



January 5th, 2021

Greetings Scouters!

My name is Chris Matuska and I am looking forward to working with you as you complete the Radio Merit Badge. I enjoyed 12-15 years working in the Radio Broadcasting field in the past and am excited to relay some of that info on to you.

A little bit about me. I am currently the Cub Master with Pack 17 in La Crosse where my son is a part of the Pack. I obtained my Eagle Scout in 2003. Over the summer of 2020, I had the privilege to help run Weeklong Day Camp for the Cubs at Camp Decorah.

Through the Gateway Area Council I was able to participate in the Wood Badge program and recently completed my Tickets. Scouting to me is especially important. It gives you the tools to be successful in life and gives you so many opportunities that you may not get elsewhere.

Throughout the course we will cover the requirements that are listed in the course guide. I do have a few that I would like to have you complete before the course and have ready to present/discuss throughout the course. The requirements that you will need to have completed are as follows:

2. Do the following:

- (a) Sketch a diagram showing how radio waves travel locally and around the world.
- (b) Explain how the radio stations WWV and WWVH can be used to help determine what you can expect to hear when you listen to a shortwave radio.
- (c) Explain the difference between a distant (DX) and a local station.
- (d) Discuss what the Federal Communications Commission (FCC) does and how it is different from the International Telecommunication Union.

3. Do the following:

- (a) Draw a chart of the electromagnetic spectrum covering 300 kilohertz (kHz) to 3000 megahertz (MHz).
- (b) Label the MF, HF, 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, citizens band (CB), television, amateur radio (at least four amateur radio bands), and public service (police and fire).



8. Find out about three career opportunities in radio. Pick one and find out the education, training, and experience required for this profession. Discuss this with your counselor, and explain why this profession might interest you.

Do ONE of the following (a OR b OR c OR d):

(a) Amateur Radio

- (1) Tell why the FCC has an amateur radio service. Describe activities that amateur radio operators can do on the air, once they have earned an amateur radio license.
- (2) Explain differences between the Technician, General, and Extra Class license requirements and privileges. Explain who administers amateur radio exams.
- (3) Explain at least five Q signals or amateur radio terms.
- (4) Explain how you would make an emergency call on voice or Morse code.
- (5) Explain the differences between handheld transceivers and home "base" transceivers. Explain the uses of mobile amateur radio transceivers and amateur radio repeaters.
- (6) Using proper call signs, Q signals, and abbreviations, carry on a 10-minute real or simulated amateur radio contact using voice, Morse code, or digital mode. (Licensed amateur radio operators may substitute five QSL cards as evidence of contacts with five amateur radio operators. Properly log the real or simulated ham radio contact, and record the signal report.)

(b) Radio Broadcasting

- (1) Discuss with your counselor FCC broadcast regulations. Include power levels, frequencies, and the regulations for low-power stations.
- (2) 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 audiotape or in a digital audio format, using proper techniques.
- (3) Listen to and properly log 15 broadcast stations. Determine the program format and target audience for five of these stations.
- (4) Explain to your counselor at least eight terms used in commercial broadcasting, such as segue, cut, fade, continuity, remote, Emergency Alert System, network, cue, dead air, PSA, and play list.
- (5) Discuss with your counselor alternative radio platforms such as internet streaming, satellite radio, and podcasts.

(c) Shortwave and Medium-Wave Listening



- (1) Listen across several shortwave bands for four one-hour periods—at least one period during daylight hours and at least one period at night. Log the stations properly and locate them geographically on a map, globe, or web-based mapping service.
- (2) Listen to several medium-wave stations for two one-hour periods, one period during daylight hours and one period at night. Log the stations properly and locate them on a map, globe, or web-based mapping service.
- (3) Compare your daytime and nighttime logs; note the frequencies on which your selected stations were loudest during each session. Explain differences in the signal strength from one period to the next.
- (4) Compare your medium-wave broadcast station logs and explain why some distant stations are heard at your location only during the night.
- (5) Demonstrate listening to a radio broadcast using a smartphone/cell phone. Include international broadcasts in your demonstration.

(d) Amateur Radio Direction Finding

- (1) Describe amateur radio direction finding and explain why direction finding is important as both an activity and in competition.
- (2) Describe what frequencies and equipment are used for ARDF or fox hunting.
- (3) Build a simple directional antenna for either of the two frequencies used in ARDF.
- (4) Participate in a simple fox hunt using your antenna along with a provided receiver.
- (5) Show, on a map, how you located the "fox" using your receive

If you have any questions on these requirements, please do not hesitate to reach out. I am looking forward to working with each of you.

You can reach me via email: cmatuska84@gmail.com or by phone: 608-769-7124.

Yours in Scouting,

Chris Matuska
Cub Master
Pack 17
Merit Badge Counselor