

David Moisan, N1KGH  
45 St. Peter #311  
Salem, MA 01970-3893  
[dmoisan@shore.net](mailto:dmoisan@shore.net)

November 30, 1998

Before the  
Federal Communications Commission  
Washington, DC 20554

In the Matter of	)	WT Docket No. 98-143
	)	
1998 Biennial Regulatory Review --	)	RM-9148
Amendment of Part 97 of the Commission's	)	RM-9150
Amateur Service Rules.	)	RM-9196

#### COMMENTS OF DAVID MOISAN

Commissioners:

I am an amateur radio operator who wishes to comment on Docket 98-143, the restructuring of Part 97, the Amateur Radio regulations. I've been a ham (now Advanced class) for nearly seven years, a relatively recent time, and I am very concerned about the future of the amateur radio service and the hams that are part of that service.

In summary, I believe we should eliminate the radiotelegraphy requirements, with a "sunset" requirement that retains the 5 WPM requirement only as long as the ITU mandates it. The FCC should also encourage, through deregulation of bandplans and new exam questions, the development of modern communications modes, including digital modulation techniques. Lastly, the FCC should stand firm on its denial of the ARRL's request to toughen the Morse code test waiver process, as it is contrary to the ADA (Americans with Disabilities Act) and does not reflect modern medical knowledge about people with disabilities.

I share the FCC's view that Morse code (radiotelegraphy) has greatly diminished in importance. Going further, I believe that radiotelegraphy is all but irrelevant in today's communications environment, where digital modulation techniques have become commonplace. A cursory reading of current data sheets for communications-related IC's and semiconductors will quickly convince one of that.

As an example, Hewlett-Packard, a well-regarded communications technology firm, has written an excellent application note on digital communications (AN-1298, *Digital Modulation in Communications Systems: An Introduction*, Hewlett-Packard Corporation, 1997). Nowhere in there is radiotelegraphy, specifically OOK (on-off keying), mentioned. On the other hand, FSK (frequency shift keying) is mentioned prominently in the application note, and it is clear early on that it is very important in understanding digital modulation techniques.

But it is OOK— Morse code— that gets a disproportionate share in amateur radio exams, getting three elements, while FSK has only a few questions devoted to it in the Signals And Emissions topic.

Moreover, there is a great social cost to the licensing structure. Shortly after I received my Technician-class license in the ARS, I “elmered” or taught, a young friend of mine, amateur radio so that he sat for, and passed his Technician-class license, and so that we could attend meetings of the local amateur radio club.

It was a disaster. My friend, at the time struggling with technical difficulties, and financial difficulties in getting on the air, was repeatedly criticized and put down by other members of the club because he was just a "Tech", a young person who just didn't belong in amateur radio. It was made clear by the other members, repeatedly, that my friend was considered a lesser person for not knowing Morse code. The fact that I was teaching him electronics, that he already knew how to use electronics test equipment, including an oscilloscope, and that he had already gained considerable technical expertise in the computer field, was irrelevant. My friend, and by extension, myself, *did not belong*.

Morse code was the wedge driven between my young friend and the older hams in the club. It is not the only reason why he was snubbed, but it is a too-common occurrence, pitting newer hams against older hams. Since institutional memory is passed down from the older generation to the new, this split, and the aging demographics of ham radio, promises catastrophe.

While the FCC cannot, and should not, resolve every social ill, it should be aware that the ARS cannot be run like a private club with secret code words and handshakes, if it is to fulfill its requirements as a publicly-regulated service and survive into the next century. The regulations of the ARS should be written for the sole purpose of insuring that applicants be able to design, construct, and use radio transmitters safely and with no interference to other services. Anything more than this is paternalism, as the FCC recognized in WT 90-55.

The code test is not only irrelevant to modern communications, but it is also no longer in the public interest to mandate this in the ARS examinations.

In reference to WT 90-143, Section E, Telegraphy Testing Requirements, I am making the following recommendations:

The FCC should eliminate code testing and streamline the ARS to include just three classes of license: The Technician license, which includes all privileges of the current Technician license, the General license, which is equivalent to the current General license, and the Advanced license, which includes privileges granted to both the current Advanced and Extra Class licenses. Current Novice licenses, and Technician Plus licenses, should be "grandfathered" to General class, while the Advanced and Extra class licenses should inherit the current Extra class privileges.

Until the ITU votes to eliminate Article S25.5 in the international Radio Regulations requiring a 5 WPM code test, an interim 5 WPM test should be included, with a "sunset" provision that, should the ITU eliminate the 5 WPM requirement (as is possible, if not probable, when WRC-2001 convenes), the code test will be dropped no later than three (3) months after the ITU strikes it from its regulations.

To encourage the development of digital techniques, Part 97. should be amended to eliminate specific bandplans (the allocations of specific emission modes depending on bandwidth and other characteristics) for each of the amateur bands that are allocated to our service, as is done in Canada. Bandplans should be voluntary, and designed in accordance with good amateur practice and future needs. Any emission mode that fits in the bands and does not cause interference should be permitted. This would free up the Commission to act on more important matters such as malicious interference, but more importantly, it would give amateurs the flexibility they need for experimentation, thus serving the FCC's desire for technological advancement in the amateur service.

**Ideally, it should be possible to experiment with a variety of advanced techniques without ever requiring an STA.**

To further emphasize the importance of digital modulation, as suggested in the NPRM, paragraph 24, the Commission should direct the Question Pool Committee to include these subjects related to digital modulation in the Signals and Emissions topic in the following pools:

Technician (present Elements 2 and 3A): Definitions of FSK, MSK, PSK and digital modulation in general, including basic definitions of Shannon's Law.

General (present Element 3B): Definitions, examples and description of n-QAM, trellis encodings and the reasons for their use.

Advanced: (present Elements 4A and 4B): Descriptions and definitions of digital modulation testing techniques, including constellation patterns, eye patterns and their uses.

The preceding suggestions are in no way intended to be all-inclusive. With time, digital techniques are expected to become predominant in radio and the question pools should be revised to reflect it, including many more questions on digital technique than are described here.

Eliminating the 13 and 20 WPM code tests would also eliminate the need for the present code waiver system for examinees with disabilities. I share the views of the FCC on this matter (as described in paragraph 25 of section E), and have some additional comments.

As a person with multiple "invisible" disabilities, I am concerned that the current code waiver procedure, and the ARRL's recommended revisions to that procedure, may have the potential to be discriminatory. While there undoubtedly have been a few examinees who have abused the system, there may be even more examinees who are discouraged from applying for their licenses because of misguided and even prejudicial beliefs about their disabilities.

As an example, a charitable organization devoted to disabled hams regularly advertises in ham radio magazines. Their ads feature a young child in a wheelchair. It's an image that's familiar to anyone who watches Jerry Lewis's telethons: the stereotypical brave child who has a horrible disease but is somehow on a pedestal, nobler than the rest of us, yet deserving our pity. It is an image that many in the ham community share.

But the real world of people with disabilities in 1998 is much more complicated than that. I have ADD (Attention Deficit Disorder), a severe hearing loss in both ears and other complications resulting from my premature birth. I tried for four months to learn the code at 20 WPM, without success. I sat for the test anyway, and I just barely passed element 1B (the 13 WPM test), gaining my General license. Many hams would say, "Try harder and stop whining!"

But is that enough? I once spoke to a ham who was discouraged from applying for a code waiver by his fellow hams. His excuse? He had suffered a stroke. As the Commission may know, people who've suffered strokes lose their motor coordination and are often effectively unable to receive or send code. That such a disability would be dismissed with the phrase "Try harder!" is intolerable to anyone who has had a friend or family member suffer from the disease.

The same is true for people with learning disorders like ADD and dyslexia. "Trying harder" does no good as these people are already working as hard as they can just to learn, speaking from personal experience. There are many people with hearing impairments who, whether they "stop whining!" or not, will still have a disability.

I fear that too many hams and VE's make snap judgments about people with disabilities when they are clearly unqualified in doing so. Instead of putting thought and consideration into reasonable accommodations to serve examinees with disabilities, they make prejudicial assumptions and utter hoary clichés like "work harder!" The ARRL's proposal as described in RM-9196 would've been a nightmare, denying disabled examinees any privacy and opening up VEC's to ADA lawsuits.

The reality of disability extends far beyond the stereotypes, and that all hams and prospective hams with disabilities deserve the same rights and privileges accorded to nondisabled hams and examinees. The disabled are a minority group that any of us can join, through accident or illness.

To that end, in addition to the elimination of Elements 1B and 1C that I mentioned previously, I recommend that the Commission remind the ARRL, VEC's and other organizations of their responsibilities in dealing with people with disabilities. The Americans with Disabilities Act does not require that the amateur service lower its standards, nor do I suggest that it should. But as we enter the next century, we must have the same progressive understanding of disabled hams and their concerns as we do about the technology we use in our service.

In summary, I recommend that: (1) The 13 and 20 WPM code tests, Elements 1B and 1C, be eliminated and the 5 WPM test (Element 1A) be retained only as long as the ITU requires it. (2) The amateur bandplans should be deregulated and digital modulation techniques should be prominent in the question pools and, (3) that the amateur community should be reminded of our obligations under the ADA to treat disabled hams and examinees with the same rights, courtesies and considerations that non-disabled hams and examinees are due.

With proper training, an understanding of digital modulation and other state of the art topics is possible for even the most inexperienced hams. We can set aside outdated regulations. We can deal with disabled hams with dignity. We can move forward. We can learn if we desire to. We must learn and grow if the amateur service is to thrive. I want to be there for it.

Respectfully submitted,

David Moisan