

# **THE CHANGES TO THE AMATEUR LCD**

**Michael Owen VK3KI**

## **BACKGROUND**

In August 2003 the ACA published a discussion paper ‘A review of Amateur Service Regulation’. It took into account the changes made to the international Radio Regulations affecting the amateur services by the World Radiocommunication Conference in 2003, including the removal of Morse code as a treaty requirement for operation below 30 MHz. The ACA undertook extensive consultation with amateurs at meetings in 10 cities across Australia and received over 1,300 submissions as part of its review.

In January 2004, the requirement for a Morse code qualification to operate below 30 MHz in Australia was removed.

The results of the ACA review were published in May 2004, as the ‘Outcomes of the Review of Amateur Service Regulation’, (the “Outcomes”).

Then, in October 2005, the entry-level licence foreshadowed in the Outcomes, the Foundation licence, was introduced, with the existing licence categories consolidated into two categories, the Standard and Advanced.

Finally, the Authority has made an amending Determination to give effect to the remaining matters foreshadowed in the Outcomes, as well as introducing some new conditions.

The amending Determination, the Radiocommunications Licence Conditions (Amateur Licence) Amendment Determination 2008 (No. 1) that amends the Radiocommunications Licence Conditions (Amateur Licence) Determination No. 1 of 1997, (the “Amateur LCD”), will have come into force on the first moment of the day following its registration on the Federal Register of Legislative Instruments.

While the ACMA site will have the Amending Determination on its website, very soon the amendments will be consolidated into the single Amateur LCD by the Office of Legislative Drafting and Publication and it will only be necessary to look at the one document.

## **THE CHANGES**

### **Formal Changes**

A number of the amendments are formal, removing the references to the old licence categories of Intermediate, Limited, Novice and Unrestricted, previously left in the Amateur LCD to allow the transition to the new categories. Further changes substitute ACMA for ACA. Other amendments do not change meaning but reflect current drafting conventions, for example, to no longer refer to the provision in the Radiocommunications Act giving the power to make the particular condition.

These amendments, while extensive and affecting headings as well as many provisions, are formal and are not further referred to.

The changes that are significant include the following (in no particular order):

### **Using the Internet**

Even in the time since the release of the Outcomes, the variety and extent of the use of the Internet by amateurs has increased, with IRLP, EchoLink, D-STAR and even the control of remote transceivers.

Previously, section 11 of the LCD basically prohibited the connection of automated systems to a public telecommunications network. As is pointed out in footnotes, for the purpose of the amateur service, the Internet is considered to be part of a public telecommunications network.

As amended, section 11, together with the new sections 11A, and 11B, now provide that Advanced, Standard and Repeater stations may operate automatically when connected to a public telecommunications network, including the Internet.

Section 11A (2) provides:

- (2) *The licensee must not, directly or indirectly, connect the station to a public telecommunications network, unless the licensee has implemented reasonable measures to ensure that only appropriately licensed persons access the station to transmit a signal to another amateur station.*

The provision recognises the reality that the licensee cannot guarantee that only appropriately licensed persons access the station to operate a transmitter, and so this provision requires the implementation of reasonable measures to achieve that without imposing an absolute liability.

What are reasonable measures? Obviously that will depend on the circumstances of each case. If it is intended that a transceiver can be operated by amateurs generally through the Internet, measures to ensure that the person seeking to operate the station is licensed, such as verification of identity and of licence before the person can do so, and before appropriate password access is granted, as is done with EchoLink, would seem reasonable measures.

It may be that the new provision reflects what is already done.

Sub-section (3) defines the term “appropriately licensed person” as a person “*holding a licence that authorises that person to operate a station using the frequency and emission mode of the station being accessed.*”

### **A warning required**

Not foreshadowed in the Outcomes is a provision applying to Standard and Advanced stations (not Repeater stations), section 11B.

The operative provision of section 11B is:

- “(2) If a licensee connects a person from a public telecommunications network to the station, whether manually or automatically, the licensee must:*
- (a) advise the person being connected that his or her transmissions may be overheard by other persons; and*
  - (b) advise the person being connected to disconnect if he or she does not wish to proceed with the connection.*

The note to the section explains why that provision is there. Section 7 (1) of the *Telecommunications (Interception and Access) Act 1979* creates an offence to intercept a communication passing over a telecommunications system. By section 6 (1) of that Act “*interception of a communication passing over a telecommunications system consists of listening to ... such a communication in its passage over that telecommunications system without the knowledge of the person making the communication.*” By the further definitions of the Act, “telecommunications system” includes the communication transmitted by the amateur station, as the communication is not carried solely by radiocommunication. The offence is “listening”, without either disclosing or acting on what is listened to, so long as the person making the communication does not know that he or she can be heard.

The obligation is imposed on a licensee who connects a person (not necessarily a licensed person) from a public telecommunications network, which could be a “phone patch” or a connection over the Internet. If the obligation had been imposed on a Repeater station, then a D-STAR gateway station could be regularly “connecting a person from a public telecommunications network” to the station, and the obligation would be unrealistic. And a Foundation station cannot make such a connection.

While it can safely be assumed that a licensed person would be fully aware of the fact that any amateur transmission can be listened to by others, the requirement is not restricted to a licensed person, as referred to in section 11A (2).

The point is that it really does make sense for an amateur allowing a non-amateur to communicate through an amateur transmitter to ensure that the non-amateur does understand that whatever is said may be lawfully listened to by other people.

### **International third party messages**

The Amending Determination revokes Section 5 (4) of the LCD.

That provision required a bilateral agreement between Australia and the foreign country before third party messages could be exchanged between amateurs of the countries. WRC 03 removed that requirement from the ITU’s Radio Regulations, leaving it for each administration to decide what messages its amateurs could exchange.

The section revoked provided:

- (4) A licensee must not transmit messages to an amateur station in a foreign country, on behalf of a third party, unless the government of that country has made a special arrangement with Australia for the transmission and reception*

*of messages, on behalf of third parties, between amateur stations in Australia and amateur stations in that country.*

Now a note to section 5 of the LCD makes it clear that while an Australian amateur station may transmit a message on behalf of a third party to an amateur station in another country, the amateur in the other country will be bound by the that country's regulations, and may not (except in the case of emergencies or disaster relief) be permitted to exchange such messages.

This change may prove to be very important in emergency communications, and practices for such communications.

The change gives full effect to the intent of the change made in 2003 to Article 25 of the Radio Regulations.

### **Encoded transmissions**

To now, section 8 (3) (a) of the Amateur LCD required “a carrier wave” emitted from an amateur station to be subject to “intelligible modulation”, that is transmissions encoded for the purpose of obscuring meaning were not permitted.

To give effect to the changes made to Article 25 of the ITU Radio Regulations at WRC 03 and to give effect to the policy considerations identified in the Outcomes, section 8 (3) is now qualified to be subject to a new subsection 8 (3A), which provides:

- (3A) *The licensee must not operate an amateur station to transmit signals that are encoded for the purpose of obscuring the meaning of the signals, except for:*
- (a) *signals exchanged between an amateur station and a space station in the amateur satellite service for the purpose of controlling the operation of the space station; and*
  - (b) *signals exchanged between an amateur station and an unattended amateur station for the purpose of controlling the operation of the unattended amateur station; and*
  - (c) *intercommunications when participating in emergency services operations or related training exercises.*

The phrase “encoded for the purpose of obscuring the meaning” is important. Many signals are encoded, but the code is in the public domain. The section uses the phrase used in the ITU Radio Regulations, and looks at purpose to determine whether the encoding is subject to the section.

While section 3A (a) reflects an exception accepted at WRC 03, and section 3A (b), allowing encoded control signals of an unattended amateur station seem obvious, section 3A (c) is important in recognising the reality of emergency communications.

## Special call signs

Because the call sign is a licence condition set out on each amateur licence, there was no legal basis on which the call sign could be altered for special events unless the licensee was issued with a new licence for the relevant period the special event call sign was to be used. The Amending Determination now provides a basis for the “AX” call sign to be used for special occasions.

The Amending Determination amends the LCD by making the existing provision, section 2 (2) that provides “*However, if a condition in this Determination is inconsistent with a condition specified in the licence, the condition specified in the licence applies*” now subject to the new section 8 (1A), which is as follows:

*(1A) The licensee of an amateur station (other than an amateur beacon station or amateur repeater station) may, on the following days, substitute the prefix letters VK in the call sign printed on the licensee’s amateur licence with the prefix letters AX:*

- (a) 26 January;*
- (b) 25 April;*
- (c) 17 May.*

The Note to the subsection points out that 26 January is Australia Day, 25 April is Anzac Day and 17 May is World Telecommunication Day.

What is unclear is how another event can be celebrated, for example, the use of special call signs for at least a period during 2010 to mark the centenary of the WIA as the oldest national radio society in the world.

## “Operate”

The existing section 9 (1) of the Amateur LCD provides that “*The licensee must ensure that an amateur station is operated at all times by, or under the supervision of, a qualified operator*”, unless the station is a repeater, beacon or using an automatic or computer controlled mode.

The words in section 9 (1) “or under the supervision of” are deleted, so that the station must be “operated” by a qualified operator, or, now, a “qualified person” “in attendance at the amateur station”, subject to the exceptions.

A new exception is added to this list of exceptions – “an amateur station at a remote location.”

So, and importantly, section 9 (1) becomes:

### **9 Control of equipment at an amateur station**

- (1) The licensee must ensure that an amateur station is operated at all times by a qualified operator or qualified person in attendance at the amateur station, unless the station is:*
  - (a) an amateur repeater station; or*
  - (b) an amateur beacon station; or*

- (c) *an amateur station using automatic mode (including, for example, packet mode and radioteletype mode);*
- (d) *an amateur station using computer controlled mode (including, for example, packet mode and radioteletype mode); or*
- (e) *an amateur station at a remote location.*

A “qualified operator” is essentially a person holding the appropriate Australian certificate of proficiency, but the new “qualified person” is, by a new definition “ ... *a person who holds an overseas qualification equivalent to the certificate of proficiency for a qualified operator.*”

The other changes to this provision must be looked at in the context of the new definition of the word “operate”.

The definition of “operate” now makes the circumstances in which a person other than a “qualified operator” or “qualified person” may “operate” an amateur station.

The word “operate” is used throughout the Radiocommunications Act, for example the primary offence by section 46 is to “operate a radiocommunications device” without a licence. The word is not defined, and must be given its ordinary and natural meaning.

Certainly, to cause a transmitter to transmit or to cease to transmit must be to “operate” the transmitter.

Then, if through an Internet connection, an amateur in another country causes an IRLP node station in Australia to transmit, or through a D-STAR gateway station causes the D-STAR gateway repeater in Australia to transmit, who is “operating” the Australian transmitter?

And, certainly, Australian amateurs do want to be able to allow others to “speak” on their station, or to train potential amateurs on their station.

All of this is now addressed in the definition of “operate”, and various other changes.

That definition starts with the general and then defines those particular actions that are excluded, and does so in relation to specified stations, either Standard or Advanced stations or Repeater stations.

The definition must be read carefully and is as follows:

*In this Determination:*

***operate*** *means take an action to control the operation of the amateur transmitter, other than:*

- (a) *in relation to an amateur standard station or an amateur advanced station — an action taken by a person who is not a qualified operator or a qualified person, that is done in the presence of and under the supervision of a qualified operator or qualified person, to activate by switch or voice a microphone connected to a transmitter, when the operation of the transmitter:*
  - (i) *is limited to causing the transmitter to transmit or to cease to transmit; and*
  - (ii) *is otherwise controlled by the qualified operator or qualified person; or*

- (b) *in relation to an amateur standard station or an amateur advanced station — an action taken by a person who is not a qualified operator or a qualified person, that is done in the presence of and under the supervision of a qualified operator or qualified person, to control the operation of a transmitter while being trained or examined for the purpose of becoming a qualified operator; or*
- (c) *in relation to an amateur standard station or an amateur advanced station — an action taken by a person who is not a qualified operator or a qualified person, to activate by switch or voice a microphone connected to a transmitter through a public communications network if:*
  - (i) *the action is limited to causing the transmitter to transmit or to cease to transmit; and*
  - (ii) *the operation of the transmitter is otherwise controlled by a qualified operator or qualified person present at the transmitter;*  
*or*
- (d) *in relation to an amateur standard station or an amateur advanced station, for a station which receives radio signals from a second amateur station and automatically retransmits those signals by radio — an action taken by the operator of the second amateur station if that action causes the retransmitting station's transmitter to only transmit or to cease to transmit; or*
- (e) *in relation to an amateur standard station or an amateur advanced station, for a station which receives signals through a public telecommunications network from a second amateur station and automatically retransmits those signals by radio — an action taken by the operator of the second amateur station if that action causes the retransmitting station's transmitter to only transmit or to cease to transmit; or*
- (f) *in relation to an amateur repeater station:*
  - (i) *which receives radio signals from a second amateur station and automatically retransmits those signals; or*
  - (ii) *which is connected to a public telecommunications network which receives signals from a second amateur station and automatically retransmits those signals;*  
*an action by the operator of the second amateur station that causes the first station's transmitter to only transmit or to cease to transmit.*

The effect of these amendments and the new definition is to allow a person who is not “qualified” to “talk over” a Standard or Advanced amateur station, and allows the training and assessment of potential amateurs using Standard or Advanced stations, and the “operation” of the Australian station by another Standard or Advanced station by an Internet connection.

Foundation licensees cannot operate (that is, ‘control’ as opposed to ‘use’) a repeater station.

As is pointed out in the formal Explanatory Memorandum in respect of the Amending Determination:

“ ... the definition of *operate* clarifies the responsibilities of amateurs ‘operating’ through another, unmanned amateur station (usually an amateur

repeater station). Amateur repeater stations receive radio signals from a second amateur station (or a station connected to a public telecommunications network which receives signals from a second amateur station) and automatically retransmit these signals. The definition of operate explicitly excludes an action by the operator of the second amateur station that causes the first station's transmitter to *only* transmit or to cease to transmit. For all other actions, responsibility for the operation of the repeater station is placed on the amateur operating the second amateur station.”

In this context, new section 27A (1) makes is explicit that:

*The licensee of an amateur licence (amateur foundation station) must not authorise another person to operate the licensee's amateur station if the other person is not a qualified operator or qualified person.*

The section uses the word “operate” which means operate as defined. It should be noted that the acts excluded from the general definition of the term do not apply to Foundation stations.

In the “conditions” for an Advanced station a new section 12A provides:

*The licensee of an amateur advanced station must not authorise another person to operate the station if the other person is not a qualified operator or qualified person.*

An identical provision (section 22A) is inserted into the conditions for a Standard station.

But, again, the conditions use the word “operate” as defined, which excludes from the general definition defined acts and these are applicable to Standard and Advanced stations.

### **Other changes affecting Foundation stations**

At long last, the LCD will limit the output power of a Foundation station to 10 watts in all permitted modes.

However, other restrictions are now made clear. In addition to section 27A (1) quoted in the context of “operate”, sections 27A (2) and (3) provide:

- (2) *The licensee of an amateur licence (amateur foundation station) must not operate an amateur station using automatic mode or computer controlled mode.*
- (3) *The licensee of an amateur licence (amateur foundation station) must not operate an amateur station that is directly connected to a public telecommunications network.*

The note to this section does make it clear that a Foundation station may be indirectly connected to a public telecommunications network through a gateway operated by another licensee.



## **Emergency communications**

A number of amendments relate to (and better facilitate) emergency communications.

Section 5 (1) of the Amateur LCD is amended by deleting the word “natural” before the word “disaster” in the provision:

*“The licensee must not solicit a message that is to be transmitted on behalf of a third party unless the message relates to a disaster.”*

A new section 8 (2A) applies to stations “*participating in emergency services operations or related training exercises*” and provides:

*If a network of amateur operators is participating in emergency services operations or related training exercises, for transmissions relating to those operations or exercises, the licensee must ensure that arrangements are in place for at least 1 station in the network to transmit the call signs of the stations participating in the network:*

- (a) at the beginning and end of a transmission or series of transmissions; and*
- (b) for a transmission or series of transmissions that lasts for more than 30 minutes — at least once during each period of 30 minutes; and*
- (c) by voice (using the English language), by visual image or by an internationally recognised code.*

The term “emergency services” is defined in section 3 (1) to mean:

*“ ... services provided by an organisation established in a State or Territory for purposes that include the provision of services during an emergency. ”*

The existing rules as to the use of call signs, effectively requiring every station to identify every other station and giving it own call sign every 10 minutes, in sections 8 (1) and (2) of the Amateur LCD are made subject to the new subsection 8 (2A).

## **New rules relating to the use of repeater stations**

A new section 8A is inserted into the Amateur LCD by the Amending Determination.

While the concept may not be perceived as new, the effect of the new section is to impose a legal obligation on the licensee to ensure that he or she only operates through a repeater where the repeater's output frequency is allowed under that persons own licence. The new section is:

- (1) *The licensee must not operate an amateur station to transmit a signal to another amateur station, through an amateur repeater station, if the licensee is not authorised under the licence to transmit on the repeater output of the amateur repeater station.*
- (2) *The licensee must not operate an amateur station to transmit a signal to another amateur station, through an amateur repeater station linked to a second amateur repeater station, if the licensee is not authorised under the licence to use the repeater output of the second repeater station.*
- (3) *The licensee must not operate an amateur station to transmit a signal to a second amateur station through a third amateur station if the licensee is not authorised under the licence to transmit on the third amateur station's transmit frequency.*

The note to the new section 8A is important, and states that a licensee may transmit a signal over a repeater link, whether or not the licensee is authorised to transmit on the repeater link frequencies.

## **Spurious emissions**

A new provision "Spurious emissions limits for an amateur station" is included in the Amateur LCD. In the Outcomes the ACA said "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, including amateur stations. The ITU requirements ... will be included in the remade Amateur Determination."

The new provision is as follows:

7. (1) *The licensee must not operate an amateur station if the emissions of the station include spurious emissions that are not attenuated below the power of the wanted emission supplied to the antenna transmission line by:*
  - (a) *for frequencies less than 30 MHz — the lesser of:*
    - (i)  $43 + 10 \log (PEP)$  dB; and
    - (ii) 50 dB; or
  - (b) *for frequencies above 30 MHz — the lesser of*
    - (i)  $43 + 10 \log (P)$  dB; and
    - (ii) 70 dB.
- (2) *In subsection (1):*

*P means mean power in watts supplied to the antenna transmission line.*

*PEP means peak envelope power in watts supplied to the antenna transmission line.*

These limits are the limits for the amateur service in Appendix 3 of the Radio Regulations.

Some older commercial equipment may not comply with these requirements.

## **Interference**

Section 7 of the Amateur LCD is amended so that it now reads:

*The licensee must not operate an amateur station if its operation causes harmful interference to radiocommunications.*

Previously, rather than the word “radiocommunications”, the phrase used was “a service provided by another station”.

“Radiocommunications” is defined in section 6 the Radiocommunications Act widely as follows:

- (1) *For the purposes of this Act, **radiocommunication** is:*
  - (a) *radio emission; or*
  - (b) *reception of radio emission;**for the purpose of communicating information between persons and persons, persons and things or things and things.*
- (2) *The reference in subsection (1) to communicating information includes communicating information between a part of a thing and:*
  - (a) *another part of the same thing; or*
  - (b) *the same part of that thing;**(as, for example, in the operation of a radar device).*

It is considered that the change encompasses some situations that may not have been covered by the previous language and is now consistent with the definition of “harmful interference” in the *Australian Radiofrequency Spectrum Plan*, which defines ‘harmful interference’ as something occurs to a radiocommunications service, not ‘a service provided by another station.’

## **CONCLUSION**

Not every change to the Amateur LCD is described in this paper, and all licensees are urged to carefully read the Amending Determination to check for changes that might affect their operation, for example, operation on 50.0 to 50.3 MHz may be affected by the six additional translator stations that have an input on VHF channel 0.

The changes are the last of the changes resulting from the ACA review of the amateur service. Not all the changes originally proposed have been given effect to, with the ACMA retreating some time ago from the power limits identified in the Outcomes.

In their totality, the removal of the Morse code requirement for operation below 30 MHz, changes to the licensing structure, in particular the introduction of an entry-level licence, and now these changes represent a significant up-dating of the structure and regulation of the amateur service in Australia.