Before the
Federal Communications Commission
Washington, D.C. 20054

In the Matter of	**)**	
	)	
The Amateur Radio Service:	**)**	
Proposed Changes to the Morse Code (CW)	**)**	**RM-10811**
Proficiency Requirement for Operator	**)**	
Access to the Amateur Radio Bands	**)**	
Below 30 MHz	**)**	
	)	

To: The Commission

Reply Comments in Rebuttal to Comments of Michael J. Dinelli Made on 6 November 2003 On The Above Petition

I, Leonard H. Anderson, respectfully wish to make some general Comments to Mr. Dinelli's comment statements. I make these as a private citizen, as a professional electronics design engineer retired from regular hours, as a U. S. Army Signal Corps veteran who began in HF radio communication in 1953, and as a long-time radio and electronic hobbyist who has never had any amateur radio license or ever tested for same, nor has any affiliation with amateur radio organizations or businesses or publishers.

The following reply comments address the contents of Dinelli's 6 points given in bold with a brief title in italics.

2. The Amateur Radio Service must remain a skilled, technical service –not become another Personal Radio Service.

The United States Amateur Radio Service already is a "skilled, technical service," but it is also a voluntary one and not obliged to meet any working standards of a business, a service provider, a guild, a union, or any particular craft. Licensing is essentially a regulatory tool used by the Commission in its lawful requirements of regulating all United States civil radio. The Commission is not an academic organization and amateur radio licenses are neither college degrees nor graded certificates of accomplishment. All United States amateur radio licensees are obliged to operate according to law.

Amateur radio is a challenging, enjoyable, entertaining avocational activity involving an evolving technical field. But, it is essentially a solo endeavor of the licensee regardless of occasional help from family and friends. It is an individual's hobby. It is no more of a "necessity to the nation" than the skills of various citizens who volunteer during times of crisis in communities, cities, and regional areas. In that regard, amateur radio is a very <u>personal activity involving radio communications.</u>

3. Morse code remains essential to the Amateur Radio Service to fulfill its Basis and Purpose...

That point is not made clear. 47 C.F.R. § 97.1 defines United States amateur radio in five paragraphs. None of those mandate any specific knowledge or skill level in Morse Code. As a transmission mode/modulation, Morse Code is as optional to use as any other allocated mode, any allocated frequency band as indicated in all other parts of 47 C.F.R. involving amateur radio regulations.

Morse Code proficiency has been required in United States amateur radio license testing since the first radio regulatory agency of 1912. It has never been removed from amateur radio license testing until the no-code-test Technician Class license was first authorized in 1991; Morse Code cognition testing has remained a requirement for all United States amateur radio licenses having below-30-MHz privileges. The International Telecommunications Union amateur radio regulations (S25) yielded the option for each administration to retain or eliminate their own amateur radio Morse Code tests as a result of the World Radio Conference concluded in July, 2003.

There is **no** moral, legal, or ethical reason to continue the required Morse Code test for United States amateur radio licensing just because the Morse Code test has always been there in the past.

4. The capability to send and receive Morse code is retained in the U.S. military service, is still being trained in military schools and is in use today in various military theaters throughout the world..."

This is incorrect. In my Comments on RM-10805 through RM-10811 of 20 October 2003 that was shown to be incorrect according to United States military public documents.[1]

Dinelli cites an August 2003 article by Bart J. Hill in *73 Amateur Radio Today* that is supposed proof of his statement. *73 Amateur Radio Today* ceased publication in September 2003. While Bart J. Hill claims an Army Lieutenant Colonel rank, that does not subvert or override any public documents of the U.S. Army or any other U.S. military major branch which predate 2003 by many years.[2] Information from the Fort Gordon Signal Corps Center does not indicate any signalmen being trained as Morse Code operators. The only Morse Code requirement is that of Army MOS 98C and 98H, military intelligence intercept operators, and for MOS 18E, Special Forces Communications Sergeant. The Military Intelligence school is at Fort Huachuca, Arizona, and their school's syllabus and course details are public knowledge. There is very little public knowledge of Special Forces operation or tactics.

Please see the Attachment for a more detailed discussion on military Morse Code use.

5. Instant retesting of exam elements is not in the best interest of the Amateur Radio Service.

The presumption seems to be that "instant retesting" is a common procedure. This cannot be known since there are several Volunteer Examiner Coordinator (VEC) groups and many localized Volunteer Examiner (VE) teams. The Commission delegated amateur radio license testing to the VEC some time ago and must trust them to follow federal law. By law, all VEs must be already-licensed radio amateurs of a specified license class or higher. Dinelli has made no case for his statement.

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[1] Attachment A, the first of three attachments, citing public information of the U. S. Army.

[2] Hill's Lieutenant Colonelcy is claimed in a personal biography given on http://www.qrz.com, an on-line Internet database of amateur radio licensees.

6/ It is <u>not</u> in the best interest of the Amateur Radio Service to delegate areas of content for examination...

Perhaps one of the wisest moves the Commission made after the Restructuring Report and Order 99-412 was the option of the VEC Question Pool Committee to originate <u>all</u> questions on <u>all</u> pertinent subjects. This has a number of advantages for all.

The VECs must all be composed of already-licensed United States radio amateurs, therefore they will be cognizant of the amateur radio regulations as well as the activity of U. S. radio amateurs. They are presumably up to date on all radio amateur matters. With a two-year cycle of question pool revisions they are able to keep up with both the changes in the amateur radio state of the art as well as federal administrative constraints on changing test syllabus formal regulations. The Commission need only accept or reject a particular question pool proposed by the VEC.

Since the VEC are themselves radio amateurs, they are in the best position to choose questions that would be pertinent, meaningful. The Commission is not obliged to be a sort of overlord on any "syllabus" required of amateurs.

A Summary And Conclusion

No valid reason for retention of the Morse Code Test in United States amateur radio for either technical or legal reasons. Retention of the Morse Code Test only serves as emotional sustenance of those already licensed in the amateur radio service and who demand that all do as they once had to do. Retention of the Morse Code Test provides a barrier to uncounted numbers of future Americans who are interested in the communications and technical aspects of amateur radio, not in becoming members of a living museum of old radio operating skills.

The Commission yields much to individual radio amateurs in operating **<u>options.</u>** Unfortunately, there is no such option on CW psychomotor skills to obtain an amateur radio license having below-30-MHz privileges. Options on mode use are plentiful, yet there is no option on a singular mode operating skill test. Options should be opened for the benefit of all. Options should not be restricted by demands of old-timers who refuse both change and arguments in favor of change.

The Commission must continue to look towards and prepare for the future for **<u>all</u>** Americans, not to satisfy a minority of amateur old-timers. The Morse Code Test has proved its worth in the past. We no longer live in that past. Those who have become proficient in Morse Code should feel secure that they have accomplished a personal task and met test requirements of older times. However, such individual personal accomplishments have no basis for demands that all must emulate them. I urge the Commission to discontinue the Morse Code Test for any amateur radio license for the benefit of all, present and future. It is time for that change. Give all modes an equal option. Option is not a failure.

Respectfully submitted electronically this 17th day of November, 2003.

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Attachment to Comment Rebuttal on U.S. Military Use of Morse Code

Dinelli's argument point 4 uses as his source an article in the August 2003 issue of *73 Amateur Radio Today* by Bart J. Hill, K7LTC. If Hill is involved in Army communications in any way, then he is woefully ignorant of his commissioned officer status and command responsibilities of Army tactical operations. The overall U.S. military template for the future was "Force XXI" or the force for the 21st century, that template already over a decade old. That emphasized the "digital battlefield" concept, almost self-defining in providing quick, sure, flexible, secure communications for command and control. Rather than list all the documents on those templates, the evolution into that can be seen by tracing the progress of one High Frequency (HF) radio set still in present-day Army Signals inventory.

Prior to 1986, the Army had several HF radio sets, among them the AN/GRC-109, a rather old design that was intentionally made to use on-off keying Morse Code (CW) mode It could do that by means of a built-in key, external key, or the AN/GRA-71 Coder Burst Communications unit, an external device that could both record or play back (for transmission) recordings of Morse Code messages at a rate of 300 words per minute equivalent. The number of available transmit frequencies was 24 maximum, all selectable from replaceable quartz crystals. It covered a frequency span of 3 to 22 MHz. The separate receiver unit could be crystal controlled or tunable, able to cover 3 to 24 MHz. That the design is relatively old can be seen by the power supply unable to work directly with 24 VDC vehicle systems already standardized in 1955. A full description of the GRC-109 is found in Field Manual 24-24, *Signal Data References Signal Equipment*, 29 December 1994.

The AN/PRC-70 was available and operational before 1986 but suffered several internal faults besides reaching a weight limit for manpack operation or movement. The solution was the design of the AN/PRC-104 using a basic receiver-transmitter (RT-1209) and amplifier-coupler (AM-6874) which are also integral and basic to the vehicular and transportable AN/GRC-213 and the higher output power AN/GRC-193. The RT-1209 tunes in 100 Hz increments from 2 to 30 MHz, has provisions for SSB (selectable upper/lower sideband), data/teletypewriter, or voice/CW modes (on-off keyed internal 1 KHz source, not by direct carrier on-off keying). The AM-6874 provided a Peak Envelope Power (PEP) of 20 Watts and included an automatic antenna matching network. The PRC-104, GRC-213, and GRC-193 became operational with the U.S. Army in 1986.[3] The AN/PRC-104 (manpack) complete set included a Morse Code "knee" key, KY-872 as well as the standard H-189 handset. GRC-193 and GRC-213 did not include the KY-872 but had remote control units for siting the radios away from the operating position, that enabled through remoting of the push-to-talk control line normally operated from the handset.

FM 24-24 lists the PRC-104, GRC-193, and GRC-213 but the only reference to any Morse keying is the AN/GRA-71 Coder Burst Communications unit used with the AN/GRC-109. There is no telegraph key shown, listed, or indexed in FM 24-24. Note: FM 24-24 supersedes TC 24-24 issued in October, 1988. The most recent Army field manual to mention Morse Code as an available mode besides FM 24-24 is FM 24-19, *Radio Operator's Handbook*, May 1991:

There is no mention of Morse Code use at all in the following Army field manuals:

FM 3-21.31 *The Stryker Brigade Combat Team*, March 2003;

FM 6-02.72 (was FM 11-1) *Tactical Radio: Multiservice Communications Procedures for Tactical Radios in a Joint Environment*, June 2002;

FM 11-45 *Signal Support to Theater Operations*, June 1999;

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[3] Year on the basis of the issuance of TM 11-5820-929-nn operations and maintenance technical manuals for the AN/PRC-104(A). A subsequent model known as the IHFR or Improved High Frequency Radio was the AN/PRC-104(B).

FM 11-43 *Signal Leader's Guide,* June 1995;
FM 11-41 *Signal Support: Echelons Corps and Below (ECB),* September 1991
FM 11-32 *Combat Net Operations,* February 1990

FM 11-32 emphasized that the majority of land forces communications is in the VHF region. This is reinforced by FM 11-41 and FM 11-45. It is especially emphasized in FM 6-02.72 for the four major branches of the U.S. military. Such operations are done with the AN/PRC-119 (manpack) and the AN/VRC-87 through AN/VRC-92 (vehicular) and AN/ARC-210 (airborne) SINCGARS (SINgle Channel Ground Air Radio System). SINCGARS operates on 30 to 88 MHz, has the option of steady-state FM or Frequency-Hopping (FH) modes at 100 hops per second. SINCGARS has no provision for any Morse Code operation in any mode or sub-mode. Approximately a quarter million SINCGARS receiver-transmitter units have been produced since 1989 by ITT Aerospace and Communications division in Fort Wayne, IN, and the former General Dynamics Land Division in Fort Lauderdale, Florida. Western NATO members have SINCGARS-compatible VHF communications radios.[4]

The military aviation band is 225 to 400 MHz and has been that since about 1950. There is no valid reference for any use of Morse Code on that military aviation band, either by the United States or any western NATO member military. Morse Code capable HF and LF radios have been used on U.S. military aircraft in the past. The International Civil Aviation band of 108 to 137 MHz does not use any Morse Code except as automatic identifier signals on the 108 to 118 MHz radionavigation sub-band; such Morse Code use is not for communications purposes. Undersea communications with U.S. submarines is done on VLF and ELF bands using slow-speed encrypted data modes, then through a variety of HF through microwave bands for confirmations and direct orders.

FM 24-24 will show rather explicitly that the United States military has considerable resources in a variety of communications equipment for flexible command and control through many media. The 2002 through 2003 military operations in Afghanistan through Iraq is ample demonstration of command and control and logistics support by direct communications with Central Command in Florida. None of that was implemented with Morse Code modes of any sort.

In summary, any statement that the U.S. military of today uses Morse Code in any form other than for off-duty recreational purposes, as in amateur radio activities, is false, misleading, or highly improper if done by a commissioned officer in a public periodical.

Leonard H. Anderson
17 November 2003

[4] Stated in FM 6-02.72 and also in the advertisements from Harris Corporation on system sales to the United Kingdom for SINCGARS-compatible VHF radios.