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COMMUNICATIONS & TECHNOLOGY

FEBRUARY 2009

CQ

SWEEPSTAKES
Enter to WIN!
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- **Ham Radio Groundhog Day, p. 13**
- **Results, 2008 CQ WW VHF Contest, p. 30**
- **The Ionosphere is Falling! p. 104**

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**********SCH 3-DIGIT 230
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On the Cover: Kent Olson, KAØLDG, of frigid Fargo, North Dakota, brushes snow off his call letter license plate. Details on page 94.

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With the Kenwood TM-V71A you have a choice of where you want your speaker, on the top or on the bottom of the radio. Simply remove the faceplate and flip the main body, then reattach the face, it's that simple! Yet another Kenwood **1st**, this dual band transceiver has ten dedicated EchoLink® memory channels as well as EchoLink sysop-mode operation. EchoLink connection to your PC via the optional PG-5H cable kit is easy with no expensive interface needed.

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Large dual color amber or green thirteen segment LCD.

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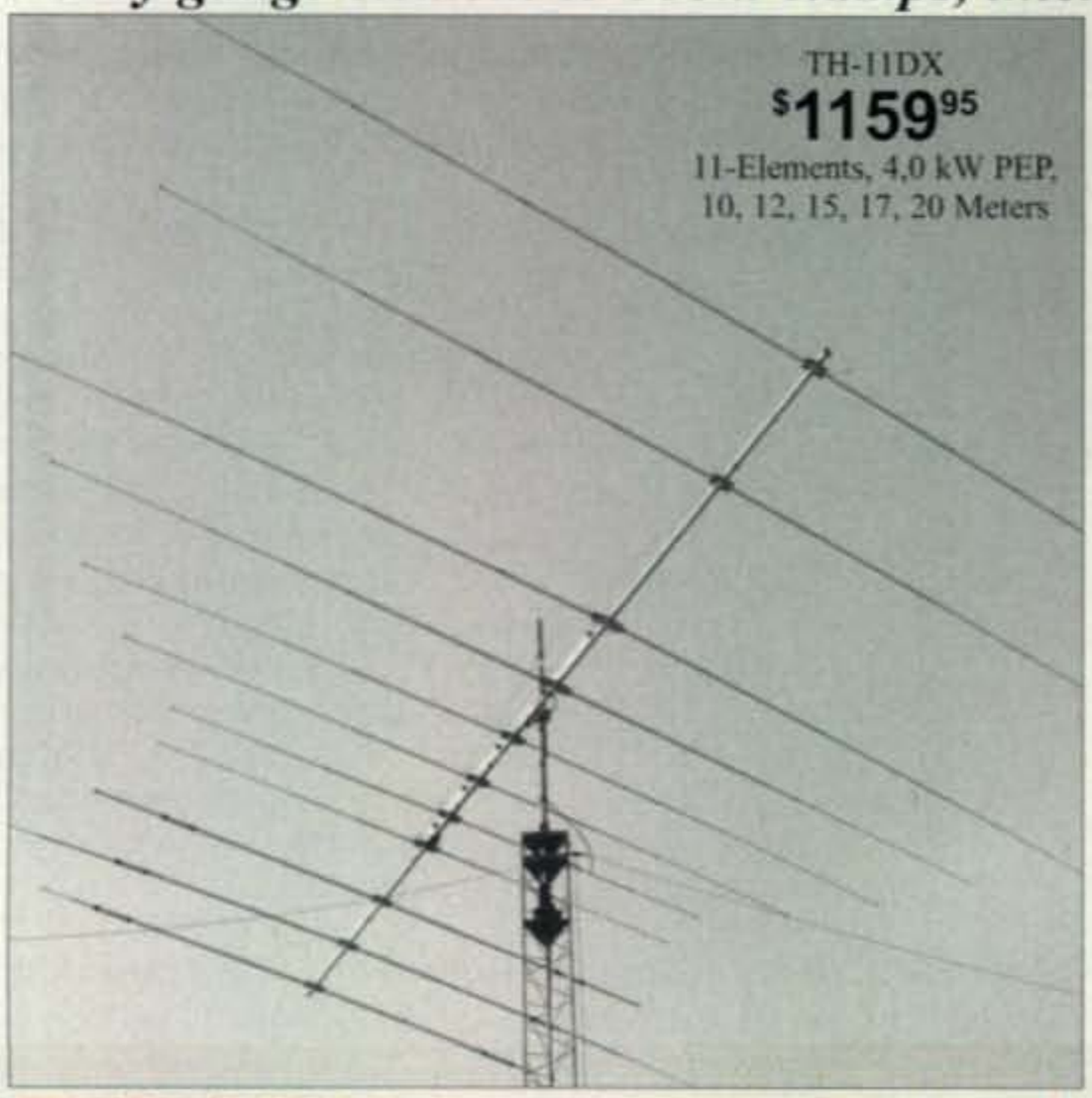
. . . are stronger, lighter, have less wind surface and last years longer.
Why? Hy-Gain uses durable tooled components -- massive boom-to-mast bracket, heavy gauge element-to-boom clamps, thick-wall swaged tubing -- virtually no failures!



TH-11DX
$1159.95
11-Elements, 4,0 kW PEP,
10, 12, 15, 17, 20 Meters

TH-11DX, $1159.95. 11-element, 4.0 kW PEP, 10,12,15,17,20M

The choice of top DXers.

With 11-elements, excellent gain and 5-bands, the super rugged TH-11DX is *the "Big Daddy" of all HF beams!*

Handles 2000 Watts continuous, 4000 Watts PEP.

Every part is selected for durability and ruggedness for years of trouble-free service.

Features a low loss log-periodic driven array on all bands with monoband reflectors, BN-4000 high power balun, corrosion resistant wire boom support, hot dipped galvanized and stainless steel parts.

Stainless steel hardware and clamps are used on all electrical connections.

TH-7DX, $869.95. 7-element, 1.5 kW PEP, 10,15,20 Meters

7-Elements gives you the *highest average gain* of any Hy-Gain tri-bander!

Dual driven for broadband operation without compromising gain. SWR less than 2:1 on *all* bands.

Uniquely combining monoband and trapped parasitic elements give you an excellent F/B ratio.

Includes *Hy-Gain's* diecast aluminum, rugged boom-to-mast clamp, heavy gauge element-to-boom brackets, BN-86 balun. For high power, upgrade to BN-4000.

TH-5MK2, $759.95. 5-element, 1.5 kW PEP, 10,15,20 Meters

The broadband *five element* TH5-MK2 gives you outstanding gain.

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.

TH-3MK4, $469.95. 3-element, 1.5 kW PEP, 10,15,20 Meters

The super popular TH-3MK4 gives you the *most gain for your money* in a full-power, full-size durable Hy-Gain tri-bander!

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

Fits on average size lot with room to spare -- turning radius is just 15.3 feet. Four piece boom is ideal for DXpeditions. Rotates with CD-45II or HAM-IV rotator.

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.

TH-2MK3, $369.95. 2-element, 1.5 kW PEP, 10,15,20 Meters

The 2-element TH-2MK3 is Hy-Gain's *most economical* full power (1.5kW PEP) full size tri-bander.

For just $339.95 you can greatly increase your effective radiated power and hear far better!

Ruggedly constructed, top-performing, compact 6 foot boom, tight 14.3 foot turning radius. Installs almost anywhere. Rotate with CD-45II or HAM-IV. BN-86 balun recommened.

EXP-14, $599.95. 4-element, 1.5 kW PEP, 10,15,20 Meters

Revolutionary 4-element compact tri-bander *lets you add 40 or 30 Meters!* Has 14 foot boom and tight 17.25 feet turning radius. Fits on roof tri-pod, mast or medium duty tower.

Hy-Gain's *patented* broadbanding *Para Sleeve* gives you less than 2:1 VSWR. 1.5kW PEP.

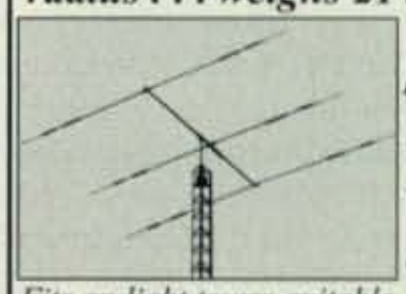
BetaMATCH™ provides DC ground to eliminate static. Includes BN-86 balun. Easily assembled.

***Truly** competitive against giant tri-banders at half the cost!*

QK-710, $179.95. 30/40 Meter option kit for EXP-14.

Compact 3-element 10, 15, 20 Meter Tri-Bander

For limited space . . . Installs anywhere . . . 14.75 ft turning radius . . . weighs 21 lbs . . . Rotate with CD-45II, HAM-IV



Fits on light tower, suitable guyed TV pole, roof tri-pod

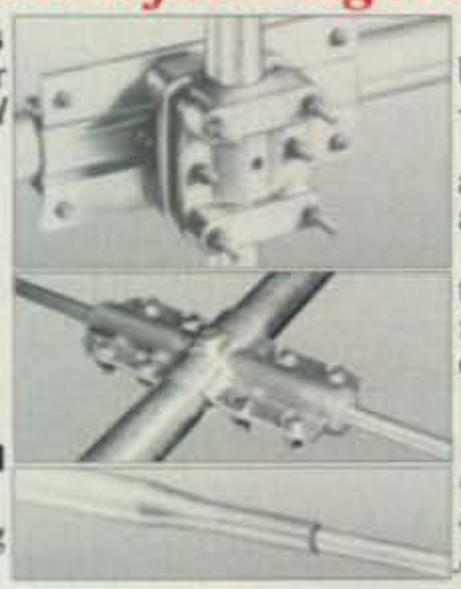
TH-3JRS, $359.95. Hy-Gain's *most popular* 3-element 10, 15, 20 Meter tri-bander fits on most lots! Same top performance as the full power TH3MK4 in a compact 600 watt PEP design.

Excellent gain and F/B ratio let *you* compete with the "big guns".

Tooled manufacturing gives you *Hy-Gain* durability with 80 MPH wind survival.

Model No.	No. of elements	avg gain dBd	avg F/B dB	MaxPwr watts PEP	Bands Covered	Wind sq.ft. area	Wind (mph) Survival	boom feet	Longest Elem. (ft)	Turning radius(ft)	Weight (lbs.)	Mast dia O.D.(in.)	Recom. Rotator	Sugg. Retail
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 (30/40)	7.5	100	14	31.5	17.25	45	1.9-2.5	HAM IV	$599.95

Tooled Manufacturing . . . Highest Quality Materials



1. Hy-Gain's famous super strong *tooled* die cast *Boom-to-Mast Clamp*

2. *Tooled* *Boom-to-Element Clamp*

3. Thick-wall *swaged* aluminum tubing

***Tooled** manufacturing* is the difference between Hy-Gain antennas and the others -- they just don't have it (it's expensive!).

Die-cast aluminum boom-to-mast bracket and element-to-boom compression clamps are made with specially *tooled* machinery.

Hy-Gain antennas feature *tooled* swaged tubing that is easily and securedly clamped in place. All tubing is deburred and cleaned for smooth and easy assembly.

Durable precision injection molded parts.

***Hy-Gain** antennas are stronger, lighter, have less wind surface area, better wind survival, need no adjustments, look professional and last years longer.*

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ham radio news

Antenna Notes

The city of San Diego, California was considering a new rule in January that would for the first time subject amateur radio antennas to height restrictions normally applicable only to buildings and other structures. According to *Newsline,* if the ordinance is approved, hams with non-compliant antennas would have to apply for a very expensive and time-consuming "Process Three" site development permit.

Across the country, a ham in Penn Township, Pennsylvania, has won a battle to keep his 53-foot tower. According to the *Tribune-Review* newspaper, the township's zoning board had originally granted a permit to Charles Mills (W3YNI) last March, then declared it invalid in July when neighbors complained, and re-issued it in August with some modifications. The neighbors filed an appeal and on December 11th, the zoning hearing board voted unanimously to deny the appeal. A further appeal is possible but considered unlikely.

NYC Museum Ham Station Threatened With Closure

Another museum-based ham station is in danger of being closed down permanently. The Hall of Science Amateur Radio Club (HOSARC) has run a demonstration at the New York City science museum (on the 1964–65 World's Fair site) for more than 35 years. Now, according to club officials, the museum is undergoing a major renovation and has a new director who does not see the ham radio exhibit as being a priority. The club has started an online petition to urge museum officials to keep the station on the air. It may be found at <http://tinyurl.com/6ljost> (that's 6-L-j-o-s-t).

IARU Region 1 Adopts New 40m Band Plan

Region 1 of the International Amateur Radio Union (IARU) has adopted a new 40-meter band plan for hams in Europe and Africa, in advance of the expansion of the 40-meter band in that region from 7000–7100 kHz to 7000–7200 kHz this coming March 29. Adopted at the region's triennial conference in Croatia in late November, the plan designates 7000–7025 kHz as CW/"contest preferred," sets a QRP "centre of activity" at 7030 kHz, and has narrow-mode digital modes operating between 7040 and 7050 kHz. The plan suggests voice operating between 7050 and 7200 kHz, with "SSB contest preferred" areas at 7060–7100 and 7130–7200. IARU band plans are voluntary "gentlemen's agreements" and do not carry the force of law.

According to the ARRL, the Region 1 Conference also urged contest sponsors to add a "youngsters and newcomers" category whenever possible, and called for replacing signal reports in contest exchanges with "some other less predictable exchange, so as to enhance the skill requirements of contest operators."

CHU Moves to New Frequency

Another result of the expansion of the 40-meter ham band in Europe and Africa to 7200 kHz as of March 29 is the relocation of the 41-meter international broadcast band to 7200–7350 kHz. As broadcasters began relocating, Canadian time and frequency standard station CHU—a decades-long fixture on 7335 kHz—began experiencing significant interference. As a result, Canada's National Research Council, which runs CHU, decided to move the station's frequency to 7850 kHz, effective January 1, 2009. So if you're having trouble finding CHU at 7335, try tuning up to 7850.

Three Prominent Hams are Silent Keys

The man who wrote "Scratchi" for *CQ* magazine over the course of four decades has died. George H. Floyd, Jr., WA4DGA, was an engineer and executive with General Electric in Lynchburg, Virginia (not Feenix, Ariz! —ed.) until his retirement. His true identity was revealed after his passing on November 22. The "Scratchi" column featured a politically-incorrect (by today's standards) Japanese-American ham writing in fractured English and regularly skewering the pomposity and poor operating practices he encountered on the air. For many years, Floyd was also the pseudonymous author of "Lighthouse Larry" in GE employee publications. We will be presenting a tribute to Scratchi in an upcoming issue.

On November 25, ARRL President Emeritus George Wilson, W4OYI, became a Silent Key. Wilson served as ARRL President from 1992 to 1995, when he stepped down after suffering a stroke. He remained active on the air and in public service/emergency communication until his death. Wilson was also a judge on the Newsline Young Ham of the Year award committee.

The following day, Gene Harlan, WB9MMM, editor and publisher of *ATV Quarterly* magazine, passed away from the effects of ALS, also known as Lou Gehrig's Disease. Harlan also sold amateur television equipment and software, made name badges and was the founder of *CyberHam* magazine in the mid-1990s.

FCC Asks Hams for Help with DTV Transition

The FCC has asked hams around the country to serve as resources for neighbors having trouble with this month's conversion to digital television (DTV). The request, made to the ARRL in early December, was passed along to radio clubs. The FCC is asking hams to answer questions and distribute technical information and FCC handouts. ARRL Media and Public Relations Manager Allen Pitts, W1AGP, stressed that hams should not make "house calls," help directly with installations, or sell DTV converters. Some hams feel the FCC should not be calling on them to "do its dirty work." Others see this as an excellent opportunity to provide positive public relations for amateur radio. See WB6NOA's Op-Ed, "Be a DTV Ambassador," on page 52 in this issue.

S. Africa Set to Launch Second Ham Satellite

South Africa's second satellite—a ham radio satellite known as SumbandilaSat—was slated to be launched from Russia sometime between December 2008 and March 2009. According to the AMSAT News Service, it will operate in conjunction with the University of Stellenbosch Software Defined Receiver project. It will carry a VHF/UHF transponder with a 2-meter uplink and a 70-centimeter downlink, a "parrot repeater" (a voice digipeater), and a voice beacon. Updated information should be available on the SA-AMSAT website at <http://www.amsatsa. org.za/>.

Feb. 18 Deadline for Dayton Award Nominations

Nominations for the 2009 Dayton Hamvention® awards are being accepted until February 18, 2009. The Dayton Amateur Radio Association recognizes three worthy amateurs each year with its Amateur of the Year, Special Achievement, and Technical Excellence awards. Details and nominating forms are available on the Hamvention website at <http://www.hamvention.org>.

(Continued on page 9)

TOKYO HY-POWER

Two of the LIGHTEST and MOST COMPACT Amplifiers in the Industry!

NEW!

Outstanding for Field Works and DX-peditions!

600W OUT, Weighing only 22.5lbs.

HL-1.1KFX

Lightweight HF Linear

This world-class compact HF amplifier has built-in switching mode power supply to save the weight. It is compatible with wide AC line of 100 to 250V, and is best suited for DX-peditioners.

Features

- The amplifier allows operation in full break-in CW mode due to the use of the amplifier's high speed antenna relays.
- The amp utilizes a sophisticated circuit to run the various high speed protection circuits such as overdrive, high antenna SWR, DC overvoltage, band mis-set etc.
- An analog multimeter allows the operator to monitor Pf (Forward output power), Pr (Reflected power), Vd (Drain voltage of power FET), Id (Drain current) etc.

Specifications

Frequency:
1.8 ~ 28MHz all amateur bands including WARC bands
Mode:
SSB, CW, RTTY
RF Drive:
75 ~ 90W
Output Power:
SSB 600W PEP max.
CW 600W.
RTTY 500W (5 minutes)
Final Transistor:
SD 2933 x 4
(MOS FET by ST micro)
Circuit:
Class AB parallel push-pull
Cooling Method:
Forced Air Cooling
Multi-Meter:
Output Pf 1kW, Reflected Power 100W, Drain Voltage Vd 60V, Drain Current Id 50A
Input/Output Connectors:
Type M-J (UHF SO-239)
AC Power:
1.4kVA max. when TX
AC 100 ~ 250V (Auto Select)
Dimensions:
9.1 x 5.6 x 14.3 inches (WxHxD)
Weight:
Approx. 22.5 lbs.

NEW!

To go with the popular Yaesu FT-817 series.

Compact 45W Power Amp.

HL-45B

HF/50MHz 45W Linear Power Amplifier

Features

- HL-45B is a solid-state HF/50MHz band linear power amplifier with the maximum output power of 45W. Designed RF drive power is 5W.
- This amplifier is particularly designed for the use with popular portable radio of YAESU FT-817. When combined with FT-817, you can enjoy a unique and very comfortable feature of automatic band selection as well as send-receive switching, by connecting the amp and radio with the supplied special control cable.
- LED power level meter will always indicate the relative output power level for the convenience of the operator.

Specifications

Frequency:
HF Band (1.8 ~ 28MHz and 50MHz Amateur Bands)
Mode: SSB(A3E), CW(A1A), FM(F3E)
RF Output Power:
SSB (PEP)/CW 45W
RF Drive Power: 5W max.
DC Power: DC 13.8V, 8.5A max.
In/Out Impedance: 50Ω
In/Out Connectors: SO-239
Major Circuits and Functions:
1. Class AB wide band linear power amp
2. Automatic/manual switching output low pass filters
3. WARNG (Protection circuit) for over-voltage and over-drive
4. LED meter for indicating transmitting power level
5. Send-receive switching remote terminal
6. ALC
Final RF Power Transistor:
RD30HVF
(by Mitsubishi Electric) x 2
Accessory Parts:
DC Power cord (Red/Black) x 1
Coax jumper cable with PL-259 connectors x 1
Remote control cable for FT-817 x 1
Spare fuse 10A x 2
Dimensions:
150(W) x 47(H) x 211(D) mm
(5.9 x 1.9 x 8.3 inches)
Weight:
Approx. 1.6kgs. (3.4lbs.)

More Fine Products from TOKYO HY-POWER

HC-1.5KAT
HF 1.5KW Auto Tuner

HL-350VDX
VHF/2m 330W Amplifier

HL-1.5KFX
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CQ contents

FEBRUARY 2009

p.13

p. 46

features

Vol. 65 No. 2

10 **INTRODUCING *WORLDRADIO ONLINE* AND WELCOME TO FORMER *WORLDRADIO* SUBSCRIBERS** *By Dick Ross, K2MGA*

13 **HAM RADIO GROUNDHOG DAY:** Amateur radio special event station K3HWJ on February 2 in celebrates Punxsutawney Phil's winter prediction *By Henry Hill, WA3CVC*

18 **CQ MARKET SURVEY:** VHF/UHF Handhelds galore *By Gordon West, WB6NOA*

30 **RESULTS OF THE 2008 CQ WW VHF CONTEST** *By John Lindholm, W1XX*

38 **ANNOUNCING:** The 2009 CQ WW WPX Contest

44 **MATH'S NOTES:** More potpourri *By Irwin Math, WA2NDM*

54 **WORLD OF IDEAS:** Hamming from the shadows, part 6 *By Dave Ingram, K4TWJ*

62 **MOBILING:** Costs! *By Jeff Reinhardt, AA6JR*

65 **DIGITAL CONNECTION:** Podcasts *By Don Rotolo, N2IRZ*

78 **QRP:** Clubs, kits, and fun meets *By Dave Ingram, K4TWJ*

p. 30

p. 62

departments

34 **WASHINGTON READOUT:** House Committee report Blasts FCC Chairman Kevin Martin *By Frederick O. Maia, W5YI*

46 **PUBLIC SERVICE:** It's all about the weather *By Bob Josuweit, WA3PZO*

68 **THE WEEKENDER:** Plumber's special, a 20-meter ground plane with weatherproof feed *By John B. Kruk, K3KR*

72 **BEGINNER'S CORNER:** What's that noise? *By Wayne Yoshida, KH6WZ*

85 **WHAT'S NEW:** Antenna tuning accessories, 3-GHz dummy load, 35–45 kHz receiver, and good reads *By Anthony A. Luscre, K8ZT*

88 **VHF PLUS:** It's about EME communications *By Joe Lynch, N6CL*

92 **AWARDS:** Extending a short-term award *By Ted Melinosky, K1BV*

96 **DX:** Desecheo and other 2009 DXpeditions *By Carl Smith, N4AA*

101 **CONTESTING:** Unwritten expectations in contesting *By John Dorr, K1AR*

104 **PROPAGATION:** The ionosphere is falling! Plus 2008 CQ WW DX CW Contest conditions *By Tomas Hood, NW7US*

2 **HAM RADIO NEWS**

8 **ZERO BIAS**

9 **ANNOUNCEMENT**

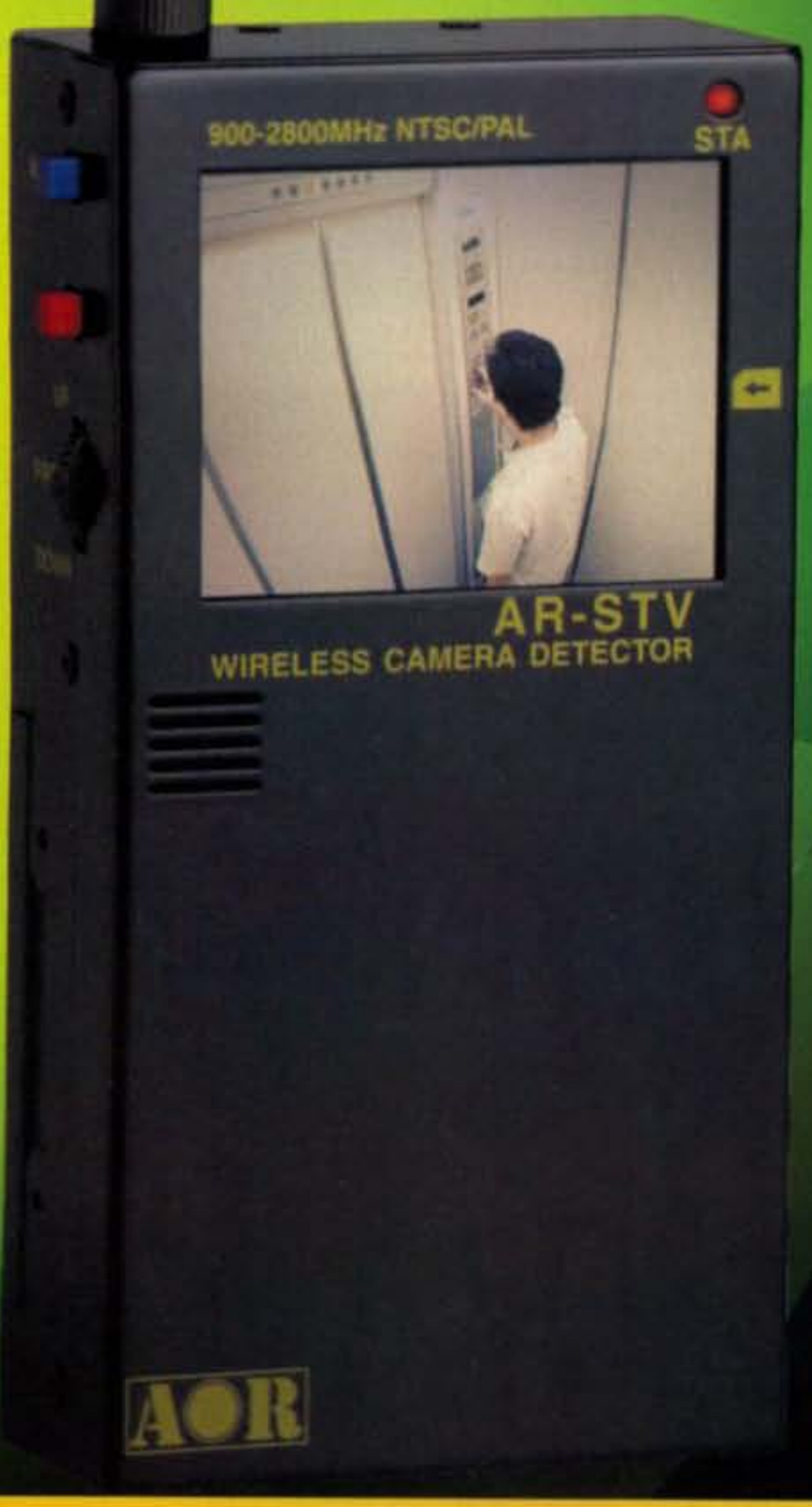
52 **OP ED** *by WB6NOA*

112 **HAM SHOP**

114 **OUR READERS SAY**

Want to SEE who is watching you?

The AR-STV handheld receiver captures hidden video signals!



Now, with the AR-STV handheld wireless camera receiver from AOR, you can see who is watching you on wireless video surveillance cameras. It's a valuable addition to any security operation. This easy to operate receiver features a large 2.5 inch color LCD display, still picture recorder and sensor that captures video signals in real-time. The USB connector makes it easy to download stored images into a computer. And the AR-STV comes complete with an internal clock that allows captured images to be time-stamped. With an optional 4 GB SD memory card, the AR-STV can be used to store up to nearly 2000 images.

Add to the power of your security force with this pocket-sized video receiver from AOR!

- Receives and displays analog video signals on L-band (1.2 GHz) or S-band (2.4 GHz)
- 2.5 inch color LCD display
- Still picture recorder
- Can be set for continuous search between 900 ~ 2800 MHz
- Detects NTSC or PAL analog video signals in real-time
- Built-in clock allows captured images to be time-stamped
- USB connector makes it easy to download stored images into a computer
- Easy to operate
- Powered by four AA size batteries or external DC power
- NiMH batteries, belt clip and battery charger included
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DSP | 60 m Band

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Automatic Matching for FT-897/857 Series Transceivers

FC-40

Automatic-Matching 200-Memory Antenna Tuner (160 m ~ 6 m Band)

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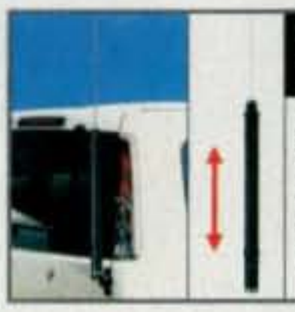

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Active Tuning Antenna System (no separate tuner required)

REAL PERFORMANCE, REALLY PORTABLE

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5 W All Mode Transceiver (AM 1.5 W)

60 m Band

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Introducing the Yaesu FT-950 transceiver for DX enthusiasts
Superb receiver performance
Direct lineage from the legendary FT DX 9000 and FT-2000

HF/50 MHz 100 W Transceiver

FT-950

- Triple-conversion super-heterodyne receiver architecture, using 69.450 MHz 1st IF
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- 1st IF 3 kHz Roofing filter included
- High-speed Direct Digital Synthesizer (DDS) and high-spec Digital PLL for outstanding Local Oscillator performance
- Original YAESU IF DSP advanced design, provides comfortable and effective reception. IF SHIFT / IF WIDTH / CONTOUR / NOTCH / DNR
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- Optional RF μ -Tune Units for 160 m, 80/40 m and 30/20 m Bands

Optional External Data Management Unit (DMU-2000) Provides Many Display Capabilities

Shown with after-market keyer paddle, keyboard, and monitor (not supplied)

COMPACT HF/50 MHz TRANSCEIVER WITH IF DSP

A superb, compact HF/50 MHz radio with state-of-the-art IF DSP technology configured to provide YAESU World-Class Performance in an easy to operate package.
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HF/50 MHz 100 W All Mode Transceiver

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a CQ editorial

zero bias

BY RICH MOSESON,* W2VU

It's (Not) the Network . . . Or Is It?

The "bones" of this editorial have been clattering around inside my head for several months, but until now, I hadn't gotten around to fleshing it out. It's a good thing, too, because now that I am, it's going in a completely different direction than I first thought it would.

Chances are you have seen the ads from a certain wireless phone company, in which the user is followed around by about 100 company workers, making sure he always has reliable service. "It's the network," says the ad copy.

My first thought when this theme began appearing in the company's ads was, "Here's where ham radio is different. We don't need *the network*. On the rare occasions when *the network* goes down, we hams can fire up our rigs and continue to communicate." The fixed infrastructure of *the network* is what makes it vulnerable to overload or failure at the times of greatest need. Ham radio's flexibility, on the other hand, is what makes our service stand out in those same times.

But the more often I've seen these ads, the more I've realized that my initial impression was wrong, as the pictures tell a different story than the words. While the words talk about the network, the pictures are of *people*. More than repeaters and antennas, *the network* is kept reliable by the *people* who build and maintain it. This visual message, as any television producer will tell you, is at least as powerful as the verbal message. And in this sense, ham radio is *no different*. It is not our transceivers and repeaters and antennas that give our service its legendary reliability "when all else fails." It is our *people*. People who have the right equipment, knowledge, and training to meet the needs of the moment. People who can set up and operate communications networks on the fly, and keep them running for as long as needed. Depending on what we need to do, we can use HF or VHF; make contacts direct or via relays; and use code, voice, text, or video to get our messages through.

A growing number of these options require a physical infrastructure—a network—in order to work. Repeaters and satellites need to be built and maintained; satellites need to be built, launched, and controlled; repeater networks need to have links established and maintained. This network infrastructure is a large part of what makes ham radio work on an everyday basis (keep in mind that 99% of the time, we are *not* responding to an emergency or disaster, but it is these everyday contacts that keep us prepared for that other, critical, 1%). Also, of course, we have our own network of people—like in the TV ad—who design, build, and maintain the components of our physical networks. And the growth of this infrastructure is expanding the horizons of our everyday operating.

Stretching the Network

On VHF and UHF, the basic unit of our infrastructure is the repeater. These automatic relay stations allow us to use handhelds and relatively low-powered mobile radios to keep in contact with each other over a wide area, such as a city or a county. Sometimes, though, this isn't quite enough. There may be dead spots that limit coverage. In response, some repeater owners have added remote receivers, along with "voting" devices that automatically select the receiver with the strongest signal to be relayed to the transmitter.

To stretch further, a growing number of repeater owners are linking their systems, expanding their range to cover entire metropolitan areas, large semi-rural or rural areas, or even multiple cities. This has been common practice for many years in some parts of the country, but has recently been expanding elsewhere. There's one network of linked repeaters in New York City that covers all five boroughs plus Long Island and New Jersey suburbs. There is another in New Jersey that connects much of the state. The next logical step is to link together multiple linked systems. This has resulted in wide-area networks in some parts of the country, and in the rise of internet-linked networks such as IRLP (Internet Radio Linking Project) or Echolink.

The capabilities of these networks are simply astounding. Example: I was recently asked to be a guest on a net in New England that covers much of that region through a traditional linked repeater network. It is also connected to both an Echolink conference node and an IRLP reflector, which together allow check-ins from all over the world (see www.tipsnet.org). On the night I visited this net—via Echolink from my computer since I wasn't close enough to make a direct RF connection—we were joined by hams from all over the United States, including several coming in from a repeater in Alaska, as well as two hams from Scotland and one from Australia. It was a worldwide linkup on a scale that I had never experienced before, and it brought a whole new dimension to my hamming. It was, indeed, *the network*—both the equipment and the people—coming together to add to my enjoyment of this great hobby. I look forward to using Echolink and IRLP more often to keep in contact with hams around the world, especially while waiting for those danged sunspots to start showing up again in sizable numbers.

73, W2VU

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

Welcome, *WorldRadio* Readers

As a result of last year's purchase of *WorldRadio* magazine by our parent company, CQ Communications, Inc., *WorldRadio* subscribers as of this month are also *CQ* subscribers. Welcome. Details of how your *WR* subscriptions have been converted to *CQ* subscriptions are in the January 2009 issue of *WorldRadio*, on our website, and in the note from Publisher Dick Ross, K2MGA, on page **10** of this issue.

WorldRadio has *not* gone away. While it is no longer being published on paper, it continues as an online-only magazine, something that is at the leading edge of the publishing industry. Each monthly issue—starting with this month's issue—is being posted online in PDF format, accessible to all to either read online or download to your computer to read later. We have established an e-mail alert list to notify readers when each new issue is available, along with highlights of that issue. You may sign up by going to <http://mailman.sunserver.com/mailman/listinfo/worldradio-l>, or by following the link from either the *CQ* or *WR* websites. Being on the alert list is free. So is online access to the new *WorldRadio Online*.

Meanwhile, we would like to extend a warm welcome to *WorldRadio* readers. We hope you will find our pages to be enjoyable and educational while you continue to read *WR* online. We would also like to extend an invitation to all *CQ* readers to check out *WorldRadio Online* for its great ham radio stories and the unique perspectives of its columnists.

announcements

• **The following Special Event stations are scheduled for February:**

W7G, from commemoration of George Washington's birthday, George, Washington State; February 21–23 on 14.250, 18.135, 7.225, 3.880 MHz. QSL to W7BJN for secial QSL.

KD8CKP, from the 4th annual Freeze Your Acorns Off (FYAO) QRP Special Event, Kent, Ohio; Portage County ARS; 1500–2300Z February 21 on 15, 20, 40, 80 meters SSB, CW, PSK-31 in the General portion of the bands, Echolink through the KC8RKV node. For $8^1/2 \times 11$ certificate send QSL and SASE to Al Atkins, KB8VJL, 12433 Chamberlain Road, Aurora, OH 44202. <www.portcars.org>

NI8G, from the celebration of Thomas Edison's birthday, Milan, Ohio; Thomas Edison Memorial Radio Club; 1500–2100 Z February 7 and 1500–2100Z February 8 on 3.770, 7.270, 14.270, 21.370 MHz SSB. For QSL send QSL and SASE to Jack Hubbard, NI8N, 13113 River Road, Milan, OH 44846.

• **The following hamfests, etc., are slated for February:**

Feb. 7, **Charleston Hamfest & Computer Show and ARRL 2009 SC State Convention**, Exchange Park Fairground, Ladson, South Carolina. Contact Jenny Myers, WA4NGV, e-mail: <brycemyers@aol.com, phone 843-747-2324; <www.wa4usn.org>. (Talk-in 146.790–no tone Charleston, 145.250–tone 123.0 Summerville, 147+ tone 103.5 St. George; exams 1 PM)

Feb. 13–15, **Orlando HamCation℠ & Computer Show**, Central Florida Fairgrounds, Orlando, Florida. Contact Mort & Roberta Cohen, e-mail: <hamcation@aol.com>, phone 407-814-0434; <www.hamcation.com>. (Talk-in 146.760 [–600] no tone, backup 147.015 [+600] 103.5 tone; exams Saturday by preregistration only) *See us at the CQ Booth.*

Feb. 14, **St. Cloud, MN Cabin Fever Reliever Hamfest**, National Guard Armory, St. Cloud, Minnesota. Contact Art Carlson, WAØNJR, phone 320-252-0801; <www.w0sv.org>. (Talk-in 147.015 tone 100; exams 10 AM)

Feb. 20 (March 13 snow date), **New Providence ARC Auction**, New Providence Municipal Building Gymnasium, New Providence, New Jersey. Contact James Kern, KB2FCV, e-mail: <james1787@aol.com>, phone 908-219-4016; <www.nparc. org. (Talk-in 147.255 [141.3 Hz])

Feb. 22, **ARRL Roanoke Division Winterfest**, Northern Virginia Community College, Annandale, Virginia. Sponsor Vienna Wireless Society. Contact Dennis Voegler, WA4QMS, e-mail: <wa4qms@arrl.net>, phone 703-534-2081; <www.viennawireless.org>. (Talk-in 149.79; exams)

Feb. 28, **Vermont's HAM-CON**, Hampton Inn Convention Center, Colchester, Vermont. Sponsor Radio Amateurs of Northern Vermont. Contact Mitch Stern, W1SJ, e-mail: <w1sj@arrl.net, phone 802-879-6589; <http://www.ranv.org>. (Talk-in 145.15; exams)

ham radio news *(from page 2)*

Hams, Homeowner's Associations, Begin Talks

A small ham radio advocacy group called Hams for Action (HFA) says it is involved in a "constructive dialogue" with the Community Associations Institute (CAI), the national organization of homeowner's associations. Many, if not most, of these associations, severely limit the ability of hams to put up outdoor antennas and are beyond the reach of the FCC's "reasonable accommodation" rule.

According to HFA, the CAI has posted an article on its website which discusses the value of amateur radio and encourages individual associations to consider "voluntary accommodation" of "modestly scaled" ham antennas. The association is also offering advice to HFA members on how to propose changes in a homeowner's association regulations on ham antennas. The HFA is also developing a database of "ham-friendly" community associations. Amateurs who know of such groups are encouraged to forward the information to Cameron Bailey, KT3A, at <hamsforaction@comcast.net>.

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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Allow six weeks for change of address.

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CQ Amateur Radio, 25 Newbridge Rd., Hicksville, NY 11801

Introducing *WorldRadio Online* and Welcome to Former *WorldRadio* Subscribers

In this business of magazine publishing, an opportunity comes along once in a while to do something particularly interesting and exciting. This is one of those times. The decision by *WorldRadio* Publisher Armond Noble, N6WR, to retire and sell the magazine gave us the opportunity to serve a new group of readers and to jump feet-first into the growing field of online publishing. All of us here at CQ are pleased to present the first-ever issue of *WorldRadio Online*, a 21st century manifestation of a popular old print magazine friend, *WorldRadio*. It's now up and running!

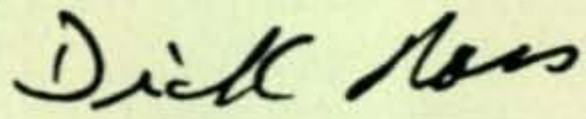
While internet publishing has been a part of amateur radio for a while, *WorldRadio Online* is truly a different type of product. What we've done is taken the familiar WorldRadio magazine format, adapted it and improved it for internet presentation, and made it available FREE to anyone with an internet connection.

How can you get to it? Simply go to the CQ web page: <www.cq-amateur-radio.com> and click on the *WorldRadio Online* button at the upper left corner of the home page. You'll be taken straight to the new WorldRadio Online homepage. If you wish, you can also sign up for a free e-mail reminder service so we can let you know when each new issue is posted. You'll get all the human interest stories and mini-DXpedition features that made WorldRadio special, along with such favorite columnists as "The Krusty One," Kurt N. Sterba.

Knowing our readers as I do, and knowing Hams in general, I expect that you'll let us know what you think! But please, when doing so, remember that all of this is new to us, as it is to you, too. We're learning, and we're looking for constructive criticism.

Last, but certainly not least, all of us here at CQ extend a hearty welcome to a group of brand new *CQ* readers: The thousands of folks whose *WorldRadio* subscriptions have now been turned into *CQ* subscriptions. We recognize that some of our new readers may have the impression that *CQ* is written for the big gun contester, DXer, or certificate chaser, and yes, we do sponsor and report on some of the biggest contests in the world. But I think you will quickly discover that there's much more to *CQ* than contesting and DXing We invite you to read this issue and the ones that follow, and we're confident that you'll like what you see. Plus, of course, *WorldRadio* continues to be as close as your nearest computer.

Enjoy!



Dick Ross, K2MGA
Publisher, CQ

hy-gain® ROTATORS

. . . the first choice of hams around the world!

HAM-IV

HAM-IV
$649.95

The most popular rotator in the world! For medium communications arrays up to 15 square feet wind load area. *New* 5-second brake delay! *New* Test/Calibrate function. *New* low temperature grease permits normal operation down to -30 degrees F. *New* alloy ring gear gives extra strength up to 100,000 PSI for maximum reliability. *New* indicator potentiometer. *New* ferrite beads reduce RF susceptibility. *New* Cinch plug plus 8-pin plug at control box. Dual 98 ball bearing race for load bearing strength and electric locking steel wedge brake prevents wind induced antenna movement. North or South center of rotation scale on meter, low voltage control, max mast size of 2 1/16 inches.

HAM IV and HAM V Rotator Specifications	
Wind Load capacity (inside tower)	15 square feet
Wind Load (w/mast adapter)	**7.5 square feet**
Turning Power	800 in.-lbs.
Brake Power	**5000 in.-lbs.**
Brake Construction	Electric Wedge
Bearing Assembly	**dual race/96 ball bearings**
Mounting Hardware	Clamp plate/steel U-bolts
Control Cable Conductors	**8**
Shipping Weight	26 lbs.
Effective Moment (in tower)	**2800 ft.-lbs.**

TAILTWISTER SERIES II

T-2X
$799.95

T-2XD
$1229.95
with DCU-1

For large medium antenna arrays up to 20 sq. ft. wind load. Available with *DCU-1 Pathfinder* digital control (T2XD) or standard analog control box (T2X) with *new* 5-second brake delay and *new* Test/Calibrate function. Low temperature grease, alloy ring gear, indicator potentiometer, ferrite beads on potentiometer wires, *new* weatherproof AMP connectors plus 8-pin plug at control box, triple bearing race with 138 ball bearings for large load bearing strength, electric locking steel wedge brake, North or South center of rotation scale on meter, low voltage control, 2 1/16 inch max. mast.

TAILTWISTER Rotator Specifications	
Wind load capacity (inside tower)	20 square feet
Wind Load (w/ mast adapter)	**10 square feet**
Turning Power	1000 in.-lbs.
Brake Power	**9000** in.-lbs.
Brake Construction	Electric Wedge
Bearing Assembly	**Triple race/138 ball brngs**
Mounting Hardware	Clamp plate/steel U-bolts
Control Cable Conductors	**8**
Shipping Weight	31 lbs.
Effective Moment (in tower)	**3400 ft.-lbs.**

CD-45II

CD-45II
$449.95

For antenna arrays up to 8.5 sq. feet mounted inside tower or 5 sq. ft. with mast adapter. Low temperature grease good to -30 F degrees. *New* Test/Calibrate function. Bell rotator design gives total weather protection, dual 58 ball bearing race gives proven support. Die-cast ring gear, stamped steel gear drive, heavy duty, trouble free gear train, North center scale, lighted directional indicator, 8-pin plug/socket on control unit, snap-action control switches, low voltage control, safe operation, takes maximum mast size to 2 1/16 inches. MSLD light duty lower mast support included.

CD-45II Rotator Specifications	
Wind load capacity (inside tower)	8.5 square feet
Wind Load (w/ mast adapter)	**5.0 square feet**
Turning Power	600 in.-lbs.
Brake Power	**800 in.-lbs.**
Brake Construction	Disc Brake
Bearing Assembly	**Dual race/48 ball brings**
Mounting Hardware	Clamp plate/steel U-bolts
Control Cable Conductors	**8**
Shipping Weight	22 lbs.
Effective Moment (in tower)	**1200 ft.-lbs.**

HAM-V

HAM-V
$1099.95
with DCU-1

For medium antenna arrays up to 15 square feet wind load area. Similar to the HAM IV, but includes *DCU-1 Pathfinder* digital control unit with gas plasma display. Provides automatic operation of brake and rotor, compatible with many logging/contest programs, 6 presets for beam headings, 1 degree accuracy, auto 8-second brake delay, 360 degree choice for center location, *more!*

ROTATOR OPTIONS

MSHD, $99.95. Heavy duty mast support for T2X, HAM-IV and HAM-V.

MSLD, $39.95. Light duty mast support for CD-45II and AR-40.

TSP-1, $34.95. Lower spacer plate for HAM-IV and HAM-V.

AR-40

AR-40
$349.95

For compact antenna arrays and large FM/TV up to 3.0 square feet wind load area. Dual 12 ball bearing race. Automatic position sensor never needs resetting. Fully automatic control -- just dial and touch for any desired location. Solid state, low voltage control, safe and silent operation. 2 1/16 inch maximum mast size. MSLD light duty lower mast support included.

AR-40 Rotator Specifications	
Wind load capacity (inside tower)	3.0 square feet
Wind Load (w/ mast adapter)	**1.5 square feet**
Turning Power	350 in.-lbs.
Brake Power	**450 in.-lbs.**
Brake Construction	Disc Brake
Bearing Assembly	**Dual race/12 ball bearings**
Mounting Hardware	Clamp plate/steel bolts
Control Cable Conductors	**5**
Shipping Weight	14 lbs.
Effective Moment (in tower)	**300 ft.-lbs.**

HDR-300A

HDR-300A
$1499.95

For ***king-sized*** antenna arrays up to 25 sq.ft. wind load area. Control cable connector, *new* hardened stainless steel output shaft, *new* North or South centered calibration, *new* ferrite beads on potentiometer wires reduce RF susceptibility, *new* longer output shaft keyway adds reliability. Heavy-duty self-centering steel clamp and hardware. Display accurate to 1°. Machined steel output.

HDR-300A Rotator Specifications	
Wind load capacity (inside tower)	25 square feet
Wind Load (w/ mast adapter)	**not applicable**
Turning Power	5000 in.-lbs.
Brake Power	**7500 in.-lbs.**
Brake Construction	solenoid operated locking
Bearing Assembly	**bronze sleeve w/rollers**
Mounting Hardware	stainless steel bolts
Control Cable Conductors	**7**
Shipping Weight	61 lbs.
Effective Moment (in tower)	**5000 ft.-lbs.**

Digital Automatic Controller

DCU-1
$749.95

Automatically controls T2X, HAM-IV, V rotators. 6 presets for favorite headings, 1° accuracy, 8-sec. brake delay, choice for center of rotation, crisp *plasma* display. Computer controlled with many logging/contest programs.

AR-35 Rotator/Controller

AR-35
$89.95

For UHF, VHF, 6-Meter, TV/FM antennas. Includes automatic controller, rotator, mounting clamps, mounting hardware. 110 VAC. One Year Warranty.

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Voice: 662-323-9538 **Fax:** 662-323-6551

RBD-5
$29.95

NEW! Automatic Rotator Brake Delay

Provides automatic 5-second brake delay -- insures your rotator is fully stopped before brake is engaged. Prevents accidentally engaging brake while rotator is moving. Use with HAM II, III, IV, V, T2Xs. Easy-to-install. Includes pre-assembled PCB, hardware.

hy-gain®

Antennas, Rotators & Towers

308 Industrial Park Road,Starkville, MS 39759, USA

A groundhog named Punxsutawney Phil has unofficially become America's "official" predictor of spring's arrival, looking for his shadow each February 2nd. Plus, of course, as a groundhog, Phil is a natural ham, as WA3CVC discovered on a visit last Groundhog Day.

Ham Radio Groundhog Day

BY HENRY HILL,* WA3CVC

I left my house at 12:30 AM on February 2, 2008, headed for the Groundhog Day celebrations and amateur radio special event station K3HWJ located in Punxsutawney, Pennsylvania, a small town about 65 miles northeast of Pittsburgh. The plan was to first go the 122nd Groundhog Day event on Gobbler's Knob—home of Punxsutawney's Groundhog Day celebration—and then over to the special event station, a short distance away, which started up later in the morning. The drive from my house in Plum, Pennsylvania was about 69 miles. The early morning traffic was light and uneventful, and I arrived at Gobbler's Knob at 2:30 AM.

Gobbler's Knob

The gate at the entrance was not open to the public until 3 AM, but I had a pass to get in early and set up my photo gear for shooting the event. The large crowd was already lining up at the gate despite the 24-degree temperature. The *Punxsy* Phil fans in the crowd mostly trudged up the steep hill on foot through light falling snow, blustery winds, and shaky late-night drivers.

When the gate finally opened, the crowd began filling the Gobbler's Knob open-air venue that started up front with the stage and then opened up into a small area for the "inner circle." This was where the Punxsutawney Groundhog Club's inner circle of dignitaries worked. They were also the men and women who handled all of the planning and logistics for the event, as well as the care and handling of the groundhog. Also in this area just off the stage was where the media gathered, with the guests of the inner circle standing just behind them. The area outside of the inner circle was divided by a pathway to get to the stage from the entrance, with the remaining areas on both sides of the pathway being open to all guests; this was standing-room-only on a first-come, first-serve basis. On the perimeter of the open area were huge bonfires where the fans could keep warm and socialize away from the packed-in crowd. To the rear of the venue was a building with restrooms and food: hot chocolate, snacks, and some breakfast items for the inner-circle guests and media. Food was also available to the public at vendor locations, along with restroom facilities. However, if you did move in this record crowd of 10,000 or more, you would lose the coveted spot you garnered by being ambitious and arriving early to get up close.

Photo A– When Punxsutawney Phil is removed from his heated burrow on the morning of February 2nd each year, his handler first lifts him high in the air so everyone can see him. (Photos by and courtesy of the author)

The night passed by quickly with the many entertaining events that were taking place up on stage. A team of local young ladies danced all night long, and television-like games were played with members of the audience, such as the Newlywed Game, where couples were tested to see who really knew their mate the best. Other games with audience participation were played, and souvenir Groundhog Day T-shirts were fired out of a compressed air cannon from the stage into the crowd to keep the cold folks warm and awake.

I was surprised by how many visitors

*823 Pierson Run Road #B, Pittsburgh, PA 15239

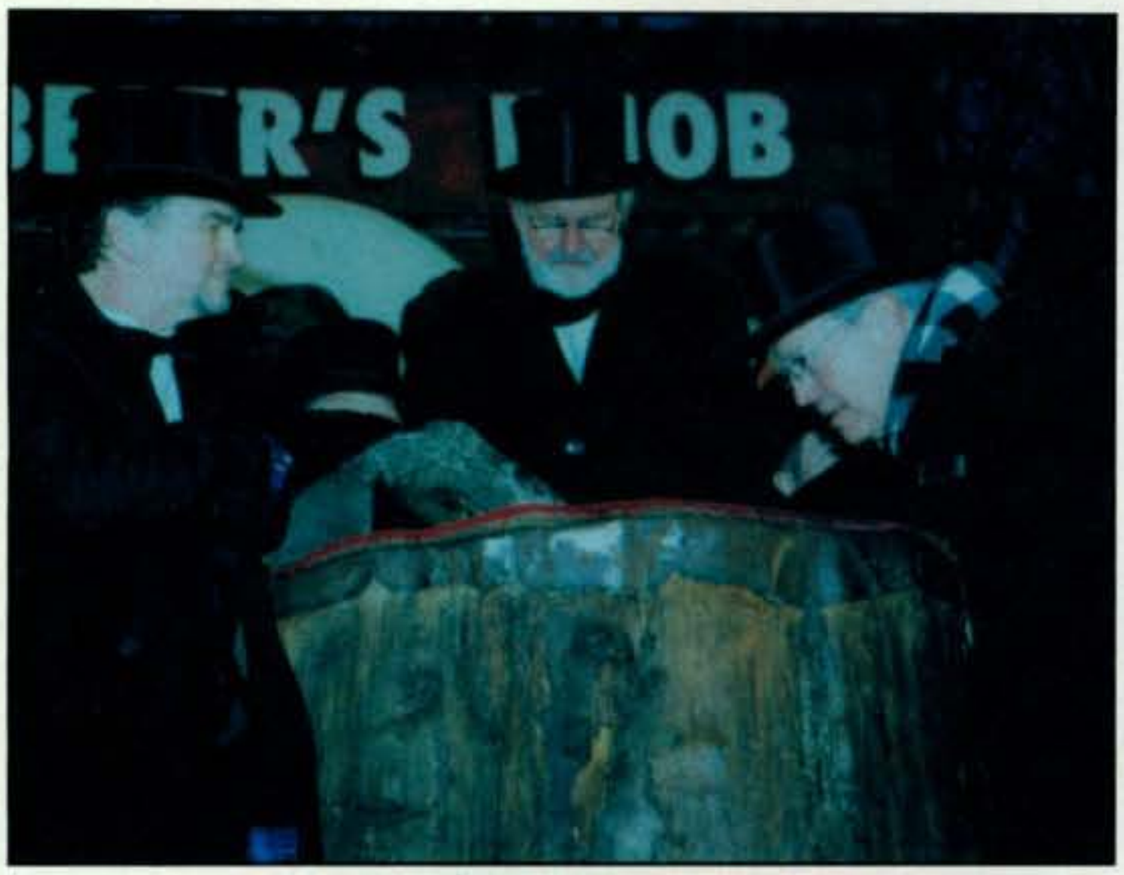

Photo B– Punxsutawney Groundhog Club President Bill Cooper consults with Phil and then translates his forecast from "Groundhogese" into English.

Photo C– Once Phil's forecast is translated, it is read aloud to the assembled crowd by the groundhog club's Mike Johnston.

from other countries made the trip, with Groundhog Day a planned stop in their itinerary. There was a woman from Iceland, as well as a few young men and women from Brazil, Germany, and other countries. They were very excited and proud to be here in America celebrating with the local folks the old tradition of Groundhog Day (if you're not familiar with this *tradition*, see "About Groundhog Day"). Their enthusiasm soon won over the crowd, which greeted them very warmly. The local folks were great hosts who represented our country as a very classy example of how the good qualities of humanity are the common thread of friendship. It was a very nice experience.

The Main Event

Finally, the full complement of the "inner circle" made its way down the main path to the stage. The clock-watchers noted that it was now closing in on the magic time of 7:24 AM, when Phil was supposed to look for his shadow Then John Griffiths and Ben Hughes, two of Phil's handlers who were dressed to the nines in their formal wear and top hats, knocked on the door of Phil's home, a special tree stump at the front of the stage. Then Mr. Hughes reached in, caressed Phil the weary little groundhog, and then raised him way above his head for all to see (photo A). The crowd cheered as the little guy looked around with a deer-in-the-headlights look from all the media lights that were now focused on him; his eyes were still adjusting to being pulled out of the dark stump.

Phil was then placed on top of the stump to confer privately with the president of the Groundhog Club, Bill Cooper (photo B). Phil then communicated his prognostication to Mr. Cooper, who then handed over the written scroll of Phil's words to Mike Johnston. Punxsutawney Phil's words were then eloquently spoken by Mr. Johnston to the crowd (photo C), drawing a deeply disappointed boo when he told of Phil seeing his shadow, meaning there would be six more weeks of winter. This was Phil's disappointing 2008 forecast.

On a more positive note, I was able to get in close enough to let Phil briefly be a "guest op" on my HT (photo D).

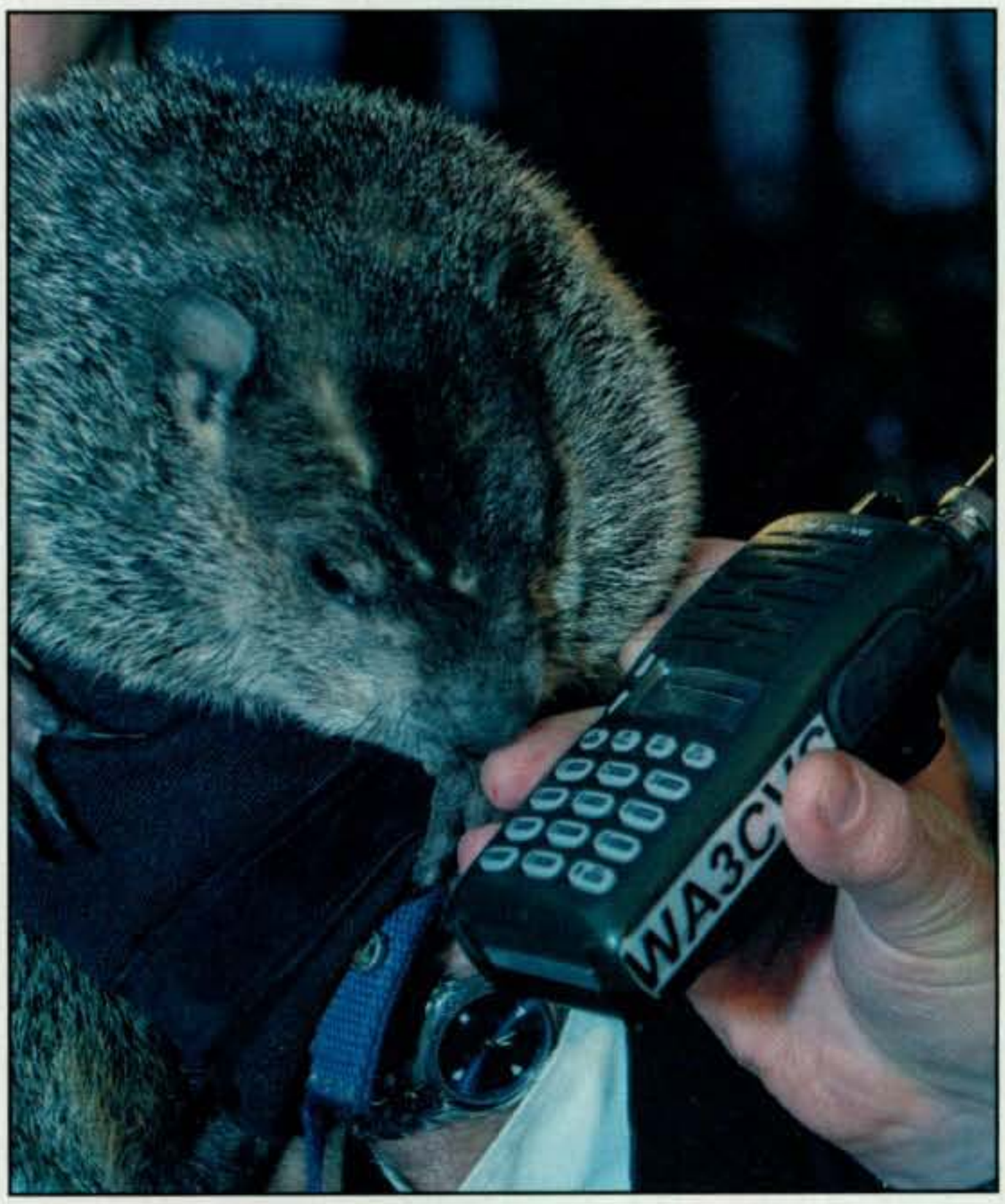

Photo D– Even a groundhog should get to ham it up a little. We think he was calling CQ on WA3CVC's handheld but we couldn't be sure, since he was speaking Groundhogese.

From (ground)Hogs to Hams

Once the ceremony was over, I started my short drive to the special event station at the local airport. I set the frequency on my 2-meter rig to 147.390, and keyed the mic. "QRZ Punxsutawney Special Event Station, this is WA3CVC." "WA3CVC, this is K3HWJ, you are full quieting into the Punxsy repeater. Can I help?" It was nice to hear that I was headed in the right direction, and that I would be at the station soon. I was crossing the Punxsutawney airport property when I first saw the Mosley 3-element beam perched high above one of the older buildings straight ahead. As I got clos-

"Great sounding rig! Must be a Ten-Tec."

All the Ten-Tec rigs that I've owned have excelled in audio. I owned a pair of (other brand) transceivers but Ten-Tec beats them in transmit audio - K4NTY

Great audio! Full, rich, natural! - K4TEN

Good audio quality and it sounds like my natural voice - K6WLM

Excellent audio. I was working a station in Puerto Rico and he stopped the calling stations and asked me what I was running. I told him the Jupiter and he said "I should have known it was a Ten-Tec." - WD4PG

I'm confident that I will have the best signal I can possibly produce! – W1RGO

TEN-TEC

I am amazed how clean and clear I sound – W4WUQ

Very well balanced audio; natural sounding, pleasing to listen to. One of the best sounding rigs on the band. Well rounded with clarity. - KA4ICK

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Hearing is everything.

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Photo E– Home of the Punxsutawney Area Amateur Radio Club and site of the annual Groundhog Dayspecial event station.

er, I noticed a folded dipole running horizontally between supports and the sign for the Punxsutawney Area Amateur Radio Club (photo E). I was there.

Mike Miller, N3HBH, who is the club president, greeted me and showed me around the station setup, which is spread across two different buildings on this very small private airport. The main station was in the older building, with an ICOM 746-PRO being used on 20 meters (on 14.240 MHz). The second rig was a Ten-Tec Jupiter set on 7.240 for the 40-meter operations, being run on the B&W BWD-90 folded dipole. The 75-meter band, as well as 2 meters, was also being operated for the event.

I arrived very early and was one of the first operators on HF (photo F). It wasn't long before I made my first contact with Texas on 20 meters. The event was now

Photo F– The author (right) waits his turn to get on the air shortly after arriving at the K3HWJ special event station … and still dressed for standing outside overnight in the cold!

About Groundhog Day

For those readers who may not be familiar with American traditions, Groundhog Day is not really an American tradition (but most Americans don't know that!). It is an adaptation of a European tradition brought here by German settlers in the 1700s. February 2nd is known as Candlemas Day, halfway between the winter solstice in December and the spring equinox in March. By tradition dating back before Christianity in Europe, according to the Stormfax Weather Almanac website, nice weather on Candlemas Day meant the rest of the winter would be cold and stormy. A cloudy Candlemas Day, on the other hand, was supposed to foretell early arrival of springtime weather.

Following in that tradition, it was believed that if an animal saw its shadow on Candlemas Day, there would be six more weeks of winter weather. Eighteenth-century Germans, according to Stormfax, watched badgers to see if they cast shadows. When large numbers of Germans emigrated to Pennsylvania, they brought along this tradition, but substituted the more-common groundhog as their weather forecaster.

According to the Punxsutawney Groundhog Club (www.groundhog.org), the Groundhog Day tradition there began in 1886, with the first trek to Gobbler's Knob coming in 1887 and continuing every year since. The groundhog club website claims 100% accuracy for Phil's forecasts. However, Stormfax compared them with actual Pennsylvania weather and determined that he's been right only 39% of the time … roughly the same level of accuracy of many human weather forecasters! *— W2VU*

Photo G– Officers of the Punxsutawney Area Amateur Radio Club. From left: Mike Miller, N3HBH; Steve Waltman, KB3FPN (standing); Jim Byrne, KA3WSX (seated); Clif Wineberg, WB3GAD; Sherman Hollopeter, W3QOS; and Doug Hunter, WA3LVU.

officially running, and the fun had begun. Then other members and guests began to show up (photo G), after first stopping in at the hangar next door where the club was putting on its annual big breakfast. Fresh butcher cuts were being cooked right there for all comers, along with pancakes and other specialties The participants did not go hungry with local homegrown and cooked cuisine with a Punxsutawney-esque flair that screamed for seconds being served to all.

The band conditions that day were terrible, with noise and weak signals resulting in a contact count well below the usual number of about 500 contacts for the day. The operators had to work hard for the contacts on this day, but at times the bands opened up a little to the cheers of all. There were 35 folks participating during the event, as members or as guests. The day was not a serious contest type of day, but a more small-town fun kind of day, where the warmth of sharing the fun was the main theme.

The operators took turns at the microphone and kept track of the contacts that they worked in the log. This was a great opportunity for a few of the new hams to operate under contest conditions (photo H). It was also fun for hams around the world to be able come to Punxsutawney via the radio and be a part of the festivities. I saw everyone having fun and enjoying this day, which is a local holiday.

The town of Punxsutawney puts on a spectacular Groundhog Day celebration with events all over town. The main park has vendors, artwork, and a chance for everyone to meet Punxy Phil up close and personal. Other locations ran events, from the original "Groundhog Day" movie at the local theater, to craft shows, brunch and breakfast everywhere, an art show, and the annual Trails to Rails dance at the Punxsutawney Eagles club.

This special event station has been operational on Groundhog Day for over 30 years and is one of those kinds of events that is a beacon for the area … as seen by all the out-of-country guests at the ceremony. The Punxsy ham club puts on a fun event for all who come and participate and gets a lot of nice media attention on ham radio as well; this is a good thing these days. Hams around the world who cannot come in person are able to use their radios as keys to the welcome mat of Punxsutawney. They also get to participate in a Pennsylvania original and receive a nice certificate for their time and effort (fig. 1). The certificates are different every year, and are a local original. The members and guest hams have a ball working under such a fun environment, where the young and the old, men and women, all share in the fun. I hope to see you there this February!

Photo H– John Buttner, KB3OUG, was the first operator working the bands on the ICOM 746-PRO. This was his first contest-type operating experience.

Fig. 1– The 2008 Groundhog Day certificate sent out for contacts with K3HWJ. A new certificate is designed and printed each year. (Courtesy Punxsutawney Area Amateur Radio Club website, <http://www.qsl.net/k3hwj/>)

With over two dozen models to choose from, if you're in the market for a handheld, you're almost certain to be able to find the radio that offers the best mix of features you want and a price you can afford. (Photo by the author; equipment photos courtesy of their respective manufacturers)

Four leading ham radio manufacturers offer 26 models of exciting VHF/UHF handheld technology. Battery capacity has never been greater, and plug-in modules allow you to expand some handhelds' talents into the digital world. Take a swim with some handhelds, and tune in worldwide shortwave broadcasting with others. You can get dizzy with the features and accessories . . . and we will cover them all!

CQ Market Survey:

VHF/UHF Handhelds

BY GORDON WEST,* WB6NOA

It has been three years since we field-tested VHF and UHF handhelds, and the best news is there has been no substantial increase in handheld pricing. Single-banders, new, sell for as low as $99, several dual-banders are under $199, tri-banders are around $260, quad-banders under $299, and you can go all digital, starting in the mid-$300 range.

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This year our HT buyer's market survey is divided into the following categories: Single-band HTs, Dual-banders and Two-banders, Tri-banders, Quad-banders, including shortwave receive, and Digitals.

First, some highlights of what's to come: Some dual-banders are actually less expensive than a single-band HT, and definitely less than two single-band HTs! There is a big difference between two bands and dual-band. Dual-banders let you monitor two frequencies at once (generally one on each

band), while two-banders give you only one at a time. Go for a dual-bander if you need simultaneous reception on VHF and UHF. Got shortwave? Can a little HT with shortwave receive pull in shortwave and AM radio bands well? Finally, going digital with ICOM D-STAR technology is the proven data system. Now, too, Yaesu has an APRS HT, while the Kenwood D7 has vanished. D-STAR GPS positioning by itself will keep you from getting lost, and our field review takes a look at the offerings of each individual HT.

Single Band

We start, alphabetically, with Alinco, and its relatively new "V" series handhelds, priced in the $150s, with three identical models for three different bands:

V-17 = 2 meters
V-47 = 70 cm band
V-27 = 222 MHz

"The V series are designed so all the accessories are interchangeable," comments Evelyn Garrison, WS7A, Alinco's Marketing Manager. Think of "V" for Very rugged! They are *submersible* for search-and-rescue teams wading in a river.

TIP: *Waterproof* means your equipment will likely survive light rain or spray from a fire hose, but only if all rubber plugs are inserted into the jacks. Any jack left open on a "waterproof" radio will allow ingress of water to the radio and the radio will fail shortly. *Submersible*-rated handhelds may take a brief, shallow dunking and likely survive. The little rubber plugs are recommended, but not required, for survivability. Look for more in this topic in a later tip.

Although the 2-meter V-17 does not give us AM aircraft reception, it does offer a unique capability of receiver attenuation for downtown use. The nickel-metal-hydride battery pack is standard issue for each of these units. An optional lithium-ion and/or AA dry-cell packs are available as well. This radio series is *rugged*!

TIP: Battery tray . . . a good deal! Many handhelds may take the optional battery tray that holds AA alkaline cells. This is a good deal for emergency communicators who may exhaust their packs at the scene. Any AA battery cells will work, without the need for any recharging.

"It might be worth mentioning that some radios with these battery-tray options do not transmit with very much power. One high-end radio, for example, transmits only 100 mW with the two LR 6/AA battery pack option," comments D-STAR guru Brian Roode, NJ6N. "However, (a mid-range dual-bander) works full power with the battery tray fully loaded." Check on the specifics on radios you're considering.

Alinco has just introduced the DJ-175, a single-band, 2-meter radio seen selling for under $99. It has that big-radio feel with 200 channels of memory. You can computer clone it with alphanumeric readouts, too. It also receives out-of-band, FM, 136–173.995 MHz. A 700-mAh battery and charger are included as well!

Alinco's DJ-175 is a new single-band HT for 2 meters available at many dealers for under $99. →

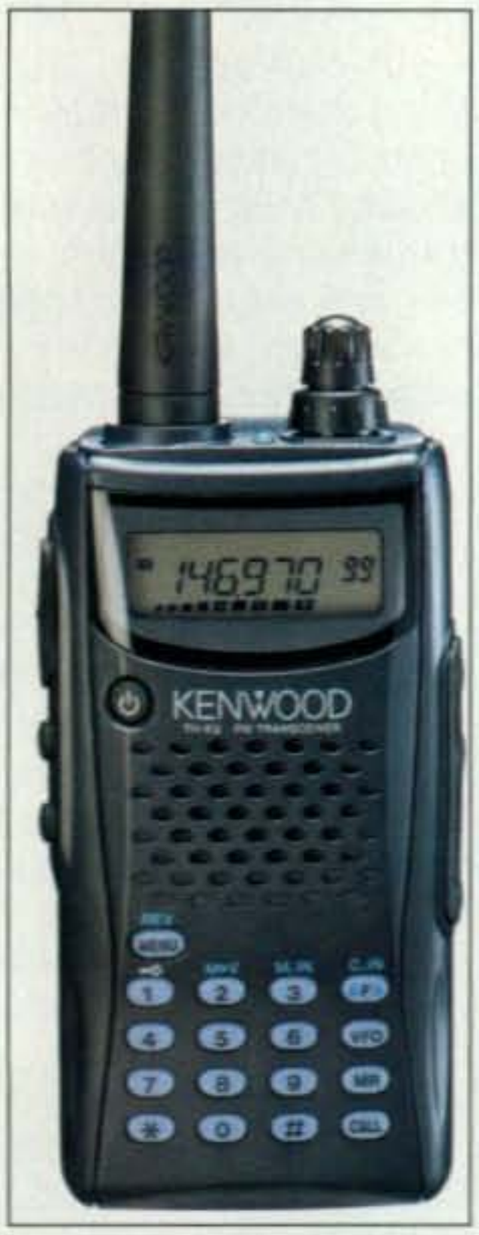
Single Band

	Alinco DJ-V17T	Alinco DJ-V47T	Alinco DJ-V27T	Alinco DJ-175	ICOM IC-V82	ICOM IC-U82	ICOM IC-V8 Sport	ICOM IC-V85	Kenwood TH-K2AT	Yaesu VX-150	Yaesu VX-170	Yaesu VX-177
Features												
Bands	2m	70cm	1.25m	2m	2m	70cm	2m	2m	2m	2m	2m	70cm
Power	5W	4.5W	5W	5W	7W	5W	5.5W	7W	5W	5W	5W	5W
RX	130-174	410-470	216-250	136-174	138-174	400-479	136-174	136-174	136-174	140-174	136-174	420-470
Air	No	No	No	No	No	No	No	No	No	No	No	No
Memories	200	200	200	200	200	200	100	106	100	200	200	200
Alpha	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dual RX	No	No	No	No	No	No	No	No	No	No	No	No
Auto Repeater	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Illuminated Keypad	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes
Clone	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Computer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Computer Clone	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Antenna Connector	SMA	SMA	SMA	SMA	BNC	BNC	BNC	BNC	SMA	SMA	SMA	SMA
12V DC	Yes	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes
DCS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Power Levels	2	2	2	3	3	3	2	3	2	3	3	3
Audio	0.5W	0.5W	0.5W	0.5W	0.5W	0.5W	0.3W	0.3W	0.5W	0.5W	1.0W	1.0W
Battery Type	NiMH	NiMH	NiMH	NiMH	Ni-Cad	Ni-Cad	AA Alkaline	Li-Ion	NiMH	NiMH	NiMH	NiMH
Cost	$130.00	$180.00	$190.00	$99.00	$140.00	$140.00	$99.00	$195.00	$140.00	$120.00	$119.00	$150.00
Weight	9.9 oz	9.9 oz	9.9 oz	8.7 oz	14 oz	14 oz	12.5 oz	12 oz	12.5 oz	11.5 oz	14 oz	14 oz
H_2O*	Sub	Sub	Sub	Wea	Wea	Wea	Wea	Wea	Wea	Wea	Sub	Sub

**Note: In the H_2O specifications, Sub = Submersible and Wea = Weatherproof. See text for explanation of the difference.*

Price listings are based on advertised prices as of press time and are subject to change. Please check with your dealer for updated pricing information.

The rugged K2 2-meter handheld from Kenwood can be programmed by computer and can keep running even while the battery is being charged. →



Single-banders from ICOM include its V and U82 series handhelds, a single band for either 2 meters or 440, including the internal plug-in jack for the optional D-STAR board. There is 7 watts of power output on the 2-meter V82, and a land-mobile-style keypad with recessed pushbuttons. Also, unlike the keypads on land-mobile radios, these *may* be used for direct frequency entry. You can clone up to 200 memories, and get auto repeat on both the VHF and UHF commercial-type ham handhelds. The IC-V/U82s sell for about $140 each.

TIP: Handheld battery capacity ranges from 600 mAh to 1400 mAh, depending on the thickness and weight of the actual battery. Most handhelds ship with modest battery capacity and a recharger. Larger capacity battery packs are available, but keep in mind that the new lighter weight lithium-ion chemistry requires a specific matching battery charging system.

ICOM also pursues the under-$99 field with the V8 Sport, a 2-meter, 5 1/2-watt output, 100-channel HT with alphanumeric memory names as well. ICOM supplies the full-featured radio along with an AA battery case, and *you* supply the batteries. You can also get rechargeable batteries for this radio, which has extended receive ability but no air-band receive (RX).

The ICOM V85 2-meter single-bander is relatively new, selling at under $199 and shipping with a lithium-ion long-life battery. Seven watts output! Cloning from radio to radio is simple.

Kenwood continues with its successful under-$140 K2, a PC-programmable 2-meter handheld, with the added feature of running directly off 13.8 volts DC for battery charging, even with the radio turned on.

The heritage of the Kenwood K2 radio is likely from the company's land-mobile radio division, so you get a rock-solid selective receiver, internal VOX, and computer capability with optional programming software. One software selection is narrow-band or wide-band modulation. Wide-band is our common ±5 kHz deviation, and narrow band is 2 1/2 kHz deviation.

Recently, NTIA, the FCC's counterpart for federal government communications, has ordered all government high-band channels to be narrow-banded. Even though this radio, plus many other brands of equipment, may indeed be computer-modified for narrow-band deviation, *no ham radio* may be used for out-of-band Civil Air Patrol (CAP) and US Coast Guard Auxiliary use. Although your signal may sound fine with a modified narrow-band ham set, the new NTIA regulations now forbid VHF ham equipment from being used to transmit outside of ham band limits.

Kenwood acknowledges that recently it has been lying low with new equipment debuts, but suggests that hams stay tuned for some exciting new-technology radios coming soon.

Yaesu continues to market its rugged VX-150, a 2-meter handheld with 209 memories, wide- and narrow-band deviation selection, and a handy battery voltage meter. The display is angled up—easier to see on your belt if you are good at reading frequencies and channels upside down. However, it is a workhorse radio from its land-mobile division design, priced at around $125. It looks tough and has loud audio, too!

Yaesu also offers its VX-177/127, and VX-170/120 single-banders for 70 cm or 2 meters, and these units let you choose whether or not you want the full keypad, or for beginners, a more restricted keypad to prevent accidental key pushes. Both units offer 200 alphanumeric channels, 10 memory groups of channels, and even a security password to prevent unauthorized use. The large display on the radio face is easy to see, and everything lights up at night. They are in the $150 range.

TIP: Let's see . . . Why would a ham go with a single-bander rather than spending just a few more dollars for a dual-band HT? That is a valid question, and what comes to mind are ham radio emergency teams who use their equipment infrequently and may not have any inclination to do much more than pass traffic on a couple of 2-meter or 440-MHz or 222-MHz channels.

Dual-Banders & Two-Banders

Here is where ham radio comes to life for those of us always looking to try out new systems on the air or plug into the internet using VoIP (Voice over Internet Protocol).

Think wide-band receive, aircraft bands, public-safety scanning capabilities, and working the FM EASY satellites by going dual band!

Go micro with the credit-card-size Alinco DJ-C7 two-bander. For under $190, it's a ham set, FM broadcast receiver, AM aircraft receiver, 300-MHz military receiver, and full-featured ham transceiver on 2 meters and 440. It only puts out a third of a watt, but with 200 memory channels, this tiny radio will likely get you to a local repeater. It weighs less than 4 ounces!

Alinco also makes a more traditional-size handheld, the DJ-V5, with regular-size features for both ham bands, plus extended receive covering 76 MHz to 999 MHz, including AM aircraft-band RX. Features include 200 memory channels with alphanumerics, one-band-at-a-time operation, and plenty of audio output to be heard over a crowd. The DJ-V5 sells for a little over $200.

ICOM's P7A dual-bander features 1000 memory channels and has a wide-band receiver covering 500 kHz to 999 MHz. →

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Choose a mount depending on the antenna size and vehicle mounting location space.

For Small Antennas & Limited Space

MODEL	ANT CONN	COAX CONN
Maldol EM-5M	SO-239	PL-259

Footprint: 1.1"x .75"
Max Antenna: 40"

For Medium Size Antennas

MODEL	ANT CONN	COAX CONN
COMET CP-5M	SO-239	PL-259
COMET CP-5NMO	NMO	PL-259

Footprint: 3.4" x 1.25"
Max Antenna: 60"

For Tall or Multi-band HF Antennas

MODEL	ANT CONN	COAX CONN
COMET HD-5M	SO-239	PL-259
COMET HD- 5 3/8-24	3/8-24	PL-259

Footprint: 3.75" x 1.1"
Max antenna: 80"

COMET BNC-24 DUAL-BAND 2M/70CM HT ANTENNA RX range: 100-1200MHz
• Gain: 2.15/3.5dBi • Length: 17" • Conn: BNC Super flexible featherweight whip

COMET SMA-24 DUAL-BAND 2M/70CM HT ANTENNA RX range: 100-1200MHz
• Gain: 2.15/3.5dBi • Length: 17" • Conn: SMA Super flexible featherweight whip

COMET SMA-503 DUAL-BAND 2M/70CM HT ANTENNA RX range: 100-1200MHz
• Length: 8.75" • Conn: SMA

Maldol MH-209 *(BNC Conn)* **MH-209SMA** *(SMA Conn)* **2M/70CM DUAL-BAND HT ANTENNAS**
3" length, soft rubber cover. Good performance in a small package!

COMET NEW! CSB750A DUAL-BAND 2M/440MHZ W/FOLD-OVER
Gain & Wave: 146MHz 3.6dBi 1/2 wave, 446MHz 6.1dBi, 5/8 wave x 2 • VSWR: 1.5:1 or less • Length: 42" • Conn: PL-259 • Max Pwr: 150W

COMET NEW! CSB770A DUAL-BAND 2M/440MHZ W/FOLD-OVER
Gain & Wave: 146MHz 4.4dBi 5/8 wave center load, 446MHz 6.9dBi 5/8 wave x 2 center load • VSWR: 1.5:1 or less • Length: 51" • Conn: PL-259 • Max Pwr: 150W

COMET NEW! CSB790A DUAL-BAND 2M/440MHZ W/FOLD-OVER
Gain & Wave: 146MHz 5.1dBi 7/8 wave center load, 446MHz 7.7dBi 5/8 wave x 3 center load • VSWR: 1.5:1 or less • Length: 62" • Conn: PL-259 • Max Pwr: 150W

Maldol AX-50 DUAL-BAND 2M/440MHz
Gain & Wave: 2M 1/4 wave • 70cm 5.0dBi 9/8 wave • Length: 21" • Conn: PL-259 • Max Power: 60W

Maldol AX-75 DUAL-BAND 2M/440MHz W/FOLD-OVER
Gain & Wave: 2M 1/2 wave center load 3.2dBi • 70cm 5/8 wave x 2 5.7dBi • Length: 30" • Conn: PL-259 • Max

Maldol AX-95 DUAL-BAND 2M/440MHz W/FOLD-OVER
Gain & Wave: 2M 1/2 wave center load 3.3dBi • 70cm 5/8 wave x 2 5.8dBi • Length: 38" • Conn: PL-259 • Max

COMET B-10 / B-10NMO DUAL-BAND 2M/440MHz
Gain & Wave: 146MHz 0dBi 1/4 wave • 446MHz 2.15dBi 1/2 wave • Length: 12"
• Conn: B-10 PL-259 ,B-10NMO - NMO style • Max Pwr: 50W

COMET SBB-2 / SBB-2NMO DUAL-BAND 2M/440MHz
Gain & Wave: 146MHz 2.15dBi 1/4 wave • 446MHz 3.8dBi 5/8 wave center load • VSWR: 1.5:1 or less • Length:29"
• Conn: SBB-2 PL-259 • SBB-2NMO NMO style • Max Pwr: 60W

Maldol EX-107RB / EX-107RBNMO DUAL-BAND 2M/440MHz
Gain & Wave: 146MHz 2.6dBi 1/2 wave • 446MHz 4.9dBi 5/8 wave x 2 • VSWR: 1.5:1 or less • Length:29"
• Conn: EX-107RB PL-259 • EX-107RBNMO NMO style • Max Pwr: 100W

COMET SBB-5 / SBB-5NMO DUAL-BAND 2M/440MHz W/FOLD-OVER
Gain and wave: 146MHz 3dBi 1/2 wave • 446MHz 5.5dBi 5/8 wave x 2 • Length: 39"
• Conn: SBB-5 PL-259, SBB-5NMO - NMO style • Max Pwr: 120W

COMET SBB-7 / SBB-7NMO DUAL-BAND 2M/440MHz W/FOLD-OVER
Gain & Wave: 146MHz 4.5dBi 6/8 wave • 446MHz 7.2dBi 5/8 wave x 3 • Length: 58"
• Conn: SBB-7 PL-259, SBB-7NMO - NMO style • Max Pwr: 70W

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The new IC-92AD from ICOM offers standard dual-band FM operation and includes full D-STAR digital capability as well. An optional GPS microphone will let you transmit position information via D-STAR.

Alinco's third two-bander has been around for many years. The DJ-596MKII has 100 alpha channels, nickel-metal-hydride battery, and even an alarm to keep away intruders or mosquitoes. Out-of-band receive capability is modest—no air, and only 136–174 and 400–512 MHz. Then again, this is meant for serious ham communications, not as a programmable scanner like Alinco's other two models. It is priced near the DJ-V5, so I would trot right down to the ham store and put one in each hand and weigh your options!

One important bonus to the legacy dual-band 596MKII is the capability to add Alinco's EJ-47U digital voice module. The $199 plug-in board will allow a pair of similarly equipped Alinco radios to communicate simplex via digital voice. This could be useful if you don't want too many people listening in, although this *is* an open-protocal datastream for the ham radio service. However, this digital modulation is *not* compatible with ICOM's more-advanced D-STAR data signaling.

Over at ICOM America, the venerable IC-T7H dry-battery-pack handheld continues to fare well, even though it is relatively expensive at $175. It will tune aeronautical AM, and it is one of the easier ones to modify for authorized out-of-band use. I like it, though, because it is simple to operate and it has been around a long, long time.

Relatively new from ICOM is the dual-band MICRO P7 HT. It puts out a little over 1 watt on dual bands, and offers extraordinary wide-band receive from 500 kHz to 999 MHz AM and FM. It can hold a thousand regular memory channels, luckily giving you alphanumerics to remember what you put into memory. It weighs under 6 ounces, and was seen selling for around $240. There is no keypad for frequency entry, so it's best to get ICOM's cloning cable or software.

ICOM America gets double mention for two dual-band radios that are also featured at the conclusion of this piece as *digital* radios.

The IC-91A is a true dual-bander, capable of receiving on one band while simultaneously transmitting on another. If you plan to work the FM EASY satellites, you can simultaneously hear your own downlink on FM. The 91A also can simultaneously receive two frequencies within the same band. The 91A features 5 watts out, 2 meter and 440 dual-band capabilities, and a spectrum scope for an overview of band activity if you can't find anyone around to talk to!

The 91A holds 1300 memory channels, giving you plenty of slots in which to store hot frequencies throughout the radio spectrum, tuning from 495 kHz all the way up to 999.99 MHz! Tuning modes can be FM, broadcast FM, or AM, with good sensitivity to AM shortwave broadcasts still remaining on high

Two Bands

	Alinco DJ-C7T	Alinco DJ-V5TH	Alinco DJ-596MKII	ICOM IC-T7H Sport	ICOM IC-P7A	ICOM IC-91A/AD	ICOM IC-92AD	Yaesu FT-60R	Yaesu VX-3R
Features									
Bands	2m/70cm	2m/70cm	2m/70cm	2m/70cm	2m/70cm	2m/70cm	2m/70cm	2m/70cm	2m/70cm
Power	.3W	5W	4.5W	5W	1.5W/1W	5W	5W	5W	2W/1W
RX	78-174 380-511	76-999*	138-174 400-512	118-174 400-470	0.5-999*	0.5-999*	0.5-999*	108-512 700-999*	0.5-999*
Air	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Memories	200	200	100	70	1000	1304	1304	1000	1286
Alpha	No	Yes	No	Yes**	Yes	Yes	Yes	Yes	Yes
Dual RX	No	No	No	No	No	Yes	Yes	No	No
Auto Repeater	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Illuminated Keypad	No	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Clone	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Computer Clone	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Antenna Connector	SMA	SMA	BNC	BNC	SMA	SMA	SMA	SMA	SMA
12V DC	Yes	Yes	Yes	No	Drop-in Charger	Yes	Yes	Yes	Yes
DCS	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Power Levels	1	3	2	2	2	3	4	3	1
Audio	0.3W	0.5W	0.2W	0.5W	0.05W	0.5W	0.5W	0.5W	0.05W
Battery Type	Li-Ion	NiMH	NiMH	AA Alkaline	Li-Ion	Li-Ion	Li-Ion	Li-Ion	Li-Ion
Cost	$195.00	$279.00	$240.00	$175.00	$240.00	$339.00	$579.00	$184.00	$169.00
Weight	3.2 oz	12 oz	11 oz	15 oz	5.7 oz	10.6 oz	11.4 oz	13 oz	4.6 oz
H_2O†	Wea	Wea	Wea	Wea	Wea	Wea	Sub	Wea	Wea

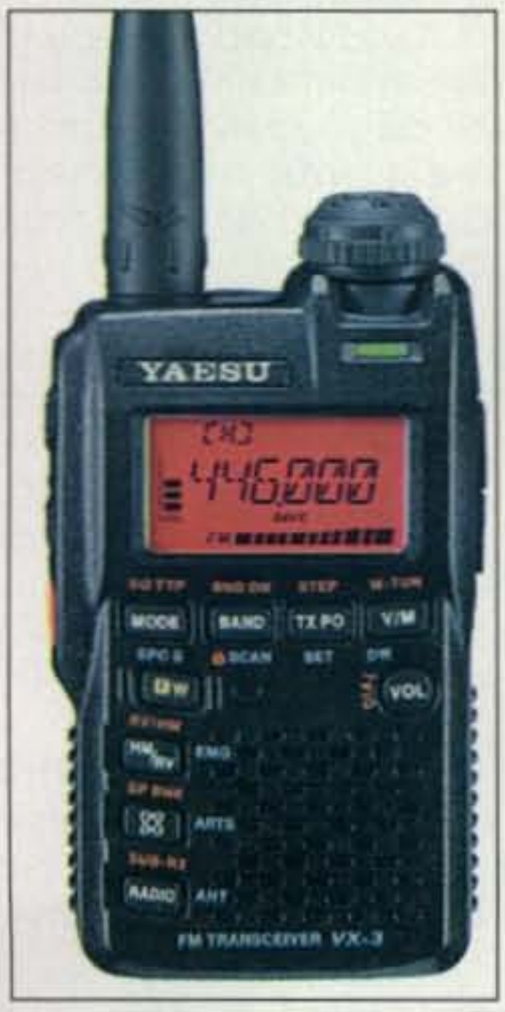
**See owner's manual for actual receiver specifications.*
***Requires computer software to program.*
†Note: In the H_2O specifications, Sub = Submersible and Wea = Weatherproof. See text for explanation of the difference.
Price listings are based on advertised prices as of press time and are subject to change. Please check with your dealer for updated pricing information.

frequency. If you buy the 91A without the D-STAR board, it will cost just a little over $300.

The ICOM IC-92AD comes in at around $575, and *includes* full D-STAR features other than the optional GPS microphone. The 92AD operates on 2 meters and 440 and has true dual-band capabilities with twin reception, even in the same band. It has 5 watts out, a band scope, and even a built-in voice-recorder function. It goes underwater, too, without needing to surface for 30 minutes, 3 feet down!

The 92 has over a thousand channels of memory, reception from the AM broadcast band through 999 MHz, FM, AM, and broadcast FM reception, and that fabulous built-in D-STAR feature that we'll talk about soon.

Over at Kenwood, we all mourn the loss of the D7, that magical handheld with a built-in TNC (terminal node controller) and amazing all-in-one short-message packet communicator. It's gone . . . no more. The last one I saw on eBay was over a grand! I am told that the demise was caused by new international regulations about component and circuit-board concerns for landfills. You will never find *my* D7, even broken, in a landfill!



Yaesu's VX-3R is a micro dual-bander with a long-lasting lithium-ion battery, full features on 2 meters and 70 centimeters, and a receiver that covers 500 kHz to 999 MHz. →

Yaesu offers two 2-band handhelds. The most popular is the regular-size FT-60R, with 1000-plus memories with alphanumeric labels, two bands of ham transmit on 2 meters and 440, and good receive capabilities, including AM aircraft, 137–520, and 700–999 MHz to listen to the drone of digital signals (cellular blocked). Since analog cellular is no more, even Marconi himself couldn't get it to decode cellular's unique digital modulation. However, the FCC has yet to change the rules that require blocking the old analog cellular frequencies.

I especially like this unit for beginners, because our local ham radio store, Ham Radio Outlet in Anaheim, California, takes the extra effort to pre-program nearly 100 channels of local 2-meter and 440 open repeater activity, plus lots of scanner-type frequencies to monitor. This makes such good sense! Any store selling a relatively complicated dual-band handheld to a brand new operator without including a repeater directory sells that operator short on all that ham radio has to offer. Don't get me started!

Like many Yaesu products, this equipment suffers from one design feature that will drive even a veteran operator to frustration: An accidental push of a single button may launch the unit into the auto-range transponder system, and without knowing it, every time you transmit a message the first few seconds are blanked out followed by a telltale beep. (ARTS is a method for finding similarly equipped hams within simplex range.) Unless someone tells you to turn off ARTS, you could go on for days wondering why no one is coming back

to your transmissions. Even the Yaesu mobiles will do that. There *is* a way of locking out this feature in the menu, but leave it to a seasoned ham for the keystrokes. The FT-60 sells for under $189 and is a workhorse radio regularly found in our classroom instruction demos. It also runs full power on AA batteries.

TIP: Most handhelds terminate to either a BNC or SMA antenna connector. If you are going to hook up your handheld to an external antenna, choose the adapter *cable*, spaghetti-thin, that takes the pressure off the big coax going to a tiny antenna receptacle. Also know which antenna receptacle your handheld will take in order to choose the correct longer length flexible or telescopic whips to improve your range.

The little Yaesu VX-3R is a micro dual-bander covering 2 meters and the 440 band, with nearly unlimited wide-band receive from 500 kHz to 999 MHz. Sorry, no SSB on HF. Forget about TV audio, too, as virtually all TV audio will be going digital as of February 18, 2009. However, you can tune into AM and FM broadcast stations even while monitoring a ham frequency. A super-thin 1000-mAh lithium-ion battery will keep you on the air all night. The VX-3R puts out a couple of watts, and that should be plenty to get you on the air, covertly, with the radio unseen in your shirt pocket. It even gives you FM stereo! It is priced at about $175.

Even for a new operator, a dual-band handheld makes terrific sense. I have several dual-banders myself, as well as two-banders, and I am still learning some of their exciting features. If you're looking for even more, though, such as shortwave reception and/or more than two ham bands, you'll have to take one more step up.

Tri-banders

ICOM, Kenwood, and Yaesu each offer a single powerful triband handheld transceiver.

At ICOM, it is the IC-90, with the third band as 6 meters FM. It offers ultra-wideband receive from the AM broadcast band up to 999 MHz, with full shortwave AM high-frequency capability. With 555 alphanumeric memories, tons of scanning, over-size buttons, and a relatively small size, this $275 ICOM tri-band HT is a success on the added band of 6 meters, as well as on 2 meters and 70 cm.

Kenwood's TH-F6A gives you the additional third band with full power out on 222 MHz, in addition to 2 meters and 70 cm. However, what makes the Kenwood tri-band transceiver unique is that it is the only ham handheld transceiver with high-frequency receive that *includes SSB*! That's right! With this little handheld, you can listen in on the 75-meter and 40-meter CW and SSB nighttime crowd, and catch some DX excitement on 20 meters on up during the day. Kenwood also includes a built-in ferrite-bar antenna for improved shortwave and local AM radio broadcasts.

TIP: Taller flexible whips . . .Yes, the much taller, very flexible handheld whip may boost your repeater capability *slightly*, but nothing beats operating in a repeater "hot spot" of best reception. Be cautious with the tip end of these very flexible whips. Many times the tip-end rubber cap falls off, leaving an antenna as sharp as an ice pick, and just as dangerous, to eyes near you.

The Kenwood F6A is also a true dualbander, allowing you to transmit on one band while simultaneously receiving on a second band. This is a handy feature if you ever are transmitting to a crossband repeater system that is tied into a dis-

The Kenwood TH-F6A tribander offers full power on 222 MHz, as well as 2 meters and 70 centimeters, plus a wideband shortwave receiver that includes SSB and CW capability. →

tant regular repeater. If the crossband system is set up correctly, it stays on only with the input, not hanging until the repeater drops out. With the other band on your *dual*-band HT, you can monitor the repeater directly and carry on a fast-paced conversation using both the repeater input and the temporary crossband transmit, tuned into the repeater input. We used this feature of the radio during the recent wildfires and it worked great!

The Kenwood F6A is no match for your larger HF receiver, but nonetheless, it is a kick to listen in on all that's happening on SSB HF. It *will* overload on strong signals, but is a hoot down on 75 meters, LSB, at night.

The Yaesu VX-6R is also a triband radio, one band at a time, although literature from Yaesu calls it a dual-band handheld. The reason is that the included 222-MHz band, for low-power transmit, is available only in the USA versions. This radio aptly shows its strong point in the literature—surviving a waterfall deluge, certified as "submersible."

TIP: Any marine radio and ham radio handheld listed specifically as "submersible" employs sealed jacks, knobs, and a built-in submersible microphone element capable of keeping water out for 30 minutes at a depth of 3 feet. The external optional submersible microphone screws into the mic jack and gives good audio input when close-talking the mic element. However, the mic element built into most submersible handhelds may not lead to the full-sounding audio that you would normally get with a non-submersible. A thin film of Gortex™ keeps the water out, but unfortunately it rolls off full-sounding transmit audio. Some hams actually go into the internal mic-element hole and gently rearrange the Gortex™ shield. This could undo its ability to swim, so keep this in mind.

The VX-6R holds 900 channels, capable of 24 memory-bank divisions. It's best to get these channels computer-entered, making it much easier to enjoy your radio by channel use, as opposed to searching 900 channels for your local ham club repeater. You can even add the optional barometric-pressure sensor, too, just to monitor atmospheric pressure and millibar changes. The radio also includes weather alert plus AM broadcast band through 999-MHz AM and FM receive.

Tri-band Notes

Getting 6 meters as the third band really requires a large mobile antenna for any decent repeater coverage. Even the longer rubber ducks have a hard time bringing up distant repeaters on 6.

Getting the 222 band as your third band is a fun way to meet new friends on this less-used band, but be careful, as not all repeaters are open on 222, nor are 222-MHz operators in some parts of the country embracing "newbies" who start playing around on "their" secret band. The Kenwood F6A is the only multiband handheld to put out a full 5 watts on the 222-MHz band. (Alinco's V27 single-bander also puts out 5 watts on 222 MHz.)

Probably the biggest benefit of a tri-band radio is the built-in shortwave receiver, spanning from the AM broadcast band through nearly 1000 MHz almost nonstop.

TIP: Speaker/microphones and headsets will keep you from missing a radio call that you might miss with the radio worn on your belt. However, transmitting with the equipment on your belt will lead to poor range. Also, many headset microphones may alter your transmit audio. Some lead to abnormally "hot" audio deviation. Some headsets may cause your voice to sound overly mellow, making it hard for others to hear your enunciation. Cautiously select headsets that are specifically designed for your particular handheld radio. Test them ahead of time before operating in a crowd.

Quad Band

The Yaesu VX-7R is advertised as a tri-band transceiver, but it is actually a quad-bander. On 6 meters it transmits 5 watts as well as 1 watt AM, which is regaining popularity in some areas, centered on 50.4 MHz. The rig also puts out 5 watts FM on 2 meters, about 300 mW on 222 MHz FM, and back to 5 watts out on the 70-cm band. It can swim for 30 minutes at 3 feet for a submersible rating, and allows for dual-band reception if you plan to work satellite crossband, transmitting on one band and listening to your own signal through an FM satellite on the other band.

This quad-bander also allows AM/FM reception from 500 kHz to 999 MHz, with remarkable high-frequency shortwave reception on double-sideband stations, including WWV.

Similar to other Yaesu handhelds, it has a WIRES II feature, and any local repeater designed around the WIRES-II internet linking makes saying hi to folks in Japan a real kick. WIRES is not the same as D-STAR, so keep these two systems separate in your brain.

Speaking of memories, the VX-7R offers 450 main memories, 10 quick memories, 12 home-channel memories, 10 weather-channel memories, 89 shortwave-broadcast memories, 10 hyper memories, and, most amazing, 280 marine channels. (I know, there are only 55 marine VHF channels, so maybe the military marines are being added, huh?)

Oh, you can even choose the face color as silver or black, each one with a very bright LED strobe for a little visual signaling.

TIP: Break the fall . . . If you accidentally fumble your handheld, stick your foot out and break the fall. An HT slamming into concrete or asphalt will usually suffer major knob or display damage. However, if you can break the fall with your foot, the HT will likely survive unscathed. *(Only with heavy boots or shoes; a falling HT can easily break a toe.—ed.)*

The Yaesu VX-8R will be arriving soon at your dealer and will feature 5 watts out on 6 meters FM, 1 watt out on 6 meters AM, full power on 2 meters, nearly 2 watts on 222 MHz, and 5 watts on the 440 band—plus, of course, ultra-wide-band receive capabilities with its completely independent AM/FM receiver. You can listen to Beethoven while yakking on a ham band! The new VX-8R is relatively small for its capabilities, yet completely sealed up against submersion excursions, with full ability to listen to two bands simultaneously.

Great news: The VX-8R has twin TX/ RX busy indicators to let you know which band is yakking and which band is squelched. There is plenty of customization of the LCD display, too. Also, since many states forbid cell-phone operation holding the equipment up to your ear, you can take advantage of Bluetooth® capabilities, along with an optional waterproof Bluetooth® headset. Of course, you can pipe in music to one side of your noggin with the local repeater coming out the other side.

	Tri-band			Quad Band	
	ICOM IC-T90A	**Kenwood TH-F6A**	**Yaesu VX-6R**	**Yaesu VX-7R**	**Yaesu VX-8R**
Features					
Bands	6m/2m/70cm	2m/1.25m/70cm	2m/1.25m/70cm	6m/2m/1.25m/70cm	6m/2m/1.25m/70cm
Power	5W	5W	5W	5W	5W
RX	0.5-999*	0.1-1300	0.5-999*	0.5-999*	0.5-999*
Air	Yes	Yes	Yes	Yes	Yes
Memories	555	435	900	900	1003
Alpha	Yes	Yes	Yes	Yes	Yes
Dual RX	No	Yes	No	Yes	Yes
Auto Repeater	Yes	Yes	Yes	Yes	Yes
Illuminated Keypad	Yes	No	Yes	Yes	Yes
Clone	Yes	Yes	Yes	Yes	Yes
Computer Clone	Yes	Yes	Yes	Yes	Yes
Antenna Connector	SMA	SMA	SMA	SMA	SMA
12V DC	Yes	Yes	Yes	Yes	Yes
DCS	Yes	Yes	Yes	Yes	Yes
Power Levels	3	3	3	4	5
Audio	0.5W	0.5W	0.5W	0.5W	0.5W
Battery Type	Li-Ion	Li-Ion	Li-Ion	Li-Ion	Li-Ion
Cost	$255.00	$330.00	$244.00	$275.00	TBA
Weight	8.5 oz	8.8 oz	9.5 oz	9.2 oz	8.5 oz
H_2O†	Wea	Wea	Sub	Sub	Sub

**See owner's manual for actual receiver specifications.*

†Note: In the H_2O specifications, Sub = Submersible and Wea = Weatherproof. See text for explanation of the difference.

Price listings are based on advertised prices as of press time and are subject to change. Please check with your dealer for updated pricing information.

Brand new from Yaesu (and just arriving at dealers), the VX-8R covers 6 meters, 2 meters, 222 and 440 MHz, along with an independent wideband receiver. Plus, as you can probably tell from Yaesu's photo, it's one of several new HTs rated as "submersible" (see text for details).

Good timing, Yaesu. With Kenwood out of the *portable* APRS® (Automatic Position Reporting System) handheld field, the new VX-8R's optional GPS operation gives you access to the worldwide standard APRS® network to exchange your positions and messages. A built-in AX.25 data TNC gives you uncomplicated APRS® operation. 1200/ 9600 bps data rates allow you to communicate your GPS-derived position to other APRS® stations tuned in to your signal or watching you on their computer.

When the VX-8R is tied into the FGPS-2 board, it can display positions, heading directions, messages, distances, icons, and weather information to other APRS® stations. The GPS APRS gurus all are itching to try out these features and compare them to the now non-existent Kenwood D7 capabilities.

The VX-8R has 1267 memory channels in 24 memory banks, fully illuminated keypad, WIRES II internet linking capabilities, built-in VOX, and a 10-dB attenuator for use in strong-signal environments. This is the only radio I haven't had lots of time with, as it was in my hands for just seconds at the recent Pacificon convention (a hugely successful convention in the San Francisco bay area held every October).

Late news: The Yaesu VX-8R just hit the streets in mid-December. We took it outside in the nasty rain/snow we were having in southern California and it is indeed waterproof! Early sales suggest the GPS microphone option is a big hit.

TIP: Power in . . . Use only the suggested DC power cord when operating your handheld radio from a 12-volt source. The accessory cords usually feature a series alternator filter to minimize whistle on transmit and receive. Some may also step down 12 volts to a lower voltage required for DC operation. Just because the jack fits, don't plug in external 12 volts haphazardly with an unknown cable.

Digital

We mentioned earlier that the Alinco DJ-596 has a digital voice option, but that system works only within simplex range. The only real growth area in digital communications on the VHF and UHF ham bands is with D-STAR, provided exclusively by ICOM. You can grow into ICOM D-STAR with the single-band IC-V82 or IC-U82 transceivers, adding a D-STAR board. The same thing with the IC-91 dual-band transceiver: You can purchase it as an IC-91A, D-STAR available; or as the IC-91AD, with D-STAR installed and ready. Also new from ICOM is the IC-92AD, D-STAR built-in, with an optional GPS speaker microphone that would eliminate any quandary with a 91 or 82 on how to integrate the fabulous GPS feature.

D-STAR is an acronym for *Digital Smart Technology for Amateur Radio.* This is an open protocol, designed in Japan, available to all ham radio manufacturers and experimenters. ICOM alone is the pioneer, the settler, and the D-STAR population with this exciting technology that ties into the internet. Ham radio clubs, D-STAR specialty groups, and D-STAR emergency teams work with the ICOM D-STAR repeater and a computer to use the internet to carry your little handheld signals around town, around the state, around the country, and not so surprising, around the world.

The pathway that leads to your successful handheld D-STAR digital highway doesn't necessarily start with the actual equipment, but rather your membership in a local ham organization or club and its D-STAR repeater/internet system. It is this organization that has made the huge investment in a mountaintop or building-top repeater/internet site to support a D-STAR digital gateway into the internet. You should join and support the organization before you decide to invest in your own D-STAR handheld or mobile radio. Work closely with that group, with its ICOM recommendation, and with the radio dealer who also has an expensive investment in sometimes supplying a free D-STAR repeater to a specific user group that brings aboard additional ICOM handheld sales through that dealer.

"With over 7000 global users, I feel it is safe to say D-STAR is more than a fad; it is a wave of the future," comments Ray Novak, N9JA, of ICOM America. "In just under two years, we have seen the launch of over 300 systems on the global network, with 250 of these being in the USA and in Canada."

Novak adds, "We have seen some incredible tools developed to make D-STAR one of the most EmComm focused products in years. Each time a ham emergency responder transmits, his/her callsign and location are broadcast to all those on the system, making search-and-rescue events easy to track and log."

Two powerful software packages developed in 2008 were "D-PLUS" from Robin Cutshaw, AA4RC, and "D-RATS" from Dan Smith, KK7DS. Look them up on QRZ.com for more information on these two new software programs.

The ICOM IC-91AD is D-STAR ready at $435, offering 2 meters and 440 MHz, wideband receive including simultaneous receive on two frequencies within one band, or dual bands, bandscope, 5 watts output, and D-STAR digital voice

Digital

	Alinco DJ-596T"D"	ICOM IC-V82"D"	ICOM IC-U82 "D"	ICOM IC-91AD	ICOM IC-92AD
Features					
Bands	2m/70cm	2m	70cm	2m/70cm	2m/70cm
Power	4.5W	7W	5W	5W	5W
RX	138-174 400-512	138-174	400-479	0.5-999*	0.5-999*
Air	No	No	No	Yes	Yes
Memories	100	200	200	1304	1304
Alpha	No	Yes	Yes	Yes	Yes
Dual RX	No	No	No	Yes	Yes
Auto Repeater	No	Yes	Yes	Yes	Yes
Illuminated Keypad	Yes	No	No	Yes	Yes
Clone	Yes	Yes	Yes	Yes	Yes
Computer Clone	Yes	Yes	Yes	Yes	Yes
Antenna Connector	BNC	BNC	BNC	SMA	SMA
12V DC	Yes	No	No	Yes	Yes
DCS	Yes	Yes	Yes	Yes	Yes
Power Levels	2	3	3	3	4
Audio	0.5W	0.5W	0.5W	0.5W	0.5W
Battery Type	NiMH	Ni-Cad	Ni-Cad	Li-Ion	Li-Ion
Cost	$549.00	$345.00	$345.00	$434.00	$579.00
Weight	8.5 oz	14 oz	14 oz	9.2 oz	8.5 oz
H_2O†	Wea	Wea	Wea	Wea	Sub

Note: "D" indicates digital, but may not be found on official dealer spec sheets.
**See owner's manual for actual receiver specifications.*
† In the H_2O specifications, Sub = Submersible and Wea = Weatherproof. See text for explanation of the difference.
Price listings are based on advertised prices as of press time and are subject to change. Please check with your dealer for updated pricing information.

and data. You can buy the IC-91 for about $100 less *without* the D-STAR board and add it ypurself later.

In the D-STAR mode, the IC-91AD provides digital voice operation with an AMBE codec, plus 950-bps data capabilities that will show up on the other station's screen as you are talking.

You can connect the 91 to your own external GPS receiver via the NMEA 0183 format, allowing your own and other stations' positions to be sent and received.

TIP: "Beaconing your position via D-STAR every minute through your local D-STAR repeater will likely make you highly *un*popular with system users," comments Brian Roode, NJ6N, who is very active in helping D-STAR newcomers get everything set up and operating correctly.

"We recommend only sending your position report *automatically* along with your normal voice transmission. D-STAR rigs ship with a feature enabled that beeps every time a transmission ends, including a position beacon, so everyone hears the beep every time you beacon!" adds Brian.

"There is another more complicated reason why it is a problem, and that has to do with gateway routing. If someone direct-calls you, by callsign, but you're not there, and your radio is set to auto-beacon every x minutes, your radio will auto-magically *also* send all of your beacons to the person who direct-called you! D-STAR is really amazing, and fun, and a bit complicated, too," comments Brian, NJ6N.

The new ICOM IC-92AD, seen selling for under $600, is ICOM's high-end D-STAR *submersible* dual-band handheld, capable of accepting the new ICOM HM-175 GPS receiver, built into the microphone, eliminating the need for you to supply your own GPS tethered to the equipment. Everything is in the mic!

The D-STAR GPS features on both the 91AD and the 92AD allow you to plot your and other stations' position information with mapping software, or to see their position (latitude and longitude) show up on the screen. Your position may also be sent at automatic, pre-set intervals from 5 seconds to 30 minutes, depending on how often you want to "squawk" your exact position. This positioning information stays solely within the D-STAR network and cannot be interpreted by traditional APRS® systems.

"Everything is going digital—cellular, public safety, digital TV this month, and now amateur radio going there, too. Just think, new 2-meter repeater pairs and

the spectral efficiency of D-STAR repeaters using only one quarter of the spectrum of traditional analog FM repeaters," finalizes Ray Novak, N9JA.

With more and more D-STAR repeaters coming up on the air, we all can see the bright future of the amateur radio digital evolution!

Handheld Wrap-Up

When considering a new or first handheld, find out what your local ham radio club members are using. Ask where most club members are purchasing their gear. If you purchase the same model handheld as some of your ham friends are using, it is likely that they can clone from their radio to yours with the hotbed of local 2-meter and 440 action—repeater pairs, alphanumerics, correct tones, oddball splits, and even pre-set power output levels for local repeaters.

Use our specification tables to review "hot checkpoints." We even include typical selling prices as of press time, but check with your dealer for updated pricing.

TIP: Handheld TX mods . . . Get on your computer and go to Mods.dk (search) and see all of the available modifications for your particular handheld. As noted above, Coast Guard Auxiliary or Civil Air Patrol personnel are no longer permitted to use modified ham radio handhelds on NTIA federal frequencies. The reason? These services and their out-of-band repeaters all have gone narrow band, ±2.5 kHz deviation. Even though you may be licensed by your Coast Guard Auxiliary unit to transmit just above and just below the 2-meter band, your wideband ham set will likely chop out of the narrow-band repeater system. The marine VHF service, however, remains wideband, and Channel 16 at 156.800 FM is the distress frequency. Modified ham gear should be used on marine frequencies only in a life-and-death emergency.

Most important, get your hands on the handheld radio equipment and see how it looks and *feels*. What looks fabulous in print might be too small and lightweight in the hand. Nothing beats actually comparing radios, side by side, at a ham club meeting or at your local radio store. Looking over the color ads is one thing, but actually holding the radio, listening to the audio output, gazing at the display, and sizing up the keypad make a huge difference in your decision on which radio to buy.

FINAL TIP: Regularly play with your handheld. In an emergency, you will know how to use it on frequencies beyond what is already stored in memory. The savvy HT operator can program a new repeater channel on the fly in seconds.

If you are new to ham radio, I recommend two-band gear. On the 440-MHz band, there is plenty of all-country excitement on Internet Radio Linking Project (IRLP) and EchoLink®. Imagine sitting in your easy chair and working another station that is thousands of miles away through your local internet-linked repeater! Enjoy your handheld!

Results of the 2008 CQ WW VHF Contest

BY JOHN LINDHOLM,* W1XX

"Six meters is like a box of chocolates. You never know what you're gonna get.
—KCØDEB

It was 1800 hours UTC Saturday, July 19, 2008, the scene of the starting flag for the CQ WW VHF Contest, when "Gentlemen (and ladies), start your radios" was heard S9 throughout the amateur radio world. There was Gene, KB7Q, revving up his radios in Yellowstone Park, Wyoming (DN44). Mike, KB7ME, was making good on his promise of last year to operate portable from rare square DN02 in Lake County, Oregon. California rovers K6EU, WA6KLK, K6JRA, and W6KA were dispensing "almost all water grids" CM86, CM87, CM94, and DM03 to the delight of West Coast contesters. Jon, K1NV, was experiencing fine openings to the east on 6 meters, operating portable 7 from a ghost town in the Nevada desert (DM17). Andrew, W2AJM, operating this, his favorite contest, from FN21 was busy on 6 meters snagging no less than three South Dakota stations for a new state—all in different grid squares. Zoli, HA5CQZ/P, was harmonizing CQ VHF to the Summits on the Air (SOTA) program from Mt. Muzsla (HA/EM-006) at 805 meters ASL running an FT-817 and 6-element Yagi on 2 meters. So began the 2008 CQ VHF Contest for some of the 532 entrants submitting logs.

Conditions: Creamy Vanilla or Chewy Taffy?

Band conditions are always a mixed bag, reported by some as dead as a doornail while others experience double-hop across the continent. Here's a North American sampling from those who experienced some of the brighter moments:

"Highlights for me in CM87 were working KB7ME in DN02 for a new grid on 2 meters and via tropo with meteor scatter pings to work KG6IYN in DM12." – *AJ6T.* "Conditions improved a lot on Sunday with 6-meter openings first to the northeast and later to the northwest. Plus we made 17 two-meter EME contacts for 17 rare grids we could not have worked otherwise." – *K5QE.* "At times 6 meters had wall to wall signals, but then 'poof,' they'd be gone only to reappear two minutes later. Love this band." – *NØHF.* "Some decent 6-meter *E*-skip on the east coast six hours into the contest on Saturday and then again early Sunday morning, but none Sunday afternoon." – *N3UM.* "What a terrific Saturday evening with the whole Midwest barreling into northern New Jersey." – *WB2LEB.* "At 2315Z I had not made a single 6-meter *E*-skip contact and was starting to think the contest might be a bust, but then, VO1NO in GN19 answered my CQ, followed by Gulf Coast stations popping in. For the next three-plus hours, the band was open to various spots in the Midwest and some double hop to California and the DN grids." – *K1TEO.*

On the DX side of the ledger, in what is surely the first entry in this contest from Guam, KG6DX in QK23 had "a nice opening to Japan" during the 23Z hour for a 6-meter run of 62 JAs in 22 grids plus one in South Korea." Nice going, Joel. Meanwhile CQ VHF stalwart Julio, NP3CW, "worked around 85 stations on 6 meters in North America and the Caribbean in a bunch of grid squares just days before the contest, but 'nada' during the contest." In Europe, perennial multi-op winner OK1KIM summed up the situation with: "We made a few 2-meter meteor-scatter contacts but our 86 LOC total is our lowest ever, as there was no elevated propagation. Even though our effort turned into

Expanded CQ WW VHF Contest Results

For a listing of the ops and grids activated by the rover stations in the 2008 contest, plus the operators of the multi stations, go to <www.cq-amateur-radio.com>, to the Contests section, to "Expanded Results of the 2008 CQ WW VHF Contest."

With a third-place SOAB effort, KG6IYN, operating portable from extreme southern California, proved you can score big on the "left coast." Here Bruce is putting the finishing touches on a pair of Cushcraft 13-element Yagis for 2 meters, and yes, both T-matches were up.

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e-mail: <w1xx@cq-amateur-radio.com>

Ninety-nine percent of EN67 in Michigan's UP is in Lake Superior. Thus, Craig, K9CT (left), and Larry, N9LR (right), multi-op'd portable station N9LR on Mt. Brockway's terra firma, running 100 watts on both bands to Yagis on a 50-foot trailer-mounted tower.

more of a 'social gathering,' we hope our multi victory is still secure." It is!

Single-Op Top Scores

The scores never tell the whole story, as philosophically summarized by Pierre, PJ2BVU: "The important thing is not to necessarily win, but to take part." Thus, winning can be in the eye of the beholder. Notwithstanding, 259 handsome CQ certificates were earned by entrants, nearly 50% of the entry base.

In the USA, Bob, K2DRH, continued his mastery over the SOAB (Single Op All Band) category with just under 160K points, getting his station back together just in time following some significant hardware failures. Jeff, K1TEO, with just

Ocean State 2-Meter FM Simplex Challenge

By Bill Champaigne, N1HRA*

The concept of a 2-meter FM simplex contest was hatched within the confines of an Amateur Radio Emergency Service (ARES) group in Charlestown, Rhode Island. The objective was to test FM simplex coverage in support of the local Emergency Management Agency. Further, with many newly licensed hams confined to 2-meter FM, training in making rapid-fire QSOs was desired. In stepped the established CTRI Contest Group as sponsor of a now statewide (and more) competition.

Research on the web revealed similar activities by clubs in Milwaukee and the Twin Cities, which provided valuable guidance in drawing up rules for the so-called *challenge*. Running concurrent with the CQ WW VHF Contest would assure some level of success, which proved accurate. To concentrate activity, seven so-called *focus hours* split between Saturday evening and Sunday afternoon were incorporated into the rules. Geographical boundaries of local grid squares, as the default VHF contest exchange, was provided along with a list of 3-letter abbreviations for the 39 statewide cities and towns which was also included in the exchange. Multipliers were cities/towns, plus grid squares, plus other states. Acting as a wild card were bonus points for working the CTRI club call, WA1RR, which was active during each of the focus hours from seven different locations scattered across the state. To further ARES purposes, bonus points were also offered for operating at least some of the time on battery/generator/solar. The rules and entry forms for e-mail submission in MS Word format were posted on the club website.

The results were gratifying. At least 38 stations participated with activity reported in 21 RI cities/towns, six grid squares, and four states plus three rovers and a maritime mobile. Almost all of the stations active had never operated in a contest before, or very little. Gaining familiarity with grid squares was a positive result.

The results were e-mailed to each contestant and posted on the club website with certificates being mailed to all who submitted logs.

Many newcomers were exposed to the joy of contest operating with the added potential of gaining some additional members for the club. Other groups may want to tap this potential source of contest operators.

**Vice President, CTRI Contest Group*

QSO LEADERS BY BAND

WORLD

Single-Op 50 MHz

E77EY 324
W4TAA/VE3 197
ZC4LI.....193
EA3AKY 168

144 MHz

HS8LUR 297
HS6RMY 268
HA6VV/P 265
DK5DQ.....200
OK1KZE 188

Multi-Op 50 MHz

C4N 290
OK1KIM.....125
UT1IC.....50

144 MHz

HS0IAQ 506
HS8KFW 429
OK1KIM.....399
HS1AXC.....384
E22YS 382

USA

Single-Op 50 MHz

K1TOL 480
K5TR.....449
K2DRH.....440
W5PR 420
WD5K 388
KG6IYN.....314
K2PLF.....311
KA1LMR 303
K1TEO.....297
W1XX.....286

144 MHz

K2DRH.....178
K1TEO.....134
WB9Z.....113
KG6IYN.....100
N8RA 98
W1XX.....98
KE2N 92
K4QI.....77
K2PLF.....76

Multi-Op 50 MHz

K5QE 596
K8GP 432
KB1DFB.....406
KA2LIM.....354
W3SO 320

144 MHz

K8GP 307
W3SO 211
K5QE 193
KB1DFB.....145
KA2LIM.....106

The Carolina DX Association operated N4BX in North Carolina's FM13, another almost all-water grid bordering the Atlantic seaboard. Besides experiencing good propogation on 6, thanks perhaps to tropical storm Cristobal, the 2-meter EME array yielded a QSO with an OZ in Europe.

a part-time effort, displaying his operating prowess, finished second. Bruce, KG6IYN, was a nice surprise, finishing third with 69K, the second highest score ever from California, just short of the 6-land record of 75K set by W3SE in 2000. The aforementioned KB7ME in Oregon scored the third highest 7-land score ever with 19K points.

In the USA 6-meters-only category, Lefty again piloted his K1TOL station to top honors and second highest USA score of 82K. Ken, WM5R, guest op'd the multi-array station K5TR to a solid second place with 69K. Chuck, W5PR, and Tom, WD5K, were in a virtual tie for third and fourth place at 61K. W3BD, operated by George (N3GH), got the highest score ever from 3-land in this category. A glance at the top scorers box for 6 meters shows that 5-landers dominated, taking seven out of the top ten scores.

The 2-meters-only category was largely shunned in North America with only two U.S. and one Canadian entry. But the category continues big in Thailand, although scores there were not as big as in previous years; HS6RMY was tops with 10K points in 19 grid locators. Europe produced some good 2-meter scores with HA6VV/P tops with 27K, followed by perennial winner DK5DQ with 21K.

Further on the DX side, DL2OM captured the SOAB top score with 20K, edging out OK1DC with 18K. E77EY earned the third highest 6-meters-only score ever from Europe with 42K.

Hilltoppers and QRP

The Hilltopper category is now more popular overseas than it is in North America. By definition, a Hilltopper must meet three conditions: operate portable, run QRP, and limit the operation to no more than six hours continuous. This accommodates especially those who may backpack to isolated high spots where it may be difficult to overnight. Multiple entries were received from Thailand, Hungary, and Ukraine. E75DX far outdistanced the competition with 81Qs in 50 LOCs. W9SZ topped the USA entries.

QRP stations are limited to 10 watts output and can operate full time from home or portable. All 24 entries from European Russia were QRP, as well as 29 entries from Ukraine. All 2-meter single-op stations in Thailand were also QRP. HA1ZH was the top DX QRP station with 9K points. In the USA, Chris (KA1LMR) again paced the QRP field with 44K with Curt (K9AKS) again finishing second.

Multi-Op Scores

There were lots of multi-operator stations on with the Texans at K5QE besting all other North Americans. Their 218K score was the third highest ever in 5-land. The highest score ever from 2-land, 86K, was posted by KA2LIM, and the second highest New England score ever, 92K, was submitted by the Connecticut crew at KB1DFB. K8GP, now sporting the Delmarva VHF Society moniker, scored the highest 4-land score ever with 176K. On the DX side, C4N from Cyprus came through with the third highest score ever from Asia, 46K. Meanwhile, the OK1KIM group continued their multi domination of the contest from Europe with 125K, as they had done in 2004, '05, and '06. Last year's winner, UT1IC, finished third, with Thailand's HSØIAQ coming in fourth utilizing 2 meters only.

Rover Scores

In the simplified two-band format of this contest, rover stations can be outfitted for action on short notice and with reasonable effort. They can constitute a significant portion of the score registered by a fixed station making a serious effort. In North America, certificates are issued based on a regional basis to recognize their valuable contributions. The top five scores worldwide were made by these rover stations: WB3BEL, WB8BZK, N9TTX, VE3CRU, and WAØVPJ.

Contest Management

Putting on a worldwide contest is very much a team effort. For example, 2008 saw a remarkable upsurge in log submissions from Ukraine and European Russia. Pre-contest coordination among the clubs in Ukraine by Yuri, UT1IC, paid huge dividends. His eastern EU contacts yielded Victor, UA6EM, who oversaw the Cabrillo submission of many UA logs. Bringing about the usual S9-plus activity from Thailand was Champ, E21EIC, who

TOP SCORES
WORLD

All Band
DL2OM 20,251
OK1DC 18,395
IW2NOD 11,100
AO6VQ 5,754

6 Meters
E77EY 42,768
ZC4LI.....21,230
W4TAA/VE3 .19,897
EA3AKY.....17,472

2 Meters
HA6VV/P 27,030
DK5DQ 21,600
OK1KZE 17,672
S53N.....13,158
HS6RMY.....10,184
9A4VM.....8,062

Hilltopper
E75DX 5,700

HA2VR/P 4,278
DL2SAX/P 4,012
GW8ZRE/P 2,898

QRP
HA1ZH.....9,216
VE3TLT 2,108

Rover
VE3CRU 18,612
E20YLM.....864
US1IAA.....396

Multi-Op
OK1KIM 125,528
C4N 46,110
UT1IC 13,034
HSØIAQ 12,144
HS1AXC 9,984
E22YS 8,404
HS8KFW.....6,864

USA

All Band
K2DRH 159,996
K1TEO.....75,710
KG6IYN 69,390
W1XX 57,840
K2PLF.....56,023
WB9Z.....50,032
KØKP 31,086
KE2N 29,050
K4QI 28,314
N8RA.....26,892

6 Meters
K1TOL 82,080
K5TR 69,146
W5PR 61,740
WD5K 61,304
AE5T.....28,896
W5WVO.....25,957
W3BD 22,357
K5MV.....16,037
K3FM.....8,806
WA1UJU.....7,840

2 Meters
KX4R 1,276

Hilltopper
W9SZ.....1,944
K1ZE.....1,722

QRP
KA1LMR 44,619
K9AKS 13,090
KO9A.....7,854
W3EP 6,811
N9TF.....4,864
N8XA 2,808
NØKIS 2,613

Rover
WB3BEL.....56,882
WB8BZK.....41,724
N9TTX 22,464
WAØVPJ.....14,691

Multi-Op
K5QE.....218,986
K8GP.....176,774
W3SO.....108,332
KB1DFB.....92,568
KA2LIM.....86,032

received some extra help from E20PFE and HS8KGG in converting paper logs to e-submissions. In South America, Flavio (PY2ZX) helped stir the initial signs of contest activity there, along with translating the rules into Portuguese and Spanish. Others known to have helped internationally are DL8EBW, JF1ICQ, G4DWZ, and still others who have done so with little or no fanfare.

I can't say enough about the assistance provided by Steve, N8BJQ, who produced all the scores and statistics from the log-checking program. Trey, N5KO, monitored the log submissions robot. Jon, K9JK, converted the paper logs to e-submissions using the WA7BNM CabForms. This contest does attract many casual entrants who thankfully availed themselves of the WA7BNM on-line post entry

(Continued on page 108)

BY FREDERICK O. MAIA,* W5YI

House Committee Report Blasts FCC Chairman

Congressional Investigation Charges Kevin Martin Abused Power

House Democrats, led by Reps. John D. Dingell (D-Mich.), Chairman of the Committee on Energy and Commerce, and Bart Stupak (D-Mich.), Chairman of the Subcommittee on Oversight and Investigations, have released a blistering assessment of FCC chief Kevin Martin's leadership. One of the items cited has been of direct interest to hams.

The report was released in early December, just a month before Martin would lose his chairmanship with the changeover in presidential administrations. Early in 2009 Democrats will have the majority on the five-member Commission.

Martin, 41, an appointee of President George W. Bush, must step aside after President-elect Barack Obama is inaugurated January 20 and names a replacement. Bush appointed Martin, a Harvard Law School graduate, to the Commission in 2001 and named him chairman in 2005.

The 110-page investigative report, entitled "Deception and Distrust: The Federal Communications Commission Under Chairman Kevin J. Martin," details findings of the House Energy and Commerce Committee's Oversight and Investigations Subcommittee. The House Commerce Committee has the principal responsibility for legislative oversight relating to the telecommunications industry.

Nearly a year in the making, the report is the culmination of a supposedly bipartisan investigation into the FCC's regulatory processes and management practices. It was formally launched on January 8, 2008 in response to complaints about the agency from the public and communications industry professionals and from external and internal information about how items were brought to a vote. Eighty-four of the report's 110 pages were e-mails, memos, and letters included to support the findings.

Initially, the examination began as a bipartisan effort, but Republicans dropped out when it became clear that the report would have partisan political overtones. The Ranking Republican on the committee, Joe L. Barton, (R-Texas), initially supported the study, but later dropped out.

Investigators pored over thousands of records, documents, and e-mails, and conducted interviews with current and former FCC employees as well as members of the telecommunications industry. The FCC said it cooperated in the investigation, which required 11,620 hours of work from more than 600 FCC employees who provided the committee staff with more than 9000 e-mails and approximately 75 boxes containing nearly 170,000 pages of documents.

Among other things, the report charges abuse of power, suppression of information, rewriting reports, ignoring warnings, reversing findings, overcharging consumers, and manipulation of data that could have changed the outcome of some proceedings.

The report claims that Commission staffers suffered from a climate of fear and extreme micromanagement; every decision, no matter how trivial, had to go through Martin's office for approval. (This included all staff appointments, the report said, meaning that it could play a role in the Commission's failure to date to name a replacement to Special Counsel for Amateur Radio Riley Hollingsworth, K4ZDH, who retired last July.) The report added that FCC employees were afraid to disagree with Martin's conclusions due to their concern of being demoted. The result, it said, was a demoralized, ineffective agency.

The probe also concluded that the Inspector General (IG), appointed by Chairman Martin, was not sufficiently independent and unable to conduct impartial investigations. It recommended that Congress amend the Inspector General law to require that IGs for all independent agencies, such as the FCC, be appointed by the President and confirmed by the Senate, rather than being appointed by the agency head

The report also blames Martin for undermining an open and transparent regulatory process. "Chairman Martin's heavy-handed, opaque, and non-collegial management style has created distrust, suspicion, and turmoil among the five current commissioners," it says.

"Our investigation confirmed a number of troubling allegations raised by individuals in and outside the FCC," Subcommittee Chairman Bart Stupak said. "The Committee staff report details some of the most egregious abuses of power, suppression of information, and manipulation of data under Chairman Martin's leadership. It is my hope that this report will serve as a roadmap for a fair, open, and efficient FCC under new leadership in the next administration."

In a later conference call with reporters, Stupak said Martin's conduct violated the Communications Act, the Administrative Procedure Act, and the Freedom of Information Act. Martin's legacy at the FCC will be "a blueprint of what not to do."

"Any of these findings, individually, are cause for concern," said Rep. John D. Dingell (D-MI), Chairman of the Committee on Energy and Commerce. "Together, the findings suggest that, in recent years, the FCC has operated in a dysfunctional manner and Commission business has suffered as a result. It is my hope that the new FCC Chairman will find this report instructive and that it will prove useful in helping the Commission avoid making the same mistakes."

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FCC spokesman Robert Kenny read the report's conclusions a little differently, saying that the agency's review of the report indicated the Commission "...did not violate any rules, laws, or procedures." Noting that some of the criticisms occurred under previous FCC leadership, Kenny added that "Chairman Martin has followed the same procedures that have been followed for the past 20 years by FCC Chairmen, both Democratic and Republican alike."

Broadband Over Power Lines

Of particular interest to amateur radio operators were the allegations in the report that FCC officials ignored complaints of radio frequency interference caused by broadband over power lines (BPL). BPL is a high-speed data technology that uses electrical power lines to deliver internet service. The broadband travels by inserting HF frequency signals into the unshielded overhead utility lines and residential electrical wiring. Amateur radio operators have long complained that the electrical lines act like antennas, causing interference to their operations.

Under Martin's direction, according to the report, the FCC allegedly manipulated or withheld engineering data on BPL technology from the public in an effort to push it through as an alternative to regular cable or telecom internet service. The report said in October 2004 the FCC issued its final rule defining BPL access and setting technical and administrative requirements to protect licensed ham operators from harmful interference.

The investigative panel found that in issuing its final rule and order, the Commission withheld from the public certain engineering reports on which it relied upon in enacting the rule. Although the rule was written under former FCC Chairman Michael Powell, it was under Chairman Martin that, according to the report, the FCC Enforcement Bureau and General Counsel continued to hide the damaging engineering information.

The American Radio Relay League spent nearly three years battling the FCC regarding its failure to follow its own guidelines regarding BPL interference. The ARRL ultimately challenged the FCC with a controversial lawsuit accusing the agency of failing to abide by rules mandating the disclosure of studies and deliberations affecting public rulemaking.

In 2007, a Petition for Review of the FCC's Orders adopting rules governing broadband over power line systems

was filed with the US Court of Appeals for the District of Columbia Circuit. The D.C. Circuit is the appellate court given the responsibility of directly reviewing the decisions and rulemaking of federal independent agencies of the United States government based in the nation's capital.

The case for the ARRL was prepared by an outside legal firm with extensive appellate experience with assistance from ARRL General Counsel Christopher D. Imlay, W3KD. Oral arguments were held on October 23, 2007; the court's decision was released on April 25, 2008. The court found that the FCC's decision-making process was seriously flawed. While the court did not agree with the ARRL on every point, it did agree with two major points and sent back the BPL rules to the Commission for revision. It said the commission must disclose the entire BPL field tests cited in the rules and explain the reasoning for its emission-level limits.

Writing the majority opinion for the three-judge panel, Circuit Judge Judith Rogers ruled that "The Commission failed to satisfy the notice and comment requirements of the Administrative Procedure Act (APA) by redacting studies on which it relied in promulgating the rule and failed to provide a reasoned explanation for its choice of the extrapolation factor for measuring Access BPL emissions." The court said that studies used in enacting a rule must be made available during the rulemaking in order to afford interested persons an opportunity for comment.

The three-judge panel agreed that the FCC eliminated critical engineering data and said that "...there is little doubt that the Commission deliberately attempted to exclude from the record evidence adverse to its position. ...On remand, the Commission shall afford a reasonable opportunity for public comment on the unredacted studies ...[and] make the studies part of the rulemaking record. ..." The FCC can appeal the ruling to the full circuit court or to the Supreme Court.

After reading the decision, ARRL General Counsel Imlay observed, "The decision of the Court of Appeals, though long in coming, was well worth the wait. It is obvious that the FCC was overzealous in its advocacy of BPL, and that resulted in a rather blatant cover-up of the technical facts surrounding its interference potential. Both BPL and Amateur Radio would be better off had the FCC dealt with the interference potential in an honest and forthright manner at the outset. Now there is an opportunity to finally establish some rules that

will allow BPL to proceed, if it can in configurations that don't expose licensed radio services to preclusive interference in the HF bands."

ARRL Chief Executive Officer David Sumner, K1ZZ, added: "Now that the Commission has been ordered to do what it should have done in the first place, we look forward to participating in the proceedings on remand, and to helping to craft rules that will provide licensed radio services with the interference protection they are entitled to under law."

December's House investigative report essentially agreed with the court. It accused the FCC of playing "hide and seek" with the engineering data used in support of the BPL order and said that it "cherry picked" a study on which it relied for its BPL decision. This is exactly what the ARRL has been saying for years ... that the FCC was handling the BPL interference issue with biased engineering data that supported its position.

The House committee concluded, "The fact that the FCC withheld the required engineering reports in this matter indicates poor judgment and an attempt to hide critical weaknesses in its decision. This illustrates the extent to which a culture of secrecy has developed at the FCC."

The report added that the "... technological issue has been rendered largely moot over time due to improvements in BPL technology." This statement undoubtedly refers to a "second generation" of BPL systems that has tighter technical standards against harmful interference. BPL providers have voluntarily begun to implement these restrictions, which are more stringent than those imposed by the government. Some older systems continue to cause interference, though, and several communities and providers have concluded that BPL is not cost-efficient.

In July, the ARRL asked the FCC to consider simply adopting rules that require "mandatory notching of all Amateur allocations by BPL systems," and "notch depths of 35 dB ... a 10 dB improvement over older systems." As of this writing, however, no new rules had been proposed.

The League now acknowledges that the industry itself has improved modems and delivery infrastructure to voluntarily reduce the chance for interference, and the ARRL is already on record as supporting certain brands of BPL systems.

It is unlikely that the committee report will lead to any follow-up action, as Martin's term as FCC Chairman was coming to a close regardless.

73, Fred, W5YI

Announcing:

The 2009 CQ World-Wide WPX Contest

SSB: March 28–29, 2009 CW: May 30–31, 2009

Starts: 0000 GMT Saturday Ends: 2359 GMT Sunday

I. Objective: For amateurs worldwide to contact as many amateurs and licensed prefixes as possible during the contest period.

II. Period of Operation: 48 hours. Single Operator stations may operate 36 of the 48 hours—*off times must be a minimum of 60 minutes.* Multi-Operator stations may operate the full 48 hours.

III. Bands: The 1.8, 3.5, 7, 14, 21, and 28 MHz bands may be used. No WARC bands allowed. *Observance of established band plans is strongly encouraged.*

IV. Terms of Competition for All Categories:

(a) All entrants must operate within the limits of their chosen category when performing any activity that could impact their submitted score. Only the entrant's callsign may be used to aid the entrant's score.

(b) A different callsign must be used for each entry.

(c) All entrants must not exceed 1500 watts total output power, or the maximum output power of their country, or the power limit of their entry category, whichever is less, on any band.

(d) Self-spotting or asking other stations to spot you is not allowed.

(e) All operation must take place from one operating site. Transmitters and receivers must be located within a 500-meter diameter circle or within the property limits of the station licensee, whichever is greater. All antennas must be physically connected by wires to the transmitters and receivers used by the entrant.

(f) The entry location of a remote station is determined by the physical location of the transmitters, receivers, and antennas. A remote station must obey all station and category limitations.

V. Entry Categories

A. Single Operator Categories: Only one person (the operator) can contribute to the final score during the official contest period. QSO alerting assistance of any kind (this includes, but is not limited to, use of packet, local or remote call and frequency decoding technology, Skimmer, Internet chat rooms or websites) places the entrant in the Single Operator Assisted category.

(a) Single Operator High (All Band or Single Band): One person performs all of the operating and logging functions. Only one transmitted signal is permitted at any time. QSO alerting assistance of any kind is not allowed. **Total output power must not exceed 1500 watts**.

(b) Single Operator Low (All Band or Single Band): One person performs all of the operating and logging functions. Only one transmitted signal is permitted at any time. QSO alerting assistance of any kind is not allowed. **Total output power must not exceed 100 watts.**

(c) Single Operator QRP (All Band or Single Band): One person performs all of the operating and logging functions. Only one transmitted signal is permitted at any time. QSO alerting assistance of any kind is not allowed. **Total output power must not exceed 5 watts.**

B. Single Operator Overlay Categories. Single Operator entrants **may also submit their log for *one* of the categories shown below** by adding an additional line in the Cabrillo log file header called CATEGORY-OVERLAY.

(a) Tribander/Single Element (TB-WIRES): During the contest an entrant shall use only one (1) tribander (any type, with a single feedline from the transmitter to the antenna) for 10, 15, and 20 meters and single-element antennas on 40, 80, and 160 meters.

(b) Rookie (ROOKIE): To enter this category you must have been licensed as a radio amateur three (3) years or less on the date of the contest. Indicate the date first licensed in your Soapbox comments.

C. Single Operator Assisted Categories: Only one person (the operator) can contribute to the final score during the official contest period. Entrants in this category may use QSO alerting assistance.

(a) Single Operator Assisted High (All Band or Single Band): One person performs all of the operating and logging functions. Only one transmitted signal is permitted at any time. QSO alerting assistance is allowed. **Total output power must not exceed 1500 watts**.

(b) Single Operator Assisted Low (All Band or Single Band): One person performs all of the operating and logging functions. Only one transmitted signal is permitted at any time. QSO alerting assistance is allowed. **Total output power must not exceed 100 watts.**

D. Multi-Operator Categories (All band operation only, high power only):

(a) Single-Transmitter (MULTI-ONE): Only one transmitter and one band permitted during a 10-minute period. Exception: One—and only one—other band may be used during a 10-minute period if—and only if—the station worked is a new multiplier. Ten-minute periods begin with the first logged QSO on a band. Contacts in violation of the rule should be shown in the log and will be removed without penalty during the log checking. The log must indicate which transmitter made each QSO (see rule XIII(b)). Maximum power allowed is 1500 watts total output.

(b) Multi-Two (MULTI-TWO): A maximum of two transmitted signals at any time on different bands. Both transmitters may work any and all stations. A station may only be worked once per band regardless of which transmitter is used. The log must indicate which transmitter made each QSO (see rule XIII(b)). Each transmitter may make a maximum of 8 band changes in any clock hour (00 through 59 minutes). For example, a change from 20 meters to 40 meters and then back to 20 meters counts as two band changes. Use a separate serial number sequence for each band. Maximum power allowed is 1500 watts total output.

(c) Multi-Transmitter (MULTI-MULTI): No limit to transmitters, but only one transmitted signal (and running station) allowed per band at any time. Use a separate serial number sequence for each band. Maximum power allowed is 1500 watts total output.

VI. Exchange: RS(T) report plus a progressive contact serial number starting with 001 for the first contact. Multi-two and multi-transmitter entrants must start with serial number 001 on each band.

VII. Contact Points:

(a) Contacts between stations on different continents are worth three (3) points on 28, 21, and 14 MHz and six (6) points on 7, 3.5, and 1.8 MHz.

(b) Contacts between stations on the same continent, but different countries, are worth one (1) point on 28, 21, and 14 MHz and two (2) points on 7, 3.5, and 1.8 MHz. Exception: For North American stations only—contacts between stations within the North American boundaries (both stations must be located in North America) are worth two (2) points on 28, 21, and 14 MHz and four (4) points on 7, 3.5, and 1.8 MHz.

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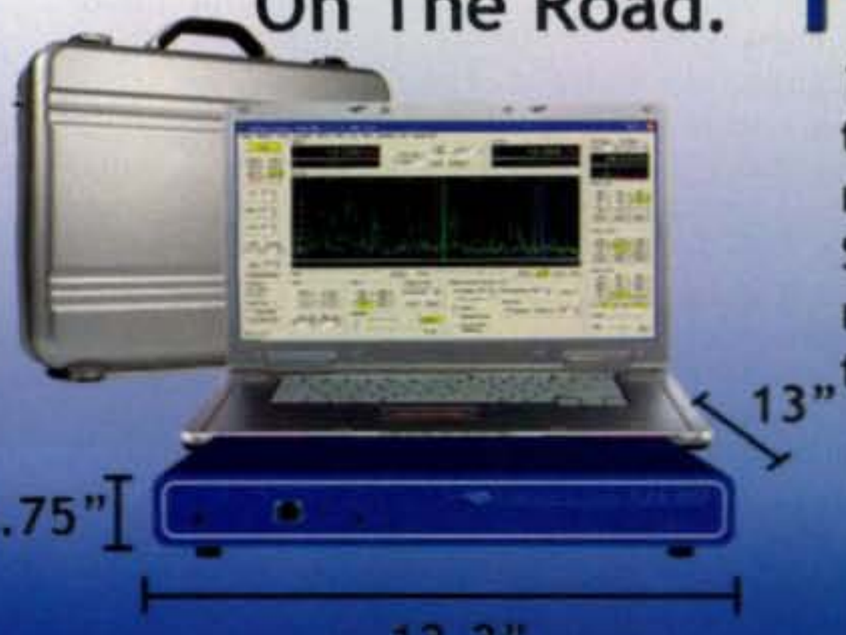

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(c) Contacts between stations in the same country are worth 1 point regardless of band.

VIII. Prefix Multipliers: The prefix multiplier is the number of valid prefixes worked. Each PREFIX is counted only once regardless of the band or number of times the same prefix is worked.

(a) A PREFIX is the letter/numeral combination which forms the first part of the amateur call. Examples: N8, W8, WD8, HG1, HG19, KC2, OE2, OE25, etc. Any difference in the numbering, lettering, or order of same shall count as a separate prefix. A station operating from a DXCC country different from that indicated by its callsign is required to sign portable. The portable prefix must be an authorized prefix of the country/call area of operation. In cases of portable operation, the portable designator will then become the prefix. Example: N8BJQ operating from Wake Island would sign N8BJQ/KH9 or N8BJQ/NH9. KH6XXX operating from Ohio must use an authorized prefix for the U.S. 8th district (/W8, /AD8, etc.). Portable designators without numbers will be assigned a zero (Ø) after the second letter of the portable designator to form the prefix. Example: PA/N8BJQ would become PAØ. All calls without numbers will be assigned a zero (Ø) after the first two letters to form the prefix. Example: XEFTJW would count as XEØ. Maritime mobile, mobile, /A, /E, /J, /P, or interim license class identifiers do not count as prefixes.

(b) Special event, commemorative, and other unique prefix stations are encouraged to participate. Prefixes must be assigned by the licensing authority of the country of operation.

IX. Scoring (QSO Points):

1. Single Operator: (a) All Band score = total contact points from all bands multiplied by the number of different prefixes worked (prefix multiplier; prefixes are counted only once). (b) Single Band score = total contact points on the band entered multiplied by the number of different prefixes worked on that band only (prefix multiplier).

2. Multi Operator: Scoring is the same as Single Operator, All Band.

3. A station may be worked once on each band for QSO point credit. Prefix credit may be taken only once.

X. Awards: Certificates will be awarded to the highest scoring station in each category listed under Section V . . .

1. In every participating country.

2. In each call area of the United States, Canada, Australia, Asiatic Russia, Spain, and Japan.

3. In countries or call areas where entries justify, second- and third-place awards may be made.

All scores will be published. To be eligible for an award, a single operator station must show a minimum of 12 hours of operation and multi-operator stations must show a minimum of 24 hours of operation.

A single-band log will be eligible for a single-band award only. If a log contains more than one band, only contacts made on the band specified in the Cabrillo header or summary sheet will be considered for scoring purposes.

XI. Plaques and Donors:

Plaques are awarded to recognize top performance in a number of categories. For a current list of plaques and sponsors, or to learn how to become a sponsor, see the CQ WPX website: <http://www.cqwpx.com/plaques.htm>.

A station winning a World plaque will not be considered for a subarea award. That award will be given to the runner-up for that area if the number of entries justifies the award. Contestants who win a category for which no plaque is sponsored may contact <plaques @cqwpx.com> to arrange to order one.

XII. Club Competition: A plaque will be awarded each year to the club that has the highest aggregate score from logs submitted by members. The club must be a local group and not a national organization (e.g., ARRL or DARC). Participation is limited to members operating from a local geographic area defined as within a 275 km radius from center of club area (except for DXpeditions specially organized for operation in the contest). Single operators can only contribute to one club. Multi-operator scores may be allocated to multiple clubs as indicated with the entry. Please spell out the full club name in the Cabrillo file. To be listed in the results, a minimum of three logs must be received from a club.

XIII. Instructions for Submission of Logs:

(a) All times must be in GMT.

(b) All logs must be submitted in chronological order. Entries from Multi-Single and Multi-Two stations must clearly indicate which transmitter made each QSO (column 81 of Cabrillo QSO template for CQ contests). For Multi-Single, use "0" for run station and "1" for multiplier station.

(c) The log *must* show the correct serial number sent and received for each contact. Logs without sent and received serial numbers may be reclassified as checklogs.

(d) We would appreciate receiving all logs in electronic format. Electronic submission of logs is ***required*** for anyone competing for an award and for all who use a computer to log the contest or prepare contest logs.

(e) Single band entrants are requested to include *all* contacts made during the contest period, even if on other bands. Indicate the single band information in the Cabrillo header and only those contacts made on the single band will be included in the scoring.

(f) The Cabrillo file format is the standard. Please make sure all of the Cabrillo header information is included. For detailed instructions on filling out the Cabrillo file header, see the WPX Contest website <www.cqwpx.com>. Failure to fill out the header correctly can result in your entry being placed in the wrong category or reclassified as a checklog. **U.S. stations must indicate the ARRL Section or State where you operated from in the Cabrillo header (e.g., ARRL-SECTION: OH)**.

(g) E-mail is the expected method of log submission. SSB logs in Cabrillo format should be sent to <ssb@cqwpx.com>. CW logs in Cabrillo format should be sent to <cw@cqwpx.com>. In the "Subject:" line of your e-mail message, please include only your callsign and nothing else. All logs received via e-mail will be confirmed via e-mail. A listing of logs received can be found on the CQ WPX website at <www.cqwpx.com>.

(h) Instructions for NON-CABRILLO electronic logs: If you are not able to submit a Cabrillo log, please contact the Contest Director for permission to submit another format.

(i) Instructions for paper logs: Official log and summary sheets are available from CQ Communications, Inc., 25 Newbridge Road, Hicksville, NY 11801 USA; fax (+1) 516-681-2926); or e-mail your request to CQ at <cq@cq-amateur-radio.com>. They are also available in pdf format for printing on the CQ website: <www.cq-amateur-radio.com)You may make your own forms as long as all required information is present. Each paper log entry must be accompanied by a Summary Sheet listing all scoring information, the category of competition, and the entrant's name and mailing address in BLOCK LETTERS. Indicate SSB or CW on your envelope.

XIV. Disqualification: Violation of amateur radio regulations in the country of the contestant, or the rules of the contest; unsportsmanlike conduct; taking credit for excessive unverifiable QSOs or unverifiable multipliers will be deemed sufficient cause for disqualification. Incorrectly logged calls will be counted as unverifiable contacts.

ANY use by an entrant of any non-amateur means including, but not limited to, telephones, e-mail, Internet, Instant Messenger, chat rooms, VoIP, or the use of packet to SOLICIT, ARRANGE, or CONFIRM any contacts during the contest is unsportsmanlike and the entry is subject to disqualification.

An entrant whose log is deemed by the Contest Committee to contain a large number of discrepancies may be disqualified from eligibility for an award, both as a participant operator or station, for one year. If an operator is disqualified a second time within five years, he/she will be ineligible for any CQ contest awards for three years.

XV. Declaration: By submitting an entry in the CQ WPX Contest you agree that: (1) you have read and understood the rules of the contest and agree to be bound by them, as well as all rules and regulations of your country which pertain to amateur radio, (2) your log entry may be made open to the public, and (3) all actions and decisions of the WPX Contest Committee are official and final.

XVI. Deadline: All entries must be postmarked NO LATER than May 1, 2009 for the SSB section and NO LATER than July 1, 2009 for the CW section. All logs, including e-mail entries, are subject to these deadlines. Logs postmarked after the deadline may be listed in the results, but will be ineligible for any awards.

Questions pertaining to the CQ WPX Contest may be e-mailed to the WPX Contest Director, Randy Thompson, K5ZD, at <k5zd@cqwpx.com>.

MFJ-989D 1500 Watt *legal limit* Tuner

World's most popular 1500 Watt Legal Limit Tuner just got better -- much better!

MFJ-989D
$389.95

New, improved MFJ-989D *legal limit* antenna tuner gives you better efficiency, lower losses and a new *true* peak reading meter with no price increase. Easily handles *full* 1500 Watts SSB/CW over 1.8-30 MHz.

New dual 500 pF *air variable capacitors* give you twice the capacitance for more efficient operation on 160 and 80 Meters.

New, improved *AirCore™ Roller Inductor* gives you lower losses, higher Q and handles more power more efficiently.

New *TrueActive™* peak reading Cross-Needle *SWR/Wattmeter* lets you read *true* peak power on all modes.

New high voltage *current balun* lets you tune balanced lines at high power -- no worries.

New *crank knob* lets you reset your roller inductor quickly, smoothly and accurately.

New larger 2-inch diameter *capacitor knobs* with easy-to-see dials make tuning much easier.

New cabinet maintains components' high-Q. Generous air vents keep components cool. 12 7/8Wx6Hx11 5/8D inches.

Includes six position ceramic antenna switch, 50 Ohm dummy load, indestructible multi-color Lexan front panel with detailed logging scales and legends.

The MFJ-989D uses the superb time-tested T-Network. It has the widest matching range and is the easiest to use of all matching networks. Now with MFJ's new 500 pF air variable capacitors and new low loss roller inductor, it easily handles higher power much more efficiently.

MFJ *Differential-T™* 1.5kW Tuner

MFJ-986
$349.95

Simple two knob tuning makes antenna tuning foolproof and easier than ever! Handles 1.5 kW PEP SSB/CW amplifier output, 1.8-30 MHz. *AirCore™* roller inductor, *Differential-T™* capacitor, lighted peak/average Cross-Needle SWR/Wattmeter, Six position antenna switch, balun. 10 3/4Wx4 1/2Hx15D".

MFJ *compact* kW Tuner

MFJ-962D
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A few more dollars steps you up to a kW tuner for an amp later. Handles 1.5 kW PEP SSB amplifier input power (800W output). Ideal for Ameritron's AL-811H! *AirCore™* roller inductor, gear-driven turns counter, pk/avg lighted Cross-Needle SWR/Wattmeter, Six position antenna switch, balun, Lexan front panel, 1.8-30MHz. 10 3/4x4 1/2x10 7/8 in.

MFJ *Fully Balanced* 1.5 kW Tuner

MFJ-976
$499.95

MFJ-976 is a *fully balanced* wide range (12-2000 Ohms) antenna tuner that gives you *superb* current balance. Handles *full* 1.5kW SSB/CW, 1.8-30 MHz. Tunes *all* balanced lines -- 600 Ohm *open wire* line, 450/300 Ohm *ladder* lines, 300/72 Ohm *twin lead*. Also tunes wires/coax fed antennas. Cross-Needle meter.

MFJ 2500 Watts *ContinuousCarrier™* Tuner

Silver plated Edge-Wound Roller Inductor . . .1000/500 pF Variable Capacitors . . . Antenna Switch . . . 4-Core Balun . . . true Peak Cross-Needle Meter . . . Dummy Load . . . Extremely Wide Matching Range . . .

MFJ-9982
$699.95

The MFJ-9982 ContinuousCarrier™ antenna tuner handles 2500 Watts continuous carrier output on all modes and all HF bands into most unbalanced antennas -- even on 160 Meters where even the best antenna tuners fail!

The MFJ-9982 gives you every feature you'll ever want in a high power tuner -- wide matching range, 1.8 to 30 MHz coverage, 6-position antenna switch, 4-core balun, dummy load, true peak/average lighted SWR/Wattmeter, 6:1 reduction drives with detailed logging scales, 3-digit turns counter, extra large knobs.

New Components, New Technologies

The *Heart and Soul* of the MFJ-9982 is its roller inductor and variable capacitors.

MFJ's high power, high-Q *continuous current AirCore™* roller inductor is no ordinary roller inductor! It's edge wound from thick .06-inch *silver-plated* solid copper strap.

It can carry huge circulating RF currents and withstand tremendous heat that'll melt or burn up ordinary roller inductors.

Self-insulating construction reduces stray capacitance -- keeps self-resonant frequencies high and out-of-the-way. Dual, *silver-plated* compression wheels give ultra low-resistance contacts. New fast-tune crank knob.

High-current, *high-capacitance* 1000 pF and 500 pF air variable capacitors have low minimum capacitance and are self-insulating.

These newly developed air variable

capacitors give you *very high efficiency* on 160/80 Meters *and* MFJ's patent pending innovation gives you *extremely wide matching range* on 10/12/15 Meters at 2500 Watts -- a feat *only* the MFJ-9982 has achieved.

Hi-Voltage/Current Antenna Switch

The antenna switch is completely isolated to handle high-voltage, high impedance antennas. High-current, low impedance antennas are handled by parallel sets of high-current contacts of *two* ceramic switches.

New 4-Core Balun

Powerful balun -- Four 2 1/2 inch cores, 12-gauge *Teflon™* wire. Run balanced lines at full 2500 Watts SSB/CW continuous, 24/7.

New Balanced Line Feed-Thru Insulator

Allows massive transmitter currents to flow directly to the antenna without passing through lossy screws or bolts.

TrueActive™ Peak Reading Circuit

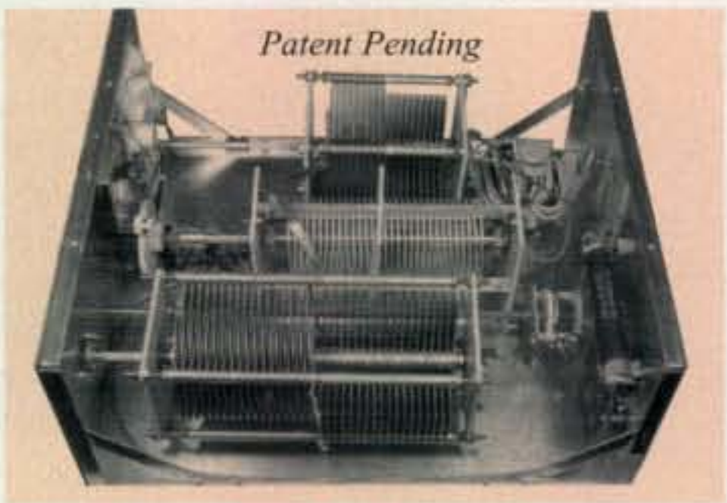
New *TrueActive™* circuit reads *true* peak or average power on all modes. *Cross-Needle* meter reads SWR/forward/reflected power.

1500 Watt Dummy Load

1500 Watt air-cooled non-inductive 50 Ohm resistor. 100W/10 min., 1.5kW/10 sec.

New Cabinet maintains high Q

New roomy cabinet maintains high Q. Vent holes. Heavy gauge, .08 inch aluminum braced chassis. Vinyl cover, non-stripping PEM nuts, heavy 10-gauge and copper strap wiring throughout. 13 3/4Wx7Dx16 1/4D inches. 15 pounds.



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MFJ . . . The World Leader in Ham Radio Accessories

math's notes

BY IRWIN MATH,* WA2NDM

More Potpourri

Last month we brought you our soap-box preaching (which I like to do from time to time), and I thank you for your indulgence. This month I would like to discuss some additional items that might be of interest to you.

The Effects of RF

We are aware (or should be aware) of the damage that too much RF can do to our bodies. Although specific dangerous levels have not been adequately documented, there is no doubt that at some level we had better be careful. A common microwave oven (for example) can be thought of as a 2.5-GHz 750-watt transmitter, and we know what this can do to a chicken (in the RF field). Well, a Bluetooth® headset (worn on your ear) linked to your cell phone is also a transmitter, but in this case one that happens to be located less than an inch from your brain. Now I know the manufacturers say that there is no danger, since the RF level for such a device is very low, and many people wear them as a sort of badge of "coolness," but again, please be careful! There are no valid long-term studies or guarantees as to what the effects will be on the wearer after 10 to 20 years of this sort of exposure (even at low power).

The same also goes for your HT. Although not in contact with your head, many do produce as much as 5 watts of RF a foot or so from your brain, so again be careful. As far as your home station is concerned, the old adage that the higher an antenna is the better it performs is true from the safety angle as well. In this aspect, the higher it is the further away from you it is, and therefore everyone benefits. In conclusion, certainly use all of these devices when you wish, but do not expose yourself to RF at any level when it isn't necessary!

Digital vs. Analog

It is obvious that this is truly becoming a digital age. Some even say that analog is either dead or dying. I wonder, however, if we are giving up something in the transition. A CD (compact disk) is truly amazing in that it can be played again and again without any noticeable degradation (as compared to an analog record), but it is a sampled reproduction of the music it contains. An analog recording, on the other hand, is a smooth copy with no "steps." Now I am well aware that digital theory says that if you sample a signal at twice the highest frequency present (the Nyquest criteria) all of the information in the signal will be retained, but remember that music is not a single tone. There are overtones and who knows what else. That is part of the reason why a piano sounds like a piano and a trumpet playing the same exact note still sounds like a trumpet. Most CDs are sampled at 44.1 kHz, well above the maximum of 20 kHz that humans are supposed to be able to hear, so why the difference? Why is it that most professional musicians can easily distinguish between a digital and analog recording? Maybe the harmonics (and who knows what else) beyond the range of human hearing have something to do with it.

My analog Tektronix oscilloscope shows the leading edge of a 10-kHz square wave with a 5-nanosecond rise time as a smooth trace that extends from 10% to 90% of the signal in 5 nanoseconds. My digital Tektronix scope, on the other hand, displays this exact same signal as a "jagged" trace with three or four "steps" between 10% and 90%. Note that I chose a slow signal well within the range of either scope to illustrate a point. Both oscilloscopes' bandwidths are well in excess of 200 MHz and I specifically mentioned the name "Tektronix" to convey the fact that they both are also high-quality industrial pieces of equipment, not "bargain basement" scopes. The digital trace is simply lacking as far as this particular measurement is concerned. True, the digital scope has all sorts of nice features, such as choosing the color of the trace, displaying measurement data, etc., but in short, each has its own merits as well as shortcomings.

Now consider trying to peak a tuned circuit using a digital meter as compared to the same task with an analog display. It is clearly much simpler to interpret (and anticipate) the movement of the analog meter's pointer than to extrapolate between the changing digits of the DVM. On the other hand, trying to measure a specific voltage with more than two or three digits of resolution on an analog meter is not easy, while on a digital DVM it is a snap.

Finally, just as a point of interest, a common baseband 5-MHz video signal when transmitted as analog requires 5 MHz of bandwidth. A 10-bit digitized version of the same baseband video signal requires more than 100 Megabits of bandwidth (5 × 2 × 10). Commercially, even this is not enough and typically a data rate of 270 Mb/s is used.

In conclusion, all of this is not to say that analog and digital do not have their respective merits. It is only to point out that there are significant advantages and disadvantages of each that one should be aware of.

As you read this, analog over-the-air TV transmissions soon will have ceased to be (at least in the U.S.). Without a converter box, an "old-fashioned" TV set will simply become a collection of parts for your junk box. Perhaps this is the time to see what other uses we can come up with for these parts. When vacuum-tube TVs gave way to solid-state versions, there were plenty of sweep tubes available for linear amplifiers, plenty of power transformers available for all sorts of HV power supplies, and enough coil forms, IF transformers,

*c/o CQ magazine

and the like to stock a junk box for years. It would be interesting to see what one can come up with this time around.

Technology for Technology's Sake

You will remember that last time we spoke at length about "technology for technology's sake." Since that time I would like to relate two incidents that occurred coincidentally.

My wife has an older (1995 vintage) luxury car (name withheld on purpose) that suddenly developed a fault in the directional signal "blinker." Upon investigation we found that a so-called "directional module" had failed. Fortunately, this was a plug-in device, and since a replacement part was more than $150 (from the dealer), we proceeded to open the defective unit. Inside was a relay, a 24-pin IC (microprocessor?), some diodes, capacitors, and a few surface-mounted components, as well as a power relay. The trouble, fortunately, turned out to be a simple unsoldered (or broken) wire at the terminal pin of the relay coil. One or two seconds with a soldering iron solved the problem and we were back in business. My point, however, is why this entire "complex" assembly was even created, when in "the old days" a simple $2 "flasher" did the same job. Mind you, this module did nothing else except blink the directional lamps on the car when activated.

In a similar fashion, a friend had the heater/air-conditioner blower fail in his car. The dealer repaired this (for many hundreds of dollars) and gave him the so-called "blown out" parts, which he then brought to me out of curiosity. The blower assembly consisted of a motor and plastic blower wheel connected to some sort of "control assembly" that looked just like a 15-ampere diode bridge attached to a heavy heat sink. Disconnecting the "control assembly" and connecting 12 volts directly to the blower motor terminals immediately indicated that the motor was indeed quite good. Opening the assembly with a pair of pliers and chisel revealed a couple of heavy diodes, a small 1N4002 style diode, and something that looked like an SCR. The 1N4002 style part was open. Again, replacing the diode with an actual 1N4002 solved the problem. Even if labor costs were $100 per hour, this sort of repair should have cost $101!

I am not trying to criticize the auto manufacturers (or any others, for that matter), but why make everything so complex. It seems to me that manufacturers really want servicing to be reduced to just replacing expensive assemblies. Today, fixing only what is broken, it seems, has become a lost art. Just replace it is the modern way.

I hate to constantly bring up the past, but back in the so-called "good old days" individuals at least tried to repair things that had failed. People were not afraid to open any defective product to see "what went wrong" and repair shops were plentiful. In particular, as amateur radio operators we always opened our equipment to see what was going on behind the front panel—even when it wasn't broken. What has happened? I believe that we as a society have gotten lazy, and if we don't "wake up" (as I mentioned last month), we will become a race of consumers purchasing whatever technology those "in the know" want to sell to us, whether we need it or not.

That about ends the soap-boxing for this year. I will try to get back to more normal topics in this column for the rest of 2009, but want you to think about what I have said. I really feel that our youngsters are losing the entire "feel" and joy of technology, and we should try to do what we can to re-awaken their interest. Comments are welcome!

73, Irwin, WA2NDM

public service

BY BOB JOSUWEIT,* WA3PZO

It's All About the Weather

It seems as if we are always talking about weather emergencies and natural disasters either here in the United States or around the world. This month's column is no different as we take a look at some weather happenings and disaster preparedness.

In early December amateur radio operators around the country and many National Weather Service (NWS) offices participated in the national Skywarn Recognition Day. Since 1999 the event celebrates the contributions that volunteer Skywarn radio operators make to the National Weather Service. Sponsored by the National Weather Service and the ARRL, both organizations recognize the importance that amateur radio operators provide during severe weather. Steve Naglic, Warning Coordination Meteorologist at the NWS Weather Forecast Office in Columbia, SC, told local amateur radio operators, "We greatly appreciate all the assistance you have given us this past year and your help has allowed us to provide better service to the public and our other customers. The March 15th supercell outbreak was a testament to your vital support, as the information we received from spotters helped us to provide timely warnings and save lives."

A supercell thunderstorm is potentially the most dangerous of the convective storm types. According to the National Weather Service, storms possessing this structure have been observed to generate the vast majority of long-lived strong and violent (F2–F5) tornadoes, as well as downburst damage and large hail.

Julio Ripoll, WD4R, Assistant National Hurricane Center Amateur Radio Coordinator for WX4NHC, thanked members of the VoIP (Voice over Internet Protocol) Hurricane Net for their effort and time during Hurricane Paloma, especially as the hurricane tracked through the Cayman Islands. According to Ripoll, "The information relayed by your net gave the Hurricane Center Forecasters additional insight of what Cayman residents were actually going through. Your multi-tasking, multi-mode methods of combining EchoLink and IRLP VoIP, HF monitoring, Internet Web Blogs, and direct e-mail is a great example of information gathering without limitations."

He continued, "These hybrid communications efforts, before and during the hurricane, to contact hams and non-hams were successful in promoting awareness that they had alternate means of sending and receiving hurricane information during the event. Some of these new contacts will be better prepared for future storms because of your interaction with them during Paloma. Some may become hams."

*c/o CQ magazine
e-mail: <wa3pzo@cq-amateur-radio.com>

Ham radio operators from around the country participated in the annual Skywarn Recognition Day. The National Weather Service recognizes the importance of ham radio operators during weather emergencies.

A hurricane bulletin issued during Hurricane Paloma said in part: " . . . Hurricane force winds extend outward up to 30 miles . . . 45 km . . . from the center . . . and tropical storm force winds extend outward up to 115 miles . . . 185 km. Unofficial reports of sustained winds of 80 mph . . . 130 km/hr . . .with gusts near 100 mph . . . 160 km/hr . . . have been received from amateur/ham radio operators on Grand Cayman during the past couple of hours."

Ripoll said they "worked many NWS stations on HF, APRS, and EchoLink/IRLP. Stations worked were as close as Florida and as far away as Australia. The coldest weather report we received was 12°F from Alaska and the warmest was 80°F from Hawaii. Many stations were very jealous when we gave them our weather report of 79°F and sunny. We also trained a new WX4NHC operator, Enrique Morales, KB4BX, who will augment our bilingual staff for the next hurricane season."

CQ asked Ripoll about the value of Skywarn Recognition Day. He said the "SRD is both fun and very useful for hams and the NWS as a joint exercise for possible future operations during severe weather and communications outage backup. An example of the importance of a ham radio station at an NWS Office during severe weather was during Hurricane Katrina. During Katrina, NWS Slidell lost all communications with the outside world, except for ham radio. They were able to establish and maintain contact with WX4NHC and others around the country with real-time weather reports and let them know their damage and personal conditions."

Gary Woodall, Warning Coordination Meteorologist at the NWS Fort Worth Forecast Office,

Alinco gives you Mobiles for all Seasons and for all Reasons!

Work the DX on 6 and 10 Meter FM

- **DR-03T** (pictured) 10 meters
- **DR-06T** 6 meters

- Same key-operations as DR-135-435 series mobile radios.
- EJ-41U internal TNC board is available as an option for 1200/9600bps packet (DR-06T only), no need to remove mic for packet operation.
- DR-03T 10 watts. H(10W)/M(5W)/L(2W) power settings.
- DR-06T 50 watts. H(50W)/M(20W)/L(5W) power settings.
- 100 memory channels
- Front panel data port
- Rear panel DSUB9 computer connection (DR-06T only)
- CTCSS, DCS encode+decode, DTMF encode and Tone-burst are all standards
- Clean, clear Alinco audio
- Super-wide 7 character alphanumeric display
- Wide and narrow FM modes (16K0 & 8K50F3E / DR-03T is fixed for NFM)
- Theft alarm feature
- A large, palm-fitting commercial-grade backlit microphone with an 8 pin metal connector (not a modular plug) as well as direct frequency input and direct multi-function access such as monitor, call channel, power setting,memory to VFO plus more!
- Stays in mode you select (voice/packet) through power off cycles
- Ten autodial memories

Work simplex and the VHF and UHF Repeaters

- **144 MHz DR-135TMkIII** 50 watts, H/M/L power settings
- **220 MHZ DR-235TMkIII** (pictured) 25 watts, H/M/L power settings
- **440 MHZ DR-435TMKIII** 35 watts, H/M/L power settings

- EJ-41U internal TNC board is available as an option for 1200/9600bps packet
- 100 memory channels
- Front panel data port
- Rear panel DSUB9 computer connection
- No need to remove mic for packet operation
- Ignition key on/off feature
- CTCSS, DCS encode+decode, DTMF encode and Tone-burst are all standards
- Clean, clear Alinco audio
- Super-wide 7 character alphanumeric display
- Wide and narrow FM modes (16K0 & 8K50F3E)
- Theft alarm feature
- A large, palm-fitting commercial-grade backlit microphone with an 8 pin metal connector (not a modular plug) as well as direct frequency input and direct multi-function access such as monitor, call channel, power setting, memory to VFO plus more!
- Stays in mode you select (voice/packet) through power off cycles
- Ten autodial memories

Dual Band fun and versatility

- **DR-635T** 144 MHz/440MHz

- VHF/UHF full duplex operation includes V/U and U/V modes.
- Cross-band repeater function (where permitted; standard on DR-635T)
- 200 Memory channels
- H/M/L power output settings- VHF: 50/25/5W UHF: 35/20/5W
- Large 6 character alphanumeric display
- Selectable display color illumination (Blue, Violet or amber)
- Internal duplexer - single antenna connector
- Removable control head can be remotely mounted (requires optional EDS-9 separation kit) or allow transceiver to be inverted for optimal speaker placement.
- Expanded receive range includes FM broadcast band (WFM)
- Power supply voltage display
- Theft alarm feature
- Optional 1200 and 9600 bps packet operation with optional EJ-50U
- Digital voice communications with optional EJ-47U
- Illuminated DTMF EMS-57 microphone allows direct VFO frequency entry and remote control of transceiver
- CTCSS & DCS encode and decode plus four different tone bursts
- CTCSS Tone and DCS scan
- Programmable VFO and Memory scan modes
- "Time Out" timer
- Cable Clone feature
- AM Aircraft band reception
- Temperature Compensated Crystal Oscillator
- Ignition key activated power on/off feature
- Optional Accessories
  - EJ-47U digital modulation unit
  - EJ-50U TNC unit
  - EDS-9 Front-control unit separation kit

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WX4NHC at the National Hurricane Center is one of the most recognizable stations on the air during hurricane season. Here Julio Ripoll, WD4R, Enrique Morales, KB4BX, Jose Deschapelles, W2JD, and Miguel Parages, Jr., KG9C, staff the station during Skywarn Recognition Day. (Photo courtesy Julio Ripoll, WD4R)

described the importance of the spotters: "We have some powerful electronic tools for observing thunderstorms. However, those tools only tell part of the story of what's happening in or near a storm. By combining the electronic data with the near-storm observations we get from spotters, we have a much more complete picture of the storm." He continued, "We're happy to participate in Skywarn Recognition Day as a small 'thank you' to our dedicated storm spotters. We have a tremendous network of storm spotter groups across north and north-central Texas. The amateur radio operators serve as the backbone for many of the groups, with law and fire officials, city and county employees, and members of the public also making valuable contributions."

Some History

The first Skywarn Recognition Day was in 1999. Meteorologist-in-Charge of the Goodland, Kansas NWS office, Scott Mentzer, NØQE, developed a way to recognize the valuable contributions storm spotters make to the National Weather Service. "Since many of those storm spotters were also hams," Floyd said, "it seemed like a natural fit for the recognition to be centered on Amateur Radio." At the end of the first event 15,888 QSOs were logged with contacts made to all 50 states and 63 countries. The Des Moines forecast office took the honor of making the most contacts of any office that first year, with 761 QSOs, and went on to lead the pack until 2003 by logging between 1300 and 1500 contacts each year. Over the years the feedback from that first event was "overwhelmingly positive" from both the NWS staff and the local ham clubs: "Suddenly there was incentive for more NWS staffers to either obtain a license or upgrade so that more people could work ham radio during severe events. In addition, many club members had never visited an NWS office before. When they came for the special event, they learned the value of their reports and how they were used in conjunction with existing technology."

The following year 85 of the 122 NWS offices—almost 70 percent—participated in the event, making nearly 24,000 QSOs. "Perhaps the most unusual contact that occurred in 2000 was with an airliner 39,000 feet above Utah," Floyd said. "The pilot ended the QSO with a request for a 'spot weather forecast' for his arrival at Salt Lake City airport."

In 2001, the name of the event was changed to SKYWARN Recognition Day, a name Floyd said better relayed what the day was all about: "Each year since the inception of SRD, the number of NWS offices and local ham clubs participating has increased, until now more than 100 offices sign up each year to take part. The most contacts made during any SRD occurred in 2006 when—thanks to the staff and local hams in the Grand Junction, Colorado area—1640 QSOs were logged!"

Station callsigns have also changed over the years. Floyd said that some NWS offices and clubs apply for a special event callsign, "such as W3B in Brownsville or NØY in Aberdeen, South Dakota. Other callsigns hint at office location, including WX9GRB in Green Bay and WX4NHC at the National Hurricane Center. Still others represent more of the big picture, as in KCØSKY in Pleasant Hill, Missouri."

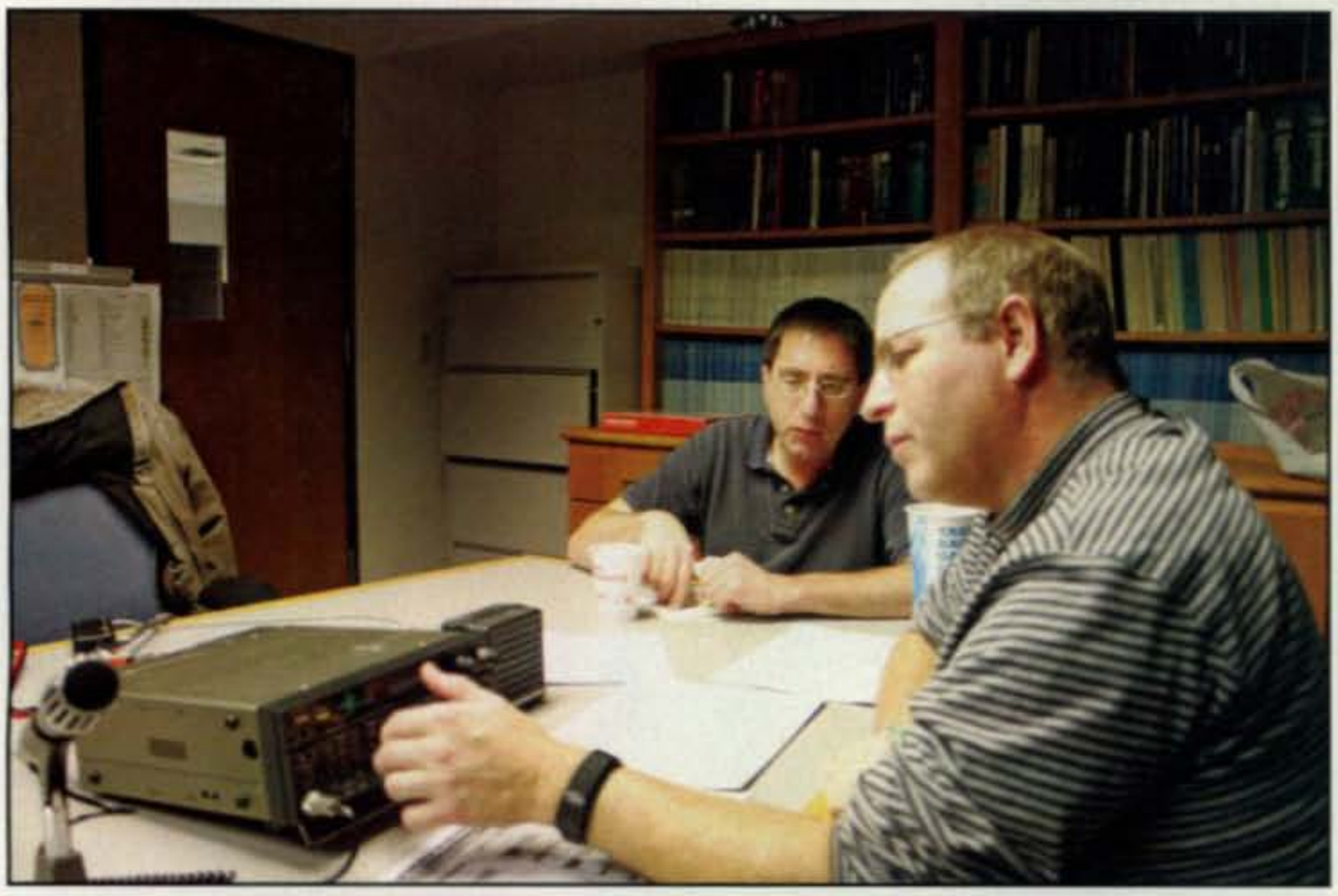
Floyd said that as SKYWARN Recognition Day has grown throughout the years, he has seen a greater use of digital communications in addition to CW, RTTY, and packet radio: "Each year, more and more contacts are being made using EchoLink, Winlink, and the use of e-mail reflectors." Over 100 Weather Service offices in the United States and Canada participated in the event.

Getting Involved

Each year the effects of severe weather are felt by many Americans. To obtain critical weather information, NOAA's National Weather Service (NWS), part of the U.S. Department of Commerce, established the Skywarn program. Skywarn, a volunteer program with nearly 280,000 trained severe-weather spotters, helps keep communities safe by providing timely and accurate reports of severe weather to the National Weather Service. Although Skywarn spotters provide essential information for all types of weather hazards, the main responsibility of a Skywarn spotter is to identify and describe severe local storms. According to the National Weather Service 10,000 severe thunderstorms, 5000 floods, and more than 1000 tornadoes occur across the United States each year. These events threatened lives and property.

Since the program started in the 1970s, the information provided by Skywarn spotters—coupled with Doppler radar technology, and improved satellite and other data—has enabled the Nation Weather Service to issue more timely and accurate warnings for tornadoes, severe thunderstorms, and flash floods.

According to the NWS, Skywarn storm spotters are part of the ranks of citizens who form the nation's first line of defense against severe weather. There can be



Joe Miketta, Warning Coordination Meteorologist at the Mt. Holly, NJ National Weather Service Office, listens in as Mike Patton, W3MJP, a member of the local Skywarn Advisory Committee, makes contacts across the United States using the call WX2PHI. (Photo courtesy of Lou Ruh, WX3I)

no finer reward than to know that their efforts have given communities the precious gift of time, seconds and minutes that can help save lives.

Who is Eligible?

The NWS encourages anyone with an interest in public service and access to communications, such as amateur radio, to join the Skywarn program. Volunteers also include police and fire personnel, dispatchers, EMS workers, public-utility workers, and other concerned private citizens. Individuals affiliated with hospitals, schools, churches, and nursing homes or who have a responsibility for protecting others are also encouraged to become a spotter.

How Can I Get Involved?

The NWS has 122 local Weather Forecast Offices, each with a Warning Coordination Meteorologist who is responsible for administering the Skywarn program in his/her local area. You can contact your local ARES or RACES group to find out who the local amateur radio Skywarn Coordinator is or contact your local Weather Service Office. Many local NWS websites have a link to the local Skywarn program. Training to become a spotter is conducted by the local offices and covers information on thunderstorm development, storm structure, and identifying potential severe-weather features. In addition, you will be taught what information to report and how to report it. Classes are free and typically are about two hours long.

Additional Training

While the Skywarn training program provides you with all of the information you need to become a storm spotter, many members of Skywarn have an interest in expanding their knowledge of the weather. One way of doing this is to attend a meeting of a local chapter of the American Meteorological Society (AMS). According to the AMS, local chapters have been a part of the society's framework almost from the beginning of the organization, with the first chapter formed in Boston in 1929. The local chapters were viewed from the start as an effective means of increasing the awareness of meteorology among the general public, as well as providing a mechanism for local gatherings of professionals and weather enthusiasts that would ultimately lead to a growth in society membership. The society now has approximately 125 active local chapters, including over 40 student chapters that specifically serve the needs of meteorology students. The AMS also sponsors a certification program for broadcast meteorologists.

In the Philadelphia area, the Delaware–Philadelphia Area Chapter of the AMS has a variety of members from local universities, the National Weather Service, the Federal Aviation Administration, local television stations, Sky-

AMS Logo. Local chapters of the AMS are a great way to learn more about the weather, meet other weather enthusiasts, and introduce members to ham radio.

warn spotters, students, ham radio operators, and weather enthusiasts. Over the past year there have been speakers from the local universities on local weather studies being done, as well as Bill Read, KB5FYA, Director of the National Hurricane Center. For further information on local chapter activity check at the AMS chapter website at <http://www.ametsoc.org/amschaps/index.html>.

Possible New Warnings

The 2008 hurricane season was barely over and some forecasters were suggesting that new types of warnings should be issued in 2009. Hurricane Ike, the most destructive storm in the 2008 hurricane season, was not classified as a major hurricane using the yardstick forecasters have used for decades. However, Ike produced a catastrophic storm surge and ranks as the third costliest tropical system to strike the U.S. in 150 years, behind only Hurricanes Katrina and Andrew. Some forecasters are considering modifying the Saffir-Simpson scale. Ike was only ranked a Category 2 hurricane on the scale.

Hurricane scientists meeting in Miami in mid-December, as this is being written, will discuss, and perhaps act on, a proposal to develop a new scale for classifying hurricanes that better accounts for storm surge. Gene Hafele, meteorologist in charge of the Houston/Galveston office of the National Weather Service, who is proposing the modification ,told the *Houston Chronicle* that "It is not an easy issue, but I believe a change must be made." He continued, "Bad decisions were made during Ike by both citizens and officials, based on the notion that Ike was a Category 2 storm and a feeling that 'I have been through a lot worse.' It is hard to convince people that they could face certain death when they see that a storm is not even considered to be a major hurricane." Storm surge is determined more by the size of the hurricane than its wind speed.

NHC Director Bill Read, KB5FYA (with headset), gave Skywarn volunteers a personal tour of the National Hurricane Center. (Photo courtesy Julio Ripoll, WD4R)

National Hurricane Center Director Bill Read, KB5FYA, has been non-committal on a possible change. However, he eventually wants to deliver risk information on forecast winds and storm surge, perhaps by ZIP code, to residents within the potential path of a hurricane. The pros and cons of the Saffir-Simpson scale will be discussed at April's National Hurricane Conference in Austin, TX.

Severe Weather Coming

It won't be long before severe weather will strike some part of the country. Flooding, tornadoes, and eventually hurricanes will strike. Will you be prepared? Now is the time to get ready. Until next month . . .

73, Bob, WA3PZO

Searching for peak HF performance?

"This is the first receiver we've tested with better than 100 dB IMD dynamic range at the closer signal spacings." *QST* Product Review, April 2008

Introducing the Elecraft K3 transceiver

No other rig in this price class comes close to the K3's performance. Its high dynamic range, down-conversion architecture provides roofing filter bandwidths as narrow as 200 Hz, while its 32-bit I.F. DSP handles advanced filtering and noise reduction. The K3 also offers an optional fully independent, high-performance subreceiver, as well as innovative new features like variable-bandwidth, DSP-tracking roofing filters, and 8-band RX/TX EQ.

Then there's the K3's unmatched versatility. It provides state-of-the-art performance as a primary home station, yet its size and weight make it ideal for DXpeditions, RV operation, and Field Day. You *can* take it with you!

- 100-W model starts at $1849; upgradable 10 W model, $1399
- 160-6 m; SSB/CW/AM/FM/data modes
- Up to five crystal roofing filters in both main and subreceivers
- 4"H x 10" W x 10"D; only 8 pounds
- Factory-assembled or *no-soldering* kit (all PC boards pre-built, 100% tested)
- Fully isolated soundcard interface
- Built-in PSK31/RTTY for data-mode QSOs with or without a computer
- Unsurpassed customer support

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op ed

BY GORDON WEST, WB6NOA

Become a D-TV Ham Ambassador

The opinions expressed in this op-ed essay are those of the author and do not necessarily reflect the editorial position of CQ magazine.

Our Federal Communications Commission may need our help. Millions of TV viewers may be losing over-the-air reception this winter, with most analog TV stations switching over to all-digital on February 17, 2009.

OK, so the Feds have been sending out $40 discount cards for converters. Many of your neighbors receiving signals from their trusty TV antennas may indeed have this new magic box, but likely *few* will have a *clue* as to how to actually get things hooked up. You know whose door they will be knocking on, looking for advice—the ham radio operator down the street.

Be prepared for the ultimate opportunity to help a neighbor get back on the air with over-the-air digital TV reception, and for the opportunity to enhance the image that ham radio operators can make that happen.

"Science . . . technology . . . experimentation . . . with ham radio . . . WE DO THAT!" says the latest ARRL PR brochure, indicating that amateur radio is *their* scientific national resource.

If your neighbor already has decent TV antenna reception on the lower channels, it is quite likely the converter box will also give him solid reception on high VHF and UHF frequencies. It's a 30-minute public-service job to tie in the converter, and a few minutes to show them how to run through their new channels . . . ×4. Most networks may transmit the digital main program on one of four reception slots[1], allowing the viewer to select three other digital alternate programs, using that new remote controller. You will need to do some "blank screen" teaching, because digital reception will be a lot different from just scrolling through the channels, looking for a signal! Many analog TVs will take as much as five seconds to lock on to the signal when you change channels—something new to your neighbor who blasts instantly through the analog channels with the remote. The delay is caused by the digital converter taking time to process the incoming video before sending it along to the TV. During this period, the TV will display a blank screen.

You can decide (in conjunction with your neighbor) whether to feed the converter box output box to the existing TV's channel 3, or go to the TV's auxiliary audio and video input. One other thing to consider: Does your neighbor's converter have analog pass-through? This is an important consideration, as many areas of the country may be served by *both* digital broadcasting and regional analog, low-power Class A translators. Say what? This would be a nightmare for your non-technical neighbor, but easy for you to work around with either the correct, more expensive converter box or a slightly more complicated antenna switch and lessons on how to watch *digital* channels on channel 3, and watch *analog translators* by going to the usual UHF analog channels and flipping a switch.

As the neighborhood ham radio operator, you have the opportunity to become the TV ham ambassador on the block, or if you tell them to just go out and hire a service guy (at who knows what per hour), you will let a great public-relations opportunity go away.

Hopefully, you will become the neighborhood information center, assuring nearly everyone on the block getting *cable TV* and *satellite TV* that there will be *no* change in *their* reception methods.[2]

And yes, there will be basket cases where the existing TV antenna is standing on its nose after a big wind, the twin-lead looks like shorted-out twisted spaghetti, and the TV has a pencil stuck in the mechanical tuner in order to pull in *any* type of picture. Is there a young ham in your local radio club who may want to make 50 bucks by doing a complete antenna reinstall? Or maybe make a trip down to the local electronics outlet with a neighbor to buy the new breed of digital-ready TV? There is a good opportunity here for some young hams who can take some radio club instruction on getting digital TV signals from over the airwaves and teaching their neighbors.

I can almost guarantee you're going to get a knock on your door over the next few months from your neighbors. It's actually a kick to wire in your own kitchen TV for free, over-the-air digital reception and to learn more for yourself about how these boxes work. Give it a try!

We have everything to gain in ham radio PR by spending some time with our neighbors who receive over-the-air TV from the aluminum on their roof. We can demonstrate how the ham radio service in their community acts on the ARRL motto, "WE DO THAT! With amateur radio."

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A New TVI Danger

I just discovered from Bill Prats, K6ACJ, that digital TV converter boxes may present a new source of television interference (TVI) for hams. "Many of the new DTV converters might easily overload with a strong ham transmission on VHF or UHF near the box or the over-the-air antenna," says Bill, "causing the TV screen to either freeze or go black." So if your neighbor, using an outside antenna with a new DTV converter box, says his/her screen goes blank whenever you get on 2 meters or 440 MHz, an overload of the box is the likely culprit. While you can try to explain that the problem is in the poor shielding of the converter, your best bet first is to try reducing your power level so as not to overload the neighbor's box.

Notes

1. Each new digital TV channel has four viewing options, one of which is always the main channel. The others may be news headlines, weather, or other programming, or two or more of the subchannels may be used by the broadcaster for the same program with higher definition.

2. During the switchover from analog to digital , many of the 2008 *digital* channels will change locations on the 2009 radio/TV spectrum, further confounding viewers who "thought" they were all set for digital over-the-air reception! Viewers will need to do a new channel search on February 17, and likely weeks thereafter, to lock in the new correct locations for digital reception. As a ham, you can help with this new search!

AMERITRON mobile *no tune* Solid State Amp

500 Watts, Instant bandswitching, no tuning, no warm-up, SWR protected, 1.5-22 MHz . . . NEW! ARI-500 Amplifier Radio Interface reads transceiver band data -- automatically bandswitches ALS-500M amp . . . NEW! ALS-500RC Remote Head gives total remote control!

ALS-500M
$849
Suggested Retail

Just turn on and operate -- no warm-up, no tuning, instant bandswitching. Compact.

Ameritron's ALS-500M solid state *mobile* amp gives you 500 Watts PEP SSB or 400 Watts CW output! Covers 1.5-22 MHz, (10/12 Meters with MOD-10M, $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 inches. 7 lbs.

Choose ARI-500 for fully *automatic bandswitching* or ALS-500RC for *manual* remote control.

***New* ARI-500, $119.95**, *Amplifier Radio Interface* reads band data from your transceiver so you can *automatically bandswitch* your ALS-500M amplifier. *See right inset.*

***New* ALS-500RC, $49.95**, *Remote Head* lets you mount ALS-500M amplifier *anywhere* and gives you full *manual remote control*. Select desired band, turn On/Off and monitor current draw on its DC Current Meter. Power, transmit and overload LEDs. RJ-45 cables plug into Amplifier/ Remote Head. Works with serial numbers above 13049 (below 13049 requires the ARF-500K, *see below*).

ALS-500M, $849, 500 Watt mobile amp.

ALS-500MR, $879, ALS-500M mobile amp ***plus*** ALS-500RC *Remote Head.*

ARF-500K, $179.95, Remote kit for older ALS- 500M mobile amps with serial # below 13049. Includes filter/relay board for ALS-500M, AL-500RC Remote Head, cables, hardware, instructions.

ARF-500K2, $289.95. Includes ARF-500K Remote kit for older ALS-500Ms ***plus*** ARI-500 *Amplifier Radio Interface* below.

Let your rig *auto bandswitch* your ALS-500M Amplifier

ARI-500
$119.95
Ship Code A

The Ameritron ARI-500 *Amplifier Radio Interface* reads band data from your Icom, Yaesu, Kenwood or Alinco transceiver so they can remotely and automatically bandswitch your ALS-500M amp. Lets you mount your ALS-500M out-of-the-way in your trunk. Works with serial numbers above 13049 (below 13049 requires the ARF-500K, *see above*). You can add the ALS-500RC for manual bandswitching and data monitoring, etc, *see left description.*

Programmable Screwdriver Antenna Controller

10 Memories . . . Super Accurate . . . AutoPark™ . . . StallProtector™ . . . Super bright LEDs

Tuning your mobile screwdriver antenna couldn't be easier or more reliable!

The SDC-102 lets you save *10* of your favorite screwdriver antenna positions in memory -- that's more than enough for all HF bands. Then, with a push of a button, you can quickly return to any saved position.

Up/Down buttons let you manually move the antenna to any desired position. A 4-digit turns counter gives you precise antenna position -- you can see its *super bright LEDs* even in direct sunlight!

Returning to a position from memory is extremely accurate for three reasons . . .

A. The antenna always moves to its desired position from the bottom, insuring that the motor is always loaded the same.

B. Ameritron's exclusive *AutoPark™* feature automatically bottoms your antenna for parking in your garage and *resets and calibrates* your counter each time to eliminate antenna slippage and turns count errors.

C. The momentum of the moving antenna causes it to overshoot its stop point. Ameritron's exclusive *Dead-OnSTOP™* feature automatically reverses the motor briefly just before it stops to eliminate overshoot and come to a precise stop.

Ameritron's exclusive *StallProtector™* feature prevents your expensive motor from burning out. Automatically detects motor stall and completely shuts off power to motor.

Monitor motor current on LEDs for signs of trouble and to determine stall current.

If you wire the motor backwards, you can reverse its direction from the SDC-102 front panel so the UP button is always up and the DOWN button is always down.

Compatible with single and dual magnetic turns sensors. Requires 12 VDC.

New!
SDC-102
$129.95
Suggested Retail

3½Wx3¼Hx1¼D inches.

SRS-100, $29.95. Magnetic sensor kit for High Sierra antennas to use SDC-102.

SRS-1001, $9.95. Magnetic sensor kit for Hi-Q Antennas to use SDC-102.

1.2 kW Screwdriver Antenna

SDA-100
$409
Suggested Retail

SDA-100 lets you operate 3.5 to 30 MHz continuous with six foot whip at full 1200 Watts PEP.

World's most rugged screwdriver antenna features . . . super heavy-duty commercial Pittman 12 Volt gear motor . . . stainless steel/ aircraft aluminum CNC machined components . . . 2-inch machine groove fiberglass coil form with 14-gauge wire wound at 8 turns per inch . . . built-in magnetic sensors . . . super durable Lexan cover . . .

SWP-100, $24.95. 6-ft stainless whip.
SDM-100, $99. Stainless steel mount.
Saves $16.85! **SDA-110, $509.95.** Includes SDA-100, SDC-100, SWP-100.

Flat Mobile Wattmeter

AWM-35
$159.95
Suggested Retail

Ultra-thin 1⅝ inch flat mobile SWR/ Wattmeter *flat mounts* on your dashboard wall or shelf for easy viewing. Lighted Cross-Needle meter and *active* electronics let you read *true* peak or average power in 3000/300 Watt ranges 1.8-30 MHz. "High SWR" LED. 5Wx3¼Hx1⅝D inches. *Remote sensor* with 25 feet thin, flexible cable is 3½Wx2¾Hx2¾D inches. Use 9V battery or 12 VDC.

Digital Screwdriver Controller

SDC-100
$99.95

4-digit *super bright* LEDs let you re-tune *exactly* -- fast, no guessing. Digital count range -999 to +999. On/off/reset switch for easy calibration. 4Wx1½H x2D". Use 13.8VDC.

Call your dealer for your best price!

Free Catalog: 800-713-3550

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Hamming from the Shadows – Part 6

BY DAVE INGRAM,* K4TWJ

Your interest in our series of articles on undercover hamming continues to be quite high, indicating we are filling a definite need in this area of growing concern. In light of that fact, both this month's and next month's columns present more views and notes of encouragement to overcome CC&Rs and keep on hamming.

Do you live far enough outside of a big city so that installing antennas and hamming to the max is no problem? Enjoy your good fortune while you can and hope that situation holds true for many years hence. We are noticing, however, health concerns, job changes, economic variations, etc., are causing more people—both young adults and retirees—to move closer to more populated areas and into gated communities, highly restricted subdivisions, and condos with CC&Rs galore. When doing so, new arrivals are required to sign away numerous taken for granted privileges such as installing amateur radio antennas. Unfortunately, the public services we provide during hurricanes, tornadoes, etc., are favorably accepted (the "Katrina factor"), but our antennas are forbidden. Do not despair, however, as every cloud has a silver lining—if you are willing to pursue it.

A good example of that fact appeared in the November 2008 issue of *QST* on page 54. W1WSN moved into a condo in CC&Rs-infested Florida (no antennas, no wires, no poles; just sit there). He researched his situation, devised a simple multiband "screwdriver-type" vertical antenna, and delivered an extensive presentation to the condo's board of directors. He then paid all board-mandated charges for professional installation, and his antenna was approved.

Every case of CC&Rs is different, however, so my philosophy is first and foremost to devise a good "plan B" (hidden antenna), and then prepare papers explaining amateur radio's fine history of public service and propose installation of an antenna. We can also learn much more from the experiences of others, so read on for a couple of real-life tales plus some ideas for staying low profile and on the air.

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e-mail: <k4twj@cq-amateur-radio.com>

One Tree Antenna Farm

After Hurricane Katrina knocked down a number of 80-ft. tall pine trees supporting over 2000 feet of wire antennas (plus put a tree through the roof of

Photo A– Society of Wireless Pioneers' kingpin Ben Russell, N6SL, uses a roll of thin magnet wire and a single tree beside his home in Florida to make a nearly invisible antenna farm. One wire routed to the top of the tree makes a quarter-wave vertical for 20 meters, another wire continues on from near the treetop to the house façade to make an inverted-L for 40 meters, and a third wire routes around the house to make an inverted-L for 80 meters. Ben is the usual 40-meter net control for the SOWP and, until he told me, I thought he was using a delta loop or End Fed Z up 80 or 90 feet. His thin wire antennas romp! Photos A, B, C, and D via N6SL)

MFJ All-Band G5RV Antennas

Operate all bands through 10 Meters, even 160 Meters, with a single wire antenna!

MFJ-1778
$44.95

The famous G5RV antenna is the most popular ham radio antenna in the world! You hear strong signals from G5RVs day and night, 24/7.

And it's no wonder . . . it's an efficient, *all band* antenna that's only 102 feet long -- shorter than an 80 Meter dipole. Has 32.5 foot ladder line matching section ending in SO-239 connector for your coax feedline.

Use as Inverted Vee or Sloper, and it's even more compact and needs just one support.

With an antenna tuner, you can operate all bands 80 Meters through 10 Meters and even 160 Meters with an antenna tuner and a ground.

MFJ's fully assembled G5RV handles 1500 Watts. *Hang and Play™* -- add coax, some rope to hang and you're on the air!

MFJ-1778M, $39.95. *Half-size*, 52 foot *G5RV JUNIOR* covers 40-10 Meters with tuner. Handles full 1500 Watts.

MFJ All Band Doublet

MFJ-1777
$59.95

MFJ-1777 is a 102 foot *all band* doublet antenna that covers 160 through 6 Meters with a balanced line tuner. Super strong custom fiberglass center insulator provides stress relief for ladder line (100 ft. included). Authentic *glazed ceramic* end insulators. Handles full 1500 Watts.

MFJ *Dual Band* 80/40 *or* 40/20M Dipoles

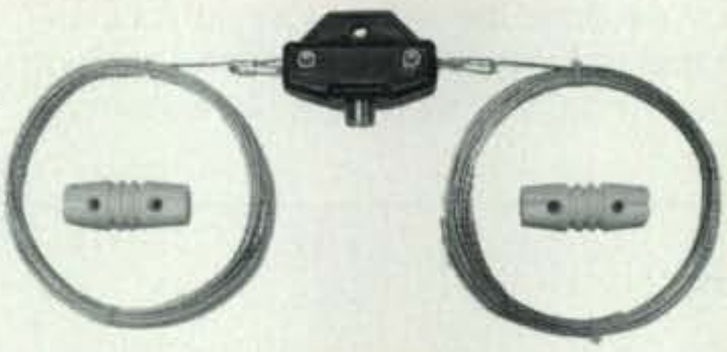
MFJ-17758
$89.95
80/40 Meters

MFJ-17758 is a short 85 foot long *dual band* 80/40 Meter dipole antenna. It's *full-size* on 40 Meters and has ultra-efficient end-loading on 80 Meters. Handles full 1500 Watts. Super-strong injection-molded center insulator with built-in SO-239 connector and hang hole. Solderless, crimped construction. 7-strand, #14 gauge hard copper wire. Connect your coax feedline directly, no tuner needed.

MFJ-17754, $59.95. Short coax fed 42 foot long *dual band* 40/20 Meter dipole antenna. *Full-size* on 20 Meters, ultra-efficient end-loading on 40 Meters. Same construction as MFJ-17758.

MFJ *Single Band* Dipole Antennas

Ultra high quality center fed dipoles will give you trouble-free operation for years. Custom injection-molded UV-resistant center insulator has built-in coax connector and hanging hole. Heavy duty 7-strand, 14-gauge hard copper antenna wire. Extremely strong solderless crimped construction. Authentic *glazed ceramic* end insulators. Use as horizontal or sloping dipole or inverted vee. Handles full 1500 Watts. Simply cut to length for your favorite frequency with cutting chart provided.



MFJ-1779A **$69.95** 160M, 265 ft.
MFJ-1779B **$49.95** 80-40M, 135 ft.
MFJ-1779C **$29.95** 20-6M, 35 ft.

True 1:1 Current *Balun & Center Insulator*

MFJ-918
$24.95

True *1:1 Current Balun/ Center Insulator* forces equal antenna currents in dipoles for superior performance. Reduces coax feedline radiation and field pattern distortion -- your signal goes where *you* want it. Reduces TVI, RFI and RF hot spots in your shack. *Don't build a dipole without one!* 50 hi-permeability ferrite beads on high quality RG-303 *Teflon*® coax and *Teflon*® coax connector. Handles full 1.5kW 1.8-30 MHz. Stainless steel hardware with *direct* 14 gauge stranded copper wire connection to antenna. 5x2 inches. Heavy duty weather housing.

RF Isolator

MFJ-915
$29.95

MFJ-915 *RF Isolator* prevents unwanted RF from traveling on the outside of your coax shield into your transceiver. This unwanted stray RF can cause painful RF "bites" when you touch your microphone or volume control, cause your display or settings to go crazy, lock up your transceiver or turn off your power supply. In mobile installations, stray RF could cause your car to do funny things even blow your car computer. Clear up these problems, plug an MFJ-915 between your antenna and transceiver. 5x2 in. Handles full 1500 Watts. Covers 1.8-30 MHz.

MFJ-919, $59.95. 4:1 current balun,1.5 kW.
MFJ-913, $29.95. 4:1 balun, 300 Watts.

Antenna Switches

MFJ-1704
$79.95
4-Positions

MFJ-1704 heavy duty *antenna switch* lets you select 4 antennas or ground them for static and lightning protection. Unused antennas automatically grounded. Replaceable lightning surge protection. Good to 500 MHz. 60 dB isolation at 30 MHz. 2.5 kW PEP. Less than .2 dB insertion loss, SWR below 1.2:1. SO-239 connectors. Handy mounting holes. 6¼Wx4¼Hx1¼D inches.

MFJ-1702C
$39.95
2-Positions

MFJ-1702C Like MFJ-1704, but for 2 antennas. 3Wx2Hx2D"

MFJ-1700C
$99.95

MFJ-1700C *Antenna/ Transceiver Switch* lets you select one of six antennas and one of six transceivers in any combination. Plug in an antenna tuner or SWR wattmeter and it's always in-line for any antenna/transceiver combination. Has lightning surge protection. Handles 2 kW PEP SSB, 1 kW CW, 50-75 Ohm loads. Unused terminals are automatically grounded. 1.8 to 30 MHz. SO-239 connectors. 4¾W6½Hx3D inches.

MFJ-1701
$69.95

MFJ-1701 *Antenna Switch* like MFJ-1700C but lets you select one of six antennas only. 10Wx3Hx1½D inches.

33 ft. Telescoping fiberglass Mast

3.8 feet collapsed, 3.3 lbs.

MFJ-1910
$79.95

Super strong fiberglass mast has huge 1¾ inch bottom section. Flexes to resist breaking. Resists UV. Put up *full size* inverted Vee dipole/vertical antenna in minutes and get *full size performance!*

Make your own antennas

Dipoles, G5RV, Random Wire, Doublets, Beverage Antennas, etc.

MFJ-16C06, $4.56. 6-pack authentic *glazed ceramic* end/center antenna insulators.
MFJ-16B01, $19.95. Custom injection-molded UV-resistant center insulator has built-in coax connector and hanging hole.
MFJ-18G100, $24.95. 100 ft. of flexible, 7-strand, 14-gauge solid copper antenna wire.
MFJ-58100X, $49.95. 100 ft. 50-Ohm RG-8X with PL-259s on each end.
MFJ-18H100, $34.95. 100 feet, 450 Ohm ladder line, 18 gauge copper covered steel.

Lightning Surge Protectors

Ultra-fast gas discharge tube shunts 5000 amps peak. Less than 0.1 dB loss. Up to 1000 MHz. SO-239s. **MFJ-270, $29.95.** 400W PEP. **MFJ-272, $39.95.** 1500W PEP.

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Photo B –Close-up view of the tree base supporting three antennas at N6SL. All three radiators are parallel-connected to the single coax feed line's center conductor, and 10 buried radials are parallel-connected to the feed line's shield. Even in direct sunlight the wires and cables are barely noticeable (especially with the pine-bark distraction), and that is precisely the objective.

his house in Louisiana), Society of Wireless Pioneers kingpin and net control Ben Russell, N6SL, made repairs, sold his house, and moved to Florida. He moved into a nice, new retirement community complete with golf course, tennis courts, exercise facilities, only one or two trees, and CC&Rs galore. Specifically cited was "no ElectroMagnetic Radiation of any form was allowed from any house." That seems quite illogical to me. Garage-door openers, satellite-TV controllers, keyless automobile entry systems, and much more—even porch lights—all fall in the EMR category.

Ben started with attic-hidden wire antennas and loops, and then progressed to using his single (and small) tree to support three almost invisible wire antennas (photos A, B, and fig. 1). The antennas are separate quarter-wave wires for 20, 40, and 80 meters, all RF fed via a single 50-ohm coax cable, and complemented with 10 buried radials. One of the radials connects to an approximate half-mile-long chain-link fence installed/positioned along the backside of the community's property. Now that's what we call an effective ground system.

How does the setup work out for Ben? Excellent, I would say. When checking into the SOWP Net, I note 40-meter signals from N6SL are consistently good. Ben also works into Europe on 40 meters using only 100 watts, when I barely hear Europe, and the same good results are noted on the 20-meter SideSwiper Net. It is amazing what Ben does with a few lengths of ultrathin wire. I must state, however, that Ben is one sharp cookie. Like many Society of Wireless Pioneers members, he can hear signals through almost anything. Watch for more good words and views from N6SL and other SOWPers coming in our April and May 2009 "Keys Special" columns.

When There's a Will...

Florida's stiff restrictions on antennas can easily cause one to feel alone and defeated. However, Joan Jones, W4JMJ, beat the odds and is surviving admirably (photos D and E). Inspired by her brother VE3WWR, she studied and acquired her Tech license in February 2007, General license in March, and Extra Class in December. She started studying CW, took the ARRL's on-line EmComm course, joined Skywarn, YLRL, and several radio clubs, and recently received accreditation as an ARRL VE. This YL is a real asset to

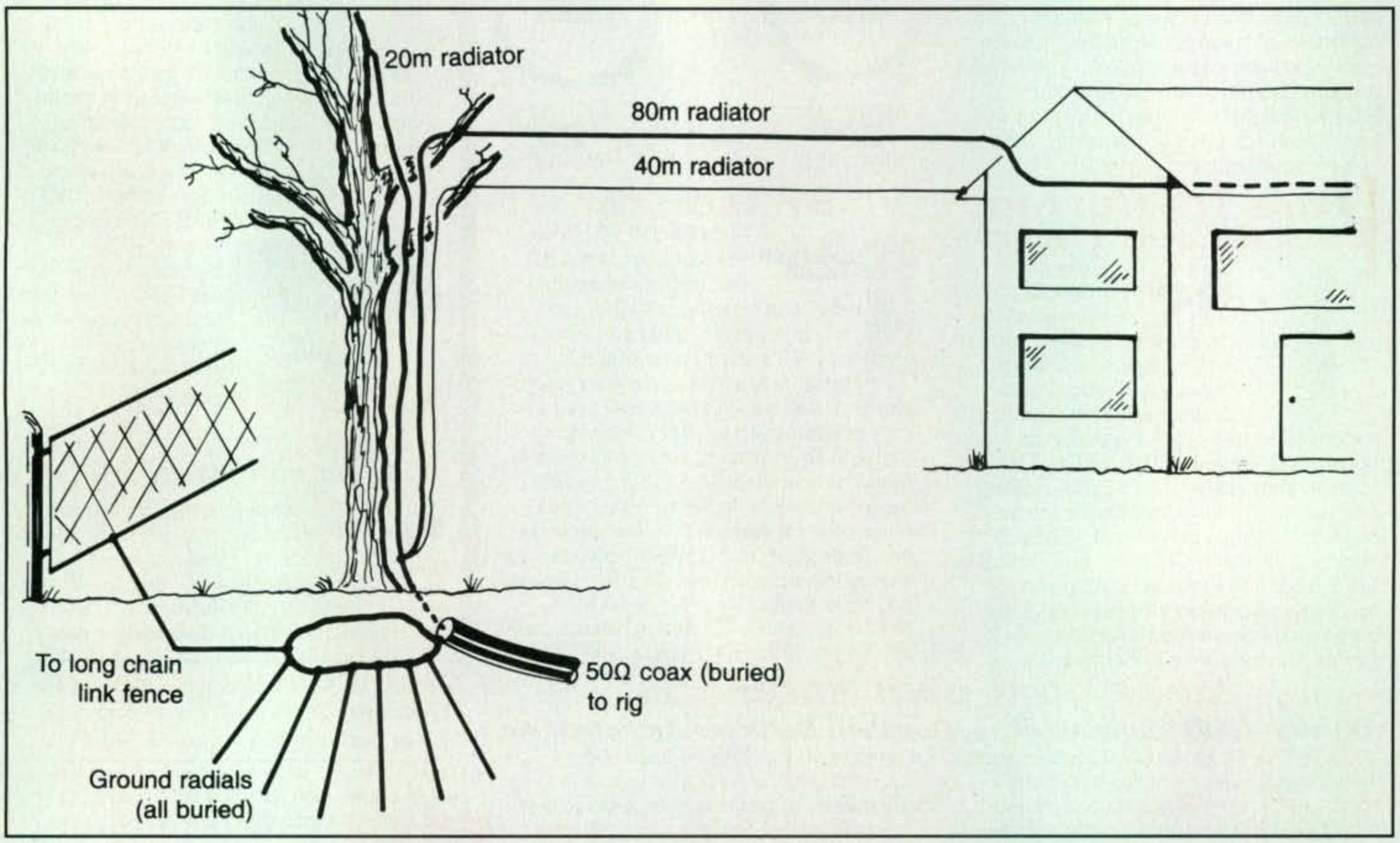

Fig. 1– Outline of the nearly invisible triband wire antenna at N6SL. All three radiators are connected in parallel at base of tree and with exception of high power limitations, are equivalent to their large wire counterparts. (Circuit diagrams redrawn by Rex, W1REX)

Photo C– The indoor setup of N6SL is modest but quite air-worthy. His Kenwood TS-570 is heard coast-to-coast and in Europe each week on 40 and 20 meters. It is backed up with a Ten-Tec Scout and complemented with a nice assortment of keys, bugs, paddles, and a special homemade Cootie that will be highlighted in our upcoming Keys 2009 column. Watch for it.

amateur radio and her community, yet her home owner's association deed restrictions are so strict that they state "no outside antennas allowed" and "if" the HOA approves installation of a flagpole, it could not be used to hide an antenna. Isn't it interesting how exclusion of amateur radio antennas is directly proportional to an area's potential need for reliable and emergency communications when Mother Nature unleashes her wrath?

Photo D– Photographing a doublet strung in an attic is a formidable challenge, but Joan Jones, W4JMJ, accomplished the feat to show us part of her secret pride. Like N6SL and other amateurs who are sidestepping antenna restrictions, she too confirms low-height antennas can reach out surprisingly well. (Photo courtesy of W4JMJ)

LDG ELECTRONICS

The #1 Line of Autotuners

Z-100

Designed from the ground up to provide 100 watt power handling in a small, lightweight package. Perfect for portable as well as sitting on your desk in your shack! The Z-100 will tune with 0.1 to 125 watts (50 watts on 6 meters), making it an excellent choice for almost any radio or operating style. Backpackers and QRP operators will appreciate the latching relays. Power can be removed from the tuner once you have tuned. Additionally, when it's not tuning, it draws nearly zero amps.

Suggested Price $149

NEW! Z-817

The ultimate autotuner for QRP radios including the Yaesu FT-817(D). Tuning is simple; one button push on the tuner is all that is needed - the Z-817 takes care of the rest. It will switch to PKT mode, transmit a carrier, tune the tuner, then restore the radio to the previous mode! 2000 memories cover 160 through 6 meters. The Z-817 will also function as a general purpose antenna tuner with other QRP radios. Just transmit a carrier and press the tune button on the tuner. Powered by four AA internal Alkaline batteries (not included), so there are no additional cables required. A coax jumper cable is also induced for fast hook up. ***Suggested Price $129.99.***

AT-200Pro

The AT-200 features LDG's new "3-D memory system" allowing up to eight antenna settings to be stored for each frequency. Handles up to 250 watts SSB or CW on 1.8 – 30 MHz, and 100 watts on 54 MHz (including 6 meters). Rugged and easy-to-read LED bar graphs show power and SWR, and a function key on the front panel allows you to access data such as mode and status. All cables included. ***Suggested Price $249***

NEW! KT-100

LDG's first dedicated autotuner for Kenwood Amateur transceivers. Easy to use - just right for an AT-300 compatible Kenwood transceiver. 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***

radio not included

AT-7000

The AT-7000 is the ideal tuner for IC-7000 & other Icom Radios: Covers all frequencies from 1.8–54 MHz (including 6 meters), and will automatically match your antenna. Requires just 0.1W for operation, but will handle up to 125W (100 W on 6 m), making it suitable for everything from QRP (IC- 703 Plus) to a typical 100 W Icom transceiver. All cables included. ***Suggested Price $169***

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A warranty is a promise, a promise of quality and service life. The #1 line of autotuners in the industry now comes standard with a no-questions-asked 2-Year Transferable Warranty.

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Our customers tell us we do the right things to meet their support expectations. Customers feel good about owning LDG products because service life and support is something they can count on - even when they are ready to sell a unit to another ham.

Now With 2 Year Transferable Warranty!

AT-100Pro

This desktop tuner covers all frequencies from 1.8 – 54 MHz (including 6 meters), and will automatically match your antenna in no time. It features a two-position antenna switch, allowing you to switch instantly between two antennas. The AT-100Pro requires just 1 watt for operation, but will handle up to 125 watts. All cables included.

Suggested Price $219

radio not included

AT-897 for the Yaesu FT-897

If you own a Yaesu FT-897 and want a broad range automatic antenna tuner, look no further! The AT-897 Autotuner mounts on the side of your FT-897 just like the original equipment. We even added the ability to mount the "feet" on the side of the tuner so when you're transporting your rig by the handle, you can safely set it down and not worry about scratching the case. The AT-897 takes power directly from the CAT port of the FT-897 and provides a second CAT port on the back of the tuner so hooking up another CAT device couldn't be easier. ***Suggested Price$199***

radio not included

New FT Meter

LDG's new version of its popular FT-Meter presents a lush, highly readable 2.5" meter face with calibrated scales for signal strength and discriminator reading on receive, and power output, SWR, modulation, ALC action and supply voltage on transmit. Each function is selectable from the radio's menu. On/Off switch for the light. • LED back-illuminated in cool, high-visibility blue.• Calibration adjustment is on the back of the unit; makes it easy to calibrate.• Backlight brightness adjustment is also on the back of the unit; so you can set the backlight to your desired level brightness. The FT-Meter comes fully assembled and ready to go; just plug it into the radio and you're in the picture like never before.

Still Only $49

Z-11Pro

The original portable Z-11 was one of LDG's most popular tuners, accompanying adventurous hams to their backyards, or to the ends of the earth. Now meet the Z-11Pro, everything you always wanted in a small, portable tuner. Designed from the ground up for battery operation. Only 5" x 7.7" x 1.5", and weighing only 1.5 pounds, it handles 0.1 to 125 watts, making it ideal for both QRP and standard 100 watt transceivers from 160 - 6 meters.

"With 8,000 memories in LDG's exclusive "3-D Memory" array, the Z-11Pro uses LDG's state-of-the-art processor-controlled Switched-L tuning network. It will match dipoles, verticals, inverted-Vs or virtually any coax-fed antenna. With an optional LDG balun, it will also match longwires or antennas fed with ladder-line. All cables included.

Suggested Price $179

See AT-1000Pro Review in Nov. '08 CQ

NEW! AT-1000Pro

Building on the success of the AT-1000, LDG Electronics has refined and expanded its 1KW tuner. The AT-1000Pro has an Automode that automatically starts a tuning cycle when the SWR exceeds a limit you set. Operates at any power level between 5 and 1,000 watts peak. RF Relay protection software prevents tuning at greater than 125 watts. Tunes from 1.8 to 54.0 MHz (inc. 6 meters), with tuning time usually under 4 seconds, transmitting near a frequency with stored tuning parameters, under 0.2 seconds. 2000 memories. 2 Antenna connections. All cables included.

Suggested Price $599

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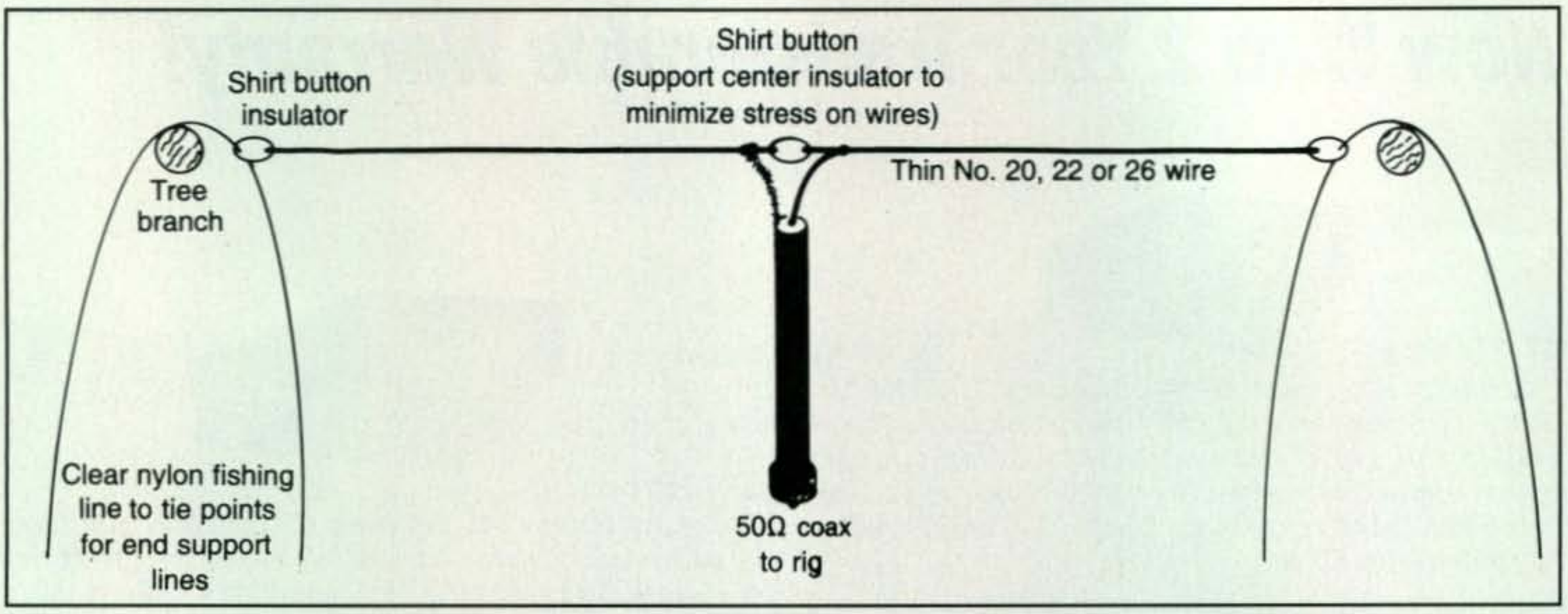


Fig. 2– Outline for home-assembling an "almost invisible" wire antenna. A basic dipole is shown, but concepts of using ultra-thin wire, shirt buttons, and clear fishing line can be applied to many other types of doublets, End Fed Zepps, etc.

Rather than giving up, Joan installed a multiband doublet in her attic, and it is working out quite well. Her on-the-air time has been limited, but she has made a fair number of DX contacts—and the number is growing almost daily. There is an upside here, too. Joan (and non-ham hubby) have a getaway cabin complete with outdoor antennas installed nice and high in Georgia, and she can also use her brother's station when visiting him in Canada. We understand that Joan also recently became District Four spokesperson for the YLRL, so expect to hear and read more about and from this dynamic YL in the future.

Antenna Notes

Every case of hamming from the shadows is similar in that it requires a low-profile antenna and every case differs in the type of antenna filling a particular need at a particular location. The more you know about various types or designs of antennas, the better you are situated to survive antenna restrictions. I personally feel whether that antenna is comprised of wire or aluminum, making it "full size" ensures top transmitted signal strength and maximum receive signal capture area. In the case of "lower band" antennas, that equates to assembling them using thin insulated

Surviving CC&Rs

Maintaining a Low Profile

Two major factors must be addressed for successfully hamming from the shadows: using an unnoticed or "transparent to untrained eyes" antenna and ensuring you are not discovered through interference to home electronics. Items falling in this category include stereos, surround-sound TV systems, programmable heat/cooling thermostats, inexpensive telephones, and the worst items of all, touch lamps. Knowledge is everything here. A wealth of superb "must read" information is available at <www.arrl.org/news/rfi/neighbors.html>, <www.arrl.org/tis/info/rfiaudio.html>, and <www.arrl.org/tis/info/rfitel.html>. Print out copies of these approximately 18 pages, add a copy of the *ARRL RF Interference Handbook*, read all carefully, and keep them handy for quick future reference if and when you are confronted with interference complaints. Be sure your own house (TV, stereo, telephones, etc.) is clean of interference from your rig. Modern transceivers and linear amplifiers are usually spectrally "clean" and strong cable-TV signals usually deliver such high-level signals to TVs. Cases of old-style TV interference have become rather scarce. Today's problems typically result from sheer induction-field RF overload.

You minimize induction field overload and open-air coupling of RF energy by installing your antenna(s) far from, and at right angles to, as many utility-related wires—seen and hidden in walls—as possible. Using no more than 100 watts until ensuring neighbors are not experiencing sheer induction-field RF overload is also encouraged. Remember, it is much more difficult to survive an interference complaint than it is to avoid the possibility of overload and interference.

Induction Fields The Straight Facts

How far from your antenna can induction-field radiation and the potential for RF interference extend—20 feet, 200 feet, 2 miles? Farther? Our good friend Bob Rumsey, KZ5R, conducted some noteworthy studies and found the usual induction field (the area in which unfiltered stereos, computer speakers, TV surround-sound systems, touch lamps, etc., can suffer interference) is 20 or 25 feet for 100-watt signals. If you run approximately 400 watts, the induction field increases to roughly 200 feet. If you run 800 or 1000 watts, the induction field increases to around 500 feet. Knowing these facts, plus the approximate distance to your neighbors' electronics (and adding several feet for a margin of error) indicates the approximate maximum power you can run in an average situation. There are few set guidelines in this uncharted area, and I heartily encourage having a double handful of clamp-on 31 Mix-type toroids ready to snap on power and speaker lines of appliances experiencing RFI. Suitable toroids may be a challenge to find. We found a good supply at <www.radioworks.com>. Watch for more RFI-avoiding notes, plus details of Rumsey's new RFI-minimizing baluns (www.balundesigns.com) in Part 7 next month.

RFI: Expect the Unexpected

A recently noted case of TVI seemed to defy correction, even with the installation of snap-on toroids and a high-pass filter. Closer investigation revealed a haphazardly installed VCR with a continuously active broadband preamp connected to the TV's antenna terminals. The owner was using the VCR's built-in tuner as a remote-controlled channel selector for the TV. The area's TV signals were strong and the broadband preamp was essentially unnecessary, but it could not be bypassed without internal mods (a liability "no-no" on neighbors' electronics!). Therefore, the amateur generously purchased a new deluxe (and RFI-proof!) VCR and gave it to the family. RFI was eliminated and everyone came out a winner. Unusual problems occasionally require unusual solutions.

Photo E– One of the reasons Joan, W4JMJ, enjoys HFing under limited circumstances is her gear: a new Yaesu FT-2000 with a deluxe speaker console and other special extras. Joan recently joined Skywarn, received ARRL VE accreditation, became District Four spokesperson for YLRL, and began practicing CW and investigating digital modes. Truly a little HFing encouragement goes a long way. (Photo courtesy of W4JMJ)

wire in a color to match or blend in with the background and using shirt buttons for insulators, plus clear fishing line for end supports (fig. 2). Installed with the feed point supported and obscure makes the antenna almost invisible to untrained eyes. Wimpy? No! Thin wire works just as well as thick wire for power levels up to 100 watts—maybe more—and that is the ideal "max power" for hamming from the shadows.

I have mentioned the "End Fed Z" from <www.parelectronics.com> in a previous column, but it warrants repeating at this point. The antenna uses a half-wavelength of wire as a radiator, and it is coax-fed through a small impedance matching box at one end. Hide the box near a window sill or roof eave, substitute your own thin-wire radiator with fishing-line end tie, and you're in like Flint. Place the matchbox near ground level, stretch the half-wave radiator vertically or sloping and you have a romping half-wave vertical—and the high feed-point impedance of a half-wave vertical reduces the necessity for buried radials. You can also install the End Fed Z as an inverted-L or fully horizontal and get very good results. These monoband antennas are presently sold by <www.universal-radio.com>; phone 1-800-431-3939. Check them out!

Also, MFJ Enterprises recently introduced replacement attic vents with feed-through connectors for hiding coax lines (photo F). Combine those vents with our "almost invisible" antenna ideas, and a world of ideas in creative antennas—center fed or end fed, lying on a roof, stretched to a tree, or placed under an eave—become appealing. More details are available at <www.mfjenterprises.com>.

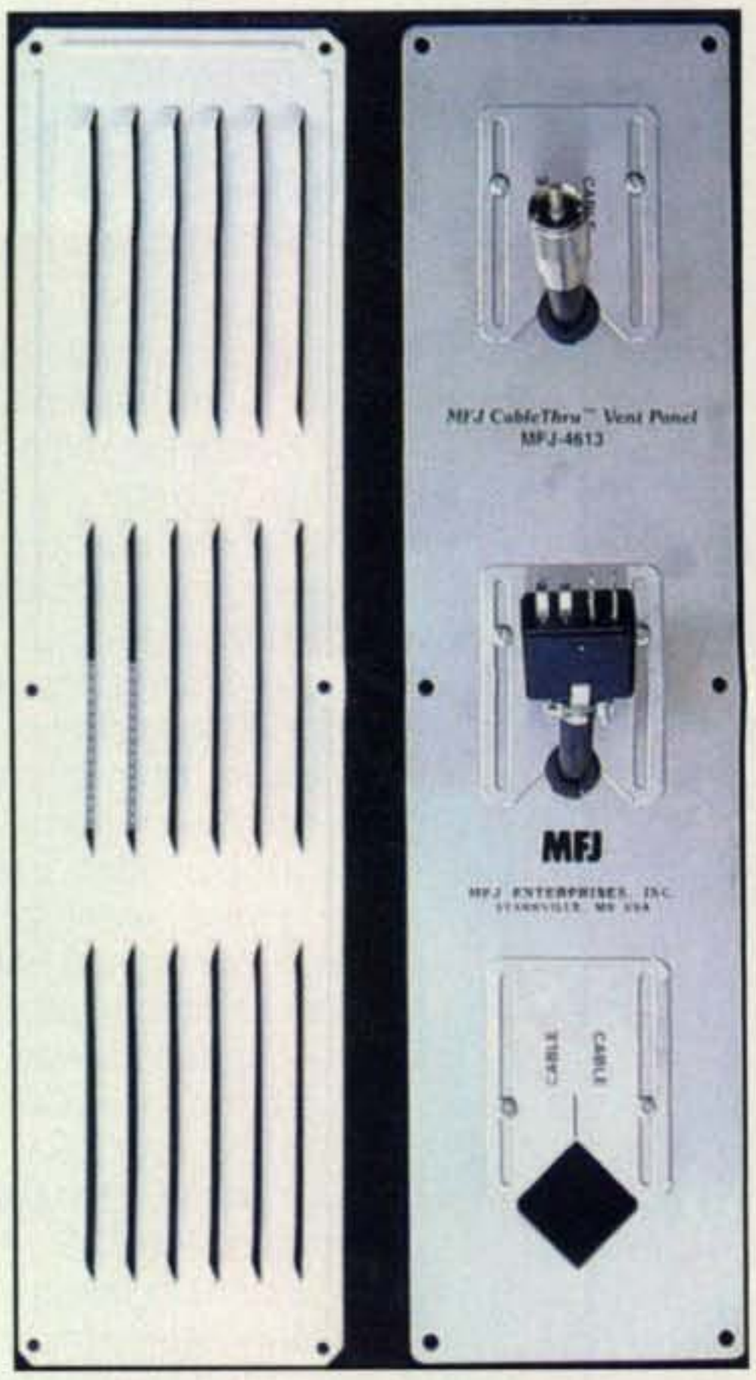


Photo F– Looking for a slick and clever means of routing your station's transmission line to an under-eaves or roof-hidden antenna? MFJ's new Eave/Soffit Replacement Air Vent Plates fill the bill admirably. They are available in a half-vent three-cable version (like model 4613 shown here) and a full vent replacement six-cable version (model 4616, not shown). Details at <www.mfjenterprises.com>.

Quick Wrap-up

We have arrived at the closing wire, and there are still more ideas, notes, and tales of successful hamming from the shadows to share with you. Stay tuned for Part 7 next month and never allow unfortunate circumstances to annihilate your enthusiasm for amateur radio. If you, too, are hamming amidst handicaps, we would like to hear of your plight and your solutions to antenna and RFI entanglements. We all learn and grow through such sharing of knowledge, so drop me an e-mail or postal note at the address shown on the first page of this column soon. 73, Dave, K4TWJ

mobiling

BY JEFF REINHARDT,* AA6JR

Costs!

At the time this is being written (mid-December), a most welcome drop in fuel prices is being experienced across the U.S. Where I live in southern California, prices crested near $5.00 per gallon during the summer. Now we're seeing some locations selling fuel in the $1.70 per gallon range.

Why is this important? Fuel costs and availability will likely play a role in the selection of your next vehicle, from a micro-compact car up through a large motor home. There's also a good chance you'll consider a new radio for your next vehicle and you'll want to make a good choice there as well. My crystal ball is a bit fuzzy on the future of fuel commodities, but for now mobile radio gear is reasonably priced. There may be changes coming there, however.

In October 2007 the Japanese yen was priced just below 120 yen to the dollar. As this is being written, the U.S. dollar only brings 91.35 yen. If this pattern holds, items imported from Japan will likely cost more dollars. In short, if you're considering the purchase of new radio gear, or just about anything from Japan, it may be better to buy sooner rather than later. Of course, all these figures may change overnight, as the financial marketplaces have been very volatile. Chalk it all up to a global economy that is going through major adjustments that will affect you and me for some time into the future.

*5904 Lake Lindero Drive, Agoura Hills, CA 91301
e-mail: <aa6jr@cq-amateur-radio.com>

Photo A– A 1950s' era marketer might have referred to this as "Box 'o Radio to Go." It's a nicely designed, "all in one," portable package of power supply, radio, external speaker, and easy power and antenna connections assembled by Harry, KG6OTW. (KD6ARA photo)

More Costs!

The decline in fuel prices is welcome to at least one group of mobile operators, the County Hunters. In the past, these dedicated folks would often go out of their way to get an isolated county for award enthusiasts, and very often wayyyyy out of the way for that elusive "last one" for a ham who needed it. While some County Hunters drive small vehicles, more than a few operate larger rigs, including motor homes—just another way fuel costs can impact our on-the-air activities. Special thanks go to those operators who have gone the "extra mile" to help a fellow paper-chaser. Of course, now some sunspots wouldn't hurt either!

More on Bluetooth®

Alan Applegate, KØBG, wrote to comment on the November "Mobiling" column. He had additional thoughts on Bluetooth® and hands-free devices for safer mobile operating. Please understand, the information below was provided by Alan and reflects his observations on the items mentioned. I am merely passing along the information.

(With some Bluetooth units) …there is an annoying delay between pushing the PTT and actually transmitting. The delay is inherent to some degree, but the headset selection can be the real killer, or saving grace as the case may be.

For the record, the interface I am currently using is the TalkSafe® from RPF. It is sold by AES and several other prominent amateur retailers.

To date, I've spent about $300 purchasing several different headsets, including a free one sent to me by a friend in Holland. For the most part, those tiny little ones that fit into the ear suffer in several different ways. First, their delay is all but terminal. One nondescript unit from RadioShack takes almost 4 seconds to switch from receive to transmit, and slightly longer back to receive!

The Blue Parrot series is a lot faster, and the transfer time is about 600 to 700 ms, depending on how far away from the TalkSafe you are. Further, longer, closer, quicker.

The Bluesonic I mention on my web page is actually a bit faster than the Blue Parrot on transmit, and a bit slower on receive. However, the distance covered is rated half that of the Blue Parrot.

Alan adds that switching speeds between T/R can have a great impact on your operations, especially if you're participating in roundtable discussions. Alan provides much more information at his website, <www.K0BG.com>, which is devoted to many different aspects of mobile operations. It appears to be a very comprehensive site and stands as a great example of "hams helping hams." Thanks, Alan!

Portable or Mobile?

Long ago the FCC was quite persnickety about mobile and portable operations. Thank goodness the regulations caught up with technology and we no longer need to inform "Uncle Charlie" about our mobile operations, keep logs, or get a permit to go "portable," as in operating from a location away from home.

There has also been a thinning line between portable and mobile rigs. Many of today's vehicles have little room for a permanent installation, so hams often create a "to go" package of gear that's "easy in, easy out." Another good reason for a "portable/mobile" package is security; easy removal is better done by the ham who owns and wants to keep the gear. In other instances, a ham may own several vehicles, but the ham radio budget can only support equipment for one. Through the years we have seen many different and creative ways to package gear for a quick installation or removal from a vehicle.

During a recent visit to Ham Radio Outlet near "Beautiful Downtown Burbank" California, Eric (the store manager) showed me a nicely packaged mobile/portable setup put together by Harry Almada, KG6OTW. Included in the rugged case is a rig, power supply, antenna, and external power connections (see photos).

While packages such as Harry's are not completely unique, they do represent a thoughtful way to assemble and use gear in a number of different ways, including mobile, emergency-response, and after-disaster communications services. In one small case you have the capability to get on the air quickly using 12-VDC or 120-VAC power sources.

In a conversation with your author,

Photo B– Note the radio in this package has a front-firing speaker, saving the space that would otherwise be devoted to an external speaker. (KG6OTW photo)

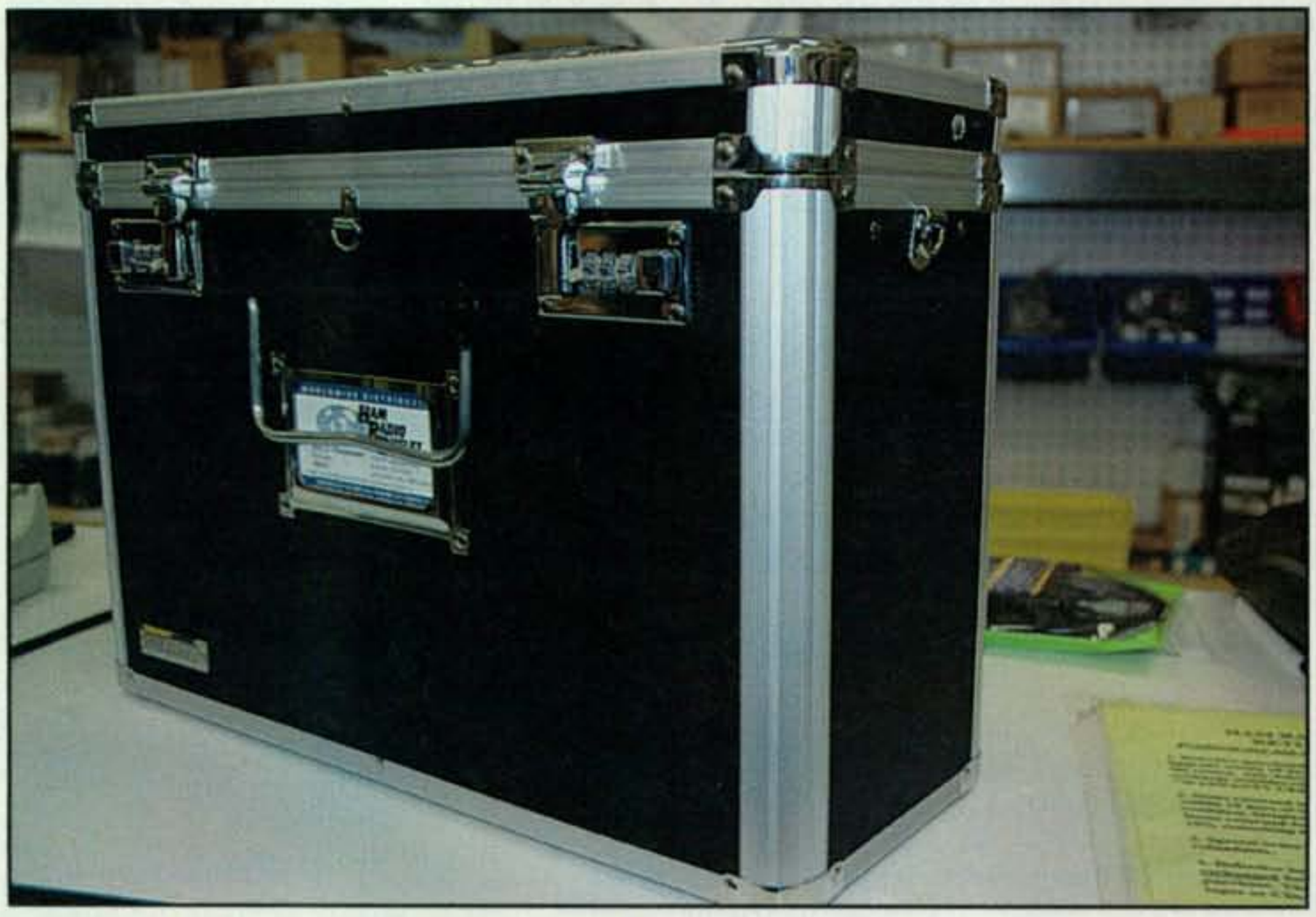


Photo C– A rugged case protects the radio gear and power supply when storing or shipping. (KD6ARA photo)

Harry said he's not doing anything special, but he is creating packages that are well-built and free of visible loose wires. In the examples shown in the photos, there's a large aluminum plate inside to support and separate the gear, while it also acts as a heat sink.

Harry is not a radio dealer and he does not have a website; he creates his packages to the equipment specifications of those who would like to own such a unit. So far he has made several for professional emergency responders as well as hams. If you'd like more information on Harry's creations, you may call him at 562-868-1691 or e-mail him at <offroadrider77@aol.com>.

Arizona Cracks Down on Crime

Arizona hams should be aware that the state is cracking down on license-plate frames that might obscure the word "Arizona" at the top of the plate. Should you be found guilty of this transgression against humanity, it could cost $135 to proclaim "Amateur Radio" if your accessory license-plate frame is too large. Do you feel safer now? I know I do.

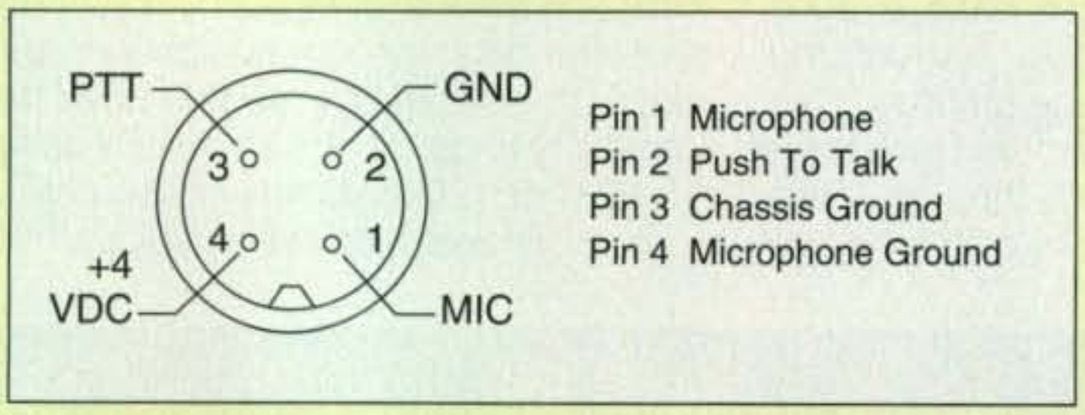
I guess the state wants everyone to have an opportunity to know which of the 50 states in the union had its prisoners produce that fine work of art.

Your Contributions Welcome!

As always, I welcome your contributions to this column on mobile operations, installations, and those handy "tips & tricks" that help us keep one step ahead of auto designers and installation challenges. Please send e-mail and digital photos to the address shown on the first page of the column.

Let's hope those fuel costs remain low and the winter weather is not too difficult. Happy mobiling!

73, Jeff, AA6JR



Pin 1 Microphone
Pin 2 Push To Talk
Pin 3 Chassis Ground
Pin 4 Microphone Ground

Oops

We had a "disconnect" in our November article "Talk is Cheap" about using a speaker from a telephone handset as a communications microphone. The top diagram in Figure 1, showing the typical connections for a 4-pin mic plug, has a disagreement between the drawing and the text. The drawing is correct. The correct pinout is as follows:

Pin 1 – Microphone
Pin 2 – Chassis Ground
Pin 3 – Push To Talk
Pin 4 – Microphone Ground

You should always check the pinouts for your specific radio regardless, as there may be some variations.

Out-of-Date Dates

The Calendar of Events in January's "Contesting" column has some incorrect dates. All of the January dates are correct, but most of the February contest dates are for 2008. All of the dates in this month's contesting Calendar of Events are correct. We regret any inconvenience.

Looking Ahead in CQ

Here are some of the articles we're working on for upcoming issues of *CQ*:

- Go ATV With Discarded Analog TVs, by Gordon West, WB6NOA
- Creating a Ham Radio Legacy, by Emily Stewart, KCØPTL
- Back to the Future – an ARISS Story, by Bob Hopkins, WB2UDC
- Your Next Mobile Rig May Be Your Cell Phone! by Bill Kearns, WB6JAR
- An Invisible Mobile Installation, by Scott Williamson, VY1SW
- A Young Ham at 88, by Dennis McCarthy, AAØA
- *CQ* Interviews: International Tennis Hall of Fame Director Mark Stenning, AA1AC
- *CQ* Interviews: Nobel Prize Winner Joe Taylor, K1JT

Do you have a ham radio story to tell? See our writers' guidelines on the CQ website at <http://www.cq-amateur-radio.com/guide.html>.

Podcasts

BY DON ROTOLO,* N2IRZ

Information is at the heart of communications, and sharing information has been one of the tenets of amateur radio since the beginning. Hiram Percy Maxim, known as "the Father of Organized Amateur Radio" recognized this when he created *QST*, and we carry on this tradition with every club newsletter. Ever since Tucson Amateur Packet Radio (TAPR) went to an online newsletter in 2001, more and more clubs—both within and outside amateur radio—have moved to online media. This move not only saves costs (postage and printing are expensive!) but affords for higher quality (color is free, for example) and the potential for expanded offerings (such as an embedded URL hyperlink). Thus, we come to a fairly recent phenomenon, the *Podcast.*

Surely you have heard of the iPod, the digital audio player that has taken over the market. Well, Apple iPods (and their generic non-Apple cousins) play a standard compressed audio format known as MP3, which is the audio layer (layer 3) of an MPEG (Motion Pictures Expert Group) encoded file. The term *Podcast* combines the words iPod and Broadcast, bringing us a new way to communicate.

The basic idea is similar to that of a commercial radio broadcast, in which a studio production is sent out to be heard by the general public. Local programs can reach the area covered by the radio station, while syndicated programs reach several markets. Podcasts, in comparison, are downloaded by interested listeners worldwide, but using more of a "pull" model in which listeners pull the broadcast, as opposed to a "push" model, as with commercial radio.

Podcasts have reached mainstream business. I work for a major luxury automobile importer, and we use Podcasts to reach the sales force with regular information that (we hope) will help dealers sell more cars, while the after-sales division uses them for systems training. Hams are leveraging this technology for their own uses as well.

Visit <http://www.hamradioclass.org/> to download complete amateur radio licensing classes for Technician and General. Of course, you can buy these classes on CD for a nominal fee, or offer a donation to support the free downloads, but the point is that distribution to a very specific and interested audience is almost without costs, and so Podcasts are far less expensive to distribute than even a postcard.

Taking a step sideways for a moment, let's talk about using and creating Podcasts. As a user, you need an MP3 player such as an iPod or even your home computer equipped with any of several MP3-capable programs. iTunes is one of the leaders, a free download from Apple at <http://www.apple.com/itunes/>. Next you need an internet connection so you can download the Podcast file and some way to put that file onto your MP3 player. Then, just like listening to a song, just press play and you're all set.

Creating Podcasts is nearly as simple. While the exact process depends on your setup, basically you record whatever you want to say onto your computer, convert it to MP3 format, and post it where others can download it. Recording requires a microphone, which can be found at any computer store from under $20. Using some sound-recording software—perhaps Windows® Sound Recorder, which comes free with Windows®, or Audacity, an excellent freeware program that includes editing capabilities (download it at <http://audacity.sourceforge.net/>)—you record your program and convert it to MP3 format. You then create an RSS (Really Simple Syndication) file to allow automated downloads and post it all to a server on the web. For some detailed instructions, I found <http://radio.about.com/od/podcastin1/a/aa030805a.htm> to be very helpful, including some free training classes in audio editing.

Let's talk a little about the technology behind it all. For starters, a brief explanation of RSS is in order. Briefly, RSS is a way for potential listeners to "subscribe," or automate the download of interesting Podcasts that they want whenever a new one is posted. On their own computer, listeners configure the RSS feed utility in their browsers to look for and download certain Podcast "feeds," and then they just synch up (load) the files into their MP3 player every so often. While one can also download a Podcast manually, the "weekly show" format of most Podcasts lends itself to regular automated downloads.

The MP3 format is a lossy compression scheme that allows for an up to 12:1 ratio. Some listeners can perceive slight quality loss at the highest compression ratios, especially for music files. However, for voice information the distortion is almost

A collection of iPods which can be used to listen to Podcasts on the go. Apple's iTunes software, a free download, simplifies the tasks of subscribing to and downloading Podcasts, and plays them as well.

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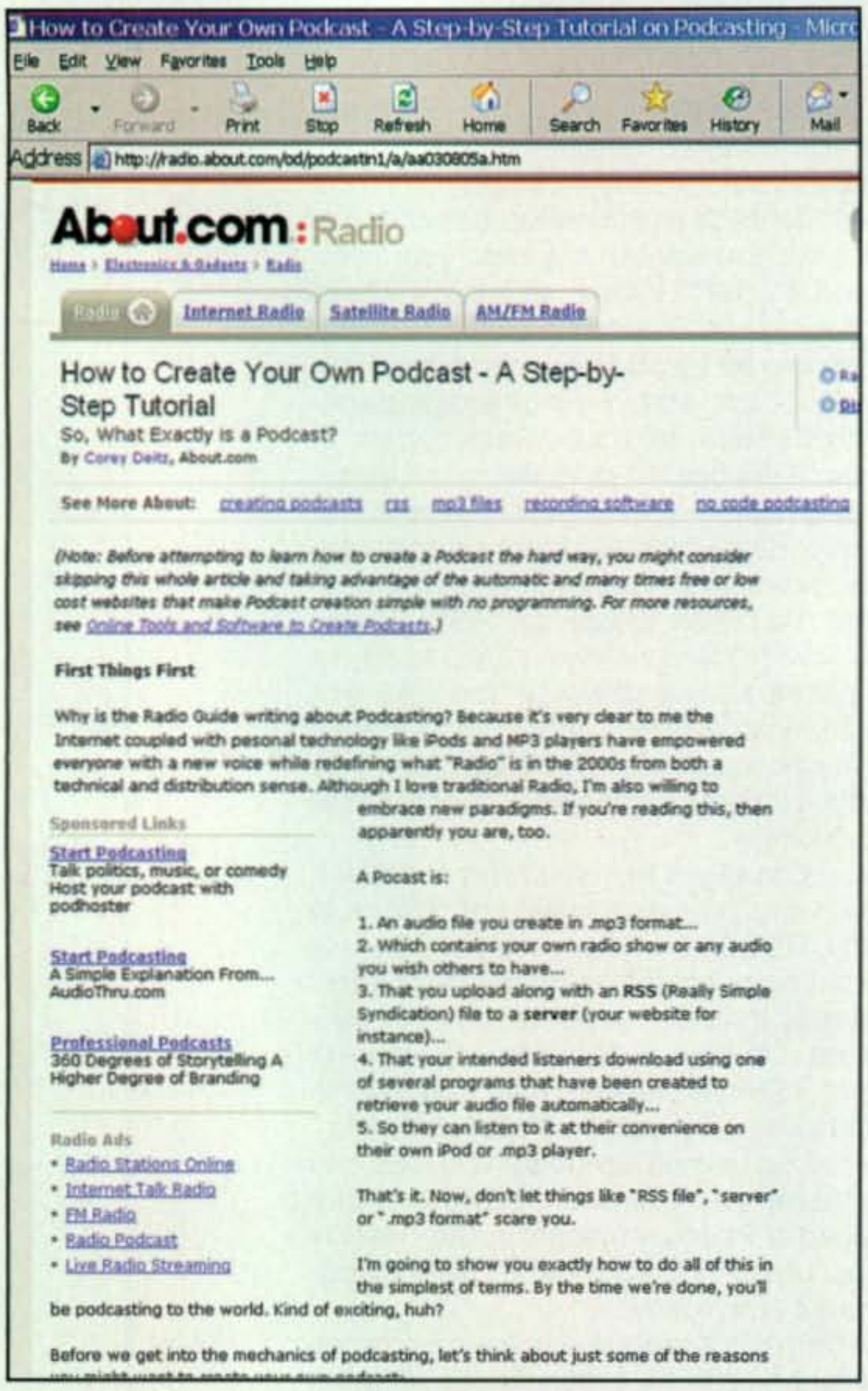

The Podcasting how-to page at About.com. This is a great resource for anyone wanting to learn how to create their own Podcasts with clear, simple, and manageable instructions. Although most people listen rather than create, knowing how is a skill that could come in handy someday.

undetectable. For example, the 20-minute ARRL News Podcast is a relatively small 2.4 MB download, about the same size as The Beatles' under-three-minute song "Yellow Submarine" as found on an audio CD.

As with most popular software, there are several ways to skin this cat. The suggestions above are some of the more popular applications being used today, but they are by no means the only ones available. Again, the internet is your friend here. Search for what you want to do; the resources available are plentiful.

OK, so now that we know about Podcasts, what do they have to do with ham radio? To start with, the amount of information available is staggering. Not only are there licensing courses and regular news Podcasts, but special-interest groups and even clubs are creating and distributing their own Podcasts.

For example, search on Google for "Amateur Radio Podcast" to see about a half-million hits. Some of the more popular ones that show up are the Amateur Radio Newsline <http://www.arnewsline.org/> for ham-related news and information, one sponsored by DXZone at <http://www.dxzone.com/catalog/Internet_and_Radio/Podcast/> with links to several Podcasts such as ARRL Audio News, the Solder Smoke Podcast, the DX Podcast, and This Week in Amateur Radio, and the Radio Society of Great Britain's weekly news Podcast at <http://www.rsgb.org/news/gb2rsaudio.php>.

Does your local club have a Podcast? You can record your regular meetings and produce special reports on certain club activities and local happenings—just like your newsletter, but spoken instead of written. Some members may not be comfortable with this form of communication, the whole MP3 player and file download thing, but I think that with a little encouragement and hand-holding, even the most technophobic ham will learn to welcome these reports. After all, we're a (mostly) audio-based bunch, right?

The costs, or lack thereof, are another incentive for your local club. I saw a generic MP3 player on sale at Staples this week for under $25, and even less expensive devices can be had. Therefore, listeners aren't really laying out significant money to get on board, especially if they just want to listen on their computer, since iTunes is free. Production and distribution costs are almost zero, certainly far less than just the ink on your monthly newsletter, never mind paper and postage. Also, your club members can listen almost anywhere—while commuting (my car has an iPod interface), performing chores, relaxing, or during many other things.

Podcasts are also for those of you who have something to say. Steve Antoine, WD8LQB, created a 10-part 5-wpm Morse Code course. Jerry Taylor, KDØBIK, posts a new edition of *The Practical Amateur Radio Podcast* every week or three. Russ Woodman, K5TUX, has released the first few episodes of "Linux in the Ham Shack." Surely there is something you want to share with the rest of us. Maybe an old story, a practical tip, a description of your shack, or some aspect of radio you know well and would like to share? If so, consider creating your first Podcast, even if just for the bragging rights.

Digital Modes

Next month I'll be writing about packet radio—what hardware you'll need and some of the software available. As a precursor to that topic, I'm going to briefly touch upon why PSK31 and similar modes might not be the best choice for certain types of messages.

The digital modes really prove their worth in emergency communications (EmComm). In the olden days, Morse code (CW) and voice were the ways we communicated, CW having the advantage when reception conditions were difficult. Radio teletype (RTTY) was also used, but again couldn't compete in poor signal conditions (lots of errors and strange characters printing). Then came the computer revolution, and with it a need for perfect copy—absolutely no tolerance for any errors, anywhere in the message.

Did hams (or their handlers) suddenly become more picky? No, the tools did. Computer files (and internet e-mail messages) rely on a very rigid set of formatting rules, where even one single misplaced, missing, or incorrect character in a file can cause the whole file to become unreadable.

This brings us to the main topic: errors. When communications between humans occurs, we have a unique and powerful ability for error correction. A slightly garbled message is usually understandable, because we often can figure out what word was intended, even if one or two letters are incorrect. This does not carry over to relatively random character sets, such as a callsign. Certainly, there comes a point when even the word is unintelligible.

CQ's "Getting Started in Packet Radio" video has been combined with the Amateur Satellite and VHF "Getting Started" videos and remastered into DVD format. The video covers all aspects of packet radio operations, from connecting the equipment to using the network and bulletin boards.

Digital TV is Here

As we discussed in the October 2008 "Digital Connection," analog NTSC Television broadcast signals will cease forever on February 17, 2009. If you receive your TV programming over the air using an antenna, and you don't have an ATSC-compatible TV or converter box, you won't have any TV service on February 18th. In a test conducted in the Wilmington, North Carolina market, the majority of callers to a help line were somewhat prepared but still having problems. What was the most common issue? The antenna.

ATSC digital signals require about 25–35% greater signal strength for good performance as compared to NTSC analog signals. Combine that with the fact that most broadcasters are moving up-spectrum to the UHF TV band, where the old VHF antennas aren't very efficient, and you have a lot of angry and confused viewers. Not only should you yourself be prepared, but be ready to assist your neighbors: Hams have the technical expertise to solve antenna problems, offer good advice, and generally elevate the public's opinions about amateur radio. Take advantage of this unique opportunity to serve your family, friends, and community. *(See WB6NOA's Op-Ed on this subject elsewhere in this issue.—ed.)*

Computers don't have this reasoning and error detection and correction ability—or at least it's not nearly as good as our human ability. However, since our mechanical friends get so upset at even the slightest error, we use mathematical constructs and methods to help them detect and even correct errors down to the data bit level, at the cost of a somewhat longer message. For example, if we send every letter of a word twice instead of once, and the kinds of errors expected are where one letter gets changed on occasion, chances are we'd figure out which of the pair of letters would be the wrong one, but we'd be doubling the length of the message.

That means for communications between humans it is perfectly acceptable to employ methods that are *lossy*. By that I mean where an error can creep in and not be corrected in any way. For computers, however, communications must be *lossless*: All errors are at least detected and either corrected, or the communication is rejected for that error. Lossy radio communications modes include voice, CW, PSK31, RTTY, and others. Lossless modes include PACTOR, packet (at least in "connected" mode), WinDRM, and D-Star.

For EmComm, perhaps the very first responders might be just fine with lossy methods (probably voice), but as an EmComm situation unfolds, there is a greater need for tactical communications such as lists of people, reports of conditions and issues, and factual data. It is at this point where lossless communications take on a greater value. Today, most EmComm involves radio only for the "first hop"—from the immediate area to a gateway of sorts, after which the communications pass over wires. Consider Winlink 2000 (WL2k) as an example: Radio to a gateway, then internet the rest of the way.

However, participation in WL2k can sometimes be expensive. PacTOR III modems are expensive, for example, although the further development of WinMOR (see my December 2008 column, or the *Proceedings* of the 2008 ARRL/TAPR Digital Communications Conference) will certainly influence that equation. Thus, in several areas good old AX.25 packet radio is still in use, and in my opinion it is because of the cost associated with the alternatives.

As I mentioned, in the next column, April 2009, we'll take a close look at packet, particularly when used for messaging (as opposed to APRS , which is the majority of packet operations).

We'll focus on sound card software for AX.25 packet, along with operating techniques, since without some kind of introduction your packet experiences will be an exercise in frustration. CQ made a video (now available on DVD) on "Getting Started in Packet Radio" which is still applicable (and available) today to help with that, and in the past I have written about using packet, but at the risk of repeating, we'll take a closer look at that as well.

The idea is that with little more than a computer, radio, and ordinary soundcard radio interface, all of which you probably have, you can be prepared for whatever comes your way. My first forays into digital were on packet, so I'm looking forward to sharing with you—maybe even a Podcast on the subject. Until then . . . 73, Don, N2IRZ

weekender

BY JOHN B. KRUK, K3KR

Plumber's Special: A 20-Meter Ground Plane with Weatherproof Feed

I have been a ham for over 50 years and I enjoy building and modifying antennas. I even have a bit of an "antenna farm." After reviewing numerous articles on antennas, especially verticals—including portions of CQ's *Vertical Antenna Handbook*[1] and *W6SAI HF Antenna Handbook*[2], as well as two articles by Al Christman, K3LC [3,4],—I was prompted to reconstruct my 20-meter vertical, turning it into an elevated ground plane (see photo A), in the hope of enhancing DX efficiency.

The Antenna

Antenna construction started with standard (hard) copper water pipe. The bottom section is a 10-foot piece of 3/4-inch and the top a 20-foot piece of 1/2-inch. The top piece telescopes into the bottom piece to give a bit of added strength. (Refer to fig. 1 as we move along.)

To prepare the antenna for mounting using stand-offs, an anchor spacing of 30 inches was randomly picked, and we'll use several means to strengthen the mounting locations. On the 3/4-inch pipe, place two 3/4-inch copper couplings at each mounting spot and sweat solder them in place[5] (use couplings without internal stops; otherwise you will have to file off the stops). Now drill a 3/16-inch pilot hole through the couplings (and the pipe) at each mounting spot.

Next solder two 1/2-inch copper couplings to the half-inch pipe to match the above mounting spacing. Now slide the half-inch pipe into the 3/4-inch pipe, aligning the mounting locations (the fit may seem a bit loose at this time). Feed solder into the drilled holes and sweat solder the bushings (use plenty of solder so that you get a good bond and

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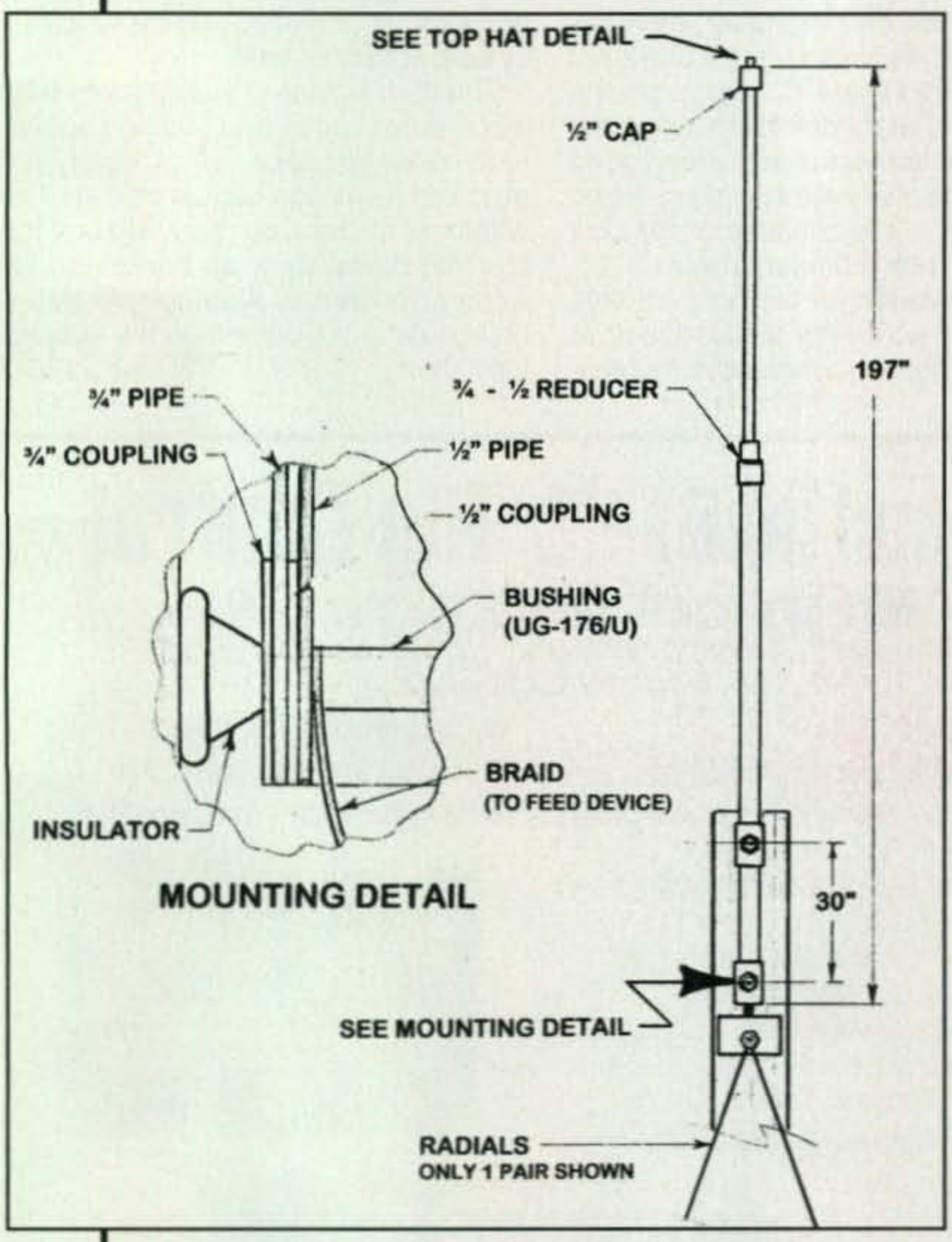

Fig. 1– Construction detail for K3KR's "Plumber's Special" 20-meter elevated ground-plane antenna.

Parts List

Plumbing Supplies:

20' piece 1/2" copper water pipe (tubing) Type L (Type "L"is preferred as it has a heavier wall than Type "M"; also some stores only stock 10' pipe sections, but you want a single 20' piece)

10' piece 3/4" copper water pipe (tubing) Type L

3/4" – 1/2" copper reducing fitting

1/2" copper cap

2 ea. 3/4" copper coupling (w/o stops)

2 ea. 1/2" copper coupling (w/o stops)

1 ea. 1-1/2" copper pipe cap

1 ea. 1-1/2" DWV (drain-waste-vent) ABS plastic plumbing pipe cap or PVC electrical conduit cap (DWV, PVC, ABS, etc., are plumbing terms. When you mention them, your hardware or building-supply store will know what you're looking for. For the insatiably curious, a search on the internet will turn up their deeper meanings.)

Miscellaneous Supplies:

1 ea. 8' *treated* 2×4

1 ea. SO-239 coax chassis connector

2 ea. UG-175 or UG-176 coax reducer, or similar brass bushing

Threaded brass rod or long brass machine screws (1/4-20 thread)

Radial wire (about 135' if you are going to use eight radials). This can be anything from #12 to #18 gauge copper, stranded or solid, insulated or bare).

Top-hat material (brass rod, brazing rod, salvaged surplus whip antenna; I used Maxrad # MHBL-118 antenna rods at 0.062" dia.)

2 ea. "feed-through" or "stand-off" insulators

Nylon string, mason line, or similar (to anchor the ends of the radials)

Miscellaneous "non-critical" hardware as mentioned in the article (check your junk box, and don't be afraid to substitute or improvise)

Tools:

Drill & bits

Screwdriver

Soldering gun

Propane torch

Pliers and/or wrenches

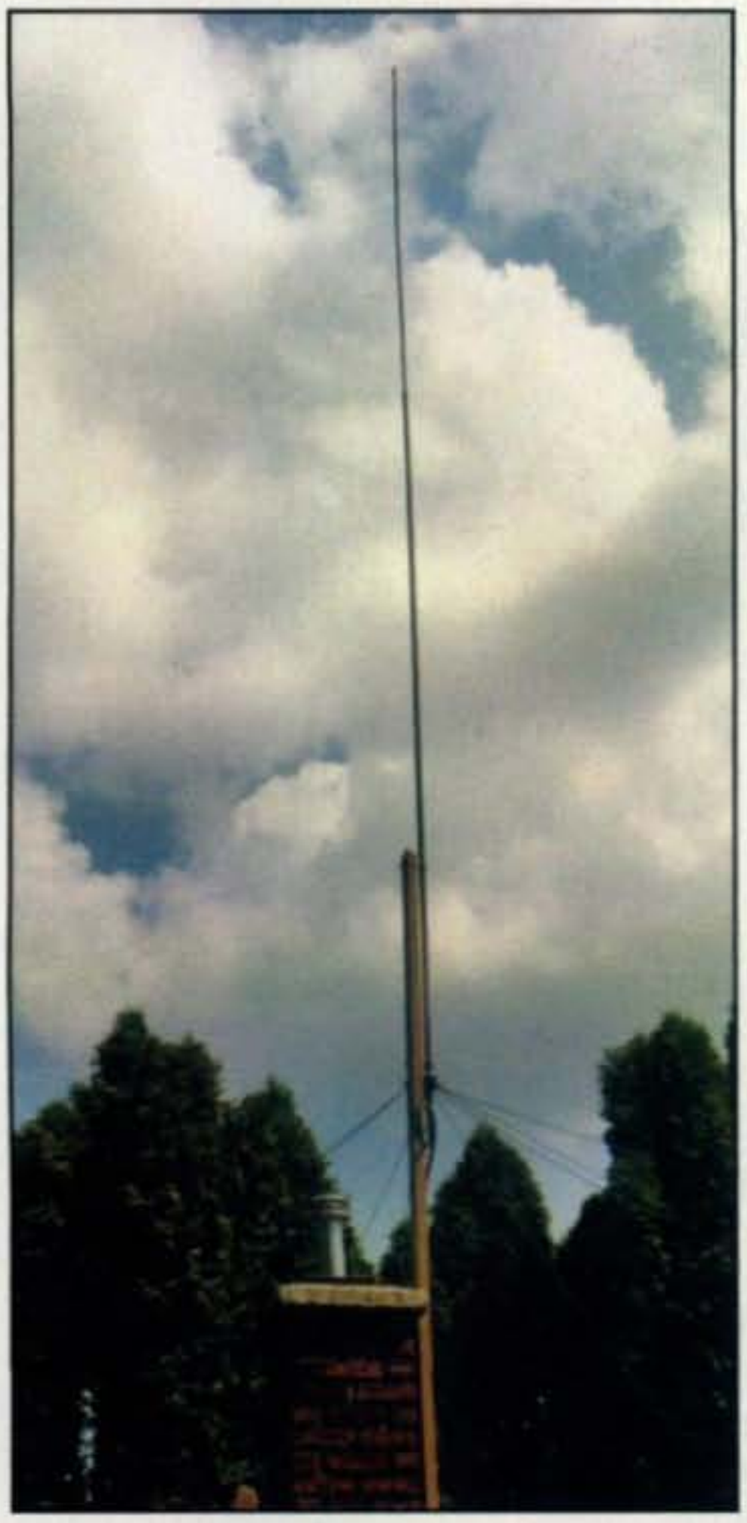

Photo A– K3KR's elevated 20-meter ground plane. Note that this photo was taken before the top hat was added. (All photos by the author)

fill any void). Now enlarge the holes to 1/4 inch entirely through the pipe.

When soldering, use typical plumbing techniques.[6] To aid in solder flow, make sure your junctions are clean (use steel wool or a plumber's wire brush) and use some non-corrosive soldering flux (you may clean off the flux with denatured alcohol if you wish).

To keep the mounting spots from crushing, slide a 1/4-inch spacer bushing up, on the inside, to each of the mounting holes. You can buy a couple of brass bushings, but mine were made from a couple of surplus UG-176/U coax reducers. (You could use UG-175/Us, but you will have to enlarge the center hole to 1/4 inch.) If you cut them so that they fit tightly, they will stay in place—or you could sweat some solder to help hold them.

Next, put a 3/4-inch-to-1/2-inch copper reducer fitting at the top junction and sweat solder it.

Adding a Top Hat

I decided to put a bit of a "top hat" on the antenna using salvaged antenna

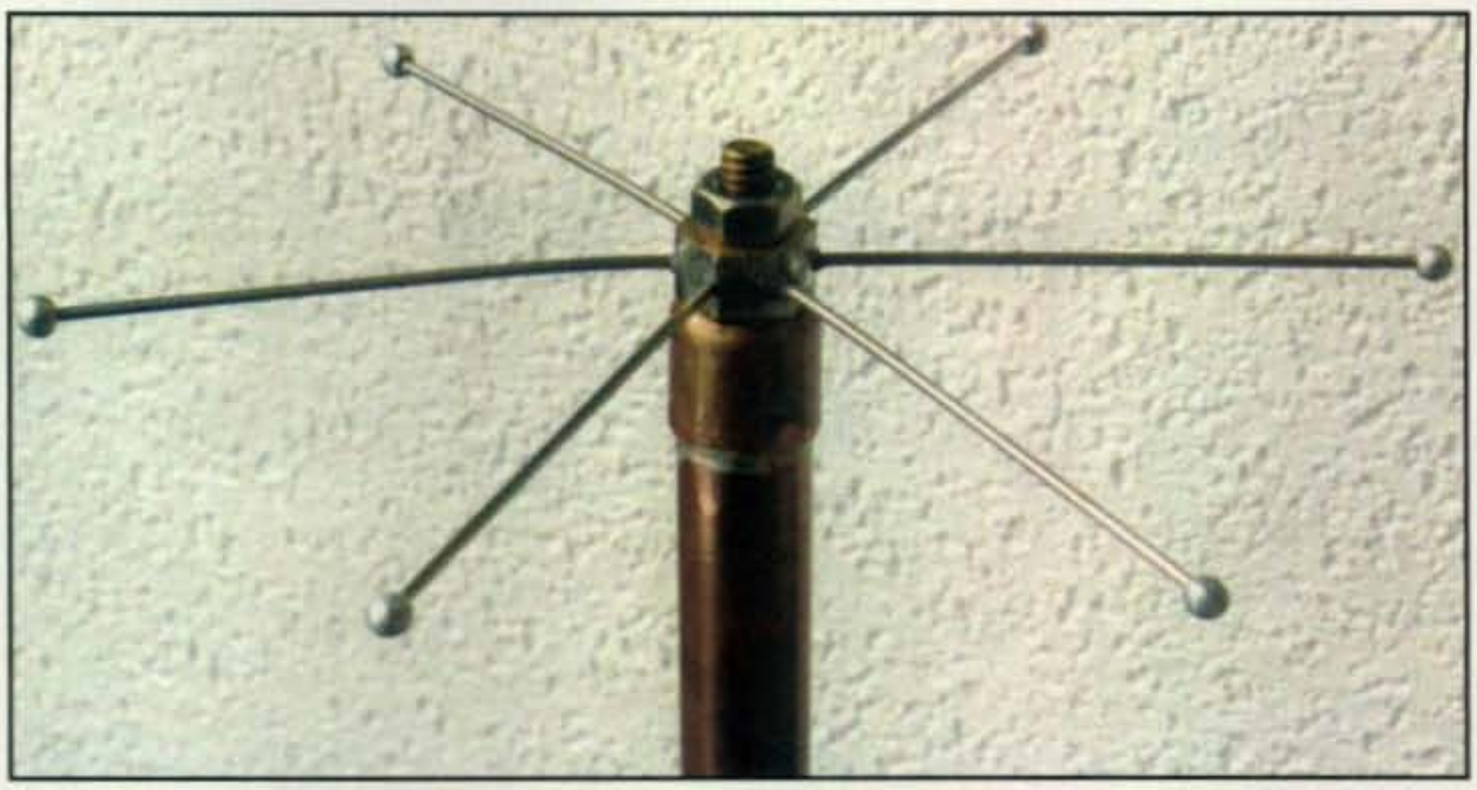

Photo B– Top hat added at the top (where else?) of the antenna. See text for details.

rods (photo B and fig. 2). A large (9/16-inch) 1/4-inch brass nut was drilled to accept the rods and tapped up from the bottom for 4-40 stainless set screws to secure the rods. You could also "friction fit" the rods by using a drill just a bit smaller than the size of the rods, and then tap the rods into the nut (maybe also with a dab of super glue). (It might be a good idea to temporarily put a 1/4-inch screw in the nut to prevent the rods from protruding into the threaded hole.)

I started with 24-inch top-hat radials, but they ended up around three inches each. There were several reasons for this. Tuning the antenna with the 24-inch radials seemed very difficult (possibly I just became impatient); trimming them to 18, 12, 9 inches, etc., didn't seem to help much, so I then decided to keep the vertical radiator as long as possible with just a minimal top hat, which also proved the easiest to tune.

To mount the top hat, a 1/4-inch brass screw was inserted up thruough the center of a 1/2-inch copper-pipe cap and soldered. This assembly was then sweat soldered to the top of the radiator. The top-hat assembly was then screwed down on the cap followed with a jam nut (see photo). (You may have to remove this cap and resolder it several times as you later cut and tune the antenna.)

As a guide, you can use the standard formula for determining starting dimensions:

$$1/4\ \lambda\ (\text{in feet}) = \frac{234}{f\ (\text{in MHz})}$$

It may be a good idea to keep things on the long side, as it is much easier to cut and shorten the antenna than to make it longer once it has been cut.

The entire antenna was then mounted to a treated 8-foot 2×4 using standoff insulators and 1/4-inch stainless-steel hardware (photo C). The 2×4 was fastened to a chimney (see photo A), but it could also be fastened to the side of a building, etc.

The Feed Device

Now I needed some sort of weatherproof device to feed the antenna (see photos D and E). The objective was to come up with something that would allow direct feeding of the ground plane with coax, attach ground radials, and also provide some weather protection for the junction.

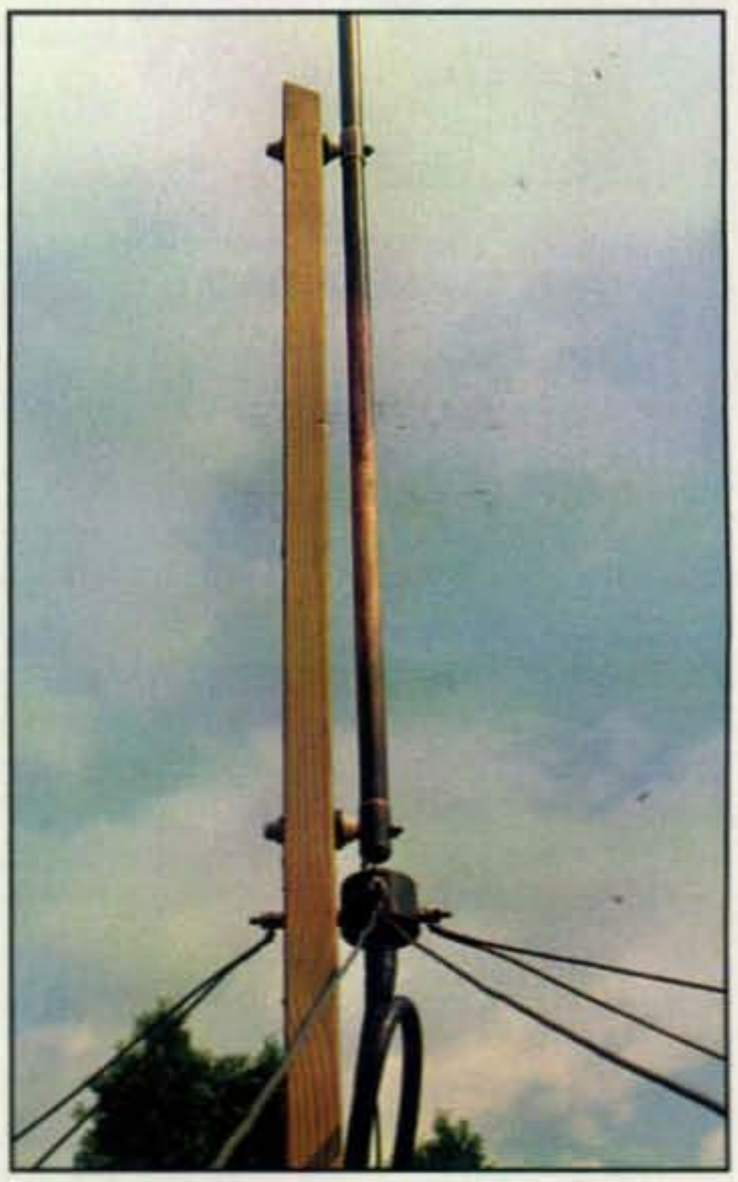

Photo C– Mounting detail. Antenna is attached to a treated 2×4 with standoff insulators.

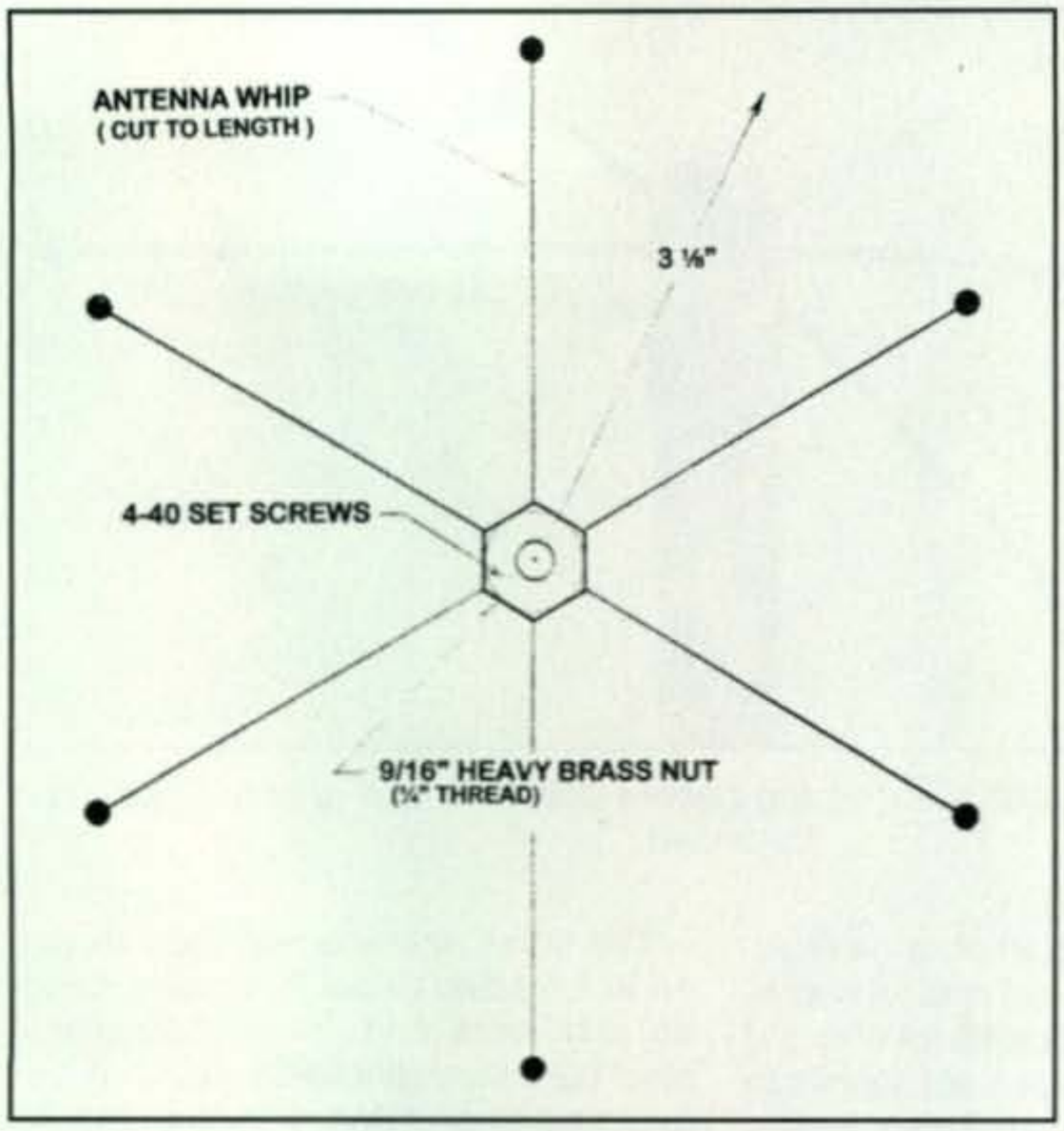

Fig. 2– Detail of the top hat for the elevated ground-plane antenna.

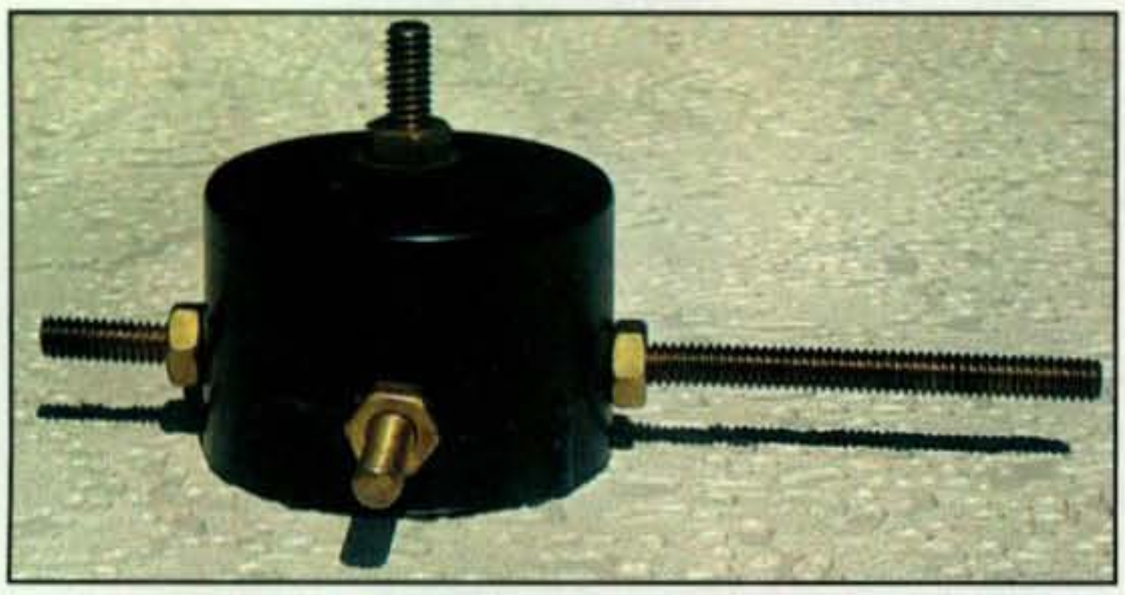

Photo D– Exterior view of feed device. See photo E for interior and text for details.

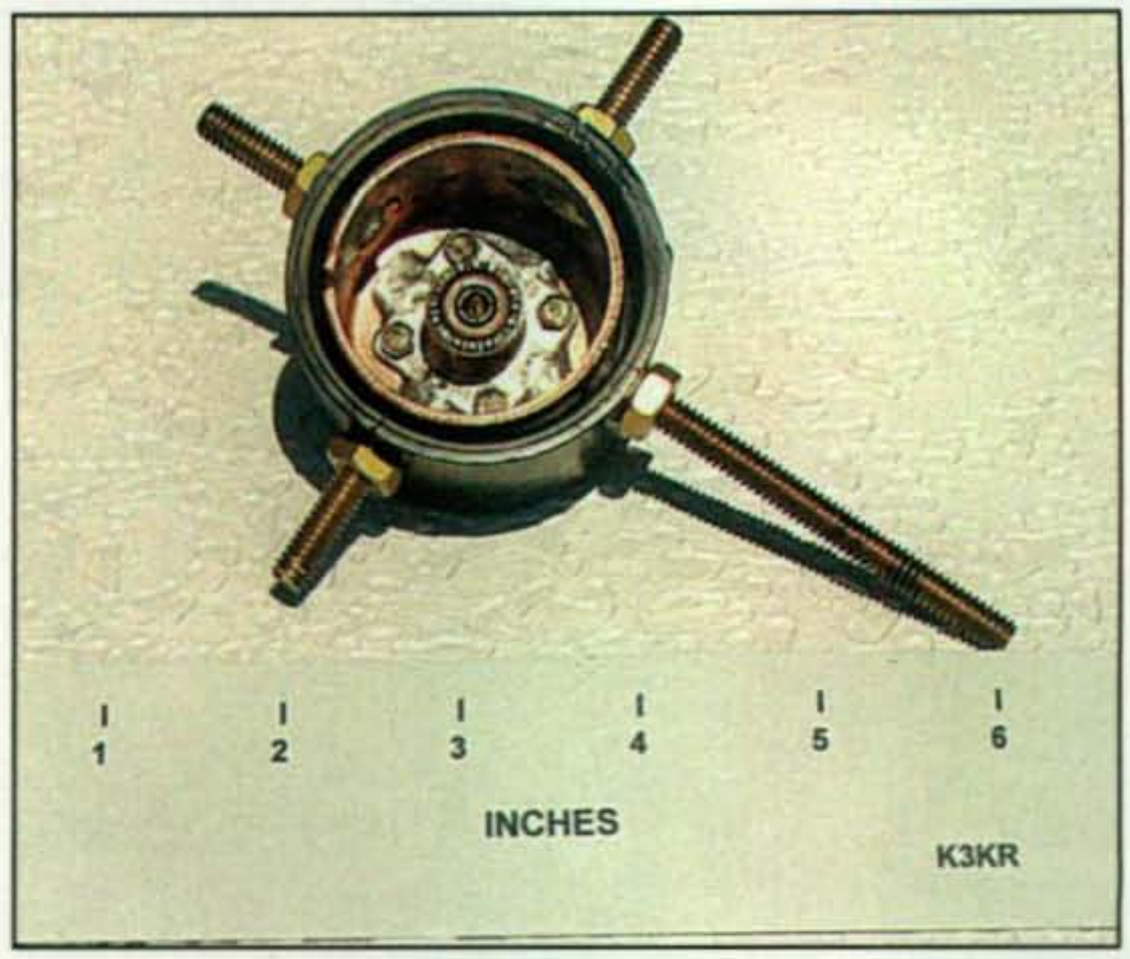

Photo E– Interior of feed device. See photo F for mounting details.

It was decided to use a copper DWV (drain/waste/vent for the plumbing-impaired) plumbing-pipe cap covered with a plastic ABS-DWV cap (both 1 1/2 inches).

To start construction, the copper cap was inserted into the bottom of the ABS cap (mine was a perfect tight fit, but different brands may vary). A 1/8-inch pilot hole was drilled through the top of both caps (in the exact center).

In the center top of the copper cap, punch a 5/8-inch hole (if you don't have a chassis punch, you can drill the hole, or even enlarge the smaller hole with a file). Into this hole insert a SO-239 coax chassis connector, and using it as a template, drill four smaller pilot holes for the mounting flange. Then tap these holes with a 4-40 tap. If you don't have taps, maybe one of your friends can tap the holes for you, or just drill the holes and use nuts with the screws.

The SO-239 was then inserted up into the copper cap and fastened with four 4-40 stainless screws (you can also put on some solder). If the screws protrude above the copper cap, cut them off flush (if you use nuts, cut the screws flush with the nuts).

Next, take a 2-inch long piece of 1/4-inch threaded brass rod and drill a 9/64-inch hole into one end. Slide the hole end down over the SO-239 connector solder pin and sweat solder it to the pin.

Take the ABS cap and enlarge the pilot hole to 13/64 inch, tap it with a 1/4-20 tap, and then screw the plastic cap down onto the stud (you may have to hold the stud to keep it from spinning). It may also be a good idea to put a "jam nut" on the stud to help keep everything tight.

To attach the ground radials, four equally-spaced 13/64-inch holes were drilled in the side (through both the plastic cap and the copper cap) and then tapped with a 1/4-20 tap. Three brass 1/4"× 1 1/2" studs were then inserted into the holes. The fourth stud was 3 inches long and used as a combination mounting, radial, and ground stud. You could put jam nuts on the inside and outside, or just solder the studs (using care not to melt the plastic).

This finished assembly provides a "drip ring" to keep rain and weather off the connector (see photos.) If you wish, you could also slide a piece of tubing up over the connector for added protection.

Assembly

The feed device was mounted directly under the ground plane and a short piece of wire braid (made from several pieces of coax braid) connected the feed device top stud to the ground plane (see photo F). It was also decided to use eight radials in lieu of the usual four (actually four pairs of two).

The ground radials attach to the four brass studs and then "fan out" about 20. Since the antenna was at the corner of the roof, it was possible for me to anchor four of the radials to the roof, but the other four are anchored to tree branches. The tree branches didn't have enough spread to allow a symmetrical 45 spread, so I had to settle for a 20 spread for each "tree" pair; therefore, I decided on 20 for all four pairs.

Final Tuning

Now it's time to tune the antenna. Cut the radials and trim the radiator to resonance (by cutting from the top). Next, droop the radials to give a good match to 50 ohms. The final length of my radiator ended up at 197 inches, each ground radial was 199 inches, and the top-hat radials were each 3 1/8

Photo F– Mounting detail of the feed unit. It is attached to the vertical radiator with coax shield. There are four pairs of radials creating the ground plane.

inches. Optimum ground radial droop was around 50 down.

Once you have tuned the antenna and you are satisfied that everything is in order, you may want to spray the copper pipe with crystal-clear acrylic plastic spray to protect it and keep it bright.

My antenna showed resonance around 14.070 MHz (I spend most of my time on CW), but it shows an excellent match across the entire band (almost a perfect SWR of 1.00:1 at 14.0 and less than 1.20:1 at 14.35).

Also, the antenna is fed directly with coax with no matching needed. I used "hard line" because I had a piece that I had salvaged from a local cell-phone company, but standard RG-213/U (RG-8A/U) could be used. My transmitter tunes well into the antenna, and the antenna has been doing an exceptional job chasing (and catching) DX.

Resources

There is really nothing critical about the antenna, and all items should be readily obtained and/or substituted. Most items can be obtained at a building-supply or home-improvement store. You can also check with a ham friend, surplus center, hardware store, plumbing store, electrical contractor, mail order, hamfest, two-way radio shop, etc. If you can't find a particular item, use your imagination—improvise. After all, you are a ham. If you can't find it, maybe you can make it.

I had an assortment of "feed through" insulators, and I picked out two of them that I used as "stand-off" insulators to attach the antenna. If you don't have any, make them. Use PVC pipe (PVC plumbing pipe or PVC electrical conduit), thick Lucite® or Plexiglas® (available as storm-door replacement "glass"), or, worst case, buy some stand-offs.

The top-hat rods came from my junk box, but you could also use brass rod, brazing rod, etc., or check with a friend or two-way radio dealer, as he may have a junk box. Worst case, buy one or two antenna rods and cut them.

Finally, if you like to work with antennas and you like DX, or if space restrictions are a factor, this ground plane may be the way to go. And for working DX, you don't have worry about how you are going to rotate it.

Notes

1. Lee, Capt. Paul H., USN (RET), N6PL, *Vertical Antenna Handbook*, 2nd Edition, CQ Communications, Inc.

2. Orr, William I., W6SAI, *W6SAI HF Antenna Handbook,* CQ Communications, Inc.

3. Christman, Al, K3LC, "Elevated Vertical Antenna Systems," *ARRL Vertical Antenna Classics,* 1st Edition, pages 108–115, ARRL.

4. Christman, Al, K3LC, "Vertical Antennas with Top Loading," *National Contest Journal,* November/December 2004, pages 11–13, ARRL.

5. Sweat soldering is a technique used for joining copper pipes. Basic steps include thoroughly cleaning both surfaces, then roughening them with sandpaper, applying flux to both pieces, fitting them together, and heating with a torch until hot enough to melt the solder. Capillary action will then distribute the solder evenly around the joint. The Copper Development Association has an excellent description of sweat-soldering techniques at <http://www.copper.org/pub_list/pdf/copper_tube_handbook.pdf>. See pages 45–48.

6. If you're not familiar with plumbing soldering techniques, maybe a friend can do it for you. If you want to try it yourself, you'll need a "basic use" propane torch kit. You can get them at any hardware or home-improvement store with a wide variety of prices and options. They usually come with a "soldering tips" booklet applicable to plumbing, or you can pick up a free "do-it-yourself" plumbing pamphlet at the same store. Basically, you just cut the pipe, clean the junctions with a fitting brush or steel wool, apply some soldering paste flux, heat the joint, and feed solder into it. See sweat-soldering description above.

beginner's corner

BY WAYNE YOSHIDA,* KH6WZ

What's That Noise?

In the world of radio, most of us use our sense of hearing to use our equipment.[1] As an auditory thing, every once in a while someone will ask or think, "What's that noise?"

Let's take a look at the various noises that happen as we work with our radios. First, we should define or distinguish "noise" versus "sound." For this discussion, we will define noise as something bad or unwanted and a sound as something normal or a good thing that happens. In addition, because noise is so broad and affects many things in a radio, let's further limit the scope of this discussion to FM operations, using mobile and portable (handheld) equipment.

When talking about FM, we should have a simple understanding of a technical term called *quieting*. This term is used to describe how strongly an FM signal is heard in a receiver. If a station is nearby and transmits a strong signal and there is no interference, the signal is said to be "full quieting." There is no background noise and the person's voice is clear and easily understood.

However, if the station moves to another location farther away, the signal strength diminishes and the signal begins to sound noisy. This noise can often be described as "crunchy," or distorted. Many times the receiver S-meter will go up and down quickly, and the signal has a "fluttering" quality. This means that the radio signal is becoming weaker and is no longer quieting the receiver (the noise is becoming stronger than the radio signal).

Try this experiment on your FM rig: Move the radio squelch control fully counter-clockwise. When the volume control is set to a normal listening level and the squelch is opened, the receiver will produce that rather irritating hissing noise. Now, when someone transmits on frequency, you will notice that the signal makes the noise go away (the receiver is quieting) and you hear the person talking.

A few nights ago, as I drove home from the office, I listened to the weekly communications net for the RACES group (RACES stands for Radio Amateur Civil Emergency Service, a volunteer group of public-service hams). After the news and bulletins, I listened to the stations checking in. Almost all of the stations on the 2-meter repeater net were coming in loud and clear. However, a few stations made me think "what's that noise?" since there were some other noises were coming in along with their voices. Well, okay, the dog barking in the background is easily diagnosed, but perhaps not so easily fixed.

There were also two or three stations that had a slight "buzzing" noise superimposed on top of their voices as they checked into the net. While not terribly offensive, the noise was enough to think about it as either a radio problem or a repeater problem.

Since the RACES net is done on a "closed" repeater, a certain "PL," or sub-audible tone, is required to access the repeater. PL stands for "Private Line" and is a Motorola trade name for a technique to limit access to an FM channel. The generic term for this concept is CTCSS, or continuous tone-coded squelch system. Think of PL or CTCSS as an electronically coded key that "opens" a "locked" radio system, using a sub-audible tone that is transmitted along with your voice.

One of the main purposes of a sub-tone is to make a repeater "private"—that is, the tone is a secret and those who do not belong cannot access the repeater. Another purpose for sub-tone access is to help prevent interference from other repeater systems.

But wait a second. If CTCSS is sub-audible, then how can it be heard when listening to a repeater system? One reason a sub-tone can be heard on a radio is a misadjustment of the tone generator in the radio. If the tone is "too strong," it can be heard as a slight buzzing noise on the transmitted signal. Oddly, in some radios there is no adjustment for the CTCSS output. Equally odd is the fact that not everyone will hear the PL noise, or it is not loud enough to be an annoyance to some people.

In some radios, the tone generator has a variable control (usually a trimmer pot) either as a part of the radio or on the tone generator itself (see photo A). If this is the case, and if the radio manufacturer thinks it is OK for the owner to make this adjustment, instructions on how to do it may appear in the operator's manual. If not, the radio may have to be checked and adjusted by a service person.

*16428 Camino Canada Lane, Huntington Beach, CA 92649
e-mail: <kh6wz@cq-amateur-radio.com>

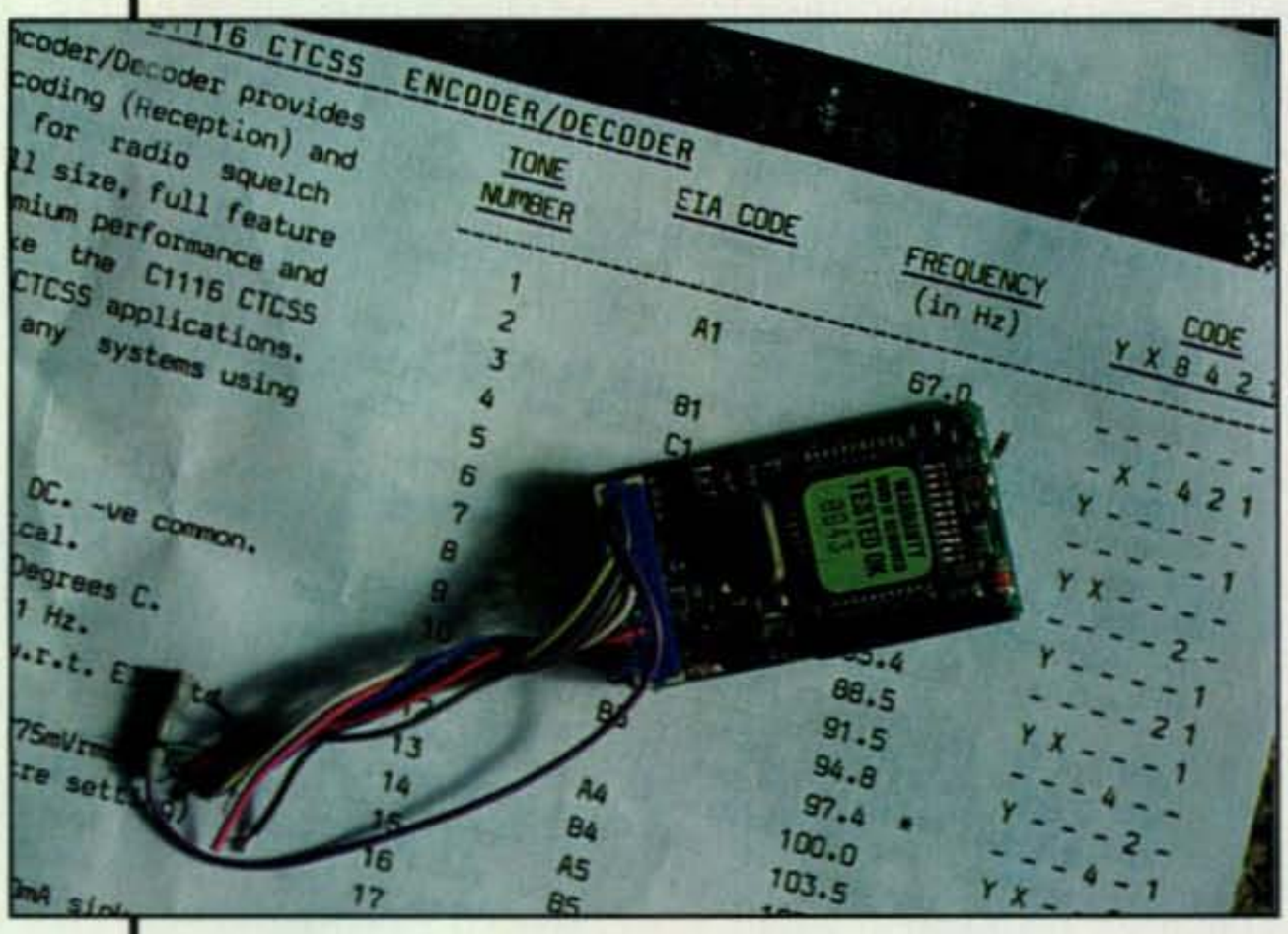

Photo A– An accessory tone generator board that can be installed in just about any FM rig. This one has an adjustment for the tone output.

This is one of the noises that happens in many, but not all, radios, and there may or may not be anything you can do to correct it. In this case, this is a situation where an odd noise does not impact the operation of a radio and is considered normal by most radio manufacturers.

Similar, but Different Noises

The "PL buzz" described above is different from a noise coming from an AC-operated power supply, as when a mobile radio is used in a fixed station. In this case, the power supply that converts household AC into 12 volts DC is not working right, and it is allowing some of the AC to come out of the DC output. Something is likely to be wrong with the filter circuit in the power supply.

An easy way to verify whether the power supply is indeed broken is to swap the power supply. Even if you do not have a second power supply, you can substitute another high-current, 12-volt power source for your station power supply. This is most easily done with a portable automotive booster battery, like the one shown in photo B. If you do not have one of these, you can try using your automobile battery, and connect your radio to your car battery with a pair of jumper cables, and wires. Be careful when you do this to make sure you do not connect the positive terminal on the battery (or the positive wire coming from the battery) to the car body or the radio case (ground).

If this procedure makes you nervous, ask a friend with some radio and/or car experience to help you. The idea here is to verify that the noise problem goes away when you change the power supply. This verifies that the problem is not in the radio, but rather something happening outside of the radio—in other words, the power supply. Therefore, if you are able to say the buzzing or humming noise is coming from a bad power supply, now what?

You can either buy a new power supply or have it checked so that it can be repaired. This decision should be based on the cost of a shiny and new power supply, versus the cost of repairing the old unit. Generally, a new 12-volt power supply capable of handling the typical 50-watt, 2-meter FM mobile rig should be rated at about 12 amps minimum. To be sure, check the radio specifications for the power-supply requirements during transmit.

Typical power supplies for ham radio applications are rated at 12 volts and 20 amps, so this provides some extra power for a small accessory such as a battery charger. The cost of a new 20-amp power supply varies from about $60 to $250 or more, so it may be worth checking to see if it can be repaired. Your local ham radio dealership would be a good place to ask for assistance on this, or it can recommend a place that may be able to repair the unit.

A Change in Environment

Quite often, particularly in mobile stations, a high-pitched, whining noise comes from a transmitting station. Most of the time the noise varies with engine speed. Generically, this automotive noise is called "alternator whine" even if it is caused by something else.

This whine can be caused by the electrical charging system, most likely the alternator, but it can also come from an *electric fuel* pump, the ABS system, or the ignition system. In addition, all currently made automobiles have at least one microprocessor, and many vehicles have several. Because these car computers run many complex digital signals to control various systems, and because digital signals usually mean "square waves," the car computers can be a source of interference and noise. Remember, square waves produce

Photo B– A booster battery like this can be used to power a mobile rig temporarily as you make tests and adjustments. Be very careful not to short the positive terminal to any electrical ground!

an infinite number of odd harmonics, and sine waves produce an infinite number of odd and even harmonics. In any case, a computer can be a source of lots of noises we don't want to hear in our radios!

A simple cure to the alternator noise, even if the noise is not caused by the alternator but something else in the vehicle, is a large filter choke. This is a large coil of wire wound around a big ferrite "donut," as shown in photo C. Commercial versions of this automotive filter choke are available from your ham radio equipment dealer or car audio shops. Check to make sure the filter's current rating is enough to run your radio equipment. It may be a good idea to buy the biggest noise filter available, so you can be sure it will run without any problems. This filter is inserted into the positive power lead in between the battery and your radio. One of the best places to mount a power-line filter is inside the vehicle, just before the wire goes into the radio, as you can see in photo D.

I have found that a noise filter installed in this way cures 99% of the alternator-whine types of noises coming from mobile

Photo C– A choke can sometimes be used to filter the DC line and minimize noise. A store-bought filter is a more elegant way to filter the DC line. Check with your favorite radio dealer for a recommendation.

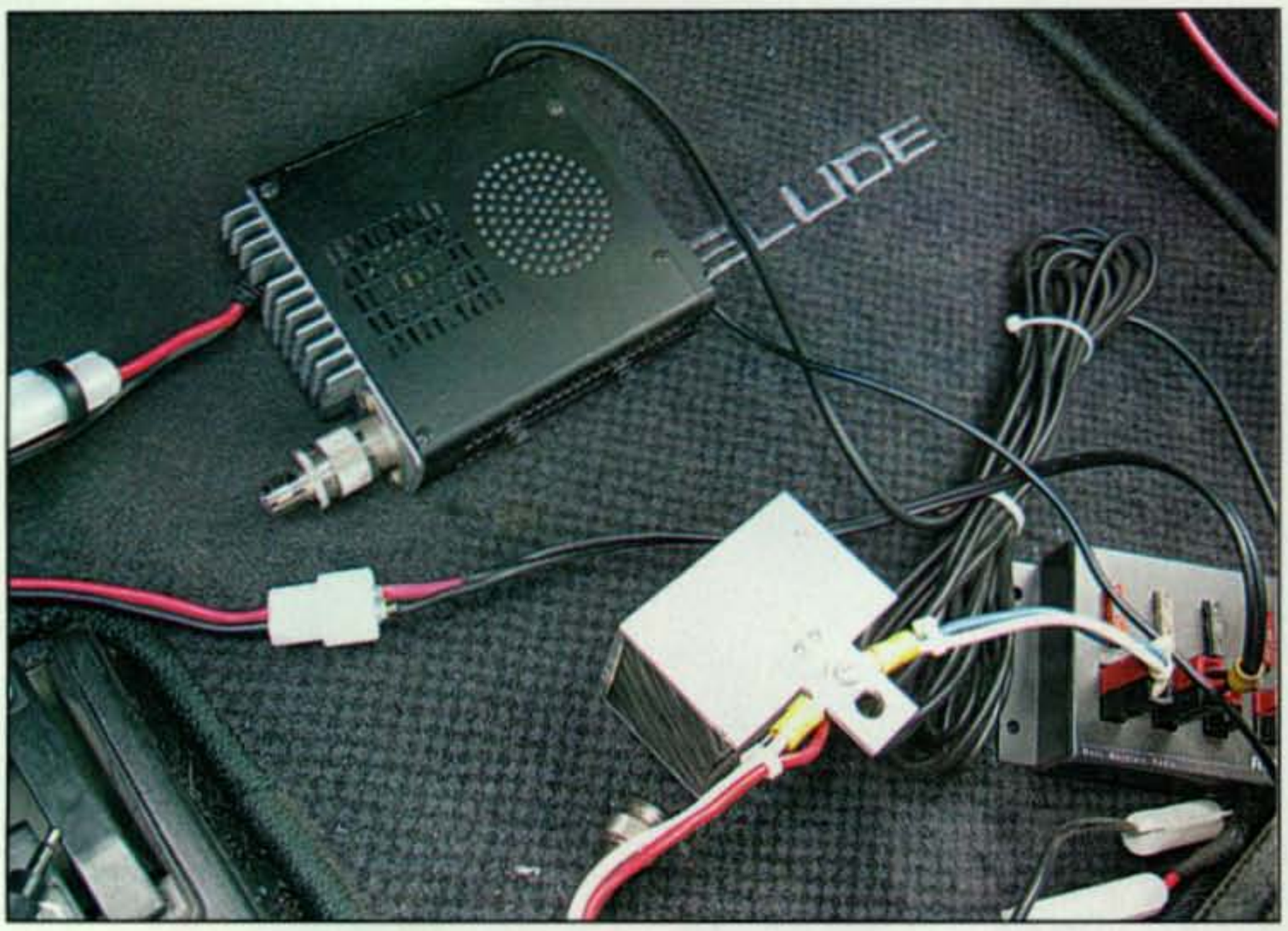

Photo D– A good place to install the noise filter is close to the mobile rig. This under-seat installation includes a RigRunner from West Mountain Radio to add extra DC outlets for other items.

radio stations. I have to mention one instance of a noise that I could not cure, however. Years ago I had a two-seat Toyota sports car. Since there was very little room in the cockpit for radios, I mounted the radio on the passenger side of the center console. I mounted a very tiny external speaker near the top of the windshield, underneath the rear-view mirror, using the mirror bracket for support. This car produced enough noise that the speaker would produce a high-pitched whine *even when the radio was turned off.*

Somehow I determined that this was most likely coming from the electronic ignition system. When the radio was on and the receiver was working (that is, when someone was transmitting to me), the radio receiver was strong enough to override the whining noise. However, when the radio was in standby mode the whining was very loud. I installed a small switch in one of the speaker mounting holes so that I could disconnect the speaker from the radio, which made the noise go away. When I wanted to use the radio, I would flip the switch so the speaker was connected to the radio. This was a minor inconvenience, but it did mask the whining noise. I call this a "band-aid" solution, because I never solved the problem. I only masked it to make the problem go away.

From the Airwaves

So far most of these noises have been coming from the radio or the radio power supply. However, there are many noises that come from the surrounding radio-garbage in the air around us.

For example, in some parts of the USA hams operating on the UHF-FM band (420 MHz to 450 MHz) may hear noise from radar systems. The noise sounds somewhat like an electric shaver, but higher in pitch, and it usually comes and goes in strength and sometimes in frequency, probably due to the "sweeping" of the radar signal. We must understand that amateur radio is a "secondary user" in the 420 MHz to 450 MHz band, so if ham radio operations cause interference to radar—or other licensed, shared services—the ham radio operations must move, shut down, or eliminate interference.

In this case, it is most likely that a UHF repeater system, rather than an individual station, is causing interference to a radar station. In any case, this noise must be tolerated, since in most cases the radar system is the primary user of this band.

No discussion of VHF-FM and repeater operating would be complete without mention of an interference noise called *intermod*. Intermod is short for intermodulation. This is when two or more transmitted radio signals on different frequencies mix and are received at the same time. As you can imagine, this can create a messy situation, and this can be heard on your radio as a very irritating noise!

In many areas, this intermod situation seems to be growing. Pagers, cell phones, data links, alarm systems, and other wireless devices contribute to radio-wave pollution. As the number of systems grows, so does this mixing of different frequencies, and the result is a noisy radio. In addition to all of this RF pollution, many radios are capable of receiving more than the ham radio bands, meaning that such radios may be more susceptible to intermod because of their wider receiving ranges.

One way to deal with this is to advance the squelch control. However, this adjustment must be balanced between getting rid of interference and completely locking out the desired signals. Another way to battle intermod is with a suitable filter to minimize the unwanted frequencies coming into your radio.Remember, though, if you like a fully-quieting FM repeater signal and also want to listen to the out-of-ham-band services such as the local air traffic controllers, a filter will limit your enjoyment of the non-ham frequencies.

As we can see, along with all of the good sounds coming from our radios, there are many unwanted and irritating noises in our ham radio equipment, too. Some are considered normal and have to be tolerated, and some noises can be cured, either by finding the core cause of the problem or finding some solution or alternative to make it "just go away."

Do you have a strange noise coming from your station equipment? If so, what did you do about it? Did you seek assistance from your ham friends or the equipment manufacturer? Tell me the story, and we can share it with the readers of this column.

73, Wayne, KH6WZ

References: Filters for Receivers and Repeaters

Angle Linear: < http://www.anglelinear.com/>
DCI Digital Communications: <http://www.dci.ca/>
MFJ Enterprises, Inc.: < http://www.mfjenterprises.com/>
PAR Electronics: <http://www.parelectronics.com/>

Note

1. *Exceptions:* Hams who are hearing-impaired and rely on other means to process incoming signals, as well as those of us who use text modes, such as RTTY, packet, or PSK-31.

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qrp

BY DAVE INGRAM,* K4TWJ

Clubs, Kits, and Fun Meets

Looking to spice up your amateur radio life? Confined to a limited budget? Think less is best and going green is good, and take a closer look at the world of QRP. Need some enticement? Check out the pint-size QRP setup Pete Haddad, W5PEH, uses with good success (photo A). The transceiver is quite small, but it has qualified Pete for QRP's famed 1,000 Mile Per Watt Award several times. Impressive!

Another enticement for exploring QRP is the large number of clubs, on-the-air contests, club-produced kits, and weekend fun meets supporting low-power communications. There is enough activity here to hold your interest for a lifetime.

The New England QRP Club (photo B) is a shining example of that fact. It is the third oldest QRP club in the U.S. Membership is free and open to all amateurs. Members informally meet on 3.566 MHz Thursday evenings at 8:30 PM EST (the club call is WQ1RP) and everyone is invited to join in. NEQRP also sponsors an annual "QRP Afield" contest that always proves exciting. As NEQRP kingpin Dennis Marandos, K1LGQ, explains, "QRP Afield is held each year during the third weekend of September. Each QRPer picks a six-hour period to operate according to his/her lifestyle, band conditions of the time, etc. Activity is on all modes—CW, SSB and PSK—and usually centers around the popular 80, 40, 20, 15, and 10 meter QRP calling frequencies. QRP Afield is a purely fun event for QRPers rather than a competition for big-gun contesters and, as such, does not offer awards or trophies. The general attraction involves setting up a field-day-type operation typically with battery power, 5 watts or less of output, and at least 500 feet from your home shack, and contacting other QRPers doing likewise. Each contest has a different theme such as lighthouses, public parks, or backyards. The result is good public exposure for amateur radio and, since most QRPers are sharp operators, it is an ideal way to put that new homebrew rig through its paces."

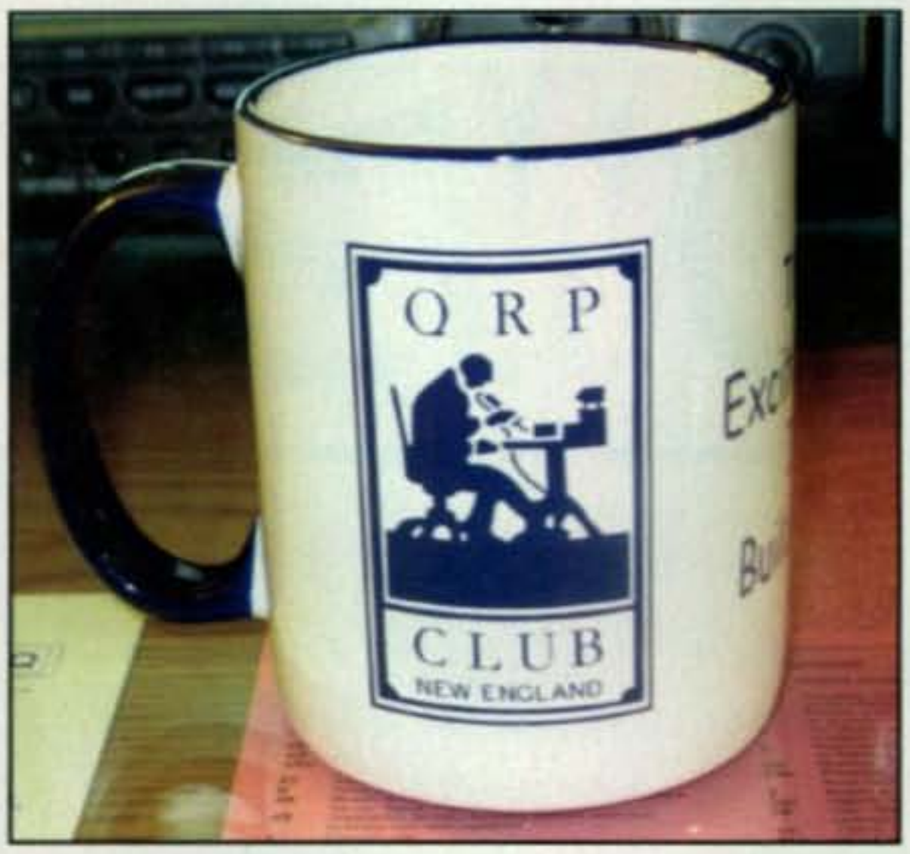

Photo B– The classic New England QRP Club logo gracing a coffee mug previously sold by the club as a promo item. We understand the mug may return for an encore, so check with <K1LGQ@arrl.net> for availability.

Right now is the perfect time to mark your calendar for QRP Afield. Do it! The contact person handling rules, logs, and tallying scores for QRP Afield is Chuck, K1CL. You can find more details (and join NEQRP) at <www.newenglandqrp.org>.

The NESCAF Kit

Need a little help copying those weaker/QRPp stations on the bands, particularly when using a "bare bones" receiver? The New England QRP Club offers a neat Switched Capacitance Audio Filter kit (photos C, D, E, F and fig. 1) worth considering. The kit typically goes together in a couple of hours, it is suitable for new homebrewers and old pros alike, and the filter board's small size (2 inches square) can be fitted inside many QRP rigs. There are two panel-mountable controls in the NESCAF kit: One sets the bandwidth (approximately 1500 to 60 Hz), and the other sets the filter's center frequency (between approximately 400 and 1000 kHz). You supply the cabinet, connectors, and 9- or 12-volt battery.

If you are unfamiliar with capacitor-type audio filters, they differ from narrowband IF-level filters

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e-mail: <k4twj@cq-amateur-radio.com>

Photo A– Once again proving QRP is big-time fun in a small-size package, Pete Haddad, W5PEH, has worked numerous states plus several countries with this palm-size 40-meter Small Wonders transceiver and LDG Z11 tuner. He also uses it with a homebrew audio amplifier and speaker for easy in-shack band monitoring. Nice! (Photo via Pete, W5PEH)

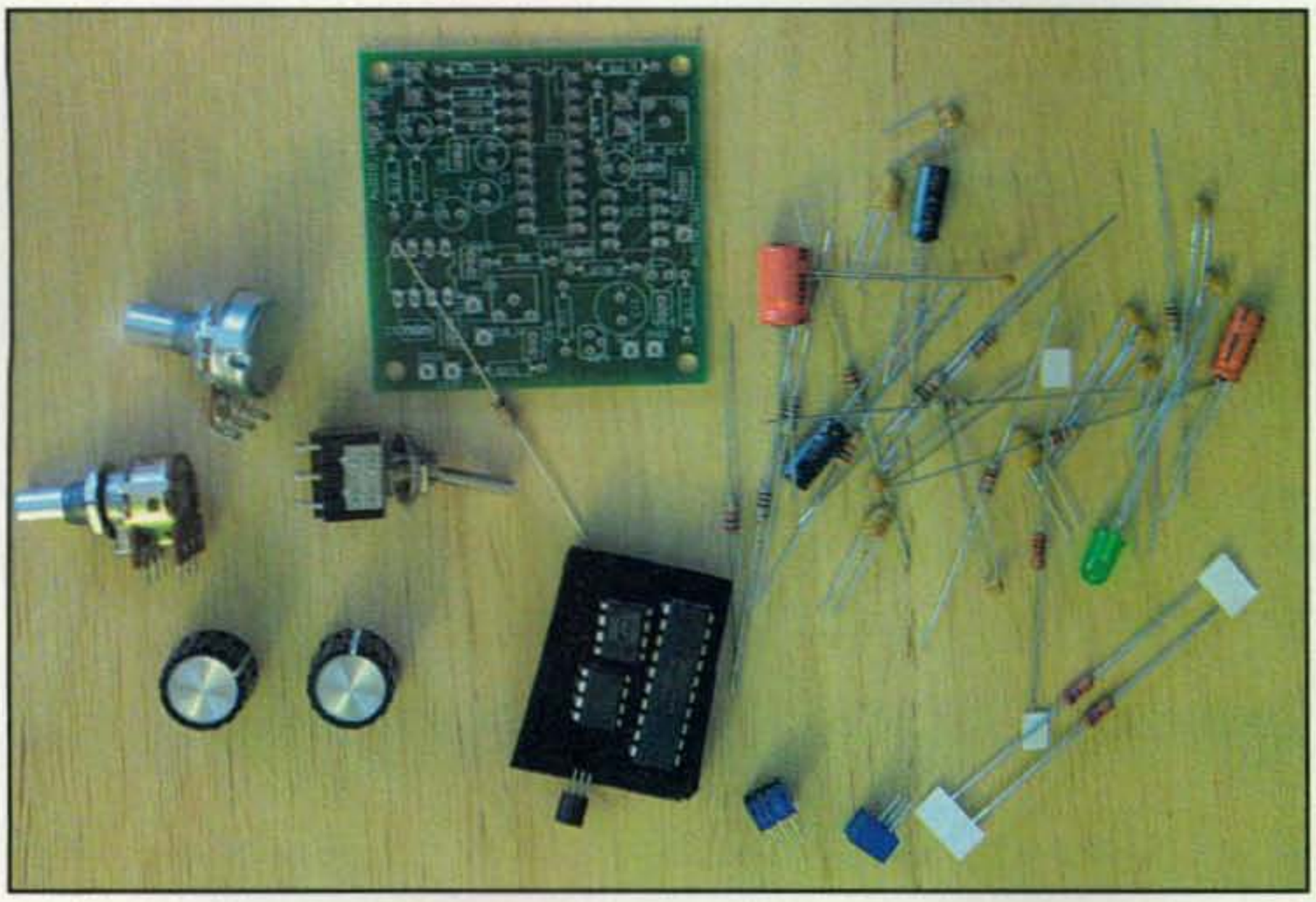
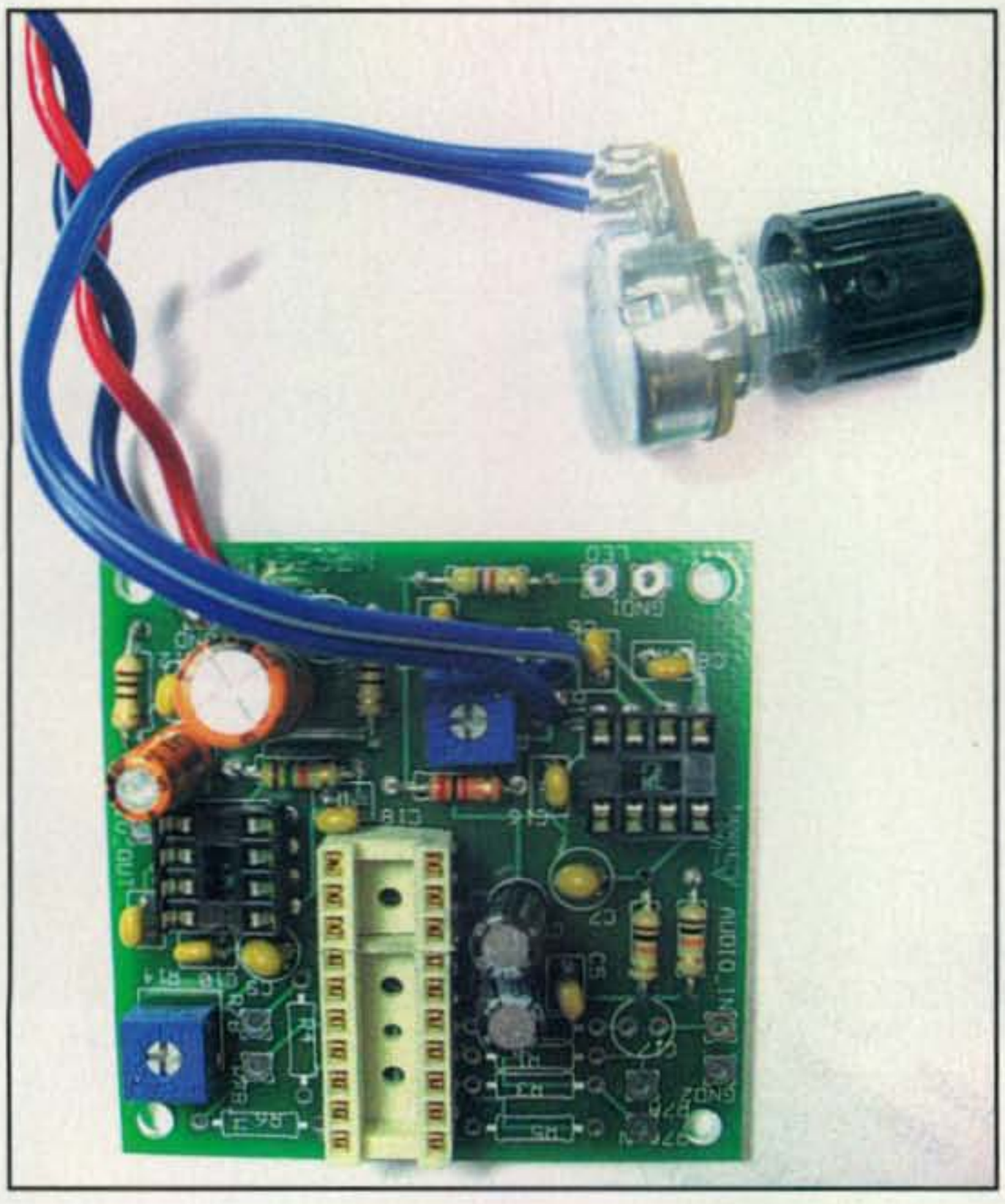


Photo C– A NEQRP Club Switched Capacitance Audio Filter kit as received, unpacked, and laid out for assembly. Approximately three dozen components comprise the kit. You add input/output connectors and a 9- or 12-volt battery. The filter can connect to an earphone or speaker socket of a receiver or transceiver, and lets you continuously adjust bandwidth from 1500 Hz to 60 Hz. (SCAF photos courtesy Dennis Marandos, K1LGQ)

(usually crystal or DSP type in higher end transceivers) in that they are less expensive and connect in the earphone or speaker line of a transceiver or receiver. IF-level filters are more effective for removing adjacent-frequency signals "blocking" a receiver's AGC system and reducing receiver sensitivity, but they are expensive. As a clarifying example of filters, compare the (DSP type) audio filter in an ICOM IC-706 or Kenwood TS-570 with the IF-level (DSP) filter in an ICOM IC-756 Pro or Kenwood TS-2000. With AF filtering, QRM can hold the S-meter at S7 or S8 even when you do not hear QRM (because the IF bandwidth remains wide). IF filtering narrows the IF bandwidth so QRM cannot pass and reduce receiver gain. In this case, the S-meter fluctuates with static, noise, and/or weak signals. Get the idea? Do not assume audio filters are ineffective, however. Indeed not! They are a perfect addition for less-expensive rigs, and they are definitely worth adding to your arsenal of QRP goodies.

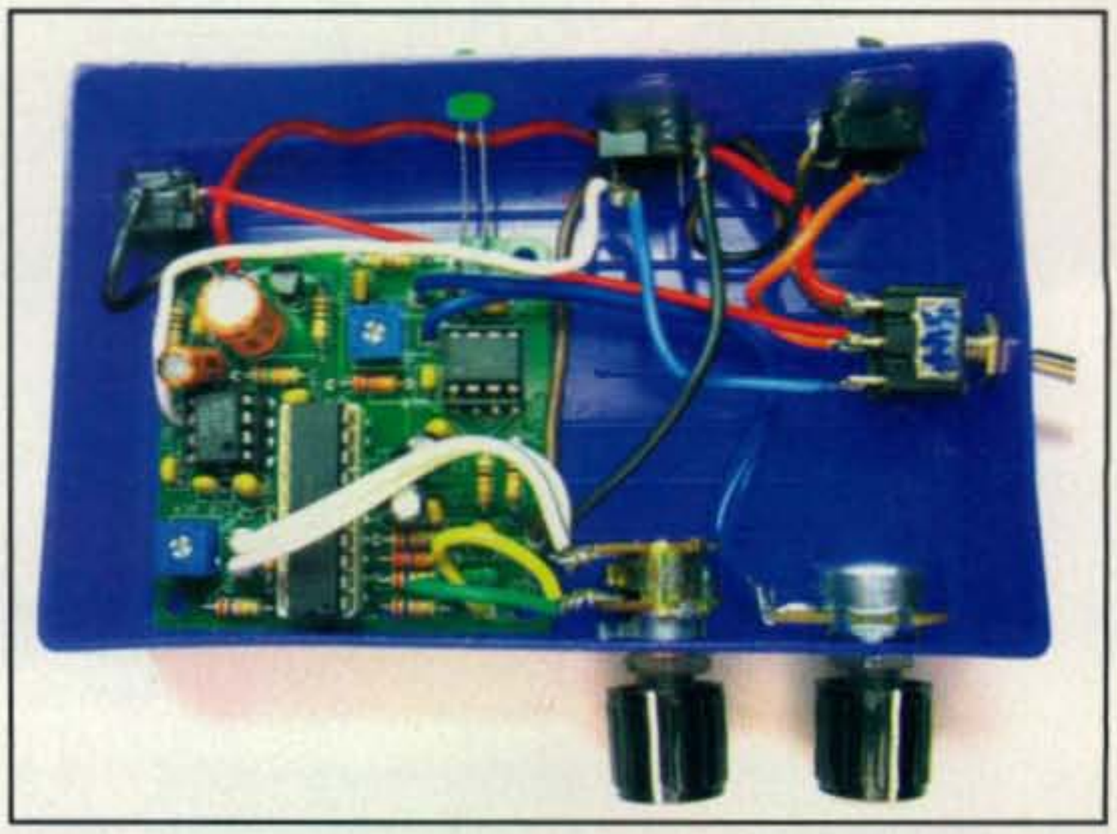
How to order? Go to the <www.newenglandqrp.org> website and note Treasurer Paul Kranz, W1CFI, processes orders. Try one. You'll like it!

Although no longer available, the NEQRP Club previously produced a small CW transmitter kit worthy of recognition at this point. Study its circuit diagram (fig. 2), and visualize the "frills" that can be added to and gleaned from its general design. The "spot" switch activates only the oscillator, for example, and the key activates both stages. An inductor and trimmer capacitor in series with the crystal add VXO capability. The IRF 511 is an inexpensive and heavy-duty MOSFET that loafs along at 5 watts but is only driven to 1 watt, so it should survive high SWR under impromptu field operation with no problems. Changing values on the drain's



← *Photo D– The NEQRP SCAF kit approximately two-thirds assembled. The PC board measures approximately 2 inches by 2 inches.*

Photo E– Dennis, K1LGQ, mounted his SCAF in a plastic "soap dish" so it could easily connect to all of his homebrew radios. The bright -blue color adds class and flash while ensuring it can be found almost anywhere—indoors or in the wilderness. (Discussion of filter in text.) ↓



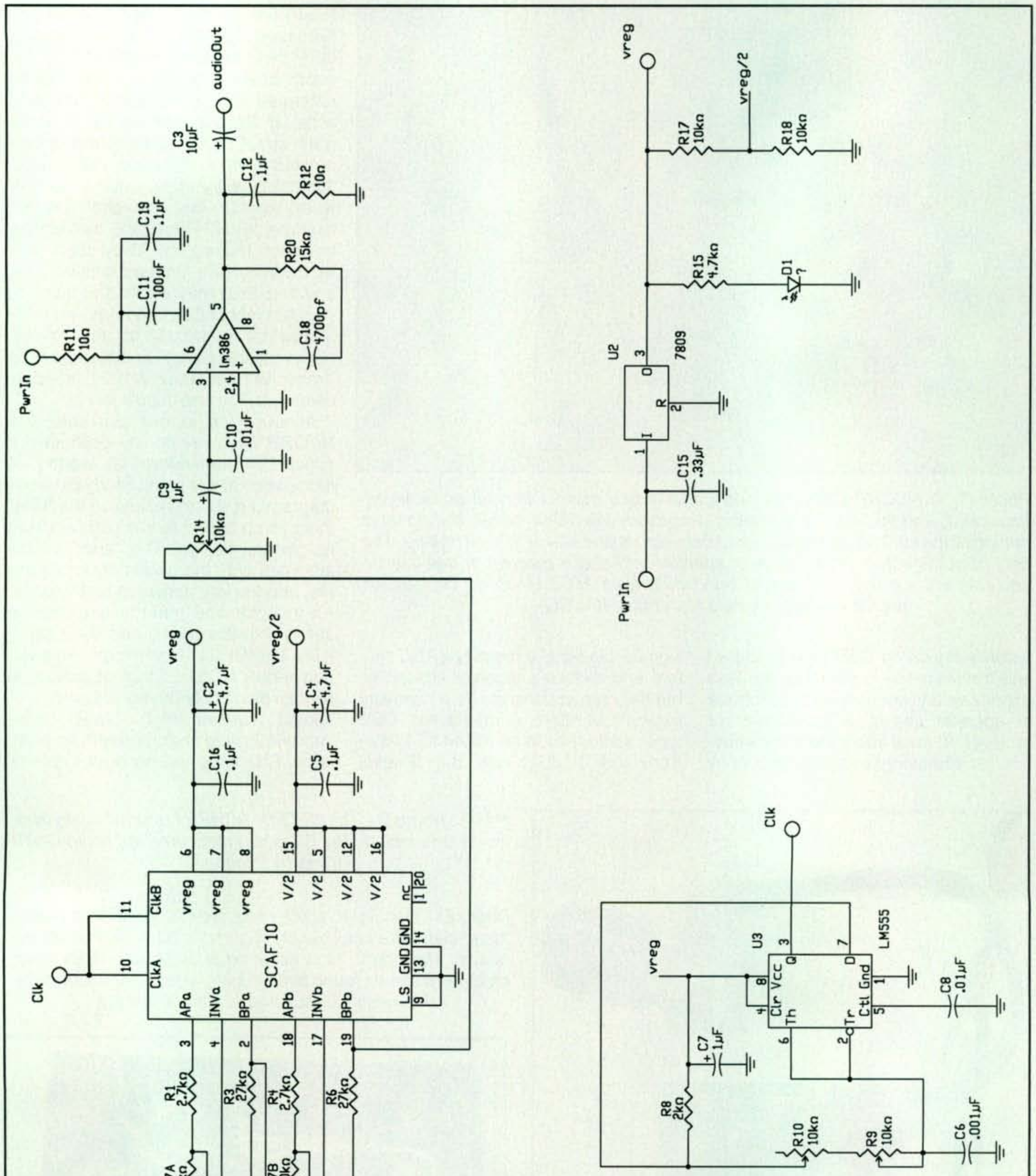


Fig. 1– Circuit diagram of the NEQRP SCAF kit indicates a multi-function filter (SCAF-10) followed by a hefty audio amplifier stage (LM 386). "Switching" is under microprocessor control and set by variable resistors; one determines audio center frequency and the other establishes/sets bandwidth.

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DESKTOP SWITCHING POWER SUPPLIES

MODEL	CONT. (Amps)	ICS	SIZE (inches)	Wt.(lbs.)
SS-10	7	10	1⅛ x 6 x 9	3.2
SS-12	10	12	1⅝ x 6 x 9	3.4
SS-18	15	18	1⅝ x 6 x 9	3.6
SS-25	20	25	2⅞ x 7 x 9⅝	4.2
SS-30	25	30	3¼ x 7 x 9⅝	5.0

MODEL SS-25M

DESKTOP SWITCHING POWER SUPPLIES WITH VOLT AND AMP METERS

MODEL	CONT. (Amps)	ICS	SIZE (inches)	Wt.(lbs.)
SS-25M*	20	25	2⅞ x 7 x 9⅝	4.2
SS-30M*	25	30	3¼ x 7 x 9⅝	5.0

MODEL SRM-30

RACKMOUNT SWITCHING POWER SUPPLIES

MODEL	CONT. (Amps)	ICS	SIZE (inches)	Wt.(lbs.)
SRM-25	20	25	3½ x 19 x 9⅝	6.5
SRM-30	25	30	3½ x 19 x 9⅝	7.0

WITH SEPARATE VOLT & AMP METERS

MODEL	CONT. (Amps)	ICS	SIZE (inches)	Wt.(lbs.)
SRM-25M	20	25	3½ x 19 x 9⅝	6.5
SRM-30M	25	30	3½ x 19 x 9⅝	7.0

MODEL SRM-30M-2

2 ea SWITCHING POWER SUPPLIES ON ONE RACK PANEL

MODEL	CONT. (Amps)	ICS	SIZE (inches)	Wt.(lbs.)
SRM-25-2	20	25	3½ x 19 x 9⅝	10.5
SRM-30-2	25	30	3½ x 19 x 9⅝	11.0

WITH SEPARATE VOLT & AMP METERS

MODEL	CONT. (Amps)	ICS	SIZE (inches)	Wt.(lbs.)
SRM-25M-2	20	25	3½ x 19 x 9⅝	10.5
SRM-30M-2	25	30	3½ x 19 x 9⅝	11.0

MODEL SS-12SM/GTX

MODEL SS-10EFJ-98

CUSTOM POWER SUPPLIES FOR RADIOS BELOW

EF JOHNSON AVENGER GX-MC41
EF JOHNSON AVENGER GX-MC42
EF JOHNSON GT-ML81
EF JOHNSON GT-ML83
EF JOHNSON 9800 SERIES
GE MARC SERIES
GE MONOGRAM SERIES & MAXON SM-4000 SERIES
ICOM IC-F11020 & IC-F2020
KENWOOD TK760, 762, 840, 860, 940, 941
KENWOOD TK760H, 762H
MOTOROLA LOW POWER SM50, SM120, & GTX
MOTOROLA HIGH POWER SM50, SM120, & GTX
MOTOROLA RADIUS & GM 300
MOTOROLA RADIUS & GM 300
MOTOROLA RADIUS & GM 300
UNIDEN SMH1525, SMU4525
VERTEX — FTL-1011, FT-1011, FT-2011, FT-7011

CIRCLE 134 ON READER SERVICE CARD

NEW SWITCHING MODELS

SS-10GX, SS-12GX
SS-18GX
SS-12EFJ
SS-18EFJ
SS-10-EFJ-98, SS-12-EFJ-98, SS-18-EFJ-98
SS-12MC
SS-10MG, SS-12MG
SS-101F, SS-121F
SS-10TK
SS-12TK OR SS-18TK
SS-10SM/GTX
SS-10SM/GTX, SS-12SM/GTX, SS-18SM/GTX
SS-10RA
SS-12RA
SS-18RA
SS-10SMU, SS-12SMU, SS-18SMU
SS-10V, SS-12V, SS-18V

*ICS – Intermittent Communication Service

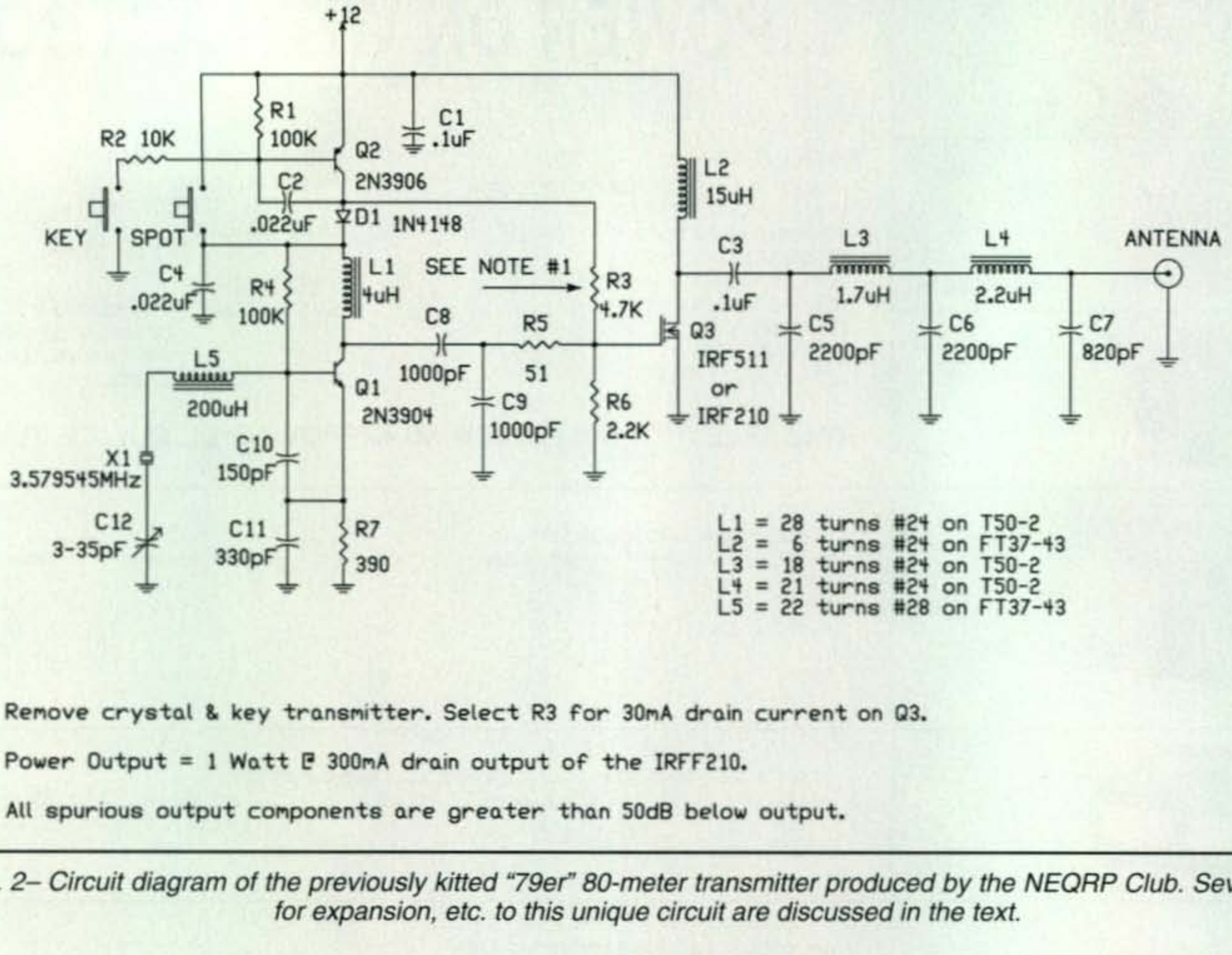


Fig. 2– Circuit diagram of the previously kitted "79er" 80-meter transmitter produced by the NEQRP Club. Several ideas for expansion, etc. to this unique circuit are discussed in the text.

output filter and the oscillator's collector choke (plus crystal frequency) should allow the transmitter to operate 40, 30, or even 20 meters. Tapping off the oscillator's collector with a 100-pFd capacitor should also yield a good mixer injection signal for slaving a simple direct-conversion receiver (with muting, etc.). That expansion could easily produce a simple, but effective, mini transceiver. Ah, dinking with QRP circuits is so much fun!

Lobstercon

Each year several large QRP gatherings or mini conferences are held in various areas of the U.S. The most familiar gathering is "4 Days In May" held in conjunction with the Dayton Hamvention®. There is also Pacificon held in California, Atlanticon in Maryland, Ozarkcon in Missouri, and Lobstercon in Maine. The events usually center around QRPers converging on a particular motel, piling into a large meeting room and discussing rig ideas and antenna designs and sharing tales of QRP success (short and tall!), plus squeezing in some on-the-air operating for good measure. A creditable number of new treats and goodies surface during these conferences, so they often set trends in QRP for several months afterwards.

Lobstercon is a mite different. It evolved from the creative mind of Rex Harper, W1REX, the guy behind <www.qrpme.com>, and it is an outdoor event with the emphasis on fun. Rex describes it as a mix of QRP, camping out, barbecuing, hobnobbing, eyeball QSOs, a swapfest, a musical jam, and a lobster feast.

Photo F– A select group of New England QRP Club members gather for a (SCAF) kitting party. As each kit passes around table, each member adds his precisely counted and double-checked parts to the package, and then a "tablemaster" rechecks each package for accuracy.

Photo G– One of several long tables at Lobstercon 2008. Notice tents and cars for camping out in background. That is Rex Harper, W1REX, behind the box of donuts on right side of table. Adjacent to Rex are Joel, KE1LA and XYL Grace, Jim, KC1FB, and XYL Claudia, K1TES is fellow in suspenders and Mark, KE1L is beside him. Jim, W1FMR, is in orange T-shirt. Gala outdoor event covered three days in July 2008. (Photos of Lobstercon courtesy K1LGQ)

Photo H– Lobstercon creator and the chap behind all those neat tuna-can rigs of <QRPme.com,> Rex Harper, W1REX, standing by the table. The chap at end of table and closest to Rex is well-known QRPer and designer extraordinaire Steve Webber, KD1JV. the photo was taken at sunset, hence orange tint.

A small crowd attended the first Lobstercon, which was held in a park near a Maine lighthouse in July 2000. Approximately 85 people from all areas of the U.S. attended Lobstercon 2008 (photos G, H, I, and J), which was held in Thomas Point Beach and Campgrounds in Brunswick, Maine, and even more people may attend Lobstercon 2009 planned for July 10–12. Camp spaces and lobsters are limited, however, so attendance will probably be cut off at 100. Interested in attending Lobstercon? Register early. Check <www.lobstercon.me> (another W1REX venture) for details.

Rex has more plans for Lobstercon (a most enthusiastic chap, indeed). He is striving to expand it into a "4 Days in July" event, and he is also encouraging other QRP groups to camp out and get on the air from their area with portable rigs that same weekend. With a bit of luck, we may hear Salmoncon from Washington State, Spudcon from Idaho, Corncon from Iowa, Cranberry-saucecon from New Jersey, and more (Dixiecon from Alabama, Concon from Alcatraz Island?) gracing QRP frequencies July 9, 10, 11, and 12.

You can help! Spread the word among your area's QRPers and contact <w1rex @qrpme.com> to coordinate plans. This promises to be a big event, so mark your calendar now and join in the fun!

Conclusion

That overflows available space for this time, friends, but stay with us for more news on Lobstercon and nationally coordinated "cons on the air" (did I really say that?). Also, tell us if your club will join on-the-air festivities and what type of activities or projects you are pursuing. There is power in numbers, and there are enough QRPers for them to be a major force in amateur radio.

May the force of good signals always be with you.

73, Dave, K4TWJ

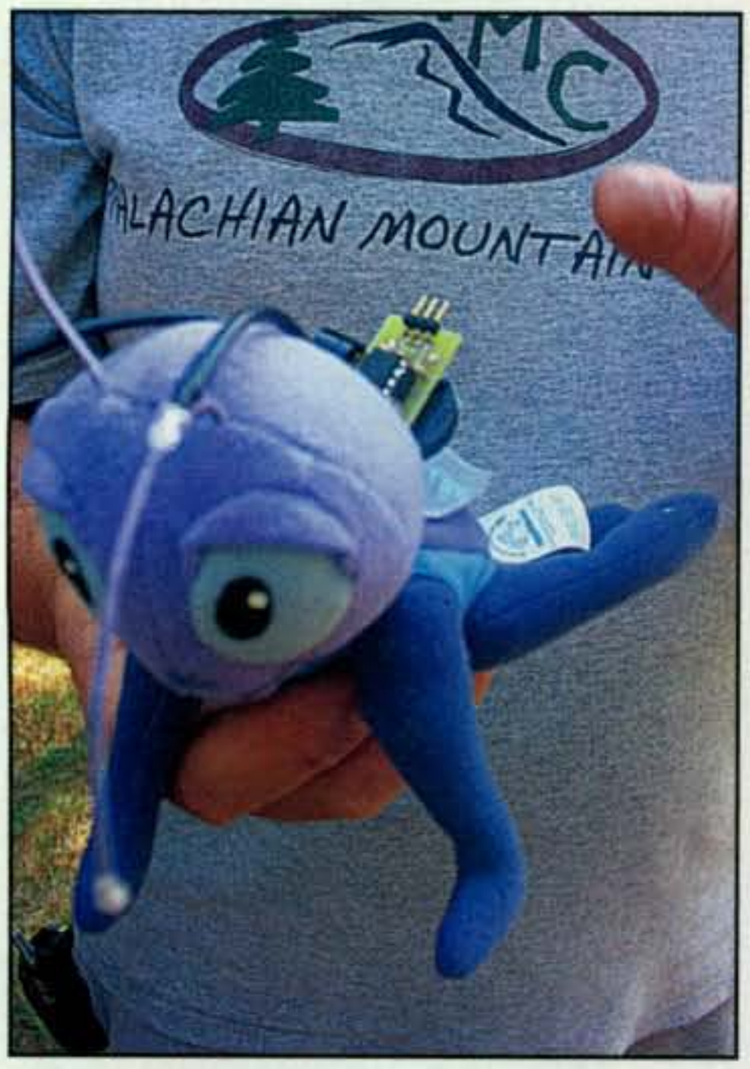


Photo I– Each preregistered guest at Lobstercon received a "Maine Bugs" kit, as featured in our December 2009 "World of Ideas" column, as part of the attendee welcome package. Here Bruce Bedford, N1RX, shows his kit assembled and installed in a temperature-chirping stuffed bug. Cool!

Photo J– Like any good QRP meet, Lobstercon also had its share of rigs built in Altoids® tins on display. This is only a small sampling of the little delights. You know it is QRP if it is in an Altoids tin!

BY ANTHONY A. LUSCRE,* K8ZT

Antenna Tuning Accessories, 3-GHz Dummy Load, 35–45 kHz Receiver . . . and more

This month we begin with a variety of antenna switches and accessories. Next are a 3-GHz dummy load and a receiver to monitor the ultrasonic band (35 to 45 kHz). We then continue with some reading material for the cold winter nights. Finally, we visit The Amateur Radio Website of the Month.

Antenna Tuning Accessories

Array Solutions has announced seven new products to complement your antenna setup.

The Array Solutions QSK MASTER (photo A) is a 160–6 meter, 2500-watt, continuous-power external QSK switch. Internal strapping options include amplifier polarity keying sense, 120/240-VAC powering, and added turn-off time delay to ensure that the QSK MASTER is compatible with any transceiver/amplifier combination. Also, the QSK MASTER's low-current keying interface means that it can be directly keyed by your transceiver without requiring a separate external transceiver/amplifier interface. For maximum reliability the QSK MASTER is relay-based, using a high-speed signal relay for transceiver and bias switching, and a Jennings high-current/high-speed vacuum relay for amplifier output switching. This means that the QSK MASTER is essentially lossless, so no optional fan is needed for high duty-cycle operation. Unlike PIN diode switches, the QSK-MASTER cannot be damaged by any sudden high-SWR event even when operating at maximum power. Introductory price is $375.

The Array Solutions SWSD-1 is a single-wire, single-direction Beverage Antenna System. The SWSD-1 consists of a receiver matching transformer assembly, and a 10-watt non-inductive termination resistor assembly. Both the matching transformer and termination assemblies are mounted in rugged NEMA 4X housings for long-life and superior outdoor reliability, and are designed to mount to a 1-inch OD galvanized water pipe available from any home-improvement store. The SWSD-1 provides excellent operation from 1.8–30 MHz and interfaces to your receiver via standard 50-ohm cable. Price is $79.

The Array Solutions TwoPAK Plus is a 1.8–148 MHz stand-alone, full-legal-limit, high-power and high-isolation, two-position remote antenna switch. The TwoPak PLUS consists of two separate assemblies: a remote weatherproof outdoor SPDT RF switch, and the full-legal-limit weatherproof Bias-T PLUS (see more information below), which can be placed conveniently in the shack. The Bias-T PLUS provides the RF switch A/B control voltage over the coax-cable feed-line, eliminating the requirement for an external DC control cable. The RF Switch portion of the TwoPAK PLUS is enclosed in a heavy-duty die-cast aluminum box. It has three SO-239 connectors (N-type optional), and a galvanized U-bolt for remote mounting at your antenna location. Price is $285 ($295 with "N" connectors).

The Bias-T MASTER is a 1.8–54 MHz stand-alone weatherproof unit that permits the application or extraction of DC power and control voltages of up to 1.5 amps on your coax-cable center conductor, thereby eliminating the requirement for external DC power wires. The Bias-T MASTER is used for remote powering of remote RF switches, mast-mounted preamps, or remote-mounted auto tuner (CG Antennas, SGC, ICOM, etc.) without running additional wires. The unit easily handles full-legal-limit power on the coax along with the DC control voltage. Price is $150.

For remote powering of mast-mounted preamps or other low-current devices, the Array Solutions Bias-T PLUS provides for the application or extraction of DC power and control signals of up to 400 ma on the center conductor of your coax cable. It easily handles full-legal-limit power from 1.8–148 MHz along with the DC control voltage. Price is $75.

How do you protect that expensive remote auto-tuner when the weather turns bad? The Array Solutions ATD-1 Auto-Tuner Disconnect is the

Photo A– Array Solutions' QSK MASTER is a 160–6 meter, 2500-watt, continuous-power external QSK switch.

*5441 Park Vista Court, Stow, OH 44224-1663
e-mail: <k8zt@cq-amateur-radio.com>

answer. The ATD-1 grounds both your auto-tuner output and the antenna feedpoint when the DC control voltage to the ATD-1 is disconnected. The DC control voltage may be supplied via the Bias-T MASTER, or through a separate DC connection. The DPDT relay used in the ATD-1 has 20 KV of gap and arc capability, so there is no need to worry about breakdown even at full legal limit into the worst loads presented to your auto-tuner. The ATD-1 is perfect for the CG-3000/5000, SCG, ICOM, and other remote auto-tuners. Price is $165.

Finally, Array Solutions has teamed up with the CG Antenna Company to provide the CG-3000 (200 watts PEP) and CG-5000 (800 watts PEP) remote auto-tuners. Both auto-tuners cover 1.8–30 MHz, include all-stainless-steel mounting hardware, and are housed in a professional and versatile harsh-environment ABS case that includes an "O" ring seal between the two body halves. The CG-3000/5000 enhanced software provides for lightning-fast tuning—usually about two seconds for the first tune and a few hundred milliseconds maximum when tuning from memory. Introductory price is $379.

For more information on these and other Array Solutions products visit <www.arraysolutions.com>.

Photo B– The ULTRA-RX1 receiver from the Xtal Society covers the ultrasound band of 35 to 45 kHz.

3-GHz 300-Watt Dry Dummy Load

The model MFJ-263 3-GHz 300-watt Dry Dummy Load uses a new high-tech metal film resistor that gives a low SWR up to 3 GHz. The MFJ-263 is mounted on a large, heavy-duty, air-cooled heatsink which handles 125 watts continuous and 300 watts for 10 seconds. The unit measures 10 3/4"W × 2 1/4"H × 5 1/4"D and uses a high-quality Teflon® "N" connector. Suggested retail price is $99.95. For more information or to purchase visit <www.mfjenterprises.com>.

35–45 kHz Ultrasound Band Receiver Kit

The Xtal Set Society has introduced a new receiver kit, the ULTRA-RX1 (photo B). The receiver covers the ultrasound band of 35 to 45 kHz, allowing you to "hear" insects, rodents, bats, and more. Signals emitted across species vary from single sine waves to chatter with a rich mix of harmonics and pulses. Sound power levels (SPL) emitted range from roughly 70 to 110 dB, sufficient to be heard from 25 to 100 feet with a high-gain receiver such as the RX1. Signals heard generally are a pattern of "clicks." Price of the unassembled kit is $69.95. For additional information visit <www.midnightscience>.

Worldwide Listening Guide

A new book by John Figliozzi, *Worldwide Listening Guide* (photo C), is being published by Master Publishing, Inc. Modeled on the author's popular *Worldwide Shortwave Listening Guide*, this new book explains radio listening in all of today's formats. Formats include "live," on-demand, WiFi, pod casting, terrestrial, satellite, internet digital, and the standard analogy AM, FM, and shortwave. The introduction section explains new formats of delivery methods for radio, including the over 20,000 radio stations that use the internet to stream their broadcasts. The book then looks at other methods of augmenting traditional radio listening, including using I-pods, MP3 Players, WiFi radios, and satellite downlinks.

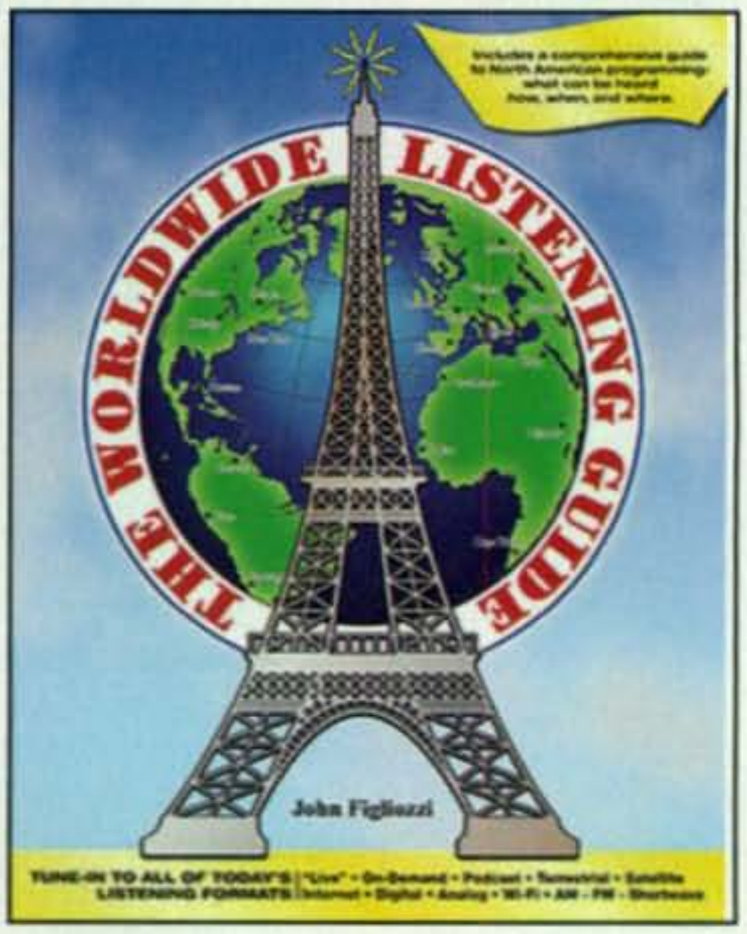


Photo C– Worldwide Listening Guide, *a new book by John Figliozzi, is published by Master Publishing, Inc. and available from the CQ Bookstore.*

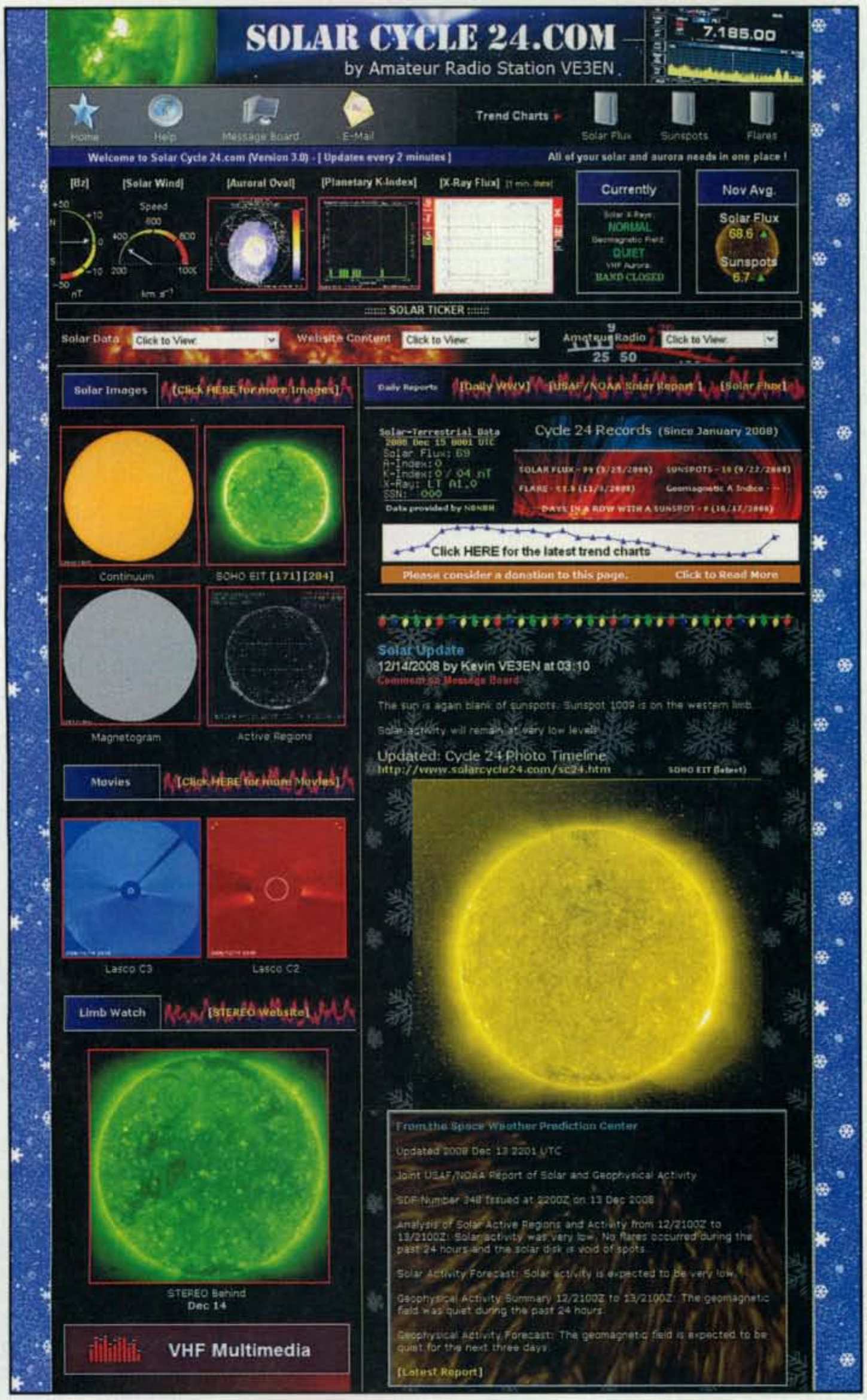


Fig. 1– Screen-shot of this month's Amateur Radio Website of the month, Solar Cycle 24.com. Its motto is "All of your solar and aurora needs in one place!"

The updated guide is organized to make it easy and convenient to use. Program listings are provided two ways:

• Programs are listed by UTC time, station ID/call letters, days of broadcast, type of programs, and their frequencies and/or web address. The "how to use" pages explain exactly the contents of listings columns.

• Classified listings are provided of programs by topic or subject area.

This new book is available from the CQ Bookstore (<www.cq-amateur-radio.com>, then click on the Store icon) or from Universal Radio (www.universal-radio.com.) Suggested retail price is $24.95.

Klingenfuss Offerings

Klingenfuss Publications has announced its 2009 list of publications. Included in the list are:

The 25th edition of *Guide to Utility Radio Stations* contains the latest frequencies used in the age of digital broadcasting. The guide also includes hundreds of digital data decoding screenshots. This reference is also updated continuously via the publisher's website.

The *2009 Shortwave Frequency Guide*, 13th edition, is "the most up-to-date worldwide shortwave radio handbook available today." The listings are arranged alphabetically and by frequency and include both broadcast and utility stations.

The *2009 Super Frequency List*, 15th edition, on CD includes more than 40,000 entries.

For more information on the above visit <www.klingenfuss.org>.

The Amateur Radio Website of the Month

This month's Amateur Radio Website's motto is "All of your solar and aurora needs in one place!" Solar Cycle 24.com (fig. 1) at <www.solarcycle24.com> provides both up-to-the-minute and historical data on solar and aurora activity. With its colorful graphics, color-enhanced images, and wide variety of charts, Cycle 24.com catches your eye while providing a number of windows on the world of propagation. The site, by Kevin Gilles Gibeau, VE3EN, has information on: Daily WWV numbers, USAF/NOAA Solar Report, Solar Flux, Planetary K-Index, Auroral Oval, X-Ray Flux, Cycle 24 Photo Timeline, and more. Hopefully, as you read this in February, the sunspots will have continued to grow in number!

Wrap-up

That's all for this month's column. Remember, I welcome your feedback, questions, and/or comments. If you are a producer of a new product for amateur radio, please feel free to e-mail me or use the address on the first page of this column. Until next month . . .

73, Anthony, K8ZT

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.*

vhf plus

BY JOE LYNCH,* N6CL

It's About EME Communications

Of late, several issues are affecting the EME community and its future. Some of these issues are internal and some are external. I open this column with an external issue that Pat Barthelow, AA6EG, addresses. I close this column with an internal issue that I address. I invite you to read on to learn more about two of the issues that are affecting the EME community.

Reclaiming Old Dishes for EME

The following is from Pat Barthelow, AA6EG:

A recent chat with a friend in the JPL/Deep Space Network brought forth some interesting material. JPL/DSN has several primary sites in Australia, Spain, and Goldstone, in southern California. Each site has a mix of dishes, detailed at their respective DSN websites (see: <http://deepspace.jpl.nasa.gov/dsn>). There are a couple of generations of dishes approximately 30 meters (plus or minus) in size that are superseded by more modern versions. Also most stations have a huge 70-meter dish.

I was told by this high-level DSN person that a number of the smaller dishes (approximately 30 meters in size) are about to be phased out and possibly scrapped, due to budget cuts and newer, more accurate dishes coming on line. This may be an opportunity for EME enthusiasts to collaborate with universities to see if the surplus dishes (and their associated upkeep costs, which are not trivial—more about that later in this piece) could be managed for the respective universities' use, as well as for EME use. Some of the older DSN dishes have been given new life using this method. One that comes to mind is the Apple Valley (southern California) 30-meter dish, a former JPL asset and now run privately by an organization called the Lewis Research Center (see: <http://www.lewiscenter.org>).

Another group of dishes is being decomissioned at Goonhilly, England (see: <http://www.goonhilly.bt.com>). The British Telecom has been soliciting for interest proposals for reuse. If no proposals are forthcoming, they are planning to demolish those K-band quality 30-meter dishes! If someone contacted BT at Goonhilly, with a plan, perhaps he or she could adopt one or more of the dishes no longer needed by BT and put them to use in EME or other science outreach.

The other dish having reuse success is the CAMRAS-run (former user: ASTRON) Dwingeloo Dish in Holland, and the website (see: <http://www.camras.nl>) had an internet-ready SDR with digital files of a recent EME contest that a visitor could tune to hear the EME activity.

Other organizations around the world have large dishes, many of which are not used, or underutilized. It might be worthwhile to investigate these dormant dishes to see if they could be re-engaged in moonbounce work and science outreach, like I have done with Jamesburg, beginning in 2005 (<http://www.jamesburgdish.org>).

Here is the major problem with reclaiming these old dishes: The upkeep of such large dishes is both expensive and time consuming. One cost is associated with the Az/El drive motors. For EME use, this is not trivial. Our dish drive motors are very efficient, and probably under normal, no-wind conditions apply relatively low-power inputs to drive the two dish axes (i.e., four 20-hp motors, two for each axis, in proportioned power opposition, to eliminate gear backlash). However, if these motors were using a high percentage of their capacity, that could be, say, 30–50 hp for hours a time, which adds up.

Again, concerning maintenance, another astonishing item that the JPL/DSN representative and I discussed has to do with preventative maintenance. The JPL/DSN representative advised me that an investigation into a major bearing failure on one of the DSN dishes (in Spain) may have been due to something as simple as neglected maintenance, which simply consisted of periodic application of shots of grease to the bearing. Apparently overlooked for a long time, that bearing failure was *very* costly.

I don't yet know the best solutions/sources for financing science outreach costs of such wonderful instruments. However, it should be a worthwhile search to find such solutions. (Richard Branson, Sergey Brin, Woz, where are you when we need you?)

*e-mail: <n6cl@sbcglobal.net>

VHF Plus Calendar

February 1	Moderate EME conditions
February 2	First Quarter Moon
February 7	Moon Perigee
February 8	Very good EME conditions
February 9	Full Moon
February 15	Poor EME conditions
February 16	Last Quarter Moon
February 19	Moon Apogee
February 22	Poor EME conditions
February 25	New Moon

—EME conditions courtesy W5LUU.

AMSAT DXpedition Operations Loaners

The following is from Drew Glasbrenner, KO4MA, AMSAT-NA VP Operations, via the AMSAT News Service (ANS):

The AMSAT Operations team is in the process of acquiring a few sets of basic loaner gear that will be available to DXpeditions and other groups in order to promote activity on the satellites. Initially these will consist of simple FM portable stations including a full-duplex dual-band HT and an Arrow or other suitable antenna. *Depending* on the success of the program, we will likely expand it to include the transponder and digital satellites as well. We also expect to be able to integrate AO-51 operations into the program. In the recent past, similar efforts have been undertaken by individuals within AMSAT, including W9AE's AO-40 package, and KO4MA's gear loaned to the KG4SB Guantanamo operation.

Thanks to the past generosity of AMSAT-OZ and a few individual donors to a prior personal effort to equip a Peruvian university station for AO-40, I have approximately $140 to redirect to this project. To complete the first phase of this, I'd like to have on hand two split-boom Arrow antennas with diplexers and two late-model full-duplex handhelds. The preferred rig is the Kenwood D-7 or Yaesu FT-530. These will be packaged together in two custom crush-proof PVC carrying tubes. We already have a major DXpedition to a location within LEO range of most of North America interested in participating in the early part of this year.

If businesses, organizations, or individuals would like to assist in this program, please e-mail Drew at <ko4ma@amsat.org>. All sponsors will receive full recognition from AMSAT for their participation. As indicated above, our major needs at this point are two split-boom

Arrow antennas with diplexers and two full-duplex dual-band HTs.

Appalachian Trail via 2-meter Simplex Radios

The following is from Jorge L. de la Torre, KI4SGU:

I have formed a new e-mail group with the goal of activating the whole of the Appalachian Trail with 2-meter simplex radios. Called Peak-2-Peak, the site will be focused on this end and other outdoor and mountaintop operations for amateur radio operators. The purpose of the group is to promote the use and understanding of amateur radio by combining it with hiking/climbing/biking and mountaintop operating.

Radio amateurs on the summits of mountains contact other peak-2-peak stations along with amateurs not on mountaintops. The goal is to see how far your signal will go and who you can contact. Again, this is not a contest, so there are no points, scoring, multipliers, or other competition.

Then, there are mini-field days and mobile/portable operations. Basically just go out somewhere (preferably outdoors, in a park or mountain setting), set up, and operate. Usually two to four hours in duration, often these include 2 meters, 6 meters, or HF. These will sometimes be solo, sometimes with several stations in operation.

The long-term goal is to activate the whole of the Appalachian Trail with 2m/FM simplex, all 2100 miles of it, sometime in April 2012. This year we will try for the Georgia and North Carolina portions of the trail. This group has taken a lot of its inspiration from Colorado's "14er Ham Event," the Boy Scouts of America's "Operation On-Target," "SOTA-uk," and the LXpeditions group. I make no apologies.

While reading messages and looking at photos posted on the Yahoo Group link (http://groups.yahoo.com/group/peak-2-peak/) is encouraged, membership with message posting and other group privileges is limited to those who have actually participated in a peak-2-peak or LXpeditions event. To participate, follow the schedules and make contact on-air with a peak-2-peak participant. Please mention the date/time and frequency in your membership request to the group.

If you are an avid hiker and enjoy working your radio near the Appalachian trail, then please check out the Peak-2-Peak Yahoo Group.

New Canadian Beacons

The following is from Doug Leach, VE3XK, via Dana Shtun, VE3DSS, the VHF columnist of *The Canadian Amateur* magazine:

The West Carleton Amateur Radio Club VHF/UHF weak-signal beacons went operational into an array of nested half-wave stacks of KU4AB horizontal omni antennas at 25 ft.

this past December. The location on my tower at FN15wg is temporary and we hope to move the setup well away from active local VHF/UHF amateurs next summer.

Look for the beacon "VE3WCC FN15wg" CW identification on 432.358 MHz, 222.063 MHz, 144.297 MHz, and 50.009 MHz. All of those frequencies were selected because they were on clear 1-kHz slots in the beacon sub-bands. That said, there is an annoying carrier just above the 6-meter beacon at 50.010 MHz, which is not always present. As amateur radio is supposed to be exclusive on 6 meters, it should not be there without identifying in accordance with amateur radio rules. I don't know where it is coming from and would welcome anybody giving me a clue to its direction. It seems like southwest from my QTH.

The stacked antennas should launch most of the power at an elevation angle of 20–30 degrees above the horizon, whereas the original single KU4AB antennas radiated a lot of energy straight up. This new arrangement means that some of the locals may not receive the beacons at the same signal strength as before we changed to stacked antennas.

Please spread the word among your VHF/UHF contacts, as we need reception reports from near and far. I will be very interested in any signal reports. You can e-mail me at: <ve3xk@rac.ca>. My website is: <http://www.igs.net/~ve3xk/>.

Current Convention

The Orlando HamCation & Computer Show: The 63rd Orlando HamCation & Computer Show will be held February 13–15, 2009, at the Central Florida Fairgrounds, 4603 West Colonial Drive, Orlando, Florida. For details, see the website: <http://hamcation.com>.

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 organizations and/or conference organizers have announced calls for papers for their forthcoming conferences:

Southeastern VHF Society Conference: Technical papers are solicited for the 13th annual Southeastern VHF Society Conference to be held in Charlotte, North Carolina on April 24–25, 2009. Papers and presentations are solicited on both the technical and operational aspects of VHF, UHF, and microwave weak-signal amateur radio. In general, papers and presentations on non-weak-signal related topics such as FM repeaters and packet will not be accepted, but exceptions may be made if the topic is related to weak signal.

The deadline for the submission of papers and presentations is March 2. All submissions should be in Microsoft Word (.doc) or alternatively Adobe Acrobat (.pdf) files. All text, drawings, photos, etc. should be black and white only (no color). Please indicate when you submit your paper or presentation if you plan to attend the conference and present there or if you are submitting just for publication. Papers and presentations will be published in the conference *Proceedings.* Send all questions, comments and submissions to the program chair, Steve Kostro, N2CEI, at <svhfs2009@downeastmicrowave.com>. For further information about the conference please see the Society's website: <http://www.svhfs.org>.

Central States VHF Society Conference: Technical papers are solicited for the 43rd annual Central States VHF Society Conference to be held in Chicago, Illinois on July 23–26, 2009. Papers, presentations, and posters on all aspects of weak-signal VHF and above amateur radio are requested. You do not need to attend the conference, nor present your paper, to have it published in the *Proceedings.* Non-weak-signal topics generally are not considered acceptable. However, there are always exceptions. Please contact the folks below if you have any questions about the suitability of a topic. Strong editorial preference will be given to those papers that are written and formatted specifically for publication, rather than as visual presentation aids. Deadline for submissions: for the *Proceedings,* June 1; for presentations delivered at the conference, June 29; and for notifying us that you will have a poster to be displayed at the conference also June 29. Please bring your poster with you on July 23/24, 2008. Contact information: Kermit Carlson, W9XA, via e-mail: <w9xa@yahoo.com>, or snail mail at: Kermit Carlson, W9XA, 1150 McKee St., Batavia, IL 60510. Submissions may be made via the following: electronic formats (preferred); via e-mail; upload to a website for subsequent downloading; on media (3.5" floppy, CD, USB stick/thumb drive). For more information, please see the website: <http://www.csvhfs.org>.

And Finally . . .

Here is a question that seems to have generated a lot of activity of late on the moonnet reflector: When it comes to EME contacts, what is an "initial" contact—and why does it matter?

In order to answer that question, one needs to examine the history of EME operating. Because of what now seems primitive technology, a long time ago when EME operating first began to catch on within the weak-signal community the early pioneers built big, expensive stations for EME operations in order to work each other. There were so few of them that it was easy to keep count of how many there were on each band at that time.

Gradually, more people began to join the exclusive club of EME operators. I use the word *exclusive* here only to draw attention to the huge amount of work necessary to get on EME at that time—work that was usually outside of the ability of most of the amateur radio community. Even though it was exclusive, more and more amateur radio operators were able to overcome the barriers and get on the air. As a result of this growth, it became increasingly difficult to keep track of these newer operators.

Out of that desire to keep track of these newer operators as a way of continuing to encourage their participation in EME communications, a gentlemen's agreement rule was devised. Each time an EME station contacted another EME station for the first time that contact counted as an initial. Obviously, subsequent contacts between the same EME stations did not count as "initial" contacts. When one or the other of these two stations had a guest operator signing his or her callsign, the contact between the stations did not count as another initial contact because it was the same two stations once again working each other.

Yet, the flaw in the rule had to do with the question of what to do about the new operator at the old station. Did that new operator get to start his or her own count of initials? Yes, but once the new operator was getting known among the EME community, some of the old operators who had worked the old EME station would be discouraged from working the new operator at the old EME station because that contact with the new operator at the old station would not count as an "initial" contact. As a result of this unintentional boycott of the new operator, he would be unfairly handicapped in his quest to develop his "initials" totals, or to achieve any other EME goals, such as working new states or countries.

Is all of this explaining of the rule beginning to sound confusing? Of course it is. Nevertheless, it gets worse.

Our new operator decides to go to another old EME station and continue to operate under his callsign. Again, the same rule applies. Some of these same old EME operators who are keeping score of their "initial" contacts again avoid making contact with this new operator. However, this new operator, if he has made a significant location change (more than 50 km), gets to start a new initial count for himself. If, on the other hand, he has not made a significant location change, he gets to keep adding to his initial count that began at the first old station.

Decades have passed since the "rule" was adopted. Several other issues have surfaced that present even more problems for the rule. For example, every once in a while a duly-licensed amateur radio operator spouse of an EME operator decides to get on the air. Again, the rule states that only contacts between EME stations count. The spouse can keep his or her own "initial" score but may become discouraged because some of the old EME operators will not work that spouse simply because that contact does not count as a new initial contact.

It is easy to see how this same scenario plays out for members of a club station. Subsequent contacts with new operators of the club station are discouraged because some of the old EME operators will not contact the club station under any callsign other than the one they initially worked at that club station.

Here is another problem that has surfaced: An old EMEer has decided to retire and move into a retirement community. He finds a buyer for his home who is also a ham and who is also interested in EME contacts. After the sale is completed, the new owner of the home and the EME station gets on the air with his or her callsign. Under the "rule" no one who works this new operator at the old EME station can count that contact as an "initial" contact because the rule states that initial contacts must take place between EME stations. Again, some of the old EMEers are discouraged from contacting the new EMEer at the old EMEer's station because of the rule.

The latest problem that challenges the initial rule is the operation of a remote base by several operators who just happen to want to sign their own callsigns when operating that remote base station. Again, some of the old EMEers are discouraged from contacting the subsequent operators of the remote base station because these contacts do not count as "initials."

Because most of these operators are young and savvy (with one exception, an 81-year-old, who is probably the most savvy of the group), they have figured out the rule of the game as well as the unintended consequences of the rule. They made their point to the EME community that they want to have fun despite the rule. Furthermore, they have the audacity to bring up the issue of how counterproductive the rule is to encouraging new people to enter the wonderful world of EME communications.

It is pretty clear to this savvy group that for some in the EME community the "initials" score-keeping has made them exclusive members of a closed club. Here I use the word *exclusive* in its more negative sense, that being people who want to keep the status quo. It really doesn't matter to these closed-club members that the new operators might need their grid square, state, or country for a legitimate award. Contact with that exclusive closed club member is all but impossible.

There you have it—an analysis of a simple rule that was born out of the necessity to try to keep track of new EMEers as a way of developing interest in EME communications that has now become so antiquated and problematic that it now is preventing—or at the very least, highly discouraging—new operators from entering the EME community.

If we continue to find ways to keep the new operators out of our hobby, then our days are numbered. If you have ideas that will get around these self-imposed barriers to admission, please let me know and I will publish them here in this, your column. I look forward to hearing from you in the near future.

Until next month . . .

73, de Joe, N6CL

BY TED MELINOSKY,* K1BV

Extending A Short-Term Award

In the year 1658, we in America were still learning how to be colonists and many of the first Pilgrim settlers were struggling in a new and difficult world.

Kristianstads Radioamatörer, SK7BQ, established the Roskilde 1658 Award in recognition of the 350th anniversary of the Treaty of Roskilde signed on February 26, 1658. After this treaty the provinces of Halland, Skåne, and Blekinge became Swedish. Until 1658 they were still physically part of Denmark. Thus, they were Danish considerably longer than they have been Swedish.

The decades that followed the signing of the treaty were some of the most violent in the history of Sweden and Denmark. For centuries after the Treaty of Roskilde was signed the history of Sweden was focused on that of the prior Swedish provinces. However, books and TV shows have made the untold history of the former Danish provinces known to more people, not only in Sweden and Denmark.

Short-Term Roskilde 1658 Award

This Swedish award was originally designed to be made available during the anniversary year 2008. However, due to very poor propagation during most of 2008, the award period has been extended to now include all of 2009. The award is a cooperative effort among the amateur radio clubs in the three Swedish provinces, as well as the local chapter of EDR (the IARU organization in Denmark) in Roskilde.

The award certificate is an image of the actual treaty being honored and a map of Denmark and Sweden showing the territory involved. The prefix hunter will have the opportunity to snare some very exotic prefixes as a result of the stations activated to publicize the award.

To earn the award, at least four of the special Swedish callsigns listed below must be contacted by radio amateurs or logged by SWLs. If the Danish "joker" station OZ1658ROS is contacted or logged, then only three of the Swedish callsigns are needed along with the Danish joker station. Contacts must be made during 2008–2009. All bands and modes may be used. However, no QSOs made using repeaters, crossband repeaters, transponders, or satellites will count for the award.

The following callsigns are valid for the Roskilde 1658 Award: SH1658DK, SH1658OZ, SK1658OZ, SC1658OZ, SK1658DK, SB1658OZ, and OZ1658ROS.

Cards are not needed for the award. Your application will be checked against a master list of contacts from all the special stations. When you have made the necessary contacts, you may apply for the award. The sponsor will check the automated log, make sure you qualify, and then issue the certificate. (An online log will be available so you can be sure your contact has made it into their system.)

Award fees are as follows: For Swedish amateur radio stations and Swedish SWLs the fee is 50 SEK; for all all other the fee is $US10 or 7 Euros. Send the list of special stations you contacted along with the award fee to: Kristianstads Radioamatörer, Award Manager, c/o Anders Nordgren, Strömshall 4010, SE-280 60 Broby, Sweden. The Roskilde

*12 Wells Woods Rd., Columbia, CT 06237
e-mail: <k1bv@cq-amateur-radio.com>

The short-term Roskilde 1658 Award is issued in recognition of the 350th anniversary of the Treaty of Roskilde signed on February 26, 1658.

USA-CA Special Honor Roll

Henry Kiernan, KF2O
USA-CA All Counties #1173
November 3, 2008

USA-CA Honor Roll

500		2000	
W8QXO	3446	KW1DX	1368
		KF2O	1369
1000		W8QXO	1370
KW1DX	1761		
KF2O	1762	**2500**	
W8QXO	1763	KW1DX	1287
		KF2O	1288
1500			
KW1DX	1477	**3000**	
KF2O	1478	KF2O	1198
W8QXO	1479		

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.

1658 Award website (http://wwwsk7bq.com/roskilde) will continuously be updated with the latest information along with an activity calendar listing active stations for every week.

DX Awards

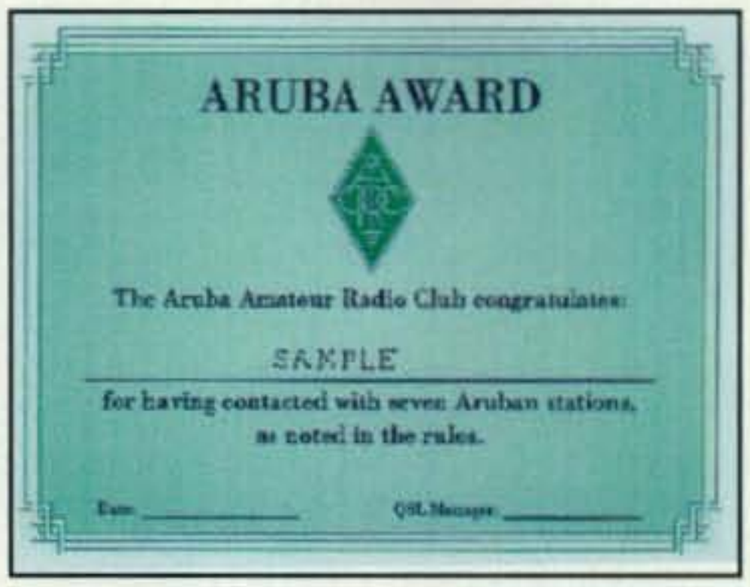
Some countries have large ham populations that support issuing of hundreds of awards. The biggest are Germany with over 400 awards, USA 380-plus, and Japan 250-plus. This month awards we publicize five small countries whose entire awards program each consists of just one award.

Andorra's 5 Bands Award. Work Andorra stations since January 1, 1989. Contact different Andorra stations on each of the five bands 3.5, 7, 14, 21, and 28 MHz, and the award may be All CW, All SSB, or Mixed. All stations with the C3 prefix count, except those with the C30 prefix. The award is free of charge. Send the five QSLs to: URA, P.O. Box 1.150, Andorra La Vella, Andorra. Internet: <http://www.ura.ad/CAT/Diplomes.htm>; e-mail: <ura@andorra.ad>.

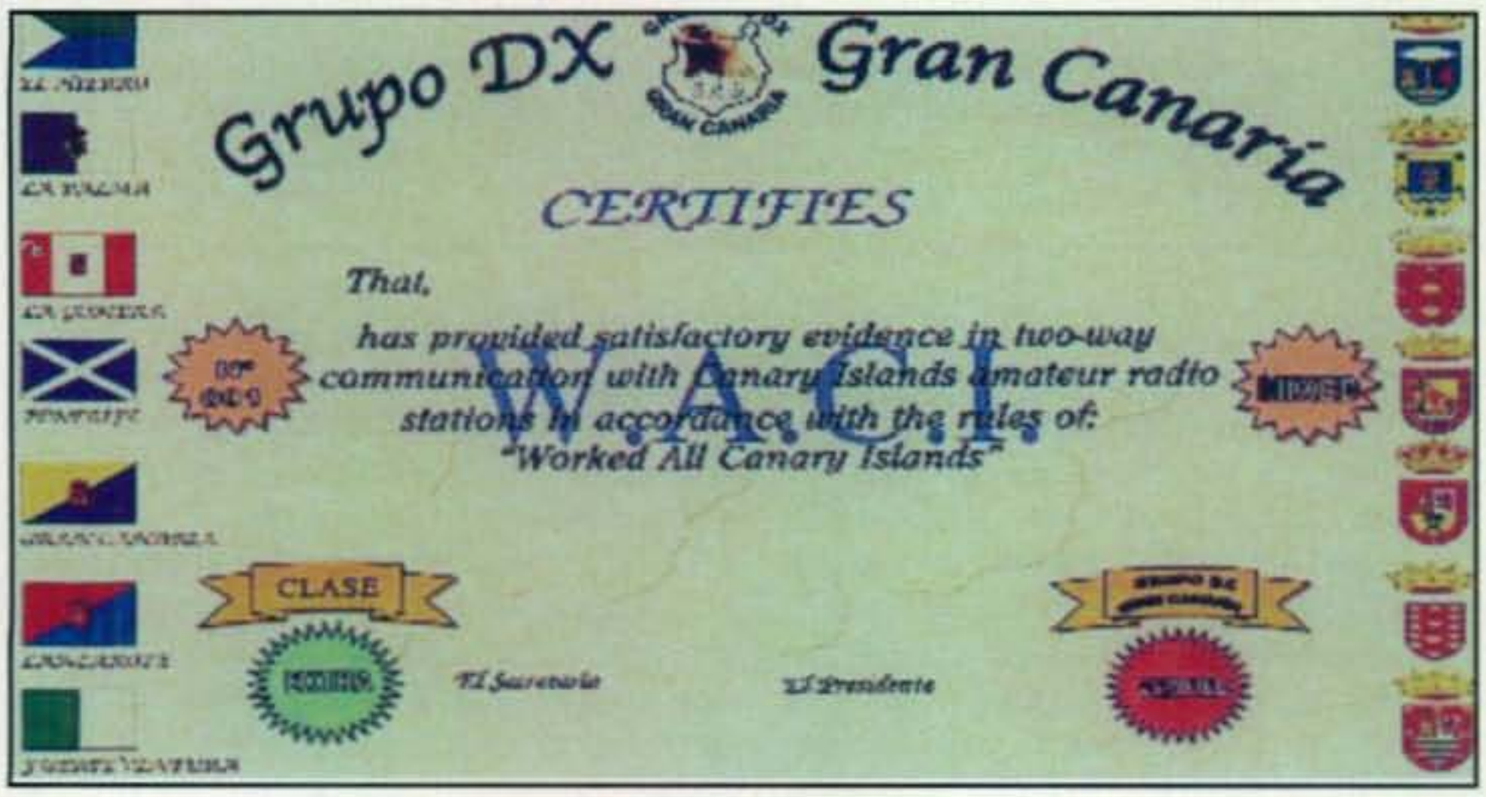
Aruba Award. Make seven contacts with different Aruban stations, of which at least five must be P43 prefixes. The others may be P40, P49, P4, etc. The following special callsigns belong to residents, and thus count as a P43: P41A, P41E, P40B, P40HQ, and P41HQ. SWL OK. All modes and bands allowed. Each P4 call counts only once, regardless of band or mode. Contacts must have been made since January 1, 1998. Send GCR list and fee of $US5 or 8 IRCs to: Aruba Amateur Radio Club, P.O. Box 2273, San Nicolas, Aruba. Internet: <http://www.qsl.net/aarc/w_award.htm>.

Worked All Canary Islands. Sponsored by the Grand Canaria DX Group, this award is available to any amateur or SWL who provides proof of contact or reception with the Canary Islands. The award is offered in two classes, Basic and Extra, and in five categories for mode, for a total of ten awards.

Work Andorra stations since January 1, 1989. on each of the five bands 3.5, 7, 14, 21, and 28 MHz, All CW, All SSB, or Mixed, to earn the country's 5 Bands Award.



Make seven contacts with different Aruban stations, of which at least five must be P43 prefixes, to qualify for the Aruba Award.



Sponsored by the Grand Canaria DX Group, the Worked All Canary Islands award is available to any amateur or SWL who provides proof of contact or reception with the Canary Islands.It is given in two classes and five categories for mode.

On the Cover

Kent Olson, KAØLDG, brushes away some of the 40-plus inches of snow that falls on his hometown of Fargo, North Dakota, in a typical winter. A ham since age 17, Kent's main interests—when he gets time to operate—include chasing DX, operating QRP (low power) and participating in contests, primarily to give out the rare multiplier of North Dakota.

His station is fairly straightforward, with an ICOM IC-746 Pro as his main transceiver, feeding a Cushcraft R7 vertical and a dipole antenna. He has an IC-706 and a Yaesu FT-897 as backup and portable rigs. "I was always interested in ham radio but never knew who to talk to about it," says Kent. But then he met a fellow student in his high school electronics class back in 1981 who was a ham, who introduced him to other local hams, who got him licensed and on the air.

The truck in our cover photo is a 1988 Mazda B2200, which Kent describes as "a real workhorse" with more than 130,000 miles on the odometer. His "other car" is a jet. ... A few months before getting his ham ticket, Kent joined the North Dakota Air National Guard and has made a career of it. He currently holds the rank of Lieutenant Colonel and is Vice Wing Commander. For several years, Kent flew an F-16. He noted that it was the only F-16 model with an HF radio aboard and that on long flights, once at altitude, he would occasionally tune to the ham bands and make aeronautical mobile contacts. He currently flies the C21, the military version of the LearJet. *(Cover photo by Larry Mulvehill, WB2ZPI)*

Hank Kiernan, KF2O
USA-CA All Counties #1173, November 3, 2008

Hank, KF2O, USA-CA All Counties #1173.

I was first licensed in 1957 as WV2AUB (and became WA2AUB when I passed my General test), but in a sense ham radio preceded that date in my life by quite a bit. I was always fascinated by geography as a young child, so when a friend introduced me to listening to some DX stations on his Zenith Transoceanic radio, it seemed to quite naturally evolve into getting my ham license and immediately going after all the DX I could muster. That wasn't very much with only a low wire 40-meter antenna and 20 watts out on a crystal-controlled Heathkit, but I did manage to work a few countries while in high school and college.

DXing has always been my first love, and when we bought our first house in 1969, I finally got back on the air. Somewhat limited then, as now, by a small suburban (noisy) lot, the antenna farm gradually expanded from low wires, to a telescoping pole, to a 25-foot telescoping tower with a tribander, and finally to a 75-foot tower with beams for 2 through 40 meters and a wire 4-square on 80 hanging off it, plus an inverted U on 160 hung in trees, and even a 60-meter vertical. Along the way, I upgraded to Advanced and Extra in 1981 and got my KF2O call.

The challenge of working DX motivated me, and it didn't take long to get DXCC, then 5 band DXCC. As each level was achieved I kept pushing out the envelope. By 2007 I reached #1 Honor Roll Mixed and SSB, and am only two short on CW. I had over 2900 band-countries worked for the DXCC Challenge, WAZ on nine bands, and was in the top 15 WPX Honor Roll for Mixed, SSB, and CW. There was little DX left to work that I hadn't already worked and sunspots were at the minimum. Plus I was now retired and had more time to devote to ham radio during the daylight hours.

So that's when I turned to county hunting! I had received the 500 level award in 1981, and over the years had confirmed about 1000 counties without making any specific effort. But looking for a new challenge, I began in May 2007 to hunt counties. I started with the state QSO parties (7QP and Alabama QP were the first), and then discovered the nets, MARAC, K3IMC forum, etc., the "mother lode" of county hunting. I wasn't smart enough in the summer of 2007 to realize I had better look for the "snowy" counties of the Dakotas, Montana, Idaho, etc., before winter set in, but I did manage to work much of the rest of the country. In summer 2008 I worked all the snowy counties I had missed. Finally, in August Larry, WØQE, who was also an early county hunting mentor for me, drove to Chase and hayes counties in Nebraska to give me my last two counties for 3077!

There were so many mobiles that gave me counties that I am reluctant to name them lest I leave out someone. However, I must mention Bob Voss, N4CD, whom I worked in over 400 counties! I would also like to thank the various net controls who give so much of their time to assist others in achieving the award, in particular Joe, N5UZW, on the 40-meter net, and Jim, KZ2P, on the 20-meter net.

Besides DXing and county hunting, I have always been an avid DX contester, and I'm the southern NY/NJ area manager for YCCC (Yankee Clipper Contest Club). I am also a QSL card collector and have about 75,000 cards neatly filed in shoeboxes all over my cellar.

My wife of 43 years, Pat, puts up with my radio hobby, as well as my golfing. We have two children and six grandchildren, whom we visit often and light up our life. We are regular churchgoers and travel whenever we can. Thankfully we have our health. Life is good! *—73, Hank, KF2O*

Basic: Contact or hear the seven major Canary Islands—El Hierro, Fuerteventura, Gran Canaria, La Gomera, La Palma, Lanzarote, and Tenerife.

Extra: Contact the seven islands listed above plus an additional seven islands, islets, or rocks on which there is no permanent amateur radio population and which appear in the official listing of the Spanish "DIE" (Diploma Islas Espanolas, <http://www.ea5ol.net/die/>) award program . These are identified in the "S-###" reference section with either "GC" (Gran Canaria) or "TF" (Tenerife) as the province and "AF-004" as the IOTA (Islands On The Air) number.

The award in either category can be requested for the following five modes: CW, SSB, FM, Digital (RTTY, SSTV, PSK31), or mixed modes. All bands and modes allowed and no date restrictions. Send a list including callsign, name of the island, band, and mode. Include scans or photocopies of the cards. You may also send scans of the cards by e-mail directly to the Gran Canaria DX Group at <grupodx@ea8.net>. The fee for each award is 10 Euros, $US15, or

Zone	Band (in MHz)								
	1.8	3.5	7	10	14	18	21	24	28
20	8	2	1	1	1	2	2	4	4
1, 2, 3, 6, 7, 10, 12, 19, 24, 25, 26, 27, 28, 29, 30, 31, 32	16	8	4	4	2	4	4	8	8
All other zones	8	4	2	1	1	2	2	4	4

Table I– Point values for the Cyprus Award.

The Cyprus Award is issued for contacts with stations on the island of Cyprus using the point values as shown in Table I.

7 IRCs. Apply to: W.A.C.I. Award Manager, P.O. Box 54, E-35080 Las Palmas de G.C., Spain. Internet: <http://www.grupodxgc.com/>.

The Cyprus Award. Contact Cypriot stations using the point values as shown in Table I. If all contacts are made on one band, 32 points are needed for the award. On two bands you need 24 points, on three bands you need 16 points, and on four bands only 12 points are needed. Any mode is acceptable. Contacts since April 1, 1973 count for the award. A special VHF endorsement is available. Send GCR list and 10 IRCs or the equivalent to Awards Manager, Cyprus Amateur Radio Society, P.O. Box 51267, 3503 Limassol, Cyprus. Internet: <http://www.cyhams.org>.

Papua New Guinea Birds of Paradise Award. Contact Papua New Guinea (P29) stations after September 16, 1975. Oceania stations need seven in at least five provinces; others must contact five in at least three provinces. The National Capital District (Port Moresby) is a separate province. The official society station P29PNG may be substituted for any province. All bands and modes may be used. Send GCR list and $AUS2 or $US2 to: Awards Committee, P.O. Box 204, Port Moresby, NCD, Papua New Guinea.

The provinces include: Capital Dist. East, Manus, Southern Highlands, Central, Milne Bay, West New Britain, Chimbu Gulf, Morobe, West Sepik, East New Britain, New Ireland, Western Highlands, Eastern Highlands, North Solomons, Western, Enga, Northern, Madang, and Sepik.

Contact Papua New Guinea (P29) stations after September 16, 1975 to earn the Birds of Paradise Award.

Work or hear at least four land-based (not /MM) Solomon Islands stations for The 4 From 44 Award.

Solomon Islands The 4 From 44 Award. Work or hear at least four land-based (not /MM) Solomon Islands stations after July 7, 1978. Band or mode endorsements are available upon request. Send GCR list and $2US, 1 Pound UK, or 12 IRCs to: The Awards Manager, SIRS, Box 418, Honiara, Solomon Islands. *(Note: I believe this award is still being issued, but could not verify it at the time of writing this column in mid-December.—ed.)*

We're always interested in hearing from clubs, special interest groups, or individuals who sponsor an award. Please contact me at the e-mail address shown on the first page of this column.

73, Ted, K1BV

BY CARL SMITH,* N4AA

Desecheo and Other 2009 DXpeditions

We're knee deep into the contest season by now and have a couple of really good DXpeditions coming up. I was not able to provide any "advance" notice of the Palestine operation, since it was still rumor until mid-December and then planned for January 1–11. The team announced included several Italians and one Polish operator.

Joe, AA4NN (on the left), and Phil, W9IXX (right), as they operated from St. Barthelemy as TO5DX the end of October. (Photo courtesy of Joe, W8GEX)

This is Michel, OD5TX/A61TX, operating from the Emirates Amateur Radio Society club station, A62ER/ND. Ali, A61C, took the photo of Michel. Jack, W4JS, is QSL Manager for both Michel and Ali. (Photo courtesy of Ali, A61C, and Jack, W4JS)

KP5, Desecheo

The KP5 operation from Desecheo has been scheduled for February 12–26. The news release in late November gave more details:

These dates were coordinated with other USFWS research activities scheduled on other parts of Desecheo Island, as well as scheduling USFWS security personnel for the camp.

Fifteen operators will be allowed on the island at any given time. A total of 6–8 stations will be operational, including 160–6 meters.

A reconnaissance trip to Desecheo was scheduled for Friday, December 19. Three team members, USFWS personnel, and a UXO (unexploded ordnance) expert were to sweep and clear the assigned area of UXO and other hazards. There will be no radio operations.

The 15-man team will assemble in Puerto Rico on February 8, 2009, for mandatory UXO training. The next three days will include team operations training, and last-minute preparation and staging of the several tons of equipment for transport. On February 12th, landing will commence and two stations will be immediately activated. Likewise, stations will continue to operate until the final moments before departure on February 26th.

Halfway through the operation, on February 19th, approximately half of the operating team will be replaced with fresh operators for the final week.

The team has been diligently planning antennas and propagation paths to take advantage of every possible band opening to Asia, where Desecheo is #2 on the Most Wanted List, and Europe, where it is ranked #3 on the Most Wanted List.

Contributions are being solicited. To assist us and for the latest news, please go to the website: <http://www.kp5.us>.

73, Glenn Johnson, W0GJ, and Bob Allphin, K4UEE, designated Desecheo 2009 co-leaders

*P.O. Box DX, Leicester, NC 28748-0249
e-mail: <n4aa@cq-amateur-radio.com>

The Bavarian Contest Club team participated in the WAE RTTY Contest from 9K2HN 's superstation with a claimed score of 3.3 million points. Left to right: Chris, DL5NAM; our host Hamad, 9K2HN; Yaser, 9K2YM (non-op visitor); Harry, DM5TI; Uwe, DL9NDS; and Markus, DL9RCF. (Photo courtesy of Markus, DL9RCF)

The WPX Program

CW

3209.....HL5YI 3211.....WD9DZV
3210.....HA2ESM

SSB

3026.....WA8UEG 3027.....JE8DVU

Mixed

2021.....WA8UEG 2022.....TI2KAC

Digital

19.....WA8UEG 22.....DK2AJ
21.....KF2O

CW: 550 HA2ESM. 850 WD9DZV. 1000 SP5JXK. 1600 W2OO. 2300 VE6BF. 2350 W9IL. 3000 KF2O. 5400 K9QVB.
SSB: 850 K7SAM. 900 VE6BF. 1450 WM4R. 1900 W2OO. 2300 W9IL. 3300 KF2O.
Mixed: 1000 DH5MM. 1350 TI2KAC. 1650 KC9ARR. 2350 W2OO. 2450 VE6BF. 3150 W9IL. 3600 ON4CAS. 4050 KF2O.
Digital: 350 DK2AJ. 400 KF2O. 600 KØDEQ. 800 9A3JB..

30 Meters: W2OO, KF2O
17 Meters: W2OO, 7K3QPL,KF2O
12 Meters: W2OO, KF2O

Award of Excellence: UT9FJ, UT4EK
160 Meter Bar: UT9FJ
30 Meter Bar: W2OO, KF2O
17 Meter Bar: W2OO, KF2O
12 Meter Bar: W2OO, KF2O
Digital Bar: UT9FJ

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, KBØG, 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, WX3N, 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.

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, KBØG, F6BVB, YU7SF, DF1SD, K7CU, I1POR, K9LJN, YBØTK, K9QFR, W4UW, NXØI, WB4RUA, I1EEW, ZP5JCY, KA5RNH, IV3PVD, CT1YH, ZS6EZ, YU1AB, IK4GME, WX3N, 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.

Complete rules and application forms may be obtained by sending a business-size, self-addressed, stamped envelope (foreign stations send extra postage if airmail desired) to "CQ WPX Awards," P.O. Box 355, New Carlisle, OH 45344 USA. Note: WPX will not accept prefixes/calls which have been confirmed by computer-generated electronic means.

*Please Note: The price of the bars for the Award of Excellence are $6.50 each.

CQ DX Awards Program

SSB

2516.....CT1DNU 2518.....K4IQJ
2517.....IKØWHN

SSB Endorsements

330.....VE2PJ/339 330.....N4MM/339
330.....K4MZU/339 330.....N4JF/339
330.....KE5K/339 330.....IØZV/339
330.....K4MQG/339 330.....K2TQC/339
330.....N7RO/339 330.....K3JGJ/339
330.....K5OVC/339 330.....K2FL/338
330.....OE5EGL/339 330.....K4IQJ/334
330.....W4WX/339 275.....XE1MEX/293
330.....K9MM/339

CW Endorsements

330.....N7FU/338 330.....K4IQJ/338
330.....K4MQG/338 330.....K4JLD/337
330.....N7RO/338 330.....N6AW/336
330.....K2FL/338 330.....N4AH/336
330.....N4JF/338 320.....K1FK/328
330.....W8XD/338 310.....WA4DOU/316
330.....K2TQC/338 275.....HA5LQ/277

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. Currently we recognize 338 active countries. Please make all checks payable to the award manager.

An interesting point to be considered by everyone is that Desecheo is ranked at #51 in North America. All of the above Most Wanted rankings are from *The DX Magazine*'s Most Wanted Survey results for 2008 and thus are the most recent/accurate indication of the need for the various areas of the world. NA operators should be reasonable and understand that the DXpedition will be focusing on working the areas where KP5 is most needed as propagation allows.

YWØA, Aves Island

The 4M5DX Group of Venezuela is planning a DXpedition to Aves in February or March. Some details are available on

The Len Wells Ham Spirit Trophy is awarded annually to a ham radio operator who has displayed true ham spirit in the interest of our hobby. This trophy, in memory of Len Wells, ZS1AU, has been in circulation for 40 years. Here the son of Len Wells, Dennis Wells, ZS1AU, presents the trophy to Rassie Erasmus, ZS1YT (left), a member of the Takboland Club, who also happens to be the president of the South African Radio League. Rassie had just returned from attending the IARU Region 1 meeting in Croatia. (Photo courtesy of Dennis, ZS1AU)

CQ DX Field Award Honor Roll

The CQ DX Field Award Honor Roll recognizes those DXers who have submitted proof of confirmation with 175 or more grid fields. Honor Roll lisiting is automatic upon approval of an application for 175 or more grid fields. To remain on the CQ DX Field Award Honor Roll, annual updates are required. Updates must be accompanied by an SASE if confirmation is desired. The fee for endorsement stickers is $1.00 each plus SASE. Please make all checks payable to the Award Manager, Billy F. Williams. Mail all updates to P.O. Box 9673, Jacksonville, FL 32208.

Mixed

K2TQC.....265
HAØDU.....228
W1CU.....228
VE3XN.....217
KØDEQ.....216
N8PR.....214
HA1RW.....213
HA5WA.....206
KF8UN.....205
N4MM.....201
F6HMJ.....201
VE3ZZ.....201
JN3SAC.....200
W4UM.....198
OK1AOV.....195
W6OAT.....194
N4NX.....192
HA9PP.....190
BA4DW.....188
9A5CY.....187
K8OOK.....184
K2SHZ.....182
K2AU.....182
KØCA.....181
K1NU.....180
ON4CAS.....180
W5ODD.....177
NØFW.....176

SSB

W1CU.....209
W4ABW.....199
KØDEQ.....192
VE7SMP.....190
N4MM.....184
W4UM.....182
NØFW.....176
DL3DXX.....175

CW

DL6KVA.....220
W1CU.....220
KØDEQ.....207
DL3DXX.....203
JN3SAC.....194
W4UM.....191
OK1AOV.....186
OK2PO.....184
N4MM.....179
N4NX.....177
KØCA.....175

5 Band WAZ

As of December 1, 2008, 759 stations have attained the 200 zone level and 1618 stations have attained the 150 zone level.

New recipients of 5 Band WAZ with all 200 zones confirmed:
EA5BRE

The top contenders for 5 Band WAZ (zones needed, 80 or 40 meters):

S51U, 199 (27)
N4WW, 199 (26)
W4LI, 199 (26)
K7UR, 199 (34)
W2YY, 199 (26)
IK8BQE, 199 (31)
JA2IVK, 199 (34 on 40m)
IK1AOD, 199 (1)
WØCP, 199 (18)
GM3YOR, 199 (31)
VO1FB, 199 (19)
KZ4V, 199 (26)
W6DN, 199 (17)
W3NO, 199 (26)
HB9DDZ, 199 (31)
RU3FM, 199 (1)
N3UN, 199 (18)
OH2VZ, 199 (31)
W1JZ, 199 (24)
W1FZ, 199 (26)
SM7BIP, 199 (31)
N4NX, 199 (26)
N4MM, 199 (26)
EA7GF, 199 (1)
N6HR/7, 199 (37)
JA5IU, 199 (2)
RU3DX, 199 (6)
N4XR, 199 (27)
HA5AGS, 199 (1)
VE3XN, 199 (26)
YU7GMN, 199 (10)
K7LJ, 199 (37)
RA6AX, 199 (6 on 10m)
RX4HZ, 199 (13)
KØGM, 199 (17)
S58Q, 199 (31)
WB9EEE, 199 (17)
KQØB, 199 (2 ON 10)
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)
OE2LCM, 198 (1, 31)
HA1RW, 198 (1, 31)
WK3N, 198 (23, 24)
W9XY, 198 (22, 26)
KZ2I, 198 (24, 26)
W7VJ, 198 (34, 37)
K9MIE, 198 (18, 21)
W9RN, 198 (26, 19on40)
W5CWQ,198 (17, 18)
K9OW,198 (34on10, 2on15)
I5KKW, 198 (31&23 on 20)
JT1BV, 198 (4, 11)
IV3MUC, 198 (1&31 on 40)

The following have qualified for the basic 5 Band WAZ Award:

G4OWT (180 zones)
KQØB (190 zones)
IK8GYS (152 zones)
KE5K (187 zones)

5 Band WAZ updates:

CT1EKY (200 zones)
G3WW (162 zones)
IV3MUC (198 zones)
OK2PEX (190 zones)
KQØB (199 zones)
SV6DVP (200 zones)
N4GG (195 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, 17 Green Hollow Rd., Wiggins, MS 39577. 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

10 Meter SSB
585 .....VE2BQB

15 Meter SSB
642 .....VE2BQB

20 Meter SSB
1177 .....VE2BQB

40 Meter SSB
107 .....EA5BRE

10 Meter CW
197 .....VE2BQB

15 Meter CW
332 .....VE2BQB

20 Meter CW
581 .....VE2BQB

40 Meter CW
265 .....N6AW

80 Meter CW
75 .....VE2BQB

All Band WAZ

Mixed
8533.....JA7VEI
8534 .....G4OWT
8535.....SV3ICK
8536.....KQØB
8537 .....K5DB

SSB
5086 .....KG4VPC
5087 .....JA1ERB
5088.....MMØXPG
5089.....WØWG
5090 .....IK8GYS

CW
548 .....JFØEHX
549.....DL2HJ
550.....HA2ESM
551 .....HL2JFM
552.....OM4EX

RTTY
192 .....K7MTR

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, 17 Green Hollow Rd., Wiggins, MS 39577. 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>.

the website: <http://www.yw0a.4m5dx.info/>. An interesting comment from that website says:

Isla de Aves is the most lonely island in the Caribbean Sea, a small and remote island composite of sand and coral. It has some 400 meters north to south direction and around 100 meters at the widest point (north section) and 10 meters wide at the narrowest point (central section).

Approximately 4.5ha (11.115 acre) of surface area, this located in the Caribbean west of the islands of Leeward, on 15 40 18 N, 63 36 59 W, at 1109 km west of Guadeloupe and Dominica. It has a length that does not exceed 150 meters and its maximum point is 3 meters (9 feet) over sea level on a calm day.

On some occasions, during strong storms, the island is submerged completely. On it is a military base (pile-dwelling) settled by the naval forces, raised on piles to protect it from the tides.

FR/G, Glorioso

Glorioso was a question mark last month, but I did get "official" information stating that the DXpedition is still "go" but has been delayed until sometime later in 2009 due to a problem in

The CQ DX Field Award Program

CW

55 .....HA2ESM

Digital

13 .....SV1EOS

Endorsements

Mixed

250 .....K2TQC/265
200.....KØDEQ/216
200 .....W1CU/228
175 .....OK1AOV/195

SSB

200.....W1CU/209
175.....KØDEQ/192
175 .....W4UM/182

CW

200.....W1CU/220
200.....KØDEQ/207
175 .....W4UM/191
175 .....OK1AOV/186
3.5/7 MHz JN3SAC

RTTY

100.....W1CU/144

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. Please make all checks payable to the award manager.

QSL Information

R3RRC via RW3GW/3
R3RRC/Ø via RW3GW/3
R3RRC/AM via RW3GW/3
R3RRC/ANT via RW3GW/3
R3RRC/MM via RW3GW/3
R9ØLPU via RX1CQ
R9ZF/NN7A via NN7A
RAØCL via IK2DUW
RA9LI/9 via UA9LP
RIØB via RW3GW/3
RIØL via IK2DUW
RI3OTA via RW3GW/3
RI3OTA/AM via RW3GW/3
RKØLXD/P via IK2DUW
RL6YXX via N3SL
RP3DY via RW3DY
RSØB via RW3GW/3
RSØB/P via RW3GW/3
RUØLL via IK2DUW
RV3GW/1 via RW3GW/3
RV3MA/0 via RW3GW/3
RW3GW/0 via RW3GW/3
RW3GW/6 via RW3GW/3
RZ3AZO/1 via RW3GW/3
S52X via NI5DX
S79ELY via JA1ELY
S79J via JA1ELY
S79MH via HB9OCR
SM7/DK3PZ via DK3PZ
SN8A via SP8AQA
SO9R via SP9SX
SP8ZKX via SP8AQA
SU/KJ9I via KJ9I
SU1HR via RW3GW/3
SV5/DJ5AA/P via DJ5AA
SV8/DK6SX via DK6SX
SV9/I1JQJ via I1JQJ
SV9/OZ8ZS via OZ8ZS
T26U via RA3AUU
T32CXX via WØCXX
T32DAS via KØDAS
T32XG via JA1XGI
T4ØC via N1KI
T77IARU via 3A2LF
T88II via KJ9I
T88YT via JI1PLF
TA1ØØFB via TA1CM
TC1ØØFB via TA1HZ
TC17GS via TAØU
TC37F via LZ1NK
TK/3A2LF via 3A2LF
TMØA via F5OIU
TMØL via F5OIU
TM3O via F5KEQ
TM4DGJ via F5KFF
TM8CDX via F5CQ
TO3T via VE3KF
TQØLER via 3A2LF

(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/>.)

scheduling transportation. The French team is made up of military personnel who are subject to their own personal schedules as well as the scheduling of military authorities who have control over Glorioso, plus transportation to and from there. The team is dedicated to "making it happen," but they must wait for all the pieces to come together.

T2, Tuvalu

This one is ranked #42 in Europe, and it will see action February 17 to March 2 by Bill, N7OU, and his friend Bob, W7YAQ. They will work mostly CW, especially during the ARRL DX CW Contest, on 160 to 10 meters. Their calls will not be known until they arrive. They will be operating from Fiji as 3D2 from February 11–16 as well.

DX Conventions

As this is being written in December, DX conventions are already starting to be announced for 2009. The 60th Annual International DX Convention, Visalia, California, will be held April 17–19, sponsored this year by the Northern California DX Club. They have already activated the website: <http://www.

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 339 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 338	W8XD 338	N5ZM 337	N6AW 335	G4BWP 334	W7IIT 330	F6HMJ 328	CT1YH 320	VE7KDU 300
WB4UBD 338	K2TQC 338	N4AH 337	KA7T 336	W1JR 334	G3KMQ 329	SM5HV/HK7 327	W9IL 319	KT2C 300
K3UA 338	N7RO 338	K2OWE 336	PY2YP 335	I4LCK 334	N5HB 329	W4LI 325	YT1AT 317	KØKG 300
K9MM 338	F3TH 338	N5FG 336	HB9DDZ 335	YU1AB 334	K1HDO 329	N4OT 325	RA1AOB 317	K4IE 291
W4OEL 338	K9BWQ 337	K9OW 336	K3JGJ 335	WØHZ 333	K7JS 329	YV5ANT 324	EA3ALV 316	G3DPX 284
EA2IA 338	N4MM 337	DL3DXX 336	K2JLA 334	K6LEB 333	W6OUL 329	KF8UN 323	W6YQ 316	N2VW 283
OK1MP 338	W7OM 337	K8LJG 336	F3AT 334	K5RT 332	N7WO 329	IKØTUG 321	WA4DOU 316	XE1MD 280
N7FU 338	W7CNL 337	N4CH 336	WA4IUM 334	K2JF 331	KE3A 329	W3II 320	UA9SG 310	W2JLK 277
N4JF 338	WØJLC 337	K9IW 336	PA5PQ 334	WA8DXA 331	K6CU 329	WG5G/QRPp 320	YU7FW 306	HA5LQ 277
K4IQJ 338	K4CN 337	W4MPY 336	K2ENT 334	K8SIX 331	KA3S 328	F5OIU 320	ON4CAS 304	
K2FL 338	VE3XN 337	K5UO 336	NC9T 334	W2UE 330	K1FK 328	PY4WS 320	WD9DZV 304	
K4MQG 338	K4JLD 337	K7LAY 336	W2VJN 334	W4UW 330	IKØADY 328	OZ5UR 320	N1KC 302	

SSB

K4JLD 339	N5ZM 339	K4IQJ 338	K8SIX 336	K5UO 335	W9IL 333	XE1MD 327	LU3HBO 317	EA8AYV 302
EA2IA 339	N7RO 339	XE1L 337	W4UW 336	WDØBNC 334	F6HMJ 333	DK5WQ 327	WB4GMR 317	N2LM 302
XE1AE 339	KE5K 339	OE3WWB 337	DL3DXX 336	WØYDB 334	YV1AJ 332	CP2DL 327	N8SHZ 316	4X6DK 301
IN3DEI 339	IØZV 339	K9OW 337	KE3A 336	W4NKI 334	KSØZ 332	NI5D 327	XE2NLD 315	4Z5FL/M 301
NØFW 339	OE2EGL 339	N5FG 337	K9IW 336	WA4IUM 334	LU4DXU 332	K7TCL 326	IZ6CST 314	N5WYR 300
DU9RG 339	W4ABW 339	PY2YP 337	N2VW 336	K5RT 334	VE4ROY 332	YV4VN 326	W6NW 314	YC9WZJ 300
K3UA 339	K5TVC 338	N6AW 337	K2JLA 335	W6SHY 334	CT1EEN 332	SV3AQR 326	EA3ALV 313	K7ZM 300
K6YRA 339	KZ2P 338	VE3MR 337	OE7SEL 335	W5RUK 334	YV1JV 331	KD5ZD 326	W7GAX 312	KW1DX 295
IK1GPG 339	W6BCQ 338	VE3MRS 337	ZL3NS 335	EA3KB 334	N5ORT 331	WR5Y 325	KA1LMR 312	W4EJG 295
DJ9ZB 339	W6EUF 338	AA4S 337	K7JS 335	CT3DL 334	CT1AHU 331	KC4MJ 325	ON4CAS 312	K7ZM 295
N7BK 339	N4CH 338	IK8CNT 337	PY4OY 335	VE7WJ 334	EA3JL 331	PY2DBU 325	RA1AOB 312	XE1MEX 293
4Z4DX 339	W7OM 338	EA4DO 337	PA5PQ 335	WA4WTG 334	K1HDO 331	YT1AT 325	KD2GC 311	K1RB 292
WB4UBD 339	K9BWQ 338	CT3BM 337	XE1VIC 335	ZL1BOQ 334	K7HG 331	KE4SCY 325	K5CX 310	W9ACE 291
OZ3SK 339	W8AXI 338	YU1AB 337	K2ENT 335	N7WR 334	N5YY 331	W4MPY 325	RW9SG 310	W5PVE 288
OK1MP 339	W9SS 338	K8LJG 337	IK6GPZ 335	K3LC 334	K3PT 330	K6GFJ 324	IØYKN 310	WD9DZV 287
K2TQC 339	VK4LC 338	W3AZD 337	NC9T 335	HB9DDZ 334	N1ALR 330	W6WI 323	XE1MW 309	HB9DQD 286
K4MZU 339	K7LAY 338	KØKG 337	K1UO 335	4N7ZZ 333	W9OKL 329	EA3CYM 323	AA1VX 308	VE7HAM 285
N4JF 339	OZ5EV 338	W2FKF 337	I8KCI 335	VE1YX 333	W2FGY 329	WN9NBT 322	WB2AQC 305	N8LIQ 284
W4WX 339	WS9V 338	W7FP 337	I8LEL 335	W2JZK 333	CT1CFH 329	W6OUL 322	K7SAM 305	WØIKD 283
K5OVC 339	EA3BMT 338	VE2GHZ 337	DU1KT 335	K8LJG 333	EA1JG 329	CT1ESO 321	I3ZSX 304	AE9DX 282
K4MQG 339	W6DPD 338	IKØAZG 337	CT1EEB 335	VE4ACY 333	KF8UN 328	XE1RBV 321	K3BYV 303	W5GT 276
N4MM 339	K4CN 338	YU3AA 337	W1JR 335	VE2WY 333	WØULU 328	VE7SMP 320	JR4NUN 303	HSØ/EA4BKA 276
K9MM 339	VE3XN 338	W7BJN 337	I4LCK 335	K9PP 333	K1EY 328	N1KC 320	YV2FEQ 303	K9DXR 275
VE2PJ 339	K9HQM 338	AB4IQ 337	ZL1HY 335	EA3EQT 333	K4DXA 328	W5GZI 320	KU4BP 303	AD7J 275
K3JGJ 339	K2FL 338	W4UNP 336	W2CC 335	YV1KZ 333	LU5DV 328	WØROB 318	W4PGC 302	

RTTY

WB4UBD 337	K2ENT 333	N5FG 331	OK1MP 328	EA5FKI 319	K4CN 303	W4EEU 297
NI4H 336	K3UA 332	N5ZM 330	G4BWP 320	PA5PQ 311	K8SIX 300	

Over 25 DXer/contester members of the North Carolina DX & Contest Club (NCDXCC) met for a pizza dinner and a tour of the facilities of the club's founder, Dave Anderson, K4SV. Dave's company, Trident Microsystems, is an electronics manufacturing facility in the Asheville/Hendersonville area of western North Carolina. Following the dinner and tour, two videos of the DXing adventures of Vlad, N3CZ (mostly in Africa), and Dave were enjoyed by the group. (Photo courtesy of Vlad, N3CZ)

dxconvention.org> so you can keep up with details as they become available. From that website:

The theme for the 60th Annual International DX Convention, our Diamond Jubilee year, is 60 years of DX history and looking forward to the next 60 years of DXing. This year the Northern California DX Club has gone all out to bring you an outstanding program, terrific raffle prizes, great speakers, good food, a wonderful YL tour, and short waits to sign up for banquet seating.

A new feature at the convention will be the Contest Academy sponsored by the Northern California Contest Club. The event will be held on Friday between 1 and 5 PM. Registration will open at 11 AM as a convenience to those attending the Contest Academy. Additional details on the Contest Academy will be posted on the IDXC website. We look forward to seeing you in Visalia!

Most Wanted Survey

In the Desecheo item earlier in this column I mentioned *The DX Magazine*'s Most Wanted Survey for 2008. The overall worldwide results of that survey are posted on the web at: <http://www.dxpub.com>. A further breakdown of the survey results is also available; please see the website for more information.

Until next time, enjoy the chase and Have Fun!

73, Carl, N4AA

Unwritten Expectations in Contesting

BY JOHN DORR,* K1AR

February's Contest Tip

To work a dupe or not to work a dupe . . . that is the question! In my book, it's always faster to simply log a duplicate QSO that calls you rather than taking the time to debate it during the heat of battle. Also, there may be a reason why the station is calling you "again," notably that you really didn't have a valid contact the first time around. In today's computerized age there is no reason to not log a duplicate QSO. It costs you nothing and can prevent a "not in log" to possibly emerge when the final results are tallied. When compared to the operating philosophy of years gone by, today's world of contesting suggests that working dupes is encouraged. My, how times have changed!

We all have expectations when operating a contest. They range from winning your operating category to working a few new countries. As I've said many times, too, hopefully the prevailing goal in operating is that you're going to have fun doing it. Beyond the aspect of what you personally can get out of a contest are the expectations of your peers. The task of meeting those expectations is what I'm going to explore this month.

What do we exactly expect from each other when we enter a contest? I suppose at the highest level of consideration is the fact that we will operate ethically—follow the rules of the contest and our licenses, and engage in fair play. It all seems pretty simple. However, when you drill down a bit into the subject, there are some disturbing trends that I'd like to address. They are not "against the rules" per se, but cross the line of expectation for many competitors. In summary, topics to consider (and there are others) include:

- On-the-air Behavior
- Log Washing
- Spotting
- Category Selection

On-the-Air Behavior

The way we interact with each other at the height of competitive battle is at the core of what contesting is all about. In most cases contesting is the simple transfer of a callsign and an exchange. Unfortunately, with solar conditions being what they are, many contests have been jammed into the "Main Street" of bands—20 meters. Therefore, it's only natural that with unprecedented QRM levels, tempers occasionally will flare up and the jockeying process ensues to secure a usable frequency, making the contest interchange escalate into a little more than 59001.

However, we have an obligation to respect each other and particularly those operators who choose to use the bands for something other than contesting (yes, that mandate goes both ways!). Most rules specify unsportsmanlike conduct as a key criterion for disqualification. Common sense and respect also prevail!

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Calendar of Events

All year	**CQ DX Marathon**
Jan. 23–25	**CQ WW 160M CW Contest**
Jan. 24–25	REF CW Contest
Jan. 24–25	UBA SSB Contest
Feb. 7	Minnesota QSO Party
Feb. 7–8	Vermont QSO Party
Feb. 7–8	Mexico Int'l RTTY Contest
Feb. 8	North American CW Sprint
Feb. 7–9	Delaware QSO Party
Feb. 14-15	**CQ WW WPX RTTY Contest**
Feb. 14-15	Dutch PACC Contest
Feb. 15	North American SSB Sprint
Feb. 21–22	ARRL CW DX Contest
Feb. 21–22	REF SSB Contest
Feb. 27–Mar. 1	**CQ WW 160M SSB Contest**
Feb. 28–Mar. 1	North American RTTY QSO Party
Mar. 7–8	ARRL SSB DX Contest
Mar. 28–29	**CQ WW WPX SSB Contest**

Log Washing

If you're not familiar with the term *log washing*, you're probably wondering, "What the heck is he talking about"? It is an extreme example of post-contest manipulation in which a log is programmatically (or manually) processed against a database of valid callsigns, exchanges, and historical data to weed out bad QSOs, yielding an artificially low error rate in the final score after log checking. For decades, there has been significant debate over how much post-contest "adjustment" should be acceptable in a log entry before it's deemed no longer suitable for submission.

The range of opinion for acceptable behavior regarding this subject varies from hard-liners who suggest logs should be submitted "as is" immediately after the contest, to a more moderate view that allows for a quick run through the file to spot obvious typos. In my mind, it's hard to view use of external data sources as acceptable under any circumstance. Indeed, banning their use is an unwritten expectation in my book.

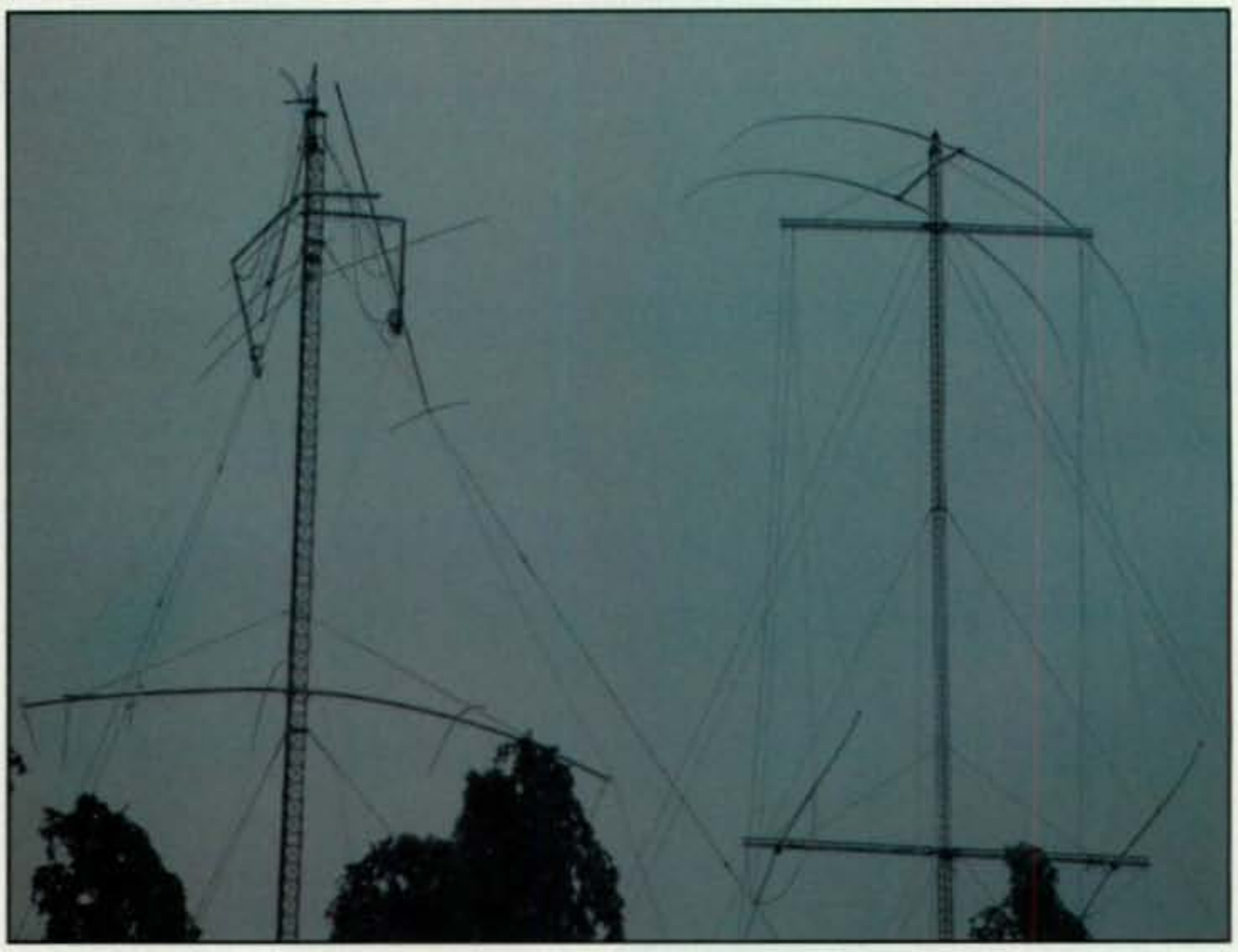
Spotting

Contest rules are very clear on how spotting can be used and in what categories. Most major contests have some type of assisted category expressly established for that mode of operation. Also, while there are always a few who try to use spotting as a single operator, log checking is getting very sophisticated in this area, so watch out. Your days are numbered.

However, there is also another aspect of this subject: the casual contest entry. For some reason, a few entrants think the rules apply differently if they are only operating a contest as a part-time effort. Their logic is "I'm not going to win anything, so who cares if I used spotting and sent my log as a single operator?" While it may be true that you won't win

Paolo, I2UIY (SK) CQ RTTY Contests Plaques

In fond memory of Paolo Cortese, I2UIY's significant, and jovial, contribution to ham radio contesting, *CQ* magazine is sponsoring a memorial plaque, "Single Op DXpedition" annually for each RTTY contest: February's CQ WPX RTTY and September's CQ WW RTTY. Paolo made many such contest expeditions himself, setting records and entertaining his hosts, so it is fitting to perpetuate his memory with these awards. For each contest, the recipient will be selected by the CQ RTTY Contest Committee from among the single-operator contest DXpeditions based on overall contribution, not just the score itself.



Nothing was spared by the New England ice storm in mid-December at KC1XX. (Photo courtesy of Matt, KC1XX)

your category, you are still competing against others who are very serious within the confines of their experience or station. Thus, remember the game of contesting is not just about winning. It's about following the rules regardless of how serious you may be in any given event!

Category Selection

Ah yes, an oldie but goodie. You enter a contest as a single operator, only to learn after the contest that you did poorly but would have won the single operator assisted category based on your final score. What do you do? You change your category after the contest and submit the winning entry. I know it's hard to believe, but some contesters do this. Also, like the other topics being discussed this month, the rules don't specifically prevent you from engaging in *this kind of* activity. While there has been much discussion about requiring entrants to pre-register before a contest, the burden of administrating that approach is significant on an already over-worked group of volunteers.

Fortunately, we have peer pressure on our side. There's nothing more effective in dealing with this situation than challenging your peers if you suspect they are playing the category maximization game. It is an unwritten expectation.

Working with the Robots

After any major contest, the log checkers receive scores of requests for assistance, usually related to issues pertaining to electronically submitting logs to the sponsor's contest robot. The following guidelines generally apply to most major contests, although there may be subtle differences from one to the other. Hopefully, you'll experience a little less pain the next time you submit your log.

• When submitting your log, simply enter your call in the Subject field of your e-mail message. There is no need to include anything else (e.g., category, pet's name, etc.). In many cases, adding extra text (especially punctuation) will result in an entry bounced by the robot.

• Simply attach your log file to the e-mail. There is no reason to add any text inside the e-mail message. It is never read by any of the log checkers and is unnecessary.

• Label your log file with just your call (e.g., K1AR.cbr). Don't use cute names such as CQWWCW08.cbr or other identifiers. Remember, computers do the heavy lifting here. Make their job easy (and that of the log checkers).

• If you make a mistake submitting your log (e.g., wrong category), you can always resend a correction. Logs may be submitted as many times as you like. Generally, the last submission is the only one that's considered your "final and official" entry.

• Send your log as a Cabrillo text file, hopefully one created by your contest logging program. The robot will reject

One of the many large antennas at KC1XX's superstation that was destroyed by the storm. (Photo via KC1XX)

Microsoft files (e.g., Word, Excel, etc.) and other non-text, non-Cabrillo formats. If you're having problems creating your Cabrillo file, start with the author's support system first and then contact the contest's help desk as a last resort.

• Carefully read any error messages you receive from the robot. While they may not always be clear, more often than not they will save you the pain of asking for help. The beauty of text files is that you can easily correct the mistakes with a text editor such as Notepad. As hard as it may be to believe, some logging programs have bugs and may not generate a syntactically correct file. Remember, there is no extra charge for submitting a log several times while attempting to "get it right."

• For some reason, many logs are submitted to the sponsor's "help" e-mail address. Make sure you send your log to the right place. Help locations are just for that—help, not for receiving logs.

Ice and Contesting

As I write this month's column in mid-December, my local New England region is experiencing the aftermath of one of the worst ice storms ever recorded in this area. Nearly 50 percent of New Hampshire's public-service power customers are without electricity (including me; thank goodness for state-of-the-art laptop batteries and generators). At my *home* station, I lost one half of my antennas, albeit a dipole, given that I only have wires in the trees. However, others were not as fortunate, as you can see by the picture of Matt Strelow, KC1XX's antenna devastation. Indeed, much of New England was dealt a heavy blow.

I know many of you are saying, "Finally, we can play fair and square with those guys." What I do know is that two inches of radial ice does not mix well with aluminum antennas suspended high in the air. We'll be talking about this one for many years to come!

Final Comments

I hope I've given you some food for thought regarding the unwritten expectations of contesting. Fortunately for all of us, we generally play by the rules, written or otherwise.

Well, that's it for this month, and what a month it has been! I have to get to work on that dipole now. There are certain advantages of maintaining a low-profile station. Being weak isn't one of them, but sleeping better at night has its appeal. See you in the next contest!

73, John, K1AR

propagation

BY TOMAS HOOD,* NW7US

The Ionosphere is Falling! . . . plus 2008 CQ WW CW Contest Conditions

A Quick Look at Current Solar Cycle Conditions

(Data rounded to nearest whole number)

Sunspots
Observed Monthly, November 2008: 4
Twelve-month smoothed, May 2008: 4

10.7 cm Flux
Observed Monthly, November 2008: 69
Twelve-month smoothed, May 2008: 70

***Ap* Index**
Observed Monthly,November 2008: 3
Twelve-month smoothed, May 2008: 7

As you may remember, I predicted good conditions for both contest days for the 2008 CQ WW DX CW Contest starting at 0000 UTC, Saturday, November 29 and continuing until 2400 UTC, Sunday, November 30. I postulated that the planetary *A*-index (*Ap*) would remain at about 5 for both days.

The WW CW Contest weekend was much better than predicted. The planetary *Ap* on the first day was a mere 2, falling to a very quiet 1 by the second day of the contest. The planetary *K*-index never got above 1, except during one period when measured at a high-latitude station. The *Ap* was 0 about half of the total contest time. With such quiet geomagnetic conditions, weaker signals are more likely to be heard on those bands where openings are weak yet present. Stable ionosphere conditions allow weak signals to propagate reliably.

The 10.7-cm radio flux was a low 68 on both days, and the observed sunspot counts on both days were 0. However, the typical CW signal can be received much farther along a given circuit than an SSB signal using the same power on the same circuit. The conditions resulted in reasonable propagation on many of the contest bands. These conditions fit pretty well with the forecast.

How did you fare in 2008 compared to 2007? I am interested in hearing from you regarding the differences between these years and how you did overall this time.

Poor Propagation on 40, 80, and 160 meters

There has been talk among the amateur radio community regarding strange propagation on 40 meters and below. The general report is that the expected propagation conditions that should be present on a given path are not what they have been during other solar cycle minimums. The consensus is that conditions are poor and that there seems to be no explainable reason. Since the geomagnetic field is often very quiet, and there is at least some solar activity, there should be better conditions. Yet,often the conditions are very poor.

There just may be a scientific reason behind these observations. The Air Force with NASA launched a Communication/Navigation Outage Forecast System (C/NOFS) satellite on April 16, 2008. Observations made by the Coupled Ion Neutral Dynamics Investigation (CINDI) instrument suite aboard that satellite have shown that the boundary between the Earth's upper atmosphere and space has moved to extraordinarily low altitudes.

CINDI is a NASA-sponsored Mission of Opportunity conducted by the University of Texas at Dallas. NASA's Explorer Program at Goddard Space Flight Center, Greenbelt, Maryland, managed the CINDI mission. The Explorer Program provides frequent flight opportunities for world-class scientific investigations from space within heliophysics and astrophysics.

The CINDI investigation is carried out as an enhancement to the science objectives of the C/NOFS satellite undertaken by the Air Force Research Laboratory and the Space and Missile Command Test and Evaluation Directorate.

By measuring the variations in neutral and ion densities and drifts, these instruments help scientists study disturbances in the Earth's ionosphere

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LAST-MINUTE FORECAST

Day-to-Day Conditions Expected for February 2009

	Expected Signal Quality			
Propagation Index.....	(4)	(3)	(2)	(1)
Above Normal: 2-14, 19-22	A	A	B	C
High Normal: 1, 18, 23-24, 24-28	A	B	C	C-D
Low Normal: 16-17, 26	B	C-B	C-D	D-E
Below Normal: 15, 25	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 fair (C) on Feb. 1st, good on Feb. 2nd through the 14th, 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.

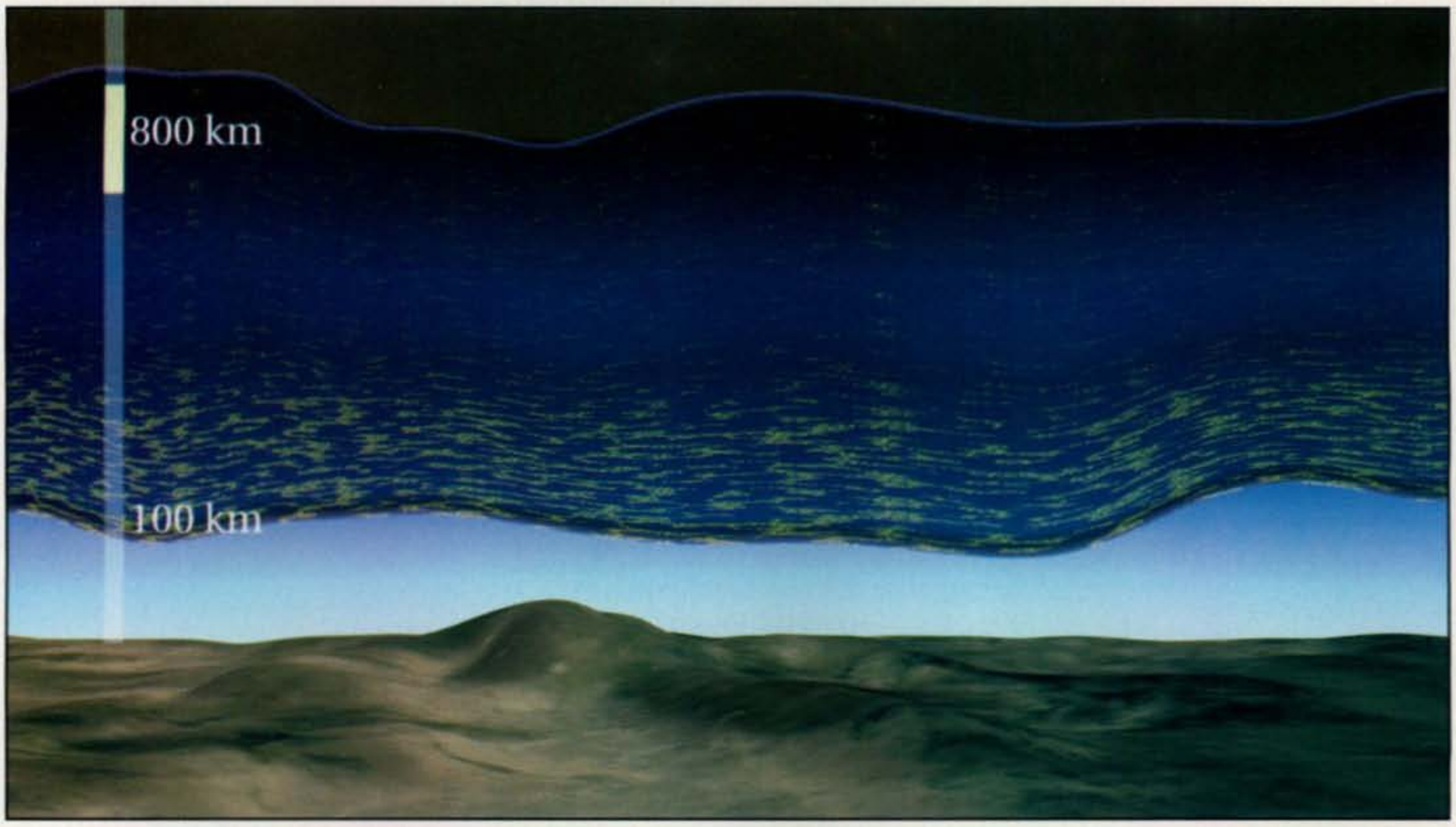

Fig. 1– CINDI has discovered that currently the ionosphere occupies less vertical height than expected. The findings show a link between the extent of the ionosphere and solar activity levels observed at solar minimum. This graphic shows the ion density of the ionosphere during the day. (Credit: NASA/Goddard Space Flight Center)

that can result in a disruption of navigation and communication signals. The ionosphere is a gaseous region in our atmosphere of electrically charged particles that surrounds our planet. Radio waves, typically in the shortwave frequencies, are propagated be refraction in this ionosphere, enabling long-distance communications. These communications can be disrupted by ionospheric disturbances.

CINDI's first discovery was, however, that the ionosphere was not where it had been expected to be. During the first months of CINDI operations the transition between the ionosphere and space was found to be at about 260 miles (420 km) *altitude during* the nighttime, barely rising above 500 miles (800 km) during the day. These altitudes were extraordinarily low compared with the more typical values of 400 miles (640 km) during the nighttime and 600 miles (960 km) during the day (see figs. 1 and 2).

The height of the ionosphere and space transition is controlled in part by the amount of extreme ultraviolet energy emitted by the sun. Scientists expected a somewhat contracted ionosphere because C/NOFS was launched during a minimum in the 11-year cycle of solar activity. However, the size of the actual contraction caught investigators by surprise. In fact, when they looked back over records of solar activity, they found that C/NOFS had been launched during the quietest solar minimum since the space age began.

It is clear that if the ionosphere is closer to the Earth than during past solar cycle minimums, the possible distance between two stations relying on ionospheric refraction becomes shorter. If an amateur radio operator expects a typical evening path to be open between, say, the East Coast of the United States and Europe, with an ionosphere much lower than typical, that path may well be closed.

The speculation that conditions are just not the same as they used to be is now a credible observation with a solid scientific reason behind it. The amateur radio community is observing real differences in daily propagation on the shortwaves.

February Propagation

From the middle of February through early April, typical equinoctial propagation conditions can be expected on the HF frequencies. This usually means a noticeable improvement in conditions between the Northern and Southern Hemispheres. Look for improvements between the United States and South America, Africa, Australasia, Antarctica, and parts of Asia. Equinoctial propagation occurs during the spring and fall months, when the sun is most directly overhead at the equator, producing similar ionospheric characteristics over large areas of the world. It tends to maximize during sunrise and sunset periods and over both short- and long-path openings.

As I write this, we are seeing more frequent sunspot activity, so little by little we'll see improvements in the propagation at higher frequencies over long-distance paths. It is always a surprise to the casual amateur radio operators when they get on a band such as 10 meters during the solar minimum and discover that there is still some life on the band, beyond short-skip distances, especially during periods when sunspots occur and the daily 10.7-cm flux levels increase enough to wake up the higher frequencies. However, the currently weak solar activity does not support worldwide DXing on the highest HF bands for any significant length of time.

During the daylight hours, optimum DX propagation conditions are expected on 20 meters. The band is forecast to open to all areas of the world sometime during this period, although often with moderate to strong fading. Conditions on 17 and 15 may be good, too, but usually for far shorter distances than

Fig. 2– This graphic shows that the ion density of the ionosphere practically disappears during the night. With the current unexpected low level of the boundary between space and the Earth's atmosphere, the distance of the propagation of radio waves off the ionosphere is much shorter than if the ionosphere were higher. (Credit: NASA/Goddard Space Flight Center)

SUCH A HAM

Not tonight, Mavis... I've got a QSO.

during peak solar cycle years. Conditions are expected to become optimal for an hour or two after sunrise and again during the late afternoon. For short-range paths (regional), 40 meters should be usable during most of the daylight hours. With increasing hours of daylight during February, expect the HF bands to remain open for an hour or so longer into the early evening than during the winter months.

Daytime conditions on 10 and 12 meters will be less exciting. Openings will be possible for stations in low latitudes using north-south paths, with no openings expected into Europe and the Far East.

During the early evening hours and to as late as midnight, seven bands should be available for DX openings; 15, 17, 20, 30, 40, 80, and 160 meters. Fifteen and 17 meters should hold up for openings towards Central and South America and the Caribbean, the Pacific area, Far East, and parts of Asia. Better openings into many areas of the world may be possible on 20 meters during this period, with the strongest signals from southerly and westerly directions. Good DX conditions are also forecast for 30, 40, and 80 meters for openings toward the east and the south. Openings in the same direction, but with higher noise

levels and weaker signals, should also be possible on 160 meters.

Between midnight and sunrise it should be a toss-up among 20, 30, and 40 meters for DX paths. These bands should open to many areas of the world with conditions favoring openings toward the south and the west. Expect similar conditions on 80 meters, but with weaker signals and higher noise levels. Be sure to check 160 for some unusual DX openings toward the south and the west during this period. Conditions on the bands between 160 and 20 meters are expected to peak at local sunrise.

VHF Conditions

Trans-equatorial (TE) scatter propagation tends to increase during the equinoctial period, and some 6-meter openings may be possible between 7 and 10 PM local time. The best bet for such openings is between the southern tier states and South America for paths approximately at right angles to the equator. An occasional TE opening may also be possible on 2 meters. Unlike *F2*-layer or sporadic-*E* openings on 6 meters, TE openings are characterized by very weak signals with considerable flutter fading.

Do expect moderate coronal-hole activity on occasion. With the influence of coronal mass ejections or elevated solar wind streams, the geomagnetic field may reach minor storm levels. While most days will see quiet conditions, there is a fair chance that geomagnetic storms will trigger modest auroral activity. Auroral activity tends to occur more frequently during the equinoctial period.

Current Solar Cycle Progress

The Dominion Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-cm observed monthly mean solar flux of 68.6 for November 2008, continuing a slow but steady monthly rise since July. The 12-month smoothed 10.7-cm flux centered on May 2008 is 69.7. The predicted smoothed 10.7-cm solar flux for February 2009 is about 74, give or take about 7 points.

The Royal Observatory of Belgium reports that the mean monthly observed sunspot number for November 2008 is 4.1, showing a nice rise over October's 2.9. The lowest daily sunspot value during November 2008 was 0, occurring on November 7–10, and from the 18th to the 30th. The highest daily sunspot count for November was 14 on the 12th. The 12-month running smoothed sunspot number centered on May 2008 is 3.5. A smoothed sunspot count of 18 is expected for February 2009, give or take about 5 points.

The observed monthly mean planetary *A*-index (*Ap*) for November 2008 is 3. The 12-month smoothed *Ap* index centered on May 2008 is 6.9. Expect the overall geomagnetic activity to be quiet to unsettled during most days in February. At the time of writing, the forecast holds that February will be a quiet month with little to no geomagnetic storminess. Refer to the Last-Minute Forecast on the first page of this column for the outlook on what days that this might occur.

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 bands. Please come and participate in my online propagation discussion forum at <http://hfradio.org/forums/>. See you on the air!

73 de Tomas, NW7US

service. Thanks, Bruce! K9JK also produced all the certificates for 2007, sent out prior to the 2008 contest. Curt, K9AKS, provided historical perspective that aided in reporting these results. The contest website (www.cqww-vhf.com) has been restructured and maintained by Randy, K5ZD, in conformity with the family of CQ WW contests. Thanks to all.

Of course, the real heroes are the stations on the air. A look at the statistics indicates: log submissions were up 19% from 2007 and within 94% of the record-breaking year 2006; total number of stations active 9158; a total of 42,092 claimed QSOs; total number of grids activated 853. This represents an overall 12% increase in activity from 2007. Bottom line: This contest is quite healthy, and has the potential to only get better as it continues to appeal to mainstream 6- and 2-meter operators.

With 100% of logs checked, the following error rates were revealed: invalid or "not in log" 1.7%; dupes (claimed as valid) 0.4%; "busted calls" 1.4%; overall error rate of 3.6%, up slightly from the prior year. Thanks to all entrants for the obvious care exhibited in logging contacts and in submitting their logs in Cabrillo format.

The plaque program has been put on hold. The initial bulk order supplied by the vendor has all been issued as of the 2007 contest. Costs have increased for a reorder, so other less-expensive alternatives are being explored. Whether the program should be continued depends on new donors, especially clubs, stepping forward. Continuing to tap the well of previous donors somehow doesn't seem appropriate. Your comments on this are welcomed.

An editorial explanation: The Contest Quahogs of Rhode Island (CQRI) in past years have provided a review of this contest. Because of a severe nor'easter ice storm, the scheduled meeting date was postponed indefinitely. Thus, the CQRI members, including the Old Timer, are seeing this report for the first time.

As the checkered flag has marked the end of the 2008 contest and this report, we look ahead to the 2009 CQ WW VHF Contest, scheduled for July 18–19. The full announcement will appear in the June issue of *CQ*, on the CQ website (www.cq-amateur-radio.com), and on the VHF Contest website (www.cqww-vhf.com). See you all then.

73, John, W1XX

GRID MULTIPLIER LEADERS BY BAND

WORLD

Single-Op 50 MHz

E77EY	132
ZC4LI	110
EA3AKY	104
W4TAA/VE3	101

144 MHz

DL2OM	60
DK5DQ	54
HA6VV/P	51
OK1KZE	47
S53N	43

Multi-Op 50 MHz

C4N	138
OK1KIM	50
UT1IC	30

144 MHz

OK1KIM	86
UT1IC	19
UW3E	16

USA

Single-Op 50 MHz

K1TOL	171
WD5K	158
K5TR	154
K2DRH	151
W5PR	147
KG6IYN	112
AE5T	112
W5WVO	101

144 MHz

K2DRH	50
WB9Z	42
K1TEO	36
K4QI	32
K4LY	29

Multi-Op 50 MHz

K5QE	170
KA2LIM	117
K8GP	111
KB1DFB	107

144 MHz

K8GP	58
K5QE	53
W3SO	49
KA2LIM	35
KB1DFB	26

QRM

Enjoyed the first two hours of the contest with one QSO per minute, but Sunday with poor conditions, very few contacts made ... **EA3AKY.** I got chased off the hill after only three hours of Hilltopper time ... **K1ZE.** VHF QRP is fun! ... **K3TW.** Big day for the 6-meter single-element V-beam and the 2-meter Moxon with 2.5 watts on both bands. The evening brought propagation delights on both bands ... **K4TRT.** The *E*-skip covered a surprisingly broad range over the country with at least one QSO in every grid field in the lower 48 except DL. I slept until 6 AM on Sunday only to find 6 meters open to 3-land. Best DX was VA6AN in DO33 ... **K5TR (WM5R, Op).** This was only my 2nd effort on 6 meters using my new FT-450. I'm still using HF wire antennas but looking forward to putting up a 6-meter ground plane. Best DX was Indiana ... **K6CSL.** What a great decision to go QRP again. Signals were 60 dB out of the east. Only one station I called didn't hear me ... **KCØRQH.** I enjoyed the contest and was pleased to win a certificate in 2007. Let's hope for more UK entries by backpackers activity sponsored by the RSGB ... **GW8ZRE/P.** The Hilltoppers were mainly active over here ... **HA2MN.** Few stations participating in Japan but looking forward to more JAs active next year ... **JO7UEB.** Not a high QSO count but visited 10 different grid squares in five states: AR, LA, MS, MO & TN. Most Qs were in MS and the 5th call area ... **K9JK/R.** Had a lot of fun ... **KD5WGM.** I operated single-op from a campground in North Carolina running 10 watts on 2 meters with an IC-706 to a homebrew Moxon rectangle. On 6 meters I ran 8 watts to a homebrew copper halo with both antennas on a paint-pole 18 feet above the bed of the truck ... **KI4SYR.** I operated in the Hilltopper class from the Topeka, Kansas hospital parking garage roof during some breaks from work with just a quarter-wave whip. W5WVO and K5TR had huge signals. Stations in Texas, New Mexico, and Arizona were very loud ... **NØJK.** This was my first time to operate QRP portable. I had a lot of fun combining camp

ing and amateur radio ... **NØKIS.** Nice band openings made for a lot of fun ... **N1ZN.** Nice to see some Brazilian stations active in the CQ WW VHF ... **PP2XX.** This was my first contest from my new QTH in FN36 ... **VE2PIJ.** My callsign, "VE3AAQ Mobile W1 Rover" was the longest and most confusing callsign I have ever used ... **VE3AAQ.** I finally got the chance to operate the contest from my home province. I set up a small Yagi at my parent's lakeside cottage in western Newfoundland and had a few patchy openings. I could have given out GN19 to more people if they would only swing their beams my way ... **VO1NO.** Propagation was not great, but I still had fun ... **W4FRA.** A fun weekend with some good *E*-skip, but nothing like 2006. But then, what is? ... **W5WVO.** The weather was perfect and conditions weren't terrible. I guess I couldn't ask for much more. I enjoy the Hilltopper category. I didn't even mind being invaded by June bugs ... **W9SZ.** I could hardly believe it when I heard maritime mobile station, K2NUD, in grid FN40 off Long Island ... **WB2AMU.** Nice 6-meter opening from DM04 to CN87 on Saturday ... **N6ZE.** Operating QRP in northwestern Ohio, I worked east to New Brunswick, Canada, west to Washington State, and south to Florida Sunday morning. The contest was fun as always ... **N8QE.** I'm back on 6 meters since the AM days in 1953. Ran low power to a 6-element Yagi put up for the contest. It was great to see so many friends whom I see in HF contests on a regular basis ... **N4PN.**

Number/letter groups after call letters denote the following: Class (A = all band, 6 = 6 meters, 2 = 2 meters, Q = QRP, Q* = QRP portable hilltopper, R = rover. M = multi-operator), Final Score, Number of QSOs, Number of grid locators, State/Province (USA/Canada only), Grid Locator or Number of grids activated (rover only). Rover scores for USA are listed separately. Certificate winners are listed in boldface.

2008 VHF RESULTS

NORTH AMERICA

UNITED STATES

K1TEO	**A**	**75,710**	**431**	**134**	**CT**	**FN31**
W1XX	**A**	**57,840**	**384**	**120**	**RI**	**FN41**
N8RA	**A**	**26,892**	**234**	**81**	**CT**	**FN31**
W2DAN	**A**	**21,150**	**245**	**75**	**RI**	**FN41**
W1RZF	**A**	**6,786**	**127**	**39**	**MA**	**FN42**
KC1MA	**A**	**5,060**	**86**	**46**	**MA**	**FN51**
N1ZN	A	3,441	88	31	CT	FN31
W1OUN	A	3,348	79	36	MA	FN42
N1SV	A	3,036	82	33	MA	FN42
K1PU	A	1,958	65	22	CT	FN31
N4CW/1	**A**	**1,450**	**47**	**29**	**ME**	**FN53**
N1OXA	A	1,034	36	22	ME	FN44
WB1BRE	A	672	27	24	VT	FN33
W1DYJ	A	612	30	17	MA	FN42
K1VUT	A	540	27	15	MA	FN41
W1TR	A	372	22	12	CT	FN31
KA1C	A	133	13	7	ME	FN54
K1VU	A	84	11	6	MA	FN42
K1TOL	**6**	**82,080**	**480**	**171**	**ME**	**FN44**
K5ZD	6	920	46	20	MA	FN42
W1DMM	6	560	35	16	CT	FN31
KA1CQR	2	4	2	1	CT	FN31
K1ZE	**Q***	**1,722**	**60**	**21**	**CT**	**FN31**
W1BYH	**Q***	**210**	**26**	**6**	**MA**	**FN42**
N1PRW	Q*	20	5	2	MA	FN42
KA1LMR	**Q**	**44,619**	**360**	**107**	**NH**	**FN43**
W3EP	**Q**	**6,811**	**112**	**49**	**CT**	**FN31**
AB1II	Q	4	2	1	MA	FN42
KB1DFB	**M**	**92,568**	**551**	**133**	**CT**	**FN41**
NE1B	**M**	**10,725**	**158**	**55**	**NH**	**FN42**
K2SQS	**A**	**9,024**	**148**	**48**	**NJ**	**FN20**
WB2LEB	**A**	**6,795**	**122**	**45**	**NJ**	**FN20**
N2VGA	**A**	**3,564**	**69**	**36**	**NY**	**FN30**
WB2RVX	A	3,488	73	32	NJ	FM29
KA2CYN	A	3,472	98	28	NY	FN31
W2BVH	A	1,638	51	21	NJ	FN20
N2SLO	A	1,488	45	24	NY	FN30
N2WSY	A	1,484	40	28	NJ	FM28
NQ2O	A	1,305	36	29	NY	FN13
W2LP	A	468	31	12	NY	FN31
N2MPU	A	297	25	9	NJ	FN20
KC2OGR	A	133	15	7	NJ	FN20
N2DCH	A	84	10	6	NY	FN22
K2PS	**6**	**6,375**	**125**	**51**	**NJ**	**FM29**
KC2HZW	**6**	**4,601**	**107**	**43**	**NY**	**FN30**
W2AJM	6	2,080	65	32	NY	FN21
N2WM	6	1,430	55	26	NJ	FN21
W2LE	6	1,150	50	23	NJ	FN20
AG2A	6	1,092	52	21	NY	FN30
W2YE	6	624	39	16	VA	FM19
WB2AMU	6	209	19	11	NY	FN31
K2HVE	6	12	4	3	NJ	FN20
W2JEK	**Q**	**216**	**23**	**9**	**NJ**	**FN20**
KA2LIM	**M**	**86,032**	**460**	**152**	**NY**	**FN12**
K2JV	**M**	**26,250**	**273**	**75**	**NJ**	**FN20**
N2RAS	M	6,536	115	43	NJ	FM29
N2GCZ	M	5,986	112	41	NY	FN31
K2OAK	M	1,408	56	16	NJ	FN20
K2PLF	**A**	**56,023**	**387**	**121**	**MD**	**FM19**
K3ISH	**A**	**26,670**	**226**	**105**	**PA**	**FN21**
N3HBX	**A**	**21,978**	**221**	**74**	**MD**	**FM19**
K3OO	**A**	**18,247**	**204**	**71**	**PA**	**FN20**
KA3ZLS	A	13,908	160	61	MD	FM19
N3ALN	A	12,213	166	59	MD	FM19
K3CB	A	12,139	150	61	MD	FM18
K3TC	A	11,825	152	55	MD	FM19
K3ZO	A	11,605	179	55	MD	FM18
N3UM	A	6,815	115	47	MD	FM18
W3LL	A	2,496	94	24	MD	FM19
N3XZ	A	1,530	40	30	PA	FN11
W3TDF	A	1,520	65	20	PA	FN20
K3TUF	A	1,224	55	17	PA	FN10
KB3KXX	A	588	34	12	MD	FM19
N3EMF	A	432	20	18	PA	FN01
N3JNX	A	231	14	11	PA	FN11
KM3G	A	100	13	5	PA	FM19
W3BD	**6**	**22,357**	**283**	**79**	**PA**	**FM19**
						(Op: N3GH)
WA2FGK	6	2,436	84	29	PA	FN21
						(Op: K2LNS)
K3WW	6	2,352	98	24	PA	FN20
AF3I	6	1,537	53	29	PA	FN10
K3VOA	6	341	31	11	DC	FM18
						(Op: K4ZW)
W3BW	6	252	21	12	MD	FM29
WA3G	6	200	20	10	MD	FM19
K3LAB	6	100	10	10	PA	EN90
W3MEO	**Q***	**60**	**6**	**5**	**MD**	**FM18**
K3TW	Q	24	5	4	MD	FM18
WBØIWG	Q	18	4	3	PA	FM19
W3SO	**M**	**108,332**	**531**	**146**	**PA**	**FN00**
AC3I	M	132	12	11	PA	FN21
KE2N	**A**	**29,050**	**258**	**83**	**VA**	**FM18**
K4QI	**A**	**28,314**	**209**	**99**	**NC**	**FM06**
W4MYA	**A**	**19,671**	**209**	**79**	**VA**	**FM07**
K4LY	**A**	**17,384**	**155**	**82**	**SC**	**EM85**
N4XD	A	8,308	107	62	NC	FM05
N4PN	**A**	**7,200**	**111**	**60**	**GA**	**EM82**
NG4C	A	6,380	106	55	NC	FM16
KN4SM	A	5,508	83	51	VA	FM16
N4QWZ	**A**	**5,253**	**73**	**51**	**TN**	**EM66**
WK4P	A	3,990	83	38	NC	EM96
N2QT	A	3,515	78	37	VA	FM07
K2EVW	A	3,276	61	42	VA	EM96
KI4SYR	A	3,136	83	28	NC	EM96
WA4QYK	A	2,835	59	35	TN	EM86
K5VIP	A	2,220	48	37	VA	FM16
K4FJW	A	2,088	54	29	VA	EM86
W4PK	A	1,881	56	33	VA	FM07
N4HN	A	1,643	40	31	NC	EM95
KI3O	A	1,541	52	23	VA	FM18
K4FTO	A	1,495	48	23	VA	FM18
WF4R	A	1,215	35	27	VA	FM16
W4FRA	A	1,170	32	30	NC	FM15
WA4ZKO	**A**	**1,080**	**35**	**27**	**KY**	**EM78**
N1LF	A	777	26	21	AL	EM63
KR1ST	A	726	28	22	SC	EM92
K3IXD	A	510	22	17	SC	EM93
AK4FL	A	220	14	11	AL	EM64
K4JEB	A	176	14	11	SC	FM02
WB3JKQ	A	105	12	7	TN	EM75
AE4EC	A	55	8	5	NC	FM05
N4BP	**6**	**4,738**	**103**	**46**	**FL**	**EL96**
K4JPD	**6**	**4,420**	**85**	**52**	**GA**	**EM73**
N4MM	**6**	**1,824**	**57**	**32**	**VA**	**FM09**
W4PM	6	946	43	22	VA	FM17
K4WI	6	798	38	21	AL	EM62
N4VA	6	504	36	14	VA	FM18
W4YA	6	221	17	13	FL	EL98
KC8KSK	6	110	11	10	SC	FM03
AB4GG	6	36	6	6	TN	EM75
KB7TBT	6	25	5	5	GA	EM84
K4BAI	6	18	6	3	GA	EM72
N3UA	6	4	2	2	VA	FM17
KX4R	**2**	**1,276**	**29**	**22**	**GA**	**EM73**
KR4F	**Q**	**567**	**27**	**21**	**AL**	**EM64**
N4TZH	**Q**	**507**	**33**	**13**	**FL**	**EL96**
KI4FW	Q	252	36	7	VA	FM18
NZ1D	Q	252	18	14	FL	EL98
K8GP	**M**	**176,774**	**739**	**169**	**VA**	**FM19**
N4BX	**M**	**24,297**	**213**	**89**	**NC**	**FM13**
W4YCC	**M**	**5,390**	**81**	**49**	**SC**	**EM94**
K4TRT	M	1,288	41	23	VA	FM07
AI4GR	M	950	39	19	NC	EM85
K5GZR	**A**	**13,509**	**148**	**79**	**TX**	**EM20**
WB2FKO	**A**	**10,293**	**137**	**73**	**NM**	**DM65**
K3TD	A	3,800	73	50	TX	EM10
W5UWB	A	1,650	46	33	TX	EL17
AA5JG	A	840	41	20	OK	EM04
KE5JXC	A	414	22	18	LA	EL39
W5KI	A	380	19	19	AR	EM36
WD5USA	A	304	16	16	OK	EM04
KD5WGM	A	20	4	4	TX	DM92
K5TR	**6**	**69,146**	**449**	**154**	**TX**	**EM00**
						(Op: WM5R)
W5PR	**6**	**61,740**	**420**	**147**	**TX**	**EL29**
WD5K	**6**	**61,304**	**388**	**158**	**TX**	**EM12**
AE5T	**6**	**28,896**	**258**	**112**	**LA**	**EM32**
W5WVO	**6**	**25,957**	**257**	**101**	**NM**	**DM65**
K5MV	**6**	**16,037**	**203**	**79**	**TX**	**EM20**
K3FM	**6**	**8,806**	**119**	**74**	**MS**	**EM50**
K5VNV	6	2,829	69	41	TX	EL18
K5WMH	6	1,960	56	35	NM	DM64
KJ5RC	6	1,102	38	29	MS	EM42
KD5J	6	972	36	27	AR	EM45
AE5PW	6	24	6	4	AR	EM45
WA5NFC	6	1	1	1	AR	EM45
K5QE	**M**	**218,986**	**789**	**223**	**TX**	**EM31**
W5LCC	M	11,826	143	81	TX	DM93
AB5GU	M	9,135	128	63	TX	EL29
KØXXX	**M**	**5,555**	**85**	**55**	**AR**	**EM46**
K5KDX	M	4,230	74	47	AR	EM35
KG6IYN	**A**	**69,390**	**414**	**135**	**CA**	**DM12**
AJ6T	**A**	**6,050**	**95**	**50**	**CA**	**CM87**
KW6N	**A**	**3,731**	**83**	**41**	**CA**	**DM06**
N6RZR	**A**	**2,077**	**50**	**31**	**CA**	**CN80**
N6ZE	A	720	36	16	CA	DM04
KG6ZHC	A	44	8	4	CA	CM87
K6RAD	A	20	4	4	CA	CM88
K6FV	**6**	**735**	**35**	**21**	**CA**	**CM87**
K6CSL	6	160	16	10	CA	CM97
W6BVB	**Q**	**918**	**38**	**18**	**CA**	**DM04**
N6WG	Q	448	32	14	CA	CM87
W6QU	Q	221	17	13	CA	DM12
K6VCR	**M**	**13,790**	**163**	**70**	**CA**	**DM13**
W6YX	**M**	**6,500**	**104**	**52**	**CA**	**CM87**
KB7ME	**A**	**19,251**	**176**	**93**	**OR**	**DN02**
K7BG	**A**	**9,933**	**128**	**77**	**MT**	**DN47**
N7EPD	**A**	**9,522**	**154**	**46**	**WA**	**CN87**
N6KW	A	4,650	108	31	WA	CN87
N7NT	**A**	**3,420**	**70**	**45**	**AZ**	**DM43**
K1NV/7	**A**	**2,752**	**58**	**43**	**NV**	**DM17**
N7DB	A	1,909	59	23	OR	CN85
KG7P	A	1,848	65	21	WA	CN87
K7ND	A	1,365	42	21	WA	CN87
K7CW	**6**	**6,106**	**142**	**43**	**WA**	**CN87**
KC7V	**6**	**1,372**	**49**	**28**	**AZ**	**DM43**
KD7WPJ	6	608	32	19	UT	DM37
KB7Q	6	322	23	14	WY	DN44
AD7BN	6	9	3	3	UT	DN40
KGØAL	6	4	2	2	MT	DN76
N8BI	**A**	**10,089**	**150**	**57**	**OH**	**EN91**
K8MR	A	4,905	89	45	OH	EN91
WN8R	A	4,268	82	44	OH	EN91
W8TCZ	A	3,567	58	41	OH	EN81
WZ8T	**A**	**3,002**	**56**	**38**	**MI**	**EN72**
KB8DDZ	A	2,380	52	35	OH	EM79
K8DXR	A	1,710	48	30	OH	EN90
N8PPF	A	208	15	13	OH	EN80
WA8WV	A	130	11	10	WV	EM98
W8IDM	A	33	7	3	OH	EN91
WA1UJU	**6**	**7,840**	**140**	**56**	**MI**	**EN56**
N8II	**6**	**4,346**	**106**	**41**	**WV**	**FM19**
KB8UUZ	**6**	**3,526**	**86**	**41**	**OH**	**EN91**
N8OC	6	1,927	47	41	MI	EN83
N8BJQ	6	1,320	44	30	OH	EN80
NO8R	6	726	33	22	MI	EN73
W8KNO	6	299	23	13	OH	EN91
N8XA	**Q**	**2,808**	**64**	**39**	**OH**	**EM89**
N8QE	Q	133	15	7	OH	EN91
N9LR	**M**	**22,080**	**199**	**96**	**MI**	**EN67**
W8YY	M	99	10	9	MI	EN57
K2DRH	**A**	**159,996**	**618**	**201**	**IL**	**EN41**
WB9Z	**A**	**50,032**	**311**	**118**	**IL**	**EN60**
K9BZ	**A**	**19,320**	**211**	**84**	**WI**	**EN45**
WO9S	A	10,545	142	57	IL	EN61
W9IIX	A	3,354	79	26	IL	EN61
N2BJ	A	3,007	72	31	IL	EN61
KA9FAJ	A	2,016	46	36	IL	EN40
NT9E	A	1,550	44	25	IL	EN52
KA9BYN	A	950	35	25	IN	EN60
AI9I	A	812	32	14	IL	EN51
AF9J	A	690	27	15	WI	EN52
KB9YGD	A	594	23	18	IN	EN61
K9OR	A	435	23	15	IL	EN62
KCØREY	A	216	16	12	IL	EN40
N9LF	A	110	10	10	IN	EN60
KB9WQJ	A	35	6	5	IL	EM58
W9SE	**6**	**5,022**	**93**	**54**	**IL**	**EN50**
WE9V	6	850	50	17	WI	EN52
K9MMS	6	230	23	10	IL	EN51
AI9T	6	180	15	12	IL	EM69
W9RE	6	168	14	12	IN	EM69
W9ILY	6	100	10	10	IL	EN61
KC9LBO	6	4	2	2	WI	EN43
AA9DY	6	2	2	1	IL	EN52
W9HT	6	1	1	1	IN	EN71
W9SZ	**Q***	**1,944**	**45**	**27**	**IL**	**EN50**
K9AKS	**Q**	**13,090**	**129**	**77**	**IL**	**EN41**
KO9A	**Q**	**7,854**	**114**	**51**	**IL**	**EN52**
N9TF	**Q**	**4,864**	**97**	**38**	**IL**	**EN52**
WD9DCW	Q	220	14	11	IL	EN52
N9LYE	Q	160	10	8	IL	EN51
KG9N	Q	6	2	2	IL	EN50
KØKP	**A**	**31,086**	**287**	**99**	**MN**	**EN36**
KØAWU	**A**	**19,635**	**240**	**77**	**MN**	**EN37**
KCØTPP	**A**	**11,520**	**148**	**60**	**MO**	**EM48**
KAØZOZ	**A**	**10,764**	**147**	**69**	**IA**	**EN23**
NØJJQ	**A**	**10,725**	**119**	**75**	**IA**	**EN21**
NØGZ	A	7,360	94	64	IA	EN31
WBØCQO	A	6,565	83	65	IA	EN31
NØVZJ	A	2,924	65	34	MN	EN35
W6GMT	A	2,691	66	39	MN	EN37
KCØTDJ	A	546	22	21	IA	EN40
KØJQA	A	465	22	15	IA	EN31
KØUK	A	24	5	4	CO	DM59
NØHF	**6**	**4,600**	**92**	**50**	**CO**	**DM79**
NØUY	**6**	**3,784**	**88**	**43**	**MN**	**EN18**
WØRUN	6	2,408	56	43	CO	DN70
KCØDEB	**6**	**1,530**	**45**	**34**	**KS**	**EM29**
WBØTSR	**6**	**1,421**	**49**	**29**	**SD**	**EN14**
NØTK	6	1,144	44	26	CO	DM79
NNØQ	6	693	33	21	MN	EN25
WØHBH	6	378	21	18	MO	EM48
WØLPG	6	280	20	14	SD	EN14
KDØAWW	**Q***	**345**	**23**	**15**	**CO**	**DM79**
NØJK	**Q***	**35**	**7**	**5**	**KS**	**EM28**
NØKIS	**Q**	**2,613**	**53**	**39**	**NE**	**EN11**
NDØC	**Q**	**962**	**37**	**26**	**MN**	**EN23**
WØIS	Q	780	34	20	MN	EN34
KCØRQH	Q	665	33	19	MN	EN35
NØUNL	**M**	**5,508**	**82**	**54**	**NE**	**EN10**
KCØIYT	**M**	**1,848**	**66**	**28**	**MN**	**EN26**

Rover

WB3BEL	**56,882**	**350**	**119**		**4**
WB8BZK	**41,724**	**251**	**114**		**6**
N9TTX	**22,464**	**137**	**117**		**8**
WAØVPJ	**14,691**	**120**	**83**		**7**
K9ZF	**8,778**	**103**	**66**		**2**
W3DHJ	**8,228**	**100**	**68**		**4**
WA6KLK	**5,699**	**98**	**41**		**2**
KK6MC	**5,251**	**77**	**59**		**7**
K6EU	**5,194**	**82**	**49**		**4**
K6JRA	**4,410**	**78**	**42**		**2**
KØCS	**3,984**	**74**	**48**		**3**
K9JK	**3,960**	**60**	**45**		**10**
AE5P	**3,952**	**59**	**52**		**11**
W7PJ	**1,729**	**67**	**19**		**3**
N2SLN	**1,357**	**41**	**23**		**2**
KD5IKG	**1,075**	**31**	**25**		**4**
W6KA	**735**	**24**	**21**		**4**
VE3AAQ/W1	**704**	**31**	**16**		**2**
WO3X	144	12	6		3
W4BFB	96	8	8		4
KA3KSP	32	4	4		2

CANADA

VE1SKY	**6**	**315**	**21**	**15**	**NS**	**FN74**
VE2HAY	**A**	**1,824**	**47**	**32**	**QC**	**FN35**
VE2DC	A	238	15	14	QC	FN35
VA2WDQ	A	119	13	7	QC	FN35
VE2TZT	**6**	**7,992**	**111**	**72**	**QC**	**FN35**
VE2TKH	6	110	11	10	QC	FN46
VA2LGQ	6	90	10	9	QC	FN15
						(Op: VE3AV)
VE2PIJ	6	60	10	6	QC	FN36
VA2BGL	6	1	1	1	QC	FN48
VA2BS	**2**	**24**	**6**	**2**	**QC**	**FN36**
VA2SG/P	Q	1	1	1	QC	FN48
VE3KZ	**A**	**15,120**	**161**	**80**	**ON**	**FN03**
VA3WLD	**A**	**5,586**	**87**	**49**	**ON**	**FN03**
VE3CVG	A	1,225	41	25	ON	FN25
VE3OX	A	594	25	22	ON	FN14
VE3RCN	A	312	22	12	ON	FN03
W4TAA/VE3	**6**	**19,897**	**197**	**101**	**ON**	**FN15**
VA3DX	**6**	**6,783**	**119**	**57**	**ON**	**FN03**
VA3WPV	6	49	7	7	ON	FN04
VE3TLT	**Q**	**2,108**	**51**	**34**	**ON**	**EN92**
VA3RKM	Q	6	2	2	ON	FN25
VE3HHT	**M**	**1,782**	**43**	**33**	**ON**	**EN92**
VE3CRU	**R**	**18,612**	**148**	**99**		**7**
VE3OIL	R	1,316	38	28		3
VE5UF	**A**	**4,368**	**76**	**52**	**SK**	**DO61**
VA6AN	**A**	**3,034**	**61**	**41**	**AB**	**DO33**
VE6CPP	A	119	10	7	AB	DN39
VE9CEH	**6**	**5,883**	**111**	**53**	**NB**	**FN65**
VO1NO	**6**	**231**	**21**	**11**	**NF**	**GN19**
VY2HF	**6**	**432**	**24**	**18**	**PEI**	**FN86**

MEXICO

XE2WWW	**6**	**1,881**	**57**	**33**	**EL06**
XE3N	**6**	**1,200**	**50**	**24**	**EL60**
XE2HWB	**6**	**105**	**15**	**7**	**DL44**
XE2SO	**M**	**247**	**19**	**13**	**DL94**

PUERTO RICO

NP3CW	**A**	**52**	**9**	**4**	**KP4 FK68**

GUATEMALA

TG9VHF	**6**	**1**	**1**	**1**	**EK44**

MARITIME MOBILE REGION 2

K2NUD/MM	**6**	**2**	**2**	**1**	**FN40**

AFRICA

CANARY IS.

EA8BQM	**6**	**42**	**7**	**6**	**IL27**

MADEIRA IS.

CT3FQ	**6**	**225**	**15**	**15**	**IM12**

MOROCCO

CN8KD	**6**	**2,628**	**73**	**36**	**IM63**

SENEGAL

6W1SE	**6**	**1**	**1**	**1**	**IK14**

ASIA

CHINA

BG4TQX	**6**	**1**	**1**	**1**	**PM01**

CYPRUS

C4N	**M**	**46,110**	**304**	**145**	**KM65**

CYPRUS – UK SOV. BASE AREAS

ZC4LI	**6**	**21,230**	**193**	**110**	**KM64**

JAPAN

JH7IMX	**A**	**12**	**3**	**3**	**QM08**
JO7UEB/7	**Q**	**6**	**2**	**2**	**QM08**

THAILAND

HS6RMY	**2**	**10,184**	**268**	**19**	**OK06**
HS2ZMU	**2**	**2,688**	**168**	**8**	**OK03**
HS8LUR	**2**	**2,376**	**297**	**4**	**NJ99**
HS4NGK	**2**	**2,100**	**105**	**10**	**OK17**
E22TV	**2**	**2,002**	**143**	**7**	**OJ07**
HS3ANP	**2**	**1,782**	**99**	**9**	**OK14**

HS4FHT	**2**	**1,314**	**73**	**9**	**OK16**	
E20MWE	2	750	125	3	OK03	
E21QEB	2	304	38	4	OK03	
HS8JYX	**2**	**240**	**24**	**5**	**NJ98**	
E21YDP	2	216	18	6	OK03	
HS3NWD	2	144	24	3	OK14	
HS8KGG	2	16	8	1	OK03	
HS7ZSX/P	**Q***	**1,504**	**94**	**8**	**NK92**	
E20RUZ/P	**Q***	**800**	**100**	**4**	**OK04**	
HS8KAY/P	**Q***	**270**	**45**	**3**	**NJ97**	
E20XMG/P	**Q***	**240**	**30**	**4**	**OK04**	
HS7WHB/P	**Q***	**220**	**22**	**5**	**NK93**	
HS0IAQ	**M**	**12,144**	**506**	**12**	**OK03**	
HS1AXC	**M**	**9,984**	**384**	**13**	**OK03**	
E22YS	**M**	**8,404**	**382**	**11**	**OK03**	
HS8KFW	**M**	**6,864**	**429**	**8**	**NJ99**	
E21TOY	**M**	**5,472**	**342**	**8**	**OK03**	
HS9MXM	**M**	**5,360**	**335**	**8**	**OJ07**	
HS2AP	**M**	**3,652**	**166**	**11**	**OK03**	
HS0CHT	**M**	**2,934**	**163**	**9**	**OK03**	
HS0QGC	**M**	**2,784**	**232**	**6**	**OK03**	
HS1SAG	M	1,432	179	4	OK03	
E20NKB	M	1,392	116	6	OK03	
E20YLM	**R**	**864**	**36**	**12**	**5**	

TURKEY (ASIATIC)

TA7OM	**6**	**4,128**	**86**	**48**	**KN90**
TB7MPB	**6**	**3,744**	**78**	**48**	**KN90**
TB7CVX	6	567	27	21	KN91

EUROPE

AUSTRIA

OE1CWA	**Q***	**520**	**26**	**10**	**JN88**

BALEARIC IS.

AO6VQ	**A**	**5,754**	**83**	**42**	**JM19** (Op: EA6VQ)

BOSNIA & HERZEGOVINA

E77EY	**6**	**42,768**	**324**	**132**	**JN84**
E72WG	6	154	14	11	JN94
E75DX	**Q***	**5,700**	**81**	**50**	**JN84**

BULGARIA

LZ2ZG	**6**	**25**	**5**	**5**	**KN23**

CROATIA

9A1DL	**A**	**1,520**	**52**	**16**	**JN95**
9A5ST	**6**	**1,344**	**42**	**32**	**JN83**
9A4VM	**2**	**8,062**	**139**	**29**	**JN85**

CZECH REPUBLIC

OK1DC	**A**	**18,395**	**161**	**65**	**JN69**
OK1KZ	A	1,161	69	9	JO70
OK1KZE	**2**	**17,672**	**188**	**47**	**JN79** (Op: OK1COM)
OK1KIM	**M**	**125,528**	**524**	**136**	**JO60**

ENGLAND

G8HXE/P	**Q***	**1,200**	**50**	**12**	**IO83**

EUROPEAN RUSSIA

RU3GX	**Q**	**1,292**	**38**	**17**	**KO92**
RV6YY	**Q**	**560**	**20**	**14**	**LN04**
RA6HLF	Q	528	24	11	LN04
RV6LKY	**Q**	**504**	**21**	**12**	**LN17**
UA6LNS	**Q**	**504**	**21**	**12**	**LN07**
RN6MA	**Q**	**462**	**21**	**11**	**LN06**
RA5HDA	**Q**	**420**	**21**	**10**	**LN13**
RA6LGV	**Q**	**374**	**17**	**11**	**KN97**
RZ6HKM	**Q**	**272**	**17**	**8**	**LN05**
RU6LB	Q	224	14	8	LN17
RU6HL	Q	210	15	7	LN04
RW6HHH	**Q**	**208**	**13**	**8**	**LN05**
RA6FVZ	Q	196	14	7	LN05
RX6FT	Q	192	16	6	LN04
RN6HAZ	Q	168	12	7	LN04
UA6HML	Q	156	13	6	LN05
RA6FQR	Q	132	11	6	LN05
RV6MA	Q	128	8	8	KN97
RX6APY	Q	90	9	5	KN95
UA6EM	Q	90	9	5	LN14
RX6AS	Q	60	6	5	LN04
RA6FQO	Q	24	6	2	LN04
RV6FT	Q	2	1	1	LN03
RW3XL	Q	2	1	1	KO84

FRANCE

F6FJE/P	**6**	**49**	**7**	**7**	**JO00**
F0FEK	**Q**	**1,215**	**38**	**16**	**JN19**

GERMANY

DL2OM	**A**	**20,251**	**144**	**77**	**JO30**
DK5DQ	**2**	**21,600**	**200**	**54**	**JO31**
DL2SAX/P	**Q***	**4,012**	**71**	**34**	**JN48**

HUNGARY

HA6VV/P	**2**	**27,030**	**265**	**51**	**JN97**
HA2VR/P	**Q***	**4,278**	**93**	**23**	**JN87**
HG4GGV/P	**Q***	**1,652**	**59**	**14**	**JN97**
HA5CQZ/P	**Q***	**1,612**	**62**	**13**	**JN97**
HA5OT/P	**Q***	**1,204**	**43**	**14**	**JN97**
HA7UL/P	Q*	660	30	11	JN97
HA4FY/P	Q*	368	23	8	JN97
HA7SZA/P	Q*	234	39	3	JN97
HA1ZH	**Q**	**9,216**	**111**	**64**	**JN86**
HA2MN	Q	40	10	2	JN97

IRELAND

EI/W5GN	**6**	**284**	**17**	**12**	**IO52**

ITALY

IW2NOD	**A**	**11,100**	**121**	**74**	**JN44**

KALININGRAD

RA2DF	**6**	**1**	**1**	**1**	**MN62**
RU2FM	**2**	**32**	**4**	**4**	**KO04**

MACEDONIA

Z36W	**6**	**902**	**41**	**22**	**KN11**

MOLDOVA

ER1RR	**6**	**468**	**26**	**18**	**KN46**

POLAND

SP9HAX	**6**	**63**	**9**	**7**	**JO90**
SP9DWT	6	9	3	3	JN99
SN9F	**M**	**512**	**32**	**16**	**JO90**

PORTUGAL

CT1ANO	**6**	**6,164**	**134**	**46**	**IN51**
CT1FFU	**6**	**3,880**	**88**	**35**	**IM59**

ROMANIA

YO5C8X	**6**	**195**	**15**	**13**	**KN27**
YO3CZW	6	24	6	4	KN34

SERBIA

YU1UU	**6**	**3,010**	**70**	**43**	**KN04**
YU7AE	**Q**	**165**	**15**	**11**	**KN05**

SLOVENIA

S51CK	**6**	**4,717**	**89**	**53**	**JN76**
S53N	**2**	**13,158**	**153**	**43**	**JN65**

SWEDEN

SA1A	**6**	**100**	**10**	**10**	**JO97** (Op: SM1TDE)

SPAIN

EA3BOX	**A**	**1,628**	**43**	**37**	**JN11**
EA3AKY	**6**	**17,472**	**168**	**104**	**JN11**
EA3BSG/P	**6**	**5,676**	**86**	**66**	**JN11**
EA5FQ	**6**	**2,080**	**52**	**40**	**IM98**
EH2AGB	**6**	**572**	**26**	**22**	**IN93**
EA3FHP	6	280	20	14	JN11
EA1GWM	6	190	19	10	IN53
EA1BFZ	6	80	10	8	IN81
EC7DNB	6	16	4	4	IM77
EA1GPL	6	9	3	3	IN90

UKRAINE

UT7IL	**A**	**486**	**20**	**18**	**KN87**
UZ7U	**6**	**1,943**	**67**	**29**	**KO50** (Op: UT3UA)
UR5QU	**6**	**1,092**	**42**	**26**	**KN77**
US0YW	**6**	**360**	**20**	**18**	**KN27**
UX0FF	**6**	**340**	**20**	**17**	**KN45**
UY5ZZ	6	336	24	14	KN77
UT2UB	6	280	20	14	KO50
US0LW	**6**	**270**	**18**	**15**	**KN99**
UT2II	**6**	**110**	**11**	**10**	**LN09**
UT8IM	6	16	4	4	KN87
UT3IZ	6	6	3	2	KN87
UT5JCW	**2**	**504**	**18**	**14**	**KN64**
US5IPH/P	**Q***	**1,232**	**56**	**11**	**KN87/88**
UT5IZ/P	**Q***	**550**	**28**	**11**	**KN87/88**
US5IHF/P	**Q***	**324**	**27**	**6**	**KN97/98**
UW2I	**Q**	**1,368**	**36**	**19**	**KN98**
US5MPO	Q	462	21	11	KN98
US5IQU	Q	448	28	8	KN98
UR5IOT	**Q**	**364**	**28**	**7**	**KN88**
UR5ITU	**Q**	**350**	**27**	**7**	**KN87**
UY7IZ	Q	280	28	5	KN88
UR4QX	**Q**	**264**	**12**	**11**	**KN86**
US3ITU	Q	260	26	5	KN88
US5IVZ	Q	216	27	4	KN87
US5IMZ	Q	208	26	4	KN88
US3ITD	Q	200	25	4	KN98
UY2ID	Q	200	25	4	KN98
US7IIZ	Q	192	24	4	KN98
UY2IW	Q	192	24	4	KN98
UT2IY	Q	184	23	4	KN98
UT5YU	Q	184	23	4	KN98
US5IVL	Q	176	22	4	KN98
UR4IHV	Q	168	21	4	KN98
UY1IM	Q	160	20	4	KN98
US8IJE	Q	144	18	4	KN98
US8IPB	Q	126	9	7	KN86
UR7INK	Q	120	15	4	KN88
UR7IM	Q	112	14	4	KN88
UR5MGW	Q	80	8	5	KN98
UZ5Q	Q	77	11	7	KN77 (Op: UY5QZ)
UR6IE	Q	42	7	3	KN88
UR4IIU	Q	40	5	4	KN87
US0YA	Q	20	5	4	KN28
UU4JCR	Q	18	3	3	KN65
UT1IC	**M**	**13,034**	**158**	**49**	**KN98**
UR4EYN/P	**M**	**3,535**	**69**	**35**	**KN78**
UW3E	**M**	**3,531**	**68**	**33**	**KN78**
UR7IWA	M	66	11	3	KN88
US1IAA	**R**	**396**	**33**	**6**	**2**
UT3IB	R	60	6	5	4
US3IFV	R	56	7	4	3
UX2IQ	R	48	6	4	2

WALES

GW8ZRE/P	**Q***	**2,898**	**69**	**21**	**IO83**

OCEANIA

GUAM

KG6DX	**6**	**1,449**	**63**	**23**	**QK23**

SOUTH AMERICA

ARUBA

P43JB	**6**	**100**	**10**	**10**	**FK42**

BRAZIL

PV8AZ	**6**	**42**	**7**	**6**	**FJ92**
PP5XX	**2**	**2**	**1**	**1**	**GG53**
PY2REK	**2**	**2**	**1**	**1**	**GG65**
PU2WDV	**Q**	**2**	**1**	**1**	**GG67**
PY2ZX	**M**	**8**	**2**	**2**	**GG66**

COLOMBIA

HK6F	**6**	**891**	**33**	**27**	**FJ24**

NETHERLANDS ANTILLES

PJ2BVU	**6**	**9**	**3**	**3**	**FK52**

TRINIDAD & TOBAGO

9Y4D	**6**	**18**	**6**	**3**	**FK90**

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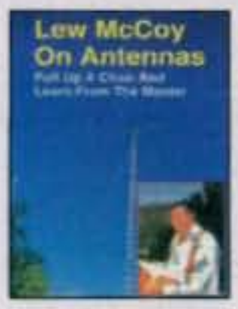

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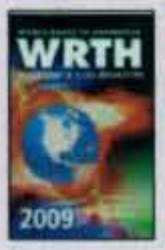

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our readers say

Buttons and Dials

Editor, *CQ:*

I want to thank you for your most thoughtful comment in Zero Bias (October 2008) regarding those of us for whom "... clicking a mouse will never replace pushing buttons and turning dials." In the '80s, before my own work involved so many hours a day on a PC, I was thrilled at my first attempt at digital RTTY. It was really fun. But alas, a night or so ago (yes, even old hams have dreams), I dreamt I was about to shower, but first needed to step up to my 2010 computer keyboard neatly installed in my water closet in order to adjust the flow, set the time, and access the desired water using my conservation-defined software. Drat! After a 12-hour day on a very similar keyboard, I had lost my special shower password! I reached for my W/C Special Blackberry (no digital pictures, please) to seek customer support in Calcutta. They were so helpful, and the shower took place about 2 hours later. Needless to say, 20 meters was dead by the time I saddled my J-38. Sigh!

Technology is clearly wonderful, and such things are upon us for sure. And yet how refreshing it is that there are still so many wonderful and different interests in this great hobby. It is also wonderful to know that we do still have choices, and that perhaps I might never have a nightmare that our hobby will become totally software dominated (uh, well, perhaps?). I think that we should also remember that the companies you spoke of who seek out customer input from online communities (as mentioned in your editorial) are receiving that input from those who depend upon, and also enjoy, today's online existence. It does not represent the rest of us who may not. (There I go, being one of "Those." Oh, how I hate acting my age.)

In any event, thank you again for considering the "rest" of us in your comments.

Richard Taesch, K6TOB

Cross-Banding on Simplex Frequencies

Editor, *CQ*:

I'm informing the amateur radio community of what I think is becoming a major issue that needs to be addressed. I'm not sure about other areas of the United States, but here in northern Ohio, eastern Indiana, and southwestern Ontario there are a few amateur radio operators who are causing interference by running repeaters on what both the ARRL and Radio Amateur of Canada call the national simplex calling frequencies. In southwestern Ontario (one station) is running not 1, not 2, not 3, but 4 repeater inputs with the output on the national calling frequency of 146.520. When using these repeater inputs almost all of southwestern Ontario gets transmitted onto 146.520. (This amateur) even promotes this practice on his QRZ website by inviting all to use his repeater.

This repeater system is creating interference to all who are making calls on 146.520. They're other amateurs in the Great Lakes area who also run repeaters on 146.520 and 52.525. My opinion is that this practice should not be taking place on any calling frequency, be it on VHF, UHF, or HF.

Recently the FCC ruled that cross-band repeating is legal. For my understanding there are no guidelines, band plan, or rules to follow once one decides to cross band. I have contacted the FCC, ARRL, Radio Amateur of Canada, and Industry Canada about this problem. These complaints have fallen on deaf ears. Nobody wants to address the issue of interference or band plans. Because there are no guidelines or rules to follow, any frequency one chooses to cross band on is perfectly legal. The FCC states that there is no malicious interference or rule violation. The ARRL states that the national calling frequency is just a band plan. Industry Canada states that they will only look into this matter if the FCC deems necessary. Rules are made to keep everything organized. If there are no rules then havoc and chaos will soon follow.

I left 11 meters almost 20 years ago because of rude inconsiderate people. Those people then (and probably still are) were allowed to do whatever they chose to do because of the lack of enforcement. And if the amateur bands go the same way 11 meters did, we can only blame ourselves. This is because of some amateurs' own self interest. And because of the ARRL and the FCC turning their backs and allowing it to happen.

Tony Everhardt, N8WAC

W2VU replies: Tony, I went to the website of the ham you mentioned and what he is running is a *remote base* system, which is different from a repeater. Simplex transmissions received on one frequency are retransmitted on another simplex frequency and any return communication follows the same path in reverse. It happens that his remote base transmitter on .52 is at a very high location, so it has very wide coverage. He apparently sees this as giving hams without such an advantageous location the opportunity to see what one can do on simplex from such a QTH. Since there are no repeaters involved, he is not only in compliance with applicable FCC and Industry Canada rules, but with the band plans as well. Perhaps if it is brought to the gentleman's attention that his remote base system is unintentionally causing interference to other users of .52 within his broad coverage area, he might be persuaded to move to a less-popular simplex frequency, such as 146.55 or 146.58. Meanwhile, those other frequencies are available for your use as well, without having to compete with a strong signal from across the lake.

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