Although an unconfirmed rumor, we hear some readers have not been on the HF bands in several weeks—possibly one or two months (gasp!). We have the perfect suggestion to boost your interest at least 10 dB—go QRPI! Yes indeed, friends and fans. Whether you are stifled by antenna restrictions or a limited budget, or if you have already worked the world with high power, QRP will open a new dimension in real radio enjoyment. Build one or two low-power projects along the way, too. Homebrewing simple circuits is half the fun of QRP.

Is QRP a pursuit for all seasons? You bet, and that point is being proven every day regardless of the sunspot count. While tuning 30 meters only a few nights ago, for example, we spotted US0ZZ calling CQ with no takers. I answered him while running only 4 watts with my little Elecraft KX-1, and he snapped back a heartwarming reply with an RST of 339. After the usual exchange, he also dropped to 4 watts and we enjoyed a solid two-way QRP QSO. Doing the same thing with 50 or 100 watts just would not have the same pizzazz. Yes, we are having fun with QRP, and yes, there’s room for you, too. Check out the QRP action on 7040 or 14060 kHz one weekend soon. Now let’s bring on the hot news of the month!

The Hamfest Buddy

We have been promising to reveal a new quick-brew mini project for several months and the time has now arrived. Our new treat is called the Hamfest Buddy (photo A). It is a go-anywhere QRPp transmitter for fun or emergency use, and it also serves as a wireless BFO for monitoring favorite frequency activity with a portable AM-mode shortwave receiver. You can assemble the Buddy in an hour, it operates from an ordinary 9-volt battery, and it is also available as a low-cost kit.

I call it the Hamfest Buddy because it is perfect for putting you in the mainstream of QRP action at hamfests. How so? QRPers attending hamfests habitually gather in an out-of-the-way motel room after show hours to compare circuits and rigs or just to get on the air for fun. The best way to spot that activity is with a semi-wide-bandwidth receiver covering the ever-popular QRP frequency of 7040 kHz. The Hamfest Buddy fills that bill by acting as an adjustable BFO for the receiver, plus it lets you transmit back on the same frequency. In addition, the little transmitter can be used stand-alone style for emergency preparedness while traveling to or from hamfests. Power output is low (50 or 60 milliwatts typical) but quite adequate for general motel-area coverage with only a 2- or 3-

foot wire as an antenna. Also, some good QRP records have been set using even less power and an outdoor antenna. Try it. Who knows? You might even outdo Tommy Rockford, K6ATX, when he used a grid-dip oscillator to expose the crook’s hideout and call for help in the classic amateur radio novel S.O.S. at Midnight!

What about a mating receiver for the Buddy? That’s the good part. It works with small AM/FM/shortwave radios such as the little Grundig Mini 300 or Grundig FR200 shown in photo B. These famous-name radios are low-priced, remarkably sensitive, and well-calibrated (the Mini 300 even has a digital readout and clock-radio function for a

*4100 S. Oates Street #906, Dothan, AL 36301
e-mail: <k4twj@cq-amateur-radio.com>

Photo A—The Hamfest Buddy in various stages of assembly. The little gem fits in a 1.5" × 1.75" plastic fuse box or pill box. It functions as a go-anywhere two-frequency QRPp transmitter and wireless BFO for a mating receiver, and it is a perfect quick-brew project for newer amateurs. Kits are available from K4TWJ (see sidebar).

Photo B—Portable AM/FM/shortwave radios such as the hot little Grundig Mini 300 and FR200 shown here are great traveling companions. They are handy for on-the-spot SWLing, and when placed near a Hamfest Buddy they make a neat two-frequency mini-transceiver.
Fig. 1—Circuit diagram of the Hamfest Buddy, a unique one-transistor mini-rig and fun project that goes with you anywhere, anytime.

- Travel alarm. They are available from leading amateur radio dealers such as Universal Radio, Inc. (5630 Americana Pkwy., Reynoldsburg, OH 43068; telephone 1-800-431-3939 or via <www.universal-radio.com>). The radios are mainly designed for receiving the international shortwave broadcast bands (e.g., 41/40 meters) and lack a BFO, but that is no problem here. You just place a Hamfest Buddy within a few inches of the receiver and it radiates a BFO signal into the radio for copying CW. Also, since the receiver's (AM) bandwidth is around 6 kHz (and the Buddy has two switch-selectable frequencies approximately 2 kHz apart), you hear all the action with ease. When you wish to call a station, just grab the key and start transmitting. It's that simple.

- Learn with the Best — Gordon West & W5YI! Tech, General, Extra, Commercial study manuals, audio courses, software & more

- Technician Class
  - Technician Class book GWTM $15.95
  - Technician audio course on 6 audio CDs GWTW $34.95
  - Tech book + software package NCS $39.95

- Tech + General Value Package
  - Technician & General Class books + W5YI software package. Includes 2 Gordon West study manuals, W5YI Morse code software & free Part 97 book.

- W5YI Ham Operator Software
  - Includes all written and code exams, plus W5YI CW software on a CD-ROM, with free Part 97 booklet.

- HOS (no books) $39.95
- HOSB (with 3 study manuals) $79.95

- General Class
  - Upgrade to the HF bands by earning your General Class ticket. Gordon's NEW book includes all the Q&A along with his fun explanations that make learning easy. His audio course is a great way to learn if you spend a lot of time in your car or truck. The W5YI interactive study software gets you ready for the exam — and to get on the HF bands!

- General Class book GWGM $17.95
- General Class audio course on 4 audio CDs GWGW $24.95
- Book + software package GUS $39.95

- Learn Morse code for your upgrade to General!
  - Morse code Learning Course
    - on 8 audio CDs GW05 $39.95
    - CW Teacher on 2 audio CDs GWCT $14.95
    - Code software 0-48 wpm WMC $14.95
    - Morse code 5-16 wpm — tape GW13 $29.95
    - Morse code 13-20 wpm — tape GW20 $29.95

- Get your commercial license!
  - GROL-Plus book — FCC Elements 1, 3 & 8 for MBOP, GROL, & radar GROL $39.95
  - GROL-Plus book + software GRSP $69.95

Hamfest Buddy Kits Available

- Realizing that many of our amateur radio friends would like to build the Hamfest Buddy but do not have the time to hunt down parts or lay out a circuit on perfboard, I put together some low-cost kits complete with all parts, crystal, PC board, and “can’t miss” notes. The kits do not include a plastic case (you supply that item), but they have been favorably endorsed by seasoned amateurs and newcomers alike as a genuine “fun project.” They are available direct to you from me, Dave Ingram, K4TWJ, 4100 S. Oates St. #906, Dothan, AL 36301. The kits are $16 plus postage ($2.00). Specify if you want a 7.040, 10.106, 14.060, or 5.58 MHz crystal in your kit, and I will zip a Hamfest Buddy directly to you.

- We may be moving a bit quickly here, so let’s slow the pace and I will explain.

Circuit Details

- Study fig. 1 and you will see the Hamfest Buddy is basically a one-transistor transmitter with some unusual mods and expansions. Notice, for example, the switch connected between the crystal and ground. It shorts out VXO inductor L2 to give the Buddy its two operating frequency capability. Next notice the

Extra Class

- Let Gordon help you get your top ham ticket, Amateur Extra Class! His book includes memorable answer explanations to help you learn the material and understand the correct answer. His audio theory course reinforces learning. The W5YI software helps you prepare for that tough Element 4 exam.

- Extra Class book GWEM $19.95
- Extra Class audio theory course on 7 audio CDs GEWE $39.95
- Extra book + software pkg. ECS $39.95

Basic books teach you Electronics!

- Basic Electronics BELC $19.95
- Basic Digital Electronics BDIC $19.95
- Basic Communications Elect. BCOM $19.95

Getting Started in Electronics

- by Forrest M. Mims. A great introduction for anyone who wants to learn electronics fundamentals. Includes 100 projects you can build, and great experiments that demonstrate how electricity works!

- GSTD $19.95

Order today from W5YI: 800-669-9594 or on-line: www.w5yl.org

The W5YI Group • P.O. Box 565101 • Dallas, TX 75356

www.cq-amateur-radio.com

August 2005 • CQ • 73
Overall size and portability was a prime consideration when I designed the Hamfest Buddy, so I made its output/band-pass filter optional and placed it outside the box (a 1.5" x 1.75" AGC/ cartridge fuse box is perfect; a dental-floss case or pill box also works well). The filter is not mandatory when using a 2- or 3-foot clip lead for an antenna, but it should be included when used with an outdoor antenna such as a dipole or vertical. Values of filter components for various bands are included in fig. 2.

Assembly Notes and Operation

While the Hamfest Buddy's low parts count and simple design make it an ideal first "build it" project for newer amateurs, a few helping Elmer notes always warrant mention.

Remember, when working with small parts, transistors, and PC boards, always use a low-wattage "pencil" iron and extra-thin solder (such as RadioShack .022 silver bearing solder) to avoid bridges between close-spaced connections. Using a hand magnifier also helps.

Note the 10-µH RF choke between the positive battery connection and the transistor's collector. Do not confuse it with the 4.7-µH VXO coil or frequency shift will be high and output will be low. Watch the transistor's base wiring, too. It is easy to transpose locations of the 10K-ohm and 4.7K-ohm resistors.

If the Buddy's wireless BFO signal is too strong (that is, if it overloads or "blocks" the receiver rather than mixing with incoming signals), move the Buddy back a foot or two from the receiver. If you are using an outdoor antenna with the Buddy, disconnect it during receive to lower the BFO level.

If your assembled Buddy doesn't seem to work, insert a milliamp meter in series with a battery lead. It should indicate approximately 0.8 mA key up and 30 to 35 mA key down. High current indicates a dead short. Low current indicates an open circuit (did you remember to include an RF choke between V+ and the transistor's collector?). If current is within limits but you do not hear the Buddy's signal, tune ±10 kHz of the crystal frequency. The VXO coil or receiver's calibration may have altered exact frequencies. If necessary, connect a 2- or 3-foot clip lead to your receiver's antenna socket and place it near the Buddy until you hear its signal. If you only hear the Buddy on key down, try a lower value emitter resistor in place of the 10K resistor. Maintain diligence and patience. Troubleshooting is a good learning experience.

The Buddy also makes a neat, fun item for club meetings and hamfests. Just sneak up behind a friend tuning a receiver and ask if he/she hears the rare DX calling him/her on 7040 kHz (or your particular Hamfest Buddy's frequency). Then make up a wild DX call and transmit to the nearby receiver with the Hamfest Buddy in your pocket (no antenna needed here). What a gag!

Conclusion

We wrap up this month's column with a guaranteed-to-please topping for the Hamfest Buddy—a mating (and ridiculously simple) pocket key for emergency use (fig. 3). The key (and I use the term loosely!) is a monaural 1/8-inch phone plug with its terminals shorted and part of a spring cut from a ballpoint pen slipped over its end. You just half-insert the plug in the Buddy's socket and then press down on the plug to send CW. Adjust spring length for comfortable tensioning, and store the spring in the plug's back section for carrying. It's funky, but it works! Remember the Hamfest Buddy is a flea-power fun rig and enjoy!

73, Dave, K4TWJ