QRP POWER

Power is No Substitute for Skill

October starts the DX contest season. Since this column will appear in mid-September. I decided to concentrate on several things that will improve your chances when contesting or DXing using QRP power levels.

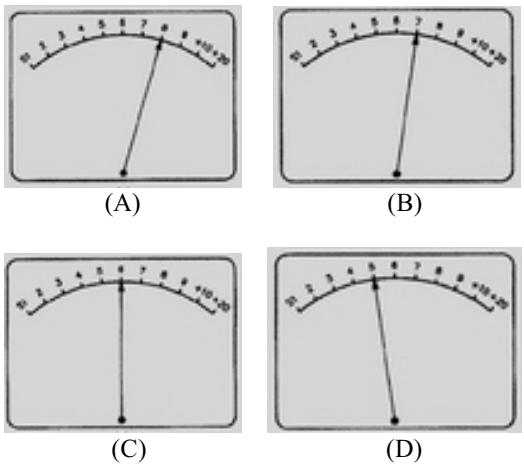
First of all, let me express my gratitude to John Dorr, K I AR, contesting columnist for *CQ* magazine. John's June Contesting Tip says: "Here's a great tip to help hone your operating skills. The next time you enter a DX pileup, try calling the station with just 100 watts, instead of instinctively turning on the amplifier. The idea is to try to let operating skill prevail over brute force. It's amazing how differently you will operate (and how you can improve your skills) when you know you're not the loudest guy in the pack!" Well said, John!

About the only thing I'd change in John's statement is to substitute 5 W for the 100 W! Gang, the message is getting out. If you want to improve your operating skills start using QRP. I wonder if we will have any "QRP converts" as a result of John's contesting tips?

To dB or Not to dB

Let's take a look at what happens when someone decides to drop the output power down from 1000 W to 5 W. The most obvious result is your signal is no longer *really* loud. Is your QRP signal readable? Let's find out (see Figure 1).

We are going to work in decibels, which is the way RF power output and S meters are calibrated. Each S unit on the meter is theoretically equal to a 6-dB change in signal level. Since every 3 dB is equal to a doubling or halving of the power output. 6 dB equals a power increase or decrease of *4* times. Taking a I -kW signal and arbitrarily assigning it an S9 reading on the S meter. if we decrease the should read S8. By dividing this power again by four (an additional 6 dB) the S meter should read 57 for a 62.5-W signal. Continuing downward, by attenuating this 62.5-W signal by a factor of four (to 15.6 W) the S meter should read S6. One final 6-dB drop from 15.6 W to 3.9 W (well within QRP power levels) should equal an S5 signal on the S meter. In all actuality, to go from 15.6 to 5 W would equal a drop of only 4.9 dB, which is less than one S unit, so the resulting indication on the meter would be somewhere between S5 and S6. Not tough copy at all, under most band conditions.



(A) (B) (C) (D)

Figure 1 – I f a 1-kW signal pushes the S meter to S9, dropping to 250W will only to S8 (A). Drop to 62.5W and your down to S7 (B). Take the big downward leap to 15.6W and the meter reads S6 (C). Finally, dip to only 3.9W and the meter is S5 (D). So going from 1 kW to 3.9W only "cost" us four S units!

QRP Contesting & DXing Tips

Tip #1: ***Never doubt that you will prevail when hunting DX.*** It may take several nights of intense effort, but you will end up in the other guy's log. Doubting that QRP works is one of the biggest obstacles QRPers have to overcome. QRP works: we prove that every time we get on the air.

Tip #2: ***Spend some time using a good CW program on your computer to increase your CW speed and learn to copy ing your head.*** Without a doubt, this is a very important tip. The more proficient you are at CW (the preferred mode in QRP) the more DX contacts you'll make. There are several good CW learning/training programs available for the PC. Learning to put away the paper and copy in your head is something that every good CW operator can do. It takes time and effort but it's doable.

Tip #3: ***Check your antennas and replace broken wires, beam elements and weathered coax while the weather is still good.*** In the middle of an ice storm during a major contest is *not* the time to find out that your antennas aren't up to par. Take advantage of the good weather in the late summer and early fall to inspect, repair and replace the various elements of your antenna farm. Now is the time to erect that "killer death-ray" antenna. Antenna experimentation is at the heart of QRP. *Safety first!* Be sure to observe all safety precautions when erecting or working with antennas.

Tip #4: ***Get on the air often, get to know the bands, and work everything you hear!*** This will dramatically improve your operating skills and build confidence. Learning how the bands propagate will also help during contests and Dxing by allowing you to "read" the propagation and move around accordingly.

Tip #5: ***QRP works better at higher frequencies.*** It's true. The higher you go in frequency, the more efficient your 5-W signal tends to be. This is why on 10 and 6 meters you can really work the world with only 5 W. Use this information to plan the time to QSY to higher bands as the propagation improves. When 10 meters seems dead, dropping to 15 meters will yield many QSOs. Don't forget to check 10 intermittently because it can "prop" in and provide more contacts, especially those all-important "multipliers."

Tip #6: ***Learn what the propagation information furnished by WWV/WWVH really means.*** It does no good to chase DX when the A Index is in the 20s and the Geomagnetic Field is at major storm strength. *The ARRL Antenna Book,* along with the ARRL's *Low Power Communications. The Art and Science of QRP,* have chapters dedicated to deciphering these propagation forecasts. Learn about it; you won't be sorry.

I hope these tips will encourage many of you to give contesting and DXing a try. Major HF contests are 24-48 hours of intense DXing and offer a great way to increase your DXCC totals. Remember there are some really *big* contests starting in October: the QRP ARC! Fall QSO Party and the CQ WW DX Contest just to name two. Jump in and try them.

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