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Federal Communications Commission
Washington, D.C. 20554

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In the Matter of)
)
1998 Biennial Regulatory Review --)
Amendment of Part 97 of the Commission's)
Amateur Service Rules.)
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1 Introduction

1.1 Background

1.1.1 My name is David Tucker. I am an Extra class amateur radio operator and the licensee of amateur radio station K1TY. I have held an amateur license since 1978 and have held the highest class of amateur operator license since 1980. I am an accredited Volunteer Examiner and have taught Amateur Radio theory. I also hold the General Radiotelephone Operator's License, GMDSS Operator/Maintainer license, and Second Class Radiotelegraph Operator's Certificate.

1.1.2 In the Notice of Proposed Rulemaking, the Commission solicits comment on a proposed change in the current Amateur service license structure and other matters. I offer a licensing structure (the "modified modular" structure) that is more logically coherent, more internationally compatible, less expensive to administer and more likely to aid the Amateur Service in its mission as enumerated in the Commission's Rules. In addition, I detail why I believe reform of the Amateur licensing structure is needed.

1.2 Executive Summary of the Proposed Structure and Chart

1.2.1 Amateur license classes are reduced to two, here called "Full" and "Limited."

(A complete 1-page description of the proposal, in chart form, appears on Page 5; a full text description begins on page 17) Both are no-code licenses that are eligible for one or more Morse code endorsements. The "Full" license is similar to the current Advanced license and carries full technical privileges. The "Limited" license is an entry license that requires Technician-level theory. It is subject to restricted technical privileges similar to those of the current Novice license.

1.2.2 Frequency and mode privileges are determined by the Morse code endorsement, if any, carried on the license. A 5 wpm endorsement would be available to all licensees; a 12 wpm endorsement would be available to Full licensees only. General, Advanced, and Extra licensees receive Full + 12 privileges, whereas Novices are given Limited + 5 privileges. Technician licensees issued before March 21, 1987 are issued Full + 5 licenses. Other Technician and Technician Plus licensees are grandfathered with Full privileges above 30 MHz and Limited privileges elsewhere.

1.2.3 The proposed structure provides increased incentives to technical mastery, especially by requiring Advanced-class level theory for full privileges above 30 MHz. It also simplifies examination procedure by reducing the number of elements to 4, and deemphasizes Morse code requirements while avoiding the need for any current licensee to lose privileges.

Chart: Proposed "Modified Modular" Amateur License Structure

Class	Privileges	Additional Privileges with Optional 5 wpm Endorsement (El. M-5)†	Additional Privileges with Optional 12 wpm Endorsement (El. M-12)†
<p>Full</p> <p>Written requirements: Elements L, plus 100-Question Element "F," covering Advanced theory plus most of the Extra syllabus (4(A)+ level)</p>	<ul style="list-style-type: none"> ▪ All privileges above 30 MHz ▪ Entitled to select any Group C or Group D callsign under the Vanity Callsign program ▪ Only Full licensees may be Volunteer Examiners 	<ul style="list-style-type: none"> ▪ "Full + 5" ▪ All Amateur privileges ▪ Issued to: Technicians licensed before 1987-03-21 	<ul style="list-style-type: none"> ▪ "Full + 12" ▪ All Amateur privileges. ▪ Eligible for any vanity call ▪ Full International Reciprocity ▪ Issued to: General, Advanced, Extra
<p>Limited</p> <p>Written requirement: 65-Question Element "L," covering Technician-level theory (3(A) level)</p>	<ul style="list-style-type: none"> ▪ All-mode access to 2 m, 222 MHz, 440 MHz, 1.2 GHz Amateur bands ▪ May NOT: <ul style="list-style-type: none"> • Be control operator or station licensee for Auxiliary, Beacon, or Repeater stations; • Use over 50 W PEP; • Be Trustee for a Club Station; or • Be a Volunteer Examiner. ▪ Callsign must be K-prefixed 2x3 format (W outside 48 contiguous states) 	<ul style="list-style-type: none"> ▪ "Limited + 5" ▪ Adds voice SSB on 10, 80, and 160 m, CW on all Amateur frequencies below 30 MHz, 200 W PEP max. ▪ Issued to: Novice 	<p>Not Available</p>
<p>Technician issued on or after March 21, 1987 (others = > Full + 5)</p> <p>(Grandfathered; no new licenses issued)</p>	<ul style="list-style-type: none"> ▪ All privileges of Full class, except: <ul style="list-style-type: none"> • Ineligible to be Volunteer Examiner • Credit for Element "L" only • 5 wpm endorsement adds "Limited" frequency and mode privileges below 30 MHz, rather than all privileges 	<ul style="list-style-type: none"> ▪ "Technician + 5" (equivalent to Technician Plus) ▪ Adds same privileges as "Limited + 5" ▪ (Technicians licensed before 1987-03-21 issued "Full + 5" without further examination) 	<p>Not Available</p>

† Format made uniform (suggestion: 5 wpm: 5 min, 25 consecutive letters correct to pass; 12 wpm: 3 minutes, 4 or fewer errors to pass).

* Sequential callsigns: 2x3 format, "K" for Limited, "W" for others (W for Limited and K for others outside 48 contiguous states)..

2 JUSTIFICATION FOR REFORMING THE AMATEUR LICENSE STRUCTURE

This section sets forth why the current structure needs reform.

2.1 The current structure is irrational because it grants full technical privileges to the entry-level license, while relying on the weak incentive of small slices of HF spectrum to induce Amateurs to master the content of the more advanced exams.

2.1.1 The current structure is irrational because the privileges granted to the various classes bear little relationship to the material they have mastered or, put another way, because applicants are tested on a body of material that is either insufficient or irrelevant to the privileges sought. Although the Morse code requirement generates most of the noise, it is this defect in the theory examinations that requires the most attention.

2.1.2 The main purpose of the examinations is to ensure that amateurs, who have unparalleled technical privileges, are able to prevent interference to others and protect themselves and those around them from the dangers arising from the electrical and RF exposure hazards inherent in using those privileges.¹ A subordinate purpose is to ensure applicants have the minimum operating knowledge necessary to do such things as establish and end contacts.² In addition, the U.S. uses the licensing system to provide amateurs with an incentive

¹ See International Telecommunications Regulations, Art. 32/S25.6; 47 C.F.R. § 97.1(c); FCC 96-375 ¶ 8.

² See 47 C.F.R. § 97.503(c)(2),(4).

to increase their technical knowledge.³

2.1.3 It follows that the technical knowledge tested for a given license class should be adequate to ensure the licensee is competent to exercise his or her privileges. It also follows that, if a given level of technical knowledge is sufficient for an activity, it is also sufficient for the same activity carried out on a frequency that is a few kilohertz higher or lower.

2.1.4 By this standard the U.S. licensing structure is highly defective. In particular, the Technician license is overprivileged. There are currently 6 classes of Amateur operator license in the U.S., namely, Novice, Technician, Technician Plus, General, Advanced, and Extra. For almost a decade, the Technician license has been the main entry license class.⁴ Originally an “experimenter’s license” that carried the same theory requirement as the General license, and provided the same privileges above 220 MHz,⁵ it now carries “full license” privileges everywhere above 30 MHz, but without the same theory requirement.⁶ Until the creation of the current scheme, Element 3 (comprising what are now subelements A and B) had been required for full-power capability,⁷ but that requirement was reduced to a new 3(A) level midway between Novice (Element 2) theory and

³ See FCC 98-143 p. 4, ¶ 11; 47 C.F.R. § 97.1(c).

⁴ See Bliss, Norm, *FCC Rule Book* (Newington, CT: 1995), p. 2-2.

⁵ See *id.*, p. 2-11.

⁶ See 47 C.F.R. §§ 97.301(a), 97.201(a), 97.203(a), 97.205(a).

⁷ See Bliss, p. 2-3.

General (Element 3) theory.⁸ Yet the full technical privileges remain.⁹ But if Element 3(A) is sufficient to operate a 1500-watt microwave transmitter into a high-gain antenna, it is unclear why Elements 3(B), 4(A) (Advanced), or 4(B) (Extra) are necessary. Either 3(A) is insufficient, or the others are superfluous.

2.1.5 I believe Element 3(A) must be insufficient for the privileges granted. The standard that 3(B)-level theory be required for full privileges is long-standing and seems reasonable. In addition, I know of no other country gives that level of privilege—all privileges above 30 MHz—to an entry-level license.¹⁰ A 3(A)-level license should convey restricted, rather than full, technical privileges.

2.1.6 By similar reasoning, of the “full” U.S. licenses, the General, Advanced, and Extra classes, 2 of the 3 are redundant. The only difference among them in privileges granted consists of small slices of HF spectrum and the ability to be a Volunteer Examiner for higher license classes.¹¹ There is nothing, from a technical viewpoint, that an Extra can do but a General cannot.¹²

2.1.7 Of the three levels of theory, it is my opinion is that only a 4(A)-level exam is needed. This seems to be the most difficult Amateur exam. Those who pass it seem to have little trouble with Element 4(B) (if they have studied the

⁸ 47 C.F.R. §§ 97.501(e), 97.503(c).

⁹ See 47 C.F.R. §§ 97.301(c), 97.201(a), 97.203(a), 97.205(a).

¹⁰ This includes Canada, the United Kingdom, France, Spain, Switzerland, Barbados, Mexico, Australia, and New Zealand, among others, many of which are available through <http://www.vtt.fi/ket/staff/komppa/license.htm>

¹¹ See 47 C.F.R. §§ 97.301(b)-(d), 97.509(b)(3).

¹² See *id.*

material). The consensus seems to be that 4(B) is not harder than 4(A), but merely covers different material. If so, a passing grade on a 4(A)-level exam would seem to indicate a level of technical mastery over basic material, and preparation for more specialized, individual technical pursuits of the sort that general examinations are ill-suited to encourage. This would seem to indicate that two theory elements are desirable, namely, an entry level with a 3(A)-type exam, and a full level with a 4(A)-level exam, and that more than these two are not needed.

2.2 The current structure does not provide effective incentives to upgrade.

2.2.1 It might be supposed that Elements 3(B), 4(A), and 4(B) form an indispensable part of “incentive licensing.” If so, the argument is fatal to the case for reform; the Commission has manifested a commitment to a license structure that encourages technical self-training among Amateurs.¹³ But the truth is just the opposite: **the current structure provides incentives that are less, not more, effective than a simpler structure.** If 4(A)-level theory provides a certain “plateau” of technical knowledge, and public policy indicates that amateurs should achieve that level of proficiency, then it is crucial to provide every incentive reasonably possible to reach that level. Ironically, the current structure dilutes rather than strengthens incentives to do so. Our system defeats those incentives in 3 ways: it allows substantially full HF privileges to many who have not reached this level and many of whom would seem to have no intention of

¹³ FCC 98-143 p. 4, ¶ 1.

doing so (that is, General licensees);¹⁴ it withholds full privileges from some who have reached it but do not wish to master 20 wpm Morse code (i.e., Advanced class licensees);¹⁵ and it grants all possible privileges above 30 MHz to those who demonstrate very little knowledge of radio theory (Technicians).¹⁶

2.3 The “Modified Modular” structure is more effective at providing amateurs with an incentive to master more difficult electronic theory.

2.3.1 Compare the current structure to the system described on Page 5. Under the modified modular structure, those who have no interest in Morse code nevertheless have powerful incentives to pass a 4(A)-level exam. There is currently no incentive to master advanced material for those who do not wish to learn the code, because, unlike under the modified modular structure, there is currently only one class of code-free license. In addition, those who aspire to broad HF privileges must pass the Full exam (which includes material General-class licensees are not currently required to learn), and they are more likely to do so because less code ability is required for full privileges. At the same time, those who qualify for an entry-level license have full access to 4 popular VHF and UHF bands and can still participate fully and meaningfully in all amateur activities, and entry-level licensees who pass a 5 wpm exam can participate fully in CW activities below 30 MHz (including DX, contests, traffic handling, and so on) as well as many voice activities in a way Novices and Technician Plus

¹⁴ See 47 C.F.R. 97.301(d).

¹⁵ See 47 C.F.R. § 97.301(c).

¹⁶ 47 C.F.R. §§ 97.301(a) 97.201(a), 97.203(a), 97.205(a).

licensees cannot do now. Also, grandfathering Technicians ensures that nearly half of all licensees,¹⁷ who have only passed Element 3(A) at most, will have incentive to master the full “core” theoretical material without stripping them or any others of any privileges now possessed. Finally, note that classes for the Full exam are more likely to form, because the number of applicants will be larger and the “market” (so to speak) for such instruction will not be split into three separate groups (i.e., General, Advanced, and Extra theory classes, all of which are comparatively rare).

2.4 The current structure burdens Volunteer Examiners and the Commission with unnecessary work, because of its excessive number of elements and license classes.

2.4.1 In addition to its illogical structure and poor incentives, the current burdens Volunteer Examiners and the Commission with excessive elements to administer and excessive upgrade processing. Currently, there are 8 examination elements (1(A), 1(B), 1(C), 2, 3(A), 3(B), 4(A), 4(B)).¹⁸ A typical upgrade path might have one licensee being processed for license class changes 5 times (Novice or Technician, Technician Plus, General, Advanced, Extra). For VEs, each element is another exam to generate, grade, and maintain a question pool for. For the Commission, each step on the ladder is potentially another upgrade application form to process.

The modified modular proposal cuts both the possible number of license classes

¹⁷ Approximately 46% of all U.S. licensees hold a Technician or Technician Plus license; only 44% hold so-called “full” licenses (General, Advanced, or Extra).

¹⁸ 47 C.F.R. § 97.503(a),(b).

through which one licensee can progress,¹⁹ and the number of elements to 4. This means less administrative burden and cost. Neither the Commission's proposal nor the ARRL's do as well, leaving 6 exam elements (2 code and 4 theory elements in each case).²⁰ Yet neither possesses the same rationality or incentives as the Modified Modular system, because both maintain multiple full licenses with MF/HF privileges and full VHF+ privileges for the entry-level license.

2.5 The current license structure hinders international efforts to harmonize Amateur Radio licensing, including reciprocal licensing.

2.5.1 International compatibility between licensing systems is becoming more important. The U.S. is implementing reciprocity under CEPT and IARP;²¹ there is already automatic reciprocity between the U.S. and Canada;²² and the Commission is making Amateur service reciprocity automatic for all aliens with whose governments a reciprocity agreement is in force.²³ International operation is now common, and international goodwill remains a key goal of the Amateur Service in the U.S.²⁴ In this environment, it makes sense for the U.S. to adopt a structure broadly based on the simpler structures of other nations, modifying

¹⁹ Currently there are 5 levels typically held (Novice or Technician, followed by upgrades to Technician Plus, General, Advanced, and Extra). Under the modified modular proposal there can be at most 4 (Limited, Limited + 5 or Full (but not both), Full + 5, Full + 12).

²⁰ See FCC 98-143 pp. 4-5; *QST*, Sept. 1998, p. 49.

²¹ FCC 98-234, pp. 77-79.

²² See 47 C.F.R. §§ 97.9(c)(2), 97.7(b).

²³ FCC 98-234, p. 79.

²⁴ 47 C.F.R. § 97.1(e).

that model to suit its own needs (such as providing appropriate incentives) while maintaining a basic compatibility that will make operation by FCC licensees abroad, as well as alien licensees here, easier and less bureaucratic. Because the modified modular structure is based on CEPT and other licensing systems, it harmonizes more effectively with international initiatives such as CEPT and IARP than does the current system with its multiple license classes and 20 wpm requirement for full privileges. In addition, the availability of the 12 wpm Morse code endorsement ensures that US amateurs will be able to provide US government certification of that ability which some other governments require for full privileges (e.g., Canada).²⁵

²⁵ Industry Canada, *Radiocommunication Information Circular RIC-2*, ¶ 3. (Industry Canada documents are available from <http://strategis.ic.gc.ca/SSG/sf01347e.html>.)

3 DETAILED DESCRIPTION OF PROPOSED AMATEUR RADIO OPERATOR LICENSE STRUCTURE—THE “MODIFIED MODULAR”²⁶ SYSTEM

This section describes the Modified Modular structure in detail. It presents the same information on the chart on Page 5. That chart contains the entire proposal. Here, however, supporting commentary is added for each facet of the proposal.

3.1 Principles

This proposal attempts to apply the following principles to the Amateur license structure:

- Amateurs should be encouraged to master advanced electronic theory
- In particular, Technician class licensees should be given an incentive to do so
- Amateur self-regulation as preferable to legally restrictive mode subbands²⁷

²⁶ The term “modified modular licensing structure” (or “modified modular licensing”) describes how the proposal was designed. The proposal is based on the structure that prevails in CEPT and most countries for which information was available. The modular principle is that technical privileges should depend on technical mastery only, and HF privileges should depend on Morse code ability only. For example, the Canadian structure is fully modular because each endorsement carries its own set of privileges. See Industry Canada, *Radiocommunication Information Circular 24*, pp. 1-2. This modular structure has been modified in 2 principal ways to meet the needs of U.S. amateurs (thus, “Modified Modular”). First, the 12 wpm endorsement is only available to Full licensees. This provides incentive to upgrade to Full, and ensures that “examination standards” are maintained in the face of the eliminated 20 wpm exam. Secondly, Full + 5 licensees are given extended HF privileges. This provides further incentives to upgrade to Full, and enables those who can only master 5 wpm to acquire broad HF privileges without having to obtain a medical waiver.

²⁷ Although not strictly part of the proposal, it would in my opinion be beneficial if mandatory mode subbands were eliminated and replaced with amateur-maintained band plans. This would remove an administrative burden from the Commission and allow amateurs in the US to respond more effectively to band use issues, just as amateurs in most other countries are

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- Morse code proficiency should be deemphasized
- The structure should be internationally compatible and as administratively simple as possible.

currently able to do.

3.2 License Classes—"Full" and "Limited"

3.2.1 The proposal envisions 2 license classes, a Limited class and a Full class. Each class would be eligible for optional Morse code endorsements. Specifically, a 12 wpm endorsement would be available for Full licensees, and a 5 wpm endorsement would be available for all licensees. Technician licensees would be grandfathered into Full privileges above 30 MHz, but would receive credit only for the Limited class written exam when upgrading. Thus, Technician licensees will not lose any privilege they currently possess. (All other licensees gain privileges under the plan.) No new Technician licenses would be issued.

3.3 Two written examinations covering rules and theory; technical privileges to depend on demonstrated technical proficiency

3.3.1 The "Limited" class license would be granted to applicants who pass a Limited-level written examination ("Element L"), approximately equivalent to the present Technician examination (i.e., Elements 2 and 3(A) together, approximately 65 questions long, possibly somewhat shorter). Technician-level theory is chosen because in constructing the current license structure the Commission has determined that 3(A)-level theory is appropriate for an entry-level license that does not require knowledge of Morse code.

3.3.2 The "Full" class license would be issued to applicants who passed an advanced-level written examination ("Element F"), approximately equivalent to the current Advanced level exam (Elements 3(B) and 4(A), plus some questions from

Element 4(B); approximately 100 questions long),²⁸ in addition to Element L. The Limited license holders without endorsement would have full access to the 2 m, 222 MHz, 440 MHz, and 1.2 GHz amateur bands,²⁹ and be limited to operations that require comparatively less mastery of FCC rules and electronic theory. In particular, a Full license would be required to:

- **Run High Power** - i.e., be the control operator of a station having a power output of over 200 W PEP below 30 MHz and over 50 W PEP above 30 MHz. The concept of limiting the maximum power newcomers can use is clear in the current regulations. Currently, 200 W PEP is the maximum power that Novice and Technician Plus licensees may use on the HF bands.³⁰ In addition, Novices are currently limited to 25 watts on the 222 MHz band, and 5 watts on 1.2 GHz.³¹ The increase to 50 watts is justified because the Limited theory exam is more extensive than the

²⁸ A 100-question exam is not excessive for those who seek to demonstrate a mastery of radio theory. Commercial Operator Element 6, covering radiotelegraph theory, is 100 questions long. 47 C.F.R. § 13.302(a)(4). Furthermore, the Canadian *Basic-level exam* is 100 questions. See Industry Canada, *Radiocommunication Information Circular RIC-24*, p. 5. Here, of course, it is the advanced exam that would be longer. A 100-question exam would allow coverage of nearly all radio theory covered under the current system. In addition, the large question pool would make memorization relatively difficult. This would encourage mastery of concepts rather than memorization, a continuing problem with the publicly-released pools that are indispensable to the Volunteer Examiner system.

²⁹ These bands are selected for technical reasons. The 2 m and 440 MHz bands are the most popular, so including them gives the beginner a better opportunity to sample amateur radio. Furthermore, Novices, who are to become Limited licensees with the 5 wpm endorsement, already have access to the 222 MHz and 1.2 GHz bands. The 902 MHz bands and those above 1.2 GHz have little commercial equipment available; the 6 m band has the potential for interference and is not as popular as the ones listed.

³⁰ 47 C.F.R. § 97.313(c), 97.301(e).

³¹ 47 C.F.R. §§ 97.313(d).

Novice theory exam, and is more convenient because few VHF mobile units exceed this power. In addition, it avoids the need for environmental assessment because of its relative safety.³²

- Be the control operator or station licensee of **Repeater, Beacon, or Auxiliary** stations. The Commission has identified these stations as being engaged in specialized operations requiring mastery of rules and theory.³³ Indeed, authority to operate these stations is denied foreign reciprocal licensees, and is reserved to holders of an FCC-issued Technician license or higher; Novices and foreign reciprocal operators are ineligible under current rules.³⁴
- Be the **Trustee of a Club station**. The justification is that a licensee responsible for proper technical operations and rules compliance where many operators are involved ought to have a more advanced knowledge of rules and theory. This principle is reflected in the Commission's rules, which require a trustee to possess an FCC-issued Technician license or above.³⁵ Here again, Novices and foreign reciprocal operators are ineligible under current rules.³⁶
- Obtain a Vanity (or Sequential) Callsign **other than a K-prefixed 2x3**

³² See 47 C.F.R. § 97.13(c) (no evaluation requirement under 50 watts).

³³ FCC 96-375 p. 5 ¶ 8.

³⁴ 47 C.F.R. §§ 97.201, 97.203, 97.205.

³⁵ 47 C.F.R. § 97.5(b)(2).

³⁶ See *id.*

callsign (W-prefixed outside the 48 continental U.S.). Distinctive callsigns for Limited licensees will enable more experienced licensees to provide guidance to newcomers or former newcomers who are interested in becoming active again, and encourages newcomers to participate fully, knowing that errors will be corrected rather than chastised.

- **Be a Volunteer Examiner.** VE's would be allowed to administer either written element and the exam for any endorsement shown on the VE's license. The Commission's proposal indicates a desire to increase the pool of Volunteer Examiners.³⁷ Since all amateurs General class and higher will immediately qualify to administer all elements, the pool of VE's qualified to do so will grow fourfold upon adoption.³⁸

3.4 Morse code proficiency would be used to determine HF privileges

- **A 5 wpm endorsement,**³⁹ available for all licensees, would give Limited licensees **CW privileges on all amateur frequencies below 30 MHz and voice SSB privileges on the 160 m, 80 m, and 10 m bands.**⁴⁰

³⁷ FCC 98-143, pp. 5-6, ¶ 14.

³⁸ There are currently approximately 311373 licensees who would receive a Full license with a 12 wpm endorsement, more than 4 times the number of current Extras (76153).

³⁹ In the interest of uniformity and fairness, examinations at 5 wpm would be required to be uniform; the one-minute solid copy format (5-minute text) is suggested because it is more in keeping with applicants being able to receive "texts" in Morse code. Examinations at 12 wpm, intended to be compatible internationally, would be a 3 minute exam, with 4 or fewer errors to pass. See ERC Recommendation T/R 61-02 (Chester 1990, revised in Nicosia 1994), Annex 2, subparagraph 2.ii.a.

⁴⁰ Novice and Technician Plus licensees already have voice SSB privileges on 10 m. The 80 m and 160 m bands are chosen because they give local access and a better sample of amateur activity during periods when 10 m is not well populated. (For similar reasons, Canada gives 5 wpm licensees access to the latter 2 bands, and has proposed giving them 10 m access as well.

- **All Amateur privileges** would be granted to all **Full** licensees with a 5 wpm endorsement.⁴¹
- A **12 wpm endorsement** would provide all amateur privileges and ensure that U.S. amateurs can qualify for full HF privileges when operating abroad. This is necessary because Canada, frequently visited by US amateurs, **currently denies** full HF privileges to reciprocal operators who have not passed a 12 wpm exam, and is probably not alone in doing so.⁴²

3.5 Conversion of Current License Classes and Assignment of callsigns

3.5.1 Current license classes would be converted to new ones in the following manner

- **General, Advanced, and Extra** class licensees would be equivalent to, and renewed as, a **Full** license with a **12 wpm endorsement**.

Industry Canada, *Radiocommunications Information Circular* RIC-2, Schedule I; also <http://www.rac.ca/pr10m.htm>). These licensees are limited to CW and voice SSB privileges because their lower duty cycles make those modes more appropriate for technically limited licensees, especially on 10 m, where RF exposure is of greater concern. See 47 C.F.R. §§ 97.13(c), 1.1310. Granting Morse code privileges on all frequencies allows the greatest possible scope for practice.

⁴¹ The need for Morse code testing seems to be at an end. Five wpm seems to be the lowest required by international law, and because the CEPT seems to be sanctioning that speed with respect to the Technician Plus license. In addition, the United Kingdom seems ready to adopt much the same structure as proposed here. See Radio Society of Great Britain, "New Century-New Outlook", *RadCom*, June 1998, available at <http://www.rsgb.org/lic/cwpolicy.htm> (RSGB will propose 5 wpm, full-privilege license to Radiocommunications Authority; license not to have CEPT Class 1 or HAREC Class A privileges). Actually, **the modified modular system is flexible enough to harmonize with any view on the code requirement** simply by altering the privileges of Full + 5 licensees between those of Limited + 5 and full privileges and full international reciprocity. In any case, the 12 wpm endorsement would confer full privileges. (With the advent of the GMDSS system, a 20 wpm requirement for full privileges has become unjustifiable.)

⁴² Industry Canada, *Radiocommunications Information Circular* RIC-2, ¶ 3.

- **Novice** licensees would be equivalent to, and renewed as, a **Limited** license with a **5 wpm endorsement**.
- **Technician Plus** class licensees licensed **before March 21, 1987** would, upon the licensee's application, be issued a **Full** license with a **5 wpm endorsement** carrying the expanded privileges.
- **Other Technician and Technician Plus** licensees would **retain their current license class**. No new Technician licenses would be issued. (The Technician Plus license would be equivalent to, and renewed as, a Technician license with a 5 wpm endorsement.) The Technician license would carry credit for Element L, and Full privileges above 30 MHz. Technician licensees with a 5 wpm endorsement would have the privileges of a Limited licensee with a 5 wpm endorsement when operating below 30 MHz. Technicians would be ineligible to be Volunteer Examiners.

3.5.2 It is suggested that callsigns be assigned in the following manner:

- Full + 12 licensees could apply under the Vanity Callsign system for any available callsign
- Technicians and Full licensees without the 12 wpm endorsement could apply for any available Group C or Group D callsign.
- Limited licensees could apply under the Vanity Callsign system for any available K-prefixed 2x3 callsign (W-prefixed outside the 48 continental states). Ideally, an upgrade to Full would be signified by changing the K to W (or vice versa), i.e., KA2CEF becomes WA2CEF, both upon grant

and as an interim identifier. The purpose is to allow Full licensees to spot and provide extra assistance to beginners.

- New licensees and those who requested a sequential callsign change would be issued a Group D sequential callsign. Limiteds would receive a K-prefixed 2x3 callsign, others a W-prefixed 2x3 callsign (W- and K-prefixed, respectively, outside the continental U.S.).

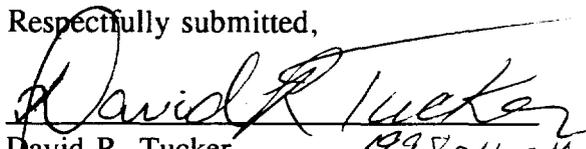
4 CONCLUSION

The Commission has not reviewed the Amateur service license structure in about a decade. In addition, the current structure is now at least three decades old. Given the scope of changes in communications technology, it is my belief that large changes are in order, and that the Commission will best serve the public by reevaluating the Amateur license structure by reference to first principals.

This proposal is based upon the premise that Advanced (4(A)-level) theory is highly desirable, that mastering that material should be highly encouraged, and that Morse code should be deemphasized. In addition, only 4 examination elements, 2 written and 2 Morse code, lighten the administrative burden on the Commission, its Volunteer Examiners, and the amateur community as a whole, and no licensee loses privileges even as incentives to reach that level are strengthened.

I believe that the modified modular structure is better suited to ensuring a qualified pool of operators as well as administrative simplicity and international compatibility, and hope the Commission will give it careful consideration.

Respectfully submitted,


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