

US amateur radio licensing

- U.S. amateur radio examination process & procedures
- Code of Federal Regulations – Part 97
Amateur Radio Service
Subpart ‘A’ to Subpart ‘F’



ARRL

*The national association for
AMATEUR RADIO*

Historically

- FCC used to administer exams
- Exams were given at specific times and locations around the U.S.
- Examinees had to travel many miles on specified dates in order to take the FCC exam
- 1984 FCC decided to go to a VEC/VE testing program



ARRL *The national association for
AMATEUR RADIO*

Historically (cont)

A better way was required for all



ARRL *The national association for
AMATEUR RADIO*

Historically (cont)

- ARRL demonstrated to the FCC that it could administer amateur radio examinations
- VEC program was born in late 1982
- President Reagan signed Public Law 97-256 which amended Communications Act of 1934
- Records indicate 1st VEC exam given in Alaska on 17 April 1984



ARRL

*The national association for
AMATEUR RADIO*

Code of Federal Regulations – 47

Part 97 – Amateur Radio Service

- Subpart F — Qualifying examination systems Exam standards
- Volunteer examiner coordinators (VEC)
- Volunteer examiners (VE)
- Question pool guidelines
- Reimbursement to VECs and VEs for expenses



ARRL *The national association for
AMATEUR RADIO*

US licensing process

- Federal Communications Commission (FCC) set standards
- Volunteer examiner coordinator (VEC) coordinates efforts of volunteer examiners and files information with FCC
- Volunteer examiners (VE) administer exams and return paperwork to VEC



ARRL *The national association for
AMATEUR RADIO*

US licensing process, cont.

- Applicant and VEs sign application form
- Application checked by VEC
 - Information from application entered into computer for electronic filing
- Application reviewed and data processed and **GRANTED** by FCC within 90 minutes of receipt
- FCC (not VEs) issues license
 - License is valid as soon as license grant information appears in FCC database
 - FCC database information available via Internet on an hourly basis



ARRL *The national association for
AMATEUR RADIO*

US amateur licenses

- **Technician:** Entry level VHF/UHF/HF
(1st written exam)
- **General:** HF voice
(2nd written exam)
- **Amateur Extra:** All US amateur privileges
(3rd written exam)



ARRL

*The national association for
AMATEUR RADIO*

Three tier simplified US license structure

- Entry-level license to encourage beginners (Technician)
- Higher-level license that gives increased privileges in return for demonstrating increased technical knowledge (General)
- A license that conveys all amateur operator privileges, extensive technical knowledge (Amateur Extra)



ARRL *The national association for
AMATEUR RADIO*

License and call signs issued by FCC

- Licenses normally issued for 10 years
- Call sign includes number to designate one of ten US call districts where license is first issued.
- Distinctive call sign formats for various license classes.
- Call signs selected in sequence by FCC computer.
- Vanity call sign program — licensed amateurs can select a call sign from available call signs, with eligibility conditions, for an annual fee.



ARRL *The national association for
AMATEUR RADIO*

Call Sign Format

- Amateur Extra - Group A — W1VT - WR1B
 - One or two letter (beginning with A if 2x2) prefix
 - Number
 - One or two letter suffix
- Advanced - Group B – KU4WJ
 - Two letter (beginning with K, W, or N) prefix
 - Number
 - Two letter suffix
- General and Technician - Group C - W1RFI-WB7CSL
 - One or two letter prefix
 - Number
 - Three letter suffix



ARRL *The national association for
AMATEUR RADIO*

Special Prefixes

- **Alaska**
 - AL, KL, NL, WL
- **Hawaii and Pacific Areas**
 - AH, KH, NH, WH
- **Caribbean Areas**
 - KP, NP, WP



ARRL *The national association for
AMATEUR RADIO*

Syllabus topics

(Originally specified by FCC -- now set forth by VEC's question pool committee)

- Rules and regulations
- Operating procedures
- Radio-wave propagation
- Amateur radio practice
- Electrical principles
- Circuit components
- Practical circuits
- Signals and emissions
- Antennas and feed lines
- RF environmental safety practices



ARRL

*The national association for
AMATEUR RADIO*

Exam question pools

- Syllabus forms basis for large pool of questions at each exam level
- Each question pool contains more than 10 times the number of questions used on any given examination
- The FCC delegates authority to oversee these question pools to the VECs. VECs maintain the pools and update them as required
- VECs accept public comments on each syllabus and question pool
- VECs publish questions before using them on exams



ARRL *The national association for
AMATEUR RADIO*

Morse code exams

- WRC-03 removed the international Morse proficiency requirement (allowing access to HF bands).
- The US FCC removed Morse code proficiency test requirement in February 2007.
- Some administrations still require code (Generally 5 wpm)



ARRL *The national association for
AMATEUR RADIO*

VEC agreements

- VECs agree to abide by FCC rules when giving exams, and coordinate exams given by their volunteers throughout the US.
- VECs or VEs create exams by selecting the appropriate number of questions from each question pool, following syllabus-topics selection guidelines
- VECs allowed to charge a fee to recover necessarily and prudently incurred costs of giving exams (VEs and VECs may not profit by collecting fees)



ARRL *The national association for
AMATEUR RADIO*

VEC program advantages

- Minimum cost to applicants & minimal involvement of government agencies
- Increased opportunity to take exams given by in the communities where they live
- Reduced anxiety level when taking exams given by peers instead of government personnel
- Large pool of questions ensures that applicant understands the material. Questions are in public domain for individual study or for publishers to create license study guides
- Can be patterned toward commercial license programs (for example, US commercial license testing is also privatized {COLEM's})



ARRL *The national association for
AMATEUR RADIO*

VEC program disadvantages

Some risk of fraud in administering exams using volunteers, but probably no more overall fraud than if the FCC administered exams.



ARRL *The national association for
AMATEUR RADIO*

License manuals

- Outline follows form of syllabus
- Text gives detailed explanations
- Important terms summarized at beginning of each chapter
- Plenty of drawings and charts
- References from text to specific questions in the pool assist appropriate learning



ARRL *The national association for
AMATEUR RADIO*

Conclusions

- In the US, amateur licensing is regulated by the FCC, but volunteer amateurs are used to help write exam questions and administer license exams
- Provides economic and other benefits to the government
- Provides many benefits to the amateur radio operators
- Technical training and support material readily available



ARRL *The national association for
AMATEUR RADIO*