Why You Didn't Get the Call You Wanted, p. 56

Amateur Radio

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COMMUNICATIONS & TECHNOLOGY

JUNE 2011

CQ

"Take it to the Field" SPECIAL!

On the Cover: Bob Curry, KC3VO, of Adelphi, Maryland, "taking it to the field" on his Honda Goldwing. Details on page 14.

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Automatic Band Switching: The R8's famous "black box" matching network combines with traps and parallel resonators to cover 8 bands. You QSY instantly, without a tuner!

Rugged Construction: Thick fiberglass insulators, all-stainless hardware, and 6063 aircraft-aluminum tubing that is double or triple walled at key stress points handle anything Mother Nature can dish out.

Compact Footprint: Installs in an area about the size of a child's sandbox -- no ground radials to bury and all RF-energized surfaces safely out of reach.

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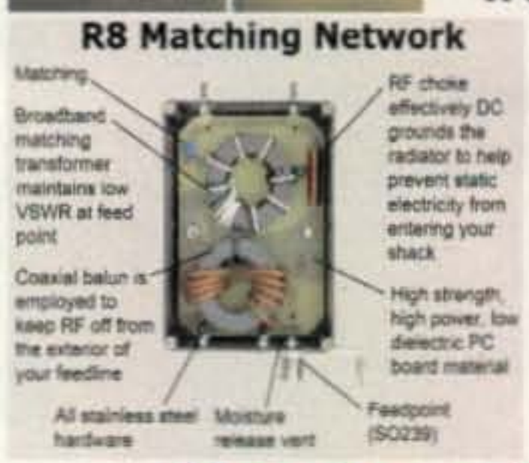
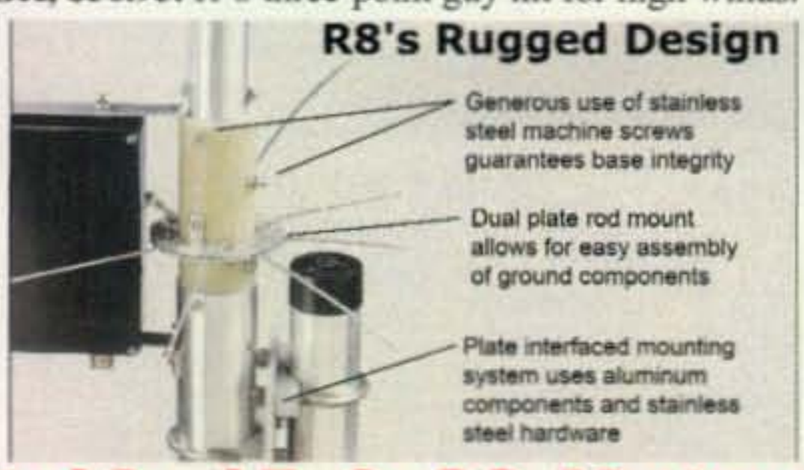
The sunspot count is climbing and long-awaited band openings are finally becoming a reality. Now is the perfect time to discover why Cushcraft's R8 multi-band vertical is the premier choice of DX-wise hams everywhere!

R-8GK, $56.95. R-8 three-point guy kit for high winds.





MA-5B *5-Band* Beam

Small Footprint -- Big Signal

The MA-5B is one of Cushcraft's most popular HF antennas, delivering solid *signal-boosting directivity* in a bantam-weight package. Mounts on roof using standard TV hardware. Perfect for exploring exciting DX without the high cost and heavy lifting of installing a large tower and full-sized array. Its 7 foot 3-inch boom has less than 9 feet of turning radius. Contest tough -- handles 1500 Watts.

The unique MA-5B gives you 5-bands, automatic band switching and easy installation in a compact 26-pound package. On 10, 15 and 20 Meters the end elements become a two-element Yagi that delivers solid power-multiplying gain over a dipole on all three bands. On 12 and 17 Meters, the middle element is a highly efficient trap dipole. When working DX, what really matters are the interfering signals and noise you *don't hear*. That's where the MA-5B's impressive side rejection and front-to-back ratio really shines. *See* ***cushcraftamateur.com*** *for gain figures.*

Cushcraft 10, 15 & 20 Meter Tribander Beams

Only the best tri-band antennas become DX classics, which is why the Cushcraft World-Ranger A4S, A3S, and A3WS go to the head of the class. For more than 30 years, these pace-setting performers have taken on the world's most demanding operating conditions and proven themselves every time. The key to success comes from attention to basics. For example, element length and spacing has been carefully refined over time, and high-power traps are still hand-made and individually tuned using laboratory-grade instruments. All this attention to detail means low SWR, wide bandwidth, optimum directivity, and high efficiency -- important performance characteristics you rely on to maintain regular schedules, rack up impressive contest scores, and grow your collection of rare QSLs!

It goes without saying that the World-Ranger lineup is also famous for its rugged construction. In fact, the majority of these antennas sold years ago are still in service today! Conservative mechanical design, rugged over-sized components, stainless-steel hardware, and aircraft-grade 6063 make all the difference.

The 3-element A3S/A3WS and 4-element A4S are world-famous for powerhouse gain and super performance. **A-3WS, $499.95,** 12/17 M. **30/40 Meter** *add-on kits* available.

Cushcraft Dual Band Yagis

One Yagi for Dual-Band FM Radios

Dual-bander VHF rigs are the norm these days, so why not compliment your FM base station with a dual-band Yagi? Not only will you eliminate a costly feed line, you'll realize extra gain for digital modes like high-speed packet and D-Star! Cushcraft's A270-6S provides three elements per band and the A270-10S provides five for solid point-to-point performance. They're both pre-tuned and assembly is a snap using the fully illustrated manual.

Cushcraft Famous *Ringos* Compact FM Verticals

W1BX's famous *Ringo* antenna has been around for a long time and remains unbeaten for solid reliability. The Ringo is broad-banded, lighting protected, extremely rugged, economical, electrically bullet-proof, low-angle, and more -- but mainly, it just plain works! To discover why hams and commercial two-way installers around the world still love this antenna, order yours now!

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Young Ham of the Year Nominations Due by June 30

Do you know a young ham who has done something special related to ham radio? The Newsline Young Ham of the Year Award, co-sponsored by *CQ*, honors one radio amateur age 18 or younger each year who has made a significant contribution to society through amateur radio. Nominations for the 2011 award must be received by June 30. Full details and nominating forms are online at <www.arnewsline.org>. Mail nominations to Young Ham of the Year Award, c/o Amateur Radio Newsline, 28197 Robin Ave., Santa Clarita, CA 91350

Cost Estimate for ARRL Study Bill: $1 Million

The non-partisan Congressional Budget Office projects that conducting the studies mandated by S.191, the Amateur Radio Emergency Communications Enhancement Act of 2011, would cost taxpayers approximately $1 million in 2012, if passed and signed into law. The bill, which is being heavily promoted by the ARRL, would direct the Department of Homeland Security to study the uses and capabilities of the Amateur Radio Service during and after a disaster or emergency, and would require the department's Inspector General to additionally report on the cost of grant programs administered by the Federal Emergency Management Agency and the extent to which these programs overlap with each other. The CBO analysis was requested by the Senate Homeland Security and Governmental Affairs Committee.

ARISSat-1 Special Op a Flop

A planned activation of the ARISSat-1 amateur satellite aboard the International Space Station to commemorate the 50th anniversary of manned space flight apparently never happened. The satellite was supposed to be turned on during the April 12-13 timeframe, 50 years after the April 12, 1961 flight of Yuri Gagarin. No ground stations heard its signals, though, and at press time, no reason had been announced for the failure. An update posted on the ARISSat-1 website simply said that "AMSAT is working with our Russian partners to determine any problems and assist in correcting them." The satellite is scheduled to be hand-launched from the space station during a spacewalk in July. For updated information, visit <www.arissat1.org>.

"Penny Postcard" Up Another Penny

Some of our readers may recall when the cost of mailing a postcard was just one penny. Well, as of April 17, it costs one penny *more* to mail a postcard. While rates on first-class letters did not change, the postcard rate increased from 28 cents to 29. Obviously, this affects any hams mailing QSL cards directly within the U.S.

Special Callsigns for Royal Wedding

If you worked any stations in the United Kingdom with GR, MR or 2R prefixes during late April or early May, then you were part of the celebration of the wedding of Prince William and Catherine Middleton. The special callsign prefixes were authorized by the British government, at the request of the Radio Society of Great Britain, to be used between April 29, the date of the royal wedding, and May 9. William is second in line to the British throne, after his father, Prince Charles.

FCC Launches New "Beta" Website

The FCC has opened access to its new "Beta" website, the first major overhaul of the agency's website in a decade. Once you get past all the buzzwords in the announcement about it ("architected with a more intuitive user experience … the *reimagined* FCC.gov is proof that … dot-govs can look, feel and run like dot-coms."), you'll find some interesting features, including blogs by Commission staffers and a very cool "spectrum dashboard" that lets you search for the allocations of various services or "browse" by frequency. Unfortunately, the architects of the new site appear to believe the radio spectrum begins at 225 MHz and we haven't been able to figure out how to search for amateur allocations, even though they're listed on the chart. Check it out yourself at <http://beta.fcc.gov/>.

Several Prominent Amateurs Silent Keys

Four prominent hams became Silent Keys in late March and early April. On March 27, Paul Baran, W3KAS, died from complications of lung cancer, according to the *ARRL Letter*. Baran was one of the fathers of the internet and of packet radio. He came up with the idea of packet switching, in which data to be transmitted is broken up into small packages, sent over sometimes varying routes and reassembled at its destination.

The following day, the *ARRL Letter* reports, Mike Koss, W9SU, owner of Industrial Communications Engineers (ICE), passed away suddenly after collapsing on his workshop floor. ICE, well-known among hams as a manufacturer of line filters, surge protectors and more, temporarily suspended taking new orders while it reorganized the business in light of Koss's passing.

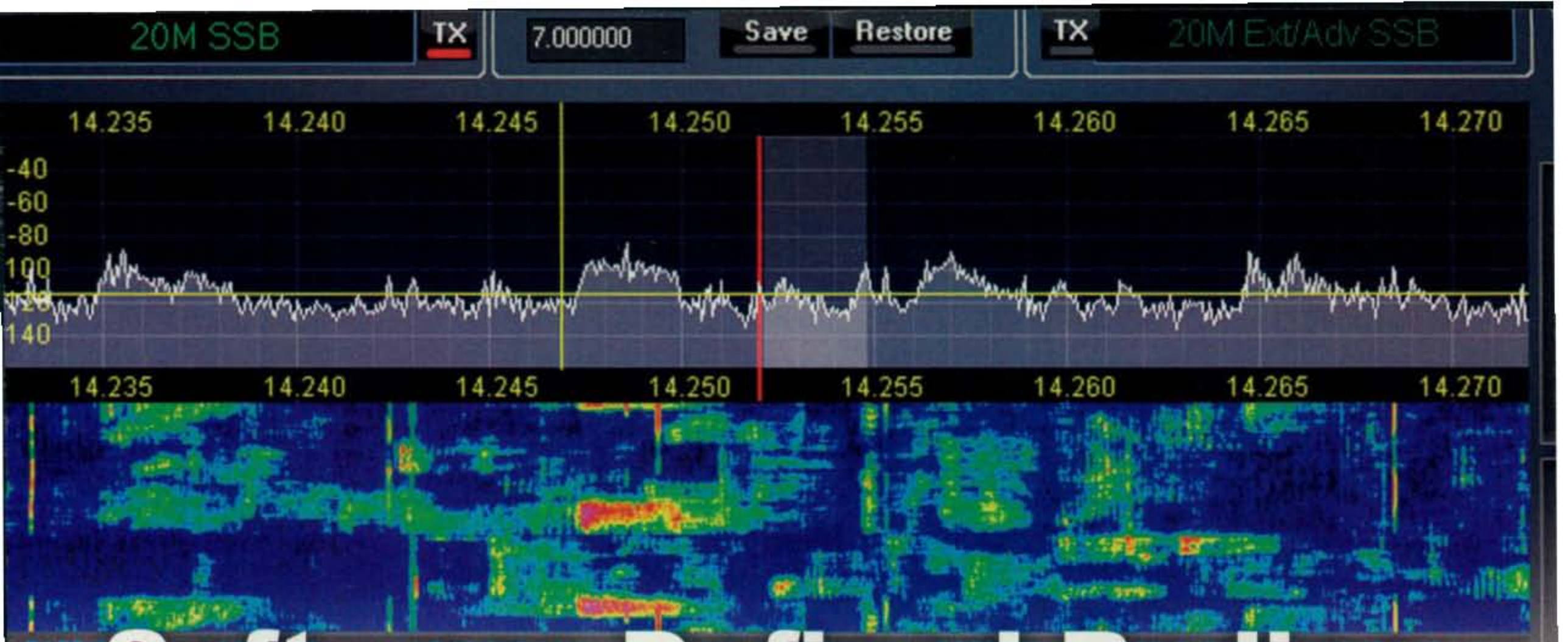
Grammy-winning recording engineer Roger Nichols, KE4BDA, became a Silent Key on April 9, after a battle with pancreatic cancer. According to the *ARRL Letter*, Nichols was 66. He was best known for his work with Steely Dan and was honored with three Grammy awards.

Finally, on April 13, just a few weeks after celebrating his 100th birthday, ham radio legend Leo Meyerson, WØGFQ (ex-W9GFQ), also became a Silent Key. Meyerson founded and ran World Radio Laboratories in Council Bluffs, Iowa, producing the "Globe" line of transmitters that were very popular among hams in the mid-20th century. *CQ* columnist Joe Eisenberg, KØNEB, was a family friend of Meyerson's. He will share some reflections on the man who was also his personal ham radio mentor in his July "Kit-Building" column.

Morse Messages on Mars

The next Mars rover now being buil—named Curiosity—will apparently be taking Morse code with it to the red planet when it is launched this fall. The *ARRL Letter* reports that The Planetary Society's Science and Technology Coordinator, Emily Lakdawalla, reported on her blog that the pattern created by the rover's six wheels "are in a pattern of short squares and longer rectangles—almost like dots and dashes. Morse code." The patterns reportedly spell out "JPL." The official function of these patterns is as "visual odometry markers," which help observers visually determine how far the rover has traveled. Curiosity is scheduled for launch between November 25 and December 18 of this year, and for arrival on Mars sometime next August.

Additional and updated news is available on the Ham Radio News page of the CQ website at <http://www.cq-amateur-radio.com>. For breaking news stories, plus info on additional items of interest, sign up for CQ's free online newsletter service. Just click on "CQ Newsletter" on the home page of our website.



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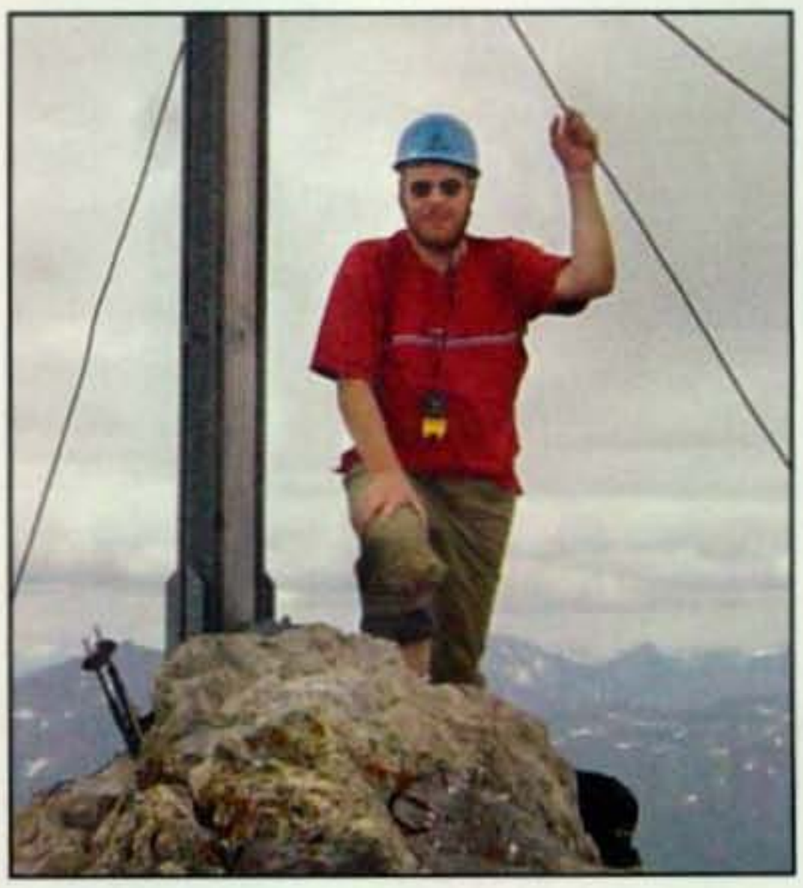
TAKE IT TO THE FIELD SPECIAL



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departments

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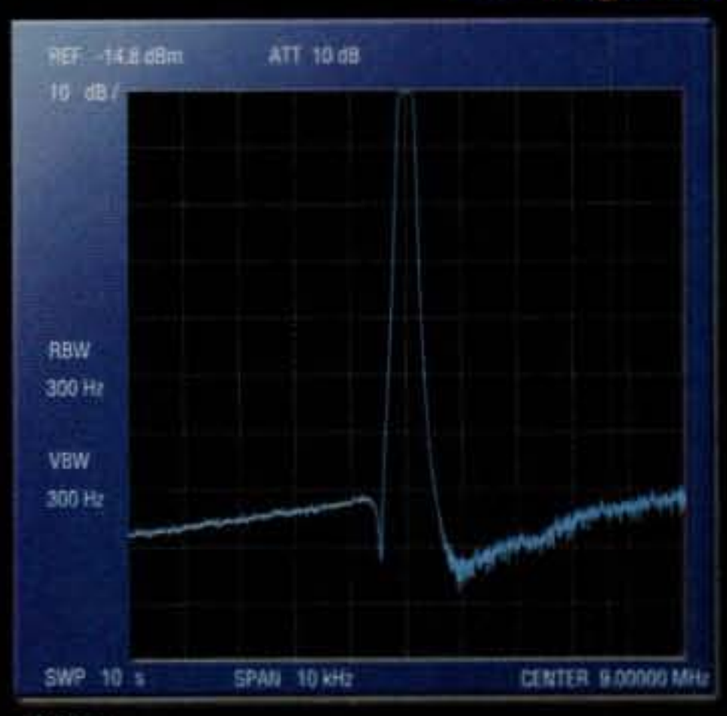
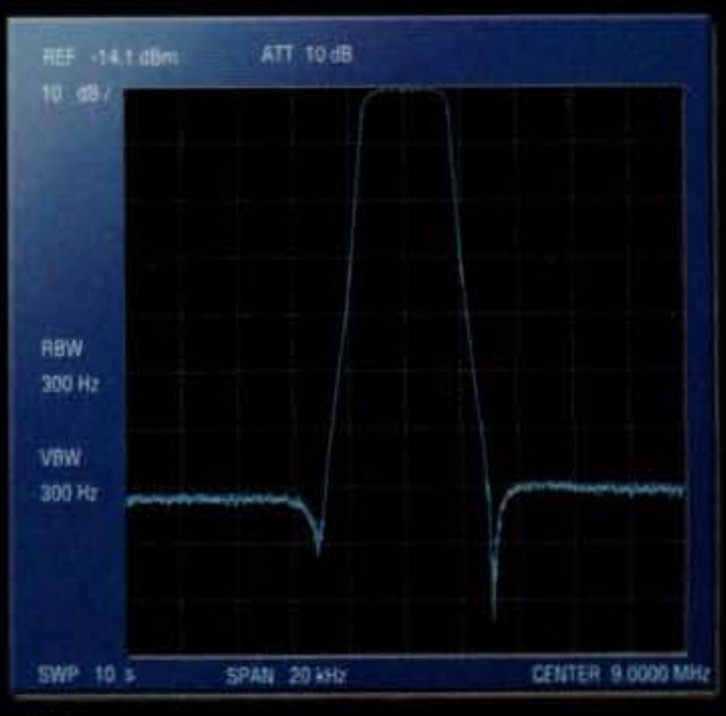


300Hz



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- ±0.05ppm OCXO included
- 300 Hz Roofing Filter included
- 600 Hz Roofing Filter included
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HF/50 MHz 200 W Transceiver
FT DX 5000D

- Station Monitor SM-5000 included
- ±0.5ppm TCXO included
- 600 Hz Roofing Filter included
- 3 kHz Roofing Filter included

HF/50 MHz 200 W Transceiver
FT DX 5000

- Station Monitor SM-5000 optional
- ±0.5ppm TCXO included
- 600 Hz Roofing Filter included
- 3 kHz Roofing Filter included

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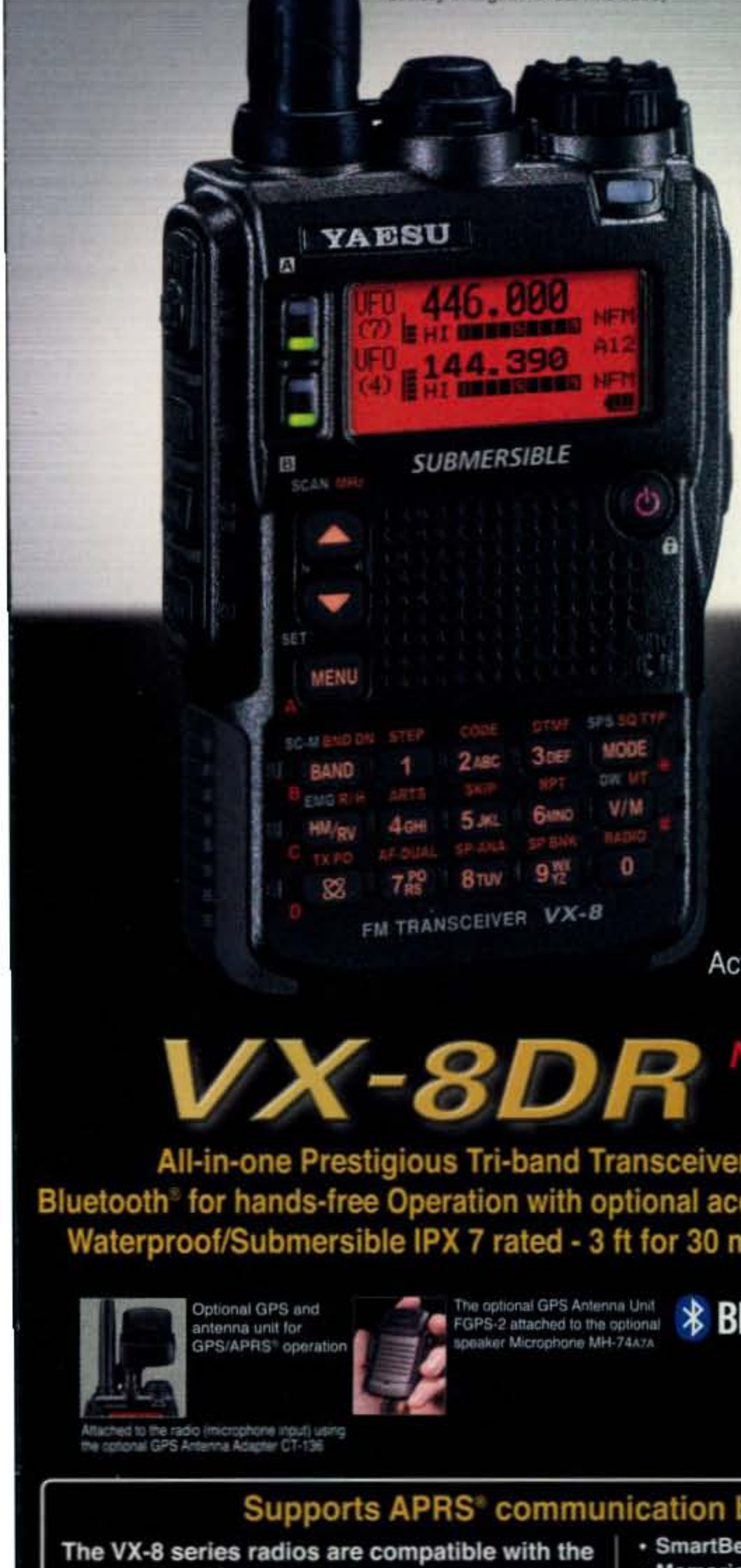
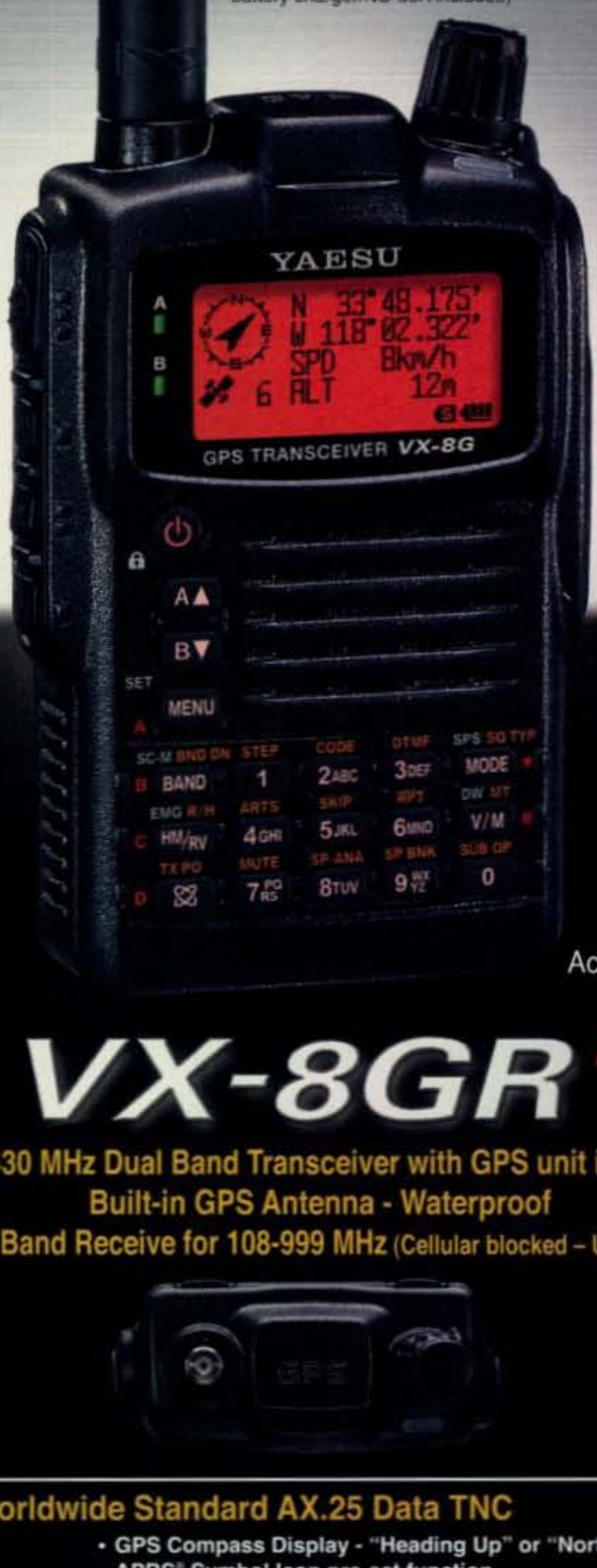


Actual Size



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The CQ editorial — zero bias — a

BY RICH MOSESON,* W2VU

That "Special" Feeling

Welcome to our first annual "Take it to the Field" special! I'm really excited about this issue, our first special topic issue in several years and the first in a new series of specials, looking at topics of particular interest to hams of the twenty-teens (or whatever we end up calling this decade). Among the hottest of these topics right now, thanks in part to the availability of high-quality gear that is small and lightweight, is operating "out there"—away from our home stations— whether it's on foot on a hiking path, with friends in a local park or on the road passing out contacts in a contest.

We picked June for our "Take it to the Field" special because the weather is great for heading outside and of course, because it's the month for Field Day, that annual ham radio tradition that's equal parts contest, emergency preparedness exercise, public relations event, cook-off and outdoor social activity. But there's much more to "taking it to the field" than joining your club on Field Day, and our goal for this issue is to paint a picture of the many different ways in which hams all over are getting out of their houses and taking their ham gear with them. I hope you'll agree that we succeeded.

From the front cover—with Bob Curry, KC3VO, riding off into the sunset with his motorcycle-mobile kilowatt station (see "On the Cover" on page 14)—to NW7US's Propagation column in "the back of the book," we take you all over the world of ham radio away from home. From the shores of Long Island Sound to the skies over Guanajuato, Mexico and the earthquake-shattered streets of Christchurch, New Zealand, this issue is crammed full of articles showing hams having fun and helping their communities while operating "in the field."

We've got stories on makeshift stations on an island, a radio club that does high-altitude ham radio balloon launches and community outreach with its "Digital Mobile Library," and a group of hams in Arizona that loves to head out to the park and play with antennas—even loading up metal lawn chairs and pizza pans! Plus, we have a review of three portable single-lever keyer paddles for sending Morse code from who-knows-where, two looks at different kits for portable operating, tips on being prepared for just about anything in the field, Rover operating in VHF contests, upcoming DXpeditions and a guide to likely propagation conditions for Field Day.

In fact, we had so many good stories that we couldn't fit them all in the issue. So we added a *special web supplement* with two more features—a project article on a battery discharge meter to let you know which power packs are ready for field use, and a look at a hamfest just for RVers in the middle of the Arizona desert! Our web supplement also contains expanded results of the 2010 CQ DX Marathon (main article is in the issue, on page 28) and "overflow" from our Kids' Korner, Public Service and QRP columns. Be sure to check out the web supplement to get the maximum value from this special issue. Details are on page 86.

I must admit that when we started gathering articles for this issue, I was a little concerned. Would we be able to get the word out in time to get a broad selection of articles on a wide array of outdoor activities? I needn't have worried. At least half the articles that landed on my desk over the past few months had some outdoor connection, so I think we hit on exactly the right topic at exactly the right time.

Looking Ahead—and Looking for Articles

We've got three more special topic issues planned over the coming months, and we're starting to collect articles for them now. Here are the topics:

- Public Service (October)—looking at different ways in which hams are continuing to innovate in providing emergency and public service communications;
- Cutting Edge (November)—exploring how hams are continuing to contribute to the advancement of the radio art; and
- QRP (next April)—the lure of low-power operating is stronger today than ever, and we want to help you succeed if you decide to give it a try. Plus, we'll be looking at articles on new twists and ideas for experienced QRPers.

In each special, it is our goal to include a mix of operating and technical articles, to give readers a taste of the broad spectrum of available activities and projects within each specialty area. So if you've got a story that you think might fit in, please send it along (but please check out our writers' guidelines first; they're on our website).

Herr Professor...

One other quick item before I let you loose on our "Take it to the Field" articles: We've had more than our usual number of letters this year from readers who can't quite figure out whether to believe what Professor Heisseluft wrote in his April article. All we can say is that the professor has been out standing in the field for years (speaking of taking it to the field), and comes inside just frequently enough to write an article for our April issue each year.

Now, I don't normally do this, but if you're one of the readers we heard from who is upset about this article, I recommend that you read the Op-Ed in the May issue of *QST* (yes, *QST*). It's on page 97 and titled "The Serious Business of Ham Humor." What the author says about that magazine's humor writers applies equally to those who have graced our pages over the years, from Hashafisti Scratchi and Snorlock Ohms to Dr. Jerzy Ostermond-Tor and his protégé, Professor Emil Heisseluft. The author of that op-ed is Eric Nichols, KL7AJ, who coincidentally has written a book that we are publishing called *The Opus of Amateur Radio Knowledge and Lore,* a light-hearted look at just about everything about ham radio. It should be available by the time you read this.

Read ... then Get Out!

I hope you enjoy this "Take it to the Field" special, and then "take it to the field" yourself. Whether you're hiking, biking or RVing, operating from a vacation spot or the middle of the woods somewhere, or just joining your club for Field Day, make sure ham radio is part of your outdoor action this summer. We hope this issue will inspire you to get out and get on the air!

73, Rich W2VU

*e-mail: <w2vu@cq-amateur-radio.com>

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Separate air dielectric *Hy-Q* traps let you adjust for maximum F/B ratio on each band.

Also standard is *Hy-Gain's* exclusive *BetaMATCH™*, stainless steel hardware and compression clamps and BN-86 balun.

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You get an impressive average gain and a whopping average front-to-back ratio. Handles a full 1500 Watts PEP. 95 MPH wind survival.

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Features *Hy-Gain BetaMatch™* for DC ground, full power *Hy-Q™* traps, rugged boom-to-mast bracket and mounts on standard 2"O.D. mast. Stainless steel hardware. BN-86 balun recommended.

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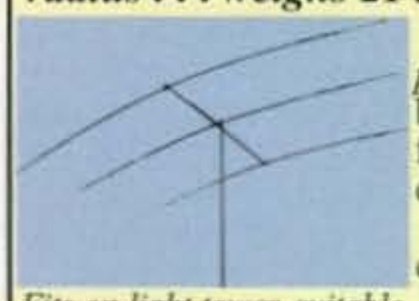

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TH-11DX	11	*For Gain and F/B ratio—See...* • www.hy-gain.com • Hy-Gain catalog • Call toll-free 800-973-6572		4000	10,12,15,17,20	12.5	100	24	37	22	88	1.9-2.5	T2X	$1159.95
TH-7DX	**7**			**1500**	**10, 15, 20**	**9.4**	**100**	**24**	**31**	**20**	**75**	**1.5-2.5**	**HAM-IV**	**$869.95**
TH-5MK2	5			1500	10, 15, 20	7.4	100	19	31.5	18.42	57	1.5-2.5	HAM-IV	$759.95
TH-3MK4	**3**			**1500**	**10, 15, 20**	**4.6**	**95**	**14**	**27.42**	**15.33**	**35**	**1.9-2.5**	**CD-45II**	**$469.95**
TH-3JRS	3			600	10, 15, 20	3.35	80	12	27.25	14.75	21	1.25-2.0	CD-45II	$359.95
TH-2MK3	**2**			**1500**	**10, 15, 20**	**3.25**	**80**	**6**	**27.3**	**14.25**	**20**	**1.9-2.5**	**CD-45II**	**$369.95**
EXP-14	4			1500	10,15,20	7.5	100	14	31.5	17.25	45	1.9-2.5	HAM IV	$599.95

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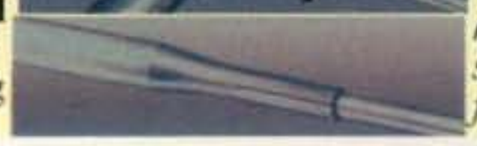

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announcements

• The following Special Event stations are scheduled for late May and June:

K3DN, Warminster Amateur Radio Club at the Union League in Philadelphia to honor the American Flag; 1700Z June 4 to 1700Z June 5 on 28.70, 21.050, 21.280, 14.050, 14.280, 7.050, 7.280, 3.580, 3.880 MHz and PSK31 on 14.070 MHz. Certificate via self-addressed, stamped letter-size envelope along with $1 U.S. to K3DN, Warminster Amateur Radio Club, PO Box 113, Warminster, PA 18974. Foreign stations must include the correct amount of postage. Contact: Irwin Darack, KD3TB, ≤irwindarack@comcast.net> or (267) 261-4959. More information: <http://www.k3dn.org>.

NB9QV, from WW II Submarine *USS Cobia* AGAA-245 and the annual Museum Ships Afloat weekend, Manitowoc, Wisconsin; June 4–5 from 1400–2100Z on 7.250 and 14.260 (±25 kHz) SSB. For QSL send QSL and #10 SASE to Fred Neuenfeldt, W6BSF, 4932 So. 10th St., Manitowoc, WI 54220-9121. For *USS Cobia* certificate send $1.00 and QSL to Tom McNulty, KØEFV, 4015 Independence Ave., Waterloo, IA 50703-9317. Information: <www.qrz.com/NB9QV>

NWØAA, from activation of the Northwest Angle ARC, MinnesoTa, located in the northern-most area of the contiguous U.S. May 28–30 from 1400–2100Z daily on 3.945, 14.245, 14.040, 21.070. SASE to Dan Whipple, 11726 Norway St. NW, Coon RaPIDS, MN 55448.

WØS, from 150th anniversary of the starting of Military Newspaper *Stars and Stripes*; Boothel ARC; 12 noon local time June 10 to 4 PM June 11, around 28.450, 21.350, 14.240, 7.255, 3.855 SSB; 21.070, 14.070, 7.070, 3.070 PSK 31. SASE to Boothel ARC, WØS, P.O. Box 98, Jackson, MO 63755.

VE3MIS, from Annual Streetsville Bread & Honey Festival, Mississauga, Ontario, Canada; Mississauga Amateur Radio Club; June 4–5, 1400–2000Z daily on28.480, 14.240, 7.230 MHz. Certificate: MARC, c/o Michael Brickell, VE3TKI, 2801 Bucklepost Cres, Mississauga, ON, Canada L5L 1M6. Include $2 U.S. for postage. Please note: They cannot use U.S. postage stamps in Canada. Information: <http://www.marc.on.ca/>.

• The following hamfests, etc., are scheduled for June:

June 10–11, **Ham-Com**, Plano Centre, Plano Texas. For details go to: <http://www.hamcom.org/>. (VE exams Friday 11 AM to 5 PM and Saturday 9 AM to 4 PM) ***See us at the CQ Booth.***

June 11, **Knoxville Hamfest and Electronics Exposition and ARRL Tennessee State Convention,** Kerbela Temple, Knoxville, Tennessee; Radio Amateur Club of Knoxville, RACK. Latest information: <http:/www.W4BBB.org>. Contact Lou Dreinhoefer, WB3JKQ, e-mail: <wb3jkq@arrl.net> or David Bower, K4PZT, e-mail: <d.bower@ieee.or >. (Talk-in 53.770, 147.300, 224.500, 444.575 MHz; VE exams)

June 12, **The Hall of Science Amateur Radio Club Hamfest,** New York Hall of Science parking lot, Flushing Meadow Corona Park, Queens, New York. Information: <http://www.hosarc.org> or call at night only: Stephen Greenbaum, WB2KDG, 718-898-5599; e-mail: <WB2KDG@arrl.net>. (Talk-in 444.200 PL 136.5, 145.270 –600 kHz PL 136.5); VE exams 10 AM)

June 18, **Raritan Valley Radio Club ARRL Hamfest,** Piscataway High School (Lots 11/12), Piscataway, NJ. Information: <http://www.w2qw.org>. Public contact: E. Drew, W2OU, e-mail: <drumor@optonline.net >. (Talk-in: 146.625 and 442.250, both PL 141.3)

June 20, **Flea at MIT**, Cambridge, Massachusetts, Albany and Main St., Cambridge, MA. Sponsored by the Harvard Wireless Club (W1AF), the MIT Electronics Research Society, the MIT UHF Repeater Assn. (W1XM), and the MIT Radio Society (W1MX) For space reservations and details go to <www.swapfest.us>. (Talk-in 146.52 and 449.725/ 444.725 W1XM/R, PL 114.8)

June 24–26, **Friedrichshafen Ham Radio Conference,** Lake Constance, Friedrichshafen, Germany. Details: <http://www.hamradio-friedrichshafen.de/ham-en/press/accreditation.php>; http://www.hamradio[friedrichshafen.de/ham-en/list-of-exhibitors/hall-overview.php>; <http://www.hamradio-friedrichshafen.de/ham-en/press-photos.php>.

Please submit hamfest and special event announcements ***at least three months in advance*** *by e-mail to <hamfest@cq-amateur-radio.com> or <specialevent@cq-amateur-radio.com>, or by postal mail to: CQ Magazine, Attn: Hamfests (or Special Events), 25 Newbridge Rd., Hicksville, NY 11801.*

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So you think you'll never have the time or money to go on a DXpedition? Think again. KC2SOU and friends put together a two-day trip to the other side of the pile-ups … and they never even left the country!

DXpedition – "Yes, You Can!"

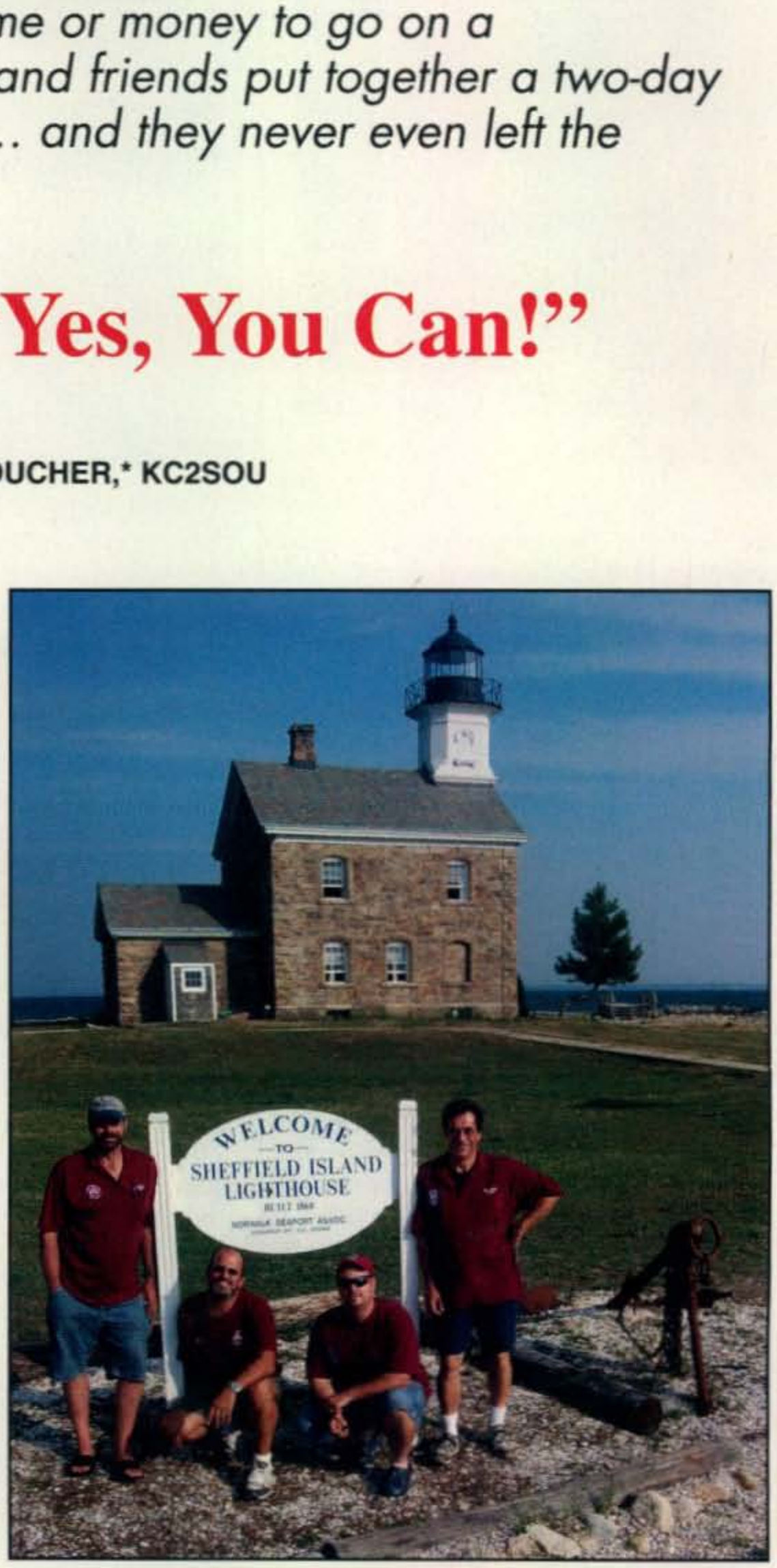
BY RONALD S. BOUCHER,* KC2SOU

"Wow! A DXpedition. That would be a lot of fun, I wish I could do one," you say. "Can we put one together, on a small budget, I wonder? How many contacts can we make? Saltwater ground! Hmmmm!" Well maybe you can, at least a mini DXpedition.

More Than Just Field Day

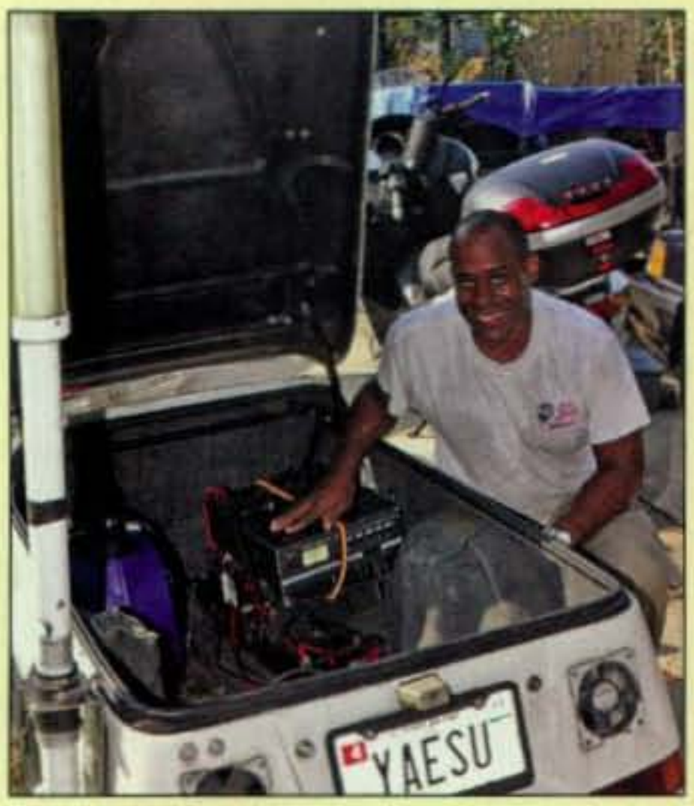
I have been a member of the Nutley (NJ) Amateur Radio Society, W2GLQ, for about three years. In those years, we have had an increased membership of new and younger hams. As a club, we wanted to do more than just Field Day! At one of our meetings, Richard Codianni (Cody), KC2LSD, remarked that he had had the experience of his life when he went down to Bogota, Colombia and had a chance to operate on Gongona island, IOTA (Islands On The Air) SA-017, with his buddy Pedro Allina, HK3JJH. As Cody was telling us about his wonderful experience, he made it so appealing that we as a club wanted to operate on an IOTA as well (see sidebar, "What's an IOTA?"). Several of us said we would love to try, time permitting! So Cody went to work trying to find an IOTA around the NY, NJ, CT tri-state area. After much research, he came across IOTA NA-136, Sheffield Island, Connecticut. Now here is the kicker! Lighthouses! One is on Sheffield proper—ARLHS USA 753 —and two more are visible from the island, Greens Ledge, ARLHS USA 355, and Eatons Neck Lighthouse, ARLHS USA 264, across Long Island Sound in New York State (see sidebar, "Lighthouses and Amateur Radio"). To top this off, the boat launch was only 63 miles away from home. To sum it up, we had an IOTA and three lighthouses. This was like hitting the "Pick 4" lottery!

Okay, now how do we make this happen? Cody found out that there is a park on the island so it is open to the public. That led him to the island's Executive Director, Susan Snider. Cody called Ms. Snider and told her we would like to operate from the island for the weekend. She did not see a problem, except that we could not stay overnight. We would have to leave at sundown and come back the next day. He asked if he could meet with her and make all the arrangements and she agreed. Cody and Dave Calo, KD2C, Vice President of W2GLQ, drove up to Norwalk and met with Susan and her staff, who could not have been more helpful. After confirming that there would be generator power on the island, Cody and Dave reserved the dates of July 17–18, 2010, and agreed to the fees for the boat transport. Cody picked this date because there would be no major HF contest on that weekend. The following weekend was an IOTA contest, but he figured it would be better to be one of the few IOTA stations on this weekend than to compete with the big guns the following weekend. We called our club insurance agent to make sure we were covered and I made reservations with the hotel. Now



The group of operators from the author's radio club poses by a sign outside the Sheffield Island lighthouse in Connecticut. The operation there let the group "activate" one IOTA island and three lighthouses (see text for details).

*c/o CQ magazine



On the Cover

If you've been to the Dayton Hamvention® in the past several years, chances are you've seen Bob Curry, KC3VO, wandering through Hara Arena wearing a backpack with a big antenna attached … or riding his specially-outfitted motorcycle, as seen on this month's cover.

It's a 1994 Honda Goldwing with a custom trailer that Bob bought new in 1993 and has ridden over 100,000 miles. In order to run his radio gear—a Yaesu FT-100D HF/VHF/UHF transceiver—Bob replaced the bike's original alternator with a modified 1300-watt Delco truck alternator, which charges the additional battery at the bottom of each saddlebag and a third one in the trailer. Also in the trailer is a gasoline generator for backup and either a modified Tokyo Hy-Power HL-700B solid-state amplifier or a homebrew amp that also runs on 6 meters. The antenna on the back of the trailer is a Tar Heel Model 200, which covers 80-6 meters. If Bob wants to run "barefoot" without the trailer, he's also got a Little Tar Heel antenna that mounts directly on the bike, along with his Diamond V/UHF-FM antenna and the motorcycle's stock CB and broadcast antennas. Bob can also sub out the HF gear for VHF/UHF equipment and antennas; he's equipped to go motorcycle mobile on all bands up to 10 GHz!

A retired TV station engineer, Bob has been a ham since 1969 and has been operating motorcycle-mobile since 1971 (with a Swan 500 transceiver and a rewired helicopter battery!) While he's talked all over the world from his bike, Bob says his main interest is rag-chewing. "I like to meet people over the radio and talk to them about things we have in common and things we don't have in common." Like maybe a backpack HF station that puts out 700 watts!
(Cover photo by Larry Mulvehill, WB2ZPI)

Off in the distance is Greens Ledge and its lighthouse, one of two lighthouses visible from Sheffield Island that were able to be "activated" for lighthouse "collectors."

the paperwork was just about done, but the hard part was just beginning!

Traveling Light

Because of all the logistics of getting to the island, we wanted to travel as light as possible but still have solid stations. As emergency communications stations, we should have a "go" bag ready at all times, and this was a perfect opportunity to use mine!

So what equipment to bring? And what bands? Well, due to scheduling conflicts and the economy, there were only three members starting off, Anthony (Tony) Testa, KG2GL; Cody, KC2LSD; and me. One other operator Frank Levine, KC2AUP, said he could come for the day on Saturday. With a small but dedicated team, we decided to go with just two bands, 20 and 40 meters. This was our best bet for daytime worldwide contacts with the lack of sunspot activity!

Now please keep in mind, folks, that you are reading this in 20 minutes but the trip involved nine months of planning. Be advised, plan early and practice your setup.

Off to Sheffield Island

We left on Friday afternoon and it took two-and-a-half hours in traffic to get to the hotel. After unpacking, we set out for our chores and food. We met with Susan and Captain Mark for last minute details and we all agreed to a 7 AM departure for the island on Saturday. It would take us approximately 35 minutes to get there.

By the time we got back to the hotel, it was 11PM. This was my first DX-pedition, so sleep was not easy to come by. We woke up at 5:30 AM and, after breakfast and loading the boat, we were on our way. I am 38 years old and I must tell you, being a fairly new ham, I was like a kid in a candy store. The weather was unbelievable that morning, the sun was up saying *hello* in the most gentle way and the waters of Long Island Sound were like liquid sunshine. The day was getting exciting and it was only the beginning! Wow!

What is an IOTA?

"Islands On The Air" (IOTA) is a program started by Geoff Watts, a leading English short-wave listener, in 1964. Since 1985, the program has been run by the Radio Society of Great Britain (RSGB). The program's goal is to promote amateur radio activity with island stations around the world. There are approximately twelve hundred islands or island groups that qualify as an IOTA "entities." All qualified IOTAs have a reference identification number consisting of a continent identifier and a number. Sheffield Island, Connecticut, for example, is NA-136, North America #136.

Some of the rules that are followed to qualify an island for an IOTA number are as follow: it cannot be in a river or a lake or a largely enclosed bay; it must be a minimum distance from the mainland. For more detailed information on the program go to <http://www.rsgbiota.org/info/index.php>.

Activating an IOTA island is not very difficult. All you have to do is to operate a station on a qualified island. The difficult part is usually getting there. (In some cases, such as islands that are rare or extremely difficult to reach, "validation" of the operation is required. See the FAQ page on the IOTA website)

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We got to the island around 8:00 AM and went straight into setup mode. I brought a 20-meter dipole with a 30-foot portable mast and Cody went with his 40-meter homebrewed 33-foot quarter-wave vertical, which he had up in 20 minutes. Tony and I got the portable mast and dipole up. At approximately 9:30 a.m., we were on the air with a Yaesu FT-897D on 20 and am ICOM IC-706MKIIG on 40. I started out on 20 on the IOTA calling frequency. After my second CQ, the contacts started, and after two or three QSOs, the pile-ups began.

The group's 40-meter vertical is visible in the right foreground, sporting an IOTA (Islands on the Air) flag as the operation gets under way.

Lighthouses and Amateur Radio

The Amateur Radio Lighthouse Society (ARLHS) sponsors a program whose goal is not only to promote amateur radio but lighthouses and the keepers who run them as well. There are over 10,000 "lights" world-wide, each having its own identification number. Hams may qualify for certificates by contacting other ham stations operating at or near different lighthouses, and "activating" a lighthouse has become a fun "in the field" activity.

Now here is the catch to activating qualified "lights." There are rules that govern activation. To keep it short we will look at two of the rules.

First is the *1000-Meter Rule*: if you operate within 1000 meters of a qualified "light" it is a valid activation. Of course, operating on "light" property is preferred, but that is not always possible because many lighthouses are not open to the public.

Second is the *Visual Sight Rule*: "If in the opinion of the operator, an operation with the 1000-Meter Rule would be illegal, ill-advised, impossible or impractical, the rule is suspended and the Visual Sight Rule can be invoked. The Visual Sight Rule states that on operation is valid if a station is within visual sight of the physical structure of the "light" during the day." For more information on the rules and a list of "lights" go to <http:// www.ARLHS.com>.

There is a similar group in Europe that sponsors amateur radio lighthouse activities there. Each group runs sometimes-overlapping lighthouse weeks/weekends in the summer.

Again, I am a fairly new ham so pileups like this were a little intimidating, but Tony and Cody are more experienced and they helped me to handle them.

We knew it was going to be a good weekend when, after two hours on the air, we had over 100 QSOs on 20 meters. I wish I could say that 20 was strong all weekend, but I'll get to that later. Forty meters was not good to start with. I know some of you are thinking that 40 is a nighttime band, but we wanted to give some local states a chance before the band went long.

On Saturday afternoon, our club president, Frank, KC2AUP, arrived on the island. After short hellos and something to drink, he was on 20 meters having a ball. With four operators, we could take a break every two hours or so and believe me, we needed them. That afternoon was unforgettable!

It was close to 100 degrees on the mainland, but on the island with a nice breeze off the water, it was a little cooler. We had prepared a cooler with sport drinks and cold cuts to keep us going for the weekend. Now there is one thing that is mandatory for this crew of hams (if not most): *coffee!* I made sure I got myself a cheap coffeepot for the trip. And when you heard the generator putting in some overtime, you knew the coffeepot was on. Something that became clear to us was that there were just as many stations looking for the lighthouses as the IOTA contact, and we were activating *three* lighthouses, as all were in view of our station.

An Overnight Break

That evening we shut down around 8:00 PM, packed away the radios, and put them inside the staff house. We were able

The Sheffield Island Lighthouse

The Sheffield Island Lighthouse guards the western entrance to Norwalk Harbor on the Connecticut shore of Long Island Sound. There has been a lighthouse here since 1826; the current light was built in 1868 and was active until 1902.

In 1986, volunteers with the Norwalk Seaport Association were able to save the light from development, and it has been on the National Register of Historic Places since 1989. It is adjacent to the Stewart B. McKinney National Wildlife Refuge. The lighthouse and surrounding grounds are open to visitors, who must travel to the island by boat. (Information courtesy Norwalk Seaport Association)

to keep the antennas up for the night so that was a great timesaver. We counted over 400 QSOs on 20 meters and 125 on 40 as we were waiting for the boat to leave. The talk became making 1000 QSOs before this trip was over. Then it went from talk to a goal. By the time we got back to the hotel, it was 11 p.m. Sleep was not so hard to come by that night. It felt like I closed my eyes and the alarm went off. "Where is the snooze button?" We packed up, checked out, and we were on our way back to the boat dock.

Operators from W2GLQ, the Nutley (NJ) Amateur Radio Society, on the air from Sheffield Island.

Going Long ... and Out

We got back to Sheffield Island and were on the air by 8:30 AM and soon the pileups were back as well. I was working them the best way I could. I finished one QSO, called QRZ, and in the pile of stations I heard a "Juliet Hotel." "Juliet Hotel, make your call." The response was "Juliet Hotel 4 Italy Foxtrot Foxtrot." Wow . . . my first Japan contact ever!

The morning and afternoon were going well. We had steady contacts, but of course out of nowhere, the band just went blank. I was calling QRZ to 50 stations but on the next call heard just a few "crickets." Those were some funky band conditions. It was so bad we checked to see if the antenna was still up. It was, so we broke for lunch and some coffee. We had 800+ QSOs in the log, but now the bands were really hurting us big time. We wanted to reach our 1000-QSO goal, but it was not looking good. We needed nearly 200 more contacts. But we did not give up!

The rest of the afternoon the band was up and down. We needed to pack up by 7:30 PM so radios were going off by 7:00 PM. We all know grayline is the time to operate and this day was no exception. By 5:00 PM we needed only 75 more QSOs to reach our goal. Would we make the 1000 QSOs? By 6:00 PM we were so close. Now grayline took full effect. It was like all of Europe was calling. At 7:00 PM I gave my last RST report and thanked all the stations for their time and signed "W2GLQ from NA-136 QRT."

Wow, it was over! We checked our logs for the weekend with the two stations. We worked 49 states (where is KH6 when you need it?), 58 DX entities, and a grand total of 1024 QSOs. We had achived our "goal"!

I would like to thank Cody, KC2LSD, and Tony, KG2GL, for taking me under their wings with my first "DXpedition." My fellow hams, the main thing I want *you* to get out of this story is *"just get out there and play radio."*

Sunset meant time to shut down, even on the first day of operating, since the group was not allowed to stay on the island overnight.

Photo A– Guanajuato city is home to some of the most beautiful 17th- and 18th-century buildings in all of Mexico. Several can be seen in this photo, behind the women and children marching in a parade. (Photos courtesy of XE1CRG, except as noted)

When members of this three-year-old radio club in Mexico "take it to the field," they do it in style, with a mobile ham shack and a high-flying portable repeater.

XE1CRG: The Hams of Guanajuato

BY C. STEWART GILLMOR,* W1FK

Recently my wife and I visited Guanajuato, Mexico to see our son, who is a biology professor at a national plant genetics research laboratory there. Guanajuato is one of the 31 states in Mexico and is roughly 200 miles northwest of Mexico City. It lies between the arid northern parts of Mexico and the more lush southern areas. Its *bahio* (lowlands) region is important for agriculture and livestock and is Mexico's strawberry capital. Mining and agriculture traditionally have been the main activities in Guanajuato, but now 30% of the GDP (gross domestic product) is from industry, automobiles, and other manufacturing.

**29 Spencer Rd., Higganum, CT 06441-4034*
e-mail: <sgillmor@wesleyan.edu>

Region Steeped in History

The Spanish settled the region in the 1520s, drawn by the fantastic minerals found in abundance. The capital of Guanajuato state is the city of Guanajuato, with a population of 154,000 and some of the most beautiful 17th- and 18th-century buildings in the whole country of Mexico (see photo A). In the 18th century, silver ore from Valenciana, one mine near Guanajuato city, provided over half of the world's silver production.

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Full size performance is achieved using separate full size radiators for 2-20 Meters and highly efficient end loading for 30, 40, 75/80 Meters.

Get very low radiation angle for exciting DX, automatic bandswitching, omni-directional coverage, low SWR. Handles 1500 Watts PEP SSB.

MFJ's unique *Elevated Top Feed*™ elevates the feedpoint *all the way to the top* of the antenna. It puts the maximum radiation point high up in the clear where it does the most good -- your signal gets out even if you're ground mounted.

It's easy to tune because adjusting one band has minimum effect on the resonant frequencies of other bands.

Self-supporting and just 20 feet tall, the MFJ-1798 mounts easily from ground level to tower top -- small lots, backyards, apartments, condos, roofs, tower mounts.

Separate *full size* quarter wave radiators are used on 20, 17, 15, 12, 10 and 2 Meters. On 6 Meters, the 17 Meter radiator becomes a 3/4 wave radiator.

The active radiator works as a stub to decouple everything beyond it. In *phase* antenna current flows in all parallel radiators. This forms a very large equivalent radiator and gives you incredible bandwidths. Radiator stubs provide automatic bandswitching -- absolutely *no loss* due to loading coils or traps.

On 30, 40, 75/80 Meters, end loading -- the most efficient form of loading -- gives you highly efficient performance, excellent bandwidth, low angle radiation and automatic bandswitching.

MFJ's unique *Frequency Adaptive L-Network*™ provides automatic impedance matching for lowest SWR on these low bands. Tuning to your favorite part of these bands is simple and is done at the *bottom* of the antenna.

You don't need a ground or radials because an effective counterpoise that's 12 feet across gives you *excellent* ground isolation. You can mount it from ground level to roof top and get awesome performance.

The feedline is decoupled and isolated from the antenna with MFJ's exclusive *AirCore*™ high power current balun. It's wound with *Teflon*® coax and can't saturate, no matter how high your power.

Incredibly strong solid fiberglass rod and large diameter 6061 T-6 aircraft strength aluminum tubing is in the main structure.

Efficient high-Q coils are wound on tough *low loss* fiberglass forms using highly weather resistant *Teflon*® covered wire.

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6 bands: 40, 20, 15, 10, 6, 2 Meters . . . No radials or ground needed

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MFJ-1796 is only 12 feet high and has a tiny 24 inch footprint! Mount anywhere -- ground level to tower top -- apartments, small lots, trailers. Perfect for field day, DXpeditions, camping.

Efficient end-loading, no lossy traps. Entire length always radiating. Full size halfwave on 2/6 Meters. High power *air-wound* choke balun eliminates feedline radiation. Adjusting one band has minimum effect on other bands.

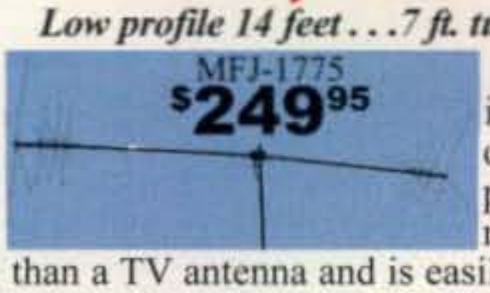
MFJ-1796W, $229.95. WARC band version for 12, 17, 30, 60 Meters only.

MFJ-1792, $189.95. Full size 1/4 wave radiator for 40 Meters. 33 ft., handles 1500 Watts PEP. Requires guying and radials.

MFJ-1793, $209.95. Like MFJ-1792 but has full size 20 Meter 1/4 wave also.

6-Band, 40-2 Meters *Rotatable* Mini-Dipole

Low profile 14 feet . . . 7 ft. turning radius . . . 40, 20, 15, 10, 6, 2 Meters . . . 1500 Watts . . .



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MFJ-1775 is inconspicuous and low profile -- not much bigger than a TV antenna and is easily turned by a lightweight rotator like Hy-Gain's *AR-35*.

It's no Wimp! Its *directivity* reduces QRM/noise and lets you *focus* your signal in the direction you want -- work some *real* DX.

You can operate 6 bands -- 40, 20, 15, 10, 6 and 2 meters -- and run *full 1500 Watts* SSB/CW on all HF bands!

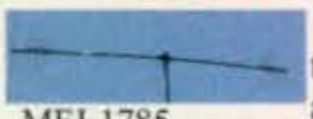
Features automatic band switching and uses highly efficient end-loading with its *entire length* always radiating. With 6 and 2 Meters thrown-in, you have ham radio's most versatile *rotatable* dipole!

Each HF band uses a separate, efficient end-loading coil wound on fiberglass forms with *Teflon*™ wire, and capacitance hats at each end (no lossy traps). 6 and 2 meters are *full-length* halfwave dipoles.

Built-to-last -- incredibly strong solid rod fiberglass center insulator and 6063 T-6 aircraft strength aluminum tubing radiator. Assembles in an afternoon. Adjusting one band has little effect on other bands.

MFJ-1775W, $249.95. WARC band version for 12, 17, 30, 60 Meters only.

MFJ *80/40/20 Meter Rotatable* Dipole



MFJ-1785
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Now you can operate the *low bands* on 80, 40, and 20 Meters with a true rotatable dipole that'll blend in with the sky! Take advantage of excellent low band propagation during this low sunspot cycle. Handles 1500 Watts SSB/CW. 80/40 meter end-loading coils are wound on fiberglass forms with *Teflon*™ wire, and resonated with capacitance hats to ensure extremely low-losses. Full-size on 20 Meters gives incredible DX. Balun included! 33 foot low-profile, inconspicuous. Easily rotatable with a medium duty rotator like Hy-gain's AR-40.

MFJ's Super High-Q Loop™ Antennas

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MFJ's *tiny* 36 inch diameter loop antenna lets you operate 10 through 30 MHz *continuously* -- including the WARC bands!

Ideal for limited space -- apartments, small lots, motor homes, attics, or mobile homes. Enjoy DX and local contacts mounted vertically. Get both low angle radiation for excellent DX and high angle radiation for local, close-in contacts. Handles 150 watts.

Super easy-to-use! Only MFJ's super remote control has *Auto Band Selection*™. It auto tunes to desired band, then beeps to let you know. No control cable is needed.

Fast/slow tune buttons and built-in two range Cross-Needle SWR/Wattmeter lets you quickly tune to your exact frequency.

All welded construction, welded butterfly capacitor with no rotating contacts, large 1.050 inch diameter round radiator -- *gives you highest possible efficiency*.

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Photo B– Members of the Guanajuato Radio Club standing with the author (far right), who is holding the SARSEM capsule. From left to right: Arturo Castro, XE1DES; Jonathan Remba, XE1BRX; Martin Beltran; Alfredo Chavez; Sergio Luna, XE1DNR; Sergio Orozco, XE1CT; Hugo Bergamo, XE1CQ; Erik Arzola, XE1CKJ; and Stew Gillmor, W1FK. (Rogene Gillmor photo)

The Mexican war of Independence began in 1810 in several towns and cities in Guanajuato: San Miguel el Grande, Dolores, Atotonilco, and Guanajuato city. San Miguel is now named San Miguel de Allende, and Dolores is named Dolores Hidalgo to honor those early heroes of independence.

I had seen in *CQ* magazine mention of a high-altitude balloon project built and launched by the Guanajuato ham radio club, XE1CRG. I love to visit ham radio clubs when I am in other countries, so I contacted XE1CRG via e-mail. The club president, Jonathan Remba Uribe, XE1BRX, responded that the club would be delighted to talk with me. The club has members from throughout the state and meets in Leon, the largest city, with over one-million people. I discovered that XE1CRG, the Radio Club of Guanajuato, is a model for active ham radio clubs! These hams have been organized for just over three years and already they have a great record of achievement in public service, youth education, and radio-science activities (photo B).

As Remba explained to me, the club and its members have four projects:

1. They visit schools and demonstrate satellite and International Space Station (ISS) contacts. They also go to a science discovery park, and using a large passenger bus ("digital mobile library") equipped with ham gear, demonstrate ham radio on HF, VHF, and UHF, as well as SSTV and the internet for the general public (photo C).

2. As a club activity, they make the *CQ* WW WPX contest a club affair (photos D and E).

3. They work with both Boy Scouts and Girl Scouts in the Jamboree On The Air.

4. An ongoing series of experiments is their exciting high-altitude balloon flights (SARSEM-ICARUS II). They have completely designed and successfully flown two high-altitude balloon modules (and are planning a third flight for November 2011). The balloons have risen nearly to 100,000 feet and are equipped with 144- (xmtr) and 440- (rcvr) MHz links, and television camera downlink at 900 MHz. The balloon capsule sends information about temperature, voltage sensing, flight computations, and GPS. Also, hams from numerous Mexican states over approximately a 1000-mile diameter have succeeded in contacting others via the balloon. Fairly sophisticated tracking plots of the flights are displayed on their nice website. One member is currently designing a 2- to 3-meter wingspan glider which he hopes they can release at high altitude and guide by telemetry. You can view many interesting videos and photos at the club's website: <http://CRAEG.REMTRONIC.com>. (See photos F and G.)

A Small Core Group, With Help

How many hams are involved in these projects and how can they do so much?

There are about a dozen most active hams with another two dozen helpers, and they are incredibly energetic and imaginative. Their sponsors include the

Photo C– "Digital Mobile Library" bus used by the Guanajuato Radio Club, XE1CRG, to demonstrate amateur radio to the general public.

Photo D– XE1CRG members pulling an all-nighter during a CQ WW WPX contest. From left, Hugo Bergamo, XE1CQ; Erik Arzola, XE1CKJ; and Alberto Aguete, XE1COS.

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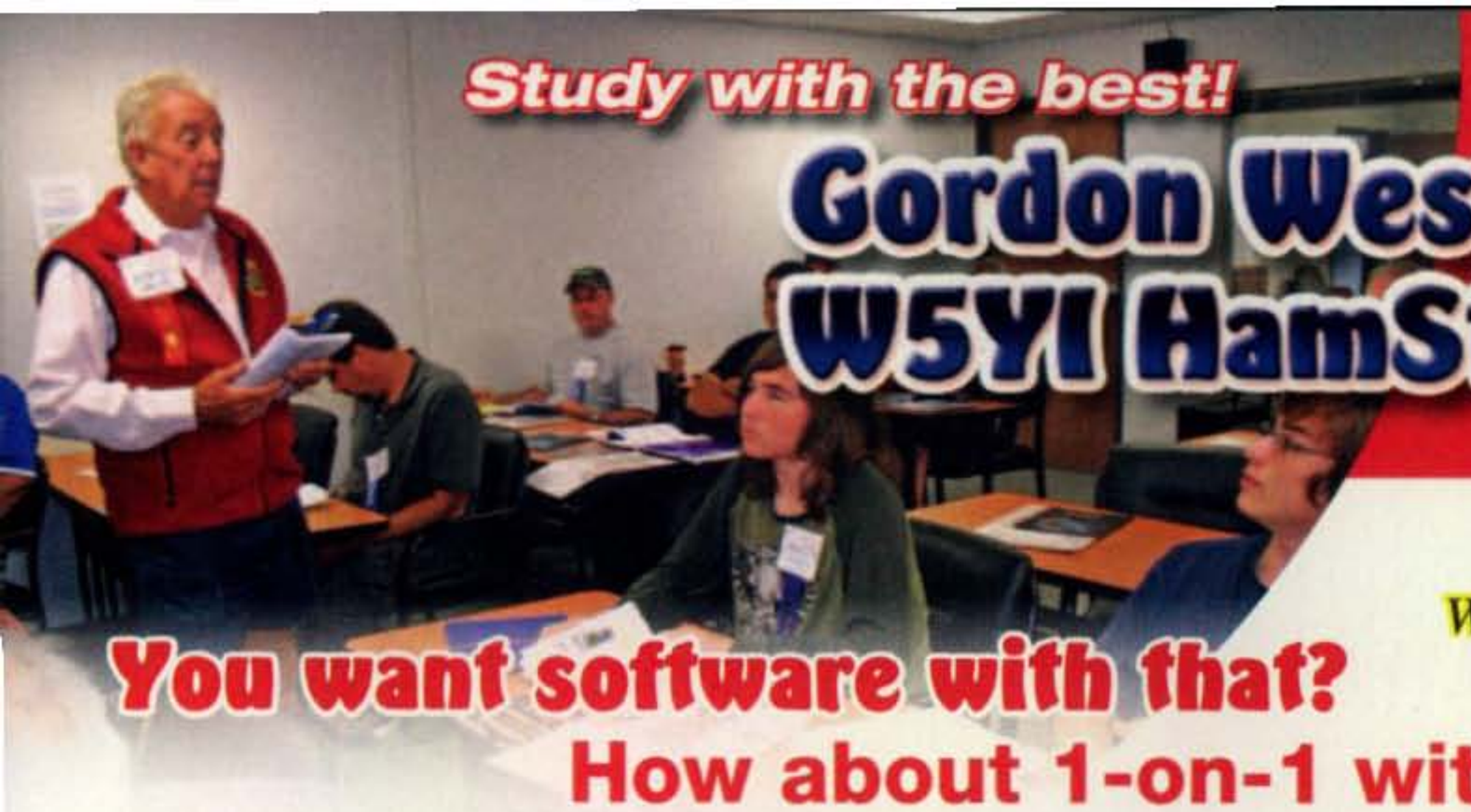
Photo E– Club members Jonathan Remba, XE1BRX; Sergio Orozco, XE1CT,; and Alberto Aguete, XE1COS, operating XE1CRG during the CQ World-Wide WPX Contest.

Photo F.–The SARSEM-ICARUS II capsule (Aerostatic Sub-Space Repeater) as successfully flown in November 2010.

Irapuato city water and sewage service (JAPAMI), the Leon city park service, and several city and university ham radio clubs, plus more than 20 individuals, mostly Mexican hams. They maintain three repeaters and have a weekly net on the repeaters plus Echolink. Several of them are major DX chasers.

I am truly impressed with the various activities in which this club is engaged: youth education in science and radio, informing the general public about ham radio, high-altitude near-space research, and regular ham radio contesting and DXing. If there was a "Ham Pentathlon" event in the Olympics, the Radio Club of Guanajuato, Mexico would be in the finals competition.

Photo G– Composite photo of the Earth from 95,000 feet taken by the Radio Club of Guanajuato SARSEM-ICARUS I balloon in November 2009.



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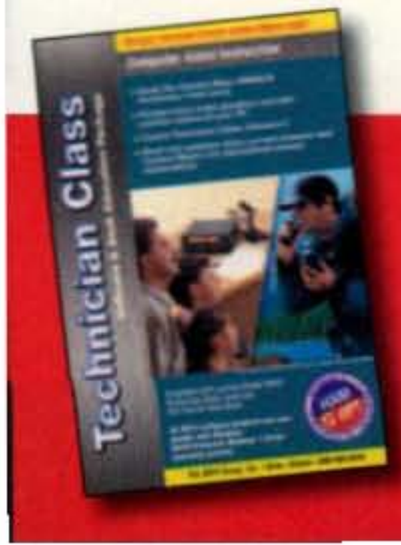

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A group of hams in Mesa, Arizona "takes it to the park" every week, and if you contact them, you never know what they'll be using to put their signals into the air.

"Two Blue Lawn Chairs 20 Feet High" Antennas in the Park

BY JUDY FERRARA,* K7JLF

A little more than two years ago, I heard about a group of hams that goes out to Red Mountain Park in Mesa, Arizona, every Thursday morning ... to play with antennas. It caught my interest and in April, 2009, I showed up at the park, with notebook and camera in hand. I started asking questions, and they explained what they were doing and why. Not one of them made me feel "out of place." I have since become a regular part of the group and look forward to our weekly sessions.

My Own Ham Radio Story

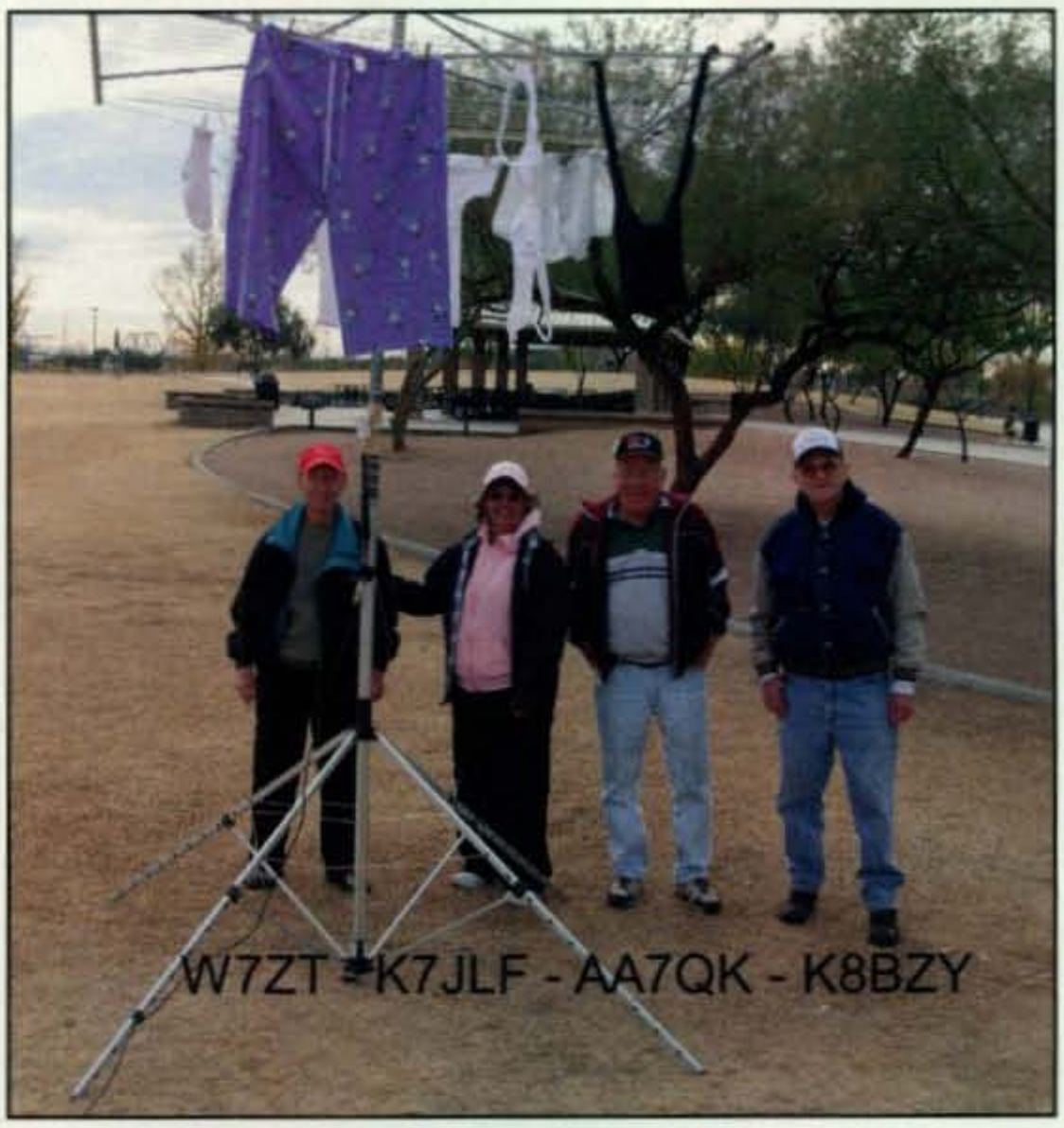
A little background on how I got into the hobby of amateur radio. About 15 years ago, I was encouraged by my brother Bob, WB6VYH, in California to get my ham license. He even sent me a book with the test questions and answers and told me to read, read, and read again. I was so excited at the thought of being able to talk to the world, I went to RadioShack and bought myself a small HTX 202 radio and began reading. But my then-husband told me NO, I couldn't do that, and that was the end of my amateur radio hobby ... for then.

Fast forward to 2004, married again, I found the old test book and radio in a box. I was determined that I would try again to get into ham radio and I now had a computer on which to do practice testing. My husband asked what I was doing on the computer so I related the story of wanting to be a ham radio operator. He asked if he could study with me. We took the practice tests online as well as a class at the local college. In December of 2004, both of us earned our licenses and it has been a wonderful hobby for me!

Being a person who didn't know a thing about electronics to start with (my brother inherited all the electronic genes in the family), it has been slow learning for me but I never wanted to give up. That's why I was intrigued when I heard about experimenting with antennas at the park.

Taking it to the Park

It all started a few years back, when two guys, Bill Maynard, W7ZT, and Tom Liska, K9CJM, got together and started experimenting with putting up different antennas on different hilltops in different parks. They told someone what they were doing, another one showed up, and over the years other hams joined these informal meetings at the park, sharing ideas, experimenting, and learning. Some days we have just four of us, some days there might be 20 or more out there.



Bill Maynard, W7ZT; author Judy Ferrara, K7JLF; Nick Spencer, AA7QK; Earl Allen, K8BZY ... and laundry for a real "clothes-line" antenna at their weekly Antennas in the Park adventure!

We set up antennas of every sort imaginable and try to make contacts around the world.[1] This is done every Thursday, rain or shine. Sometimes there may only be two antennas; other times, as many as ten. We experiment to see if things work, or help others learn the whys and hows of antennas. There are lots of people who come and go on Thursdays; some are hams, some are not but would like to be, some belong to one club or another, some don't belong to any club. This isn't a club event, just some hams getting together.

Each Thursday through the heat of Arizona's summer, a small but hardy group of us helped each other, bringing out

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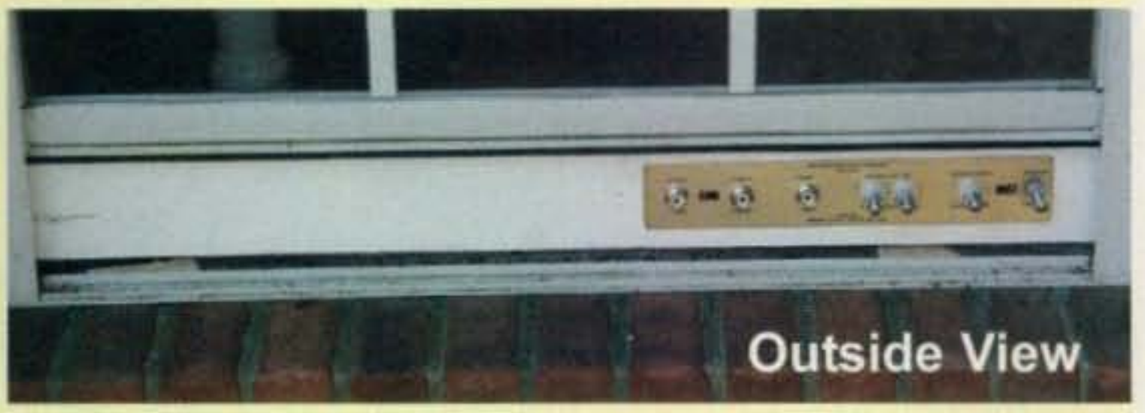

MFJ Weather-Proof *Window Feedthrough Panels* mount in your window sill. Lets you bring all your antenna connections into your hamshack *without* drilling holes through walls.

Simply place in window sill and close window. One cut customizes it for any window up to 48 inches. Use horizontally or vertically. Connectors are mounted on inside/outside stainless steel plates and attached to a 4 foot long, 3½ inch high, ¾ inch thick *pressure-treated* wood panel. Has excellent insulating properties. Weather-sealed with a heavy coat of long-lasting white outdoor enamel paint. Edges sealed by weather-stripping. Seals and insulates against all weather conditions. Includes window locking rod.

Inside/outside stainless steel plates ground all coax shields. Stainless steel ground post brings ground in.

MFJ-4603 Universal Window Feedthru Panel

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Four 50 Ohm *Teflon*® SO-239 coax connectors lets you feed HF/VHF/UHF antennas at full legal power limit.

A 50 Ohm *Teflon*® coax *N-connector* lets you use any antenna up to 11 GHz, including 450 MHz, UHF, satellite, moon bounce and 2.4/5.8 GHz Wi-Fi antennas.

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***5-way** binding posts* lets you supply 50 Volts/15 Amps DC/AC power to your outside antenna tuners/relays/switches.

Stainless ground post brings in ground connection, bonds inside/outside stainless steel panels together and drains away static charges.

MFJ's exclusive *Adaptive Cable Feedthru*™ lets you bring in rotator/antenna switch cable, etc. without removing connectors (up to 1¼X1⅝ in). Adapts to virtually *any* cable size. Seals out rain, snow, adverse weather.

3 Coax, Balanced Line, Random Wire

Best Seller! 3 *Teflon*® coax connectors for HF/VHF/UHF antennas. Separate high voltage *ceramic* feed-thru insulators for balanced lines and longwire/random wire, Stainless steel ground post.

MFJ-4602
$69.95

6 Coax

6 high quality *Teflon*® coax connectors for HF/VHF/UHF antennas. Stainless steel ground post. Full 1500 Watt legal limit.

MFJ-4601
$59.95

4 Balanced Line, 2 Coax

4 pairs of high-voltage *ceramic* feed-thru insulators for balanced lines and 2 coax connectors.

New! MFJ-4600
$79.95

5 Cables, any-size

5 *Adaptive Cable Feedthrus*™. Pass any cable with connector: 2 cables with large connectors up to 1¼x1⅝ inches and 3 cables with UHF/N size coax connectors. Seals out weather.

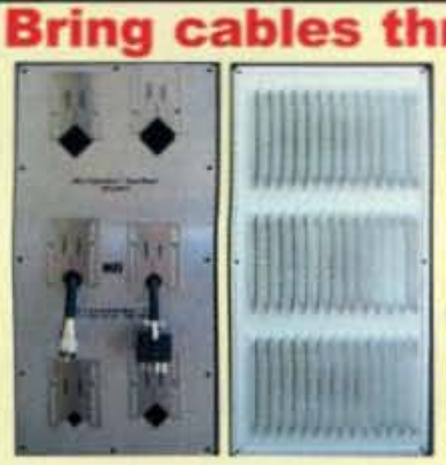
MFJ-4604
$99.95

All-Purpose FeedThru/CableThru™

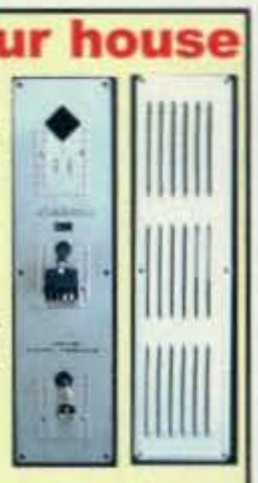
***Stacks** MFJ-4603 **and** MFJ-4604!* Gives you every possible cable connection you'll ever need through your window without drilling holes in wall -- including UHF, N and F coax connectors, balanced lines, random wire, ground, DC/AC power and cables of any size for rotators, antenna switches, etc.

MFJ-4605
$159.95
New!

Bring cables thru eave of your house



MFJ-4616
shown with standard full-size vent (not included) it replaces. For *6 Cables*
$26.95



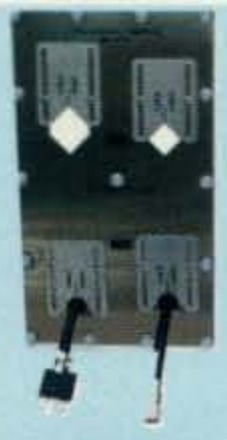
MFJ-4613
shown with standard half-size vent (not included) it replaces. For *3 Cables*
$14.95

Replace your standard air vents on the eave/sofitt of your house with these *MFJ AdaptiveCable*™ *Air Vent Plates* and…

Bring in coax, rotator, antenna switch, power cables, etc. *with connectors* up to 1¼x1⅝ inches!

Sliding plates and rubber grommets adjust for virtually any cable size to seal out adverse weather, insects and varmints. Use existing vent hole, mounting screws and screw holes.

AdaptiveCable™ Wall Plates



MFJ-4614
For 4 Cables
$34.95

Bring nearly any cable -- rotator, antenna switch, coax, DC/ AC power, etc. -- through walls *without removing connectors* (up to 1¼x1⅝ inches). Sliding plates and rubber grommets adjust hole size to weather-seal virtually any size cable.

Includes *stainless steel* plates for each side of wall, sliding plates, rubber grommets, weather stripping and screws.

MFJ-4612
For 2 Cables
$24.95

MFJ-4611
For 1 Cable
$14.95

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Tech Help: (662) 323-0549
FAX:(662)323-6551 8-4:30 CST, Mon.-Fri. ***Add shipping.***

http://www.mfjenterprises.com for more info, catalog, manuals, dealers

Yes, lawn chairs can radiate (or at least that's what they tell us). Somehow, the group managed to make contacts on their lawn chair dipole.

our equipment from the vehicles, setting it up, taking it down and putting the equipment back into the vehicles. At first it was normal antennas. With cooler weather and fall madness came the "lawn chairs in the sky," an "umbrella" antenna, "pizza pan antenna," a "string of Christmas lights" antenna, a "Christmas tree" antenna, backpack antenna and even contacts made on a "clothes line antenna," complete with the laundry!

Sometimes, someone will come to the park and ask how to use their newly acquired antenna, and we all jump in, get it set up, sometimes read the manual if need be, and get the guy on the air to make sure his antenna works.

We set up our radios and will let different people use them—especially those hams who are not able to put up an antenna or don't have portable stations to use—so they have a chance to make contacts. We have made contacts to the Black Forest in Germany, Hawaii, Belgium, many other countries and lots of contacts in the USA. We have used batteries, 110-volt AC, low

Here's a pizza pan antenna (second from left)! Now if they could mount them horizontally and "load them up" with pizza dough, sauce, and toppings, then the Arizona sun might provide them with lunch when it's time to tear down!

Now that's what we call a top-hat! Bill Maynard, W7ZT, with his umbrella antenna.

power, and never more than 100 watts. Some antennas were only a few feet tall and none over 24 feet. The surprise in our contact's voice when we say, "I am using two blue lawn chairs 20 feet high for this contact," was priceless! We get a lot of laughs, and there are a lot of great people out there in the HF world who let us break into their conversations or nets to see if we can make the contact and check out how well the antennas are working.

Sometimes we sit afterward and ask questions. With hundreds of combined years of ham radio experience in the group, there is no lack of answers or humor. I can tell you that I have learned a lot from this gathering of hams and I couldn't of pick a nicer bunch of people to hang out with at the local park. I have taken hundreds of pictures[2] and lots of notes on the simplest things that are normal to the hams that have been in the hobby for many years, but very important information to know for a non-technical ham. When my husband, Tony, K7AJF, comes home from work, we sit in front of the computer and I show him the pictures from the park. I explain what and why certain things were done so he can help me with the antennas here at home. We have learned more in the last two years from the group in the park than we have in the four years prior, attending club meetings and Field Days.

Beyond Antennas

The park gathering is loaded with teamwork. Setting up radios and antennas so close to each other does cause interference but we all share the bands, letting whoever has a good contact finish their call. I have learned how to put up my own 24-foot mast without breaking the fiberglass poles, easy ways to attach guy wires, how to use the antenna analyzer, which way to stretch out and how to use the counterpoises for the antenna, and so *much more*! Along the way, I have also learned about Echolink, PSK31, and QRP; and started teaching about ham radio.

We have people who stop to chat about what we are doing and we give them information on local clubs, how to get started, classes and an invite to come back and join us there at the park, whether or not they have a license. Some have gone on to earn their licenses.

A lot of hams also come out to the park, just to see what we are doing, to visit, to share, to have fun. I had a rough time getting into the hobby, but there is no stopping me now. I just acquired a keyer and paddles, and we have now added a CW practice class to our weekly outing. A 20-minute CW class won't interfere with our weekly mini field days in the park. I would like to say special thanks to all the hams who have helped me learn about ham radio in a fun way.

Try it in your area; it might just be the highlight of your week, as it is mine! Maybe someone will come around and ask *you* about the hobby.

Notes

1. We are very fortunate that we are able to do this every week without needing permits or reservations. We're usually there early, between 6 and 10 AM, before any of the park's pavilions are in use for picnics or other activities.

2. Judy's photo collection can be seen on the web at <https://picasaweb.google.com/k7jlf.judy>.

Results of the 2010 CQ DX Marathon

BY JOHN SWEENEY,* K9EL/VA3CDX

Participation in the 2010 CQ DX Marathon was up significantly despite some of the worst band conditions in years! Excluding the new PJ countries, there were actually two fewer countries available compared to 2009. However, there were 58 countries with no activity at all in 2010! Overall not the best year for DXing, so the competition was as fierce as ever. There were significantly more people with higher scores, so those countries that *were* active were in many logs. In the end, taking into account the new PJ countries, the winning 2010 score in the Unlimited Class was identical to the winning 2009 score.

Logs were received from 62 countries and 28 zones—a nearly 30-percent increase over last year. Once again the majority of the logs (75%) were Unlimited Class. 60 percent of the logs came from three countries—USA, Brazil, and England—with participation from England up over 100 percent from 2009. We even had one SWL entry this year. The competition for certificates was especially exciting in 2010, as there was a 25-percent increase in the number of single-mode submissions and a 50-percent increase in QRP (10 watts or less) submissions. As the DX Marathon rules were not clear on multiple entries and multiple certificates, a clarification was published earlier this year. Please see sidebar.

And the Winners Are...

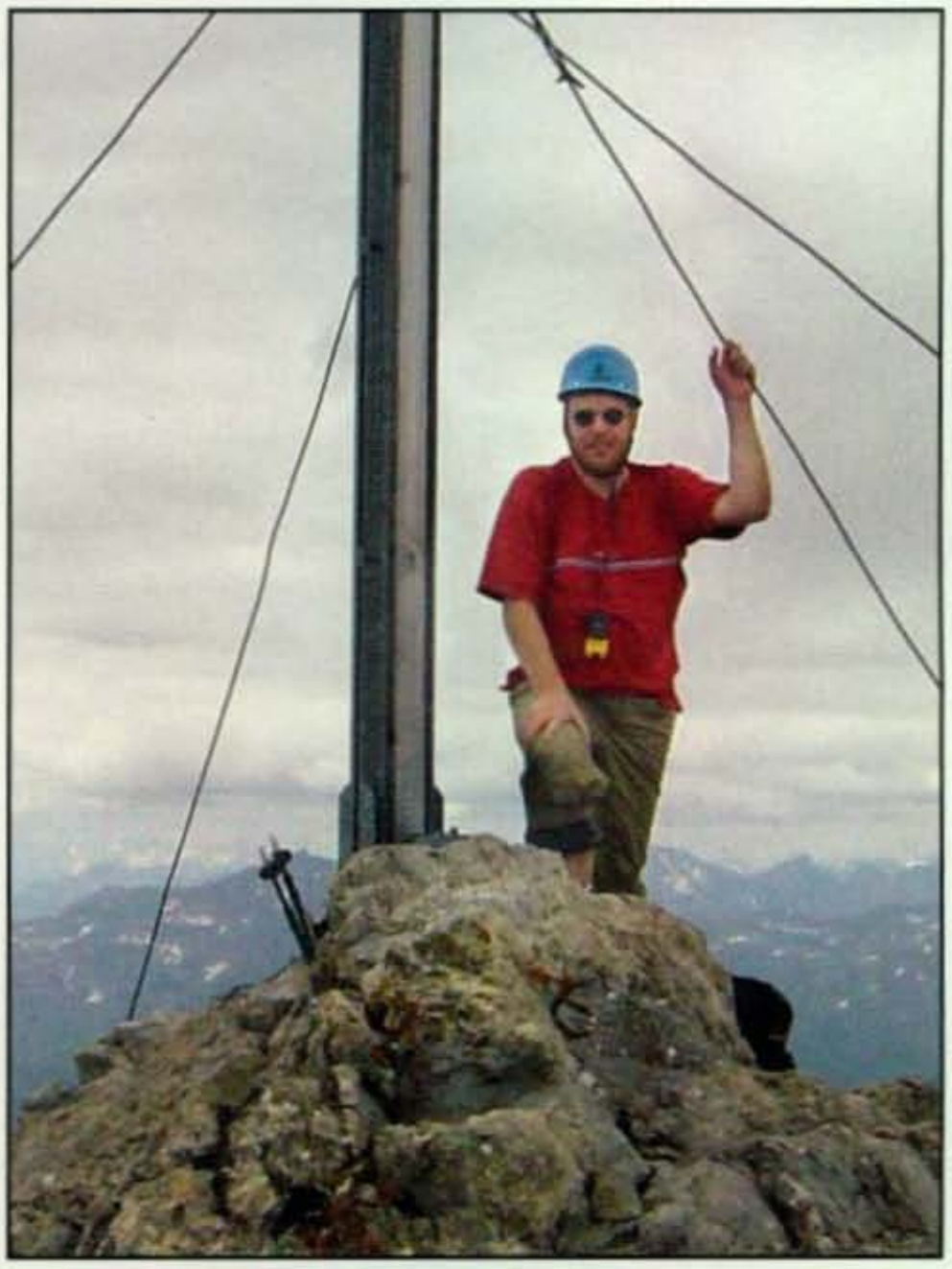
Once again Bob Locher, W9KNI, was the top scorer in the Unlimited Class with a score of 325. Bob worked 285 of the 291 countries that were available in 2010, as well as all 40 CQ zones. Congratulations to Bob on winning two years in a row! PP5EG, OM3EY, and NØFW were not far behind with scores of 323, 320, and 318, respectively. Bob's last new one was worked at 2200Z on December 31st, so he obviously was very active right to the end of the contest! Competition in Formula Class was just as competitive, with Bernhard Wittek, DL4CW, claiming the Formula Class plaque with a total score of 254, four points ahead of the runner-up, KØABC. Congratulations to all of our Formula Class participants.

Once again the plaques for the winners in both classes will be provided by the Northern Illinois DX Association. We sincerely appreciate their support for sponsoring the DX Marathon plaques.

Major certificate winners in 2010 include Joe, W1JR, who came out on top in the CW competition at 305 points; David, N3CDA, who took top SSB honors with a score of 286; and Mark, K7MTR, who topped the digital-mode competition at 237 points. Fantastic single-mode scores and all higher than 2009. Notable in the single-band competition was Mike, K5NU, who amassed an amazing score of 243 points (205 countries/38 zones) on 80 meters! We had our first 10-meter-only submission. Hopefully, we will see more higher band submissions as the sunspots improve.

Each year has its unique problems and 2010 was no different. Last year, many participants lost points due to incorrect callsigns for zones 2, 3, 4, 5, 17, 18, and 19. I am pleased to report that the number of zone errors was down by 90% this year. Hopefully, each of our participants will continue to use the information available on the DX Marathon website (www.dxmarathon.com).

Unfortunately, a new problem evolved in 2010—incorrect postings on DX spotting networks. Please listen carefully to the station you are working, as the call on the cluster may not be right. Many submissions included "JX/G3PJT," which was called in many times. Unfortunately. G3PJT was actually at J6. 5N7M



Bernhard Wittek, DL4CW, took home top Formula Class honors in the 2010 CQ DX Marathon with a total score of 254 points.

Bernhard Wittek, DL4CW
Formula Class Winner

Bernhard became interested in radio at a very young age, listening to shortwave broadcasts on his parents' tube receiver. At age 12, he attempted an amateur license but was distracted by other interests. After many years of SWLing, Bernhard finally got his ham license in 2004. His passion for SWLing quickly turned to a passion for DXing. Bernhard operates an IC-751A transceiver to all homebrew antennas. Currently his antenna farm consists of a 33-foot vertical and a 90-foot Zepp. Bernhard operates primarily CW and RTTY and is an avid QSL collector. He is also licensed in the U.S. as N4FC. Bernhard said he came across the DX Marathon accidentally a few years ago, noticed that his score was quite good and made a real effort in 2010.

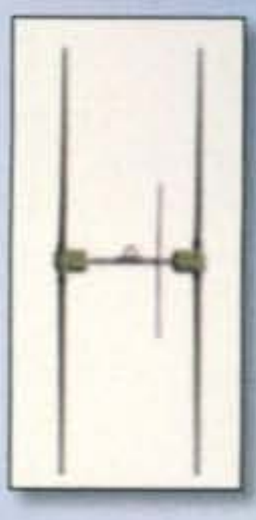
Bernhard is an active participant in SOTA (Summits On The Air) and the photo in this article shows Bernhard on one of his expeditions in Austria.

*Program Manager, CQ DX Marathon
e-mail: <K9el@dxmarathon.com>

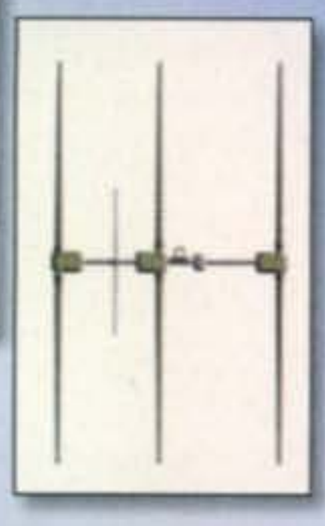
Which SteppIR Product is Best for You?

2, 3, and 4 Element Yagis

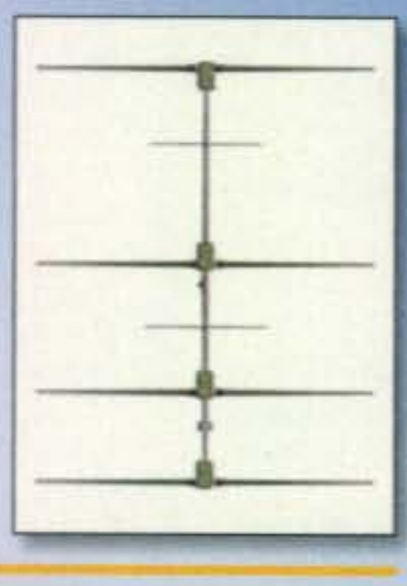
For the hams who are fortunate enough to have towers in their backyards. Gain and directivity is yours with a SteppIR Yagi.



2 Element 20m-6m Yagi
2 element Yagi, 20m-6m continuous coverage; 57" boom, 36 ft longest element, 18.2 ft turning radius, 6 sq ft wind load, 30 lb; SDA 100 controller included.



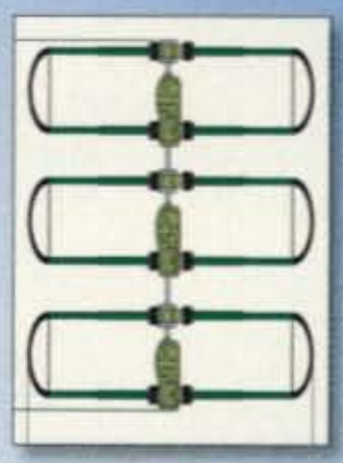
3 Element Yagi 20m-6m
3 element Yagi, 20m-6m continuous coverage; 16 foot boom, 36 ft longest element, 19.7 ft turning radius, 6.1 sq ft wind load, 51 lb; SDA 100 controller included.



4 Element Yagi 20m-6m
4 element Yagi, 20m-6m continuous coverage; 36 ft longest element, 24.1 ft turning radius, 9.7 sq ft wind load, 99 lb; SDA 100 controller included.

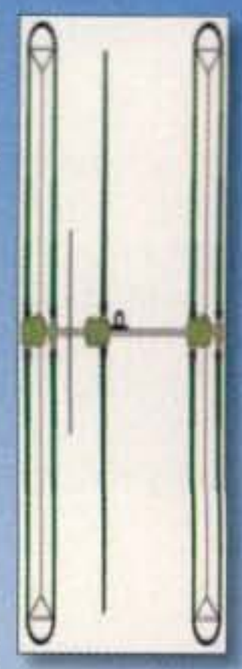
Dream Beam Series Yagi's

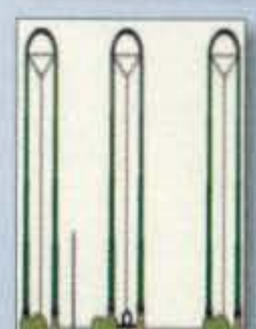
The Dream Beam series offers antennas for both space limited Hams as well as the "Big Guns" who have the space and want the very best.



DB11 Yagi Antenna
DB11 Yagi, 18.5 ft element length, 11 ft boom, 10.8 ft turning radius, 61 lb, 5.9 sq ft wind load; 2 active elements on 20m; 3 active elements on 17, 15, 12, 10, 6m.

DB18 YAGI
Dreambeam DB18 yagi, 3 el on 20m-6m, 2 el on 40/30m, 18 ft boom; Does not include optional 6m passive element kit; Includes SDA100 controller.





DB18E YAGI
Dreambeam DB18E, 3 el 30m-6m, 2 el 40m, three looped elements, does not include optional 6m passive element kit, 18 foot boom; Includes SDA 100 controller.

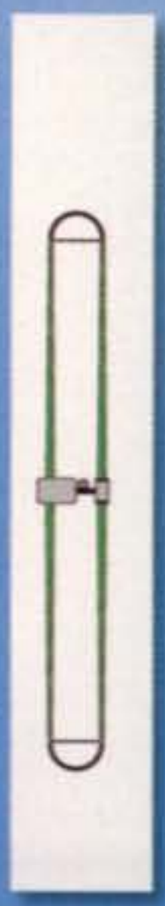
Vertical and Dipoles

For the ham who may not have a tower, but a tree or two for a dipole. SteppIR verticals work great when there are no tall structures around to hang some wire. And, the low take-off angle can be your friend.

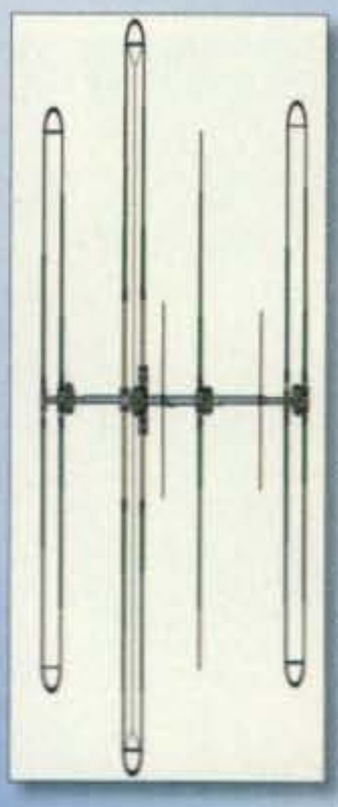
BigIR Vertical Antenna, 40m-6m
BigIR vertical antenna, 40m-6m continuous coverage, 32 ft length, 15 lb total weight, 2 sq ft wind load; EIA 222C wind rating when guyed; Comes with SDA 100 controller and 1.5"mounting pole ; Does not include optional 80m coil.

SmallIR Vertical Antenna 20m-6m
20m-6m continuous coverage, 18 ft total length, 12 lb weight, 1 sq ft wind load; EIA-222C wind rating without guys.

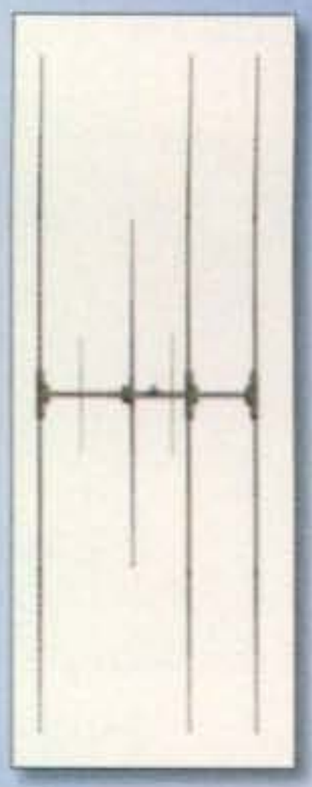
20m-6m Dipole
20m-6m continuous coverage dipole; 36 ft element length; Comes with SDA 100 controller.



40m-6m Loop Dipole
40m-6m continuous coverage, 39 ft total length; SDA 100 controller included.



DB36 DreamBeam Yagi, 40m-6m
DreamBeam DB36 4 element Yagi, 40m-6m continuous coverage; 36ft boom, 48 ft longest element, 26 ft turning radius, 17.5 sq ft wind load, 160 lb; SDA 100 controller included.



MonstIR 4 Element Yagi 40m-6m
MonstIR 4 element Yagi, 40m-6m continuous coverage with full length elements; 34ft boom, 70 ft longest element, 39.7 ft turning radius, 23.9 sq ft wind load, 160 lb; SDA 100 controller included.

SteppIR

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TOP SCORES
Single-Mode

CW

Callsign	Countries	Zones	Score	Comments
W1JR	**265**	**40**	**305**	**Certificate Winner**
OH6MW	258	40	298	
W4VQ	258	40	298	

Digital

Callsign	Countries	Zones	Score	Comments
K7MTR	**197**	**40**	**237**	**Certificate Winner**
SP3BGD	172	39	211	
GU0SUP	129	37	166	

SSB

Callsign	Countries	Zones	Score	Comments
N3CDA	**246**	**40**	**286**	**Certificate Winner**
MØURX	243	40	283	
PY2ADR	234	40	274	

Low Power

Callsign	Countries	Zones	Score	Power	Comments
W8QZA	**186**	**39**	**225**	**5**	**Certificate Winner**
ND0C	182	38	220	5	
IV3AOL	162	31	193	5	

Single-Band

Callsign	Countries	Zones	Score	Band	Comments
K5NU	**205**	**38**	**243**	**80**	**Certificate Winner**
K4VSC	**41**	**14**	**55**	**40**	**Certificate Winner**
VE8DW	43	17	60	20	
W9KVR	**125**	**38**	**163**	**17**	**Certificate Winner**
PU2ELP	**156**	**34**	**190**	**10**	**Certificate Winner**
K4MM	**68**	**15**	**83**	**6**	**Certificate Winner**

Note: Expanded Top Scores boxes may be found in the Expanded scores section on the CQ website.

was called in as HN7M, 5T7M, 5U7M, and several other variations. WH6R was called in as WH8R as another example. Although actual pirate activity was down in 2010, there is still confusion with the E51 prefix and European Turkey. Please check callsigns carefully for the correct country! Many stations claimed credit for various EZ stations, but neither the DX Marathon committee nor the ARRL has been able to receive any official information regarding the validity of the EZ stations that are currently active. For 2010, the lack of approval for EZ contacts did not have any significant impact on the final results.

Many submissions were received marked as Formula Class, but were actu-

Oms, PP5EG, proudly displaying two of his DX Marathon certificates. Oms was runner-up in the 2010 Marathon Unlimited Class.

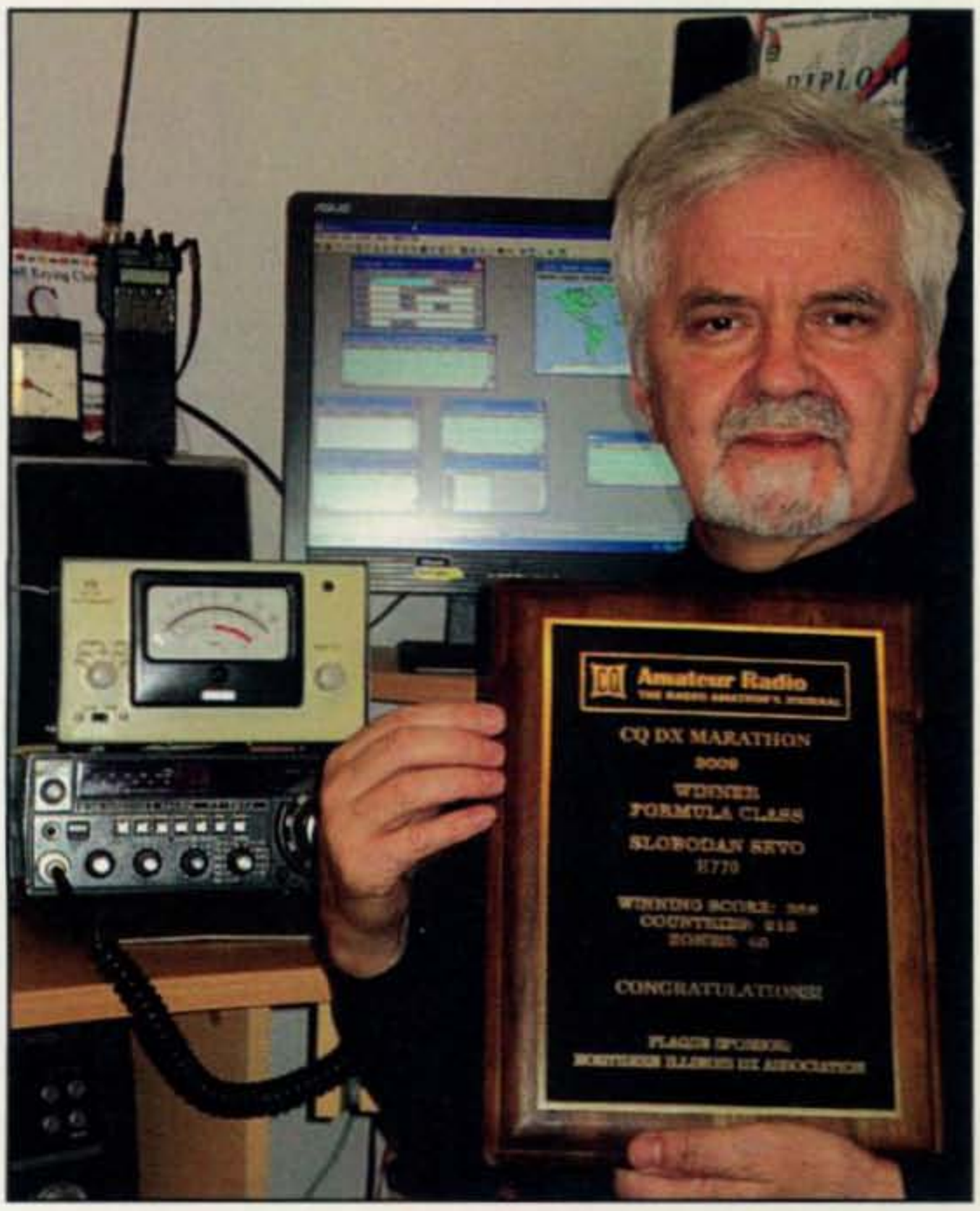
Zone Certificate Winners

Callsign	Countries	Zones	Score
VE8DW	43	17	60
NØFW	278	40	318
K5EK	274	40	314
RA9OO	121	37	158
VK6HG	147	37	184

Note: Top scorers in other zones received Top Country Score certificate.

Country Certificate Winners

Callsign	Countries	Zones	Score
XV4TUJ	88	27	115
9A2EU	215	40	255
A65CA	246	40	286
BV1EK	111	32	143
BD1EFO	113	36	149
CE2WZ	160	38	198
CO2OT	73	18	91
CT1CQK	147	35	182
DJ9ZB	267	40	307
DU1IVT	119	36	155
E73PY	105	33	138
EA4KD	271	40	311
EC8AFM	181	36	217
EI7CC	221	40	261
F5CQ	254	40	294
FS/K9NB	88	25	113
G4PTJ	260	40	300
MDØCCE	271	40	311
GJ4PRB	76	17	93
GUØSUP	129	37	166
GWØVSW	90	17	107
HA8TI	189	40	229
HB9ALO	250	40	290
HC6EP	71	26	97
7Z1HL	199	37	236
IZ2AMW	266	40	306
LY5W/IT9	92	34	126
JH2UVL	260	39	299
WP3GW	162	31	193
LA2LI	194	39	233
LU5VV	165	38	203
LY9Y	252	40	292
OH2BEN	258	40	298
OK2SG	264	40	304
OM3EY	280	40	320
ON4ON	270	40	310
OZ7YY	263	40	303
PA3FQA	273	40	313
PP5EG	283	40	323
R6YY	275	40	315
S51DX	215	40	255
SM5DJZ	260	40	300
SV1DPI	251	40	291
SV9COL	227	40	267
TA1HZ	121	30	151
UA9FAR	260	40	300
US7MM	263	40	303
V51YJ	192	40	232
VE1DX	265	40	305
VK3HJ	224	39	263
VU2PTT	183	39	222
T6AF	104	32	136
YB1AR	175	38	213
YI1RZ	117	32	149
YO9HP	252	39	291
YU1PC	151	37	188
YV6BXN	135	29	164
Z2-AC7GP	103	25	128
ZL2IFB	248	40	288
ZS1D	27	18	45



Slobodan "Bob" Sevo, E77O, 2009 Formula Class Winner proudly displaying his plaque.

ally Unlimited Class based on the types of antennas used. Simply limiting power to 100 watts does not necessarily qualify a station for Formula Class. Please read the DX Marathon rules carefully regarding the types of antennas and power allowed for Formula Class. And finally, don't forget that the CQ countries list includes additional valid countries that are not part of the ARRL DXCC program. Since most logging programs use the ARRL list, don't forget to work TA1 (European Turkey), IT (Sicily), IG9/IH9 (African Italy), and others. For complete details, please go to <www.dxmarathon.com>.

See our expanded results on the *CQ* website (www.cq-amateur-radio.com) web for QRM and additional score breakdowns.

73, John, K9EL/VA3CDX

DX Marathon Clarification on Multiple Entries and Awards

For those of you who may have missed this in the April issue, the following clarification to the CQ DX Marathon rules is effective immediately.—ed.

Each entrant may submit one log each year per operating location. Plaques are awarded for the top score in Unlimited Class and in Formula Class. In addition, certificates are awarded to qualified participants in this order:

Top Score–Country
Top Score—Zone
Top low power (10 watts or less) score in Formula Class
Top Score—Single mode entry (SSB, CW, Digital)
Top Score—Single band entry

Plaque winners are not eligible for certificates. Only one certificate will be awarded per entrant. In the case of a participant qualifying for more than one certificate, that participant will receive a certificate for the highest level based on the above order. At the discretion of the DX Marathon Committee, a certificate may then be awarded to the next qualifying entrant(s) in the additional category.

Results 2010 CQ DX Marathon

(Any comments appear beneath the line score of the entrant)

UNLIMITED CLASS

Call	Countries	Zones	Score
W9KNI	**285**	**40**	**325**
		Plaque Winner	
PP5EG	283	40	323
OM3EY	280	40	320
NØFW	278	40	318
N5ZM	276	40	316
PY2WC	275	40	315
R6YY	275	40	315
K5EK	274	40	314
PA3FQA	273	40	313
K3KO	272	40	312
EA4KD	271	40	311
MD0CCE	271	40	311
W2QO	272	39	311
W4QN	271	40	311
N8BR	270	40	310
N8RR	270	40	310
ON4ON	270	40	310
DJ9ZB	267	40	307
IZ2AMW	266	40	306
IK5PWQ	265	40	305
VE1DX	265	40	305
W1JR	265	40	305
DL5AN	264	40	304
OK2SG	264	40	304
OZ7YY	263	40	303
US7MM	263	40	303
N8MZ	261	40	301
W3GQ	261	40	301
G4PTJ	260	40	300
SM5DJZ	260	40	300
UA9FAR	260	40	300
W8AEF	260	40	300
JH2UVL	260	39	299
PY7ZY	259	40	299
KØXB	258	40	298
OH2BEN	258	40	298
OH6MW	258	40	298
W4VQ	258	40	298
N6AR	257	40	297
PP1CZ	257	40	297
WT8C	257	40	297
G3VKW	256	40	296
N8PR	257	39	296
WX6V	256	40	296
UX1UA	255	40	295
F5CQ	254	40	294
K9NB	254	40	294
N8DE	254	40	294
W4HG	254	40	294
W7DO	254	40	294
WA5VGI	253	40	293
LY9Y	252	40	292
PY4OG	252	40	292
SQ1EIX	252	40	292
SV1DPI	251	40	291
YO9HP	252	39	291
HB9ALO	250	40	290
K6FW	250	40	290
K8SM	250	40	290
W1SKU	250	40	290
W4VIC	250	40	290
W3OA	249	40	289
JAØDAI	248	40	288
LY3BM	248	40	288
LY3W	248	40	288
ZL2IFB	248	40	288
IWØHOU	247	40	287
K8AJS	247	40	287
A65CA	246	40	286
N3CDA	246	40	286
K4UTE	245	39	284
VE5UA	244	40	284
W1EBI	244	40	284
MØURX	243	40	283
N4PQX	243	40	283
OZ7AM	243	40	283
K6TA	242	40	282
K6YK	242	40	282
W2IRT	242	40	282
N7CW	241	40	281
W6RLL	242	39	281
AA7A	240	40	280
N4LV	240	39	279
N6EE	239	40	279
WØEWM	240	39	279
F5IN	236	40	276
K6XT	236	40	276
SV3DCX	237	39	276
F5VHY	235	40	275
K3NK	235	40	275
N8BJQ	235	40	275
PY2ADR	234	40	274
PY2XAT	233	40	273
F4BKV	232	40	272
W5UHQ	232	40	272
K3WA	231	40	271
N1IBM	232	39	271
VE3ZZ	231	40	271
F1JKJ	230	40	270
K2UF	230	40	270
KF7E	230	40	270
WD9DZV	232	37	269
OZ7RQ	228	40	268
IK2DJV	227	40	267
SV9COL	227	40	267
W9OA	227	40	267
G5LP	225	40	265
NQ7R	225	39	264
PY2DY	225	39	264
PY2TIM	225	39	264
NØRB	223	40	263
VK3HJ	224	39	263
EI7CC	221	40	261
K3TN	223	38	261
NØKE	221	40	261
W8AV	221	40	261
W8BBQ	221	40	261
OK1WCF	221	39	260
VE3UTT	220	40	260
W4CU	220	40	260
N9US/4	221	38	259
K7ACZ	219	39	258
PR7AR	218	40	258
K5WAF	216	40	256
9A2EU	215	40	255
S51DX	215	40	255
G3TXF	214	40	254
ON4CAS	214	40	254
IZ5CML	214	39	253
W7RV	213	40	253
W9OA-P9	212	40	252
K7CMR	211	40	251
YO9FNP	211	40	251
PY6HD	210	40	250
G4IIY	209	40	249
K1SND	211	38	249
K9DDO/4	210	39	249
PT7ZT	210	39	249
KØFX	208	40	248
N8TR	208	40	248
RN3AKK	208	40	248
SV2FLQ	209	39	248
K3XC	207	40	247
N8AGU	206	40	246
N8NN	206	40	246
W6XK	206	40	246
N3TR	205	40	245
N7KA	206	39	245
SV3AQR	207	38	245
PY1SX	205	39	244
K5NU	205	38	243
K5VIP	203	40	243
UA3VVB	203	40	243
VK4LDX	204	39	243
VK3FM	203	39	242
AA4XA	203	38	241
G3WW	200	40	240
W2LK	201	39	240
K7GS	200	39	239
K7MTR	197	40	237
PY2CX	199	38	237
7Z1HL	199	37	236
N6MA	196	40	236
PY5IP	197	39	236
PY6KY	199	37	236
LY3M	196	39	235
W4UFO	195	40	235
W5MPC	197	37	234
IK5FKF	193	40	233
LA2LI	194	39	233
LA8AW	193	40	233
PY5MJ	193	40	233
VK2MWG	193	40	233
I2WIJ	192	40	232
KD8GOX	192	40	232
OH5RF	193	39	232
V51YJ	192	40	232
JN3SAC	190	40	230
HA8TI	189	40	229
WØVX	189	40	229
W6NWS	189	40	229
EI4GXB	189	38	227
K8BN	187	40	227
KØARY	188	38	226
N7FF	187	39	226
G3LZQ	185	40	225
KZ2I	185	40	225
PY9MM	189	36	225
W3EC	185	40	225
9A5CW	187	37	224
SM7BHM	185	38	223
VU2PTT	183	39	222
PAØMIR	179	40	219
K8YC	180	36	216
PY5CA	179	37	216
N9LAH	175	40	215
YB1AR	175	38	213
A65BD	174	37	211
N9AG	173	38	211
G3YBY	171	39	210
SV2CXW	181	29	210
WA6JRZ	169	40	209
PY1ZV	170	37	207
W7ABC	169	37	206
WM3O	169	35	204
LU5VV	165	38	203
WØRIC	162	39	201
K3LB	159	40	199
CE2WZ	160	38	198
G3NKC	162	36	198
NF7E	157	40	197
VE3UZ	159	38	197
WB2TFM	158	37	195
PY3OPP	158	35	193
WP3GW	162	31	193
W6DCC	153	39	192
PU2ELP	156	34	190
IZØRCP	160	29	189
N7WO	152	37	189
IWØHLZ	149	39	188
W7YS	149	37	186
PY2NZ	147	37	184
CT1CQK	147	35	182
W9ILY	149	33	182
HB9DDZ	143	38	181
K2SX	144	36	180
F5VKT	144	35	179
K1MIJ	143	35	178
W1XT	141	36	177
YB1TJ	137	38	175
NC4MI	140	34	174
KØCF	140	33	173
KT7G	136	37	173
AJ4FM	137	34	171
K3GMT	139	32	171
CE3PG	134	36	170
PP5BZ	132	35	167
G4OWT	130	36	166
GUØSUP	129	37	166
N6KW	130	36	166
CT1AHU	125	36	161
NN6NN	121	38	159
RA9OO	121	37	158
DU1IVT	119	36	155
N4QVM	125	30	155
SV2HWR	123	31	154
PY3KN	124	29	153
TA1HZ	121	30	151
F5IYJ	118	31	149
JO7KMB/DV1	114	35	149
PY4FQ	114	35	149
KB8KE	117	31	148
NKØS	118	29	147
NØHF	113	33	146
W3ZGD	107	34	141
DL8ZAJ	112	27	139
VK4FR	104	34	138
T6AF	104	32	136
W9VA	111	25	136
W5GWH	99	33	132
LY5W/IT9	92	34	126
LY1ØEPC	92	29	121
W4DL	96	25	121
PY2PT	90	28	118
FS-K9NB	88	25	113
WA7PVE	75	31	106
HC6EP	71	26	97
GJ4PRB	76	17	93
PU3LYB	67	25	92
DK8JB	74	14	88
DU1JI	66	18	84
K4MM	68	15	83
AD7XG	44	19	63
VE8DW	43	17	60
ZS1D	27	18	45
TB2MYE	32	11	43
AD7CK	22	19	41
PP5KR	11	8	19
VE2PIJ	3	3	6

FORMULA CLASS

Call	Countries	Zones	Score
DL4CW	**214**	**40**	**254**
		Plaque Winner	
K0ABC	213	37	250
F4FDA	200	39	239
K4WY	200	39	239
NI5F	196	38	234
G4MUL	193	40	233
K8CQ	192	36	228
K6TTT	188	39	227
W3ZL	192	35	227
W8QZA	186	39	225
		Low power - 5 watts	
AD2AM	186	38	224
			All SSB
N1AM	187	37	224
NDØC	182	38	220
		Low power - 5 watts	
LY3BY	181	38	219
YO4AAC	181	37	218
EC8AFM	181	36	217
SP3BGD	172	39	211
			All Digital
W4KVS	171	35	206
AD1C	167	38	205
JA1IRH	162	40	202
K6LE	164	35	199
KD5JWC	162	35	197
		All CW, All mobile	
SP5JXK	161	35	196
			All CW
IV3AOL	162	31	193
		Low power - 5 watts	
PR7AB	155	38	193
NU4I	153	36	189
			All CW
WA7QCC	153	36	189
			All Mobile
YU1PC	151	37	188
			All CW
VK6HG	147	37	184
PP2RON	145	38	183
IZ3DBA	145	37	182
			All CW
JA7OXR	140	38	178
			All mobile
SV8PKJ	144	33	177
AA5JG	142	34	176
DH5MM	137	35	172
OO9O	138	34	172
OK1BLU	140	31	171
KE4PT	139	30	169
KA9MOM	137	31	168
F5MPN	133	32	165
PY4ZO	130	34	164
		Low power - 10 watts	
YV6BXN	135	29	164
		Low power - 10 watts	
AA4FU	131	32	163
PY4XX	128	35	163

W9KVR	125	38	163
N3RC	126	35	161
WA2VQV	132	29	161
N6DIT	128	32	160
W4WNT	128	27	155
AA7DK	123	31	154
			All SSB
SV8PKI	125	28	153
ON3AD	118	32	150
		Low power - 10 watts	
BD1EFO	113	36	149
W4MJW	120	29	149
			All SSB
YI1RZ	117	32	149
KFØIQ	121	27	148
BV1EK	111	32	143
PY4OY	109	33	142
YO9CWY	114	28	142
DF4ZL	110	30	140
			All CW
KJ8O	111	28	139
E73PY	105	33	138
WA1LWS	103	28	131
Z2/AC7GP	103	25	128
NØCKC	94	29	123
			All 17m
W2GHD	96	25	121
			All Digital
G3LHJ	95	23	118
	All CW, Low power - 5 watts		
E73X	93	24	117
			All CW
XV4TUJ	88	27	115
			All SSB
GWØVSW	90	17	107
	All CW, low power - 2.5 watts		
PY4LH	83	24	107
TA1DX	82	22	104
W9BK	80	19	99
			All SSB
N3CU	75	21	96
		Low power - 5 watts	
W6GMT	71	23	94
		Low power - 10 watts	
W2VU	70	22	92
			All SSB
CO2OT	73	18	91
WBØLJK	64	24	88
			All SSB
PA3CLQ	66	15	81
			All CW
LA9BM	63	17	80
CA3OEV	55	20	75
			All SSB
VE3CLQ	55	20	75
			All SSB
PU4HUD	51	18	69
PY1CMT	48	20	68
	All CW, Low power - 5 watts		
PY4SKY	48	18	66
ON7IC	46	15	61
			All SSB
K4VSC	41	14	55
			All SSB
VE4KZ	36	19	55
			All Digital
KA2IBN	41	13	54
			All SSB
M5AEF	46	7	53
		Low power - 2 watts	
W9LD	30	20	50
VK8HPB	31	18	49
			All SSB
KD6NL	33	15	48
			All SSB
KA9JAC	30	17	47
3G6CS	27	15	42
			All CW
M1DUD	32	6	38
	All 6 meters, Low power - 5 watts		
YO9HJY	21	6	27
		All SSB, All 40m	
PU2KXM	10	8	18
			All SSB
G4001SWL	237	40	277
			SWL

Single-lever paddles are becoming more popular among hams using Morse code in portable settings, especially when packing for minimum weight. In this article, N7RR reviews three different choices—the Whiterook MK-33, plus the Bushwhacker and the Mini-B, both from American Morse Equipment.

CQ Reviews:

Three Portable Single-Lever Keyer Paddles

BY J. BRUCE PRIOR,* N7RR

Commercial single-lever paddles are becoming popular. A number of operators have found that at higher Morse sending speeds, their accuracy increases without a second lever to get in the way. Marshall G. Emm, N1FN, has written an eloquent online article[1] which argues for the superiority of single-lever paddles. The simplicity of single-lever paddling is especially useful in portable operations where the radio amateur's situation can be less than optimal. Like any paddle, the three paddles in this review can be wired to control electronic keyers or they can each be wired as a simple bi-directional lateral switch to key a transmitter directly as a sideswiper, also known as a cootie key.

Whiterook MK-33

Selling for $28, the fully-assembled MK-33[2] is the most economical portable single-lever paddle currently on the market in the USA. At 1.3 ounces, it is also very lightweight. A mini-stereo socket is built into the bright-red plastic case to accommodate a user-supplied patch cord. The action is simple, with a bendable lever and stick-on rubber fingerpieces. A metal extender connects the brass and steel contacts to ground inside the case. Return tension and contact spacing are both fixed. Most of the mechanism is open, which makes it easy to see what is going on, but that same characteristic makes the paddle vulnerable during transportation without some sort of protective container, adding to the effective weight of the paddle.

The low weight of the MK-33 means that the paddle needs to be steadied by the operator's non-keying hand unless an alternative anchoring system is used. As shipped, there are four rubber feet attached to the bottom of the case. One option is to remove those feet and to substitute 3M™ Dual Lock™ and then to attach the same material to an operating surface or to a transceiver to hold the paddle steady while paddling. Another possibility is to buy the companion Whiterook MK-36 leg mount system for $10, which uses a 1-inch wide Velcro® strap to wrap around a leg or other heavy object (see photo A). Shipping cost of Whiterook products is based on total product price rather than weight. The review MK-33 and MK-36 were shipped for $10 via UPS Ground, whereas the MK-33 alone would have shipped for $6.75 via Priority Mail. Whiterook paddles are made after they are ordered, so customers should expect to wait several weeks for delivery.

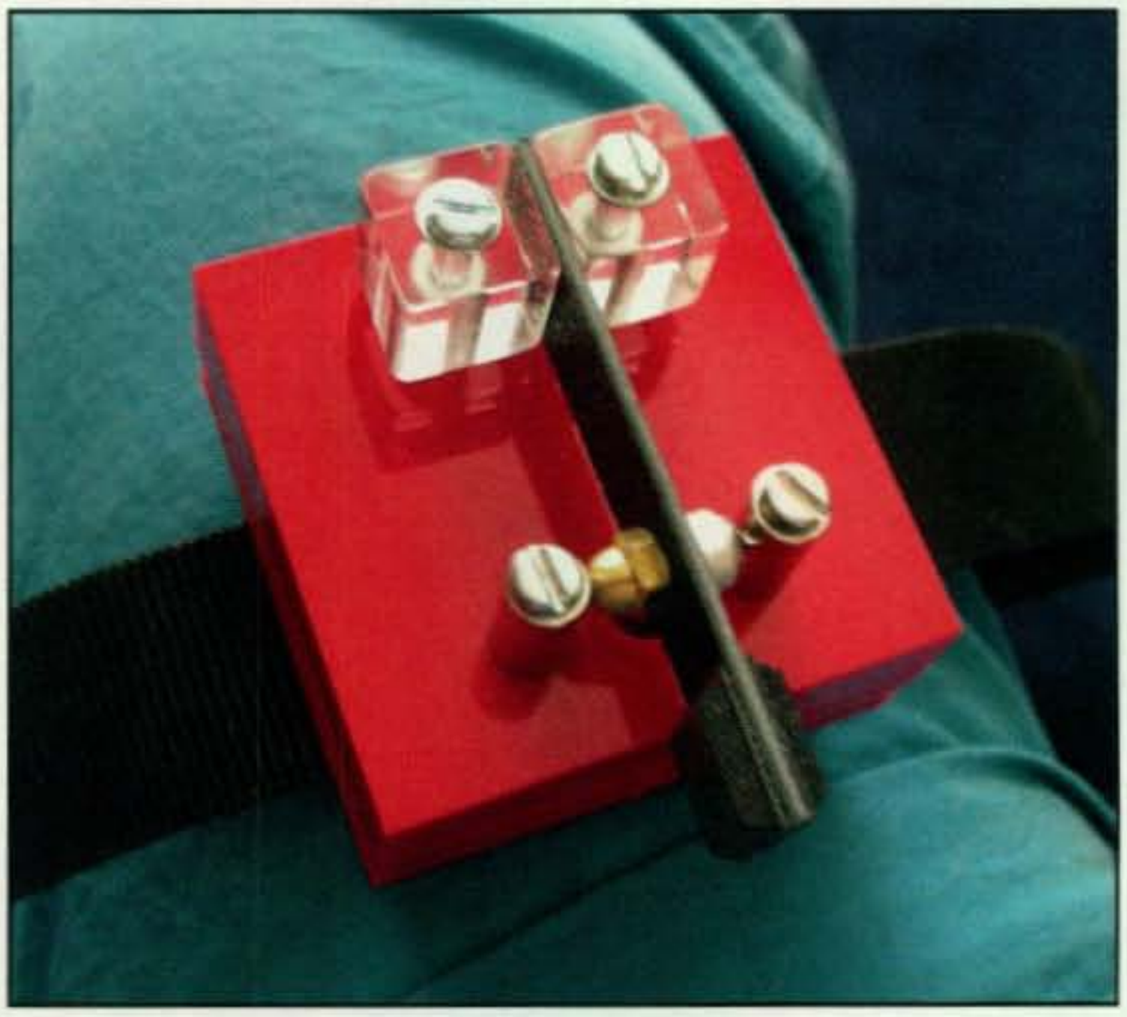


Photo A– The MK-33 needs support from the non-keying hand unless 3M™ Dual Lock™ is installed on the base or the MK-36 leg mount system is employed. (Photos by Margaret Prior, K7MWP)

In spite of its simplicity—or maybe because of it—the MK-33 paddle feels good and works quite well. Because it is so economical, the MK-33 would be a good choice for anyone looking for a starter paddle, or for a Morse-oriented amateur radio youth program which includes building a CW transceiver with a built-in or separate electronic keyer.

American Morse Equipment Bushwhacker

The single-lever Bushwhacker paddle[3] with its anodized aircraft aluminum is lightweight: 4.5 ounces without mounting

*853 Alder St., Blaine, WA 98230-8030
e-mail: <n7rr@hotmail.com>

AMERITRON 600 Watt *no tune* FET Amp

Four rugged MRF-150 FETs at 50 Volts give high efficiency . . . No deterioration with use

ALS-600
$1499
Suggested Retail

Ameritron ALS-600 *Solid State FET* compact desktop station amplifier is only 4 dB below 1500 Watts -- less than an S-unit!

There are no tubes, no tube heat, no tuning, no worry rugged -- just turn on, select band and operate. 600 Watts PEP/500W CW -- lets you talk to anyone you can hear!

Covers 1.5-22 MHz, (10/12 Meters with $29.95 kit, requires FCC license), instant bandswitching, SWR/thermal protected, extremely quiet, lighted peak reading Cross-Needle SWR/Wattmeter, front panel ALC control, operate/standby switch. 12.5 lbs., 9½Wx7⅛Hx12D in.

Includes ALS-600PS transformer AC power supply for 120/220 VAC, inrush current protected. 32 lbs., 9½Wx6Hx12D inches.

ALS-600 Amp with Switching Power Supply
***New!* ALS-600S, $1599.** ALS-600 amplifier with 10 lb. ALS-600SPS switching power supply combo.

Switching Power Supply

ALS-600SPS
$699
suggested retail

Works with all ALS-600 amplifiers. Extremely lightweight, just 10 lbs. Superb regulation, very low radiated noise. 9Wx6Hx14½D in.

From QST Magazine, March, 2005

". . . the ampifier faulted only when it was supposed to. It protected itself from our boneheaded, sleep-deprived band changing manuevers . . . "

"I found myself not worrying about damaging this amplifier. It seems quite capable of looking out for itself. . . . Kudos to Ameritron."

"I couldn't hear any noise at all from the SPS (*switching power supply*) on the vertical or quad…"

"I came to greatly appreciate the size, weight, reliability and simplicity of this amplifier."

"The ALS-600S makes it possible to pack a transceiver and a 600 Watt amplifier, that together weigh less than 30 pounds."

AMERITRON *mobile* 500 Watt *no tune* Solid State Amp

Instant bandswitching, no tuning, no warm-up, SWR protected, 1.5-22 MHz, quiet, compact

ALS-500M
$849
Suggested Retail

Ameritron's ALS-500M solid state *mobile* amp gives you 500 Watts PEP SSB or 400 Watts CW output! Just turn on and operate -- no warm-up, no tuning, instant bandswitching. Fits in very small spaces.

New ALS-500RC, $49 *Remote Head* lets you mount ALS-500M amplifier *anywhere* and gives you full control. Select desired band, turn On/Off and monitor current draw on its DC Current Meter. Has power, transmit and overload LEDs. RJ-45 cables plug into Amplifier/Remote Head.

Covers 1.5-22 MHz, (10/12 Meters with $29.95 kit, requires FCC license).

Virtually indestructible! *Load Fault Protection* eliminates amplifier damage due to operator error, antenna hitting tree branches, 18-wheeler passing by. *Thermal Overload Protection* disables/bypasses amp if temperature is excessively high. Auto resets.

Typically 60-70 watts in gives full output. ON/OFF switch bypasses amplifier for "barefoot" operation. Extremely quiet fan comes on as needed. Excellent harmonic suppression, push-pull output, DC current meter. 13.8 VDC/80 Amps. 3½x9x15 in. 7 lbs.

ALS-500M, $849, 500 Watt mobile amp.
ALS-500MR, $879, ALS-500M/Remote Head
ALS-500RC, $49, Remote head for ALS-500M (for serial # above 13049).
ARF-500K, $179.95, Remote kit for ALS-500M serial # lower than 13049. Includes AL-500RC Remote Head, filter/relay board for ALS-500M, cables, hardware, instructions.

Free online manuals! **Ameritron brings you the finest high power accessories!**

ARB-704 amp-to-rig interface. . . $59.95

Protects rig from damage by keying line transients and makes hook-up to your rig easy!

RCS-4 Remote Coax Switch . . . $159.95

Use 1 coax for **4** antennas. No control cable needed. SWR <1.25, 1.5 - 60 MHz. Useable to 100 MHz.

RCS-8V Remote Coax Switch. . . $169.95

Replace **5** coax with 1! 1.2 SWR at 250 MHz. Useable to 450 MHz.<.1 dB loss, 1kW@ 150MHz.

RCS-10 Remote Coax Switch. . . $179.95

Replace **8** coax with 1! SWR<1.3 to 60 MHz.**RCS-10L, $219.95** with lightning arrestors.

New! RCS-12C Fully Automatic Remote Coax Switch Controller. . . $239.95

Band data from transceiver auto selects antennas. Antenna memories. No hotswitching. Rig-to-amp interface. For 3/4 BCD, 1 of 8 relay boxes. **RCS-12, $309.95**, auto controller with 8 coax relay box, to 60 MHz. **RCS-12L, $349.95**, with lightning arrestors.

AWM-30 Precision SWR Wattmeter..$149.95

Active circuit gives *true* peak/average readings on lighted cross-needle meter.3000/ 300 Watt ranges, Remote sensor.

AWM-35 Flat Mobile SWR Wattmeter . . $159.95

1⅝ in. thin on dashboard. Remote sensor, 25' cable. True *peak*, Cross-Needle,1.5 kW, 1.8-30 MHz. *High-SWR* LED.

ATP-100 Tuning Pulser . . . $69.95

Safely tune up for full power, best linearity. Prevents overheating, tube damage, power supply stress, component failure.

ADL-1500 Dummy Load with oil . . . $74.95

Oil-cooled. 50 Ohms. 1500 Watts/5 minutes. SWR< 1.2 to 30 MHz. Low SWR to 400 MHz.

ADL-2500 fan-cooled Dry Dummy Load, $219.95

Whisper quiet fan, 2.5kW/1 minute on, ten off. 300W continuous. SWR< 1.25 to 30 MHz.<1.4 to 60 MHz.

SDA-100 Mobile Screwdriver Antenna

$409.95 80-10M, fiberglass form, Pittman motor, CNC parts, magnetic sensors, #14 wire, 1.2 kW PEP. 6' whip, $24.95

800 Watts . . . $899
with four 811A tubes

AL-811H, $899. Plugs into 120 VAC outlet. All HF bands. Hi-silicon transformer, heavy duty tank coils, tuned input, operate/standby switch, Xmit LED, ALC, lighted meters, 32 lbs. 13¾Wx8Hx16D in.
AL-811, $749. Like AL-811H, but three 811A, 600 W.

Desktop Kilowatt
with Classic 3-500G tube

AL-80B, $1495. Whisper quiet 3-500G desktop amp gives *full* kilowatt SSB PEP output. Plugs into 120 VAC. Ameritron's exclusive *DynamicALC*™ doubles average SSB power out and *Instantaneous RF Bias*™ gives cooler operation. All HF bands. 48 lbs. 14Wx8½Hx15½D in.

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with Eimac® 3CX1500/8877

AL-1500, $3795. Ameritron's *most powerful* amplifier uses the herculean *Eimac®* 3CX1500/8877 *ceramic* tube. 65 Watts input gives you full output power -- it's just loafing with a 2500 Watt power supply. All HF bands, all modes. 77 lbs.17Wx10Hx18½D inches.
AL-1500F, $3195, Import tube.

1500 Watt* True Legal Limit™ *Antenna Tuner

ATR-30, $599.95 • Super high current edge-wound silver plated roller inductor • 500pf capacitors • 6:1 reduction drives • 3 core current balun • 6 position antenna switch • True *peak* meter

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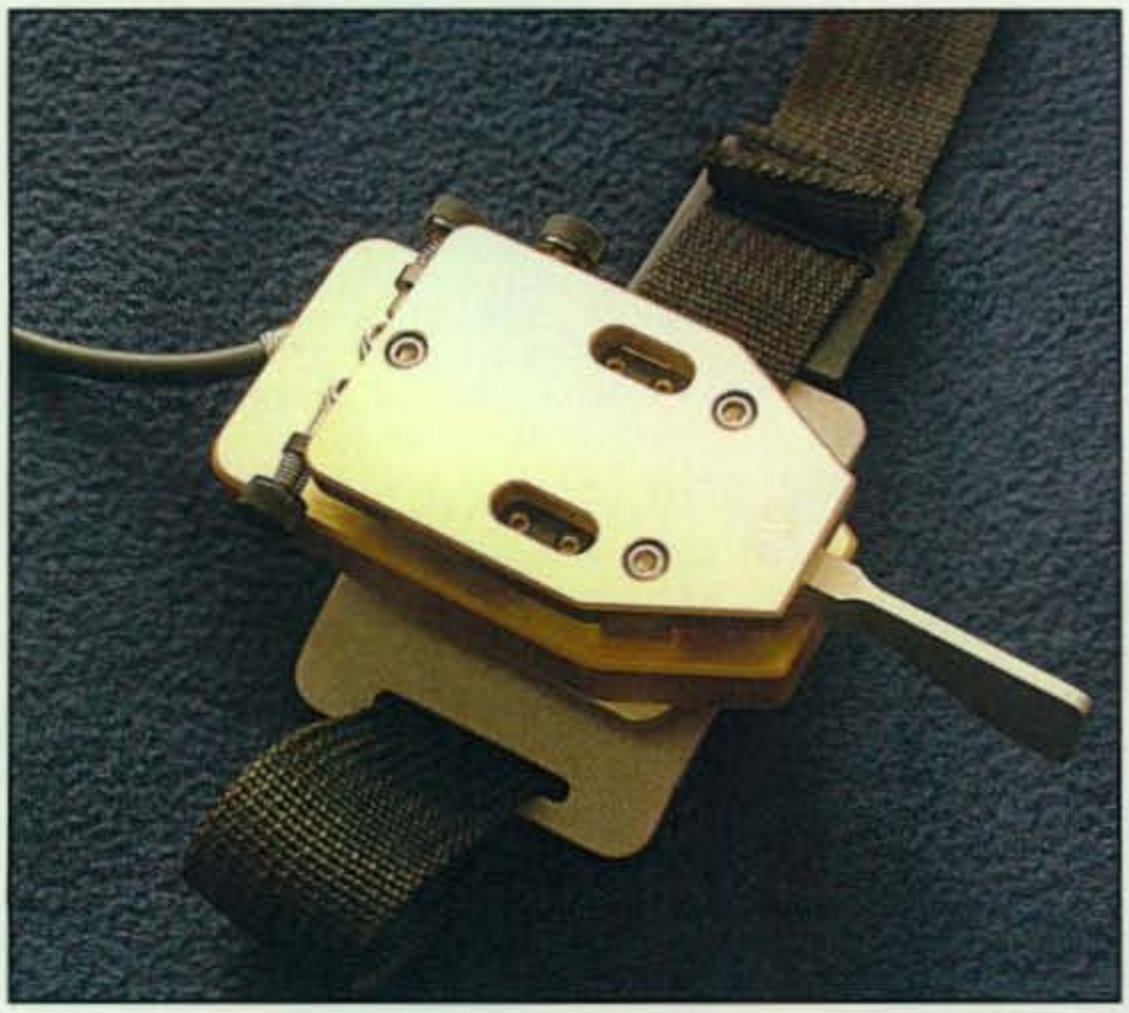
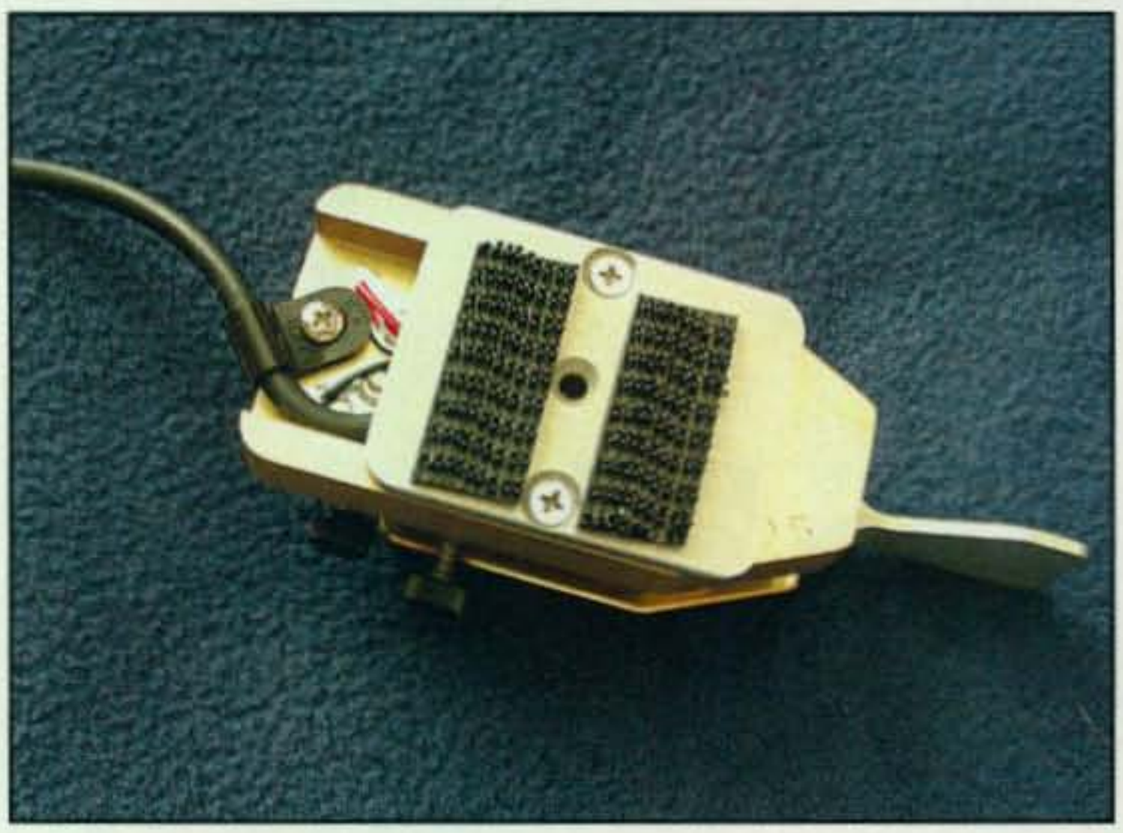
accessories. Because of that light weight, the paddle requires one of three mounting accessories available from American Morse Equipment (AME) in order to operate effectively. Like the Porta-Paddle II, the single-lever Bushwhacker paddle can be attached to an optional Desk Base (available for $20 plus $6 shipping) for home station use, or it can be fastened either to a Leg Mount bracket for $27.95 (photo B) or to a special Qwikmount bracket ($15) equipped with 3M™ Dual Lock™ material (photo C), allowing it to be connected to almost any other surface with matching Dual Lock™, for an extremely stable mounting. The Bushwhacker includes a strong protective cover, making its mechanism even better adapted to portable operation than the Porta-Paddle II.

The Bushwhacker comes either as a kit for $99 or assembled for $149 plus $6 shipping. I built the kit version of this paddle. The kit of parts is virtually finished. Only a bit of grit-paper for smoothing the end of two finger-screws used for electrical contacts is recommended by AME. One stage requiring some finesse is adjusting the fingerpiece with hex-screws to set its neutral position between the two levers. Two Allen key wrenches are provided with the paddle. Once the screws are set, the paddle operates just fine.





Photos B & C– The Bushwhacker can be attached to a leg mount (top), or a Qwikmount for 3M™ Dual Lock use on a heavy-duty base (bottom).

The Bushwhacker paddle shows remarkable engineering. A high-quality adjustable single-lever paddle is more complex than a dual-lever paddle because that lever must return to a neutral position. The aircraft aluminum fingerpiece on the Bushwhacker controls two separate contact levers which are adjusted for a just-snug fit. A single central spring generates return tension. Finger-screws with no locknuts adjust both contact spacing and tension, so their settings can be changed very quickly.

The bearing system of the Bushwhacker is utterly simple, but most clever. The single paddle sits on a flat steel washer and rotates around a removable pivot rod which is inserted through a choice of three different sets of holes in the base and top cover, making the paddle leverage ratio adjustable without changing the overall length of the paddle (photo D). I started out using the middle hole. Then I tried the front hole and finally settled on the back hole, which yields the lightest-touch leverage ratio.

Although not really needed, I lubricated the bearing rod and the fingerpiece/lever interfaces with the graphite from pencil lead. An operator may install the fingerpiece with its wing in the upward or downward orientation, depending on how it feels in a given mounting situation.

Small and not very heavy, the well-built Bushwhacker is especially suitable for vehicle-based portable operation where extreme light weight is not critical.

American Morse Equipment *Mini-B*

American Morse Equipment now has five Morse paddles in its lineup. The latest is a second single-lever paddle called

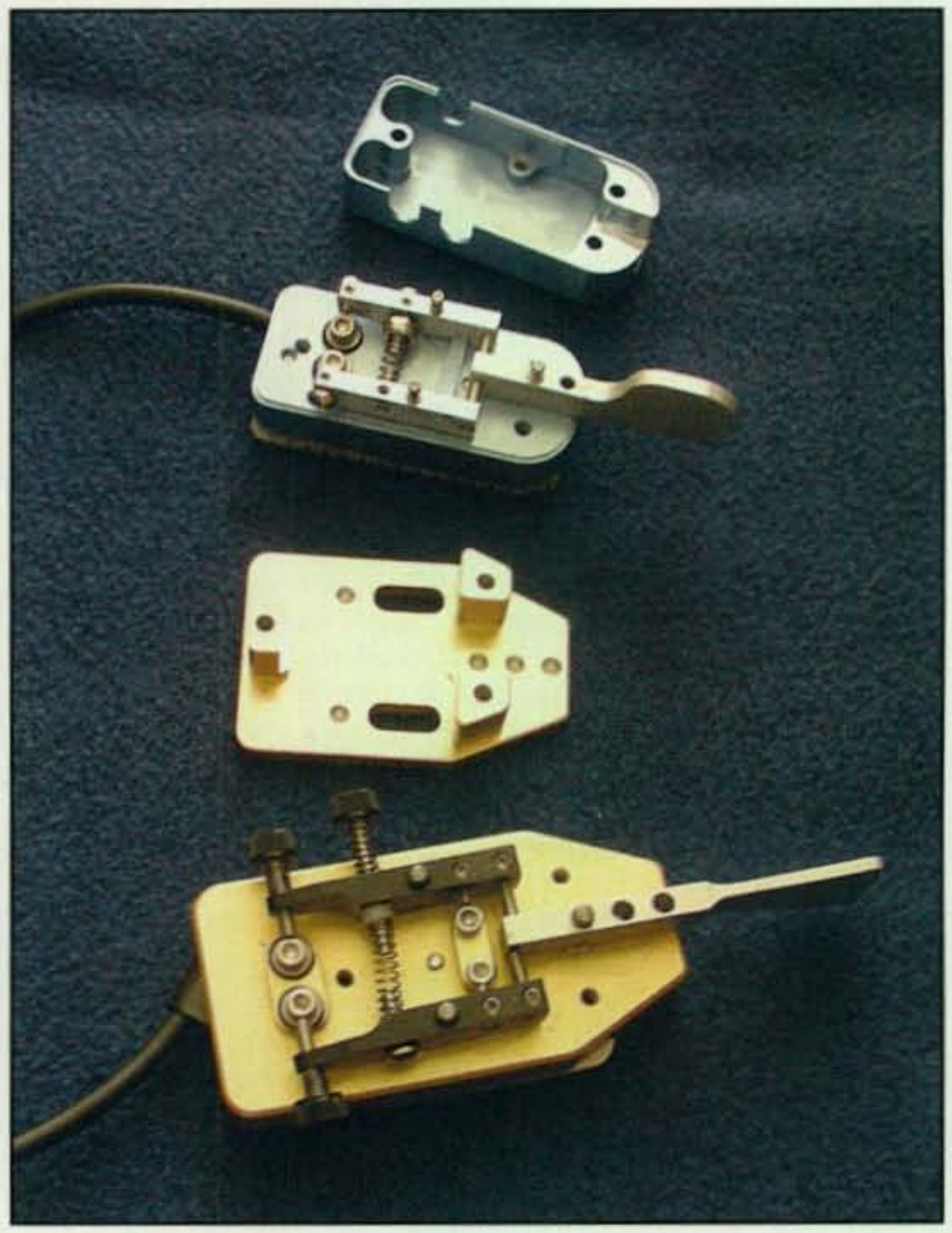


Photo D– The Bushwhacker and the Mini-B both feature unique adjustable pivot ratios with removable pivot rods.

Photo E– The Mini-B sports a sleek art deco *enclosure.*

the *Mini-B*[4], which shares many of the larger Bushwhacker features, but it is considerably smaller and lighter. Miniaturization made the engineering of this paddle even more challenging than its bigger sibling. The *Mini-B* is the only single-lever paddle known to this reviewer which is truly backpack-ready. Only the fingerpiece and the user-supplied cord project significantly from its rounded *art deco* cover (photo E), which does a fine job of protecting the intricate working parts inside. That protective design makes it unnecessary to carry it in its own container inside a backpack.

Available either as a kit for $95 or fully assembled for $129 plus $4 shipping, the *Mini-B* is truly tiny, so some of its parts are very small as well. The assembly manual is lavishly illustrated and well-written.[5] The manual recommends assembly over a container to prevent loss of components. Three sizes of Allen key wrenches are included with the *Mini-B*, including the minuscule 0.035" size. Doug Hauff asks people to consult with him before forcing anything during assembly. Building the kit doesn't seem trivial, but I assume that it could be accomplished by most people easily within an hour. (I evaluated the assembled version of the *Mini-B*.)

Three mounting options are recommended by AME for use with both the Bushwhacker and the *Mini-B*, as well as the other portable AME dual-lever paddles. The options are the Qwikmount using the 3M™ Dual Lock™ system to fasten to almost any surface, as well as the leg mount. The desk base will work with the Mini-B, but the base uses two holes, so the one screw to mount the Mini-B will place the paddle slightly off *center.*

A single-screw mounting system, shared with the rudimentary AME DCP "Dirt Cheap Paddle," makes both the DCP and the *Mini-B* vulnerable to rotation if that method is used on any of the mounting options during the course of portable operations, especially when removing them from their mounts. A user could take the *Mini-B* paddle to a machine shop to have one or two extra threaded holes tapped at appropriate distances on the base.

There is a simpler solution to the *Mini-B* rotation problem: Don't bother ordering the Qwikmount. Instead, ignore the single mounting hole entirely, and after installing its connecting cord, paste some robust Dual Lock™ material onto the entire *Mini-B* base (photo F) bridging the cable attachment channel, and fasten the paddle directly to the top of an operating surface or transceiver with 3M™ Dual Lock™ installed.[6] Dual Lock™ can also be placed on the top of the leg mount, so the *Mini-B* equipped with Dual Lock™ can be attached to a leg or some convenient piece of equipment. I have installed Dual Lock™ on my titanium ice-axe, so that that tool can serve as a base for my *Mini-B* paddle. Without the Qwikmount and any container, the *Mini-B* is extremely light-weight for outdoor enthusiasts who pay attention to grams rather than ounces for items in their backpacks.

Contact spacing and spring tension for the *Mini-B are adjustable using a* Phillips screwdriver with the paddle cover attached. On the pre-assembled review paddle, spring tension could not be adjusted to very light-touch. That could be remedied by shortening its spring or by substituting the supplied spring with a weaker one. I simply cut off one turn from the spring, which made quite light-weight tension possible, while still allowing adjustment to fairly heavy tension. Like the Bushwhacker, the leverage ratio of the *Mini-B* is adjustable, but with a choice of two hole positions rather than three. Just like on the Bushwhacker, I prefer the rear-position ratio on the *Mini-B* that closes the circuits with a maximum of fingerpiece travel, but requiring less pressure. The fingerpieces of both the Bushwhacker and the *Mini-B* can be mounted with their wings in the upward or downward orientation. For most operating situations, I prefer the upward orientation for the *Mini-B*, but the downward orientation for the Bushwhacker.

The *Mini-B* is definitely a keeper. It is equally suitable for a Summits On The Air[7] mountaineering expedition or for a comfortable home station.

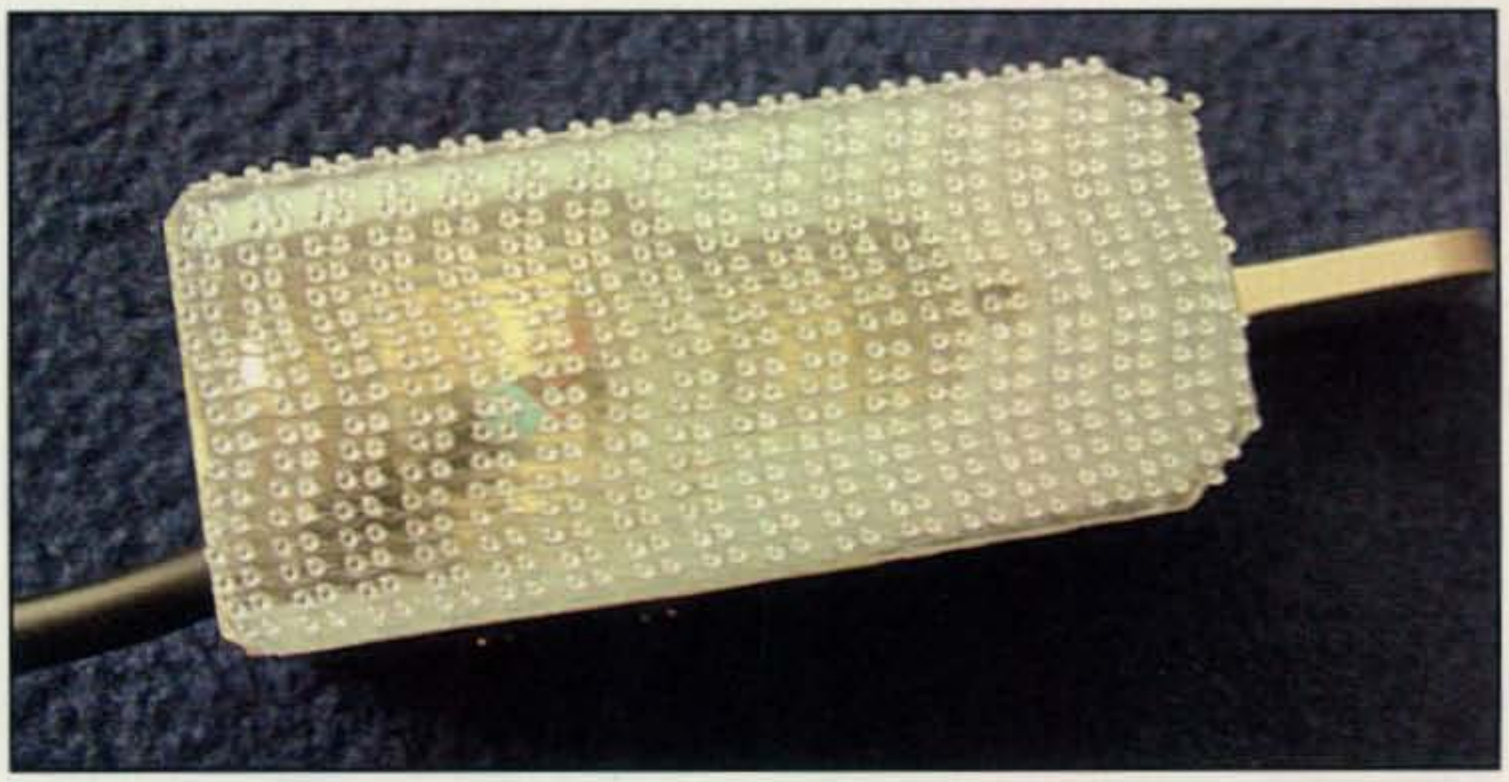


Photo F– The most straightforward mounting system for the single-screw Mini-B is to attach 3M™ Dual Lock™ to the entire length of the bottom.

Notes

1. <http://www.morsex.com/pubs/ iambicmyth.pdf>
2. <http://electronicsusa.com/mk.html>
3. <http://www.americanmorse.com/bushwhacker.htm>
4. <http://www.americanmorse.com/minib.htm
5. <http://www.americanmorse.com/files/ Mini-B_Manualrevb.pdf>
6. A similar bridging method is not possible for the AME DCP since that dual-lever paddle does not include a channel on its bottom where cable connections are located.
7. <http://www.sota.org.uk/>

Announcing:

The 2011 CQ World-Wide VHF Contest

Starts: 1800 UTC Saturday, July 16, 2011
Ends: 2100 UTC Sunday, July 17, 2011

PLEASE NOTE:

This year's rules reflect significant changes, so please read them carefully. *Rationale:* Single-op stations now routinely use web- and packet-based clusters for spots to locate potential contacts. Further, VHF antennas are often of narrow beamwidths which must be pointed directly at each other to make the contact.

1. Thus, to facilitate making more QSOs, and to prevent stations from inadvertently falling into the multi-op category for using the cluster (as previously), *passive* QSO alerting assistance is now permitted in ALL categories. This means anyone can look at packet/web clusters.

2. Self-spotting is defined as *active* assistance and is *not permitted* with the following exception:

3. Accommodation is made for stations attempting digital EME or digital meteor-scatter contacts. Such stations calling CQ may self-spot callsign, frequency, and sequence **only** and no other information. "Chats" such as "I see your trace now" are *not* permitted. *Caution:* Reflectors will be monitored for any violations that may result in punitive action.

I. Contest Period: 27 hours for all stations, all categories. Operate any portion of the contest period you wish. (*Note:* Exception for QRP Hilltopper.)

II. Objectives: The objectives of this contest are for amateurs around the world to contact as many amateurs as possible in the contest period, to promote VHF, to allow VHF operators the opportunity to experience the enhanced propagation available at this time of year, and for interested amateurs to collect VHF Maidenhead grid locators for awards credits.

III. Bands: All authorized amateur radio frequencies on 50 MHz (6 meters) and 144 MHz (2 meters) may be used as authorized by local law and license class.

IV. Categories of Competition:

For all categories: Transmitters and receivers must be located within a 500-meter diameter circle or within the property limits of the station licensee's address, whichever is greater.

Note the following change in rules! There are three types of QSO alerting assistance: **(1) Passive** is defined as any technology that provides callsign and frequency information of potential new contacts to the operator, *not* initiated by the entrant. It includes, but is not limited to: The DX Cluster, spotting nets, packet and web clusters, Skimmer, and the like. **(2) Active** involves the direct initiation of QSO alerting information by—and with the direct participation of—the entrant to benefit the entrant's score. It includes, but is not limited to, self-spotting or by stealth (such as asking other stations to spot you). **(3) Interactive** includes any two-way conversation (or variation thereof) between stations to effect a QSO. This includes use of the telephone, and website posts providing information *beyond* that of callsign, frequency, and sequence.

Passive QSO alerting assistance is **permitted** for ALL categories.

Active QSO alerting assistance is permitted *only* by stations attempting digital EME or digital meteor-scatter contacts. Stations calling CQ using such modes are limited to spotting callsign, frequency, and sequence **only.** *Caution: To ensure strict compliance with these rules,* the adjudication process will include review of real-time and archived transcripts from websites used to coordinate *active* alerting data during the contest period.

Interactive QSO alerting is **prohibited** for all categories.

1. Single Op—All Band. Only one signal allowed at any one time; the operator may change bands at any time.

2. Single Op—Single Band. Only one signal allowed at any one time.

3. Single-Op All-Band QRP. There are no location restrictions – home or portable – for stations running 10 watts output or less.

4. Hilltopper. This is a single-op QRP portable category for an all-band entry limited in time to a maximum of 6 continuous hours. Backpackers and portables who do not want to devote resources and time to the full contest period are encouraged to partic-

ipate, especially to activate rare grids. Any power source is acceptable.

5. Rover. A Rover station is one manned by no more than two operators, travels to more than one grid location, and signs "Rover" or "/R" with no more than one callsign.

6. Multi-Op. A multi-op station is one with two or more operators and may operate 6 and 2 meters simultaneously with only one signal per band.

Stations in any category, except Rover and QRP Hilltopper, may operate from any single location, home or portable.

V. Exchange: Callsign and Maidenhead grid locator (4 digits, e.g., EM15). Signal reports are optional and should not be included in the log entry.

VI. Multipliers: The multiplier is the number of different grid locators worked per band. A "grid locator" is counted once per band. *Exception:* The rover who moves into a new grid locator may count the same grid locator more than once per band as long as the rover is himself or herself in a new grid locator location. Such change in location must be clearly indicated in the rover's log.

A. A rover station becomes a new QSO to the stations working him or her when that rover changes grid locator.

B. The grid locator is the Maidenhead grid locator to four digits (FM13).

VII. Scoring: One (1) point per QSO on 50 MHz and two (2) points per QSO on 144 MHz. Work stations once per band, regardless of mode. Multiply total QSO points times total number of grid locators (GL) worked.

Rovers: For each new grid locator visited, contacts and grid locators count as new. Final Rover score is the sum of contact points made from each grid locator times the sum of all grid locators worked from all grids visited.

Example 1. K1GX works stations as follows:

50 QSOs (50 × 1 = 50) and 25 GL's (25 multipliers) on 50 MHz

35 QSOs (35 × 2 = 70) and 8 GL's (8 multipliers) on 144 MHz

K1GX has 120 QSO points (50 + 70 = 120) × 33 multipliers (25 + 8 = 33) = 3,960 total points.

Example 2. W9FS/R works stations as follows:

From EN52: 50 QSOs (50 × 1 = 50) and 25 GL's (25 multipliers) on 50 MHz

From EN52: 40 QSOs (40 × 2 = 80) and 10 GL's (10 multipliers) on 144 MHz

From EN51: 60 QSOs (60 × 1 = 60) and 30 GL's (30 multipliers) on 50 MHz

From EN51: 20 QSOs (20 × 2 = 40) and 5 GL's (5 multipliers) on 144 MHz

W9FS/R has 230 QSO points (50 + 80 + 60 + 40) × 70 multipliers (25 + 10 + 30 + 5) = 16,100 total points

VIII. Awards: Certificates suitable for framing will be awarded to the top-scoring stations in each category in each country. Certificates may also be awarded to other top-scoring stations who show outstanding contest effort. Certificates will be awarded to top-scoring stations in each category in geographic areas where warranted.

Geographic areas include states (U.S.), provinces (Canada), and countries, and may also be extended to include other subdivisions as justified by competitive entries. U.S. rover certificates are issued on a regional basis.

IX. Club Competition: Credit your club for aggregate club score. See <http:/ www.cqww.com/clubnames. htm> for a list of registered clubs. Follow directions for resistering your club if not already registered.

X. Miscellaneous: An operator may sign only one callsign during the contest. This means that an operator cannot generate QSOs by first signing his callsign, then signing his daughter's callsign, even though both callsigns are assigned to the same location.

A station located exactly on a dividing line of a grid locator must choose only one grid locator from which to operate for exchange purposes.

A different multiplier cannot be given out without moving the complete station at least 100 meters.

Making or soliciting QSOs on the national simplex frequency, 146.52 MHz, or your country's designated national simplex frequency, or immediately adjacent guard frequencies, is prohibited. Use of commonly recognized repeater frequencies is prohibited. Recognized FM simplex frequencies such as 146.49, .55, and .58, and local-option simplex channels may be used for contest purposes.

Aeronautical mobile contacts do not count.

Contestants should respect use of the DX window, 50.100–50.125 MHz, for intercontinental QSOs only.

UTC is the required logging time.

XI. Declaration: Your submission of a log entry affirms that: (1) you have abided by all the rules of the contest as well as those of your country's licensing authority; (2) you accept any decisions made regarding your entry by the contest's adjudication process which are official and final.

XII. Log Submissions: Log entries must be submitted by September 1, 2011 to be eligible for awards. Submit your electronic log in the Cabrillo format created by all major logging programs. Send via e-mail attachment to <cqvhf@cqww-vhf.com>. Subject line: Callsign [used in the contest] only.

Entrants are reminded to be sure their log indicates their grid location. For USA/VE stations operating away from their home address, be sure to indicate the state or province location of operation.

It is strongly recommended that paper logs be entered on-line for automatic Cabrillo submission. Click on the "Web Form for Typing in Paper Logs" link on the contest website at <http://www.cqww-vhf.com>. Computer-generated logs must be e-submitted. Callsigns of electronic logs received are posted and updated regularly on the website.

For those without web access, paper logs may be submitted to: CQ VHF Contest, 25 Newbridge Road, Hicksville, NY 11801 USA. Questions may be sent to <help@cqww-vhf.com>.

What You've Told Us...

Our March survey asked about your use of e-readers and smart phones and your thoughts on subscribing to a digital edition of *CQ*. First, since there seemed to be some confusion: **Any digital edition of *CQ* would be in addition to our traditional print version**. *We have no intention of eliminating the print edition of* CQ.

Nearly one-third of you who responded to the survey already own (23%) or plan to buy (6%) an e-reader this year. Among that group, the Kindle is most popular by far (49%), followed by the iPad (25%), the Nook (20%), other (13%) and the iPod Touch (6%).

A similar number of readers either own (23%) or plan to buy (4%) a smart phone. Top choice there is a phone using the Android platform (33%), followed by iPhone (31%), Blackberry (24%), and other (15%).

Asked if you would be likely to buy a subscription to a digital edition of *CQ* when it is introduced, 61% of you said you'll stick with the print edition. Of the rest, half said they'd need to see more details first, 28% said they'd likely replace their print subscription, 13% said they'd take it *in addition* to the print version and 11% weren't sure.

Forty per cent of readers responding said their preferred device for reading a digital edition of *CQ* would be their computer, followed by 14% each choosing an e-reader or "don't know," 10% would be interested in reading it on multiple platforms, and nobody would want to read a magazine on their smart phone screen.

Finally, of those who said they'd consider buying a digital edition, 60% would be willing to pay up to $15, while $38 would go as high as $25 and 2% would pay more than $25 for a 1-year subscription.

This month's free subscription winner is Gene Patterson, KC3RT, of Gibsonia, PA.

Reader Survey
June 2011

We'd like to know more about you—about who you are, where you live, what kind(s) of work you do, and of course, what kinds of amateur radio activities you enjoy. Why? To help us serve you better.

Each time we run one of these surveys, we'll ask a few different questions and ask you to indicate your answers by circling numbers on the Survey Card and returning it to us. As a bit of incentive, we'll pick one respondent each month and give that person a complimentary one-year subscription (or subscription extension) to *CQ*.

Since this is our "Take it to the Field" special, we'd like to get an idea of the amount and nature of "field" operating that you do.

Please answer by circling the appropriate numbers on the reply card.

1. Do you ever operate ham radio away from home?

Yes, HF and VHF/UHF 32
Yes, HF only 33
Yes, V/UHF only 34
No 35

2. Do you operate mobile?

Yes, HF and VHF/UHF 36
Yes, HF only 37
Yes, V/UHF only 38
No 39

3. Do you operate portable while on foot?

Yes, HF and VHF/UHF 40
Yes, HF only 41
Yes, V/UHF only 42
No 43

4. What is your favorite form of portable/mobile ham activity?

Operating while driving 44
Operating while hiking or camping 45
Operating while bicycling 46
Operating while sailing or flying 47
Operating from temporary location (e.g. Field Day) 48
Operating from a fixed vacation location 49
Do not operate portable or mobile 50

5. What is your favorite type of portable/mobile ham activity?

Rag-chewing 51
DXing 52
Contesting 53
Public service 54
Keeping in touch with group and/or outside world 55
Other 56
None of the above 57

6. Have you built any of your portable/mobile gear or antennas?

Yes, radio equipment 58
Yes, antennas 59
No 60

Thank you for your responses. We'll be back with more questions next month.

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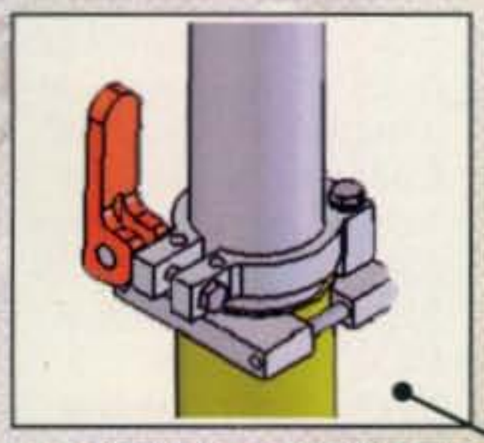

MANUAL AZIMUTH ROTATION WITH OVER CENTER LOCKING LEVER

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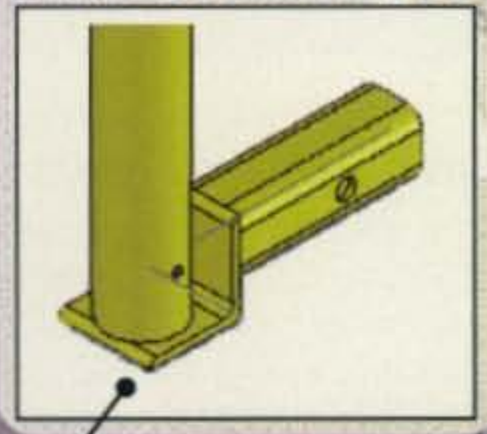

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If you want to use a modern synthesized VFO with a tube-type "boatanchor" transmitter, you might have trouble producing enough output from the solid-state VFO to drive the tube rig's circuitry. WA1FFL has a project to solve that problem.

An Improved VFO Driver Amp for Tube Rigs

BY JAMES D. HAGERTY,* WA1FFL

I have had many discussions with other radio amateurs regarding the suitability of using a direct-digital synthesis (DDS) VFO with a vintage tube-type transmitter. The stability, precision, and software flexibility of DDS VFOs make these devices an attractive option to keep vintage gear on the air. However, some interfacing is required. The output of DDS VFOs tends to be relatively low because of the very low operating voltages of the chips themselves (1.8–5 volts). My own VFO design (published in 2008 in *QEX*[1]) puts out 0.5 volts peak across 50 ohms after filtering and a 20 dB gain stage. Its AD9951 DDS IC runs on a mere 1.8 volts.

One classic reference on this subject is the Doug DeMaw *CQ* article "VFO Interfacing: Using Solid-State VFOs to Drive Vacuum-Tube Transmitters."[2] This article, which was published nearly 20 years ago, is one of the few treatments of a subject which has been the focus of discussion for many vintage-equipment users' groups.

I eventually built the DeMaw circuit (see fig. 1; this was called figure 2 in the original article), which consisted of a 1-stage 2N3866 circuit with a tuned transformer output. There was little design data for the output matching circuit, for which it was only stated, "T2 is wound for the operating frequency." The circuit was stable and gave over 10 volts peak output at the lower HF frequencies, but it rolled off much too quickly to be useful over the entire HF spectrum. The reason is that T2, when wound with the specified 1:8 turns ratio (in my case, 5 turns to 40) acquired a secondary inductance so large that for practical values of variable capacitor C1, the resonant frequency of the tuned secondary was only in the region of 2 MHz or so. I then turned my attention to developing a better approach. I needed to know what VFO drive level was actually required for the older rigs. It will certainly vary from one tube to another, but some basics may be stated.

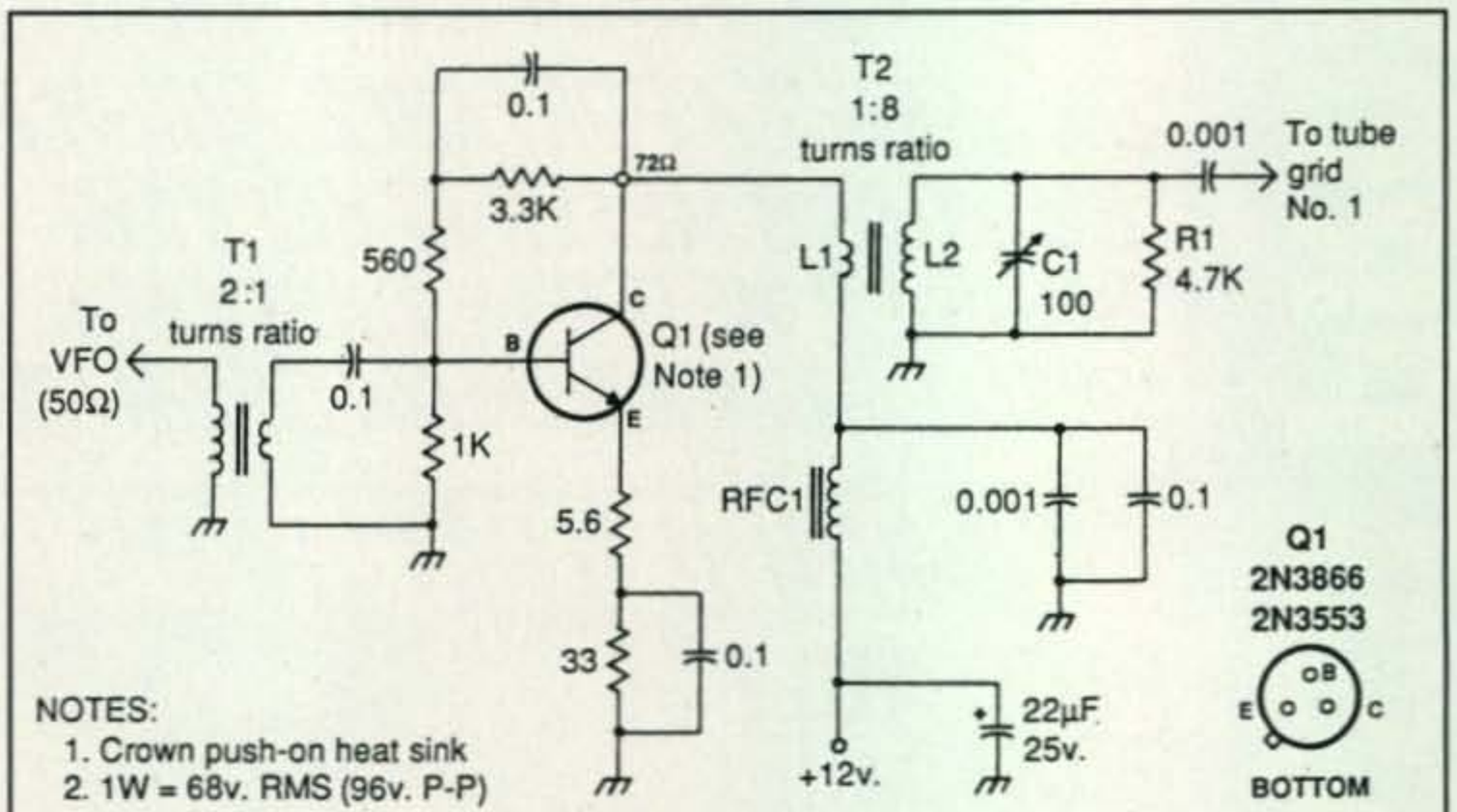

Fig. 1– Schematic of Doug DeMaw, W1FB's, solid-state VFO amplifier circuit, as published in the September 1991 issue of CQ.

Assessing the Needs

For a VFO, driving a vacuum-tube grid requires volts, but not enormous amounts of power. Recall that we are replacing a very high-Q device (i.e., a crystal) that will shatter at low power levels, but that nonetheless is capable of significant voltage excursions. The subject of input impedance for the grid of a common-cathode tube circuit is non-trivial and generally has been oversimplified. It is important to consider here for the purpose of knowing how to match the VFO output for a drive level that will actually work.

One interesting window into this subject was the specification for the VFO drive requirements of the original E.F. Johnson Adventurer, a classic tube transmitter from the 1950s and '60s. According to the original product flyer/data sheet, this is "8–10 volts across 22K ohms."[3] That is less than 5 milliwatts! The spec for the Heath HG-10 VFO, which is known to work well with the vintage DX-40 and DX-60, states an output of 5V RMS or more, only with no load specified. Many years ago I tried driving my Hallicrafters HT-40 with this VFO, but the drive was insufficient. I later used a Hallicrafters HA-5 VFO with approximately 10 volts output to do the job. The capacities of the older tube VFOs from the 1960s have thus been specified in various ways, but with little consistency.

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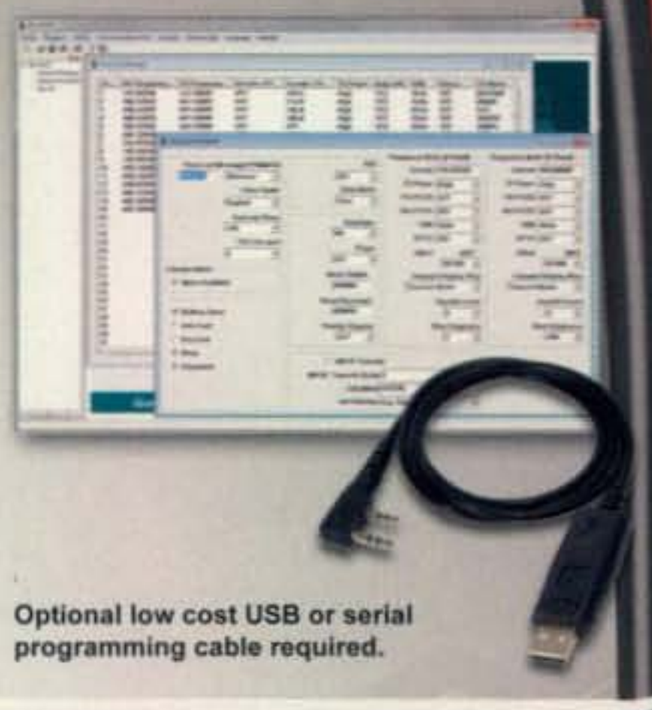

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The 2011 *ARRL Handbook*[4] explains the tube grid input impedance situation this way (page 17.5): "The input impedance of a vacuum tube amplifier is directly related to the grid current. Grid current varies with grid voltage, increasing as the voltage becomes more positive. When the grid voltage is negative, no grid current flows and the input impedance of a tube is nearly infinite." However, with grid current flowing, and adding in the inter-electrode capacitances of the tube, the input impedance drops dramatically.

Written during the heyday of vacuum-tube gear, the 1965 *Handbook*[5] (page 157) states, "... the grid-current flow that results when the grid is driven positive in respect to the cathode over a portion of the excitation cycle represents an average resistance across which the exciting voltage must be

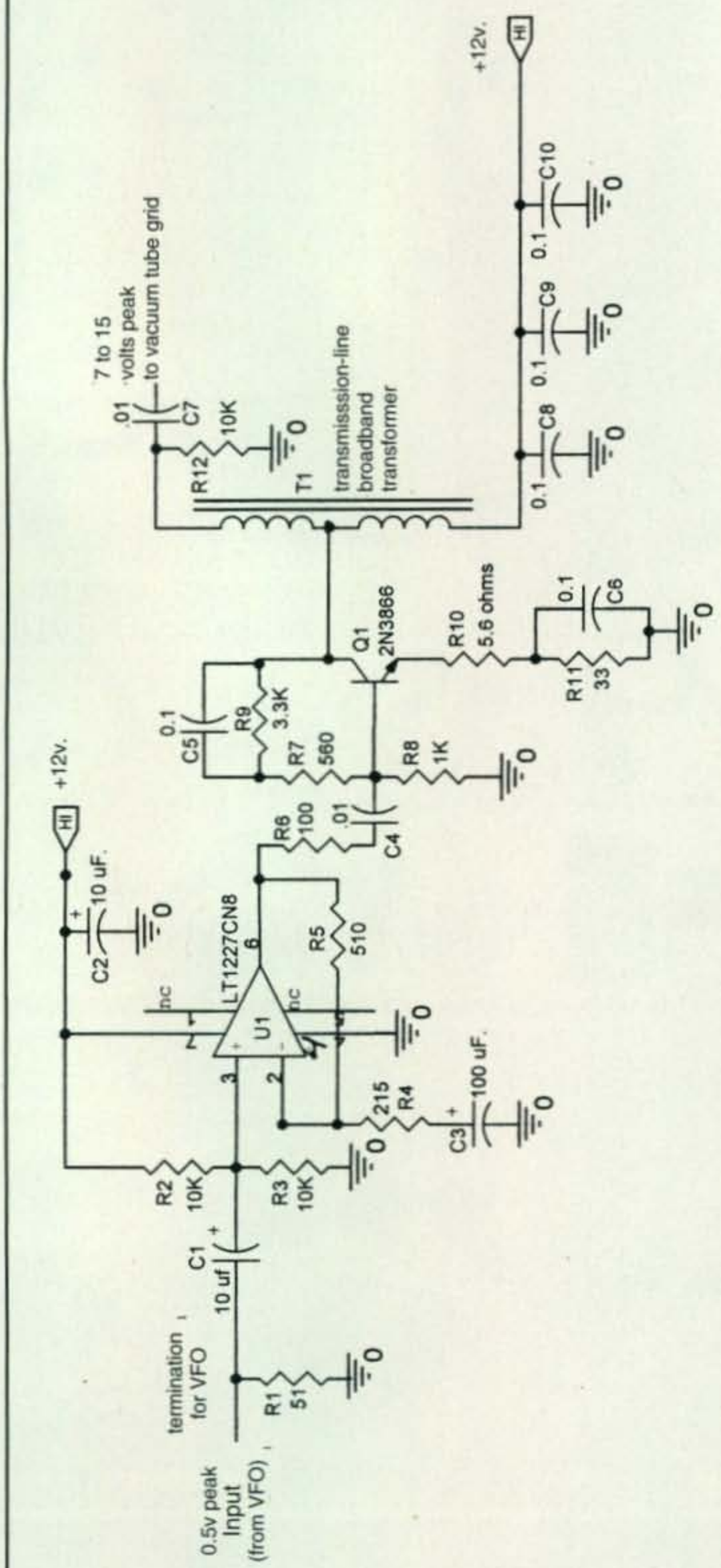


Fig. 2– Schematic of the author's circuit, designed to be more broadbanded than the DeMaw circuit on which it is based.

Parts List and Construction Notes for Broadband Driver Amplifier for Use with Vacuum-Tube Rigs

R1: 51 ohms, 1/4 watt, metal film, 1%
R2, R3: 10K ohms, 1/4 watt, metal film, 1%
R4: 215 ohms, 1/4 watt, metal film, 1%
R5: 510 ohms, 1/4 watt, metal film, 1%
R6: 100 ohms, 1/4 watt, metal film, 1%
R7: 560 ohms, 1/4 watt, metal film, 1%
R8: 1K ohms, 1/4 watt, metal film, 1%
R9: 3.3K ohms, 1/4 watt, metal film, 1%
R10: 5.6 ohms , 1/4 watt, metal film, 1%
R11: 33 ohms, 1/4 watt, metal film, 1%
R12: 10K, 20%, carbon, 1/2 watt rating.
C1, C2: 10 µF, tantalum, 15 volt rating
C3: 100 µF, tantalum, 15 volt rating
C4, C7: 0.01 µF, ceramic; 25 volt minimum rating for C4; 500 volt rating for C7
C5, C6, C8, C9, C10: 0.1 µF, ceramic, 25-volt rating or higher
Q1: 2N3866 (RF Parts, use genuine Motorola)
U1: RF op amp, Linear Technology #LT1227CN8. (For convenient mounting use a 4-pin wire-wrap socket). Solder pin 4 (ground) to ground plane on proto-board.
Heat sink: TO-39 clip-on unit for Q1 (Aavid part number 578305B00000G)
T1: Transmission-Line Broadband Transformer; 10 bifilar turns #26 enameled wire on an FT50-43 core, or 10 bifilar turns #24 insulated solid wire on an FT82-43 core.

Twist the two wires together using a manual drill, holding one end of the bundle in a vise and the other end in the drill chuck. Obtain about 5–8 twists per inch. Then wind the twisted pair of wires on the toroid, counting the number of turns going through the center of the toroid. Connect one free end of each separate wire together in the middle and then to Q1's collector; the remaining two free ends connect as shown on the schematic.

For more detailed winding notes consult any edition of the *ARRL Handbook*.

Note: All cores are available from Amidon, Inc., <www.Amidoncorp.com>; they take direct phone orders).

Miscellaneous: Vector 8004 or other perforated ground-plane prototyping board (2.5" × 4.5") with holes 0.1" apart. Use #4-40 standoffs.

Chassis-type (i.e., bulkhead) BNC connectors with solder lugs (e.g., Jameco #355178 or Jameco #658427)

Construction Notes: Construct the amplifier on perforated ground-plane prototyping board, such as Vector part #8004. To accommodate the 4-pin wire-wrap socket for U1, the board perforation holes should be spaced 0.1" apart. Push through the socket so that the pins stick through to the ground plane side.

Solder the ground pin (IC pin 4) to the ground plane. Components are mounted "ugly-style" to the ground plane. An input and output BNC connector can be mounted on the board with a ground lug. Bend the ground lug at 90 degrees and solder to the ground plane. First solder the lugs onn by themselves, and then attach the BNC connectors after cooling. Jameco has affordable RG58/U BNC cables that are 1–3 feet long.

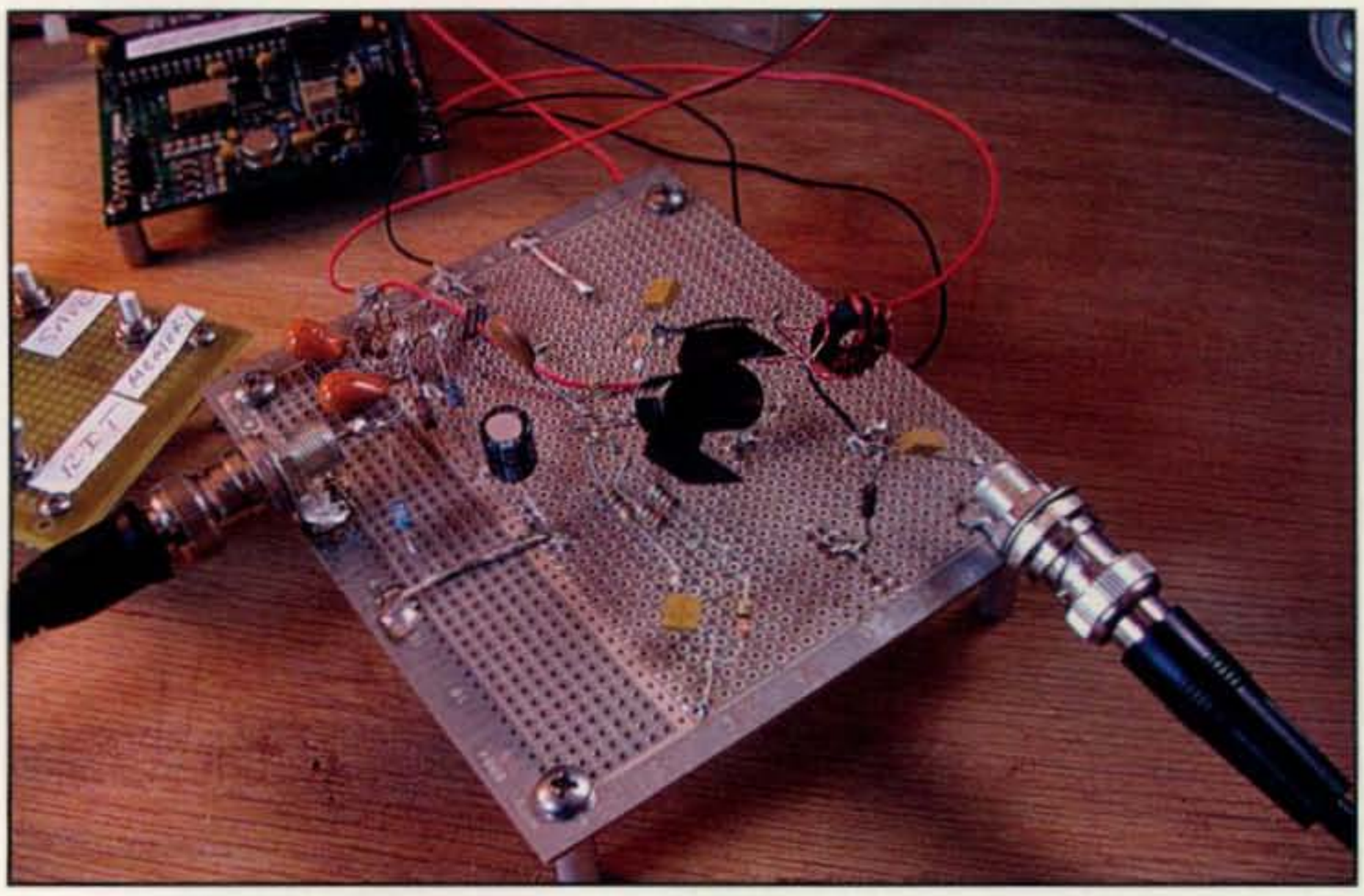


Photo A– Here is the author's amplifier circuit built "ugly style" on a Vector prototyping board.

developed by the driver ... the grid input resistance is a matter of a few thousand ohms..." In the same section, an approximate expression for the grid input impedance is given by: Input impedance (ohms) = {driving power (watts)/d.c. grid current $(ma)^2$} × 620,000, with the driving power and grid current (for normal operation) taken from the tube tables.

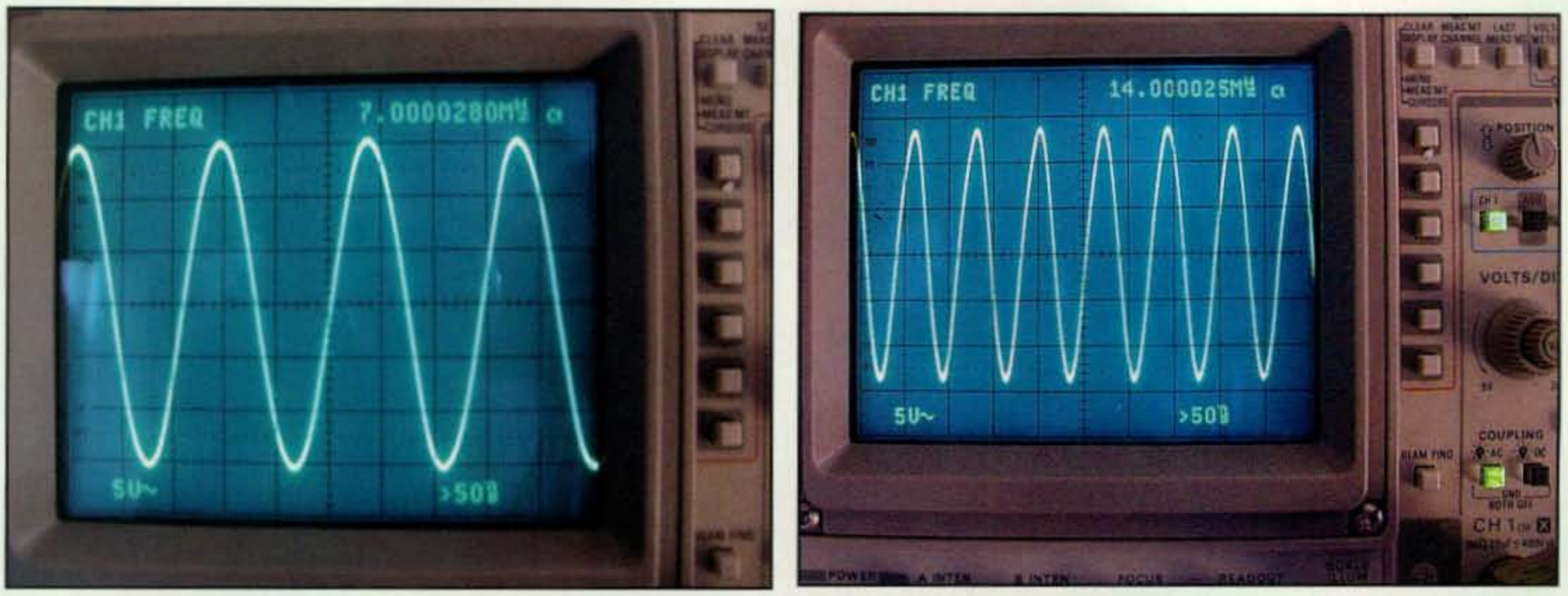
Finally, I quote the 1990 *Handbook*[6] on this subject (page 5-8): "If the tube is driven into the grid-current region, there is in addition a resistance component in the input impedance. The resistance has an average value equal to $(E^2)/P$, where E is the RMS driving voltage and P is the power in watts consumed by the grid. The resistance will usually vary during the a.c. cycle, because grid current may flow only during part of the cycle ... the grid voltage/grid current characteristic is seldom linear."

Putting together all of the above, it is obvious that we will need a step-up impedance transformer in our VFO buffer output stage, and that the impedance we need to drive will be well above 50 ohms and certainly at least 1K ohms (if we assume 10 volts RMS drive level at less than 0.1 watts).

Making it Broadbanded

A broadband solution was then investigated. Broadband transmission-line matching transformers are universal in transistor circuits. All recent ARRL *Handbooks* have extensive winding information about these devices (see page 20.22 of the 2011 ARRL *Handbook*, for example). Starting with the basic 1:4 configuration, I wound a conventional transformer with #26 enameled wire on an Amidon FT-50-43 toroid. The "50" means 0.5-inch diameter; the "43" is the core material type and each type has a specific value of magnetic permeability associated with it. Using the original one-stage circuit I then connected the center (Low-Z terminal) of the new broadband transformer to the 2N3866 collector, replacing the original tuned transformer. See fig. 2 for a schematic of the new circuit. Then, 12 volts d.c. was fed in through one free transformer end. The transformed, High-Z output (a.c. coupled) was taken at the other end. The transformer winding itself acts as an RF choke for the d.c. feed.

To give the output circuit a resistive termination for load stability I used 10K, knowing this would not excessively load down the grid circuit that followed. (I have actually loaded this circuit down to 1K.) A pre-driver stage was then added using a Linear Technology RF op amp, the LT1227CN8. This allowed me to direct-couple its output to the 2N3866 stage, eliminating the input transformer in the original DeMaw circuit. It also allowed me to tailor the overall gain more easily, as well as providing a 50-ohm termination for the preceding DDS VFO output filter. The LT1227 is a robust, general-purpose RF op amp that is available from Digi-Key and it costs only a few dollars. It may also be used as a driver for mixers.[7] The gain resistor and other component values of the LT1227 were adjusted to produce the best-quality waveform at the output of the 2N3866 stage. The 100-ohm resistor in series



Photos B & C– Typical measured output waveforms on 7 and 14 MHz, respectively, showing 15 volts peak output on 40 meters and 13.5 volts out on 20 meters—enough to satisfy the drive requirements of most tube-type transmitters.

with U1's output is referred to as a "back termination" and its main pur-pose is for load stability; a minimum value of 50–75 ohms is recommended for this part.

The entire two-stage amplifier was built "ugly-style" on a slice of Vector 8004 prototyping board, which has a ground plane as well as the 0.1 hole spacings required for the socket that housed the LT1227. This method of construction allows for easy experimentation with different transformer types, transistor substitutes, and trimming of component values. For input and output connectors, I used bulkhead BNC types with the solder lug bent 90 degrees and soldered right to the ground plane. This technique allowed for easy cabling with BNC cables. Jameco Electronics has such cables from 1 to 3 feet in length. Mouser Electronics has Vector #8004 board stock. A 2.5" × 4.5" slice of this material is sufficient to build the circuit. Photo A shows the working amplifier board.

Initial Results and More Experimenting

The results were more than encouraging. Over most of the HF band I obtained 10–15 volts peak, dropping to about 10 volts peak at 21 MHz. The broadband transformer did indeed widen the response from the previous version and provided (across the much larger impedance) the signal swing I needed to drive a tube rig. The circuit is economical and very easy to build. See photos B and C for typical measured output waveforms from the amplifier, measured at C7. For example, at 7 MHz there was 15 volts peak, with about 13.5 volts peak observed at 14 MHz.

As an experiment, I wound another transformer on a larger (FT-82) core with insulated, #24 solid wire; its performance was identical to the smaller unit and the insulated wire (vs. enameled) was easier to work with. Increasing the number of core turns from 10 to 14 resulted in no observable difference in the output.

I also tried substituting hand-wound, 1:9 and 1:16 transformers, but the larger inductive load that they placed on the 2N3866 collector caused distortion. The original 1:4 unit delivered the voltage I needed with a minimum amount of distortion from the magnetic core.

In another experiment I used an Amidon type 61 core material instead of type 43 for the transformer; the result was improved signal fidelity at 14 MHz, with a penalty of more distortion below 3.5 MHz. If you are a 160- or 75-meter phone operator, the type 43 core material is definitely the way to go! It gave good results down to 1 MHz.

The final step was to drive my 1965 HT-40 transmitter with the DDS-VFO and buffer-amp combination. After

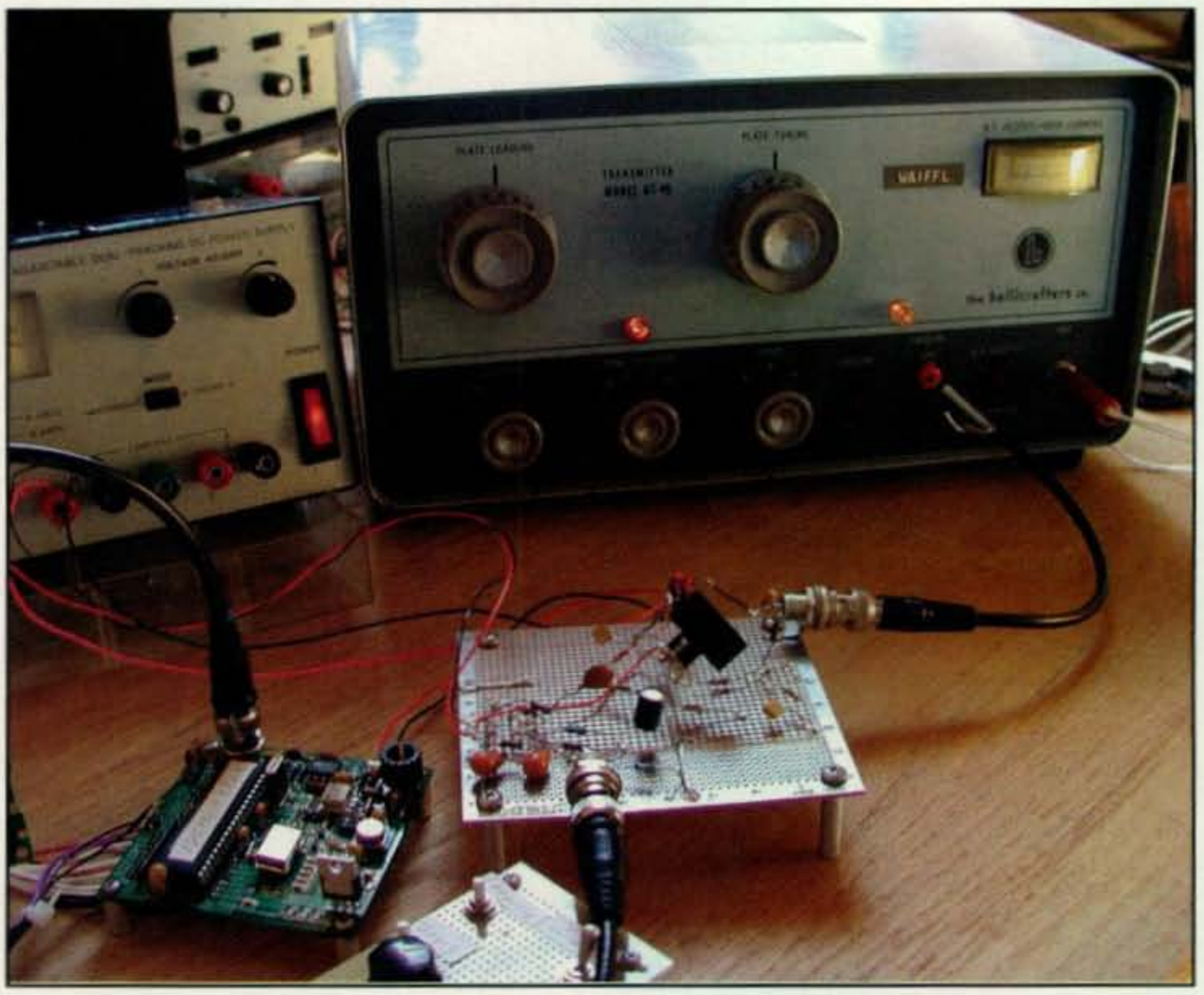


Photo D– WA1FFL's complete setup, with his DDS VFO (left) and amplifier (center) connected to his Hallicrafters HT-40 transmitter.

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some protective restoration work (replacement of paper capacitors, electrolytics, and addition of a 2-amp line fuse), the HT-40 was ready to be re-energized.

Lacking a compatible FT-243 crystal socket plug, I made up a cable with surplus connector pins that fit into the crystal socket with a push fit. See photo D of the entire system connected together. A 12-volt bench supply was used to power the VFO and buffer amp.

Ready to Rock ... Without the "Rock"

After a 10-minute warm-up, the HT-40 was loaded up with the DDS-VFO and buffer amp driving the rig. With the buffer amplifier in the circuitthere was plenty of VFO drive to obtain 35 watts output from the HT-40 on 80 and 40 meters. The output on 20 meters was 33 watts and on 15 it was 25 watts, with 20 watts on 10 meters. All of these results were obtained while using a 50-ohm dummy load at the HT-40 output. The HT-40 tubes were the originals, and the readings were very typical of what I remember getting from the rig after its last use some 35 years ago.

Important: it should be noted that the length of cable between the buffer amplifier and the HT-40 (10 inches of RG58/U) should be kept very short to avoid unacceptable roll-off on the higher bands, resulting in insufficient drive on 10 meters. An earlier (2-foot) cable made from miniature coax exhibited this problem; it had 55 pF of measured capacitance. The new 10-inch cable measured only 17 pF and worked significantly better, easily driving the rig up at 28 MHz. As a check against false resonance, the output was put on the author's scope/counter (Tektronix 2247A) and it showed a stable 28.000-MHz carrier reading.

A complete parts kit is available for the buffer amplifier at <www.WA1FFL. com>. I hope you will try this amplifier with your favorite vintage-tube rig. I will have the HT-40/DDS-VFO/driver amp set up at the Hagerty Radio Company booth at the Dayton Hamvention® so that you can see them working.

Acknowledgements

The author would like to thank Mitchell Lee, KB6FPW, Senior Applications Engineer with Linear Technology Corp., for his valuable suggestions and insight. I also am grateful to Bruce Muranko, WD8BPD, for testing the circuit with his vintage Heathkit DX-40. His photos and correspondence indicated success.

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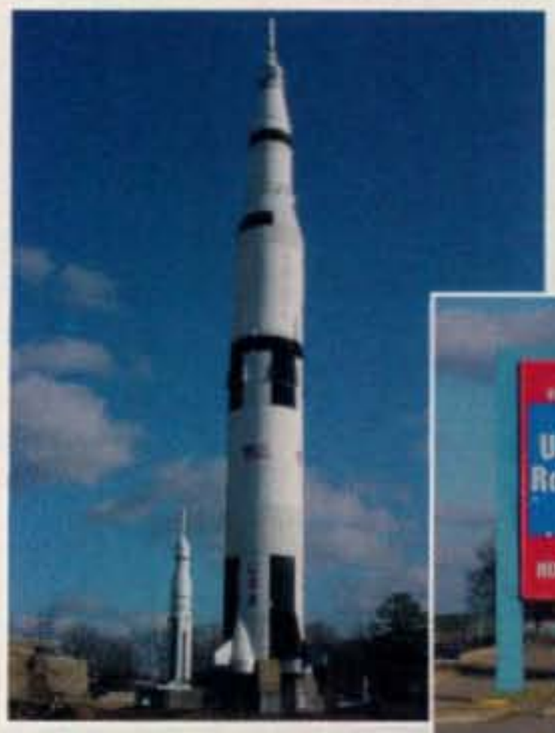

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The 555 Once Again!

BY IRWIN MATH,* WA2NDM

I don't know how many times the LM555 timer (and its variations) has been discussed in this column, but it certainly is one of the most versatile ICs to have ever been produced. The device can be used as a timer, oscillator, pulse detector, and modulator, and countless circuits have been developed that employ this chip. Therefore, we were pleasantly surprised when we took a look around and discovered that after all of this time newer versions (with unique improvements) are available and this is our topic this month.

Our first device is the ALD7555 from Advanced Linear Devices (www.aldinc.com). This IC is a direct pin-for-pin CMOS replacement for the common 555 with a number of new benefits. Unlike the older 555, this unit features high-input impedance, which allows smaller timing capacitors, longer timing cycles, and lower power dissipation, an impor-

*c/o CQ magazine

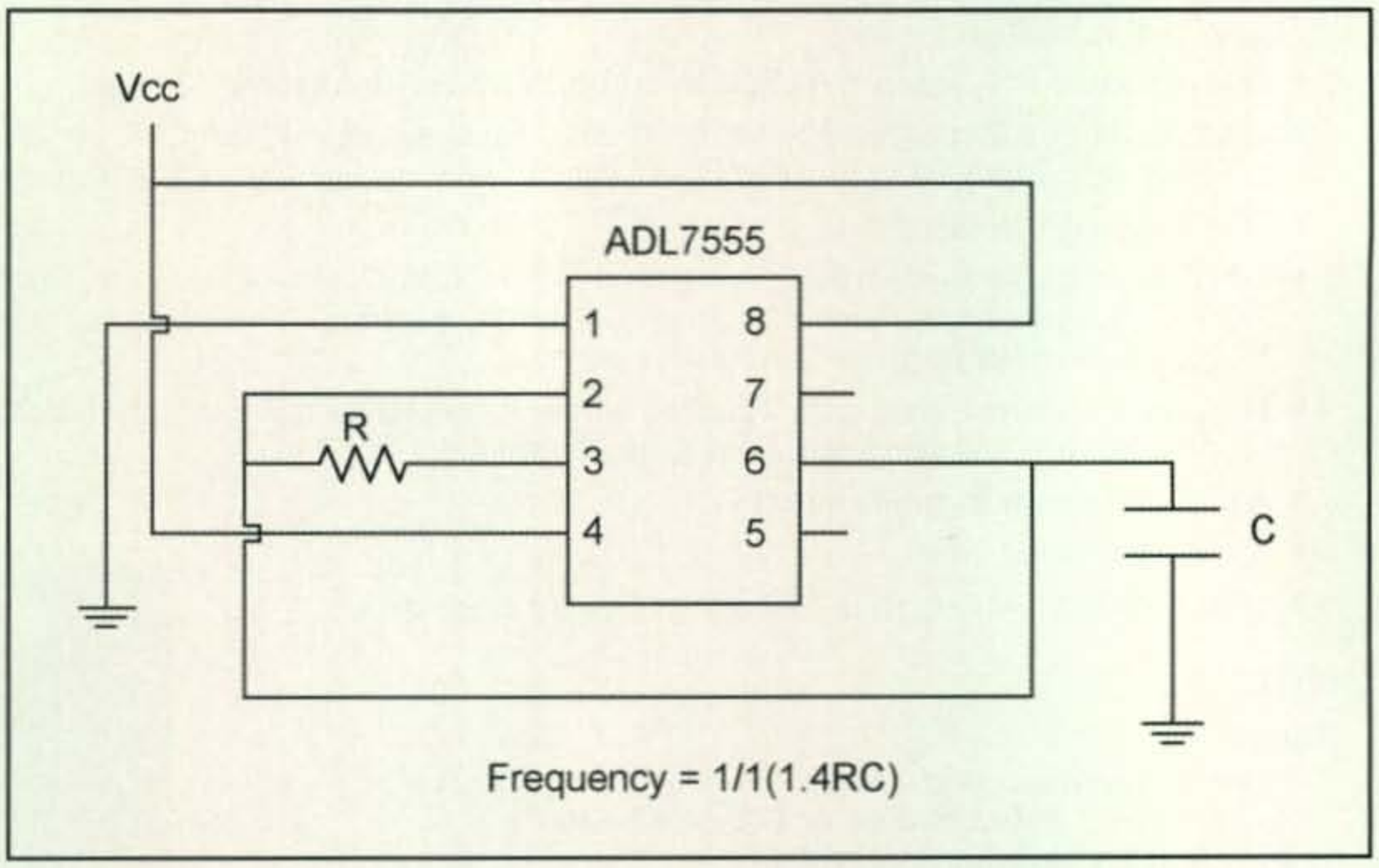

Fig. 1– Fifty-percent duty-cycle circuit for the ALD7555.

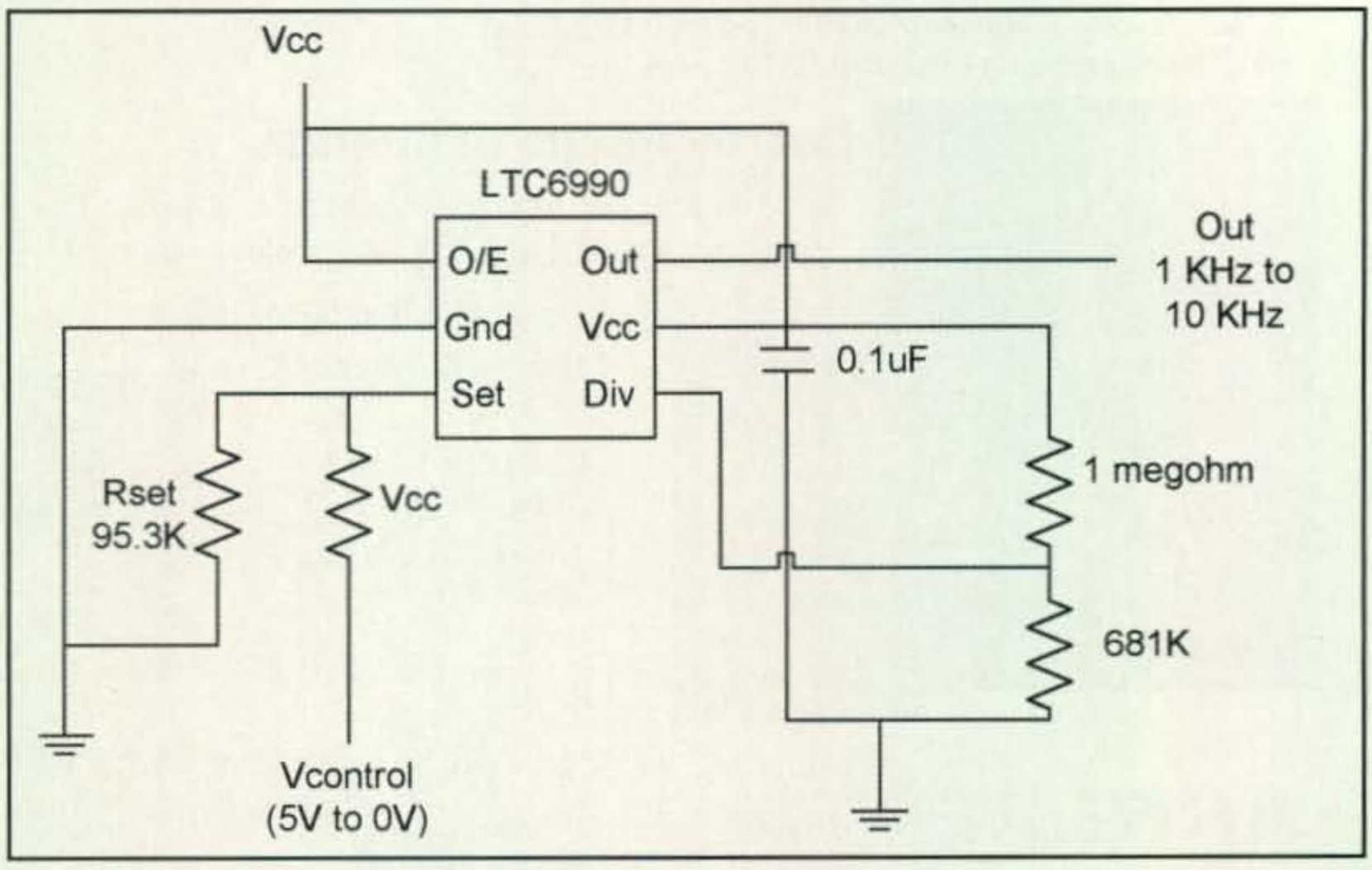

Fig. 2– Voltage-controlled oscillator, the LTC6990.

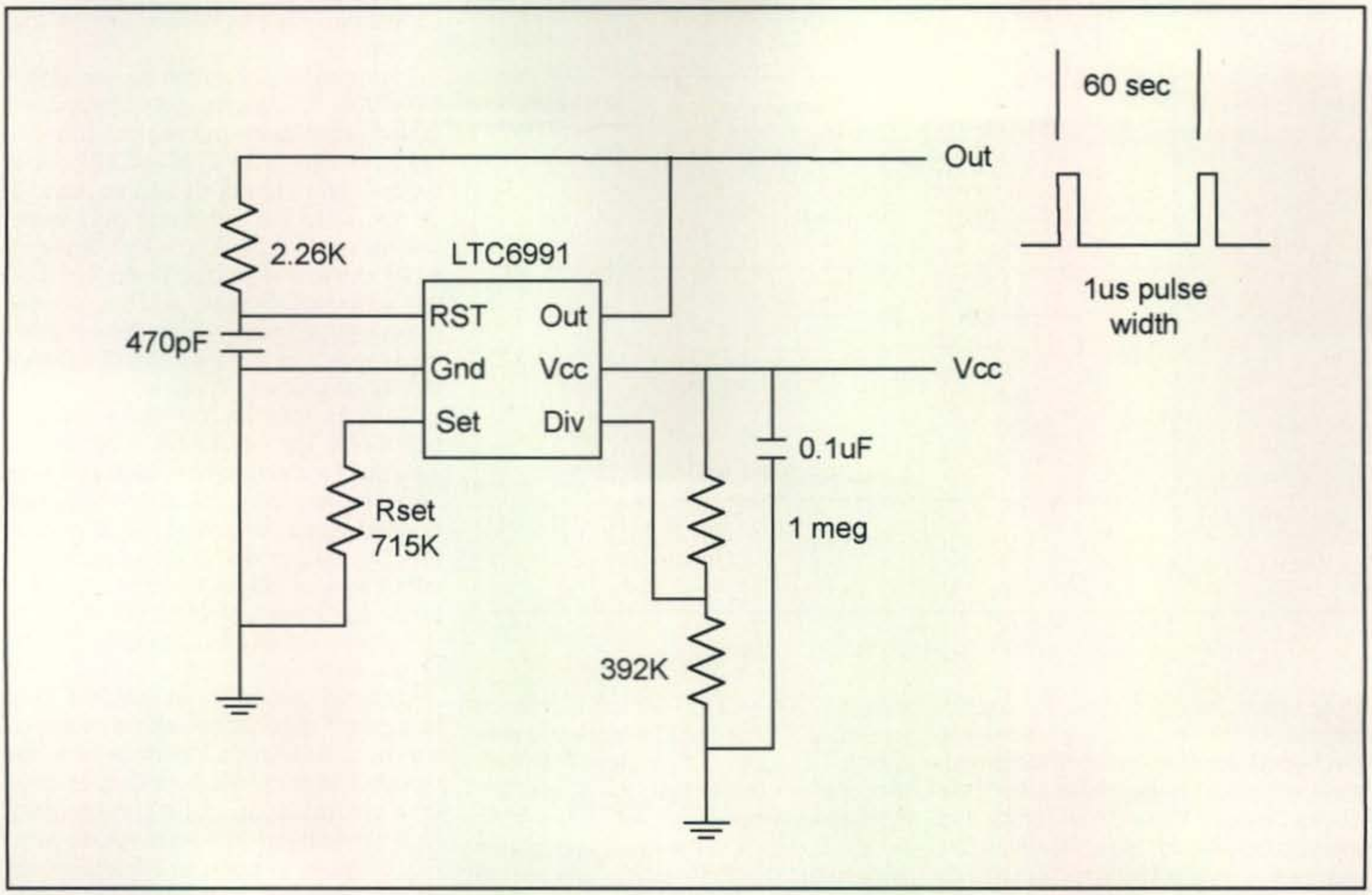

Fig. 3– Low-frequency pulse generator, the LTC6991.

tant consideration in battery-operated circuits. When used as an oscillator, frequencies as high as 2.5 MHz can be reached (with only 5 volts Vcc). Also, in the oscillator mode a true 50% duty-cycle square wave can be obtained with the circuit of fig. 1. When used one shot, a timing range of 100 seconds can be achieved with a 10-megohm resistor and 10-µF capacitor due to the high input impedance. The ALD7555 can operate with a Vcc supply ranging from 2 volts to 10 volts and can sink up to 80 mA at its output, allowing it to directly drive relays, LEDs, and other power devices. Pin connections, as we mentioned, are the same as for the older 555, and the device is available in both surface-mount packages as well as a plastic 8-pin DIP version. For further information you should log onto the Advanced Linear website. Cost for the ADL8555, by the way, is less than $1.00 in quantities of 100.

Our next device is the LMC555 from National Semiconductor (www.national.com). This is also a direct pin-for-pin replacement for the common 555. Maximum frequency with this chip is 3 MHz (astable mode), and the operating voltage can go as low as 1.5 volts (for battery operation) or as high as 15 volts. The output from the LMC555 can sink currents up to 50 mA, and the device will operate from –40 to +85°C. For further information on this chip you should log onto the National Semiconductor website.

The next five offerings are offshoots of the various 555 functions but are not specifically direct pin-for-pin replacements. In fact, all are available only in surface-mount packages, but you can experiment with them if you are careful and have a soldering iron with a tiny tip.

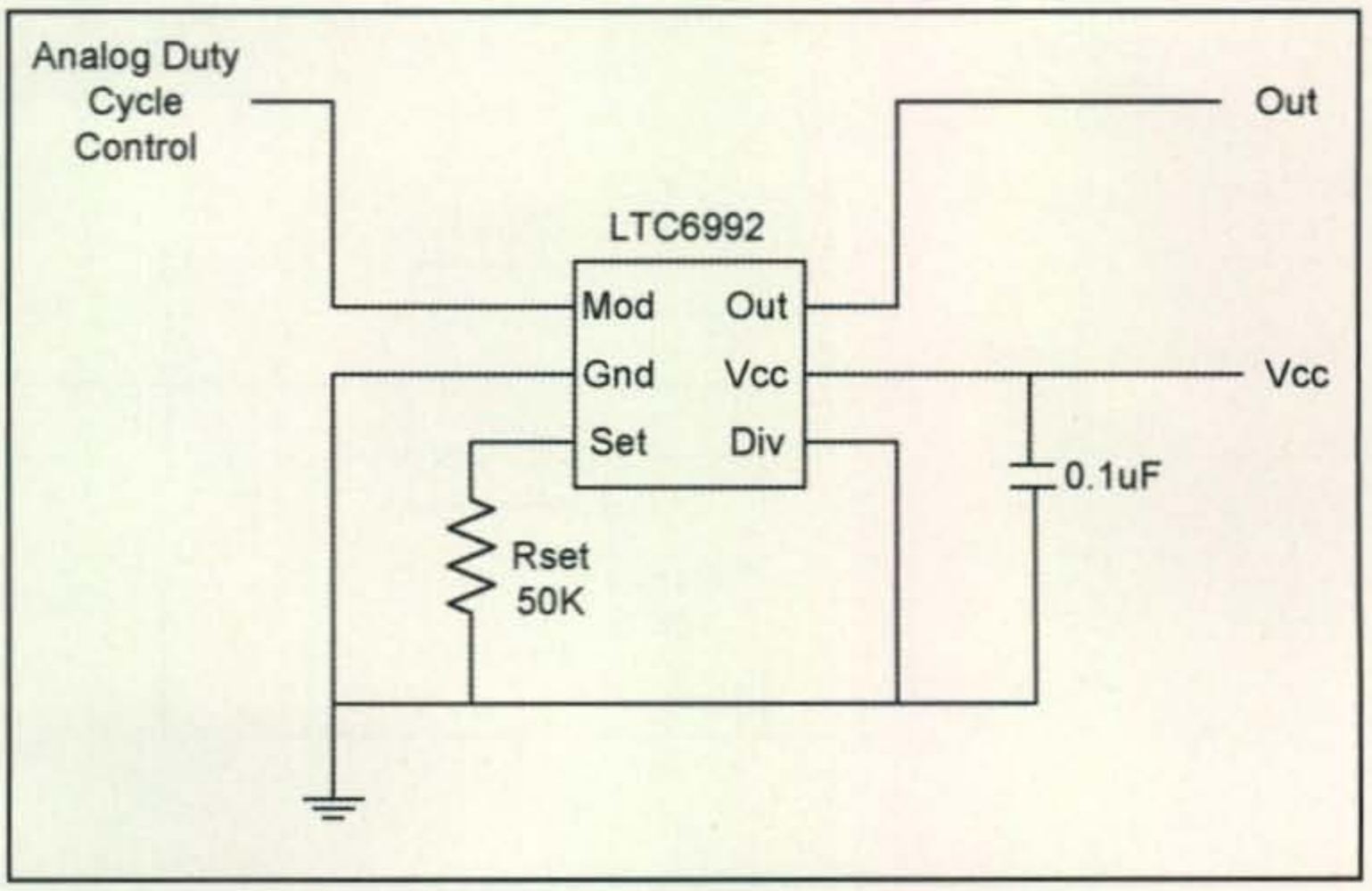

Fig 4– One MHz with the LTC6992 pulse-width modulator.

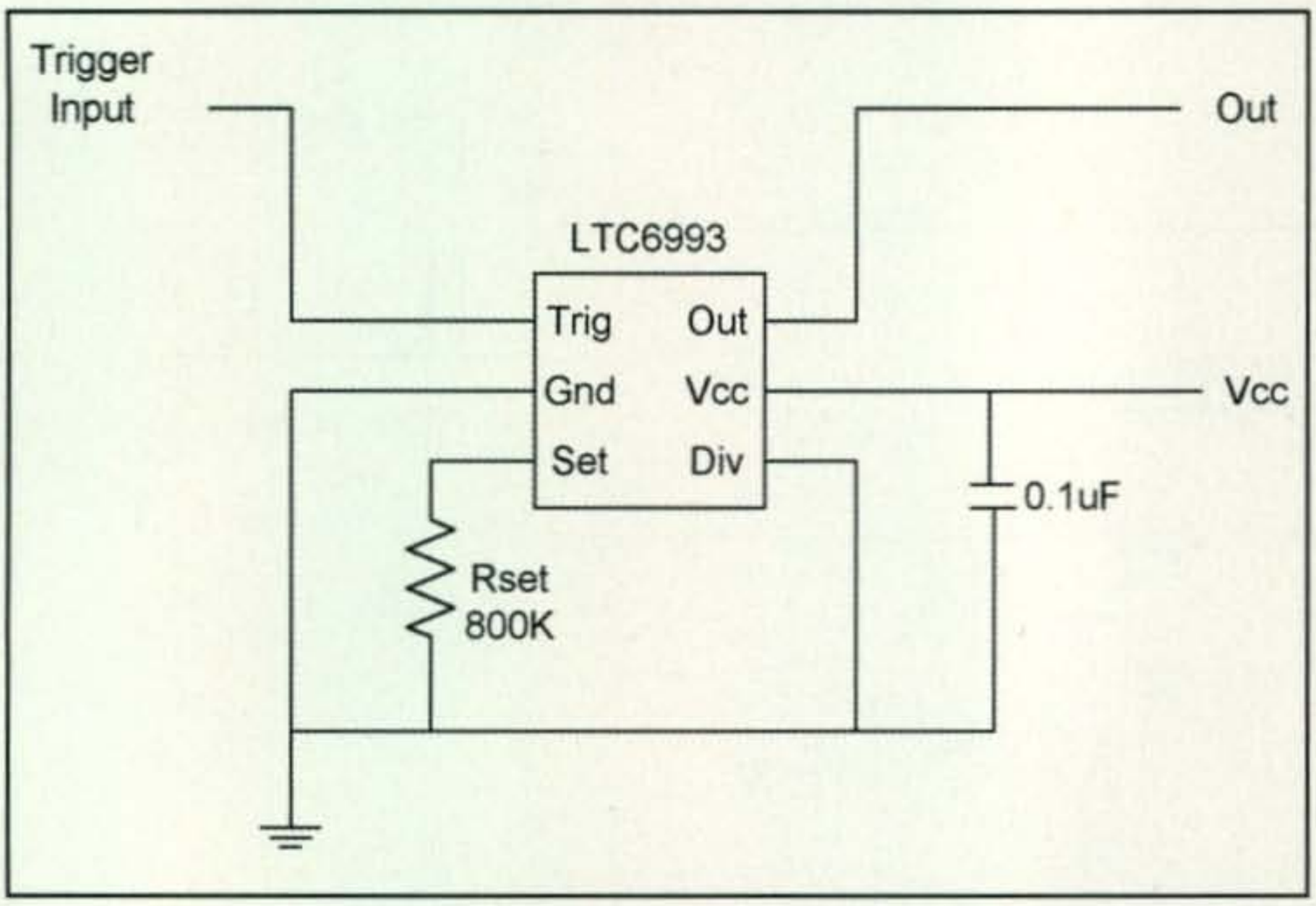

Fig. 5– The LTC6993 one-shot circuit.

They are quite interesting for experimenters, however, and I am sure you can find an application for which one or more will work for you. All are from the Linear Devices "TimerBlox" family and specific details, full specifications, as well as a very interesting design tool all are available on its website at <www.linear.com>.

The first is the LTC6990. This device is a fixed-frequency or voltage-controlled frequency oscillator (VCO) that will operate from 488 Hz to 2 MHz. The center frequency is set by one external resistor, and a second resistor is used to adjust the VCO deviation, which can be up to 300 kHz at 1 MHz. This device operates from a 5-volt supply and provides a 50% duty-cycle output. Accuracy is better than 2.2%, and the operating temperature range is –40 to +125° C. Fig. 2 is the basic application schematic. Further details are on the website.

The second device is the LTC6991. This is a low-frequency oscillator with a period of 1 ms (1 kHz) to 9.5 hours (0.0017 Hz). The frequency is set by one to three external resistors and the accuracy is better than 1.5%. The operating temperature range is also –40 to +125º C and fig. 3 is the basic application schematic. Further details are on the website.

The third device in the series is the LTC6992. This device is a voltage-controlled pulse-width modulator. The frequency range is 3.81 Hz to 1 MHz, and the minimum duty cycle can be set to 0 or 5%, while the maximum duty cycle can be set to 95 or 100% by means of three external resistors. Control is with a 0- to 1-volt DC input, and the unit will make a good frequency modulator within its range. Fig. 4 is the basic circuit and further details are on the web.

Number four in the series is the LTC6993. This is a one shot with a range of 1 microsecond to 33.6 seconds and an accuracy of 5% or better depending on the timing range selected. The device can be configured for either rise- or fall-time triggering and a positive or negative output pulse. Fig. 5 is the basic circuit and further details are on the web.

Last in the series is the LTC6994. This is a switch de-bouncer with a range of 1 µs to 33.6 seconds. Its primary intended use is to eliminate poor connections from push buttons, but it can be used as a slow-speed jitter remover as well. Fig. 6 shows its basic circuit as well as an example of jitter removal. As in the case of the other chips in the family, further details are available on the Linear Technology website.

I hope these offerings are of interest to you. See you here next month.

73, Irwin, WA2NDM

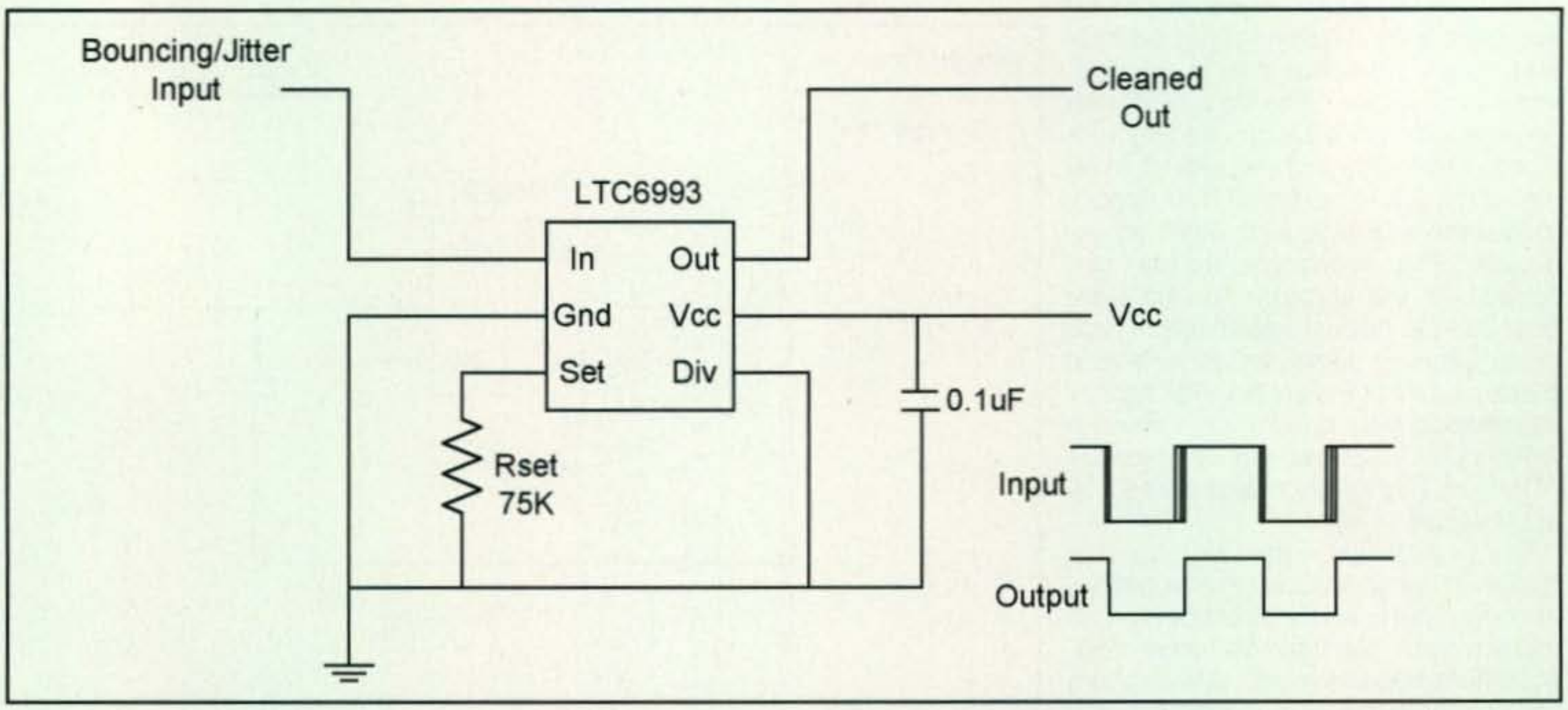

Fig. 6– Basic circuit of the LTC6994 bounce/jitter reducer.

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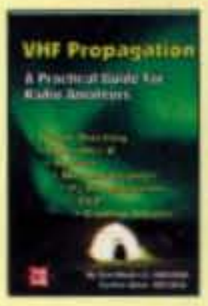

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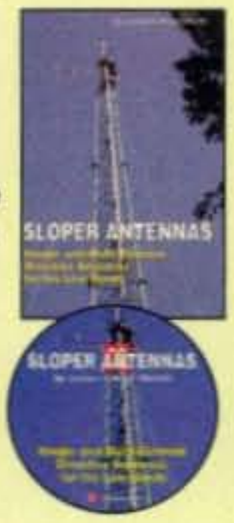

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Ten Reasons Why You Didn't Get the Vanity Callsign You Wanted

BY FREDERICK O. MAIA,* W5YI

Amateur radio station callsigns continue by far to be the number-one subject of questions from readers, especially callsigns that may be chosen by the licensee. We constantly get mail and inquiries from radio amateurs asking why they didn't get a particular station callsign. This month, let's look into why so many vanity callsign requests are dismissed (rejected) by the FCC.

Ham radio operators in the United States may pay a small fee and apply to get a specific "vanity" station callsign, including calls from other callsign areas, as long as they have the appropriate license class for the desired callsign format. However, there is much more to it than that.

Vanity callsigns have proven to be very popular, and more than 60,000 U.S. radio amateurs hold one; most seem to be Extra Class licensees. Nonetheless, there is a lot of confusion about the FCC's Vanity Call Sign System.

There are a variety of reasons why someone would request a vanity callsign. Most amateurs want a shorter callsign that is easier to pronounce or better to transmit on CW. A short callsign is also an indication that the applicant has advanced up the licensing ladder.

The second most requested vanity callsign is one in which the suffix contains the applicant's nickname or initials. Other popular selections include keeping the same callsign suffix as the current call, but changing the prefix and/or district numeral when an amateur moves to a new radio district.

Some want a callsign that reflects a specific interest in amateur radio (such as W7FM or K7ATV). Others request callsigns that were formerly held by family members or friends, or even callsigns that they themselves formerly held and gave up. Since the FCC does not restrict most requests, all of these are valid reasons. However, all sorts of regulations apply.

The FCC gets about 300 requests for a vanity callsign every week, but less than half that number actually get the callsign they want. There is real little reason why amateurs should not get the callsigns they select if they know and follow the rules. Admittedly, though, they can be complex.

You must hold an unexpired amateur radio license to request a vanity callsign for your station. Unlicensed individuals and new clubs cannot get a vanity callsign as their first callsign. A vanity callsign can only be obtained in exchange (traded in) for an existing call. If your license has expired, you must first renew the license.

Now, let's look at the top ten reasons for not getting what you want:

1. Callsign not available

This is the number-one reason for not getting your first choice, but there are many other reasons why a particular callsign is not assignable. Just because the callsign you want shows up as unassigned on qrz.com does not mean it is available.

There is really only one way to determine the status of a callsign, and that is to go to the FCC's Universal Licensing System (ULS). You can find it on the web at <http://wireless.FCC.gov/ULS/> and click on the "search licenses" link. Enter the callsign you want into the callsign search box. If your response is "no matches found," then the callsign is usually available providing the callsign is in a valid format. There are exceptions, though, which we will discuss later.

A number of free vanity websites (e.g., Vanity Headquarters, AE7Q, and RADIOQTH) have sprung up and offer a variety of features. These include search tools, sorted availability lists, prediction capabilities, help files, message boards, and the like.

We do not recommend that you use data from these sites to determine the availability of a vanity callsign. Again, always consult the FCC's amateur service (ULS) database to determine a callsign's official status.

2. Improper format selected

All callsign formats are regulated, including those of the Amateur Radio Service. They are regulated internationally by the Geneva-based International Telecommunication Union (ITU) and nationally by our Federal Communications Commission (FCC).

By international agreement, the first characters (prefix) of a callsign indicate the country in which a station is authorized to operate. The international callsign prefixes assigned by the ITU to the United States are AA through AL, KA through KZ, NA through NZ, and WA through WZ.

The FCC further allocates the following callsign blocks to its amateur service. All callsigns must contain 3 elements: a 1- or 2-letter prefix, a geographical zone numeral Ø (zero) through 9, and a 1-, 2-, or 3-letter suffix.

There are five different formats that are assigned by the FCC to ham radio stations. They are: (1-by-2 format) K1AA–KØZZ; N1AA–NØZZ, and W1AA–WØAA; (2-by-1 format:) AA1A–ALØZ, KA1A–KZØZ, NA1A–NZØZ, and WA1A–WZØZ; (2-by-2 format) AA1AA–ALØZZ, KA1AA–KZØZZ, NA1AA–NZØZZ, and WA1AA–WZØZZ; (1-by-3 format) K1AAA–KØZZZ; N1AAA–NØZZZ, and W1AAA–WØZZZ; and (2-by-3 format) KA1AAA–KZØZZZ and WA1AAA–WZØZZZ.

You may not choose a callsign beginning with the single letter "A"or two-letter AM to AZ prefixes. These prefixes are ITU-assigned to countries other than the United States. Also, the 2-by-3 blocks, AA1AAA–AL1AAA and NA1AAA–NZØZZZ, may not be selected, as they are not currently assigned by the FCC to the amateur service.

Be aware that you will get a "no matches found" when you check the status of these excluded for-

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mats, but they are not available for assignment. It is amazing to us how many amateurs apply for a callsign beginning with the single letter "A."

Some callsign prefixes are geographically restricted. Applications for vanity callsigns with AH, KH, NH, and WH prefixes require a Hawaii or U.S. Pacific territory mailing address. AL, KL, NL, and WL prefixes require an Alaska mailing address, and KP, NP, and WP prefixes may only go to stations with a Caribbean or Puerto Rico mailing address.

Note that there is no requirement that you actually reside in a Pacific/Atlantic area or Alaska in order to obtain a geographically restricted callsign prefix. You only need a mailing address in that area—a place where you can receive mail from the FCC. You can use the address of a ham friend who will forward your mail to you. There are also remailing services just about everywhere. Be aware: Undeliverable licenses can be revoked.

3. Does not conform to group system

As discussed many times in this column, there are four different "groups" of callsigns. Group A is all 1-by-2, 2-by-1, and 2-by-2 AA–AL prefixed callsigns. Group B contains the rest of the 2-by-2. Group C is all 1-by-3 callsign and group D is 2-by-3 format. Extra Class licensees may select any group A, B, C, or D format. Advanced class: B, C, or D format. General or Technician Class: C or D format. Novices: D format only.

A licensee is not considered to hold a particular license class until it appears in the FCC amateur service database. You may not apply for a new vanity callsign on the basis of holding a VE certificate showing you passed an upgrade exam.

New (first-time licensed) Technician and General Class radio amateurs will receive a 2-by-3 (group D) callsigns. This is because when the FCC first began issuing group C callsigns (back in 1978) it began with the "N" prefix. At the time, no N-by-3 callsigns had been assigned.

When the FCC exhausted all N-by-3 callsigns, it next went to group "D" (2-by-3) callsigns because its computer programming did not have the capability to go back and pick up unassigned K and W 1-by-3 calls. It has been that way ever since. You will have to request a vanity callsign to get a 1-by-3 format.

All vanity call sign applicants, including amateurs residing in foreign countries, must provide a mailing address that is located in a U.S. state or territory. There is no requirement that any FCC-licensed radio amateur be a U.S. citizen.

4. Application filed too early or late

An expired or canceled callsign is generally available for reassignment two years (plus one day) after expiration or cancellation, whichever is sooner. However, there are exceptions. The FCC's "license search" function will tell you which calls are still in the two-year grace period, expired or canceled.

The FCC cancels all dormant callsigns after two years of inactivity. Many times a callsign is cancelled before expiration, such as when an amateur selects a new vanity callsign. His/her previous callsign becomes available two years (plus one day) after cancellation.

Use the FCC's ULS to determine the expiration or cancellation date. All other online databases can tell you if a callsign is unassigned, but do not tell you if it has been dormant for the minimum two-year period, and in many cases it has not.

There is a huge demand for 1-by-2 and 2-by-1 callsigns by Extra Class operators. It is important that you file your vanity application on the first day that a callsign becomes available.

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LDG's newest tuner is specially designed for Yaesu's newest 100 watt radios. The YT-450 interfaces directly with the Yaesu FT-450 and FT-950 radios, making integration easier than ever. Simply connect the tuner to the radio with the customer supplied cables and you are ready to operate. DC power and all control is done through the interface cable. Just press the tune button on the tuner and the rest happens automatically: mode and power are set, a tune cycle runs and the radio is returned to its original settings. It will quickly match nearly any kind of coax fed antenna with an SWR of up to 10:1. 2000 memories recall settings in an instant! An extra CAT port on the back allows seamless connection to a PC. You have the newest radio, now get the newest tuner to go with it!
Suggested Price $249.99

Designed to handle the higher power of the Tokyo Hi Power HL-45B.

NEW! Z-817H

The ultimate autotuner for QRP radios including the Yaesu FT-817(D) with addition of the Tokyo High Power HL-45B. The Z-817H interfaces to the CAT port (ACC) on the back of the radio with the provided cable. Tuning could not be simpler; one button push on the tuner and the Z-817H takes care of the rest. Switch to PKT mode, transmit a carrier, tune the tuner, then restore the radio to the previous mode! The CAT thru port on the back allows connection to the THP HL-45B for automatic band selection on the amp. The Z-817H will also function as a general purpose antenna tuner with other QRP radios or QRP radios with up to 75 watt HF amps. Powered by four AA internal Alkaline batteries (not included), so there are no additional cables required. 2000 memories cover 160 through 6 meters. Latching relays, so power consumption is Zero when not tuning. ***Suggested Price $159.99***

KT-100

LDG's first dedicated autotuner for Kenwood Amateur transceivers. Easy to use - just right for an AT-300 compatible Kenwood transceiver (except TS-480HX). The KT-100 actually allows you to use the Tune button on the radio. The LEDs on the front panel indicate tuning status, and will show a match in seconds, or even less of you've tuned on or near that frequency before. Has 2,000 memories for instant recall of the tuning parameters for your favorite bands and frequencies. If you have an AT-300 compatible Kenwood radio, you can simply plug the KT-100 into your transceiver with the provided cable; the interface powers the tuner, and the Tune button on the radio begins a tuning cycle. The supplied interface cable makes the KT-100 a dedicated tuner for most modern Kenwood transceivers.
Suggested Price $199.99

YT-847

YT-847 Autotuner is an integrated tuner for the Yaesu FT-847. An included CAT/Power cable interfaces with your FT-847. Just press the tune button on the tuner and everything else happens automatically! The mode is set to carrier and the RF power is reduced, a tune cycle runs and the radio is returned to the original settings.
Suggested Price $249.99

Your Favorite Dealer has these tuners in stock NOW!
Don't Miss Out - Call or visit them TODAY!

Visit our website for a complete dealer list www.ldgelectronics.com

LDG

Competition usually exists for a short call ign and the FCC awards call igns by lottery when more than one application is received for the same callsign on the first day of availability.

It makes no difference what time of day an application is filed. The FCC's computer "lumps" together all applications for a specific callsign received during the first 24 hours and randomly assigns the call ign to one of them.

5. Vanity fee not paid

Filing for a vanity callsign is a two-part process. The first part involves filling out the application. The second part is payment of the FCC "regulatory fee," currently $13.30 for a 10-year license term. All vanity callsigns carry a new 10-year term beginning when the callsign is issued.

Nearly all vanity callsign applications are completed on line at the FCC's ULS website with online payment using a credit card. You have 10 days to mail a check or money order if you don't have (or don't want to use) a credit card. You may, however, complete a paper document application and attach a check, money order, or credit card number.

Failure to pay the fee or payment with an invalid or declined credit card will result in the vanity callsign application being dismissed.

6. Callsign pending assignment

Once properly filed, a vanity callsign application goes into "pending status" for 18 days. This is to allow time for mailed in applications and payments to arrive. The FCC goes by the postmark date on mailed applications to determine which online applications to match them up with. This way there is no advantage to filing electronically and everyone gets a fair chance at a specific callsign.

It is very important to know that the FCC's Universal Licensing System "search licenses" link does not show callsigns that are pending assignment to someone else during this 18-day period. You need to go to a different FCC webpage to determine if someone else has already filed for the callsign you want. A callsign that became available a few days ago may already have applications pending for it, leaving you with no chance to get it.

To get a listing of pending applications, go to the "search applications" link on ULS at <http://wireless.fcc.gov/uls/>. Click on "vanity search" to see if a callsign has already been submitted on a vanity application. The link is in the middle of the page under "amateur."

7. Callsign of deceased radio amateur filed wrong

The so-called "silent key callsign harvesting" procedure has changed. The FCC adopted an Order last November to provide a 30-day "visibility" period for canceling the callsigns of amateur radio licensees who died more than two years ago. That Order became effective February 14, 2011.

Under the old rules, an applicant could submit the required death information (copy of a death certificate, an obituary, or data from the social security death index) to the FCC and simultaneously apply for the callsign of the deceased. The cancellation would take effect before the callsign was issued 18 days later, leaving the person who submitted the cancellation request as the lone applicant for the callsign.

Now the FCC cancels the callsign 30 days *after* it is notified of the death of an amateur who died more than two years ago. This gives everyone a chance to apply for a canceled callsign.

The bottom line is, wait for the FCC amateur service database to show a cancellation date before you apply for the callsign of an amateur deceased more than two years ago.

The FCC also adds an additional 30 days to callsigns that were surrendered, canceled, revoked, voided, or set aside

SUCH A HAM

Mavis thought I should get out of the shack and take up golf.

because the applicant acknowledged (or the commission determined) that he/she was not eligible for the callsign.

8. Club vanity application filed wrong

Amateur radio clubs may also apply for vanity callsigns. It is the license class of the trustee that determines the callsign "group" that may be selected. For example, a club with a General Class trustee may apply only for a group C or D vanity callsign but not one from group A or B.

Also, effective February 14, 2011, clubs may not apply for an additional vanity callsign if they already hold one. Military recreation stations are not considered clubs and are not eligible for vanity callsigns.

It is legal to temporarily change the club trustee to an Extra Class level licensee, get a group A or B vanity callsign, and then change the trustee back to a Technician or General Class trustee. The clubs' group A or B callsign will not change.

9. Obtaining former holder, family member callsigns

Former holders of a callsign and family members of a deceased radio amateur are exempt from the two-year waiting period.

A club, however, is not eligible for the previous callsign of the trustee without waiting the full two years plus one day.

Family members include a spouse, child, grandchild, stepchild, parent, grandparent, stepparent, brother, sister, stepbrother, stepsister, aunt, uncle, niece, nephew, or in-law of the person now deceased.

The FCC has defined in the Part 97 rules exactly what is included in the in-law category. They are: (1) A parent, stepparent, brother/sister, or step-brother/sister of a licensee's spouse; (2) The spouse of a licensee's brother/sister, stepbrother/sister, child, or stepchild; or (3) The spouse of a licensee's spouse's brother/sister or step-brother/sister.

The family member must, however, hold a callsign from a group equal to or lower than the deceased's callsign.

Amateurs may "will" their callsigns to a club before death providing that the now deceased radio amateur was a bona fide club member. A relative of a deceased club member may also authorize the transfer of his/her callsign to the club. This authorization must be in writing.

10. Callsigns statutorily ineligible for assignment

There are a few amateur radio callsigns that are not available under the Vanity Call Sign System. These include callsigns reserved for the military (KA2AA through KA9ZZ, KC4AAA through KC4AAF, KC4USA through KC4USZ, KG4AA through KG4ZZ, KC6AA through KC6ZZ, KL9KAA through KL9KHZ, and KX6AA through KX6ZZ). To eliminate confusion, any callsign having the letters SOS or QRA through QUZ as the suffix is also not assigned.

There are also three types of excluded 2-by-3 format callsign blocks. These include callsigns having the letter X as the first letter of the suffix. These are allocated to experimental (non-amateur) stations.

Federal Emergency Management Agency (FEMA) stations have callsigns with the prefix letters AF, KF, NF, or WF and the suffix letters EMA reserved for them for use during an emergency. None has ever been used by FEMA, however, and the application procedure for these FEMA callsigns is unclear.

Also, the so-called group "X" callsigns having the letters WC, WK, WM, WR, or WT as the prefix are not assigned.

Finally, radio amateurs who owe money to the FCC (as determined by a "red light" check) and those "off-lined" due to an enforcement problem are ineligible for a vanity callsign until the discrepancy is resolved. 73, Fred, W5YI

BY RICHARD FISHER,* KI6SN

Take it to the Field Special

EmComm to the Field: In NZ 'Quake Wake, Christchurch Hams Blanket the Countryside

By Richard Smart, ZL4FZ / ZK9EA

The highly-skilled radio operators in New Zealand who took action in disaster's aftermath show us why field readiness is such an integral part of emergency communications.

Richard Smart, ZL4FZ / ZK9EA, had his hands full—s you might imagine any Amateur Radio Emergency Communications (AREC) Section Leader would—after a 6.3-magnitude earthquake rocked his world. Smart's firsthand account from the disaster zone is a primer on the value of field operation and how it filled a critical need.—ed.

First, the shaking, and after this shallow, devastating earthquake struck Christchurch on February 22 at 12:51 PM. I did what anyone would *and should* do in this situation: Check on my family's welfare. Fortunately, everyone was OK, and so was the house.

There was no time to dawdle, though. Geoff Chapman, ZL3PX, Assistant National Director of Amateur Radio Emergency Communications New Zealand (AREC) telephoned with the suggestion that we should try to retrieve the two AREC vehicles from the Branch 05 clubrooms located in Avonside, one of the areas more seriously affected. *This 'quake was a big one.*

Given the damage across the region, the only way to get around was by bicycle. Therefore, with a borrowed bike for Geoff and one of my own, we made our way from the Marshlands Road area to the Br05 clubrooms. With knee-deep water from recent rain and truck-size silt holes in the road, this was a difficult trip.

When we reached the clubrooms, we were able to get into the garage and get both vehicles. I proceeded to Dallington to check on the welfare of some elderly relatives, while Geoff started to return to his home.

He made it across the bridge over the Avon River. However, by the time I had verified that my relatives were well, the way had been closed. There was too much damage. We now had vehicles on each side of the river.

While waiting with relatives, Don MacDonald, ZL3DMC, arrived. It turned out that he couldn't cross the Avon either, wanting to return home to Kaiapoi.

We remained in contact with Geoff while he made contact with officials at Civil Defence (CD), where Wayne Rissman was requesting communications for a temporary welfare center that had been established at Hagley Park.

At Hagley, a tent city had been put up for the Ellerslie Flower Show. It was soon turned into an emergency welfare center to cope with the large number of people displaced from the Central Business District (CBD) of Christchurch.

As people began to make their way to Hagley, the weather changed for the worse and it began to rain steadily. Eventually more than 600 people ended up there for the two days it was open.

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Following the earthquake, Christchurch, New Zealand's Amateur Radio Emergency Communications Daihatsu van provided a vital link to the region from a makeshift tent city in Hagley, previously the site of the Ellerslie Flower Show. (Photographs courtesy of Christchurch AREC)

During this time, Steve Davis, ZL2UCX, was called to respond with Red Cross teams undertaking urban search and rescue in the CBD.

After Don and I arrived at Hagley, we found that CD had no communications from the site. *None.* It was, indeed, an unplanned venue.

We deployed the Daihatsu communications van on VHF (Emergency Service Band 41) and 2 meters (the 705 repeater) and manned the site from around 1800 to 0100 hours. EmComm traffic was carried on 705, ESB41, 5.320 MHz, and 3.900 MHz.

As the Daihatsu was set up, a problem was found getting the generator to run for more than three minutes at a time. Ken Duffy, ZL4KD, found the problem, low oil. After fixing it, he stayed on to assist for the evening.

At 1230 hours, relief operators Rob Thirkettle, ZL3RX, and Mark Carshalton, ZL3BA, took over and oper-

Bright-orange cases filled with emergency-communications radios were readied for use by AREC/LandSAR teams deployed to Halswell in what would become Operation West.

EmComm operators take their positions during operations from Halswell Domain.

ated through the night. They were relieved at approximately 0900 hours the next morning by Don, Ken, and me.

February 23: Tough Going in the Field

Operations continued at Hagley for the rest of the day. Most activity was centered on welfare requests between the Emergency Operations Center (EOC) in the Art Gallery and the various welfare centers in the suburbs. Some communications problems were noted at Burnside High School, and we twice dispatched Ken to fix them.

Steve continued his involvement with Red Cross throughout the day.

During the afternoon, Steve contacted us with a request for communications with a LandSAR (Land Search and Rescue) team that was working in the Sumner Redcliffs area. ZL3PX and ZL4KD attempted to get the AREC civilian bus to the area, but because of closed bridges, gridlocked traffic, and road damage, they arrived just as the SAR operation was closed off for the night. A trip that would normally have taken about 20 minutes took more than 2 1/2 hours.

As we were planning our next night shift rotation we learned that Hagley was to close. By 1830 the last of the people had been transferred to other centers.

February 24: Portable Repeater Called to Duty

New tasking! AREC was directed to provide communications for New Zealand LandSAR teams that would be conducting welfare checks in some of the more northern suburbs. Don and I took the Daihatsu communications van and assembled with the LandSAR teams in Cramner Square. We subsequently were sent to Brooklands, where we discovered that the local community had already been checked by the local Volunteer Fire Service.

The EOC radioed that we were needed in Lyttelton and Governors Bay. The SAR teams assembled in a long convoy with the AREC Daihatsu's orange flashing lights leading the way.

At Lyttelton we deployed an SAR repeater on ESB-60 on a hill and set up the Daihatsu on a rugby field. Once the teams were tasked and sent on their way and our set p was completed, the repeater coverage was checked using coverage prediction software. This gave a measure of confidence that the site would continue to be useful as the teams moved from Lyttelton through to

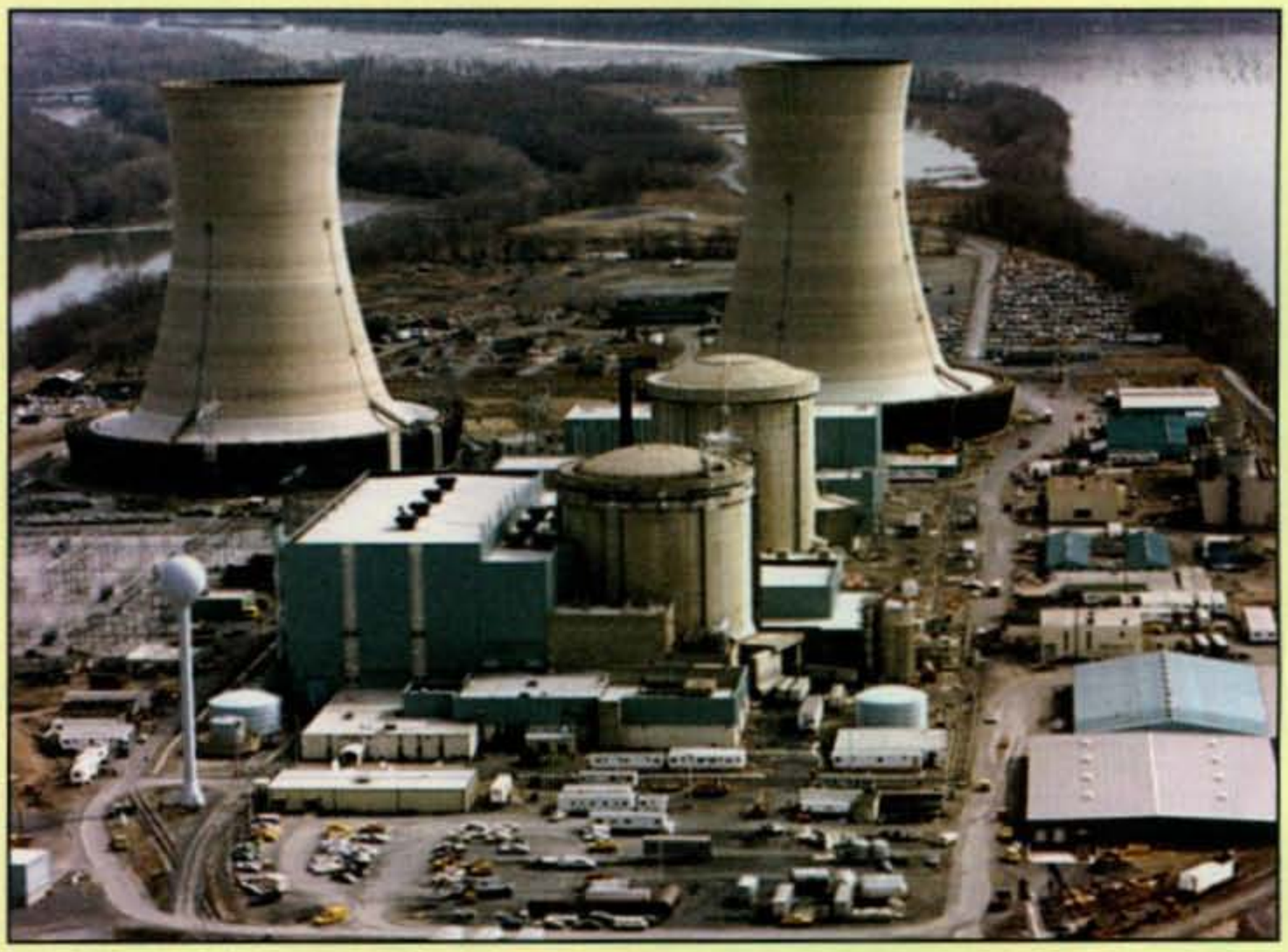
EmComm to the Field: More on the Web

In addition to Christchurch AREC's textbook example of how to provide disaster communications under field conditions, this month we bring you via the internet three other *EmComm to the Field*-related features all at *CQ Public Service On the Web:* <http://cqpublicservice.blogspot.com/>.

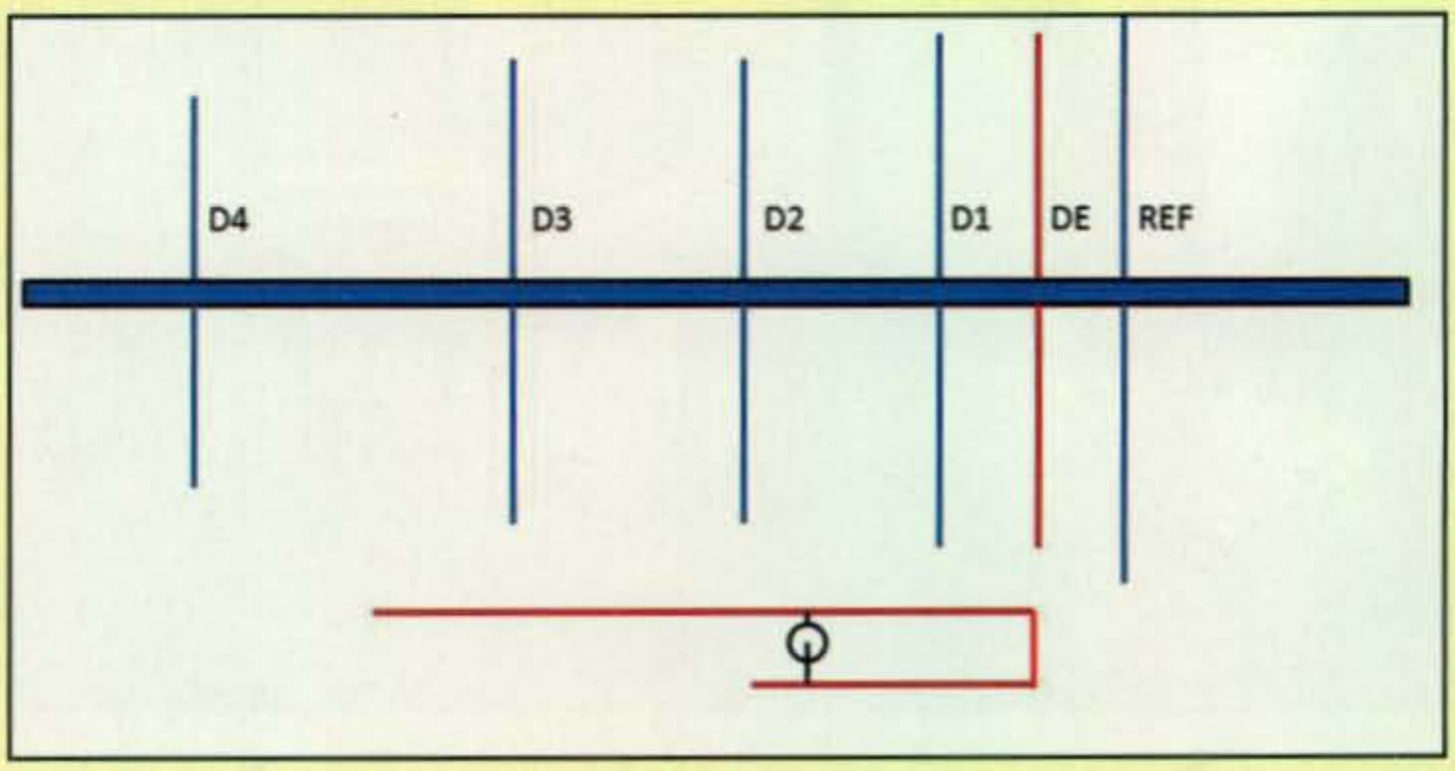
Staring Down Disaster: As we go to press, officials in Japan are still trying to re-establish control over a damaged nuclear power plant in Fukushima. Looking back 32 years, former *CQ Amateur Radio* "Public Service" columnist Bob Josuweit, WA3PZO, recalls the harrowing time he spent as ARRL Eastern Pennsylvania Emergency Coordinator when a little-known nuclear power station called Three Mile Island flirted with meltdown in 1979 and radio amateurs were ready to assist at evacuation centers far and wide.

Weak Signal, No More: A six-element, portable, 2-meter beam (diagram below) may be just what you need next time you're called to EmComm duty in the field. With coat hangers and PVC, Richard Fisher, KI6SN, shows how to make this simple and effective trail-friendly antenna.

Lost and Found: Disoriented and alone, a lost Arizona hiker was found with the help of a well-equipped and manned mobile communications unit, experienced search-and-rescue personnel, and highly-skilled radio direction finders—all radio amateurs who feel at home in the field. Get a nugget of the *CQ VHF* magazine story and details about how you can read the full narrative.



Radio amateurs were on-the-ready when a partial meltdown at Three Mile Island created local panic and nationwide concern in 1979. (Courtesy of U.S. Department of Energy)



Governors Bay. This coverage prediction software was successfully used many times throughout our deployment for the planning and checking of repeater sites.

At the end of the day a large number of houses had been checked and the more serious welfare needs sent through to the EOC. Our tasking was increased to include the remainder of the bays around the peninsula.

We did a lot of planning to get ready for the coming days, including some initial thoughts to solve the very serious radio coverage issues we would face. The SAR teams and AREC then arranged to meet at Teddington the next morning, ready to work through the remainder of Banks Peninsula and in particular the many small bays.

The officer in charge (OIC) from the Council for CD went back to the EOC to explain what had been achieved and to confirm the expansion of our responsibilities for the next day.

February 25: SAR Repeater Deployed, Redeployed

New rules! After the OIC had returned to the EOC the previous evening, a decision had been reached to redeploy the LandSAR teams to Halswell Domain in what would later become Operation West. All teams and AREC members arrived early and the first groups were sent into Halswell and surrounding areas. An ESB-60 SAR repeater initially was installed above Halswell Quarry to provide coverage for the immediate area.

At the end of the day the intelligence gathered was processed and summarized and then sent to EOC with the OIC from CD who went back to explain in detail what had been achieved.

A very large number of houses were covered in this first venture into the suburbs. There was a lot of valuable information gathered about the conditions residents were facing.

A number of people with serious medical or other needs were located. Where these were life threatening, a 111 (*New Zealand's equivalent of 911—ed.*) call was placed for immediate assistance. Otherwise an intelligence summary was compiled and sent through to the EOC for analysis that evening.

On the basis of the detailed reports gained from the SAR teams based at Halswell, CD expanded the brief to include all of the western suburbs, and later included Banks Peninsula.

The SAR team numbers were increased and the Christchurch Management Support Unit (MSU) was called in to establish a computer network to manage the large amounts of data being received.

The ESB-60 repeater was relocated to Westmoreland and subsequently to Marley's Hill (with 705 amateur repeater) where it could be powered by electrical mains.

There was extensive use of VHF simplex on ESX07 for SAR teams members to chat among themselves. Operation West, a subsidiary of Operation Suburb, ran until the following Thursday evening, March 3.

By the Numbers

- At its height, more than 350 LandSAR and 22 AREC personnel were deployed.
- To finally cover the peninsula and the city suburbs, four SAR repeaters were deployed on ESB-58 (Lyttelton and Akaroa), ESB-59 (Westmoreland fill-in), and ESB-60 at Marley's Hill.
- HF was used as a backup over Banks Peninsula for the four-wheel-drive teams, although the vertical incidence maximum usable frequency (MUF) was later determined to be less than 5 MHz. We were able to *borrow* the DOC repeater on ES-157 at Mt. Herbert.
- AREC staff from Dunedin, Timaru, Christchurch, Blenheim, Wellington, and Auckland all played a part—some being originally deployed as LandSAR members, and some directly as AREC members.
- At final count, there were more than 800 man-hours used (AREC).
- Some 50 handheld radios were deployed to sector leaders along with the SAR teams' own radios for individual team members.
- Fourteen Sector Leaders, each having up to eight four-man teams, were responsible for searching designated sectors and reporting back to SAR base.
- Total handhelds in the field was about 150. We have never had so many handheld radios together, showing the magnitude of this operation.

Best-Laid Plan: Interoperable Communication

Where did all the handhelds come from? How did you get consistency of frequencies?

Answer: During the last five years, Civil Defence and LandSAR have undergone a transformation of standardization of HF and VHF communications with the establishment of a section of VHF spectrum in the 139- to 143.999-MHz range

About 350 search-and-rescue team members gather for a briefing at Operation West *in communications support following the Christchurch earthquake.*

to be designated as the *Emergency Services Band* of frequencies.

Frequencies were then allocated to Emergency Services throughout New Zealand: its Police Digital Network, St. Johns Ambulance Service, Department of Conservation (DOC), and New Zealand Land Search and Rescue.

The VHF-FM handhelds are equipped with two memory banks of 10 memories each. Bank 1 is standardized throughout New Zealand. Bank 2 can have channels that are suited to a local area's operational needs.

Each pack of six radios consists of a high-impact carrying case fitted with individual cradles for charging the NiMh batteries. This makes for a very convenient and efficient method of bulk-handling of radios and safe transportation.

Throughout New Zealand there are pools of these handheld radios ready to be sent wherever required, along with portable SAR repeaters and linking repeaters.

Lessons Learned

There are many, many lessons we took away from this experience, and while many things went well, we have an ongoing effort to make improvements.

Some things did not happen as expected and from these we hope to be able to distill some reasons why and come up with ideas on how to avoid the mistakes.

Issues related to manning, national response, staff rotation, planning, and many others presented particular chal-

A dish provides satellite communication as part of EmComm operations at Halswell, near Chistchurch, New Zealand.

lenges. Solutions will take some time to be sorted out and developed.

Words of Appreciation

I wish to make my thanks known to many people for their assistance, guidance, support, and direction throughout this event.

To the members of Branch 05 for their efforts over years to obtain and fit out the communications vehicles. Without these the response from AREC would have been severely limited.

To the AREC members involved from all the Christchurch and Canterbury branches, whether they operated this time or not. The choice of operators for any emergency of this nature will always be affected by who is available after helping immediate family, who is in the right location, and many other pertinent factors.

To those who were not called upon or were not able to respond, it does not matter. Your previous support in other events and in training and preparing the team all count. Without that we could not have responded at all.

To those AREC members from other branches, whether responding as part of LandSAR or directly as part of AREC, *thank you*. Your observations and provision of expertise and equipment are valued and needed. I hope that in turn, Christchurch will be able to support you in like manner if ever required.

We also owe thanks to the police and DOC for getting radios delivered from around New Zealand and making access available to repeaters.

And a special thanks to National Director of AREC-New Zealand, Jeff Sayer, ZK6EA.

From KI6SN . . .

Our thanks to Richard Smart, ZL4FZ/ZK9EA, for this detailed summary of amateur radio's response to the devastating earthquake in New Zealand in February. It is interesting to note the extent to which amateur radio is integrated into the emergency response system in New Zealand, and that the hams essentially coordinate communications beyond the amateur bands as well, having access to equipment and frequencies in the public-service bands. This allows them to use their communications expertise to set up repeaters and other portable infrastructure for search-and-rescue teams on their own assigned frequencies, while leaving amateur repeaters free for more traditional communications among shelters and emergency coordinators. 73, Richard, KI6SN

kit-building

BY JOE EISENBERG,* KØNEB

Take it to the Field Special

Going Retro and Going Portable

This month we will give an update on a kit we built previously and take a look at a simple tube-type transmitter kit.

Small Wonder Labs Retro-Helper

A few months ago, I wrote about the Small Wonder Labs Retro-75 75M AM transceiver kit. There is now a small additional module available for this kit that enables the VFO to control the transmit frequency as well. In its current configuration, this kit has a VFO with about a 50-kHz range for receive and two crystals for transmit, confining its transmitter to 3.880 and 3.885 MHz, the two most common 75-meter AM frequencies. However, due to QRM, from time to time these operations can be a few kHz either side of these frequencies.

To address this problem, Small Wonder Labs has introduced the Retro-Helper kit (photo A). This additional kit is designed to be mounted in the custom case that is made for the Retro-75. Like the Retro-75, this kit aligns with only a digital voltmeter needed, so alignment is a snap. Two voltage test points are provided on the board to perform the adjustments. The Retro-Helper board mounts using mini angle brackets attached to the back wall of the case. Leads from the Retro-Helper board are placed in two unused IC socket holes (photo B) as well as another place on the main board. With a low parts count, this kit can be built in about an hour and then easily installed in the Retro-75 case. All leads are supplied, and the only modification needed to the main board is to cut one capacitor lead at the board level and solder a wire to the now open lead. To do this, I simply heated up the connection on that side of the capacitor to lift it out completely and attach the wire.

Once installed (photo C), the transmitter and receiver will be on the same frequency, as set by the VFO. Most builders of this kit set the VFO range to be from 3.850–3.900 MHz to cover the most common area of the band favored by AM operators. An additional advantage to using the Retro-Helper is that you can now calibrate your VFO dial settings simply by using a frequency counter while transmitting a dead carrier into a dummy load. Now you no longer have to try to guess which transmit crystal to use when tuning in 75-meter activity! The Retro-75 and the Retro-Helper are both available at <http://www.smallwonderlabs.com>. Dave Benson, K1SWL, from Small Wonder Labs hints on his website that he now has more time to devote to designing kits, so watch for new things to come!

Glowbug AC-1 Junior

Nowadays when we think about building kits we don't often think of using vacuum tubes. However, some kits that use tubes are now available, and we will take a look at one of them.

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e-mail: <k0neb@cq-amateur-radio.com>

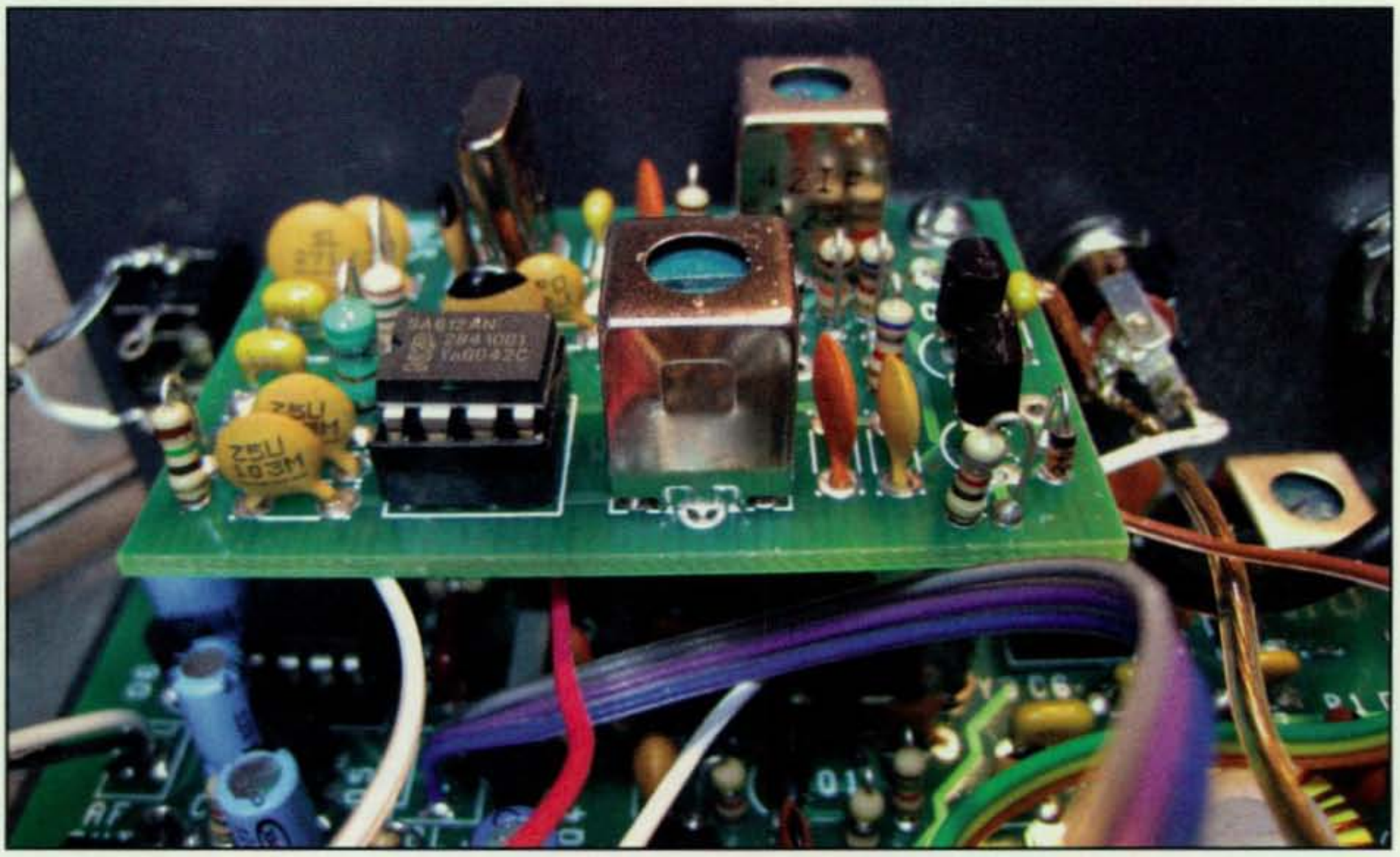

Photo A– Small Wonder Labs Retro-Helper board.

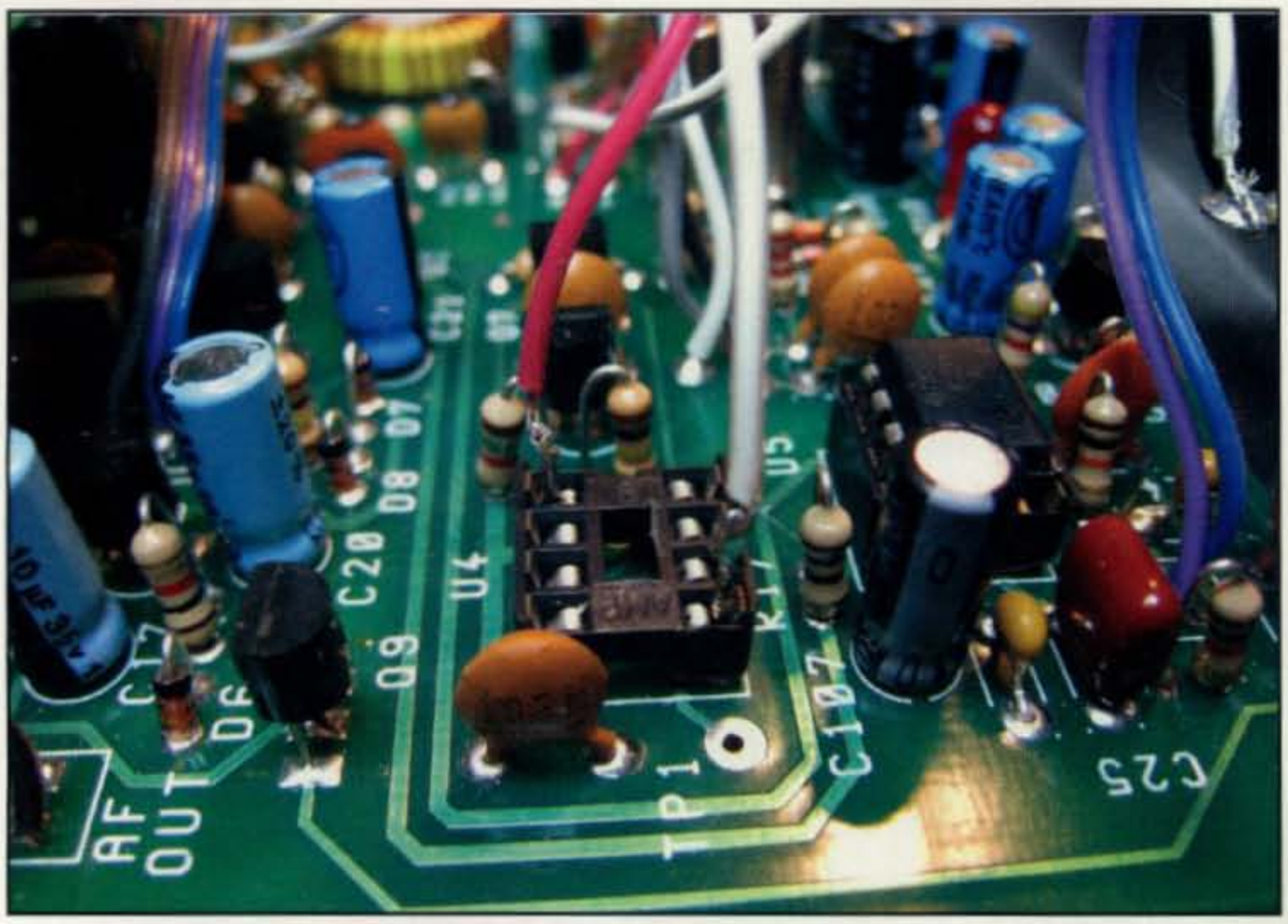

Photo B– Close-up of Retro-Helper connections to an unused IC socket.

The Glowbug AC-1 Junior is a crystal-controlled, 1-watt CW transmitter for 30 or 40 meters (photo D). The kit is based on the 6AQ5 tube and is powered by a 12-VAC wall-wart which is supplied with the kit. The transmitter is keyed using a relay to avoid the problems of having a higher voltage at the key contacts. This allows the use of any type of key or electronic keyer without the problem of getting "bit" when touching the metal part of the key or switching problems with some keyers. There is just one toroid to wind (see photo E) and it is a single winding type so it is quite easy. Don't let the toroid keep you from building this kit. It is very easy to do. The suggestion of using a small bit of hot glue on the bottom of the toroid to support it is a great idea and will keep it standing upright for stability and appearance. There are three positions on the crystal switch, allowing you to select either of the two crystals supplied

Photo C. Retro-75 with finished Retro-Helper installed and ready to go!

Photo D– Front view of Glowbug 40-meter CW transmitter. (Glowbug photos courtesy of Dwight Morrison, KG4HSY)

Photo E– Inside view of the Glowbug. Notice the single toroid near the front and the power transformer mounted sideways to fit on the board.

with the kit or another that you can add later. Crystals for 7.030 MHz and 7.040 MHz are supplied to cover the most common QRP watering holes.

The connections provided on the back (photo F) for both the antenna and receiver are RCA type connectors. Most hams use PL-259 or BNC connectors for connection to tuners and antennas, so purchasing the desired adapters is a good idea before you begin to build this kit. The T/R switching needed for the receiver is provided in this kit using relay contacts to provide isolation. Two other advantages to using a relay are that it provides full break-in keying and it bypasses the output coupling stage. This allows you to tune the receiver to any frequency or band regardless of the transmitter frequency. The key plugs into a 1/8-inch jack on the front of the case. The largest components to deal with are the tube and the transformer. The tube simply plugs into a socket that is soldered onto the board and the transformer is bolted into place on the board to produce the B+ voltage and filament voltage necessary for the tube from the 12-VAC source. As with most tube circuits, be aware that there is high voltage of around 140 VDC present in parts of this circuit. Once aligned, it is best to keep the cover on the case to prevent contact with the high voltage parts of the board.

With all components mounting to the board itself, assembling the unit into the pre-painted case is quite easy. With its relatively low parts count, I would estimate that it should not take more than two hours to assemble this kit before you are enjoying its soft red glow and mellow sound on CW!

The Glowbug AC-1 Junior is available from Glowbug Kits on the web at <http://www.glowbugkits.com> for $99.97 plus $15 for shipping in the USA.

Photo F– Rear-panel view of Glowbug 40-meter transmitter.

Going Portable

With the warm summer months being here, it is a good time to consider kits for portable operation. The Elecraft KX-1 40-20M CW transceiver is a great choice for compact and portable operation. It has options for an internal antenna tuner as well as adding 80- and 30-meter operation. The internal automatic tuner is fast and matches a wide variety of antennas. The Hendricks PFR-3 is a 40-30-20M portable CW transceiver that features a built-in manual antenna tuner for coax or balanced line. The Small Wonder Labs Rock-Mites are also quite impressive for their low cost and making contacts on a picnic table. I have used my Rock-Mite with a regulated solar panel as a power supply and have made contacts using only the power of the sun.

When taking your kit radios out into the field, be sure to tune your antenna first to be sure not to damage the output stages of the simplest kits. The kits with tuners handle this problem well, but kits such as the Rock-Mite have no VSWR protection. Bringing a small tool and parts kit along is useful, and a battery- or gas-powered soldering iron is a must. Be sure to pack adequate solder and electrical tape for repairs, and batteries to power your kit radios.

Until next time . . .

73 de Joe, KØNEB

Takin' It to the Woods

BY CAM HARTFORD,* N6GA

Whether you're off to the woods, the beach, the trail, the vacation cabin, or the campground, don't forget to pack a QRP rig! Doing a GORK, a SOTA, an AT, a Top of the World, or just taking the goats out for a hike; a QRP rig makes a great companion.

Operating in Milliwatt Field Day, QRP Afield, QRP to the Field, FYBO, BUBBA, or the Bumble Bee, these are operating events intended to take advantage of the portability and versatility of today's QRP radios.

What drives so many of us to participate in these events? It's fun, plain and simple. For some of us they offer new reasons to get outside and hike a trail. For others who get out regularly they provide a reason to build new radios. Yet for others the thrill comes from operating a radio in an environment different from the everyday one, using different equipment and antennas. Hike to operate, build to hike . . . it's a clear-cut case of the chicken versus the egg. It's easy to carry something small and lightweight, so there's a need for this kind of radio. Since there are small, lightweight competent radios available we can easily get one and take it on a hike, do Field Day with it, or take it on a vacation. No matter, though, as QRP rigs and portable operating were made for each other!

Jim and Hanz Hit the Trail

One afternoon on 20 meters CW I responded to a station calling CQ in the QRP section of the band. It was Jim Cluett, W1PID. When Jim and I completed our QSO, I was immediately called by Hanz Busch, W1JSB. I'd occasionally seen posts by Jim on QRP-L regarding their outings together but hadn't paid close attention. This time I dialed up Jim's webpage: <http://www.mv.com/ipusers/w1pid/>. Jim and Hanz make regular treks in the outdoors and do an excellent job of documenting them. On the webpage I counted more than 50 hikes, bike trips, ski trips, and boat outings. The photographs they take along the way make a person understand why they get out as often as they do, such as shown in photo A. Jim documents each trip with details about the location, weather, what antennas and gear they used, and what contacts were made.

Curious about the gear they have been using, I scanned a few of the articles Jim has posted and came up with the following:

Rigs—ATS-2, ATS-3, MFJ Cub, HB-1A, FT-817
Tuners—ZM-2, BLT, T1
Antennas—44-foot dipole, 33-foot wire, 50-foot wire, Par End-Fedz halfwave. Hanz is also using a tricked-out SWL SW-20, but more on that later.

The above list of gear covers some interesting ground, including a couple of tiny surface-mount kits, a popular kit from a well-known manufacturer, a new TFR (trail-friendly radio) from China, and a commercial all-mode, all-band portable radio. In addition, it includes a variety of small tuners and easily-erected antennas. That's just the kind of stuff a person would need to carry for a day hike.

In reading the descriptions of these outings, one gets the impression that Jim and Hanz have specialized in the items that allow them to get on the air quickly with little fuss. Judging from the list of contacts they've been able to make, the gear does its job quite well.

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Photo A– Jim Cluett, W1PID, operating kayak mobile on Hermit Lake, New Hampshire.

Their outings mesh quite well with my idea of an excellent radio day—great place to hike to and good Qs when I get there!

W1JSB's SW-"XX" Based Rigs

In a couple of the pictures on W1PID's website you can see Hanz, W1JSB, seated next to what looks like a small waterproof box with a hinged lid, the kind of box a portable QRP rig might live in (photo B). I asked Hanz if he would share with us what the contents of the box are. Here, in part, is what he said:

I wanted to build a QRP radio, but since there are many available kits to choose from, I had to weigh the advantages and disadvantages of each and decide which one was best for my intentions. After doing some research online and talking with my good friend, Jim, W1PID, an avid QRP operator, I decided to go with the SW-80 by Small Wonder Labs (www.smallwonderlabs.com).

My idea was to build a radio that would be good for local HF communications, as it might be a tool for emergency situations,so this is why I first bought the 80-meter version. The SW-80 has many attractive features, including clean stable keying, very low current consumption, up to 3 watts output, and a price tag of $55.

Hanz then came across a likely candidate for an enclosure while browsing the camping section of a local department store. For me, this is the fun part—looking for the pieces and parts for a new radio project and unexpectedly stumbling onto something good. The box is an attractive clear-plastic design with a water-tight lid made by Outdoor Products. Go to <www.outdoorproducts.com>, Family Camping, Dry Storage.

What the box now contains is a veritable sandwich of tasty QRP radio modules, to wit, the SW-80 transceiver board, a lithium-ion battery, an LED voltage readout module, a KD1JV Digital Dial, and a P-4 touch keyer.

The battery is a 6500-mAh, 12-volt, lithium-ion rechargeable unit found through a search on eBay. This battery is flat and fits perfectly in the bottom of the case, held in place by an industrial-strength hook-and-loop fastener.

Next came a simple LED voltage indicator for monitoring the battery voltage. Due to the low power consumption of the SW-80 board, this battery should provide at least a week of casual operating.

Hanz continued: "In order to hold everything together nicely, I had to drill four holes in the bottom of the enclosure so that 3-inch machine screws could be inserted, securing the SW circuit board on top of the battery and the Plexiglas® panel above that, sandwich style. Rubber washers were used as gaskets and rubber feet were adhered to the underside of the case."

The Plexiglas® panel provides a mounting plane for the controls. A KD1JV Digital Dial (www.qrpkits.com) is mounted on the underside of the panel. The last piece of the puzzle is a model P-4 touch keyer from CW Touch Keyer (www.cwtouchkeyer.com). Looking at photo C, you can see what I consider one of the more clever aspects of this design—a couple of cap nuts mounted on the front right corner of the box. These are the contacts for the touch keyer. They are simple, rugged, and have nothing mechanical to break or fall out of adjustment.

The success of this rig encouraged Hanz to make another one for 20 meters. This is the rig he uses when out hiking and with which he has logged many DX and stateside QSOs.

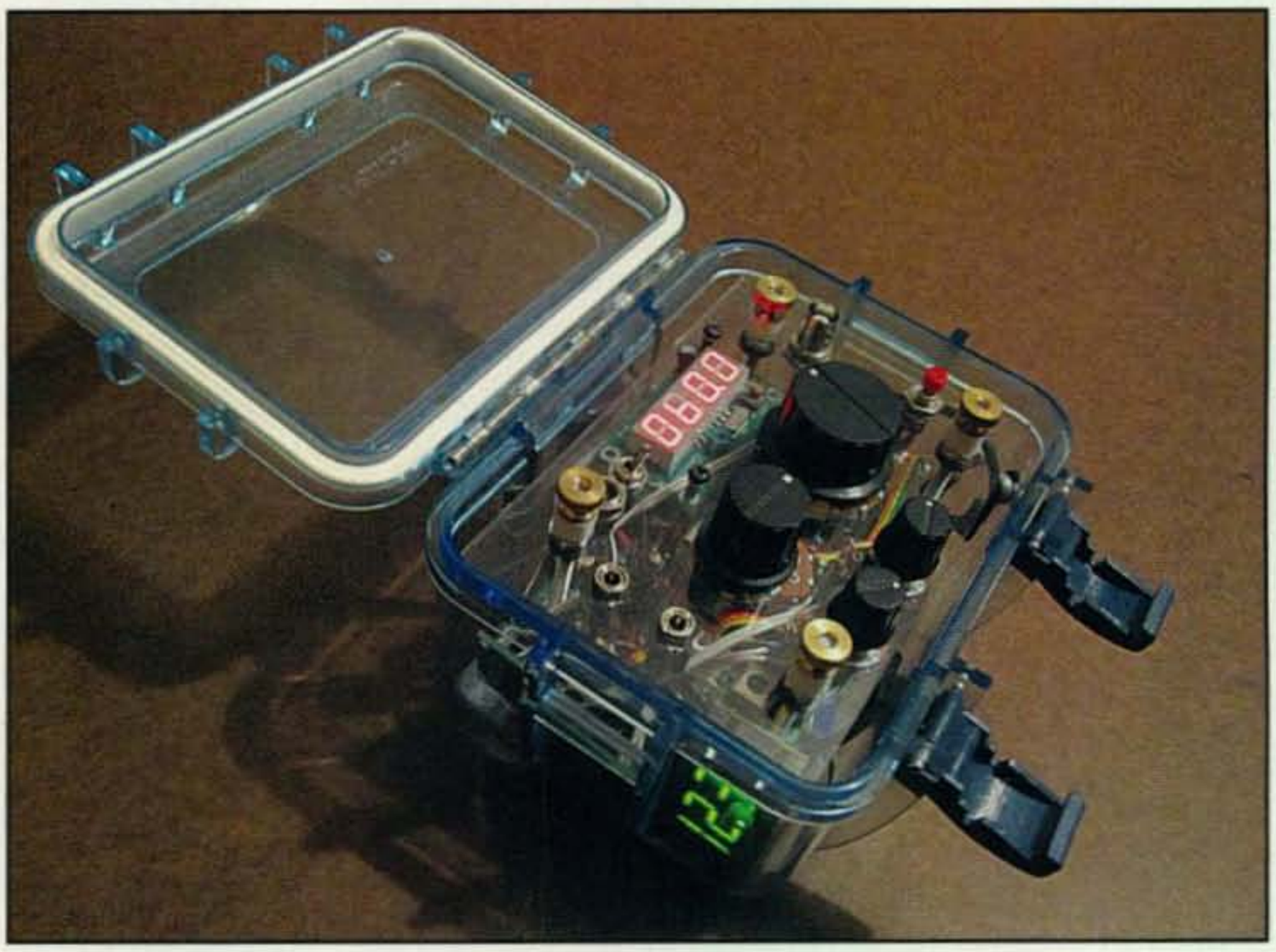

Photo B– Hanz's portable rig-in-a-box, the SW-20 by Small Wonder Labs.

Photo C– The two cap nuts on the SW-20 are the contacts for the keyer-touch paddle.

Congrats, Hanz! A true work of QRP art! More detailed pictures and descriptions of Hanz' rigs are available on his website, <w1jsb.com>.

Trail-Friendly Radios

The concept of the trail-friendly radio grew out of the need for a small portable radio that could easily be transported to and operated from a place of few creature comforts. By this we mean seated on a log, a rock, or the ground. No table, no chair, no operating position with transceiver, computer, uninterruptible power supply, liquid refreshments, and climate control. Just the great outdoors with its less-than-comfortable seating arrangements. The idea pertains to both the physical layout of the radio, its controls and connectors and readouts, if any, and the parts of the radio.

A standard box-shaped radio with the controls on the front and connectors on the back is not very convenient to operate from such a location. Say you've hauled your favorite K2 up to the mountaintop and found a shady tree trunk to lean against. With the radio sitting on the ground next to you, it's hard to see the controls or the frequency display. You could prop up the radio against something, but then it would be sitting on the cables with connectors coming out the back. Not good for the radio. Hence the idea for the trail-friendly radio.

As TFRs evolved, the controls and readouts migrated, flounder-like, to the top of the box where they were more easily seen and accessed. This allowed the box to become flatter, a subtle change which lent some stability for operating on uneven surfaces.

Photo D shows an early homebrew rendition of the concept, clunky as it might be. This one was built around an NE-4040 transceiver board from Small Wonder Labs and a swap-meet box. Also contained in the box were a Z-match antenna tuner, a KC-1 keyer/counter from Wilderness Radio (www.fix.net/~jparker/wild.html), and a battery pack. The shape allowed it to sit on the ground or on one's lap, and it contained all the ingredients to make it a fully self-contained station. Just add antenna and operator. Missing from this rendition was a key ingredient, lightness. It weighed in at a couple pounds, making it less than ideal to be carried in a backpack.

Sharing the photo with the HB TFR is an Elecraft K1 mounted on its wide-range tilt stand. This device allows you to tilt the radio in a more-or-less upward

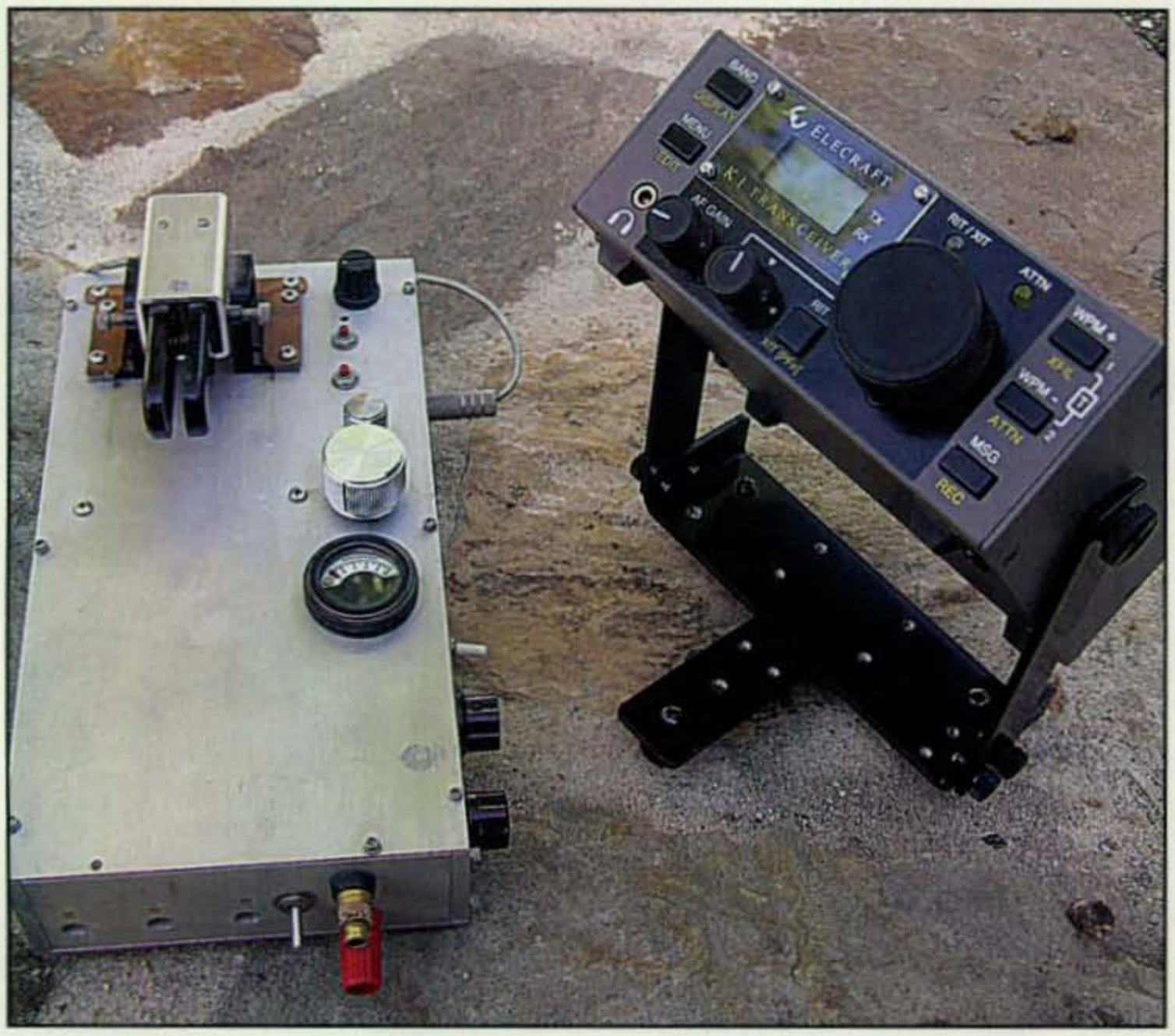

Photo D– An early, clunky, homebrew trail-friendly radio on the left. The Elecraft K1 mounted on its tilt stand is on the right.

facing direction so it can easily be addressed from a sitting-on-the-ground position. The K1 is a good candidate for trail operation because it can be configured as a four-band radio with internal automatic antenna tuner, keyer, and battery. The only drawback is its limited stability when sitting on an uneven surface.

Photo E brings us to the current crop of trail-friendlies. Clockwise from the upper left corner are the Elecraft KX-1; Hendricks QRPKits PFR-1; ATS-4 by Steve Weber, KD1JV; and Ten-Tec R-2040. Shared features include a flat, stable format, and controls and readouts located on the top surface for easy accessibility. In no specific order, here are the particulars of each rig:

Elecraft KX1: This would be the granddaddy of the group if time were measured in radio-years. Introduced by Elecraft about eight years ago, it still holds up well against the competition. It has a DDS VFO, digital frequency readout, built-in keyer, and internal battery pack. The base rig covers 40 and 20 meters and either 30 meters, or a 30/80-meter combination board may be added optionally. Other options include an

Photo E– Clockwise from the upper left corner: the Elecraft KX-1; Hendricks QRPKits PFR-1; the ATS-4 by Steve Weber, KD1JV; and the Ten-Tec R 2040.

automatic antenna tuner and a keyer paddle that attaches to the case.

Hendricks PFR-3: The Yellow Radio from Doug Hendricks' QRP Kits has a full load of tricks up its sleeve—a DDS VFO, digital frequency readout, up-down pushbutton tuning, built-in keyer, and antenna tuner. It covers 40, 30, and 20 meters. There's a built-in battery holder so you can run it on either internal or external power. An optional keyer paddle, attachable to the box, is available. Like the KX-1, it's a fully loaded radio station in a small box.

ATS-4 by KD1JV: The smallest of this group, the ATS-4 is the latest iteration in Steve Weber's line of Appalachian Trail Sprint radios. Place this radio next to the Hendricks PFR-3 and the family resemblance will be obvious; both were designed by Weber and under the skin they are soul mates. It's a case of a design being stretched in slightly different directions for different purposes. The ATS-4 covers five bands, including 80, 40, 30, 20, and 15 meters (or 17 meters, your choice). It has the same DDS VFO and microprocessor control as the PFR-3 but trades the battery pack and ATU for a much smaller footprint.

Ten-Tec R4020: This radio first showed up on our shores as the HB-1A, designed and built in China. Ten-Tec has taken over distribution of it and I'm thinking that with the Ten-Tec name backing the product, it should do very well. Like the others in this group, it's a DDS and microprocessor-controlled radio, and has a built-in keyer, digital readout, and battery pack. Ten-Tec sells two models of this radio, the R4020 and the R4030. The former covers the 40- and 20-meter bands, and the latter covers 40 and 30 meters.

This radio is a new arrival at the N6GA lab, so my impressions are based on a very short acquaintance. However, right out of the box I can say that it has an impressive list of features, most interesting being the backlit LCD readout which provides the display of frequency, mode, IF bandwidth, signal strength, power out, battery voltage, and CW keyer speed. Look for a more in-depth review of this rig in my next column.

Moving Down the Trail

It's now time to stop writing and start hiking. The sun is shining, so I feel a strong pull to grab a rig and head out. There's a local lump named Potato Mountain that needs to be hiked and activated!

72/73, Cam, N6GA

ON THE WEB!

A Power Supply for April's Two-Tube Transmitter. See page 86 for details.

learning curve

BY RICH ARLAND,* K7SZ

Take it to the Field Special

Extreme Radio, or There and Back Again

(with apologies to Bilbo Baggins)

I have debated about writing this particular column, not really knowing what to title it. "Survival Radio" seems a bit ominous, so let's call this column "Extreme Radio," which it definitely is.

During the upcoming months, tens of thousands of people will leave the comfort of their cozy little suburban homes and journey to the great outdoors, camping, hiking, canoeing, tromping around in the woods, and otherwise enjoying nature. With this mass exodus of soft-bodied urbanites "hitting the bush," as it were, there are bound to be accidents. There are times when someone does something stupid, or puts him/herself or family members in a precarious position. Probably the most common backwoods emergency is getting lost or separated from your camping/hiking partners. It can and does happen with great regularity. Next on the list of backwoods blunders is physically injuring yourself or one of your companions, followed closely by confrontations with wildlife; they call it "wild"life for a reason. Nothing gets the heart rate up over 240 like being chased by a sow grizzly bear who seconds before was guarding her cute little cubs! Yes, life can be strenuous at times when you are in the bush.

Many of us ham radio types love to couple our enjoyment of the outdoors with our radio hobby, dragging along all sorts of equipment to fill the hours of boredom between rattlesnake bites and being terrorized by a bull bison! With that in mind, here are a few things you might want to take along, just to make life interesting and possibly secure your safe return to civilization.

Extreme Radio Gear

With the prolific availability of the UHF GMRS/FRS handie-talkies that advertise up to 20-mile range, it is unimaginable that today's modern backwoodsman/woman would leave home without at least one pair of these little jewels. In all reality these things are overpriced, oversold, and overstated in their ability to offer reliable, good-quality communications over more than a few hundred feet. No, really . . . they are not all that satisfactory for backwoods use. They are, however, great little gadgets to keep the kids busy and out of mommy's and daddy's hair. Unfortunately, unless you are going on your nature sojourn with a group of hams, you probably would be well advised to drag along at least one pair of these HTs just so you can communicate(?) with the majority of your party.

There are several high-end models (read that "expensive") that offer GPS receivers included with the HT package. These units might be worth their price, considering the GPS portion will work a lot better than the radio portion of the package. Having GPS integrated into the GMRS/FRS HT has one serious drawback, that being a false sense of security thinking that you can utilize the GPS receiver to find your way in the wild.

Looks like your standard Stanley mobile workshop/took kit, right? Well, I have added a "few things." This mobile toolbox offers portability and protection for the comm gear. The radio gear is housed in the compartment above the batteries. Antennas consist of a Diamond dual-band vertical, a VHF/UHF Yagi by Arrow Antennas, and a copy of the ELK log periodic array (LPA). Coax and a portable mast system (not shown) round out the station.

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A close-up of the radio compartment. On the extreme left is the IC-2027 VHF/UHF FM dual-band high-powered transceiver. The control head for this radio is attached to the inside of the front lip of the compartment. There are two MFJ Cleartone speakers included with this kit. The older Kenwood TS-7730 2-meter FM transceiver is located on the extreme right-hand side of the radio compartment. This is a digital radio that connects to the MFJ TNC-X (center of the lid) to provide packet capability. A five-port RigRunner power distribution panel from West Mountain Radio is included for DC power management. A SignalLink interface is also included, which allows other digital modes such as WinLink, APRS, etc., to be used. A dual-band VHF/UHF SWR/power meter is attached to the bottom of the TNC. All the interconnecting cords and power cables are housed below the radio compartment on top of the batteries when not in use.

Hold on there Ricky Ranger, not so fast. Unless you have a lot of experience using a GPS receiver to actually plot a course, include waypoints, and for orienteering, you might be better off with a good-quality compass and a topo map of your area. Seriously, GPS in the bush can be unreliable, mainly due to the trees and other vegetation that will do a great job of blocking the satellite's microwave signals to the receiver. It's better to spend some time getting comfortable with a compass and a map, learning how to read and recognize what you see on the map with what you visually see in the woods. This is called *orienteering,* and there are clubs all over the world that offer classes on how to do it correctly. Believe me, it's time and energy well spent if you plan to spend much time in the woods.

OK, enough with the toy radios. We're hams. We have neat stuff to play with in the outback, stuff that really works! Enter the *Trail Friendly Radio,* or TFR. For several years the Adventure Radio Society has sponsored something it calls the "Spartan Sprint," which relies on the "MacGyver Factor" that we all possess to design, build, or adapt radio gear to a trail setting. These two-hour sprints are held the first Monday of each month. The unique thing about this event is the ingenuity of the individuals to make do with extremely low power (QRP) radio equipment that weighs almost nothing! Emphasis is placed on small radios, wire antennas and lots of fun in the out doors.

The Adventure Radio Society coined the phrase "Trail Friendly Radio" and it seemed to stick. The idea is to design and build, modify, or otherwise adapt your QRP radio gear to easy operation from a non-traditional sitting-at-the-radio-in-the-shack type scenario. A number of very clever people have fabricated some really cool and innovative portable HF stations that are not only easy but fun to operate campside or inside the tent in your sleeping bag (sure beats the days of reading "Captain Marvel" comics under the blankets with a flashlight, huh?).

The Hendricks QRP Kits PFR3 transceiver along with the Small Wonder Labs RockMite and the Wilderness Radio SST all are examples of small, well-designed, simple-to-operate HF rigs that can provide hours of fun while camping/hiking, or living in the bush. The underlying theme here is small, HF and CW only. That's right, good old Morse code. Don't leave home without it!

I am sure that there are folks out there who wonder why there is all this emphasis on CW when playing HF radio in the wilds. Simple: CW is a great mode for getting the message through. It does not take a computer or add-on box such as PSK31 or RTTY, and is many more times efficient in terms of spectrum utilization and readability than SSB or FM modes. Interestingly, since the FCC has dropped the CW requirement for ham radio licensing, there has been an unprecedented upturn in individuals wanting to learn CW! Go figure!

HF can, with proper antenna placement and propagation, enable long-distance communications that cannot be accomplished with VHF/UHF radios. Herb, a good friend of mine and an Alaskan bush pilot, carries a pair of RockMites, one on 40 meters and another one on 80 meters, as his personal survival radio gear. Should he become stranded, God forbid, he has a way of contacting someone several hundred miles away who can alert the proper folks that there is a bush pilot in trouble and start a search-and-rescue (SAR) operation. And you think this ham radio stuff is just for fun!

We have focused on HF rigs briefly, but there is a place for a VHF/UHF handie-talkie (HT) in our wilderness radio package. There are a number of hams who regularly keep a radio watch on 146.52 simplex, the national 2-meter calling frequency, to provide help to stranded hikers/campers and outdoorsmen. Therefore, it is an extremely good idea to include a small HT in your kit, along with an efficient external antenna, so you can extend the range of your rig while in the bush. This antenna can be nothing more than a coaxial dipole made from RG-174 miniature coaxial cable and the necessary coax fittings to hook it to your HT. Suspend this antenna vertically from a tree branch using a length of 550 para-cord and you are on the air! This expedient antenna rolls up and stows in an extremely small footprint and weighs almost nothing!

Now that we have broached the subject of HTs as part of your backpack gear, let's examine this idea a bit more in detail. Anyone who has done any backpacking knows that weight is the biggest single enemy of the backpacker. Lighter is better. Smaller is better. Everything the backpacker/hiker/ camper puts in

his/her pack has to be carefully selected to fill multiple roles as well as for compactness, with a critical eye toward weight. That is why I highly recommend the smallest VHF/UHF HT you can purchase.

For me, the Yaesu VX-3R dual-band HT is the ultimate backpacking rig. It is extremely small, very lightweight, and puts out 1.5 watts with the lithium-ion battery pack (3 watts if you use a 6-volt add-on pack), all of which equates to an ideal take-along VHF/UHF rig. With the VX-3R you have instant access to 2 meters and 70 centimeters, plus receive-only on the civilian VHF aircraft band, the military UHF aircraft band, AM and FM broadcast channels, weather channels, FRS/GMRS frequencies, and about anything else you can think of. This tiny HT can also act as a scanner, covering VHF/UHF police, fire, and EMS frequencies. The frequency agility of this little HT is nothing short of phenomenal.

Yes, it is an itty-bitty radio with limited power output but by using an external gain antenna you have a great emergency radio set in the palm of your hand. In addition to the standard dual-band stock antenna, I have procured a stubbie-duckie for those times when concealment is needed, and a dual-band whip that greatly extends the range.

My VX-3R gets carried everywhere. I am never without it. Ditto for my wife, Patricia, KB3MCT. We have both experienced the rapid disintegration of the cellular-phone networks when they have become overloaded during emergencies. With our VX-3Rs, we have reliable communication that is not nearly as fragile as the cell-phone system. It can be argued that 1.5 watts is hardly enough power for a real survival/emergency radio. However, compared to the standard 5W HT, the 1.5W signal is less than one S-unit below its higher-powered brother. Again, using a gain antenna is the key.

Two of these 20-amp/hour gelled electrolyte rechargeable batteries are housed in the lower portion of the commo platform. A charger is kept with this gear to recharge from AC mains when needed. These batteries may be recharged either by the AC powered charger or a solar panel that goes with the mobile commo package. Using lower power and gain antennas on the radios offers extended time between recharging.

Rich the "Bag Man"

Ask my wife what her major irritation is with yours truly and undoubtedly she will tell you that I "collect stuff." Not just any old "stuff" either. I collect slide rules (yes, those people-powered calculators of yesteryear), watches (chronographs, actually), knives (you can never have enough edged weapons), and her least favorite, bags.

I love putting radio gear into bags. All sorts of bags: big bags, medium-size bags, small bags, and really, really small bags. You have no idea! I have yet to find the ultimate bag for radio gear.

Since we both are heavily involved with our local ARES group, we have "go-bags" or "bug-out-bags" (B-O-Bs). There are go-bags and then there are "GO-BAGS." Over the years I have come to realize that there is no one all-encompassing bag for all occasions. Therefore, I have started breaking down my readiness equipment into smaller bags, each having a specific function.

First and foremost I have a "radio bag" or my every-day-carry (EDC) bag. This is built around a $25 courier bag from Amazon.com. I have tried a number of bags for this role, but so far this bag is the best one I have found. It is large enough for the basics and it carries well. It is similar (if not identical) to a courier bag at over three times the price (also on Amazon), but I chose this one for price and after reading several reviews. It has lots of pockets that I use to carry my primary HT, a Yaesu FT-60R with spare "AA" alkaline pack, my ARES creds, a bottle of water, a couple of protein bars, a knife or two, flashlight, insect repellent, space blanket, water purification unit, earphone/mic accessory, mini-manual for the rig, coaxial dipole antenna, SMA-to-BNC adapter, personal meds, spare glasses, fire-starting material, and a few other goodies. As its name suggests, my every-day-carry bag is either on my person or in my vehicle virtually all the time. It is always within easy reach, "just in case." For those of you who think that this is a bit over the top, you might want to read the lessons learned by the folks in Christchurch, New Zealand, after their recent bouts with two massive earthquakes and assorted aftershocks *(see this month's "Public Service" column elsewhere in this issue—ed.)*. There is no such thing as being "too prepared."

Next is my "real" B-O-B, a medium-size, internal-frame backpack I found at the PX at Ft. Gillem. In this bag I have my 72-hour kit: extra clothes, socks, ARES safety vest, windbreaker, additional meds, water, freeze-dried meals (nobody does it better than Mountain House; they are tasty and reasonably priced.). Three freeze-dried entrées will yield enough food for two servings per bag. That means in an emergency three freeze-dried packages will feed you for three days. To augment these foodstuffs, I also carry a half-dozen protein bars (only take the ones offering at least 25 or more grams of protein per bar). This bag also holds my wet-weather gear, shelter half or small tent, sleeping bag, and personal hygiene items. I also include spare batteries, a hand-held scanner, a hand-held CB radio (40 channels and a full 5 watts output), and a GMRS/FRS HT. I can quickly transfer the contents of my EDC bag into this bigger bag if needed. One thing to remember: If you pack it, you hump it. I would highly recommend you build your B-O-B accordingly with a critical eye toward conserving weight.

A word about knives: You need at least one good lock-blade folding knife, one full-tang hunting knife, and a multi-tool as a bare minimum. Knives are task-specific tools. I do not and will not advocate using a knife for self-defense. A knife as a defen-

Meet "The Chick Magnet"! This is my giant Alaskan malamute, Oki-Kuma-TU ("Big Bear" in Japanese). He is my workout partner, and believe me, when we go out and walk for exercise this big guy is quite the ice-breaker. Women love this dog! The nice part? He's cheaper than a Corvette!

sive weapon takes years of training and practice. I use knives as tools. My folding Kershaw is always on my belt. I have a smaller Gerber Paraframe folder in my pocket and an original Gerber multi-tool on my belt each and every day. Patricia and I both have Leatherman Wave multi-tools in our B-O-Bs, along with full-tang hunting knives. There is no need to take out a second mortgage on the homestead to finance some good blades. Believe it or not, Amazon.com and Wal-Mart are great sources for quality knives by Kershaw, Gerber, Buck, and others at very reasonable prices. Spending over $50 on any knife is a waste of money.

My "real" ARES radio gear is located in a Stanley portable tool box on wheels which houses the dual-band ICOM IC-2720 VHF/UHF FM transceiver, two 20-amy/hour gelled electrolyte batteries, battery charger, coaxial cables, spare coaxial "tweenies," trunk tracking scanner, and a dual-band ground-plane antenna with 40 feet of fiberglass mast and ground anchor.

As I am sure you can see by now, gathering the necessary equipment and assembling a "bug-out-bag" is no simple task. It is amazing how much "stuff" you have to pack along to fulfill the YOYO-72 requirement mandated by ARES. What?! You have forgotten what YOYO-72 means? OK, one more time: *You're On Your Own for 72 hours!* Lots of things have to be weighed and many things discarded to conserve space and weight while maintaining portability. It is a trial-and-error process that is ongoing.

Self-Preparedness

One final thought before you charge off to the great outdoors: Get physically fit *before* hitting the bush. You don't have to go back to basic training or boot camp; just start a walking program. Take your dog (you do have a dog, right?) for a walk a couple of times a day. It will do both of you a world of good. Start eating right, leaving the sugars and simple carbs alone, and concentrate on protein-rich meals featuring fish and chicken. Salads are great for getting your body back in shape. Stop drinking alcohol and smoking! Seriously, that crap will kill 'ya! Above all, start enjoying life. It's too short not to.

This column was a cooperative effort by several people that I'd like to thank: Herb in Alaska . . . I will fly with you any day, pal! Appalachian Eddie, backpacker extraordinaire. Ronny, the Appalachian Trail Ninja, who actually used to hump a deep-cycle marine battery into his campsite to power his radio gear! Suvivorman Mitch from the Great Pacific Northwest. Gunny Rake, *Semper Fi*, pard! And finally, Ghost Hiker . . . enough said!

73, Rich, K7SZ

digital connection

BY DON ROTOLO,* N2IRZ

Virtual Communities for Beginners (For Anything!)

Ham radio isn't my only hobby, but it seems that it's central to almost all the others. My interests in electronics, cars, programming, tools, and even gardening all seem to support ham radio in some way.

One of my other interests is metalworking and machinery (this, from an electrical engineer!), where the fun is figuring out how to design and build something. I mention this because the other day I had to cut a 19-thread-per-inch screw thread, which is an uncommon size and normally impossible to cut on my particular lathe. However, with the planet's largest reference library at my fingertips—the internet—I managed to find the information I needed on setting the lathe gears for 19 TPI.

That got me thinking. Many readers are old enough to remember the times before the internet, when you needed a collection of catalogs for buying oddball items mail order, the local university library was a valuable source of books and information, and the local Packet Bulletin Board System (BBS) was a great place to communicate by "electronic mail." If you had a hobby, chances are you were a member of a local club dedicated to that hobby, mostly so you could bounce ideas and problems off people with the kind of knowledge you needed.

There aren't as many metalworking (or computer or sewing or electronics) clubs anymore, since the experts are on the internet somewhere, but by no means does this mean that people still don't get together and talk about some common interest. Predictably, that personal interaction has moved online, in the form of the online *forum* and *user group*.

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User Groups

A user group is a group of people with a similar interest, often quite narrow in scope, who share an online space and discuss topics of mutual interest. Yahoo! <groups.Yahoo.com> has one of the

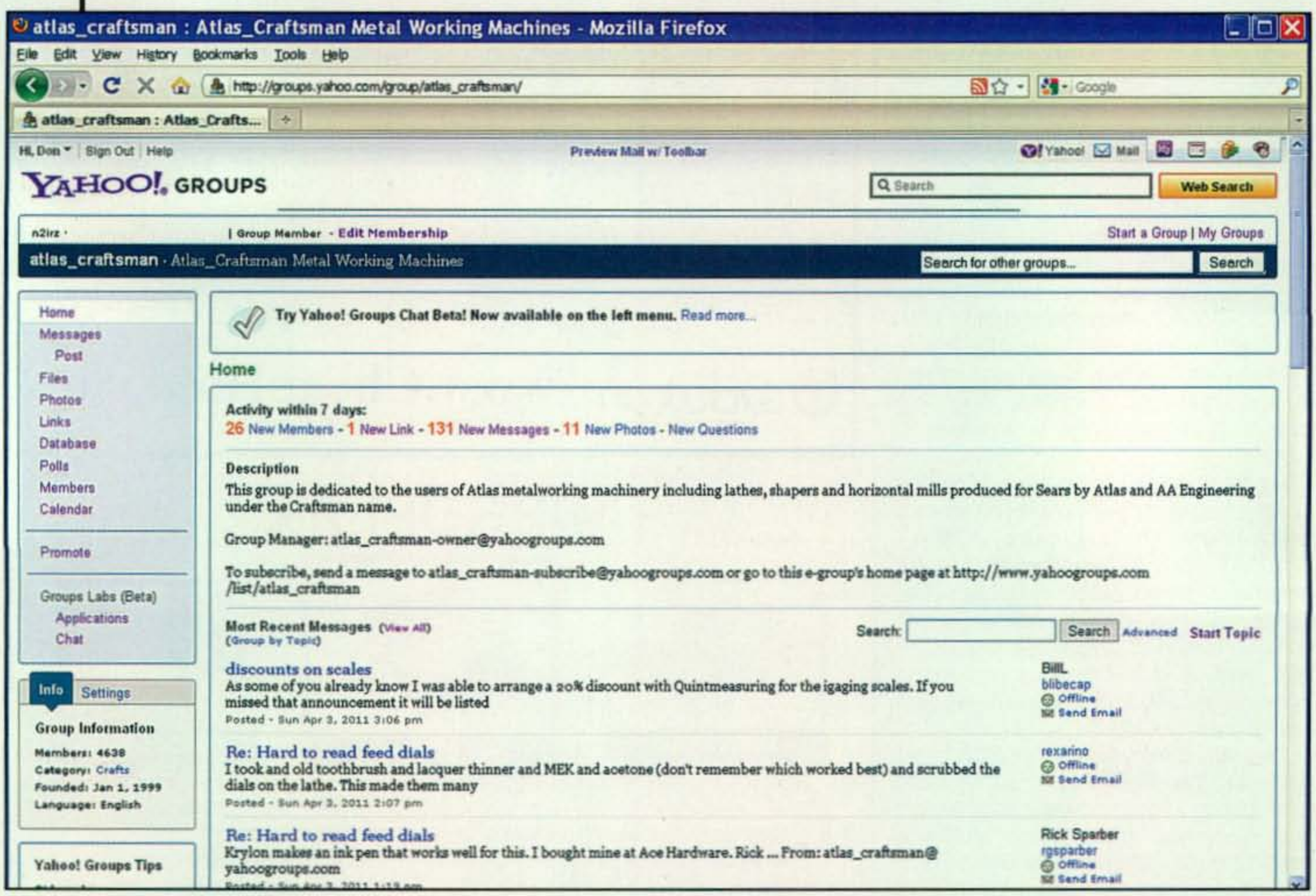

Figure 1. The home page of one of my Yahoo! user groups, this one dedicated to Atlas metalworking machinery. Recent messages are shown toward the bottom of the page while links to other sections files, photos, etc. are on the menu at the left side. Near the top is a box used to search for another one of the nearly seven-thousand user groups that may be of interest.

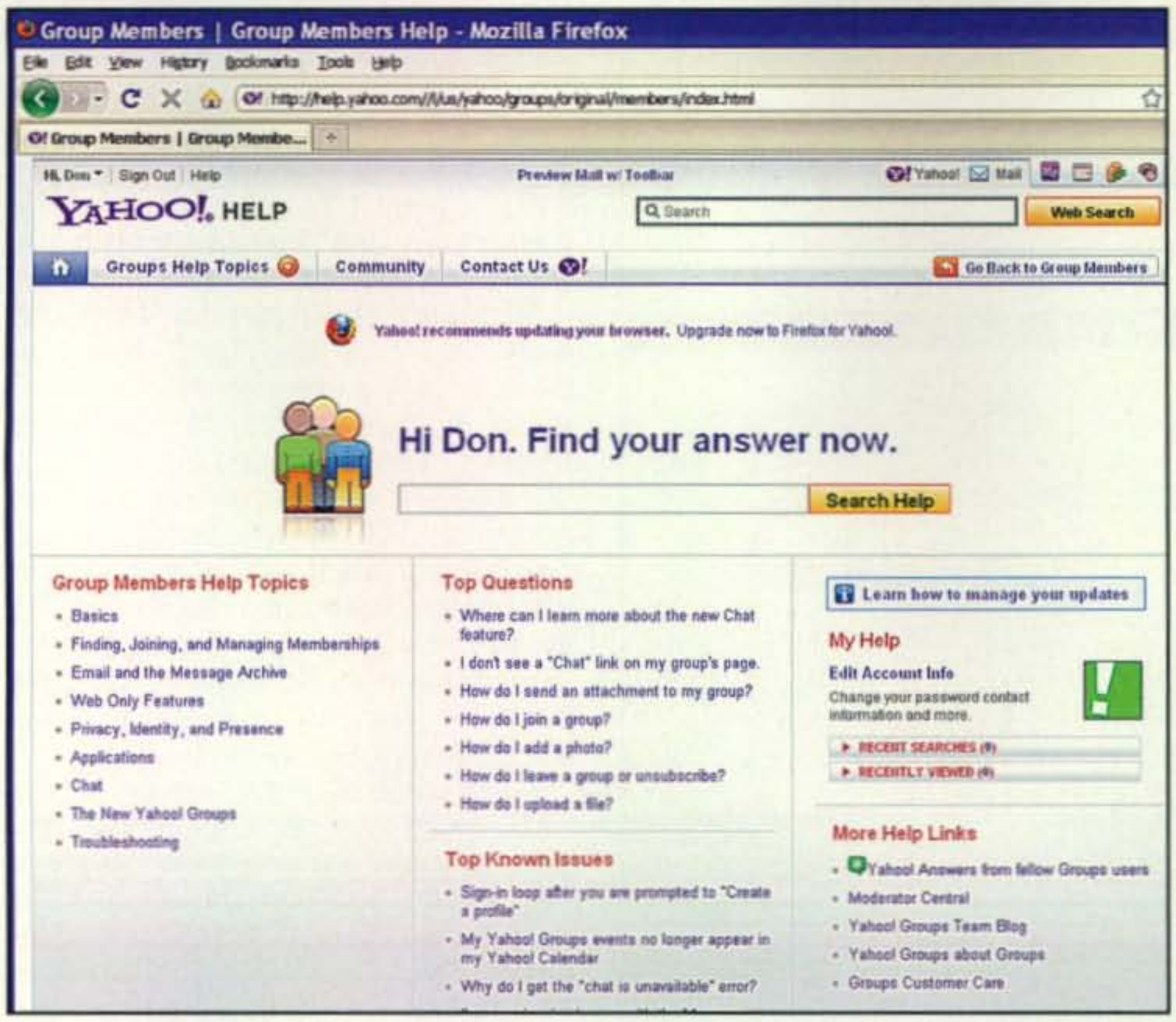

Figure 2. The Yahoo! user group help page, which explains most everything worth knowing about participating in user groups. User groups and forums are a good way of using the internet to interact with other people of similar interests, serving many of the functions that many social clubs did in the"good old days."

largest websites for user groups. Anyone can create a new user group, on virtually any legal activity or topic, although most folks will find one or more existing groups and simply join as a member. Membership in a Yahoo! group can be public, private, or somewhere in between, where you need to be "approved" as a member before you can fully participate. This is usually done to help control spammers, the bane of these groups.

Let's take a look at one of the groups I frequent, the Atlas_Craftsman lathe forum <http://groups.Yahoo!.com/group/atlas_craftsman/>. Most of the activity is on the Message Board, where members "post" e-mail-like messages for everyone to see and respond to. This particular group, which is moderately busy, sees an average of 500 messages per month, but this can vary from 200 to over 1000 depending on the season.

As an example of the kinds of advice you can get, a lathe I had just bought was a little bit worn in one spot, and I wasn't quite sure how or whether this might affect its accuracy. I posted a message explaining what I was seeing and asking for opinions, receiving about two-dozen responses. Not all of the responses were credible—that is, I didn't exactly believe that the person responding knew more than I did—but as with any group, virtual or not, it is often best to hear everything being said and decide what's useful yourself. In the end, a few responses were quite valuable to me in deciding that the wear was not important.

Nearly all user groups also have an archive, where they keep files and photos that can come in handy. One file I found posted in the Files area was a scan of the illustrated parts list for my "new" lathe (built around 1943), which was extremely helpful as I went looking for some spare parts. A few other files, including that information I mentioned before about the gear setup for cutting a 19 TPI thread on my "old" lathe, also came in handy.

In some cases, photos are also helpful, particularly when trying to figure out how something is supposed to be assembled or set up. However, as with message posts, you need to understand that the "noise" level can vary according to the expertise of the member: There was one photo that clearly showed a piece of the lathe, assembled incorrectly. Had I not known it was incor-

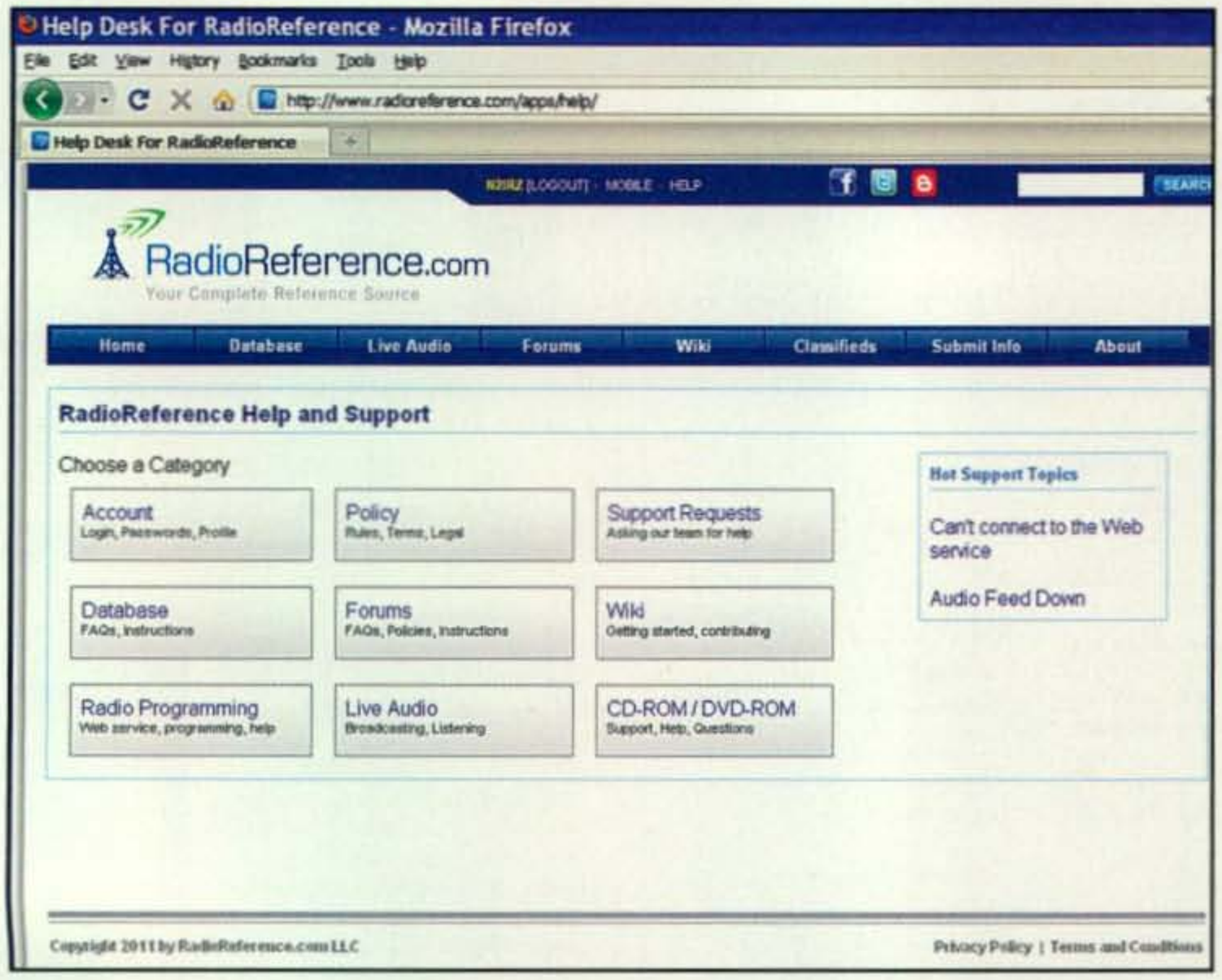

Figure 3. The help page at <www.RadioReference.com>, which explains many of the details of using this very large forum. Clicking on the forums button brings you to the forums FAQ page, where you can find highly-detailed information about using every aspect of a vBulletin forum, the most common type in use today.

rect, I could have been led down that path as well.

Finding a user group that might be of interest is easy, using the Search feature: Just type in some related words, such as "ham radio" into the "Find a Yahoo! Group" box, and spend a little time sorting through the search results and visiting forums until you find one that seems *like a nice* place. Like non-virtual clubs and other groups, each one has its own "flavor" and feel: Some are a bit rowdy and boisterous, others are reserved and proper, and most are somewhere in between. Poke around and, if you like what you see, join the group.

Joining is a simple task; click the "Join" link. Most user groups will require you to respond to a test e-mail in order to verify your e-mail address, and then you'll have to wait a short time until the group "owner" or moderator checks and approves your request to join. This is mostly a formality, again in an effort to control spammers. Some groups allow instant membership, with no verification or approvals necessary. In my experience, these kinds of groups often have a very high "noise" level of inaccurate or off-topic posts. I suppose it depends on the subject.

While mostly self-evident, it can take a little practice to get familiar with all the features of a user group. Before making your first post, try to get a feel for the culture of the group. When you think you're ready, click the "Start Topic" or "Post" link, which opens up a message box. Try to give your message an informative subject line so others can quickly see the topic: "Help" is not as useful as "Help cutting screw threads." Then type your message. Once there are some responses, the message and its responses are called a "thread."

As I mentioned, each group is different, but the higher quality groups I have joined tend to use proper grammar, punctuation, and spelling as much as possible. If people can't decipher your post because you're using slang, unfamiliar abbreviations, no punctuation, and long-winded, rambling comments, you won't get many responses, and those you do get may not be very helpful. Awful grammar and spelling, AS WELL AS SHOUTING (typing in all capital letters) make others think less of your intelligence, education, and emotional state, again reducing your chances of getting good responses.

Not that every word must always be spelled correctly: If you don't know enough about a word to look up the spelling, just spell it as best you can and maybe add a comment (spelling?) to let others know of your uncertainty. Also, if English is not your best subject and you find it difficult to write "perfectly," don't let that keep you from getting involved. The lathe forum has many members from outside the USA, and we all work to make everyone feel welcome. You'll find that most folks are very accommodating if you don't have a negative attitude when you post.

Responding to an existing post is also easy: Just click the "Reply" link. Just beware of the date of the message you're responding to. It's sometimes frowned upon to respond to a message that's several years old without acknowledging that you are "resurrecting" an old message thread. If you can add value to a message thread, please do so. The system only works when people share their expertise. Conversely, off-topic posts (or even worse, wrong information) generally should be avoided.

While some of us may have the time to check in with our user groups frequently, many are simply too busy. For this reason, you can choose to have new posts delivered to your e-mail inbox. I prefer the "daily digest" notification format, which compiles all new posts every day and sends them to me in a single e-mail. The other alternative for notifications (besides "off," of course) is to be informed of every message immediately, using the "individual e-mail" setting. On a busy group, this can fill your mailbox quickly, so beware!

Forums

Similar to user groups, there are many *forums* (or, more accurately, *fora*) on the web covering just about every topic there is. The main difference between a user group and a forum is the breadth of the topics discussed (*Atlas Lathes* versus *Metalworking*, for instance), but the real defining difference is simply the kind of software being used. Yahoo! provides the software for its user groups, while the owner of a forum must obtain software for a web server. The most popular forum software is a program called vBulletin, from Jelsoft <https://www.vbulletin.com/>. Relatively inexpensive at under $200, its market share (and performance) is far above its nearest competitors.

A user group is a simplified forum. Forums have far more features, capacity, security, and configuration options than user groups. The downside is that a forum operator needs to buy or borrow server space somewhere on the internet to run the software. From a user's point of view, you can do more on a full-size forum, but the basic principles are the same: Messages are

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- AES
- HRO
- Radio City
- R&L Electronics

New! - PK-232SC with Sound Card, Rig Control, USB - All built-in!

PK-232SC Multimode Data Controller*

Sound Card, Rig Control, USB, Pactor, RTTY, CW, Packet & more!

100,000 sold - All-time top selling data controller!

- Single USB connection to computer
- USB Sound Card built-in
- Rig Control built-in - Yaesu CAT, ICOM CI-V & Kenwood logic level
- Computer isolated from Radio

As Always-
Upgrade any PK-232 ever made to the PK-232SC!

The incredible PK-232SC again expands its role in your radio station. Now it connects to your computer with a single USB cable - no audio cables, no RS-232 cables! It has a built-in USB sound card with isolated audio I/O to your radio to prevent ground loops. The new logic level rig control for your Icom CI-V, Yaesu CAT and older Kenwood radios is optically isolated. There is a new audio monitor jack so you can hear the PK-232 ouput. You never have enough downstream USB ports so we even added a pair for that new radio with USB rig control and other accessories.

New! - HamHub II - Connect and Control your TNC, Radio & PC

HamHub II works with any TNC and Radio!

- Single USB connection to computer
- USB Sound Card built-in
- Rig Control built-in - Yaesu CAT, ICOM CI-V & Kenwood logic level, USB and RS-232
- Isolates Computer from Radio
- 2 RS-232 port and two USB ports

The HamHub II connects your computer, your TNC and your radio. It switches seamlessy between data controller modes and sound card modes under software control. A single USB cable connects to your computer - no audio cables, no RS-232 cables! It has a built-in USB sound card with isolated audio I/O to your radio to prevent ground loops. The logic level rig control works with your Icom CI-V, Yaesu CAT and older Kenwood radios. Dual USB and dual RS-232 ports take care of rig control on your newer radios, TNC control and accomodate addtional accessories.

Why do I need a HamHub II?

The problem with a typical sound card interface is that it is designed to work with your radio only. Many stations still use hardware data controllers for modes and features the sound card interfaces and computers don't have. The HamHub II connects any radio, any TNC and your computer in a flexible system to use all the resources of your hardware and software.

- **TZ-900 Antenna Impedance Analyzer**
  Quickly check Antennas & transmission lines- color graphics - no computer required!
- **DSP-232+ Multimode Data Controller***
  Sound card interface, USB, Pactor, 1200/9600 Packet
- **DSP-599zx Audio Signal Processor***
  Noise Reduction & filtering for Audio, CW & data
- **PK-96/100 TNC - 1200/9600 Packet***
  Available with USB or RS-232
- **ANC-4 Antenna Noise Canceller**
  Kill noise before it gets to your receiver!

HamLink™ Wireless and USB Remote Control & Audio

- **HamLinkUSB™ Rig Control Plus**
  Logic Level plus PTT
- **PK-232 RS-232-to-USB Adapter***
  Use the PK-232 with new computers!
- **HamLinkBT-BTH+™ Headset**
  Use a standard cellphone Bluetooth® headset to keep your hands free for driving and operating.
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posted, photos and files are shared, topics are viewed in threads, and so on.

It's beyond the scope of this column to explain all of the features of a vBulletin forum, but we can cover the basics easily enough. Almost all forums require a new user to register before being allowed to post—yet again, to control spam—and verify your e-mail address. Most forums will let you browse through their messages without registering and do not charge for registration. Some forums offer "premium" memberships for a small fee, providing some advantages such as eliminating advertising, but this is almost always optional. Few will become wealthy as a forum operator, but these membership fees often help to cover the cost of web hosting and the like.

One ham radio-related forum worth looking into is Radio Reference. To register, go to the forum home page (e.g., <http://forums.radioreference. com/>) and click on the "Register" link (it's a little bit hidden in the welcome text). Pick a user name and password, and provide your e-mail address for verification. Check your e-mail inbox after a minute or two, and follow the instructions in the e-mail to join the forum. Then log into the forum with your User ID and password. I also recommend that you select the "remember me" checkbox so you don't have to log in every time you visit the forum. This sets a cookie on your computer, so be sure cookies are enabled.

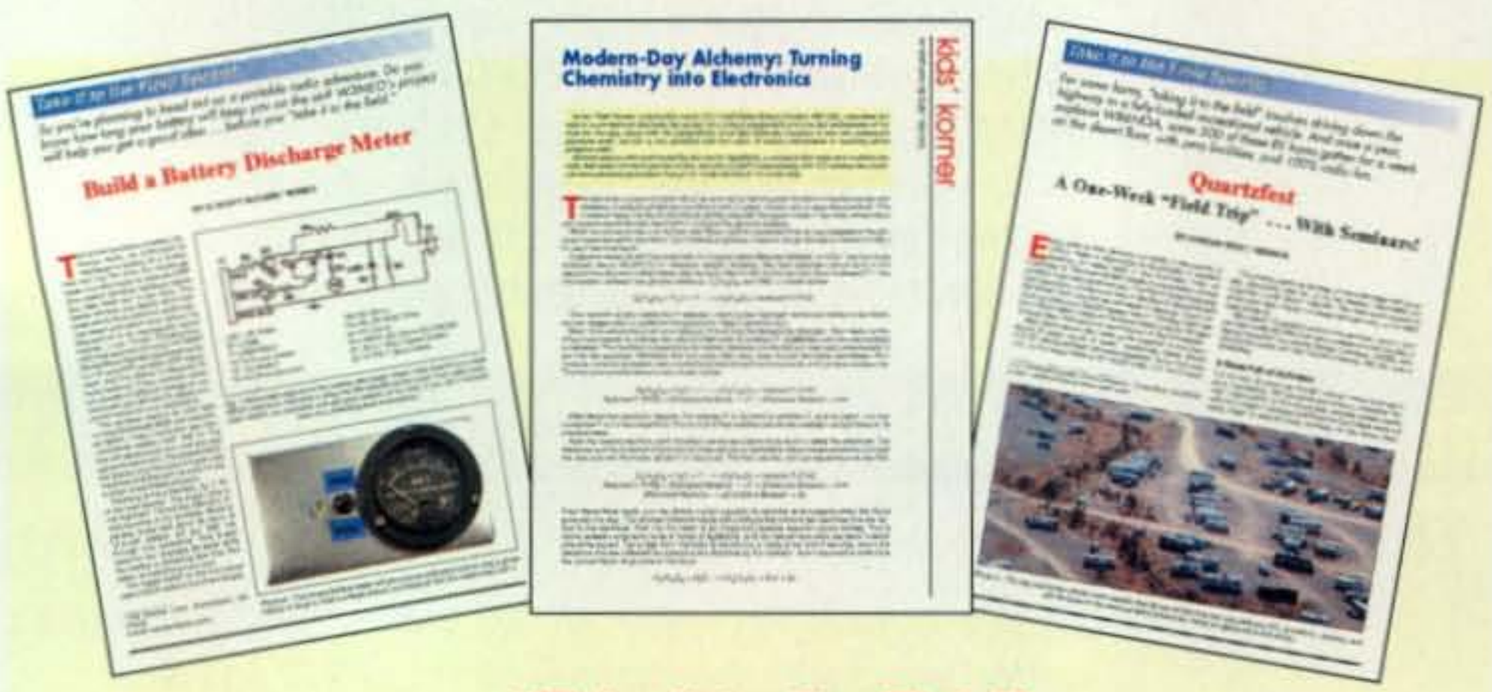
The forums I visit frequently have several dozen sub-forums on more focused aspects of the overall forum topic. For example, the Radio Reference forum I mentioned before has nearly 140 different sub-forums (including one for each U.S. state), allowing for a high level of specialization. For forums that I visit frequently, I'll generally just click on the "new messages" link, which shows me messages posted since my last visit from all sub-forums. In forums I visit less frequently I'll often pick the one or two specific sub-forums that interest me and scan topics there instead.

When responding to a post, the same etiquette applies as in User groups: Clear subject and message text, grammar, etc. When creating a new post, however, it is always a good idea to search first. Especially on larger forums, there is an excellent chance that your specific question has been discussed and answered already. It is in your own best interest to spend 5 minutes searching for an answer—which you will get immediately—instead of posting a new message, waiting several days for users to respond, and (even worse) annoying members who already answered the question in that other post you should have searched for.

Every vBulletin forum has an FAQ and Help file which explains how to perform tasks such as maintaining your user profile, creating, editing and responding to posts, and so on. You can also go to the official vBulletin Forum at <http://www.vbulletin.com/forum/forum.php> where you can tap into a huge user community and find many details on how to use the forum software.

That's all the space I have this month. I know that many readers are already members of some user groups and forums, but if you're one who has not yet discovered this sometimes intimidating and perplexing internet resource, I urge you to get up your courage and give it a try, even if you prefer to just be a "lurker" who reads but rarely posts. I think you'll find a treasure trove of information, along with some nice people, just on the other side of your keyboard. And if you spot username "n2irz" give me a shout!

Until next time . . .73 de Don, N2IRZ



"Take it to the Field" Web Supplement

Can't get enough of our "Take it to the Field" special? There's more on the web!

Check out our special **Web Supplement** to this issue to read:

• **Quartzfest — A One Week "Field Trip" ... With Seminars! by Gordon West, WB6NOA.** Gordo takes us on a tour through the ham radio component of the annual pilgrimage to Quartzsite, Arizona, that draws over 1-million RVers each January, including several hundred hams who spend a week together on the desert floor.

• **Build a Battery Discharge Meter, by H. Scott McCann, W3MEO**. How long will that HT battery or gel-cell last out in the field? W3MEO has a construction project and computer program to help you know how much life is left in those cells!

Plus...

*** Expanded results, 2010 CQ DX Marathon**

• QRP Add-on: A Power Supply for April's Two-Tube Transmitter

*** Three more Public Service stories:**

Staring Down Disaster—Ham Radio's response to the Three-Mile Island nuclear accident in 1979

Weak Signal No More—An easy-to-build 2-meter beam for better range on the trail and at public service activities

Lost and Found—Hams coordinate a search-and-rescue operation in Arizona (full story in Spring *CQ VHF*)

• **Modern-Day Alchemy: Turning Chemistry into Electronics**—"Kids' Korner" columnist Brittany Decker, KB1OGL, gets technical with explanations of the chemical reactions that measure glucose in a drop of blood and turn the reading into an electronic display on a meter.

Find all of this on the *CQ* website at **<http://www.cq-amateur-radio. com>** by clicking on the cover of the June issue, then following the prompts for the **Web Supplement**.

BY BRITTANY DECKER,* KB1OGL

Getting the Right Chemistry

Most high school kids shudder at the mention of the word 'chemistry.' However, as an organic chemistry student at my high school, I was assigned to visit a chemistry lab, a trip which would change my view on chemistry and on the way that other subjects often pre-judged as boring (like amateur radio), should be taught.

Last November, I had the privilege of going to AgaMatrix, Inc., a company that tests and modifies diabetic test strips. While this may sound like the most boring field trip I could ever go on, it has actually been one of the most memorable! The way that Richard Williams, the head of scientific development at AgaMatrix, received and welcomed my presence was unexpected. He certainly did not get a lot of his own work done that day because for most of the 9 am to 6PM work day, he taught me the complex chemistry behind the strip. When I left AgaMatrix that day, I left with a packet of printer paper that we had drawn structures and reactions on to help me understand how the strip works. No—the diabetic strip does not suck the blood into the meter itself, but it does use the energy from the blood to calculate its glucose concentration. Not only did I leave with a whole new understanding of the diabetic strip and meter, and the chemistry behind it, but Richard also gave me some new ideas for a chemistry project that I have been working on that is based on the work of another amateur radio operator named John Kanzius, K3TUP (SK).[1] My day at AgaMatrix taught me that any subject can be made interesting, but it is up to the teacher to exude his or her love for the subject to the student.

At AgaMatrix Incorporated, the main research is testing the diabetic strips and meters that are produced by the company. There are a few departments involved in this. There is the Quality Control (QC) lab that does all of the meticulous testing, about 2 million strips per year. It takes a full staff of people to do all of the testing. After meeting various people in different departments, I sat down with Richard to learn the complex theory behind *the chemistry* that goes on in the test strip.

The strip, a piece of plastic about an inch-and-a-half long and familiar to virtually anyone with diabetes, is actually plastic surrounding a strip of paper, coated with a soap-like chemical. This chemical helps the liquid (the blood) quickly saturate the paper inside of the strip, where there are organic chemicals that react with it, and give the glucose reading. When the blood comes into contact with these organic chemicals they act as catalysts to the glucose molecules within the blood. Each individual glucose molecule will go through a number of steps to reach the final result. Along the way, what starts out as a chemical process becomes an electronic one. The bridge from chemistry to electronics is made at the end of the strip, where the electrons that are collected through chemical reactions are carried to an electrode and then measured to determine the concentration of glucose in the blood. (For a closer examination of the chemical reactions and formulas involved, see "Modern-Day Alchemy: Turning Chemistry into Electronics," in this issue's web supplement on the *CQ* website, <www.cq-amateur-radio.com>).

Richard Williams, head of Scientific Development at AgaMatrix, was Brittany's host and mentor for her day-long visit.

Getting Hands-On Experience

When I came back from lunch, Richard set up a small experiment for me to do. The experiment consisted of me testing 160 strips for readings. I would be testing out of four packs of strips, two of which had been put in an oven inside of a beaker with water droplets inside and an evaporating dish on top at 50° C (122° F) for 10 hours. I used the standard scientific method and formulated the typical components of a lab report.

While working out the math and conversions, Richard saw the way I did my math (fraction bars to keep my units straight) and was very surprised that a high school student could make those conversions so quickly and accurately. He had never seen that method before, and said he'd have to keep it in mind for his own use.

*c/o CQ magazine

One of the testing laboratories at AgaMatrix. Each station performs a different function.

A glucose testing meter, test strips and an iPhone set up with a special module to let it serve as a test meter!

The field trip, although exhausting at the end of the day, was exciting for me. It was definitely a day well spent. Richard Williams and his exuberance and love of chemistry had captivated me and gotten me to strive to understand the chemistry they work with every day. Not only was it what I had hoped for, but Richard had exceeded my expectations by taking so much time out of his work day to explain principles and draw diagrams that he said he hardly thought of anymore. He said I brought back memories of Fischer and framework diagrams that he had to look in his old text books from college to remember how to draw.

A Connection to Ham Radio

After I went on this field trip and learned so much about chemistry in one day, I immediately thought about writing about my experience in Kids' Korner, quite simply because it serves as an example of the way every amateur radio operator should behave towards the younger generation. Chemistry, a topic many kids do not even want to talk about, is much like amateur radio in that it can be an exciting and rewarding experience with the right teacher. People who approach teaching students with exuberance and love for their subject will captivate the students and imbue them with their own passion for the subject.

I consider every amateur radio operator an Elmer, mainly because every single operator is a representative of this hobby. We are all advocates for amateur radio, and the way we behave as individuals will shape other people's opinions of amateur radio. If the only radio operators a person has met are bitter and anti-social, the person will generalize all amateur radio operators as being that way.

Having a bright outlook on the future of amateur radio also goes a long way. No one wants to be part of a hobby that is "dying." Amateur radio is not dying at all, it is just looking for people like Richard Williams, those who are passionate, personable, and persistent teachers. 73, Brittany, KB1OG

Notes

1. John Kanzius, K3TUP, was profiled in the January 2009 issue of *CQ*, shortly before he became a Silent Key. He is a 2008 inductee into the CQ Amateur Radio Hall of Fame. He developed a still-experimental method of using radio waves to kill cancer cells while leaving healthy cells around them undamaged. Work on his process continues.

what's new

BY JOHN WOOD,* WV5J

Sounds Like Summer is Here!

Perhaps it's because the Dayton Hamvention® is held in May, or it could just be that hamfest season itself is here, but whatever the reason, a sizable number of new amateur radio products are coming to the marketplace as summer approaches. This month, we take a look at a few of those items with an eye toward reviewing even more in our forthcoming annual Dayton new product "Safari" in the August and September issues of *CQ*.

This month we'll take a first look at a new interface and a new power monitor from West Mountain Radio and then a new radio that enables two-way communications over the internet. We'll also look at a new logging application and then see if The Cord Bug can help you manage your cables. So let's get started.

RIGblaster Advantage Interface

Bringing new products to market seems to be a mission for the folks at West Mountain Radio. Now they've done it again with their new RIGblaster Advantage sound card and rig-control interface (photo A).

Following in the steps of the original RIGblaster, the new Rigblaster Advantage features a simplified PC interface and expanded rig control radio compatibility. It reportedly incorporates several user-requested enhancements, including its own internal sound card, a single plug-and-play USB cable connection to the user's PC, a rig control interface for CAT/CI-V as well as RS232 through a DB9 port, and front-panel-mounted controls for transmit power level, receive audio level, and VOX delay adjustment.

Placing the sound source for digital-mode communication within the RIGblaster Advantage simplifies the PC interface. The single USB cable connection between the user's PC and the RIGblaster Advantage now handles audio, rig control, and power, thus eliminating two audio cable connections to the PC.

*1870 Alder Branch Lane, Germantown, TN 38139
e-mail: <wv5j@cq-amateur-radio.com>

The internal sound card enables the RIGblaster Advantage to generate audio completely independently of the PC's sound card, a personal preference of some hams.

The RIGblaster Advantage makes it easier to control rigs that require RS232 DB9 cables for rig control. The newest laptops and desktop PCs aren't readily available with RS232 ports, or if they are offered, they are an extra cost option. Thus, in addition to the CAT/CI-V port also used for rig control on ICOM, Ten-Tec, and some older Yaesu radios, the RIGblaster Advantage features an RS232 DB9 port which eliminates the need for a separate USB-to-RS232 rig control interface.

The front-panel controls make it a snap to change transmit power levels on the fly without having to adjust the output volume in software. The receive audio-level adjustment knob allows the user to set the radio's sound level for comfortable listening while adjusting the RIGblaster's receive level for best operation. The VOX delay knob controls the amount of time the VOX circuit waits before unkeying the transmitter.

Compatible with all manufacturers' radios, the RIGblaster Advantage makes it easy to switch back and forth between voice and digital modes. It features an eight-pin screw-on microphone connector used by many radios. West Mountain Radio also has adapters available for other microphone connectors. Jumper blocks inside the RIGblaster Advantage are used to configure signal routing from the microphone connector. PTT control can be exerted through your microphone's PTT, software, or foot switch. For CW fans, a CW/FSK output jack is provided for connection to a radio's straight key input.

For complete product and order information about the new RIGblaster Advantage from West Mountain Radio, visit your favorite West Mountain Radio dealer or go to <www.westmountainradio.com/RBADVPR>.

The West Mountain PWRcheck

West Mountain Radio has also announced production of PWRcheck (photo B), an integrated DC power analyzer, wattmeter, and electricity monitor.

Photo A– West Mountain Radio has just released its latest ham station accessory, the RigBlaster Advantage, which includes a lot of the features that were requested by hams, including front-panel transmit power level control.

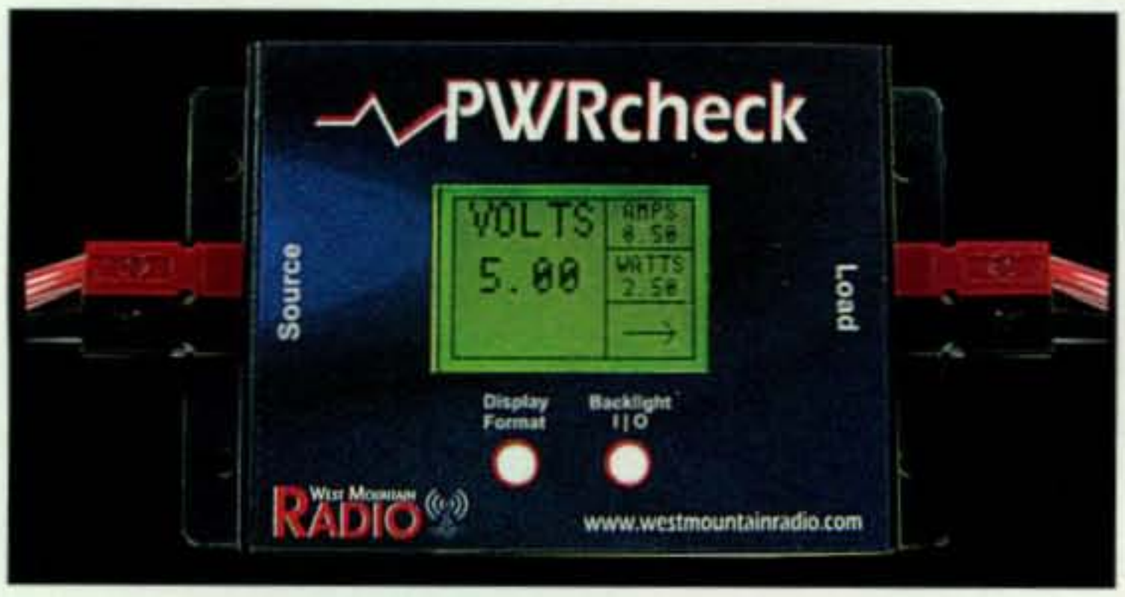


Photo B– West Mountain Radio has also come out with its PWRcheck which enables DC-powered stations to monitor the status and health of their DC power supply systems.

Photo C– Link Communications has revealed its IPR5000 radio, which it calls a revolutionary new radio system that is able to provide PTT communications over an IP network along with GPS-based Automatic Vehicle Location (AVL).

PWRcheck enables amateur radio enthusiasts, emergency service providers, and site operators to assess load requirements and monitor the status and health of their DC power-supply systems.

The PWRCheck handles 13 display modes, updated in real-time; provides a visual alarm with programmable limits for current, voltage, wattage, and amp-hours; uses an easy-to-read gas-gauge-type display for monitoring the charge in the user's back up battery, stores 174,000 points for historical data logging (over four months' worth at 1 data point/minute), and includes PC software that supports real-time monitoring, data download, and charting.

The alarm can be set to flash the display when user-programmable limits are exceeded, giving users warning of an impending system failure.

Placing PWRcheck in the high-side of the DC system, between the battery or power supply's positive terminal and the load(s), greatly simplifies installation in vehicles or rigs that have one side of each load connected to a common ground or chassis ground for the return path to the battery. PWRcheck's current sensor only drops 0.1V at 40A, minimizing power losses in systems where PWRcheck is permanently installed as a monitor.

PWRcheck can serve as a data logging instrument that can capture and retain a four-month history and file ready for download to a laptop computer during maintenance visits for recording site history and analysis of component performance and failure conditions.

The included PWRcheck PC software allows users to control every aspect of PWRcheck operation such as data logging rate, display formats, and alarm conditions. The integrated charting software automatically collects and displays data, including voltage, amps, and wattage versus time. Data can also be exported to spreadsheet programs such as Excel® for further analysis.

PWRcheck is priced at $125 with software and features Anderson Powerpoles® for source and load connections. It is available for immediate shipment from West Mountain Radio at <www.westmountainradio.com/PWRCKPR>.

IPR5000 Talking over an IP Network

Active hams never know when they might be called on to provide emergency communication services or communicate over non-amateur networks, so it's probably a good idea to be aware of this new internet-based radio from Link Communications and to know a little about its capabilities.

Link Communications recently unveiled its IPR5000 (photo C), a rugged, water-resistant mobile radio that can give the user secure Push-To-Talk (PTT) communications over any IP network. It utilizes cellular 3G/4G, satellite, WiFi, and wired IP networks for global coverage with seamless operation even between carriers to provide real-time communications to a wide spectrum of people such as oil-field workers, delivery drivers, law enforcement, tactical response teams, etc.

The company describes the IPR5000 as a revolutionary new radio system with familiar PTT operation. The package includes a handheld microphone, internal and external speakers for clear audio, an LCD display, a roof-mounted antenna, and a bracket for mounting the radio under the dash. Housed in a rugged case, it is sand, dust, and water resistant to IP-65.

The IPR5000 automatically selects the lowest cost IP network available. For example, it will utilize 3G/4G when possible and revert to satellite when necessary (least-cost routing), providing secure PTT coverage while minimizing data costs. When wide-area coverage is not needed, WiFi and wired connections enable communications with lower recurring costs. Talk groups can include members located anywhere on the globe using any internet service provider; there are no geographic limitations. Leveraging the public IP infrastructure, the IP radio saves money by eliminating the need to build and maintain radio sites. Link says it also completely avoids the hassle of dealing with radio-frequency licenses and it's offered as a solution to the FCC's narrow-banding mandate.

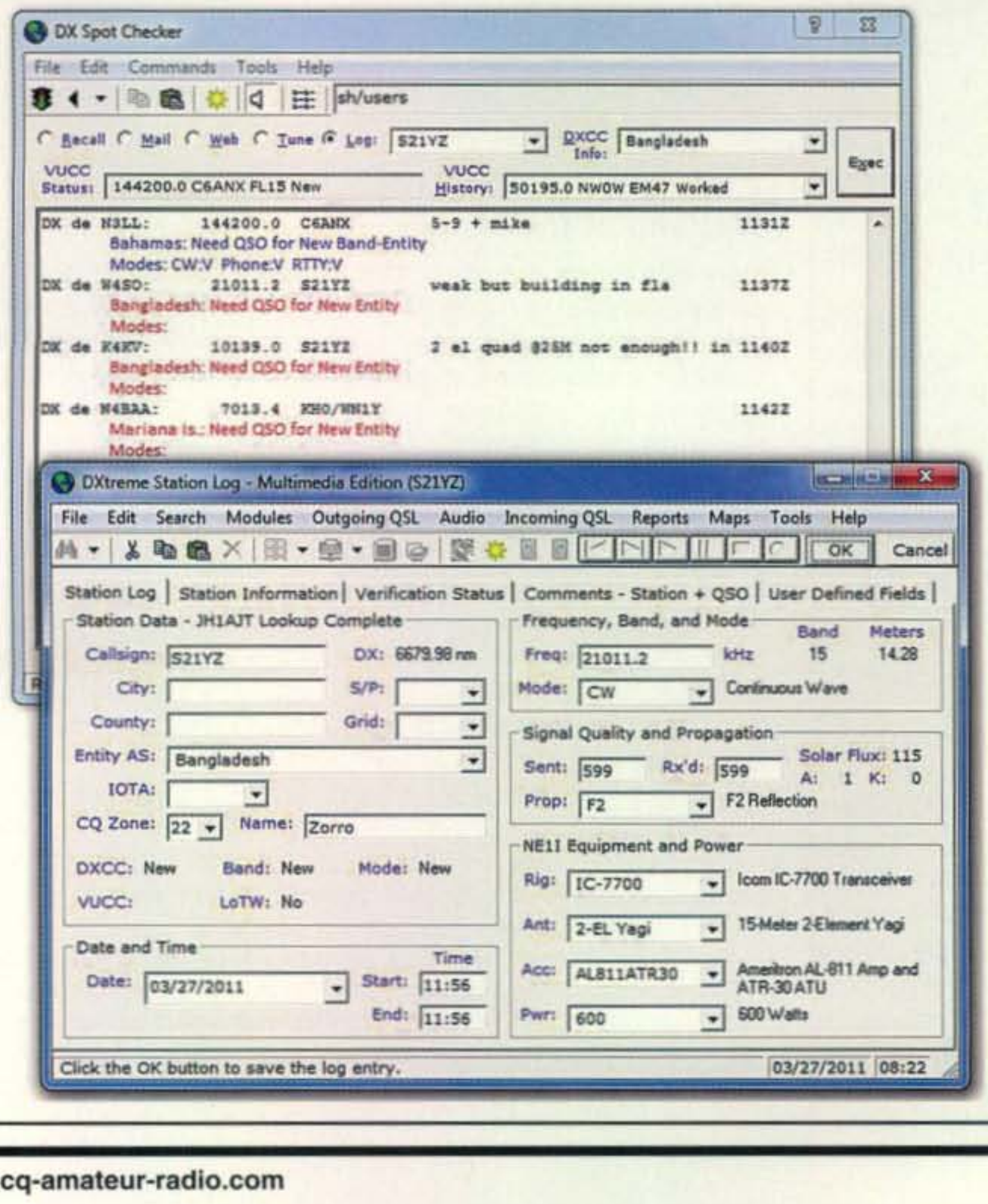
In addition to providing PTT communications, the IPR5000 provides GPS-based Automatic Vehicle Location (AVL). IPR5000 owners can access AVL data through an interactive mapping website or even from an iPhone, Blackberry, or Android smartphone. The LinkTDS dispatch software integrates mapping with the ability to select and PTT any IPRadio. The IPRadio display indicates the distance and direction to whomever you hear talking.

Cellular 3G/4G models are available for various carriers and protocols (CDMA, GSM, LTE, etc.) and require a cellular data plan for operation. Satellite communications require a BGAN or similar satellite IP terminal and data plan.

For more information on the IPR5000, visit <www.linkcomm.com> or call (800) 610-4085.

DXtreme Station Log Multimedia Edition Version 7.0

DXtreme Software™ has just released a new version of its popular logging program for amateur radio operators called DXtreme Station Log—Multimedia Edition™ Version 7.0 (photo D). Like other logging programs, DXtreme Station Log



lets hams log their contacts and import ADIF files from popular contest programs. However, unlike other logging programs, DXtreme Station Log provides multimedia and advanced functions that can add a new dimension to amateur radio logging activities, such as its new DX Spot Checker™.

DXtreme Station Log's DX Spot Checker enables hams to receive incoming DX spot announcements from Telnet-based DX Cluster and DXSpider servers. As each spot arrives, the DX Spot Checker queries the ham's station log database and lets the user know by means of colorful rich-text and audio whether a QSO is needed with the station for a new or verified DXCC® entity or band entity. The rich-text messages and audio announcements are fully customizable by the user.

The DX Spot Checker also lets hams to see whether a QSO is needed with the station for a new or verified grid loca-

Photo D– DXtreme Software is now promoting its new DXtreme Station Log Multimedia Version 7.0 which offers a number of advanced station log f eatures, including its new DX Spot Checker™.

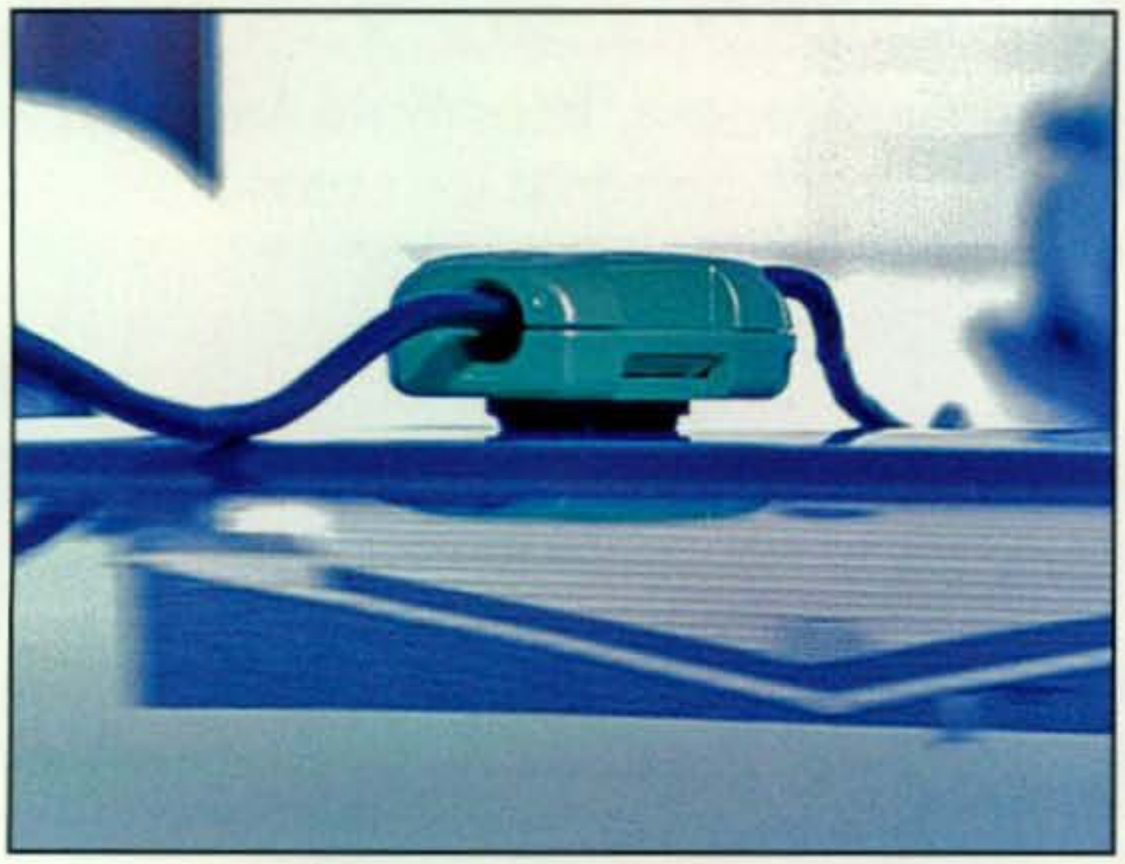


Photo E– Here comes The Cord Bug, a new way to keep wires and cables in place whether they are under the hood of your car or on the desk in your home ham station.

tor or whether spotted hams are users of the ARRL's Logbook of The World (LoTW). It is said to be ideal for VUCC tracking (Buckmaster™ HamCall™ required) and can quickly check personal DXCC status information without having to leave the DX Spot Checker window. DX Spot Checker can also tune supported radios to the frequency of a selected spot through integration with Afreet Omni-Rig available free over the web, send incoming spot announcements to others by e-mail, and perform web-based callsign lookups on stations spotted.

The Station Log Window is the focal point of the electronic logbook. In addition to providing the expected logging functions, the window can also retrieve the frequency and mode from supported rigs through integration with Afreet Omni-Rig, and display DXCC and Grid/VUCC status information for logged stations. In addition, it can retrieve and store current and historic solar flux, *A*-index, and *K*-index values per station, and it lets hams track the propagation mode used and QSL cards sent and received.

DX Spot Checker's multimedia functions let hams listen to previous contacts and view QSLs whenever they browse their logs. The embedded audio facility allows hams to create and maintain an audio archive of memorable contacts.

The integrated QSL Imaging™ facility lets hams scan and view the physical QSL cards they receive from regular mail and capture and view the electronic QSLs, including LoTW QSLs, they receive over the internet. Advanced functions let hams create QSL and address labels for physical QSLs, create signed *TQ8* files automatically for uploading to the LoTW server, and produce ADIF-based electronic QSLs for uploading to eQSL.cc.

To help hams track the performance of their stations, DXtreme Station Log offers avariety of reports. Station Log can output these reports to printers, as well as to theDXtreme Active Report Viewer. The DXtreme Active Report Viewer lets hams view and sort reports within Microsoft® Internet Explorer®, either locally or over the internet. An FTP facility is embedded in Station Log to let hams automatically upload their reports to the web, where they or their friends can access the reports remotely. The app also allows hams to generate a variety of other reports.

DXtreme Station Log runs in 32- and 64-bit versions of Microsoft Windows® 7, Microsoft Windows Vista® and Windows XP. It retails for $89.95 in the U.S. and $93.95 USD elsewhere (special pricing is available for upgrading users). All prices include shipping and handling charges and lifetime product support by e-mail.

For more information about DXtreme Station Log Multimedia Edition V7.0, visit <www.dxtreme.com>, or contact Bob Raymond, NE1I, at <bobraymond @dxtreme.com>.

The Cord Bug

Noted contester Kelly Taylor, VE4XT, and co-inventor Michael Clark have teamed to produce The Cord Bug (photo E), a device to help amateur radio operators with temporary routing of power and antenna cables.

The Cord Bug holds RG8X-size and smaller coax of 12-gauge power cables, and secures itself magnetically to the exterior of a car or to safe metal areas inside an engine bay, truck bed, or trunk.

Initially designed to help drivers in cold climates prevent damage to their cars from their engine block-heater cables, The Cord Bug is also the perfect way to keep temporarily routed antenna and power cables secure and prevent chafing of paint or cable as well as damage to other parts of vehicles. Amateur Radio Emergency Service (ARES) operators, mobile contesters, and mobile operators should find The Cord Bug indispensible for temporary operations such as mobile emergency command centers and field units.

The Cord Bug uses a specially designed magnet system that requires no mechanical knowledge to use and minimizes the possibility of paint damage by holding the neodymium magnets away from painted surfaces. Workshops will find The Cord Bug handy for securing power tool cords to metal workbench supports or tool chassis.

The Cord Bug is available online, with PayPal checkout (no PayPal account required), at <http://thecordbug.com/hamradio>. The price is $8.95 Canadian plus $6.95 shipping and handling. Canadian customers add sales tax (calculated for you on the site).

Website of the Month

One place on the web you might want to check out is <www.ku4ay.net>. I've recently been there and found it to have a large measure of amateur radio information including scanner frequencies, antenna designs, a dash of amateur radio history, and even two completely different stories on the origin of the term *ham*. Next time you're surfing, stop by <www.ku4ay.net> for a visit.

That's a wrap it up for this month. Again, watch for *CQ*'s annual two-part series during the months of August and September where we report on all the new amateur products that made their debut at the big party in Dayton. Until then, look forward to the next edition of "What's New" in *CQ*'s July issue.

73, John, WV5J

Note: *Listings in "What's New" are not product reviews and do not constitute a product endorsement by CQ or the column editor. Information in this column is primarily provided by manufacturers/vendors and has not necessarily been independently verified. The purpose of this column is to inform readers about new products in the marketplace. We encourage you to do additional research on products of interest to you.*

BY JOE LYNCH,* N6CL

Take it to the Field Special

Rover Operating

Mountaintopping has long been popular on the VHF+ ham bands, mainly because the VHF+ operator recognizes that the higher above obstructions he (or she) was, the farther he could transmit. In recent years in contests, the grid locator system and the Rover category have given this activity an added boost.

By definition, a Rover is a one- or two-person team that sets up portable operations from at least two grids during a set time period. Rovers have been known to operate from as many as 15 grid locators during a contest, but the average is closer to four or five grids on a given trip.

Rover contest operation has been around in one form or another for many years. Before grid locators, mobile stations would travel to rare states and put them on the air for others who needed to work them. Interest increased with the adoption of grid locators, as more mobile stations were able to travel to relatively nearby rare grid locators. For example, from my home in Tulsa, Oklahoma, I need to only travel 15 miles to the intersection of Oklahoma State Highway 117 and U.S. Highway 75 to be at the corner of four grids: EM15, EM16, EM25, and EM26.

The Rover concept really got a push when contest-station operators discovered that it provided a way to augment their operations. Club stations such as the Rochester VHF Group, the Pack Rats, and the W2SZ Contest Group would enlist a mobile station to go to a nearby state, and then set up and provide contacts to the club station.

The concept grew until, based on a recommendation from the ARRL Contest Advisory Committee, the League adopted a Rover category for the June 1991 VHF QSO Party. (The idea of including a Rover category, as well as the Limited Multi-Op category, was formed and promoted by Emil Pocock, W3EP, Curt Roseman, K9AKS, and Mike Owen, W2MRO, in several of the "VHF-UHF Contesting!" columns in the *National Contest Journal*, beginning with the September/October 1989 issue. The idea really gained steam when the results of a survey published in the March/April 1990 issue of the journal indicated the proposal had overwhelming support.) The category proved to be an instant success, and nearly fifty stations submitted entries.

Riding its success, the League decided to adopt the category for the January and September VHF contests, as well. By the 1992 ARRL June VHF QSO Party, Rovers accounted for nearly 10-percent of the entries.

Clearly, there is a strong interest in this category. Interestingly enough, one of the reasons for creating it was to wean the captive rover stations away from the super contest stations and encourage them to compete among themselves. Now the pendulum has swing to the other extreme. During the 1993 January VHF Sweepstakes a group from the Hampden County Radio Association set up teams principally to work each other. In so doing, each team scored a previously unheard of 1.2+-million points.

Although the Rover concept has become an official part of contests, the original activity—mountaintopping—is still very popular. Most frequently during the summer months, a group of operators will get together and travel to rare grids to give others an opportunity to fill in the holes on their grid locator maps.

e-mail: <n6cl@sbcglobal.net>

VHF Plus Calendar

The following is a list of important dates for VHF Plus enthusiasts:

June 1	New Moon; Partial Eclipse of the Sun
June 4–5	Fifth weekend of DUBUS EME contest
June 9	First quarter Moon
June 11–13	June VHF QSO Party
June 12	Moon perigee
June 15	Full Moon; Total eclipse of the Moon
June 18–19	SMIRK QSO Party
June 23	Last quarter Moon
June 24	Moon perigee
June 25-26	ARRL Field Day
June 27	*Boötids* meteor shower peak

Why is Mountaintopping/Rovering So Popular?

As stated above, it is relatively easy for many people to drive to a rare grid locator and put it on the air. And, with the inclusion of the category in contest rules, Rovers find themselves competing with each other to be the best. The fascination with rovering also includes what I call the "being DX" factor. Once on the air, the Rover finds that contacts with his station are "in demand." Although not anywhere near as intense as an HF DX pile-up, the thrill of being the "hunted" is just as real. Dave Hallidy, K2DH, reported that one of his biggest thrills as a Rover is giving out new grids on 13 cm to operators who are new to that band and running minimal stations. Also, Rover operation often is relatively inexpensive and sometimes surprising. You never know what interesting events you may observe when you are out and about. For instance, Tim Marek, NC7K, reported that while he was setting up his equipment in a shopping-center parking lot, he watched, open mouthed, as the local police busted a drug dealer right in front of him!

The Successful Rover Expedition

How does one put together a successful Rover expedition? Perhaps the most important factor in all successful Rover trips is *planning*. This includes: how far in advance you plan for your trip, where you go, how long you stay within a particular grid locator, what kind of equipment you take, what kind

Here is N5AC's truck ready to go Rovering for the 2006 ARRL June VHF Contest. (Photo by N6CL)

of vehicle (or vehicles) you drive, what time of year you take your trip, how long your trip will be, and who will go with you. It helps to make a list of all of these items and check them off as you accomplish them.

First, consider your destination. To a large extent, where you go will be dictated by the rarity of the surrounding grids. For example, in the panhandle and western part of Texas there are several grids that are relatively rare. A Rover might start in DM96 and work his way down to DM91, spending most of the time in the rarest grid locator, DM94.

Unless you are out for a Sunday afternoon drive and you just happen to have a 6-meter rig in the car, you will be better off if you have a good idea as to the location of the high points in the grids you plan to visit. This means you almost have to travel the route before your trip, or at least get in touch with someone who knows the area and has pictures.

Second, you must secure permission to operate from the sites you have selected. This means getting permission from property owners, local authorities, and so on, which may be very difficult. Assuming you are successful in obtaining permission from the land owner, after your trip, be sure to thank your host for allowing you to use the property for your hobby.

How long should you stay at a given location? There are several factors to consider. Are you on an extended trip, or are you participating in a contest? Is the grid you are in relatively rare and worth the effort involved in spending some extra time? Are you in the contest to win, or are you just having a good time? If you are contesting, how long will you stay to work every last station before moving on? Is it worth it to you to stay just so someone can finally complete that contact on 23 cm—even though you are delayed an hour?

During contests, some of the on-the-air intimidation from the intense operators on the other end can be relentless. Remember, *you are in control*. You make the decision when to pack up and move on. One time a couple of operators were faced with the decision to help someone complete a contact when time had expired for their schedule. On that occasion they stayed "too long" in an attempt to complete a contact (unsuccessfully). When they finally got on the road, they were only able to travel a short distance before being too exhausted to go any farther.

What kind of equipment you take depends on how many bands you want to operate. For ease of operation, many operators choose out-of-the-box multiple-band radios. Many VHF+ transceivers are very popular because they offer the ability to operate on more than one band with a flick of the switch. Unfortunately, this benefit is also a drawback. If there is more than one person on your team, operating on one band will keep one of you very busy, while the other operators stand around waiting for a turn at the mic (or key). If you plan to operate more than one band on the air simultaneously, take the necessary equipment.

You will also need backup equipment. If something fails, you cannot just drive home and replace it. Make sure you have extra microphones, extra coaxial cable, and plenty of extra connectors. In your box of spare connectors include mic connectors, coaxial connectors, and phone plugs. Bring all the tools you think you will need, and then some. What about a soldering iron? RadioShack sells a butane-powered soldering iron for around $30. Do not forget the solder!

Antennas and rotators are a challenge. Some operators choose to mount the antennas atop their vehicle. This saves setup and disassembly time. However, this means the vehicle is their rotator. Others bring along a tower. It takes longer to put up the antennas, but they are also higher up in the air. Still others opt for something in between—assembling their antennas on a single mast and attaching the mast to the vehicle. They use an "armstrong" rotator (you know, your strong arm), or an inexpensive TV antenna rotator powered by the generator or an inverter (that is equipped to power a motor). A few have gone so far as to punch a hole in the top of a vehicle, install a PVC-type fitting, and run the mast down inside the van. When operating, the person merely reaches over and "rotates" the antennas from the comfort of the vehicle's interior.

The type of power you run tends to dictate how you will run your equipment. If you run more than a brick (100 to 150 watts), you will need either a small gas generator or deep discharge marine type batteries. Notice, I said batteries. Even if you use just a brick, a marine battery is something to consider. It was awfully mortifying to find myself standing by the road holding my jumper cables in the air on Sunday morning during one June VHF contest. Fortunately, I did not have to answer too many embarrassing questions once a very kind motorist stopped to assist me. Faced with a similar experience in the past, others have decided to keep the engine running in their vehicles all the time.

How do you keep track of your contacts? You can use a laptop computer. However, most of the people I have talked with who have tried this method have returned to pencil-and-paper logs. The chief complaint is that the software used is not versatile enough to accommodate the logging needs of the Rover,

and the computer is just one more item that can break. If you go with paper logs, bring plenty of pencils and paper. Have a safe place to stow the logs. Keep containers full of sharpened pencils near the operating positions, because you never know when you will drop one or break the lead.

How do you keep track of time? If you are going to run meteor schedules, you must have an accurate source of time for the sequencing. One cheap way for accurate time is to use an HF radio and an antenna that will pick up the WWV signal, plus a clock on which you can control the "seconds" setting.

What is the best way to operate CW? The cheapest way is a hand key. However, some operators use keyers that can double as beacons. The choice is up to you. Remember to bring a hand key as a backup. You never know.

What kind of vehicle makes a good Rover station? The most popular seems to be a full-size passenger or panel van. Whatever the vehicle, it is imperative that it be in excellent running condition (down to the tires!) for the trip. An automobile-club towing service will never find some of the locations you choose. Also, know how to operate what you are driving. Towing something takes a certain set of skills. Driving something with limited side and rear vision takes another set of skills. If you are driving something with limited field of vision and towing something else, your work is really cut out for you.

In addition to choosing the type of vehicle you plan to use, you must decide where you are going to stay. This refers back to planning your route. If you stay inside the vehicle, be sure you are protected from the elements. If you choose to stay at a motel, know where to find one once you arrive at your destination. This is where your GPS or OnStar™ service comes in handy.

What about operating while in motion? If you are in a contest, the temptation exists to make as many contacts (points) as possible. One source of points is FM simplex (if you are near a metropolitan area that supports this type of activity). The other is via 6 meters, if the band is open. I operated while traveling from grid locator to grid locator using an ICOM IC-7000, a brick, and the base mast of a whip mobile antenna from my car. However, it is safer to have a copilot do the operating. Trying to operate contest style and log at the same time can be very distracting, not to mention *dangerous*. If you choose to operate and drive, and find yourself in a pile-up, pull over. If you do not, you might find yourself in another type of pile-up.

What time of year is the best time for roving? Obviously, the best time is when the band is open. This often seems to be during the summer. However, when planning for your trip, make provisions for any kind of weather. You may run into snow in June, if you travel through some parts of North America.

Who will you take on your trip? You may want to go by yourself. However, the long stretches between band openings make for lonely times. If you choose to travel with someone, make sure you are compatible before you go on a long trip. Not only is compatibility important, so is trust. Trust is knowing that your friends are going to lead you down a nearly washed out road, across the right spot. Trust also is knowing that your friend is not going to run over you.

How many of you should there be on a trip? If you are operating in a contest, all contest rules (as they are written now) state that there may be no more than two operators. However, for the CQ contests, a third person, a non-operator, may go along as a driver. Obviously, if you are not participating in a contest, take along as many of your friends as you can live with at a time!

During the planning stages of your trip, check out your equipment exactly as it is to be used. On the trip you will find the same thing. Knowing what to expect before you leave can save you from yet another headache when you arrive at your destination.

Probably the most important part of your planning is giving someone your itinerary. Without it, your friends will not know where to look for you if something happens. Remember, you may go where your cell phone does not work. Your family, not to mention your many friends on the VHF-Plus frequencies, care about you. They want you to have fun on your trip. However, they also want you to return home—or at least know how to find you if you cannot figure out how to make it back.

What about publicity? When you have your trip itinerary worked out, let me know and I will publicize it in this column or on Facebook. Remember, the more publicity, the more successful your trip.

Current Contests

European Worldwide EME Contest 2011: Sponsored by DUBUS and REF, the EU WW EME contest is intended to encourage worldwide activity on moonbounce. Information for this contest is available at the following website: <http://www.marsport.org.uk/dubus/EMEContest2011.pdf>.

ARRL June VHF QSO Party: The dates for this contest are 11–13 June. Complete rules are in the May issue of *QST*. Rules can also be found on the ARRL website (http://www.arrl.org). Many are making plans to activate rare grids. For the latest information on grid expeditions, check the VHF reflector (vhf@w6yx.stanford.edu) on the internet. This is by far the most popular VHF contest. For weeks in the run up to the contest postings are made on the VHF reflector announcing Rover operations and grid expeditions. It is a contest that will create for you plenty of opportunities to introduce the hobby to your friends who are not presently working the VHF-Plus bands or are not hams.

SMIRK Contest: The Six Meter International Radio Klub (SMIRK) will hold its annual contest from 0000 UTC Saturday June 18 until 2359 UTC June 19. Contacts must be made on the 50-MHz (6-meter) band. Any licensed amateur in any country may participate. Exchange is grid square and SMIRK number for operators who have one. Points are 1 for contacts with stations not having SMIRK numbers and 2 points for contacts with stations having SMIRK numbers. Logs should go to the secretary, Paul (Mick) McBride, W3FJ, 10 Longview Drive, Williamsport, PA 17701, or via e-mail to <mickpdm@hotmail.com>. They must be received by August 1, 2011.

Field Day: ARRL's classic, Field Day, will be held on June 25–26. Complete rules for this contest can be found in *QST* and on the ARRL's website: <http://www.arrl.org>. In years past very large European openings have occurred on 6 meters. Also, as happened in 1998, tremendous sporadic-*E* openings can occur. Certainly, this is one of the best club-related events to involve new people in the hobby. *(For more on Field Day, see the "Taking it to the Field Special" articles and columns in this issue of CQ—ed.)*

Conference and Convention

The annual **Ham-Com Hamfest** will be held June 10–11, 2011, in Plano, Texas. As always, the North Texas Microwave Society will present a microwave forum. For more information, see the Ham-Com website at <http://www.hamcom.org/>, and please see us at the CQ Booth.

Calls for Papers

Calls for papers are issued in advance of forthcoming conferences either for presenters to be speakers, or for papers to be published in the conferences' *Proceedings*, or both. For more information, questions about format, media, hardcopy, e-mail, etc., please contact the person listed with the announcement. The following conference organizer has announced a call for papers for its forthcoming conferences:

Technical papers are solicited for presentation at the **30th Annual ARRL and TAPR Digital Communications Conference** to be held September 1618 in Baltimore, Maryland, and publication in the conference *Proceedings*. Presentation at the conference is not required for publication. Submission of papers is due by July 31, 2011 and should be submitted to: Maty Weinberg, KB1EIB, ARRL, 225 Main Street, Newington, CT 06111, or via the Iinternet to <maty@arrl.org>. For suitable topics and submission guidelines also contact Maty via e-mail; also check <http://www.arrl.org>.

Meteor Showers

June minor showers include the following and their possible radio peaks: June *Arietids*, June 7*; *zeta-Perseids*, June 9*; June *Boõtids*, June 27, 2100 UTC; and *β-Taurids*, June 28. An asterisk (*) indicates that the shower may have multiple peaks.

For more information on the above meteor shower predictions, please see Tomas Hood, NW7US's "Propagation" column elsewhere in this issue, as well as the International Meteor Organization's website: <http://www.imo.net>.

And Finally . . .

As usual, the summer sporadic-*E* season should be in full swing by now. Six meters should be active almost every day during this month. During those intense 6-meter openings watch for possible openings on 2 meters. In addition to the day-to-day operating, you can see from the "Current Contests" section above that there are good contests to participate in that will give you plenty of operating time on the VHF-Plus frequencies.

Again, thank you very much for your support for this, your column, as well as our sister publication, *CQ VHF* magazine. I look forward to your ongoing contributions to both this column and the magazine. Until next month...73 de Joe, N6CL

BY TED MELINOSKY,* K1BV

Awards from Switzerland and Greece

This month we start off with a 2011 short-term award from Switzerland and then move on to an awards series from Greece.

The Zurich HB80Z Award

During 2011 the Zurich chapter of the Union of Swiss Shortwave Amateurs celebrates its 80th anniversary. This award may be earned by any licensed amateur or SWL. Each QSO or SWL report with stations residing in the Zurich Canton (ZH) during the calendar year 2011 count 1 point for award purposes. QSOs with /mobile or /portable stations are also valid, if such station is located within the boundaries of the Canton Zurich during the QSO.

Requirements:

HB9 stations need 10 points

EU stations need 5 points

DX stations need 5 points

Each callsign may be worked one time only. A QSO with club station HB80Z is not required, but does count for 2 points.

SWL OK. All bands and modes OK. Each mode will be counted separately (Phone/CW/Mixed/ VHF/UHF).

Send a list of QSOs signed by two stations (GCR) with fee of CHF 10, 10 Euros, $US13, or 10 IRCs to: USKA Sektion Zurich, Award Manager, Rolf Peter, HB9MHR, Zelglistr. 16, CH-8602 Wangen ZH, Switzerland.

Awards from the Radio Amateur Association of Greece (R.A.A.G.)

R.A.A.G. offers a series of handsome certificates that focus on the geography and history of this southern European Mediterranean country. Modern Greece traces its roots back to the civilization of ancient Greece, generally considered as the birthplace of democracy, Western philosophy, the Olympic Games, western literature, and other facets of culture that have endured to the present day.

Greek amateurs are somewhat scarce (about 4600 licensees, which probably includes VHF/UHF), so the awards listed below present a bit of a challenge. Several of the awards listed require only a modest number of confirmations.

General Requirements: Awards are issued for SSB, CW, mixed or single mode. The fee for each award is 10 Euros or 10 IRCs. Endorsements are 2 Euros, $US2, or 4 IRCs. Apply to: R.A.A.G., Award

USA-CA Special Honor Roll

Jerry Haislip, K1SO
USA-CA All Counties #1215
February 28, 2011

USA-CA Honor Roll

500

K1SO.....3536
KE5AQD.....3537
SV3AQR.....3538

1000

K1SO.....1813

1500

K1SO.....1523

2000

K1SO.....1412

2500

K1SO.....1328

3000

K1SO.....1240

The total number of counties for credit for the United States of America Counties Award is 3077. The basic award fee for subscribers is $6.00. For nonsubscribers it is $12.00. To qualify for the special subscriber rate, please send a recent CQ mailing label with your application. Initial application may be submitted in the USA-CA Record Book, which may be obtained from CQ Magazine, 25 Newbridge Road, Hicksville, NY 11801 USA for $2.50, or by a PC-printed computer listing which is in alphabetical order by state and county within the state. To be eligible for the USA-CA Award, applicants must comply with the rules of the program as set forth in the revised USA-CA Rules and Program dated June 1, 2000. A complete copy of the rules may be obtained by sending an SASE to Ted Melinosky, K1BV, 12 Wells Woods Road, Columbia, CT 06237 USA. DX stations must include extra postage for airmail reply.

*12 Wells Woods Rd., Columbia, CT 06237
e-mail: <k1bv@cq-amateur-radio.com>

During 2011 the Zurich chapter of the Union of Swiss Shortwave Amateurs celebrates its 80th anniversary by offering this short-term award.

The Radio Amateur Association of Greece (RAAG) issues the Athenian Award for contacts with 25 stations in the Athens area.

For the Greek Islands Award work and confirm 10 contacts in at least three groups of the Greek islands

The R.A.A.G. Award requires contacting stations located in Greece. Contacts must be made with at least seven Greek stations from any of the nine call areas, SV1 to SV9.

Manager, PO Box 3564, 10210 Athens, Greece. Internet: <http://www.raag.org/awards_en.html>; <http://62.103.213.195/awards_en.html>.

Athenian Award. Issued for contacts with 25 stations in the Athens area for any mode in the following three classes:

1st class—QSOs on 160 and 80 meters
2nd class—QSOs on 40 and 30 meters
3rd class—QSOs on any band, any mode

Endorsement stickers are available for each 25 new contacts.

Greek Islands Award. Work and confirm 10 contacts in at least three groups of the Greek islands as listed below:

1. Crete
2. Dodecanese
3. Ionian
4. Cyclades
5. Evia
6. Sporades
7. Lesbos
8. Khios
9. Thasos-Samothraki
10. Ikaria-Limnos

Mixed-mode or single-band endorsement stickers are available for every 10 different islands.

R.A.A.G. Award. Contact stations located in Greece after 1 January 1975. Submit a verified list of contacts with at least seven Greek stations from any of the nine call areas, SV1 to SV9. No band or mode limitations.

Greek Call Areas: SV1 Central Greece, SV2 Macedonia, SV3 Peloponnese, SV4 Thessaly, SV5 Dodecanese, SV6 Epirus, SV7 East Macedonia/ Thrace, SV8 Greek Islands, SV9 Crete.

Alexander the Great Award. This award is intended for radio amateurs or SWLs who have confirmed contacts with countries crossed by Alexander the Great. Only one contact should count from every country, except for Greece, where at least two contacts are needed, one of them with the SV2 call area (Macedonia). Contacts on or after 1 January 1958 count for the award. It may be endorsed for CW, SSB, RTTY, or Mixed Modes.

Available in two categories:

1st category—contacts with all 25 countries listed below.

2nd category—contacts with 15 countries (SV2 and SV or SV5 required).

A paper certificate is offered for the 2nd category; and a paper award plus a plaque with the face of Alexander the Great on it is awarded for the 1st category. *Note:* The IARU or RAAG's Award Manager must certify the list of contacts. If you are not a member of an association affiliated with the IARU, the cards must be sent. Fee for category 1 is 25 Euros or 25 IRCs. Fee for category 2 is 10 Euros or 10 IRCs.

Country List:

4K Azerbaijan
4X Israel
5A Libia
SV Greece
SV2 Macedonia
SV2/A Mt. Athos
SV5 Dodecanese
TA Turkey
UJ Uzbekistan
VU India
YA Afghanistan
YI Iraq
YK Syria
Z3 Fyrom (Macedonia)
ZA Albania
AP Pakistan
E4 Palestine
EK Armenia
EP Iran
EY Tajikistan
EZ Turkmenistan
JY Jordan
LZ Bulgaria
OD Lebanon
SU Egypt

The Alexander the Great Award is intended for those who have confirmed contacts with countries crossed by Alexander the Great.

The Work All Greece Digital Award is issued to those who make PSK or RTTY contacts with stations in all nine Greek Regions SV1–SV9.

Work All Greece Digital Award. Issued to radio amateurs or SWLs who make PSK or RTTY contacts with stations in all nine Greek Regions SV1– SV9 since 1 January 1958. The contacts must be made using only these two digital modes, and not RTTY and PSK combined. No endorsements available.

We're always on the hunt for new awards to feature on these pages. I invite you to send your e-mails to the address shown on the first page of this column. 73, Ted, K1BV

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dx

BY CARL SMITH,* N4AA

CYØ Update, plus VU4PB and S21YZ

Last month I said something about spring being in the air. Gosh I missed that one! Folks in the upper Midwest USA were still having snow the end of March, and in the southeastern USA fierce storms spread destruction across many states with winds of 60 to 70 mph and tornadoes destroying towns. I can only hope and pray that those affected will recover.

CYØ

I said last time I would have some info on the CYØ DXpedition from Sable Island this month. Randy, NØTG, did provide the stats for the operation and they are presented in a table shown below. One comment he made I thought worthy of mention: "550 JAs were worked prior to the earthquake . . . after that only 15 more. I would like to express my condolences to the Japanese people for the huge loss of life and the loss of so much of the infrastructure in the northeastern part of their country. Just as this is being written, I am hearing Japan was again hit by two 7.4 earthquakes. We can only hope and pray that they didn't suffer more disastrous loss of life and property.

*P.O. Box DX, Leicester, NC 28748-0249
e-mail: <n4aa@cq-amateur-radio.com>

CYØ Stats

Band	CW	SSB	RTTY	Total
160	1826			1826
80	1519	54		1573
40	2619	450		3069
30	2659			2659
20	3871	1488		5359
17	3394	539		3933
15	1838	680		2518
12	1598	247		1845
10	543	89		632
Total	**19,867**	**354**	**703**	**24,117**

This is the "runway" at Sable Island (CYØ). Look closely and you can see the tire tracks on the sandy beach. That is water above, to the right and below the "runway." From the plane one can only wonder if there is enough "runway" on which to land. As of the writing of this article in mid-April, Randy, NØTG, and Wayne, K8LEE, are still recovering from a cold/flu bug, but Randy says Jeff, N1NSB, came through "without a scratch." (Photo courtesy of Randy, NØTG)

VU4PB and S21YZ

That "big yellow thing in the sky" (the Sun) started having "fits" in March and gave us a much-needed boost for the contests in March. Ten meters was amazing. The VU4PB and S21YZ DXpeditions were workable on 10 and 12 meters and their signals were fantastic. A friend worked them from his mobile (100 watts) from east Tennessee. Some DXers were heard to say, "I haven't heard signals like that in years." Indeed, the solar flux kept hanging in with levels above 100 for days on end.

The two DXpeditions mentioned above fell into the time frame of the improved propagation. With those conditions, both operations provided many DXers with a much-needed "New One," either "All Time" or just filling in the bands/modes. Thanks to the teams that put them on the air!

The VU4PB operation from Andaman went QRT as scheduled at 1829Z on 31 March 2011 and the various operators have headed home to get back to their normal lives. A large number of log-check requests have been generated due to the pirate activities that unfortunately took place. The team asks that all who sent requests stand by while they

This is Basappa, VU2NXM, one of the operators at VU4PB. He works with youth groups and Scouts in India with the help of Josh, N7XM, who helps out by obtaining equipment and other supplies for them. (Photo courtesy of Josh, N7XM, <xxhound@gmail.com>)

CQ DX Awards Program

CW

1121 ..... K5ND

SSB Endorsements

340	K4IQJ/341	340	YU3AA/340
340	N7RO/341	340	W6DPD/340
340	EA2IA/341	330	W4UNP/339
340	K4CN/341	330	K3LC/338
340	N5ZM/341	300	AE9DX/300

CW Endorsements

340	K4IQJ/341	330	N5ZM/339
340	N7RO/340	330	W7CNL/339
340	EA2IA/340	320	WG5G/QRPp/325
340	K4CN/340	275	K4EQ/279
340	W4OEL/340	QRPp	K5ND
330	N4AH/339		

RTTY Endorsements

330	N5ZM/335	320	K4CN/323

The basic award fee for subscribers to *CQ* is $6. For non-subscribers, it is $12. In order to qualify for the reduced subscriber rate, please enclose your latest *CQ* mailing label with your application. Endorsement stickers are $1.00 each plus SASE. Updates not involving the issuance of a sticker are free. All updates and correspondence must include an SASE. Rules and application forms for the CQ DX Awards may be found on the <www.cq-amateur-radio.com> website, or may be obtained by sending a business-size, self-addressed, stamped envelope to CQ DX Awards Manager, Billy Williams, N4UF, Box 9673, Jacksonville, FL 32208 U.S.A. As of October 12, we recognize 341 active countries, pending a final decision on the former Netherlands Antilles. Please make all checks payable to the award manager. Photocopies of documentation issued by recognized national Amateur Radio associations that sponsor international awards may be acceptable for CQ DX award credit in lieu of having QSL cards checked. Documentation must list (itemize) countries that have been credited to an applicant. Screen printouts from eQSL.cc that list countries confirmed through their system are also acceptable. Screen printouts listing countries credited to an applicant through an electronic logging system offered by a national Amateur Radio organization also may be acceptable. Contact the CQ DX Award Manager for specific details.

address the e-mails received. Only then will the final logs be sent over to the QSL Manager, Joe, W3HNK, for QSL responses. The breakdown of QSOs by continent for the operation, which logged around 33,000 contacts, shows EU 45%; AS 30%; NA 20% and others 5%. (A few photos of the operation were sent along from Basappa, VU2NXM, who was one of the operators.)

I have to interrupt here for a bit of story-telling concerning the VU4PB operation. This group was on the air over the same time period as the CQ WW WPX contest the last full weekend of March. One of my readers commented that he observed a contest station operating on 20 meters SSB on about the same frequency as VU4PB. With all of the typical QRM, many DXers made the mistake of working a V31 station, believing they were working VU4PB. There is some speculation that this was due to folks watching Cluster spots and not verifying whom they were working. Alsp, according to my "reporter," the V31 station

The WPX Program

CW

3264 ..... AB1J

SSB

3092	VE2NGH	3094	DM3FZN
3093	KU1T		

Mixed

2149	DM3FZN	2151	N7WEJ
2150	K2EN	2152	K3VED

CW: 2000 AB1J. 5800 K2VV.
SSB: 350 VE2NGH. 2300 SV3AQR. 4950 F6DZU. 5000 K2VV.
Mixed: 450 K2EN. 550 K3VED, N7WEJ. 1000 KU1T. 2350 AB1J. 2500 UA4SKW. 6650 K2VV.
Digital: 400 K2EN.

20 meters: KU1T

Europe: KU1T
N. America: KU1T

Award of Excellence: AB1J, DM3FZN

Award of Excellence Holders: N4MM, W4CRW, K5UR, K2VV, VE3XN, DL1MDD, DJ7CX, DL3RK, WB4SIJ, DL7AA, ON4QX, 9A2AA, OK3EA, OK1MP, N4NO, ZL3GO, W4BQY, IØJX, WA1JMP, KØJN, W4VQ, KF2O, WB8CNL, W1JR, F9RM, W5UR, CT1FL, WA4QMQ, W8ILC, VE7DP, K9BG, W1CU, G4BUE, N3ED, LU3YL/W4, NN4Q, KA3A, VE7WJ, VE7IG, N2AC, W9NUF, N4NX, SMØDJZ, DK5AD, WD9IIC, W3ARK, LA7JO, VK4SS, I8YRK, SMØAJU, N5TV, W6OUL, WB8ZRL, WA8YTM, SM6DHU, N4KE, I2UIY, I4EAT, VK9NS, DEØDXM, DK4SY, UR2QD, AB9O, FM5WD, I2DMK, SM6CST, VE1NG, I1JQJ, PY2DBU, HI8LC, KA5W, K3UA, HA8UB, HA8XX, K7LJ, SM3EVR, K2SHZ, UP1BZZ, EA7OH, K2POA, N6JV, W2HG, ONL-4003, W5AWT, N3XX, HB9CSA, F6BVB, YU7SF, DF1SD, K7CU, I1POR, K9LJN, YBØTK, K9QFR, 9A2NA, W4UW, NXØI, WB4RUA, I6DQE, I1EEW, I8RFD, I3CRW, VE3MS, NE4F, KC8PG, F1HWB, ZP5JCY, KA5RNH, IV3PVD, CT1YH, ZS6EZ, KC7EM, YU1AB, IK2ILH, DEØDAQ, I1WXY, LU1DOW, N1IR, IK4GME, VE9RJ, NN1N, HB9AUT, KC6X, N6IBF, W5ODD, IØRIZ, I2MQP, F6HMJ, HB9DDZ, WØULU, K9XR, JAØSU, I5ZJK, I2EOW, IK2MRZ, KS4S, KA1CLV, WZ1R, CT4UW, KØIFL, WT3W, IN3NJB, S50A, IK1GPG, AA6WJ, W3AP, OE1EMN, W9IL, I7PXV, S53EO, DF7GK, S57J, EA5BM, DL1EY, DJ1YH, KUØA, VE2UW, 9A9R, UAØFZ, DJ3JSW, OE6CLE, HB9BIN, N1KC, SM5DAC, RW9SG, WA3GNW, S51U, W4MS, I2EAY, RAØFU, CT4NH, EA7TV, W9IAL, LY3BA, K1NU, W1TE, UA3AP, EA5AT, OK1DWC, KX1A, IZ5BAM, K4LQ, KØKG, DL6ATM, VE9FX, DL2CHN, W2OO, AI6Z, RU3DX, WB9IHH, CT1EEN, G4PWA, OK1FED, EU1TT, S53MJ, DL2KQ, RA1AOB, KT2C, UA9CGL, AE5B, KØDEQ, DKØPM, SV1EOS, UAØFAI, N4GG, UA4RZ, 7K3QPL, EW1CQ., UA4LY, RZ3DX, UA3AIO, UA4RC, N8BJQ, UA3BS, UA9FGR, UT3UY, WA5VGI, UT9FJ, UT4EK, K9UQN, UR5FEO, LY2MM, N3RC, OH3MKH, RA3CQ, UT3IZ, S55SL, RU3ZX, YO9HP, RA3DNC, K8ZT, KE5K, JH8BOE, TF8GX, S58MU, UX1AA

160 Meter Endorsements: N4MM, W4CRW, K5UR, VE3XN, DL3RK, OK1MP, N4NO, W4BQY, W4VQ, KF2O, W8CNL, W1JR, W5UR, W8ILC, K9BG, W1CU, G4BUE, LU3YL/W4, NN4Q, VE7WJ, VE7IG, W9NUF, N4NX, SMØDJZ, DK5AD, W3ARK, LA7JO, SMØAJU, N5TV, W6OUL, N4KE, I2UIY, I4EAT, VK9NS, DEØDXM, UR2QD, AB9O, FM5WD, SM6CST, I1JQJ, PY2DBU, HI8LC, KA5W, K3UA, K7LJ, SM3EVR, UP1BZZ, K2POF, IT9TQH, N6JV, ONL-4003, W5AWT, N3XX, F6BVB, YU7SF, DF1SD, K7CU, I1POR, K9LJN, YBØTK, K9QFR, W4UW, NXØI, WB4RUA, I1EEW, ZP5JCY, KA5RNH, IV3PVD, CT1YH, ZS6EZ, YU1AB, IK4GME, NN1N, W5ODD, IØRIZ, I2MQP, F6HMJ, HB9DDZ, K9XR, JAØSU, I5ZJK, I2EOW, KS4S, KA1CLV, KØIFL, WT3W, IN3NJB, S50A, IK1GPG, AA6WJ, W3AP, S53EO, S57J, DL1EY, DJ1YH, KUØA, VR2UW, UAØFZ, DJ3JSW, OE6CLD, HB9BIN, N1KC, SM5DAC, S51U, RAØFU, CT4NH, EA7TV, LY3BA, K1NU, W1TE, UA3AP, OK1DWC, KX1A, IZ5BAM, DL6ATM, W2OO, RU3DX, WB9IHH, G4PWA, OK1FED, EU1TT, S53MJ, DL2KQ, RA1AOB, UA9CGL, SM6DHU, KØDEQ, DKØPM, SV1EOS, N4GG, UA4RZ, 7K3QPL, EW1CQ, UA4LY, RZ3DX, UA3AIO, UA4RC, N8BJQ, UA3BS, UA9FGR, UT3UY, WA5VGI, UR5FEO, N3RC, UT3IZ RU3ZX, YO9HP, RA3DNC, K8ZT, KE5K, JH8BOE, S58MU, UX1AA.

Complete rules and application forms may be obtained by sending a business-size, self-addressed, stamped envelope (foreign stations send extra postage for airmail) to "CQ WPX Awards," P.O. Box 355, New Carlisle, OH 45344 USA. Note: WPX will now accept prefixes/calls which have been confirmed by eQSL.cc. Other electronic QSL confirmation means are not accepted.

*Please Note: The price of the 160, 30, 17, 12, 6, and Digital bars for the Award of Excellence are $6.50 each.

5 Band WAZ

As of April 1, 2011, 839 stations have attained the 200 zone level and 1718 stations have attained the 150 zone level.

New recipients of 5 Band WAZ with all 200 zones confirmed:

S59Z S53R

The top contenders for 5 Band WAZ (zones needed, 80 or 40 meters):

N7US, 199 (18)
N4WW, 199 (26)
W4LI, 199 (26)
K7UR, 199 (34)
IK8BQE, 199 (31)
JA2IVK, 199 (34 on 40)
IK1AOD, 199 (1)
VO1FB, 199 (19)
KZ4V, 199 (26)
W6DN, 199 (17)
W3NO, 199 (26)
RU3FM, 199 (1)
N3UN, 199 (18)
W1JZ, 199 (24)
W1FZ, 199 (26)
SM7BIP, 199 (31)
N4NX, 199 (26)
N4MM, 199 (26)
EA7GF, 199 (1)
JA5IU, 199 (2)
RU3DX, 199 (6)
N4XR, 199 (27)
HA5AGS, 199 (1)
VE3XN, 199 (26)
N5AW, 199 (17)
JH7CFX, 199 (2)
K7LJ, 199 (37)
RA6AX, 199 (6 on 10m)
RX4HZ, 199 (13)
KØGM, 199 (17)
S58Q, 199 (31)
KQ0B, 199 (2 on 10)
K9OW, 199 (34 on 10)
G3NKC, 199 (31 on 10)
K8PT, 199 (26)
N8AA, 199 (23)
IN3ZNR, 199 (1)
EA5BCX, 198 (27, 39)
G3KDB, 198 (1, 12)
JA1DM, 198 (2, 40)
9A5I, 198 (1, 16)
K4CN, 198 (23, 26)
G3KMQ, 198 (1, 27)
N2QT, 198 (23, 24)
OK1DWC, 198 (6, 31)
W4UM, 198 (18, 23)
US7MM,198 (2, 6)
K2TK, 198 (23, 24)
K3JGJ, 198 (24, 26)
W4DC, 198 (24, 26)
F5NBU, 198 (19, 31)
W9XY, 198 (22, 26)
KZ2I, 198 (24, 26)
W7VJ, 198 (34, 37)
W9RN, 198 (26, 19 on 40)
W5CWQ,198 (17, 18)
I5KKW, 198 (31&23 on 20)
UA4LY, 198 (6&2 on 10)
IK4CIE, 198 (1, 31)
K2FF, 198 (18, 23)
JA7XBG, 198 (2 on 80&10)
HB9ALO, 198 (1, 31)
JA3GN, 198 (2 on 80&40)

The following have qualified for the basic 5 Band WAZ Award:

N8AA (199 zones)
K8QM (170 zonnes)
TF4M (152 zones)

5 Band WAZ updates:

N7US (199 zones)
S59U (190 zones)
K3XA (160 zones)
IV3MUC (200 zones)
K2FF (198 zones)

***Please note: Cost of the 5 Band WAZ Plaque is $100 shipped within the U.S.; $120 all foreign (sent airmail).**

Rules and applications for the WAZ program may be obtained by sending a large SAE with two units of postage or an address label and $1.00 to: WAZ Award Manager, Floyd Gerald, N5FG, P.O. Box 449, Wiggins, MS 39577-0449. The processing fee for the 5BWAZ award is $10.00 for subscribers (please include your most recent *CQ* mailing label or a copy) and $15.00 for nonsubscribers. An endorsement fee of $2.00 for subscribers and $5.00 for nonsubscribers is charged for each additional 10 zones confirmed. Please make all checks payable to Floyd Gerald. Applicants sending QSL cards to a *CQ* checkpoint or the Award Manager must include return postage. N5FG may also be reached via e-mail: <n5fg@cq-amateur-radio.com>.

The WAZ Program

6 Meters

101 .....S51DI (35 zones)
102 .....S59Z (25 zones)

15 Meters SSB

647 .....JL3DGI

20 Meters SSB

1200 .....RW9FM

20 Meters CW

604 .....JAØCVC
605 .....9A4MF

160 Meters

371 .....CT1FJK (40 zones)
372 .....VK3PA (30 zones)
373 .....SP6HEQ (40 zones)
374 ..PAØWRS (40 zones)
375 ..VE6RST (32 zones)

All Band WAZ

Diamond Jubilee

109.....S59U
110 .....VE1AI
111 .....NW7E
112 .....DL5ST

Mixed

8788 .....UA1NFA
8789 .....K8QM
8790 .....K7AWB
8791.....RA4FEA
8792.....SP7DQR
8793 .....N3YZ
8794.....AK7O
8795 .....W9QO

SSB

5156 .....EI9HX
5157 .....K8QM
5158.....K7AWB
5159 .....W7BC
5160 .....KN4FO

CW

622 .....DL9FA
623 .....YO2LAN
624 .....K8QM
625.....KJ6P
626 .....DL7UPN

RTTY

214 .....K8QM

Satellite

025 .....KCØTO (40 zones)

Rules and applications for the WAZ program may be obtained by sending a large SAE with two units of postage or an address label and $1.00 to: WAZ Award Manager, Floyd Gerald, N5FG, P.O. Box 449, Wiggins, MS 39577-0449. The processing fee for all *CQ* awards is $6.00 for subscribers (please include your most recent *CQ* mailing label or a copy) and $12.00 for nonsubscribers. Please make all checks payable to Floyd Gerald. Applicants sending QSL cards to a *CQ* checkpoint or the Award Manager must include return postage. N5FG may also be reached via e-mail: <n5fg@cq-amateur-radio.com>.

failed to give his callsign very often, thus compounding the problem.

This entire situation could easily have been resolved by the V31 station giving his call more often, *and* if the DXers would have verified whom they were working. This was *not* the problem of the VU4 operators.

Many DXers have complained, "I'm not in the log." Perhaps that is because they didn't work the right station. These points have been repeated time and time again on these pages, on the pages of other publications, on the clusters, on the air, etc., etc. Ladies and gentlemen, we have to *pay attention* to what is going on.

It's time we put a stop to all of the ridiculous things being said and done on the air. It is ruining our reputation as "the cream of the crop." We may fast become known as "the bottom of the barrel." Which "title" do you want to have?

Once again, I urge all DX clubs to actively promote the principles put forth by Uncle DX in *The DX Magazine* and on the website <http://www.dxpub.com/dx_news.html>; the procedures set forth by ON4UN and ON4WW, which are available on the ARRL website <http://www.arrl.org/files/file/DXCC/Eth-operating-ENarrl-SITE-1jul2008.pdf>; and DX Code of Conduct available at <http://dx-code.org/>. *You have heard the problem on the air, now it is time to help solve the problem!*

I tried to find some stats for the S21YZ operation from Bangladesh but could not come up with that before press deadline. I'll have try to have that next time for this column. I can say the operation was coordinated by Zorro, JH1AJT, a well-known DXpeditioner from years past and it is good to have him back.

ZS8M

ZS8M from Marion Island has wrapped up a year-long activity and was preparing to sail away to home in South Africa. Pierre, ZS1HF, did as well as he could with the conditions he faced. Pierre was on a work assignment on Marion Island and operated when his work schedule allowed him to do so. A construction team came in to build a new camp that kept him off the air for several weeks. When he was able to get back on, he encountered some locally generated noise that made operating difficult, if not impossible. Much time was spent trying to resolve the noise problem, but his time on the island was almost up before he was able to get rid of it.

Future DXpeditions

There are rumors afloat that we might see some activity from Malpelo (HKØM) in early 2012. This would be good news for a lot of DXers. Malpelo consistently has been in the upper levels of the Most Wanted list (see *The DX Magazine*) every year, especially for CW and Digital modes. I hope to have more for you on this one in the months ahead.

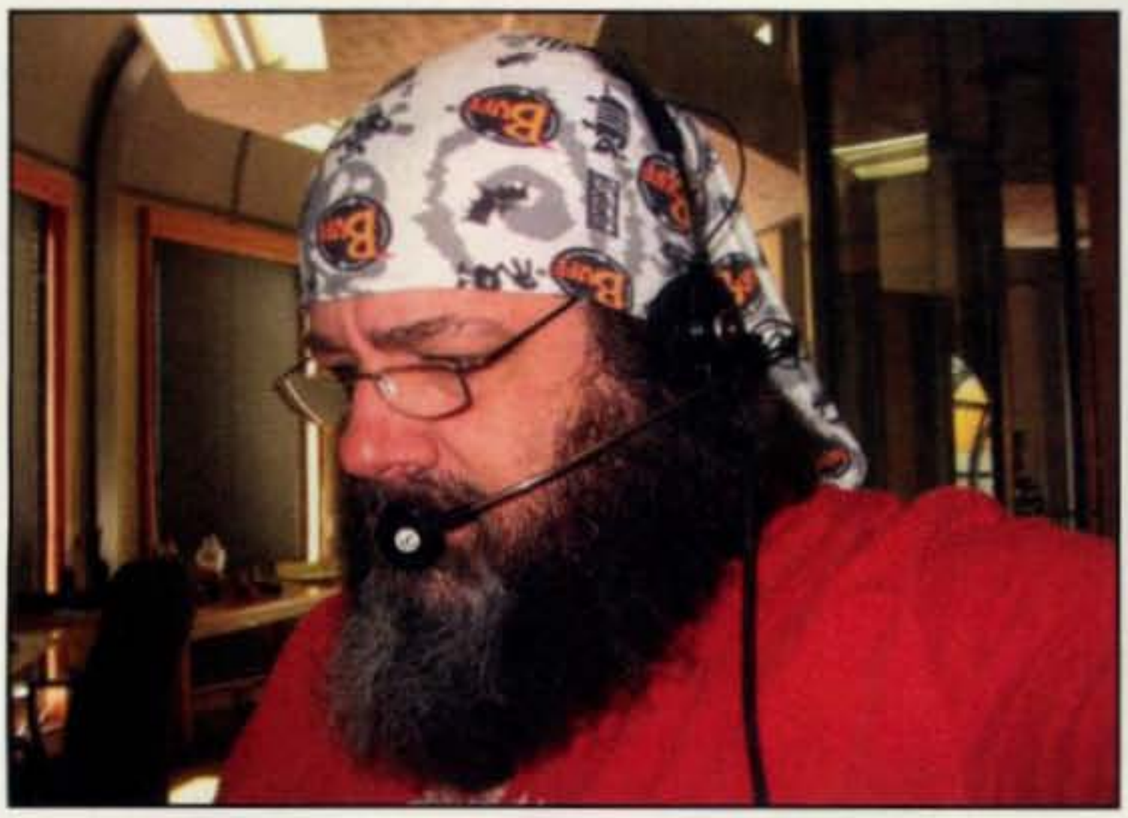
Another one that could see action is Trindade Island (PYØT). It has not seen much activity in recent years and is sitting around the #40 mark for CW/SSB and Digital modes.

Timor Leste, 4W6A, was just announced for a DXpedition September 16–26. Steve, 9M6DXX, gives a website for more information and accepting donations: <http://www/4w6a.com>.

The Oceania DX Group (ODXG) is planning a trip to Vanuatu for the September/October time frame. Chris, VK3QB, says, "We are trying to attract newcomers and/or those who for whatever reason do not feel suited to a 'high pressure' DXpedition environment. Our goal is to have fun and develop interest and skills in DXpedition operators. If you are interested, contact Chris by e-mail: <cmchapman@bigpond.com>.

LoTW

The ARRL's Logbook of The World has been a very worthwhile project for many. If you have not checked into using it, you really should. Trying to confirm many contacts via snail mail is getting just too expensive for many of us. Postage keeps going up, mail is routinely pilfered and/or



Pierre, ZS1HF/ZS8M in early March. He went QRT from Marion Island after a year on the island where he logged around 9000 QSOs. There were two licensed hams on the new team on Marion Island, but unfortunately they will not be active. (Photo courtesy of Pierre, ZS1HF/ZS8M)

For those who don't recognize this gear, it's a Collins S-Line circa 1966. That's a Heath SB-200 amplifier on the right with a Heath Monitor Scope under the shelf. (Photo courtesy of Lynn, W4NL [ex-W3BWZ])

outright stolen, money disappears, and frustration grows waiting for cards to appear in the mailbox. I am well aware of the fascination of having all those pretty cards to show our friends and cherish for oursleves. I've done it for years myself, but there comes a time when one has to say enough is enough.

Today many DXpeditions upload their logs to LoTW after the operation is done. Agreed, most wait until they have exhausted the supply of donations either with the mail-in requests on by the donations page on their website. Whichever way you choose to go is entirely up to you. Unless you have some reason for not waiting, just be patient and the logs will be on LoTW within a reasonable length of time and you will get your confirmation (granted, with no "hard copy"). However, once it is "in the bag," you can still ask for a hard copy if you just have to have one.

Convention Time

It's convention time for many. Some have already taken place, but there are more coming. I'll mention just a few of them here:

The W5-DXCC in Plano, Texas is June 10: <http://groups.yahoo.com/group/STXDXCC/message/2521>.

The Friedrichshafen International Exhibition in Friedrichshafen, Germany is June 24–26: <http://www.hamradio-friedrichshafen.de/ham-en/index.php>.

The Maritime DX forum in Halifax, Nova Scotia is August 5–6: <http://www.harc-arc.org/mdf>.

CQ DX Honor Roll

The CQ DX Honor Roll recognizes those DXers who have submitted proof of confirmation with 275 or more ACTIVE countries. With few exceptions, the ARRL DXCC Countries List is used as the country standard. The CQ DX Award currently recognizes 341 countries. Honor Roll listing is automatic when an application is received and approved for 275 or more active countries. Deleted countries do not count and all totals are adjusted as deletions occur. To remain on the CQ DX Honor Roll, annual updates are required. All updates must be accompanied by an SASE if confirmation of total is required. The fee for endorsement stickers is $1.00 each plus SASE. Please make checks payable to the awards manager, Billy F. Williams. All updates should be mailed to P.O. Box 9673, Jacksonville, FL 32208.

CW

NØFW 340	EA2IA 340	N4MM 339	F3TH 336	K9OW 335	W4UW 330	IKØADY 326	WA4DOU 314	K4EQ 279
K2TQC 340	N7FU 340	W7CNL 339	DL3DXX 336	K2OWE 334	K8SIX 329	F6HMJ 326	YO9HP 314	4Z5SG 277
WB4UBD 340	K4IQJ 340	N5ZM 339	N5FG 336	W4MPY 334	W7IIT 329	EA5BY 326	ON4CAS 312	WA2VQV 277
K3UA 340	K4MQG 340	N4AH 339	YU1AB 336	K5UO 334	K1FK 329	WG5G/QRPp 325	KØKG 312	
N4JF 340	W8XD 340	K9IW 339	UAØMF 336	N6AW 334	N7WO 328	W9IL 319	WD9DZV 310	
K2FL 340	N7RO 340	K8LJG 339	W7OM 335	HB9DDZ 334	W6OUL 327	OZ5UR 318	KT2C 302	
WK3N 340	N5FG 340	K7LAY 338	WØJLC 335	G3KMQ 332	KE3A 327	CT1YH 318	HA5LQ 302	
N4NX 340	K4CN 340	KA7T 338	VE3XN 335	K6LEB 332	K6CU 327	EA3ALV 317	N2LM 300	
K9MM 340	K4JLD 339	K3JGJ 338	N4CH 335	K5RT 330	W1DF 327	RA1AOB 315	K4IE 296	
W4OEL 340	K9BWQ 339	OK1MP 336	PY2YP 335	JA7XBG 330	KA3S 326	W6YQ 314	N2VW 281	

SSB

XE1AE 341	EA2IA 341	K9BWQ 340	W4ABW 337	VE3MR 336	AB4IQ 335	CT1AHU 330	XE1RBV 319	AD7J 306
NØFW 341	IN3DEI 341	K7LAY 340	DL3DXX 337	VE3MRS 336	W4UW 335	N1ALR 330	VE7SMP 318	HB9DQD 305
K6YRA 341	DU9RG 341	W6DPD 340	I8KCI 337	AA4S 336	K1UO 335	K7HG 329	ON4CAS 317	4Z5FL/M 304
IK1GPG 341	K4MQG 341	K8LJG 340	VE1YX 337	PY2YP 336	HB9DDZ 335	N5YY 329	N8SHZ 314	K7SAM 303
K2TQC 341	N4MM 341	YU3AA 340	N4CH 337	K9OW 336	K9IW 335	KE4SCY 328	IV3GOW 314	I3ZSX 302
K4MZU 341	K9MM 341	KØKG 339	EA3BMT 337	EA5BY 336	N7WR 335	K6GFJ 328	W6NW 312	AE9DX 300
K5OVC 341	K3JGJ 341	W7FP 339	IKØAZG 337	XE1J 336	K8SIX 334	W9GD 327	KU4BP 312	4X6DK 299
DJ9ZB 341	N5ZM 341	W4UNP 339	YU1AB 337	OE3WWB 335	KE3A 334	SV3AQR 326	N2LM 312	WD9DZV 299
OZ5EVV 341	N7RO 341	K9IW 339	UAØMF 337	N6AW 335	N2VW 334	VE7EDZ 326	KA1LMR 310	K7ZM 298
K3UA 341	KE5K 341	W2CC 338	KZ2P 336	IK8CNT 335	JA7XBG 334	KD5ZD 324	RA1AOB 310	W9ACE 292
WB4UBD 341	K4IQJ 341	K3LC 338	W7OM 336	EA4DO 335	K5UO 333	W1DF 324	G3KMQ 310	W6MAC 290
N4JF 341	N5FG 341	4Z4DX 337	W8AXI 336	CT3BM 335	K5RT 332	W4MPY 323	XE1MEX 310	N3RC 278
VE2PJ 341	K4CN 341	OZ3SK 337	W9SS 336	K8LJG 335	WØYDB 332	WØROB 323	IØYKN 309	WA5UA 276
WK3N 341	K5TVC 340	OK1MP 337	VK4LC 336	W3AZD 335	WA4WTG 332	TI8II 322	XE1MW 307	
N4NX 341	W6BCQ 340	W4WX 337	WS9V 336	W2FKF 335	ZL1BOQ 332	YO9HP 322	AA1VX 306	
K4JLD 341	VE2GHZ 340	IØZV 337	VE3XN 336	YU3AA 335	W9IL 332	KW3W 322	W5GT 306	
N7BK 341	K2FL 340	OE2EGL 337	K9HQM 336	W7BJN 335	F6HMJ 331	W6OUL 320	K4IE 306	

RTTY

WB4UBD 339	N5FG 336	K3UA 333	K4CN 323	WK3N 314
NI4H 338	N5ZM 335	OK1MP 329	UAØMF 318	K8SIX 298

The Pacific Northwest DX Convention in Everett, Washington is August 12–14: <http://www.wwdxc.org/convention/2011-dx-convention/2011-pnw-dx-convention.html>.

The W9-DXCC in Chicago, Illinois is September 16–17: <http://www. w9dxcc.com>.

The W4-DXCC/SEDCO in Pigeon Forge, Tennessee is September 24: <http://sedco.homestead.com/>.

If you have not yet been to one of these conventions, you have missed half the fun of being a DXer!

Try it . . . you must might like it !

I'll be out with the local club for Field Day the end of June. I haven't done that for quite some time. I hope to work some of you on 40 meters as W4MOE. It is my all-time favorite FD band.

Until next time, enjoy the chase and by all means, Have Fun!

73, Carl, N4AA

QSL Information

EA6/DK3WM via DK3WM
EA6/DL1DA via DL1DA
EA6/DL1KBQ via DL1KBQ
EA6/DL3OCH via DL3OCH
EA6/HA5GY via HA5GY
EA6/LX1DH via LX1DH
EA6AEI via EA6AZ
EA6AM via EA6AZ
EA6LH via EA6AZ
EA6TS via EA6AZ
EA6URB via EA6ZX
EA7/GØWHX via GØWHX
EA7HWL/3 via EA7HWL
EA8/DF7EF via DF7EF
EA8/DH2MS via DH2MS
EA8/DJ8NK via DJ8NK
EA8/DL5AXX via DL5AXX
EA8/DL7HKL via DL7HKL
EA8/EA4ERL via EA4ERL
EA8/EA4SV via EA4SV
EA8/G3SXW via G3SXW
EA8/G3XAQ via G3SWH
EA8/LA3JJ via LA3JJ
EA8/OE3NHW via OE3NHW
EA8/OH1BOI via OH1BOI
EA8/OK1ZHS via OK1ZHS
EA8/ON6ZK via ON6ZK
EA8/PD2BNH via PD2BNH
EA8AK via W3HNK
EA8BWW via NI5DX
EA8CMX via OH2BYS
EA8GK via DJ6QT
EA8ID via via DJ6QT
EA9/DJ1AIB via JR1AIB
EA9/DL1DA via DL1DA
EA9/DL3OCH via DL3OCH
EA9/G3SXW via G3SXW
EA9/KHØAM via JE1CKA
EA9/OK1FCJ via OK1DRQ
EA9/OL8R via OK1DRQ

(The table of QSL Managers is courtesy of John Shelton, K1XN, editor of "The Go List," 106 Dogwood Dr., Paris, TN 38242; phone 731-641-4354; e-mail: <golist@golist.net>; <http://golist.net/>.)

Outdoor Contest Operating

GEORGE TRANOS,* N2GA

With the advent of warmer weather in the Northern Hemisphere thoughts turn to spending more time outdoors. There are those hams who consider amateur radio contesting to be a strictly indoor activity and therefore relegate it to only the colder months. There is no need to give up your favorite radio pursuit just because of the temperature; you can contest from the field! You should give it a try if you've never done it.

Camping, Hiking, and Ham Radio

Some hobbies go well together, and ham radio is one that complements many other activities. One in particular that works well is camping. Like ham radio, camping has many different forms. You can travel in style and comfort in a recreational vehicle (RV) and spend your nights at an RV park with most of the amenities of home. RVs can have dedicated sleeping, eating, and living areas; they may also have fancy cooking facilities, lavatories, satellite television, and room to carry lots of radio stuff.

On the other end of the scale, tent camping and backpacking are two of the "back to basics" forms of camping. You can go hiking with nothing more than the clothes on your back, a knapsack with a tent, sleeping bag, clothes, food, and water. You can walk into the wilderness and set up camp at a secluded spot, stay overnight, and then get up the next day to pack up and start the routine all over again.

Car camping exists in between these two extremes. You carry all of your gear in your car and set up in a campground. Many types of campgrounds exist, some privately maintained and others owned by local, state, or national government organizations. These can run the gamut from extremely primitive with no toilet facilities or running water to luxurious with camp stores, shower and toilet facilities, lakes, and even swimming pools. Most charge a reasonable per-night fee at each site. Most of the time there is a picnic table, fireplace, parking spot for your car, and a place to pitch your tent.

Regardless of the type of camping chosen, ham radio can mesh well with your campsite. Normally there are trees that can be used to hang wire and enough room between campsites to allow fairly long and effective antennas. You can bring a gel-cell battery or rely on your car battery to power your station. Low-current-draw radios are a must unless you have some method of recharging your battery or can run your station from a generator. Very low-power (QRP, 5 watts or less) operating works well when camping because of these restraints.

Calendar of Events

All year	**CQ DX Marathon**
May 28–29	**CQ WW WPX CW Contest**
June 4–5	SEANET Contest
June 11	Portugal Day Contest
June 11	Asia-Pacific SSB Sprint
June 11-12	VK Shires Contest
June 11–12	GACW WWSA CW DX Contest
June 11–12	DRCG Long Distance Contest (RTTY)
June 1–12	ARRL June VHF QSO Party
June 18–19	All Asian CW DX Contest
June 25–26	ARRL Field Day
June 25–26	King of Spain SSB Contest
June 25–26	Marconi Memorial HF Contest
July 1	RAC Canada Day Contest
July 2–3	Venezuelan Ind. Day Contest
July 2–3	DL-DX RTTY Contest
July 9–10	IARU HF Contest
July 16–17	**CQ WW VHF Contest**

Selecting an Operating Location

When operating outdoors, having an effective antenna system is paramount, especially if you plan to operate in a contest. It is best to find a location at the top of a hill with the land sloping down and away from the location in the direction(s) of

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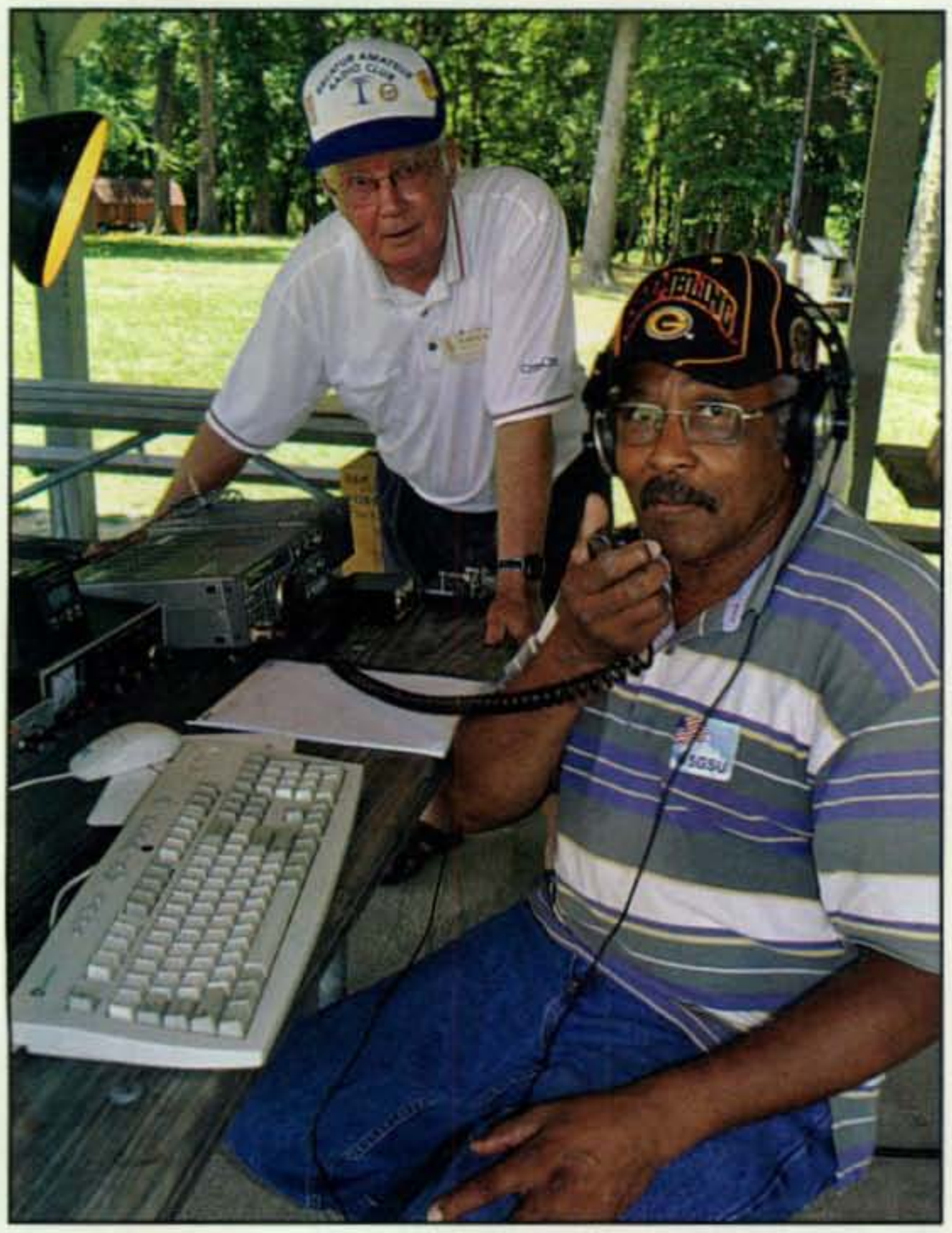
e-mail: <n2ga@cq-amateur-radio.com>

This tower and antenna at the Long Island Mobile Amateur Radio Club (LIMARC) Field Day operation is typical of temporary stations clubs may set up and use not only for Field Day, but for emergency field operations as well. (N2GA photo)



ARRL Field Day is a perennial favorite for outdoor contesting. Here, Robert McKenzie, K4MLR (standing), and J. Lester Christophe, W5GSU, operate the Decatur, Alabama, Amateur Radio Club's 2010 Field Day station. Bob is the club president, Lester is vice president. (Photo by Larry Mulvehill, WB2ZPI)

your intended signal. If you choose to use a dipole or other wire antenna, find a spot where there are tall trees and some amount of clearing between them so you can raise the antenna as high as possible and not have the surrounding vegetation interfere with it. Be extremely careful when shooting lines over trees as to not injure someone or damage property on the other side. You will be amazed at the number of ingenious ways there are to launch antennas over trees! People sometimes use bows and arrows, slingshots, fishing rods, tennis balls, and even rocks tied to the line to get up and over a large tree. Make sure you pull the line through and tie it off properly or your antenna may fall down. You may find that if you use a light heaving line, you can get over a higher tree. After it lands, tie a heavier line to it and pull that line through to actually hold your antenna.

Antennas for the Outdoors

You have many choices for antennas, and your selection will depend heavily on your operating location, weight limitations, time constraints, budget, and competitiveness. For simple installations looking for ease of installation, light weight, low cost, and simplicity, nothing beats a simple dipole. You can install it in minutes and be on the air quickly. Other choices are vertical antennas, phased verticals, and even Yagis on push-up masts. These take much more time to install, may cost considerably more, may take up a lot of space and be hard to transport, but may offer significantly better performance. If you have an RV, you might consider a small Yagi (to be used only while stationary) to improve your radiated power. Of course, the choice of antenna is limited only by your imagination (and the prohibitions of the campground). You have to decide if the advantages it offers offset all the other factors. For most people, though, a simple dipole is easiest to just get on the air.

Power and Radio Limitations

Unless you are running a generator or using your rechargeable car battery, your choice of radios will be limited to those running from 12-volt DC power. Many of today's modern radios may be usable. However, they may have large current draw even when their power output is reduced. In most cases, you might be better off with a true QRP radio that has been designed to utilize small amperage. Most of these radios will put out 5 watts and utilize extremely low current, especially on receive. Many will not have digital displays or other fancy features, and some will only run in CW mode. Utilizing Morse code may be your best bet anyway, as low-power voice operation will be much more challenging.

QRP Contesting

Probably the best way to get started with this type of operating is to participate in a QRP contest. Many QRP clubs sponsor contests, and you normally can find some of these during the warmer months when outdoor operating is more comfortable. QRP Amateur Radio Club International (QRPARCI) sponsors some contests and lists others on its website at <http://www.qrparci.org>. Other organizations also sponsor QRP contests, and there are many with QRP categories.

Operating Necessities

You will need a small table and comfortable operating chair if you want to stay on the air for any substantial amount of time. Picnic tables and benches are fine for short stints, but anything more than an hour at a time will require a folding chair at the minimum. Your table should be set so your radio will be at the proper height for comfortably operating the controls. You may want to place a mouse pad, soft tablecloth, or a cloth on the front of your table so your hands and arms don't get chafed or full of splinters. A screened-in tent with zip-up storm flaps is ideal for operating as it will have sun and rain protection, keep the bugs away, and provide good ventilation so you don't overheat. You will need something to use to log contacts. Initially, you can do it the old-fashioned way with paper and pen. This works well for the casual operator, but to be competitive you will need a laptop computer for all of its productivity enhancements. A radio interface cable will also help log band and mode automatically. Again, all of these things depend on your power limitations and your desire for simplicity.

Field Day

The fourth full weekend in June is ARRL Field Day. Radio amateurs in the United States and Canada are encouraged to set up portable stations running off emergency power to simulate operating under extreme conditions. Field Day is not really a contest but an emergency-preparedness exercise that has a contest-like operating experience. Many of today's big-gun contesters cut their teeth at Field Day.

Many Field Day operations are run by radio clubs; however, some may be run by one or two individuals. Field Day can be the highlight of a club's operating events. For some clubs, Field Day is a picnic with some operating thrown in. Other clubs put up large towers with Yagi antennas and set

up in a public space. Each group does it differently, with many trying to compete with others within their own operating class and area. Field Day is a great place to be exposed to operating expertise, antenna setup and placement, power distribution, lightning protection, computer logging, CW and voice HF operating, digital modes, gastronomical delights, and other areas of amateur radio.

Why Participate in Field Day?

Ted Console, K2QMF, says, "From what I can remember, my first Field Day was around 1965. A close ham friend of mine asked me to become a member of a radio club he belonged to. The club set up a Field Day site on Long Island and I attended my first Field Day. It was great! We were putting up antennas, putting up tents, setting up equipment and generators. There was a lot of sharing of experiences. A big part of it was the camaraderie between members.

"As far as operating, working many stations during the event was a thrill and watching techniques used by other members to work pile-ups was a learning experience. I guess I would have to say that the whole Field Day package is a must for any new ham. It opens the door for many different aspects of ham radio, including, but not limited to, contest operating and having fun."

Phil Lewis, N2MUN, adds: "My first Field Day was in 1991 at Babylon Town Hall on Long Island. We used paper logs and dupe sheets with two-man teams—one talking and one checking for dupes. This emphasized teamwork. Today, it's you and your computer! Setup is a learning experience and there's always good food. Remember, though, to always think safety first."

Like Phil, my first Field Day was in 1991 on Long Island, and I remember bringing my Bencher iambic paddle with me. I operated at the LIMARC "novice" station and used Mike's N2LPD callsign. We had a big CW score that year, especially on 10 meters as it was the peak of the sunspot cycle. It was great operating with all of the other budding contesters and sitting in with more experienced hands.

Summary

Ham radio outdoors can be lots of fun. Even casual operating can yield many and varied contacts from many areas. Choosing a prime operating location is paramount if you want to contest competitively. A wide array of antenna options is available, but time and space constraints limit your choices.

Most operating is done using batteries or generators as a power source, and you may be limited to only DC-powered radios and low-power output. Consider participating in the low-power operating categories in major contests, or try a QRP-specific contest for more fun. Bring your own operating necessities to help make your experience more enjoyable.

For starters, try joining a local club and operate in ARRL Field Day. It's coming up in just a few weeks (June 25–26)! You'll enjoy operating in the great outdoors and knowing you can combine being outside with contesting. I hope to CU on the air this summer!

73, George, N2GA

propagation

BY TOMAS HOOD,* NW7US

Take it to the Field Special

Try Something New for Field Day

A Quick Look at Current Cycle 24 Conditions

(Data rounded to nearest whole number)

Sunspots
Observed Monthly,March 2011: 56
Twelve-month smoothed, September 2010: 20

10.7 cm Flux
Observed Monthly, March 2011: 115
Twelve-month smoothed, September 2010: 82

***Ap* Index**
Observed Monthly, March 2011: 7
Twelve-month smoothed, September 2010: 6

One Year Ago: A Quick Look at Solar Cycle Conditions

(Data rounded to nearest whole number)

Sunspots
Observed Monthly, March 2010: 15
Twelve-month smoothed, September 2009: 6

10.7 cm Flux
Observed Monthly, March 2010: 83
Twelve-month smoothed, September 2009: 73

***Ap* Index**
Observed Monthly, March 2010: 4
Twelve-month smoothed, September 2009: 4

LAST-MINUTE FORECAST

Day-to-Day Conditions Expected for June 2011

	Expected Signal Quality			
Propagation Index.....	(4)	(3)	(2)	(1)
Above Normal: 1-5, 8-21, 25-26, 28-30	A	A	B	C
High Normal: 7, 22-24	A	B	C	C-D
Low Normal: 6, 27	B	C-B	C-D	D-E
Below Normal: N/A	C	C-D	D-E	E
Disturbed: N/A	C-D	D	E	E

Where expected signal quality is:
A—Excellent opening, exceptionally strong, steady signals greater than S9.
B—Good opening, moderately strong signals varying between S6 and S9, with little fading or noise.
C—Fair opening, signals between moderately strong and weak, varying between S3 and S6, with some fading and noise.
D—Poor opening, with weak signals varying between S1 and S3, with considerable fading and noise.
E—No opening expected.

HOW TO USE THIS FORECAST

1. Find the *propagation index* associated with the particular path opening from the Propagation Charts appearing in *The New Shortwave Propagation Handbook* by George Jacobs, W3ASK; Theodore J. Cohen, N4XX; and Robert B. Rose, K6GKU.

2. With the *propagation index*, use the above table to find the expected signal quality associated with the path opening for any given day of the month. For example, an opening shown in the Propagation Charts with a *propagation index* of 2 will be good (B) on June 1st through the 5th, poor (D) to fair (C) on the 6th, fair (C) on the 7th, etc.

3. As an alternative, the Last-Minute Forecast may be used as a general guide to space weather and geomagnetic conditions through the month. When conditions are Above Normal, for example, the geomagnetic field should be quiet and space weather should be mild. On the other hand, days marked as Disturbed will be riddled with geomagnetic storms. Propagation of radio signals in the HF spectrum will be affected by these conditions. In general, when conditions are High Normal to Above Normal, signals will be more reliable on a given path, when the path is ionospherically supported.

Field Day is always the fourth full weekend of June, beginning at 1800 UTC Saturday and running through 2059 UTC Sunday. Field Day 2011 will be held June 25–26, 2011. The Field Day objective is to work as many stations as possible on any and all amateur bands (excluding the 60, 30, 17, and 12 meter bands) and to learn to operate in abnormal situations in less than optimal conditions. This year's theme? Try something new!

I will say it again, and not for the last time: digital modes such as PSK-31 are very effective for getting a signal from your location to a far distant station's location. Using the same power level as a single-sideband station, your PSK-31 digital or CW Morse code signal will "make it" farther than that SSB signal. Most Field Day operations center either on voice or on Morse code (SSB and CW). Try something new! Fire up PSK-31 or even a mode like Olivia or JT65A. Remember: You get double points for digital contacts.

The forecast is good for higher HF bands during the contest. Expect sporadic-*E* openings on 10 meters, with a slight chance for *F*-region longer-range propagation due to the recent rise in sunspot activity. The forecast on 15 is significantly better than the forecast for 10 meters. Especially with digital modes, the *F*-layer mode propagation model on 15 meters indicates strong openings.

One of the best available methods to predict HF propagation conditions in advance is the 27-day recurrence tendencies of geomagnetic, solar, and ionospheric conditions. It is not an absolute method, but it does give a very good indication of what is expected. This column is being written in April, about three 27-day solar rotation cycles away from the start of the Field Day weekend. Based on a study of the patterns expected during the next three rotational periods of the sun, it looks like conditions for Field Day, June 25–26, will be fair to good.

Predictions for one 27-day rotational period are far more accurate than for three 27-day rotational periods. Be sure to carefully check conditions on May 28 and 29, since this would be one rotational period before the Field Day weekend. There is better than a ninety percent chance that conditions observed on those days will recur during the event weekend. Remember, also, that short-skip propagation often by the sporadic-*E* (*Es*) mode is a big part of Field Day on-air activity, especially on the higher HF bands and even on low VHF bands.

If you wish to maximize your on-air efforts, you'll want to check out the Last-Minute Forecast. Use these charts, as well as a good forecasting and analysis software tool, like ACE-HF <http://hfradio.org/ace-hf/>, to help you prepare operating guides for your Field Day operations. For the very latest

*e-mail: <nw7us@nw7us.us>

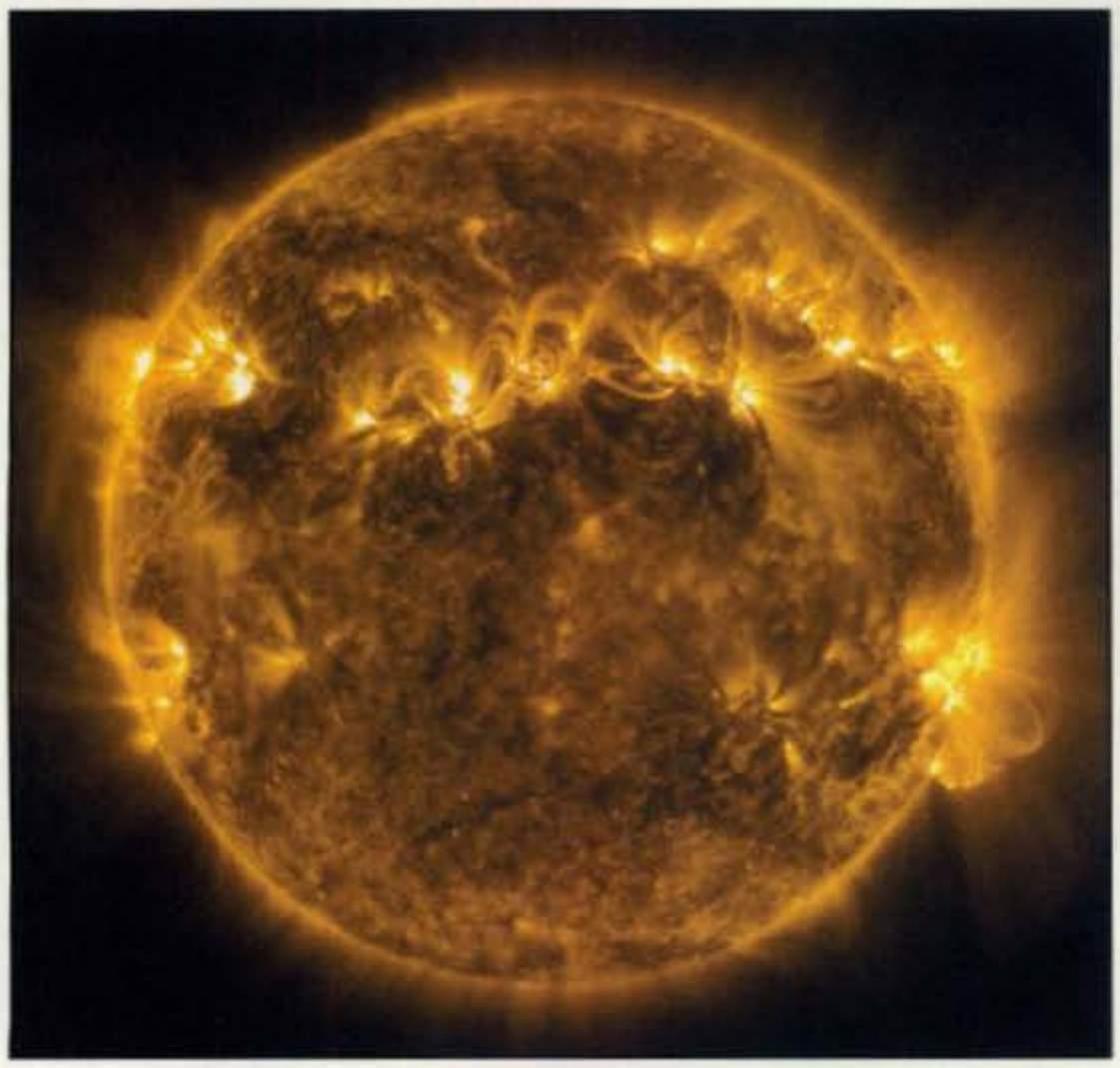


Fig. 1– Sunspot Cycle 24 energy continues to rise, with April seeing another record number of sunspots so far in the new cycle, with a daily count of 153 on April 13, 2011. That's the highest since July 5, 2005, when the daily number reached 181, nearly six years earlier. This image was taken in extreme ultraviolet light at the 171-Angstrom wavelenth as seen by the SDO Atmospheric Imaging Assembly (AIA), an array of four telescopes that observes the surface and atmosphere of the Sun. This rise in solar energy and the increase in sunspots is great for high-frequency propagation; even 10 meters has shown some life again. (Credit: SDO/AIA)

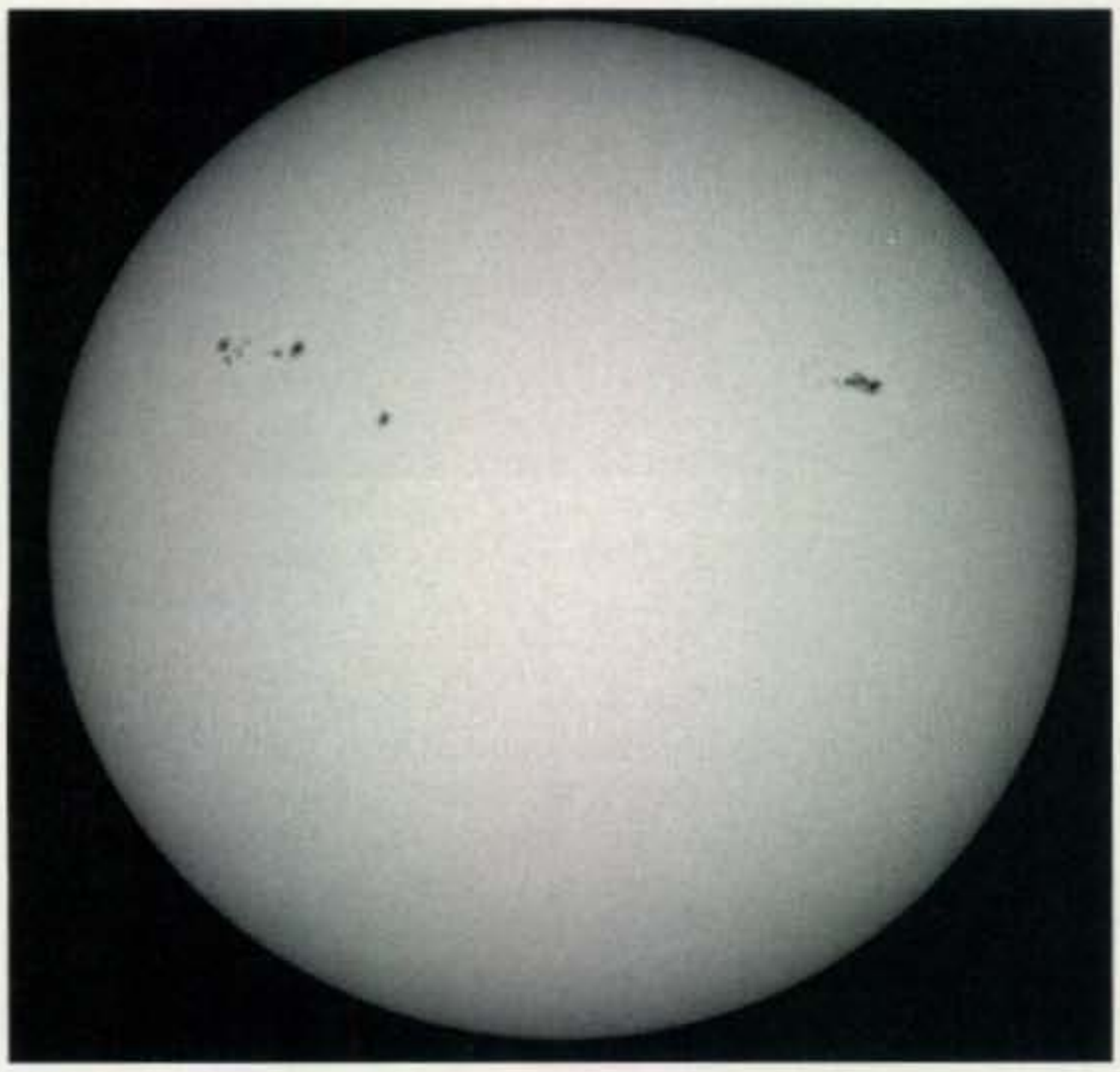


Fig. 2– Since February 2011, sunspot activity has increased each month. This image captures the sunspots on the Sun on April 16, 2011 at 1405 UTC as seen by the Solar Dynamics Observatory's Helioseismic and Magnetic Imager (HMI). If this level of activity continues through the ARRL Field Day 2011 weekend, expect exciting results not seen since 2004! (Credit: SDO/HMI)

update on conditions, take a look online at my up-to-the-day Last-Minute Forecast chart, available on my Space Weather and Radio Propagation Center <http://hfradio.org/lastminute_propagation.html>.

Sporadic-*E* Season is Open!

The annual summer sporadic-*E* (*Es*) season that starts at the beginning of May is now in full effect. Typically, sporadic-*E* activity increases through May, picking up to about 60 percent of the days by the start of June. This is great news for ten-meter enthusiasts. Now is the time to send out your signals in hopes to catch some propagation.

June Propagation

June marks the changeover from equinoctial to summertime propagation conditions on the shortwave (HF) bands. Solar absorption is expected to be at seasonally high levels, resulting in generally weaker signals during the hours of daylight when compared to reception during the winter and spring months.

When using the Last-Minute Forecast chart, realize that the column you should use is the (2), as we are still in the bottom of the solar cycle. Use the (2) column if the flux is averaging around 80 or higher for a few days or more.

Ten-meter propagation to DX locations far to the east and west is a rare event during the peak of summer. With the low solar activity finally on the rise, we will see short yet strong F-region openings mostly on north/south paths. Of course, we also expect sporadic-*E* (*Es*) short skip propagation. Solar activity just won't create a high-enough Maximum Usable Frequency (MUF) on most east/west *F*-region DX paths.

Seventeen and 15 meters will be significantly more reliable than 10, holding some promise. Look for excellent conditions around sunrise and sunset.

Twenty meters is fair during the hours of darkness, and are good to excellent during daylight hours, now that sunspot activity is rising. Like we see on 15 meters, the best openings on 20 will be the hours around sunrise and sunset.

Recurring coronal holes will cause occasional periods of geomagnetic storminess during June, degrading higher latitude signal paths more than middle and low latitude paths. Coronal holes and the associated high-speed solar winds containing clouds of plasma released by the coronal holes are the bane of propagation during the solar minimum. These geomagnetic storms will play rough on HF propagation. In addition, noise from electrical storms increases considerably during June and the summer months. These higher static levels will make DXing on 40, 80, and 160 more of a challenge.

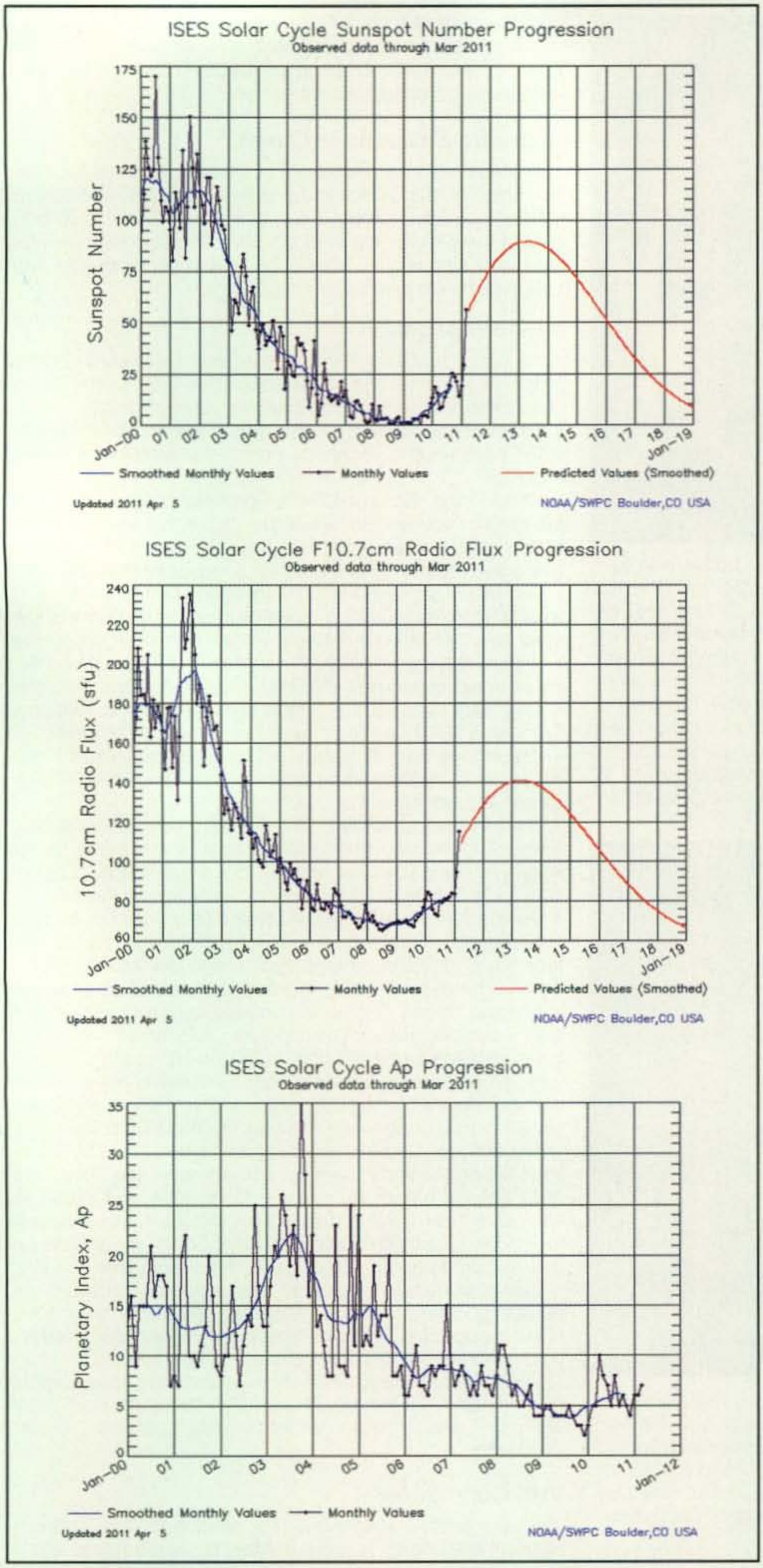
The 30- and 40-meter bands should offer good DX conditions during the early morning, late evening, and during the night despite higher static. Look for Europe and Africa as early as sunset. After midnight, start looking south and west for Pacific, South America, and Asia. Short-skip should be possible out to about 750 miles during the daytime.

Expect some openings on 80, similar to how 40 meters will be acting. Fairly frequent short-skip openings up to 1000 miles are possible during darkness, but expect very few daytime openings with all the static and absorption.

Sporadic-E propagation starts to peak during June. Expect an increase in the number of short-skip openings on HF, and often on 6 and 2 meters, with paths open between 50 and 2300 miles.

VHF Conditions

The summertime sporadic-*E* (*Es*) season for the Northern Hemisphere begins in force in May. By June, things could



well be hot on six meters and there might even be openings on 2 meters. During the late spring and summer months, a sharp increase at mid-latitude of *Es* propagation occurs. Through June, you can expect to see 20 to 24 days with some Es activity. Usually these openings are single-hop events with paths up to 1000 miles, but June's *Es* openings are often double-hop. Europe can generally be worked from the East Coast throughout June.

During the daylight hours, monitor 6 meters for transcontinental openings, as well as between Hawaii and the western states, and the Caribbean and Central and South America. The best time to look for these is during the afternoon hours, especially when conditions are High Normal or better.

There is usually a seasonal decline in transequatorial propagation (TE) during the summer months, but some 6-meter openings may still be *possible* during June. The best time to catch an opening across the geomagnetic equator is between 8 and 11 PM local daylight time.

Don't forget to check out *CQ VHF* magazine for more details on VHF propagation and conditions. If you use Twitter.com you can follow @hfradiospacewx for hourly updates that include the K index numbers. You can also check the numbers at <http:// sunspotwatch.com>.

Current Solar Cycle Progress

The Royal Observatory of Belgium reports that the monthly mean observed sunspot number for March 2011 is 56.2, up from February's 29.4 and the highest yet in new sunspot Cycle 24. The lowest daily sunspot value of seventeen (17) was recorded on March 21. The highest daily sunspot count was 100 on March 8. The 12-month running smoothed sunspot number centered on September 2010 is 19.6. A smoothed

Fig. 3– Sunspot Cycle 24 progression charts showing the huge, sharp rise in March 2011. We will continue to see variable monthly numbers, but overall, it is clear that this sunspot cycle is on a quick rise. As can be seen by the geomagnetic progression chart (Ap), conditions were very favorable for stable HF propagation, as the geomagnetic field was very quiet. This results in some very stable, reliable communications when a DX opening is present on a given ionospheric path. (Source: Space Weather Prediction Center [SWPC] / The National Oceanic and Atmospheric Administration [NOAA])

sunspot count of 55, give or take about 9 points is expected for June 2011.

The Dominion Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-cm observed monthly mean solar flux of 115.3 for March 2011, a sharp rise over February's 94.5 and continuing the upward trend of the new cycle. The 12-month smoothed 10.7-cm flux centered on September 2010 is 82.4. The predicted smoothed 10.7-cm solar flux for June 2011 is 112, give or take about 9 points. If we do see this high of a flux in June, expect strong openings on 10 and 12 meters primarily on paths between the Northern and Southern Hemispheres; expect an abundance of daytime activity on 15 and 17 meters.

The observed monthly mean planetary *A*-index (*Ap*) for February 2011 is adjusted to 6, and March is 7. These figures still indicate very quiet geomagnetic conditions overall. However, this is slowly changing now that we are seeing a rise in solar energy and sunspot activity. The 12-month smoothed *Ap* index centered on September 2010 is 6.3. Expect the overall geomagnetic activity to vary greatly between quiet to minor storm level during June, since the increased sunspot activity also includes flares and related space weather. Refer to the Last-Minute Forecast for the outlook on conditions during this month. You can find the online version of this outlook at <http://sunspotwatch.com>

I welcome your thoughts, questions, and experiences regarding this fascinating science of propagation. You may e-mail me, write me a letter, or catch me on the HF amateur bands. Please come and participate in my online propagation discussion forum at <http://forums.hfradio.org/>. If you are on Facebook, checkout <http://www.facebook.com/spacewx.hfradio> and <http://www.facebook\.com/NW7US>. Speaking of Face-book,check out the *CQ Amateur Radio* magazine fan page at <http://www.facebook.com/CQMag>.

Now that the new solar cycle is active, I'll be keeping my ears to the radio, hoping to hear you on the air. Happy DX!

73, Tomas, NW7US

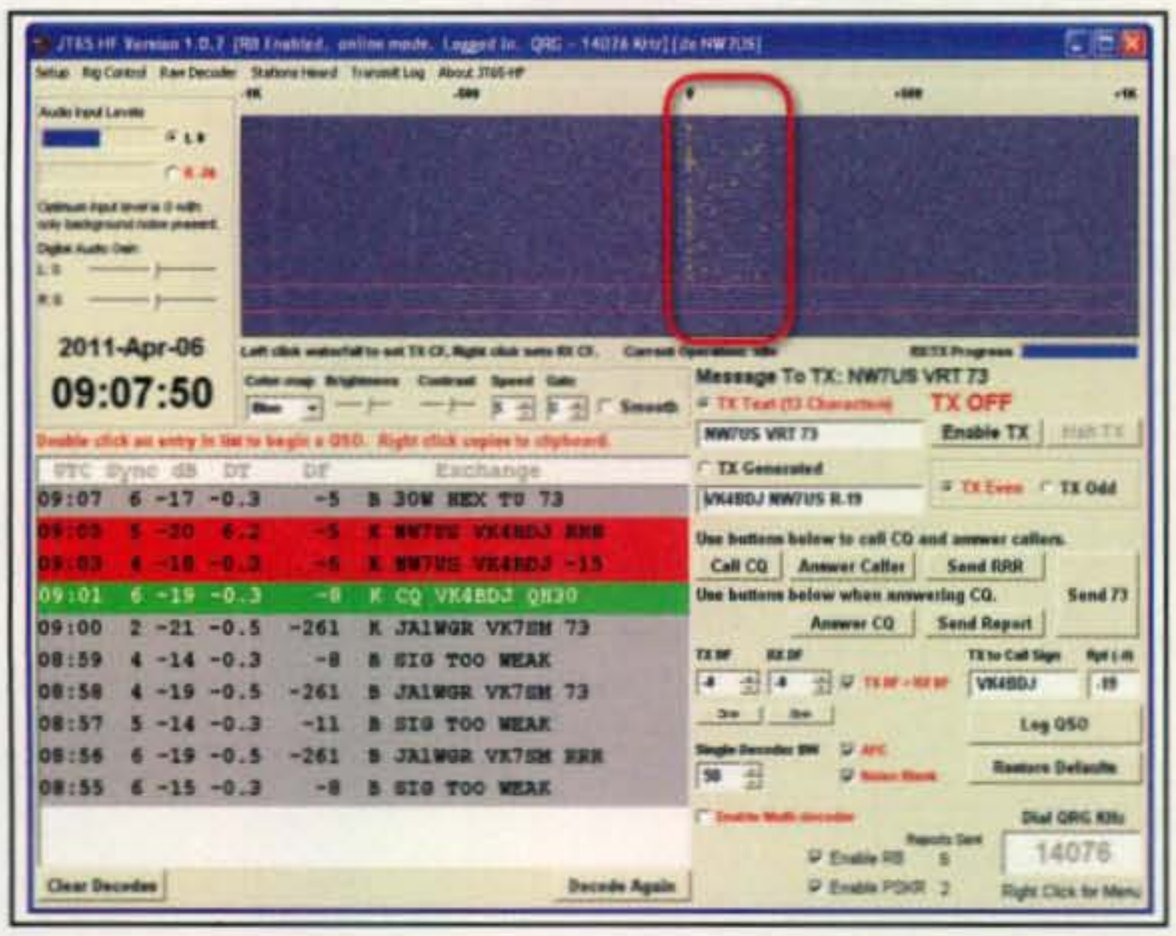
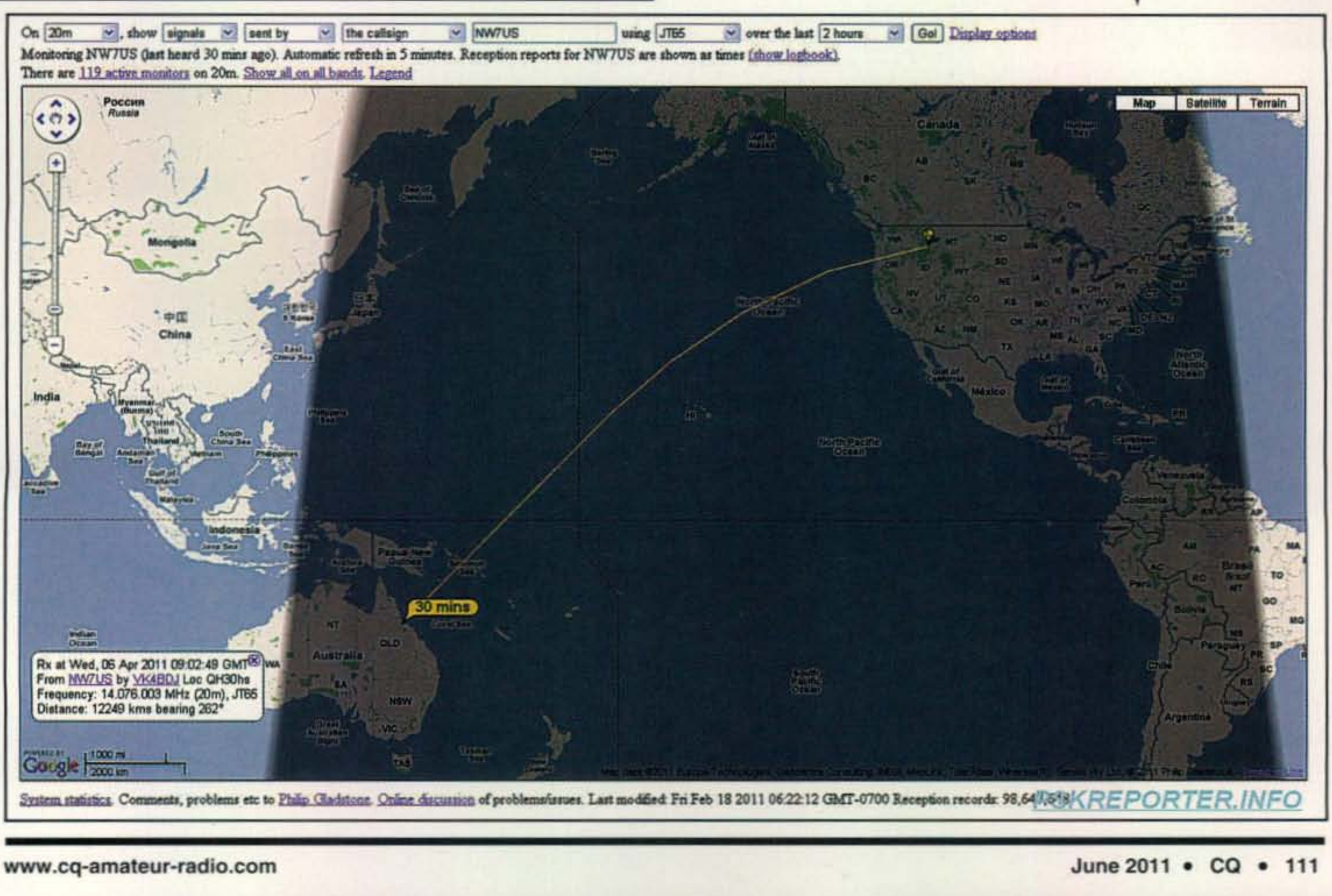


Fig. 4– With the welcomed rise in solar activity in April came refreshing DX on many amateur radio high-frequency bands. This screen capture from April 6, 2011 shows the JT65A QSO between VK4BDJ (Australia) and NW7US (USA) at 0907 UTC on 20 meters. Such openings became routine during April on 20 meters, while the 17- and 15-meter bands were also hopping with activity. Some activity was also reported on 10 meters. (Credit: NW7US using JT65-HF Software)



Oops...

Well, the gremlins have been at it again.

In our March issue, the headline on the Awards column read "Short-Term and Urainian Awards." That should have read, "Ukrainian."

In our April issue, the lines between the components on the schematics in AD5X's review of the Ameritron RCS-12 Automatic Antenna Switch got all out of whack, somewherein the "translation" process between PCs and Macs, and we didn't catch it until it was too late. The correct schematics are reprinted here. Our apologies to anyone who was inconvenienced.

Finally, for the greater than usual number of readers who wrote and called this year to find out whether Professor Heisseluft's April feature was true or an April Fool's joke, let's just say that the professor has been appearing in our April issue (and *only* our April issue) for decades. It is up to each reader to determine the level of veracity of his articles. And if you haven't yet purchased your 1" × 1" parcel of land in American Samoa, we're afraid it's too late. The last "lot" was sold on April 1st. Oh, and by the way, the FCC does not require hams to own property in a location as a prerequisite for obtaining a callsign from that location, just that you have a mailing address there.

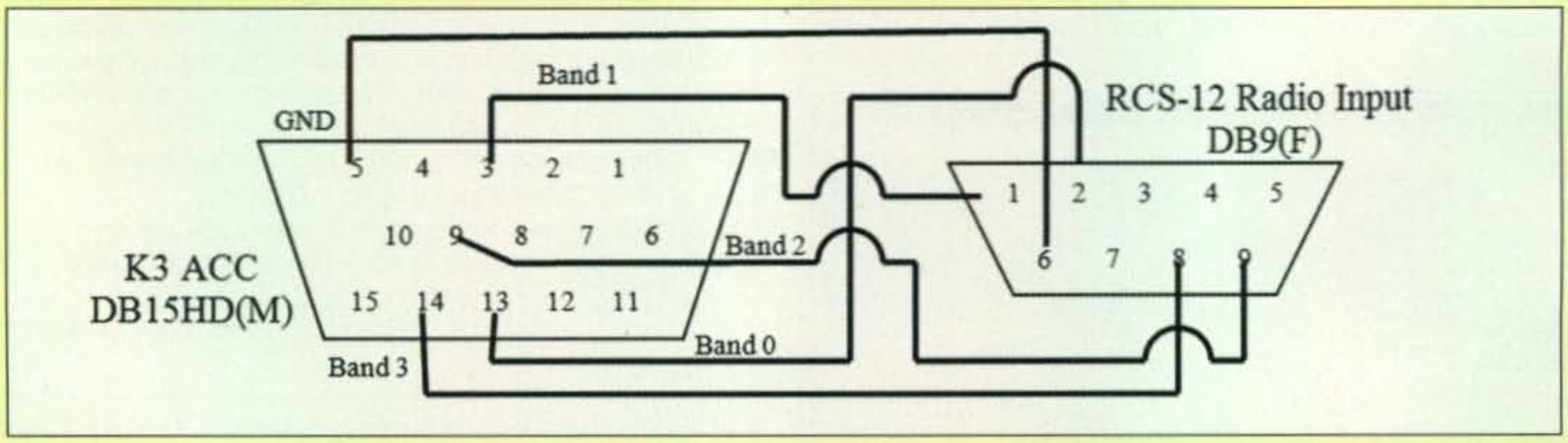


Fig. 1– Elecraft K3 to RCS-12 cable. The connectors are viewed from the solder pin side.

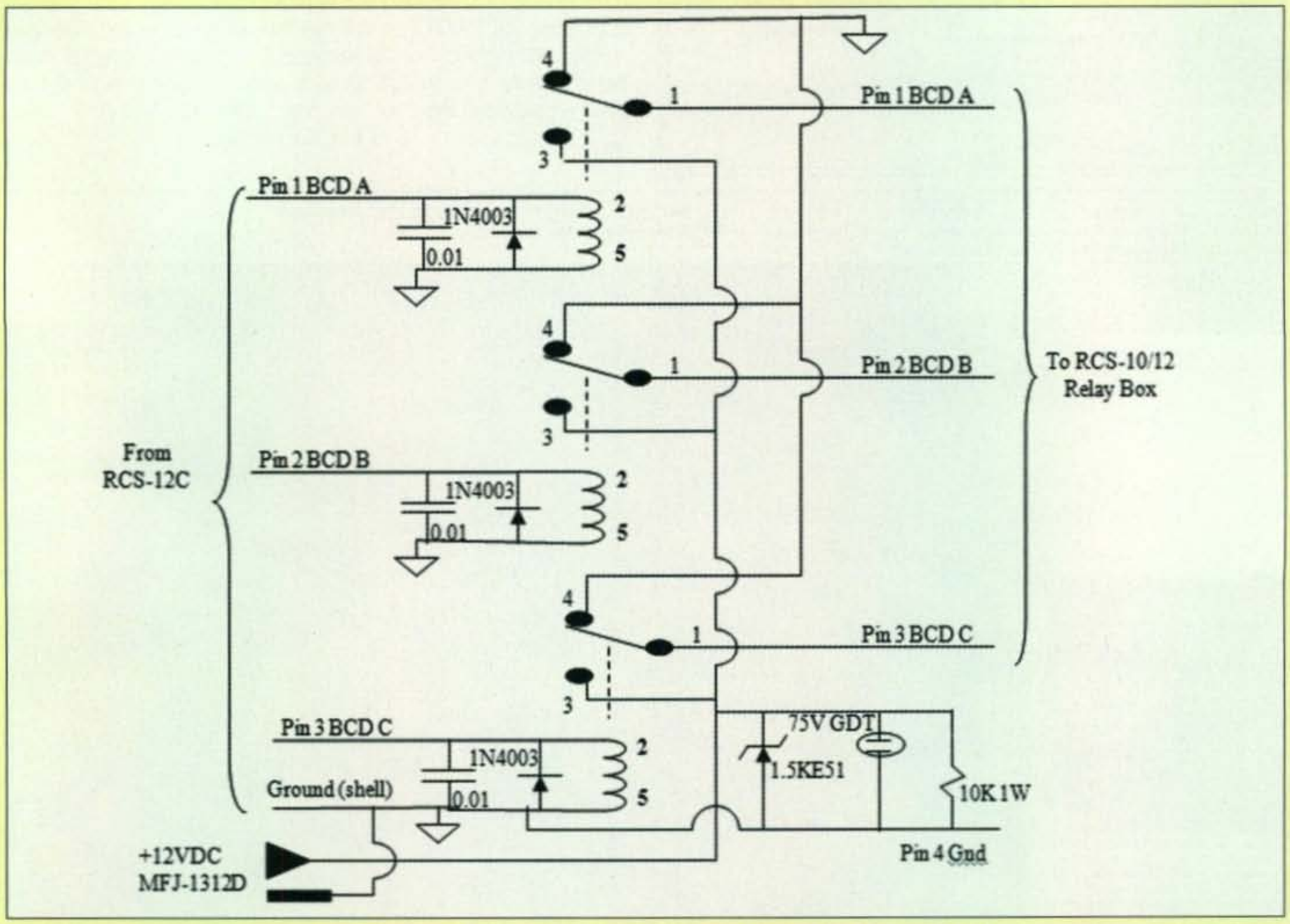


Fig. 2. Voltage transient protection circuit. (See text for details.)

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2M/220/440HT

- wideband RX – 900 memories
- 5W 2/440 , 1.5W 220 MHz TX
- Li-ION Battery - EAI system
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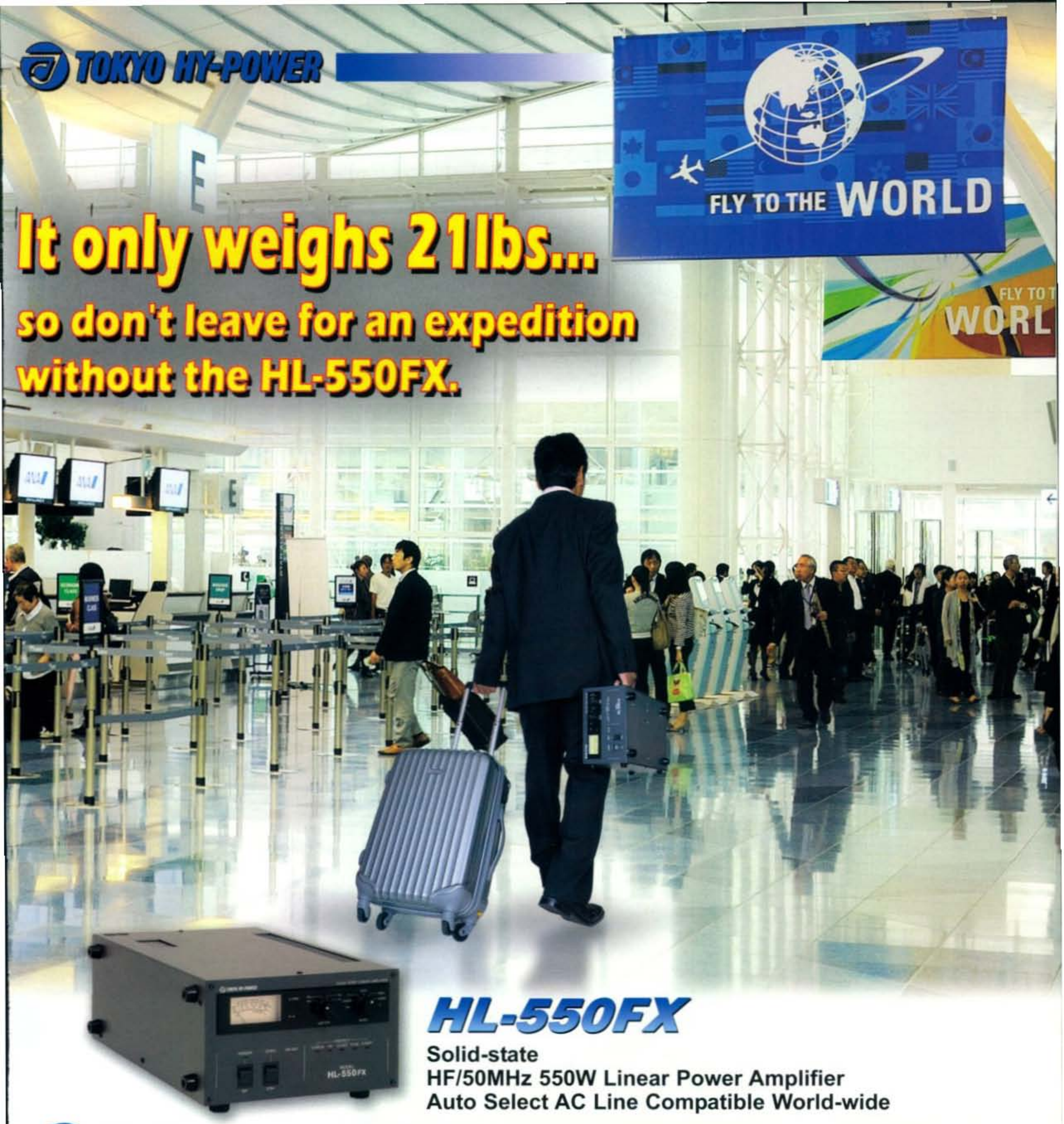

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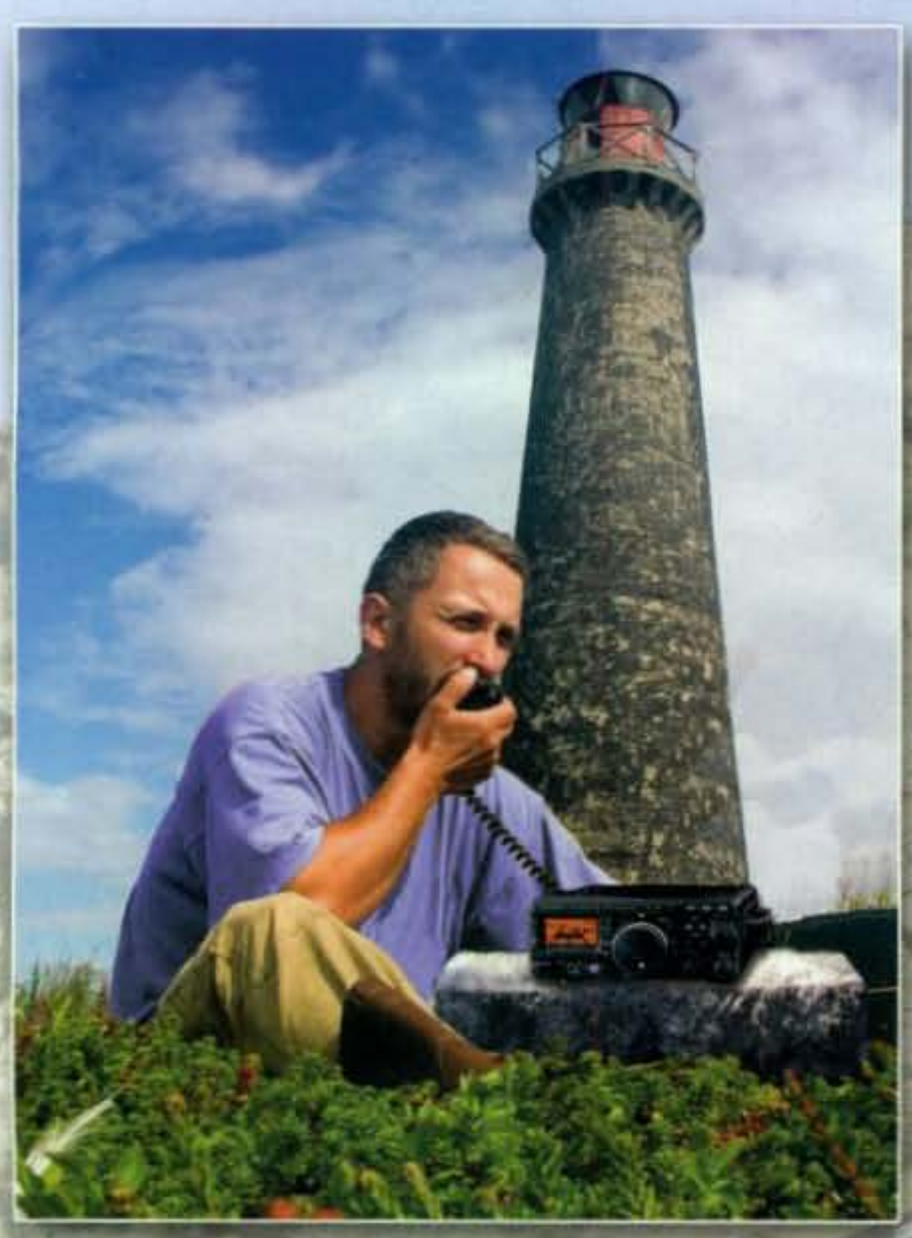

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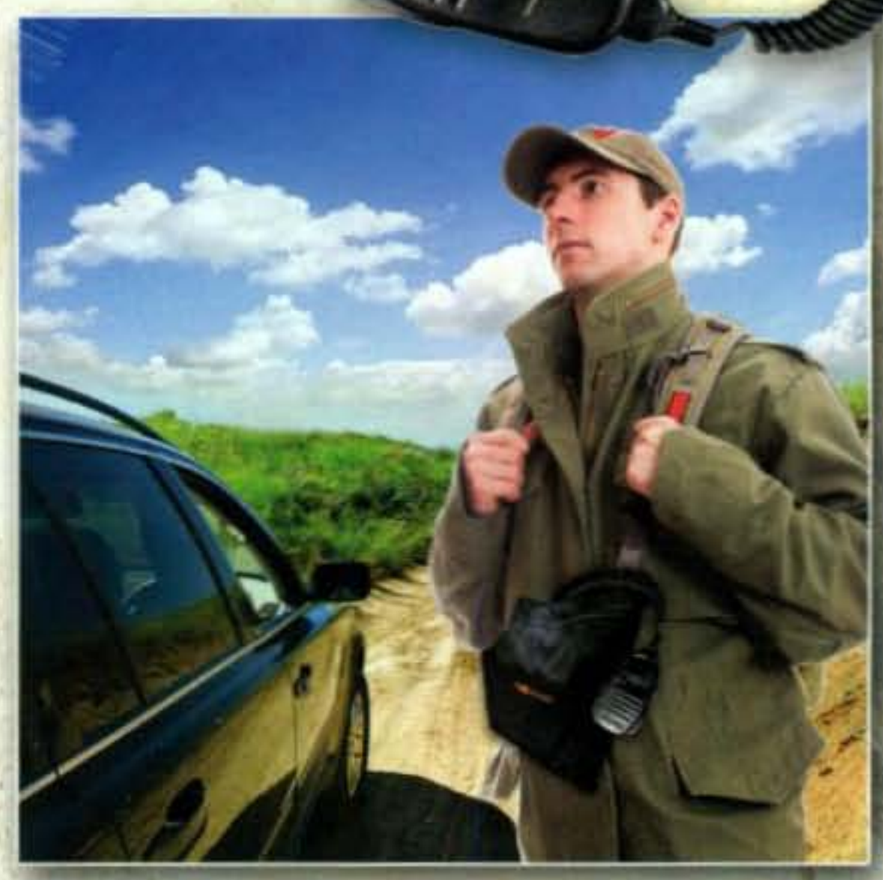

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