



Australian Government

Australian Communications Authority

## Outcomes of the Review of Amateur Service Regulation

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*The Australian Communications Authority is  
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## Introduction

The ACA has completed its review of amateur service regulation. The review commenced in August 2003 with the release for public comment of the discussion paper, *A Review of Amateur Service Regulation*.

The paper outlined the changes to Article 25 of the International Telecommunication Union (ITU) *Radio Regulations* as a result of the World Radiocommunication Conference 2003 (WRC-03). It also discussed the impact the changes have on current regulatory and licensing arrangements, and raised possible options for the future.

Interested persons were invited to make a written submission in response to issues raised in the paper. In addition, the ACA held 10 public meetings in cities around Australia to discuss the proposals in the paper.

The ACA received over 1,300 submissions in response to the discussion paper. Following careful consideration of the issues and the comments received, the ACA intends to make a number of changes to the amateur service.

Notably, a new three-tier licensing structure will be introduced. Under the new structure, existing novice and novice limited licences will become the standard amateur licence, and unrestricted, intermediate and limited licences will become the advanced amateur licence. All amateur licensees will be issued with a licence reflecting their new category.

Most of the intended changes will need to be implemented through amendments to legislative instruments, including remaking the *Radiocommunications Licence Conditions (Amateur Licence) Determination No.1 of 1997* (the Amateur Determination).

The changes are intended to:

- update and simplify regulation of the amateur service;
- improve access to the amateur service;
- harmonise, where possible, licence conditions and qualification requirements with those of other countries; and
- maximise self-regulation within the amateur service.

The ACA will also update the Amateur Determination to make it easier to use. Changes may include indicating maximum permitted emission bandwidths rather than listing each emission type separately, the use of descriptive words for the emission modes, for example, morse code, telephony, data, and rationalising transmitter power specifications.

The outcomes of the review are listed in the order they were raised in the discussion paper, with the exception of the following new issues raised during the public consultation:

1. removal of restriction on connection of an amateur station to the public telecommunications network;
2. increased maximum transmitter output power of certain amateur stations;
3. content of amateur communications—permission to encode particular transmissions; and
4. use of callsigns—callsign arrangements during emergency service operations and training.

The review of the Amateur satellite networks issue has also been completed however is still pending finalisation.

## **1. Prohibition of international communications under certain conditions**

Under current arrangements, Australia does not prohibit communications with amateurs of other countries unless their country of origin has a contrary view. In the discussion paper, the ACA proposed to maintain this arrangement. The public consultation process showed general support for this proposal.

The ACA will continue to permit communications to amateur stations in foreign countries. If another country seeks a prohibition on such communications, this will be published in the *Commonwealth of Australia Gazette*. The ACA will also directly inform the amateur community through established communication channels.

## **2. Content of amateur communications & permission to encode particular transmissions**

New text in Article 25 of the ITU *Radio Regulations* provides that transmissions between amateur stations of different countries shall not be encoded for the purpose of obscuring their meaning, except for control signals exchanged between Earth command stations and space stations in the amateur-satellite service.

At the public meetings and in submissions, it was requested that encoding of transmissions be permitted for training and operations with emergency services, particularly in situations when personal details were being transmitted. It was also requested that encoding for command and control signals for amateur stations be permitted, particularly for amateur repeaters and remote unmanned amateur stations, to prevent malicious access or damage to these stations. Some respondents asked whether the prohibition on encoding of transmissions was necessary at all.

If encoding of transmissions were generally permitted, it could be considered contrary to the permitted uses of an amateur station contained in section 6 of the Amateur Determination; in particular, the encouragement of intercommunications in the amateur service.

The ACA will require that transmissions between amateur stations shall not be encoded for the purpose of obscuring their meaning, except for:

- control signals exchanged between Earth command stations and space stations in the amateur-satellite service;
- command and control signals for amateur stations; and
- communications during emergency services operations and training.

## **3. Third party communications**

Third party communications can currently take place only where agreements have been established between administrations of the countries concerned. In the discussion paper, the ACA proposed to remove the prohibition of third party communications. The public consultation process indicated support for this proposal.

The ACA will remove the prohibition of third party communications to an amateur station in another country. If another country seeks a prohibition on such communications, this will be published in the *Commonwealth of Australia Gazette* and conveyed to the amateur community through various means.

The prohibition will be removed when the Amateur Determination is re-made. The amateur community will be notified when this has occurred.

#### **4. Removal of restriction on connection of an amateur station to the public telecommunications network**

Section 11 of the Amateur Determination restricts the connection of an amateur station to a public telecommunications network. The restrictions apply to automated systems where there is little direct licensee control, including an amateur repeater station, amateur beacon station, automatic mode and computer-controlled mode. At the public meetings and in some submissions, the ACA was asked whether this restriction was still necessary.

The restrictions on these operations were originally put in place because, being automated, they were not monitored. This means there is an increased risk that this may enable an inappropriately qualified amateur, in Australia or overseas, to gain access to privileges to which they are not entitled. This could also enable non-amateurs to have access, through the public telecommunications network, to the Australian amateur bands.

The ACA has decided to remove the current restrictions on the connection of an amateur station to the public telecommunications network. However, it will be the responsibility of the operator of an amateur station that is connected to minimise the possibility of non-amateurs gaining access to amateur bands through their station, via the network. This could be done through the use of software, hardware, and operational measures.

This is consistent with the finding in the Productivity Commission's *Radiocommunications Inquiry Report* of July 2002, which states that changes to the Amateur Determination to allow the use of technologies that involve the connection of amateur stations through the Internet would not appear to undermine the integrity of the amateur bands, or Australia's obligations under international agreements.

To give effect to this decision, the ACA will not include the substance of section 11 in the re-made Amateur Determination. The ACA will instead include a condition that requires a licensee of an amateur station connecting to the public telecommunications network to have appropriate measures in place to minimise the possibility of a non-amateur gaining access, to the amateur bands through their station via the network.

During consideration of this issue, the appropriateness of section 41 of the Amateur Determination was also considered. Section 41 states:

The licensee must not operate an amateur repeater station to transmit a signal to another amateur station if the originating station is not authorised under its licence to use repeater output of the amateur repeater station.

Section 42 of the Amateur Determination describes access control systems that the licensee of an amateur repeater station must use if the repeater station uses an output that is not on the same frequency as the input, or if the output is on a frequency on which the originating station is not permitted to transmit a signal.

While the amateur repeater licensee is expected to implement the requirements of section 42, it is not possible for the licensee to guarantee compliance of the originating amateur operator. Therefore, beyond the requirements of section 42, the obligation to comply with the intent of section 41 will be placed on the originating amateur. One method of achieving this is to require the originating amateur to be sufficiently aware of the operating frequencies of repeater stations and associated access codes, and to use only those codes which give access to frequency bands for which he or she has privileges.

Further, it is intended to expand section 42 to address the potential for non-amateur access to an amateur station through the Internet or the public telecommunications network.

## **5. Morse code below 30 MHz**

Changes to Article 25 of the ITU *Radio Regulations* provided the ACA with the opportunity to remove the morse code proficiency requirement to operate in bands below 30 MHz. In the discussion paper, the ACA proposed to do so.

Feedback at the public meetings, as well as initial analysis of submissions, indicated overwhelming support for the proposal.

After considering the feedback, the ACA discontinued the mandatory morse code proficiency requirement to operate in bands below 30 MHz for the amateur service.

The ACA amended the Amateur Determination as an interim measure to implement this decision. The amendments give:

- holders of intermediate and limited amateur licences access to the same frequency bands and modes as unrestricted amateur licensees; and
- holders of the novice limited amateur licence access to the same frequency bands and modes as novice licensees.

The arrangements came into force on 1 January 2004.

As part of the new amateur licensing structure (see 13), the ACA will remove the mandatory morse code proficiency requirement from the syllabus in all amateur qualifications.

## **6. Amateurs must be qualified – minimum competence level**

Article 25 of the ITU *Radio Regulations* provides that administrations shall verify that persons wishing to operate an amateur station are qualified to do so, and refers to Recommendation ITU-R M.1544 for guidance for standards of competence. ITU-R M.1544 recommends that persons seeking an amateur licence should demonstrate theoretical knowledge of the ITU *Radio Regulations*, methods of radiocommunication, radio system theory, radio emission safety, electromagnetic compatibility, and avoidance and resolution of radiofrequency interference.

In the discussion paper, the ACA proposed to continue to verify to operational and technical qualifications of any person wishing to operate an amateur station, in accordance with Article 25.

The public consultation process indicated support for this proposal.

The ACA will continue to verify the operational and technical qualifications of any person wishing to operate an amateur station.

## **7. Operating parameters – purity and stability of emitted frequency, and maximum power**

The Amateur Determination provides for emitted frequency and maximum power privileges for each amateur licensing option. In the discussion paper, the ACA proposed to continue to impose limits on the purity and stability of emitted frequencies, and maximum power limits on amateur stations in accordance with the ITU's requirements for transmitting stations.

The public consultation process showed support for this proposal.

The ACA will continue to impose limits on the purity and stability of emitted frequencies, and maximum power limits on amateur stations in accordance with the ITU's requirements for transmitting stations.

The ITU requirements have been incorporated into the ACA policy information paper *Amateur Operating Procedures* (on the ACA website at [www.aca.gov.au/aca\\_home/publications/reports/info/regs.htm](http://www.aca.gov.au/aca_home/publications/reports/info/regs.htm)), and will be included in the re-made Amateur Determination.

## **8. Increased maximum transmitter output power of certain amateur stations**

At the public meetings and in approximately ten percent of submissions, requests were made to increase the permitted maximum transmitter output power for amateur stations to 1,500 watts peak envelope power (PEP) for the unrestricted licence. At present, a holder of an unrestricted licence is permitted to transmit with a maximum peak power of 400 watts using certain emission modes, and 120 watts mean power for all other emission modes.

Amateur operators can currently apply to the ACA to transmit on powers above 400 watts by way of a special condition attached to their licence. Amateurs can also be issued with a scientific licence to operate outside amateur bands.

As a general rule, the maximum transmitter output power permitted under the unrestricted licensing option should remain at 400 watts PEP. This takes into account:

- that permitting the use of 1500 watts PEP in urban locations under all unrestricted licensees will significantly increase the potential for interference;
- that the use of 400 watts PEP meets the requirements of most amateurs for effective communications;
- that the use of 1,500 watts PEP in urban locations will, in most circumstances, result in the electromagnetic radiation (EMR) exceeding the reference level for general public exposure. The use of 400 watts PEP also exceeds that level in some circumstances; and
- public sensitivity to EMR issues.

The current system allows the ACA to keep track of amateurs who are operating at higher powers for compliance and interference investigation purposes. Many amateurs may be unaware that they can apply to the ACA to operate on higher powers. The ACA will publish information about how to apply in due course.

## **9. Use of callsigns and callsign arrangements during emergency service operations and training**

The section of Article 25 that sets out the requirement for amateur stations to use callsigns was not changed by WRC-03. In the discussion paper, the ACA proposed to maintain existing arrangements regarding the use of a callsign.

The public consultation process showed general support for this proposal. It was also asked whether different arrangements for the use of callsigns by amateur operators could be permitted while training or operating with emergency services.

The ACA will maintain current requirements for use of a callsign while operating an amateur station for normal use, as contained in sections 8, 37 and 44 of the Amateur Determination.

After consultation with the Wireless Institute Civil Emergency Network (WICEN) NSW Inc., the ACA has decided to permit less frequent use of callsigns for amateur operators participating in training and operations with emergency services. In a network of amateur operators participating in emergency service operations or training, the ACA will require that at least one station in the network must transmit their full callsign at a minimum interval of 30 minutes, but preferably every 10 minutes, for the duration of the transmission.

To give effect to this decision, the ACA will include a condition in the re-made Amateur Determination permitting this arrangement.

## **10. Amateur communications during disasters**

The discussion paper stated that in the event of a natural disaster, amateur operators have four options:

- operation as per normal under the Amateur Determination;
- operation in amateur bands using high power authorised by a special condition on the amateur licence;
- operation outside of amateur bands authorised by a scientific licence; or
- operation using a third party authorisation with, for example, ambulance, fire or police emergency services.

The ACA proposed to make no changes to current regulatory arrangements for amateur communications during a natural disaster.

During the public consultation process, it was requested that these options should apply to all disasters, not just natural disasters. It was also asked whether it could be permitted to encode transmissions for operations and training with emergency services (see outcome in section 2).

The ACA will apply the above options to all disasters rather than just natural disasters. The ACA will not make any other changes to current regulatory arrangements for amateur communications during disasters, with the exception of the outcomes in sections 2 and 9 of this document.

## **11. Overseas amateurs may operate without a licence/reciprocal licensing**

Australia participates in European Conference of Postal and Telecommunications Administrations (CEPT) Recommendation T/R 61-02, where participating countries recognise Australian amateur qualifications and licences and we recognise theirs. On request, reciprocal Australian licences are issued to visiting overseas amateurs and, similarly, reciprocal CEPT licences are issued to visiting Australian amateurs when they travel.

In the discussion paper, the ACA sought comments on the possibility of Australia participating in CEPT Recommendation T/R 61-01, in addition to T/R 61-02. This recommendation provides for:

- Australian amateurs to operate an amateur station while visiting any country that has implemented CEPT Recommendation T/R 61-01, without having to obtain an individual temporary licence from the country being visited; and
- overseas amateurs visiting Australia, who hold a licence issued by a country that has implemented CEPT Recommendation T/R 61-01, to operate in Australia without having to obtain an individual temporary licence.

The adoption of T/R 61-01 in Australia would require the ACA to create a class licence for these overseas amateurs.

The public consultation process showed support for participation in T/R 61-01.

In mid-2004, the ACA will begin liaison with CEPT and development of the licensing arrangements necessary for Australia to participate in T/R 61-01. The ACA expects the new arrangements to come into force in early 2005.

## **12. Amateur-satellite service**

The changes to Article 25 regarding the amateur-satellite service are intended to simplify the text and have no impact on Australia's regulatory arrangements for amateurs.

In the discussion paper, the ACA proposed to make no changes to current regulatory arrangements for interference to other stations by stations in the amateur-satellite service.

The public consultation process indicated general support for this proposal.

The ACA will not make any changes to current regulatory arrangements for interference to other stations by stations in the amateur-satellite service.

## **13. Amateur licensing options and the foundation licence**

As a result of the removal of the mandatory morse code proficiency requirement to operate in bands below 30 MHz (see section 5), there is no longer any practical reason to have five amateur licensing options. In the discussion paper, the ACA proposed to combine the unrestricted, intermediate and limited licences into one licence, and the novice and novice limited licences into one licence.

The paper also raised the possibility of introducing a new entry-level licensing option in Australia, similar to the foundation licence in the United Kingdom (UK). The discussion paper sought comments on three possible combinations of licensing options, depending on whether a foundation licence is introduced and whether the novice licence is continued:

- unrestricted and novice licensing options;
- unrestricted and foundation licensing options; or
- unrestricted, novice and foundation licensing options.

### ***Public consultation***

Over two-thirds of all submissions were in favour of the introduction of a foundation licensing option. In summary:

- The most common reason given for the support was the need to make the amateur service more accessible to potential amateurs, who they believed found the existing novice theory examination too difficult.
- Many submissions cited the foundation licence recently introduced in the UK as being of about the appropriate standard.
- A high percentage of submissions supported the use of only commercially manufactured radiocommunications equipment for foundation licensees.
- Many respondents suggested that foundation licences should not be renewed without the licensee being re-examined.
- The majority of respondents suggested that the maximum transmitter output power should be 100 watts PEP.
- Many respondents suggested spectrum access should be limited to parts of the 3.5, 7, 21, 28, 52, 144 and 420 MHz bands.
- These bands were suggested based on the reasoning that access should not be granted to bands or band segments where inexperienced licensees could easily cause interference to other amateur operators or other services.
- Many respondents also suggested that only telephony and hand-sent telegraphy be permitted.

A small percentage of submissions were opposed to the introduction of a foundation licensing option, and were in favour of a two-tier licensing structure consisting of an unrestricted licensing option and a novice licensing option. The majority considered that an amalgamation of the five existing licensing options into two levels, taking into account the removal of morse code, was the only change necessary. This group also considered that the introduction of a licensing option requiring lower qualifications than the existing novice licensing option would result in a general decline of the amateur service.

#### *Licensing structure*

Thirty-nine percent of all submissions were in favour of a two-tier licensing structure, consisting of an unrestricted licensing option and a foundation licensing option. In summary:

- The majority of respondents generally supported the arguments put by the Wireless Institute of Australia (WIA) in its submission.
- The WIA considers that a two-tier licence structure would be easier to administer than a three-tier structure.
- The majority believed that the examination required to obtain a novice qualification had become more complex over time, such that there was now little difference in the knowledge required for the novice and unrestricted qualifications. They argued that existing novice and novice limited licensees should be granted an unrestricted licence.
- However, a few respondents did not agree with this. They suggested instead that the novice licensing option should remain in place for existing novice and novice limited licensees, but should no longer be issued, which would phase out the novice licence over time.

Twenty-four percent of all submissions were in favour of a three-tier licensing structure, consisting of unrestricted, novice and foundation licensing options. In summary:

- The majority of respondents commonly supported the arguments submitted by a group titled 'CQVK'<sup>1</sup>.
- One of the main arguments for a three-tier structure was that the gap between the knowledge required for the foundation licence and that for the unrestricted licence is so large that, if there were only two tiers, it would be a disincentive to foundation licensees to upgrade their qualifications.
- The majority of respondents also considered that the extent of the knowledge gap between a novice qualification and an unrestricted qualification did not justify unrestricted licences being issued to those with novice qualifications.

On balance and after careful consideration of submissions, the ACA has decided to introduce a foundation-style amateur licence, to form part of a three-tier licensing structure. This licence will reflect the general nature of the UK foundation licence, although it will be adapted to suit Australian preferences.

The ACA will also combine the current unrestricted, intermediate and limited licensing options into one licensing option, and the current novice and novice limited licensing options into one licensing option.

The new amateur licensing structure will be as follows:

- **Foundation amateur licensing option**—the lowest level licence offering basic operating privileges.

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<sup>1</sup> CQVK submitted an 87-page response authored by three amateur operators. CQVK also conducted surveys during 2003 on issues raised in the ACA discussion paper, and used this research to base arguments in their submission. CQVK received support for its submission from many other amateur operators and amateur clubs.

- **Standard amateur licensing option**—the middle level licence offering higher privileges than the foundation licence. Existing novice and novice limited licensees will translate to this level.
- **Advanced amateur licensing option**—the highest level licence offering the most operating privileges. Existing unrestricted, intermediate and limited licensees will translate to this level.

None of these licences will require knowledge of morse code.

More detailed information about the proposed arrangements for each licensing option is in Appendix A.

#### *Foundation amateur licence*

The foundation licence will be the entry level to the amateur service. It will allow a level of operational experiences without requiring the technical knowledge needed to obtain a licence to operate a standard station.

The form for this licence and the means for obtaining it will be modelled on the UK foundation licence. In summary:

- The examination for the necessary qualification will place emphasis on the safe operation of amateur radio equipment. It will comprise a practical element involving the operation of transmitters and receivers, and a multiple-choice examination paper covering safety, operational and regulatory issues.
- A certificate of proficiency will be issued to persons, of any age, who successfully contest the examination and complete the practical elements.
- Attendance at a training course will not be mandatory.
- Given the limited technical knowledge required to obtain the licence, to minimise interference to other radiocommunications services, the licence:
  - mandates the use of commercially manufactured equipment;
  - allows voice and morse code modes only;
  - limits operation to 10 watts PEP;
  - limits spectrum access in the 420–450 MHz band; and
  - makes no provision for spectrum access in the 1.8 and 50 MHz bands.
- spectrum access will generally be limited to encourage licensees to further develop their knowledge and skills to advance to higher levels of operation.

In deciding to permit a maximum transmitter power of 10 watts PEP, the ACA has followed the UK model for its foundation licence. Although the majority of submissions suggested that a maximum transmitter power of 100 watts PEP should be permitted, it was considered that the need to limit the occurrence of interference and exposure to EMR, in circumstances where licensees are required to possess little technical knowledge, far outweighed the claimed operational advantages provided by allowing the use of 100 watts PEP. The claim that 100 watts PEP should be permitted on the basis that commercially manufactured 10 watts PEP equipment is not available was not accepted. At least three models are available that are known to meet this specification.

In keeping with the existing arrangements allowing any qualified person to be issued with an amateur licence, it was decided not to introduce an age limit for operating under the foundation licensing option.

The main argument for requiring foundation licensees to be re-examined regularly was to promote the licence as a 'stepping stone' to amateur radio operation and to encourage licensees to develop their skills and upgrade their qualifications. Section 123 of the *Radiocommunications Act 1992* (the Act) provides that where there are reasonable grounds to believe that a qualified operator would be unable to achieve satisfactory results in an examination referred to in paragraph 122(1)(b) of the Act (such as an amateur examination), the ACA can request the operator be re-examined. However, the ACA considers it unreasonable to use this power to re-examine foundation licensees regularly. There is no apparent reason why a foundation licensee could not remain at their current level of qualification. None of the current amateur licensing options requires an operator to be re-examined regularly.

Suggestions calling for a foundation qualification and licence to be a prerequisite for obtaining a higher grade of amateur licence were not agreed with. Although the foundation licence is a suitable means for people with limited technical knowledge to access the amateur service, it was considered that people who have greater technical knowledge should be allowed to contest higher level qualifications directly.

Similarly, although recognising the value of training courses, making attendance at training courses of this nature mandatory is considered inappropriate given the potentially large distances candidates may need to travel.

### *Three tier structure*

The standard of the novice theory examination may have become a little more complex with the introduction of new material from time to time. However, on investigation, the syllabus for the novice theory examination remains significantly different in content and required depth of knowledge to the syllabus for the unrestricted theory examination. The ACA would not be justified in permitting holders of novice qualifications to operate unrestricted stations.

Given that the qualification necessary for the proposed foundation licence requires little technical knowledge, the ACA accepts the argument that the gap between the foundation and advanced licences could discourage many foundation licensees from developing their skills and knowledge.

It is considered that a three-tier licence structure is more appropriate to the ongoing vitality of the amateur service. While recognising that a two-tier licensing structure would be simpler to administer than a three-tier structure, the ACA does not accept that this outweighs the disadvantages resulting from the knowledge and skill gap between the licences in a two-tier system.

The smaller steps in a three-tier licensing structure:

- provide incentive to upgrade knowledge and skills;
- allow for manageable study programs; and
- deliver stepped access to increased privileges.

The introduction of the new licensing options means that the syllabus for the existing novice and unrestricted qualifications needs to be updated. The syllabus for each of the new licensing options will:

- be restructured along lines used internationally;
- include assessment objectives to guide examiners;
- be updated, as appropriate, to reflect relevant technology and EMR issues;
- be re-aligned, where necessary, to encourage licensees to upgrade their qualifications;
- ensure the retention of exemptions for holders of novice and unrestricted qualifications for completing, for example, Certificates of Electrotechnology.

The ACA intends to permit other assessment techniques, such as progressive assessment, to be used as an alternative to the current method of assessment.

#### **14. How are we going to license?**

The discussion paper presented two possible approaches to licensing Australian amateur stations:

- (a) continue under the apparatus licensing regime; or
- (b) authorise amateur stations, other than beacons and repeaters, under a class licence.

Many respondents believed that none of the available licence types—apparatus, class or spectrum—were suitable for the amateur service. However, they recognised that the Act precluded the issue of any other type of licence. While some respondents suggested that the amateur service should be authorised under a class licence, the majority considered apparatus licensing more appropriate. Some expressed concern that class licensing would result in a general decline in the standard of the amateur service. Much of the support for the class licence was based on the fact that no annual licence fee would be required.

The ACA has decided to continue to use apparatus licensing for managing Australian amateur operators at this point in time.

#### **15. Amateur callsign administration**

Amateur station callsigns need to meet the requirements set out in Article 19 of the ITU *Radio Regulations*. Article 19 was amended at WRC-03 to give more flexibility to the callsign template. The discussion paper sought comments on the possibility of changing the Australian amateur callsign template to reflect the revised Article 19, and reviewed other amateur callsign arrangements.

Few submissions commented on callsign arrangements. Of those that did, the majority suggested that the present structure of amateur callsigns should be retained. The current practice of having callsigns that denote the type of amateur licence and the state where the station is usually located provides useful information for propagation and self-regulation.

The ACA will leave current callsign arrangements as they are, with the exception of the introduction of four-letter callsigns from 2005. Some rearrangement of callsign blocks will be required when the new licensing options are introduced.

#### **16. Potential outsourcing – obligations and opportunities**

The discussion paper offered the possibility for an amateur registration body (ARB) to manage amateur examinations, certificates and callsigns (and, if class licensing were to proceed, station location information). Examination management is currently delegated to the WIA.

The majority of submissions that commented on the possible outsourcing of administrative matters were in favour of the suggestion and considered that any outsourced functions should be handled by a non-profit organisation. Some respondents objected to outsourcing in any form, and there was considerable support for no additional outsourcing.

The ACA has decided to proceed with the outsourcing of amateur certificates and callsign management. Outsourcing the issue of certificates is consistent with the recommendation made in the Productivity Commission's *Radiocommunications Inquiry Report* that the ACA delegate the conferring of certificates of proficiency for amateurs.

More information about outsourcing of amateur certificates and callsign management will be published on the ACA website later this year.

## **17. Interference protection for other radiocommunications services**

The discussion paper proposed a 'no interference' policy for amateur operators. This would mean that if an amateur were found to be causing interference to another radiocommunications service, the obligation would be on the amateur to resolve the problem.

The public consultation process showed almost universal, often very strong, disagreement with the 'no interference' proposal. Some submissions only commented on the 'no interference' proposal.

The ACA has decided to introduce interference management arrangements that build on those presently in use, rather than the 'no interference' policy proposed in the discussion paper.

Information about the respective responsibilities for resolving interference of amateurs and those affected by interference is presently documented in the ACA's publications *Interference from CB and Amateur Transmitters* and *Apparatus Licensing: Amateur Operating Procedures*.

It is proposed that the responsibilities of those affected by interference and the ACA's method of dealing with interference will be published as an Advisory Guideline<sup>2</sup> under the Act. The ACA intends to document the responsibilities of amateurs for resolving interference as conditions in the Amateur Determination. This proposal is consistent with the recommendations of the Productivity Commission's *Radiocommunications Inquiry Report* of July 2002. That report recommended that the ACA, in consultation with industry, should develop guidelines that outline the principles for managing interference disputes.

The ACA is also considering making a guideline under section 112 of the Act about how it might exercise its powers to apply additional conditions to amateur licences for unresolved interference.

## **18. Amateur Internet linking systems**

An amateur Internet linking system (AILS) connects amateur operators in Australia and overseas using the Internet. Amateur operators can connect to an AILS through an amateur station or by other means, such as a computer with Internet access. In October 2002, the ACA published a consumer fact sheet about regulatory requirements applying to AILS.

The discussion paper sought comments on the clarity of the policy contained in the fact sheet.

Few submissions commented on this issue. Some respondents found the policy to be quite clear, while others found the policy confusing or unclear.

The ACA will update the AILS consumer fact sheet to reflect changes to third party communications and restrictions on connection to the public telecommunications network arrangements, among other, minor, amendments.

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<sup>2</sup> Section 262 of the Act provides that 'The ACA may make written advisory guidelines about any aspect of radiocommunications or radio emissions'.

## APPENDIX A

### Proposed arrangements for foundation, standard and advanced licensing options

	<b>Foundation</b>	<b>Standard</b>	<b>Advanced</b>
<b>Qualifications: regulations</b>	Regulations in limited detail: <ul style="list-style-type: none"> <li>▪ nature of amateur radio</li> <li>▪ callsigns &amp; identification</li> <li>▪ no codes, broadcasting, music</li> <li>▪ subject to ITU Radio Regulations</li> <li>▪ permitted frequencies, modes &amp; power.</li> <li>▪ operation of transmitters and receivers</li> <li>▪ amateur operating procedures</li> </ul>	Full regulations as required at present, plus: <ul style="list-style-type: none"> <li>▪ CEPT compatibility rules</li> <li>▪ EMR requirements</li> </ul>	Full regulations as required at present, plus: <ul style="list-style-type: none"> <li>▪ CEPT compatibility rules</li> <li>▪ EMR requirements</li> <li>▪ advanced interference legislation</li> </ul>
<b>Qualifications: theory</b>	Derived from UK foundation licence and CQVK discovery licence proposals, including: <ul style="list-style-type: none"> <li>▪ electronic &amp; spectrum units</li> <li>▪ electronic laws &amp; equations</li> <li>▪ spectrum principles</li> <li>▪ transceiver block diagrams</li> <li>▪ antennas</li> <li>▪ safety</li> </ul>	Basic theory, perhaps tending to lower than the current novice standard, similar to UK intermediate licence. Items to be removed from syllabus: <ul style="list-style-type: none"> <li>▪ vacuum tubes</li> <li>▪ advanced modes of transmission &amp; reception</li> </ul> Assessment standards for other items to be redefined. Safety to include electrical & RF safety, including EMR.	Unrestricted theory as at present with some additions: <ul style="list-style-type: none"> <li>▪ interference location and resolution</li> <li>▪ EMR assessment of sites</li> <li>▪ antenna gain &amp; radiation pattern calculations</li> </ul> Safety to include electrical and RF safety, including EMR.
<b>Assessment</b>	Non-compulsory training course. Written examination or continuous assessment by accredited institution. Practical training/assessment of operating procedures and operation of equipment required.	Non-compulsory training course. To include practical assessment e.g. assemble and operate a station from supplied transceiver, antenna tuner, power supply, etc. Written examination or continuous assessment by accredited institution.	Non-compulsory training course. To include some form of practical assessment, e.g. construction of a measuring instrument or antenna tuner, or teaching classes for lower levels. Written examination or continuous assessment by accredited institution.
<b>Bands</b>	3.5–3.7 MHz 7.0–7.3 MHz 21.0–21.45 MHz 28.0–29.7 MHz 144–148 MHz 430–450 MHz. Maximum occupied bandwidth: 8 kHz below 28 MHz, 16 kHz from 28 to 148 MHz, within band edges above 148 MHz.	As for foundation, plus 14.000–14.350 MHz 52.000–54.000 MHz 1.240–1.300 GHz 2.400–2.450 GHz 5.650–5.850 GHz Maximum occupied bandwidth: 8 kHz below 28 MHz, 16 kHz from 28 to 148 MHz, within band edges above 148 MHz.	All bands as currently available. Maximum occupied bandwidth: 8 kHz below 28 MHz, 16 kHz from 28 to 148 MHz, within band edges above 148 MHz.
<b>Permitted power</b>	10 W PEP for all permitted modes	100 W PEP for all permitted modes	400 W PEP, all modes.
<b>Modes</b>	Voice or morse code modulation only.	As in current Amateur Determination for novice.	As in current Amateur Determination for unrestricted.
<b>Additional notes</b>	Only unmodified transmitting equipment of commercial manufacture is permitted. Antenna experimentation is permitted.	May construct any parts of the station.	Access to two-letter callsigns if available.
<b>Translation of present licensing options</b>	New level	Novice Novice limited	Unrestricted Intermediate Limited