Why I Operate Remote Radio

Remote operation has many uses to fit your interests.

Gene Hinkle, K5PA

The internet allows us to control radios and send audio between multiple points, making remote radio operation possible. We are now able to have radio systems control an audio waveform transmission over the internet with fidelity and security, providing greater functionality and operating flexibility.

Personally, my four favorite uses for remote radios are to compare signal reports, improve net experiences, operate in disadvantaged conditions, and multiply the number of radios I physically own (see Figure 1).

Real-Time Signal Comparisons
I wanted to know how my signals were received at different locations due to propagation and my station design. I used the Reverse Beacon Networks (RBN) and WSPR networks that made good use of the internet to report signal levels in real time, but the actual signal reception was missing, because only the received signal levels were reported. Listening to my own signal at remote locations helps me understand how propagation affects the reception.

Remote radio gives us the ability to compare signal conditions from other points on the globe with what my home station hears. Most hams know that during contest or DX operations, signals are reported routinely as 59 or 599 as a matter of acceptance. But remote radio listening helps me understand how hams truly report their reception and how another operator's 559 report compares with what I call a 559.

Making a Better Net Experience
If you have participated in on-the-air nets, you know that many signals that check in are not heard well from your location. This is when a remote site shines in providing a better point for reception. By changing to different geographic locations, it is possible to gain a better net participation experience. For example, when listening to a net operating in the western US from my location in central Texas, I can normally hear 20% of the net. But with a remote station, I can find a receiver much closer to the geographical area of the net, allowing me to hear a much larger portion of the net.

Disadvantaged Operations
Operating during poor weather conditions is another great use for remote radio. After disconnecting all my antennas from my radios and properly grounding them, I use a wireless device, which avoids the possibility of lightning damage through direct wire
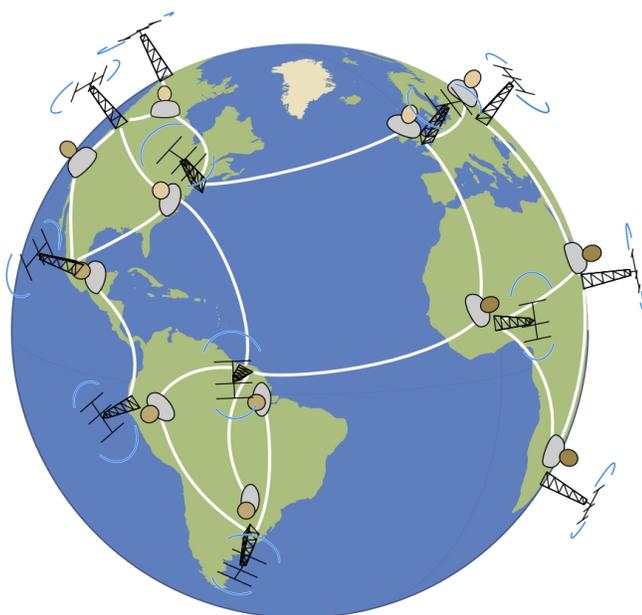
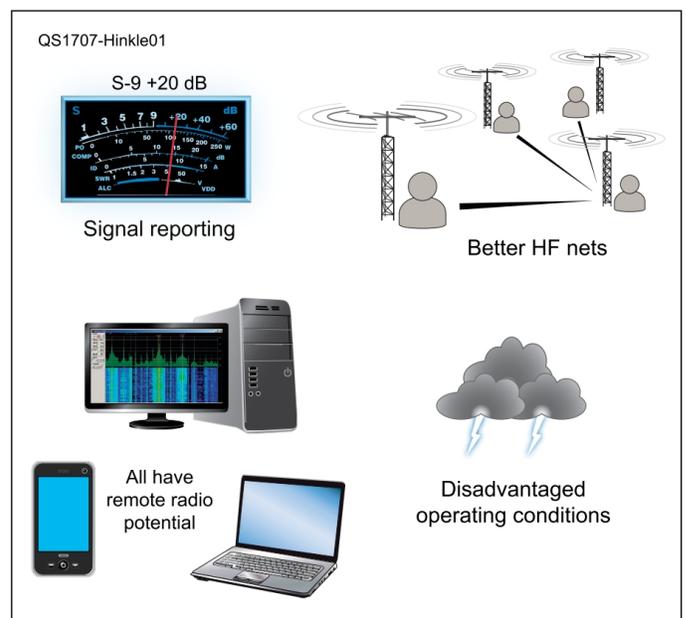The internet connects global remote radios together.

Figure 1 — Common uses of remote radio.

connectivity, and I sign in to a remote radio station.

Remote operating is also great for hams that live in disadvantaged ham communities due to restrictions set by hospitals, retirement facilities, or homeowner associations. These hams usually know a variety of stealth antenna techniques, including remote station operations. It is particularly nice to be able to locate a remote radio across the globe without being bound by local time or propagation conditions.

Another disadvantage many of us have, especially entry-level hams, is the inability to fund a quality station consisting of the best transceivers, amplifiers, and antennas. With remote radios, however, costs can be as low as internet connectivity and a notebook computer or tablet (which they may already own or can borrow) loaded with remote radio client software.

An important caveat to consider is that the ham radio operating paradigm might not apply as we think of it today. Some hams may not want to have a hardware station with all its assemblies and costs. It is possible that with more remote sites becoming available, the user-base might shift to remote operations as it gains more acceptance.

Multiplication Factor
From my home station, I participated in a 40-meter net that serves as a DX window to the South Pacific, the Caribbean Islands, and Central America. My station has one antenna for this band, and it was doing fairly well listening to the net. But as other stations began to check in, it was apparent that I could benefit from using receivers from different locations. I started up my Android tablet, *Windows 10* tablet, and my *Windows 7* computer to access different remotes across the United States. By carefully choosing the sites' locations, I could

---

---

tailor my listening experience, and I could also choose which remote I would transmit over.

Other Hams' Interests
I recognize other ham groups have additional interests in remote operating, such as in radiosport contesting. A few years ago, a contest station was operated completely void of operators at the physical radio site. All operators were working as a team from their respective locations, saving them time and money. As remote radio operations expand, it is necessary to remember that all remote operations must follow the regulatory rules and regulations put in place by their respective countries and the radiosport entities.

In Closing
Remote operation has not been a

replacement for my station, but is an additional tool to use. Over my 2-year experience with remote operation, I have gained a better appreciation of radio, propagation, and access to remote radios.

Gene Hinkle, K5PA, began experimenting with ham radio at a very young age, and this led him to a career in RF engineering. He earned his M.S. in Electrical Engineering from The University of Texas at Austin. He is an IEEE Life Senior Member and a Professional Engineer (Retired) in Texas. He is an ARRL Life Member and a VE examiner. He recently retired from a radio technology company specializing in radio-geolocation. His favorite operating modes are CW, low bandwidth digital signals, and working DX. Visit his website, **www.k5pa.com**, for more information.