



# CW Today

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Thanks to many CW operators having returned to activities as well as growing and renewed interests in CW for the reasons we delved into in past issues of **CW Today**. We are now all enjoying more Quality Telegraphy Time. At the same time an insidious erosion of our CW bands is under-way, already started in USA and on the map in Australia and some other places, to do away with exclusive CW bands.

Irrespective of legislation that allows the use of USB on 40 m, LSB on 20 m and any mode to be used on any frequency, if gentlemen's agreements are no longer respected and radio amateurs cannot administer their own internal affairs, then legislative protections would become necessary, and some of us feel that is already required in the planned remake of the Australian amateur radio licence.

It is thus essential for us to remember the reasons that exclusive CW bands are required for users of the CW mode.

## Why CW exclusive sub-bands?

The reason that CW is the ONLY mode to have exclusive bands until now is because unlike other modes, CW suffers the most from incompatible QRM. The reason why CW is the only mode to be allowed across the entire amateur bands is because other modes are not disabled, generally speaking, by CW. I will explain these two points in a little further detail:

CW by its very nature is a very narrow mode, on-off keying. It is generally used as an AURAL mode, as digitally it is inefficient. That

means we decode it by EAR. Which means that we have to listen. Our human brain can easily separate out multiple CW signals at different pitches and our narrow filters can cut out other CW signals that are off frequency, should we wish.

However, an SSB signal, even in a narrow filter, will still cause interference to CW as it is broad banded. However, as the power of the SSB transmission is dissipated across a broader bandwidth, the power per hertz will be less but this is generally compensated by higher power allowance for SSB. But still the voice is not constant and it is thus possible to copy CW through SSB QRM, though very taxing upon the brain and frustrating because off-frequency SSB is a nasty sound. Our hobby isn't about being tortured, it's about enjoying, and hence SSB isn't allowed on the CW bands.

Even WORSE however, are data modes: because a data mode is usually constant and narrow in frequency, if zero beat with a CW signal, this will render the CW signal unreadable. Therefore, although SSB is incompatible to share frequency with CW without causing the CW interference, a data signal is generally far, far worse in its harmful interference to CW, so digital modes are more QRM than SSB.

The reverse however is not proportionally true. It is asymmetric and this is why CW is allowed anywhere on the band: if an SSB station is on a frequency and there is a CW signal, the CW signal can be quite effectively notched out - still leaving the SSB signal intelligible. If the CW is off frequency

the pass band tuning may also be adjusted to filter it out and not one sound of it will remain.

For data modes, especially those that are efficient and have error-correction and are thus robust, a CW signal on the exact same frequency will at worst slow down the data throughput but no operators' ears will be harmed. Digital mode users generally are looking at their monitor screens, not listening to the data signal!

Another problem and reason that no other modes have ever been tolerated in the exclusive CW bands and the very reason also for their necessary exclusivity, is because if you are experiencing QRM from another radio station, you should have a right to know who that station is and to report them or complain to them. SSB, easy to tune in and complain, many of us have microphones but even in the CW position, provided on the correct side band, we can hear SSB and understand it if on roughly the same frequency; CW, even more easy to tune in, can be heard and understood by other CW operators at ANY audible pitch - basically as wide as is your filter, unlike SSB and Data modes where you have to be on the same frequency to communicate. Data modes, on the other hand, cannot be listened to without extra equipment and even then, not necessarily immediately, requiring fine tuning and many of the data modes cannot be interrupted by a third party no matter how urgent. This is why originally data modes had to send CW identification so interference could eventually be complained

against via alternative avenues to a radio amateur or to the authorities.

Now that CW Ident is not required and not used in Australia, we already suffer harmful QRM from digital modes and can do nothing about it. If a data signal causes QRM to a CW operator, the CW operator can NOT contact the data operator and tell them: a) he does not know who they are and b) they won't be listening anyway and c) they probably can't decode CW without switching to digital CW mode and even that won't be reliable – why should they – they'd have no idea the station is complaining and asking them to QSY. If a CW operator causes QRM to another CW operator, even if off frequency, a "QSY" can easily be understood.

The above are the main reasons, a simple logical reality fact check, as to why CW bands are EXCLUSIVE and why CW is however allowed across the entire HF frequency bands.

Now however, there are moves afoot to violate the rights of all human aural CW operators by lumping CW in as a "data mode" and/or extending the entire exclusive CW bands to being shared with Data modes. No good can come of this at all. It can only be perceived as, at best, ignorance of the above mentioned facts or at worst an attempt to push out the pleasure of CW and attempt to do the impossible: kill off the mode, so that more expensive radios can be sold, and to allow anyone passing the simplest of exams to

get onto HF with a computer and use the limited HF resources, more money for ARRL/WIA, government tax, radio manufacturers etc. but at OUR expense, denying us the historic right to operate CW without interference from other modes.

Remember too that HF resources are now cut in half for the coming decade due to sunspot minima putting more pressure on 20, 30 and 40 m. We are already struggling for space and CW is after all undergoing a revival for several reasons not least the reason that techno and electronic music will never eradicate or replace human music generated by live singing, playing musical instruments, and all the benefits that brings to both the musician and the listeners, in addition to many other practical aspects detailed in past issues.

It is now high time for CW unions and associations to defend our rights against these insidious encroachments and the erosion of our rights and freedoms – 40 m is already often rendered almost unusable from non-CW QRM in the evening and night when it is often the only DX band available with modest means for the majority of Australian CW operators. And yet the top end of the SSB band on 40 m is empty bar a few broadcast splatters. We therefore hope that we won't have to migrate from the bottom 50 kHz of every band to the top 50 kHz of every band to avoid not only SSB but even worse, digital modes, as sharing with SSB is certainly the lesser evil. Bureaucrats without knowledge of the basics

appear to be behind trendy ideas to lump CW in with Data, based on "bandwidth" or "on-off keying" or some other irrelevant comparison. What actually matters is the intelligibility and intercommunication compatibility between the modes, which is precisely why CW requires protection and exclusivity from all other modes.

## Selection of CW Contests in July

**Saturday 9 July 2016 1200 UTC to Sunday 10 July 2016 1200 UTC**  
IARU HF World Championship: single and multi-operator stations contact as many other amateurs, especially IARU member society HQ stations, around the world as possible on all non-WARC HF Bands. Categories include CW or SSB only, mixed, high, low and QRP power levels. Exchange is signal report and ITU Zone (58 for VK6, 59 for VK1-3 and VK5, and 55 for VK8 and VK4) or for HQ Stations the abbreviation of the national society. Official rules at [www.arrl.org/iaru-hf-championship/](http://www.arrl.org/iaru-hf-championship/)

**Saturday 30 July 2016 1200 UTC to Sunday 31 July 2016 1200 UTC**  
SWL and RSGB IOTA Contests: exchanges from Australia are RST, serial number, and OC-001 (if on the mainland island of Australia). CW, SSB or mixed. For details of rules please search the web.

Your comments, questions and feedback on CW Today are as always welcome via email to [vk5eee@wia.org.au](mailto:vk5eee@wia.org.au)

73 & 77 de Lou VK5EEE



## Erratum

### Steampunk antenna

Unfortunately, the reference list for the Dale Hughes article in the June edition went missing. The list is provided below.

#### References

1. See Wikipedia for a definition of steampunk <http://en.wikipedia.org/wiki/Steampunk>
2. Controlled Impedance "Cheap" Antennas. Kent Britain WA5VJB. Available from <http://www.wa5vjb.com/yagi-pdf/cheapyagi.pdf>

The same design plus additional information is also provided in the 2012 ARRL Handbook, page 19-7.

3. ARRL Antenna book, 20th Edition n, page 21.11
4. <http://www.belden.com/techdatas/metric/8263.pdf>
5. <http://www.minikits.com.au/electronic-kits/rf-amplifiers/rf-preamplifiers/70cm-RX-Preamplifier>