

**Before the  
Federal Communications Commission  
Washington, DC 20554**

In the matter of \_\_\_\_\_

WT Docket 98-143

1998 Biennial Review  
---Amendment of Part 97  
of the Commission's  
Amateur Radio Service rules

RM-9148  
RM-9150  
RM-9196  
...etc.

**To: Federal Communications Commission**

I, Michael J. Sparling of 16820 Vincent Avenue, Monument CO 80132, file these comments on November 30, 1998 in the FCC's Notice of Proposed Rulemaking, WT Docket No. 98-143.

**My Credentials:**

I have been a licensed amateur radio operator for about 35 years. I currently hold an extra class amateur radio license with the call sign W6LVW. I was originally licensed as a novice with the call KN3DOV. I also hold a commercial general radiotelephone license - originally issued as 1<sup>st</sup> class. I am a NARTI certified engineer - Class 1 with both (all) RF and non-RF master endorsements. I have a college degree, am an electronics engineer and have worked in the electronics/computer industry for over 25 years. I am the Chief Engineer and CEO of the Total Control Radio Corporation. The Amateur Radio Service has been a continual technical inspiration to me over the years and has played a significant role in launching and advancing my early career.

**Summary:**

I basically agree with and support the ARRL's approach to amateur radio license restricting (fewer levels) as amended and published in their December 1998 issue of QST and (I assume) has been communicated to the FCC. However, **I strongly disagree with any lessening of the International Morse code (CW) telegraphy requirements for the extra class amateur radio license.** The ARRL has proposed that the 20 WPM requirement should be removed for obtaining the amateur radio extra class

license and that the requirement should be "replaced" with a "more rigorous technical exam." **I agree that the extra class license should require a more rigorous technical exam**, however, in contrast with the ARRL, I believe that the **20 WPM requirement** (or some other higher speed, e.g. 18 WPM, etc.) **should be maintained** (not removed) for the extra class license. **A higher CW copy speed should continue to be required for the extra class because additional, exclusive extra class CW band privileges are granted as a result of obtaining the extra class license.** The additional extra class phone and CW privileges are an **incentive** and should only come as a **reward** for demonstrating extra technical knowledge and skills in copying the International Morse code that are well above and beyond the norm.

I believe that to fully appreciate the CW requirements, the general value of the International Morse code itself must be explored and reevaluated as I have attempted to do in the following.

### **The Value of the International Morse code:**

Some amateur radio operators view the International Morse code as a kind of "right of passage" that must be accomplished in order to prove commitment to amateur radio or keep "undesirables" out of our ranks. This may have some merit, but, in and of itself, is probably NOT a valid reason to preserve the International Morse code requirements for obtaining and upgrading an amateur radio license.

The US military and commercial maritime shipping have abandoned the requirement for radio operators to know the International Morse code. This is primarily due to the availability of "reliable and redundant" commercial and military satellite and digital communication systems. However, amateur radio operators do not have access to these satellite and digital communication systems (maybe they should?), so the **real value of the International Morse code for amateur radio has not at all diminished as an effective radio communication tool, especially in an emergency.**

### **International Morse code attributes:**

Following is a list of attributes showing **why the International Morse code has real and lasting value for amateur radio and should remain a**

**requirement to obtain and upgrade an amateur radio license, especially the extra class license.**

1. As previously mentioned, the International Morse code is **not dependent** on a multibillion-dollar satellite and digital communication system to work, as are military and commercial electronic data modems.
2. The International Morse code uses CW radio equipment, which is **simple and easy to build and operate** - electronic data modem communication systems are inherently more complex devices.
3. CW radio equipment requires the **smallest investment** because of its simplicity - electronic data modems are more expensive because of their complexity.
4. The International Morse code is **easy to learn** - once memorized, CW copy speed is typically close to the ARRL's newly proposed HF entry-level requirement of 5 words per minute.
5. The International Morse code is **hard to forget** - once learned (but not used) only copy speed diminishes over time, and it takes very little practice to recover the higher copy speed again.
6. CW requires **less bandwidth** than any other form of digital communication, i.e., the slower the speed the less bandwidth required. Low speed CW is especially valuable in extremely poor signal to noise conditions such as moon bounce, VLF or any other high noise, weak signal propagation conditions.
7. The International Morse code uses a **powerful data processing engine - the human brain**. An experienced CW operator can copy the code even under extreme interference and poor signal to noise conditions.
8. The International Morse code is **robust**. Consider its performance under perhaps one of the most difficult interference conditions of all, the radio magazine's "CW contests." In these contests, stations are typically "stacked one on top of another" and still they communicate. It's amazing just how effective CW really is.

9. CW requires **less power** to establish communications, reducing potential interference to other services.
10. CW is **easy to get working on emergency power** with less or no reliance on public utilities and communication system infrastructure.
11. The International Morse code can also **provide communication at "super high speed."** Via meteor trail propagation, amateur radio operators have developed a method of high speed CW, in excess of 100WPM, using audio recorders to capture the signal off the meteor trail and then play it back at slower copy speed. The window for communication is typically less than ten seconds for a two-way contact. To my knowledge, this performance, under these conditions, has never been accomplished using electronic data modems.
12. The International Morse code uses **data compression**. Extensive use of standard **Q-codes** and other common **abbreviations** greatly improve CWs data throughput performance.
13. The International Morse code is an **International language**. Amateur radio operators all over the world know and use the standard Q-codes. This knowledge allows them to communicate everyday using CW, even without understanding each other's spoken language...this **promotes International good will**.
14. The International Morse code, in an emergency, can be even **generated mechanically** with the simplest of devices such as a blinking light, a rock, a drum, a musical instrument or even an automobile horn. In this case, in an emergency, the International Morse code has value to any person.
15. The International Morse code is the **only form of digital communication that can be generated and copied by both humans and/or machines** (CW data modem). This can't be said for any other form of data communication.

**Note:** The ARRL has proposed access to portions of the HF CW bands to the entry level (Technician) class licensees without providing demonstrated (tested) International Morse code proficiency. This is **offered as an incentive to learn and use the code and I heartily**

**support this proposal.** However, inadvertently, this will also result in the use of CW modems, (by some "novice" CW operators) to generate and copy the International Morse code. When one operator uses a CW modem and communicates with another operator who does not, but copies by ear and sends by hand, this creates the **human to machine communication** I referred to in item 15 - this is a good thing. Again, this CAN NOT be said for any other form of digital data communication.

16. **CW can maintain communication when all else fails** - This is **perhaps the most important value of the International Morse code of all**, especially so in an emergency!

### **Conclusions:**

For the above listed attributes, I believe **the International Morse code has real and lasting value to the Amateur Radio Service and should remain a requirement for obtaining and especially upgrading to an extra class amateur radio license.** In that spirit, higher demonstrated CW copy speed skills (20 WPM or so), in addition to increased technical knowledge (a more technically challenging test), should be used as an incentive for obtaining the extra class license and to gain the extra class HF CW and phone band operating privileges.

Respectively submitted by:

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November 30, 1998