

January 14, 2014: UCARES Net Training Item (W7IE)

For the training item tonight, I'm going to talk about type certified radios.

First for the disclaimer: I am not a lawyer or expert on FCC rules and regulations. What I am presenting here tonight is only research performed on my own and does not represent any official position. You are responsible for how you interpret or follow what I'll discuss.

We should all be familiar already with Part 97, which regulates use of Amateur Radio bands. Because it is assumed we are knowledgeable radio operators, and to allow for experimentation, radios operating within Amateur Radio essentially do not require certification for transmitting. A caveat here as radios with scanning capabilities above 30 MHz must meet Part 15 requirements. Hence most commercially sold Amateur Radios have FCC approval. If you build your own radio, you do not have to obtain certification (for the most part), just ensure it operates within the rules.

Often we hear about "type accepted" or "type certified" equipment. In public safety, this is in reference to FCC Part 90 certification, which governs Land Mobile Radio Service. Radios that are used for public safety frequencies must meet certain restrictions, such as limiting the ability of the operator to modify frequency programming directly, among others. These radios are often very expensive new and of commercial quality. Even used and in bad condition, they can go for over \$100. This makes Part 90 type certified radios out of reach of many budgets.

Now to the exciting part: what about "broken" ham radios? "Breaking" refers to modifying the radio, either through software or physical removal of a component on the circuit board, so that the radio may transmit outside of the Amateur Radio bands. In this way, it is technically possible to have a radio that transmits on Amateur Radio and Public Safety frequencies and doesn't cost too much. For this reason, many Hams break their radios. While not illegal to perform the operation of breaking the radio, transmitting almost always is.

Interestingly enough, it is OK to go the other way: using a type certified radio on Amateur Radio bands. That is because Part 97 doesn't require certification, so a Part 90 type certified radio may be legally programmed to transmit on both Public Safety and Amateur Radio bands. Just make sure that an unlicensed operator doesn't start transmitting illegal on the ham bands!

This is the closest I get to an official statement, so pay attention: It is the position of the Utah County Sheriff's Office that modified Amateur Radios are not to be used on Public Safety frequencies. This applies particularly to volunteer organizations supporting the Sheriff's Office, including UCARES, SCAT, TERT and SAR. Only type certified radios are to be used. Period. You have been warned.

What about during an emergency? Some may say that using a broken ham radio during an emergency where life, limb or property is in danger is acceptable. Keep in mind that confiscation of your equipment and suspension of your ham license is always a possible outcome, even in the event of an emergency. Consider if that is truly an emergency and the ONLY way communication can be made?

What about other options, including using a cell phone, calling on a ham frequency first, etc.? Be aware of the consequences before you transmit!

How about those cheap Chinese radios? Aren't they type certified? Those Baofeng or Wouxun radios may be type certified if they have the FCC label AND listed in the FCC database as such. It may be possible to purchase them without the label, which would make them illegal, or they may not have applied for certification for a particular model. Do not trust the website, or some forum out there. I would recommend investigating carefully before using any of those radios on public safety frequencies to ensure they have the proper certification first. Remember, you must not be able to change programmed frequencies directly on the keypad to be considered type certified, that capability must be disabled.

One last word on Family Radio Service, or FRS. It is covered under Part 95 (along with other services) and must be limited to 500mW of output and a fixed antenna. That means that any radio that exceeds half a watt on transmit and has a removable antenna could not be certified for use on FRS. So, sorry, you can't use a broken ham radio there either.

So there you have it. Remember, before trying anything discussed tonight, make sure you understand the rules first.