

1. What Is Radio?

Communication from one location to another using electromagnetic waves. (No wires)



1920s-era
Radio
Receiver

Where Radio is used?

- **Radio** is used in:
 - broadcast receivers
 - two way radios
 - televisions
 - smart phones
 - wireless LANs
 - garage door openers
 - car locks
 - EZ Pass
 - satellites
 - radar
 - microwave ovens
 - many others



1b. Broadcast Radio

- **Broadcast** - **One-way** transmissions to the public. Could be **commercial** (music, news, sports with advertisements) or **non-commercial** (National Public Radio, school radio stations, Voice of America)



Requirement 1

Broadcast Radio Towers

Examples of radio transmission towers you may see:



Requirement 1

1b. Two-Way Communications

- **Two Way** Radios both send (transmit) and receive messages.
 - walkie-talkies
 - Amateur Radio
 - cell phones
 - fire and police
 - aviation
 - ships
 - military, etc.



1b. Important Difference

- Broadcast radio operators do not know their audience, nor how many there are.



- Two way radio operators know who they are talking to and how many there are.



Requirement 1

1c. Radio Call Signs

- **Call Signs** are identification. They **show you have a license** to transmit.
- **Broadcast Call Signs**
 - WHO, KDKA, KORA, WNBC
- **Amateur, or “Ham”, Radio Call Signs**
 - WW3Y, KB3BOY, VR2DK, 9N1MM, JA1ABC
 - A92EB/OZ, G4RZC/MM
 - All ham call signs contain a number

Why is it called Amateur Radio?

- Commercial broadcast stations are for-profit businesses. They present news and entertainment to attract listeners. Then they sell access to those listeners to other businesses in the form of paid advertising.
- Amateur, or “Ham”, Radio is a separate service and is not allowed to do business or make profit. Hams therefore are amateurs. That does not mean that they are less skilled.

Amateur Radio Call Signs



Requirement 1

US Call Signs

- Every US station has a call sign issued by the Federal Communications Commission (FCC)
- Broadcast call signs begin with K or W

KXAS WBAP

- Amateur call signs begin with A, K, N or W

AB2SN KF5WTNY8N W3ZLP

International Call Signs

- International call sign prefixes assigned by the International Telecommunications Union (ITU)

- Countries issue specific call signs

- Examples:

- XE – Mexico
- VE – Canada
- VK – Australia
- ZL – New Zealand
- PY – Brazil
- G – Great Britain
- F – France
- I – Italy
- 4X – Israel
- JA – Japan



1d. Phonetic Alphabet

Alfa AL fah

Bravo BRAH VOH

Charlie CHAR lee

Delta DELL tah

Echo ECK oh

Foxtrot FOX trot

Golf GOLF

Hotel hoh TELL

India IN dee ah

Juliet JEW lee ETT

Kilo KEY loh

Lima LEE mah

Mike MIKE

November

no VEM ber

Oscar OSS cah

Papa pah pah

Quebec keh BECK

Romeo ROW me oh

Sierra see AIR rah

Tango TANG go

Uniform YOU nee form

Victor VIK ter

Whiskey WISS key

X-Ray ECKS RAY

Yankee YANG kee

Zulu ZOO loo

Example: “My name is Tom – *tango, oscar, mike* – Tom”