

23'-9 1/2" HALF SPAN

47'-7" O. A. SPAN

14'-11 1/8"

99" DIA. HAMILTON STANDARD
6531A-15 HYDROMATIC
PROPELLERS,
PITCH, HIGH 86°, LOW 13°

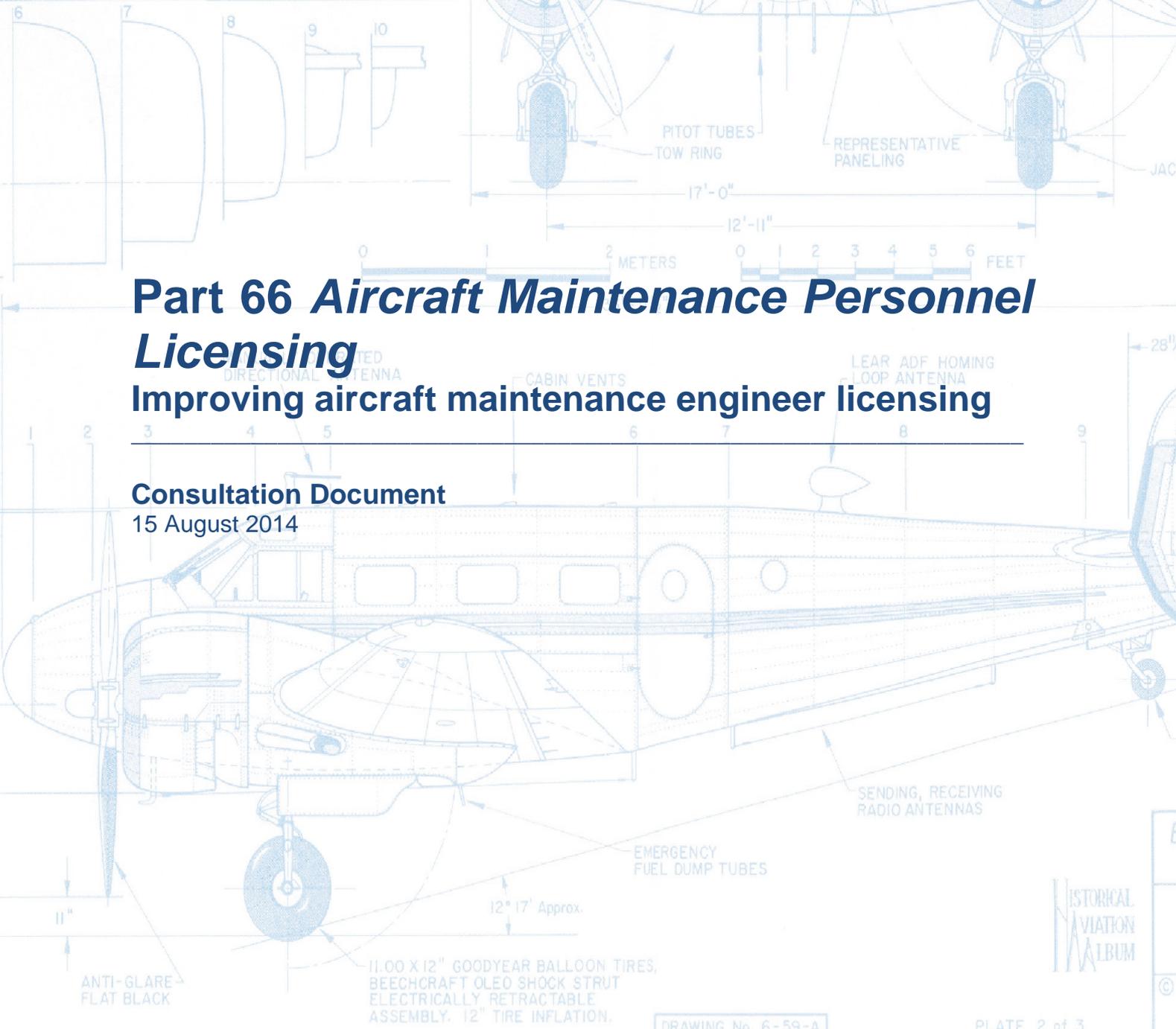
PAINT TRIM,
DOWN ON SIDE
PREVENT
ON,

6° AT 25% OF CHORD LINE

Part 66 Aircraft Maintenance Personnel Licensing

Improving aircraft maintenance engineer licensing

Consultation Document
15 August 2014



HISTORICAL
AVIATION
ALBUM

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Summary

- The Civil Aviation Authority (CAA) is reviewing Part 66 *Aircraft Maintenance Engineer Licensing* to consider what improvements can be made to the licensing system. We are interested in learning your views on Part 66.
- Part 66 has not kept pace with the rapidly changing practices and technology of aviation and aviation maintenance. There are a number of safety risks and economic issues associated with this. This review is also timely given the pending introduction of Part 147 *Maintenance Training Organisations* and economic incentives to align with international practice to the extent possible.
- We have identified a number of specific issues with Part 66 that may need addressing. The body of this consultation document summarises these into four main themes, briefly discussing what we consider to be the more substantial issues of each theme. The four themes are:
 - Ø *Licensing structure* – the structure of categories, groups and ratings; international alignment; clarity of privileges.
 - Ø *Technology* – enable rule adaptability to new and emerging technology; account for increasing technological reliability.
 - Ø *Training, currency and experience* – the training, examination and licensing processes; ensure New Zealand has the skill set and workforce to install, test and maintain new and emerging technology; ensure licensed aircraft maintenance engineers are up-to-date with their training and knowledge.
 - Ø *Other regulatory matters* – medical requirements and certification; defense force training; minor rule fix-ups.
- Appendix A details each issue and an option for resolving it. However, we are interested in learning your views on whether you agree with the issues identified and the option presented, and whether there are any issues we have not yet identified and how these may be resolved. A number of questions are posed throughout this document, and collated in Appendix B, to guide your feedback.
- Feedback on the the issues and options presented must be provided to the CAA by close of business on **Monday, 13 October 2014**.

Providing Your Feedback

The Civil Aviation Authority (CAA) is seeking your feedback on potential improvements to Civil Aviation Rule Part 66 *Aircraft Maintenance Personnel Licensing* and the licensing system. We are interested in your views on the questions posed throughout this document, and also welcome any other comments you wish to make about Part 66 and the licensing system. All questions are collated into a response form in Appendix B.

Feedback on the the issues and options presented must be provided to the CAA by close of business on **Monday, 13 October 2014** at:

E-mail: consultation@caa.govt.nz

Post: Bryce Wigodsky, Senior Policy Advisor
Civil Aviation Authority
PO Box 3555
Wellington 6140

We can also meet with you to discuss this review and receive your feedback in person if you wish. To arrange a meeting, please contact us at the above address with your preferred time and place.

This discussion document, and the response form in Appendix B (as a separate form), are available on the CAA's website at <http://www.caa.govt.nz/index.html>, "Aircraft Maintenance Engineers".

Please note that, once received, submissions become public information that can be requested under the Official Information Act 1982. Please indicate clearly if any parts of your comments are commercially sensitive, or if for any other reason you would not want them disclosed.

Introduction

Part 66 and licensed aircraft maintenance engineers

Civil Aviation Rule Part 66 *Aircraft Maintenance Personnel Licensing* “prescribes rules governing–

- the issue of aircraft maintenance licences, certificates, and ratings
- the privileges and limitations of those licences, certificates, and ratings.”

Part 66 sets the structure and requirements for, among other things, the different aircraft maintenance categories, which licensed personnel can undertake which maintenance activities, qualifying examinations, eligibility requirements, group and type ratings and additional privileges.

Licenses are granted on the basis of both practical experience and the passing of examinations. Formal aircraft maintenance engineer training is not required to take a license examination and obtain a license. Part 66 licenses have no expiry; however, they may be suspended or revoked under the Civil Aviation Act 1990.

In addition to standard licenses and ratings, Part 66 sets the requirements for Certificates of Maintenance Approval (CMA) and Certificates of Inspection Authorisation (IA). A CMA allows license holders (or non-license holders approved by the Director of Civil Aviation) to perform maintenance work on, and certify release to service of, aircraft types for which they do not have a type rating or the necessary practical experience. An IA enables suitably qualified personnel to perform an annual review of aircraft maintenance in accordance with Part 43 *General Maintenance Rules* and certify conformity with technical data following major repairs and major modifications.

Supporting Part 66 is a suite of advisory circulars (ACs), including training syllabi, which set the knowledge, coursework and experience expectations for obtaining a license.

Part 66 license holders undertake their work in a variety of environments. Some operate independently in non-certificated maintenance facilities (Part 43), certifying under the privileges of their license. Others work for organisations certificated under Part 145 *Aircraft Maintenance Organisations* and certify under the privileges of that organisation’s authorisation. Some Part 145 organisations may operate as part of an airline operation.

Reviewing Part 66

This review of Part 66 takes a close look at the rule part in its entirety to identify any issues in need of being addressed and the options for doing so. We acknowledge there are a number of rule parts that could do with a general review like the approach being taken here. Part 66 is considered an appropriate starting place due to the rapid introduction of new aviation technology that Part 66 is not well suited for, the economic and safety need to ensure we are well aligned with international aircraft maintenance practice, and the pending introduction of Part 147 *Maintenance Training Organisations*.

The Civil Aviation Authority (CAA) has undertaken work to identify what it views as areas of aircraft maintenance personnel licensing that may be in need of improvement. These are grouped into four general themes for the purpose of this consultation – licensing structure; technology; training, currency and experience requirements; and general regulatory issues.

This document is divided into two parts:

- a general summary of each theme and the more substantial problems identified to date, and
- a listing of all specific identified issues along with an option to address each of these (Appendix A).

Questions are posed throughout this document to guide your feedback. These are also collated in a response form in Appendix B (also available to download from our website at <http://www.caa.govt.nz/index.html>, “Aircraft Maintenance Engineers”). If you believe there are any other issues with aircraft maintenance personnel licensing that we have not identified here, or you have general feedback about the licensing system, we welcome those comments as well.

If rule amendments are desired to address any of the issues raised, this will be coordinated by the Ministry of Transport to be considered by the Minister of Transport for inclusion onto the Rules Programme. This involves assessing proposed changes against other transport sector rules awaiting development. Where the Minister approves progressing with a rule amendment, the CAA would develop draft new rules and publicly consult on these using the standard notice of proposed rule making (NPRM) process. The Ministry would then coordinate consideration and a decision from Cabinet.

Introduction questions

1. Are there any matters identified in this document that you consider are not a problem? Why not?
2. What issues are you aware of that have not been identified here and how could they be addressed?
3. What would be the impact to you or your business of any of the changes proposed in Appendix A?
4. What other issues or comments do you wish to raise regarding Part 66 and the aircraft maintenance engineer licensing system?

Defining and Resolving the Problems

The overall issue

The regulatory structure of Part 66 has not kept pace with rapidly changing aviation maintenance engineering practices and technology. This gives rise to a number of safety and economic issues potentially in need of being addressed. In terms of safety, there may be barriers to licensed aircraft maintenance engineers (LAMEs) being appropriately trained, qualified or allowed to perform certain tasks. This may particularly be the case with regard to new and emerging, and increasingly complex, technology. The regulatory structure also introduces risks to New Zealand's international alignment, presenting barriers to economic opportunities and New Zealand's aviation reputation.

Objectives

The objectives of this review are to improve:

- aviation safety
- international alignment
- economic opportunities, and
- the effectiveness and clarity of the licensing regulatory system.

The options for the specific issues identified in Appendix A seek to meet these objectives.

Options for improvement

The overall issue is comprised of a variety of specific matters as summarised below and detailed in Appendix A. To best resolve each issue, there are a number of options available:

- A. No change** – the current situation would remain as is, with no changes to the rules, ACs or other formal documents or processes. This option may be appropriate for issues considered to be insignificant and/or that pose no barrier to successfully carrying out the duties and responsibilities of a Part 66 license.
- B. Rule amendment** – amend specific rules in Part 66 (and other rule parts where consequential amendments are necessary) to enable an improved licensing system. This option would be necessary where current rule requirements are in need of removal. Where new requirements are needed, a rule amendment may be necessary if legislative action to implement and enforce the requirement is needed. Though not explicitly stated, proposals for rule amendments include relevant changes to ACs and other documents as a result. Where rule amendments are approved by the Minister of Transport and undertaken, this would involve the usual notice of proposed rule making (NPRM) process, giving you a chance to see what any amendments look like and to comment again.

C. **Non-legislative initiatives** – where changes are considered appropriate but amendments to the rules are not, certain non-legislative actions may improve the licensing system. This could include amendments to relevant ACs, education initiatives, promotional activities or changes to the administrative process. Such initiatives would seek to clarify requirements, provide additional guidance and increase understanding of rules and expectations.

The issues detailed in Appendix A include options we believe would best meet the objectives set out above and a brief assessment of the potential impact of implementing that option. We would value your feedback on each of these issues and the option presented.

Identified Issues

The issues identified with Part 66 can be grouped into four general themes: licensing structure; technology; training, currency and experience; and other regulatory issues. The issues in each of these themes are summarised below and detailed in Appendix A.

Licensing structure issues

The aircraft maintenance engineer licensing structure in New Zealand is divided into categories, group ratings, and aircraft and component ratings. There are also provisions for Certificates of Maintenance Approval (CMA) and Certificates of Inspection Authorisation (IA). In general, this structure is considered sound; however, there is room for improvement.

To illustrate, the structure of Part 66 is not well aligned with New Zealand's key aviation partners overseas, such as the Civil Aviation Safety Authority (CASA) in Australia or the

- *Simplify and align the Part 66 licensing structure with international practice.*
- *Address issues of overlapping and unclear privileges.*
- *Ensure IA have the skill set for increasingly complex avionics.*
- *Improve CMA requirements.*

European Aviation Safety Authority (EASA). For example, those regulators use a basic category and group hierarchy distinguished by nature of the work, such as line mechanic, minor maintenance and licensed mechanic; engine type (piston or turbine) and aircraft type (fixed wing or rotorcraft). New Zealand's structure also accounts for these general characteristics, but further distinguishes by aircraft size, construction material and instrument systems. This presents barriers for New Zealand businesses and LAMEs demonstrating their qualifications overseas, mutual acceptance of LAME qualifications between New Zealand and other countries, and converting foreign licenses into New Zealand licenses.

Many countries also have more modern licensing structures that reflect current industry practice. For example, Part 66 has separate categories for electrical, instrument and radio LAMEs. Internationally these are generally classed as an avionics category or rating, reflecting the similarity and increasingly integrated nature of this specialty area.

The privileges outlined in Part 66 have also caused some confusion and uncertainty amongst LAMEs and aircraft engineering businesses, giving rise to potential risks to safety. At times, the CAA has encountered situations where electrical, instrument or radio rated LAMEs conduct aircraft weight and balance calculations for which they are not trained. We are also aware of situations where there is confusion between LAMEs about who is responsible for, or eligible to, undertake certain tasks where their respective privileges overlap. There are other concerns that the various eligibility and recent experience requirements for obtaining a CMA may not be appropriate.

As aircraft systems become increasingly complex and integrated, there may be a need to consider whether LAMEs with an electrical, instrument and/or radio rating are, in some

cases, the most appropriate to hold an inspection authorisation (IA) rating. At present, holding an IA is limited to airframe and powerplant rated LAMEs, who may have no or limited training of avionics systems. Alternatively, consideration could be given to requiring IA holders to have some avionics training, even if they are not an electrical, instrument or radio rated LAME.

Licensing structure questions

5. Should Part 66 be better aligned with key international aviation regulators? If so, which one(s)?
6. What issues, if any, do you see with re-structuring the electrical, instrument and radio ratings into an “avionics” rating?
7. What clarifications could be made to the privileges (and additional privileges) listed in Part 66 that would help you perform your job?
8. What is your view on allowing electrical, instrument and/or radio rated LAMEs to be eligible to hold an inspection authorisation?

Technology issues

Aviation technology is advancing rapidly, both in terms of what it can achieve and how complex it can be. New airframes are being constructed out of composite materials that are thinner, lighter and stronger than older wooden or metal airframes. Aircraft systems for communications and navigation are becoming more integrated. An aviation sector is emerging that involves more frequent use of more sophisticated remotely piloted aircraft systems (RPAS).

When it comes to certain technology and materials, Part 66 is specific and detailed in places. In some cases, such as specifying certain components or systems for type ratings in Appendix B.2, this may be considered appropriate. In other areas, such as listing specific radio technology in Appendix B.1(f), this makes it difficult, due to the pace of rule making, for Part 66 to account for new and emerging technology.

One characteristic of new and emerging technology is its increasing reliability. Rule 66.103 requires LAMEs to, among other things, “have completed 6 months practical experience on the type or group of aircraft or components” for which a rating is sought. Increasingly, some new technology requires maintenance activities at intervals of up to 10-12 years. This makes it virtually impossible for LAMEs to meet the practical experience requirements in a reasonable time.

Added to this, New Zealand still has a large proportion of older aircraft with older, less complex technology. One challenge is to ensure LAMEs are appropriately qualified and

- *Enable Part 66 to more easily adapt to new and emerging technology.*
- *Ensure Part 66 eligibility requirements are appropriate for the increasing reliability of modern aircraft technology.*
- *Maintenance standards for remotely piloted aircraft systems (RPAS).*

trained to conduct installation, testing and maintenance work on new and emerging technologies, while remaining competent to work on existing technology.

A considerable amount of new technology will be introduced over the next decade as part of the New Southern Sky programme.¹ That programme includes identifying and developing the appropriate training requirements to meet its objectives, including for new technology.

There is an increasing need for maintenance standards for the rapidly growing sector of remotely piloted aircraft systems (RPAS). The CAA is currently considering its approach to RPAS safety assurance, including maintenance, in line with international developments.² Any changes to the Part 66 licensing system regarding RPAS maintenance will be considered and completed as part of that work. However, other changes to Part 66 as a result of the current review should enable the part to adapt for RPAS maintenance standards in a timely manner.

Technology questions

9. What is your view on specifying different technology, and privileges for these, in an advisory circular rather than in Part 66?
10. Do you support amendments to the rules for practical experience requirements to be more tailored for the aircraft or technology for which a rating is sought?
11. What challenges do you see regarding the installation, testing and maintenance of new and emerging technology?

Training, currency and experience issues

A number of issues have been identified with the training and requirements for obtaining a license, and with staying up-to-date on maintenance requirements, practice and technology.

Key aviation regulators around the world, such as EASA, CASA and the United Kingdom CAA, no longer require oral examinations to obtain an aircraft maintenance engineer license. New Zealand, on the other hand, continues to require oral examinations. Preliminary discussions with industry indicates that these examinations may be unnecessary, with some not adequately testing an applicant's true understanding of aircraft maintenance.

Similarly, the examination pass mark in New Zealand is not aligned with general international practice. To pass a Part 66 exam in New Zealand a 70 percent mark is required, whereas in other key jurisdictions it is 75 percent. This may pose risks to safety where some new LAMEs may not be adequately prepared to exercise their license. Alternatively, there may be no concerns because this is reflective of, and appropriate for, the New Zealand context.

Also, a student can complete their maintenance engineer course of study and receive a diploma, but this does not equate to their receipt of a Part 66 license. Students

¹ <http://www.nss.govt.nz/>

² <http://www.caa.govt.nz/rpas/index.html>

completing formal coursework are required to go through additional steps and costs to obtain a Part 66 license at the end of their course of study.

There are challenges with regards to New Zealand's LAME workforce, particularly those specialising in avionics. As new, more complex technology of a computerised and integrated nature is introduced, there is a risk that the workforce is too small and not appropriately trained to handle the influx of such technology.

The CAA is also aware of anecdotal stories from industry of safety risks arising from LAMEs not being current with the rules or technology. For LAMEs not working in a Part 145 organisation, there may be a risk that over time they gradually become less current with requirements and maintenance standards. Currently, the rules do not require LAMEs to undertake ongoing professional training to stay up-to-date with their industry standards and practices. Given that a Part 66 license has no expiry, there is a risk that some LAMEs could continue practicing under their license without being current, or without realising they may not be current.

- *Ongoing competency to carry out privileges of Part 66 license.*
- *Ensure workforce capacity and capability to install, test and maintain new and emerging technology.*
- *Aligning training courses with licensing.*
- *Reconsider the use of oral examinations.*
- *Possible changes to the Part 66 examination pass mark of 70 percent.*

Training, currency and experience questions

12. Do you think Part 66 oral examinations should continue or be discontinued (in their entirety or only specific oral exams)?
13. What is your view on the separate processes required for aircraft maintenance engineer training and a Part 66 licensing?
14. What is your view on whether the Part 66 examination pass mark of 70 percent should be raised to align with international practice?
15. What concerns, if any, do you have regarding New Zealand's ability to cater for an influx of new and increasingly complex aviation technology?
16. What is your view on whether LAMEs should be required to undergo re-currency training to ensure that their skills are up-to-date? If you support re-currency training, how often do you think it should be done and what type should it be (e.g. courses, conferences, etc)?

Other regulatory matters

There are a several other issues identified with Part 66 relating to general regulatory matters that may be in need of improvement.

Medical fitness

There are considerable medical requirements in place for aircraft pilot licensing, both at the time of first issuing a Part 61 license and at license renewal. Basic medical fitness of LAMEs is assured as part of "fit and proper person" requirements at the time of issuing a

Part 66 license. After that time, rule 66.19 prohibits LAMEs from exercising the privileges of their license if they have a “known medical deficiency, or increase of a known medical deficiency, that creates a risk of harm to that person or to any other person.”

As a Part 66 license has no expiry date and there are no requirements to report changes in medical status to the Director of Civil Aviation, full responsibility is thus placed on the LAME to abide by this Rule. This may provide insufficient safety assurance of LAMEs’ medical fitness to exercise their privileges.

There is a question of to what extent might confidence of a LAME’s medical fitness be necessary to ensure safe aviation. The spectrum of options that may be considered appropriate range from no changes to the current requirements to full certification like that used for Part 61 pilot licenses.

- ➔ *Greater assurance of medical issues, and drug and alcohol impairment management.*
- ➔ *Consider Defence Force training.*
- ➔ *Address issues with exam cheating.*

The International Civil Aviation Organization (ICAO) does not have medical requirements for LAMEs; however, other countries have developed their own LAME medical standards. For example, the Civil Aviation Safety Regulations in Australia goes a step beyond New Zealand’s requirements by requiring reporting and clearance of known medical conditions without requiring full medical certification. There, license applicants must declare any safety-relevant medical issues at the time of application. If a condition develops or changes after licensing, license holders cannot exercise their privileges unless a 30 day period

has passed from learning of the condition *and* they have a medical document certifying that their condition does not impair their ability to carry out their privileges.

Alcohol and drug use

Rule 66.17 outlines requirements pertaining to alcohol and drug convictions for the purpose of determining if a LAME or potential LAME is a fit and proper person under section 10 of the Civil Aviation Act 1990. However, there are no requirements pertaining to impairment as a result of alcohol and drug use. The Ministry of Transport is currently considering the matter of impairment requirements across the aviation, maritime and rail sectors. Any potential Civil Aviation Rule changes on this issue will be considered as part of that work and not this Part 66 review.

Transfer of Defence Force training

The CAA is also aware of potential issues with enabling New Zealand (or other countries’) Defence Force personnel to transfer their training qualifications to obtain a civilian aircraft maintenance license. This may create barriers to accessing qualified LAMEs and an administrative burden on Defence Force personnel seeking to obtain a civilian license.

Investigating allegations of examination cheating

The procedures followed by the Director of Civil Aviation when investigating allegations of unauthorised conduct on a Part 66 licensing exam (rule 66.15) are not aligned with those

for pilot licensing (rule 61.19). There are risks that this creates inappropriate inconsistency and procedural issues. This could also undermine the integrity of the Part 66 examination process.

Other regulatory questions

17. Do you think there should be different medical requirements for LAMEs than is currently in place? Why or why not?
18. If so, what do you think these requirements should be?
19. What is your view on whether New Zealand Defence Force-trained aircraft maintenance personnel should be able to transfer their training qualifications to the civilian system for the purpose of obtaining a Part 66 license?
20. What changes and/or clarifications, if any, do you think could be made to the procedure followed when investigating allegations of unauthorised conduct on a Part 66 examination?

Appendix A: Tables of Identified Issues

The following four tables outline the specific issues identified to date with Part 66, aligned with the themes discussed in this document. Each issue includes a brief summary of the evidence indicating why the issue may need to be addressed and an option for resolving the issue, along with a brief outline of the potential impacts if that proposal were progressed. Each issue is identified by an “Issue number” for reference purposes.

Table A.1 – Licensing structure issues

Issue number	Rule/AC	Issue	Summary of evidence	Option and assessment
A.1(a)	Part 66	The licensing structure is not well aligned with aircraft maintenance engineer licensing structures internationally, adding a layer of complexity and a barrier to demonstrating LAME qualifications when seeking overseas business or transfer to a New Zealand license.	<p>Because of the global nature of aviation, rules generally follow a standard format. Compliance with this is viewed as an indication of quality, but New Zealand's Part 66 is not aligned with this.</p> <p>EASA, CASA and other regulators have simplified type ratings for avionics activities. New Zealand's avionics type ratings are differentiated into electrical, radio and instrument.</p> <p>EASA, CASA and other regulators provide additional privileges for mechanical rated LAMEs to do electrical tasks. New Zealand currently allows mechanical</p>	<p>B. Rule amendment – to better align Part 66 with general international practice, particularly EASA. A complete overhaul for exact matching of the licensing structure is not expected as this is not considered necessary and would not be suitable for New Zealand.</p> <ul style="list-style-type: none"> International alignment, and thus reputation and economic opportunities, are improved. Enable some overseas LAMEs to have their license more easily converted to New Zealand license.

			<p>LAMEs to do electrical as well as radio and instrument tasks through the additional privileges.</p> <p>The CAA faces an increased administrative burden when assessing foreign aircraft maintenance engineer licenses for conversion to the New Zealand system.</p>	
A.1(b)	Appendices B and C	<p>Due to some overlapping privileges between different ratings, some tasks may be done by an inappropriately trained LAME. Alternatively, some necessary tasks may not be completed at all due to not being specifically addressed in a LAME's license.</p>	<p>CAA experience and audit findings indicate some industry confusion regarding specifically what activities different privileges allow.</p>	<p>B. Rule amendment – to improve clarity of, and distinction between, the approved privileges for different type ratings.</p> <ul style="list-style-type: none"> · Improved safety through appropriate training and ensure tasks are completed. · Improved compliance as a result of greater certainty.
A.1(c)	Rule 66.203	<p>The increasingly complex and avionic nature of new and integrated technology requires a skill set not necessarily possessed by current Inspection Authorisation (IA) holders because only airframe and powerplant rated LAMEs are eligible to be an IA.</p>	<p>Airframe and powerplant rated LAMEs holding an IA are permitted to perform an annual review and certify conformity with technical data, including on instrument, radio and electrical equipment, even though they are not trained on this equipment.</p>	<p>B. Rule amendment – to either a) allow electrical, instrument and radio rated LAMEs to hold an IA for avionics equipment only but not for an entire aircraft, or b) create a new Avionics IA and specify the allowable activities. Either of these options should reflect changes to the electrical, radio and instrument rating</p>

				<p>structure (note item A.1(a) above).</p> <ul style="list-style-type: none"> · Improved safety where an appropriately trained IA signs off complex electrical systems work. · Increased IA workforce. · Risk that, without specified limitations on the IA privilege, electrical, instrument and radio rated LAMEs are not appropriately trained or experienced in other aspects of aircraft maintenance.
A.1(d)	Subpart D	The recent experience, authorisation period and eligibility requirements for obtaining a CMA do not account for, and are considered inflexible with regards to, new and emerging technology.	<p>The increasing prevalence of newer, more complex aviation technology may require more time than the current two year CMA approval to obtain sufficient experience.</p> <p>Australia's equivalent of a CMA can be issued for a period of up to 5 years.</p>	<p>B. Rule amendment – to amend CMA requirements to match international practice and enable more responsive rules.</p> <ul style="list-style-type: none"> · Enables rule flexibility to account for new and emerging technology.
A.1(e)	Appendix C(c)(1)	Some electrical, instrument or radio rated LAMEs perform weight and balance calculations though those ratings do not train for it.	<p>The relevant electrical, instrument, radio and avionics syllabi do not provide for training of weight and balance calculations.</p> <p>CAA experience responding to</p>	<p>C. Non-legislative initiatives – specify in the AC that electrical, instrument and radio rated LAMEs should not perform weight and balance calculations, unless demonstrably trained and approved to do</p>

			queries on whether the Rules allow electrical, instrument or radio rated LAMEs to perform weight and balance calculations.	so. <ul style="list-style-type: none"> Improved safety where appropriate personnel perform these calculations. Some costs to LAMEs if they choose to undergo additional training to be able to perform these calculations.
A.1(f)	Appendix C	There is ambiguity and confusion about who is referred to in Appendix C.	CAA experience and anecdotal evidence.	<p>B. Rule amendment – clarify that listed privileges are for holders of a “rated” license, not a category only license holder.</p> <p>C. Non-legislative initiatives – amend the AC to clarify the relevant personnel that Appendix C applies to.</p> <ul style="list-style-type: none"> Improved compliance where clarity is achieved.
A.1(g)	AC 66-1	Auxillary power unit (APU) maintenance is a basic component of airframe and power plant training courses and is considered to not require a specified type rating as it currently does.	<p>APU maintenance is included in training syllabi for aeroplanes (AC 66-2.5) and turbine engines (AC 66-2.8).</p> <p>Australia does not have an APU type rating. There, APU maintenance is a component of “Aeroplane aerodynamics, structures and systems” and “Aircraft structures and systems”</p>	<p>C. Non-legislative initiatives – amend the AC to remove APU as a specified type rating.</p> <ul style="list-style-type: none"> Improve clarity of privileges.

			training modules, and is an Aircraft System for a powerplant B1 designation.	
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Table A.2 – Technology issues

Issue number	Rule/AC	Issue	Summary of evidence	Option and assessment
A.2(a)	Appendices B and C	Group ratings are specified to an extent that they do not reflect, or easily adapt to, new and emerging technology.	<p>Part 66 is outdated in terms of technology it specifies and being able to adjust to reflect emerging technology.</p> <p>Internationally, including in Australia and Europe (EASA), practice is for aircraft construction materials to be included in license training and examinations, not as a separate licensing group category.</p> <p>There are no rotorcraft ratings for performing work on composite material aircraft frames.</p> <p>Part 66 does not account for UHF radio systems (e.g. 406MHz emergency location transmitters, ELTs).</p> <p>Internationally, VHF and HF radio</p>	<p>B. Rule amendment – to limit the specificity of technology in the Rule instead specifying it in an AC, and to make other necessary amendments to align with international standards.</p> <ul style="list-style-type: none"> · Enables a faster response time to account for new and emerging technology. · Increases rule coverage and certainty as new technology is introduced in the future. · International alignment.

			systems are not an additional privilege for aeroplane or rotorcraft category holders, but they are in New Zealand.	
A.2(b)	66.103	Increasingly sophisticated and reliable aircraft technology has led to the experience requirements being a barrier to obtaining some license ratings.	New aircraft and technology, such as the Boeing 787, are so reliable that they require certain maintenance tasks only once in several years, up to 12 years in the case of the Boeing 787.	<p>B. Rule amendment – to enable practical experience that is appropriate to the aircraft or technology for which the group or rating is sought, and placing specificity of such in an AC.</p> <ul style="list-style-type: none"> · Improves the rule’s response to introduction of new technology. · Eases the compliance burden by allowing a flexible approach.
A.2(c)	n/a	There is no safety assurance of maintenance standards for Remotely Piloted Aircraft Systems (RPAS).	<p>Recognising the increasing risks of a rapidly growing RPAS sector, the development of regulations for RPAS is being undertaken by a number of international regulators, including the Federal Aviation Administration (USA), the EASA and the UK CAA.</p> <p>Monitoring overseas development, New Zealand is currently considering its approach to RPAS safety assurance, including maintenance.</p>	<p>A. No change – RPAS maintenance standards and rules are part of the CAA’s RPAS regulatory development, currently underway. No changes to Part 66 specifically for RPAS should be made until that work determines the CAA’s approach. However, other changes to Part 66 as a result of this consultation must ensure that Part 66 can account for RPAS maintenance at the appropriate time and in a timely manner.</p>

Table A.3 – Training, currency and experience issues

Issue number	Rule/AC	Issue	Summary of evidence	Option and assessment
A.3(a)	Rules 66.9 and 66.11	Because an aircraft maintenance engineer license is valid for life and there are no requirements for ongoing competency (re-currency) training, the CAA has limited assurance of LAMEs' ongoing competency, particularly those not working in a Part 145 organisation. This may pose safety risks where LAMEs are not up to date on skills, especially with regards to new technology.	<p>Part 145 place a higher standard on LAME currency that does not apply to LAMEs not working in a Part 145 organisation.</p> <p>The CAA is aware of some instances where aircraft were maintained to an out-of-date standard as the LAME was not aware of newer requirements.</p>	<p>C. Non-legislative initiatives – amend the AC clarify and strengthen expectations for re-currency training and the documentation of this.</p> <ul style="list-style-type: none"> · Cost to LAMEs/employers to obtain re-currency training. · Improved safety and CAA assurance where LAMEs are up-to-date with current requirements and practices.
A.3(b)	Part 66	The New Zealand Qualifications Authority (NZQA) training courses for aircraft maintenance engineers and the Part 66 licensing system are not linked, creating additional administrative and financial burdens for applicants.	Aircraft maintenance engineer students can complete their training and obtain a NZQA diploma, but are not licensed engineers under Part 66. Students must complete a separate process to test and qualify for a license. This situation may be a disincentive for some qualified students to obtain a license.	<p>C. Non-legislative initiatives – discussions with NZQA, Tertiary Education Commission, Service IQ, Aviation Services Ltd and other relevant parties to consider options for aligning courses, NZQA diplomas and Part 66 licensing.</p> <ul style="list-style-type: none"> · Ease financial and administrative burden on applicants. · Streamline training and licensing

				<p>systems.</p> <ul style="list-style-type: none"> Align training modules with appropriate international training modules.
A.3(c)	Rule 66.13	The use of some oral examinations in New Zealand does not align with international practice, potentially creating an undue financial and administrative burden on applicants required to take these exams.	<p>The Part 66 oral exam pass rate is near 100 percent, which is viewed as an indication that it is not a true test of an applicant's understanding of aircraft maintenance engineering.</p> <p>General international practice, including in Australia and Europe, is to have no oral exams for an aircraft maintenance engineer license, or only for Air Law.</p>	<p>B. Rule amendment – to delete some, or all, requirements for oral examinations.</p> <ul style="list-style-type: none"> Aligns with international practice. Cost savings to applicants of \$350 per oral exam.
A.3(d)	Rule 66.13	The requirement to gain at least a 70 percent mark to pass exams is not aligned with international practice and may negatively impact safety where licenses are issued to unprepared aircraft maintenance engineers.	Australia's CASA and other international regulators require minimum exam scores of 75 percent to pass.	<p>C. Non-legislative initiative – to further consider whether the Part 66 examination pass mark should be raised.</p>
A.3(e)	Rule 66.13	If New Zealand aligns with general international practice and removes requirements for oral exams (see item A.3(c) above), the limitation of failing the oral exam in rule 66.13(d) may be irrelevant. In any case, this rule may be	International practice.	<p>B. Rule amendment – to apply the current fail limit to both oral and written exams.</p> <ul style="list-style-type: none"> International alignment. Improved safety where a higher

		too limited in scope by applying only to oral exams.		<p>standard is set.</p> <ul style="list-style-type: none"> · Cost to applicants who may be required to wait until a further attempt can be made. · Outcome may be dependent on chosen option for item A.3(c) above.
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Table A.4 – Other regulatory matters

Issue number	Rule/AC	Issue	Summary of evidence	Option and assessment
A.4(a)	Rule 66.19	Because there is no requirement for LAMEs to report their safety-relevant medical matters to the CAA, the CAA has limited assurance that LAMEs are medically fit and competent to perform their duties and privileges.	Australian Civil Aviation Safety Regulations (CASR) requires applicants for a license and rating to report in their applications any safety-relevant medically significant conditions they have. After a license is granted, CASR 66.125 prohibits LAMEs from exercising their license privileges if they develop a medically significant condition unless they meet a “30 day period” and have a medical certificate documenting that their condition does not impair their ability to carry out their privileges.	<p>B. Rule amendment – to align with Australian practice. This would involve requiring LAMEs with a known safety-relevant medical condition to have medical documentation certifying that their condition does not impair their ability to carry out their privileges.</p> <ul style="list-style-type: none"> · Costs to some LAMEs to obtain medical documentation. · Improved safety from greater assurance of the management of medical issues that could potentially lead to increased

				risks.
A.4(b)	Part 66	An inability for Defense Force personnel to apply their NZDF training qualifications to a civilian aircraft maintenance engineer license may pose an administrative and financial burden on these applicants where they need to duplicate training already obtained. This may also present a barrier to entry into the civilian LAME workforce.	NZDF course qualifications are not transferrable to a Part 66 license, although NZDF practical experience generally is (see AC 66-1).	<p>C. Non-legislative initiatives – initiatives (e.g. AC amendment or education campaign) to outline the expectations around transferring Defence Force aircraft maintenance engineer training to obtain a Part 66 license.</p> <ul style="list-style-type: none"> · Streamlined licensing system. · Increased workforce. · Cost savings to applicants.
A.4(c)	Rule 66.15	Rule 66.15 prohibiting cheating or other unauthorised conduct during Part 66 exams is not aligned with the similar rule (61.19) for pilot licensing exams, creating inconsistency and procedural risks.	Rule 66.15 does not provide the same level of detail, and consequently participant assurance, as rule 61.19. In particular, rule 66.15 is limited on the procedural steps the Director must follow when investigating allegations of cheating or other unauthorised conduct during a Part 66 exam.	<p>B. Rule amendment – to align rules 61.15 and 66.19.</p> <ul style="list-style-type: none"> · Greater assurance and clarity for participants in the CAA's actions when investigating exam cheating allegations. · Increased integrity of the system.

Appendix B: Feedback Form

The questions posed throughout this document are collated below. This feedback form is also available as a separate document on our website at <http://www.caa.govt.nz/index.html>, "Aircraft Maintenance Engineers". We are also interested in any views you may have that are not covered by these questions.

Please submit your response by **Monday, 13 October 2014** to:

E-mail: consultation@caa.govt.nz **Post:** Bryce Wigodsky, Senior Policy Advisor
Civil Aviation Authority
PO Box 3555
Wellington 6140

Name: _____

Contact information: _____

License category and ratings (if applicable): _____

Organisation/business (if applicable): _____

1. Are there any matters identified in this document that you consider are not a problem? Why not?
2. What issues are you aware of that have not been identified here and how could they be addressed?
3. What would be the impact to you or your business of any of the changes proposed in Appendix A?
4. What other issues or comments do you wish to raise regarding Part 66 and the aircraft maintenance engineer licensing system?

5. Should Part 66 be better aligned with key international aviation regulators? If so, which one(s)?
6. What issues, if any, do you see with re-structuring the electrical, instrument and radio ratings into an “avionics” rating?
7. What clarifications could be made to the privileges (and additional privileges) listed in Part 66 that would help you perform your job?
8. What is your view on allowing electrical, instrument and/or radio rated LAMEs to be eligible to hold an inspection authorisation?
9. What is your view on specifying different technology, and privileges for these, in an advisory circular rather than in Part 66?
10. Do you support amendments to the rules for practical experience requirements to be more tailored for the aircraft or technology for which a rating is sought?
11. What challenges do you see regarding the installation, testing and maintenance of new and emerging technology?
12. Do you think Part 66 oral examinations should continue or be discontinued (in their entirety or only specific oral exams)?

13. What is your view on the separate processes required for aircraft maintenance engineer training and a Part 66 license?

14. What concerns, if any, do you have regarding New Zealand's ability to cater for an influx of new and increasingly complex aviation technology?

15. What is your view on whether the Part 66 examination pass mark of 70 percent should be raised to align with international practice?

16. What is your view on whether LAMEs should be required to undergo re-currency training to ensure that their skills are up to date? If you support re-currency training, how often do you think it should be done and what type should it be (e.g. courses, conferences, etc)?

17. Do you think there should be different medical requirements for LAMEs than is currently in place? Why or why not?

18. If so, what do you think these requirements should be?

19. What is your view on whether New Zealand Defence Force-trained aircraft maintenance personnel should be able to transfer their training qualifications to the civilian system for the purpose of obtaining a Part 66 license?

20. What changes and/or clarifications, if any, do you think could be made to the procedure followed when investigating allegations of unauthorised conduct on a Part 66 examination?