

FEDERAL COMMUNICATIONS COMMISSION  
Federal Communications Commission  
Wireless Telecommunications Bureau  
1919 M Street, N.W.  
Washington, D.C. 20554

November 11, 1998

OT Docket  
No 98-14

**Re: Amateur Service Review**

The attached proposal is a further and better thought-out version of a hurriedly written proposal sent to the FCC on August 6<sup>th</sup>, 1998 when the FCC's intention to simplify Amateur Radio was suddenly made known to me by ARRL. Please disregard that previous proposal.

A month later, in September the FCC proposal to streamline amateur rules down to 4 grades was made known. It appears to be far superior to ARRL's proposal, which may represent some of their member's ideas, but probably does not represent the majority of thinking of amateurs, such as me, nor many of their members, of which I am one. However, I believe it is possible to simplify Amateur Radio licensing considerably more than even the FCC's proposal does.

Understandably, the FCC would like to simplify administration of the Amateur Service as much as it can. If it were simplified enough it might require as few as one FCC employee to produce all of the tests required by Volunteer Examiners (VEs) as well as do all of the other Amateur Service paper work.

Rules developed for the functioning of Amateur Radio should not be aimed at making them highly profitable for anyone. It is understandable that businesses, such as the ARRL and others, would like to make it easier for more bodies to obtain amateur licenses so they could sell more magazines, books and other items. This is not what is needed for the most desirable type of Amateur Service. Because of the tremendous advancements in every radio and electronic communication direction, the amateur service should only require fundamental theory tests and allow licensed amateurs to select their own desired paths of more advanced studies in the communication fields.

The attaining of an Amateur Radio License should be a challenging goal for anyone interested in building and/or testing radio equipment and communicating with other similarly minded amateurs. License testing should not be so easy that anyone off of the street can buy a book of nearly verbatim questions and answers and with a little memorization be able to pass a multiple-guess test. The result of this type of testing has produced too many so called amateur operators on the bands today with capabilities only slightly above Citizen's Band operators, which are essentially nil. Purely memorized technical information is usually forgotten in a relatively short period of time. Amateurs should be reasonably knowledgeable about the technical functioning and operation of basic radio transmitting and receiving theory and of the various types of equipment they might use.

The attached proposal suggests how it is possible to do this and at the same time reduce the number of Amateur Radio License grades to only 3:

- (1) A "Class C" no-code license which would require passing a basic theory test about operating of very-high-, ultra-high- and super-high-frequency (VHF/UHF/SHF) amateur radio equipment, plus permitting some medium- and high frequency (MF/HF) radiotelephone or CW operation.

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(2) A "Class B" (Essentially a slightly less technical "General" class) license which would require passing a more advanced radio theory test plus a 13 wpm CW sending and receiving test. This license would allow operation on all VHF/UHF/SHF/MF/HF amateur frequencies except the narrow MF/HF "Class A" CW segments.

(3) A "Class A" license which would be a CW-only upgrading of a Class B license, requiring only a 20-wpm CW sending and receiving test to permit operation on special narrow segments of all of the amateur MF/HF CW-only parts of the amateur bands.

The identity-titled "W6BNB 3-License Amateur Service Proposal" which is outlined in abbreviated form in this cover letter is explained in greater detail on pages 3 through 7 that follow. This proposal has several subtle important advantages which should be considered carefully.

Respectfully submitted,



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\*\* Amateur licenses held by W6BNB since 1931 are: Class B, Class A, General, and Extra since 1952. Commercial licenses since 1932 are: Radiotelegraph 2<sup>nd</sup> Class, Radiotelegraph 1<sup>st</sup> Class, Radiotelephone 1<sup>st</sup> Class. Besides 67 years of amateur operating, there were 5 years of shipboard radio operating, 3 years of Police radio operating. There were 3 war years as officer/teacher in charge of Cadet radio and electricity training at the U.S. Merchant Marine Academy, Kings Point, LI, NY. There were 23 years as Trade School and Community College teaching of radiotelegraph and radiotelephone license theory. Author of the commercial and amateur textbook: Electronic Communication (6th edition, 1991), plus an Electricity text, an Electronics text, and a textbook on Amateur Radio Theory and Practice (all published by McGraw-Hill).

### \*\*\* THE W6BNB 3-LICENSE AMATEUR SERVICE PROPOSAL \*\*\*

The following proposal is an outline with some explanations from which a complete working structure could be easily developed. Such things as frequencies and modes are not fully delineated and those specified are subject to some variation. In the interest of simplification, rather than having 6, 5, or 4 license grades, only 3 grades would be required (except for a temporary interim license for some presently licensed amateurs).

#### THE PROPOSAL

(1) A “**CLASS C LICENSE**” for amateurs who are interested in operating modes available on all present VHF/UHF/SHF (“VHF+”) amateur bands, and who at entry may not wish to use the historic backbone of Amateur Radio, the Morse Code (“CW”). This license would allow operation on all 18 of the VHF+ amateur bands using all legal amateur modes, including, for practice between amateurs, CW or MCW and also permit radiotelephone operation on the highest 50 kHz of all of the MF/HF non-WARC amateur bands (see WARC Bands below). The license test would be on basic: electricity, active devices, power supplies, audio circuits, radio circuits, receiving and transmitting systems, digital systems, antennas, the general make-up of the Morse Code, plus radio rules and regulations pertaining to the VHF+ bands.

(2) A “**CLASS B LICENSE**” for amateurs who want to operate on the 9 MF/HF amateur bands (1.8 to 29.7 MHz ) using CW and all other legal modes. The Class B license test would consist of the Class C theory test plus a more detailed test on theory of MF/HF-type subjects and would include a CW sending and receiving test at 13 words-per-minute (“wpm”). Except for the WARC bands: The lowest 20 kHz of all HF bands, which are used generally world-wide for DX CW contacts, would now be *legally* open to all Class A & B (see “Class A license” below) licensees for CW only. The second 20 kHz would be CW only for Class A amateurs for their higher CW speed abilities. The next 30 kHz would be CW only for Classes A & B. The next 75 kHz would be for all modes other than radiotelephone. The remaining portions of all bands would be for radiotelephone and CW, with the highest 50 kHz open to Class A, B & C licensees for radiotelephone. (*CW must be available on all amateur frequencies since it requires the least complex equipment to produce 2-way emergency radio communications.*)

(3) A “**CLASS A LICENSE**” which would only be an up-grade for Class B amateurs, who by more experience and practice, have become truly proficient amateur CW operators. The Class A license test would consist of only a CW sending and receiving test at 20 wpm. Since the Class B license theory test would include all subjects required for all basic modes of amateur operations, no Class A theory test would be needed. If taken alone, a Class A license test would consist of the Class B theory test with a 20 wpm instead of a 13 wpm sending and receiving CW test. (Note: The only FCC tests needed would be 2 theory tests [Classes B & C] and 2 code tests [13 & 20 wpm sending and receiving] instead of the many tests needed in all other proposals. Test question difficulty should be at a technician level and not at an engineering level of radio and electronics theory.)

**The WARC Bands:** (Consider CW and RTTY as being “digital” emissions here.)

**The 30-meter band:** (10.100 - 10.150 MHz = 50 kHz)

Classes A&B, CW from 10.100 - 10.120 MHz

Class A, CW from 10.120 - 10.130 MHz

Digital emissions, from 10.130 - 10.150 MHz.

**The 17-meter band:** (18.068 - 18.168 MHz = 100 kHz)

Class A&B, CW from 18.068 - 18.088 MHz

Class A, CW from 18.088 - 18.098 MHz

Digital emissions, from 18.098 - 18.113 MHz

All modes, from 18.113 - 18.168 MHz.

**The 12-meter band:** (24.890 - 24.990 MHz = 100 kHz)

Class A&B, CW from 24.890 - 24.910 MHz

Class A, CW from 24.910 - 24.920 MHz

Digital emissions, 24.920 - 24.935 MHz

All modes, from 24.955 - 24.990 MHz.

**Required Code Speeds:** The 12 wpm test proposed by ARRL is actually too slow, again to increase the number of amateur operators by overly simplifying requirements. Amateur Radio is not a for-profit service. It should require licenses which persons must aspire to attain to allow them to have rewarding discussions with other amateurs, to have frequencies on which to test radio equipment and to use in emergencies. The writer has found that the human mind first tries to learn Morse Code reception by memorizing the number of dots and dashes in letters being sent (regardless of other theories about learning to receive code). This can be done fairly well up to perhaps 10 wpm. (His first test was at 10 wpm and he can still remember counting dots and dashes for some letters and numbers.) However, by the time operators reach the 13 wpm level they no longer hear separate dots and dashes but recognize specific sounds as letters. Why 13 wpm? Because at this speed there is not enough time to count dots and dashes and write down the letter before the next letter is completed. In this way receiving the code is finally learned and is remembered! Back in the 1930's, the FCC recognized that Morse code is not learned properly at speeds less than 13 wpm, so in 1936 they increased their code test speeds from 10 to 13 wpm. (Because foreign countries give 12 wpm tests is no reason why the FCC should not stay with what they know is correct.)

**(For anyone not familiar with Morse Code:** “S” is sent as dot-dot-dot. Operators receiving at 13 or more wpm hear it as “dididit” and recognize this specific sound as the letter “S”. Similarly, the letter “F” is sent as dot-dot-dash-dot. Its specific sound “dididahdit” is recognized as “F”. The same thing is true for all letters, numbers, punctuation, and special operating signs used in Morse Code operating.)

**Worthwhile RECEIVING CODE tests** must follow a plan such as: The FCC provides a plain language printed test paragraph, including some numbers and punctuation marks to be sent to applicants. This test paragraph must be sent to applicants at 13 (or 20) wpm for 5 minutes. (Any 5

letters plus a space is considered one word. Numbers or punctuation marks count as 2 letters.) The test is considered passed if there is any stretch during this copy time where 65 (or 100) or more letters in succession have been copied correctly. The present method of receiving for a specified time at a required speed and then be given a multiple-guess test on what was sent *does NOT test code receiving ability*. (A very slow-speed CW operator the writer talked to on the 40-meter band went in for a Novice 5-wpm test but was talked into trying the 20-wpm Extra Class CW test. He passed the 20-wpm multiple-guess code test! Of course, if a sending test had been given at 20 wpm, it would have proved him unqualified. To compound the situation the amateur also passed the multiple-guess theory test for Extra Class!) Some so-called, "Extra Class" licensed operators are worked on the air who can not send or receive at even 10 wpm, only because present code *sending* tests are not required! *The present systems are BAD methods of Morse code testing and must be changed*. They are actually aiding in killing CW operating on the Amateur Radio bands.

**Worthwhile SENDING CODE tests** are important and should follow a plan such as: The FCC provides a 65 (or 100) word plain language, including some numbers and punctuation marks, double spaced printed paragraph for applicants to send to the testing operator. The test would be considered passed if there were any stretch of 65 (or 100) letters copied correctly.

**5-WPM CODE TESTS are of no use whatsoever** except to increase the number of licensed amateurs. This is proven by the 5-wpm tests the FCC was talked into giving to Novices and Technicians in the past, now recognized as being essentially useless. If it is desired to determine if an operator knows the Morse Code at a certain speed they must be tested in a way which will show that they are capable of properly sending and receiving at that speed. No-code Class C amateurs who decide to learn the code, can practice with other local amateurs over the air on VHF+ bands until they can pass the required 13-wpm test as well as learn the more advanced theory required to upgrade to a Class-B license.

**Why Code Tests?** Many amateurs just do not want to learn Morse Code so they are trying to remove it from all Amateur licensing. (Note again, this proposal allows no-code Class-C amateurs to operate radiotelephone on the highest 50 kHz sections of MF/HF bands.) Originally, CW was the only type of amateur communication. It is still one of the most accurate methods of message handling when conditions are poor. Thousands of amateurs handle CW traffic daily. The CW DX/Test contests show that there are many tens of thousands of amateurs who participate in these CW activities. Many amateurs on CW bands today state that they will no longer operate radiotelephone because of the poor operating usage and the subjects and improper language they hear on those bands! They now use only CW and other non-radiotelephone modes for their Amateur Radio communications. This desirable type of amateur operator must be preserved! (A simple *emergency* CW radio station can be produced using nothing more than a single oscillator as the transmitter, a regenerative receiver, a pair of earphones, an automobile battery and a length of any kind of wire for

an antenna and ground. Anyone with good basic amateur radio learning should be able to build one. It probably would work for weeks without recharging the battery.)

**Why Better Testing?** The present ridiculous educational theory that no one should fail at anything because it may hurt their psyche or id has crossed over into Amateur Radio. What sense of accomplishment and what pride is felt when it is only necessary to memorize published verbatim questions and answers to tests (probably forgotten in 30 days) for licenses. Poorly prepared applicants should have to retake tests. Then licenses will mean something to amateurs, as they did in early years. Theory test question-areas on relevant subjects would be FCC-provided. All tests made out by the FCC amateur person (see below) should be difficult enough so those insufficiently prepared would not pass. Verbatim test questions and answers should not be published. Today verbatim, or nearly verbatim test questions and answers are available for all grades of Amateur Radio licenses! This is not right.

Information received from present VE examiners seems to indicate that there should be no disability waivers given at all. They state that crippled, sightless and other disadvantaged people are quite capable of passing amateur licenses with only minimal help from VE testers.

**The FCC Amateur Service Employee.** It seems possible that a single person skilled in amateur radio and employed by the FCC, could make out 2 new, completely different theory and code tests with answer sheets each week, and send them to official Volunteer Examiners whenever requested. All completed, graded and unused tests would be returned to the FCC by VE's for final processing. In not too long a time the FCC person would have thousands of differently worded and answered test questions on file for the various subjects to be tested, none of which would be published by outsiders. Eventually it would not even be necessary to make up all new questions and answers every week when sending license tests to VE's.

A "**Grandfather Clause**" must be included to convert present license holders to the new grades when new license classes are adopted. Some latitude may have to be given.

Present **Extra** class licensees should become **Class A** licensees.

Present **Advanced** and **General** class licensees should become **Class B** licensees since these operators have all passed 13-wpm code tests and reasonable theory tests in the past.

Present **Novice** and **Technician-Plus** class licensees should become *temporary* "**Class C+**" licensees since they are supposed to have passed theory and at least 5-wpm code tests. Class C+ licensees could use all of the VHF+ bands and should also be permitted to use CW on all non-DX Class-B CW bands, but with a limit of 5 watts of RF power output to act as an incentive to upgrade to **Class B** and its higher power output by passing its theory and 13-wpm test *within 3 years* of the installation of the new FCC rules and regulations. If not upgraded in 3 years they would drop to Class C. (The Class C+ license grade would cease to exist after 3 years of the new FCC rules.)

Hopefully the above greatly simplified plan for a better Amateur Radio Service and licensing system will be considered carefully for all of its desirable points when developing new FCC rules and regulations. Compare it with the complexity of all other proposals. Complexity is not needed! Nor is highly technical questioning needed in Amateur Radio tests. Technical areas are now spreading outward in so many different directions that it is not reasonable to try to test for most of them. Let those who want to get involved in types of operations off of the general basic lines of amateur communications do so with their own studying and personal upgrading. This was how it was done in the earlier days of Amateur Radio. All that today's Radio Amateurs need is a sound basic Amateur Radio Service in which participants can proceed on their own in any of their chosen directions.

The writer would be interested in working with FCC and/or others on developing the details necessary for an Amateur Service operating along the above lines.