

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment of Part 97 of the Commission's)	
Rules Governing the Amateur Radio Service to)	RM-10867
Implement Changes to Article 25 of the)	
International Radio Regulation Adopted at the)	RM-10868
2003 World Radiocommunication Conference,)	
To Enhance the Amateur Radio Service and to)	RM-10869
Fulfill the Commission's Objective of)	
Streamlining the Amateur Radio Service)	RM-10870
)	

Via the ECFS

REPLY to COMMENTS Made By Ralph Jerald Volpe on 30 March 2004
by Leonard H. Anderson

I wish to thank the Commission for providing a forum for commentary by all citizens. Please allow me to state that I am a retired electronics design engineer with no vested interest in any professional or amateur radio activity or educational institution nor with any of those who have commented on this petition or Rule Making. All of the following comments are those of a private citizen fortunate to experience a half century in the radio-electronics industry and military of the United States, that including radio communications..

Since Mr. Volpe has chosen to file the same words on each of the four Petitions for Rule Making, I shall file a Reply to Comments in the same manner. These replies are also made in regard to several Commenters echoing similar thoughts about the four petitions of 2004.

A. On The Independence Of American Amateur Standards and Practices

1. Mr. Volpe states, "*Whereas I can understand portions of the proposals suggesting certain consolidations I have trouble seeing the correlation between ITU requirement relaxations and this country's obligation to match in turn.*" The International Telecommunications Union (ITU) is a United Nations body and the United States of America is a signatory to that body. By national treaty agreements, the United States is honor bound to agree to the Radio Regulation Recommendations made by the ITU as a signatory.¹ During the World Radiocommunication Conference of 2003 (WRC-03), several changes were made in the whole of Article S25 covering Radio Regulations concerning the activity of Amateur Radio. Perhaps the most contentious change occurred in S25.5 about International Morse Code testing: Since July, 2003,

¹ A full description of the United Nations, the ITU, and duties of the Department of State under the Administration of the United States is available in detail at many other information venues.

administrations have the option of retaining or eliminating any Amateur Radio license examination Morse Code test. Nowhere was there any change to S25 to eliminate the **use** of International Morse Code by any administrations' radio amateurs.

2. At the time of this writing, over 10 countries' administrations have removed the Morse Code test from their Amateur Radio license examinations. More countries are reported to have such Morse Code **test** elimination pending in the near future. The international trend has been growing since the beginning of autumn. That trend already began nationally with the Order for the creation of the no-code-test Technician class license in 1991. It is well to review a snapshot of the number of United States Amateur Radio license class totals as of 24 March, 2004.² The parentheses-enclosed numerical values are based on the total of all individual licensees:

Technician class	282,381	(38.3%)	General class	146,139	(20.1%)
Technician Plus class	67,687	(9.3%)	Advanced class	84,603	(11.6%)
Novice class	39,071	(5.4%)	Amateur Extra	107,278	(14.8%)
Total, exclusive of Club licenses			727,159		(100.0%)

In just 13 years the no-code-test Technician class licensees have grown from none to **over one-third** of all licensees. In that same time, a small *grass-roots* type of special-interest organization was conceived by Bruce Perens, a long-time Amateur Extra class licensee, and named *No Code International* (NCI). NCI has grown to have thousands of members in foreign countries as well as in the United States.³ The International Amateur Radio Union (IARU), a private body composed of representatives of all Amateur Radio Organizations, recommended in 2002 that ITU-R S25.5 be revised for individual administration option. The disinterest in Morse Code as a **test** element is obviously firmly rooted and growing, both here and in other countries.

3. While *independence* is considered by most Americans as a positive attribute (that's how we began), it is a negative attribute to remain static, archaic, and unbending in avocational activity regulations enjoyed by radio amateurs worldwide. Radio amateurs prize the ability to operate in High Frequency (HF) spectrum bands, touching other amateurs worldwide through radio. It does the United States no good at all to remain aloof, set in its ways, isolated rather than independent of wishes of other nations' radio amateurs. It does the United States government no good to ignore the wishes of its own citizens. We must remain flexible.

B. Alleged Reduction Of Standards

4. Mr. Volpe, in his first paragraph, states, "*We don't have an obligation to reduce our 'standards' if they meet or exceed those proposed by the ITU. We do, on the other hand, have an obligation to find the best possible balance between 'ease of entry', maintainability, and present and future service to the community.*" Mr. Volpe is reminded of two things: An honor-bound obligation to adhere to treaties the United

² Obtained from www.hamdata.com home page, their data taken from Commission database information as of 1359 UTC, 24 March 2004.

³ www.nocode.org is their web address. NCI membership does not require any dues payments, only an interest in elimination of the Morse Code test for any Amateur Radio license test. NCI directors are long-time Amateur Radio licensees who have taken Morse Code tests.

States is a signatory to and the fact that the revised ITU-R S25.5 (Morse Code test regulation) is **optional** for any administration. **Option** allows a *choice*. The revised S25.5 does not call for any elimination of a test but rather that each country's administration can choose to retain it or eliminate it. The United States is very much obligated to follow any treaties it signs. There is **no** justification, as a leader nation, to abrogate agreements.

5. Mr. Volpe implies that Morse Code testing is some kind of unchanging *standard* in radio, that it must be kept. There is no valid case for that in the technology of radio as a communications tool. Some kind of on-off keying coding was the **only** way that early, primitive radio could be used for communications back in 1896. The first radio communications demonstrators, Marconi in Italy and Popov in Russia, used Morse Code in that year. Morse Code was first used in 1844 in the first landline communications circuit, installed between Baltimore, MD, and Washington, DC. Manual telegraphy was already known with a 52 year experience history when the first radio communications demonstrations occurred 108 years ago.

Morse Code was only the **first possible mode** useable in early radio. That does not make the mode any kind of *standard*. The first transmitters in radio used damped oscillation induced by an arc discharge, better known as *Spark*. Such radio wave generation has been forbidden internationally for decades. But, *Spark* was **first** so why didn't it become a *standard*?

Morse Code itself changed considerably since its beginning 160 years ago. *Dialects* of the same-language character set evolved. Countries with non-English languages evolved their own, unique character set codings. International telegraphy via wires required a standard character set that became the *International Morse Code* of CCITT Recommendation F.1 (1984) Division B, I. Morse Code. In §97.3 (a) (27) the Commission references that document for United States Amateur Radio regulations.⁴

C. Is Radio Telegraphy A *Standard* From a Usage or Technological Standpoint?

6. Not at all in the whole of the radio world. In the United States, all other radio services but Amateur Radio have either given up on manual telegraphy for communications or they never considered it when a radio service began. On-off (amplitude) keying was just the first, the **only** possible mode for the first, very primitive radios. While the maritime world embraced early radio, modern maritime communications is done via Single-Sideband (SSB) voice and radio teleprinter modes with Very High Frequency (VHF) voice used in harbor and inland waterway communications.⁵ The maritime world adopted the Global Marine Distress and Safety System (GMDSS) six years ago to replace the old 500 KHz distress frequency that required on-off keyed carrier telegraphy. The United States Coast Guard stopped monitoring that 500 KHz frequency before the new millennium began. In the United States **no** land-based radio service nor wired communications service uses manual telegraphy. Manual telegraphy isn't used in civil or military aviation communications. Military radio communications does not use manual telegraphy. Not one single police department, fire department, or medical service uses manual telegraphy in the United States. There is only one United States geographic location where

⁴ As of 1 October 2003. That CCITT document has been superseded by an ITU-T (Telecommunications) document has been superseded for some years but the Commission has not altered the definition. Both old and new documents define only the relative dot, dash, and spacing time intervals but do not define a telegraphic word or word rate.

⁵ Prior to radio, mariners had **no means** to communicate beyond the visible horizon. Even with the most primitive early radio equipment they could now communicate hundreds of miles. It was a godsend to those on the open water. Most of the extraordinary tales of radio operation originated with maritime radio operators in those days prior to vacuum tube based equipment.

radio telegraphy is still used, although sparingly: The Great Lakes waterways, primarily for cargo haulers..

7. It's true that, as some say, what every other radio service **does** has no bearing on Amateur Radio operational activities. However, where and when emergency situations arise, amateurs must operate **with** other radio services to aid and assist in emergency communications. Amateurs cannot do this effectively if their experience is with modes that no other radio service employs. All radio operates by identical physical laws. Radio propagation in any portion of the EM spectrum is the same for all that use it. There is no separating Amateur Radio from other radio services just because an administration has made distinct differences in the types and kinds of radio activity in codified law.

Amateur radio is, by *de facto* practice if not specifically *de jure*, an avocational activity involving radio, a fun hobby engaged in for individual, personal recreation. It is not automatically an *emergency service* in the sense that police, fire, medical, or rescue agencies are public safety organizations. **Any** radio can be used for emergencies where lives are at risk, so stated in §97.401 and §97.403. **Any** citizen can help out in any emergency the best way they can; that is a moral imperative. That is a *standard* not codified in law but incumbent upon us all.

8. The Commission is not bound by law to uphold and group or societal mores such as *rites of passage* or individual *goals* as that was stated in RM-10868. There is no prohibition in the regulations which requires a specific *entry level* or any regulatory need to go through successive tiers of classes to engage in so-called *upgrading*. Anyone may *enter* Amateur Radio, that is to get their first amateur license, at any class level provided they pass all the examination elements for that class. The common presumption among all petitioners so far is that of a radio newcomer who has no or very little experience with any radio, probably that of a teenager just beginning to taste of the activities possible by adults. This is quite short-sighted since radio as a communications medium is 108 years old and the whole society of the United States contains millions of *two-way* radios, communications devices, most **not** used in the Amateur Radio Service.⁶ *Radio* is well known by the general public beyond the ubiquitous AM/FM broadcast receiver. *Amateur* radio is not well-known.

9. Mr. Volpe should recognize that there are, perhaps, hundreds of thousands of citizens of the United States who are at least somewhat experienced and knowledgeable about radio communications, over legal age, that do not possess amateur license grants. Orientation of *entry level* requirements should be focused around all ages and experiences, not just the raw beginner or one who is of a public school student age. Nor should such entry-level licensees be forced into activities favored by their great-grandfathers and where grandfathers crowned their personal preferences as royal requiring all subsequent generations to bow down to that majesty. Myths that originated in pre-World War Two times should not remain 80 to 70 years later when their standards and practices have become obsolete, unworkable, unnecessary.

⁶ Exclusive of cellular and cordless telephone sets and Wireless Local Area Network (WLAN) devices and the millions (no accurate count easily obtained) of Citizens Band Radio Service transceivers, two-way radio exists as a common appliance in law enforcement, fire fighting, ambulance services, utility companies, taxicab services, private and commercial and military aircraft, pleasure boats, fishing craft, water vehicles of many kinds, construction companies, lumber mills and yards, small business operations of many types, railroads, FRS and GMRS handsets, plus many kinds of so-called "toy" walkie-talkies used for small-group amusement.

D. On The Myth That Infrastructure Fails, Amateur Radio Miraculously Survives Emergencies

10. Mr. Volpe repeats a tired old catechism in slightly different words in his second paragraph, "...so that there will remain a reasonable number of radio enthusiasts that are able to function when sophisticated tools and technologies are not available." Mr. Volpe has not explained what he considers *sophisticated* in the way of communications technology. Presumably, a wired telegraph system would be *unsophisticated*. But, the United States does not have any of those anymore. Radio and television broadcasting stations use quite *sophisticated* electronic technology in order to broadcast. Public safety agencies use *sophisticated* two-way radio systems, along with *sophisticated* automatic primary electrical power back-up sub-systems. The telephone infrastructure is certainly *sophisticated* with the ESSs or Electronic Switching Systems that are like mainframe computers in their quick, non-electromagnetic call routing with so many more functions to aid subscribers. Medical agencies are the most *sophisticated* of all with many and varied *sophisticated* means to save lives and mend injuries in addition to their *sophisticated* communications systems capable of instant electronic transmission of patient medical information. Even the no-license-required Family Radio Service (FRS) handheld transceivers are *sophisticated* in that they use digital voice and channel coding to separate simultaneous users.

According to the myth, all of those *fail* during emergencies. Only the radio amateurs survive to do their duty to the country by way of Morse Code on HF! A miracle? No, a pipe dream, a tale of the imagination that never happened. In all the emergency situations, natural or man-made, that occurred in the United States since the end of World War Two, there has never been a case of any communications system total failure.⁷ Radio amateurs' residences and personal vehicles are every bit as susceptible to destruction from tornados, hurricanes, earthquakes, flood, fire or unknown future terrorist acts as are the real estate and buildings of the commercial and government infrastructure. With the destruction of radio amateurs' residences and vehicles comes their loss of Amateur Radio equipment, perhaps the amateurs themselves.

Radio telegraphy using Morse Code was once valuable for real emergencies. That is no longer needed. The *sophisticated* radios of today are also *super-sophisticated* in terms of reliability, efficiency, and ease of use when compared to early vacuum tube based radios. Those *new-fangled* vacuum tube radios were once thought *sophisticated* by even-older *Spark* transmitter users.

E. Having Tough Entry Requirements Is Good For The Service

11. Mr. Volpe states "*And I dare say that simply having large number of licenses on record does,*

⁷ During the Northridge Earthquake of 17 January 1994, commencing shortly after 4:30 AM, the entire primary electrical power distribution for about 10 million was cut off from the rest of Pacific [power] Intertie by one falling High Voltage tower. Total electrical blackout. Police, fire, medical, power utility agencies continued to function with backup systems. Over 50 deaths occurred from building collapses after the main shock. The telephone systems were briefly overloaded by too many frightened and anxious subscribers, yet those outside the area codes could dial into the local area codes before noon. Leased lines not routed through the ESSs were in long use by the professional fire departments alerting all stations to answer fires. Broadcast stations continued to operate, running off of emergency generators. Off-work utility personnel were notified to return in order to double the massive repair effort required. The central electric power distribution headquarters began a very rare *black start* to switch in small areas to the grid at any one time. That *black start* began about mid-morning daylight when the HV tower was repaired. There are no reports of Amateur Radio emergency radio networks in operation during the morning of 17 January 1994 in the southern California area. Where radio communications were needed, the local public safety and utility infrastructure had them.

in it's [sic] self, little to insure that there will be a sizeable percentage of truly trained and self-disciplined radio/communications experts available in times of local, state or national need." Mr. Volpe should look around the rest of the world of radio, especially the professional local public safety organizations. Those *trained and self-disciplined* people **are** there, but seldom in Amateur Radio. Morse Code telegraphy is **not** a requirement and has **not** been used to effect rescues or repair damage at any time of local, state, or national need in emergencies in the United States over the last half century. Radio communication *experts* would be aware of other radio services in any immediate locale and be able to join with them for combined planning and preparation for emergency communications, then continue on a program of training just for that. *Experts* would not make statements or vague generalities about *availability in times of need*. They would already be there and ready. Now. They are.

12. Amateur Radio is essentially a recreational avocation. It is not a military service. It does not need some kind of Boot Camp or Basic Training for *recruits*. It is not a national service as part of a government. It is not an around-the-clock communications carrier that demands constant attention to insure continuation of service to subscribers. It is not a professional organization, nor a union, nor a guild. It is basically a hobby, a fun recreation activity involving radio communications, entirely voluntary. No radio amateur needs to *sign on* or take any oath to defend the Constitution of the United States, with their lives if needs be.⁸ All that is needed for legal Amateur Radio transmission is to pass a rather simple set of tests given by other radio amateurs certified as examiners. The Commission has never been authorized by law to be an academic institution nor license test results accredited as some kind of credential. Licenses are only a regulatory tool of the Commission, proof that the Commission has deemed an applicant passing the Commission's requirements.

13. It is better to consider that true learning is what the individual can do, that success in that process can be gauged either by individuals judging their own work or by an accredited school's certificates of completion. No avocational activity license shows the intellectual capability of the licensee, certainly not so for the few number of questions on any radio amateur license test. That so many radio amateurs do use those license tests as levels of expertise is not a guarantor that the tests are such. That false practice is little more than an emotional effort to somehow prove themselves better than others who have not achieved as high a license class. Such is game-playing or *one-upmanship*.

14. *Standards* evolve over time. United States Amateur Radio regulations have changed since 70

⁸ As this commenter did on 13 March 1952, being inducted to the Army and subsequently being taught to "close with, and destroy the enemy" on an equal basis of learning the intricacies of radar and microwave radio relay equipment at the Signal School. I was fortunate to be assigned after signal training to the HF transmitting station for ADA, attached to Far East Command Headquarters then in Tokyo, Japan. From February of 1953 I learned, not by school learning, but on-the-job to operate and maintain 36 HF transmitters that were the primary communications link across the Pacific to the United States, Hawaii, Alaska, Manila, Okinawa, Saigon, Pusan, and Seoul. During the next three years ADA expanded to 43 transmitters, relaying approximately 220 thousand messages per month on a 24-hours-a-day, 7-day-a-week schedule regardless of HF propagation conditions. At no time was any manual telegraphy employed for either receiving or transmitting at ADA. ADA continued to function until 1963 when the United States Air Force took over responsibility of all central Honshu HF communications. The transmitter site was built on an old airfield and returned to the Japanese government in 1978, the need for HF radio no longer primary. Callsign ADA remains, now that for Headquarters, United States Army Pacific. That experience led this commenter to change his career from artist-illustrator to electronics engineer. It brought a new perspective on electronics technology, painting an exciting and vibrant future possible, not colored in the faded hues of old standards and practices.

years ago and the creation of the Commission by the Communications Act of 1934. Standards in the military and commercial communications evolve to reinforce the ability of the military and commercial users to perform their responsible activities. In those areas radio communication is not an avocational activity, it is an occupation. Amateur Radio is **not** an occupation, never has been. It is a voluntary avocation, engaged in primarily for recreation. As a result of that, individuals tend to promote their own desires in order to obtain privileges for their own particular activity. They are not responsible for any service tasks to the country or to fulfill contracts with subscribers of their service. Anyone with media access, such as publications, can emphasize certain activities within the avocation over other activities. With sufficient time and exposure to a wide group of similar radio hobbyists, pseudo-standards emerge on what is claimed to be *good*.⁹

15. A case in point is the use of Morse Code in communications. Despite the fact that all other radio services were dropping that mode or never considered it to begin with, the American Radio Relay League (ARRL) kept on promoting its use, its traditional aspects and alleged general *superiority* since the end of World War Two. That promotion included lobbying the Commission to retain Morse Code testing. Even into this new millennium, the ARRL is still determined to have at least one license class required to have a code test.¹⁰ The ARRL refused to budge from its pro-code opinion stance in a 2002 resolution by the IARU to make the test optional to each administration. There is no good answer to explain it. There is only the evidence all around to show that it refuses to change. A suspected reason for stubbornness is simply human territorial imperative set by the officials and Board of Directors who are all long-time, code-tested-at-high-rate radio amateur licensees. The ARRL claims it *represents amateur radio*, yet their only obligation is to represent its members. ARRL membership has dropped to 21 percent of all United States Amateur Radio licensees.¹¹

16. Loyalists for the ARRL are not dissuaded. The core membership, the long-time amateurs, most of whom had the aptitude for Morse Code skills long ago, fiercely support both the use and license testing for Morse Code. As long-time members, they have exercised a symbiotic relationship with the ARRL, such to over-emphasize the efficacy of that mode and to the mythology created about it. Many of those members have become the equivalent of Believers, an almost cult-like following to a singular membership organization. What the ARRL says in its publications has become Articles of Faith. Since the ARRL's periodicals and publications reach so many radio amateurs, their minority group opinion plus their own promotions can exercise an undue

⁹ That is the principle behind effective marketing of any product, that of influencing one kind of product over a competitor. That does not prove that a product really is better but it makes the consumer tend to *think* it is better. In the United States the chief marketing organization of Amateur Radio standards and practices is the ARRL. The ARRL does many things besides being a membership organization. It sells a great many publications along with some non-paper products and it is also a special-interest political group employing a professional lobbyist organization as well as a communications law firm in Washington, DC. The ARRL monthly membership magazine, *QST*, has a guaranteed distribution to 154 thousand members, thus has the demographics to prove a good market venue for advertisers purchasing magazine space. That is an excellent avenue down which to drive opinion propaganda, a roadway with only one vehicle.

¹⁰ Petition for Rule Making RM-10867.

¹¹ Based on *Publisher's Sworn Statement* for *QST* magazine of 31 December 2003 of 154,545 members and compared to the average of 727,114 individual amateur licensees estimated at that time. Totals were obtained from *hamdata.com* for February, 2004, and September, 2003, then added and divided by two. The percentage calculates out to 21.255 percent. The number of ARRL Life Members were 20,193 according to the same *Publisher's Sworn Statement*. Life Members are 13.07 percent of total membership.

influence on the opinions of the whole of United States Amateur Radio licensees. There is only one competitor in the United States for radio amateur periodicals.¹²

17. Can it be that the ARRL is correct about Morse Code efficacy and every other radio service wrong? Hardly. Warfare is perhaps the harshest emergency environment short of continental-scale natural disaster. The United States military has dropped the use of Morse Code for any communications years ago, dropped the Morse training from communications training. The only Morse Code training now is strictly for Military Intelligence electronic monitoring at Fort Huachuca, AZ. Monitoring is the passive interception of signals. Communications without Morse Code modes has been proven effective in Kuwait-Iraq in 1990-1991, again in Iraq in 2003-2004, in Afghanistan and in Somalia and in the republics that made up old Yugoslavia between those two Middle Eastern conflicts. No Morse Code is used in any United States police, fire, or medical emergency organization communications. No Morse Code was used in the immediate aftermath of the heinous Attack on America of 11 September 2001. It is not a needed skill for very real, very now emergencies. Morse Code skill remains just a fun activity for avocational use and for amusing speculative fiction involving doomsday scenarios.

18. Is there a real necessity to demonstrate Morse Code manual skill to achieve any Amateur Radio license grant, any class? Not really, and for several reasons. No other manual skill has been required in any Amateur Radio license examination since 1912 when the first United States radio regulatory agency was created. The Commission has not required any Morse Code use over and above any other allocated mode for years. All allocated modes are optional to use, any allocated band. Morse Code manual skill testing does not show any knowledge of radio theory, nor knowledge of radio regulations, nor any ability in operating any of the other allocated modes available to United States radio amateurs. All any Morse Code manual skill test shows is... manual skill in Morse Code. The Commission has stated publicly in proceedings 90-53, 98-143, and in Report and Order 99-412 that Morse Code skill has no basis for the Commission's judgement on whether a license applicant is considered worthy of a grant. The Commission was obligated to obey the ITU-R Radio Regulations which then required all administrations to test for Morse Code for any licenses having below-30 MHz operating privileges. No option then. All administrations. An **option** now exists.

19. Is there any reason for retention of the Morse Code test from *tradition*? No. The Commission is not legally chartered to maintain some kind of living museum of old radio skills. The Commission must, by law, regulate United States civil radio and mitigate radio interference. If old radio skills were considered needed to be kept alive, then certain membership organizations could do that within their own private domains.

20. Radio regulations apply to **all** citizens. The Morse Code tests will affect those not yet tested. The already-tested will not be affected, except perhaps for that group's resulting emotional trauma should the code test be eliminated. The Commission is not chartered to provide emotional sustenance for those with too much territorial imperative.

¹² The only other monthly magazine left on the newsstand market directly for radio amateurs is *CQ*. *73* magazine stopped earlier in 2004 and *Ham Radio* magazine stopped in 1990, *HR* assets sold to *CQ Communications*, the publishers of *CQ* magazine.

Summary

This Reply to Comments has covered considerable ground than just Mr. Volpe's statements in his Comments. That was considered necessary due to so many other Comments on all four 2004 Petitions stating similar myths and misconceptions of retaining the *status quo* as much as possible. There is no positive aspect, no demonstration of leadership to be shown by dogged retention of old, outdated standards and practices. Old-timers in Amateur Radio have no territorial grounds to force newcomers to do as they had to do long ago. Amateur Radio licenses are not academic certificates. Skill in all of the radio arts can be achieved fully without requiring any license examination testing. More importantly, radio regulations must remain as modern and flexible as possible, to be fair and equitable to all, not just to a self-chosen few. Options should exist for all. Option is not a failure.

I thank the Commission for allowing an independent citizen's viewpoint to be heard and with the ability to share a half century's accumulation of experience and knowledge in radio and electronics at work and in hobbyist activities. As a summation of that experience, I would recommend the essential suggestions of the National Council of Volunteer Examiner Coordinators' Petition for Rule Making, RM-10870. Not for myself, but rather for the uncountable many citizens in the near future who wish to enter Amateur Radio.

Respectfully submitted electronically this 1st day of April, 2004,

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