

Common Transmitter and Receiver Problems

Since Murphy's Law—the law that states if anything can go wrong, it will—applies to amateur radio as much as it does to any other pursuit, at some point you will have to deal with problems. These may include overload, distortion, feedback, and interference.

Let's first consider interference. **All of these choices are correct** when talking about causes of radio frequency interference (T7B03):

- Fundamental overload
- Harmonics
- Spurious emissions.

Any of these could cause interference to a TV set or radio, and you will want to take steps to find and eliminate that interference. If someone tells you that your station's transmissions are interfering with their radio or TV reception, you should first **make sure that your station is functioning properly and that it does not cause interference to your own radio or television when it is tuned to the same channel** or frequency. (T7B06)

While it's not very likely that your amateur radio station will interfere with a neighbor's cable TV service, it can sometimes occur. The first step to resolve cable TV interference from your ham radio transmission is to **be sure all TV coaxial connectors are installed properly**. (T7B12)

Your amateur radio station may interfere with a nearby radio receiver if your signal is so strong that the receiver cannot reject the signal even though your signal is not on the frequency to which the receiver is tuned. When a **receiver is unable to reject strong signals outside the AM or FM band**, it can cause a broadcast AM or FM radio to receive an amateur radio transmission unintentionally. (T7B02) One way to reduce or eliminate the overloading of a non-amateur radio or TV receiver by an amateur signal is to **block the amateur signal with a filter at the antenna input of the affected receiver**. (T7B05)

Another device that often experiences interference from amateur radio stations is the telephone. The telephone wires act as antenna and the telephone itself demodulates the signal. One way to reduce or eliminate interference by an amateur transmitter to a nearby telephone is to **install an RF filter at the telephone**. (T7B04)

All of these choices are correct when considering what may be useful in correcting a radio frequency interference problem (T7B07):

- Snap-on ferrite chokes
- Low-pass and high-pass filters
- Band-reject and band-pass filters

Interference works both ways. Your neighbors may have wireless devices, sometimes called “Part 15 devices,” that can interfere with your station. A Part 15 device is **an unlicensed device that may emit low powered radio signals on frequencies used by a licensed service.** (T7B09)

All of these choices are correct when considering what you should do if something in a neighbor’s home is causing harmful interference to your amateur station (T7B08):

- Work with your neighbor to identify the offending device
- Politely inform your neighbor about the rules that require him to stop using the device if it causes interference
- Check your station and make sure it meets the standards of good amateur practice

Perhaps the most common problem that amateur radio operators have is distorted or noisy audio when transmitting. There are many reasons for poor audio. **All of these choices are correct** if you receive a report that your audio signal through the repeater is distorted or unintelligible (T7B10):

- Your transmitter may be slightly off frequency
- Your batteries may be running low
- You could be in a bad location

Reports of garbled, distorted, or unintelligible transmissions can be a symptom of RF feedback in a transmitter or transceiver. (T7B11) Sometimes, garbled or distorted audio when operating FM is the result of over-deviation. **Talk farther away from the microphone** is one thing you can do if you are told your FM handheld or mobile transceiver is over-deviating. (T7B01)

QUESTION POOL: (12)

T7B03	T7B06	T7B12	T7B02	T7B05	T7B04
T7B07	T7B09	T7B08	T7B10	T7B11	T7B01