

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

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

Via the ECFS

Reply to Comments of David Sanford Made on 27 April 2004

by Leonard H. Anderson

Mr. Sanford's Comment consisted of a one-paragraph excoriation of the present-day Amateur Radio public-disclosure question-and-answer question pool system and an in-document attachment of a four-page separate article by John Portune, W6NBC, describing his Amateur Radio club's activity of full-day study followed by a license examination. While this Reply to Comments is less specifically about any of the four Petitions for Rule Making, it was felt necessary to illuminate the present-day testing process from an independent point of view.

Please allow me to state that I am a retired electronics design engineer with no vested interest in any professional or amateur radio activity nor any educational institution nor with any of those who have commented on these Petitions for 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.

A. Memorization Is Stated As A *Bad* Thing

1. Mr. Sanford's first two sentences state, "*The following article is proof that the practice of releasing the test pool is a huge mistake. All of the amateur radio tests can be passed by memorization.*" That any question-and-answer pool is made public is a decision made outside the Commission's regulatory power. That is not alterable by any Notice of Proposed Rule Making made by the Commission.

2. **All learning begins by memorization.** That is so intrinsic to the human experience that

many fail to realize it. Memorization is the act of committing to memory all sensory input as facts of the world around us, beginning in infancy.¹

2. While Part 97, Title 47 C.F.R. is one of the smaller Parts in the whole five-volume printed and bound United States civil radio regulations, it contains a large number of items which can only be *known* by memorization. The reasons for such things as band plans, license class distinctions, numbers of required correct answers to various test elements, et al, have evolved over years of discussion and changes. Unless one is a communications attorney, it is impossible to *know all about such things* intrinsically. Memorization is **required** sufficient to demonstrate to the Commission that a license applicant is sufficiently familiar with Amateur Radio regulations.

3. It is impossible to go through *first principles* development of the laws of physics and its subsets that pertain to radio theory. Every *student must memorize* a number of **basic facts** just to **begin the learning process**.² All of those basic facts have been demonstrated and accepted to the scientific community and to academicians, worldwide.

4. **Memorization is unavoidable in any field of learning.**

B. It Is Possible To Make A Question Pool Size So As To Limit Passing by Memorization

5. The second sentence in §97.523 states, “*Each question pool must contain at least 10 times the number of questions required for a single examination.*”³ The Commission does not state any maximum. The actual published size of any question pool is determined by the National Council of Volunteer Examiner Coordinators (NCVEC) Question Pool Committee (QPC).

6. The present Element 2 and Element 3 written tests require 35 questions each, therefore each question pool **must contain 350 questions-and-answers** as a **minimum**. If the question pool were doubled, the question pools would each contain 700 questions-and-answers. Increasing the pool size further would limit the average human capacity for *memorizing all the correct answers*.⁴

7. The maximum size of the question pool is generally imposed by the QPC itself. By

¹ There are almost countless texts on this general subject, no one text having *all the answers*.

² *Student* in this case refers to anyone, any age, involved in any learning process.

³ Enhancement of words *at least* added by this commenter. Verbatim quote is from the 1 October 2003 issue of Code of Federal Regulations, Title 47, obtained from the United States Government Printing Office.

⁴ This commenter is at a loss to arrive at any maximum limit, quickly deferring to those scientists involved in human mental capacity. By empirical observation and experience, some upper limit must exist that would satisfy most negative critics. Again, by observation of those in the entertainment business, many actors are capable of *memorizing many pages of dialogue, stage directions* in a relatively short time. That is an example of refinement in the memorization process, usually done over years of experience in that, a part of the craft of acting.

definition, the NCVEC are *volunteers*. Amateur Radio is considered to be a *voluntary, non-commercial* activity involving radio, done without pecuniary compensation. All the NCVEC are required by law to be licensed radio amateurs.

8. The Commission no longer specifies the exact nature of question pool subject content. That is left up to the NCVEC QPC. The Commission does give final approval of each question pool prior to publishing. Creation of the subject content of each question pool is thus left up to the QPC. Criticism of question pool content should be directed to the QPC, not the Commission.

9. Archival and dissemination of all written element question pools can readily be done by conventional Compact Disks, each containing the entirety of all questions-and-answers up to **10,000 to 15,000** questions and answers for all three examination test elements.⁵ Generation of each *individual applicant's* written test element can be done with the ubiquitous Personal Computer having a Compact Disk drive and inkjet or laser printer.⁶ There are no real limits on the maximum sizes of test elements in reference to present-day Personal Computer hardware.

C. The ARRL Is Involved With *Free Giveaways*?

10. Mr. Sanford's third sentence states, "*Please note that the ARRL [American Radio Relay League] is proposing to do away with the code requirement, and grant General Class licenses to current Technicians.*" That is somewhat incorrect. The ARRL, in RM-10867, proposes to eliminate the manual telegraphy test for all **but** the Extra class. The NCVEC, in RM-10870, proposes eliminating the manual telegraphy test for **all** classes.

11. Mr. Sanford appears to view the **no-code-test** Technician with all the disdain of the long-tenured amateur radiotelegrapher, as if to put those unworthies in their place. Such an attitude is bigoted and unforgivable but it has a number of adherents. It is precisely that sort of *class distinction* that led to the creation of the so-called *incentive-plan* licensing structure and one that has turned away many from the voluntary non-commercial avocation called Amateur Radio.

12. As of the 26th of April, 2004, there were 283 thousand Technician class licensees out of almost 727 thousand total individual licensees. The one class of Technician licenses, less the left-over class of Technician Plus, accounts for 39.0 percent of **all** individual Amateur Radio licenses. Those

⁵ Assuming 10 Kbytes per question with four multiple choice answers plus indicators of correct and incorrect answers, 10,000 question-and-answer groups would total 100 Mbytes. Three test elements would require 300 Mbytes. The maximum capacity of the now-common Compact Disk is about 600 Mbytes.

⁶ That would include a grading sheet solely for the use of the Volunteer Examiner test team and could include whatever is necessary for Volunteer Examiner administrative purposes. Random-number generation routines are well known and have been so for three decades and more. If 50 questions-and-answers take 8 pages of paper to print, those can be done in 2 minutes maximum using six-year-old inkjet printers such as the Hewlett-Packard 722C *Deskjet*. Preparation would be highly automated and could be done in advance of any test session.

must be categorized somewhere, either as part of adjacent classes for three classes total or as a separate fourth class. 283 thousand licensees are not easily dismissed, even by the minority who consider themselves as the so-called *elite* in United States Amateur Radio.

13. The following tabulation represents Amateur Radio class totals in the United States as of 1 December 1997 and 26 April 2004. The 1997 figures were obtained from NPRM 98-183 which had ET Docket 98-143 during the Amateur Radio *Restructuring* comment period from 1998 to January 15, 1999.⁷ The 2004 figures were taken from www.hamdata.com as of 1210 UTC on 26 April, 2004. Percentages in parenthesis indicate that part of each period's total individual licenses.

<u>Class</u>	<u>1997</u>		<u>2004</u>	
Technician	179,226	(24.9 %)	283,367	(39.0 %)
Technician Plus	147,559	(20.5 %)	66,689	(9.1 %)
Novice	79,965	(11.1 %)	38,613	(5.3 %)
General	124,415	(17.3 %)	146,198	(20.1 %)
Advanced	112,482	(15.6 %)	84,403	(11.6 %)
Amateur Extra	75,694	(10.5 %)	107,478	(14.8 %)
Total, Individual	719,341	(99.9 %)*	726,748	(99.9 %)*

* cumulative round-off errors result in 99.9% instead of 100.0%

Several significant facts are evident in those two sets of figures, separated by only about 6 ½ years and embracing the *Restructuring* Order of 99-412 that went into effect in 2000. First, the increase in total individual licenses is only 7,407 or about +1.03%. Secondly, the increase in the no-code-test Technician class licensees was 104,141. Thirdly, as a group, the *code-tested* classes (Technician Plus through Amateur Extra, 5 classes) **decreased** by 96,734. The interpretation could be made that, had it not been for the Technician class, total Amateur Radio license numbers could have dropped significantly in that time period.⁸

14. It should be noted that there is hardly any exceptions taken to either Petition in regards to *automatic free upgrading* of the existing Advanced class to Amateur Extra class. The only dispute seems to come from the long-tenured amateurs' opinion of the no-code-test Technician class, now the undisputed majority class in United States Amateur Radio. What is good for one class, all of which were code-tested, is *absolutely wrong* for the no-code-test Technician class. The obvious inference there is that the long-tenured amateurs insist on a manual telegraphy test for all amateurs.

⁷ Specifically, footnote 13 on page 4 of NPRM 98-183. The first acknowledgment that the no-code-test Technician class represented a de facto *entry level* class is found in paragraph 12 of 98-183, "*We believe that the no-code-test Technician class operator license has replaced the Novice operator license as the entry-level license class of choice.*" NPRM 98-183 was adopted 29 July, 1998, and released 10 August 1998.

⁸ That is rather opposite to the claims of James P. Miccolis' Comments to RM-10867 and RM-10870 made on 23 April 2004.

15. The combined Advanced-plus-Amateur-Extra class totalled 188,176 in 1997, and 191,881 in 2004, a difference of only 3,785. By appearances of numbers, it would seem that Advanced classes had upgraded to Amateur Extra in the approximately 6 ½ year period.

16. A compromise condition could be reached by a final disposition of **retaining the no-code-test Technician class as a fourth license class** with the remaining three classes being the *entry-level*, General, and Extra. It would be assumed that the *free upgrade* of Advanced to Extra meets with general approval. That satisfies the hide-bound long-tenured's need to *keep Technicians in the no-code-test ghetto*.⁹

17. Resolution of the number of classes requires a disposition of the left-over category of Technician Plus. Those license class holders were manual telegraphy tested and thus should be eligible for HF access. If those 66,689 are *downgraded* to Technician, that classes' totals would amount to 350,056 or 48.2 percent of all licensees. That edges this combined Technician class very close to a majority. Given the continuing growth pattern, that combined class would become a majority in very few years.

18. If Technician Plus licensees are *automatically upgraded* to General, the combined category would have 212,887 or 29.3 percent of all licensees. Considering that Technician Plus class licensees are already credited with a manual telegraphy test completion status, there should be little dispute over their enjoying that so-called *free upgrade*. Technician Plus class is currently 66,689 or 9.1 percent of all licensees, not quite twice the number of remaining Novice class licensees.

19. From the enmity expressed by many of the long-tenured amateurs, trying to lump the three so-called *lower* classes (Technician, Technician Plus, and Novice) into a single *entry-level* class is not a good thing for Amateur Radio. The combined numbers, based on 26 April 2004 statistics, would put that total at 388,669 or 53.5 percent of all licenses. That **is** a majority. While that general age and experience group is not as outrageously outspoken as the class-conscious long-tenured amateurs, the long-term action might be to simply stop renewing.¹⁰ With the continuing attrition of the long-tenured amateurs in the *upper* three classes, there would be a negative growth of Amateur Radio in the United States.

D. All It Takes Is An Afternoon?

20. Mr. Sanford's fourth sentence states, "*As the article explains, a Technician License can be obtained in an afternoon.*" Had Mr. Sanford read the attached article fully, he would have

⁹ Judging from the suppressed outrage of long-tenured amateurs on the so-called *free upgrade*, one is tempted to add "*where they belong!*" but that is unkind and shouldn't be said. Nonetheless, it is quite evident that class distinction is alive and firmly entrenched in United States Amateur Radio.

¹⁰ There could also be the reverse, an outrage of those *lower-class* amateurs, now in the majority, who might vent their anger on the Commission as well as the long-tenured, class-conscious, self-styled *elite*.

understood that this special, all-day session, culminating in a separate Volunteer Examiner license test, is **expressly for the purposes of completing the test.**¹¹

21. United States Amateur Radio is **not** a union, **not** a guild, **not** a trade-craft of a professional organization. Amateur Radio is a **voluntary, non-commercial** activity involving radio, done for recreation and personal enjoyment. In short, a **hobby**. There should be nothing wrong with that, nor passing any 35-question written examination nor even a 70-question written examination after a *cramming* session lasting all day.

22. The all-day session as conducted by John Portune, W6NBC, is done by maximally-licensed radio amateurs and is unique only in its continuous cramming session, contiguous with the following Volunteer Examiner examination. It would seem that Mr. Portune's service is a **credit** to Amateur Radio rather than any detriment. It is both unique and successful, getting more citizens involved in the hobby rather than turning them away.

I consider Mr. Sanford's Comment inappropriate as well as misdirected but also thankful that Mr. Portune's unique service to United States Amateur Radio was brought to everyone's attention. 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.

Respectfully submitted this 27th day of April, 2004,

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¹¹ Mr. Sanford has no attribution for this *article* or its source. Full details can be obtained at the www.w6nbc.com website for this unique, all-amateur service. Further, it is for **other classes as well** as indicated on the website of W6NBC.