

Consultation response to September 2022 proposed amateur class licence

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1 Introduction

I gained my amateur radio qualification in New Zealand and obtained an Australian call sign through mutual recognition when I migrated to Australia in the late 1990s. In the intervening years New Zealand adopted its equivalent of Class Licensing for Amateur Radio with the General Radio User Licence (GURL) for Amateur Radio Operators[1]. I have made use of these new arrangements and reactivated my New Zealand call sign.

I offer this response to the *Consultation Paper* issued in September 2022 from the perspective of an overseas-qualified Amateur and one that has been licensed and operated under a regulatory regime similar to what is proposed by ACMA. I am pleased to see that some recommendations made by the amateur community following the earlier consultation (February 2021) have been accepted, but the majority of concerns have been disregarded in the name of “efficiency”. My greatest concerns are regarding the management and provision of a public call sign register, closely followed by international operating for visiting Amateurs and Australian Amateurs travelling overseas.

Section 2 is my response to the 15 questions posed in the paper and Section 3 provides additional commentary that does not map to any particular question.

I trust that my responses are of benefit and assist in the further development and refinement of the Class Licence for eventual adoption by ACMA.

2 Response to consultation questions

2.1 Question 1: 50–52 MHz operation

No, I do not see any reason why operating privileges for 50–52 MHz should not be extended to Standard licence holders on the same basis as it currently is for Advanced licence holders.

2.2 Question 2: Call sign transfer

The proposed call sign surrender and nomination process sounds reasonable, but why does a call sign transfer require payment? I expect that the number of transfers will be low, and any system set up to charge for this will probably cost more to operate than what would be reasonably recovered.

I hope that any transfer arrangements would require a declaration that no consideration was provided for the transfer—holding multiple desirable call signs, such as VK#_ _ , for financial gain is not in the spirit (and possibly the law) of the Amateur Service. Limitations on how many call signs (Question 4) would also address this to some degree.

2.3 Question 3: Regular check of call sign use

A “regular check” process is an unnecessary administrative burden until call signs have “run out”. The Amateur community generally notifies of Silent Keys, and there’s no reason why ACMA and the Call Sign Entity can’t be notified along with all other regulatory authorities when somebody dies. More detail would be needed on what constitutes “use” of a call sign.

- Would an Amateur that has fallen on hard times and had to liquidate their radios then be forced to give up their call sign if they were not transmitting on a regular basis?
- Would an Amateur operator that is not able to “get on the air” due to their place of residence (e.g. nursing home), but makes use of internet connectivity to communicate with other amateur operators be considered to be “using” their call sign?

One benefit of ACMA retaining call sign management in-house would be the ability to receive notifications from other government agencies or departments (state/territory and federal) that would indicate that an Amateur operator no longer was eligible to hold a call sign. This could be through death or other court orders. Outsourcing the register of call signs to a third party would unnecessarily complicate this.

2.4 Question 4: Multiple call signs

It is my opinion that a call sign is required to meet the requirements of Article 19 in the Radio Regulations for the purpose of identifying stations. In most circumstances one call sign is all that is needed to serve this purpose. Now that Australian call signs do not have to match the state or territory of residence I can see some benefit in having an additional call sign for regular use at a location (e.g. holiday home) in a different call sign area.

I personally do not have a need for multiple Australian call signs. If there is a shortage of call signs such that the checks proposed by Question 3 are necessary then I would expect that a limit to the number of call signs an individual can hold would be a prudent step. Limitations may be appropriate for “high demand” call sign structures (e.g. two letter VK#_ _ call signs), but until there is a shortage I see no need for restrictions in general.

2.5 Question 5: Other call sign management concerns

ACMA’s proposed call sign “management” arrangements are concerning, and look to be a step away from what all other regulatory authorities are doing. A big difference between Amateur service call signs and those used in the Maritime and Aeronautical services is that there is physical object registration database such as those operated by AMSA or CASA.

The Register of Radiocommunications Licence (RRL) is the register for all Apparatus licensed call signs, including Amateur. The consultation document does not explain how this is a *de facto* role when it is a fundamental part of spectrum management, and I must disagree completely with the statements that the register is not a “spectrum management function”. How else does ACMA give effect the ITU Radio Regulations, including Article 19? Identification of stations is critical for identification and management of interference, and if Amateur operators are to “facilitate self-management of interference issues between amateurs” then knowing where licensed operators are located is essential and this is facilitated by a central register of licensed Amateur operators. If interference is to be addressed at a “local/field level” when this will require a significant increase in the ACMA’s presence throughout the country.

If an opt-in register is provided by a non-government third party then this will make identification of pirate operators more difficult, and that would be detrimental to all Amateur operators and would

be counter to the interests of good spectrum management. The current situation where all Amateur operators are listed in the RRL provides certainty that a call sign is valid and what the operating privileges are. I do not see that there is an “administrative burden” is present when the call sign manager has to maintain a register of issued call signs so as to exercise their role. Having a separate “amateur-operated voluntary register” is an administrative burden that duplicates a database that exists. How is this efficient?

As far as I am aware no other radiocommunications regulator has moved away from manage call signs register for Amateur operators, and the proposal for ACMA to do this is unusual. The lack of a government operated or sub-contracted register will make verification very difficult, and may well prove impossible for VK call signs to be added to global databases. The ARRL’s Logbook of the World (LOTW) is one system that requires a licence from the relevant regulator to confirm identity as part of its quality and assurance process.

New Zealand has operated the Amateur service under its General User Radio Licence for Amateur Radio Operators for many years [1]. Approved Radio Examiners (ARXs) are able to issue call signs on behalf of RSM, just as AMC does for ACMA, but the key difference between the New Zealand approach and what is proposed by ACMA is that in New Zealand “*All radio operators’ certificates issued under the Regulations are held in the online Register of Radio Frequencies (the Register)*”. This does not appear to have been burdensome for RSM, and perhaps their experience would be beneficial to ACMA?

In my opinion the best-practice would be for ACMA to operate the RRL as it does now, and allow for the Call Sign Entity (or entities) to update that register. A less desirable, but potentially workable, alternative would be for AMC (or any future Call Sign Entity) to provide a public register in lieu of the RRL that has clear endorsement from ACMA for the purpose of international recognition. Since the RRL is up and running and the hooks are in place for AMC to allocate and adjust call signs why not retain it? “*If it ain’t broke, don’t fix it*”.

2.6 Question 6: Register alternatives to RRL

I am not aware of any comprehensive amateur-operated registers that provide the functionality of the RRL. The QRZ.com website is the closest there is to a register. Other sites like HamCall.net scrape data from ACMA, so without the RRL would be of no use.

It would be hard for third-party pseudo-registers to arbitrate disputes where two or more individuals claim a call sign without having access to a public register with standing. Associations such as the Wireless Institute of Australia (WIA), of which I am a member, may opt to provide a register for its members but it should be noted that there is no requirement to be a member of the WIA.

2.7 Question 7: CEPT operating difficulties

I expect I may have difficulty operating in CEPT signatory countries as I do not hold an AOCP but do have an Advanced Licence should I lose my New Zealand call sign. If a residence requirement was imposed by the New Zealand GURL I would only have my Australian licence to use when travelling overseas. Will the Call Sign Entity be issuing statements of equivalence with allocated call signs, and include the CEPT statement? The RRL extract currently produced by ACMA meets the CEPT requirements for T/R 61-01[2] but not T/R 61-02[3], as shown in Figure 1.

This licence accords with the requirements of the European Conference of Postal and Telecommunications Administrations (CEPT) Recommendation T/R 61-01.
Diese Lizenz entspricht den Vorgaben der CEPT Empfehlung T/R 61-01.
Cette licence est conforme aux conditions requises par la CEPT Recommendation T/R 61-01.

Figure 1: ACMA licence CEPT wording.

My New Zealand licence covers both T/R 61-01 and TR 61-02, as shown in Figure 2.

The competency requirements to which this certificate relates accord with the International Telecommunications Union Recommendation ITU-R M.1544, and are further prescribed in Schedule 4 to the Radiocommunications Regulations 2001.

The passed examination corresponds to the examination described in CEPT Recommendation T/R 61-02 (HAREC).

L'épreuve en question correspond à l'examen décrit dans la Recommandation CEPT T/R 61-02 (HAREC).

Die abgelegte Prüfung entspricht der in der CEPT-Empfehlung T/R 61-02 (HAREC) beschriebenen Prüfung.

The above named person meets the requirements to operate an Amateur radio station in accordance with the provisions of the Radiocommunications Regulations (General User Radio Licence for Amateur Radio Operators) Notice 2013, or a notice in replacement thereof, granted by the Ministry of Business, Innovation & Employment under Regulation 9 of the Radiocommunications Regulations 2001.

CEPT Amateur radio licence equivalent in accordance with Recommendation T/R 61-01.

CEPT amateur équivalent licence radio conforme à la Recommandation T/R 61-01.

CEPT Amateurfunklizenz Gegenwert in Übereinstimmung mit der Empfehlung T/R 61-01.

Figure 2: RSM licence CEPT wording.

I would not be surprised if CEPT countries push back on recognising Australian qualifications for the purpose of HAREC if Australia no longer accepts HAREC qualifications for the purpose of long-term operation. This doesn't affect me specifically as my underlying qualification is issued by New Zealand, but I expect this would impact the majority of Australian amateur operators.

The reasoning behind the ACMA policy of requiring Amateurs with international qualifications to obtain an Australian AOCp if they wish to operate longer than twelve months is unclear, and does not appear to be in spirit of harmonisation (CEPT) and mutual recognition. What is achieved by being a signatory to CEPT T/R 61-02 if international qualifications (rather than licences) are not recognised? The very purpose of HAREC is stated as (with my emphasis):

*It facilitates the issuing of an individual licence to radio amateurs who **stay in a country for a longer term** than that mentioned in CEPT Recommendation T/R 61-01. It also facilitates the issuing of an individual licence to a radio amateur returning to his native country showing the HAREC certificate issued by a foreign Administration.*

Annex 3 of CEPT T/R 61-01 requires non-CEPT administrations to provide a Statement of Conformity to show how the domestic Amateur Radio examination compares to the HAREC syllabus in Annex 6 of CEPT T/R 61-02. Since the AOCp-A issued by AMC is considered acceptable for the purpose of T/R 61-01, it would be logical to assume the reverse — that a HAREC qualification is equivalent to an Australian qualification. The discussion in Section 6 of the consultation paper appears to confuse *licences* with *qualifications*. I suggest that further consultation is made between ACMA and CEPT to clarify this, as the AOCp/AOCp-A looks more to be a matter for CEPT T/R 61-02 than CEPT T/R 61-01.

I ask that ACMA revisit the policy on accepting the qualifications of overseas Amateurs that settle in Australia and align this policy with the practice of overseas regulators. I am familiar with the New Zealand system, and use this as an example. The New Zealand Radio Operator Certificate and Call Sign Rules [4] provide a template as to how international qualifications can be handled in a class licence/GURL:

3.7. International Amateur Radio Operator Qualifications

Amateur radio operators who have immigrated to New Zealand may have their international radio amateur qualification recognised for the purpose of operating under the GURL for Amateur Radio Operators. The ARX must be satisfied that the qualification, as detailed below, is fit for the purpose of issuing a permanent New Zealand amateur call sign.

3.7.1. Harmonised Amateur Radio Examination Certificate (HAREC)

A valid HAREC Certificate issued by countries participating in the CEPT Recommendations TR61-01 and TR61-02 reciprocal recognition arrangements is recognised for the purposes of operating amateur radio equipment in accordance with the GURL for Amateur Radio Operators.

I suggest that Part 1 Section 9 of the proposed Class Licence is reworded to specifically refer to *overseas qualifications* as well as *overseas licences* as these are different matters (long term v. short term). Part 1 should have wording that allows for a Call Sign Entity to examine an overseas qualification (as is done by a New Zealand ARX) for its suitability in relation to issuing of an Australian call sign. Requiring an Amateur with an overseas qualification, who may not have a current overseas licence, to sit for an AOCP is an unnecessary administrative burden even if Recognition of Prior Learning is used. Direct recognition of overseas *qualifications* would support the stated goals of this review of Amateur licensing to reduce administrative burden and overhead.

2.8 Question 8: Scientific licences

I consider that Scientific licences and Amateur licences serve very different purposes, mainly with regard to for-profit operation. Would an Amateur operator that obtains a Scientific licence under the proposed scheme be prohibited from using that licence for work or business purposes? RR 1.56 has the following definition of the *amateur service* (emphasis is mine):

amateur service: A radiocommunication service for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, by duly authorized persons interested in radio technique **solely with a personal aim and without pecuniary interest.**

The Amateur service already has experimentation (through “technical investigation”) in its scope, and I therefore believe that there is no need for a Scientific licence provided Amateur spectrum (primary or secondary) is used.

2.9 Question 9: Other amateur experimentation under Scientific Licence

I do not consider there is any appropriate use for the Scientific Licence by Amateur operators.

2.10 Question 10: Application for authorisation

If the issue is capturing specific requirements around certain Amateur stations then perhaps this indicates that the Class Licence approach is flawed? The ACMA issues notifiable instruments under other Radiocommunications determinations (e.g. [5]) for named person, so perhaps a similar approach could be used to relax the power limit for specific Amateur operators.

2.11 Question 11: 1 kW power limit

A modest increase in allowable transmit power from 400 W (pX) to 1000 W (pX) would be consistent with other jurisdictions and would help communication with Amateur operators with increasing background noise levels. I believe that this increase would best be granted to those operators that have shown the greatest understanding of radio science and technology, and therefore an Advanced AOCP would be required. This would address the non-negligible risk exposure with these power levels, particularly in urban areas with smaller lot sizes.

2.12 Question 12: Excluded bands for high power operation

High power operation will have a detrimental effect on surrounding operators. No transmitter is 100% spectral pure, and with home-brew being a core element of the Amateur Service the adjacent channel

emissions are likely to be significantly higher than with type-approved transmitters used in other services. The available spectrum in the HF bands (1.8 MHz to 30 MHz) for Amateur operators varies, with some bands very limited and this is shown in Table 1 along with adjacent services taken from the RF Spectrum Plan [6].

Table 1: Amateur service bandwidth allocations in HF bands.

| Band | F _{min} | F _{max} | Bandwidth | Adjacent services |
|-------|------------------|------------------|-----------|-----------------------------------------------|
| 160 m | 1800 kHz | 1875 kHz | 75 kHz | Fixed, Mobile, Radiolocation, Radionavigation |
| 80 m | 3500 kHz | 3800 kHz | 224 kHz | Aeronautical Mobile, Fixed, Mobile |
| 40 m | 7000 kHz | 7300 kHz | 300 kHz | Fixed, Land Mobile, Broadcasting |
| 30 m | 10100 kHz | 10150 kHz | 50 kHz | Aeronautical Mobile, Fixed, Mobile |
| 20 m | 14000 kHz | 14350 kHz | 350 kHz | Fixed, Mobile |
| 17 m | 18068 kHz | 18168 kHz | 100 kHz | Fixed, Space Research, Mobile |
| 15 m | 21000 kHz | 21450 kHz | 450 kHz | Fixed, Mobile, Broadcasting |
| 12 m | 24890 kHz | 24990 kHz | 100 kHz | Fixed, Land Mobile, Standard Time & Freq |
| 10 m | 28000 kHz | 29700 kHz | 1700 kHz | Meteorological Aids, Fixed, Mobile |

High power operation in the 160 m, 30 m, 17 m and 12 m bands would be particularly problematic and I do not support high power operation in these bands. It would a shame if high power operation was permitted to overcome increased background noise levels further contributed to that background noise.

A compromise may be to impose more onerous spectral purity limits on transmitters that have a high power relaxation/exemption, with the onus being on the operator to show that their transmitter's out-of-band and spurious emissions are with fixed limits (i.e. not related to peak carrier power). This would ensure that the intent of Regulations 3.6 and 3.7 in Article 3 of the Radio Regulations is met. The attenuation values required in the Radio Regulations for spurious emissions are in Table I of Appendix 3 have been used to calculate the required attenuation shown in Table 2 and resulting absolute power levels in Table 3. I note that the Amateur limit is consistent with what is proposed for the Class Licence.

Table 2: Spurious emission attenuation required in HF band.

| Service | Function | 1 W | 10 W | 100 W | 400 W | 1000 W | 1500 W |
|------------|-----------------------------|-------|-------|-------|-------|--------|--------|
| Amateur | $43 + 10 \lg (PEP) / 50$ dB | 43 dB | 50 dB | 50 dB | 50 dB | 50 dB | 50 dB |
| Mobile SSB | 43 dB | 43 dB | 43 dB | 43 dB | 43 dB | | |
| Other HF | $43 + 10 \lg (PEP) / 60$ dB | 43 dB | 53 dB | 60 dB | 60 dB | 60 dB | 60 dB |

Table 3: Spurious emission absolute limits.

| Service | 1 W | 10 W | 100 W | 400 W | 1000 W | 1500 W |
|------------|---------|---------|---------|---------|---------|---------|
| Amateur | -43 dBW | -40 dBW | -30 dBW | -24 dBW | -20 dBW | -18 dBW |
| Mobile SSB | -43 dBW | -33 dBW | -23 dBW | -17 dBW | | |
| Other HF | -43 dBW | -43 dBW | -40 dBW | -34 dBW | -30 dBW | -28 dBW |

A high power (1000 W) HF transmitter in the Fixed Service is required to have the same spurious

emission level as an Amateur transmitter operating at 100 W. I suggest that if high powered operation is permitted in the Amateur service that the 50 dB cap on attenuation of spurious signals is reviewed. A solution could be to cap spurious emissions at -24 dBW (matching the current 400 W PEP limit), which is still more generous than the limit imposed on other HF users.

2.13 Question 13: High power use cases

Radio technique could include radiodetermination as well as radiocommunication, and would include extra-terrestrial operation. I hold the opinion there Scientific licences are unnecessary and administratively burdensome, but non-communication “radio technique” could well require higher power. There is a place for amateur experimentation with radionavigation and radiodetermination, and these techniques could well require more power than the proposed Class Licence allows.

2.14 Question 14: Specific use case

I don’t think it is appropriate or necessary to be prescriptive in power levels, frequencies and mode descriptions. The Amateur Service by its nature is for experimentation and self-education. We “don’t know what we don’t know” and by trying to bound uses for high power at this stage could well prevent experimentation and study into innovative radio science topics in the future. Australia’s regulation of transmissions by Amateur has benefited from general limits on occupied bandwidth and transmit power and not the prescriptive limits in terms of symbols per second of other jurisdictions (United States in particular).

Question 14 appears to be applying a Scientific Licence attitude/approach to high power operation, and this is not something that I support.

2.15 Question 15: High power authorisations

A simple and direct response to the question asked in the consultation paper is “no”. The fundamental needs to be addressed are:

- Is operation at high power safe?
- Will operation at high power interfere with other users of the spectrum and adjacent spectrum?

Location, position and frequency/band of operation should feed into the evaluation to determine whether authorisation should be granted, but are not appropriate selectors in their own right. A 1000 W UHF or microwave transmission for moon bounce could well be safe in an urban property if elevation caveats are provided, but operation with an omnidirectional antenna or directional HF antenna would be unlikely to meet electromagnetic exposure (EME) limits. It may be prudent for avoidance of interference for carrier power and/or spurious power limits to be applied geographically around licensed HF receive sites, such as those operated by Airservices Australia and the Department of Defence.

EME limits set by ARPANSA in RPS S-1 and spurious emission limits in the Radio Regulations should be the determinants for authorisation. Operation above current limits (i.e. 400 W PEP) should be treated as a privilege and not a right, as there are going to be any situations where this is either unsafe from an EME perspective, or where risk of interference to adjacent services is unacceptable.

3 Additional commentary on proposed class licence

The following suggestions and comments relate to the structure and wording of the proposed class licence, and not to any particular consultation questions.

3.1 Standards references

Schedule 1 Section 1 has a definition for “C95.3” to mean the IEEE standard for measurement of EME[7]. I suggest that the reference be changed to be “IEEE Std C95.3” and that the correct title (with the “Std”) be used, as shown in Figure 3. This would be consistent with IEC and AS/NZS standards.

IEEE Std C95.3™-2021
(Revision of
IEEE Std C95.3-2002 and
IEEE Std C95.3.1™-2010)

Figure 3: IEEE Std C95.3 reference.

Reference should be made to “RPS S-1” as the document reference for the ARPANSA EME standard.

3.2 Selection of standards for EME calculations

Schedule 1 Section 4(2) is confusing in its wording. The standards listed in (a) to (c) are not mutually exclusive, and the wording “... in accordance with one or more of the following” is not clear where the choice of standard is made. If the intent is for the Amateur Operator to use *any* applicable standard then the wording should reflect this. The wording of paragraph 2 of Section 4.1 of RPS S-1 has better wording in this regard, with its use of “or”.

It is unclear why IEC 62577 is included in this list, as this is for broadcast operations and not two-way radiotelephony.

References to RPS S-1 appear to be for selected definitions and limits. RPS S-1 does however specify in paragraph 3 of Section 4.1 that measurement or computation “... *must be made by an appropriately qualified and experienced person or organisation* ...”. If the Class Licence is not giving effect to these onerous conditions then this should be stated explicitly.

3.3 Schedule 1 power thresholds

Part 1 of the draft Class Licence defines pX and pY , but no mention is made of these in Schedule 1, which refers to “watts” alone. I suggest that the thresholds in Schedule 1 are clarified to be mean power or PEP power (as is done in Schedule 2). The pY definition in Part 1 needs additional detail to state that this is mean power, as per ITU Radio Regulation 1.156[8].

References

- [1] NZ RSM. (2017, Jul.) Radiocommunications Regulations (General User Radio Licence for Amateur Radio Operators) Notice 2017. [Online]. Available: <https://gazette.govt.nz/notice/id/2017-go3567>
- [2] CEPT, “Rec T/R 61-01 CEPT Radio Amateur Licence,” Jun. 2022. [Online]. Available: <https://docdb.cept.org/download/4045>
- [3] —, “Rec T/R 61-02 Harmonised Amateur Radio Examination Certificate,” Feb. 2016. [Online]. Available: <https://docdb.cept.org/download/2569>

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- [7] *IEEE Recommended Practice for Measurements and Computations of Electric, Magnetic, and Electromagnetic Fields with Respect to Human Exposure to Such Fields, 0 Hz to 300 GHz*, IEEE Std. C95.3, Mar. 2021.
- [8] ITU, “Radio Regulations,” 2020. [Online]. Available: <https://www.itu.int/en/publications/ITU-R/pages/publications.aspx?parent=R-REG-RR-2020&media=electronic>