

# W5YI

America's Oldest Ham Radio Newsletter

## REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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## FCC Amends Form 610 and RF Safety Threshold Power Chart

Beginning January 1, 1998, a new Form 610 (*Application for Amateur Operator/Primary Station License*) will be required on all amateur license applications. The FCC Form 610A (*Application for Permit of an Alien Amateur Radio Licensee to Operate in the United States*) and 610B (*Application for an Amateur Club, RACES or Military Recreation Station License*) have also been amended.

The new forms (which are dated September 1997) contain a statement certifying that the applicant has read and understands the new RF safety guidelines that go into effect the first of the year. Previous Form 610 editions received by the FCC or by the VECs on or after January 1, 1998, will result in the delay of the issuance of your license as the application will be returned without action and you will be required to refile on a current form.

The new form may be used immediately but the FCC will not have quantities on hand until the end of November. Meanwhile, we have had several thousand printed and these are available from the W5YI Office. Single copies are no charge. Please include a self-addressed stamped envelope with your request. Packages of 100 can be purchased for \$5.00 which includes the shipping charge. A single copy of the new Form 610 is being enclosed with this newsletter. (Note the new certification statement above the applicant signature.)

The form is also available on the FCC's Internet website at <http://www.fcc.gov/formpage.html> or <ftp://ftp.fcc.gov/pub/Forms/Form 610/>. It can also be requested by fax at 202-418-0177 (request

form code 000610 - for Form 610A use form code 006101, for Form 610B use form code 006102). The FCC Forms Distribution Center will accept FCC forms orders at 800-418-3676.

### New RF safety rules

The new statement certifies that the applicant has "read and will comply with Section §97.13(c) of the Commission's Rules" regarding RF radiation safety and the amateur service section of OST/OET Bulletin No 65, *Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*.

The "Amateur Radio Supplement B" to Bulletin 65, containing additional information on RF safety for the radioamateur is still in the draft stage. The FCC's Office of Engineering and Technology expects to complete the amateur radio RF safety guide by Monday, November 10th and it should be available shortly thereafter. The FCC plans to post it on their website: <http://www.fcc.gov/oet/rfsafety> The OET Bulletin 65 is already online.

The W5YI Group has been active in assisting the FCC with the amateur radio supplement and we have already reviewed two draft copies. We do not expect that there will be further draft copies.

There is still a controversy concerning as to what constitutes "power" in the amateur service. Some people call it transmitter power, some peak envelope power, average power and power input to the antenna. And in a new erratum to the Part 97 rules, the term ERP - effective radiated power - is

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used in conjunction with repeater stations.. The FCC's Office of Engineering and Technology is trying to get the amateur community to agree on a single term for power. We think it should be peak envelope power (or PEP) since that is what the FCC Part 97 rules use when discussing "power."

## FCC amends RF evaluation thresholds

Up until recently, Section §97.13(c) stated that before you transmit "from any place where the operation of the station could cause human exposure to RF electromagnetic field levels in excess of those allowed," you have to perform a routine RF environmental evaluation if your transmitter PEP exceeds certain threshold limits.

If the routine environmental evaluation indicates that the RF electromagnetic fields could exceed the maximum permissible exposure limits, you must take action to prevent human exposure.

On October 22, the FCC's Chief, Office of Engineering and Technology, Richard M. Smith issued an erratum changing the threshold power levels from being based on "transmitter PEP" to a somewhat undefined "power input to antenna" except for repeater stations which will be based ERP (effective radiated power.) Here is what the new Section 97.13(c) now looks like in its entirety:

### Table 1 - Power Thresholds for Routine Evaluation

This Second Erratum corrects the *Second Memorandum Opinion and Order* released August 25, 1997, by amending Section 97.13 (c)(1) of the Final Rules, set forth in Appendix A, to read as follows: (Quote)

#### § 97.13 Restrictions on station location.

(c.) Before causing or allowing an amateur station to transmit from any place where the operation of the station could cause human exposure to levels of radio-frequency (RF) radiation in excess of that allowed under § 1.1310 of this chapter, the licensee is required to take certain actions.

(1) The licensee must perform the routine RF environmental evaluation prescribed by § 1.1307(b) of this chapter, if the power of the licensee's station exceeds the following limits:

	<u>Wavelength Band</u>	<u>Evaluation Required if Power* (watts) Exceeds</u>
MF	160 meters	500
HF	80 meters	500
	75 meters	500
	40 meters	500
	30 meters	425
	20 meters	225
	17 meters	125
	15 meters	100
	12 meters	75
	10 meters	50

	<u>Wavelength Band</u>	<u>Evaluation Required if Power* (watts) Exceeds</u>
VHF	All bands	50
UHF	70 cm	70
	33 cm	150
	23 cm	200
	13 cm	250
SHF	All bands	250
EHF	All bands	250
Repeater Stations	All bands	non-building mounted antennas height above ground level to lowest point of antenna < 10 m and power > 500 W ERP
		<u>building-mounted antennas:</u> power > 500 W ERP

\* Power = power input to antenna except, for repeater stations only, power exclusion is based on ERP (effective radiated power).

(2) If the routine environmental evaluation indicates that the RF electromagnetic fields could exceed the limits contained in § 1.1310 of this chapter in accessible areas, the licensee must take action to prevent human exposure to such RF electromagnetic fields. Further information on evaluating compliance with these limits can be found in the FCC's OET Bulletin Number 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation." (End Quote)

Here is some additional information from the most recent *Supplement B* draft:

#### How to complete a "Routine Evaluation"

No station is exempt from **compliance** with the FCC's rules and with the MPE limits. However, many amateur stations are categorically exempt from the requirement to perform a **routine station evaluation** for compliance. A routine evaluation is a determination as to whether your station conforms to the FCC's radiofrequency exposure requirements.

Stations operating at or below the power levels given in the above table, are not required by the FCC to perform a routine evaluation for compliance. **Also, stations using mobile and portable transmitters and PTT (push-to-talk) operation are not required to be routinely evaluated.** The FCC has defined "mobile" devices as those designed to be used in other than fixed locations and to be used in such a way that a separation distance of at least 20 cm (about 8 inches) is normally maintained between the transmitter's antenna and the body of the user or nearby persons.

The FCC defines "portable" devices as those designed to be used so that the antenna is within 20 cm of the body of the user. Although amateur mobile and portable PTT transceivers are categorically exempt from routine evaluation, operators are cautioned to be aware that

.....(Continued on Page 9 - RF Safety)

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## HOW ABOUT A NEW CALL SIGN FOR CHRISTMAS!

The FCC announced on October 30, 1997 that they would be opening the long-awaited Gate No. 4 of the Vanity Call sign system on December 2<sup>nd</sup>. More than 500,000 amateurs will become eligible to apply for a new call sign on that date. Most will want a One-by-Three format starting with K, N or W. The 1x3 "W" calls will undoubtedly be the most popular, since it is was the first prefix issued to radioamateurs. Follows is a word-for-word copy of the Public Notice.

**Read this notice VERY CAREFULLY**, since it contains very important information on the ground rules for trading in your current station call sign. There are many pitfalls. If you don't follow the rules, your application could be dismissed and you will have to file for a time-consuming refund and start all over again!

## AMATEUR STATION VANITY CALL SIGN SYSTEM FILING GATE 4 OPENS DECEMBER 2, 1997

General, Technician Plus, Technician and Novice Class amateur operators may request a vanity call sign on or after December 2, 1997. If your application is received prior to this date or if you do not qualify under the standards detailed below, your application will be dismissed. Amateur Extra and Advanced Class operators continue to be eligible to file for a vanity call sign under filing gates previously opened.

File your request on either, but not both, the interactive electronically-filed Forms 610-V and 159 or the document Forms 610-V and 159. Both versions are available from the Internet site <<http://www.fcc.gov/wtb/amateur>>.

To facilitate the processing of requests for vanity call signs each workday, electronically-filed Forms 610-V for which the filing fee and Form 159 have been received will be processed first followed by document Forms 610-V and 159. The fee is \$50. Pay by check (to "FCC"), bank draft, money order or credit card. Do not send cash.

## USING THE INTERACTIVE ELECTRONICALLY-FILED FORMS 610-V AND 159

- To access instructions, click your mouse button with the pointer on the highlighted portion of the item for which you need assistance. Press your <enter> key to submit your application. If you have provided the required information, the screen will prompt you with a Fee Remittance Advice, FCC Form 159, that you must complete, print and mail together with the fee to Federal Communications Commission, POB 358994, Pittsburgh, PA 15251-5994. The Form 159 and the fee must be received within ten (10) days of electronically filing your Form 610-V or your application will be dismissed.

## USING THE DOCUMENT FORMS 610-V AND 159

- The document Forms 610-V and 159 are also available from the Fax-on-demand system by calling (202) 418-0177 from the handset of a facsimile machine, or from the FCC's forms contractor by calling (800) 418-FORM (3676). Your application package (completed document Form 610-V with a copy of your

license attached, Form 159 and the proper fee in a sealed envelope) must show this mailing address: Federal Communications Commission, Amateur Vanity Call Sign Request, POB 358924, Pittsburgh, PA 15251-5924.

If your application package is delivered by hand or courier, it must be prepared as described and sealed in a second, outer envelope showing this courier address: Federal Communications Commission, c/o Mellon Bank, 525 William Penn Way, 27th Floor, Room 153-2713, Pittsburgh, PA 15259, Attn: Wholesale Lockbox Shift Supervisor. [Note: Do not use the courier address as a mailing address and vice-versa.]

You must hold an unexpired amateur operator/primary station license grant of the proper operator class, as described below, to request a vanity call sign for your primary station. To request a vanity call sign for a club station, you must also hold an unexpired club station license grant listing you as the license trustee. Your name and mailing address as shown on your current license grant must be correct. If your license grant has expired, or if your name or address has changed, you must first request modification of your license grant to show the correct information by filing FCC Form 610 or, in the case of a club station, FCC Form 610-B.

Refer to the licensee data base to verify that the call sign you are requesting is not already assigned. The license grant of the former holder now deceased must be deleted from the licensee database. This is accomplished by submitting a signed request for license grant cancellation accompanied by a copy of an obituary or death certificate to the FCC, 1270 Fairfield Road, Gettysburg, PA 17325-7245 prior to filing the application for a vanity call sign.

The autogrant system does not include review of any document, except a copy of your license, attached to Forms 159 and 610-V. Even where a call sign does not appear on the database, it may not be available for assignment. For additional information on the assignment status of call signs, contact the FCC's copy contractor, International Transcription Services [717-337-1433].

A call sign is normally assignable two years following license expiration, surrender, revocation, set aside, cancellation, void ab initio, or death of the grantee. See Fact Sheet PR5000 Number 206-V AMATEUR STATION VANITY CALL SIGN SYSTEM. Where a vanity call sign for which the most recent recipient was ineligible is surrendered, cancelled, revoked or voided, the two year requirement does not apply. For explanations of Groups A, B, C and D and the geographic Regions, see Fact Sheet PR5000 Number 206-S, AMATEUR STATION SEQUENTIAL CALL SIGN SYSTEM.

## REQUEST BY LIST (PRIMARY OR CLUB STATION)

- Provide a list of up to 25 call signs in the order of your preference. The first assignable call sign on your list will be assigned to your station. When so requesting for your primary or club station:

The call sign must have been unassigned for at least two years.

- If you are an Amateur Extra Class operator, each call sign must be in Group A, B, C or D.
- If you are an Advanced Class operator, each call sign must be in Group B, C or D.
- If you are a General, Technician Plus, or Technician Class operator, each call sign must be in Group C or D.
- If you are a Novice Class operator, each call sign must be in Group D.

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Each call sign must be one designated for the Region of your mailing address as follows (refer to Fact Sheets PR5000 Numbers 206-S and 206-V for additional mailing address requirements):

- One of the contiguous 48 states - Regions 1 to 10.
- Alaska - Regions 1 to 11.
- American Samoa - Regions 1 to 10, or Region 13 having numeral 8
- Commonwealth of Northern Mariana Islands - Regions 1 to 10, or Region 13 having numeral 0.
- Guam - Regions 1 to 10, or Region 13 having numeral 2.
- Hawaii-Regions 1 to 10, or Region 13 having numeral 6 or 7.
- Puerto Rico - Regions 1 to 10, or Region 12 having numeral 3 or 4.
- Virgin Islands - Regions 1 to 10, or Region 12 having numeral 2.

## REQUEST BY FORMER HOLDER (PRIMARY

STATION) - For your primary station, you may request a call sign that was previously assigned to your primary, secondary, repeater, auxiliary link, control or space station. When so requesting for your primary station:

- You may request your former call sign even though it has been unassigned for less than two years. The two year requirement does not apply to an otherwise eligible primary station if the call sign was previously assigned to a station of the requestor.
- You do not have to hold a class of operator license required for the Group (A, B, C or D) for the call sign requested. A call sign request by a former holder may be from any Group in the sequential system.
- Your mailing address does not have to be in the Region designated in the sequential system for the call sign requested. A call sign requested by former a holder may be in any Region.

## REQUEST BY CLOSE RELATIVE OF FORMER HOLDER NOW DECEASED (PRIMARY STATION)

- For your primary station, you may request a call sign that was previously assigned to the primary, secondary, repeater, auxiliary link, control or space station of your now-deceased spouse, child, grandchild, stepchild, parent, grandparent, stepparent, brother, sister, stepbrother, stepsister, aunt, uncle, niece, nephew, or in-law. When so requesting for your primary station:

- You may request the former call sign of a close relative now deceased even though it has been unassigned for less than two years. Upon the death of the holder, a call sign is assignable immediately to an otherwise eligible primary station of a close relative.
- You must be an Amateur Extra Class operator to request a Group A call sign.
- You must be an Amateur Extra or Advanced Class operator to request a Group B call sign.
- You must be an Amateur Extra, Advanced, General, Technician Plus, or Technician Class operator to request a Group C call sign.
- You must be an Amateur Extra, Advanced, General, Technician Plus, Technician or Novice class operator to request a Group D call sign.
- Your mailing address does not have to be in the Region designated in the sequential system for the call sign requested. A call sign requested by a close relative of former holder now deceased may be in any Region.

- You must show your relationship to the deceased person exactly as listed in the instruction, i.e., "child," "niece" or "in-law".

## REQUEST BY FORMER HOLDER (CLUB STATION)

- For the club station for which you are the license trustee, you may request a call sign that was previously assigned to that station. When so requesting for a club station:

- You may request your club station's former call sign even though it has been unassigned for less than two years. The two year requirement does not apply to an otherwise eligible club station if the call sign was previously assigned to the club station for which the requestor is the license trustee.
- You do not have to hold a class of operator license required for the Group (A, B, C or D) for the call sign requested. A call sign request by former holder may be from any Group in the sequential system.
- Your mailing address does not have to be in the Region designated in the sequential system for the call sign requested. A call sign requested by a former holder may be in any Region.

## REQUEST IN MEMORIAM (CLUB STATION)

- If you are the license trustee for your club station, you may request in memoriam for your club station the call sign previously shown on the primary, secondary, repeater, auxiliary link, control or space station license of a deceased person who was a member of the club. When so requesting in memoriam for your club station:

- You may request the call sign even though it has been less than two years following death of the club member. Upon the death of the holder, the call sign is assignable immediately to an otherwise eligible club station.
- You must have in your station records a written statement (do not send to FCC unless requested) from a spouse, child, grandchild, stepchild, parent, grandparent, stepparent, brother, sister, stepbrother, stepsister, aunt, uncle, niece, nephew, or in-law of the deceased confirming the deceased person's association with the club and showing consent of the relative to your request.
- You must be an Amateur Extra Class operator to request a Group A call sign.
- You must be an Amateur Extra or Advanced Class operator to request a Group B call sign.
- You must be an Amateur Extra, Advanced, General, Technician Plus, or Technician Class operator to request a Group C or D call sign.
- Your mailing address does not have to be in the Region designated in the sequential system for the call sign requested. A call sign requested in memoriam may be in any Region.
- You must enter the relationship to the deceased person giving consent exactly as listed in the instruction, i.e., child, niece or in-law.

Access the FCC's web site at <<http://www.fcc.gov/wtb/-amateur>> for the electronically-filed Forms 610-V and 159, Fact Sheet PR5000 Number 206-V AMATEUR STATION VANITY CALL SIGN SYSTEM, Fact Sheet PR5000 Number 206-S AMATEUR STATION SEQUENTIAL CALL SIGN SYSTEM and answers to frequently asked questions about the vanity call sign system. For general information, contact the FCC's National Call Center at 1-888-225-5322 (CALLFCC).

# APPLICATION FORM 610 FOR AMATEUR OPERATOR/PRIMARY STATION LICENSE

Approved by OMB  
 3060-0003  
 See instructions for  
 public burden.

**SECTION 1 - TO BE COMPLETED BY APPLICANT (See instructions)**

1. Print or type last name	Suffix	First name	Middle initial	2. Date of birth
				____ - ____ - ____ month    day    year
3. Mailing address (Number and street)			3A. Internet Address	
City			State Code	ZIP Code
4. I HEREBY APPLY FOR (make an X in the appropriate box(es)):				
4A. <input type="checkbox"/> EXAMINATION for a new license		4D. <input type="checkbox"/> CHANGE my mailing address on my license to my new address in Item 3		
4B. <input type="checkbox"/> EXAMINATION for upgrade of my operator license class		4E. <input type="checkbox"/> CHANGE my station call sign systematically (See instructions) Applicant's Initials _____		
4C. <input type="checkbox"/> CHANGE my name on my license to my new name in Item 1. My former name was:		4F. <input type="checkbox"/> RENEWAL of my license		
_____ (Last name)      (Suffix)      (First name)      (MI)				
5. Unless you are requesting a new license, attach the original or a photocopy of your license to the back of this Form 610 and complete Items 5A and 5B.		5A. Call sign shown on license		5B. Operator class shown on license
6. If you have filed another Form 610 that we have not acted upon, complete Items 6A and 6B.		6A. Purpose of other form		6B. Date filed
				____ - ____ - ____ month    day    year

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT, (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(A)(1)) AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

**I certify that:**

- all statements and attachments are true, complete, and correct to the best of my knowledge and belief and are made in good faith;
- I am not a representative of a foreign government;
- I waive any claim to the use of any particular frequency regardless of prior use by license or otherwise;
- the station to be licensed will be inaccessible to unauthorized persons;
- the construction of the station would NOT be an action which is likely to have a significant environmental effect (see the Commission's Rules 47 C.F.R. Sections 1.1301-1.1319 and Section 97.13(a));
- I have READ and WILL COMPLY WITH Section 97.13(c) of the Commission's Rules regarding RADIOFREQUENCY (RF) RADIATION SAFETY and the amateur service section of OST/OET Bulletin Number 65.

7. Signature of applicant (Do not print, type, or stamp. Must match name in Item 1.)	8. Date signed
X _____ ( ) Daytime Telephone Number	____ - ____ - ____ month    day    year

**SECTION 2 - TO BE COMPLETED BY ALL ADMINISTERING VEs**

A. Applicant is qualified for operator license class: <input type="checkbox"/> NOVICE (Elements 1(A), 1(B), or 1(C) and 2) <input type="checkbox"/> TECHNICIAN (Elements 2 and 3(A)) <input type="checkbox"/> TECHNICIAN PLUS (Elements 1(A), 1(B), or 1(C), 2 and 3(A)) <input type="checkbox"/> GENERAL (Elements 1(B) or 1(C), 2, 3(A) and 3(B)) <input type="checkbox"/> ADVANCED (Elements 1(B) or 1(C), 2, 3(A), 3(B) and 4(A)) <input type="checkbox"/> AMATEUR EXTRA (Elements 1(C), 2, 3(A), 3(B), 4(A) and 4(B))		B. VEC receipt date: _____	
C. Name of Volunteer-Examiner Coordinator (VEC):			
D. Date of VEC coordinated examination session:		E. Examination session location:	

**I CERTIFY THAT I HAVE COMPLIED WITH THE ADMINISTERING VE REQUIREMENTS IN PART 97 OF THE COMMISSION'S RULES AND WITH THE INSTRUCTIONS PROVIDED BY THE COORDINATING VEC AND THE FCC**

1st VEs name (Print First, MI, Last, Suffix)	VEs station call sign	VEs signature (must match name)	Date signed
2nd VEs name (Print First, MI, Last, Suffix)	VEs station call sign	VEs signature (must match name)	Date signed
3rd VEs name (Print First, MI, Last, Suffix)	VEs station call sign	VEs signature (must match name)	Date signed

ATTACH ORIGINAL OR A PHOTOCOPY OF YOUR LICENSE HERE:

**SECTION 3 - TO BE COMPLETED BY PHYSICIAN**

**PHYSICIAN'S CERTIFICATION OF DISABILITY**

Please see notice below

Print, type, or stamp physician's name: \_\_\_\_\_

Street address: \_\_\_\_\_

City, State, ZIP code: \_\_\_\_\_

Office telephone number: (      ) \_\_\_\_\_

I CERTIFY THAT I have read the Notice to Physician Certifying to a Disability, and that the person named in Item 1 on the reverse is severely handicapped, the duration of which will extend for more than 365 days beyond this date. Because of this severe handicap, this person is unable to pass a 13 or 20 words per minute telegraphy examination. I am licensed to practice in the United States or its Territories as a doctor of medicine (M.D.) or doctor of osteopathy (D.O.). I have considered the accommodations that could be made for this person's disability and have determined that, even with accommodations, this person would be unable to pass a 13 or 20 words per minute telegraphy examination.

**WILLFUL FALSE STATEMENT IS PUNISHABLE BY FINE AND IMPRISONMENT (U.S. CODE TITLE 18, SECTION 1001)**



\_\_\_\_\_  
PHYSICIAN'S SIGNATURE (DO NOT PRINT, TYPE, OR STAMP)

\_\_\_\_\_  
M.D. or D.O.

\_\_\_\_\_  
DATE SIGNED

**PATIENT'S RELEASE**

Authorization is hereby given to the physician named above, who participated in my care, to release to the Federal Communications Commission any medical information deemed necessary to process my application for an amateur operator/primary station license.



\_\_\_\_\_  
APPLICANT'S SIGNATURE (DO NOT PRINT, TYPE, OR STAMP)

\_\_\_\_\_  
DATE SIGNED

**NOTICE TO PHYSICIAN CERTIFYING TO A DISABILITY**

You are being asked by a person who has already passed a 5 words per minute telegraphy examination to certify that, because of a severe handicap, he/she is unable to pass a 13 or 20 words per minute telegraphy examination. If you sign the certification, the person will be exempt from the examination. Before you sign the certification, please consider the following:

**THE REASON FOR THE EXAMINATION** - Telegraphy is a method of electrical communication that the Amateur Radio Service community strongly desires to preserve. We support their objective by authorizing additional operating privileges to amateur operators who increase their skill to 13 and 20 words per minute. Normally, to attain these levels of skill, intense practice is required. Annually, thousands of amateur operators prove by passing examinations that they have acquired the skill. These examinations are prepared and administered by amateur operators in the local community who volunteer their time and effort.

**THE EXAMINATION PROCEDURE** - The volunteer examiners (VEs) send a short message in the Morse code. The examinee must decipher a series of audible dots and dashes into 43 different alphabetic, numeric and punctuation characters used in the message. To pass, the examinee must correctly answer questions about the content of the message. Usually, a fill-in-the-blanks format is used. With your certification, they will give the person credit for passing the examination, even though they do not administer it.

**MUST A PERSON WITH A HANDICAP SEEK EXEMPTION?**

No handicapped person is required to request exemption from the higher speed telegraphy examinations, nor is anyone denied the opportunity to take the examinations because of a handicap. There is available to all otherwise qualified persons, handicapped or not, the Technician Class operator license that does not require passing a telegraphy examination. Because of international regulations, however, any handicapped applicant requesting exemption from the 13 or 20 words per minute examination must have passed the 5 words per minute examination.

**ACCOMMODATING A HANDICAPPED PERSON** - Many handicapped persons accept and benefit from the personal challenge of passing the examination in spite of their hardships. For handicapped persons without an exemption who have difficulty in proving that they can decipher messages sent in the Morse code, the VEs make exceptionally accommodative arrangements. They will adjust the tone in frequency and volume to suit the examinee. They will administer the examination at a place convenient and comfortable to the examinee, even at bedside. For a deaf person, they will send the dots and dashes to a vibrating surface or flashing light. They will write the examinee's dictation. Where warranted, they will pause in sending the message after each sentence, each phrase, each word, or each character to allow the examinee additional time to absorb and interpret what was sent. They will even allow the examinee to send the message, rather than receive it.

**YOUR DECISION** - The VEs rely upon you to make the necessary medical determination for them using your professional judgement. You are being asked to decide if the person's handicap is so severe that he/she cannot pass the examination even when the VEs employ their accommodative procedures. The impairment, moreover, will last more than one year. This procedure is not intended to exempt a person who simply wants to avoid expending the effort necessary to acquire greater skill in telegraphy. The person requesting that you sign the certification will give you names and addresses of VEs and other amateur operators in your community who can provide you with more information on this matter.

**DETAILED INSTRUCTIONS** - If you decide to execute the certification, you should complete and sign the Physician's Certification of Disability on the person's FCC Form 610. You must be an M.D. or D.O. licensed to practice in the United States or its Territories. The person must sign a release permitting disclosure to the FCC of the medical information pertaining to the disability.

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## AMATEUR RADIO STATION CALL SIGNS

...sequentially issued as of the first of November 1997:

Radio District	Group A Extra	Group B Advanced	Group C Tech/Gen.	Group D Novice
0 (*)	AB0GO	KI0KL	(***)	KC0CDV
1 (*)	AA1SW	KE1IS	N1ZUQ	KB1CFI
2 (*)	AB2EL	KG2MY	(***)	KC2COZ
3 (*)	AA3QK	KF3AN	N3ZZW	KB3BWC
4 (*)	AF4GF	KU4LT	(***)	KF4UNG
5 (*)	AC5OD	KM5MS	(***)	KD5CNU
6 (*)	AD6DQ	KQ6SX	(***)	KF6OFM
7 (*)	AB7WT	KK7KJ	(***)	KC7ZNS
8 (*)	AB8BL	KI8EH	(***)	KC8ISH
9 (*)	AA9VB	KG9LT	(***)	KB9RPO
N. Mariana	NH0B	AH0AY	KH0GT	WH0ABI
Guam	(**)	AH2DE	KH2SQ	WH2ANV
Hawaii	AH7Z	AH6PD	KH7GY	WH6DEI
Am. Samoa	AH8P	AH8AH	KH8DL	WH8ABF
Alaska	AL0H	AL7QV	KL0KR	WL7CUN
Virgin Isl.	(**)	KP2CM	NP2JV	WP2AIJ
Puerto Rico	NP3P	KP3BC	NP3RI	WP4NNM

\* = All 1-by-2 & 2-by-1 call signs have been assigned.

\*\* = All 2-by-1 call signs have been assigned.

\*\*\* = Group "C" (N-by-3) call signs have now run out in all but the 1st and 3rd call district.

**Note:** New prefix numerals now being assigned in Puerto Rico (KP3/NP3), Hawaii (AH7/KH7) and Alaska (AL0/KL0)

[Source: FCC Amateur Service Database, Washington, DC]

## NEW AND UPGRADING AMATEUR STATISTICS

For the Month of October 1995, 1996 & 1997

License Class	New Amateurs			Upgrading Amateurs		
	1995	1996	1997	1995	1996	1997
Novice	73	66	40	0	0	2
Technician	1961	1451	862	1	2	1
Tech Plus	179	141	91	364	276	251
General	26	15	20	407	284	268
Advanced	5	3	4	276	238	182
Extra Class	11	9	4	254	176	175
<b>Total:</b>	<b>2255</b>	<b>1685</b>	<b>1021</b>	<b>1302</b>	<b>976</b>	<b>879</b>
<b>Decrease:</b>		<b>(25.3%)</b>	<b>(39.4%)</b>		<b>(25.0%)</b>	<b>(9.9%)</b>

### • The number of applicants taking ham radio operator license exams continues to drop dramatically!

We did a study on the number of first time licensed amateurs over the prior six month (May to October) period for the last seven years. Here are the results:

Months	1991	1992	1993	1994	1995	1996	1997
May/Oct	19940	21748	25082	15190	17233	12276	10969
Average	3224	3625	4181	2532	2872	2046	1828
Increase	-	12.4%	15.3%	(39.4%)	13.4%	(28.4%)	(11.1%)

While the average for the last six months was 1828 ham newcomers, the number of new amateurs has averaged only 987 since July. **Not a good sign at all!**

## FCC CONFIRMATIONS BLOCKED IN SENATE!

*To get them untracked could spell the end of flat rate Internet pricing!*

FCC nominees, William Kennard (the FCC's current general counsel), Gloria Tristani (a New Mexico state regulator), Michael Powell (an anti-trust regulator) and Harold Furchtgott-Roth (a Capitol Hill economist) sailed through their Senate confirmation hearings.

The only difference of opinion seemed to be in Kennard's approval rating of the current FCC and implementation of the 1996 *Telecommunications Act*. Headed up by Sen. John McCain (R-Ariz.), the Senate Commerce Committee charged that the FCC's handling of the Telecom bill was poor and had "...resulted in more mergers, not competition." But on October 8<sup>th</sup>, the committee overwhelmingly approved all four nominations. Full Senate confirmation seemed to be just a formality.

When Congress returned after the Columbus Day recess on October 20<sup>th</sup>, however, things soured! All four confirmations were held up by Sen. Conrad Burns (R-Montana), who wants the agency to overhaul rural telephone and online "universal service" rates.

Burns feels that the FCC has not followed through on the mandate to provide schools and low-income and rural areas with subsidized advanced phone and Internet services. Burns' said that the current commission's plan to put 75 percent of the cost on states is unacceptable. He is particularly disturbed with William Kennard's position.

Burns said one solution is an appropriations bill amendment introduced by Sen. Ted Stevens (R-Alaska), which calls for Internet service providers to contribute to universal service. If passed, the Stevens amendment would require ISPs pay a per-minute access charge to phone companies for connecting their Internet customers to the Web.

The bottom line, is that if passed, the Stevens' amendment will mean the end of flat rate (usually \$19.95 monthly) Internet pricing since the cost would have to be passed on to the customer. The FCC has already considered the matter and voted against Internet access charges which would be similar to what long distance carriers pay local telephone companies.

Confirmation of the FCC nominees requires a unanimous Senate vote and at least two Senators (Burns and Stevens) will vote against acceptance. Current FCC Chairman Reed Hundt, and commissioners James Quello and Rachel Chong were all packed up, ready to depart Washington by the end of October. But it appears they will be there until some sort of agreement is worked out on the "universal service" issue.

• **We have had a new Part 97 FCC Rule Book (updated to November 1, 1997) printed.** It includes the new RF Safety regulations effective January 1, 1998. Cost is \$3.95 (postpaid) Order from: W5YI Group, Inc., P.O. Box 565101, Dallas, Texas 75356.

# W5YI REPORT

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■ Look out Dell and Gateway 2000, here comes Wal-Mart! **The nation's largest retailer (with 2,300 stores) is jumping into the build-to-order computer biz.** The computers will be built by ACI Micro Systems in Colorado Springs who are gearing up to produce 1,000 PCs per day! An example of Wal-Mart's new pre-configured "Avail" PC is indeed impressive! An Intel Pentium-166 MMX, 16 MB RAM, 3½" floppy, 1.7 GB hard drive, 16X CD-ROM drive, stereo sound/speakers, 33.6K bps modem, mouse/keyboard/-14" monitor is quoted at \$996. (with 17" monitor: \$1296.) Warranty: 1 year parts/labor with freight paid for repairs. Comes loaded with (mostly Microsoft) software. It remains to be seen whether consumers, small businesses and large corporations will think of Wal-Mart when they need a PC. (<<http://wmonline.wal-mart.com>>)

■ Bill Gates is buying more "real estate." **Get ready for a big digital cable television expansion!** The nation's largest cable-TV operator is getting in bed with Microsoft. Sources say that Microsoft will finance the purchase of 2-million "next generation" digital cable converter boxes for Tele-Communications, Inc. The \$800 million deal is structured as an investment in TCI. Digital set-tops offer computing power, telephony, fast data speed and two-way interactive capability. TCI's new set-top box will incorporate Microsoft's "Windows CE" operating system.

■ **A cellular phone with mobile Internet access has been introduced by AT&T Wireless.** The new mass-market "PocketNet" service transfers wanted personal information from the Internet to the tiny LCD screen of a small (11.6 ounce) hand-held cell phone. The data - such as e-mail, an online personal organizer, financial reports, weather forecasts, sports scores, package tracking, airline schedules, etc. - is managed and viewed from your private (password-protected) Web site provided by AT&T. The \$299 phone (manufactured by Mitsubishi and Samsung) contains a small five line by 24 character text only display which is manipulated by pressing scroll (arrow) keys. PocketNet uses a new HDML (Hand Held Device Markup Language) to communicate with the Internet. PocketNet service is available by subscription at \$29.99 a month. Many third parties have also signed on to provide content. (Info available from 1-888-328-2288 or URL <<http://www.att.com/pocketnet/>>)

■ **The FCC is striking down homeowner association restrictions** on satellite

dishes, wireless cable antennas and TV antennas - but not amateur radio antenna installations.

■ **"AltaVista" is embarking on a multi-million dollar promotional ad campaign** to improve its standing among Internet search engines. It currently ranks fifth in popularity behind Yahoo!, Excite, Infoseek and Lycos. (<<http://www.altavista.digital.com>>) Digital Equipment recently cancelled an initial public offering (IPO) for AltaVista.

■ **The FCC has issued an activity report covering commercial radio operator examinations.** Through September, 7,906 examinees have been administered commercial radio examinations. The most popular license is the General Radiotelephone Operator License (GROL) - followed by the Marine Radio Operator Permit (MROP), GMDSS Operator, Ship Radar Endorsement and GMDSS Maintainer. Least popular? The commercial radiotelegraph licenses.

■ **Mock-up of first earth satellite is beeping on 2-meter ham band!** - Although a month later than planned, two Russian cosmonauts on the Mir space station started their spacewalk by deploying a small replica of Sputnik. The original plan was to launch the one-third size working model on the 40<sup>th</sup> anniversary of the first manmade satellite launched by the Soviet Union on October 4, 1957. But the Progress cargo vehicle carrying Sputnik-1 was late in arriving on Mir. The replica was finally hand launched at 0350 GMT on November 3rd.

The primary objective of the spacewalk was to remove a failed solar panel. A new one is to be installed a few days later. U.S. astronaut David Wolf, KB5VPF manned controls inside the station while Mir commander Anatoly Solovyov and crewmate Pavel Vinogradov worked outside in open space. The crew has been working to bring the station back up to nearly full power ever since a cargo ship rammed the Spektr module on June 25th, taking out about half the Mir's power. More energy is needed for the Russian-American crew to resume regular scientific research.

The launching of the Sputnik-1 replica was a joint venture of two schools, the French radio club FR5KJ of Jules Reydellet College in St Denis, Reunion Island and the Russian students of the Center for Polytechnical Education in Naltchik. The goal of the Sputnik project is to promote interest in space among young people.

The French students built the 2-meter transmitter and the Russians constructed the

satellite body. It is emitting a 1288 Hz "beep-beep" signal on the 2-meter ham band (145.825 MHz - FM) as it circles the globe. Its batteries are expected to last about a month. A certificate is available to those who hear the satellite from: FR5KJ Radio Club, 103 rue de la République, 97489 St Denis Cedex, Reunion Island. (Include self-addressed envelope and one IRC.)

■ **The second flight test of the Ariane 5 launch vehicle is termed a success** despite a glitch that caused the second stage engine to shut down early. Ariane 502 lifted off at 1343 UTC on October 30, 1997 from the European Space Agency's Kourou launch facility in French Guiana, South America. ESA reported that two large communications satellites on board were deployed into geostationary orbit as planned. A smaller technology satellite, called TEAMSAT was also orbited. No Amateur Radio satellites were aboard.

The AMSAT Phase 3D spacecraft, currently nearing completion, was to have flown on this flight test of the Ariane 5 series. However, in August, ESA removed P3-D from the AR-502 manifest when it became clear that needed structural modifications to the P3-D spaceframe would not be finished in time to make the AR-502 launch and the Phase 3-D completion schedules compatible. The modifications came as a result of ESA's discovery that launch loads on the AR-502 flight might be significantly higher than ESA had first anticipated.

AMSAT officials believe that it still too early to know what the effect Ariane 502's now apparent success will have on the subsequent Ariane schedule, on the possible Phase 3D launch, or the vehicle on which it will ultimately ride. However, it was anticipated that a successful AR-502 flight would give ESA added flexibility in scheduling a subsequent launch for Phase 3-D on a future Ariane flight.

AMSAT-DL President Karl Meinzer DJ4ZC and AMSAT-NA President Bill Tynan W3XO, expressed their great joy and relief on hearing the news. In a joint statement they said, "After the failure of Ariane 501 in 1996, we at AMSAT-DL and AMSAT-NA were, quite naturally, very distressed to hear of that unfortunate occurrence. This subsequent success of of the Ariane 502 flight puts ESA's Ariane 5 program back on track and, even though we were not aboard this time, is very good news for us." A third flight test of Ariane 5 is presently scheduled for sometime next spring. (AMSAT contributed to this report.)



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## *(RF Safety - Continued from Page 2)*

relatively high-powered mobile or portable devices can expose persons in their immediate vicinity to significant RF fields under conditions of relatively continuous transmission..

Amateur repeater stations operating with 500 W PEP output or less whose antennas are not mounted on buildings and which are located at least 10 meters (about 40 feet) above ground are also categorically exempt from performing an evaluation. In the case of building-mounted repeater station antennas, the exemption applies regardless of height if power is 500 W or less.

**The FCC said that amateur radio operators can select from a number of technically valid methods to perform the required station evaluations.**

The RF safety guidelines incorporate two separate tiers of exposure limits that are dependent on the situation in which the exposure takes place and/or the status of the individuals who are subject to exposure. The decision as to which tier applies in a given situation should be based on the application of the following definitions.

**Occupational/controlled** exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

**Occupational/controlled exposure limits apply to amateur station operators and members of their immediate household (but not their neighbors).** In general, a controlled environment is one for which access is controlled or restricted. In the case of an amateur station, the operator is the person responsible for controlling access and providing the necessary information and training.

**General population/uncontrolled** exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure.

Therefore, members of the general public always fall under this category when exposure is not employment-related, as in the case of residents in an area near a broadcast tower. Neighbors of amateur station operators and other non-household members would normally be subject to the general population/uncontrolled exposure limits.

For purposes of applying these definitions, awareness of the potential for RF exposure in a controlled or similar environment can be provided through specific training. Warning signs and labels can also be used to establish such awareness as long as they provide information, in a prominent manner, on risk of potential exposure and instructions on methods to minimize such exposure risk.

**In general, it will be necessary to use one of the following methods to estimate controlled and uncontrolled compliance distances:**

- tables developed from field-strength equations
- tables derived from antenna modeling
- using antenna modeling computer programs (NEC, MININEC, etc.)
- using field-strength equations
- using software developed from field-strength equations, and
- using calibrated field-strength measurements

A feature of the exposure guidelines is that exposures, in terms of power density, may be averaged over certain periods of time with the average not to exceed the limit for continuous exposure. The averaging time for occupational/controlled exposures is 6 minutes, while the averaging time for general population/uncontrolled exposures is 30 minutes.

It is important to note that for general population/uncontrolled exposures it is usually not possible or practical to control access or otherwise limit exposure duration to the extent that averaging times can be applied. In those situations, it would normally be necessary to assume continuous exposure to RF fields that would be created by the on/off cycles of the radiating source.

As an illustration of the application of time-averaging to occupational/controlled exposure - such as would occur at an amateur station - consider the following. The relevant interval for time-averaging for occupational/controlled exposures is six minutes. This means, for example, that during any given six-minute period an amateur could be exposed to two times the applicable power density limit for three minutes as long as he or she were not exposed at all for the preceding or following three minutes. Similarly, an amateur could be exposed at three times the limit for two minutes as long as no exposure occurs during the preceding or subsequent four minutes, and so forth.

Another important point to remember concerning the FCC's exposure guidelines is that they constitute **exposure** limits (not **emission** limits), and they are relevant only to locations that are **accessible** to members of an amateur operator's household) or members of the public. Such access can be restricted or controlled by appropriate means such as the use of fences, warning signs, etc. For the case of occupational/controlled exposures to amateur operators, procedures can be instituted

for working in the vicinity of RF sources that will prevent exposures in excess of the guidelines. An example of such procedures would be restricting the time an individual could be near an RF source or requiring that work on or near such sources be performed while the transmitter is turned off or while power is appropriately reduced.

### The concept of power averaging

The concept of power averaging includes both on and off times, and the "duty factor" of the transmitting mode being used. Various modes of operation have their own duty factor that is representative of the ratio between average and peak power.

Table 2 shows the duty factors for several modes commonly in use by amateur operators. To obtain an easy estimate of average power, multiply the transmitter peak envelope power by the duty factor, then multiply that result by the **worst-case** percentage of time the station would be on the air in, e.g., a 6-minute period (the averaging time for controlled exposure). This is an example of "source-based" time averaging.

For example, if a 1500-watt PEP amateur single-sideband station operates ("worst case") 2 minutes on, 2 minutes off then 2 minutes on again in any six-minute period (the averaging time period for controlled exposure), then for controlled exposure situations the effective power would be:

$$1500 \text{ W} \times 0.2 \text{ (20\% from Table 2)} \times \frac{2}{6} \text{ (4 of 6 minutes)} = 200 \text{ W}$$

For uncontrolled exposures the averaging time is 30 minutes and the total transmission time during any 30-minute period would be 20 minutes out of 30. The result would then also be:

$$1500 \text{ W} \times 0.2 \times \frac{20}{30} \text{ (20 of 30 minutes)} = 200 \text{ W}$$

On the other hand, if the transmission cycle were, say, 7 minutes on, 7 minutes off the effective power would be higher, since there would be continuous exposure over a six-minute period (controlled and uncontrolled time-averaging periods specify **any** six or thirty minute period, respectively). In this case the power becomes:

$$1500 \text{ W} \times 0.2 \times 1.0 \text{ (6 of 6 minutes)} = 300 \text{ W}$$

Another example might be a 500-watt CW station that is used in a DX pileup, transmitting 15 seconds every two minutes (45 seconds for six minutes) the result would be the same for either controlled or uncontrolled exposure:

$$500 \text{ W} \times 0.4 \text{ (40\% from Table 2)} \times 0.125 \text{ (45 of 360 seconds)} = 25 \text{ W (controlled)}$$

$$500 \text{ W} \times 0.4 \times 0.125 \text{ (225 of 1800 seconds)} = 25 \text{ W (uncontrolled)}$$

For the case of a 250-watt FM base station used to talk for 5 minutes on, 5 minutes off, 5 minutes on (worst case) calculated power becomes (since worst case is 5 minutes transmission during any six-minute period or 15 minutes during any 30-minute period):

$$250 \text{ W} \times 1.0 \text{ (100\% from Table 2)} \times 0.833 \text{ (5 of 6 minutes)} = 208.3 \text{ W (controlled)}$$

$$250 \text{ W} \times 1 \times 0.5 \text{ (15 out of 30 minutes)} = 125 \text{ W (uncontrolled)}$$

**Table 2. - Operating Duty Factor of Modes Commonly Used by Amateurs**

<u>Mode</u>	<u>Duty Cycle</u>	<u>Notes</u>
Conversational SSB	20%	Note 1
Conversational SSB	50%	Note 2
Voice AM	100%	Note 3
Voice FM	100%	
Digital FM	100%	
Digital SSB	100%	
Conversational CW	40%	
Carrier	100%	Note 4

Note 1: Includes voice characteristics and syllabic duty factor. No speech processing.

Note 2: Includes voice characteristics and syllabic duty factor. Heavy speech processor employed.

Note 3: Full-carrier, double-sideband modulation.

Note 4: A full carrier is commonly used for tune-up purposes.

### Controlling exposure to RF fields

After an evaluation is performed, if a determination is made that a potential problem exists, Section 4 of OET Bulletin No. 65 should be consulted for a discussion of recommended methods for reducing or controlling exposure. Such methods could include one or more of the following:

1. Restricting access to high RF field areas
2. Operating at reduced power
3. Transmitting at times when people are not present in high RF-field areas
4. Considering duty factor of transmissions
5. Time-averaging exposure
6. Relocating or raising antenna height
7. Incorporating shielding techniques
8. Using monitoring or protective devices
9. Erecting warning/notification signage

The Commission has always relied on the skills and demonstrated abilities of amateur radio operators to comply with its technical rules, and it will continue to do so. The FCC believes that amateur licensees and applicants should be sufficiently qualified to conduct their own evaluations and act accordingly.