



RADIO

Merit Badge Requirements

Highlighted requirements need to be completed before arriving at camp.

1. Explain what radio is. Include in your explanation: the differences between broadcast radio and hobby radio, and the differences between broadcasting and two-way communicating. Also discuss broadcast radio and amateur radio call signs and using phonetics.
2. Sketch a diagram showing how radio waves travel locally and around the world. How do the broadcast radio stations, WWV and WWVH, help determine what you will hear when you listen to a radio?
3. Do the following:
 - A. Draw a chart of the electromagnetic spectrum covering 100 kilohertz (kHz) to 1000 megahertz (MHz).
 - B. Label the LF, MF, VHF, UHF, and microwave portions of the spectrum on your diagram.
 - C. Locate on your chart at least eight radio services such as AM and FM commercial broadcast, CB, television, amateur radio (at least four ham radio bands), and police.
 - D. Discuss why some radio stations are called DX and others are called local. Explain who the FCC and ITU are.
4. Explain how radio waves carry information. Include in your explanation: transceiver, transmitter, amplifier, and antenna.
5. **Learn the safety precautions for working with radio gear, particularly DC and RF grounding.**
6. Do the following:
 - A. **Explain the differences between a block diagram and a schematic diagram.**
 - B. **Draw a block diagram that includes a transceiver, amplifier, microphone, antenna, and feedline.**
 - C. Explain the differences between an open circuit, a closed circuit, and a short circuit.
 - D. Draw eight schematic symbols. Explain what three of the represented parts do. Find three electrical components to match to three of these symbols.
7. Broadcast radio
 1. Prepare a program schedule for radio station "KBSA" of exactly one-half hour, including music, news, commercials, and proper station identification. Record your program on audio tape using proper techniques.
 2. Listen to and properly log 15 broadcast stations; determine for five of these their transmitting power and general areas served.
 3. Explain at least eight terms used in commercial broadcasting, such as segue, cut, and fade.
 4. Discuss the educational and licensing requirements and career opportunities in broadcast radio.
8. Visit a radio installation approved in advance by your counselor (ham radio station, broadcast station, or public service communications center, for example). Discuss what types of equipment you saw in use, how it was used, what types of license are required to operate and maintain the equipment, and the purpose of the station.