

**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)
2003 World Radiocommunication Conference)

Via the ECFS

**COMMENTS on the Petition of the American Radio Relay League
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..

On The 18 Petitions For Part 97 Amendment in 2003 - 2004

Of the 14 Petitions for Rule Making released for comments in 2003 (now closed), plus the 4 released in 2004, it is observable that there is no unity among the petitioners about changes to the United States Amateur Radio Regulations. That fits with casual observation away from any rule making venues. Further, there is a decided scarcity of objective opinion among the traditionalists represented by the petitioners of RM-10867 (American Radio Relay League) through RM-10869 (Ronald D. Lowrance). Of those, the American Radio Relay League (ARRL) does concede more but favors its membership (21.3% of all licensed amateurs) who are inclined towards older standards and practices.¹ Mr. Lowrance appears to want a return to

¹ ARRL membership is 154,545 total according to the Publisher's Sworn Statement of 31 December 2004 in regard to *QST*, the membership magazine of the ARRL. According to the *Hamdata.com* Internet site, the total number of U.S. amateur radio licensees was 727,159 at 1359 UTC on 24 March 2004 (less 8,935 Club callsigns). *Hamdata* says they update daily from the FCC amateur radio database. *Hamdata* information based on one month previous (February) is 726,630 total licensees less club calls, six months previous (September, 2003) is 727,598 total licensees less club calls; this indicates very little difference with a high probability of the percentage of ARRL membership stated for December, 2003, is as given above. The percentage of ARRL memberships to all licensed U.S. radio amateurs is thus 21.25%, a decided minority group in U.S. amateur radio. Previous preference data, not current, has shown informally that ARRL members favor the retention of morse code testing as well as use plus

International Morse Code testing for all Amateur license classes. The Radio Amateur Foundation (RAF), a group of at least 6 licensees from the southeastern United States, takes a mid-way stance between the two. All three remain conservative and oriented towards their own past experiences.

The National Council of Volunteer Examiner Coordinators (NCVEC) have taken a more realistic look at both the present and near future in United States Amateur Radio, not only in their viewpoint on International Morse Code examination testing but the interrelationship of Amateur regulations. While the NCVEC could be accused of bias towards only the examination process, their petition shows considerable thought and the background of many in the Volunteer Examiner Coordinator (VEC) licensees with first-hand observation of those taking examinations. The VEC are also relatively long-term Amateur Radio licensees and, from casual observation of their database information, have all been required to pass an International Morse Code examination at rates faster than the existing 5 words per minute regulation minimum .

It is my objective opinion that only RM-10870 offers the most viable approach of the 18 petitions released so far towards future Part 97 Amendment. I think the NCVEC petition in general is the best choice and applaud an almost radical approach towards future changes. It is for modernization, not maintenance of a living museum of old radio skills. It would seem the VEC are in the best position to know and experience, to “feel the pulse” of present-day radio amateurs of all classes, than those groups who have long adhered to more specialized and traditional activities within U.S. Amateur Radio.

While I would personally favor the NCVEC petition, I will make some comments and observations relative to Petition for Rule Making RM-10867 [ARRL] following.

A. Inferred Charge That The Commission Does Not Provide An Effective *Entry Level License*²

1. 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 teen-ager 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.³ *Radio* is well known by the general public beyond the ubiquitous AM/FM broadcast receiver.

3. I feel that the petitioners and the Commission 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*

tending towards conservatism in and strict adherence to older standards and practices.

² RM-10867 at 7, 8, 9

³ 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.

requirements should be focused around all ages and experiences, not just the raw beginner or one who is of a public school student age.

4. The petitioners and the Commission should also recognize that an avocational activity such as Amateur Radio is neither union nor guild nor place of work requiring tenure at succeeding increments of license class. The so-called *upgrade* in Amateur Radio is not an absolute requirement for anyone, technically, morally or legally.

5. While this commenter cannot boast of legal expertise, it should be rather obvious that the lawful task of the Commission should not be to *recruit* licensees. It should, for good government purposes, provide an equitable opportunity for all citizens to enter Amateur Radio, but not to pander to niche groups or just those with long tenure in the Amateur Radio Service as licensees. The Commission's lawful task is to regulate all United States civil radio. Recruitment into Amateur Radio is a self-imposed task of clubs and membership organizations such as the ARRL.

6. Amateur Radio activities in the United States is essentially an *avocational recreation* involving the transmission of radio communications for personal enjoyment. The physical nature of electromagnetic waves traversing borders and administrative boundaries requires regulation by administrations at their origin in order to mitigate interference. Radio operator and radio station licenses are a regulatory tool for such mitigation. Those licenses are not intellectual or academic achievements such as a college or university degree. Casual observation is de facto proof that radio amateurs tend to consider themselves far more important than the *hobbyists* they are and include their Amateur Radio callsigns behind their names in the manner of official titles or academic degree qualifications.

7. There should not be a subterfuge of individual and group exaggerated self-importance to hide the fact that Amateur Radio is basically a recreation, a fun activity involving a constantly-evolving state of radio-electronics technology art. Recreational activity is important to individual citizens, relieving work stress and promoting better mental well-being. In technologically-oriented recreations such as Amateur Radio, individuals have an opportunity to get intimately involved with the technology itself, to experiment, perhaps to devise a new method to improve that state of the art.⁴

8. While the ARRL purports to be an Amateur Radio leader and organizer, it is also a publishing business concentrating on Amateur Radio books and periodicals. Its altruistic membership services require that profit-income funding for survival⁵. Publishing activities also provide an automatic venue for influence

⁴ Two such relatively recent improvements are *PSK31* for very narrowband on-line teleprinting and the *Tayloe Mixer*. *PSK31* was devised by Peter Martinez (G3PLX), a long-time radio amateur in the United Kingdom for on-circuit manual teleprinting at approximately 30 words per minute along with some error-correction in the character codes, yet capable of working within the narrow bandwidth of a conventional manual on-off keyed morse code signal. The *Tayloe Mixer*, invented by Dan Tayloe (N7VE), is a pending-patent mixer circuit using an available MOS analog switch integrated circuit with a quadrature local oscillator input that provides exceptionally high intermodulation distortion level signal inputs and an output that is well suited for audio phase-shift networks capable of selective single sideband reception.

⁵ According to copies of the ARRL 2002 Federal Income Tax forms made available on the Internet, their 2001 income was about \$12 million. They employ many on a full-time basis at their technically *non-profit* activity headquarters in Newington, CT.

of opinion among all amateurs. At the end of 2003 their reported membership total was only 21 percent of the approximate total of all licensed United States radio amateurs. That membership percentage has not risen above one-quarter of all licensed U.S. amateurs in over a decade, still a minority-group in radio amateurism. The ARRL was not the first United States Amateur Radio organization, only the eventual unofficial title holder of *National Association*.⁶ All of that must be considered when reviewing the petitioner's statements.

9. The insistence of the ARRL on any *entry level* license, specifically oriented about the ignorance and inexperience in radio communications arts may be influenced by their publishing activity. Raw beginners would be a good market for self-education books and materials on radio technology basics. In addition, such would be another chance for self-promotion through such a new product market and also a chance to increase their membership numbers. Higher membership numbers are useful in attracting greater advertisement sales for *QST*, the ARRL membership magazine.⁷

B. The Restoration of the Novice License Class as an *Entry Level License*⁸

10. This is illogical due to the continuing attrition of the former Novice class before the 2000 restructuring from Report and Order 99-412. That attrition in class numbers was occurring continually from 1990 on through mid-2000. The reasons for the continuing drop in numbers are many and have been given in other venues adequately. Proponents of maintaining a *Novice* indefinitely are denying most of the causes for its negative growth and general disinterest among the radio-interested.

11. In modern American society, *Novice* means either a probationary religious order member or a rank beginner, a know-nothing newcomer. The first doesn't apply to technologically-involved avocations but the second does and has connotations and connections to craft-guild-union ratings as the bottom-most level. Amateur Radio activity is an avocation, not an occupation. Starting a newcomer off on an avocational activity with identification equated to inferiority is a decided negative incentive.

12 An entry-level name of *Communicator* as suggested by the National Council of Volunteer Examination Coordinators (NCVEC) in RM-10870 is far better, without the emotional loading of negativism.

⁶ ARRL was incorporated in 1914. The Radio Club of America is the first, incorporated in 1909 and still in existence. The Radio Club of America or *RCA* still exists but does not engage in Amateur Radio membership services; not to be confused with *RCA Corporation*, a former business corporate entity..

⁷ In American periodical publishing, advertising space sales is the major income source among nearly all periodicals. Subscriptions pay only for the printing, handling and maintenance of subscription lists. In addition, subscription numbers are part of the demographic information used to establish and influence space sales. Space sales account for nearly the entirety of staff salaries, author's compensation, maintenance of all overhead expenses of staff and publisher. Shrinking advertiser's budgets and resultant loss of space sales resulted in the termination of specific Amateur Radio monthlies *Ham Radio* magazine (in 1990) and *73* just recently. *QST* remains as the leader in American radio amateur periodicals because their demographic base guarantees about 140 thousand subscriptions automatic with membership. Store newsstand sales amount to only 1.02% of the total printing, subscriptions to non-membership entities only 0.62%. By contrast, the remaining amateur-interest periodical, *CQ*, must exist entirely on store, newsstand, and subscription sales, no automatic demographic backing available.

⁸ RM-10867 at 15, 16, 17, 18.

Communications is a major activity of American Amateur Radio. *Communicator* has the connotation of one who does that. Further, that name has no negative loading but neither does it imply an exceptional skill or ability as in *Amateur Extra*. Many Amateur Extras must have their emotional needs satisfied with titles, lest their self-perceived importance be slighted and voluminous complaints be lodged by them against the Commission.

13. *Tradition* is a vapid reason for retention of most titles, rank, and status. *Novice* as a license class was a failed experiment. It did not produce expected results. The Commission rightfully removed that category for new licenses with Report and Order 99-412. Retention of the name as the *entry class* would be another failure by initial class identification as a negative connotation and the relatively recent memory of the failed *Novice* class. While some conservative traditionalist radio amateurs favor its return, their reason seems only because they entered into Amateur Radio with that class. Now in a position of never having to take another test, they wish to foist it on newcomers. That is simply a form of psychological transference, of using their own experiences of younger times as a self-perceived role-model.

C. Continuation of the Morse Code Test for Any Class License⁹

14. The only perceived valid reason given by the petitioners for retention of the Amateur Extra class International Morse Code test is that all Extras have taken such a test. The previous statements of the Commission about code testing as a *regulatory requirement in license consideration* has been given short shrift by the petitioners. In the proceedings of 90-53 and 98-143, the Commission has stated that the test does not serve their needs in licensing any applicant. That 14-year history should be sufficient for dismissal of a code test requirement for any Amateur Radio license class.

15. The traditionalist myth of the 1930s echoes today among the code test advocates, “*CW gets through when nothing else will.*”¹⁰ In actual communications practice several other modes do work better than CW, such as phase-shift-keying data (teleprinter) mode that includes forward error-correction (FEC) character coding. Destruction of the myth in United States Amateur Radio seems insulated by the fact that, except for certain Maritime Radio Service requirements, *no other radio service uses morse code mode for any communications purpose*. This is true for all the military service branches as well. Had the myth been true, at least one of those other radio services would have retained it.

16. Cites of “*CW is a simple, manual mode that doesn’t need ‘fancy equipment’*” are largely promoted by those conservative traditionalists who refuse to change and don’t, or can’t, learn new things. One self-contained PACTOR modem-interface box between a teleprinter and transceiver can be the “fancy equipment” needed to out-perform manual CW.

⁹ RM-10867 at 18, 19.

¹⁰ *CW* in this case is the familiar name for on-off keying of a continuous-wave carrier using International Morse Code. Etymological truth is difficult to prove for exact pre-World War 2 times in Amateur Radio other than this commenter’s observation of old amateur literature still surviving. Informally stated, it seems to have begun with the rise in amplitude-modulation voice transmission activity among some amateurs. Traditionalist amateurs favoring strict *CW* modes frowned on that practice and made their thoughts known. Very few other modes and modulations were available to amateurs in that period compared to the plethora of modes and modulations available today.

17. The *simplicity of CW* in both use and in equipment is also cited as a reason for retention, but principally by those already skilled at manual CW or have difficulty understanding the theory behind any form of analog or digital modulation. That myth may have had some validity in the vacuum tube era. With at least three orders of reliability magnitude increase beyond vacuum tubes, modern semiconductor circuitry allows more functionality in less physical space than tube architecture, allowing more complex modulation still at longer operating life.

18. Promoters of the CW myth may also seek psychological sustenance in their self-perceived superiority over others of achieving a tested 20 word per minute code rate. All humans do not have a common aptitude for on-off arrhythmic tone patterns representing letters, numbers, and punctuation of a written language. Nearly all humans do have a common aptitude to learn written languages and visual imagery, to communicate with both forms. It is uncommon that humans can be fluent in rapid psychomotor skills for representative monotone patterns of a written alphabet.

19. Morse code skill does not represent any state of the art in communications operations. It has been present in communications for 160 years with the only true change in the method that of using radio in place of wire lines 108 years ago.¹¹ One of the Commission's definitions of the basis and purpose of Amateur Radio is "*Continuity and extension of the amateur's proven ability to contribute to the advancement of the radio art.*"¹² The Amateur Extra class is regarded as the highest skill level in United States Amateur Radio but a skill level in a 108-year-old radio mode is hardly considered state-of-the-art nor advancement.

20. It is a commonly-observed, informal fact that ARRL members tend towards the traditionalist and conservative compared to all United States radio amateurs. Membership is also skewed from the average in that more of them are long-timers in the avocation. As such, the ARRL as a group is not truly representative of the entire amateur community. The Commission should serve all citizens, not a minority of 21 percent of radio amateurs as in the case of the ARRL.

21. None of the 18 petitions coming before the Commission in 2003 to 2004 seek to remove any International Morse Code use. Since code skills can be acquired without any federal requirement to be manually tested in their use, there is no reasonable reason for the retention of any International Morse Code test in any license class examination. Morse Code use would continue to be an available option for any license class. Option is not a failure.

¹¹ The first Morse-Vail Telegraph system was placed into commercial operation in 1844 on a circuit from Baltimore, MD, to Washington, DC. Radio as a communications means was first demonstrated in 1896, in Italy by Marconi, in Russia by Popov. Morse code was used in each country because the first radios were technologically primitive, so much so that only on-off keying could be used for anything resembling communications. While radio changed remarkably since then, the on-off coding changed little if any at all.

¹² § 97.1 (b).

Summary

RM-10867 is a radical regulation change in much the same way as is RM-10870. The essential differences seem to lie in the ARRL's doggedly retaining conservative tradition that appease only its membership at the expense of others, including unnumbered citizens of the future who might want to enter into Amateur Radio. A future is not promised by clinging to the past nor playing favorites to a minority. The petition of the NCVVEC in RM-10870 seems the better for both the near and far future in United States Amateur Radio. I respectfully suggest to the Commission that RM-10870 be adopted, the others rejected.

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 towards proposed rule making.

Respectfully submitted this 26th day of March, 2004,

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