

Science You Can Use

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Dear Science: Late one night about two months ago, my “weather radio” receiver issued a tornado warning (accompanied by a loud siren), but almost immediately the NOAA Weather Radio (NWR) station to which the radio was tuned went off the air. I then discovered that our entire section of town had lost power. I tuned the weather radio to another weather radio “channel”, but I didn’t hear anything about bad weather in my area. I sheltered in my basement, anyway, taking the weather radio with me. Then I discovered I couldn’t receive anything on the weather radio in the basement. I later learned that a tornado had hit the town I was in. What could I have done better? -- Buck R.

Dear Buck: A weather radio with a siren can save your life, especially if a tornado heads your way while you are asleep. In addition, I recommend you buy a battery-operated, multiband radio receiver (about \$50 at major hardware stores and online) and keep it ready for emergencies. The radio should be able to receive at least AM, FM, and the NWR radio channels: check the radio’s documentation to determine whether it covers these “bands” before you buy. There is a reasonable chance that you will be able to receive reliable, current weather information from a local AM or FM station on this kind of receiver even if you cannot receive NWR stations. Some details follow.

The NWR station you were listening to went off the air just as the storm began. This is a rare event, but it can happen. In many, but not all areas of the US, at least two different NWR stations broadcast emergency weather information for your area (more about this, below). If one of these goes off the air, you may be able to receive another weather channel that provides warnings for your area.

The alternate weather station to which you tuned didn’t provide weather watch and warning information for your area. Just because you can hear an NWR station doesn’t mean that station broadcasts warnings for your area. Do all of the following before you have an emergency. First, determine which NWR stations provide watches and warnings for your area. To do this, access https://www.nws.noaa.gov/nwr/coverage/county_coverage.html on the Internet. Select your state on the listing shown. Information (location, station identifier, and frequency) about NWR stations will then display by county for the state you selected. Locate the row(s) for the county that includes your area. Suppose, for example, you want to know what NWR stations provide coverage for Douglas County, Kansas. Select “Kansas” at the link above, then search for “Douglas” in the county list. The table shows that three stations (KID77 (162.550 MHz), KGG98 (162.425 MHz), and WXK91 (162.475 MHz)) cover Douglas County. Print this information.

Next, determine the “channel” number on your receiver that corresponds to the frequencies of the NWR stations that provide watches and warnings for your area. The original documentation for your receiver will likely contain this information. If you don’t have the manufacturer’s documentation, try accessing <https://www.nws.noaa.gov/nwr/info/nwrrcvr.html>.

If all of the above fail, you will have to experiment a little, because there are two different ways frequencies and receiver channels can correspond, depending on manufacturer and model. The two different correspondence schemes are called the “Chronological Sequence”, and “Increasing Frequency Sequence”, schemes (see Figure 1).

Chronological Sequence

1=162.550 Mhz
2=162.400 Mhz
3=162.475 Mhz
4=162.425 Mhz
5=162.450 Mhz
6=162.500 Mhz
7=162.525 Mhz

Increasing Frequency Sequence

1=162.400 Mhz
2=162.425 Mhz
3=162.450 Mhz
4=162.475 Mhz
5=162.500 Mhz
6=162.525 Mhz
7=162.550 Mhz

Figure 1. The two NWR Channel/Frequency correspondence schemes.

To determine which of these schemes applies to your weather radio, get the list of NWR stations that provide weather coverage for your county by the method described above. Select one of those stations from the list. Note its frequency. Find that frequency in Figure 1 under the “Increasing Frequency Sequence” section and note the channel corresponding to that frequency. For example, suppose you selected station KID77 operating at 162.550 MHz. The “Increasing Frequency” section of Figure 1 says that that frequency corresponds to Channel 7. Assuming that the NWR stations and your weather radio are operating correctly, tune your weather radio to channel 7 and listen until the station gives its callsign. If that callsign is “KID77”, your radio uses the “Increasing Frequency Scheme”. Repeat this process for all the NWR stations that service your area and save this information next to your weather radio.

If the process above does not produce the results you need, your weather radio probably uses the “Chronological Sequence” correspondence. Find the frequency (in the example, 162.550 MHz) of the NWR station you are trying to receive in the “Chronological Sequence” section of Figure 1, note the channel number (in this example, Channel 1), and tune your radio to that channel. Repeat the process above, based on the “Chronological Sequence” section in Figure 1.

Test your radios in your shelter before you have an emergency. For further information, see <https://www.nws.noaa.gov/nwr/info/nwrrcvr.html>.

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