

# Technician License Class



Tulsa Amateur Radio Club

Slides by Tom White, K5EHX

Images from ARRL, Wikipedia, Other Sources

21/08/06

1



Shoot for 50 minutes presentation time.

# Chapter 5

## Licensing Regulations

21/08/06

2



## Why be a Ham?

- The Amateur Radio “Mission Statement”
  - Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.
  - Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art.
  - Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communication and technical phases of the art.
  - Expansion of the existing reservoir within the amateur radio service of trained operators, technicians, and electronics experts.
  - Continuation and extension of the amateur's unique ability to enhance international goodwill.

21/08/06



T1A02 What is one of the basic purposes of the Amateur Radio Service as defined in Part 97?

B. To provide a voluntary noncommercial communications service to the public, particularly in times of emergency

T1A08 What are two of the five fundamental purposes for the Amateur Radio Service? D.

To increase the number of trained radio operators and electronics

## Who can become a Ham?

- Anyone except a representative of a foreign government.
- There is no minimum age requirement.



21/08/06

4



T1D02 Who can become an amateur licensee in the US? Anyone except a representative of a foreign government

T1D03 What is the minimum age required to hold an amateur license? There is no minimum age requirement

## Who is a Ham?



- Who is an amateur operator as defined in Part 97?
  - A person named in an amateur operator/primary license grant in the FCC ULS database
  - The FCC ULS database is the definitive resource for who is licensed and who isn't. If you have a callsign in the ULS database that hasn't expired, you are an Amateur Radio Operator.
- Three classes of Amateur License
  - Technician
  - General
  - Extra

21/08/06

5



T1A01 Who is an amateur operator as defined in Part 97? A. A person named in an amateur operator/primary license grant in the FCC ULS database

T1A03 What classes of US amateur radio licenses may currently be earned by examination? C. Technician, General, Extra

## Where does a ham operate?



- The amateur station
- Legal definition of an amateur radio station:
  - A station in an Amateur Radio Service consisting of the apparatus necessary for carrying on radio communications
- An amateur can operate wherever the Amateur Radio Service is regulated by the FCC or where reciprocal agreements are in place.
- Amateurs only have one operator / station license, but can operate from any or multiple locations.

21/08/06

6



T1A09 What is the definition of an amateur radio station? D. A station in an Amateur Radio Service consisting of the apparatus necessary for carrying on radio communications

T1C02 Where does a US amateur license allow you to transmit? B. From wherever the Amateur Radio Service is regulated by the FCC or where reciprocal agreements are in place

T2C02 How many amateur operator / primary station licenses may be held by one person? C. Only one

## Who regulates hams?

- Who grants your amateur radio license and makes and enforces the rules for the Amateur Radio Service in the United States?

# THE FCC



The FCC issues licenses for Amateur Radio, but not for:

- Family Radio Service
- General Radiotelephone Service
- The Citizens Radio Service

21/08/06

7



T1D04 What government agency grants your amateur radio license? The Federal Communications Commission

T1A07 Who makes and enforces the rules for the Amateur Radio Service in the United States? B. The Federal Communications Commission

experts, and improve international goodwill

T1D01 Which of the following services are issued an operator station license by the FCC? Amateur Radio Service NOT Family Radio Service NOT General Radiotelephone Service NOT The Citizens Radio Service

# Examinations

How to become a ham!

21/08/06

8





## How to become a Ham

- Pass the test!
- Tests are given by Volunteer Examiners.
  - VE = An amateur accredited by one or more coordinators who volunteers to administer amateur license exams.
- Three Examiners holding a General Class license or higher are required to administer an Element 2 Technician written exam.
- 35 questions... you must get 28 right to pass.
- You can take extra exams during the test. Partial credit is given by providing a Certificate of Successful Completion of Exam. This is good for 365 days.

21/08/06

9



T1A04 Who is a Volunteer Examiner? An amateur accredited by one or more VECs who volunteers to administer amateur license exams

T1A06 How many and what class of Volunteer Examiners are required to administer an Element 2 Technician written exam? Three Examiners holding a General Class license or higher

T1A05 How long is a CSCE valid for license upgrade purposes? 365 days

## Congratulations!!!

- After passing the test, you can transmit as soon as your callsign shows up in the Universal Licensing System database.
- The normal term for a license grant is ten years.
- You have a 2 year grace period renew your license after it expires.



21/08/06

10



T1D05 How soon may you transmit after passing the required examination elements for your first amateur radio license? As soon as your license grant appears in the FCC's ULS database

T1D06 What is the normal term for an amateur station license grant? 10 years

T1D07 What is the grace period during which the FCC will renew an expired 10-year license without re-examination? 2 years

T1D11 When are you permitted to continue to transmit if you forget to renew your amateur license and it expires? Transmitting is not allowed until the license is renewed and appears on the FCC ULS database

# Regulations

## Rules to Live By

21/08/06

11



## Responsibilities

- Your station must be operated in accordance with the FCC rules
- You must keep your name and address updated with the FCC. You can do this online.



Don't mess with the man!

12

21/08/06



T1D08 What is your responsibility as a station licensee? Your station must be operated in accordance with the FCC rules

T1D12 Why must an Amateur radio operator have a correct name and mailing address on file with the FCC? To receive mail delivery from the FCC by the United States Postal Service

## Frequencies and Bands

<b><u>Band Name</u></b>	<b><u>Start Freq</u></b>	<b><u>End Freq</u></b>
6 meters	50 Mhz	54 Mhz
2 meters	144 Mhz	148 Mhz
1.25 meters	220 Mhz	225 Mhz
70 cm	420 Mhz	450Mhz
33 cm	902 Mhz	928 Mhz
23 cm	1240 Mhz	1300 Mhz

21/08/06

13



T1C04 Which frequency is within the 6-meter band?  
52.525 MHz

T1C05 Which amateur band are you using when transmitting on 146.52 MHz? 2 meter band

T1C06 Which 70-centimeter frequency is authorized to a Technician class license holder operating in ITU Region 2? 443.350 MHz NOT 455.350 MHz NOT 146.520 MHz NOT 222.520 MHz

T1C07 Which 23 centimeter frequency is authorized to a Technician class license holder operating in ITU Region 2? 1296 MHz NOT 2315 MHz NOT 3390 MHz NOT 146.52 MHz

T1C08 What amateur band are you using if you are operating on 223.50 MHz? 1.25 meter band

T4B10 What is the frequency range of the 2 meter band in the United States? 144 to 148 MHz

T4B11 What is the frequency range of the 6 meter band in the United States? 50 to 54 MHz

T4B12 What is the frequency range of the 70 centimeter band in the United States? 420 to 450 MHz

## Restrictions in Bands

- Amateurs are secondary on some bands, and may not cause harmful interference to primary users.
- Some bands have mode-restricted sub-bands:
  - 6-meter: 50.0 to 50.1 CW only
  - 2-meter: 144.0 to 144.1 CW only
  - 1 1/4-meter: 219 to 220 Mhz, point to point digital message forwarding only

T1C09 What do the FCC rules mean when an amateur frequency band is said to be available on a secondary basis? Amateurs may not cause harmful interference to primary users

T3B08 Which of the bands available to Technician class licensees have mode restricted sub-bands?  
The 6-meter, 2-meter, and 1 1/4-meter bands

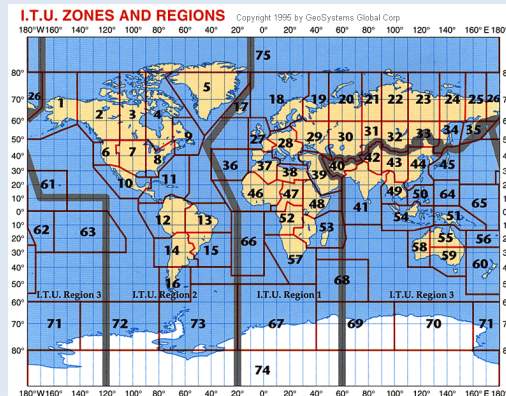
T3B09 What emission modes are permitted in the restricted sub-band at 50.0-50.1 MHz? CW only

T3B10 What emission modes are permitted in the restricted sub-band at 144.0-144.1 MHz? CW only

T6C05 What emission mode may be used by a Technician class operator in the 219 - 220 MHz frequency range? Point-to-point digital message forwarding

# International Telecommunications Union

- The ITU is the international body that oversees communications regulation.
- The ITU has divided the world into three Regions, used to assist in the management of frequency allocations.

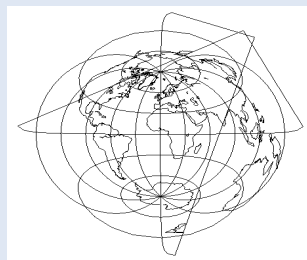


T1B01 What is the ITU? The International Telecommunication Union

T1B02 What is the purpose of ITU Regions?  
They are used to assist in the management of frequency allocations

## Ham Radio Outside the US

- You can use your amateur radio license in countries that have a “reciprocal operating agreement” with the US.
- You can communicate with any amateur in another country unless the FCC specifically prohibits it.
- You may communicate with non-amateur radio operators when the FCC authorizes you to.



T1B07 When are you allowed to operate your amateur station in a foreign country? When there is a reciprocal operating agreement between the countries

T1C10 When may a US amateur operator communicate with an amateur in a foreign country? At any time unless prohibited by either government

T1C03 Under what conditions are amateur stations allowed to communicate with stations operating in other radio services? When authorized by the FCC



## US Callsigns

- All US call signs begin with an A, K, N or W.
- All US amateur call signs have one or two letters (the prefix), a single digit from 0 to 9 and one, two or three letters (the suffix).
- Which are valid amateur radio callsigns?
  - KB3TMJ
  - UZ4FWD
  - KBL7766
  - VE3TWJ

17



T1B08 Which of the following call signs is a valid US amateur call? KB3TMJ NOT UZ4FWD NOT KBL7766 NOT VE3TWJ

T1B09 What letters must be used for the first letter in US amateur call signs? A, K, N and W

T1B10 What numbers are used in US amateur call signs? A single digit, 0 through 9

## Using your Callsign

- You must ID every ten minutes or at the end of your conversation in one of the following ways:
  - Verbally using the English language
  - By video image conforming to applicable standards
  - By Morse code at a speed not to exceed 20 words per minute



T2B03 How often must an amateur station transmit the assigned call sign? Every 10 minutes during communications and at the end of each communication

T2B04 What is an acceptable method of transmitting a repeater station identification? By phone using the English language; By video image conforming to applicable standards; By Morse code at a speed not to exceed 20 words per minute

T2B05 What identification is required when two amateur stations end communications? Each station must transmit its own call sign

## Extra Identifiers

- You can add “indicators” to your callsign, but they must not conflict with ITU prefixes for another country or FCC rules.
- When exercising the operating privileges earned by examination upgrade of a license use the indicator “/AG”. This means “Authorized General”.

T2B09 What is required when using one or more self-assigned indicators with your assigned call sign? The indicator must not conflict with an indicator specified by FCC rules or with a prefix assigned to another country

T2B11 When exercising the operating privileges earned by examination upgrade of a license what is meant by use of the indicator “/AG”? Authorized General

# Ham Radio Clubs

- Any ham radio club that has four or more members can request a “club station” callsign:
  - Tulsa Amateur Radio Club - W5IAS
  - Tulsa Repeater Organization - WA5LVT
  - Broken Arrow Amateur Radio Club - W5BBS

T2D06 How many persons are required to be members of a club for a club station license to be issued by the FCC? At least 4

## Chapter 5

The End