6 December 2019

Committee Secretary
Senate Standing Committee on Rural and Regional Affairs and Transport

Dear Secretary

Submission to Inquiry: Australia's general aviation industry

I make this submission in my personal capacity.

My primary submission comprises:

1. **The submission I made to the Aviation Safety Regulatory Review**.

   The Aviation Safety Regulatory Review was announced on 14 November 2013 by the former Deputy Prime Minister and Minister for Infrastructure and Regional Development, the Hon Warren Truss MP. The Report on the Review was released on 3 June 2014.

   My submission to the Review at **Attachment A**. I have redacted some material that I considered necessary and relevant in the context of the Review but unnecessary or irrelevant in the context of the Committee's Inquiry. I request that references to "the Panel" in Attachment A be read as references to "the Committee", and that references to "the Review" be read as references to "the Committee's Inquiry".

2. **The submission I made in response to the CASA Discussion Paper titled "Medical Certification Standards"**

   The CASA DP is dated December 2016. The submission I made in response to the CASA DP is at **Attachment B**. I have hand-corrected three errors and redacted the name of one person.

   Although the CASA DP and my response focussed primarily on aviation medical certification issues, my response canvasses issues that are centrally relevant to the terms of reference of the Committee's Inquiry.

I intend to supplement my submission with more contemporary material to show that:

3. CASA's response to the 'community service flight' tragedies will probably result in passengers on those flights being exposed to greater risks than they would have been, but for CASA's response.

4. CASA's AVMED branch continues not to understand and comply with the laws that define and constrain its activities, and continues - harmfully – to overreact to risks.

Yours sincerely

Clinton McKenzie

Attachment A

[redacted]

31 January 2014

Clinton McKenzie

[redacted]

Dear Panel

Submission to Aviation Safety Regulation Review Panel

1. I make the attached submission in my personal capacity, as a pilot, aircraft owner and erstwhile aircraft maintenance engineer with a direct and ongoing financial and personal safety interest in aviation.[1]

[redacted]

[redacted]

SUBMISSION TO THE AVIATION SAFETY REGULATION REVIEW PANEL

Executive Summary

1. This submission makes the following key points:

   a. **Successive governments have abdicated, to the aviation regulator, core government responsibilities**

      The fundamental structural flaw in aviation safety regulation in Australia is that successive governments have abdicated, to the regulator, responsibility for policy decisions which the regulator is:

      - not competent to make, or
      - fundamentally conflicted in making.

      This flaw is the primary reason for:

      - the aviation regulatory reform program being over a decade old, with no credible end in sight, and
      - the aviation regulatory regime continuing to be, in effect, a complex symbiosis between the regulator and the regulated, where the survival of an industry participant depends substantially on certificates, approvals and exemptions granted at the discretion of the regulator and paid for by the industry participant in fees for 'services', rather than independent compliance with an objective standard.

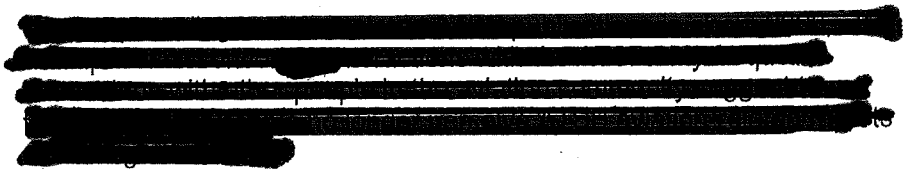
   b. **The regulatory reform program has failed and, in its current structure, is beyond repair**

      In the unlikely event that the 'new' package of aviation safety rules is implemented (not merely "completed") sometime, the package will still be a complicated, convoluted mish-mash which fails to achieve the aims of the reforms.

      Despite 155 pages of regulations growing to 2,827 pages (so far) there is almost no practical consequence for the way aircraft are operated and maintained today compared with when the regulatory reform program commenced.

      The volume and complexity of the rules, combined with the symbiotic nature of the regulatory regime, results in unnecessarily high risks of inconsistent interpretations of the rules as between individual staff of the regulator, and unnecessarily disruptive (and, in some cases, destructive) consequences for industry participants.

c. [redacted]



d. **Whatever the numerous and interrelated reasons may be for the continuing comparative safety of aviation activities in Australia, I am yet to see any evidence to suggest that the output of the regulatory reform program and [redacted] are among them.**

The theoretical reasons for the existence of the regulatory reform program and [redacted] are clear to me. The reality is disappointing.

e. **The safety regulator is not trusted**

The level of trust of the regulator by industry participants is very low.

Although a number of industry participants allege outright corruption on the part of some persons within the regulator, my experience and observations are that the primary causes of the reduction in trust is more about actions that cast doubt on the credibility of the regulator.

2. I submit that the Panel would assist in the improvement of aviation safety regulation in Australia by doing the following:

a. **Please urge government to confront and deal with the substance of the inconvenient truth that the aviation regulatory reform program has failed, and the program cannot be fixed by giving CASA more time and money to fix it.**

The regulatory reform program should, in its current structure, be terminated. It is making no material contribution to the improvement of aviation safety in Australia.

Doing nothing, at least in the short to medium term, is now a much better option, at least for general aviation, than leaving CASA to manage more of the same. The aviation industry will continue to deliver safe outcomes, but will be relieved of the cost, confusion and aggravation caused by the sporadic outputs of the regulatory reform program.

b. **Please urge government to resume responsibility for making the policy decisions that are at the core of the aviation regulatory regime.**

CASA should not be left or made to manage the substance of the process that produces the rules that: (1) CASA administers, and (2) affect CASA's own role in that administration. That process should be managed by policy and reform professionals in government, not technical experts in the regulator.

Decisions about where standards are set should be made by government, not technical experts in the regulator. Simplification, harmonisation and red-tape reduction are all very laudable policies in a regulatory reform program, but the necessary and difficult decisions require engagement with the policy issues at a far more detailed level.

c. **Please urge government to take substantial action to address the recommendations set out in the Report of the Senate Inquiry into Aviation Accident Investigations.**

Some systemic problems in aviation regulation and accident investigations appear to have been identified in the course of that Inquiry. Addressing the recommendations of the Report would go a considerable way to dealing with those problems.

SUBMISSION TO THE AVIATION SAFETY REGULATION REVIEW PANEL

Introduction

3. I make this submission with some scepticism. As will be seen from my submission, my view is that the existence of this Review and the constituency of the Panel is itself a manifestation of the fundamental structural flaw in that exists in aviation safety regulation in Australia and at the heart of a number of specific and increasingly difficult problems.

The fundamental structural flaw in aviation safety regulation in Australia

4. The fundamental structural flaw in aviation safety regulation in Australia is that successive governments have abdicated, to the regulator, responsibility for policy decisions which the regulator is:

   - not competent to make, or
   - fundamentally conflicted in making.

5. The abdication of responsibility is couched in terms of "leaving it to the experts". While an ostensibly reasonable justification from a layperson's perspective, being a technical expert does not qualify someone to make political decisions.

6. The primary aim of establishing independent safety regulators is to insulate decisions about compliance with technical standards from political and commercial pressures. Safety regulators should be left to make objective decisions as to whether an artifact, person or system meets an objective technical standard, or whether a law may have been breached. Purely political and commercial interests are, by definition, irrelevant to those decisions.

7. However, the setting of the standards to be enforced by the regulator in the first place is essentially a political decision, not a technical decision.

8. Further, a safety regulator is fundamentally conflicted if it is made or left to run the process that determines the substance of the regulator's own role in the regulatory regime it administers.

The regulatory reform program has failed and, in its current structure, is beyond repair

9. Perhaps the most stark demonstration of why "leaving it to the experts" does not work is the ongoing waste of resources that is the aviation regulatory reform program. The primary reason the aviation regulatory reform program is over a decade old and yet to be finished is, in my view, that it requires CASA to make policy decisions it is not competent to make. CASA has therefore spent over a decade and more than $200 million avoiding making and implementing those decisions.

10. Most of the decisions in establishing or reforming a regulatory framework are political decisions merely informed by input from technical experts from government and the sector to be regulated.[2] However, the structure of the aviation regulatory reform program in Australia makes the technical experts in the regulator responsible for those decisions.

11. To emphasise this point, take the (topical) example of aerial ambulance operations. Unless those operations are to be banned outright, the regulatory standards *could* be set anywhere within an easily-described spectrum:

    a. At one end of the spectrum the standards could allow operations by anyone who can strap a mower motor to a lounge chair and get it flying from any paddock.

    b. At the other end of the spectrum the standards could require operations only in aircraft built to the transport category standard, piloted by ATPLs and under constant air traffic control, to and from airports with CAT IIIC ILSs.

12. If safety were the only consideration in the decision as to where to set the regulatory standard within that spectrum, the decision would be very easy. But safety is not the only consideration in the real world, where resources are finite and risks are unavoidable – a point Dick Smith has been making for a long time.

13. The decision, in reality, must balance comparative advantages and disadvantages and matters like risk, cost and community expectations. That's why not all aviation activities involve transport category aircraft, piloted by ATPLs and under constant air traffic control, to and from airports with CAT IIIC ILSs. (Indeed, there is yet to be a passenger carried to that standard anywhere in Australia, notwithstanding that the standard is achievable as a matter of practicality.)

14. At one end of the spectrum many more aspiring operators could meet the standard at much lower cost but much higher risk compared with the other end of the spectrum. Aerial ambulance services would be available to most people in most places, but there would be many more accidents. At the other end the spectrum, aerial ambulance services would be extraordinarily safe, but available only to very few people in very few locations, unless someone is willing to invest billions in aviation infrastructure.

15. The decision as to where to set the balance between those advantages and disadvantages is a political decision, not a technical decision. Yes: the decision must be informed by technical advice on issues such as comparative risks. No: the technical experts are not competent to decide where the balance should be set, because the decision affects factors beyond the subject matter of a pilot's or an engineer's area of expertise or authority. The regulator cannot appropriately decide the level of risk to which members of the public should be exposed, or what opportunity costs society should pay to reduce the risks: Those are quintessential political decisions.

16. And that is why, nearly 18 years after a Commission of Inquiry into the loss of VH-SVQ and all nine souls on board, Regulation 206 of the 1988 regulations remains in the precisely the same operative terms, despite the Commissioner's recommendation that "in respect of Civil Aviation Regulation 206 (relating to various forms of commercial operations, including regular public transport operations) **urgent consideration be given to amending or replacing the Regulation to overcome the problems identified in the course of the Commission**" [my bolding].

17. I urge the Panel to note and mark the significance of this fact: Nearly 18 years later, a couple of hundred million dollars later and thousands of pages of new regulations later, and the regulatory reform program hasn't managed to implement a change to the regulations in response to an "urgent" recommendation arising from a $20 million Inquiry arising from an incident that resulted in the loss of nine innocent lives.

18. CASA has spent over a decade avoiding making and implementing decisions relating to the most important aspects of the regulatory regime: aspects like classification of operations, flight crew licensing and flight and duty time rules. This is hardly surprising (and an outcome for which I do not criticise CASA) because those aspects have the most profound consequences for the cost, accessibility and risk of aviation activities.

19. The necessary decisions are therefore among the most politically sensitive aspects of the regulatory regime and, consequently, the necessary decisions are the ones CASA is most averse to make. (The ever-increasing pressure to 'do something' resulted in the debacle that was the aborted implementation of the flight crew licensing rules (Part 61). I predict the same will happen with classification of operations rules. Flight and duty time rules have been a running regulatory sore for almost as long as classification of operations, if not longer.)

20. I anticipate that CASA's formal position will be that the regulatory reform program is "nearly complete". Indeed, the Director of CASA, at page 3 of the Aviation Safety Yearbook 2013 states:

> *Principal regulatory packages relating to the maintenance of aircraft involved in regular public transport operations, fatigue risk management for flight crew and flight crew licensing and flying training have been finalised, and our current schedule will see the remaining rules completed by the end of next year.*

21. For reasons I will explain, I feel justified in being blunt: That statement is laughable.

22. I have been reading statements to the same effect for more than a decade. I invite the Panel to see if it can identify anyone in the aviation community, outside the regulator, prepared to express confidence in the accuracy of that statement.

23. I realise that the Director's language was meticulously-carefully chosen so as not to commit to the completion and implementation of a complete package of rules "by the end of next year". That's one of the reasons the statement is laughable: The weasel-words speak volumes about what the regulator knows but does not want to acknowledge publicly.

24. "Completing" rules – even good ones – is of little benefit unless they are implemented effectively. I invite the Panel to see if it can identify anyone in the aviation community, outside the regulator, prepared to nominate a recent aviation-related regulatory change that is considered to have been implemented well. My observation is that the regulator has been starved of, or has itself diverted to other activities, the necessary resources to provide adequate and timely notification and education of regulatory changes. The material that is provided is often late and inadequate and, in some cases, patently inaccurate.

25. Another reason the Director's statement is laughable is that, based on the demonstrated inaccuracy of past predictions, even the prediction that the package of rules will be "completed by the end of next year" is unlikely to be accurate. Statements to that effect were welcome by the aviation community in 2003, demanded in 2005, doubtful in 2007, incredible in 2009 and now - just laughable. Based on my experience and understanding of what's been implemented so far and what is yet to be implemented, I estimate that only about 20 to 30% of the necessary work has been done to complete and implement the 'new' rules. Based on past predictions, CASA's "current schedule" will simply be changed for the umpteenth time when the almost inevitable failure to meet that schedule occurs.

26. The inaccuracy of these public statements is a matter that goes to the issue of trust (to which issue I will return later) and for which I *do* criticise the regulator: It is a matter within the regulator's direct control. If the regulator insists on making predictions which are proved wrong, year after year, it cannot expect to have much credibility within the aviation community.

27. It is in my view scandalous that successive governments have allowed the aviation regulatory reform program to deteriorate to a point at which nobody in government is willing, able or required to state a date by which the program will be completed (including the implementation of a mature set of rules), and no one is responsible or held accountable for the outcome.[3]

The ever-growing regulatory package isn't simpler, isn't harmonised and doesn't make much practical difference

28. Even assuming the 'new' package of aviation safety rules is completed and implemented, sometime, the package will still be a complicated, convoluted mish-mash that fails to achieve the aims of the reforms.

29. One of the primary aims of the reform was 'simplifying' the 1988 regulations. Those regulations were 155 pages long when they were originally made. Those regulations, and Civil Aviation Orders made under them, were supposed to be replaced by the 1998 regulations. The 1998 regulations were supposed to be so clear and harmonised, that Civil Aviation Orders and exemptions would be rendered almost entirely unnecessary. (I should note, for accuracy's sake, that back in 1988 there were also some remnants of the safety regulatory regime in the Air Navigation Act and Air Navigation Regulations and Orders, but these were not voluminous or complex.)

30. As of the date of this submission, the core aviation safety regulatory package comprises:

    a. the Civil Aviation Act, plus

    b. 766 pages of 1988 regulations, plus

    c. 2,061 pages of 1998 regulations, plus

    d. 100s of pages of Civil Aviation Orders including general exemptions, plus

    e. 1000s of pages of Manuals of Standards.

31. In effect, the output of over $200 million and more than a decade's work on 'simplification' and 'harmonisation' is the opposite:

    a. 155 pages of regulations have grown to 2,827 yet-to-be completed pages

    b. Civil Aviation Orders and numerous exemptions remain an essential part of the package

    c. 1000s of pages of Manuals of Standards have been added, and

    d. the package is not harmonised to a single regulatory concept.

32. All of this might be worth it, if it produced any safety benefits in the real world. However, there is almost no practical consequence for the way aircraft are operated and maintained today, compared to 1988. I note that the only practical differences between how I fly and maintain my aircraft today, compared with 1988, are:

    a. hemispherical rather than quadrantal cruising levels

    b. no compulsory flight plan submission and full reporting for private flights above 5,000' OCTA, and

    c. the items in radio reports have been added to, subtracted from and rearranged a few times (which is part of the reason for there now being so many variations in 'standard' radio calls used in Australia – a negative safety outcome).

33. I terminated my subscription to amendments to the civil aviation regulations (1988 and 1998) and CAOs in around 2002, because it became clear to me that the hundreds of pages of new and amended rules produced sporadically by the reform program made no material difference to safety in the real world. I remember a package of AIP Book amendments that was in the form of plastic pages. The pages were plastic because – so we were told - "there would be so few amendments to AIP Book in future that more durable pages were required". Reams of paper amendments to AIP Book have ensued.

34. An earlier 'catch-cry' of the regulatory reform program was "Safety Through Simplicity". If this 'catch-cry' was anything more than empty rhetoric, a product of the regulatory reform program is a reduction in safety.

35. The regulatory reform program is now generating its own new work. The long list of 'active projects' now includes projects to deal with problems created by the output of the regulatory reform program.

36. I commend to the Panel the address to the 2013 conference of the Regional Airline Association of Australia, by its Chairman Mr Jeff Boyd. A copy of the address is available on line. I note but one paragraph here:

> *I look and see what it has cost and taken our industry to implement the Part 66 licences, Part 145 and Part 42 and I wonder how much more it will cost and take to actually get these three parts to an amended mature set of regulations. I then contemplate what a small section of the overall regulatory reform process these regulations are. How much more time and money will it take to finish writing and then implement the massive suite of flying ops and non-RPT maintenance regulations and what toll will that have on our industry? How many decades of amendments will it take to iron out all of these new rules and achieve a mature set of regulations? Then at the end of the day we will be sitting in the middle of the Pacific with a brand new set of Australian specific regulations.*

37. I urge the Panel to note and mark the significance of the above comments. They are not the comments of a 'disgruntled ex-employee' of CASA, or a 'fringe dweller' of the aviation community or anyone else whose views might be justifiably discounted. They are the comments of a highly-respected, highly-experienced regional airline owner, pilot and aircraft maintenance engineer. In my experience, Mr Boyd's views reflect the mainstream of the general aviation community.

38. The Panel will do a considerable service to the general aviation community in Australia if the Panel convinces government to confront and deal with the substance of the inconvenient truth that <u>the aviation safety regulatory reform program has failed, and the program cannot be fixed by giving CASA more time and money to fix it</u>. Giving CASA more time and money to work on the regulatory reform program will merely result in an even more complicated, more convoluted mish-mash that still fails to achieve the aims of the reforms.

39. Terminating the aviation regulatory reform program is, in my view, now a much better option, at least for general aviation, than letting the program continue in its current structure. The aviation industry will continue to deliver safe outcomes, but will be relieved of the cost, confusion and aggravation caused by the sporadic outputs of the program.

Regulators should not manage the substance of the process that produces the rules that affect the regulator's own role in the regulatory regime

40. When regulators are left or made to manage the substance of the process that produces the rules that (1) are to be administered by the regulator and (2) affect the regulator's own role in that administration, the almost inevitable outcome is a regulatory regime that forces the industry participant into an inter-dependent relationship with the regulator.

41. In these regimes the industry participant cannot lawfully participate without numerous certificates and approvals and exemptions, and has no choice but to pay the regulator for the 'service'. The regulator must exist in order to grant those certificates, approvals and exemptions and, in a world of 'cost recovery' and 'user pays', the regulator is under constant pressure to find ways to charge fees to support its continuing existence. Further, the almost invariable solution to any perceived problem is to make ever-more rules in an attempt to deal with the 'problem'.

42. This interdependence is in many cases unnecessary. I will provide a few examples, out of many, to make my point.

Why does CASA need to approve the appointment of Chief Pilots?

43. All operators which engage in prescribed commercial operations are not permitted to conduct flying operations unless the operator has a Chief Pilot whose appointment has been approved by CASA. The practical outcome is that if an operator loses its Chief Pilot, the operator is 'grounded' until CASA gets around to considering and approving the appointment of a new one for the operator.

44. There are two main issues here: The first is the nexus between the safety of flying operations and the existence of an appointed Chief Pilot. The second is the necessity for the appointment of the Chief Pilot to be approved by CASA.

45. On the nexus issue, the underlying assumption of the nexus is that, absent an appointed Chief Pilot, the flying operations of an operator will immediately become unsafe. This assumption is a patent nonsense. It is the product of a pilot-centric view of the world, in which an aviation organisation cannot possibly function safely unless a single person – a pilot - is 'in charge' of flying operations and directly accessible by someone in the regulator – another pilot. The flight crew of an operator will, apparently, descend into anarchy the moment they find out the Chief Pilot has resigned and has yet to be replaced.

46. But the second issue is the more important from the perspective of the regulatory regime and this Review. Rather than just specifying objective qualification, experience and fitness and propriety standards that a person can satisfy, independently of the regulator, in order to qualify for appointment as an operator's Chief Pilot, the regulatory regime requires the appointment to be 'approved' by CASA. There is also a fee payable to CASA, in advance, for the approval process. (I will return to the issue of fees.)

47. To the extent that the approval process takes into account matters other than the objective qualifications, experience and fitness and propriety standards, the process entails subjective judgments by the regulator. When regulators make subjective judgments, the outcome is almost invariably controversial, especially when there are profound commercial or career consequences for someone. If the approval process merely confirms the candidate already meets the objective standards, the process is unnecessary.

48. The result is an uneasy and in my view unnecessary symbiosis between the regulator and the regulated. Rather than an operator having the certainty of knowing that any candidate who meets objective standards may, by law, be appointed as Chief Pilot by the operator whenever the operator chooses to do so, independently of the regulator, the operator is dependent for its survival on, and must pay in advance for, the subjective judgment and resource availability of the regulator to approve the appointment.

49. The approval process entails pilots judging whether other pilots are 'good enough' to be Chief Pilots. However, the objective evidence as to what usually goes wrong in commercial operators shows that neither flying skills nor the experience gained from many hours of flying produces someone with a monopoly on the wisdom and integrity to ensure that:

    a. aircraft time in service is being properly and accurately recorded

    b. aircraft defects are being properly and accurately recorded

    c. aircraft preventive and corrective maintenance is being properly carried out

    d. pilot experience is being properly and accurately logged, and

    e. pilot duty and flight time restrictions are complied with.

50. Nearly every commercial operator in Australia which has killed fare paying passengers or fallen foul of the regulator was found to have been failing in at least a few of the above areas, yet had a Chief Pilot approved by the regulator.

Why does CASA need to issue Medical Certificates?

51. My second example is medical certificates. In this regard I note another statement in the Aviation Safety Yearbook 2013. At page 17, under the headings "Looking ahead" and "Obtaining medicals", the Yearbook states:

> *CASA is determined to improve delivery of medical certificates. One initiative being examined is the capability to issue a class 2 medical certificate at the time of the medical at the DAME's office, right then and there. ...*

52. That is precisely how the medical certificate system used to run, before CASA started to micro-manage it in response to a non-existent safety problem. My DAME used to issue me my medical certificate after the medical examination "at the DAME's office, right there and then". Now he can only extend an existing, CASA-issued certificate for a short period. And, consistent with the point I will make below about fees, I now have to pay CASA a new fee to issue the certificate, which fee I previously didn't have to pay to my DAME in addition to the cost of the medical examination.

53. In short, the 'delivery of medical certificates' has to be 'improved' because CASA was allowed to create the underlying problem.[4]

54. And now the issue of colour vision deficient pilots is apparently being re-agitated by CASA, in response to another non-existent safety problem.

55. I anticipate that the purported justification for the current approach to medical certification generally and colour vision deficient pilots in particular may be compliance with ICAO standards and recommended practices. If so, I note that current AIP Supplement H12/11 dated 5 May 11 contains 82 (eighty two) pages of differences that exist between the requirements of Australian aviation legislation and ICAO standards and recommended practices. It seems to me that the choice as to when Australia will strictly adhere to ICAO standards and recommended practices is not based purely, as it should be, on reliable safety-related data.

Why does CASA need to grant Special Flight Permits?

56. My third and final example is Special Flight Permits (SFPs).

57. Last year the Maintenance Release for my aircraft expired because bad weather prevented me from ferrying the aircraft to the maintenance organisation in time. Other than the annual/100 hourly inspection, no other maintenance was due.

58. Rather than the rules incorporating an exception permitting flight subject to some fairly obvious conditions – e.g. no passengers; day VFR; flight to the location of the maintenance organisation; entry in the aircraft log book etc – I had to apply to CASA for an SFP.

59. The subsequent interaction with CASA, resulting in the issue of an SFP, contributed nothing to the safety of my flight to the maintenance organisation. The piece of paper issued by CASA did not alter the airworthiness of the aircraft, and the conditions imposed on the SFP were ones that any sensible person would envisage and could be included in the rules, thereby avoiding the necessity to apply for an SFP in the first place. After all, I have no interest in having an accident and damaging myself, my aircraft or other people or their property.

60. I of course acknowledge that there are many circumstances that may involve far more complex technical issues and risks, and which *might* therefore justify interaction with the regulator rather than being dealt with by technical experts in industry. However, that should not stop the rules including a 'standard' exception for other circumstances.

Fees for 'services'

61. On the subject of fees, like many interactions with the regulator, my application for an SFP required up-front payment of a fee for the 'service'. In my case I was required to pay $320 because CASA estimated it would take 2 hours of work to process the application.

62. I note that I have professional qualifications, expertise and first-hand experience in all of the airworthiness, maintenance, regulatory and administrative issues relevant to the issue of an SFP by CASA. In my estimation, the work necessary to process my application should have involved:

a. Reading the application: 1 minute

b. Considering the airworthiness issues and risks: 1 minute

c. Considering the appropriateness of proposed conditions to mitigate the identified risks: 1 minute

d. Signing the SFP and faxing or emailing to applicant: 5 minutes

e. Filing the paperwork 12 minutes

63. The process should in my veiw have taken about half an hour of work, at a stretch.

64. I (grudgingly) concede that administrative convenience means charging in whole hours, and therefore the fee had to be at least for 1 hour's work. What I do not accept is that I should have had to pay for 2 hours' work, because I know that the process need not have taken anywhere near 2 hours' work.

65. I use this example, not to complain about the concept of the regulator charging fees – I realise the concept is imposed on, rather than chosen by, the regulator. Nor do I expect the Panel to do anything about the amount I was charged for the SFP – that is not the Panel's role.

66. Rather, I use this example to highlight the structural issue that results in the aviation regulator having a real incentive and practical (monopoly) power to:

a. build and perpetuate a regulatory regime that requires the regulated sector to obtain 'services' from the regulator, and

b. 'pad' the charges for those 'services'.

67. When:

a. intelligent people are obliged apply to a regulator for something

b. the thing is perceived to have no practical value or purpose

c. the fee for the application is perceived to be excessive, and

d. the regulator does not have the resources available to process the application in accordance with the applicant's time constraints,

there is a *very* strong incentive to ignore the obligation.

68. In my view, a regulator should not be left to, or made to, manage the substance of the process that produces the rules that: (1) are to be administered by the regulator, and (2) affect the regulator's own role in that administration. The regulator is fundamentally conflicted in that process. In my view, the management of that process is a core government responsibility and, in the case of the aviation regulatory regime, should therefore be resumed by policy and reform professionals in government.

Paras 69 – 85 removed as irrelevant. to Committee's terms of reference.

[redacted]

I am happy to discuss with the Panel any issue raised in or by my submission.

Yours sincerely

[redacted]

Clinton McKenzie

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[1] My background:

- Active pilot since obtaining my private pilot's licence in 1986.
- Aircraft owner for over 10 years.
- Served for 20 years in the Royal Australian Air Force as an aircraft maintenance engineer.
- Attained a degree in law with first class honours at the Australian National University and was admitted to practice as a barrister and solicitor in 1997.
- Legal practice experience includes 10 years in the government law team of one of Australia's larger law firms, including 5 years as a partner.
- Legal practice experience also includes a couple of years as Legal Counsel in the Civil Aviation Safety Authority (CASA).
- CASA's General Manager of General Aviation Operations for a year.
- Currently manager of the Office of Legal Counsel in the Australian Maritime Safety Authority (AMSA).

[2] I have recently been involved in a regulatory reform program that went from a blank piece of paper to implementation of live law in about 3 years. The combined Act, regulations, Orders and exemptions produced by that program is less voluminous than some individual Parts of the Civil Aviation Safety Regulations 1998. I know what an effective regulatory reform program and product looks like. In that program all of the policy decisions were made by, or had to be ratified by, the relevant policy Departments and Ministers, before being implemented in legislation.

[3] The regulatory reform program with which I was recently involved had a completion deadline that was postponed, once, by 6 months. That deadline was met. The persons who were to lose their jobs if the deadline were not met had been identified.

[4] I note that the medical examination and certification of seafarers has been out-sourced, completely, by AMSA to the private medical sector. There is no one in AMSA issuing medical certificates to seafarers.

[5] John Deakin is a retired JAL 747 Captain with over 39,000 flight hours. He holds the ATP, CFII, and MEI, Instructor Certificates and has extensive radial and flat engine experience. He has flown everything from Piper Colts in South America to WWII war birds. He flew for Air America in the 60's and wrote a monthly column for AvWeb. Along with George Braly and Walter Atkinson, John Deakin has been delivering Advanced Pilot Seminars on piston engine management for over a decade.

[6] John Deakin is the author of the widely-read 'Pelican's Perch' series on AVweb (www.avweb.com). Pelican's Perch article #57 is titled "The Whyalla Report – Junk Science?"

[redacted]

Attachment B

2017

SUBMISSION TO DISCUSSSION PAPER: MEDICAL CERTIFICATION STANDARDS

By email: avmed.dp@casa.gov.au

I make the **attached** submission in my personal, private capacity.

Clinton McKenzie

30 March 2017

Contents

Background and comments on the paradigm problem

During my 42 years of involvement in aviation so far, I have been or continue to be, variously:

- a private pilot
- an aircraft maintenance engineer
- an aircraft owner
- the General Manager, General Aviation Operations in CASA, and
- a legal counsel to CASA.

Although I am very sceptical about whether any substantial positive action will arise out of the Discussion Paper (DP) process, given CASA's long history of empty rhetoric in relation to the regulatory reform program, I could not in all conscience fail to put on record my views about CASA's current administration and setting of medical standards, and about the related processes. I consider that the current approach produces substantially negative outcomes, including for aviation safety, which negative outcomes are not justified by counterbalancing benefits.

I also note a point I made in my submission to the Aviation Safety Regulator Review (ASRR) in 2014: CASA is not competent to set safety standards, including medical certification standards, because safety standards setting is essentially a political decision, not a decision for technical experts. (I stress that I do not use the term "not competent" in a pejorative sense. I use the term in the sense of the inevitable consequences of the limits on CASA's knowledge and capabilities, and the inescapable fact that proper standards-setting involves the weighing and balancing of broad societal costs and benefits that are not measurable by CASA.)

Further, it is not possible for CASA disinterestedly to determine its own role in the regulatory regime it administers and for which it charges fees. In the context of the DP, there are no mental gymnastics sufficient to enable CASA to do a disinterested review of submissions to CASA about CASA's own medical certification processes, decisions and standards setting, and the extent to which CASA should or should not be involved in medical certification into the future.

(I realise there is nothing that CASA can do about these points, even assuming CASA considered them to be valid. I merely note them in the hope that, one day, a proper review of aviation regulation will identify and deal with the fundamental flaw in the aviation safety standards-setting paradigm.)

Summary of key points and submission

I am disappointed to note the increasing extent to which:

1. civil aviation is regulated on the basis of intuition, tainted by cognitive bias, rather than objective analyses of absolute and comparative risks and probabilities (or at least rational estimates of them) while taking into account costs and benefits *beyond* just aviation safety, and

2. the medical certification process has disintegrated from rather than being an integral part of the system of air safety.

The short and main points of my submission are that:

1. There is a yawning gap between CASA's rhetoric on evidence-based and risk-based regulation on the one hand, and action on the other.

2. Pilots are now deliberately withholding information from DAMEs, for fear of attracting increasingly costly, intrusive, unnecessary and stressful medical and regulatory interventions, with potentially career-destroying or life's passion-destroying consequences.

3. CASA has provided no evidence to show that the relatively-recent change in its approach to medical certification was a causally beneficial response to any substantial safety-related risk or trend, or that any benefits of the change outweighed the costs.

4. The greater the extent to which medical examination and certification are devolved to private medical practitioners, private medical specialists and participants in aviation, the greater will be the contribution of aviation to Australia.

A key definition: cognitive bias

For the purposes of this submission, I use the term "cognitive bias" to mean - out of the many forms of bias the term covers - the form of bias that Cass Sunstein[1] calls "probability neglect". Sunstein observes:

> *Dreadful possibilities stimulate strong emotional responses, such as fear and anxiety. Fortunately, most high-consequence negative events have tiny probabilities, because life is no longer nasty, brutish and short. But when emotions take charge, probabilities get neglected. Consequently, in the face of a fearsome risk, people often exaggerate the benefits of preventive, risk-reducing, or ameliorative measures. In both personal life and politics, the result is harmful overreactions to risks.*

[1] *Dreadful Possibilities, Neglected Probabilities*. Cass R. Sunstein and Richard Zeckhauser Harvard University. https://www.hks.harvard.edu/fs/rzeckhau/Sunstein4-6-09.pdf

Referring to Sunstein's work, George Dvorsky[2] uses a comparison between driving a car and flying in an aircraft as an example of probability neglect:

> ***Neglecting Probability***
>
> *Very few of us have a problem getting into a car and going for a drive, but many of us experience great trepidation about stepping inside an airplane and flying at 35,000 feet. Flying, quite obviously, is a wholly unnatural and seemingly hazardous activity. Yet virtually all of us know and acknowledge the fact that the probability of dying in an auto accident is significantly greater than getting killed in a plane crash — but our brains won't release us from this crystal clear logic (statistically, we have a 1 in 84 chance of dying in a vehicular accident, as compared to a 1 in 5,000 chance of dying in an plane crash [other sources indicate odds as high as 1 in 20,000]). It's the same phenomenon that makes us worry about getting killed in an act of terrorism as opposed to something far more probable, like falling down the stairs or accidental poisoning.*
>
> *This is what the social psychologist Cass Sunstein calls probability neglect — our inability to properly grasp a proper sense of peril and risk — which often leads us to overstate the risks of relatively harmless activities, while forcing us to overrate*[sic] *more dangerous ones.*

The effects of cognitive bias in aviation regulation

I suggest that:

- Aviation is an example, *par excellence*, of an activity that evokes dreadful possibilities in many minds, especially when contemplating the prospect of the incompetence, incapacitation or mental illness – for whatever reason - of the pilot/s of an aircraft.

- The current approach to aviation medical certification neglects an objective consideration of the probabilities of those dreadful possibilities.

- This results in – to use Sunstein's words - "an exaggeration of the benefits" of the current medical certification process as well as building "harmful overreactions to risks" into that process. (In my view, the same may validly be said of the broader aviation safety regulatory regime in Australia.)

The overreactions include intrusive medical investigations and interventions, and operational restrictions, which are unjustified by the risks, benefits and costs. The harm includes cost, stress, the deliberate withholding of potentially relevant information from DAMEs, anxiety about consulting medical practitioners 'when in doubt' and, in some cases, the unjustified destruction or impairment of careers and participation in private aviation. This harm is among a number of factors that have had, and continue to have, a stultifying effect on what should be a vibrant and growing general aviation sector in Australia.

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[2] *The 12 cognitive biases that prevent you from being rational.* http://io9.gizmodo.com/5974468/the-most-common-cognitive-biases-that-prevent-you-from-being-rational

Various other terms have been used to describe the consequences of cognitive bias or, more accurately, the use of the leverage it provides, particularly with respect to aviation safety regulation. The "mystique of aviation" is one of those terms. It was coined as a description of the veil used to try to cover the banal and sometimes ridiculous details of regulatory requirements and actions purportedly justified by the mere utterance of the shibboleth: The safety of air navigation!

However, I have considerable insight into what is under that veil. The reality is that aviation is not the most complex activity in which humankind participates, and CASA is just an ordinary bureaucracy filled with ordinary bureaucrats doing ordinary bureaucratic things, motivated by ordinary human motivations and emotions. The reality is that those bureaucrats are not disinterested in decisions about where regulatory standards are set or who should administer them. Bureaucratic careers and empires can rise and fall as a consequence of those decisions.

Colour Vision Deficiency

Perhaps the starkest manifestation of the regression of the contribution of medical certification to Australia's system of civil aviation safety is the relatively-recent change in the regulatory treatment of pilots with colour vision deficiency (CVD). That change occurred not just in the absence of evidence of any causal link between CVD and any greater risk compared to pilots without CVD in contemporary operational circumstances, but despite evidence that there is no greater risk. Further, the CAD test does not simulate an operational situation within the meaning of that term in the aviation law, and CASA either knows this but arrogantly persists with its use, or is incompetent to determine a test that does simulate an operational situation.

The DP cites Annex 1 of the ICAO Convention and notes Australia's obligation to notify ICAO of any 'differences' to ICAO SARPs, but fails to also note that Australia has notified of dozens of differences to the Convention (as at the date of this submission, see AIP SUP H24/17 and the many documents 'linked' within). It seems that the decision to notify of differences is not based on objective analyses of absolute and comparative safety risks alone. In any event, at least in relation to the colour vision standard the ICAO SARPs are not the problem. The problem is CASA's use of the CAD test rather than one that simulates an operational situation.

CASA's current approach to CVD, alone, puts the lie to CASA's claims to be an evidence-based and risk-based regulator. CASA Avmed's current approach is a classic manifestation of another specific kind of cognitive bias: "Semmelweis reflex" - The tendency to reject new evidence that contradicts a paradigm.[3]

Pilots with CVD continued for decades to pass flight tests, instrument ratings renewals and other periodic checks to the same standards as pilots without CVD, without any increase in accidents or incidents. Any objective person would consider that to be substantial evidence in support of the conclusion that there is no causal connection between CVD and the ability to perform pilot duties to the requisite standards.

[3] I also note an article that is on point: "Why Facts Don't Change Our Minds" by Elizabeth Kolbert, published in the *New Yorker* on 27 February 2017
http://www.newyorker.com/magazine/2017/02/27/why-facts-dont-change-our-minds

Avmed, on the other hand, presumes that allowing pilots with CVD to have engaged in those operations was unacceptably risky, because that is what the CVD paradigm dictates. Evidence contradictory to the presumption is simply rejected.

An example of an absurd regulatory disparity caused by cognitive bias

The DP notes an ATSB report which found that "[a]round 75 per cent of [pilot] incapacitation occurrences happened in high-capacity air transport operations ... with the main cause being gastrointestinal illness...". The related Table indicates that in around half of those cases the pilot discontinued duties for the remainder of the flight.

Let us assume that the referenced ATSB report was based on an analysis of a statistically significant number of incidents. Let us also assume that pilot incapacitation creates material risks to aviation safety.

So far as I am aware[4], there is not a single syllable in the ever-growing volumes of civil aviation regulations that regulates the service of food to pilots of high capacity aircraft, before and during duty time.

The regulatory position is therefore this: A pilot who cannot pass one of the three 'tiers' of colour perception tests is too 'dangerous' to be in the left hand seat at the front of a high-capacity international aircraft, despite evidence to the contrary, but it is acceptably 'safe' for a pilot with 'normal' vision to be in that seat and to have been fed and be fed in way that is not regulated by the civil aviation regulations, despite evidence that the most likely cause of him or her becoming incapacitated is gastrointestinal illness, with about a 50/50 chance of him or her then having to be removed from further duty on the flight.

The explanation for this absurd regulatory disparity is, I suggest, intuition tainted by cognitive bias. To the public, a sandwich and a glass of fruit juice are, intuitively, completely harmless. Contemplating a sandwich and glass of fruit juice does not evoke thoughts of dreadful consequences. In contrast, to the public a pilot with a 'vision deficiency' must surely be a risk. When the dreadful consequences of a pilot with a 'vision deficiency' are contemplated, cognitive bias results in an over-estimation of the probabilities of the event occurring. However, an objective analysis of the absolute and comparative risks and probabilities supports precisely the opposite conclusion. On an objective analysis, the regulatory regime should put substantial focus on what the pilots of high-capacity aircraft are eating and no focus on CVD.

I should stress that I am not advocating for yet more civil aviation regulations to deal with the service of food to pilots. Regulations on the subject are not justifiable, given that pilots and operators of high-capacity aircraft are perfectly capable of understanding and putting in place strategies to mitigate gastrointestinal illness risk on their own initiative, and given the remote probabilities of the event and the controls that are in place if the event occurs.

[4] I gave up reading the ever-growing pile of civil aviation laws in about the year 2000, when it became obvious to me that almost none of it made any practical operational difference compared with the rule set in force when I attained my pilot licence. I have subsequently successfully completed seven Flight Reviews, therefore demonstrating either that my judgment of the safety-relevance of the current regulatory mish-mash was correct or that the various Approved Testing Officers who conducted the reviews are as 'dangerous' as I am.

However, precisely the same logic should apply to other risks, including medical-related risks, which are less probable and have lesser potential consequences for safety than incapacitation of the pilot of a high capacity aircraft through gastrointestinal illness. Given the frequency and consequences of high-capacity aircraft pilot incapacitation due to gastrointestinal illness compared to other causes, there are lots and lots of those other risks, yet some of those other risks are the subject of regulatory micro-management.

Manifestations of approaches based on intuition tainted by cognitive bias are sprinkled throughout the regulatory regime and the Discussion Paper.

The GermanWings tragedy, and mental and psychiatric conditions

The regulatory response to the GermanWings tragedy is very likely to be a "harmful overreaction", given the effects of cognitive bias and what is stated in the DP. The DP states:

> *The Germanwings Flight 9525 disaster focused public and regulatory attention on pilot psychiatric conditions and the European Aviation Safety Agency has recently moved to introduce new requirements as a direct result of recommendations arising from the accident.*
>
> *The proposals, which are undergoing consultation, include requirements to strengthen initial and recurrent medical examination of pilots certified to a class 1 standard by including drug and alcohol screening, comprehensive mental health assessment and greater follow-up requirements in case of a medical history of psychiatric conditions. Mechanisms to limit 'decision shopping' by applicants and requiring notification to licencing agencies of any applicants commencing and then withdrawing an application for a medical certificate have also been proposed.*

Because one pilot evidently had a very severe mental illness resulting in him carrying out a dreadful act that is almost too awful to imagine, every pilot with any hint of a mental illness may now have to pay the price in intrusive, expensive and stressful examinations and delays, and potential restrictions, none of which are justifiable on the basis of an objective assessment of the probabilities. That is one of the reasons why "feedback to CASA suggests that pilots are still very wary of the consequences of declaring a depressive illness or other mental conditions." No one should be surprised by that wariness.

I note that the 'grounding' and revocation or suspension of the medical certificate of the pilot that caused the GermanWings tragedy would not necessarily have prevented it or a similar tragedy, and may have even precipitated a worse tragedy.

Regulators and other bureaucrats often labour under the misconception that revoking or suspending a piece of squashed tree issued to a person, or refusing to issue a piece of squashed tree to a person, somehow has the effects of physically constraining the person and rendering him or her physically incompetent to do what s/he would lawfully be able to do if s/he had the piece of squashed tree. However, if the pilot that caused the GermanWings tragedy had been 'grounded' by his employer and his medical certificate revoked or suspended, he would not thereby have been physically constrained or rendered physically incompetent to fly an A320-211 or any of the other aircraft types he had flown.

It beggars belief that a person in that terrible state of mind and capable of performing that terrible act would, in response to being grounded and having his medical certificate revoked or suspended, have simply shrugged and gone home and watched television and twiddled his thumbs. He may not have been rostered on or lawfully allowed to fly an A320-211, but he was perfectly capable of producing the same outcome as the GermanWings tragedy, or worse, through other means.

I also note the terrible irony that the cockpit door modifications which facilitated the carrying out of the pilot's dreadful plan in the GermanWings tragedy may themselves have been a "harmful overreaction" – to terrorism. The conclusion to Sunstein's 2010 paper referenced at Footnote 1 presciently observed (with my bolding):

> *Dreadful possibilities activate emotions and make people insensitive to the probabilities of harm. Terrible outcomes that are easy to visualize trigger large-scale changes in thought and behavior even if the statistical risk is dramatically lower than those associated with many other activities with equivalent stakes that do not arouse public concern.* ***Probability neglect helps to explain public overreaction to highly publicized, low-probability risks, including those posed by*** *sniper attacks, abandoned hazardous waste dumps, anthrax, and perhaps more generally,* ***terrorism****.*

Even if I am wrong and the GermanWings tragedy would have been avoided if the regulator had suspended the pilot's medical certificate and his employer had stood him down from flying duties, it cannot rationally be presumed that any and all potential mental health problems will lead to a similar tragedy, thus justifying regulatory intervention on the basis of that presumption.

The response to tragedies like GermanWings and the other "highly publicized, low-probability risks" often manifests another specific form of cognitive bias: The "gamblers' fallacy" – the belief that the occurrence of an event affects the probabilities of the event occurring.

I implore CASA to be meticulously careful to address mental health and psychiatric issues on the basis of objective analyses of absolute and comparative risks and probabilities, not the natural but therefore misguided response to the GermanWings tragedy. Any other approach will simply result in medical certificate applicants being unwilling to utter a single syllable to employers and medical practitioners that could be construed and seized upon as indicative of a potential mental health issue.

Pilot incapacitation: The lack of analysis of the probabilities of the consequences, or to consider them in the broader, societal context

The DP is replete with references to unknowns that might increase if medical certification of general aviation pilots was no longer carried out by CASA, and not-so-gentle hints about what the rate of sudden incapacitation in sport aviation activities might *really* be. The strong implication is that unless general aviation pilots continue to be subjected to the "rigorous approach" to medical certification, there will be an increase in the sudden incapacitation of general aviation pilots. Scary!

Let us assume that the outcome of a devolution of general aviation medical certification would be an increase in the sudden incapacitation of general aviation pilots as a consequence of pre-existing medical conditions that would otherwise have been detected during the "rigorous approach" to medical certification. Let us go even further and assume that those pilots die at the controls. (Noting, of course, that there is no evidence as to the accuracy or otherwise of those assumptions, and noting that, currently, the available evidence suggests that the majority of incapacitation events occur in airline operations whose pilots have been through the most rigorous level of the "rigorous approach", and not in general aviation whose pilots only need to go through the 'second level' of the "rigorous approach".)

So the assumptions are an increase in sudden incapacitations of general aviation pilots as a consequence of pre-existing medical conditions that would otherwise have been detected during the "rigorous approach" to medical certification, leading to their death at the controls of an aircraft.

An objective response to the above assumptions would start with the following questions:

So what if there's an increase in pilot incapacitation?

If the pilot had not died at the controls of the aircraft, the pilot was going to die behind the wheel of a car or somewhere else. (Those who intuitively believe that flying an aircraft for pleasure or personal transport is substantially more stressful than driving a car should obtain and consider objective evidence.) The outcome for the pilot and society is the same, whether or not the pilot had been through the "rigorous process" and denied a medical certificate. CASA and the ATSB and federal governments might prefer the fatality to have occurred while driving a car or somewhere else other than in an aircraft, and therefore be an externality so far as their responsibility, workload and statistics are concerned, and *vice versa* in the case of the road safety regulator, but that is just self-interested politics and bureaucracy.

What about the passengers on board the aircraft?

Unless one of the passengers has the skills to safely land the aircraft, there is a high probability they are going to die or be seriously injured. (It is here that cognitive bias really kicks in, as a consequence of the dreadful prospect of the tabloid "death plunge".)

When considered in isolation, it is perfectly reasonable that the passengers would not want to be exposed to that risk and that the air safety regulator would not want them to be either. But when not considered in isolation, an incongruity is revealed: Apparently it is 'safe' for those passengers to be in a car driven by the pilot, or to be in another car near a car being driven by the pilot, or to be pedestrians on the path next to the road on which the pilot is driving a car.

Because of cognitive bias:

- there is a misguided belief that it is 'less dreadful' to die in a road vehicle accident (or, to use Dvorsky's examples, through falling down the stairs or accidental poisoning) than it is to die in a 'death plunge' in an aircraft

- the latter is wrongly considered to have a higher probability of occurring than it does as a matter of fact, and

- disproportionate resources are applied to preventing the latter.

I stress that I am not suggesting that *nothing* should be done to mitigate the objective risks to the passengers. I am merely pointing out that refusing to issue the pilot with a medical certificate or prohibiting him or her from carrying passengers in an aircraft does not remove the risk to the passengers posed by the pilot (or from other, far more probable risks).

It is only cognitive bias that leads to disproportionate efforts to mitigate the 'in-air' risks than the 'on-ground' risks. The 'stovepiping' of responsibility for mitigating various risks between different regulators means that the 'on-ground' risks are irrelevant to decisions about whether and how most appropriately to mitigate the 'in-air' risks.

What about the risk to innocent third parties, and their property, on the ground?

An objective analysis of what happens when 'general aviation' and 'sports aviation' aircraft 'plummet to the ground' due to e.g. loss of power through engine failure or fuel exhaustion or starvation, mid-air collisions and structural failures shows how remote the risks are of causing death, injury or substantial material damage on the ground. Some of these events have happened over densely populous areas (e.g. the King Air tragedy at Essendon and relatively-recently near the 2RN approach point to Bankstown in Sydney and near Carrum approach point to Moorabbin in Melbourne), yet have not led to the death of third parties or substantial damage on the ground. An entire propeller assembly broke away from REX Saab 340B VH-NRX over southwestern Sydney on 17 March, yet no substantial damage or injury was caused on the ground.

This is not to say that it has not or cannot happen. It is to say that the probabilities of third party deaths and substantial property damage on the ground are extraordinarily remote, irrespective of the cause of the accident.

What about other airspace users?

Contemplating the consequences of a mid-air collision between e.g. a large passenger jet and a light aircraft results in a *gross* over-estimation of the probabilities of it happening.

The chances of me colliding with a large passenger jet are infinitesimally small, *even if I tried deliberately to do it.* GA pilots are not fighter pilots in a fighter aircraft. They do not have the skills and their aircraft do not have the speed and manoeuvrability to enable them to put those aircraft at a point in space to which a passenger jet is going to be in the future, while the jet is climbing or descending at high rates and high airspeeds compared to general aviation aircraft.

Let us assume that the next time I am flying near Canberra, I die of a heart attack at the controls. Let us also assume that my aircraft is heading straight for Canberra airport.

In order for my aircraft to collide with a passenger jet flying into or out of Canberra:

- the primary and secondary surveillance radars on the ground would have to fail, or the approach and tower controllers would have to fail to notice both the primary and secondary returns from my aircraft on their screens, and
- the approach and tower controllers would have to fail to notice that I am not in contact with or responding to calls or directions from them, and
- the jet's TCAS would have to fail or the pilots fail to notice TCAS advisories, and
- the tower controller and the jet's crew would have to fail to see me, and
- finally and most improbably, my aircraft would have to end up flying to a point in the sky to which the jet is flying as well, and arrive at the point at the same time as the jet does.

All of those remote possibilities multiply to an infinitesimally remote possibility.

It might be argued that because the consequences would be catastrophic, it is still appropriate to take mitigation action even in respect of the infinitesimally remote possibility, by reducing the chances of me being the pilot of an aircraft and dying at the controls. That argument might be logical, if many less remote possibilities of mid-air collisions were not considered acceptably 'safe'.

RPT aircraft (including jets) fly into and out of airports that have no control tower, no ground radar plotting the course of nearby aircraft, and no notification from air traffic control of all nearby traffic (some of which traffic cannot be 'seen' by radar and air traffic control anyway). RPT aircraft also fly through airspace shared by aircraft with 'self-certified' pilots at the controls. Whilst laypeople are usually shocked and alarmed when confronted by these realities, that is just a manifestation of cognitive bias.

I finally note on this point that all mid-air collisions and near-misses of which I am aware, through various reports, involved pilots who were not incapacitated. Although it is counter-intuitive, the outcome in each of those cases may have been no different, or might even have been *avoided*, if the pilot *had been incapacitated*.[5]

An increase in aviation accidents is not *necessarily* a net negative for our society

This point highlights the flaw in a regulatory paradigm that has the air safety regulator setting air safety standards without regard to what are, for CASA, externalities. An increase in aviation accidents does not, necessarily, result in a net negative for society. It may be the case that more aviation activity would result in benefits that outweigh the costs of the increase in accidents arising from the increased activity.

For example, it may be that if more people flew long distances *instead of* driving long distances in Australia, there would be a net *decrease* in deaths and injuries arising out of the *aggregated* transport modes.

[5] The misleading effects of visual perceptions in circumstances of potential mid-air collision are well-known. See for example US FAA AC 120-55C.

It may be that an increase in aviation activity would encourage investment in infrastructure and innovation in a sector that requires specialist skills and knowledge, with consequential boosts to the economy. It may be that an increase in people flying for pleasure would result in a net increase in happiness.

A related and relevant point was made in the Canberra Aero Club's submission in response to DP 1317OS – "Safety standards for community service flights conducted on a voluntary basis". CASA's response to a fatal accident during a community service flight was to propose, among other things, an increase in the standards and regulatory approvals required to engage in those operations. But the only *rational* way to decide whether to increase those standards and requirements and, if so, to what, was to determine the opportunity cost *to society* of the increase.

CASA could set the standards such that community service flights must be conducted only in transport category aircraft, to and from airports equipped with CATIIIC ILSs. When carried at that standard, passengers would be, comparatively, extraordinarily safe. However, the operation would be very costly and the flights would be inaccessible or useless to most of the population. Some of the vast majority of the people who miss out may be unable to access the required medical treatment to which they would otherwise have access, and die of their condition, or may die in a road accident trying to get to that treatment.

CASA could instead set the standards such that community service flights may be conducted in ultralights powered by motor mower engines, to and from any convenient paddock. At that standard the service would be, comparatively, very cheap and accessible to the vast majority of the population, but there would be many more accidents than if the standards were set at the other end of the spectrum.

The only rational way to decide where within that spectrum to set the standards is to consider, among other things, objective cost/benefit data across that spectrum. But CASA does not have or consider that data, and is not competent to make decisions about it, even if it had the data. Decisions about and balancing the risks to which society will be exposed, what counts as benefits to society and what price is considered reasonable for society to pay for those benefits, are essentially political decisions. That is why the aviation classification of operations regime in Australia continues to be a muddy mess, around 20 years after Commissioner Staunton recommended an "urgent" review of one of the fundamental definitions within that regime. That is also why the flight and duty time rules have been in a state of flux for even longer.

Therefore, it is *not enough* for CASA to say that an increase in medical-related incapacitation is, of itself, justification for CASA to continue to conduct general aviation medical certification, *even if there were overwhelming evidence* that there would be an increase. The *benefits* have to be ascertained and weighed as well.

Symptoms of an unhealthy medical certification process: CASA decisions set aside or varied by the AAT

A review of the number and outcomes of applications to the AAT in the last eighteen years arising from CASA's medical certificate-related decisions indicates a trend that I suggest is symptomatic of an unhealthy medical certification process caused by a change in CASA's approach around nine years ago.[6]

During the nine year period 1999 to 2007 inclusive, there was a cumulative total of eight substantive[7] medical certification decision-related matters reviewed by the AAT, and all of CASA's decisions were affirmed by the Tribunal, except in one of those matters[8] in which - although the Tribunal affirmed CASA's decision to refuse to issue a Class 1 medical certificate - the Tribunal also varied the conditions on the Applicant's Class 2 medical certificate in favour of the Applicant. Based on my experience and expertise, this outcome seems to me to be evidence of a 'healthy' medical certification process: Not perfect - as it cannot be perfect – but the Tribunal found that the correct and preferable decision had been made by CASA in almost all cases.

Pooshan Navathe[9] then became CASA's PMO on 27 February 2008[10]. Medical examination processes involving far more intrusive and expensive tests, rejection of external medical professional and specialist opinion, and changes in approach to CVD, were subsequently implemented. I suggest a causal rather than coincidental correlation between the two.

During the nine year period after Pooshan Navathe's appointment as PMO (2008 to 2016 inclusive) there was a cumulative total of thirty two substantive medical certification decision-related matters reviewed by the AAT, and in fifteen of those matters the Tribunal either set CASA's decision aside and substituted a decision more favourable to the Applicant, or varied CASA's decision in favour of the Applicant. Based on my experience and expertise, and my further observations below, this outcome seems to me to be symptomatic of a very unhealthy medical certification process.

It is important to note that:

- over the same period, the number of applicants for medical certificates decreased dramatically from what it would otherwise have been, as a consequence of the exodus away from 'traditional' general aviation activities requiring at least a Class 2 medical certificate and into sports aviation where some of the unnecessary regulatory burden can be avoided, and

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[6] See Table attached. I would be very glad to hear from CASA if there are any errors or omissions from the Table, as it was compiled at short notice.
[7] As compared with procedural/jurisdictional questions.
[8] *Serong and Civil Aviation Safety Authority* [2006] AATA 1123; (2006) 93 ALD 673 (22 December 2006)
[9] In some AAT matters Pooshan Navathe is given the honorific "Associate Professor" (see e.g. *O'Brien and Civil Aviation Safety Authority* [2015] AATA 93 (20 February 2015) and in others "Doctor" (see e.g *Hackett and Civil Aviation Safety Authority* [2011] AATA 453 (29 June 2011)).
[10] He was CASA's PMO from 27 Feb 2008 to 12 Jan 2015.

- no evidence was provided by CASA to show a substantial increase in medical-related accidents and incidents leading up to the change in approach to medical certification, or that the change in approach would have (or has had) any positive causal effect in addressing an increase, even if it existed.

I also note some invisible statistics: First, the number of people who just gave up in frustration or did not have the resources or energy to pursue CASA decisions with which those people were dissatisfied. Secondly, the number of applications to the AAT that did not proceed to a hearing because CASA conceded it was in the wrong before the hearing. (I was personally involved in one of the latter matters – more on this below.)

In summary, in the period 2008/2016 compared with the period 1999/2007:

- The number of applications to CASA for medical certificates has reduced from where it would have been, but for the exodus out of 'traditional' GA.

- The number of applications to the AAT for review of CASA's medical certificate-related decisions have nonetheless increased substantially.

- The percentage of CASA's medical certificate-related decisions that have been set aside or varied by the AAT in favour of the Applicant has increased substantially.

- There has been no statistically significant change in the rate of accidents and incidents (the variations of which year-to-year in Australia are almost entirely stochastic anyway).

I note that of the decisions reviewed by the AAT that were made in the last 6 years by the Commonwealth transport safety regulatory authority of which I have now been a staff member for 6 years, not a single one has been set aside or varied by the AAT. (Those reviews are, of course, on the public record.)

I also note the submissions that were made by various aviation representative bodies to the ASRR in 2014. Those bodies have 'corporate knowledge' spanning decades. The submissions go not only to the expeditiousness of the medical certification *process* but also the soundness of the substantive *decisions* made by CASA during that process:

From pages 10-11 of the submission by the **Australian and International Pilots' Association** (AIPA):

> *AIPA's most frequent and often most frustrating interaction with CASA is through the Aviation Medicine Branch. The frustrations arise due to the inconsistent administration of medical clearances and certificates, the near impossibility of being able to talk to anyone about the administration processes and, most critically, what most members report as the CASA-unique approach of disregarding practicing medical specialists' advice in favour of "riskbased" decisions made by non-practicing medical bureaucrats.*
>
> ...

AIPA is most concerned about the immediate uncertainty caused to a member when the often expensive advice and tests are considered to be acceptable by DAMES and specialists but not by the Principal Medical Officer (PMO). Where else are they to turn? The problem is often exacerbated by the turnaround times, the best of which is 28 days, but as the applicant you will rarely be made aware that the clock has not started because some component of the required information is "missing", at least until you can break through the communication firewall to ask as to what point your certificate has progressed in the administrative sequence.

Paragraph 13 of the submission by the **Australian Federation of Air Pilots**:

13. The Aviation Medicine section of CASA in particular appears to act without due regard for the impact its decisions have on individual pilots and the industry. There is little or no communication about delays in the medical certificate renewal process or transparency about the reasons for delays occurring. Certificate holders are obliged to follow up with the section to find out why their certificates have not been renewed only to receive requests for additional medical reports and tests. The Federation has received numerous complaints from members as to the apparently arbitrary nature of decisions and the bureaucratic and incompetent processing of renewals. These delays threaten the livelihood of our members, and undermine the productivity of the businesses for whom they work. We have previously surveyed members and written to the former Minister on this issue [Footnote 1]. An overhaul of the Aviation Medicine section of CASA should be a priority. This would include additional resources, clearer processes, specified service standards and improved training of staff.

From page 7 of the submission by the **Aerial Agricultural Association of Australia**:

One area in particular that struggles with continuous improvement is CASA's aviation medicine branch. Examples are plentiful of questionable rulings on pilot medicals that fly in the face of genuine expert opinion (for example in cardiology) and result in the trashing of careers for no safety purpose. The ability of the branch to hide behind the facade of medical qualifications is well known in industry and under current systems, is an almost unassailable position that has drifted far from actual safety issues, or the leading non-CASA advice on medical issues.

Paragraph 9 of the submission by the **Aircraft Owners and Pilots Association**:

9. Medicals. This is probably the single biggest continuous issue that causes acrimony between GA pilots and CASA. Problems with Avmed include delays in dealing with medical assessments, rejection of DAMEs opinions, demands for ever more complex specialist reports that many would consider unnecessary, and which are then frequently ignored by Avmed itself. Avmed has unique medical opinions which sometimes do not agree with overseas experience, eg; FAA. Communication between CASA, AVMED and pilots has often been poor.

For what purpose? Most GA pilots intend to fly themselves and perhaps a few associates, mostly in VFR during daylight. Motor vehicle licencing is nothing like this, yet driving is only slightly less stressful.

> *CASA should rely on its own DAMEs for issue of class 2 medicals, and where specialist opinion is required, CASA should at least listen to specialist opinion.*

An analysis of the all of the above suggests to me that if there is a substantial medical certification-related problem in aviation in Australia, it is mainly within CASA rather the people applying for medical certificates. The problem is, I suggest, "harmful overreactions to risks".

I note that the AAT, in a 2011[11] matter, summarised the evidence put to the Tribunal by the then PMO, Pooshan Navathe, in this way (in part):

> *Dr Navathe emphasised that for CASA, the safety of air navigation is paramount, and that it therefore takes a conservative view.*

I have not heard the term "conservative view" used in the context of medical science (but perhaps the above was merely a paraphrasing or I have limited knowledge in this area). I *have* heard of the "precautionary principle", but that principle requires that the judgment of the plausibility of uncertain probabilities be grounded in ongoing scientific analysis and review.

Taking into consideration all of the circumstances discussed above, I suggest that "conservative view" means: When in doubt: intrude, investigate, test, reject contrary expert opinions, impose operational restrictions or refuse to certify", because not doing so *might* result in consequences that we know members of the public will consider too dreadful to contemplate. I suggest that CASA's claimed "risk-based approach" to medical certification has, in substance, become a risk *averse* approach that exaggerates the probabilities of extraordinarily remote risks. That approach also happens to be more likely to generate bureaucratic work that is felt to be worthwhile.

A fundamental issue here is that *any* risk can be conjured into a potential cause of an aviation *catastrophe*. Absent an objective assessment of the probabilities of the risk causing the catastrophe, there cannot be a rational mitigation of the risk. The intuitive mitigation is always an overreaction.

Another fundamental issue is that Avmed is not a disinterested party when it comes to assessing and weighing its own opinions against private medical practitioners and specialists with opinions that differ from Avmed's. This issue was highlighted by the AAT in a 2013 decision[12]:

> *[I]t could not be plainer that [erstwhile PMO] Dr Navathe is an advocate for his own decision. I do not propose to have any regard to his opinions. For the future I would trust that CASA's Legal Branch would exercise independent judgement in deciding what witnesses ought be relied upon and the content of their statements. They ought, obviously enough, be confined to matters that are relevant and witnesses ought be those who can truly provide an independent opinion.*

[11] See *Hackett and Civil Aviation Safety Authority* [2011] AATA 453 (29 June 2011) at 58.
[12] *Bolton and Civil Aviation Safety Authority* [2013] AATA 941 (23 December 2013), at 24.

I note, from first-hand experience, how much it would have cost the applicant in the above matter, in stress and uncertainty as well as money, to have the matter finally considered and decided by a disinterested and objective third party. And that is just *one* applicant.

Symptoms of a cultural problem

Further support for the problem existing in CASA rather than the people it is certifying can be found in an utterly bizarre interaction I had with CASA during my medical certification process in 2015. This led to a concession by CASA that it could not lawfully impose a restriction that it had purported to impose on my medical certificate and, consequently, I was reissued the certificate without that purported restriction imposed.

Whilst on that short summary it may appear to be a minor 'glitch' that was quickly sorted out, the history and current practise of CASA proves otherwise.

After my 2015 medical examination, which prompted a range of tests that neither I nor the medical practitioner considered necessary, I was issued with a medical certificate with the purported restriction: "For CASA audit". Having a fairly good command of the English language and long experience in the exercise of the privileges of my pilot licence, I set about trying to ascertain what the "restriction" restricted me from doing. I could understand the restriction upon my exercising the privileges of my licence without vision correction, but I could not work out what I was restricted from doing as a consequence of the restriction "For CASA audit". I searched CASR Part 67 for any reference to that term, to no avail.

Correspondence with CASA ensued and, bizarrely, CASA said that the purported restriction did not restrict me in any way in the exercise of the privileges of my pilot licence. The words were there, instead, to 'flag' the way in which CASA had already decided to deal with any subsequent application by me for a medical certificate (another administrative practice that discloses what I consider to be further unlawful behaviour by CASA: presuming to make administrative decisions in relation to applications that have yet to be submitted, in the context of circumstances sometimes years before submission, dictated by policy).

I therefore submitted an application to the AAT for review of the decision to impose the purported "restriction", on the ground either that CASA had no power to impose it or that it was not preferable to impose it because it meant nothing in substance. However, before the matter proceeded to a hearing in the AAT, CASA conceded that "a restriction in the terms 'for CASA audit' cannot lawfully be placed upon a medical certificate in the exercise of CASA's powers...".[13]

That was a relief, although I was puzzled about how an acknowledged unlawful practice could have been implemented in the first place in an organisation which claims to be the subject of proper governance and continuous improvement arrangements. I was also disappointed by the amount of unnecessary time I had to waste and stress I had to go through to deal with this nonsense in the first place.

But my puzzlement changed to alarm when I realised that my assumption that CASA would desist in its acknowledged unlawful behaviour turned out to be a naïve assumption.

[13] See CASA letter dated 17 April 2015.

As at the date of this submission, paragraph 7.2 of the Designated Aviation Medical Examiner's Handbook published on the CASA website, which paragraph is headed "Frequently Used Conditions Endorsed on Medical Certificates", still contains the purported condition. It is still patently clearly not a condition with which the holder of the certificate can comply or a restriction upon the exercise of the privileges of his or her licence. But CASA continues to print this audit rubbish on medical certificates.[14]

Even if it is 'legal', it makes no practical sense to print it on medical certificates.

If CASA wants to 'flag' the way in which CASA has, as a consequence of dictation by policy, pre-judged the tests that will be imposed upon the holder of a certificate even before an application has been submitted for a subsequent one, CASA can wave flags to itself to its heart's content and write a letter telling the holder of the certificate.

"These questions are stupid." "I'm getting out of this stuff." "This is hard."

My medical examination this year was the first occasion on which I have seen and heard professional medical staff:

- become frustrated and stressed as a consequence of the CASA-imposed process
- openly ridicule the CASA requirements, and
- express an intention to discontinue involvement in aviation medical certification.

The sentences in the heading are in quotation marks because those things were said by medical professionals during my most recent medical examination, the majority of the duration of which was taken up by the DAME and me sitting in front of a computer trying to work out what to do. Here's my rough recollection of the consult with the doctor, after all of the physical examinations were done:

Dr: "The computer won't let me go past the question about uncorrected vision at 1 metre." Me: "I can't read without my glasses. That's why I wear glasses." Dr: "We'll just put in the biggest number." (This "problem" then had to be "explained" at the end. Why a person who needs vision correction to read is expected to be able to read text at 1 metre without vision correction was a mystery to everyone involved. More on the eye test with the nurse, below.)

Dr: "You've said you've had x-rays. What for?" Me: "I get an x-ray every couple of years during dental check-ups." Dr: "That doesn't count." Me: "Well they're x-rays and that was the question." Dr: "These questions are stupid."

Dr: "You've said you're not sure about consulting an oncologist?" Me: "Yes. Dr [redacted] applied nitrogen to freeze some spots on my wrist in September after a skin check." Dr: "There was no incision?" Me: "No". Dr: "That's not skin cancer." Me: "The guidance was to say something 'when in doubt'. I'm not a doctor."

[14] See, for example, *MacNeall and Civil Aviation Safety Authority* [2016] AATA 209 (4 April 2016). See also my 're-validated' medical certificate issued on 30 January 2017.

Dr: "You've said you're not sure about Ferritin[sp?] treatment." Me: "Yes. I don't know what that means." Dr: "It's for iron deficiency. Have you ever been treated for iron deficiency?" Me: "No. How am I expected to be sure about the meaning of these medical terms?"

Dr: "You've said you're not sure about having a blood glucose test." Me: "Yes. I spent 20 years in the defence force being tested for everything, regularly. During my last medical exam with you, you gave me some referrals for blood tests. I don't know what any of those tests were for. I'm not a doctor. I just go and do the tests and assume that the people who required them know what they're for." Dr: "When did you have these tests?" Me: "You want me to remember all of the occasions on which I had blood tests in the defence force between 1976 and 1996?" Dr: "These questions are stupid. Let's just choose a date. This is waste of time."

Dr: "You've said you're not sure about "hearing troubles?" Me: "Yes. As I've said on every examination since I was diagnosed, including the last one with you, I have binaural tinnitus. I wasn't sure whether that counts as "hearing troubles". It's never been a problem while flying." Dr searches for drop down menu item to state binaural tinnitus. "I have to get out of this stuff. It's a waste of time."

Dr: "You've said you have compensation from DVA?" Me: "Yes. As I've said on every examination since I was diagnosed, including the last one with you, I have binaural tinnitus. It was caused by my service in the defence force and I receive compensation for it."

Dr: "You've said you've been in hospital for a procedure?" Me: "Yes. I had my tonsils out in 1964."

Dr: "One of the 'problems' listed here is "potentially hazardous drinking". Me: "Really? I did blood tests on referral from you last time and CASA issued a certificate that was subject to "CASA audit". I sent an email Avmed last week asking whether my DAME would give me the paperwork for those tests again and the response was I should talk to you." Dr: "No".

Then there was discussion about my tooth implant and some nasal decongestant I'd used in September and ....

After the DAME and I had sufficiently placated CASA's software I visited the front desk to pay my bill. Before the young attendant could find the right buttons to push, a senior staff member stepped in: "This is hard. I will do this one."

I note that all relevant medical 'issues' have been canvassed over and over and over and over again on each occasion on which I've had an aviation medical examination in the last 32 years. I reiterate that the interactions with the computer on this occasion took more time than the physical examination by the DAME and nurse.

What CASA has effectively done is outsource to DAME's and candidates the cost, in time and stress, of 'learning on the job' and second guessing what CASA's questions mean, so that CASA's new software captures all of the medical history that someone with a bright idea in CASA wants to capture. My aviation medical has now become the single most stressful transaction I have to deal with (and I by no means lead a quiet life).

I am guessing that so far as CASA is concerned it is an excellent system. That would be unsurprising, as CASA is not paying the cost, in time and stress, of candidates and DAMEs using the system. It is also unsurprising that the increasingly pervasive view in the aviation industry is: "You're better off telling CASA nothing". That is not only because any hint of a 'condition' might be seized upon as grounds for intervention, but also because the way in which the intervention is managed creates unnecessary complexity.

There is an insurmountable difficulty for CASA in attempting to justify this process and its consequences:

- There was a time when it was nowhere near this difficult or controversial.
- Lots of people in aviation remember when it was not this difficult or controversial, and
- The difficulty and controversy were created merely by the decisions of bureaucrats.

And, most importantly, none of it has produced a causally-positive, measured benefit for aviation safety compared to when the process was nowhere near this difficult or controversial.

Another bright idea uniformed by practical reality: The requirement that pilots with vision correction take a spare pair of glasses to the medical examination

I had heard, from discussions with other pilots, that pilots who are required to use vision correction must now take spare vision correction to the DAME medical examination. The requirement was not mentioned when I booked my most recent medical examination. However, out of abundant caution I took the spare pair of glasses that I usually leave in a seat pocket in my aircraft. This turned out to be prudent, as the nurse said I had to undergo the eyesight tests using two pairs of glasses. We agreed it was a nonsense.

This requirement is the bright idea of someone who has evidently seized upon an infinitesimally remote risk, blown its probabilities and consequences out of all proportion, and attempted to mitigate it without the benefit of much insight into practical reality.

I note that I have seen no evidence to support the conclusion that there has been a substantial number of or increase in accidents or incidents caused by pilots being unable to access adequate spare vision correction. I also note that in 32 years of flying so far, I have yet to need to use my spare glasses 'in anger'. I further note that if I were in the habit of flying without any spare glasses, or without a spare that provides adequate correction, I would not change that habit just because I was made to turn up to a DAME once every two years with two pairs of glasses.

Here's a suggestion, informed by an insight into operational reality, on a couple of ways to mitigate the risk of the silly and the deliberate law-breakers – presumably CASA believes there are a substantial number of these people if CASA has imposed this new requirement - who are not in the habit of ~~not~~ having access to adequate spare vision correction as required when exercising the privileges of a licence:

First, ask CASA's FOIs to check for spare vision correction during ramp checks of pilots whose medical certificates say vision correction must be used.

Secondly, ask CASA's ATOs and their equivalents in the various sports aviation regulatory bodies to require pilots undergoing flight reviews to conduct part of the review using one pair of glasses, and another part of the review using a different pair of glasses (with an equivalent requirement for pilots who use contact lenses). (Maybe this is already happening.)

Flying the aircraft or performing duties under the relevant permission is, after all, when it counts and when accessing and using spare vision correction is properly 'stress tested'.

The point of the eye test during a medical examination is to determine the state of the applicant's vision, corrected or otherwise, not to 'police' an operational requirement in a non-operational context. The new requirement for spare vision correction to be tested during a medical examination is a signal example of Avmed 'overreach'.

Postscript to my most recent medical examination

After my most recent medical examination I was emailed what is described as a "re-validated" medical certificate. It has the words "re-validation" and "re-validating" and "revalidated" printed on it. I have searched Part 67 of the CASRs for that term. It does not appear. What has actually happened – I hope – is that the DAME has extended the period that my medical certificate is in force, under and in accordance with CASR 67.220.

Astonishingly, the "re-validated" certificate had the purported restriction "For CASA audit" printed on it. CASA's concession in 2015 that "a restriction in the terms 'for CASA audit' cannot lawfully be placed upon a medical certificate in the exercise of CASA's powers..." appears to have been forgotten or merely disregarded by CASA Avmed. I again had to contact the person who arranged for the purported restriction to be removed in 2015 to do so again in 2017.

I remain completely baffled as to why CASA Avmed does not administer the medical certification process using language and concepts that are contained in the law that defines and constrains CASA's powers and the exercise of them. CASA is supposed to comply with the law, too.

I also note that 11 days *before* my examination I sent an email to CASA Avmed that said:

> *I understand that as a consequence of my previous medical examination, CASA will require results of blood tests as part of my current [2017] application.*
>
> *Can my DAME give me the paperwork to get the tests before the medical examination or is that all organised by the DAME at the medical examination?*

A day later, I received an email from CASA that said:

> *My advice would be to give you[sic] DAMEs[sic] practise[sic] a call to see if they can organise a referral before your appointment.*
>
> *Alternatively, your DAME can arrange a referral at the time of the examination and then upload the results at later date.*

As noted earlier, I discussed the issue with my DAME during my most recent examination and he said 'no'. However, that may have been a consequence of his levels of frustration at the time.

17 days *after* the medical examination I was contacted by my DAME to say that CASA required me to undergo tests. He asked *me* what those tests were.

So notwithstanding the new MRS, notwithstanding Avmed's audit 'flags', notwithstanding me raising the precise question with CASA 11 days in advance of my medical examination, notwithstanding me discussing the question with the DAME in accordance with CASA's advice and notwithstanding CASA contacting the DAME to tell him that tests were required, the outcome is that the DAME did not know what tests CASA required and I have to go on an unnecessary trip to the DAME to obtain referrals.

And the results of my blood tests were, I was told by the person at the counter at my DAME's medical practice, normal.

On 9 March 2017 I emailed the test results to Avmed, with a request for confirmation of receipt and advice on whether any further tests would be required. All I received was an automated reply.

As at the date of this submission - 30 March 2017 - I have not received a new medical certificate. The date of expiry printed on my "revalidated" medical certificate is 4 April 2017: fewer than four working days away. I assume Avmed is insouciantly indifferent to the stress caused by this uncertainty because it is all inflicted in the name of "the safety of air navigation".

A suggested strategic aim

Somehow, some day, CASA has to get it back into its corporate head that the medical certification process and medical certificates are not a blank canvass on which people with pet projects are allowed to wander happy as a cloud implementing any and all of their bright ideas to save the world from risks they perceive[15], insouciantly indifferent to or in arrogant disregard of the law and the costs and disruption to applicants.

The problem with 'bright idea' regulatory requirements that implicitly assume pilots cannot be trusted

There is a problem with imposing requirements on the basis of an implied assumption that pilots cannot be trusted to take common sense steps to protect their own and others' safety (and thereby coincidently also to avoid potential regulatory action, criminal sanction and personal liability) by, for example, carrying a spare pair of adequate vision correction if vision correction is required. The problem is that it inexorably leads to only one conclusion: CASA must physically monitor all pilots 24 hours a day, seven days a week.

[15] These people are usually self-described as "thought leaders".

If CASA is worried that pilots with vision correction cannot be trusted to carry an adequate spare pair when flying, and therefore those pilots should be compelled to bring spare vision correction to the DAME medical examination, how can they be trusted to carry them after the visit to the DAME (or after the ramp check or flight review)? The next step is a condition imposed on their medical certificates prohibiting the conduct of a flight unless CASA has confirmed by first-hand observation that the pilot has access to adequate spare vision correction.

But can they be trusted to comply with that condition? If they can't be trusted to carry an adequate spare pair of glasses in the first place, despite the safety risk as well as being prone to administrative and criminal action and personal liability, it surely follows that they cannot be trusted to comply with the condition, because the potential consequences of breaching the condition are the same as not carrying the spare pair of adequate vision correction.

Can I be trusted not to send my identical twin, teetotal brother to my blood tests? Maybe he's doing my flight reviews as well.

And so it goes, until CASA is physically monitoring pilots 24 hours a day, seven days a week.

I suggest that the new requirement that pilots with vision correction have to take a spare pair of glasses to the DAME medical examination be revisited, in the context of an objective assessment of the risk sought to be mitigated, and the best practical ways in which to mitigate it. As I observed earlier, the point of the eye test during the medical examination is to determine the state of the applicant's vision, corrected or otherwise, not to 'police' an operational requirement in a non-operational context.

Finally on this point, I note that there is an insidious, counter-productive consequence of approaches that implicitly assume one party to a transaction does not trust the other: The distrust is reciprocated.

CASA has lost understanding of the practical role of medical certification

All of the above and more leads me to believe there has been a loss of understanding within CASA as to the proper and practical role – and, perhaps more importantly, the comparative practical *insignificance* of the role - of medical certification in the safety of aviation activities in a country with first-world water and food supplies, clean air, professional and expert private medical practitioners and specialists, universal health insurance and modern medical facilities, high levels of education, and formal and informal recurrent checking and testing of the competence of aviation permission holders.

The medical certification function used to be far better integrated. CASA should read and heed the substance of the submission to the ASRR by another erstwhile CASA PMO, Dr Rob Liddell.

When I undergo flight reviews, I do not pull out my medical certificate in response to simulated emergencies. The piece of squashed tree issued by CASA is of no practical consequence. If I'm not fit or not competent to fly, it will manifest itself whether or not I have that piece of squashed tree. Holders of Class 1 medical certificates die suddenly and unexpectedly of medical conditions. Their piece of squashed tree is of no practical consequence as they draw their last breath.

A manifestation of this disconnection from practical reality is, I suggest, the evidence given by erstwhile PMO, Pooshan Navathe in an AAT matter[16]:

> *The evidence of Associate Professor Navathe [Footnote 4] was that a pilot's licence goes on forever, but it is the medical certificate which enables the person to use the licence.*

It is as if the erstwhile PMO was labouring under the misconception that once and while ever a pilot has a medical certificate, there are no further regulatory or practical controls over or monitoring of his or her competence or health. Working in an aviation medicine 'stovepipe', the erstwhile PMO can be forgiven for not knowing:

- the many circumstances in which pilot licences and ratings on them are stopped from going on "forever", are temporarily suspended or cease to authorise the holder to exercise some or all of the privileges of the licence, notwithstanding that the holder has a medical certificate

- the extent of formal and informal checking and reviews of pilot competency during which medical fitness issues may manifest themselves (medical certificate or not)

- the extent of 'ramp' checks and DAMP testing, or

- the circumstances in which a pilot may not be able to get access to an aircraft, on experience and other grounds, or because of pre-conditions imposed on being able to use the aircraft as pilot in command, notwithstanding that the pilot has a medical certificate and a licence to fly that aircraft as pilot in command.

Those are the main regulatory and practical controls which mitigate what are the substantial risks, *with substantial probabilities*, posed by pilots to air safety. Almost none of the substantial practical burden of aviation safety is on the shoulders of the medical certifiers, whether or not they believe otherwise.

[16] *O'Brien and Civil Aviation Safety Authority* [2015] AATA 93 (20 February 2015), at 12.

What "net benefit"?

I find the reasoning under the heading "The net benefit" in the DP to be confusing.

As I read it, the reasoning goes something like this:

- the "vast majority" of applicants for medical certificates get them
- the $ cost to get the certificates is very low
- that cost pales into insignificance compared to the $ cost of general aviation accidents, including accidents "due to pilot incapacitation or contributed to by alcohol/drug impairment", and
- therefore, "[t]he administrative cost burden of medical certification for the vast majority of pilots is minimal and claims about its effect on prohibiting pilot applicants in seeking a medical exam have not been substantiated".

The reasoning seems to be that because one cost figure is vastly higher than another cost figure, and because the vast majority of people who want a medical certificate get one, charging the second cost figure to get a certificate is justified. That does not make sense to me.

If the "vast majority" of people who want general aviation medical certificates are issued them, and all of those costly general aviation accidents referred to involve pilots with medical certificates, it seems inexorably to follow that the medical certification process for general aviation pilots is largely pointless from a safety perspective. The accidents "due to pilot incapacitation or contributed to by alcohol/drug impairment" involved pilots with medical certificates. They got their certificate and were involved in a subsequent medical-related or impairment-related accident. The piece of squashed tree and the process they had to go through to get it did not prevent the accident.

On the subject of costs of the medical certification process, I note that the primary cost which many advocates of self-certification wish to avoid is the stress and uncertainty caused by having to deal with a potentially inept and overreaching bureaucracy. Whilst the DP notes that the vast majority of applicants for certificates get them, the DP does not contain any data on, for example, the number of tests applicants were required to undergo, or of the costs incurred, delays and stress caused by compliance with those requirements, or of the costs incurred and stress caused by having to seek external review of decisions that were subsequently set aside or varied in the Applicant's favour by the AAT.

It is here relevant to again note the submissions by various aviation representative bodies to the ASRR in 2014, extracted above. It would be very difficult to put a dollar figure on the costs of the stress, uncertainties and other consequences of the matters raised in those submissions, but the figure would be a very large one, whatever it is.

On a related issue, the DP notes that the ATSB's findings on the key hazards which increase the accident rate do not mention medical events. The DP then asserts that "the contrary argument could also be made – that a rigorous approach to medical certification is in fact a significant factor to this low rate".

That argument could be made, but it would specious, even based merely on what is contained or referred to in the DP. According to what is contained or referred to in the DP, the medical certification process results in the vast majority of applicants getting a certificate, yet some of those certificate holders still die at the controls or have accidents due to other incapacitation from medical-related issues or alcohol/drug impairment. If all those certificate holders had just gone flying rather than through the medical certification process first, the outcome would have been the same. The regulator might have a warm inner glow and lots of paper or electronic records to shuffle, but the medical certification process did not magically make certificate holders any healthier or more competent. (People who wear glasses don't need a statutorily imposed condition on a certificate, breach of which is a criminal offence, to come to the conclusion that it is a good idea to wear those glasses when flying.)

Therefore, the only *potentially* positive safety-relevant output of the "rigorous approach" to medical certification is the *rejected* applicants and those with substantial operational conditions imposed on their certificates, such as a requirement to take two sets of specified medical equipment on flights or be accompanied by a 'safety pilot'. It is only *those* applicants' medical conditions and the risks and consequences to air safety that have to be objectively analysed – not blown out of proportion - before any causal link can be drawn between the medical certification process and positive air safety outcomes.

Further, until that analysis is done, no rational cost/benefit analysis can be done on the costs of the process compared with the costs if the rejected applicants had not been rejected or the applicants with operational conditions had not been subject to those conditions.

This highlights the fundamental problem in CASA reviewing its own role in medical certification. CASA does not have the relevant data and is unlikely to ask itself the question: "Is the cost of all this certification process justified by the benefit?" and, in any event, CASA has an actual conflict of interest in answering the question.

Obtain and consider evidence, rather than speculate

The DP notes:

> *The data on medical causes of safety occurrences over many decades is limited and there is a low level of pilot incapacitation recorded in general aviation. On one hand, this could be interpreted as presenting a low risk or reflect limited reporting, and on the other, that a rigorous approach to medical certification has contributed to this result.*

If CASA wants to walk the walk rather than just talk the talk about being an evidence-based and risk-based regulator, CASA must find out what *is* rather than what *could be*. If CASA cannot or chooses not to find out what *is*, or expects to be but is not spoon fed what *is*, CASA must not default to decisions based on speculation and intuition.

I make the same comment on this statement in the DP (although I note that it is not clear whether it is a statement from the referenced ATSB report, or CASA's statement):

> *It is likely that cardiovascular problems feature more prominently in general aviation accidents, but evidence of this is often difficult to establish with certainty, particularly in fatal accidents.*

It is not clear as to who expressed that view or the evidential basis for it. In any event, in does not assist in making informed decisions.

For my part, my observation is that there is an extraordinarily low level of medically-related pilot incapacitation in general aviation and the "rigorous approach" to medical certification has little-to-no positive causal connection with that outcome. As I noted above, holders of Class 1 medical certificates die suddenly and unexpectedly, despite having been the subject of the "rigorous approach" to medical certification. It is therefore evident (and unsurprising) that the medical certification process is no guarantee of anything.

My understanding is that the probabilities of the sudden incapacitation of pilots with medical certificates is about the same as that of the general population. That is hardly surprising, as pilots are part of the general population. But it does cast into considerable doubt whether there is any causal link between the medical certification process and any increase in safety.

Insurance

The DP asserts that "[t]he impact of self-certifying regimes on insurance is not yet clear". That is not correct. The experiment has been run and the results are in in the USA, where there is now a statistically significant amount of aviation activity involving self-certification, with no material effect on the availability and comparative costs of insurance premiums. The DP seems blithely to ignore the SAAA advice that "its insurer deals with very few claims relating to medical issues and would continue to provide insurances under a self-certification regime", by going on to state "consequent changes to insurance may erode [the financial] gains [of self-certification]".

More importantly, and as the DP acknowledges, the availability or otherwise of insurance for self-certified aviation activities, and the costs of that insurance, are irrelevant factors in designing a safety regulatory system.

I also note that there is no statutory obligation for pilots to have insurance anyway (and the Commonwealth does not have power to impose that obligation on pilots who are not engaging in interstate trade or commerce). I choose whether I have insurance or not, and being uninsured rather than insured makes no difference to the objective risks of the aviation activities in which I participate (which is why the subject of insurance is irrelevant to designing a safety regulatory system).

SUMMARY DETAILS OF APPLICATIONS TO THE AAT FOR REVIEW OF CASA'S MEDICAL CERTIFICATE-RELATED DECISIONS: 1999 TO 2016 inclusive

SUMMARY DETAILS OF APPLICATIONS TO THE AAT FOR REVIEW OF CASA'S MEDICAL CERTIFICATE-RELATED DECISIONS

1999 TO 2016 inclusive

Year	Matter	Outcome
2016	**Goldstein and Civil Aviation Safety Authority** [2016] AATA 57 (5 February 2016)	CASA's decision to refuse to issue a medical certificate set aside.
	MacNeall and Civil Aviation Safety Authority [2016] AATA 209 (4 April 2016)	Procedural/jurisdictional decision.
	Barnes and Civil Aviation Safety Authority [2016] AATA 256 (21 April 2016)	Procedural/jurisdictional decision.
	Barnes and Civil Aviation Safety Authority [2016] AATA 401 (17 June 2016)	CASA's decision to refuse to extend medical certificate affirmed.
	Courtney and Civil Aviation Safety Authority [2016] AATA 755 (28 September 2016)	CASA's decision to impose a condition on a medical certificate set aside.
	Tickle and Civil Aviation Safety Authority [2016] AATA 910 (16 November 2016)	CASA's decision to refuse to issue a medical certificate affirmed.
	MacNeall and Civil Aviation Safety Authority [2016] AATA 975 (25 November 2016)	CASA's decisions to refuse to issue a Class 1 medical certificate and to issue a Class 2 certificate subject to conditions affirmed.
2015	**O'Brien and Civil Aviation Safety Authority** [2015] AATA 93 (20 February 2015)	CASA's decision to impose conditions varied in favour of the Applicant.
	Barnes and Civil Aviation Safety Authority [2015] AATA 272 (29 April 2015)	Procedural/jurisdictional decision.
	Barnes and Civil Aviation Safety Authority [2015] AATA 797 (13 October 2015)	Procedural/jurisdictional decision.
	Daw and Civil Aviation Safety Authority [2015] AATA 1002 (22 December 2015)	CASA's decision affirmed.
2014	**McSherry and Civil Aviation Safety Authority** [2014] AATA 119 (6 March 2014)	CASA's decision was set aside and in substitution for that decision it was decided that Mr McSherry was entitled to the issue of class 1 and class 2 medical certificates, without conditions
	Presneill and Civil Aviation Safety Authority [2014] AATA 142 (14 March 2014)	Procedural/Jurisdictional decision
	Walker and Civil Aviation Safety Authority [2014] AATA 169 (28 March 2014)	CASA's decision to issue a class 2 medical certificate was set aside and a decision substituted that a class 2 medical certificate not be issued to the applicant. CASA's refusal to issue a class 1 medical certificate affirmed.
	Hoore and Civil Aviation Safety Authority [2014] AATA 292 (13 May 2014)	CASA's decision to cancel the applicant's medical certificates set aside. Matter remitted to CASA with direction that at the time of the reviewable decision the extent to which the applicant did not meet the medical standards for a Class 1 or Class 2 medical certificate is not likely to endanger the safety of air navigation if specified condition were imposed.
	Ryan and Civil Aviation Safety Authority [2014] AATA 494 (18 July 2014)	CASA's decision set aside and the matter remitted to CASA for reconsideration in accordance with a direction that a condition requiring the provision to the respondent of alcohol screening tests on a quarterly basis not be imposed on the applicant's class 1 or class 2 medical certificates.
	Randazzo and Civil Aviation Safety Authority [2014] AATA 581 (21 August 2014)	CASA's decision affirmed.

2013	**Gosman and Civil Aviation Safety Authority** [2013] AATA 48 (31 January 2013)	CASA's decision to refused to issue a medical certificate set aside and the matter remitted to CASA for reconsideration in accordance with a direction that the applicant did not knowingly or recklessly make a false or misleading statement in relation to his application for a medical certificate.
	Landers and Civil Aviation Safety Authority [2013] AATA 465 (5 July 2013)	CASA's decision to refuse to issue the applicant a class 2 medical certificate affirmed.
	Bolton and Civil Aviation Safety Authority [2013] AATA 941 (23 December 2013)	CASA's decision set aside and a decision substituted not to cancel the applicant's class 1 and class 2 medical certificates.
2012	**Miller and civil Aviation Safety Authority** [2012] AATA 92 (2 February 2012)	CASA's decision refusing to issue the applicant with a Class 2 medical certificate set aside. AAT decided CASA should issue the applicant with a Class 2 medical certificate with a specified condition.
	Randazzo and Civil Aviation Safety Authority [2012] AATA 266 (4 May 2012)	CASA's decision to suspend class 2 medical certificate affirmed. CASA's decision to impose conditions affirmed and further conditions imposed.
	Judges and Civil Aviation Safety Authority [2012] AATA 587 (29 August 2012)	CASA's decision not to issue a medical certificate affirmed.
	McKay and Civil Aviation Safety Authority [2012] AATA 607 (10 September 2012)	CASA's decision not to issue a medical certificate affirmed.
	Taggart and Civil Aviation Safety Authority [2012] AATA 690 (8 October 2012)	CASA's decision refusing to issue applicant a class 1 medical certificate and imposing a restrictive condition on a class 2 certificate affirmed.
	Barnes and Civil Aviation Safety Authority [2012] AATA 756 (1 November 2012)	CASA's decisions to refuse to issue applicant a class 2 and class 2 medical certificate affirmed.
	McGoldrick and Civil Aviation Safety Authority [2012] AATA 913 (13 December 2012)	Procedural/Jurisdictional decision
2011	**Dixon and Civil Aviation Safety Authority** [2011] AATA 332 (18 May 2011)	CASA's decision to refuse to issue a Class 2 medical certificate to the Applicant set aside and substituted for a decision that the Applicant be issued with a Class 2 medical certificate with specified conditions.
	Randazzo and Civil Aviation Safety Authority [2011] AATA 375 (1 June 2011)	CASA's decision to refuse to issue a Class 2 medical certificate to the Applicant set aside and substituted for a decision that the Applicant be issued with a Class 2 medical certificate with specified conditions.
	Hackett and Civil Aviation Safety Authority [2011] AATA 453 (29 June 2011)	CASA's decision to suspend Applicant's Class 1 and Class 2 medical certificates affirmed. CASA's decision to impose conditions on those certificates varied by replacing them with specified conditions.
	Ovens and Civil Aviation Safety Authority [2011] AATA 739 (21 October 2011)	Procedural/jurisdictional decision.
	Campbell and Civil Aviation Safety Authority [2011] AATA 885 (13 December 2011)	CASA's decision to impose a condition on the Applicant's medical certificate affirmed.
2010	**Ovens and Civil Aviation Safety Authority** [2010] AATA 481 (29 June 2010)	CASA's decision to impose a condition on the Applicant's medical certificate affirmed.
	Hazelton and Civil Aviation Safety Authority [2010] AATA 693 (10 September 2010)	AAT determined that the applicant satisfied the requirements for the issue of a Class 1 and Class 2 medical certificate, despite CASA's refusal to grant them.
	Harvey and Civil Aviation Safety Authority [2010] AATA 733 (27 September 2010)	AAT set aside the reviewable decision and the reconsideration of 8 April 2010 and substituted its decision that the Applicant did not, and never had, suffered from epilepsy. He had suffered one provoked episode of

		neurocardiogenic syncope. He is to undergo a tilt test for vasodepressor neurocardiogenic syncope. If this test is negative a Class 1 and/or Class 2 medical certificate is to be issued to enable him to pursue licensing as a pilot. If the test is positive medical certification must be denied.
	Jones and Civil Aviation Safety Authority [2010] AATA 795 (15 October 2010)	CASA's refusal to issue medical certificates to the Applicant affirmed.
	Repacholi and Civil Aviation Safety Authority [2010] AATA 873 (29 October 2010)	CASA's decision to refuse to issue a Class 1 medical certificate to the Applicant set aside and substituted for a decision that the Applicant be issued with a Class 1 medical certificate with specified conditions.
2009	**Mulholland and Civil Aviation Safety Authority** [2009] AATA 171; (2009) 108 ALD 169 (17 March 2009)	CASA's decision to imposed conditions on the Applicants Class 1 and Class 2 medical certificates affirmed.
	Walters and Civil Aviation Safety Authority [2009] AATA 330 (11 May 2009)	CASA's decision to impose conditions on Class 2 medical certificate set aside.
	Walker and Civil Aviation Safety Authority [2009] AATA 674 (7 September 2009)	CASA's decision to refuse to issue Applicant with Class 1 and Class 2 medical certificates set aside. AAT gave directions to CASA.
2008	**Torr and Civil Aviation Safety Authority** [2008] AATA 479 (10 June 2008)	CASA's decision to refuse to issue the Applicant with Class 1 and Class 2 medical certificates varied. AAT gave directions to CASA.
	White and Civil Aviation Safety Authority [2008] AATA 543 (27 June 2008)	CASA's decision to refuse to issue the Applicant with a Class 2 medical certificate affirmed.
2007	**Mulholland and Civil Aviation Safety Authority** [2007] AATA 1952 (14 November 2007)	CASA's decision to impose conditions on Applicant's Class 1 and Class 2 medical certificates affirmed.
2006	**Mulholland and Civil Aviation Safety Authority** [2006] AATA 452 (24 May 2006)	CASA's decision to impose conditions on Applicant's Class 1 and Class 2 medical certificates affirmed.
	Serong and Civil Aviation Safety Authority [2006] AATA 1123; (2006) 93 ALD 673 (22 December 2006)	CASA's decision to refuse to issue a Class 1 medical certificate affirmed. CASA's decision to impose conditions on the Applicant's Class 2 medical certificate varied in favour of applicant.
2005	Nil.	
2004	**Hall and Civil Aviation Safety Authority** [2004] AATA 21 (14 January 2004)	CASA's decision to imposed condition on the Applicant's Class 2 medical certificate affirmed.
	Commins and Civil Aviation Safety Authority [2004] AATA 1330 (14 December 2004)	Procedural/jurisdictional decision.
2003	**Q2002/227 and Civil Aviation Safety Authority** [2003] AATA 99 (4 February 2003)	CASA's refusal to issue medical certificate to Applicant affirmed.
	Badaoui and Civil Aviation Safety Authority [2003] AATA 1059 (21 October 2003)	CASA's decision to refuse a special medical certificate to Applicant affirmed.
2002	Nil	
2001	Nil	
2000	**Andrews and Civil Aviation Safety Authority** [2000] AATA 748 (25 August 2000)	CASA's decision to impose condition on Applicant's Class 2 medical certificate affirmed.
1999	**Window and Civil Aviation Safety Authority** [1999] AATA 525 (20 July 1999)	CASA's decision to refuse to issue a medical certificate to the Applicant affirmed.