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Amateur Radio

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COMMUNICATIONS & TECHNOLOGY
NOVEMBER 2005

CQ



"America's Tsunami"—Special Hurricane Katrina Coverage begins on page 13

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On the cover: New Orleans ten days after Katrina. See page 2 for details.

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¹Note that certain frequencies are unavailable. ²5W output

TH-F6A

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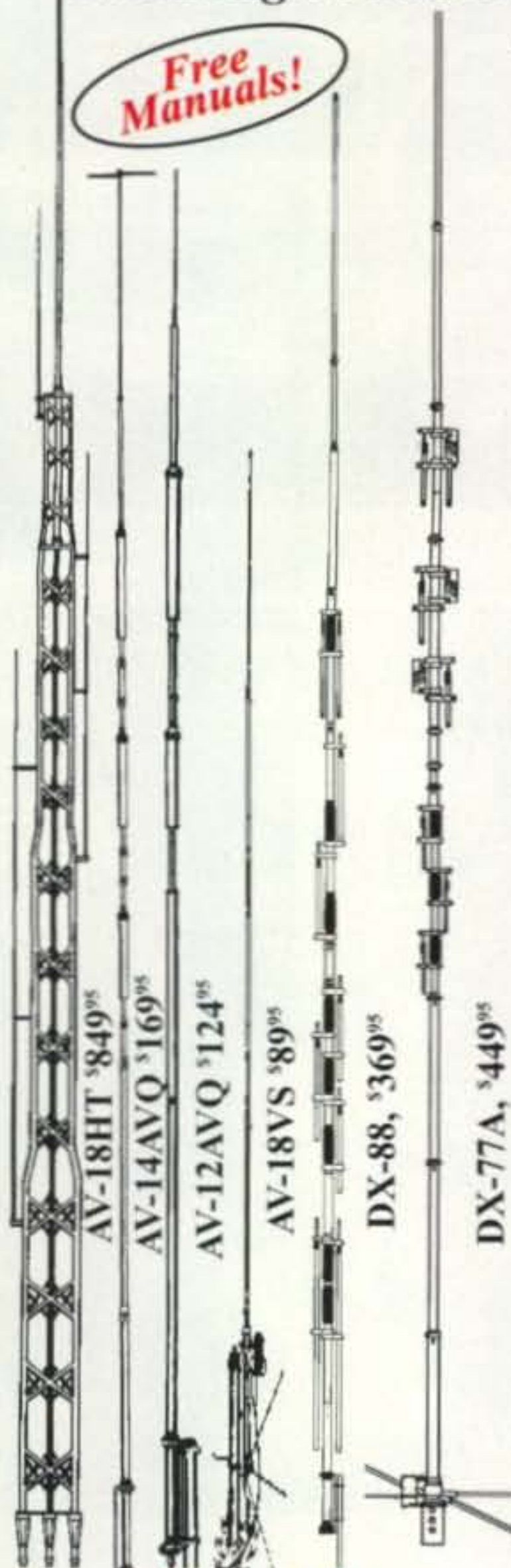


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Self-supporting -- no guys required . . . Remarkable DX performance -- low angle radiation, omnidirectional . . . Handles 1500 Watts . . . Low SWR . . . Automatic band switching . . . Aircraft quality aluminum tubing . . . Stainless steel hardware . . . Recessed SO-239 connector . . . Two year limited Warranty . . .



hy-gain® Classics

All hy-gain multi-band vertical antennas are entirely self supporting -- no guys required.

They offer remarkable DX performance with their extremely low angle of radiation and omnidirectional pattern.

All handle 1500 Watts PEP SSB, have low SWR, automatic band-switching (except AV-18VS) and include a 12-inch heavy duty mast support bracket (except AV-18HT).

Heavy duty, slotted, tapered swaged, aircraft quality aluminum tubing with full circumference

compression clamps is used for radiators. Includes all stainless steel hardware. Recessed SO-239 prevents moisture damage. Hy-gain verticals go up easily with just hand tools and their cost is surprisingly low. Two year limited warranty.

AV-18HT, \$849.95. (10,12,15,20,40,80 M, 160, 17 Meters optional). 53 ft., 114 lbs.

Standing 53 feet tall, the famous Hy-Gain HyTower is the world's best performing vertical! The AV-18HT features automatic band selection achieved through a unique stub-decoupling system which effectively isolates various sections of the antenna so that an electrical 1/4 wavelength (or odd multiple of a 1/4 wavelength) exists on all bands. Approximately 250 kHz bandwidth at 2:1 VSWR on 80 Meters. The addition of a base loading coil (LC-160Q, \$109.95), provides exceptional 160 Meter performance. **MK-17, \$89.95.** Add-on 17 Meter kit. 24 foot tower is all rugged, hot-dip galvanized steel and all hardware is iridized for corrosion resistance. Special tilt-over hinged base for easy raising & lowering.

AV-14AVQ, \$169.95. (10,15,20,40 Meters). 18 ft., 9 lbs. The Hy-Gain AV-14AVQ uses the same trap design as the famous Hy-Gain Thunderbird beams. Three separate air dielectric Hy-Q traps with oversize coils give superb stability and 1/4 wave resonance on all bands. Roof mount with Hy-Gain AV-14RMQ kit, \$89.95.

AV-12AVQ, \$124.95. (10, 15, 20 Meters). 13 ft., 9 lbs. AV-12AVQ also uses Thunderbird beam design air dielectric traps for extremely Hy-Q performance. This is the way to go for inexpensive tri-band performance in limited space. Roof mount with AV-14RMQ kit, \$89.95.

AV-18VS, \$89.95. (10,12,15,17,20,30,40,80 Meters). 18 ft., 4 lbs. High quality construction and low cost make the AV-18VS an exceptional value. Easily tuned to any band by adjusting feed point at the base loading coil. Roof mount with Hy-Gain AV-14RMQ kit, \$89.95.

DX-88, \$369.95. (10, 12, 15,17,20,30,40,80 Meters, 160 Meters optional). 25 ft., 18 lbs.

All bands are easily tuned with the DX-88's exclusive adjustable capacitors. 80 and 40 Meters can even be tuned from the ground without having to lower the antenna. Super heavy-duty construction. DX-88 OPTIONS: 160 Meter add-on kit, KIT-160-88, \$189.95. Ground Radial System, GRK-88, \$99.95. Roof Radial System, RRR-88, \$99.95.

DX-77A, \$449.95. (10, 12, 15, 17, 20, 30, 40 Meters). 29 ft., 25 lbs.

No ground radials required! Off-center-fed Windom has 55% greater bandwidth than competitive verticals. Heavy-duty tiltable base. Each band independently tunable.

Model #	Price	Bands	Max Power	Height	Weight	Wind Surv.	Rec. Mast
AV-18HT	\$849.95	10,15,20,40,80	1500 W PEP	53 feet	114 pounds	75 MPH	-----
AV-14AVQ	\$169.95	10,15,20,40	1500 W PEP	18 feet	9 pounds	80 MPH	1.5-1.625"
AV-12AVQ	\$134.95	10/15/20 M	1500 W PEP	13 feet	9 pounds	80 MPH	1.5-1.625"
AV-18VS	\$89.95	10 - 80 M	1500 W PEP	18 feet	4 pounds	80 MPH	1.5-1.625"
DX-88	\$369.95	10 - 80 M	1500 W PEP	25 feet	18 pounds	75 mph no guy	1.5-1.625"
DX-77A	\$449.95	10 - 40 M	1500 W PEP	29 feet	25 pounds	60 mph no guy	1.5-1.625"

hy-gain® PATRIOT

Hy-Gain's new PATRIOT HF verticals are the best built, best performing and best priced multiband verticals available today. For exciting DX make full use of your sunspot cycle with the PATRIOT's low 17 degree angle signal.

No ground or radials needed

Effective counterpoise replaces radials and ground.

Automatic bandswitching

Single coax cable feed. Each band is individually tunable. Extra wide VSWR bandwidth. End fed with broadband matching unit.

Sleek and low-profile

Low 2.5 sq. ft. wind surface area. Small area required for mounting. Mounts easily on decks, roofs and patios.

Full legal limit

Handles 1500 Watts key down continuous for two minutes.

Built-to-last

High wind survival of 80 mph. Broadband matching unit made from all Teflon® insulated wire. Aircraft quality aluminum tubing, stainless steel hardware.

hy-gain® warranty

Two year limited warranty. All replacement parts in stock.

AV-640, \$389.95. (6,10,12, 15,17,20,30,40 Meters). 25.5 ft., 17.5 lbs. The AV-640 uses quarter wave stubs on 6, 10, 12 and 17 meters and efficient end loading coil and capacity hats on 15, 20, 30 and 40 meters -- no traps. Resonators are placed in parallel not in series. End loading of the lower HF bands allows efficient operation with a manageable antenna height.

AV-620, \$289.95. (6,10,12,15,17,20 Meters). 22.5 ft., 10.5 lbs. The AV-620 covers all bands 6 through 20

Meters with no traps, no coils, no radials yielding an uncompromised signal across all bands.

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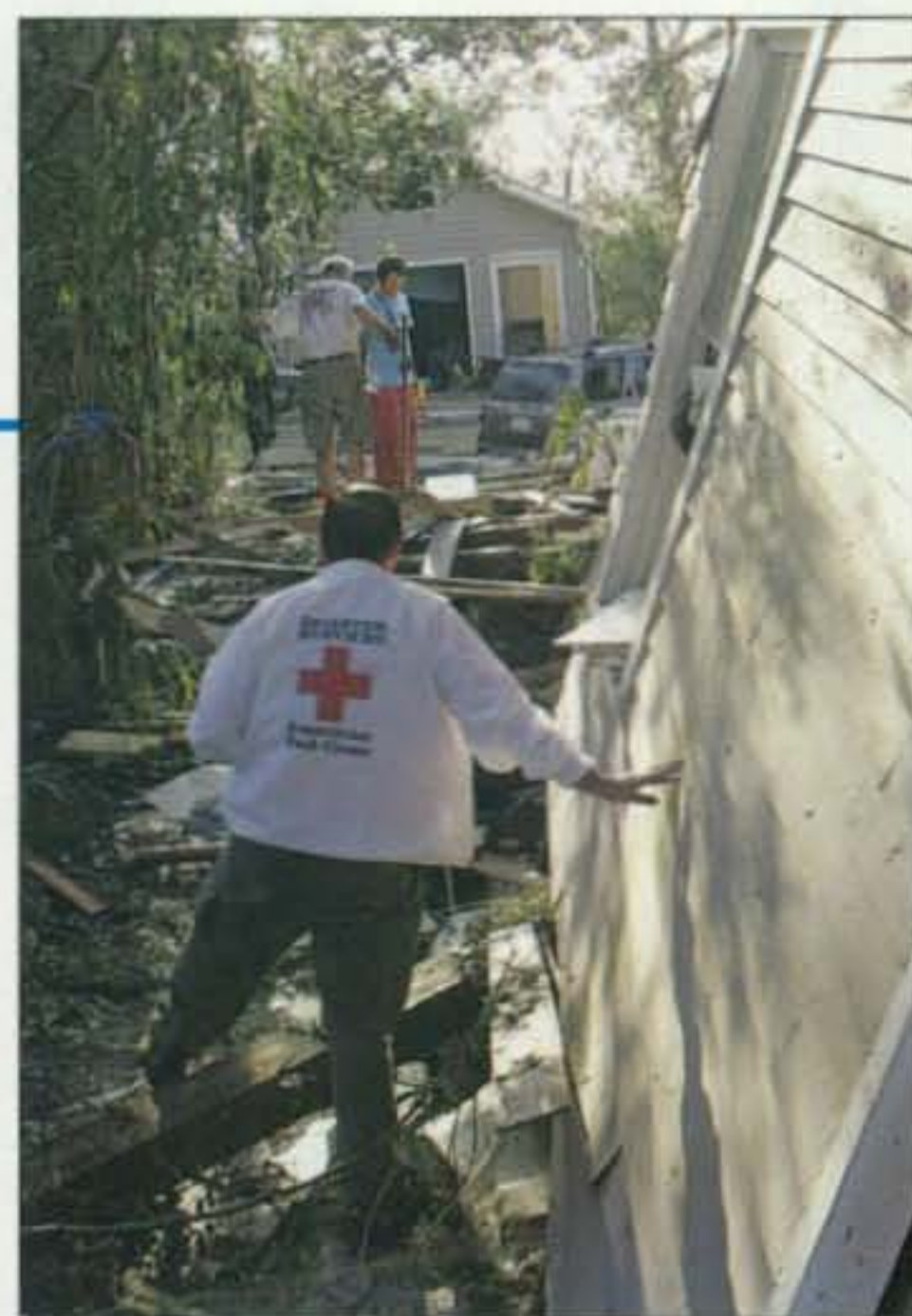
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On the Cover: Ten days after Hurricane Katrina, this New Orleans street was still covered by downed power and telephone lines, and whatever radio services use the tower in the background were most likely still off the air. Our reports on ham radio's response to the storm begin on page 13.
(Cover photo by Liz Roll / FEMA)

MFJ Small, high efficiency Loop Tuners™

Turns any wire loop into small, high efficiency multi-band transmitting loop antenna

Mount for
PVC Cross Loop



MFJ-933
\$179⁹⁵

MFJ-935B
\$199⁹⁵

MFJ-936B
\$249⁹⁵

Drape a wire around a bookcase or window and attach both ends to this new MFJ Small Loop Tuner™.

It instantly turns into a small, high efficiency multi-band transmitting loop antenna!

You can operate 5.3 to 30 MHz with a full 150 Watts. No ground, radials or counterpoises needed.

The excellent performance of a high-efficiency small loop antenna is legendary and well proven by users all over the world.

Whip Tuner/Artificial Ground gives instant 80-10M, 150 Watt Antenna

Just add short whip and counterpoise wire and instantly get an effective portable 150 Watt all band 3.5-30 MHz antenna.

It's effective, compact and simple to use for portable, fixed station and emergencies.

High power, hi-Q 3-core variable loading coil efficiently resonates short whip or random wire. Identical inductor tunes counterpoise. Operates 30-10 Meters with included 4½ foot telescoping whip antenna and counterpoise assembly.

Add longer whip/random wire and external loading coil for more efficient operation especially on 80-30M. 12 foot whip, hamstick, Hustler antennas all work great.

Tune for

MFJ-1644
\$149⁹⁵



low SWR with built-in reversible L-network. Current balun decouples radiating elements.

Tune for maximum current on RF Current Meter to give you maximum radiated power and minimum SWR. Sensitivity control lets you use QRP to 150 Watts QRO.

Ultra low capacitance fiberglass antenna/counterpoise insulator minimizes shunting antenna current to ground for maximum radiated power.

Standard 3/8x24 female connector for whip antennas and wing-nut for counterpoise. SO-239. 7¼Wx2¼HX2½D inches.

MFJ-1642, \$119.95. Like MFJ-1644 but less RF Current Meter.

You'll radiate a low angle DX signal that literally rivals full size dipoles and work incredible DX!

It's a very quiet receiving antenna -- you'll hardly notice static crashes. Its high-Q reduces QRM, overloading, harmonics.

It's perfect for apartments, antenna restricted areas and portable operation -- it really gets out!

A 13 foot wire formed into a loop operates 30-20 Meters (4 foot for 17-10 M; 7 foot for 20-15 M; 28 foot for 60-40 M).

You can tune any shape loop -- circle, square, rectangle, any odd shape. A quarter wavelength wire shaped as a circle is the most efficient.

A given wire length covers about 1.5 to 1 frequency range (i.e. 7-10/18-28 MHz, etc.). Exact frequency coverage depends on wire length, loop shape, surroundings and height above ground.

Has MFJ low loss Butterfly loop tuning capacitor, no rotating contacts. Easy-Carry handle. Mount for PVC Cross on cover.

See June, 1986, QST or recent ARRL Antenna Handbook for more details on small, high efficiency loops.

MFJ-936B, \$249.95. For home/portable stations. Has relative RF antenna current meter with sensitivity control and 30/300 Watts Cross-Needle SWR/Wattmeter. 10¼Wx5¼Hx9½D inches.

MFJ-935B, \$199.95. For portable/home stations. Smaller, lighter. Relative RF current meter with sensitivity control. 6¼Wx5¼Hx9½D inches.

MFJ-933, \$179.95. Same as MFJ-935B less RF current meter. 6¼Wx5¼Hx9½D in.

Window/Balcony 80-6 Meter Antenna, built-in Tuner

MFJ-1625
\$199⁹⁵

Complete antenna system mounts on window frame, balcony or railing.

Perfect for apartment, condo. 80-6 Meters, 200 Watts. Universal mount/clamp, built-in antenna tuner with RF isolator, extra long 12 foot telescoping whip (22.5 inches collapsed), high efficiency loading coil for 40/80 Meters, counterpoise wires, safety rope. MFJ-1623, \$179.95. Like MFJ-1625, but 6-30 Meters.

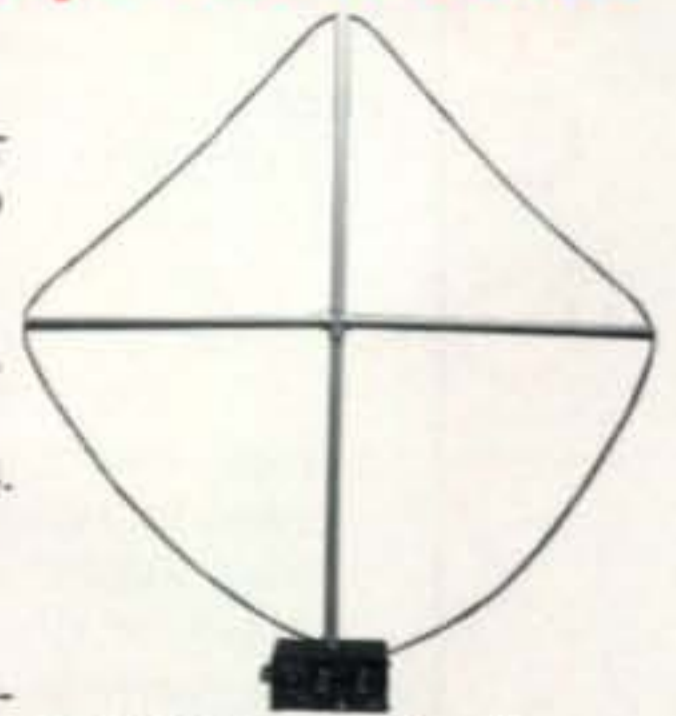
Telescoping Whips

10 and 12 foot long, standard 3/8x24 threaded stud. MFJ-1954, \$19.95. 10 foot, 19" collapsed. MFJ-1956, \$29.95. 12 foot, 22.5" collapsed.

Wire Loops and Mounts

MFJ-57B, \$29.95. Has PVC Cross for mounting loop on cover, 20-15M insulated 10-gauge flexible loop, low resistance lugs.

MFJ-58B, \$49.95. Has MFJ-57B above, plus 60-40 M, 20-15 M, 17-10 M loops; wire clips.



Butterfly loop Tuning Capacitors

The heart of the MFJ Loop Tuners is an extremely low loss butterfly tuning capacitor with no rotating contacts. 4200 Volts RMS. ¼" dia. x 2½" long shaft.

A. MFJ-19, \$69.95. 12 to 67 pF. 6Dx3Wx3½H in.

B. MFJ-23, \$89.95. 18 to 136 pF. 10Dx3Wx3½H in.

Mini high-efficiency Loop Tuner™



MFJ-932
\$99⁹⁵

Tiny 50-Watt version of MFJ-933, Small High-Efficiency Loop Tuner™. Makes portable operation really portable and fun!

Ultra low loss butterfly capacitor. Covers 80-10 Meters with appropriate wire loop. Tiny 3Wx4Hx1½D inches.

Ruggedized flat Mobile/portable SWR/Wattmeter



MFJ-818
\$69⁹⁵

MFJ's new flat, compact SWR/Wattmeter is plenty rugged to take the abuse of brutal mobile and portable operation.

Meter fully enclosed in strong aluminum case with just the scales and two small switches exposed -- there's little to break.

Simultaneously read SWR/forward/reflected power on full size 3-inch lighted Cross-Needle Meter. 30/300 Watt ranges, 1.8-30 MHz, SO-239 connectors. 5Wx3H x2D". Use 12 VDC for meter lamp or plug into cigarette lighter with MFJ-5510, \$6.95.

Dealer/Catalog/Manuals

Visit: <http://www.mfjenterprises.com> or call toll-free 800-647-1800

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All Eyes on Rita as Katrina Relief Continues

As we went to press, Hurricane Rita was churning across the Gulf of Mexico toward Texas as a Category 5 storm, its 170-mile-per-hour peak sustained winds making it the third most powerful Atlantic basin hurricane on record. Hams along the Texas Gulf coast -- already strained by helping with Hurricane Katrina relief -- were preparing to deal with a second monster storm within a month. We will update you next month on Rita as well as continuing our coverage of Hurricane Katrina.

The magnitude of the damage caused by Katrina has prompted the ARRL to take some major new steps in dealing with wide-area disasters. During and immediately after the storm, according to the *ARRL Letter*, top ARRL staffers held daily conference calls with the Section Managers and Section Emergency Coordinators in the affected areas, to provide updates, compare notes and make sure all requests for help from Newington were getting through. In addition, the League made use of the online volunteer registration program designed after 9/11 by Joe Tomasone, AB2M, and put online a "volunteers needed" web page on which relief agencies could post requests for ham radio communications volunteers.

The actions taken in response to Katrina have put a structure in place to permit ARRL headquarters for the first time to coordinate ham radio relief efforts on a regional or national basis. Traditionally, the League's Amateur Radio Emergency Service (ARES) has operated section-by-section, often with informal agreements between adjacent sections for mutual aid if a problem got too big or crossed section lines. However, there was some criticism after the 9/11 attacks in 2001 that those informal agreements didn't work in all areas and that national coordination was needed in major emergencies.

In addition, the ARRL received a \$100,000 federal grant to help reimburse some of the expenses incurred by ham volunteers responding to Katrina. Private donations have also been made to the League's new "Ham Aid" fund.

The *ARRL Letter* also reported that League President Jim Haynie, W5JBP, submitted written testimony to the congressional committee investigating the response to Hurricane Katrina. Haynie wrote that, regarding amateur radio, his statement is "a report on what is going right, and what works, in emergency communications ... and what can be depended on to work the next time there is a natural disaster, and the times after that."

FCC Sets, Extends Various Deadlines

Comments on the FCC's proposal to end Morse code testing for amateur licenses (WT Docket 05-235) must be submitted by October 31, 2005, with reply comments due by November 14. The timetable was put into motion by the official publication of the Notice of Proposed Rule Making in the *Federal Register* on August 31. We have several articles in this issue expressing various opinions on the proposal.

Meanwhile, hams living in Louisiana, Mississippi and Alabama, whose licenses expire(d) between August 29 and October 30, 2005, now have until October 31 to file renewal applications. An FCC official said hams whose licenses expire during that time period technically may not transmit until they renew ... but also noted that didn't necessarily mean those who do so will be subject to enforcement actions. The Commission said its move is pursuant to its authority "to waive rules for good cause."

FCC to Start New Public Safety/Homeland Security Bureau

The FCC is establishing a new Public Safety / Homeland Security Bureau to coordinate public safety, national security and disaster management activities within the Commission. According to FCC Chairman Kevin Martin, responsibilities of the new bureau will include all public safety communications, "including 911 centers and first responders," priority emergency communications, alert and warning of citizens, continuity of government operations, disaster management coordination and outreach, communications infrastructure protection, and network security, reliability and interoperability. Martin's statement did not include a timetable for getting the new bureau in operation, nor did it say which current offices will be moved into the new bureau.

FCC Chair Ignores Ham Radio in Statement to Senate

When the U.S. Senate Committee on Commerce, Science and Transportation held a hearing in mid-September on "Communications in a Disaster," FCC Chairman Kevin Martin was the first speaker. He addressed the committee on the impact of Hurricane Katrina on the communications infrastructure in the affected areas, the extent to which services had been restored (and what the FCC had done to cut red tape), and "some initial lessons learned from this terrible tragedy." But in a report centered on communication failures, Chairman Martin failed even to acknowledge amateur radio, the one FCC-regulated communication service that did work consistently throughout the disaster.

ARRL Starts New Toy Drive for Katrina Victims

Building on the success of last year's nationwide toy drive to help children left homeless by the four hurricanes that ravaged parts of Florida in 2004, the ARRL has decided to do it again this year, with the toys being directed this time to children affected by Hurricane Katrina. The League is asking hams (and others) to donate new, unwrapped toys suitable for children ages 1-14, and to include a QSL card with their donation. The address for shipping toys was not yet available at press time, so check the ARRL web page at <www.arrl.org> for updates. Monetary donations are also welcome. Checks should be sent to ARRL-Toy Drive, 225 Main St., Newington, CT 06111.

Motorola Apologizes for Employee Remarks

Hams responded predictably when an otherwise complimentary *Wall Street Journal* article on September 6 about ham radio response to Hurricane Katrina ended by quoting Motorola's repair supervisor for the region saying, "Something is better than nothing ... (b)ut ham radios are pretty close to nothing," and Motorola quickly issued an apology.

Saying that the employee's comments were taken out of context, the company's director of communications and public affairs, Jeff Madsen, said that "Motorola fully recognizes the incredible work that that amateur radio operator community has put forth during the Hurricane Katrina response efforts ... We will continue to work to highlight the unique capabilities that public safety communications and amateur radio operators both bring to significant natural disasters such as Hurricane Katrina."

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 at <<http://www.cq-amateur-radio.com>>.

Antenna Bill Reintroduced

Representative Steve Israel (D-NY) has reintroduced a bill designed to give hams living in homeowner-association controlled areas the same right to "reasonable accommodation" of amateur antennas guaranteed by the FCC to other amateurs. The "Amateur Radio Emergency Communications Consistency Act" was introduced in previous sessions of Congress but did not gather enough support to be reported out of committee for a vote on the floor. As the value of amateur radio stations became even more apparent in the aftermath of Hurricane Katrina, Israel decided that the time was ripe to reintroduce the measure. The bill number is HR-3876. (See K4TWJ's Op-Ed on this subject on page 25)

Question Pool Dates Rearranged

The group that writes the question pools for the amateur radio licensing exams has shifted its schedule for introducing new question pools, moving up by a full year the release of a revised pool for the Technician Class exam. The Question Pool Committee (QPC) of the National Council of Volunteer Examiner Coordinators (NCVEC) has come under fire for the current pool, which includes more than 700 possible questions for a 35-question exam. A new Technician pool will be released on January 1, 2006 and will take effect on July 1, 2006. The General Class pool, originally due for its next update in 2008, will be updated in 2007, and the current Extra Class pool—previously set to be replaced in 2006—will now remain as is until 2008. The QPC encourages input from the amateur community. Proposed questions should be submitted via the NCVEC website at <www.ncvec.org>.

Hams Address FCC Advisory Panel

Amateurs Greg Lapin, N9GL, and Dwayne Hendricks, WA8DZP, made two "well-received" presentations last summer to the FCC's Technology Advisory Committee. Both Lapin and Hendricks are members of the committee. According to the ARRL Letter, Lapin's presentation was titled, "Lessons Learned About Spectrum Sharing in the Amateur Radio Service," and focused on "hams' ability to work together to share frequencies," while Hendricks focused on amateur experimentation and "how hams once worked in concert with the FCC to study things that they wanted to know about." The presentations can be heard over the web at <<http://www.fcc.gov/realaudio/mt072805.ram>>. Lapin says his talk begins about one hour and 50 minutes into the meeting and is immediately followed by Hendricks's.

Ham Gear for "Suitsat" and SSTV Sent to Space Station

A Russian supply rocket has brought additional, specialized, ham radio gear to the International Space Station (ISS). According to the AMSAT News Service, the shipment included all the equipment needed for the "Suitsat" project, in which an amateur transmitter and a slow-scan TV (SSTV) software will be "launched" into orbit inside an outdated Russian space-suit, as well as additional SSTV gear and software for the station's permanent ham station.

Suitsat will be a transmit-only "satellite," sending special messages and a pre-recorded SSTV image to hams and stu-

dents on the ground, who will be able to track it as it orbits independently of the space station. Suitsat is expected to be "launched" during a spacewalk currently scheduled for December. Updates and additional information are available at <<http://www.rac.ca/ariss>>.

In addition, SSTV equipment and software is scheduled to be installed as a permanent part of the ISS ham station, providing the capability of both sending and receiving images via amateur radio. A dedicated laptop computer for SSTV is scheduled to be sent to the ISS on a future supply rocket.

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The original and still the best.

Many Smartuners™ have been in service, delivering precision tuning for more than a decade—since long before our competitors existed. With a combination of rugged construction, high-end components and solid engineering, SGC HF antenna couplers outlive and outperform imitators every time. Smartuners do not require special interfaces or accessories. Right out of the box, they work with ANY transceiver and ANY antenna. Low cost line trimmers don't compare when you need fast, precise, reliable tuning. The Smartuner is the industry gold standard and the choice of hobby, professional and government users around the globe.

Cat. # 54-14 SG-230

The SG-230 Smartuner is the go-to coupler when tuning requirements are critical.



Specifications

Frequency Range: 1.6 - 30MHz
Power Range: 3 - 200W PEP
Antenna Matching: Better than 2:1
< 4 seconds initially (typical)
< .01 seconds from memory
Antennas: Any
8 Ft. (> 3.3MHz)
23 Ft. (< 3.3MHz)
Transceivers: Any, up to 200W
Enclosure: Sealed ABS Plastic
Waterproof
Weather Protected
9 Ft. Cable Supplied
(For 500W, see the Cat. # 54-15)

Cat. # 54-18 SG-237

Our most versatile Smartuner, the SG-237 is perfect for almost any installation, especially mobile. (Supplied in grey case.)



Specifications

Frequency Range: 1.8 - 60MHz
Power Range: 3 - 100W PEP
Antenna Matching: Better than 2:1
< 4 seconds initially (typical)
< .01 seconds from memory
Antennas: Any
8 Ft. (> 3.3MHz)
28 Ft. (< 3.3MHz)
Transceivers: Any, up to 100W
Enclosure: Sealed ABS Plastic
Waterproof
Weather Protected
9 Ft. Cable Supplied

Cat. # 54-22 SG-239

The SG-239 is a no-frills Smartuner which delivers the performance and reliability essential in an antenna coupler.



Specifications

Frequency Range: 1.8 - 30MHz
Power Range: 1.5 - 200W PEP
Antenna Matching: Better than 2:1
< 4 seconds initially (typical)
< .01 seconds from memory
Antennas: Any
40 Ft. (> 3.3MHz)
100 Ft. (< 3.3MHz)
Transceivers: Any, up to 200W
Enclosure: Aluminum Housing
Not Weather Protected
No Cables Supplied

Cat. # 54-25 MAC-200

Switch between multiple antennas manually or automatically with the MAC-200, controlled by a built-in Smartuner. Monitor power and SWR with convenient front panel meters.



Specifications

Frequency Range: 1.8 - 60MHz
Power Range: 1.5 - 200W PEP
Antenna Matching: Better than 2:1
< 4 seconds initially (typical)
< .01 seconds from memory
Antennas: Any, up to 5 outputs
40 Ft. (> 3.3MHz)
100 Ft. (< 3.3MHz)
Transceiver: Any, up to 200W
Enclosure: Extruded Metal
Not Weather Protected
No Cables Supplied

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Tougher than Tough!



YAESU's rugged new VX-120/170 Series of 2-meter Hand-helds aren't just built tough. They're submersible, have a huge, easy-to-read LCD, and they provide big, bold audio (almost 3/4 of a Watt) from the huge internal speaker!

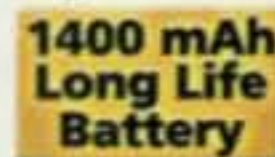


The VX-120/VX-170 are compact, high-performance FM hand-helds providing up to five Watts of RF power, along with big audio output (700 mW) and unmatched protection against the elements!

Protected against water ingress to IPX7 specifications (submersion for up to 30 minutes at a depth of 3 feet), the VX-120/170 feature long operating times, thanks to the supplied 1400 mAh NiMH Battery Pack. The 8-key VX-120 provides the utmost in operation simplicity, while the 16-key VX-170 includes direct keyboard frequency entry and direct DTMF input. And both models provide quick, one-touch access to YAESU's exciting and fun Wires-II™ VoIP Internet Linking system!

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(8 key Version / 16 key Version)

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- User Password protects against unauthorized use
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Submersible 2 m/70 cm
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VX-6R



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2 m/70 cm
Dual Band FM Handheld

FT-60R



1.5 W Ultra Compact
2 m/70 cm
Dual Band FM Handheld

VX-2R



Ultra-Rugged
5 W Full Featured
2 m FM Handhelds

VX-150/VX-110



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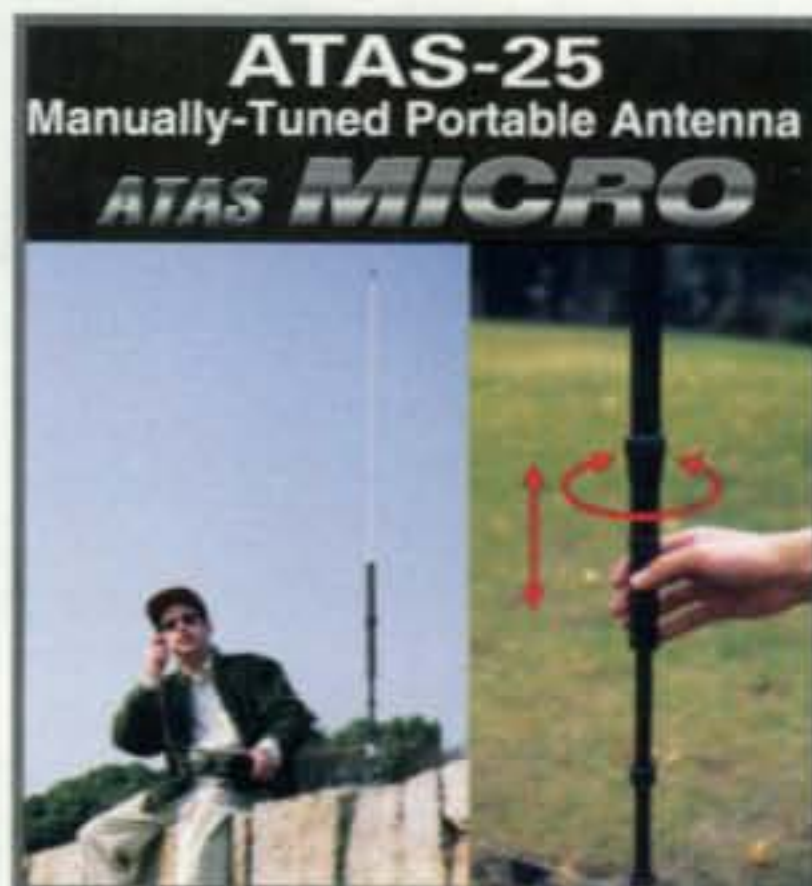


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REALLY PORTABLE**

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5 W All Mode Transceiver (AM 1.5 W)

60 m Band



Automatic Matching for FT-897/857 Series Transceivers



FC-40
Automatic-Matching
200-Memory
Antenna Tuner

WATERPROOF

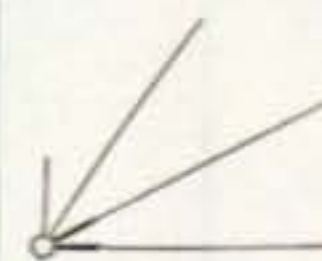
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Antenna System
(no separate tuner required)

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Off With Their Heads!

As I'm writing this in mid-September, the blame game is in full swing over who's responsible for what went wrong in relief efforts in the aftermath of Hurricane Katrina. FEMA Director Michael Brown has just resigned, after being relieved of command over his agency's operations in the Gulf coast region; President Bush has just said he'd take full responsibility for everything, and *Time* magazine has more than a dozen pages devoted to what its cover calls "System Failure."

From where I sit, 1500 miles away, it seems that there's more than enough blame to go around, shared equally by local, state and federal agencies and officials. But finger-pointing rarely brings about improvements and I think the media's and the government's time would be better spent focusing on how to make things work better next time (we all know there will be a next time, we just don't know when or where) than on trying to figure out who should be fired and who can be sued.

Finding a Silver Lining

Fortunately, for all the people pointing fingers and blaming someone else, there are just as many people pointing out things that went right, and good things that have come out of this very bad situation. It's been most pronounced among people directly affected by the storm. Dr. Roberto Dabdoub, KB5AVY, in his riveting first-person report ("But You ARE Helping Us, Roberto", p. 18), writes about his daughter using a small boat to rescue people, and a ham who told him, "... my house is under water, everything lost, so I decided to stay at the Jefferson Amateur Radio Club to try to help some." Roberto himself lost his home but focuses on the fact that his repeater system stayed on the air and was used to help people.

Don Wilbanks, AE5DW, a New Orleans radio announcer and volunteer anchor for "Amateur Radio Newline," with whom I had dinner in Huntsville just a month ago, put a personal postscript on the September 9th "Newline" program, noting that he was in a hotel in Little Rock and didn't know if he still had a house to go home to. But he refused to get caught up in feeling sorry for himself.

"Instead of dwelling on how bad it us for us and what we've lost, I would like to talk a bit about what we have gained," Wilbanks wrote. "We've met and have been helped by so many wonderful people here in central Arkansas ... The churches have gone all out to support us here and in cities all over this great country. Last night we ate dinner at the Cornerstone Bible Fellowship Church in North Little Rock. You should have seen the organization they had there. There were relief information packets available, the food was incredible, there were clothes and other supplies donated for any who needed it, lots of toys for the kids, and the people were so friendly ... If only the government relief organizations were run like this. This church will continue to do this every Tuesday night until there aren't any more people to help."

Communities all over the country are taking in and taking care of many of the estimated one million people displaced by this storm, but church dinners don't make headlines the way looting and shooting do. It's the same with ham radio. Communication systems that fail make bigger news than ones that work. For example, I didn't know until this week that the first report of a breached levee in New Orleans came via amateur radio. Hams from all over have been pitching in, as have many ham manufacturers, who

have donated gear to help outfit teams of hams the ARRL has been assembling to send into the areas that still have no communication.

There have been a number of excellent stories about ham radio making their way into the mainstream media. Even *Time* magazine, in its assessment of what went wrong, mentioned that, "...in Texas, ham operators have a place at the table in the emergency bunker in Austin along with the high-tech communications experts." Forgetting the question of whether or not we're high-tech, the clear message is that we get messages through when the "high tech" systems fail.

Much of the credit for this coverage, by the way, needs to go to the Herculean efforts of ARRL Media and Public Relations Manager Allen Pitts, W1AGP, who not only handled a never-ending stream of phone calls and interviews, but even went to Alabama for three days to see first-hand and document what the hams there were doing. In addition, hundreds of public relations volunteers got word out in their communities of local activities and tie-ins to the relief effort. Congratulations to you all for helping to tell our story.

Learning Our Lessons

One bit of interesting timing, for me, was that I was in the process of finishing up the ARRL's Level 1 Emergency Communications course when Katrina struck. Overall, it's a very good course and I recommend it to anyone involved in emergency communications or considering getting involved. One of its few weak points, however, is that it appears to be about 10 years behind the times in certain respects, with a big focus on packet radio and on formatting and transmitting ARRL radiograms via the National Traffic System. But in all the reports I've heard about ham radio activity in Katrina, I've seen very little mention of NTS and absolutely no mention of packet. On the other hand, the ARRL, with the help of AB2M, set up a centralized volunteer registration database on its website, similar to the one AB2M set up on his own website after 9/11. The course made virtually no mention of using the internet as a tool for organizing disaster response, or the growing use of internet-linked repeater networks (such as Echolink and IRLP) in emergency communications. Perhaps these topics are covered in the higher level courses, which focus more on *managing* emergency communications networks and organizations.

One chapter that's completely new to many hams today is how to deal with an influx of evacuees/refugees into otherwise unaffected areas. Hams in the U.S. haven't had to deal with this situation since the end of the Vietnam War some 30 years ago, and it's no longer part of standard emergency communications training. I hope that the ARRL's course will be regularly updated to reflect changes in the demands placed on us and in the way hams respond to emergencies and disasters.

My discussion of the ARRL EmComm course would be incomplete if I didn't mention a crucial aspect of its structure - the use of online "mentors," real people experienced in the subject area, who guide the students through the course, review the activities, and offer advice and encouragement. My mentor was David Ellenberg, WA2KWP, who did a great job of keeping me on track and keeping me plugging on, even when I was tempted (more than once) to say "I just don't have time for this." Thank you, David.

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

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

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Remembering the Edmund Fitzgerald Special Event – The *Edmund Fitzgerald* with her crew of 29 went down on November 10, 1975 in Lake Superior. This marks the 30th year of the tragedy. The following special event stations will be on the air:

The Stu Rockafellow ARS will travel to Whitefish Point, Michigan, and Paradise, Michigan and be on the air from November 3–7 on SSB 3.860, 7.260, 14.260, 18.160 (secondary), 21.360, and 28.360 MHz. For certificate (only) send 9x12 SASE (60 cents postage) to W8VS/N8F, Richard barker, 264 N. East Street, Brighton, MI 48116 (e-mail: <w8vs@arrl.net>); <http://www.qsl.net/w8njh>.

The Stillwater ARA, from Stillwater, Michigan, will use their club call, W0JH, operating three stations from the Split Rock Lighthouse State Park (lighthouse #USA783). They will be operational November 3–7 on 3.860, 7.260, 14.260, 18.160 (secondary), 21.360, and 28.360 (secondary), ±QRM. For QSL certificate send 9x12 (60 cents postage) to W0JH, 1618 West Pine Street, Stillwater, MN 55082; <http://www.radioham.org/>.

The Arrowhead RAC, from Duluth, Minnesota, will use their club call, W0GKP, from a station in Duluth harbor. See <http://webpages.charter.net/arac/>.

Other websites of interest: The *Fitzgerald*: <http://www.ssefo.com/>; Shipwreck Museum: <http://www.shipwreckmuseum.com/>.

Other special events in November:

N2UL, from "CQ Veterans Day," Nutley, New Jersey; Robert D. Grant United Labor ARA; 0400–2300Z November 11 on 28.420, 14.260, 7.260, 449.975 MHz. For certificate send QSL and SASE to RDGULARA, c/o WA2VJA, 112 Prospect Street, Nutley, NJ 07110-0716.

W3UDX, from Veterans Day celebration, grounds of the Bureau of Veterans Affairs Hospital, Butler, Pennsylvania; Butler County ARA; 1300–1900Z November 11 in the General portion of 20 and 40 meters. QSL to BCARA, P.O. Box 1787, Butler, PA 16003-1787.

W6OI, from Ten-Ten International celebration of 43 years and 75,000 members; operation in all ten call areas of the U.S. on November 26–27 from 0000–2400Z on 28.340–28.400 MHz CW and PSK. Certificate for working all call areas. Special QSL cards for each call area. Sends logs for certificate and SASE for cards to Jack Moore, K5CC, 371 Ridge Creek Lane, Bulverde, TX 78163; <www.10-10.org>.

The following hamfests, etc., are slated for November:

Nov. 5, **Enid Hamfest 2005**, Garfield County Fairgrounds Hoover Building, Enid, Oklahoma. Contact Tom Worth, 580-233-8473' <www.enidhamfest.com>. (Talk-in 147.375 + .600 MHz, Echolinked 105439; exams 1 PM)

Nov. 5, **Interstate Repeater Society Hamfest & Swapmeet**, Londonderry, New Hampshire Lions Club. Contact Paul, K1NL, e-mail: <K1NL@juno.com>, 603-883-3308. (Talk-in 146.85, PL 85.4)

Nov. 12, **Grant ARC Hamfest**, ABCEOI Building, Georgetown, Ohio. Contact Rodney Crawford, WD8CTX, e-mail: <WD8CTX@juno.com>, 937-446-2338; <www.garcohio.net>. (Exams)

Nov. 12, **Montgomery Hamfest & Computer Show**, Garrett Coliseum, South Alabama State Fairgrounds, Montgomery, Alabama. Contact Phil, K4OZN, e-mail: <k4ozn@charter.net>, 334-396-8369 (after 5 PM CST); <http://www.w4ap.org>. (Talk-in 146.24/84, call W4AP; exams beginning 8 AM)

Nov. 13, **Central Illinois/St. Louis Area Amateur Television Club Banquet**, Ariston Restaurant, Litchfield, Illinois. Contact Scott Millick, K9SM, e-mail: <smillick@wamusa.com>, 217-324-2412.

Nov. 19–20, **Fort Wayne Hamfest & Computer Show**, Allen County War Memorial Coliseum, Fort Wayne, Indiana. For more information, call and leave message at 260-450-4869, or go to <http://www.fortwaynehamfest.com>. (Talk-in 146.88[-]; exams Saturday)

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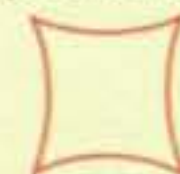
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T-2X **\$649⁹⁵**

T-2XD **\$1029⁹⁵** with DCU-1

CD-45II

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.



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

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

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

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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!



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



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

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A Desperate SOS . . .

No one will know for some time exactly how many people lost their lives to Hurricane Katrina and the flooding that followed. However, it's clear that hundreds of thousands of lives were disrupted, devastated, or put on hold in the wake of what has been described as "America's tsunami." The search and recovery effort is unprecedented in United States history.

"A major part of the problem is the loss of the communications network," said Louisiana Governor Kathleen Blanco. "Law enforcement has trouble communicating with each other; cell phone and landline phones are devastated. An emergency communications network will be established shortly," she said. Yet when all else failed, amateur radio was there.

This month we take a look at the amateur radio response during the first few days of the disaster and the life-saving mission of hams in the disaster area.

Tropical Depression #12

In late August the National Hurricane Center announced that Tropical Depression #12 had

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With telephone and power lines down throughout the Gulf Coast disaster area after Hurricane Katrina, amateur radio was there to provide communications. (Photo by Liz Roll/FEMA)

strengthened into Tropical Storm Katrina over the Central Bahamas. The center issued a hurricane warning for southeastern Florida. Amateur radio operators at the National Hurricane Center, those operating on the Hurricane Watch Net, and others began to prepare. The storm moved across Florida with 80-mph winds, killing at least 11 people. As the storm moved across the warm Gulf of Mexico waters, Katrina gathered strength on its way towards New Orleans. By Sunday morning,



Flooded neighborhoods in New Orleans forced the evacuation of hundreds of thousands of people. (Photo by Jocelyn Augustino/FEMA)

BY BOB JOSUWEIT, WA3PZO

public service

RSSL Receives Golden Antenna Award



Victor Goonetilleke, 4S7VK, receives the 23rd Golden Antenna trophy from Mayor Alsmeyer of Bad Bentheim, Germany, on behalf of Sri Lankan hams who provided communications during the December tsunami. (Photo courtesy of Siegfried Prill, DC9XU)

Members of the Radio Society of Sri Lanka received the 23rd Golden Antenna award for saving and helping people after last December's catastrophic tsunami. Under the leadership of Victor Goonetilleke, 4S7VK, RSSL provided communications for three weeks between the disaster areas and the government. The award committee is made up of the president of IARU Region 1, the presidents of the Dutch and German Amateur Radio Societies, the Town Mayor of Bad Bentheim, and the patron of the Dutch-German-Ham-Meeting. The award is sponsored by the Town of Bad Bentheim in Germany.

The town has been supporting amateur radio for more than thirty years. Each year the town acknowledges one ham or ham organization for an outstanding humanitarian act. The award has been given to hams from many countries around the world for assistance during or after nature disasters such as earthquakes, floods, hurricanes, and shipwrecks, as well as other emergency cases. Nominations for the 2006 award are due June 1, 2006. For further information contact <dc9xu@darf.de>.

August 28, a day before landfall, the National Hurricane Center issued an urgent message.

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THE MAJORITY OF INDUSTRIAL BUILDINGS WILL BECOME NONFUNCTIONAL. PARTIAL TO COMPLETE WALL AND ROOF FAILURE IS EXPECTED. ALL WOOD FRAMED LOW RISING APARTMENT BUILDINGS WILL BE DESTROYED. CONCRETE BLOCK LOW RISE APARTMENTS WILL SUSTAIN MAJOR DAMAGE ... INCLUDING SOME WALL AND ROOF FAILURE.

HIGH RISE OFFICE AND APARTMENT BUILDINGS WILL SWAY DANGEROUSLY... A FEW TO THE POINT OF TOTAL COLLAPSE. ALL WINDOWS WILL BLOW OUT.

AIRBORNE DEBRIS WILL BE WIDESPREAD ... AND MAY INCLUDE HEAVY ITEMS SUCH AS HOUSEHOLD APPLIANCES AND EVEN LIGHT VEHICLES. SPORT UTILITY VEHICLES AND LIGHT TRUCKS WILL BE MOVED. THE BLOWN DEBRIS WILL CREATE ADDITIONAL DESTRUCTION. PERSONS ... PETS ... AND LIVESTOCK EXPOSED TO THE WINDS WILL FACE CERTAIN DEATH IF STRUCK.

POWER OUTAGES WILL LAST FOR WEEKS ... AS MOST POWER POLES WILL BE DOWN AND TRANSFORMERS DESTROYED. WATER SHORTAGES WILL MAKE HUMAN SUFFERING INCREDIBLE BY MODERN STANDARDS.

THE VAST MAJORITY OF NATIVE TREES WILL BE SNAPPED OR UPROOTED. ONLY THE HEARTIEST WILL REMAIN STANDING ... BUT BE TOTALLY DEFOLIATED.

FEW CROPS WILL REMAIN. LIVESTOCK LEFT EXPOSED TO THE WINDS WILL BE KILLED.

AN INLAND HURRICANE WIND WARNING IS ISSUED WHEN SUSTAINED WINDS NEAR HURRICANE FORCE ... OR FREQUENT GUSTS AT OR ABOVE HURRICANE FORCE ... ARE CERTAIN WITHIN THE NEXT 12 TO 24 HOURS.

ONCE TROPICAL STORM AND HURRICANE FORCE WINDS ONSET ... DO NOT VENTURE OUTSIDE!

Time to Prepare

As the storm approached the Gulf Coast amateur radio operators were on duty to supply emergency communications. Nets were activated on HF and VHF, both voice and digital modes. In fact, at one point over 40 separate HF nets were identified as providing hurricane-related communications. The Louisiana and Mississippi Amateur Radio Emergency Service (ARES) organizations began their response on Saturday evening with the activation of the tri-section agreement. Evacuation shelters were beginning to open and amateur radio was on the scene. Glenn Davis, KD5SII, and Claude Causey, KD5ITA, were among the first to staff shelters in Tallulah and Monroe, Louisiana.

The West Gulf ARES Emergency Net activated on 3873 at 8:00 AM, Monday August 29. Mississippi ARRL Section Emergency Coordinator Malcolm Keown, W5XX, said "short skip on 40 meters has been almost non-existent except in the late afternoons; thus much of the operation will be on 3873. The 40-meter frequency will be 7285. Check-ins will be limited to served agencies as well as stations with emergency, priority, and weather-related traffic or stations in the affected storm event area with information or inquiries."

Desperate SOS

Hurricane Katrina struck the Gulf Coast with winds near 145 mph. Some areas reported a storm surge of over 20 feet. The death toll rose to more than 100 people in Mississippi, just 24 hours after the storm hit. In New Orleans two levees broke and the resulting flood put 80 percent of the city under as much as 20 feet of water. The first warning to the National Weather Service came via ham radio. Operators at the Orleans Levee Board reported a breach to the New Orleans office of the National Weather Service. At 8:14 AM Monday—

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a full day before the rest of the world heard of any breaks in the levees—the New Orleans National Weather Service office issued a flood warning, saying, “a levee breach occurred along the industrial canal at Tennessee Street. Three to 8 feet of water is expected due to the breach.” Communications were lost shortly thereafter. With over 40,000 people in Red Cross shelters outside of New Orleans, looting emerging on the streets, and rescuers in helicopters and boats picking up stranded people, New Orleans Mayor Ray Nagin issued “a desperate SOS” to the world.

South Texas Section Emergency Coordinator Jerry Reimer, KK5CA, described the situation in southeastern Louisiana and southwestern Mississippi as “as bad as the television is reporting. Neither state is permitting disaster relief agencies into the affected areas except on a very limited basis and only then in the most stable and accessible. Nearly everyone is still staging as close by as possible, and waiting.” According to Reimer, Louisiana state officials directed the state Section Manager and Section Emergency Coordinator *not* to advertise for volunteers. Some volunteers were requested at the state emergency operations center but were being staged nearby. In Mississippi conditions were unknown as repeaters were off the air.

Back in New Orleans, more than 25,000 evacuees took refuge in the New Orleans Superdome, the “shelter of last resort.” The storm ripped holes in the dome, and flooding cut off the stadium from the rest of the city. Conditions there were worsening by the hour, and officials quickly realized there was a need to move the evacuees to better facilities.

Big Heart

One of the places to which the Superdome evacuees were taken was the Astrodome in Houston, Texas. There Harris County ARES had been called up to support operations for a period of at least two days. Assignments were made in six-hour shifts. Operators had to be self-sufficient where an HT, good batteries, and personal items such as water were needed. As the Astrodome reached its capacity, additional shelters were opened in Dallas and Austin. Again, amateur radio operators were there to support those operations.

Ken Mitchell, KD2KW, ARES District 14 Emergency Coordinator, which includes Houston, said the ARES members “received a very good report on the

professionalism, efficiency, and flexibility from our served agency for the effort contributed so far.” He said, “We have been asked to extend our support effort 24/7 for the next two weeks and possibly beyond 30 days. We will have weekly reviews to determine how the deployment is working and when the time will begin for target stand down. Currently it looks indefinite.”

Inside the Astrodome

Mitchell said the ham radio operators assigned to the Astrodome would shadow, or stay with, an emergency official or someone else designated by the EOC office. At other times operators would be asked to be at a work room or table just in case something was requested. Usually these assignments include asking whether there is anything to request of the EOC. All the operator needed was a 5-watt HT, good batteries, bottled water, and operating skills, with an interest in meeting the served agency needs. In the first six days over 90 amateurs provided over 720 man-hours of communication support.

International Rescue

There are many stories of amateur radio operators relaying word of someone needing to be rescued from a roof of a building or saying that they couldn’t evacuate because of flooding, but this story reaches around the world.

An SOS came in via e-mail from a coastal city in south China. “They are still stranded! . . . They still stay in house . . . Please send rescuer there to save them.” The Chinese sender’s plea, on behalf of relatives trapped in New Orleans, reached the Salvation Army on September 5.

That night it was relayed to Joe Fratto, N1RLO, a Navy MARS coordinator in Massachusetts. He then relayed it to the Army MARS Western Gateway station, AAA9USA, at Fort Huachuca, Arizona. The message then made it to a MARS contact in New Orleans, a Special Forces unit from the Utah National Guard. The rescue was later confirmed.

“This is what we have been training for,” Eastern Area Army MARS Coordinator Robert Hollister messaged his members as Katrina closed in on the Gulf Coast. “It is time now to show how proud, professional and ready we really are.”

“Overall the combined MARS team of Army, Air Force, and Navy is to be congratulated for this extended operation,” said Army MARS Chief Robert Sutton, in a message to the membership ten hectic days later.

“I wish I could say we are nearly done but I cannot. There will be some areas without utility infrastructure for extended periods and we need to continue to assist until the job is done. Your support is greatly appreciated.” He said the disaster presented an opportunity to demonstrate the spontaneous interoperability existing among the three MARS organizations—Air Force, Navy-Marine Corps and Army—as well as start a significant new collaboration with SATERN, the all-Ham Salvation Army Team Emergency Radio Network.

New MARS/SATERN Partnership

The U.S. Army NETCOM/9th ASC MARS headquarters station is a 24-hour, 7-days-a-week operation manned by contract personnel who are hams. This became one of the national collection points for all three MARS organizations to process traffic to and from the affected regions. Its normal function is to serve as the Army MARS’ western area of the continental U.S. and units in the Pacific.

A series of weekend e-mail exchanges resulted in the immediate collaboration between SATERN and MARS. Salvation Army Major Patrick McPherson, WW9E, is the network’s national director in Midland, Michigan. McPherson and John Peterson, program manager of SHARES in Arlington, Virginia, arranged for SATERN to participate in the National Communication System’s “SHARED RESOURCES” program, linking federal agencies (including MARS) by HF radio. That agreement paved the way for partnering with MARS.

McPherson designated Fratto in Massachusetts to coordinate the interface. The Salvation Army meanwhile teamed up with Computer Sciences Corporation to develop a massive database for handling the 54,000-plus survivor information requests that arrived during the initial week and that have continued piling up. The data system was up and running in Dallas in time for the MARS/SHARES link.

During the worst of the disaster some Gulf Coast residents managed to telephone or e-mail the news of their plight to relatives or friends outside the storm area even though local authorities proved to be beyond reach; those were the messages SATERN was routing back via MARS.

One message read: “He is elderly and stranded upstairs. No food, no water, no meds. Has health problems.” Others, all desperate, read: “Handful of seniors in a senior building. Right off Lake Pont-



North Carolina amateur radio operators demonstrated emergency communications in the state capital as part of "Ready North Carolina." The event was part of National Preparedness Month, sponsored by the state Department of Homeland Security and the American Red Cross. ARRL NC Section Public Information Coordinator Bill Morine, N2COP, and others set up a working HF/VHF station next to exhibits from other state agencies with an emergency preparedness theme. The station drew extra attention because ham radio had just been featured on several area television newscasts in connection with Hurricane Katrina recovery efforts, which had been underway for three days. (Photo courtesy of N2COP)

chartrain they are on the tenth floor and running out of food." And "Stranded in girls' dormitory with dozens of other students in the upper levels. Lower levels are flooded. No food or water. Please rescue. Girls are from all parts of the USA."

"Disaster response and recovery efforts are an ongoing process and will be for some time to come," messaged Chief Master Sgt. Harry Marsters II, the Air Force MARS National Emergency Communications Manager. "Continued Ecom (emergency communications) support is still critical."

Although MARS and SHARES emergency radio networks were up and running 24 hours a day outside the stricken area, it was days before significant radio contact could be established inside it. In the interim, circuitous routing via e-mail and telephone (including satellite phones) had to suffice. Amateurs know how to keep the traffic moving under adverse conditions.

One of the early MARS exchanges into the Gulf region—between an Army MARS member in Massachusetts and an Air Force MARS station at a Mississippi air base—brought the disheartening news that the military station had to be evacuated. It was about to shut down before it had time to handle any significant traffic.

Confirming his own prediction, Hollister had fresh instructions September 8, based on a request from the Northern Command, the Department of Defense headquarters responsible for hurricane recovery.

"There is still a critical need to determine the status of infrastructure in the area affected by Hurricane Katrina," Hollister said. He called on operators to report not only sustained damage but also restored telephone or electrical service so response agencies can "clear the boards." He also asked state directors about the safety of members. Several were reported unaccounted for in the storm's aftermath.

"This hurricane disaster showed that we can never be over-prepared for any disaster and should never allow ourselves to become too relaxed," said James Banks, KK7RV, Army MARS Western Area Coordinator.

Emergency Continues

As our column deadline approaches Hurricane Katrina ARES operations continue in Louisiana, Mississippi, and South Texas sections, using operators recruited from Louisiana, Arkansas, Mississippi, Texas, Tennessee, Florida, and other nearby states.

ARES continues to support ongoing Red Cross shelter and Southern Baptist

Convention debris-clearing operations in St. Tammany Parish, Louisiana, where disaster relief workers are housed and fed at the First Baptist Church in Covington. In Washington Parish, ARES operators are slowly arriving to provide critical communications among hospitals and the parish EOC. Over a dozen operators from Texas alone have traveled to Louisiana, and many more are needed. Victoria County, Texas ARES Emergency Coordinator John Wagner, WA5VBP, flew into the New Orleans airport, where it was determined that his original assignment was unsafe, and he was re-routed to Baton Rouge. Communications between the field teams and the state EOC in Baton Rouge continues using HF voice on 75 and 40 meters.

In the hardest hit Mississippi counties of Hancock and Harrison, ARES District Emergency Coordinator Tom Hammack, W4WLF, requested 25 operators for critical communications among EOCs, hospitals, and shelters. Self-sufficient teams of operators were sent from Florida and Arkansas to meet this need. Hammack said his operators are sleeping on the floor where they are assigned. State RACES officer and ARES DEC Ron Brown, AB5WF, worked on a staging area for amateur radio responders near the Mississippi Emergency Management Agency (MEMA) in Jackson, Mississippi.

More to Tell....

The aftermath of Hurricane Katrina is so big with so many stories to tell that we'll continue next month. This account is just peeking into many of the stories of amateur radio responding in times of crisis. Thanks to Bill Sexton, N1IN, and others mentioned above. Until next month . . .

73, Bob, WA3PZO

Watching Rita

As we went to press, Tropical Storm/Hurricane Rita was threatening the Florida Keys and was then predicted to head out across the Gulf of Mexico, where it was expected to strengthen - possibly into another major hurricane - and predicted to make landfall somewhere in East Texas. This was of greater than usual concern to hams, as many of that region's most seasoned emergency communicators had been sent to help in Mississippi and Louisiana. In addition, many of the evacuees from Katrina were being housed temporarily in East Texas, further straining the capabilities of area hams. We will update the situation next month.

Hurricane Katrina took his home, but KB5AVY tells us in this first-person report that the storm also gave him something ... a feeling that 20 years of often-unappreciated work was finally paying off.

“But You ARE Helping Us, Roberto”

BY DR. ROBERTO DABDOUB,* KB5AVY

As I was driving through the rubble to inspect the damage to my house in the aftermath of Hurricane Katrina, the only sound on the ham bands that seemed to be alive in my beloved city of New Orleans was one of my old UHF repeaters. I heard a station from Baton Rouge responding to a distress call from a ham operator asking for purified water and medicines. A few minutes later, another ham was acknowledging that the items had been received. “We’re missing a few things,” he said. “We need more bottles of water ASAP.” And the QSOs kept going on and on. I could hear the sounds of helicopters in the background, like the signals were coming from a war zone, while the screeching of my own automobile tires became more pronounced as they rolled over debris, branches, and potholes. It was difficult to accept that these sounds were coming from New Orleans.

What Ham Radio is All About

Tears began to flow in my eyes because I felt that for the first time in my 20 years of struggling to keep four repeaters on the air with very little help from other users, my hard work was starting to pay off. My mother used to tell me that there is nothing more important in the world than to serve the community. “Yes, child, but do it unselfishly,” she used to tell me. Well, now I know that this is what ham radio is all about.

This idea is also what motivated me to go into the medical profession. When I arrived in New Orleans 45 years ago

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The author communicating with emergency officials through his ham repeater system in New Orleans. Roberto is standing at the exact location where the levee broke on the 17th Street Canal (one of four levee breaks in all), allowing water from Lake Pontchartrain to pour through and flood the city. His repeaters are located on the roof of Ochsner Clinic Foundation, which never lost power because it has its own auxiliary plant. (Photo by Chantal Dabdoub)

from my native Honduras, the city took me in her arms and opened all kinds of opportunities for me. I barely spoke English and I struggled at first. I took up residence in the French Quarter, then uptown, downtown, and in Bucktown, the place where the levee on the 17th Street Canal broke through, inundating the city with water from Lake Pontchartrain. I became an airplane pilot, a genetic research scientist, a musician, a journalist, a photographer, a book author, and last but not least, a ham radio operator.

Installing and maintaining open repeaters in metro New Orleans was my

way of paying back the community. I have to confess to you, working on those darn machines can be a pleasurable experience, but there were also plenty of frustrations. In spite of the constant headaches and sleepless nights, today, however, because of Katrina, a different panorama was beginning to unfold. Indirectly, my repeater system was saving lives.

With shaky hands I pressed the push-to-talk button on my handheld and asked, “Is anyone listening? This is KB5AVY.” After a short pause I heard a familiar voice, whose name I couldn’t remember.

"Hello Roberto, This is N5UXT, Angelo Glorioso. How are you?"

I replied, "I am fine, amigo. How are you?"

"It's so nice to hear a familiar voice," he responded. "I am fine, but my house is under water, everything lost, so I decided to stay at the Jefferson Amateur Radio Club to try to help some. But they're trying to take me out of here."

"Oh Angelo," I said, "I wish I could be there, too. But I was evacuated from my house because of my proximity to Lake Pontchartrain. However, one of my daughters stayed and now she is helping to rescue people with her little boat."

After a brief pause he said, "But you are helping us, Roberto. Your repeater is the only system in the New Orleans area that's working and also that could

"But you are helping us, Roberto. Your repeater is the only system in the New Orleans area that's working and also that could be accessed from the Baton Rouge emergency center."

be accessed from the Baton Rouge emergency center. With the help of the armed forces, the emergency crew linked it to the Baton Rouge central relief center. Thanks to your repeater we are able to help so many people."

There is nothing that could have been more rewarding than to hear those words from Angelo. You see, you do many things for people in the course of your life and never expect to get even a Christmas card or a thank you note from anyone. But in your heart, you always feel that somewhere along the line you are making someone happy, perhaps inspiring young kids to celebrate the complexities of our wonderful hobby. One of my goals in life has been not to die surrounded by lots of toys, believing that this represents some proof of success. I feel that if you die wealthy, surrounded by things, it means you haven't done your job right. You haven't given enough. Well, my wishes were coming true today.

My house is totaled and I don't have flood insurance because my house was not insurable, and I got a letter from FEMA saying that I do not qualify for help, which is another mystery to me. But the pleasure of helping the community will always be there.

One question that will always haunt me: What happened to the rest of our beloved city's communication system? What did go wrong? ■

coming soon!



NEW IC-P7A

ICOM

A major concern of emergency management officials is that responders to a disaster keep themselves safe and do not become additional victims. Risks to your emotional health may be as significant as those to your physical health, but may be more difficult to spot.

Secondary Stress and Trauma: How to Avoid Becoming a Victim

BY JOE LYNCH,* N6CL

The author is the editor of the "VHF Plus" column found elsewhere in CQ, as well as the editor of our sister publication, CQ VHF. His experience in emergency relief work includes, as the ARRL Oklahoma Section Manager, being responsible for the more than 300 amateur radio operator volunteers at the site of the April 19, 1995 Oklahoma City Murrah federal building bombing, as well as short-term mission trips for his church to Bosnia, both during and shortly after the 1996 cease fire. As an ordained United Methodist minister, with a Doctor of Ministry degree, he has had several years of education and experience pertaining to pastoral care and counseling.

—W2VU

Many of us hams have a strong altruistic side to us. We know that our hobby has the capability of providing emergency communications, thereby assisting others who are in need. A significant number of us have provided some sort of assistance, such as calling in an accident report or meeting the communications needs of a stranded motorist. For many of us, it seems to be a part of who we are as ham radio operators – to be there to help someone who is in need of our assistance.

In addition, we hams pride ourselves on our fierce independence, ingenuity, and go-it-alone mentality. However, what hams, as well as so many other responders to emergency situations, have learned in the aftermath of disasters such as the Oklahoma City Murrah federal building bombing or the 9/11 ter-

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Responders to disasters may begin to closely identify with the victims' stress and trauma, sometimes leading to similar stress levels among both professionals and volunteers. (Hurricane Katrina photo by Gene Dailey/American Red Cross)

rorist attacks is that our machismo mentality can be detrimental to our mental health.

It was more than ten years ago that I was the ARRL Section Manager for Oklahoma. It was in the aftermath of the Murrah building bombing that more than 300 ham radio operators volunteered for duty in and around the disaster site.

The work was filled with stress. Never before had we faced the idea of being responsible for communications for such a national tragedy. In at least one case a volunteer was relieved of duty when he began behaving inappropriately for the situation. Also, dealing with the loss of the victims of the bombing and the grief of their families profoundly affected a significant number of volunteers who performed a variety of jobs at the site.

From studying people's responses to these stressful events, mental health care providers came to know more about secondary stress and trauma, which often impacts providers of care to victims of disasters. The secondary nature is in the provider closely identifying with the victims' stress and trauma. From the research has come a growing list of recommendations for preparedness for volunteers so that they also do not become among the victims of the disaster.

What follows is a summary of some of this advice, with the following caveat: The advice presented here is not meant to be specific advice for specific individuals. It is presented for general distribution to anyone providing assistance to disaster victims. For specific advice regarding your particular situation, please contact your appropriate mental health care provider.

The following is based on interviews with Dr. Elana Newman, a clinical psychology professor at the University of Tulsa (Oklahoma), and Dr. Victor Labruna, a psychologist in the Division of Child and Adolescent Psychiatry at North Shore University Hospital (Long Island, New York). Dr. Newman has conducted research with journalists covering the 9/11 terrorist attack story. Dr. Labruna has been involved in stress and trauma treatment of children and youth.

In addition to the input of Drs. Newman and Labruna, I will also add my thoughts as one who has participated as a provider in a disaster and as a representative of the faith community.

Three Timeframes

Generally speaking, there are three timeframes of concern: before deployment, during deployment, and after

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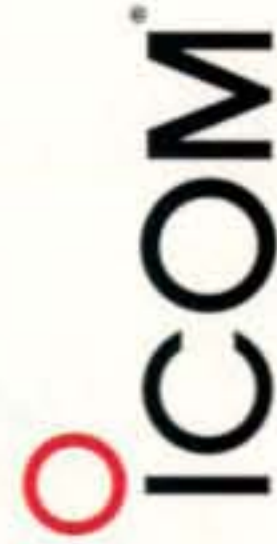
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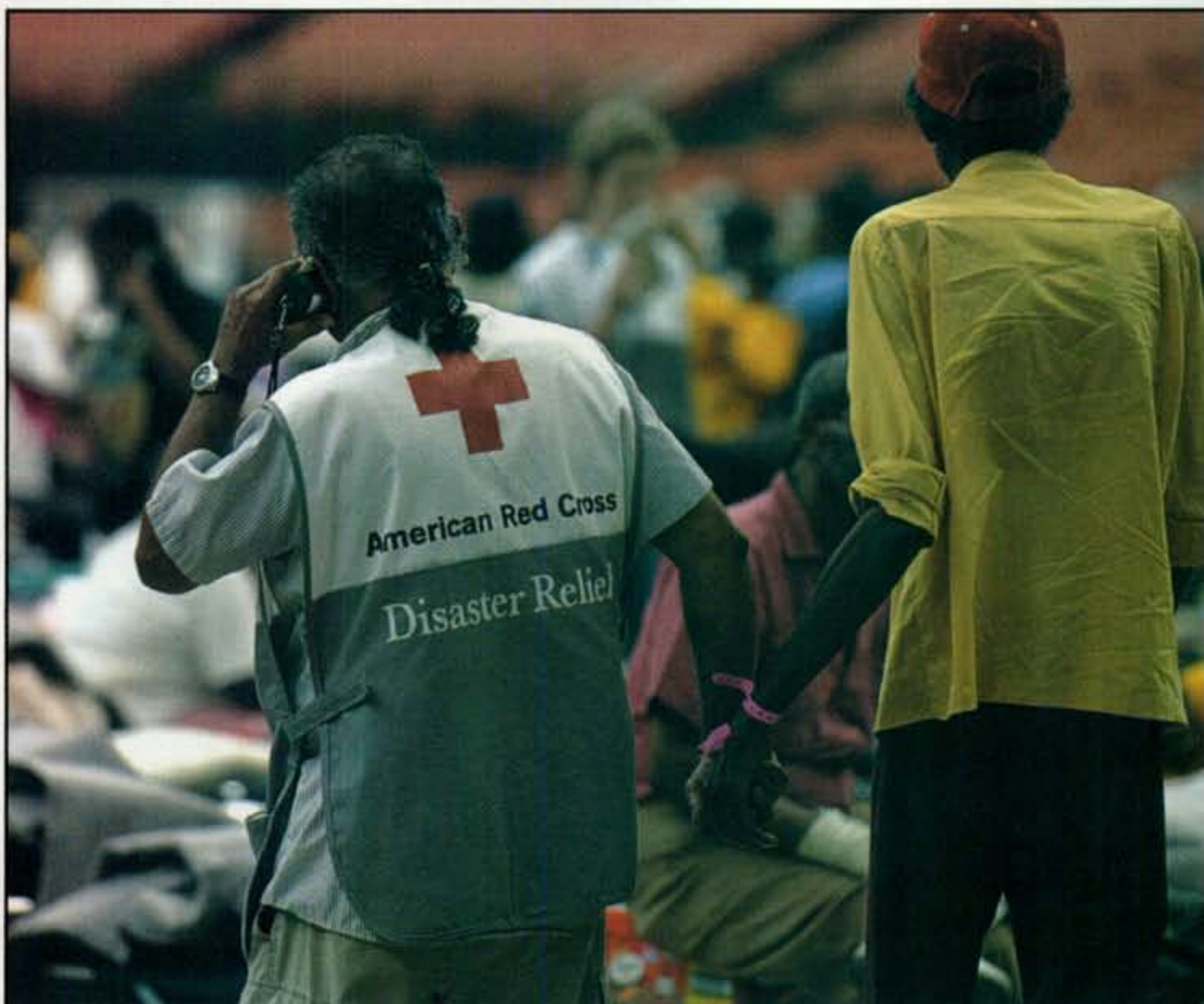
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When deployed at a disaster site, volunteers need to monitor their own emotional and physical well-being and keep in contact with their own families as much as possible, to avoid becoming additional victims of the disaster. (Photo by Daniel Cima/American Red Cross)

deployment. Before deployment is concerned with preparing yourself for what you might expect at the disaster site. During deployment is concerned with how to care for yourself while at the disaster site. After deployment is concerned with the inevitable decompressing that you will go through when you return from the disaster site.

Before Deployment: Before going to the disaster site, if at all possible you should go through some sort of briefing presented by either a FEMA representative, or a representative from one of the non-government organizations (NGOs) that is already working in the disaster area. Among the items that Dr. Labruna indicates should be discussed are the following:

- Making sure that you get proper sleep, nutrition, and exercise.
- Allowing for some "down time" for rest/relaxation/recreation.
- Making sure that you maintain regular contact with family members back home.
- Regularly monitoring your stress levels and asking for help if you need it.
- Maintaining conversations with other care providers.

You also need to be aware of warning signs of more severe reactions to the experience of the disaster, such as:

- Difficulty with attention/concentration or logical thinking.
- Difficulty sleeping.
- Becoming withdrawn or socially isolated from your fellow care providers.
- Feeling "numb" or using alcohol and/or drugs to feel numb.
- Experiencing intrusive images and/or memories that are very upsetting or distressing.
- Feeling constantly jumpy, nervous, or on-guard.

Another important item you need to be aware of is how much previous experience you have had dealing with stressful or traumatic situations. The stress and trauma that we experience in association with dealing with these issues is cumulative. That is, we tend to relive stressful and traumatic situations when we experience new ones. We tend to pile memories upon memories by making comparisons of previous experiences with present experiences.

Because of this cumulative effect, we need to be aware that something small in the present experience may have an

unexpectedly strong impact on us, and we may begin to experience one or more of the warning signs that are indicative of a more severe reaction to the stress and trauma. In short, if you have experienced a significant amount of stress and/or trauma in the past, either as a care provider in a disaster situation, or in your personal life, or both, then perhaps you may want to not volunteer for this particular situation—or at least, seek counseling from a mental health professional before doing so.

Between group and self-debriefing, you should, as much as possible, become aware of what works best for you as a coping strategy. Dr. Labruna points out the following with regard to debriefing:

The idea of "debriefing" has become a very controversial one in the mental health field. It may be beneficial for some people but may actually harm others, and most mental health organizations have advised against using debriefings. (The harm can come from hearing traumatic things said by others in a group format, or by having someone talk about something traumatic before they are ready to. In addition, some people seem to cope best by avoiding direct discussion of experiences and feelings, and debriefings may take away their natural coping style.)

Finally, when you pack for your trip to a disaster site, be sure to include such items as family pictures, inspirational books, magazines (perhaps one related to your favorite hobby), and/or important writings pertaining to your faith tradition, such as a *Bible*. These items will provide you with important links to what you consider to be normal.

During Deployment: While at the disaster site, it is up to you to take responsibility for yourself, as often there is considerable confusion and lack of direction from others at the site. Make sure you are aware of the following:

Your role and responsibilities should be clearly defined for you, or you must clearly define them for yourself.

If possible, it will be beneficial to be partnered with someone else. If you are less experienced, you should be partnered with someone who has more experience. Being partnered with another can be beneficial in that your partner may become aware of negative changes in you before you are aware of them yourself.

Your duties should be rotated among high-stress activities and low-stress activities.

Have an area or place in which you can gather your thoughts and get some rest. As much as possible, this area

should be away from the intense or stressful areas of the disaster site. At this place take time to meditate on positive images, or if you are religious, on positive thoughts and/or prayers related to your faith tradition.

Be sure to take necessary work breaks and drink plenty of appropriate liquids, such as cool water and/or sports drinks. Try to avoid stimulating drinks, such as coffee, tea, or other caffeinated drinks, or drinks containing lots of sugar.

As much as possible, you need to maintain frequent contact with your family or significant friends who are outside of the disaster area. Often family and friends are your link or lifeline to what you remember to be normal, safe, and secure for yourself.

As necessary, you should seek professional help or counseling from a provider at the site. This provider may be a mental health worker or a chaplain. Regarding the latter, even if you are not religious, do not shy away from visiting with a chaplain, because most, if not all, clergy working in disaster areas are focused on assisting others with coping strategies, regardless of one's particular faith tradition.

After Deployment: Above all, know that you have been changed by your experience with the disaster. Keep in mind that those whom you left behind at home have not changed accordingly. This means that when you return to your family, you need to be aware of your reaction to them. You may have a tendency to become impatient or even angry with them in their failure to understand your experiences and feelings.

You may want to be able to tell your stories to your friends and/or family members or in a more formal setting, such as a club meeting or at a place of worship related to your faith tradition. Do not be surprised or disappointed if there is not a lot of identification with your experiences. These are *your* experiences, not the experiences of those with whom you are sharing your stories. Rarely will others be able to truly empathize with you. Simply accept their respect for you as their gratitude for your having participated in the disaster assistance.

Be sure to take some time off in order to physically, as well as emotionally, recover from your experiences. The emotional strain most likely will manifest itself in the physical, such as the need for sleep. Give yourself ample time to regain your strength.

When you return, you should be watchful for the symptoms that have been highlighted in this article. If you

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Aid Worker Pocket Card

The following Aid Worker Pocket Card from Idaho State University provides a convenient checklist for deployment:

Caring for yourself in the face of difficult work: Our work can be overwhelming. Our challenge is to maintain our resilience so that we can keep doing the work with care, energy, and compassion.

10 things to do each day:

1. Get enough sleep
2. Get enough to eat
3. Vary the work that you do
4. Do some light exercise
5. Do something pleasurable
6. Focus on what you did well
7. Learn from your mistakes
8. Share a private joke
9. Pray, meditate or relax
10. Support a colleague

Switching on and off: Your empathy for others helps you do your job. It is important to take good care of your feelings by monitoring how you use them. The most resilient workers are those who know how to turn their feelings off when

they go on duty, but on again when they go off duty. This is not denial; it is coping strategy. It is a way they get maximum protection while working (feelings switched off) and maximum support while resting (feelings switched on).

How to become better at switching on and off:

1. Make this a conscious process. Talk to yourself as you switch.
2. Use images that make you feel safe and protected (switch off) or connected and cared for (switch on) to help you switch.
3. Develop rituals that help you switch as you start and stop work.
4. Breathe slowly and deeply to calm yourself when starting a tough job.

For more information, see your supervisor or visit www.psychosocial.org or telida.isu.edu.

This card is a service of the Idaho State University Institute of Rural Health, funded in part by Telehealth Idaho grant #5 – D1BTM00042 US DHHS, HRSA Office for the Advancement of Telehealth. The contents herein do not necessarily represent the policy of the U.S. DHHS, and you should not infer endorsement by the federal government.

think that you may be experiencing these symptoms, you should avail yourself of an opportunity to participate in a post-deployment interview/training program. Such programs are often provided by someone from one of the NGOs that are participating in the disaster assistance.

At the very least, you should seek out information pertaining to the possible initial difficulties that some people experience as they return to what is normal for them, such as their family and/or occupation. If a formal post-deployment interview/training is not available, try to avail yourself of the services of a mental health care provider and/or a clergy member who is familiar with the possible effects one may experience after participating in a disaster relief effort.

It is important to note that not all who have been deployed at a disaster site will need to check in with a local mental health provider. However, everyone should be sensitive to the possibility of the development of symptoms of secondary stress and trauma.

Finally, be patient with yourself. You may have feelings of wanting to get back into the action. It is best to resist these feelings and begin to devote your energies to resuming what is normal for yourself. Despite what you might think, the world probably will survive without your volunteer efforts.

Other Health Issues

As mentioned above, our experiences of stress and trauma are cumulative. It may be this one experience, or the combination of this experience with other experiences, that is enough to cause us to have coping problems.

One of the health concerns regarding providers has to do with secondary post-traumatic stress disorder, or PTSD. Secondary PTSD can occur when a provider is overwhelmed by the magnitude of the disaster, to a point where certain symptoms are displayed, such as irritability, moodiness, anger, having nightmares, increased use of drugs or alcohol, or being withdrawn from normal interactions with other people. If during or after your deployment you experience such symptoms,

you are urged to contact an appropriate mental health care provider as soon as possible.

In addition, if the emergency to which you responded involved potentially hazardous substances in the air or on the ground, educate yourself about substances to which you may have been exposed and about symptoms of related medical problems. Over the ensuing months, watch for signs of potentially related physical problems and seek medical attention as needed.

Websites

The following websites contain information that could be useful to you as you consider your interest in being a volunteer at a disaster site:

From the U.S. Department of Health and Human Services is a link to "A Guide to Managing Stress in Crisis Response Professions," a rather lengthy but thorough document pertaining to deployment to disaster sites. It can be found at: <http://www.mentalhealth.samhsa.gov/publications/allpubs/SMA-4113/default.asp>.

From Idaho State University is TeleHealth Idaho. This site contains links to short articles pertaining to preparing for deployment, as well as issues related to having been deployed. Among the links is one for the Aid Worker Pocket Card, which can be found in the sidebar to this article. The website is: <http://telida.isu.edu/telida/AidSupport.php>.

Finally . . .

As mentioned in the opening of this article, by our nature many of us ham radio operators want to be of assistance to those who are in need of our services. It is right and good that we have this desire. However, we need to recognize our personal limitations in rendering such assistance. If we do not do so, then we risk becoming part of the problem rather than part of the solution.

I trust that in your pondering of what you have read in this article you become aware of what will work for you so that you can be an even better provider in a disaster situation. ■

HR-3876: It's Time!

From time to time, we make space available for our writers and our readers to voice their opinions on important subjects. Such "op-ed" pieces do not necessarily reflect the editorial views of CQ or of its publisher, CQ Communications, Inc. In this case, however, we are in full agreement with K4TWJ. —W2VU

As you probably know, a record number of compliments and words of praise for amateur radio and the outstanding service provided by radio amateurs were voiced (and printed) in the wake of Hurricane Katrina. *The Wall Street Journal* and the *The New York Times* ran "attaboy stories" on what worked when everything else failed ... Ham Radio! They also stated, "It took a major crisis for ham radio's continuing usefulness to register with average Americans. Katrina demonstrated how valuable ham radio operators continue to be to our country."

"Amateur radio was the prime means of communication in wake of Katrina. Amateur radio got through when all other means of communication failed."

The Associated Press ran numerous stories of amateur operators' assistance—about ham radio working when 99% of services were out. The ARRL received a \$100,000 grant to supplement disaster expenses to volunteers. FEMA stated, "Amateur radio was the prime means of communication in wake of Katrina. Amateur radio got through when all other means of communication failed. Radio amateurs should get anything they need to continue their work." Praise was also voiced by the Coast Guard, Salvation Army, Red Cross, and the Dept. of Homeland Security.

In light of those facts, **now—right now**—is the time for the ARRL and **all radio amateurs** to encourage Congress to pass bill HR-3876.

This is the new version of the Amateur Radio Emergency Communications Consistency Act, reintroduced in September by Congressman Steve Israel (D-NY). It is co-sponsored by Rep. Mike Ross (D-AR), who is one of two licensed hams in the House. The bill will "offer residents of condos and other affected by private land use regulations the same right of 'reasonable accommodation' of amateur radio antennas currently afforded to hams without such restrictions." Hundreds of amateurs are silent because of "no antennas allowed" restrictions. We need them!

We can perform communications miracles, but we must have freedom to do it!

73, Dave, K4TWJ

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BY DAVE INGRAM,* K4TWJ

op ed—one ham's opinion

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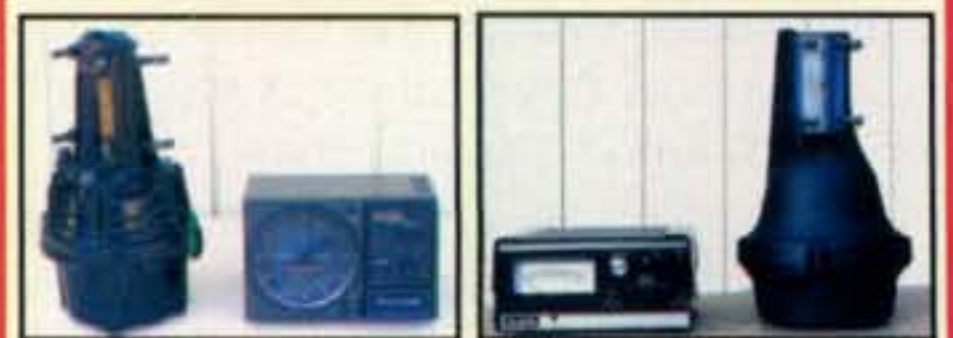
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What would YOUR radio club do with \$1 million in grant money? Buy a top-of-the-line club station? Outfit an emergency communications van? Or, maybe, give every penny to the local government to fix up a dilapidated park? Option #3 is exactly what New Jersey's I-ART—Irvington Amateur Radio Team—has done in a unique county/club partnership.

The Million Dollar Radio Club

BY DAN MOSESON, KC2OQM



It's a safe bet that most members of the ham community are aware of the vital role amateur radio has played in protecting the lives of people across the globe in times of crisis, but some may not realize it that is also has the potential to improve the everyday lives of both individuals and communities. In Irvington Park, an Essex County park in Irvington, New Jersey, amateur radio has helped to plant seeds of progress that are starting to come to fruition.

Coming into Irvington Park, one can see signs indicating that the park is supported by the Irvington Amateur Radio Team (I-ART), which is headquartered at the park's hilltop field house. Inside the small building is the group's main ham station. An array of radios stands along one wall and a number of computers used to study for license exams sit along the opposite wall. In the center of the station is a pool table which is now covered by blueprints for an improved facility for the team. Presiding over it all is club president Charles Freeman, N2GJC (see photos, next page).

The members of I-ART have been aiding with security and beautification in the 24-acre park for five years, have seen dramatic and overwhelmingly positive results, and have recently received, in conjunction with Essex County, a \$500,000 state "Green Acres" grant for the construction of a two-story building to replace their current headquarters in the park's field house. According to the *Irvington Herald*, the new building will improve the team members' view of the park they help protect. The *Herald* also reports that the grant for the

new construction will be matched by the Essex County Open Space Trust Fund. Officials hoped to have the new building finished before Christmas.

"The new fieldhouse will allow the Irvington Amateur Radio Team to expand its services to help us in emergency situations like they always do," Irvington Mayor Wayne Smith told *CQ*. "They are part of our emergency management and homeland security teams." In addition, he noted, "the fieldhouse will add some community space for residents."

A Day in the Park

CQ went to speak with Charles Freeman about the team's history, achievements and future plans. According to Freeman, an Irvington resident, the team set up its operation five years ago, aiming to beautify a park that was then in disarray. The members presented their plan to improve the run-down and dangerous park at meetings of the Irvington Town Council and the county Board of Chosen Freeholders (the New Jersey version of a county legislature), and sought grants with the help of members of an established park association based in Weequahic Park in nearby Newark. An agreement was drawn up with the county and the necessary insurance policy was secured. The club was then able to get grants from the Green Acres Program (a state-run park preservation and improvement program), which Essex County matched. The state's check was personally presented by former Governor James E. McGreevey. I-ART also established relationships with the Irvington Police Department and the Essex County Police Department.

*Editorial Intern, c/o *CQ* magazine

The Return of a Legend

LDG Electronics Introduces the **NEW Z-11Pro**

The Return of a Legend. Our 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 to 6 meters.



Full auto mode tunes with SSB. Just speak into the mic and it tunes! The Z-11Pro uses LDG's state-of-the-art processor-controlled

Switched-L tuning network. It will match dipoles, verticals, inverted-Vees or virtually any coax-fed antenna. With an optional LDG balun, it will also match longwires or antennas fed with ladder-line.

Specifications:

- 0.1 to 125 watt power range (SSB and CW), 100W on 6 meters.
- Tuning time: 0.1 to 6 seconds full tune, 0.1 seconds memory tune.
- 1.8 to 54.0 MHz coverage. Built-in frequency sensor.
- Optional interfaces for Icom, Alinco, Kenwood and Yaesu available.
- Power requirements: 8 to 16 volts DC at 300 mA maximum, 25 μ A standby current.
- Tuner may be battery powered via a user-supplied internal 6 or 8-cell AA or AAA pack. Batteries last up to 4 years.

List price \$179.

The Z-11Pro is waiting for your next portable adventure. Where will you go next... ?

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Visit our Web site for the mail-in rebate form:

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Offer extended to December 31, 2005

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The AT-200Pro features LDG Electronics' 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 to 30 MHz, and 100 watts on 6 meters.

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The AT-200Pro is the perfect match for high power Kenwood, Yaesu, Ten-Tec or Icom radios.



List price \$249.

The Low-Cost Z-100

The Z-100 is the definitive low cost automatic antenna tuner!



Designed from the ground up to provide the 100 watt power handling you asked for, 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. When the tuner is not tuning, it draws nearly zero amps. You can even remove DC power from the tuner once you have found a match.

The Z-100 features 200 fast memories which will decrease tuning time up to 95%!



List price \$149.

Prices and specifications are subject to change.



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The Irvington (NJ) Amateur Radio Team (I-ART) has its club headquarters and station inside this county-owned building in Irvington Park ... but it's about to get a new home, thanks to \$1 million in grants. The fish pond (shown on the previous page) is now the centerpiece of a redeveloped Irvington Park, with significant help coming from the Irvington Amateur Radio Team, as recognized on the sign at the park entrance. (W2VU photos)

Today, the park's pond is stocked with fish, Freeman said, and local merchants sponsor events such as free cookouts. The Town of Irvington now holds concerts in the park, the last of which drew 4,000 people. According to Freeman, this would never have happened before I-ART's arrival. The club has also talked about ham radio with local school children and the Boy Scouts and offers ham license tutoring and testing, according to the *Irvington*

Herald. I-ART members also work with Irvington's Office of Emergency Management, for which Freeman is the local coordinator, by standing ready to serve as a backup communications system in case of natural or man-made crises.

"This is Home"

Freeman said I-ART members did initially face some resistance from the "bad element" for which the park was a hang-

out prior to the team's arrival. They didn't want the hams there, he said, but the team let them know that "this is home," and there have been "no big incidents," according to Freeman.

Often, Freeman said, I-ART members are able to defuse potential problems in the park by talking, but if law enforcement is needed, the team's station has direct links to both the Irvington Police Department, called in emergencies, and the Essex County Police for



I-ART President Charles Freeman, N2JGC, goes over the blueprints for the new two-story fieldhouse that will become his club's new headquarters. The club will occupy the second floor, while the first floor will provide community activity rooms. Funds for the building come from a state grant awarded to I-ART and matched by the county, which is supervising the construction and will own the building.

less urgent issues. A police scooter was donated to aid in patrolling the park, and county employees can also radio the team to call for assistance. Members man the station seven days a week and nearly 24 hours a day.

According to Freeman, the rest of the community has been very accepting of I-ART's presence in the park, and the team's efforts have yielded results that he describes as "wonderful, phenomenal." The team enjoys the support of the Essex County Executive, Irvington's mayor and town council, local block associations and the townspeople.

Looking Ahead

Freeman also outlined the club's plans for the future. When the new two-story headquarters building is completed, it will offer a much-improved view of the park. Money has been raised to pay for improved lighting and the plans are in the works to raise funds for a system of

security cameras. There is also a plan to mount a repeater on a nearby school. Freeman told CQ that \$1 million had already been secured through Green Acres 50/50 grants and said that the club is looking for help from merchants and from the community at large for additional funding to refurbish its station (According to Freeman, every penny of the grants the club has received has gone directly to the county for park improvements.). "What we really need is sponsors that support us," he concluded, and went on to say that the support of more amateurs, local residents and merchants are needed to help make the I-ART's efforts an even greater success.

Can Your Club Do This, Too?

Freeman suggests that any other club looking to improve a community and ham radio itself try to follow I-ART's lead. Any club that can find unoccupied

space in which to base itself in can beautify a community and improve security. Freeman points out that this not only makes life better for local residents but also increases the value of their property. He advises that a club interested in attempting an effort like I-ART's present its plan to the mayor, town council, and county freeholders, as this is how to avoid the greatest amount of "red tape," and stressed the importance of securing any required insurance policy.

I-ART's method is certainly worth pursuing, if results are any indication. "Just the fact that people can see work being done," Freeman told the *Irvington Herald*, "shows them that somebody cares about this park. Joe D (Essex County Executive Joseph DiVincenzo) made it his No. 1 priority to provide excellent recreational facilities and parks for the people of this community and county. And he's exceeded that promise." ■

Beyond the Radio: Redefining the Role of the Radio Club (An editorial comment)

What does a park playground have to do with ham radio? Nothing. So why did a ham radio club help build this playground, as noted at the bottom of the sign in the photo? Because the Irvington Amateur Radio Team (I-ART) isn't a traditional ham radio

club that limits its community service to communications. I-ART has become fully involved in a partnership with Essex County, NJ to improve and maintain Irvington Park. As this article explains, I-ART's five-year-old relationship with the county goes well beyond providing communications, and has resulted in widespread local recognition and appreciation of the club for being a vital part of the rebirth of the park it calls home as well as a "good neighbor" to the community around it.

Many radio clubs today find themselves faced with dwindling memberships and shrinking attendance at meetings. Being active is the key to being successful, but many clubs find it difficult to organize radio-related activities that will help attract new members and new hams. Perhaps it's time for these radio clubs (and others) to con-

sider redefining their roles in the communities that they serve.

Last year, the ARRL stepped beyond its traditional role of exclusively offering communications services in disasters by sponsoring a nationwide toy drive for children in the southeast displaced by the string of hurricanes that battered Florida and the Gulf Coast in 2004. Similar programs are being discussed in the wake of Hurricane Katrina, although at press time, nothing had been finalized.

Perhaps it's time for radio clubs around the country, particularly those faced with declining memberships, to learn from the examples of I-ART and the ARRL and start thinking "beyond the radio" about how they can be true community service organizations as well as communications service organizations.—W2VU



Announcing:

The 2006 CQ World-Wide 160 Meter DX Contest

CW: 0000Z January 29 to 2359Z January 30
SSB: 0000Z February 25 to 2359Z February 26

The objective of these contests is for amateurs around the world to contact other amateurs in as many U.S. states, Canadian provinces, and countries as possible on the 160 meter band. *Note:* Each contest is 48 hours long and starts at 0000Z. Single operator stations may only operate 30 out of the 48 hours.

Classes: Single and Multi-Operator only. Use of packet, a spotting net, or logging assistance makes an entry Multi-Operator. Multi-Operators must show all operators, even helpers. Under Single Operator there will be a designation of power level: H = power over 150 watts, L = power under 150 watts, and Q = 5 watts or less. Single operators must show the actual call of the operator as a guest operator if it is different from the call used in the contest. Score listings will be per state or country, but if there is sufficient category activity or if a high enough score is made, then a certificate will be issued. Minimum score for a certificate is 5000 points for Low Power and 1000 points for QRP. Multi-Operators will all be considered high power.

Exchange: RS(T) and state for U.S., province for Canada, and either prefix or country abbreviation for DX. Contacts without some location indicator will be ruled invalid.

Scoring: Contacts with stations in own country, 2 points. Contacts with other countries on same continent, 5 points. Contacts with other continents, 10 points. Maritime mobile contacts count 5 points. There is no multiplier value for a maritime mobile contact.

Multiplier: Each continental U.S. state (48), U.S. District of Columbia (DC), Canadian area (14), and DX country. KL7 and KH6 are considered DX and not states for this contest. DX countries are DXCC plus WAE (IT, GM Shetland Islands, et. al). Canadian areas include VO1, VO2, NB, NS, PEI, VE2, VE3, VE4, VE5, VE6, VE7, NWT, VYØ, and Yukon. Do not count the United States and Canada as separate countries.

Final Score: Total QSO points times the sum of all multipliers (states, VE, DX countries).

Penalties: Three additional contacts may be deleted for each unverified contact removed from the log.

Disqualification: A log may be disqualified for violation of amateur radio regulations, unsportsmanlike conduct, or claiming excessive unverified contacts.

Awards: Certificates will be awarded to the top scorers in each class (see provisions under classes) by state, Canadian area, and DX

country. Runners-up with high scores over 100,000 may also receive certificates. The following plaques, with donating sponsors as indicated, will be awarded for exceptional efforts.

2006 PLAQUES SINGLE OPERATOR

	CW	SSB
World	W4ZV	N4NX
USA	K4TEA	K4JRB
Canada	K8FC	WØETC
Zone 3 USA	N5IA	N4TMW
Zone 4 USA	K4WA	N4XMX
Zone 5 USA	N4PN	K1PX
Europe	K9DX	WS9V
Africa	WS9V	WB4ZNH
Oceania	K9DX	D4B/4L5A
Asia	K4SX	NT4TT
Japan*	W4ZV	—
Russia	RZ3AA	—
S. America	W4NU	D4B/4L5A
N. America**	CQ	CQ

N4IN Memorial K2EEK Memorial

MULTI-OPERATOR

World	N4RJ	SE DX Club
USA	W8UVZ, WØCD, K8GG	WB9Z
Zone 3	4X4NJ	4X4NJ

TBA = to be announced.

**There is no SSB operation allowed in Japan at present.*

***North America outside U.S. and Canada.*

The plaque procedure is the top scorer in the indicated area wins the plaque. However, a station can only win one plaque per contest section. The plaque is then awarded to the next highest scoring station. For example, WX8ZZZ wins top World Multi-Operator. Then the next station in the U.S. wins the U.S. plaque.

Please observe the DX window from 1830 to 1835 kHz during the hours of darkness. The DX window is for intercontinental contacts. All stations will operate under the rules and regulations of their licensing agency regarding frequencies allowed and power levels. This is a gentleman's contest and band, so let's help make intercontinental contacts happen.

Computer Logging: Please submit your log via e-mail in the Cabrillo format. The Cabrillo format is created by all the major logging programs. Be sure to put your call and mode in the "Subject" line of each e-mail. The log must be an attachment and not in the body of the text. The correct name of the contest is either CQ-160-CW or CQ-160-SSB. Put in a claimed score in the Cabrillo summary if you want to be

listed in claimed scores. Use your call .log (k4jrb.log for example) as the log name. Your e-mail log will automatically be acknowledged by the server and checked for proper Cabrillo format. You may mail a diskette; if you do so you must attach a printed summary sheet. The diskette must be clearly labeled with the call of the entrant, the mode (CW or SSB), and the category. If you print out a computer log, you must also send a diskette. Do not send .bin files, database files, or other non-conforming files. Do not remove duplicates from your log, as there is no penalty for duplicate contacts.

Manual Logs: Sample log and summary sheets may be obtained from CQ by sending a large SASE with sufficient postage to cover your request. You can also download paper log forms from the CQ website <<http://www.cq-amateur-radio.com>>, or make your own with 40 contacts per page with columns for GMT, exchanges, multiplier, and points. Paper logs with over 200 QSOs must include a dupe/check sheet with all calls in alpha-sort order. Show the multiplier only the first time it is worked. Each page must have sub-totals for multipliers, contacts, and points. A running total below the sub-total on each page is recommended. Include a summary sheet with your entry showing the scoring and other essential information. A printed name/mailling address is recommended and a signed declaration that all rules have been observed. Clearly mark all duplicate contacts and remember they have no point value. Please put the summary sheet at the front of the log. Manual logs should clearly indicate total multiplier, W/VE multiplier, and DX multiplier.

Club Competition: Any club that submits at least three logs may enter the Club Competition. The name of the club must be clearly identified under club competition on the summary sheet, or summary portion of the Cabrillo log. Club Competition is "for fun" to foster more activity. There is a separate listing for club scores.

Log Submissions: Mailing deadline for CW entries is February 28, 2006; for SSB entries March 31, 2006. For manual and diskettes logs send them early to assure receipt by the deadlines. For a return receipt enclose an SASE or SAE with postage or 1 IRC. Unreadable paper logs will be put in as check logs.

Send CW e-mail logs to: <160cw@kkn.net>; **send SSB e-mail logs to:** <160ssb@kkn.net>.

All other logs go to CQ 160 Meter Contest, 25 Newbridge Road, Hicksville, NY 11801 USA. Indicate CW or SSB on the envelope.

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PROMOTION PERIOD. The Promotion Period begins October 1, 2005 and ends December 2, 2005. All mail-in entries must be received by December 1, 2005. Online entries must be received by our server before noon (US Central time) on December 2, 2005.

ELIGIBILITY. To participate, you must be at least 18 years of age at time of entry and an FCC licensed US amateur operator or the legal guardian of a minor who is so licensed. Due to restrictive laws in many countries, this promotion is only valid within the United States, its territories, and possessions. Winners located outside of the 50 states but within a territory or possession will be responsible for all applicable freight charges. Entries with insufficient or inaccurate information will be disqualified. This promotion is VOID where prohibited by law. If you enter a club callsign, you may not enter, on the same day, the callsign of the trustee or another club callsign for which the same person is the trustee. Licensed amateur operators under legal age should have their legal guardians submit entries and claim any prizes on their behalf. GigaParts employees/ex-employees and their immediate family are not eligible to win.

WINNER SELECTION. The winner will be randomly selected on or after December 2, 2005 and the winner's callsign will be announced at www.gigaparts.com as soon as the winner's information and qualification have been verified. To receive the winner's name by mail, send a self-addressed stamped envelope to GigaParts Sweepstakes Winner Request, PO Box 11367, Huntsville, AL 35814 to be received no later than January 31, 2006. Winners will be notified by email and/or telephone on or after December 2, 2005. The odds of winning are dependent upon the number of entries submitted by the participant and the total number of entries received during the Sweepstakes.

HOW TO ENTER BY MAIL. Mail a 3"x5" card with your Name, Amateur Radio Callsign, Address, and phone number to GigaParts Sweepstakes, PO Box 11367, Huntsville, AL 35814. The date of your entry will be the postmark date. If you have an entry submitted online for that date, your mailed entry will be discarded. Do not submit more than one Callsign per mailing per day. GigaParts, Inc. is not responsible for lost, damaged, illegible, or mutilated entries.

HOW TO ENTER ONLINE. Submit your callsign, email address, and a phone number in the space provided on our website, www.gigaparts.com. Only one entry per Callsign, per day is eligible. Subsequent entries may be received, but only the first entry will be eligible. Entries submitted using an automated process such as bots, macros, scripts, or a third-party do not qualify.

BONUS ENTRIES. Bonus entries may be submitted online by correctly answering a multiple choice trivia question after submitting your initial daily entry. Bonus entries are not guaranteed and may be revoked after being awarded. The Sponsor is not required to offer a bonus entry and participation in the bonus entry is completely voluntary. Limit one bonus entry per day per callsign. If the Sponsor determines that a bonus question is invalid, incorrect, poorly worded, or deficient in any way, the Sponsor will make its best efforts to address this deficiency in the interest of fairness as decided solely by the Sponsor. Remedies include, but are not limited to: discarding all bonus entries for any given day or every day; or awarding bonus entries to all participants who submitted an entry on any given day; or any other course of action deemed fair by the Sponsor.

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Participants agree to allow us to publish their name and callsign on our website, in future promotions, on QRZ.com, and CQ-amateur-radio.com. The winner will be required to provide GigaParts, Inc. with the information necessary for us to complete an IRS Form 1099. If the required information is not received by December 16, 2005, an alternate grand prizewinner will be chosen.

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It's a receiver you can't hear ... and a spectrum analyzer that won't bust your budget. Contributing Editor Gordon West, WB6NOA, looks at the RFSpace SDR-14, a software-defined receiver that feeds images of spectrum activity, rather than sounds, to just about any computer.

CQ Reviews:

RFSpace SDR-14 Software-Defined Receiver and Spectrum Analyzer

BY GORDON WEST,* WB6NOA

One of the live-equipment highlights in our classes for kids is a spectrum view of selected high-frequency ham bands. We have had great success with band-scope monitors from leading radio manufacturers. Occasionally, though, for short classroom demonstrations I might not have the actual radio equipment on hand, but still wish to show the HF radio spectrum. I can now do that with a laptop computer and the SDR-14 software-defined receiver and spectrum analyzer from RFSpace.

The SDR-14 is an RF spectrum analyzer (contained in an extremely small black box) that captures, displays, and records HF radio activity on your computer. To monitor the high-frequency band from 150 kHz through 30 MHz, just add an antenna! For frequencies up to 230 MHz the SDR-14 may be used directly with radios such as the ICOM IC-R8500 or the AOR AR-5000, which offer an IF output for a spectrum scope.

No Sound Card Needed

Conveniently, the SDR-14 does not require a sound card. The raw spectrum data is routed digitally to your computer without the use of any sound-card interface, greatly simplifying a quick classroom setup. To cover the HF bands, you simply plug a modest antenna into the .1-MHz to 30-MHz SMA HF antenna input port. This port contains a comput-



Looking at the radio spectrum is part of most of WB6NOA's demonstrations of ham radio to schools and other groups. However, a printout such as the one the kids here are holding can't compare with a "live" look at actual signals on the air.

er-selectable 10-, 20-, and 30-dB attenuator, plus a built-in pre-amp. The computer software controls the attenuator.

To take a spectral look at VHF, the "direct input SMA" port will allow sampling of the 50-, 144-, and 222-MHz bands. However, above 30 MHz the SDR-14's direct-input SMA must be coupled with a bandpass filter to limit the input bandwidth to the desired harmonic sampling band. Without filtering, the SDR-14 harmonic sampling would bring 5, 61.67, 71.67, 128.33, and 138.33 MHz

on top of one another as A/D harmonics to the base frequency range.

"The Nyquist Theorem says you cannot sample the signal whose bandwidth is greater than $F_s/2$, not the highest signal frequency. So as long as the bandwidth of the input signal is limited to one-half the sample rate, you are okay," comments RFSpace founder Pieter Ibelings, N4IP.

"Thus, the SDR-14 can indeed sample signals beyond its 33.33-MHz $F_s/2$ sample rate using the technique called

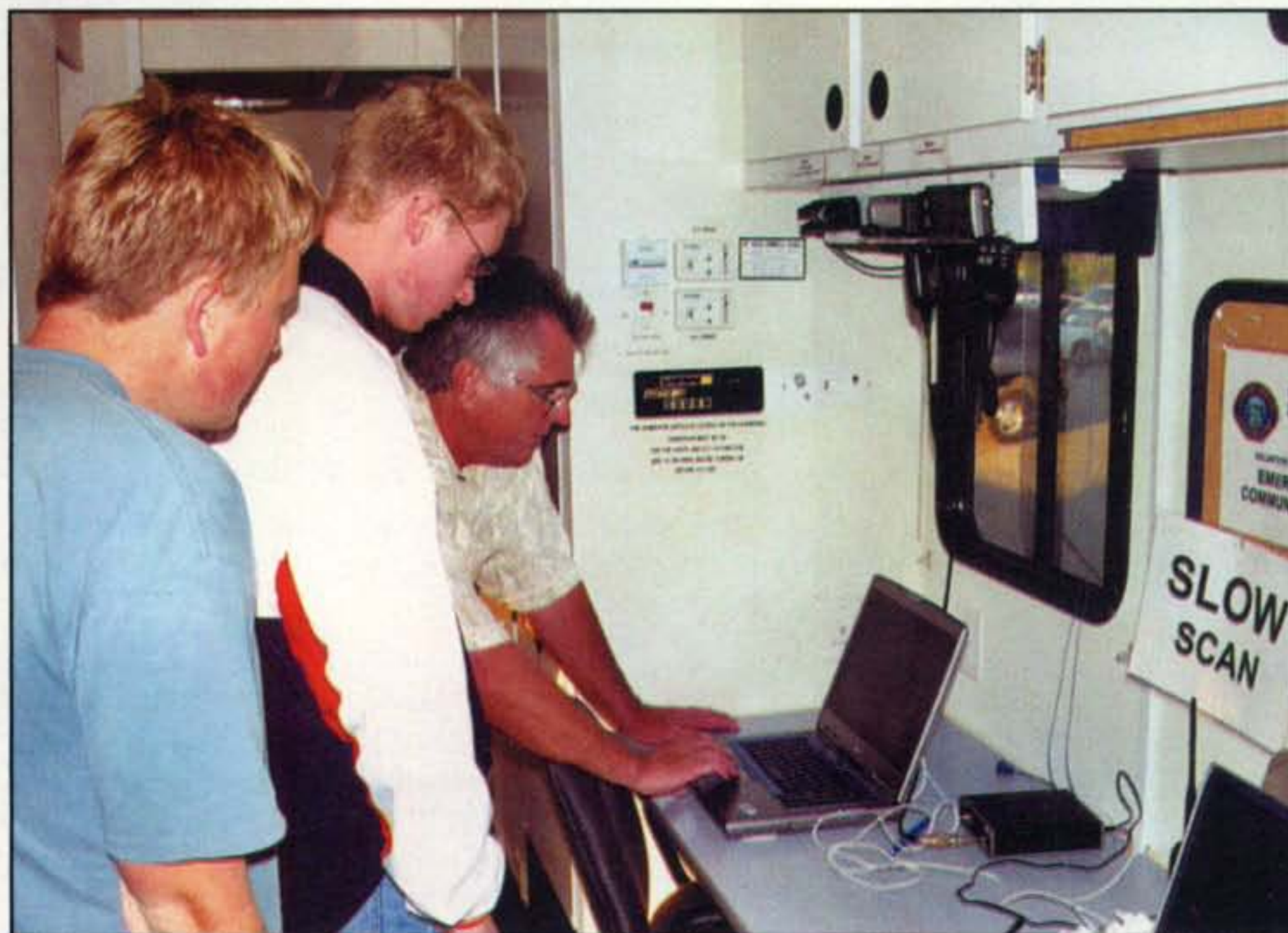
*CQ Contributing Editor, 2414 College Dr., Costa Mesa, CA 92626
e-mail: <wb6noa@cq-amateur-radio.com>



The RFSpace SDR-14, at right rear, is a software-defined radio receiver that outputs spectrum-usage information for a visual display on a computer screen rather than audio to a speaker or headphones. In this photo, students in a licensing course are watching activity on 20 meters.

harmonic sampling, which requires bandpass filtering for either 6 meters, the VHF 2-meter band, or 222 MHz," adds Ibelings. He points out that every other harmonic band folds back on itself, causing the frequency spectrum to be inverted. Thus, simple bandpass filtering techniques will allow the SDR-14 to work on frequencies above 30 MHz.

For frequencies *below* 30 MHz on the high-frequency SMA jack, get set for an amazing spectrum analysis. The SDR-14 will support real-time signal capture covering about 160 kHz of spectrum for an instantaneous look at activity on a specific shortwave or ham HF band. An antialiasing filter is employed to measure and display received signals from



Students at a ham course watch the spectrum display of the SDR-14 as it monitors HF band activity in "real time."

zero to 30 MHz without any additional filtering. This could allow you to actually monitor up to 30 MHz of high-frequency activity!

At Field Day 2005 in June, the SDR-14 gave us an opportunity to take quick looks at the 20-, 15-, and 10-meter bands for a check of activity. Ten and 15 meters were relatively dead at the time, but 20 meters showed plenty of activity. We could look at a selection of frequencies as a waterfall display, a two-dimensional spectral display, a three-dimensional spectral display, and a time-domain display. This real-time display offers 150 kHz of instantaneous response.

Installing the SDR-14

Installation to your laptop is simple. Plug in the power supply, and plug into your computer's USB connector. Windows® will detect the SDR-14 and will request the driver. Run the "SpectraVue.exe" program, and it should load quickly and say "Idle" in the lower right-hand window. This is an indication that the SDR-14 has been detected and is now in the idle mode. Now follow your frequency input selections and marvel at the activity on the different bands. Remember, using the SDR-14 above 30 MHz *will* require a bandpass filter (and a broadband pre-amp, if signals are weak) in most areas of the country. I found that a dedicated 2-meter linear amplifier with pre-amp worked quite nicely in giving me an accurate view of all that was going on over the 2-meter band and slightly beyond the band edges. Same thing with the 440 MHz band . . . I found that hooking in my TE amplifier with its 432-MHz pre-tuned circuits and then clicking in the GaAsFET amplifier gave me a perfect spectral analysis on 70 cm with no additional big cavity cans needed.

For classroom demonstrations, one of the SDR-14's best features is that everything is controlled by the computer. This allows me to change frequencies, change bandwidth, and alternate among the different displays to keep our students fascinated with everything out there on the airwaves.

The SDR-14 lists for \$999.95 (which may seem expensive, until you start pricing standalone spectrum analyzers) and can be ordered directly from RFSpace, P.O. Box 3356, Lilburn, GA 30048, web: <http://www.rfspace.com>; or from Universal Radio, 6830 Americana Parkway, Reynoldsburg, OH 43068, phone 800-431-3939, on the web: <http://www.universal-radio.com/catalog/commrxvr/0014.html>.

An inveterate tinkerer, author Phil Salas, AD5X, subscribes to the old ham tradition that there's no product made that can't be made just a little bit better. One of his particular passions is anything connected with antennas. So, along with his review of MFJ's new line of loop antenna tuners, Phil includes a circuit to make the units do even more!

CQ Reviews:

The MFJ-935B Loop Antenna Tuner (Plus a Modification)

BY PHIL SALAS,* AD5X

While wandering around the MFJ area at Dayton 2005, I saw several new products that got my attention. One series of products that I found very interesting were the MFJ loop tuners. These are manual tuners designed to tune small loop antennas and are particularly useful for antenna restricted and/or portable operation.

There are three models of loop tuners available: The MFJ-933B, MFJ-935B, and MFJ-936B. The actual loop-tuner circuitry is identical in the three tuners. The difference is in size and features. Both the MFJ-933B and MFJ-935B tuners are fairly compact (6 $\frac{1}{4}$ " x 9 $\frac{1}{4}$ " x 5 $\frac{1}{4}$ ") and cover 60–10 meters. They are probably better for portable operation due to their smaller size. The MFJ-933B has no built-in metering, so an external SWR meter is needed for tuning. The MFJ-935B (see photo A) has a built-in RF current meter for tuning. The MFJ-936B is physically larger than the other two tuners (10 $\frac{1}{4}$ " x 9 $\frac{1}{4}$ " x 5 $\frac{1}{4}$ "), but includes both a built-in RF current meter and a built-in SWR/RF Power Meter—plus it adds 80 meters to the band coverage. The dimensions given include all projections (knobs and connectors) and the carrying handles.

Some Basic Loop Information

The *ARRL Antenna Book* has plenty of information on these antennas, and I

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Photo A— The MFJ-935B is one three models of similar loop antenna tuners introduced this year by MFJ. This photo shows the 935 with my SWR LED added (see sidebar for details).

recommend that you review that information. Suffice it to say, though, that small transmitting and receiving loops, when properly designed, can approach the performance of full-size antennas. Also, due to their high-Q nature, well-designed loop antenna systems can provide pretty significant rejection of undesired signals and noise. Height above ground is not that critical, espe-

cially on the higher frequency bands (20–10 meters), and no ground or radials are needed. However, TANSTAAFL (There Ain't No Such Thing As A Free Lunch). Tuning generally will be very sharp, and there are design considerations that must be followed or significant efficiency penalties can result.

As noted above, a loop antenna is a very high-Q circuit, and therefore very

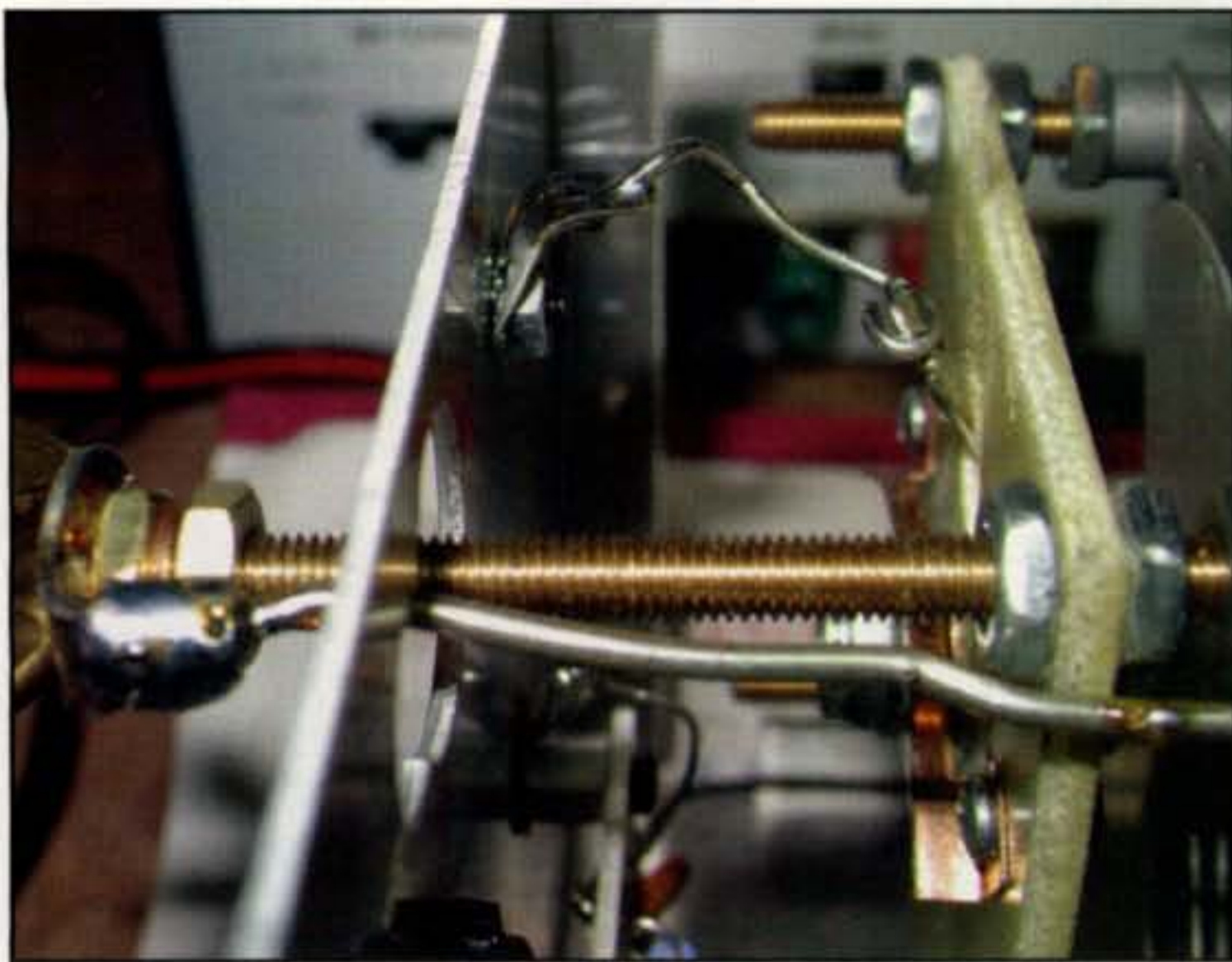


Photo B— Antenna terminal interface to capacitor.

your own tuners. In order to reduce losses in the capacitor, MFJ uses #10 brass screws both to hold the capacitors together and to extend through the case and serve as antenna connectors (see photo B). This makes the capacitor as close as possible to being part of the antenna. In addition, MFJ parallels the entire capacitor plate connectors on all four sides, as well as the brass screw, with separate bus wires to further reduce losses. Finally, the only matching necessary to the loop is another air-variable capacitor. Therefore, only high-Q air-variable capacitors are used in the design; no inductors are necessary. Photo C shows the butterfly and matching capacitors.

Mechanically, the MFJ loop tuners all are very similar. These tuners are designed to be directly connected to the base of the antenna loop itself. Therefore, the positioning of the rear antenna connectors and the PVC top mount are identical on all models, so the optional MFJ-58B Cross Antenna Kit (more discussion below) will fit all the different tuners. Also, since tuning can be very sharp due to the high-Q nature of a well-designed tuner, MFJ includes a Vernier drive on the butterfly capacitor.

The MFJ-58B Cross Antenna Kit

The MFJ-935B Loop Tuner manual does a great job pointing out the best loop lengths for different frequency ranges so that the user can build his/her own wire loop. Generally, a specific wire antenna length can be tuned over a 1.5:1 frequency range. In my case, I opted for a convenient solution to the loop question and obtained the MFJ-58B loop antenna kit. The antenna kit includes a PVC cross-mount assem-

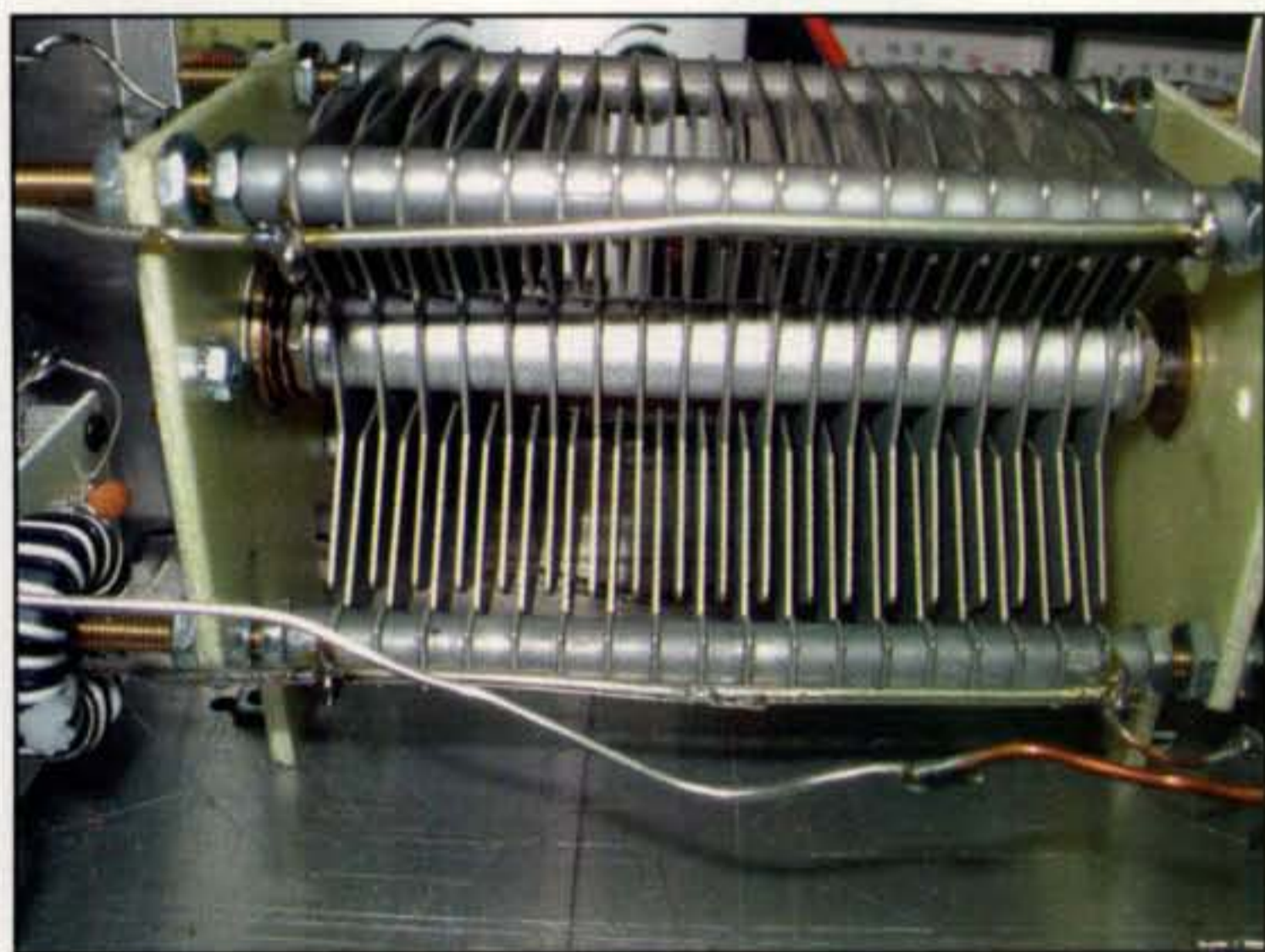


Photo C— Inside view of the 935 shows the tuning (center) and matching capacitors.

high voltages will be generated across the tuning capacitor—on the order of many thousands of volts. Also, because the loop is small compared to a full-size antenna, it has very low radiation resistance. As an example, a loop with 10-foot circumference will only have a radiation resistance of about 0.1 ohms on 20 meters. Therefore, very high current will flow in the ideal loop. At 100 watts there would be about 32 amps of RF current flowing. Even at 10 watts you would have 10 amps of RF current flowing in the loop. Thus, it is *critical* that significant attention be paid to minimizing losses in the antenna conductor and the tuning circuit itself. This means that you must use the largest conductor you can for an antenna, minimize all loop connector interfaces, and use air-variable tuning capacitors with no mechanical wiping contacts in series with the loop.

The MFJ Tuner Design

Butterfly capacitors eliminate any wiping contacts in series with the RF, and MFJ builds its own butterfly air-variable capacitors for loop-tuner use. You can purchase these separately from MFJ (MFJ-19 and MFJ-21) if you want to build

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Tenna-Tune Modification



Photo D—Rear view of the MFJ-935B showing added switch and socket for the Tenna-Tune interface.

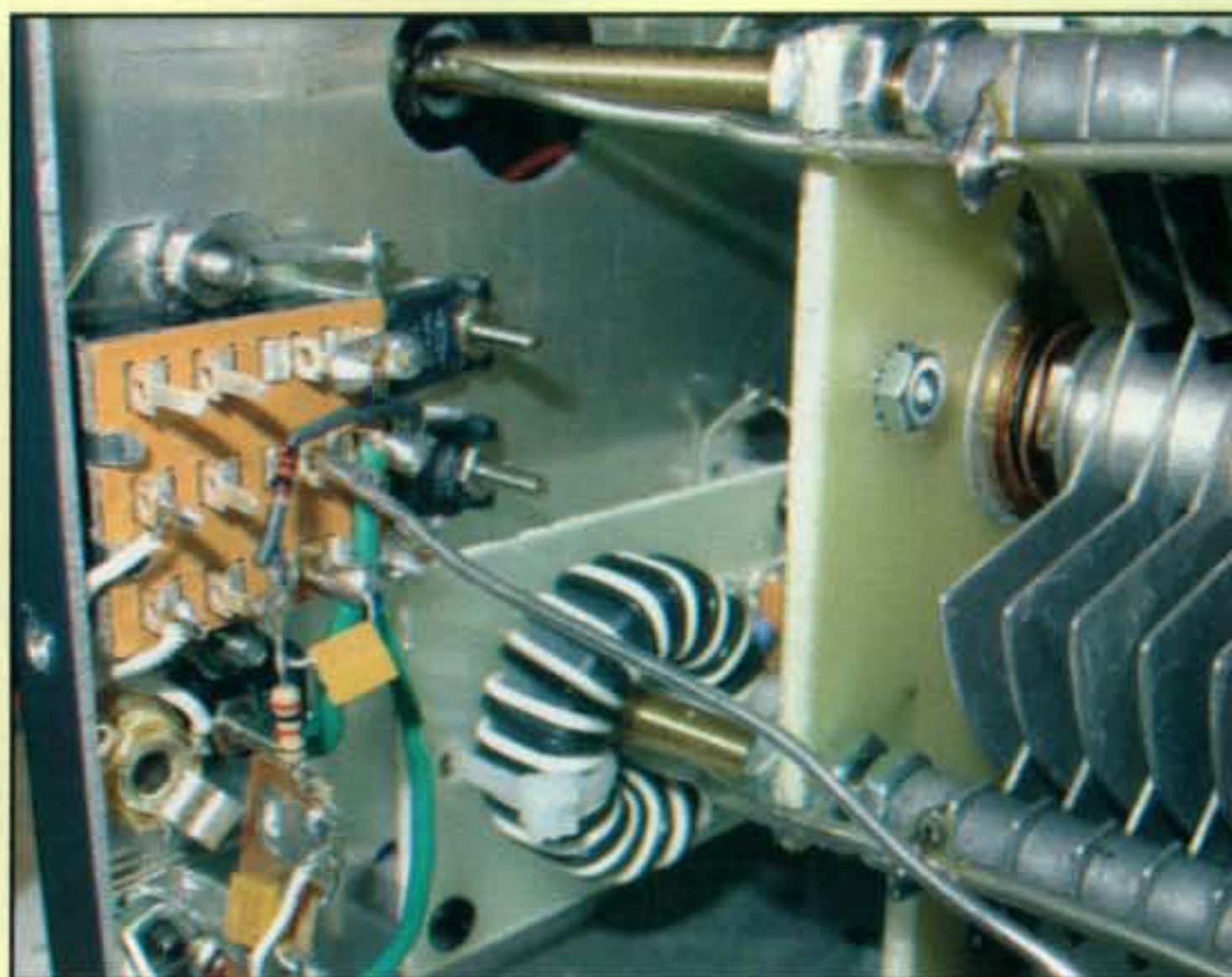


Photo E— I mounted my Tenna-Tune circuitry to some of the available space on the inside of the 935 enclosure.

I've recently begun worrying about protecting the finals in my radios during tuning operations, probably because I'm now retired, so I want my radios to last a long time! Let's face it, until you get that antenna tuner or screwdriver antenna close to the proper point, a high SWR will be presented to your radio during the tuning process. I know—most current transceivers have power turn-down circuitry to protect the output devices under high SWR conditions. However, why not be absolutely safe?

I recently added a resistive SWR bridge into my MFJ-902 antenna tuner just for this reason (October 2004 *QST*). In addition, I described the Tenna-Tune, a stand-alone resistive SWR meter, in the December 2004 *QST* "Hints & Kinks." Since there is plenty of room inside the MFJ-935B, I decided to add this circuitry to my unit as well. Fig. 1 shows an updated Tenna-Tune circuit which simultaneously permits monitoring of SWR, protecting the finals on my transceiver during tuning, and keying my IC-703 or IC-706MKIIG in the CW "tune" mode. The "Key" output to the IC-703/706G is through a 1/8-inch mono-jack mounted on the back of the MFJ-935B (see photo D). This is all accomplished with the 4PDT slide switch (three poles used) shown in the parts list and schematic. Photos A, D, and E show details of this modification. Note that I located the SWR monitoring LED adjacent to the RF current meter on the front panel.

Qty	Description	Source	Cost
3	50 Ω 15-watt resistor	Mouser 684-MP915-50	\$2.78 ea
1	4PDT Slide Switch	Mouser 629-GF6426010	\$1.02
2	0.01 μF 500V capacitor	Mouser 75-5HKSS10	\$0.26 ea
2	10K Ω-watt resistor	RadioShack 271-1335	5/\$0.99
1	1N4148 switching diode	All Electronics 1N4148	15/\$1.00
1	6000 mcd red LED	All Electronics LED-94	\$0.75
1	Heat sink grease	RadioShack 276-1372	\$1.99
3	#2 screws	RadioShack 64-3010	\$1.49/pk
3	#2 nuts	RadioShack 64-3017	\$1.49/pk
1	4-pin Molex plug	RadioShack 274-224	\$1.19
1	3.5 mm Mono Jack	All Electronics MJW-7	\$0.45
1	3.5 mm Mono Plug	All Electronics PMP	\$0.40

Table 1— Tenna-Tune parts.

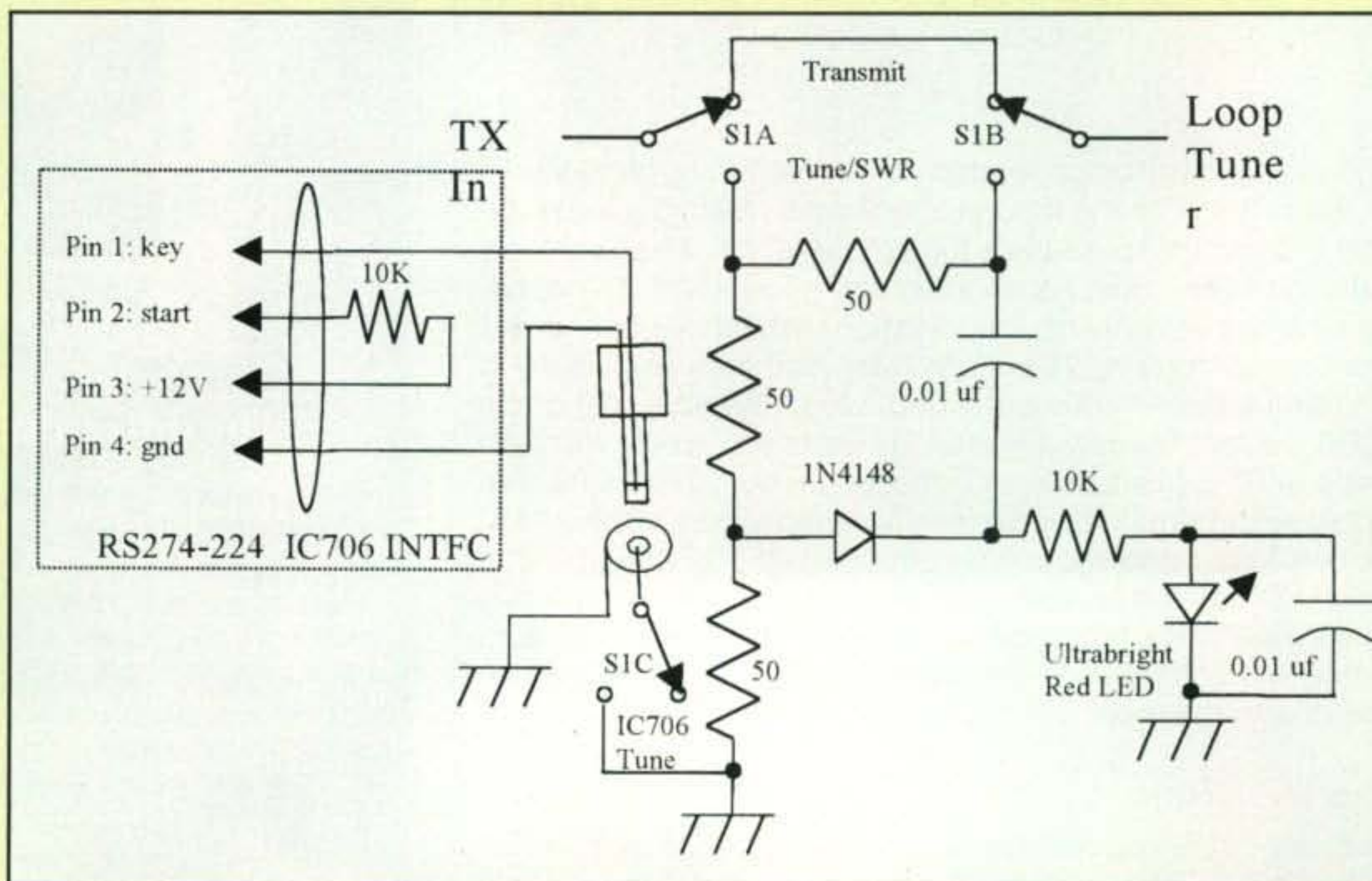


Fig. 1— An updated Tenna-Tune circuit.

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bly which mounts directly to the top of any of the loop tuners. Also included are 10-gauge flexible copper wire lengths of 28 feet (for 60 and 40 meters), 13 feet (30 and 20 meters), 7 feet (20-15 meters), and 4 feet (17-10 meters). The 13-, 7-, and 4-foot wires fit on the PVC cross-mount assembly, which mounts to the top of the loop tuners as previously stated. The 28-foot wire, used for 60 and 40 meters, does not fit on the PVC cross mount due to its length.

Loop-Tuner Use

As pointed out in the MFJ-935B manual, you need to take RF exposure precautions due to the high RF power density of a small loop antenna system. The manual includes two tables that show the distances one must stay away from the actual wire loop in order to meet the current FCC guidelines. Basically, a distance of about 4 feet seems to resolve RF exposure problems at the 100-watt power level.

Tuning and operation are quite simple. With the correct wire in place, set the MATCHING capacitor to minimum capacitance and peak the TUNING control for maximum receiver noise. Then apply low power and re-adjust both controls for maximum RF current or minimum SWR. Maximum RF current corresponds to minimum SWR in all the models due to the essentially lossless design of the tuners. I found that I could easily achieve a 1.5:1 or less SWR with very little effort.

Performance

The actual performance of the 935 has amazed me. The first time I used the unit, I just had it set up in my work area in the

center of my home (ground floor). I was playing with tuning the unit and checking SWR. However, then I heard K7AO in Reno calling CQ on 20 meters, and just for the heck of it I answered him. To my amazement, he came back to me and we had a pleasant QSO. Not only was I using the loop antenna system inside my home, I was just using my IC-703 at 10 watts output! Since then I've made numerous contacts with the loop antenna system setup on a table in my back yard.

Conclusion

There is no perfect antenna system, especially for portable use. Also, generally the more wire you can get into the air, the better your performance. However, the MFJ Loop Tuners and associated loop antennas seem to work very well, especially in antenna-restricted or portable applications. Take a look at these units and see if they may be applicable to your situation. ■

List price for the MFJ-935B is \$199.95; the MFJ-933B (with no meter) is \$179.95, and the larger MFJ-936B is \$249.95. The MFJ-57B mounting cross (for 20-15 meters) is \$29.95, and the MFJ-58B cross (for 60-10 meters—this is correct even though the current MFJ catalog says 40-10 meters) is \$49.95. The butterfly tuning capacitors MFJ-19 and MFJ-23 are \$69.95 and \$89.95, respectively. For more information, visit the MFJ website at < <http://www.mfjenterprises.com/> > or call (800) 647-1800.

Is it possible for someone with a high school education and a parent who's an active ham to pass the Technician exam without studying? We conducted an experiment last summer to find out.

Experiment The License[^] Conspiracy

BY RICH MOSESON,* W2VU

It was a noble experiment with only the best of intentions. Oh, all right, it was a conspiracy ... but still with the best of intentions. And the timing was perfect. It was last spring and my son, Dan, was about to graduate from high school. He was doing work at *CQ* over the summer, as he'd done the two previous years, and Publisher Dick Ross, K2MGA, and I were talking about any special projects he might take on. That's when we came up with ... The Plan.

Was it possible, we wondered, for a young person with a high school education (including physics), who had grown up with an active ham for a parent, to have learned enough between school and osmosis to be able to pass the Technician exam without actually studying? We guessed it just might be possible, and it would be good for a lot of people to know if it was. After all, many new hams come from families which include at least one ham. How many more might there be if it was actually easy?

This was the perfect opportunity, Dick and I realized, to test our theory—Dan had completed high school, hadn't yet started college, and had no summer assignments for school. If he didn't pass, we'd be no worse off than when we started out; if he did, we'd prove the theory and—not incidentally—get another young person licensed!

Obstacles and Motivation

One obstacle Dan had faced to getting a license earlier was a very demanding workload throughout high school. There was just no time to study a pool of more than 700 questions. Another obstacle (as is typical with teenagers) was a varying interest level. Certain aspects of the hobby appealed to Dan—things like meteor scatter and moonbounce (it was he who coined the phrase I steal so often, "What other hobby lets you play with meteors?"), and the opportunity ham radio provides to meet fascinating people from all walks of life. But neither provided enough incentive ... until this summer (all part of the conspiracy, although this part wasn't completely in Dick's or my control).

One of Dan's more consistent interests is playing the guitar. In early summer, he'd gone with me to Customer Appreciation Weekend at KJI Electronics and had a chance to meet and talk (music) with Bob Heil, K9EID. A month or so



Dan Moseson holds up his CSCE (Certificate of Successful Completion of Examination) at the CQ booth after passing his license exam at the Huntsville Hamfest. Three days later, he was issued KC2OOM.

later, he was wondering about buying a certain accessory for his electric guitar and I encouraged him to ask Bob for advice. Bob responded that he just happened to get Dan's e-mail while visiting Joe Walsh (WB6ACU and lead guitarist for the Eagles), and asked Joe for his advice as well. Needless to say, Dan was suitably impressed, not only with the advice but with the understanding that ham radio is a unique doorway through which a beginning guitarist can end up with personal advice from a guitar legend—now *that's* motivation!

Testing the Theory

Dan agreed to go along with the experiment and started out by taking a few practice tests online (probably because it beat indexing another issue of *CQ*). He took three practice tests—passed the first then failed the next two. But the types of questions he was missing were consistent and predictable: the rules and regs—things like frequency privileges, power limitations and RF exposure rules—stuff you wouldn't learn in school and wouldn't pick up from just hanging around a ham shack. After a couple of weeks, Dan asked for a copy of a license manual so he could look over those areas in which he

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

hadn't done well on the practice tests. Not a problem, says Dad. And I left him to look at whatever he wanted, whenever he wanted. I was determined not to pressure him. From what I could tell, he spent some, but not much, time with the book.

Experiment Part 2: Huntsville

In mid-August, Dan joined me at the Huntsville (AL) Hamfest, working the CQ booth and covering for Ad Manager Don Allen and me when we both had to be somewhere else at the same time. We discussed the possibility of his taking the Technician exam while we were there. Late Saturday morning, I told him that if he was going to take the test, he'd need to do it soon, since the schedule showed the test sessions running only into early afternoon. "The only thing you have to lose is money," I said, handing him a \$20 bill, "And it's my money, not yours." He disappeared for a while and returned saying he didn't know whether he'd passed. "They said they'll call us on the P.A. when all the tests are scored."

A little later, the call came and off he went ... and back he came with a Certificate of Successful Completion of Examination. He'd passed!

"Dumb luck," said Dan. "Nonsense," said Dad. "And besides, it doesn't matter. The real learning begins *after* you get your license."

We returned home and started watching the internet for FCC actions. I've got to give a lot of credit to both the Central Alabama VEC and the FCC - Dan took his test on Saturday, and by mid-day Tuesday, his license had been issued! Now, that's quick work! His call-sign: KC2OOM.

Success?

So ... was the experiment a success? It all depends on how you look at it. Could he pass the test without studying at all? No. Some studying is required, it seems, at least in those areas that don't come under the categories of common sense, stuff you learn in school and stuff you learn in living with a ham. Could he pass without having to study all 700+ questions in the pool, by taking practice exams and concentrating on his weaker areas? Yes. Did he feel as though he had really mastered the material? No, but then I don't know too many of us who felt that way right after taking a license exam. And the key question: Did he finish the summer with a ham license? Yes. So even if the results of the experiment were mixed, the conspiracy was a complete success! ■

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What You've Told Us...

Our July survey asked about your experiences with demonstrating ham radio to young people and helping with licensing courses and exam sessions.

An amazing 92% of those who responded said they have demonstrated ham radio to one or more young people (under 21) at least once. In addition, a majority of you (60%) have demonstrated our hobby to groups of 2-10 people, while 37% have shown ham radio to individuals, 25% to groups of 11-25, 11% to groups as large as 75, and 4% to groups larger than 75 people.

On the question of how frequently you demonstrate ham radio to young people, the greatest number of you (32%) said intermittently, followed closely by 28% who show off the hobby more than once a year, 21% who do it about once a year, 11% who have done a demo just once in the past five years, 5% who have done it just once, and 3% who said they never have.

Next, 33% of you said there generally is no follow-up to your (or your group's) demonstrations with a licensing course, while 30% report occasional follow-up and 28% say they always offer a license course after a demo. On a similar question about license exams as follow-ups, 35% said yes, always; 33% said no; and 23% said yes, sometimes.

Nearly half (40%) of you say that you or your group always follow up with newly licensed hams by offering to help get them on the air and answer their questions; another 38% said they do that sometimes, and only 15% said no.

Finally, more than half of you (54%) have helped teach a licensing course at least once, and nearly two thirds of you (62%) have helped give licensing exams at least once.

This month's free subscription winner is Donald Backys, K9UQN, of Hoffman Estates, Illinois.

Reader Survey November 2005

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

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

The world has suffered three megadisasters in the past 12 months - the combined effects of four hurricanes in Florida last fall, December's tsunami in South Asia, and now Hurricane Katrina. This month, we'd like to know if all this has improved your own level of emergency preparedness.

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

1. **Do you feel that you and your family are prepared to protect your personal safety and security in the event of an emergency or disaster?**
 Yes1
 No2
 Don't know3
2. **Are you better-prepared now than you were a year ago?**
 Yes4
 No5
 Don't know6
3. **Have the disasters of the past year prompted you to make or improve emergency plans for yourself and your family?**
 Yes7
 No8
 Don't know9
4. **What steps, if any, have you taken to assure your family's safety and security in an emergency or disaster? (Circle all that apply)**
 Developed family emergency plan10
 Developed family evacuation plan11
 Designated meeting point if split up12
 Designated single contact point out of area13
 Stocked up on batteries, candles, bottled water and non-perishable food ..14
 Other15
 None16
5. **Do you feel prepared to help provide communications in the event of an emergency or disaster?**
 Yes17
 No18
 Don't know19
6. **Do you feel BETTER prepared to help provide communications in the event of an emergency or disaster than you were a year ago?**
 Yes20
 No21
 Don't know22
7. **Are you a member of an emergency communications-related group, such as ARES, RACES, SATERN or SKYWARN?**
 Yes23
 No24
8. **Have you taken any formal training in emergency communications? (Circle all that apply)**
 ARRL Level 1 Emergency Communications Course25
 ARRL Level 2 or 3 Emergency Communications Course26
 Incident Command System course27
 SKYWARN training28
 Other amateur radio training29
 Other government agency training30
 None31

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

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It's All My Mother's Fault!

BY BEN WRIGHT,* K9DID

As I approach my 50th year in ham radio, I find myself reflecting on what this hobby has meant to me. This article is not a narrative of equipment upgrades nor specific ham radio accomplishments. Art Collins, Lloyd and Iris Colvin, Danny Weil, and the like set the bar too high for me. My reason for writing this article is to document the effect my mother's seemingly random decision had on my life.

As a youngster in the early 1950s, as rock 'n roll was entering the world, I wanted to listen to my own radio. No way was that stuff to be played on the family radio. My mother, knowing my penchant for taking anything and everything apart, thought, "I wonder if the kid could actually build something rather than destroy it?"

**As this issue went to press, we learned of the sudden passing of Ben in late September. I met him for the first time this year at Dayton, and his love of the hobby was plain for all to see. May he rest in peace.—K2RED*

She thus went a couple of blocks from our house to consult with a radio/TV repairman. Everyone within a half mile knew of this guy. It seems he was a "ham radio" operator, Erv, W9QHR. He operated a homebrew 15-meter, crystal-controlled, 300-watt AM transmitter, and this was in the days of 21-megacycle IFs in the TV sets. His antenna was a ZL special on a windmill tower. Growing up in Wisconsin, I had seen many windmill towers, but none as magnificent as that architectural wonder. The transmitter was in a "building" at the base of the tower. It used the four legs of the tower as the side supports and housed an old "pole pig" transformer hooked up backwards for the plate voltage. An innocuous lever switch located near W9QHR's left knee remotely operated all of this. This guy was really infamous! He had more FCC letters than I had QSL cards.

Erv suggested that my mother buy one of the three-tube Philmore radio kits. "Let the kid try to put it together; at least he'll

be quiet for a few days," he said to her. Mom and Dad thought this would be a great idea. Little did they know that there were "ham bands" on the radio, in addition to the AM stations. Their adventures with the kid were just beginning!

A few blown fuses and a trip to see Erv with my non-working creation under my arm and I was ready to hear the world. Lo and behold, all I could hear was W9QHR talking to the world. Curious as to what the other side of these conversations was about, I made another pilgrimage down the street. After all, I only had to turn on the TV at the right time to hear W9QHR's side of the conversation.

I then introduced the term "antenna" into the family vernacular. I thought it would be okay, because it had been weeks since the TV went dead during one of my experiments. While my father, a WW II veteran, had a fair understanding of radio, he apparently missed the antenna part of his schooling. We overcame this, and a wire was allowed to proceed from my radio to a con-

Ben Wright, K9DID, as a Novice (KN9DID) circa 1956. The equipment shown (left to right): National NC-125 receiver, CONELRAD receiver, and Heathkit DX-35 transmitter.



venient tree. Holy Moley! I could hear the ends of the Earth, or at least California, which some Wisconsinites still considered the end of the Earth.

I muddled along like this until I reached junior high school. Kids from all over town were now thrown together. Among them was another budding geek, geek being what it was before geeks rose to prominence and gave the term new meaning. I discovered he was learning Morse code from a ham and intended to get a ham license. It took me no time at all to thrust myself in the midst of all this and get my Novice license, KN9DID. W9ADM was our Elmer.

During a family trip to Omaha, Nebraska, I discovered that right across the Missouri River in Council Bluffs, Iowa lay ham radio nirvana—World Radio Laboratories. Loaded down with every penny I could scrounge together, I made the trek. After a recount of my finances, I decided against a Globe Chief 90A usuriously priced at \$59.95, or a KWS-1 at \$2095.00. I returned with a 6AG7, a tube socket, some resistors, condensers, and an aluminum chassis.

Now my folks were in real trouble. A new word was again added to the family's vocabulary—TVI! I believe my father added a few new words to my vocabulary that I did not hear again until boot camp. Antennas, transmitters, more fuses, "curious" neighbors (remember the 21-mc TV IFs), peeps, squawks, shrieks of pain (high voltage), and joy of dubious accomplishments ensued. I talked to the end of the known Earth—California. I then began to collect some dubious mail myself, in the form of Official Observer notices. I came to understand that under no circumstance was I to transmit during the "Lawrence Welk Show" again, or I would be relocated.

I managed to get through high school, sports, and girls, in spite of all of it interfering with my hobby. I once got pinched for reading *QST* folded into my geometry book. Remember that *QST* was in the smaller magazine format then.

When the day came to fly the nest, I decided I would enlist in the Coast Guard. My scores on the aptitude test showed, guess what? I knew enough about radio/electronics to qualify for Electronics School. This got me around a bit—Connecticut, Texas, Louisiana, all to some sort of radio stations. I even wound up on the old-time LORAN station in Korea for a year. It was decommissioned the year after I left. I don't know if my stay there accelerated or decelerated the military's decision. I tried to operate from Korea, but it was 1961 and everything was still under United Nations control and the red tape was impossible. I did discover that the military's knowledge of antenna systems was inferior to mine, and I made



In July 2005 Ben, K9DID (left), helped his lifelong friend Ron, K8DID (right), erect his quad antenna. Ben became a Silent Key in late September.

a few unauthorized changes. After this tour of duty I was sent to Sturgeon Bay, Wisconsin to serve out my time on a buoy tender/ice breaker for seven months or so.

Now things got even weirder. Having had two months at home to buy a '53 Mercury and outfit it with a crystal-controlled DX-35 in the trunk with a PE-103 for power, a Gonset converter under the dash, and the usual (for then) 8-foot whip with 75-meter loading coil, I made my appearance at my new duty station.

Any arrival on the small ship *Mesquite* (crew of 40 to 50) was greeted with curiosity, to say the least. One guy, Ron Gorzynski, exceeded the bounds of normal, however. He hailed me as a celebrity. Before the whip even stopped swaying, he enthusiastically introduced himself as a guy who had wanted to be a "ham" for as long as he could remember. Alas, it wasn't my personality or prior military accomplishments that attracted him. It was the mobile rig. I was about to become an Elmer whether I liked it or not.

I was pressed into service immediately—before my seabag was unpacked, if I recall correctly—and invited to Ron's home. He was married to a young lady who

announced after one of my visits, "That person will never darken my door again." My days as a lifelong bachelor (I was all of 22 years old) made some of my social graces suspect, I guess. Amateur radio prevailed, however, and Ron got his Novice license, WN9FNI.

In the course of those meetings, I was privileged to meet what I thought were all of the other members of the family: mother-in-law, sister-in-law, brother-in-law, etc. I figured I was in the clear, until I was introduced to Ron's wife's sister, who was working out of town. We met and were married within three months, five days after I left the military. Sue, not having been part of this hobby, sometimes had a hard time coping with the idea that a new 6146 had priority, in my mind, over the other mundane needs of the family, such as food and clothes. (She stuck it out, though, and we celebrated our 42nd anniversary last year.)

I now had a hobby, a vocation, a wife, an extended family, and my lifelong friend Ron (then WA8KEM) all traceable back to my mother's whim.

For a long time now Ron and I have lived on opposite shores of Lake Michigan, only 100 miles apart but separated by the lake, far enough away from one another to stay friends. Our hobby has kept us close. We both chase DX—the student has surpassed the teacher, as it should be—and have been active on the satellites since AO-6.

In 1998 Ron changed his callsign to K8DID, his daughter Deanna's to K7DID (I gave her her Novice test), and Deanna's husband Art's to K5DID.

Ron's wife Bonnie recanted her earlier demands and allows me to visit once a year for fishing—twice a year if her sister accompanies me—if only briefly. Bonnie's call is KA8DID.

Ron claims he changed all the callsigns to honor his Elmer. I think the DID just had a better ring to it on CW.

Thanks, Mom and Dad. ■

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FCC Code Proposal

Editor, *CQ*:

That is fine that the FCC is proposing no code testing. Really, in the world today is a need for one license that does it all. I am a licensed radio broadcaster and ham. One license does it all. In my opinion, it's the way it should be in amateur radio. This segregated license structure is for the birds. I just do not like jumping through hoops to get to a certain level.

If I had my way, you would test for one license, no code test, and it's good for all bands of amateur radio. Simple! Today's real world demands it.

Michael Harvey, KB8UXX

More Responses to G4OWY

Editor, *CQ*:

My eyebrows were raised when I read the strange letter of Mr. Howes, G4OWY, in your "Our Readers Say" section of the August 2005 issue of *CQ* magazine.

Apparently, Mr. Howes derives great relish in denying American hams/servicemen in Iraq the "pleasure of working G4OWY" (himself). These servicemen are in harm's way and it is shameful that a ham would not want to give a contact to these brave people. If my history is correct, I do believe that G4OWY (and other Englishmen) may very well have been speaking German had it not been for the gallant efforts of many American servicemen in WW II.

It is most conspicuous that G4OWY has very little understanding of the DX world. Nearly half of my 5BDXCC were from contacts with amateurs who have gone on DXpeditions. Roger, G3SXW (Mr. Howes' fellow Englishman and an outstanding DXer), has put many "new countries" on the air. Check out <www.G3AB.net/dxped.htm> and one will see the many wonderful DX places this Englishman has been. It would be foolhardy to avoid working KH6/G4ZVY or KH8/G4ZVY just because they are Englishmen, not "Native Americans."

Similarly, recent amateur operations in North Korea by Russian and Finnish hams are examples of "pseudo-North Koreans" on the air in that country. Perhaps Mr. Howes ought to learn some basic facts about the DX world.

Marvin Feldman, K4KEW

Editor, *CQ*:

I have been an active ham radio operator for nearly thirty years. I have enjoyed working DX and have always been of the impression that, when doing so, the objective was to enjoy a contact with another country. Until I read the letter in the August 2005 issue of *CQ* written by Mr. Howes, G4OWY, I had no idea that the nationality of the operator at the other end was a concern. Sadly, I have learned that many of my contacts, especially with DXpeditions and contest stations, are only "pseudo" QSOs.

What nonsense! Although I may be "denied the pleasure of working G4OWY," I hope to have the honor of working a YI station operated by one of the Americans over there defending the ways of life of the free world.

Wayne Greenough, VE3JSQ

"Pardon the Bandwidth"

Editor, *CQ*:

Thanks again for a great "Zero Bias" (July 2005 *CQ*) regarding the ARRL bandwidth petition. As usual, you provide tremendous "common sense" and balance. I completely agree with your points of concern about the ARRL petition. I have been licensed for over 50 years and an ARRL member for most of those, including now. That you are able to acknowledge the ARRL for their

good works and also appropriately criticize areas in which they are a bit off base is a credit to your fairness and objectivity. *CQ* magazine remains a great asset to our hobby.

"Zero Bias" is the first thing I read every month! The second is Don Rotolo's column (in the alternate months it appears). You have assembled a great stable of authors. Keep up the good work. Thanks!

Bill Gerth, W4RK

Editor, *CQ*:

I just finished reading "Pardon My Bandwidth" in the July issue of *CQ*. Thanks for the insightful comments and your avoidance of ARRL-bashing.

I was particularly pleased to see your comments on avoiding mixing mode and bandwidth and asking the FCC to include in the rules that observing band planning is a part of "good amateur practice."

You really helped clear this concept up for me, calm my fears. I think your ideas are a great step in fine tuning the ARRL proposal, which I would be happy to support if these matters were addressed. I am an active ham and although I primarily QRP CW, I also currently operate SSB, RTTY, and PSK31, so I'm very interested in getting the rules written in a way that will allow us all to share the bands in a friendly and equitable fashion. Separating band segments by signal width and good band planning should allow us to accomplish this.

Thanks again!

T. E. "Doc" Drake, W5TB

Editor, *CQ*:

Thanks for a very well-written piece this month (July "Zero Bias"). I have been very vocal in the forums you mentioned regarding this subject, and have tried to be both pro-ARRL and positive the whole time. There are folks out there who, like you say, find something devious in anything the League does. I for one think that there are enough of us out there trying to enjoy ourselves on the bands as peacefully as we can regardless of the occupied RF bandwidth that most of the "noise" is heard (and caused by) a very small minority.

Making anything more than 2.5k SSB illegal is just not a smart move. I was drawn to AM several years ago for two reasons: One is that I found some very technically inclined fellows there who I still learn things from quite often, and the other is that the actual sound quality of the QSO was much improved over typical SSB. I then stumbled across the folks at 14.178 and met some guys in this part of the country doing it (I live in the Dallas-Fort Worth area), and found the same two qualities in ESSB.

It would be a real shame and downright disappointing to see these guys snuffed out. Should the proposal go through as written, I'm sure some of them will stay on the bands running 2.5k SSB or high-quality AM, but I know it will run many off as well. In a time when we need to keep as many amateurs as we can active on the bands, running people off doesn't seem to be the smartest thing to be doing. I personally run about 4k on SSB (band permitting), and that's approximately half of what my AM envelope uses. It seems awfully strange to me that 8 or 9k AM is okay, but 4k SSB is not. I can only hope that you are correct in your assessment that this was an oversight. However, I'm not totally convinced. I anxiously await the next word from the ARRL EC.

By the way, my check is in the mail. I haven't been a subscriber of *CQ* in quite some time, but seeing almost nothing in *QST* about ESSB (one negative Op-Ed piece and one rebuttal, if memory serves). I'm ecstatic to see a more positive spin on it from you all. Now let's see more of the technical stuff!

Joe Isabella, N3JI

(Continued on page 114)

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W4YO uncovered so many interesting stories behind the "entities" that have been deleted from the ARRL's DXCC list that he just couldn't resist sharing a few more of them!

(More) Geopolitics and Amateur Radio

A Look at Some More Deleted Entities and Why They Became Deleted

BY EDMUN B. RICHMOND*, W4YO

This is a follow-up to my article, "Geopolitics and Amateur Radio: A Brief Look at the FCC Banned List and the ARRL DXCC Deleted List," which appeared in the June 2005 issue of CQ. The rationale for the Deleted List was discussed in that article, and will not be repeated here. Since there are 58 entities presently on the Deleted List, and only eight were discussed in that first article, such a large number of remaining entities gave rise to the possibility of a second article which, again, would look for some of the more interesting histories and briefly recount them. They certainly don't get more interesting (nor more off-the-wall) than the first!

Minerva Reef (1M4): Only contacts made July 15, 1972 and before, count for this entity. Contacts made July 16, 1972, and after, count as Tonga (A3).¹

Minerva Reef, actually listed in the geographical literature in the plural, as Minerva Reefs, is/are located in the South Pacific, at 23° 23' south latitude, 178° 58' west longitude, and some 260 miles southwest of the Kingdom of Tonga. The reefs were named for the whaling ship *Minerva*, which went aground and wrecked there in 1829. At high tide, the reefs were submerged, while they could be seen above water at low tide. They were not claimed by any nation because of an international maritime law which prohibits claiming island territory which was not at least one foot above the high-tide point at all times.

In the early part of the 1970s, Michael Oliver, a Las Vegas entrepreneur, decided that he wanted to start his own country. He began looking for a tropical island on which to fulfill his dream, and ran across some information on Minerva Reefs. Since it was difficult (probably impossible) to find a tropical paradise that was not already owned by some other country, he decided to build up Minerva Reefs and bring them above the high-water line. In 1971, he hired a dredging ship, along with several barges loaded with sand, all of which arrived from Australia, and began bringing parts of the reef to a status of being permanently above high-water. On January 19, 1972, the "Republic of Minerva" was proclaimed, the Republic's flag was planted, and a provisional president was elected by Oliver and his backers.

A declaration of independence was issued in letters to several neighboring countries, including Australia, Cook Island, Fiji, Nauru, New Zealand, Tonga and Western Samoa. These

The only known ham radio operation from Minerva was by Don Miller in 1966, operating as 1M4A, an unofficial call sign and prefix.

(All QSL card images from hamgallery.com website, courtesy Thomas Roscoe, K8CX)



seven countries met in February, 1972, to discuss this turn of events. At this conference, those in attendance expressed their grave concern about the legal and political aspects of such an action. In June of that year, Tonga issued a notice of intent that it would seek jurisdiction over Minerva, and sent a small contingent to claim the land and remove the Minervan flag. Tonga's claim was recognized by the South Pacific Forum in September 1972. In February 1973, Oliver fired his president for behaving in a dictatorial manner, and the whole project unraveled and collapsed. Nine years later, however, a group of Americans tried forcibly to re-take the reefs and re-establish Minervan control, but they were repelled by Tongan military forces. Michael Oliver apparently lost interest in the project, but in October 2003, a government-in-exile was created with the hope of establishing legitimacy to their claim and one day re-taking Minervan territory.²

Minerva Reef's only claim to amateur radio activity appears to be in April, 1966, when Don Miller operated there, using the unofficial prefix and call sign, 1M4A. This was one of Miller's expeditions sponsored by the World Radio Propagation Study Association. My own QSL shows a date of April 16th. I am unaware of any other amateur activity from Minerva Reefs, before or since the deletion date.

Federated States of Malaya (VS1, VS2), Sarawak (VS4), and British North Borneo (ZC5): Only contacts made September 15, 1963 and before, count for these entities. Contacts made September 16, 1963, and after, count as West Malaysia (9M2) or East Malaysia (9M6, 9M8).

The story of these particular entities is the opposite of that of the French African federations, which, after independence, separated into twelve new countries and twelve new DXCC entities. In the case of Malaya, Singapore, Sarawak, and

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e-mail: <w4yo@arrl.net>

British North Borneo, these four DXCC entities merged into the present entities of West Malaysia (9M2), East Malaysia (9M6 and 9M8), and the State of Singapore (9V1). British interests in the area grew in the 19th century. In 1819, the British established a trading settlement on the island of Singapore, under the control of the British East India Company. In the 1880s, Britain established protectorates on the Malay Peninsula, and on the island of Borneo. These areas were known respectively as the Straits Settlements, Singapore (which later became a British Crown Colony in 1946), Sarawak, and British North Borneo. After World War II, a growing movement for independent rule arose throughout the local population. In an attempt to combat this, the British established the Federation of Malaya, in 1948, which granted semi-autonomous rule to the region. Singapore attained full internal self-rule in 1959. A war of liberation was initiated by Communist guerrillas, causing the British to declare a state of emergency, which remained in effect until 1960.

On September 16, 1963, the independent state of Malaysia was constituted as a federation of Malaya and Singapore, along with Sarawak and North Borneo (known locally as Sabah). However, on August 9, 1965, Singapore withdrew from this federation, and proclaimed its own independence a month later. Since 1966, the remaining constituent states on the Malay Peninsula have been known as West Malaysia, while Sarawak and Sabah have been known as East Malaysia.

Amateur activity from VS1 and VS2 was quite plentiful over the years, and remains so today in the forms of 9V1 for Singapore, and 9M2 on the Malay Peninsula. VS4 and ZC5 were more than moderately rare, although VS4 was active from time to time, including, but not limited to, VS4JT (1957-1959) and VS4RB (1962).³ I worked Ron, VS4RS, in February 1964, but it was too late...he was already deleted!⁴ ZC5 was active with ZC5VS (1953), ZC5WT (1957), ZC5AB (1958), ZC5AL (1958), and ZC5AF (1959).

Trieste (I1): *Only contacts made March 31, 1957, and before, count for this entity.*

The Free Territory of Trieste (FTT) was formed after the end of World War II. It was a neutral state and consisted of the city of Trieste, a narrow strip of land on the Adriatic coast which connected it to northeastern Italy, Slovenia, and Istria. On May 2, 1945, Yugoslav troops captured Trieste. American and British troops arrived in the city the same day. The FTT was established in February 1947, as part of the Treaty of Peace with Italy. It was divided into two zones. Zone A, which included the city of Trieste, was administered by American and British forces. Zone B, which included Istria, was administered by the Yugoslav National Army. Although the FTT never really functioned as an independent state, its formal status was acknowledged, including the issuance of its own postage stamps and currency. The territory was later dissolved and divided between Italy and Yugoslavia in 1954.

Trieste was the location for several spy and murder mysteries over the years. Dame Agatha Christie, Graham Greene, and James Joyce all were familiar with the city. Because of its geopolitical situation after World War II, and its location near the Iron Curtain, it became a popular destination in several films of the period. The British spy thriller, "Sleeping Car to Trieste," was released in 1945, and starred Jean Kent and Albert Lieven. In 1952, "Diplomatic Courier" was released starring Tyrone Power and Patricia Neal. In the 1963 film, the city was a stopover on the Orient Express for James Bond in "From Russia with Love," and in 1988, Peter Ustinov and Lauren Bacall starred in "Appointment with Death."

The city of Trieste and surrounding areas were officially the Free Territory of Trieste for several years after World War II. A variety of prefixes and callsigns were used from the territory, including XA (with no numeral) and MF2.



Amateur activity from the FTT first consisted of operations by members of the American and British Occupation Forces. When I was an SWL in 1948, I received cards from Sgt. Bob Langlois, AG2AC and Maj. Bob Carragher, a Brit who was probably the most active ham in the Territory, first on the air with the call XAFG in 1947, and later with the call MF2AA.⁵ Other Brits were XAEG (1946), MF2AB (1950), and MF2AE (1953). Another American active in 1949 was AG2AD. Several Italian nationals were also active before Trieste became a deleted entity, including, but not limited to, I1BCB (1950), I1NU (1950), I1OMO (1951), I4YCD (1952), I1YCG (1955), I1RC (1957), and I1VE (1957). I never worked Trieste while it was still a DXCC entity. On March 20, 1957, I had to make a choice to work either an I1 in Trieste or ZD6RM in Nyasaland (now Malawi). I switched back and forth and called both, but decided the ZD6 was a rarer type, so I made contact with him. By the time I finished with RM, the Trieste station was gone, and I never heard another until after the deletion date.

Panama Canal Zone (KZ5): *Only contacts made September 30, 1979, and before, count for this entity.*

The Panama Canal Zone was a United States territory within the Republic of Panama, and was administered by the U.S. under a treaty signed in 1903. The Zone was 553 square miles and included the Panama Canal itself, plus an area extending five miles on either side of the canal. Under the terms of a later treaty in 1977, the Zone was abolished in October 1979 and returned to Panamanian rule. The canal itself was ceded to Panama on the last day of December 1999. The Canal Zone was separated from the Republic of Panama by a fence. Panamanians who worked in the Zone lived in the Republic and had to cross into the Zone and back every day through checkpoints. Much has been written about the construction of the canal and the staggering difficulties which had to be overcome; this will not be repeated here.

During the American ownership, the land, apart from the canal itself, was used mainly by the military and the Panama Canal Zone Authority. Many bases were set up with dependent housing, schools, shopping, medical and leisure facilities. The Zone even issued its own postage stamps beginning in 1904 and continued this practice until October 25, 1978, when Panama assumed the administration of the postal service.

Amateur radio always played an important role here, with K8CX's hamgallery.com website showing activity back to the 1920s and pre-WWII prefixes including K5, NO, NZ and NY1/NY2 (NO and NZ had no numbers). After the war, hams in the Canal Zone had calls with the KZ5 prefix. There was always an active group of KZ5s, especially on the top end of 15 meters running phone patches back to the States. Many of the stations were on military reservations, others were in private residences. Licenses were not issued by the FCC, but were issued by the zonal military authorities. Although the rules and regulations paralleled the American model,

KZ5s had a different set of regs including different frequency allocations than U.S. hams, and on many bands, could operate outside of the American phone subbands.⁶

Serrana Bank and Roncador Cay (KS4, KP3, HK0): *Only contacts made September 16, 1981, and before, count for this entity. Contacts made September 17, 1981, and after, count as San Andres.*

This was a combination DXCC entity consisting of the above two sea banks which were claimed by the United States under the Guano Islands Act of 1856.⁷ The Serrana Bank is a large atoll-like reef conglomerate consisting of five uninhabited islands in the southwestern Caribbean Sea, about 110 miles northeast of the Colombian island of Providencia. It is approximately 30 miles long and varies in width, reaching a maximum of eight miles. Several of the outlying cays are sandy and support vegetation. The largest of the islands is Southwest Cay, about eight-tenths of a mile long by a half-mile across.⁸ Roncador Cay, located at the northwest tip of the low-lying Roncador Bank, is approximately 40 miles to the southeast of the southern tip of Southwest Cay in the Serranas. Both the U.S. and Colombia had laid claim to these banks, but in 1972, the two countries reached a consensus and signed a treaty recognizing Colombia's sovereignty over the area. The treaty became effective on September 17, 1981. Today, Serrana Bank is occupied by the Colombian military and any landing and subsequent stay requires a special permit from them.

Amateur radio activity began in March 1959, with an expedition by Don, W4KVX;⁹ Dick, W3PZW; Vic, YN4DLS; and Mac, W9EVI; with the call sign KS4BB, operating from Southwest Cay, in the Serranas. It took the expedition two attempts to reach Serrana Bank after they almost became lost at sea and were dangerously low on diesel fuel during their first try. KS4BB was activated on March 20th and closed down on the 25th. Several other expeditions took place over the years, including, but not limited to, KS4BF (1962), W9WNV/HK0 (1965), W9FIU/KS4 (1970), KS4KZ (1972), HK0AB (1974), and HK0AA (1974, 1975, and 1980).

Walvis Bay (ZS9)¹⁰: *Only contacts made from September 1, 1977 to February 28, 1994, count for this country.*

This is another of those entities with a diverse and changing geopolitical history. The name, meaning Whale Bay in English, refers to the multitude of whales often found in the plankton-rich waters of the bay and along the South Atlantic coast of present-day Namibia. The bay has always drawn a large number of sea-going vessels due to its natural deep-water harbor which provides a safe anchorage for ships on their way around the Cape of Good Hope.

The Portuguese discovered the bay in 1487, but they did not formally claim the area. The bay had a quiet life until 1840 when Britain annexed the harbor and surrounding region in order to hinder German interests nearby, as well as to maintain and ensure safe passage for British ships around the southern tip of the continent. In 1910, Walvis Bay became part of the Union of South Africa. At the end of World War I, as a condition of the Treaty of Versailles, Germany lost all of its overseas colonies, and, by League of Nations mandate, South Africa was awarded control over the former German colony of Southwest Africa. After civilian rule was re-established in 1921, Walvis Bay became part of that colony. However, in 1971, South Africa transferred power over Walvis to its Cape Province, in the anticipation of having to give up control of Southwest Africa, but not wanting to lose control over Walvis Bay. Nevertheless, in 1977 there was a

possibility that South Africa would lose control of Walvis Bay to an opposing independence-minded government for Southwest Africa. As a result, the South African government re-claimed its control over Walvis from Cape Province, based on original annexation. Southwest Africa gained independence in 1990, and a new country, Namibia, was born. Walvis Bay, however, remained under South African control until 1994, when the local business community put enough pressure on the South African government to settle Walvis' political future. Sovereignty was finally and formally transferred to Namibia on February 28, 1994.

Amateur activity from Walvis Bay was bountiful and many stations hit the airwaves from this entity, including, but not limited to, ZS3WBC (1978), ZS1IS (1989), ZS9A (1990 and 1994), ZS9/DK7PE (1990), ZS9/KP2BE (1991), ZS9/DL3ECK (1992), ZS9/DJ2ZS/p (1993), and ZS9Z (1994).

Tangier Zone (CN2, EK1, KT1): *Only contacts made June 30, 1960, and before, count for this entity. Contacts made July 1, 1960, and after, count as Morocco (CN).*

Tangier is a port city on the Moroccan coast at the western entrance to the Strait of Gibraltar, not far from where Africa and Europe overlook each other. Probably founded in the fifth century B.C. by the Carthaginians, it later came under the control of the Romans, Vandals, and Byzantine Greeks, before passing to Arab Moorish and Berber dominance in 702 AD. They maintained control for over 700 years. Then, for nearly three centuries that followed, the town changed hands among the English, Spanish, and Portuguese.

The Portuguese took the city from the Arabs in 1471, and presented it to Charles II of England, as part of the marriage dowry of Catherine of Braganza. A local sultan tried to take back the town from the British in 1679. He was unsuccessful, but he was able to organize a protracted blockade of Tangier which led to the demise of English influence there. The Brits abandoned the area in 1684, but destroyed the city and port before leaving. Tangier was then returned to Arab control.

Starting in the 1840s, Europeans, especially the French and Spanish, again became interested in colonizing the area. A period of local tribal unrest in Moroccan territory, along with a visit by Germany's Kaiser Wilhelm I in 1905, precipitated a secret meeting by the French and Spanish to form the area into two protectorates against possible German incursion. The British insisted that Tangier should be treated as an international zone, separated from Morocco. The city, along with a surrounding zone of 140 square miles, was "temporarily" internationalized. In 1912, Morocco was partitioned between France and Spain (forming the territories of French Morocco and Spanish Morocco), and in 1923, Tangier was made an International Zone being jointly administered by Britain, France, and Spain. A protocol was signed by these three European powers to provide permanent security of the city, but in 1929, Spain was given police control while an international commission was established to rule Tangier. Spain

The Mediterranean city of Tangier was made an international zone both before and after World War II, before becoming an official part of Morocco in 1956. Prefixes used there during its international period included EK1 and KT1, used by American forces based there after World War II.



Table 1. DELETIONS PER CONTINENTS

Continent:	NA	SA	EU	AF	AS	OC
# of Deletions	5	0	6	18	18	11

Key:
 NA=North America AF=Africa
 SA=South America AS=Asia
 EU=Europe OC=Oceania

Source: ARRL DXCC Deleted Entity List

had full control during the World War II years, but the status of an international zone for the city was re-established in 1945. The international status of the Tangier Zone was rescinded and abolished in 1956, and Tangier became part of Morocco that same year.

Amateur activity in the Tangier Zone began after World War II with the use of the prefix, EK1. Later, that prefix was dropped by U.S. forces in the Zone who were assigned KT1 as their prefix. When I was still an SWL, I received a card in 1951 from Willy Wilcox, EK1WX, who was with the American Legation, and who later showed up on the bands as KT1WX. The CN2 prefix was used after Tangier's re-integration with Morocco. I have two QSLs from Tangier, CN2BK and CN2AK, both for contacts in July 1957. K8CX's website shows cards from EK1GW (1948), EK1AQ (1950), EK1AO (1951), EK1CW (1951), KT1OC (1952), KT1LU (1953), CN2AE (1956), and CN2BK (1959).

Some Statistical Information about Deletions

A simple statistical examination of the 58 entities which are presently on the ARRL DXCC Deleted List reveals some interesting facts. The basic information on that list was collated and analyzed in terms of Deletions per Continent (Table 1) and Deletions per Year of Occurrence (Table 2).

The greatest number of deletions occurred on the continents of Africa and Asia, each with 18, followed by Oceania with 11. This can be explained by the fact that these three continents contained the greatest number of possessions, colonies, and protectorates which had been established during the colonial expansion of European powers from the 15th through the 19th and into the early 20th centuries. Colonialism gave way to the formation of independent countries in the second half of the 20th century. Most of these emerging countries became part of what was called "the Third World." It is also interesting to see that South America has had no deleted entities over the years.

The year 1963 had by far the most deleted entities with nine (eight in Oceania, one in Asia), followed by 1960 with six (five in Africa, one in Europe). Both 1975 (one in Asia, two in Africa, and two in Oceania) and 1976 (three in Africa, one in Asia, and one in Oceania), each had five deletions. Most of the years listed in Table 2 contained from one to three deletions. The absence of some years in Table 2 indicates that during those years, there were no deletions. The first deletion occurred in 1949 (Newfoundland & Labrador), while the last deletions were in 1994, with three that year (Southern Sudan, Penguin Island and Walvis Bay). There have been no deletions since 1994.

Wrap-Up

The few short lines of a deletion announcement don't really paint an accurate picture of the real-life events that lead to the deletion. One must go beneath the words of the deletion announcement to uncover the underlying story. Sometimes it's as incredible as the Minerva Reefs saga, which probably would

Table 2. DELETIONS PER YEAR OF OCCURRENCE
(Years not listed had no deletions)

Year	No. of deletions	Year	No. of deletions
1949	1	1973	1
1950	1	1974	2
1954	1	1975	5
1957	3	1976	5
1960	6	1979	1
1961	1	1980	1
1962	1	1981	3
1963	9	1982	1
1967	2	1990	3
1968	1	1991	1
1969	2	1992	1
1972	3	1994	3

Source: ARRL DXCC Deleted Entity List

have made a great motion-picture comedy, or a TV mini-series. Other times, it's more serious, complete with spilled blood and lost lives. In between these two extremes are those changes which occur diplomatically, merely with the stroke of a pen and by mutual agreement between, or among, the parties concerned. There is no way to predict what the next deletion might be. Geopolitical events can move swiftly and unexpectedly, or they can move at a slow and deliberate pace. Our present hiatus of no additional deletions could continue for years. Eventually, however, there will be some other deletions. We'll just have to see how world events play out.

Notes

1. These, and subsequent quotes at the beginning of each deletion, are the phrases as written in the ARRL DXCC Deleted List. For the complete list and associated notes, see <www.arrl.org/awards/dxcc/deleted_list.html> and <www.arrl.org/awards/dxcc/deleted_notes.html#36>.

2. The group maintains its own website at <www.minervanet.org>.

3. My thanks to K8CX and his website, <www.hamgallery.com/qs1> for the source of additional call signs and the dates of their operations (in parentheses) mentioned in this article.

4. I actually met Ron Skelton by pure chance at the Georgia State Hamvention in the early 1980s. While rummaging through the boneyard (flea market), I ran across a Brit who had moved to the Atlanta area some years previously, and who had several pieces of vintage gear for sale. As we talked, he told me his name, and I knew immediately who he was.

5. Bob was always an active ham from several areas of the world. His British call was G3BQZ. Bob worked for Interpol, the international police agency, and after his tour in Trieste, he was stationed in Bahrain, where he operated as MP4BCC. From there, he operated in the Seychelles, as VQ9MC and, after Seychelles' independence, S79MC. He later retired there. While visiting the Seychelles in 1982, and after many contacts over the years, I had the pleasure of visiting Bob at his home. He has since become a Silent Key.

6. A friend and former Zonian, Ike Price, KZ5IP, now K8IP, once told me of the joys of operating from the Canal Zone. According to Ike, even 40 meters was open to DX all day.

7. The Guano Islands Act is listed in federal statutes as U.S. Code, Title 48, Chapter 8, Sections 1411-1419.

8. A beautiful image from space of Serrana Bank can be found at <www.oceandots.com/atlantic/san-andres/serranabank.htm>

9. Don Chesser is perhaps better remembered as the original editor of the DX Magazine.

10. Old-timers might remember the ZS9 prefix as belonging to the former Bechualand Protectorate, which, after independence from South Africa, became known as Botswana. ■

Thousands Express Their Views on Morse Code testing

It took more than a month after it was released, but the Notice of Proposed Rulemaking seeking to change the Amateur Radio Service rules to eliminate the requirement that individuals pass a telegraphy examination in order to qualify for a license was published in the *Federal Register* on August 31, 2005. You will find the NPRM on the web at: <http://www.regulations.gov/fredpdfs/05-17226.pdf>

At press time, more than two-thousand comments had poured into the FCC's online Electronic Comment Filing System (ECFS) and more were coming in every day. Most are brief one page or less comments, while some are two or three pages. However, at least one was 16 pages long. Most favor abolishing telegraphy testing.

Those in favor of the NPRM say that Morse communications is archaic, primarily recreational in nature, not a requirement in any other radio service, can be more effectively decoded by machine, and has been superseded by more modern, reliable, accurate, faster, and efficient means. They point out that WRC-2003 eliminated the need for code testing in the Amateur Service.

Commenters wanting a demonstration of telegraphy proficiency to remain say Morse is traditional ham radio which should be retained. They point out that telegraphy is needed for emergency communications, that reduced qualifications attract lower quality operators, that CW filters out undesirable individuals, makes effective use of spectrum . . . and CW equipment is easier to construct.

So far our tally shows that 55% of all amateurs taking a position on the NPRM want an end to all Morse exams. Forty-five percent want telegraphy testing to continue, with half of those wanting code tests only for the Extra Class license. (More than a hundred commenters did not take a position either way and just made an observation.)

Code Tests and the IARU

As of July 5, 2003, Article 25.6 of the International Radio Regulations requires only that countries verify the operational and technical qualifications of any person wishing to operate an amateur station. The FCC believes this requirement is satisfied by requiring applicants to pass written examinations covering relevant subject matter.

The ARRL's current position that applicants for the Extra Class license should pass a Morse code exam conflicts with a 2001 decision by the International Amateur Radio Union, a federation of global amateur radio societies. This is particularly interesting, since even though IARU officers

come from all ITU Regions, the ARRL substantially funds and manages the IARU and the League's CEO, Dave Sumner, K1ZZ, is also the IARU secretary. Furthermore, IARU presidents have always been previous high-powered League officials and the global perception is that the IARU is ARRL-controlled.

After surveying the world's amateur radio societies, the IARU's governing body called for ". . . the removal of Morse code testing as an ITU requirement for an amateur license to operate on frequencies below 30 MHz." The IARU urged member societies "as an interim measure" to seek Morse code testing speeds "not exceeding five words per minute." This is exactly what most countries did.

The IARU resolution to completely end all telegraphy testing in the Amateur Service was adopted during an IARU policy meeting held October 6-8, 2001 in Guatemala City, Guatemala. At that time the IARU said that while Morse is "an effective and efficient mode of communication" its requirement for an HF amateur license ". . . is no longer relevant to the healthy future of Amateur Radio."

One thing appears clear. While the majority of the world's amateur radio societies wanted to end demonstrated Morse proficiency, the ARRL and its aging membership did not. The League's answer was to request Morse testing for the Extra Class license only.

Submitting Comments on the NPRM

Comments may be submitted on or before October 31, 2005. Reply comments are due by November 14, 2005. A reply comment addresses comments made by others. You can file comments on paper documents or electronically. Commenters who chose to file paper comments must file an original and four copies. All paper filings must be sent to the Federal Communications Commission, Office of the Secretary, 445 Twelfth Street, SW., Room TW-A325, Washington, DC 20554. See the box for instructions for filing comments electronically.

It probably will be mid-2006 before a final Report & Order is issued. That's if the FCC chooses to end Morse testing in the Amateur Service, which, based on previous Commission positions, seems assured. The FCC is on record as saying the only reason telegraphy exams are required for U.S. high-frequency amateur operation is because it was an international regulation.

Many radio amateurs are already passing the General Class written examination in hopes that they will be able to trade in their Element 3 Certificate of Successful Completion for a Codeless General Class ticket. CSCEs are valid for 365 days, so all of these hams are hoping the FCC will

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How to File FCC Comments Electronically

In recent years, sending comments to the FCC from personal computers has become the most prevalent way of expressing one's opinion on proposals before the Commission. It is a two-step process. The first step is to complete the Cover Sheet. The second step is to choose one of the two transmittal methods: sending a file, or sending a short message that you type into your PC.

Instructions for filing comments: You may submit comments, identified by WT Docket No. 05-235, by taking the following steps:

1. Go to the FCC's website at: <<http://www.fcc.gov/cgb/ecfs/>>. Click on the "Submit a filing" link in the upper right corner of the page.

2. Enter "05-235" (without the quotation marks) in the "Proceeding" field.

3. Include your name and callsign on Line No. 3.

4. Include your address, city, state, and zip code on Lines 7 through 10.

5. Line No. 12 should contain the word "COMMENT."

6. At the bottom of the page select either "Send Comment Files to FCC" (Attach a Microsoft Word, Corel WordPerfect, or an ASCII Text file) or . . .

7. You can type in your comments by selecting: "Send a Brief Comment to FCC."

8. When you are done, click on the "Send Attached File" or "Send Brief Comments" button at the bottom of the page.

You can read comments that have already been filed by going back to the Electronic Comment Filing System page at: <<http://www.fcc.gov/cgb/ecfs/>> and clicking on the "Search for Filed Comments" link. Be sure to enter "05-235" in the "Proceeding" blank and click on the "Retrieve Document List" button at the bottom of the page.

drop the code exam before their exam must be retaken.

Samples of Filed Comments

We'll close this month with a sampling of comments filed to date with the FCC:

If we learn anything from Hurricanes Charlie and Katrina, let it be that the removing of a valid type of communications from the prerequisites for the primary backup to Civil Defense is counter-productive. [While] most emergency communications are in the bands above 10 meters . . . Hams with basic Morse Code proficiency could also be the first to provide communications with the most basic types of radio and antenna. . . .*Arthur T. Nickel, KØART, Lehigh Acres, FL – General Class*

Eliminating the Morse code test in amateur radio license requirements will not be the end of the world. It won't even be the end of Morse code. It will be the end of countless hours of frustration for those who, like myself, have passed all written test requirements through Amateur Extra Class operator, and have struggled for many months to learn Morse code, with no intention of ever using it later, just to get access to a wide range of amateur radio frequencies allocated below 30 MHz. . . .*Chris Wendling, KI4KHW, Virginia Beach, VA – Technician*

Learning Morse code has ramifications far beyond the ability to use that mode alone. The future can only be understood if we cherish our past. If that means learning a little Morse (or Latin, for that matter), so much the better! It is my opinion Element 1 should be retained for all grades of license, especially at the entry level. . . .*Charles Schenck, W1EH, Arlington, VA – Extra Class*

The only reason cited by the Commission for maintaining the Morse code requirement was the continued pres-

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ence of the requirement in the [International] Radio Regulations. Since such international requirement no longer exists, the sole remaining rationale for maintaining a Morse code requirement has been removed. Thus, any other argument for retaining the requirement is moot, and the Commission need no longer burden itself with further review of the issue. ...*Eric R. Ward, NØHHS, Durham, NC – Extra Class*

Morse code has been a mainstay in amateur radio from its beginnings. It provides a digital mode of communications superior to voice modes during severe atmospheric conditions rendering radio voice communications difficult, if not impossible. ...*Lorne W. Gustafson, K8KQD, Eustis, FL – Extra Class*

When and what event was the last time CW was the one and only means of communication during an emergency? Was it a long duration or short time emergency? Was it truly the only mode that was available? Is there any documentation to support the claim? Even during the hurricanes and listening to the nets, all traffic is passed with phone. We need to encourage people of all ages to remain or become involved in ham radio and the CW requirement does not do that. In fact, it chases people away. ...*Daniel Walz, KØDLW, Beach, ND – Technician*

The elimination of the 5-words-per-minute code requirement will not result in the Amateur Service turning into another 11-meter debacle. ...many of those who "passed" the code requirement act worse than those on 11 meters. ...*Scott R. Newfer, W8SRN, Okemos, MI – Technician*

Morse code is not a demonstration of intelligence. A brief examination of the misspelled, unformatted, rambling commentary should be self-convincing. ...*Christian Reynolds, KCØARF, Muskego, WI – Technician*

... Morse code remains the simplest, most easily deployed communications mode available to amateurs worldwide. To drop this requirement simply because military or commercial users no longer use it is foolhardy. However, I am in favor of allowing access to the HF allocations without the benefit of a Morse code examination with the restriction that non-Morse tested amateurs not be allowed access to those parts of the spectrum wherein voice (wideband) modes are not permitted. ...*Steven J. Robeson, K4YZ, Winchester, TN – Extra Class*

The discussion and debate on the need for any code testing was fully covered some five years ago by the FCC with not one compelling reason identified that could justify continued code testing except for the international treaty to which the USA was a party. As the FCC clearly notes, that treaty has now eliminated (via WRC-2003) any required code testing and now clears the path for full deletion of code testing for USA amateurs. ...*Bill Sohl, K2UNK, Budd Lake, NJ – Extra Class*

History has shown that most of the electronics community major technological developments have been first initiated and tested by skilled hams. My main fear is that to dilute that skilled and educated group of people with those who just want to "play" on the air using current new technology would stifle that group of serious-minded men and women who will carry technology further into the 21st century. ...*Jim Geisinger, K3QQN, Virginia Beach, VA – General Class*

I've been referred to as a "no-code extra" since I upgraded when Morse code at 5 wpm was the standard. I would like to see the 5 wpm requirement remain when advancing to the Amateur Extra Class, as a demonstration that an amateur wants to take that extra step to make Extra Class. ...*Daniel Guyor, NC8D, Camp Lejeune, NC – Extra Class*

I agree with the decision to eliminate Morse code testing for higher license classes of the Amateur Radio Service. As one of the many people who suffer from hearing loss, this is welcome news. I also applaud the FCC making the decision which would have been made a few years ago when the code speed was dropped to 5 words per minute. At that time the Commissioners wanted to drop code testing but couldn't because of the international requirement which mandated it. I believe this move by the FCC will only attract more people to the Amateur Service and will more than likely make Morse code more desirable because it will now be a mode of choice rather than a mode of necessity. ...*Chris J. Smith, K1CJS, Fall River, MA – Technician*

What we need are more people who are able to provide real technical skills and services to the community. If someone really would like to get into amateur radio, they will spend a few hours learning the code. After all, it is not much different than memorizing the current test

pools. ...*Timothy F. Miller, WBØRXX, Montevideo MN – Extra Class*

Until last weekend, I had not operated CW since I passed my General Class code element in 1980. However, when the FCC announced the proposed elimination of the CW requirement, it prompted me to revisit my stance on CW. Instead of causing me to jump on the "good riddance to CW" bandwagon, it led to a rekindling of my interest in the mode. In fact, this week I actually made my first CW contacts in 25 years. I will continue to operate CW (and to enhance my proficiency) in the future—not because it is a test requirement, but because I enjoy it. ...*William "Rick" Murray, WF4Y, Hendersonville, TN – Extra Class*

I have no objection to removing the CW requirement but it may make a lot of sense to consider replacing it with a typing requirement. Digital communications is becoming increasingly important and typing skill today is perhaps as useful as CW skill has been in the past. ...*Timothy Cotton, N4UM, Islamorada, FL – Extra Class*

I was counting on taking the Morse code 5 wpm test to upgrade to General Class. However, if the aim of the Commission is to eliminate it, I and other Technician Class operators I have discussed this issue with, agree to await the Commission rule making to take the General test without the code. I hope the Commission re-considers this aspect of amateur radio communications, and does not change the rules on testing for CW - Morse Code for General and Extra Class licensees, to suit the whims of a few who wish to discount the importance of keeping the code requirement. ...*Robert A. Rice, KG4RRN, McLean, Virginia – Technician*

I would like to dispel two myths that I have repeatedly heard/read in the argument dropping Element 1. "The current Element 1 test acts as a filter to keep out CBers and other 'insufficiently-dedicated' individuals" and "...acts as a deterrent to newcomers to the hobby/service." Along with being an amateur radio "newcomer," I am also a CBER and Element 1 did not deter me in any way, shape, or form from upgrading my license class and earning HF privileges. Morse code testing is part of our culture and tradition and should not be removed entirely from the curriculum. ...*Egbert C. Craig, Jr., WA2SI, Port Jefferson, NY – Extra Class*

Many No Code Techs are MARS (*Military Affiliate Radio System*) operators and operate HF with their MARS license provided they pass the MARS basic training course. MARS service dropped the code requirement a long time ago. Its time for amateur radio to do the same. ...*Edward A. Rainsberger, KD4CBD, Woodbridge, VA - Extra Class*

Simply stated, it is my considered opinion that continuing to test for Morse proficiency as a prerequisite for licensing in the Amateur Radio Service is not in the public interest. Furthermore, the requirement serves no useful regulatory purpose, and is not consistent with the goals for the Amateur Radio Service as stated in the Basis and Purpose section of the Commission's rules set forth in Part 97. ...*John D. Kasupski, KC2HMZ, Tonawanda, NY - General Class*

If you want to operate on DXpeditions or in contests, CW satisfies the key requirement for a high QSO rate. CW also makes better use of limited amateur spectrum than most other modes.

If you have a limited budget or power or antenna restrictions, then CW provides you with better intelligibility under poor signal conditions than any other common HF mode. If you want to construct your own equipment, then CW allows simpler and less expensive transceiver projects. If you want to operate from remote places using battery or other alternative power, then CW is the most power-efficient mode. And under certain emergency conditions, CW may be the only mode possible. For these reasons I believe that no one can honestly claim that CW is no longer a useful, or even an important, mode of communications. ...*Thomas M. Walsh, W2CO, Longmont, CO - Extra Class*

CW operation has its place in the Amateur Radio Family and those who use it are to be commended for their effort. The Morse code, like the spark-gap transmitter and the crystal receiver, has seen its day and it is time to move on into this century looking forward to new and inventive ways of amateur radio communications. ...*John R. Martin, WA6YVL, Lancaster, CA - General Class*

I ask the Commission to at least keep telegraphy testing for Extra, if for no other reason than to offer some thanks to CW operators who continue to enjoy the service as good operators, and as a compromise so for once, the lazy underachievers of the world do not completely win in wrecking the Amateur Service. If two-thirds of your comments favor removal, then that is reasonable since two-thirds of the license classes are codeless. ...*John White, KC5ASD, Hoover, AL - Advanced Class*

I agree with the elimination of the Morse Code requirement for testing—with caveats. When something costs you nothing, whether monetarily or through personal effort, the tendency seems to be to assign that zero value to the item. That seems to be where amateur radio is heading. Today, the effort to obtain an amateur radio license has now reached the point where no, or very minimal, effort is required. I offer a suggestion to both add value to the amateur radio license and improve the necessary knowledge level of the service as a whole. ...*G. Bryson Lewis, W4JYV, Hermitage, TN - Advanced Class*

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It is generally agreed that the Commission should allow code-free HF access at greater levels. But at the same time, it should recognize that Morse is a historically significant part of the amateur-testing regime. I believe if the Commission adopts the NPRM as proposed, it will be doing so without fully taking into account the far-reaching long-term impact of the loss of some of the most experienced amateur operators disenfranchised by this decision. Just because we can do something, doesn't necessarily mean we should. ...*Steven E. Matda, KE4MOB, Bristol, VA – Extra Class*

Congratulations! It appears that the FCC is truly working to help put amateur radio operators back on the leading edge of our craft. Morse code, while very useful at one time, has been surpassed and should be discarded as a requirement for licensing. Just as old algorithms and methods have been replaced by new ones in commerce (think NRZI tape decks, LPs, 8-tracks, etc), it's time to move on. Amateurs should be experimenting with new concepts and technologies, not living in the past. ...*Paul Rikkonen, N6PAR, San Jose, CA – Technician Class*

I was a No-Code Technician for a decade before upgrading my license. The 5 wpm code requirement did take some effort, but certainly was not an insurmountable hurdle. I gladly practiced because it was the price of obtaining the General license. Now I use it to make contact when the atmosphere has all but eliminated any other mode. What a shame if I had not been made to learn this skill. But, I concede in light of the international rule changes, that perhaps not everyone needs or should be required to learn the code. As such, I support a compromise that allows growth

of the Amateur Service while maintaining a reserve of code-proficient operators. As a part of the incentive licensing structure, a 5 wpm code requirement to obtain the Amateur Extra license would serve our nation well. ...*Ronny D. Risinger, KC5EES, Round Rock, TX – Extra Class*

I commend you on the proposed rule making. It never made sense to require a proficiency increase in one operating mode to receive more privileges in another. ...*James R. Stutesman, WA8GRI, Saginaw, MI – General Class*

The American Radio Relay League was founded on the assumption that those wishing to join will make the effort necessary to pass the entrance requirements. To this day there are many organizations whose entrance requirements don't always seem sensible to outsiders.... But it is those entrance requirements that define the organization. Remove those requirements and the organization loses meaning and substance. ...*Donald L. Smith, N6NAX, Phoenix, AZ – General Class*

Because it is no longer in general use, because the Commission has previously found that it serves no useful regulatory purpose, and because there is no longer any applicable international regulation, continuing the requirement for new licensees to demonstrate manual telegraphy skill could be construed as arbitrary and capricious and unsupported by the substantial evidence previously reviewed by the Commission. In eliminating telegraphy testing the Commission would be taking positive action to meet its statutory obligation to "generally encourage the larger and more effective use of radio in the public interest." ...*W. J. J. Hoge, W3JJH, Westminster, MD – Extra Class*

If you eliminate Morse code testing, what's next? Changing or eliminating some of the harder questions on the written test? I am also *not* in favor of the Commission making reference to (and using as a basis for change) that something in the "international requirements" for a particular proficiency has been eliminated. When I hear that, I feel like we as a nation are followers rather than leaders. ...*Terry W. Yarborough, W5TWY, Tularosa NM – Extra Class*

Required Morse code proficiency is not a deterrent to undesirable operators entering the Amateur Radio Service. There are at this time many undesirable operators on the amateur radio frequency allocations who have entered the service through the existing testing requirements. . . . Testing for Morse Code proficiency did not screen this particular scofflaw from the service. The requirement of Morse code proficiency is an unnecessary burden of entry to the service. This Proposed Rule Making is a step in the right direction. Morse code proficiency as a requirement for amateur radio licensing is nothing more than a hazing ritual. Amateur radio is a public service, not a clique, club, or fraternal organization. The licensing regulations must be relevant to today's world and not used as a method of preserving traditions. ...*Harold L. Snyder, Jr., WD5KCA, Houston, TX – General Class*

Deregulation of the Citizen Band was a mistake. It allowed anyone with a few dollars to purchase and operate a CB radio. I believe we are starting down that same road by allowing people to memorize the question pool to pass an exam. With a little effort and pride of accomplishment, a person can learn 5 word-per-minute Morse code, especially, if he/she has taken the time to memorize the multiple choice question pool answers. ...*Allen "Buddy" Walker, AC5ZQ, Gilmer, TX – Extra Class*

As a Volunteer Examiner and Amateur Extra Class licensee in the Amateur Radio Service, as well as a General Radiotelephone Operator, I am in full and complete agreement with [the NPRM.] I have full faith that those of us who use CW now will continue to use it. We will teach its utility to many other radio amateurs. Whether CW use grows has little to do with how the FCC regulates the Amateur Radio Service. The Amateur Radio Service is what we radio amateurs make it. Its future is ours. ...*Kenneth M. Beck, W17B, Kennewick, WA – Extra Class*

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SS-30	25	30	3 1/4 x 7 x 9 1/2	5.0



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SS-30M*	25	30	3 1/4 x 7 x 9 1/2	5.0



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SRM-30	25	30	3 1/2 x 19 x 9 1/2	7.0

WITH SEPARATE VOLT & AMP METERS

MODEL	CONT. (Amps)	ICS	SIZE (inches)	Wt.(lbs.)
SRM-25M	20	25	3 1/2 x 19 x 9 1/2	6.5
SRM-30M	25	30	3 1/2 x 19 x 9 1/2	7.0



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2 ea SWITCHING POWER SUPPLIES ON ONE RACK PANEL

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MODEL	CONT. (Amps)	ICS	SIZE (inches)	Wt.(lbs.)
SRM-25M-2	20	25	3 1/2 x 19 x 9 1/2	10.5
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- 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
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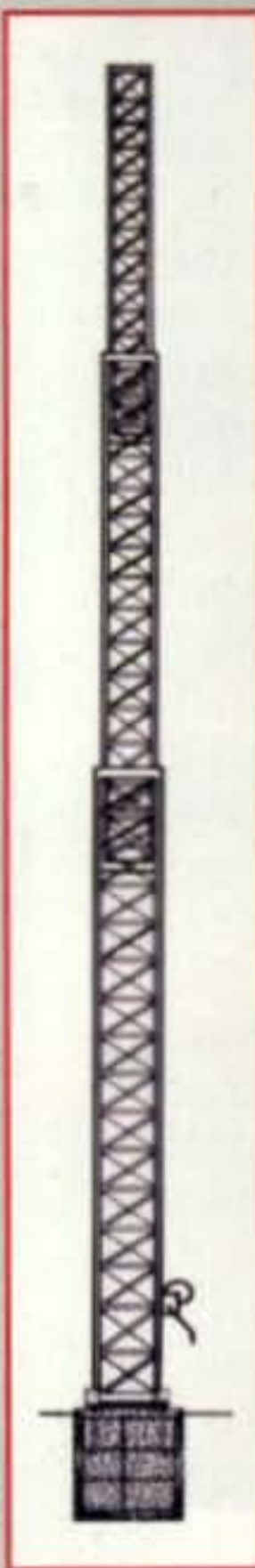
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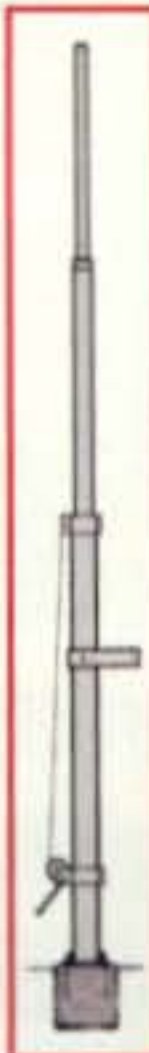
TX SERIES HEAVY DUTY CRANK-UP TOWERS					
TOWER MODEL	MAX. HT.	MIN. HT.	WT. (LBS.)	LIST PRICE	SALE PRICE
TX-438	38'	21'6"	355	\$1,523	\$1,379
TX-455	55'	22'	670	\$2,107	\$1,899
TX-472	72'	22'8"	1040	\$3,462	\$3,139
TX-472MDP	72'	22'8"	1210	\$5,571	\$5,049
TX-489MDPL	89'	23'4"	1800	\$9,034	\$8,239

HDX SERIES HEAVY DUTY CRANK-UP TOWERS					
TOWER MODEL	MAX. HT.	MIN. HT.	WT. (LBS.)	LIST PRICE	SALE PRICE
HDX-538	38'	21'6"	600	\$1,807	\$1,649
HDX-555	55'	22'	870	\$3,162	\$2,889
HDX-572MDPL	72'	22'8"	1600	\$8,281	\$7,549
HDX-589MDPL	89'	23'8"	2440	\$10,841	\$9,899
HDX-689MDPL	89'	23'8"	3450	\$20,943	\$19,129
HDX-5106MDPL	106'	24'8"	3700	\$22,791	\$20,799

MA SERIES CRANK-UP MASTS

- Handles up to 22 square feet of antenna load. (See chart below)
- MDP models include motor drive.
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- Options include coax arms, raising fixtures, motor drives, self-supporting and rotator bases, remote control panel, and more!

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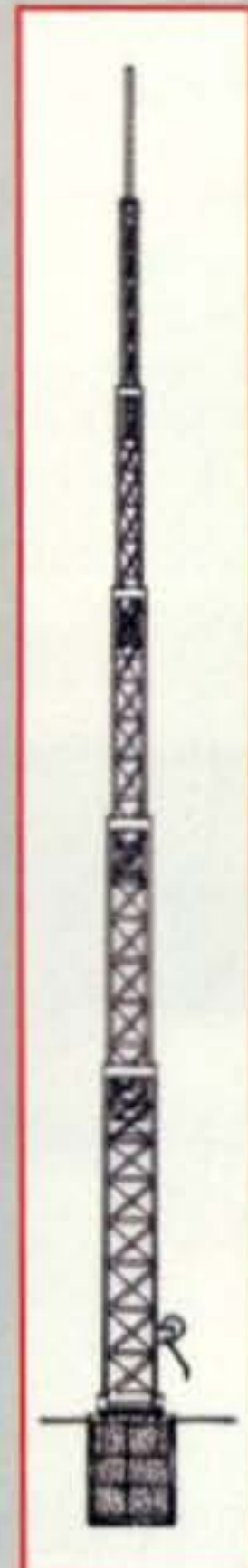


MA SERIES CRANK-UP MASTS							
MAST MODEL	MAX. HT.	MIN. HT.	WT. (LBS.)	50 MPH (sq. ft.)	70 MPH (sq. ft.)	LIST PRICE	SALE PRICE
MA-40	40'	21'6"	242	16.5	6.8	\$1,209	\$1,099
MA-550	55'	22'1"	435	22	9	\$1,875	\$1,699
MA-550MDP	55'	22'1"	620	22	9	\$3,584	\$3,249
MA-770	71'	22'10"	645	15.5	5.5	\$3,091	\$2,799
MA-770MDP	71'	22'10"	830	15.5	5.5	\$4,890	\$4,449
MA-850MDP	85'	23'6"	1128	15.3	6.3	\$6,591	\$5,999

TMM SERIES COMPACT CRANK-UP TOWERS

- Handles 20 square feet of antenna load at 50 MPH, 8 square feet at 70 MPH.
- Compact design is great for areas with tower restrictions, or where a less intrusive installation is desirable.
- All models supplied with hinged T-base, anchor bolts, load-actuated hand winch, 8' steel mast, top plate, and rotor plate.
- Options include coax arms, raising fixtures, motor drives, thrust bearing, remote control panel, and more!

Now shipping from CA for west coast customers, and KS for east coast and midwest customers, to reduce freight cost!



TMM SERIES COMPACT CRANK-UP TOWERS					
TOWER MODEL	MAX. HT.	MIN. HT.	WT. (LBS.)	LIST PRICE	SALE PRICE
TMM-433SS	33'	11'4"	315	\$1,626	\$1,479
TMM-433HD	33'	11'4"	400	\$1,970	\$1,789
TMM-541SS	41'	12'	430	\$2,135	\$1,939

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CW or No CW? by Uncle DX

Solar flares and noisy bands . . . sound familiar? September sure had its share of those conditions. Then there was the horrible devastation of the U.S. Gulf Coast by Hurricane Katrina. Many of our DXer friends in Louisiana, Mississippi, and Alabama were seriously affected, with some losing their homes. I can only pray that they have made good progress by the time you read this. You will note, too, that this month there are no WAZ and 5-Band WAZ award charts. Floyd, N5FG, the CQ WAZ Award Manager, who lives in southern Mississippi, left his home to go farther north before Katrina hit the Gulf Coast. As of this writing, he and his family were still up north and Floyd was without his files and internet access. We hope that he will be able to go back home soon, and we should have updated charts next month.

Most of us have already contributed in one way or another to aid the victims of this disaster. It will take a very long time before that part of our country recovers, and those who were displaced will require our help over the long haul. Please continue to help in whatever manner is appropriate for you. You may never know where your help goes, but you can sleep better knowing that you made an effort. Thank you!

DXing has definitely been a challenge this year, and if I read the reports correctly, it will be at least another year before we hit the bottom of the current solar cycle. What do you do? Well, you can listen a lot, work on those projects that you've been putting off for some time, and work the occasional DX that comes your way.

*P.O. Box DX, Leicester, NC 28748-0249
e-mail: <n4aa@cq-amateur-radio.com>



At the Huntsville Hamfest this past summer Floyd, N5FG, CQ's WAZ Award Manager (standing, left), presented Tom, N4TV (right), with his 5-Band WAZ certificate. Seated at bottom left in the photo is Bill Moore, NC1L, of the DXCC desk at the ARRL. (Photo by George, N5GH)



At the DX/QCWA breakfast in Hawaii (left to right), shown here are Willie, AH7XD; Lee, KH6BZF; Doctor John, KH6HAM; Tom, KH6AAA; Tets, AH7C; Bill, NØCO/KH6; Little Ray, WH6ASW; and Little Ray's relative from New York City, Big Ray, KH6IEL. (Photo by KH6HAM, and courtesy of Lee, KH6BZF)

Many DXers are scanning those old logs looking for long overdue QSL cards. Others are taking the time to learn how to use the LoTW (Logbook of The World) and get credit for many contacts using that method. Speaking of LoTW, recently I finally got around to using it. Amazing . . . I got over 100 DXCC credits from the 10,000-QSO log that I uploaded. It isn't all that difficult,



DXCC card checking at the JARL Ham Fair 2005 in Tokyo. DXCC card checkers checked 247 DXCC applications, along with four WAS applications and one VUCC application. Left to right sitting at the table are: Vicky, AE9YL; Carl, K9LA; Sam, JJ1SKG; Masa, JA1DM; Masao, JA2TBS; and Hiko, JA2MNB (behind the pole). Standing with her back to the wall is Sachiyo, JARL administrative assistant. Sitting with his back to the wall is Hiro, JA1SLS. To the right, not shown, were Katsu, JI1JMK, and Yama, JA1SGU. (Photo courtesy of Carl, K9LA)

The WPX Program

SSB

2942 N2TDT 2943 N2VRA

CW

3158 IK2SGN 3159 WV1K

CW: 950 PP6CW.

SSB: 350 N2TDT. 400 N2VRA. 700 JK7QJK. 2250 I3ZSX. 2700 KF7RU.

Mixed: 450 WV1K.

10 Meters: N2TDT

No. America: N2TDT

Award of Excellence Holders: N4MM, W4CRW, K5UR, K2VV, VE3XN, DL1MDD, DJ7CX, DL3RK, WB4SIJ, DL7AA, ON4QX, 9A2AA, OK3EA, OK1MP, N4NO, ZL3GO, W4BQY, I0JX, WA1JMP, K0JN, W4VQ, KF2O, WB8CNL, W1JR, F9RM, W5UR, CT1FL, WA4QMQ, W8ILC, VE7DP, K9BG, W1CU, G4BUE, N3ED, LU3YL/W4, NN4Q, KA3A, VE7WJ, VE7IG, N2AC, W9NUF, N4NX, SM0DJZ, DK5AD, WD9IIC, W3ARK, LA7JO, VK4SS, I8YRK, SM0AJU, N5TV, W6OUL, WB8ZRL, WA8YTM, SM6DHU, N4KE, I2UIY, I4EAT, VK9NS, DE0DXM, DK4SY, UR2QD, AB9O, FM5WD, I2DMK, SM6CST, VE1NG, I1JQJ, PY2DBU, H8LC, KA5W, K3UA, HA8UB, HA8XX, K7LJ, SM3EVR, K2SHZ, UP1BZZ, EA7OH, K2POA, N6JV, W2HG, ONL-4003, W5AWT, KB0G, HB9CSA, F6BVB, YU7SF, DF1SD, K7CU, I1POR, K9LJN, YB0TK, K9QFR, 9A2NA, W4UW, NX0I, WB4RUA, I6DQE, I1EEW, I8RFD, I3CRW, VE3MS, NE4F, KC8PG, F1HWB, ZP5JCY, KA5RNH, IV3PVD, CT1YH, ZS6EZ, KC7EM, YU1AB, IK2ILH, DE0DAQ, I1WXY, LU1DOW, N1IR, IK4GME, VE9RJ, WX3N, HB9AUT, KC6X, N6IBF, W5ODD, I0RIZ, I2MQP, F6HMJ, HB9DDZ, W0ULU, K9XR, JA0SU, I5ZJK, I2EOW, IK2MRZ, KS4S, KA1CLV, WZ1R, CT4UW, K0IFL, WT3W, IN3NJB, S50A, IK1GPG, AA6WJ, W3AP, OE1EMN, W9IL, I7PXV, S53EO, DF7GK, S57J, EA5BM,

DL1EY, DJ1YH, KU0A, VE2UW, 9A9R, UA0FZ, DJ3JSW, OE6CLE, HB9BIN, N1KC, SM5DAC, RW9SG, WA3GNW, S51U, W4MS, I2EAY, RA0FU, CT4NH, EA7TV, W9IAL, LY3BA, K1NU, W1TE, UA3AP, EA5AT, OK1DWC, KX1A, IZ5BAM, K4LQ, K0KG, DL6ATM, VE9FX, DL2CHN, W2OO, AI6Z, RU3DX, WB9IHH, CT1EEN, G4PWA, OK1FED, EU1TT, S53MJ, DL2KQ, RA1AOB, KT2C.

160 Meter Endorsements: N4MM, W4CRW, K5UR, VE3XN, DL3RK, OK1MP, N4NO, W4BQY, W4VQ, KF2O, WB8CNL, W1JR, W5UR, W8ILC, K9BG, W1CU, G4BUE, LU3YL/W4, NN4Q, VE7WJ, VE7IG, W9NUF, N4NX, SM0DJZ, DK5AD, W3ARK, LA7JO, SM0AJU, N5TV, W6OUL, N4KE, I2UIY, I4EAT, VK9NS, DE0DXM, UR2QD, AB9O, FM5WD, SM6CST, I1JQJ, PY2DBU, H8LC, KA5W, K3UA, K7LJ, SM3EVR, UP1BZZ, K2POF, IT9TQH, N6JV, ONL-4003, W5AWT, KB0G, F6BVB, YU7SF, DF1SD, K7CU, I1POR, YB0TK, K9QFR, W4UW, NX0I, WB4RUA, I1EEW, ZP5JCY, KA5RNH, IV3PVD, CT1YH, ZS6EZ, YU1AB, IK4GME, WX3N, W5ODD, I0RIZ, I2MQP, F6HMJ, HB9DDZ, K9XR, JA0SU, I5ZJK, I2EOW, KS4S, KA1CLV, K0IFL, WT3W, IN3NJB, S50A, IK1GPG, AA6WJ, W3AP, S53EO, S57J, DL1EY, DJ1YH, KU0A, VR2UW, UA0FZ, DJ3JSW, OE6CLD, HB9BIN, N1KC, SM5DAC, S51U, RA0FU, CT4NH, EA7TV, LY3BA, K1NU, W1TE, UA3AP, OK1DWC, KX1A, IZ5BAM, DL6ATM, W2OO, RU3DX, WB9IHH, G4PWA, OK1FED, EU1TT, S53MJ, DL2KQ, RA1AOB.

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 593, Clovis, NM 88101 USA. Note: WPX will not accept prefixes/calls which have been confirmed by computer-generated electronic means.

**Please Note: As of February 2004, the price of the 160 meter bar for the Award of Excellence is now \$6.50.*

and as I found out, it can be very profitable in picking up a lot of credits.

DX Happenings

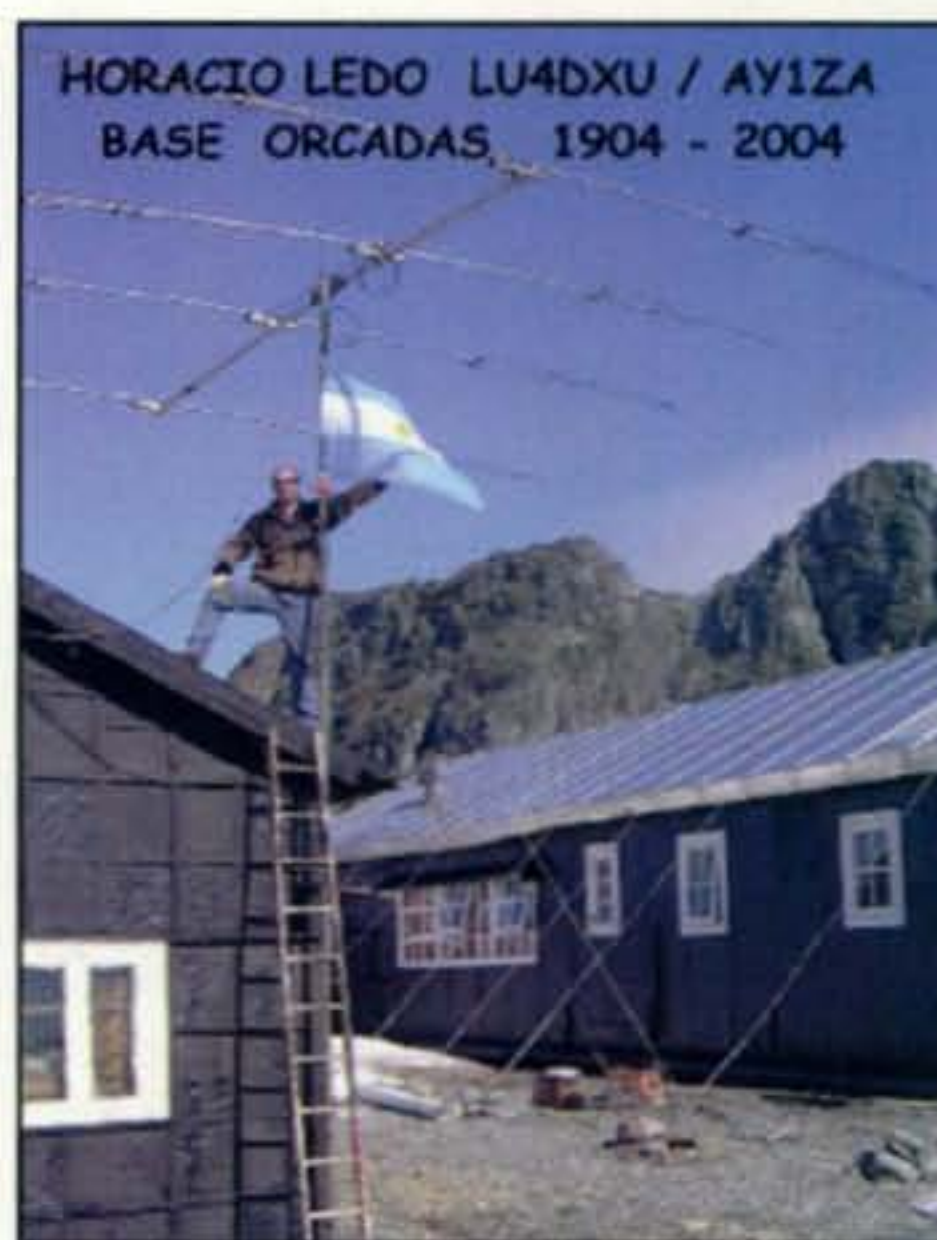
The K7C DXpedition should now be history, and I'm looking forward to reading the story from the team who put Kure on the air for three weeks. After spending nine days on board a ship—each way—I'm sure they were glad to reach their destination, and then especially the return to Hawaii and home. It should be interesting to observe the DXA web interface and see just how it turns out.

Hopefully, the French team will be able to reach Glorioso by the time you see this. They had to postpone the trip once, but expected to be able to make it happen in the October/November time frame.

The DX Conventions in Chicago and SEDCO in Pigeon Forge, Tennessee are expected to draw large crowds as of this writing, and I'll be able to report on both of those in the next column.

Charles, S9SS, received official permission to operate in the 7.1- to 7.2-MHz segment of 40 meters in early September. He had to put his antenna, a half-square hanging from tall trees, back up on a reasonably calm day with his slingshot. His first night on 7185 and 7160 he generated huge pile-ups and stayed at

it for a long time in spite of a local high noise level and the typical QRM from those calling him. *Way to go, Charles!* You made a lot of folks happy with that QSO. Oh yes, Charles and his wife Lesley, S9YL, will be at the SEDCO con-



Horacio (Henry), LU4DXU/AY1ZA, shown here at Argentina's South Orkney Antarctic Base. The base celebrated its 100th anniversary while he was there last year. (Photo courtesy of Rick, NE8Z)

vention on October 1st, so I'll have more on them in the next column as well.

Uncle DX Returns

Uncle DX has put his pen (keyboard) to work again, and like the old E. F. Hutton TV commercials, when he speaks, I listen. With all the recent talk about dropping the CW requirement for obtaining a license, this piece is particularly significant. Here's Uncle DX on CW:

CW or No CW By Uncle DX

Some of us equate the question of a no code requirement in U.S. licensing policy with "CW or no CW." Many of us who are passionate about CW are up tight, recalling how we studied and were tested on CW in a past life. After we calm down (some are working on this phase!), we may take a *savoir faire* attitude, or, as a friend used to say, a "cavalier" approach, to the subject. Another thought may be that we can't do anything about it and that's life.

Perhaps there is more, though. I'm not going to try to change anyone's mind on this. I'm just laying out what Uncle DX now feels about this plank on our back porch.

I want to say first exactly where I put CW operators who enjoy CW and are proud of their ability to use the mode and enjoy it, and even call it music. *We are proud* of it, period. We know it's a better way to move intel-

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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 335 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

K2TQC.....334	N4JF.....334	YU1HA.....333	N0FW.....332	4N7ZZ.....330	K8PV.....327	N5ZM.....323	G3KMQ.....317	WA4DOU.....289
K2FL.....334	K4MQG.....334	IT9QDS.....333	N4AH.....332	W6DN.....330	W4QB.....327	KE3A.....323	YT1AT.....317	G3DPX.....284
K9BWQ.....334	EA2IA.....334	K4CEB.....333	HB9DDZ.....332	YU1TR.....330	DL8CM.....327	N7WO.....323	K8JJC.....315	EA3BHK.....282
K9MM.....334	PA5PQ.....334	K4IQJ.....333	WB4UBD.....332	W4UW.....330	SM5HV/HK7.....327	KE5PO.....322	W6YQ.....314	YC2OK.....282
W7OM.....334	K3UA.....334	W0HG.....333	K6LEB.....331	N6AW.....330	IT9TOH.....326	HA5DA.....321	CT1YH.....313	DJ1YH.....281
K2JLA.....334	DL3DXX.....334	N5FG.....333	VE3XN.....331	K4JLD.....330	I2EOW.....326	IK0TUG.....321	N1HN.....313	XE1MD.....280
N7FU.....334	K2ENT.....334	K4CN.....333	W1WAI.....331	G3KMQ.....329	W7IIT.....326	VE7DX.....320	UA9SG.....310	WD9DZV.....277
K2OWE.....334	OK1MP.....334	W4MPY.....333	K2JF.....331	KZ4V.....329	K6CU.....326	IK0ADY.....320	EA3ALV.....306	W2JLK.....277
N4MM.....334	NC9T.....334	PY2YP.....333	K3JGJ.....331	N5HB.....329	W4LI.....325	WG5G/QRPP.....320	YU7FW.....306	I3ZSX.....276
F3TH.....334	W2VJN.....334	W8XD.....333	WA8DXA.....331	W9IL.....329	9A2AA.....325	W3II.....321	LU3DSI.....302	
F3AT.....334	G4BWP.....334	KA7T.....332	K9IW.....331	K1HDO.....329	N4OT.....325	F5OIU.....320	N1KC.....302	
DJ2PJ.....334	N7RO.....334	K8LJG.....332	K7LAY.....331	K7JS.....329	K1FK.....324	KA3S.....320	RA1AOB.....300	
WA4IUM.....334	W1JR.....334	YU1AB.....332	W2UE.....330	K5UO.....329	YV5ANT.....324	F6HMJ.....319	VE7KDU.....300	
W4OEL.....334	WB5MTV.....333	K5RT.....332	I4LCK.....330	W6OUL.....329	9A2AJ.....323	OZ5UR.....319	WG7A.....295	
W2FXA.....334	W7CNL.....333	YU1AB.....332	VE7CNE.....330	K9OW.....328	W6SR.....323	PY4WS.....319	K4IE.....291	

SSB

K6YRA.....335	K5TVC.....335	K2FL.....334	CT3BM.....334	DL9OH.....331	EA1JG.....329	PY2DBU.....325	YV4VN.....317	N5WYR.....300
K2TQC.....335	N5FG.....335	W0YDB.....334	N6AW.....334	YV1JV.....331	KE4VU.....328	IK0IOL.....325	K6RO.....316	K4IE.....300
W6EUF.....335	DJ9ZB.....335	W4UW.....334	WS9V.....334	WA4WTG.....331	KF8UN.....328	YT1AT.....325	N8SHZ.....316	W0ROB.....296
K2JLA.....335	PY4OY.....335	K9BWQ.....334	4N7ZZ.....333	W8KS.....331	W0ULU.....328	K7HG.....324	WZ3E.....314	WA1ECF.....295
K4MQG.....335	VE3XN.....335	W4NKI.....334	KE5PO.....333	YV5IVB.....331	K1EY.....328	ZL1HY.....324	I26CST.....314	KW1DX.....295
IK1GPG.....335	4Z4DX.....335	WB4UBD.....334	VE1YX.....333	KX5V.....331	KZ4V.....328	K4JDJ.....323	W7GAX.....312	W4EJG.....295
K5OVC.....335	N7RO.....335	W4UNP.....334	I4LCK.....333	K3JGJ.....331	XE1D.....328	W6WI.....323	CT1YH.....311	K7ZM.....292
N0FW.....335	I0ZV.....335	W8AXI.....334	W2JZK.....333	N5ORT.....331	W9IL.....328	EA3CYM.....323	YV5NWG.....311	OA4EI.....292
K9MM.....335	EA2IA.....335	VE2GHZ.....334	K8LJG.....333	PT2TF.....331	K3LC.....328	K6CF.....322	LU3HBO.....310	K7ZM.....292
W6BCQ.....335	IN3DEI.....335	OE2EGL.....334	VE4ACY.....333	CT1AHU.....331	K4DXA.....328	LU7HJM.....322	WA5MLT.....310	K1RB.....292
XE1AE.....335	EA4DO.....335	WA4IUM.....334	K0KG.....333	EA3JL.....331	LU5DV.....328	K5NP.....322	XE2NLD.....310	K0OZ.....291
W7OM.....335	PA5PQ.....335	K5RT.....334	VE2WY.....333	K1HDO.....331	I1EEW.....327	WA4ZZ.....322	VE7SMP.....310	W9ACE.....291
KZ2P.....335	K9OW.....335	W2FXA.....334	WB3DNA.....333	K5UO.....331	SV1ADG.....327	WN9NB.....322	RW9SG.....307	I3ZSX.....290
IK8CNT.....335	W6DPD.....335	W6SHY.....334	K9PP.....333	W6DN.....330	DL8CM.....327	WW1N.....322	W9IL.....306	N2LM.....286
VK4LC.....335	XE1VIC.....335	W5RUK.....334	W2CC.....333	YV1CLM.....330	F9RM.....327	W6OUL.....322	KK4TR.....306	KK0DX.....285
OE7SEL.....335	K2ENT.....335	K4CN.....334	DL3DXX.....333	AB4IQ.....330	XE1MD.....327	KD5ZD.....322	XE1MDX.....305	VE7HAM.....285
VE3MR.....335	OK1MP.....335	EA3KB.....334	EA3BMT.....333	AE5DX.....330	I0SGF.....327	XE1CI.....321	EA5OL.....305	N8LIQ.....284
VE3MRS.....335	IZ6GPZ.....335	K3UA.....334	EA3EQT.....333	KB2MY.....330	IT9TGO.....327	CT1ESO.....321	W6AQC.....305	W0IKD.....283
K4MZU.....335	K1UO.....335	K4JLD.....334	YV1KZ.....333	K3PT.....330	IT9TOH.....327	EA8TE.....321	K3BYV.....303	K7SAM.....283
OZ5EV.....335	I8KCI.....335	N5ZM.....334	KE3A.....333	ZL1BOQ.....330	DK5WQ.....327	K0FP.....320	YC2OK.....303	KB0RNC.....282
N7BK.....335	I8LEL.....335	PY2YP.....334	YV1AJ.....332	N7WR.....330	KE5K.....327	EA7TV.....320	JR4NUN.....303	IK8TMI.....281
K7LAY.....335	DU9RG.....335	AA4S.....334	KS0Z.....332	WS9V.....329	CP2DL.....327	SV1RK.....320	VE7KDU.....302	F5JSK.....281
ZL3NS.....335	DU1KT.....335	CT3DL.....334	LU4DXU.....332	K2JF.....329	N15D.....327	N1KC.....320	W5GZI.....302	KA5OER.....280
N4MM.....335	N4JF.....335	NC9T.....334	VE4ROY.....332	ZL1AGO.....329	K7TCL.....326	W5GZI.....320	W4PGC.....302	F5INJ.....279
OZ3SK.....335	CT1EEB.....335	W9SS.....334	W7FP.....332	W9OKL.....329	W9HRO.....326	SV3AQR.....320	YV2FEQ.....301	WD9DZV.....278
K7JS.....335	W4WX.....335	VE7WJ.....334	K9HQM.....332	I2EOW.....329	DL6KG.....326	KD2GC.....320	AC6WO.....301	W5GT.....276
XE1L.....335	W1JR.....335	VE2PJ.....334	W2FKF.....332	VE7DX.....329	HB9DDZ.....326	KE4SCY.....319	4X6DK.....301	4Z5FLM.....275
YU1AB.....335	N4CH.....335	W3AZD.....334	CT1EEN.....332	W2FGY.....329	WR5Y.....325	CE1YI.....318	SV2CWY.....300	K9DXR.....275
OE3WWB.....335	WD0BNC.....334	Y27AA.....334	K9IW.....332	CT1CFH.....329	KC4MJ.....325	W5OXA.....317	4X6DK.....300	

RTTY

K2ENT.....333	K3UA.....328	N5FG.....325	EA5FKI.....320	OK1MP.....312	KE5PO.....297	I2EOW.....291
WB4UBD.....332	N4H.....325	G4BWP.....325	W2JGR.....316	PA5PQ.....311	W4EEU.....297	YC2OK.....280



A beautiful picture of birds flying across the setting sun on Christmas Island (VK9). Charlie, W0YG's next trip to Christmas & Cocos Keeling will be in late October to early November. He especially likes the low bands and has spent a lot of time (and money) putting together better than usual antennas for those bands. (Photo courtesy of Charlie, W0YG)

ligence from point A to point B. Many of us feel receivers are better at hearing CW than SSB, and for the hearing challenged, like Uncle DX, CW offers a big advantage.

For many "CW types" this was the mode of their first QSOs, and they recall the wonderful feeling of the dits and dahs. Perhaps it was just exhilarating knowing you could do something that Mom and Dad couldn't. Remember? Laugh if you will, but I for one felt this in a kid sort of way and will bet a pension check that some of you felt it, too. Our "powerful" stations could work DX, be it KP4 or a VE, with those 6L6s/807s while watching VR-105s flashing, making us feel we controlled the media of the free world when we couldn't spell "media."

Another thing, and this is subjective I admit, but work with me here, please. I have such a high reverence for good CW ops that I think we can rise above the fray with all this business of changing the code requirements. We are above letting it alter our pleasure in the hobby and CW. We are and have been on the cutting edge of moving traffic, saving lives, working the weak ones, and being good Elmers, teaching good practices and respect for other operators and showing we are proud of the mode. Therefore, we can and must be above the hoopla and hype we are seeing these days.

So what if they change the requirement? The hobby has moved away from CW for the newcomers, no question. Like it or not, it's happened, which *doesn't* mean we CW types are wrong, behind the times, or has-beens. We are smart enough to recognize that the numbers are in SSB and the digital modes. This is fine with Uncle DX, and I venture into that world on occasion, too, as do many of you.

QSL Information

IA5/IQ5KG/P via IZ5BTC
 IH9/OL5Y via OK1MG
 II4FCF via IZ4BZB
 II7JP via IQ7MU
 II7PHG via IK2UVR
 II8MM via IZ8FBS
 II9AF via IT9AF
 IO9AF via IT9AF
 IQ0MA via I0NZK
 IQ4FD via I4GSS
 IQ8PQ via I8TWW
 IQ9AF via IT9AF
 IR0ANT via IZ8CCW
 IR1ANT via I1HYW
 IR2K via IK2HKT
 IR4T via IK4IEE
 IR9AF via IT9AF
 IU1A via IK1SPR
 IU7SCT via IK7BPV
 IU9AF via IT9AF
 J3/K5AND via ON4IQ
 J42LH via SV2AYT
 J45LEO via IK1PMR
 J45MR via IK1PMR
 J48A via SV8CYR
 J62HB via 8R1WD
 J68R via K4RG
 J6J via N1WON
 JA5BEX/5 via JA5BEX
 JA6PNR/6 via JA6PNR
 JD1BLW via JH1WCD
 JD1BLZ via JR1AGC
 JE4YAR/4 via JE4YAR

JE5HXL/5 via JE5HXL
 JJ4VQU/4 via JJ4VQU
 JN2TZB/2 via JN2TZB
 JN4BBM/4 via JN4BBM
 JO7KJC via W9NZ
 JQ6KJA/6 via JQ6KJA
 JR5DPB/5 via JR5DPB
 JW9TKA via LA9TKA
 K6O via KM6HB
 KG4WW via KX4WW
 KH0/KH2K via JA1RJU
 KP2/N3DVF via K3CT
 KP4WN via AH6WX
 LA/DL2VFR via DL2VFR
 LA5M via LA1YKA
 LO7H via LU7HN
 LP0H via LU7HN
 LT2H via LU7HN
 LX/ON4BAG via ON4BAG
 LX/ON4LO via ON4LO
 LX/ON6QX via ON6QX
 LX/ON6UM via ON6UM
 LX6T via LX1KC
 LY2CY/V25 via LY2CY
 LY4A via LY2FY
 LY7A via LY2ZO
 LZ8IARU via LZ1BJ
 LZ9W via LZ1PM
 MJ/DH1NAX via DH1NAX
 MS0IRC/P via G0HXN
 MS0IRC/P via G0HXN
 MU/DF5AU via DF5AU
 MU5RIC/P via M5AAV

N1FOC via G0TPO
 N2MO via N2CKH
 N6V via W7TSQ
 OD5/N4ISV via N4JR
 OD5RY via N4JR
 OD5UH via EA7FTR
 OD5WPX via I1HJT
 OE4A via OE1EMS
 OE50AJT via OE7AJT
 OE50VIE via OE8VIE
 OH0Z via LY2TA
 OH1F via OH1AF
 OJ0J via OH0RJ
 ON4CAT via KT6YL
 ON4TMB via F4DCG
 ON9CPI via N4JR
 OO175B via ON4UN
 OO7BS via ON7BS
 OR0OST via ON4RU
 OY/OK2SG via OK2SG
 OY1OF via ON5UR
 OZ/DB3LSP via DB3LSP
 OZ/DL1AZZ via DL1AZZ
 OZ/DL3ARK via DL3ARK
 OZ1RDP via DL9BCP
 OZ200HCA via OZ3FYN
 OZ5HCA via OZ3FYN

(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>.)

So what if the powers want to be governed by the masses! Another way of looking at it is to ask, "Does the FCC require a test for the digital modes in order to qualify for a ticket?" Typing of some kind, be it hunting and pecking or touch-typing, is necessary to "work" that mode. It's nice to be able to spell, too! Has the FCC ever required someone to pass a speech test, whatever that would be, in order to get a ticket? No! Frankly, I'd flunk any attempt to test me on command of English or spelling, let alone my ability to do a moon-bounce test. The point is CW is no different.

Some of us say CW is a filter, allowing only those dedicated enough to become proficient to enter the hobby. I've said this in the past, but I was wrong. Why would we even consider keeping anyone out of the hobby? Knowing true CW enthusiasts the way I believe I do is to say we help, not hold back.

Therefore, in the future let's get on board, rise above, and set an example of good operating while encouraging others to join in the fun of CW—unite instead of divide. In my judgment, CW will be around for a long, long time, and Uncle DX believes we will have a band on which to enjoy it.

Uncle DX will spend his time left telling others the benefits of CW, the honest pleasure of CW, the music, the advantages of CW, and the class of operators who enjoy this wonderful mode and help potential CW operators into this world understood by a few, and as the Marine Corps says... be "THE PROUD."

We CW operators are leaders, and we must act like it. CU on the low end of the bands. And CW QRP is! —73, Uncle DX

I think most of you know I prefer the "finger talking" mode myself. Uncle DX has said it so well that he's left me speechless. I can't think of a thing to add to what he said.

Thus, until next time, enjoy the chase and Have Fun! 73, Carl, N4AA

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The Class D Amplifier

This month we would like to revisit a topic that we have covered in the past—the Class D amplifier. There has been significant progress in this area over the past year. We feel that it is important for you to be familiar with this novel approach toward producing significant audio power, as it no doubt will be used in more and more applications as time goes on.

What brought all of this to mind at this point in time was an advertisement for a simple, but amazing 20-watt audio-amplifier chip that we recently came across. You might be tempted to say, "What's so unique about that?" Read on. The entire amplifier chip we are talking about is packaged in a tiny SOIC8 package that measures only 0.15" × 0.19" × 0.06"! This is so small that you almost can't see it, and what's more, no heat sink is required at all, even when delivering the full 20 watts of output power! Where did the heat go?

The MP7720 series from Monolithic Power Systems Inc. provides 20 watts into 4 ohms (7 watts into 8 ohms) with less than 0.04% THD (at 1 watt) and is more than 93% efficient. To achieve such performance in a package that is smaller than a common plastic transistor requires that the amplifier operate in Class D, as we have already mentioned. This is a method that essentially converts analog audio into a pulse-width modulated signal

*c/o CQ magazine

and then drives a power output stage with the pulses. Since the output transistors in a Class D amplifier are either fully cutoff (no power dissipation during the low-voltage portion of the pulse) or fully saturated during the high portion (in this case there is only a minimal voltage drop, resulting in minimal power dissipation), the chip runs cool. The basic pulse rate of the MP7720 is almost 1 MHz, way beyond the upper frequency of the modulating audio, so any switching noise is at least 90 dB lower than the maximum audio output level. External filters then remove any residual switching transients as well as smooth the audio. Needless to say, a 20-watt 93%-efficient amplifier still needs at least a 21.5-watt power source (but no more).

If you think this is amazing, there are other Class D amplifiers in the series in slightly larger packages with available output power ratings of up to 70 watts. If you look at the MPS website, I think you too will be impressed.

For those of you who are not familiar with Class D operation, fig. 1 shows, in simplified block-diagram form, what happens in the chip, while fig. 2 shows the resulting wave shapes. The analog input signal is first preamplified as needed, and then applied to a pulse-width modulator. This stage produces a pulse train at a fixed frequency (1 MHz for the above chips) but with a duty cycle that varies in step with the audio. Such a signal has an average value that is equal to the audio, but a peak

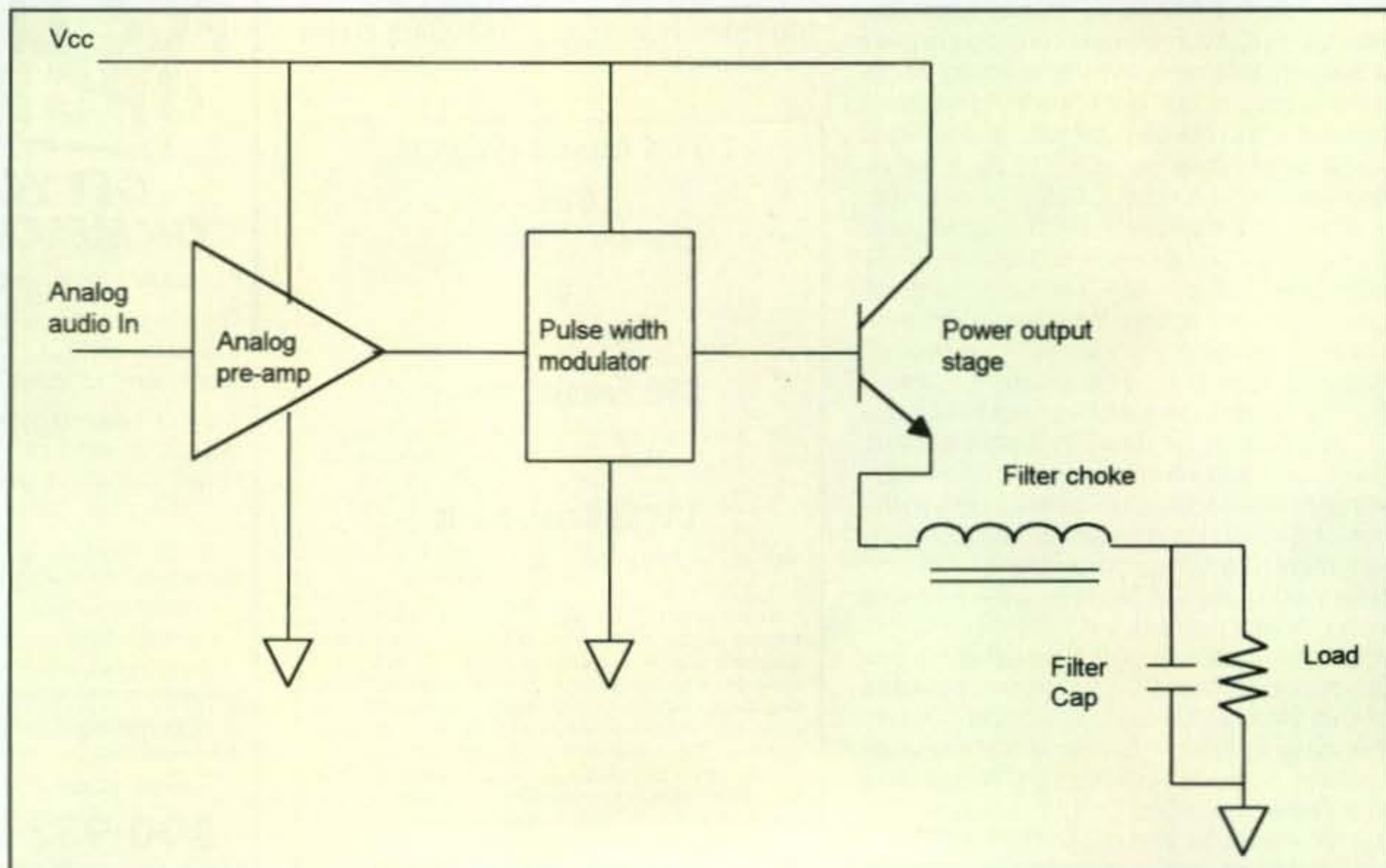


Fig. 1—Simplified block diagram of a Class D amplifier.

value that is either fully on or completely cut off. Amplifying such a signal simply requires a power stage that can switch fast enough to pass the current peaks through the audio-output load impedance. The MP7720 actually passes current pulses as high as 5 amperes in operation. Since the internal voltage drop in the output switching stage (at saturation) is only a couple of tenths of a volt, however, the power dissipation is minimal. A choke and capacitor low-pass filter at the output then serve to clean up the final signal by removing the remnants of the switching frequency.

The actual Class D chips are a bit more complex, but the explanation above should at least give you the idea of what is going on. Fig. 3 shows the schematic of the recommended circuit for the MP7720. Pins 1 and 2 are a differential input with pin 1 is biased to half the supply by the two 100K resistors in the same manner that you would bias an op-amp for single-supply operation. Pin 2 is the actual analog audio input, and feedback is taken from pin 7, the switched output signal. As in the case of a regular op-amp, voltage gain is equal to the feedback resistor divided by the input resistor (82K/10K), or 8.2. The actual output power switching is done by a pair of MOSFETs within the IC. The 10- μ H choke and 0.47- μ F capacitor form the low-pass filter, and the 1000- μ F capacitor assures that only AC passes through the speaker. The reason for such a large capacitor, by the way, is to assure good low-frequency response when driving a 4-ohm speaker.

For proper operation, a regulated power supply that can handle high-current pulses should be used with the amplifier. The higher the voltage the greater will be the output power, but the maximum 24-volt rating should not be exceeded or damage may occur. Circuit layout and several components are critical due to the large circulating currents, so be sure to download the data sheet as well as application note (AN02) for suggestions and guidance in this area. In addition, since the amplifier switches at fairly high frequencies, there is a possibility of either RF radiation from the circuit or susceptibility of interference from RF pickup from outside sources. A shielded enclosure will do much to reduce this, as will good RF wiring practices.

Other amplifiers in the series are the MP7731 for 30 watts output, the MP7782 for 50 watts out, and the MP8040 for a whopping 70 watts out!

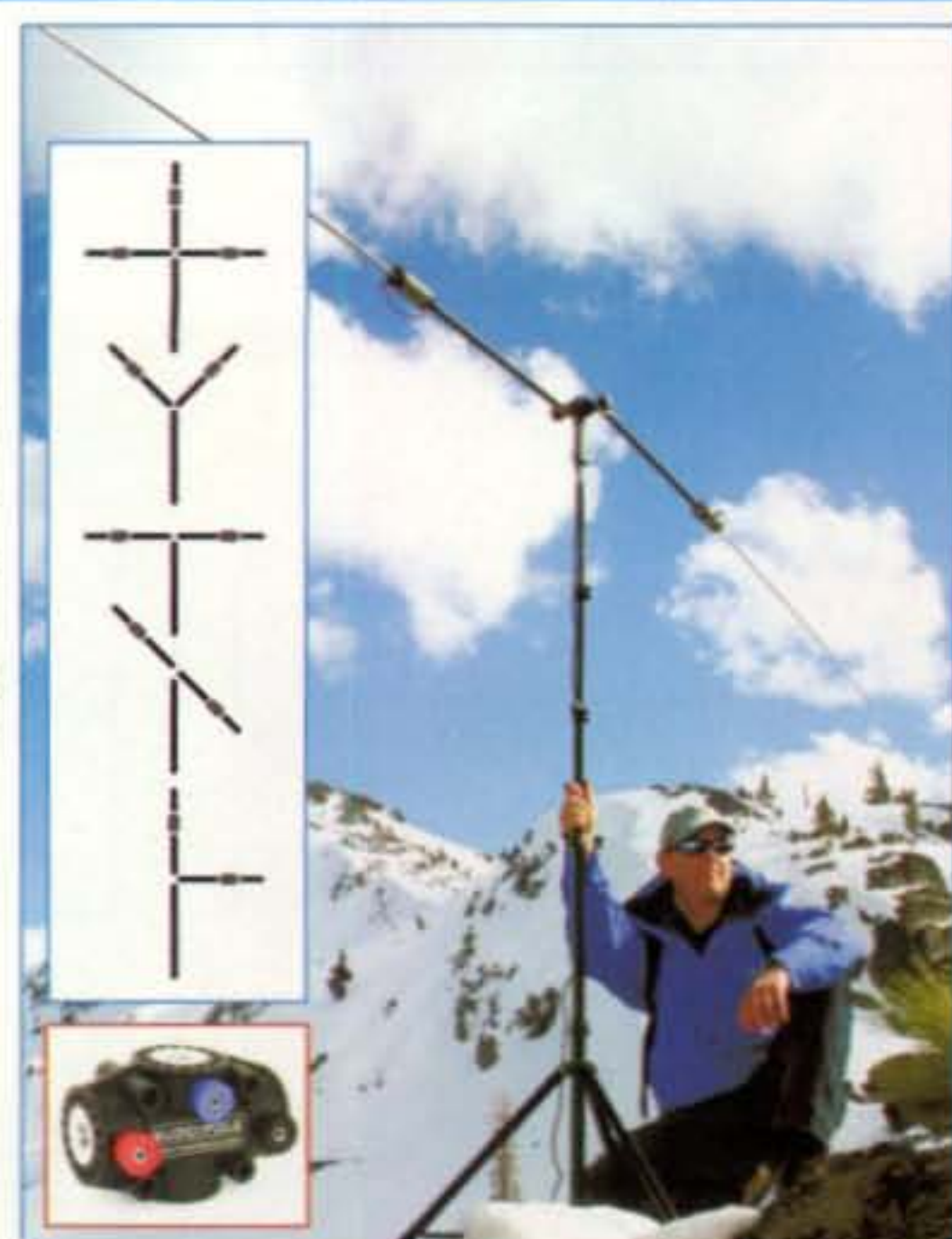


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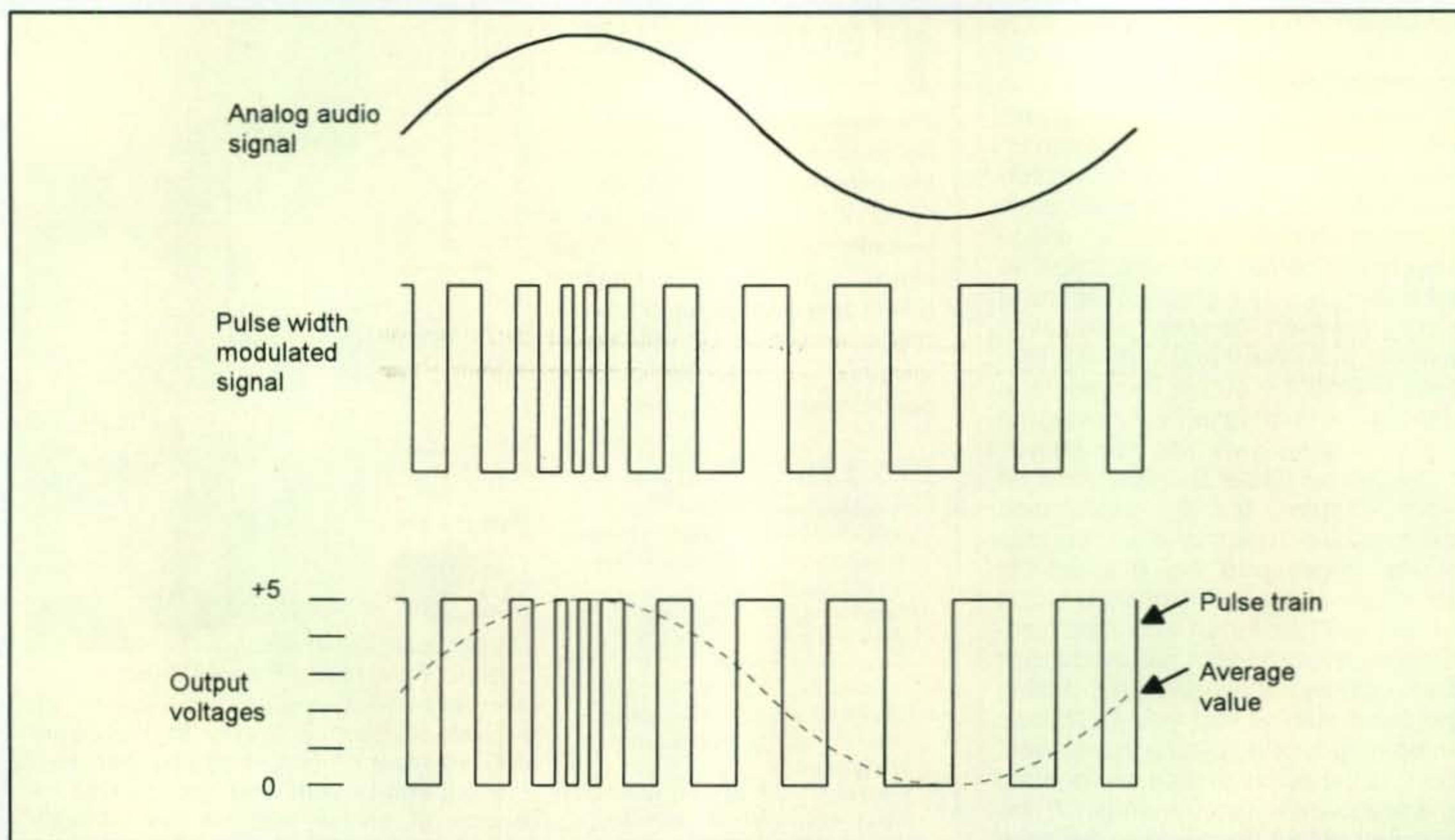


Fig. 2— Approximate wave shapes for Class D operation.

Detailed information on all of these can be found on the company website at <www.monolithic.com>. With distortion figures as low as 0.1% and low heat dis-

sipation compared to Class AB and Class B conventional circuits, there is no doubt that Class D is a real option for producing tiny high-power audio

amplifiers. Now someone should experiment with RF power stages using this technique!

73, Irwin, WA2NDM

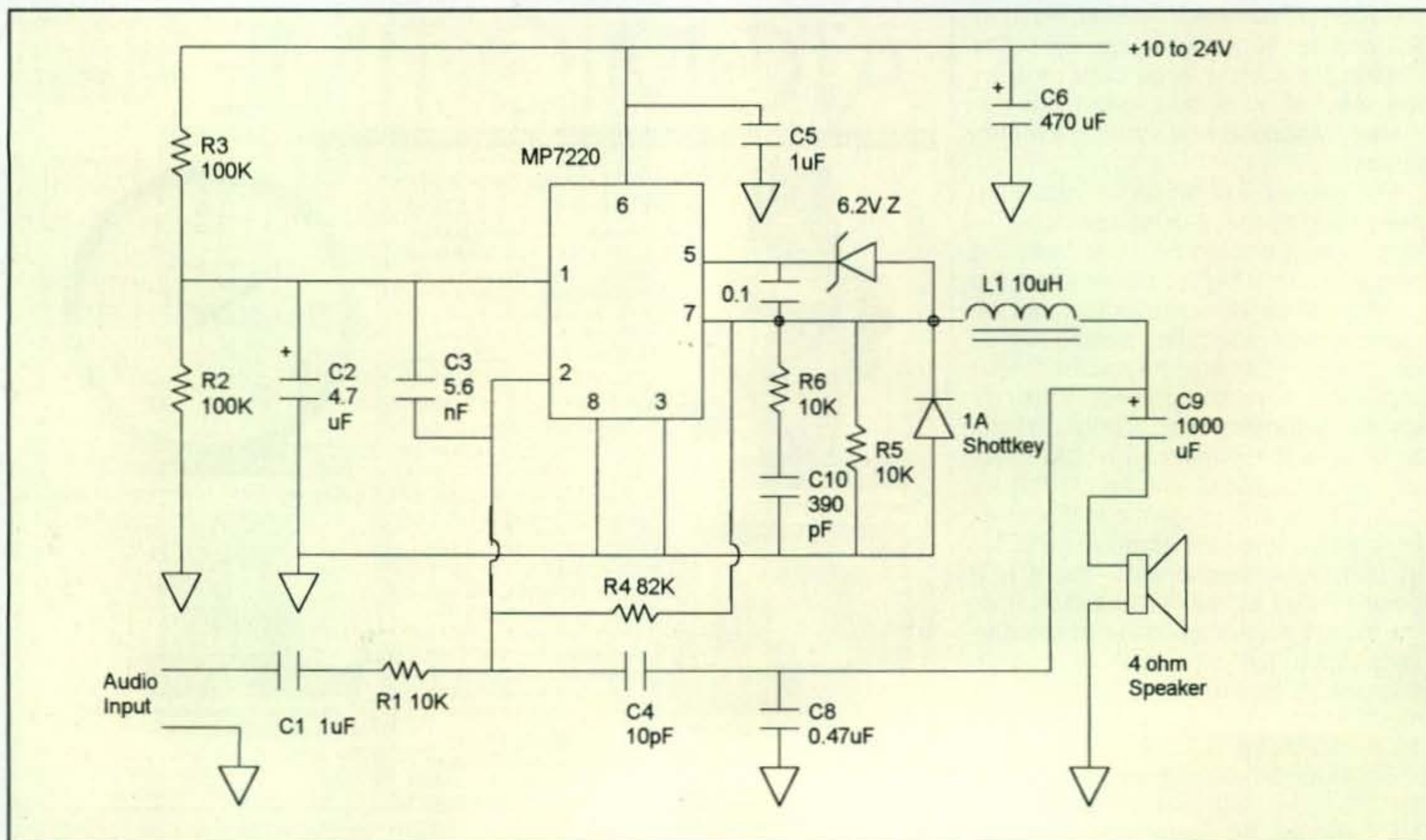


Fig. 3— Schematic of a 20-watt Class D amplifier.

60 Great Things About Ham Radio



In celebration of CQ's 60th anniversary in 2005, we've come up with 60 great things about ham radio which we'll bring you each month, five at a time. We're sure you'll have more great things that we haven't thought of, so when we're all done, we'd love to compare our list with yours.

—W2VU

This month, we'll look at the social and technical sides of ham radio...

51. Hamfests – Sure, we hams love to talk to one another on the air, but we like to get together in person just as much. And when you throw in some bargains, who can resist? Hamfests are part social gathering, part flea market for used "stuff," and, particularly for the bigger shows, part trade show for learning about and buying all sorts of new gear.

52. Dayton – The biggest of the big hamfests, the Dayton Hamvention™ is something every ham should try to attend at least once (warning: it's habit-forming). Thousands of hams from all over the world flock to southwestern Ohio each spring to see what's new, look for bargains in the massive flea market (if you can't find it at Dayton, you can't find it), and renew old friendships and start new ones.

53. Field Day – This is the ARRL's annual emergency communications exercise, but it's really so much more—part contest, part campout, part barbeque, part family weekend, and oh yes, part emergency-preparedness exercise. Hams who participate in just one competitive event each year generally take part in Field Day.

54. Building your own gear – This is a tradition that has been part of ham radio since its beginnings. Back then, of course, building your own gear was a necessity. Today it's a challenge and a rare opportunity in our prefabricated, use-it-up-and-throw-it-out world to actually build something useful with your own two hands (and assorted tools).

55. Using gear you've built yourself – There is no way to describe in words the feeling that you get the first time you turn on a piece of gear that you've built yourself ... and it works! You can talk to people with it! It's pure magic. However, as we said, we really can't describe it in words. You'll just have to experience it for yourself!

We'll be back next month with our final installment...

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Know Code or No Code? One Reporter's Opinion

A long time ago there was a famous Los Angeles area TV newsman named George Putnam. George did an editorial segment each night called "One Reporter's Opinion." Anyway, I am using his catch phrase for this month's column. The FCC is proposing to eliminate Morse code testing for any class of U.S. amateur license. This is a very major change for everyone involved in ham radio, whether or not you use the code. Code versus no-code is a controversial topic, and there are many good arguments both for keeping the code as a requirement and for getting rid of it.

I would like to propose a "politically correct" position on this code versus no-code thing: I believe all hams should possess the *knowledge* of Morse code, but beyond the knowledge that it exists. In other words, one should at least be able to *recognize* one's own callsign in Morse code and should be able to "read" the CW identifier on the repeater. Quite frankly, I find it embarrassing that some hams I know cannot recognize their own callsigns in code. Did you know there are several questions about the Morse code in the "Trivial Pursuit" game? Have you seen the ICOM advertisement for one of its HF radios with all the "text" presented in Morse code? Shouldn't we, as licensed radio communicators, have the knowledge to understand this "secret code"?

Some folks say that the code is dead and is an obsolete mode of communication. But is it really? If Morse code, or the CW¹ mode, is obsolete, then what replaced it? What are the newer modes available from the front panel of your radio? I do not have any rigs that have any other modes built in. Speaking of radio features, the Yaesu FT-857 and FT-857D have a menu-selectable CW Training feature built in. What a very nice feature to include!

Globally, the CW mode seems to have as much or maybe even more interest as in the past. For example, over 4040 logs for the 2004 CQ World-Wide DX CW Contest were received, the highest number of CW contest logs ever submitted.

When I entered the ARRL 10 GHz and Up Contest this past August, I modified my microwave setup the night before to enable the CW mode in my rig: I added a simple microswitch in the key line (see photo A). Previously, it was a "voice-only capable" machine.

To be honest, I did not know if the newly installed CW capability would be used in the contest, and I had doubts about my ability to use the code in this contest, since it had been over 20 years since I had even touched a CW key. However, as I roved around the flatlands of central California amongst the almond trees, cornfields, vineyards, and alfal-

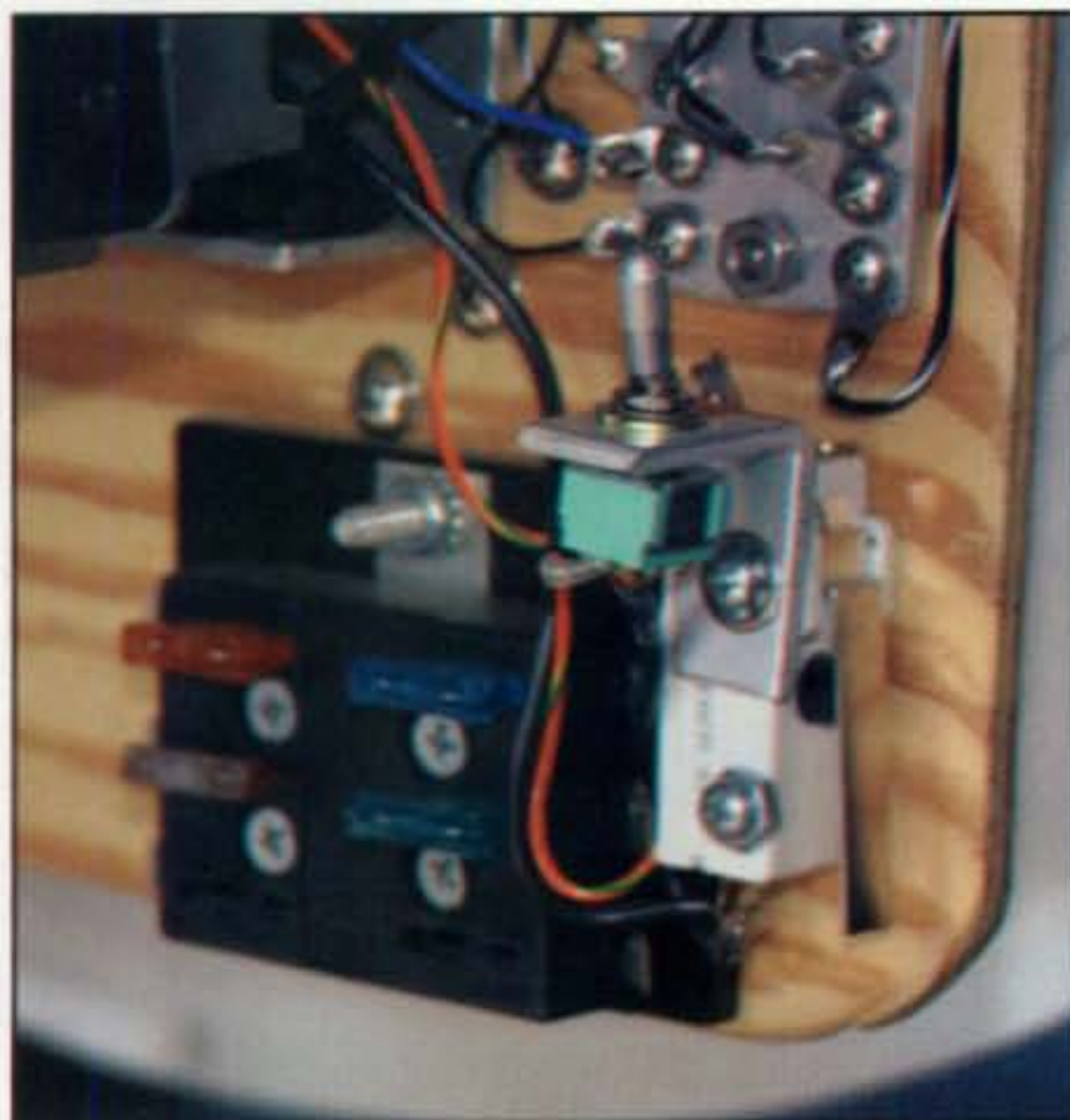


Photo A—A sturdy microswitch mounted near the spare fuse box enabled CW capability in the 10-GHz rig "Ms. June" just after midnight before the beginning of a contest. Several contacts were too weak to copy on phone (SSB), but when we switched to CW, contact was established. Amazingly, I am still able to copy and send the code after more than 20 years of not "doing" CW.

fa fields with my contest partner Chip Angle, N6CA, we made many contacts in several directions, from as little as 17 km (10.6 miles) to as much as 1033 km (641.5 miles) or more away. Also, several contacts were made on CW, because phone contacts to some stations were impossible. Here is my point: I could work the farthest or the weakest signals using only CW. If I had not used CW mode to make contact with the half-dozen or so distant stations, my score would have been much smaller.

I am glad that my rig is capable of running CW mode, since Chip's rig is bigger and performs better than my rig (see photo B). If my rig did not have CW capability, and I did not have any code knowledge, I would only have been able to watch contacts being made, rather than putting contacts in my log.

The Case for the Code

Okay, so if you are thinking that you do not do any contesting on the microwave bands, and do not care about making contacts a few hundred miles away with mostly homebrew equipment, you probably do not need the code. Remember, though, that in order to increase distance, the other, non-CW modes of communication such as single sideband (SSB) were created based on the concept of using narrow bandwidths to extend communications range. For example, SSB was designed

*16428 Camino Canada Lane, Huntington Beach, CA 92649

e-mail: <kh6wz@cq-amateur-radio.com>



Photo B— Chip Angle's rig (on left) has much more receive and transmit capability than mine. Notice the difference in the size of the dish antennas. The CW mode increased the useful communications range over SSB.

to increase electrical efficiency and frequency bandwidth compared to amplitude modulation (AM). This may be an oversimplified generalization, but the main idea is that a decrease in bandwidth means more efficient communi-

cations "power." In other words, for any given amount of power, signals occupying a smaller amount of bandwidth are not only more efficient, but have the capability of traveling over greater distances.

Thus, if you are not satisfied with how far your contacts have been, try switching to CW and see what happens before you spend money on a bigger antenna, a higher tower, or a high-power amplifier.

Speaking of antennas, these days it is hard to install a large tower and antenna system due to all the property restrictions placed upon places to live. If you need to comply with these rules and must make compromises in your antenna system, moving your operations to CW may increase your radio enjoyment.

One ham radio specialization is QRP, or low-power operating. You will find that the most successful QRP operators have code knowledge as a major repertoire of their ham radio operating skill set.

How about making contacts with non-English-speaking radio operators? It is always a kick for hams to work other hams in other countries. After all, this is one of the greatest aspects of ham radio—breaking language, culture, and generation gaps and barriers. Using Morse code equalizes everyone to "dits" and "dahs."

Yes, "accents" do exist on CW, if one is using a "straight key" or a mechanical code key, like a "bug." A CW accent is called a "fist" or a "swing." You can easily tell if an operator is using a com-

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puter or an electronic keyer for sending his or her CW, since all the characters usually will be uniform and regular. On the other hand, a person sending the old-fashioned way (or, in the case of my CW on the microwave bands, using a strange way of keying) will have a distinct way of sending the individual dits and dahs that make up each letter. Take a look at the articles here in *CQ* by Dave Ingram, K4TWJ, on code keys for a look at typical as well as special keys for sending CW from the past and present.

How to Start

Okay, so now you are beginning to think you want to try your hand at CW. If you already know the Morse code because you had to learn it to pass the test like me, and it has been a long while since you even touched a key or paddle, relax. I think that knowledge of the code is just like riding a bicycle: You just never forget how to do it. The best way to get bet-

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References

The complete 30-page Notice of Proposed Rulemaking (NPRM) WT Docket 05-235 about the deletion of Morse code testing is available in Adobe Acrobat format at <http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-143A1.pdf>. The NPRM may also be downloaded in Word and text formats by substituting .doc or .txt for .pdf in the above address.

Over 4040 logs were submitted for last year's CQ WW DX CW Contest: "Results of the 2004 CQ WW DX CW Contest," by Bob Cox, K3EST, *CQ*, September 2005, page 13.

A very good lesson about radio principles and radio technology appears on the Wikipedia website: <<http://en.wikipedia.org/wiki/Radio>>.

"A Quick Refresher Course on CW Operating Procedures," by Rod Vlach, NNØTT: <<http://www.arrl.org/news/features/2002/03/17/1/>>.

"A Beginner's Guide to Making CW Contacts," by Jack Wagoner, WB8FSV: <<http://www.netwalk.com/~fsv/CWguide.htm>>.

Dave Ingram, K4TWJ, has done many articles on Morse code keys:

"Keys and CW Hot in 2004, Part I," *CQ*, July 2004, page 80;

"Keys and CW Hot in 2004, Part II," *CQ*, August 2004, page 60.

Vibroplex has been a *CQ* advertiser since 1947. Take a look at its products: <<http://www.vibroplex.com>>.

The ICOM America ad in Morse code appears in *CQ* for September 2005, page 107.

Morse code learning materials are available from many *CQ* advertisers, such as The W5YI Group: <<http://www.w5yi.org>>.

MFJ Enterprises makes a CW decoder unit as well as code tutor devices, keyers, and computer interfaces: <<http://www.mfjenterprises.com>>.

ARRL Certificate of Code Proficiency: <<http://www.arrl.org/awards/#cp>>.

ter at CW is to get on the air and enjoy making contacts. Speed does not matter, and the emphasis should be on receiving accuracy and operating style rather than how fast you can send. Proficiency in speed will "just happen" with practice.

If you do not possess Morse code knowledge, there are many resources available to help you learn the foreign language for hams. Take a look at the advertisers in *CQ* magazine. One way to "cheat" is to use a computer program to "de-code" the Morse code, and there are decoders and little circuits you can use to "translate" the code for you. However, with a little bit of practice you will not have to rely on such contraptions. Besides, what will you do if the batteries die or the decoder unit breaks? If you are still interested in these gadgets, see the References section for more information about these units.

When studying the code, take it easy. It is best to study in many short sessions rather than fewer and longer sessions. Like a lot of things, it is often more enjoyable if you can find a study partner to learn the code. Besides, it is much more fun to teach the code to one another by sending and receiving letter groups at first and then expanding to complete words and phrases. It is very much like learning a foreign language—because Morse code is a language!

Learning to "read" the code is one step; the other step is to be able to "speak" or send the code. You can use a simple (or fancy) "straight key," an electronic keyer, or computer to send your CW. It's up to you. There are plen-

ty of places to get advice on how to learn to send Morse code properly, so I will not go into them here. The References section will lead you to some good advice. Just remember, though, that any complex accessory is more prone to fail. Your best bet is to keep things simple, and start off with the straight key and move to more complex gadgets for sending code as you gain more confidence and experience.

As you gain proficiency, you may want to declare and prove your new skill by earning a Certificate of Code Proficiency from the ARRL. You must copy one minute of code correctly to get the certificate. Check the ARRL website for more information on the certificate as well as the "Qualifying Run" schedules.

If your goal is to make contacts farther away, you should think about using the CW mode for free, before spending money to buy a new antenna, a new amplifier, or a new rig. Go ahead... don't be afraid of the Morse code. Most fellows on the bands are a friendly bunch, and it is always acceptable for any station communicating in CW to request that a station "QRS," or slow down.

73, Wayne, KH6WZ

Note

1. Today's abbreviation of Morse code as "CW" originates from the changeover from spark-gap to "continuous wave" transmission of code signals in the early part of the last century. While spark has been illegal for about 75 years, the abbreviation CW has remained and now is interchangeable with Morse code in most ham references.

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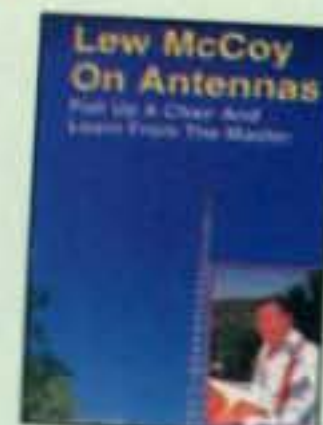
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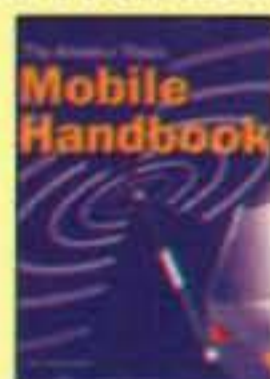
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Crystal Sets—Timeless Classics

Your response to last year's coverage of crystal sets in this column (*February 2004 issue—ed.*) once again proved overwhelming, and more views of the little delights for yet another crystal-radio special began arriving soon afterwards. Outstanding! It is great to see homebrewing so alive, well, and thriving.

With the help of Jerry Clement, VE6AB, and Jim Frederick, W4LF, we thus are proudly highlighting crystal sets again this month. We also offer hearty encouragement to assemble one or two just for your own enjoyment or for introducing that special youngster in your life to the wondrous world of radio communications. Yes, friends, even in this modern age of advanced computers and high-tech electronics, crystal sets still make excellent homebrew projects and work great for introducing kids

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Photo A— This dazzling little crystal set, made by Jerry Clement, VE6AB, sports a 5-inch-tall coil form with home-fabricated locking slider, walnut end caps, plus a machined-from-scratch catwhisker and galena crystal stand. Jerry wound that perfect 100-turn coil on a lathe and daughter Jen Clement shot this stunning photo. Awesome, isn't it?

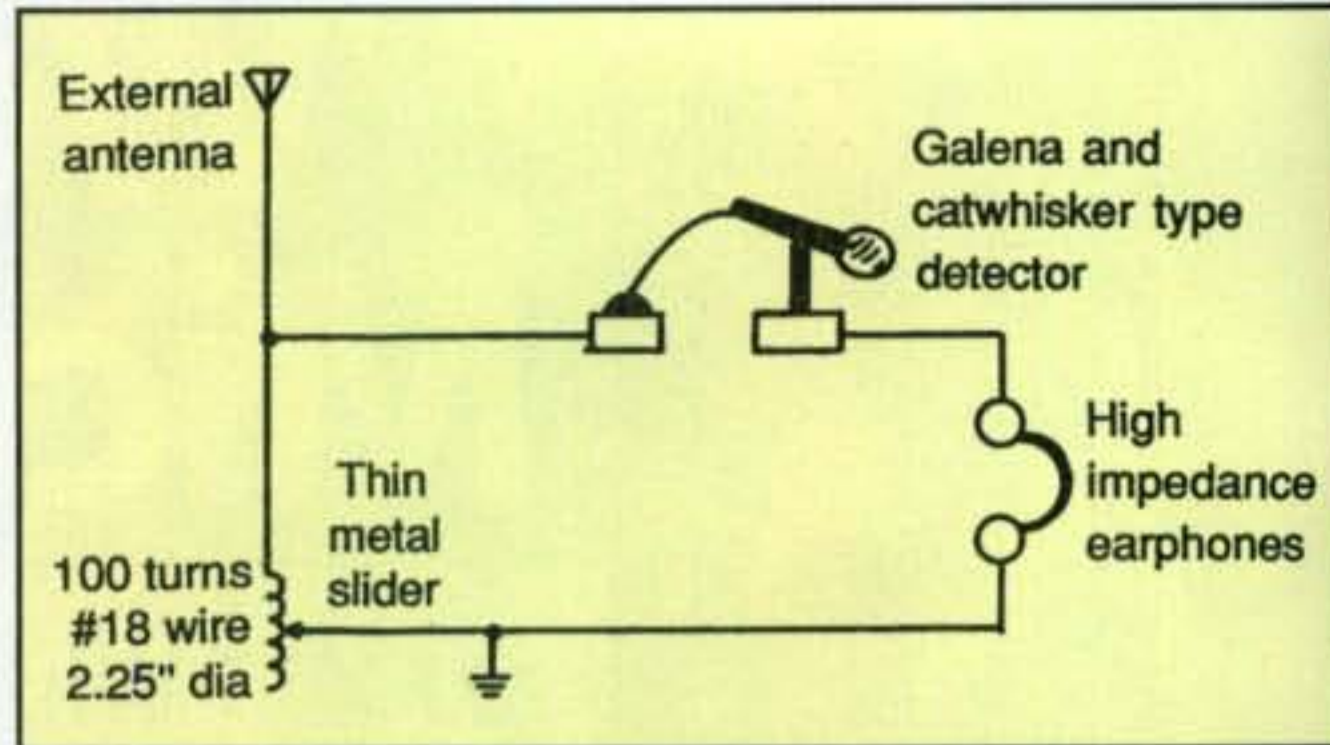


Fig. 1— The circuit diagram of the VE6AB crystal set is, like a Quaker Oats box set, basic but timeless. The coil is 100 turns of #18 enamel-coated wire with a very thin metal strip from the adjustable slider contacting one turn at a time for tuning. A galena crystal and catwhisker-type detector stand plus high-impedance crystal earphones complete the set.

of all ages to amateur radio. Just start building one and let the magic happen.

Let us know how you fare, too. Take some photographs of your self-devised prize and we will strive to include them in the next crystal-set special. Who knows? You might build one using genuine old-time parts and discover it still plays old-time big-band music. Now that would be hot news! Need more enticement? Maybe our accompanying views will fill the bill.

VE6AB's Crystal Set

One of the first to respond to last year's feature on crystal sets was Jerry Clement, VE6AB, and his recently homebrewed crystal radio literally blew those famous Quaker Oats box sets right off the shelf (photo A). The coil form and main body of this beauty is a 5-inch section of 2.25-inch diameter PVC tubing. It is wound with 100 turns of #18 enamel-coated copper wire, fitted with walnut end caps, and the feet are cabinet door pulls from Home Depot. Jerry made the crystal stand, binding posts, and slide tuner plus turned the knobs for the detector and slider on a lathe in his workshop. The slider knob also has a lock and unlock function for tuning stations.

The set's circuit diagram is shown in fig. 1, and it is a traditional "no capacitor" oats box or foxhole design. It may be basic and simple, but we are sure you will agree that after assembly it became a real showpiece worthy of gracing any den or office. Our compliments to Jerry and a special thanks to his daughter/photographer Jen Clement for sharing the view!

W4LF's Crystal Sets

Another guru of galenas and the homebrewer behind those fine-looking crystal sets you see in photos B, C, and D is Jim Frederick, W4LF. The set in photo B is particularly intriguing, as it sports classic National Velvet venier dials, adjustable

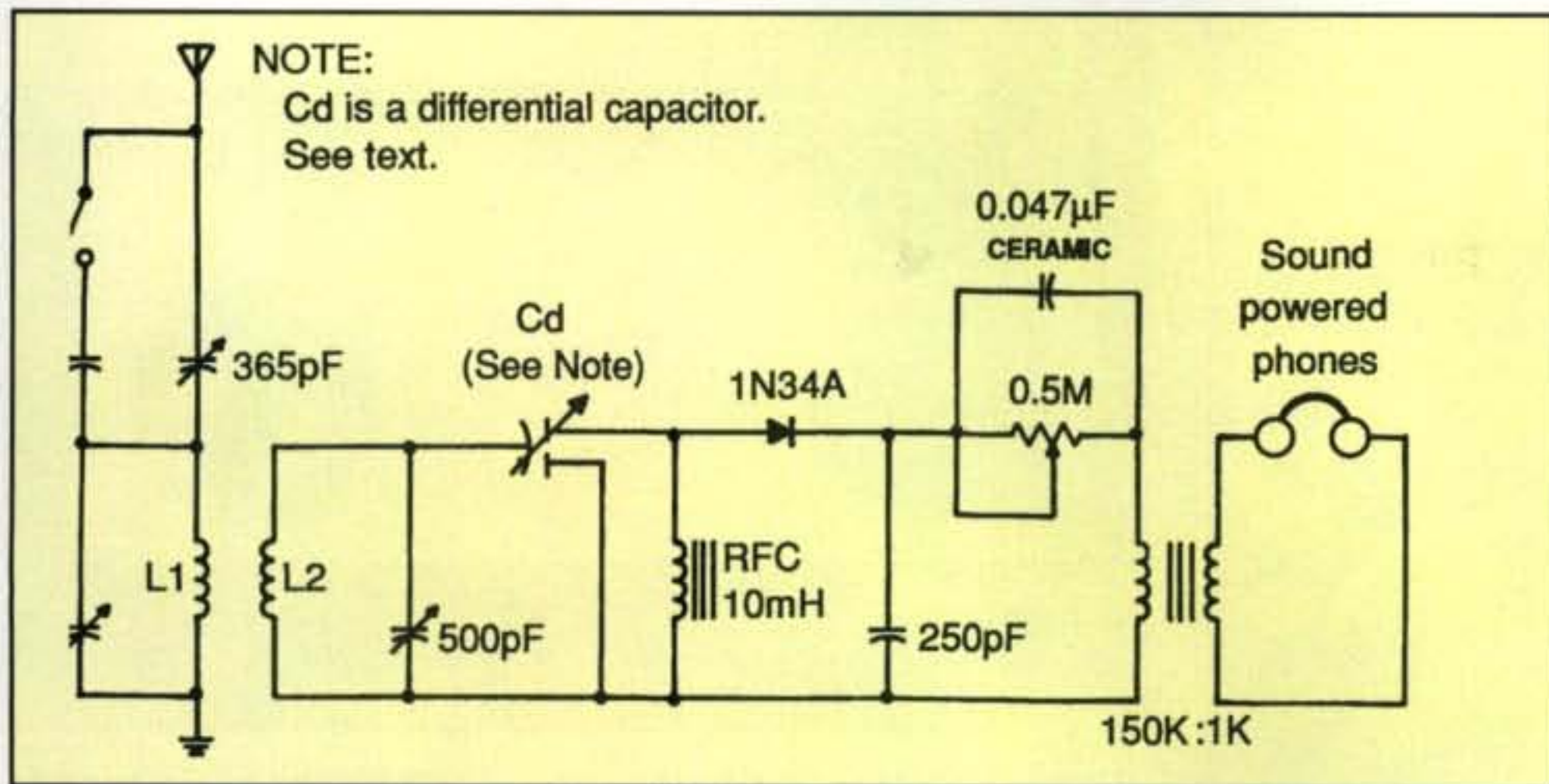


Fig. 2— Circuit diagram of the W4LF "Hobbydyne" crystal set shown in photos B and C. L1 and L2 each consist of 60 turns of 100-strand/46-gauge Litz wire wound on #61 ferrite rods $1/2$ inch by 3 inches. Cd is the differential capacitor of 15 pFd. (Hobbydyne crystal radio circuit © 2003 by Jim Frederick)

antenna coil-to-detector coil coupling, and an elaborate circuit design Jim calls the "Hobbydyne." The circuit is illustrated in fig. 2 and utilizes Litz-wire-wound coils, a homebrew differential capacitor for increasing sensitivity, and sound-powered earphones for maximum volume. Litz wire is comprised of numerous small and individually insulated

strands of wire woven so no single wire is the center conductor. As a result, it exhibits much higher Q than regular enamel-coated wire. The Litz wire in this crystal set is made of 100 strands of #46 wire. Both the antenna coil (L1) and the detector coil (L2) are wound on #61 ferrite rods $1/2 \times 3$ inches in length. Both coils consist of 60 turns of 100/46-

gauge Litz wire cylindrically wound. They are mated with tuning capacitors of 500 pFd. If regular 365-pFd capacitors are used, each coil should be increased to 70 turns.

The differential capacitor is made from two 10–15-pFd ceramic capacitors. The stator plates are removed from one capacitor and added to the other, so as the rotor plates unmesh from one they mesh by an equal amount in the other. The purpose of using a differential capacitor is matching the coil's impedance to that of the diode, and it is also more effective than the traditional tapped coil arrangement.

The coil and capacitor "after" the 1N34A diode are also interesting. The .047-µFd capacitor passes audio without loss, while the resistor protects the diode from overload on strong local signals. The following audio transformer matches the crystal set to the earphones.

Sound-powered earphones are similar to regular high-impedance-type earphones, except they have a modified diaphragm design for increased sensitivity. Typically, they are around 6 dB more sensitive than classic Baldwin earphones. They are often sold on eBay. However, you may need to buy several sets to assemble one good set.

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Photo B—Classic National Velvet venier knobs give this high-performance crystal set built by Jim Frederick, W4LF, a real radio look. The little set is exceptionally sensitive and selective, thanks to Jim's "Hobbydyne" circuit shown in fig. 2.

You may have additional questions you would like to ask Jim directly. His e-mail address is <jimfred@tampabay.rr.com>.

Heath's Magic Box

While Heathkit is best known for its amateur radio gear, the company also produced some other items of special interest during eras past—items such as a television, an airplane, and even a neat little crystal set. The TV set never flew and the

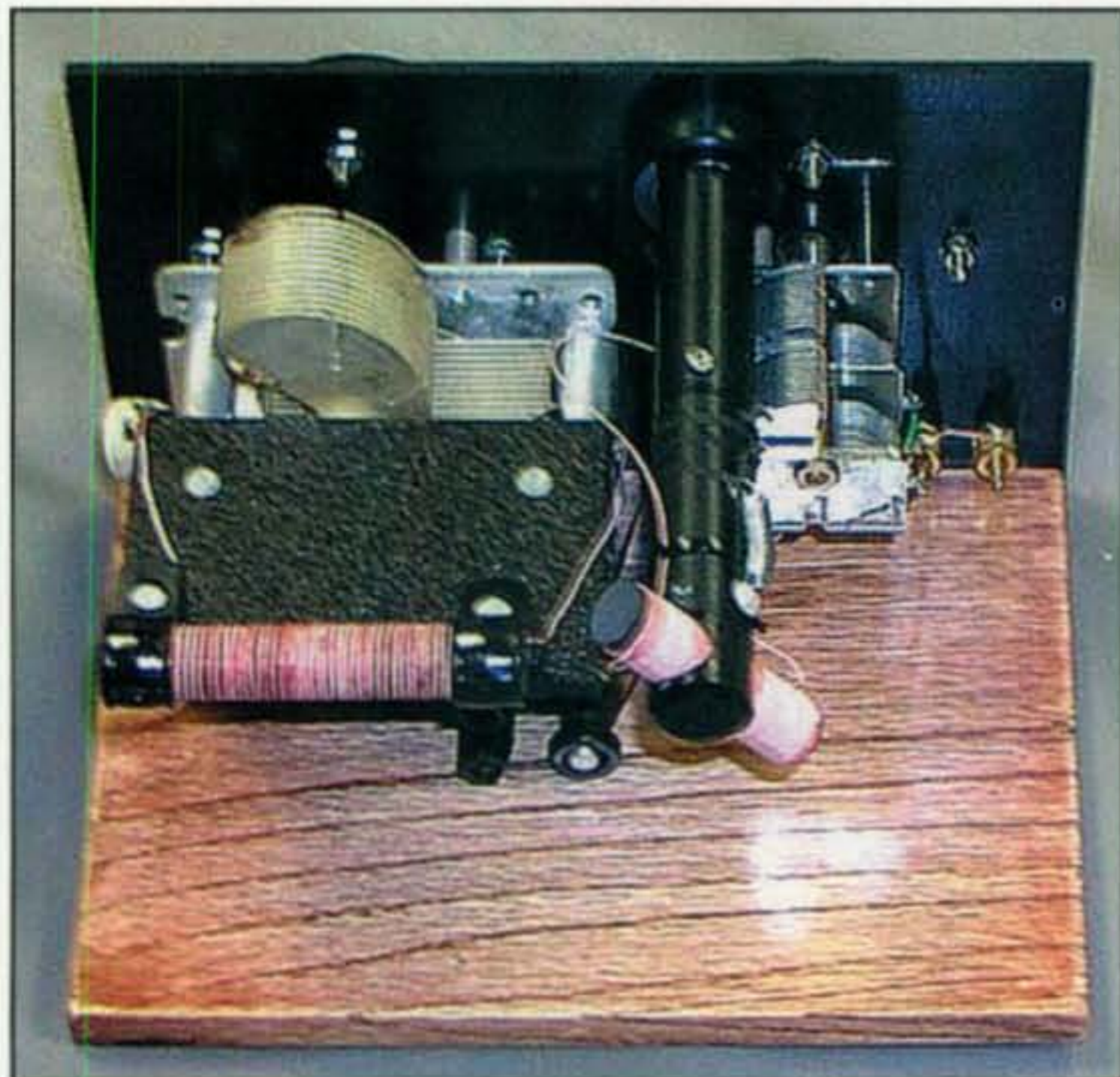


Photo C—This rear view of the W4LF crystal set gives us a peek at component layout. Note the shaft extending between the two large tuning capacitors. It supports and adjusts the position/coupling of the antenna coil with respect to the detector coil. (Discussion in text.)



Photo D—W4LF-built "retro replica" of Heathkit's 1950s-style CR1 Crystal Set. The little gem has become a rare collectable, but thanks to its use of conventional and readily available parts, homebrewing a copy is relatively easy.

airplane never received TV pictures, but the crystal set has become a favorite collectable among electronics enthusiasts of all ages—so much, in fact, that it has become quite scarce. A number of folks have homebrewed their own copies of the gem, and some copies look even better than the original.

A shining example of that fact is the "retro replica" made by Jim Frederick, W4LF (photo D). Would you like to try your hand at making a copy of this ever-popular set? The case is a plastic box with a metal top similar to the type sold by RadioShack, and the pointer-type knobs are listed in the Mouser catalog (1-800-346-8873; <www.mouser.com>). Original open-air or frame-type 365-pF tuning capacitors, diodes, wire for winding the coil, and high-impedance crystal earphones are available from The Crystal Set Society (P.O. Box 1625, Norman, OK 73070; <www.midnightscience.com>). Give it a try!

The Heathkit's original circuit diagram is shown in fig. 3,

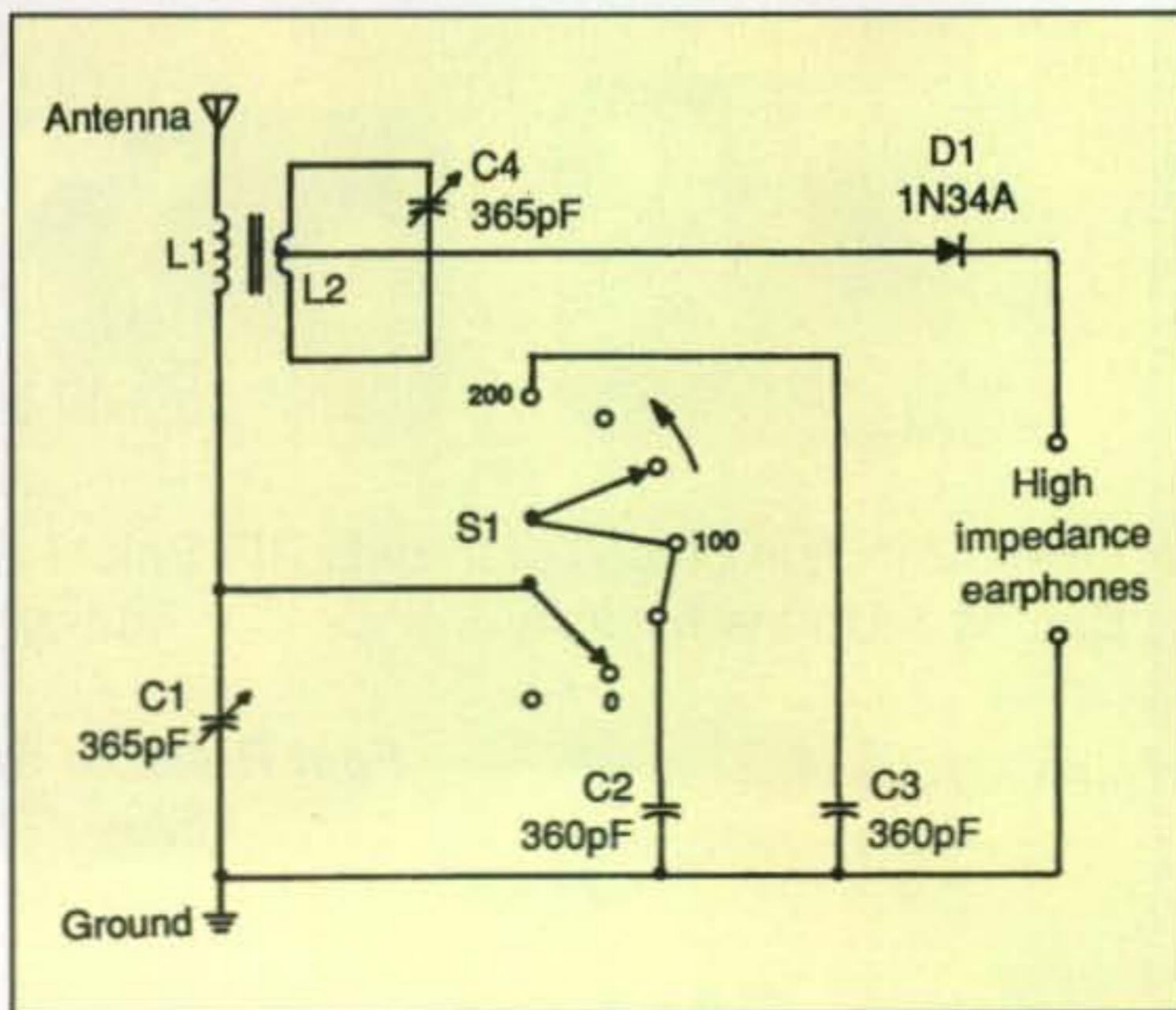


Fig. 3—Circuit diagram of the classic Heathkit CR-1 crystal set shown in Photo D. L1 is 150 turns of #32 or #34 wire. L2 is 100 turns of #32 or #34 wire tapped at 30 turns. Each coil is wound on a separate #61 material ferrite rod 1/2 by 3 inch. Coils spaced 1/2 inch apart.

and some substitutions in L1 and L2 are quite acceptable. The original coils were wound with Litz wire on two separate ferrite rods roughly 1/2 inch in diameter and 3 inches long. In Heathkit's CR1 the Litz wire is made of approximately 20 strands of #44 wire. If desired, #32 or #34 enamel-coated copper wire may be substituted without significantly sacrificing performance. Coil L1 is approximately 150 turns, and coil L2 is approximate 100 turns with an impedance-matching tap for D1 at 30 turns. Each coil is wound on 1/2-inch by 3-inch ferrite rod of #61 material. The coils are spaced approximately 1/2 inch from one another and supported by/on a paper form that resembles a large drinking straw.

Antenna switch S1 connects a fixed 360-pFd capacitor in parallel with C1 (position "100") and connects a second 360-pFd capacitor in parallel with both capacitors at position "200."

Overall the circuit is clean, effective, and a classic, and it will surely live on for many years. Our thanks to W4LF for bringing this gem to light.

Crystal Reflections

Do you remember the first crystal set you ever made (ah, those fond memories!)? In my particular case, the coil was wound with 60 to 70 turns of thin wire on half of a Popsicle® stick and tuned with an approximately 360-pFd trimmer capacitor. The whole circuit was squeezed into a plastic pill-box with an earphone tip jack on each end (using a dull pocketknife to cut those holes took more time than assembling the complete radio). The antenna connection was clip-lead connected to the metal finger stop on a rotary telephone, the ground was just held or connected to a water pipe, and the little radio played fairly well.

I built a couple of sets, showed them to my classmates (I was in grade school at the time), and they bought them, so I built more and started a fund to purchase an Army-surplus BC-455 receiver with the profit. That became my first amateur radio receiver. Visiting the local electronics parts store to purchase wire, tip jacks, diodes, and economy Trimm ear-phones and admiring the fantastic amateur radio gear with fancy knobs, dials, and meters was better than visiting Disneyland. Some years later, working in that same parts and ham store became my first "real" job. While working there, I met many radio and TV engineers plus several consulting engineers, learned about every item and component in the store, studied college electronics, and acquired a commercial FCC license. The associated path took me through radio, TV, and microwave engineering and designing, through teaching electronics at three colleges, writing 25 books and over 800 articles on amateur radio, and much more. And it all began with a simple crystal set and an uncle taking me to a parts store.

I am sure some of our readers have similar stories, so write them and send them to us for sharing with everyone in future crystal-set specials. Also remember the secondary message here of using a crystal set to introduce a youngster to amateur radio.

Conclusion

That wraps up this year's crystal-set views, friends, and in closing we urge everyone to discover or rediscover the fun of dinking with crystal sets. They are truly timeless classics! Watch for more easy-brew projects coming in future columns, too.

73, Dave, K4TWJ

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Mini HF Linear Amplifier, Web-Accessible Transceiver Kit, Remote Antenna Switch . . .

This month we'll focus on some noteworthy radio hamshack gear and accessories, antenna accessories, software, and books. Ready? Let's dig right into the goodies at hand.

Radio Gear

SGC MINI LINI™. SGC, Inc., has been designing communications products for the amateur, as well as for the military and commercial, markets for more than 30 years. The firm's latest development incorporates mature technology that has been proven for many years in the broadcast industry. Now, progress in high-performance components allows the company to use this technology in a radical new product, the MINI LINI™.

MINI LINI (see photo A) is a small, 5-lb., 500-watt HF linear amplifier that includes the AC power supply. The base unit contains the switching power supply and modulator. The MINI LINI is a single-band design that uses plug-in modules for different band operation. Modules are available for 160, 80, 40, 20, 17, and 15 meters.

The unit uses class-E amplifier technology—proven technology in the broadcast industry. The unit runs with claimed efficiency close to 90 percent, and reportedly produces less than one sixth of the heat and draws one third of the current of a conventional amplifier, at the same output power. The unit is suited to work well on any 110-VAC outlet and can be factory configured for 220 VAC.

Cool to the touch, the MINI LINI takes up very little space in the ham shack and requires no additional power supply; a 12-VDC converter can also be used for mobile operation. The introductory price of \$600 includes the base unit and the 20-meter module. Additional modules are \$275.

For more information, contact SGC Inc., 13737 SE 26th St., Bellevue, WA 98005 (1-800-259-7331; e-mail: <sgc@sgcworld.com>; on the web: <<http://www.sgcworld.com>>). Be sure to check out SGC's newly enhanced website.

The Sienna Transceiver and More to Come from DZKit. By the time this column appears in print, the groundbreaking Sienna transceiver (photo B) should have been released. While it's admittedly an expensive kit, it nevertheless is said to offer capabilities not available in its price class anywhere else. It's reportedly the first transceiver to have a built-in web server, allowing remote control from a simple web browser from anywhere in the world. This means, for example, that you can be lying back in your easy chair in your living room while the Sienna is located in your shack in the basement, letting you work DX on 20 meters from

*289 Poplar Drive, Millbrook, AL 35054-1674
e-mail: <w8fx@cq-amateur-radio.com>



Photo A— SGC, Inc., recently introduced the MINI LINI™. It's a small, 5-lb., 500-watt HF linear amplifier that includes the AC power supply. The single-band unit uses plug-in modules for different band operation, and modules are available for 160, 80, 40, 20, 17, and 15 meters. (Photo courtesy of SGC)

your laptop running Internet Explorer® and VoIP (Voice over Internet Protocol), and using a Wi-Fi® card to access your wireless home network.

According to Brian Wood, WØDZ, of DZKit, the Sienna is an easy-to-build kit that runs 100 watts on all HF ham bands using CW, SSB, and digital modes (and soon to include FM). The Sienna offers general-coverage receive from 0.5 kHz to 30 MHz, direct digital synthesis of BFO and VFO oscillators, an iambic keyer, built-in blue-green vacuum fluorescent display, choice of four crystal filters, transverter input/output, and much more.

Important to note, the radio has a modular design, allowing easy improvement of its capabilities over time and even making possible the offering of less-



Photo B— The Sienna HF transceiver offers capabilities said to be not available in its price class anywhere else. It's an easy-to-build kit that runs 100 watts on all HF ham bands using CW, SSB, and digital modes. More on the Sienna and DZKit's forward-looking kit-based product philosophy is found in this month's column. (Photo courtesy of DZKit)

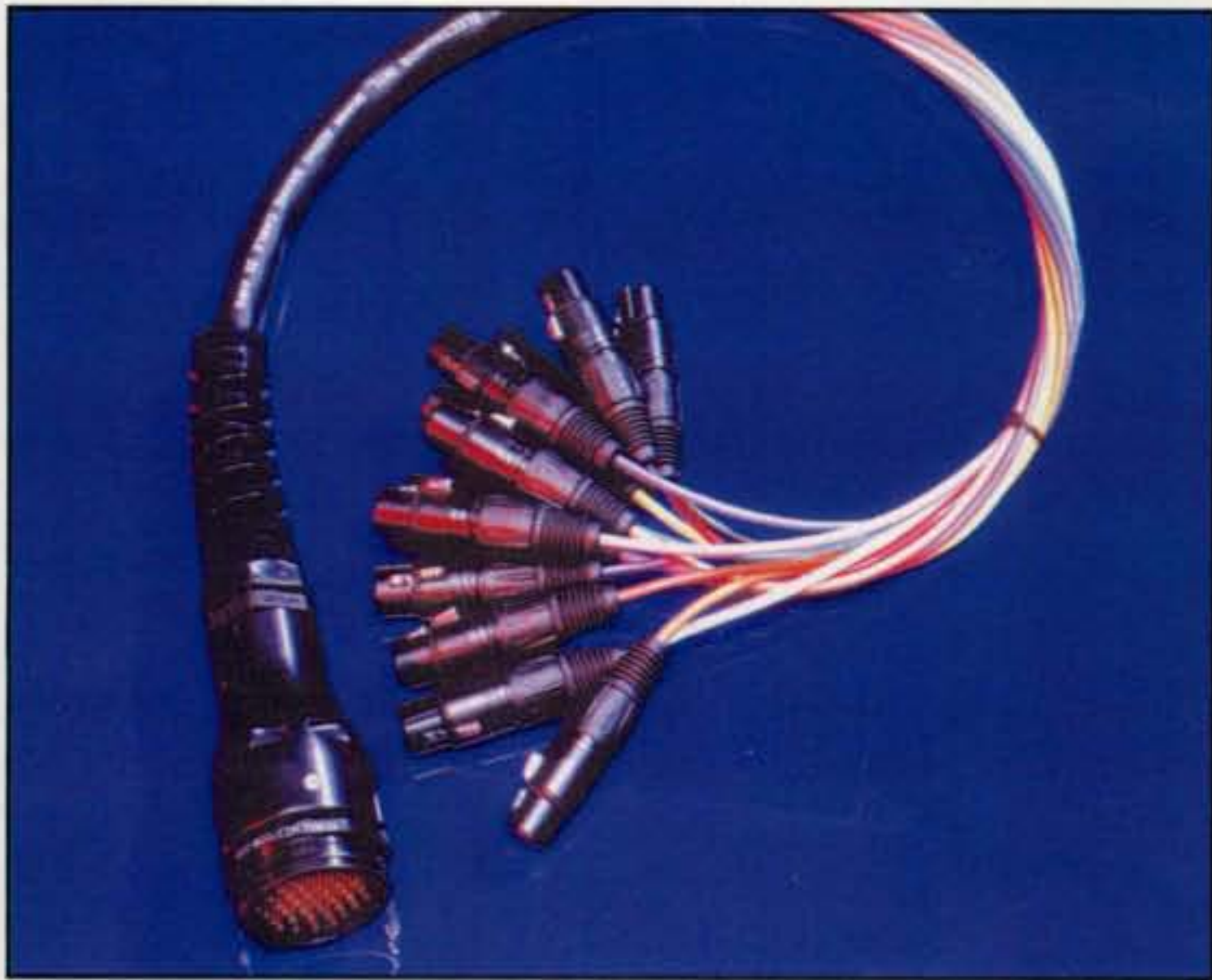


Photo C— Recently, NemaI introduced an improved version of the broadcast-industry-standard FK37 (DT12) type multi-pin connector. The connector is one example of NemaI's complete line of specialized cables and connectors in either prototype or production quantities. (Photo courtesy of NemaI)

expensive kits that will use some of the Sienna's boards. For example, the IF board, which lies at the heart of the radio, reportedly can be turned into a nifty QRP rig with the addition of an inexpensive VFO and RF amplifier. Following the Sienna's introduction, DZKit plans to offer less expensive spin-offs, just as Heathkit™ did with its radios.

Brian, along with the other DZKit principals, has several consultants in both the RF and web GUI fields helping remotely. DZKit is using primarily American manufacturers wherever possible, although there isn't much they can do about the electronic components, which are made overseas, or the original equipment manufacturer (OEM) boards, the embedded PC, and the tuner. However, the chassis, front-panel overlay, PC boards, and surface-mount technology (SMT) assembly all are done in the U.S. The goal is to recreate the Heathkit concept as closely as possible, while bringing everything up to modern standards.

Interestingly, Brian notes that it makes no sense to offer CB, color TV, or AM/FM stereo receiver kits. However, he does plan to start with ham radio equipment and then expand into other niches. Brian is trying to duplicate the look and feel of the old Heathkit manuals; the DZKit manuals include detailed pictures, step-by-step instructions, troubleshooting hints, parts drawings, and theory of operation sections so you learn while you build.

The kits (a number of which are already available) also improve on the traditional "dump the parts in a bag" model used by most kit companies. DZKit's parts are presorted, with sometimes as few as one part per bag, so that it's much harder for the kit builder to make a mistake. The goal is for customers to have fun building, to do a little learning in the process, and to be unafraid to work on or modify a kit—to not be stymied by those pesky "little things."

For more information and pricing, contact DZKit, 710 Grove Ct., Loveland, CO 80537 (970-667-7382; e-mail: <sales@dzkit.com>; on the web: <http://www.dzkit.com>).

Note: Are you too young to remember Heathkits? If so, you can find out all about Heathkits and the Heath Company by checking out what the Wikipedia encyclopedia says. Just point your web browser to <http://en.wikipedia.com/wiki/Heathkit>.

Also, CQ offers an authoritative guide to Heathkit's ham radio products; see the ad elsewhere in this issue.

Accessories for the Shack

New from NemaI. NemaI Electronics International is a respected manufacturer and distributor of electronic cable, connectors, cable assemblies, and patch panels used in broadcast, RF, data, and electronic control applications. The firm offers a complete line of precision audio, video, snake, and triax cables. NemaI's manufacturing capabilities include design, production, and testing of specialized cables and connectors in either prototype or production quantities. The firm offer products with UL approval as well as custom designs for enhanced flexibility, high-frequency performance, sunlight resistance, direct burial, and other specific requirements. It stocks more than 3000 cable and connector products available for same-day shipment, including all types of RF connectors and crimping tools. Many NemaI products are suitable for amateur radio applications.

One high-tech example of NemaI's new products is an improved version of the broadcast-industry-standard FK37 (DT12) type multi-pin connector with an optional steel insert (male), as depicted in photo C. The connector is suitable for use in both indoor and outdoor environments, and it features an extremely rugged machined body, mil-spec black plating, and a completely weatherproof insert. Additional features include a positive lock insert system to prevent conductor breakage during interconnection, secure attachment of cap to connector, standard thread strain relief, and complete compatibility with existing ITT Canon type designs. The connector is part of a complete family, including both cable and panel-mount versions with either crimp or solder contacts. NemaI offers a large selection of strain-relief options to accommodate various cable diameters and applications, and various accessories are offered.

For more details, contact NemaI Electronics International, 12240 N.E. 14th Ave., North Miami, FL 33161 (1-800-522-2253; e-mail: <info@nemaI.com>; on the web: <http://www.nemaI.com>). A comprehensive, indexed catalog is available online.

Antennas and Accessories

Ameritron Eight-Position Automatic Remote Antenna Switch. The Ameritron RCS-12 (photo D) is an automatic control box used for switching remote antenna relays. The new antenna switch is designed to work with most ICOM, Yaesu,

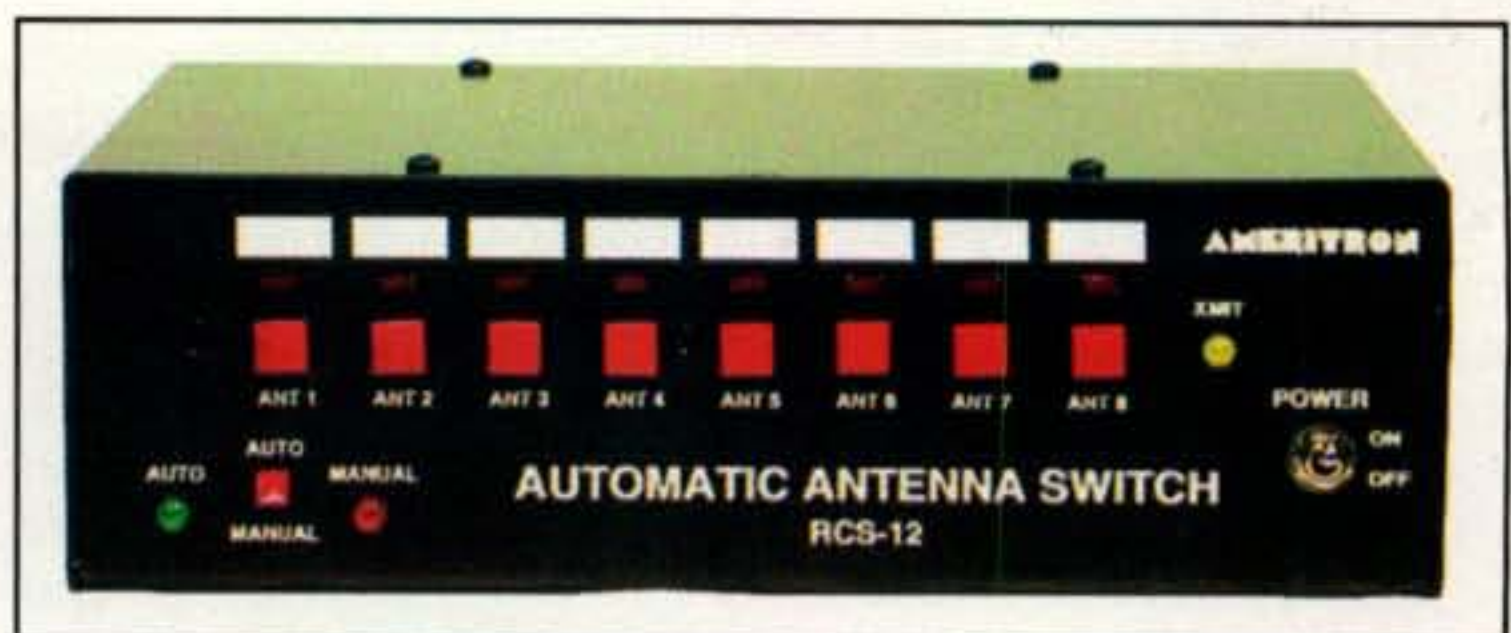


Photo D— The Ameritron RCS-12 Automatic Remote Antenna Switch is an automatic control box used for switching remote antenna relays. The new switch is designed to work with most transceivers that have a band data output line. The switch reads information from the transceiver and automatically selects preprogrammed antennas. (Photo courtesy of Ameritron)

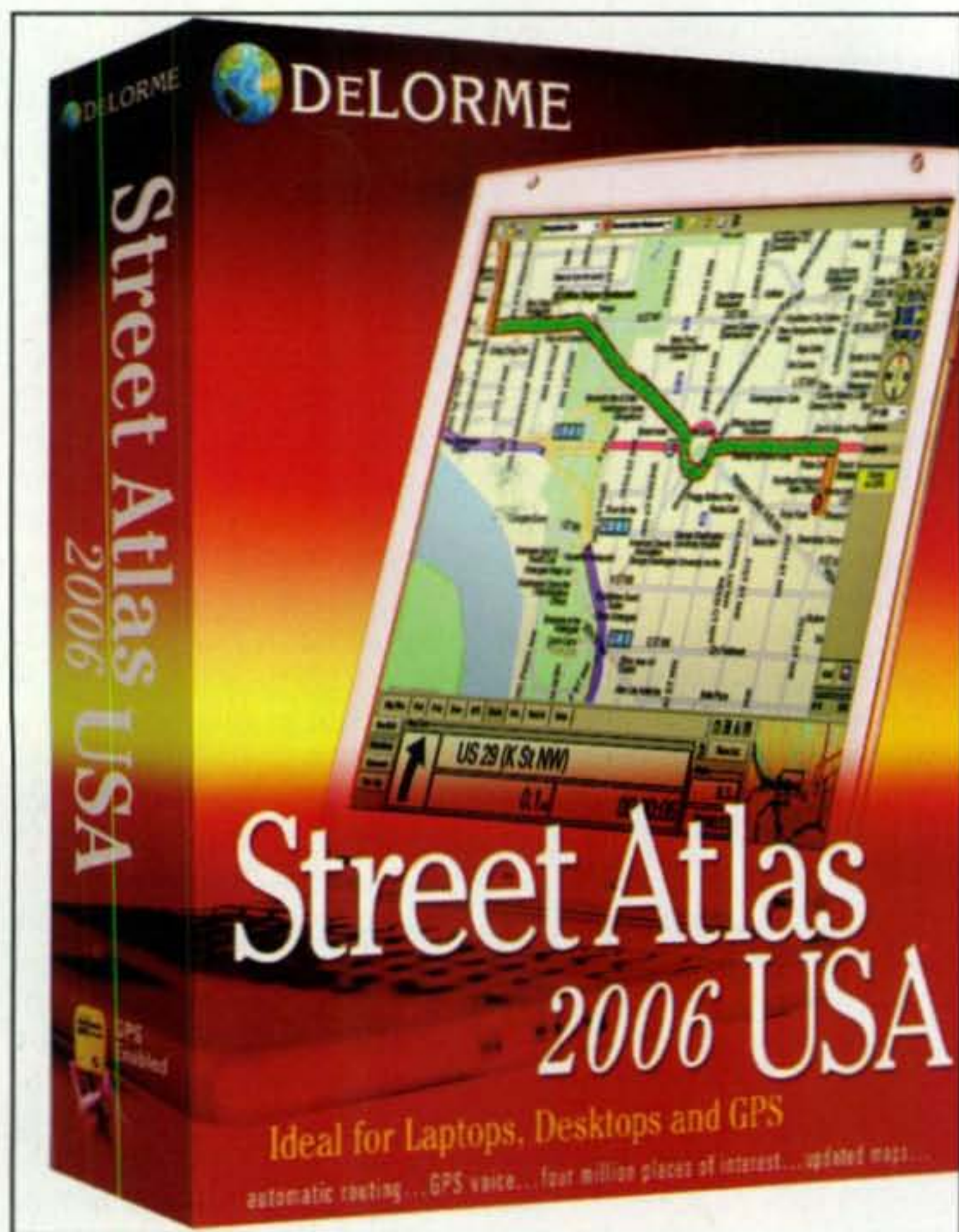


Photo E— Street Atlas USA® 2006 offers all the famous DeLorme map detail contained in the 2005 version, plus a large number of additional streets and roads, updated and verified places of interest, and much more. A “Plus” DVD-based version also is available. (Photo courtesy of DeLorme)

Kenwood, and other transceivers that have a band-data output line. The RCS-12 will work with any relay box with up to eight positions with voltages from 12 to 30 VDC. The switch reads information from the transceiver and selects preprogrammed antennas automatically. Programming the unit is said to be as easy as a push of a button.

The RCS-12 can remember multiple antennas for one band, but it selects the last antenna used for that band. The unit has a manual/automatic switch that will allow manual selection of antennas as well, and it also has eight LEDs to indicate which antenna is selected. The RCS-12 will not allow antennas to switch while transmitting; a user-programmable delay is used to give the relays enough time to switch to protect the transceiver from “hot switching.”

Basic features of the RCS-12C controller include a linear amplifier buffered relay line which prevents the amplifier from operating during an antenna changeover; an auxiliary input port which allows the switch box to be operated from a remote location; an auxiliary output for controlling other devices in “1 of 8” format; and auto, manual, and transmit indicator LEDs. The controller measures 8¹/₄”W × 2³/₄”H × 7”D, and it weighs in at just 1.5 lbs.

The RCS-12 is \$299; it’s an auto-controller that handles eight coax lines, to 60 MHz. The RCS-12L is \$339; it’s the same, but it’s equipped with lightning arrestors. The RCS-12C is \$229; it’s a compatible controller only.

To order, check out various product details, get a free catalog, or find the name of your nearest dealer, contact Ameritron, 116 Willow Road, Starkville, MS 39759 (1-800-

713-3550; e-mail: <ameritron@ameritron.com>; on the web: <<http://www.ameritron.com>>).

Software and Computers

Street Atlas USA® 2006 from DeLorme. DeLorme offers a wide variety of street-mapping software for practically every need, whether that need be business or consumer oriented. A longtime favorite in this arena is the Street Atlas USA product, which the firm considers to be “America’s premier mapping, routing, and GPS tracking software.”

Street Atlas USA® 2006 (photo E) is a major new upgrade that offers all the famous DeLorme map detail. The software suite reportedly now comes with 268,000 additional streets and roads; thousands of updated, location-verified places of interest; address-book imports; web-based map sharing; a broad array of user-defined settings; GPS voice navigation; and many other powerful features that point to this as an excellent choice for travel-planning software. Especially prominent in this update is the EZ-Nav Toolbar, which is said to make routing, GPS navigation, map sharing, and creating custom user settings a breeze.

The CD-based software is \$49.95. You also can enjoy the freedom of laptop GPS navigation in any vehicle with DeLorme Earthmate® GPSLT-20 Receiver, at \$99.95 with Street Atlas® USA 2006 software included.

Also available is the Street Atlas® USA 2006 Plus DVD, furnished on DVD-ROM for \$99.95, designed to be a powerful yet easy-to-use mapping solution for business and advanced users. With it you get everything in the regular version, plus 147 million updated business and residential phone listings linked to the map. The Plus DVD software lets you import and locate database entries, and you can link documents, photos, and URLs to the maps.

For more information, contact DeLorme, Two DeLorme Drive, Yarmouth, ME 04096 (1-800-561-5105; on the web: <<http://www.delorme.com>>. *Special note:* The SA 2006 software is for Windows® operating systems only, and with this release, DeLorme is no longer supporting Windows® 98/Me.

From the Bookshelf

The World of Keys from Dave Ingram, K4TWJ. Dave Ingram’s new “paperless book,” *The World of Keys* (see fig. 1) is now available. It’s actually the third volume in an exhaustive treatment of keying equipment. Dave is a fellow CQ columnist whose immensely popular and always interesting columns have run for many years in the magazine.

Published on CD-ROM only, *The World of Keys* features high-resolution, full-color images of over 100 of the world’s most prized, exotic, and glamorous keys—new and old. The book is laid out in several chapters using HTML format, so you can easily read the whole book and navigate through it using your web browser. The CD is set to auto run on a computer.

Some of the items and topics of interest covered in the ten-chapter book include spark keys; camelbacks; dual-polarity keys; pump keys; “fun” keys; Vibroplex bugs; fully-automatic bugs; motor-driven, rotary, and vertical bugs; three-lever bugs and keys; miniatures; and an array of modern keys, bugs, and paddles.

Dave’s overwhelming enthusiasm for keys and CW is vividly apparent in his every description, especially when he occasionally breaks into his famed sideshow-barker mode, with quips such as “Lawdy Miss Claudy—what a key!” Indeed, the CD is said to be a key collector’s dream.

The CDs are \$16 each plus shipping (\$2.50 via regular USPS mail or \$3.85 via Priority Mail) by check or money order

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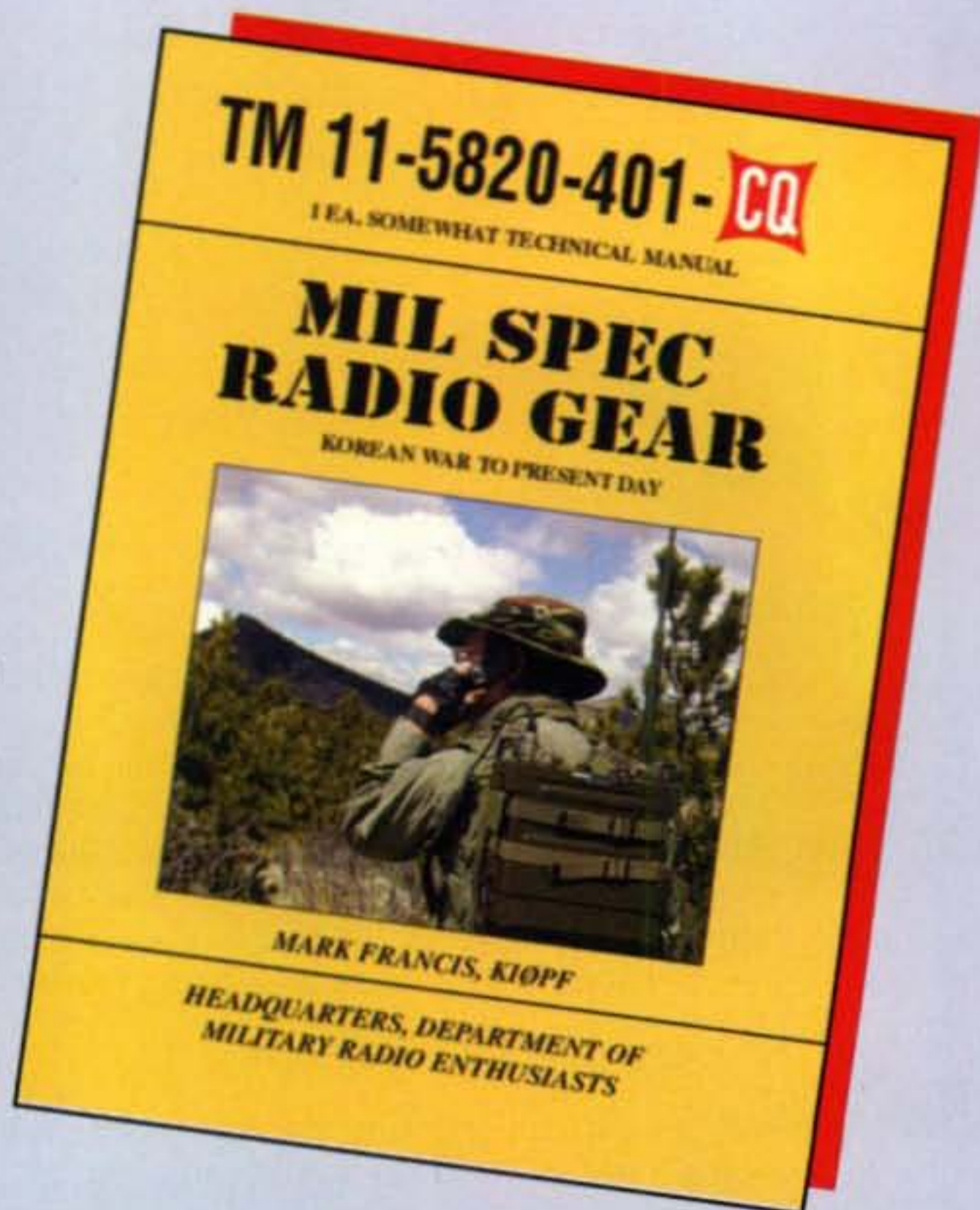
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Looking Ahead in **CQ**

Here's a look at articles we're working on for upcoming issues of CQ:

- 2005 Results, CQ World Wide 160-Meter Contest
- "Beacon in a Box," by Jim Southwick, N1JS
- "A Compact and Effective 40-10 Meter Portable Station," by Phil Salas, AD5X

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>

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Thank You

To view in full screen mode press F11

INTRODUCTION TO **THE WORLD OF KEYS**

By Dave Ingram, K4TWJ

Welcome to the World of Keys: a visual celebration and lighthearted study of amateur radio's all-time favorite accessory. Keys have been an integral part of radio since and even before its beginning, they are true pieces of telegraphic history you can hold in your hand, genuine collectables, and many keys are also sheer works of art in brass.

Over the years, keys have been produced in a wide variety of styles—spark keys, camelbacks, double lever keys, hand or pump keys, semi-automatic keys or "bugs", miniatures and paddles used with electronic keyers. Each of these categories (and more!) is the focus of upcoming chapters as we pay tribute to the timeless beauty of keys, new and old. Yes, and I sincerely trust you enjoy our views and descriptions as much as I enjoyed putting together this unique collection for you. It is my third work on world-class keys.

Fig. 1— Fellow CQ columnist Dave Ingram, K4TWJ's new "paperless book," The World of Keys, is available directly from him. In the opening screen Dave has conveniently listed the chapters in blue on the left side of the screen so you can easily go to any chapter you prefer. The new book is published on CD-ROM only, and it's said to be a key collector's dream. (Graphic from The World of Keys CD, © 2005 by Dave Ingram)

direct to Dave Ingram, K4TWJ, 4100 S. Oates St. #906, Dothan, AL 36301, or telephone 334-671-0367.

We Get Letters

Before wrapping up things this month, your "What's New" column editor would very much like to acknowledge some of the good folks who took the time and trouble to correspond with us in recent months. We do appreciate your input.

In no particular order, a tip of the ol' W8FX hat goes to Steve Legge, AI4EC; De'Borah Bankston, KB5OQX; Larry Bush, W5NCD; Craig "CJ" Jobest, W7ZFX; Dave Clarke, VE6LX; Al Bell, W4IKV; Anne Dorsey; Mike Johnson; Michelle Miller; Scott Robbins, W4PA; Jim Andem, KB1SH; Melissa Reinhardt, KD6BIT; and Les Cox, AA4F. By all means, gang, please be sure to keep those many cards, letters, faxes, messages, and e-mails coming!

A special note to our column readers: If you e-mail us, please be sure to include with your e-mail your full name and amateur radio callsign, if you hold one. While you certainly need not hold an amateur callsign, it would be nice to know we're corresponding with a real, live person who actually reads the column, and not just acknowledging an e-mail address!

To contact your "What's New" column editor, just e-mail me at my CQ address, w8fx@cq-amateur-radio.com.

Wrap-Up

That's all for this time, gang. Next time, more "What's New." See you then.

Overheard: I've found that the road to knowledge can begin very simply, often with just the turn of a page.

73, Karl, W8FX

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.

Notes on Magnet-Mount Antennas

Magnet-mount antennas are very popular for mobile use, especially on VHF and UHF. However, many people really don't understand how they work. This time we'll take a look at the electronics of magnet-mount antennas and see how you can get the best results out of yours.

Most magnet-mount antennas, such as the one shown in photo A, couple back to the metal in the vehicle to form the antenna's ground plane. A quarter-wave antenna is only resonant when it has some kind of modest-size ground plane. The base of the antenna forms a capacitor, with the paint as the insulator—or the dielectric—in this capacitor (see fig. 1). With the typical antenna base there is about 500 pF of capacitance back to RF ground.

On 2 meters this works out to about 2 ohms of reactance. While 0 ohms reactance would be best, 2 ohms is close enough to tune out and is not a big deal. However, as we go down in frequency this reactance climbs. At 10 meters that same magnetic base has about 10 ohms of reactance between the base and the vehicle body.

At HF frequencies you are really tuning your antenna for the thickness of the paint job. Back in the days of working my way through college by fixing CBs, I ran into several 11-meter mag mounts that just didn't want to tune. I quickly learned to ask if the car had been repainted when I saw this problem. With several coats of paint, the antenna just wouldn't tune up and the magnet didn't want to stick well either. My next step was suggesting a truck lip mount or something that bit into metal.

Photo B shows the large three-magnet MFJ base I use with my Tarheel motorized antenna for HF mobile operating. This base measures about 3000 pF of capacitance back to the body of the van. On 40 meters this results in about 8 ohms of reactance between what the antenna thinks is ground and the body of the van. For a short HF antenna with only a few ohms of radiation resistance, 8 ohms back to ground is a pretty #&*\$@%! poor ground. In the photo you can see a few of the various ferrite chokes I have added to help keep RF from running back down the outside of the coax and back to the rig. Also note that I haven't forgotten to put ferrite chokes on the control cable as well. The ferrite chokes at least keep my ICOM rig from shutting down any time I go over a few watts. However, they are not a good solution for my ground problem; 80- and 40-meter mobile antennas really need a hard ground on the mobile.

While we are on the topic of magnets for antennas, take a look at photo C. Get some pretty strong bar magnets. Attach them to the base of your antenna with the north side down. Those magnets just suck the signals out of the coax and push them up the antenna!



Photo A—A typical VHF mag-mount antenna and base.

I first heard this story from a CBer some years ago. There are two versions floating around: In one you just tape the magnets to the antenna; in the next you really need to saw a gap in the antenna and put the magnet across the gap.

That's a great marketing opportunity perhaps, but magnets do not affect radio waves. For those of you who can pick fly specks out of pepper, yes, there are ferro resonance effects that are used in isolators and circulators, and the mass of metal in the magnets will have some minor tuning changes. Also, there are polarization effects as electromagnetic waves pass through intense magnetic fields, but that is not what we're talking about here. Thus, put the antenna magnets in the snake-oil category for a topic for "Mythbusters." (PS: Turn them around with the south side pointing down if you want to hear better!)

Neat Antennas

I'm a sucker for buying just about any strange antenna I see at a fleamarket. Photo D shows one



Photo B—MFJ's three-magnet mobile mount is designed for the greater loads presented by larger HF antennas.

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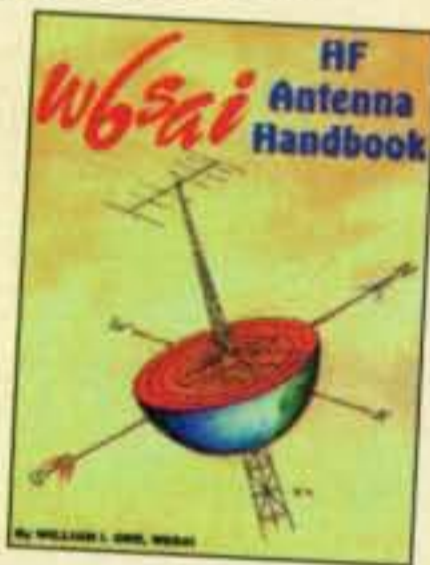
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Photo C— Can a magnet affect the performance of your antenna? Read the main text to find out.



Photo D— An XM satellite antenna I picked up at a fleamarket and took apart to see how it works. Actually, there are two antennas, a quadrifilar spiral for satellite reception and a dipole for terrestrial reception.

of my recent acquisitions, an XM satellite radio antenna. The Sirius antenna is basically the same thing. The communications lads have never figured out how to get a satellite signal into a metropolitan area with all those tall buildings. Thus, both the XM and Sirius sys-

tems have a second set of transmitters in urban areas. Your receiver listens to the satellite signal and to a transmitter on a high building, picking out the best signal. Therefore, if you are driving across Kansas, you are most likely listening to the satellite directly. Driving

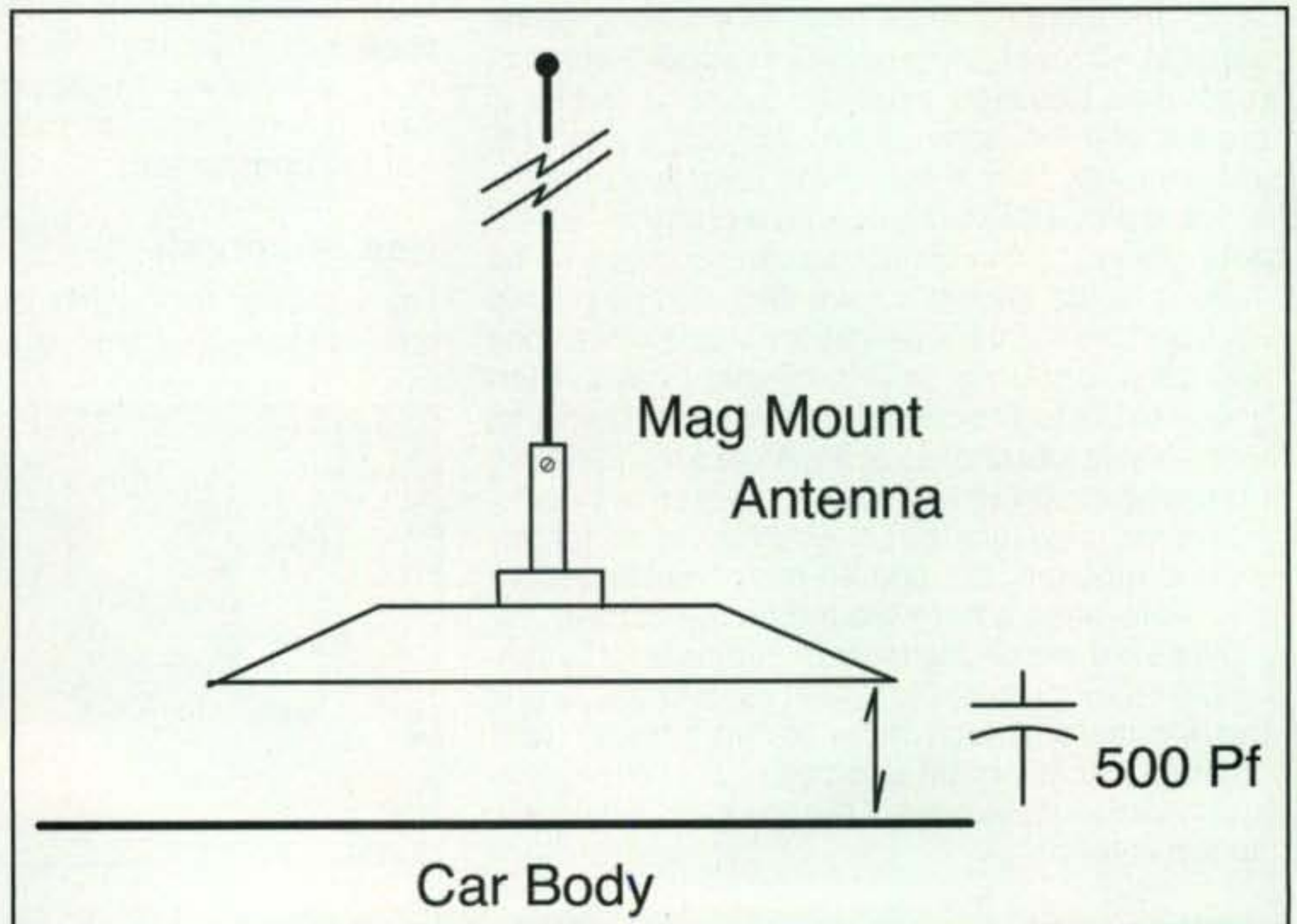


Fig. 1— The capacitor between the magnet and the car body.



Photo E— The dipole part of the XM antenna, used to pick up terrestrial rebroadcasts of programs for reception in urban areas where satellite signals have trouble getting through.

around New York City, the receiver is probably locked onto a transmitter on a high building. All systems operate in the 2320-MHz or S-Band frequency range.

Sirius uses a single satellite in geostationary orbit, while XM is using two satellites in elliptical Molniya orbits. The XM satellites swoop pretty low down over the Indian Ocean, and then up high over North America (providing longer "windows" when they're visible from the ground). This means they need to have two satellites that take turns hanging over North America. The advantage is that the satellites are much closer to the Earth and the signals are stronger. On the other hand, I hear tell that the XM satellites are in trouble. Unexpected out-gassing from the satellite is fogging up the solar cells and limiting power. Got a space-qualified squeegee?

This antenna reflects the needs of the "diversity receiver" they like to use in this combination satellite/terrestrial system. If you look at photo E, you'll see that the antenna is actually two antennas—one for direct satellite reception and the other for picking up terrestrial signals. The top spiral is a multi-wavelength "quadrifilar" antenna. The quadrifilar is circularly polarized, and the multi-wave-

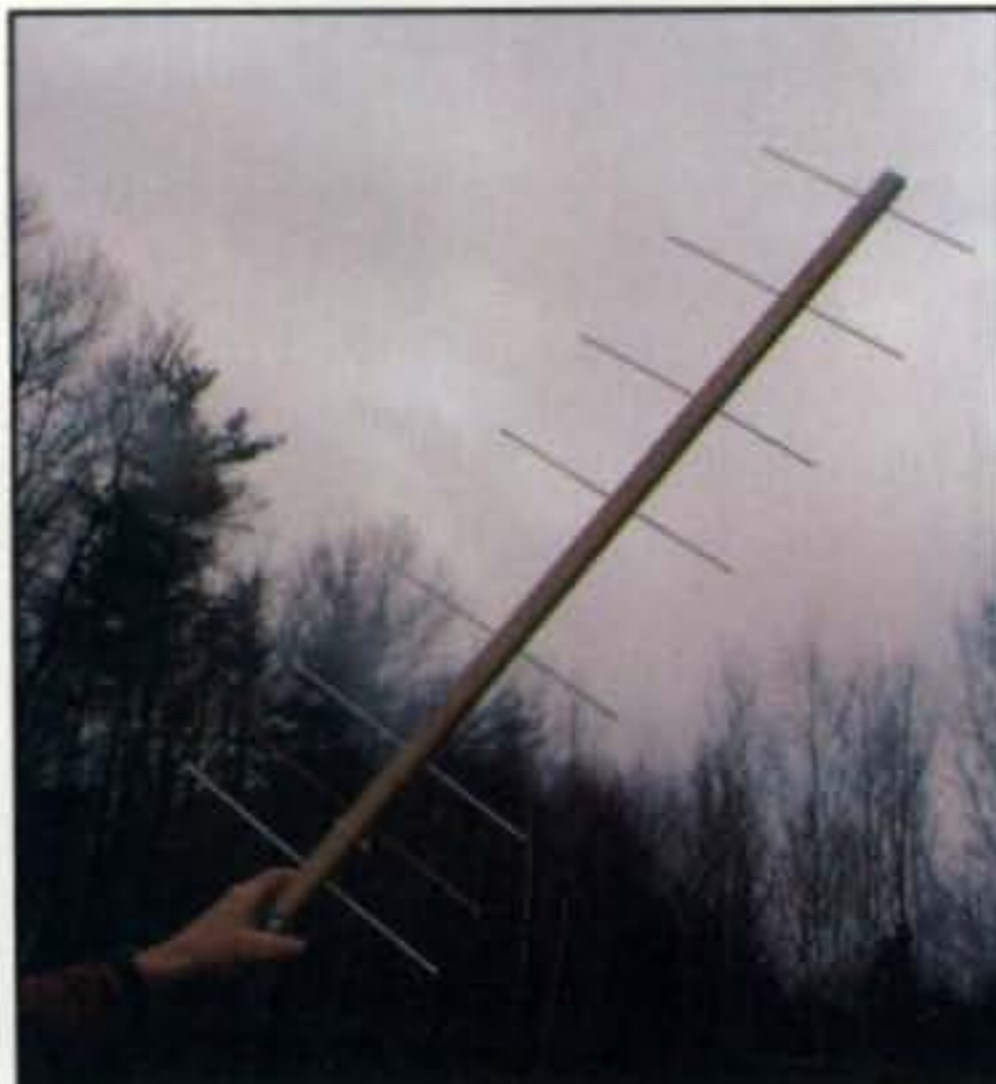


Photo F— Building Yagis on hockey sticks ... something more easily accomplished in Canada than in Texas.

length designs give it a cone-shaped upward pattern for listening to the satellite. This is not a helix antenna, but more of a twisted loop.

At the bottom are two sections of tubing that make up a fat dipole for listening to the terrestrial re-broadcasters. By using very large diameter tubing the antenna has a broad bandwidth, and they can run the coax from the quadrifilar antenna down the middle of the dipole along with structural support. The base also contains two low-noise amplifiers, one for each antenna, and an inductively coupled power supply. Now to find some other neat antenna to take apart for my next column.

Neat Ideas

From Denis in Quebec we have a suggestion for building Cheap Yagis out of broken hockey sticks. I'll have to take his word on it, as we don't see very many used hockey sticks in Texas, but that hard wood should make a pretty good boom (see photo F).

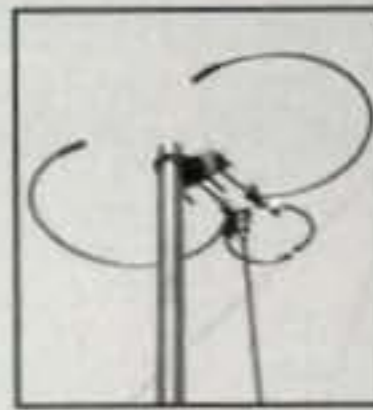
I have always gotten some of my best ideas for articles from you, our readers. How about going to the next level? Do you have any neat ideas you would like to share with the other readers? A trick for grounding a mobile vertical? A simple way of attaching a coax connector? Or using something unusual to build your antenna? Let me know, and we'll make a short topic out of it in a future column.

Next time, if I can borrow back my portable network analyzer, we'll cover off-center-fed dipole antennas. I have a Buckmaster OCF antenna I've wanted to play with for months. In the meantime, keep that soldering iron hot!

73, Kent, WA5JVB

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Speech Compression and Audio Equalization

This month's column looks at two more somewhat related and easily misunderstood features in modern HF transceivers: speech compressors and audio equalizers. The possibility of confusing these terms results from what might be called "crossover secondary results." That is, a properly adjusted speech compressor can add a slight touch of equalization (a treble boost) to your transmitted audio, and an audio equalizer can be "tweaked" to improve the clarity and punch of your SSB signal. Confusing? Let's start with a "what it does" description of each feature.

Speech compression increases the average output power of your SSB transceiver for DXing, working out despite adverse band conditions and just reaping near-optimum performance from your rig. Audio equalization enhances the tonal quality of that transmitted signal, producing a rich, full-bodied sound that is delightful to copy. Both features are included in most modern mid-priced and upper-end transceivers, and both features are usually adjustable via front-panel controls or menu settings. Now let's continue with a lightly technical discussion of each feature.

The Why and How of Speech Compression

Have you ever noticed someone calling CQ or answering your own CQ and each time he announces his call letters the signal fades right into the background noise? Some letters may be readable, yet regardless of the repeats, other syllables just never seem to produce enough modulation to be heard. Possibly you too have unknowingly been in that same spot . . . fading out to other stations during the most important time and wishing you could call up just a little more "oomph" to work out better. What is the entanglement here? It could be the result of adverse band conditions, using an indoor antenna, or just whispering into the microphone, but it is probably due to a low average output level from your transceiver.

The average voice modulates an SSB transceiver only around 20 or 25 percent, although instantaneous output peaks may register close to 100-percent modulation. A good speech compressor can increase that low level of modulation to around 60 or 70 percent while holding peaks from exceeding 100 percent. The resultant increase in "talk power" may not be earth shaking, but it can make a big difference when trying to snag that special contact or QSO. Simply stated, speech compressors give good performance for pennies (make that dollars in modern times!).

Over the years several techniques have been employed for speech compression. They range



Photo A— Precisely adjusting a transceiver's equalizer for great transmit audio can be a bit challenging, but it is always worth the effort. Here we are setting the transmit treble response on an ICOM IC-746Pro while listening to results on an external receiver with a wide passband and high-fidelity earphones. (Discussion in text.)

from bulk amplifying a mic input level while holding back peaks with a simple diode limiter, to separating mic audio into four or six bands, processing each separately, then recombining the bands into full-spectrum audio. RF-level compression has also been used, and cross-comparisons indicate it has an advantage over mic or AF-level compression because it can compensate for differences in gain of all of the transceiver's stages.

How can you determine if your rig uses AF or RF compression (or if it has an invisible compressor with a hidden button)? Check its block diagram included (hopefully!) in the owner's manual. If a block (or two!) is marked speech compressor or



Photo B— Response on some transceivers is adjusted by shifting the transmit-carrier oscillator's frequency, as on this ICOM IC-706. Here we have set the carrier frequency plus 180 Hz of center frequency to emphasize highs and give the audio a bright, clear sound.

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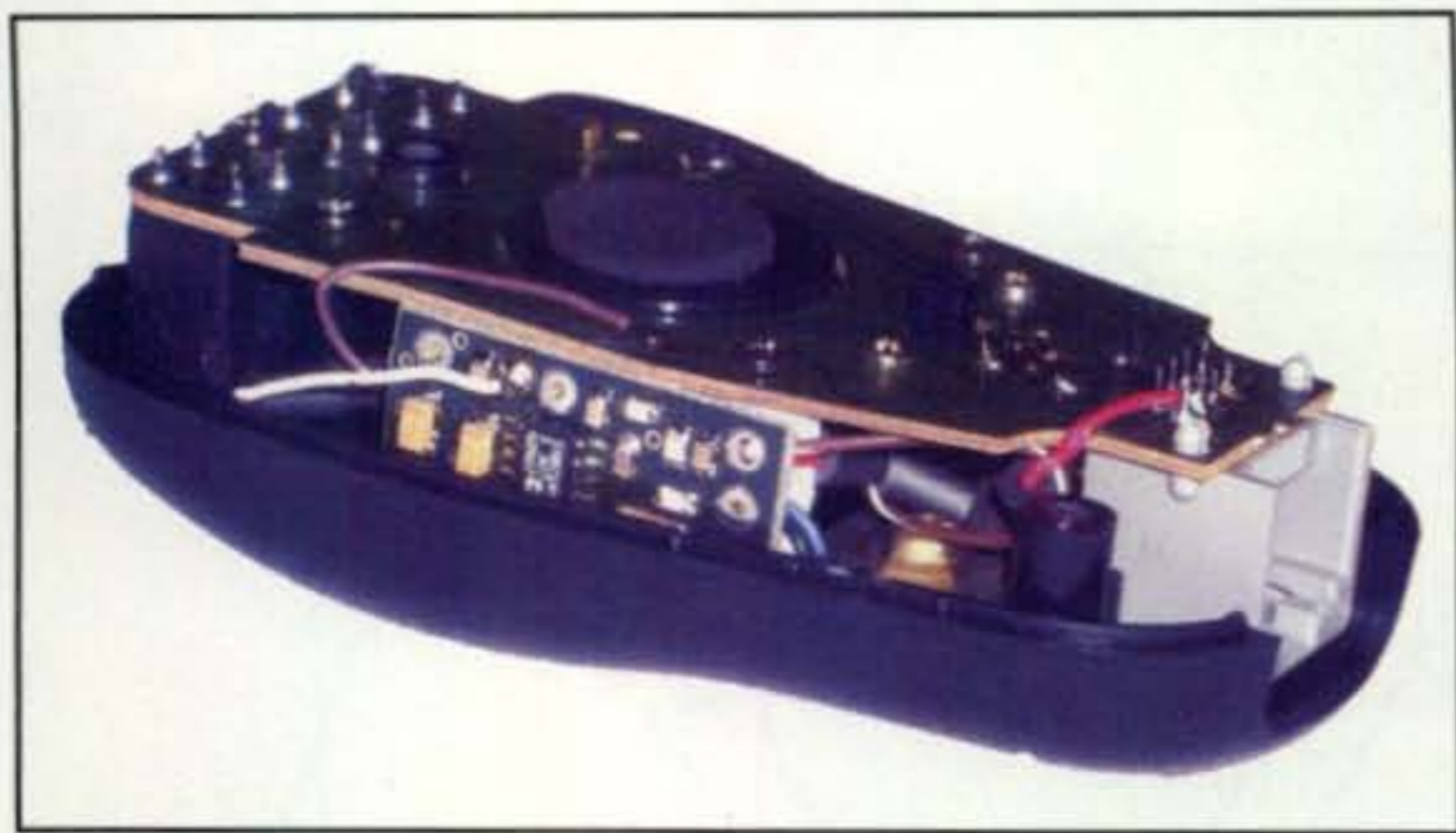


Photo C—A shining example of an aftermarket audio speech compressor is this “one big punch” unit/board produced by W4RT.com. It is installed in the microphone of a Yaesu FT-817 and controlled by switch on the mic’s back. The unit noticeably improves the audio “punch” of rigs without a speech compressor.

speech processor and it is located electrically between the mic input and the balanced modulator, it is AF-level compression. Simple and factual—with one exception. Occasionally an aftermarket speech compressor may be added to a transceiver. One example is the W4RT-produced and mic-installed compressor for some Kenwood and Yaesu rigs (photo C). It may be an AF-level unit, but it sure gives a little rig big-time clout!

Speech compressors have been a subject of debate among radio amateurs for a long time. Some folks like them; some folks don't. That is because a fair number of SSB oper-

ators crank up their mic gain—right to the point of causing adjacent frequency interference. They then switch in their rig's compressor, and guess what happens. That's right: splatter, sputter, and distortion reign supreme, and you hear what sounds like a 90-mile-per-hour wind when the operator breathes. Reduced mic gain when using a speech compressor is more than good manners. It is vital! How much should it be reduced? Again, refer to your particular transceiver's manual. It will probably list a maximum ALC or compressor meter reading to use, and I encourage staying slightly below that level to ensure a good on-the-air image.

Basics of Audio Equalization

While the main purpose of speech compression is boost a signal's “talk power” or increase its average output level, the prime function of audio equalization is enhancing audio quality to make a good-sounding signal sound even better. With a well-chosen microphone plus meticulously adjusted equalization, you actually can sound better on the air than in person.

Would you like to hear a real-life example of that fact? Just tune in the “Grand Ole Opry” from AM clear-channel station WSM in Nashville, Tennessee any Saturday night. Look past the fact that the station broadcasts country and western music (if that's not your taste in music) and just focus on the million-dollar recording-studio-grade audio. It is a shining example of how good microphones and good equalization can make one signal—any signal, AM or SSB—stand head and shoulders above the crowd. With equalization you can have rich bass tones, marvelous mid tones, crystal-clear high tones, or any imaginable mix of those ingredients.

Technically speaking, equalization uses one or more audio amplifiers with adjustments for both frequency/tone and out-



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NOTES:

1. — = IF response curve
- - = Audio response curve
2. High pitched/treble tones reduced in this area (1500-3000Hz)
3. Low pitched/bass tones reduced in this area (300-1500Hz)

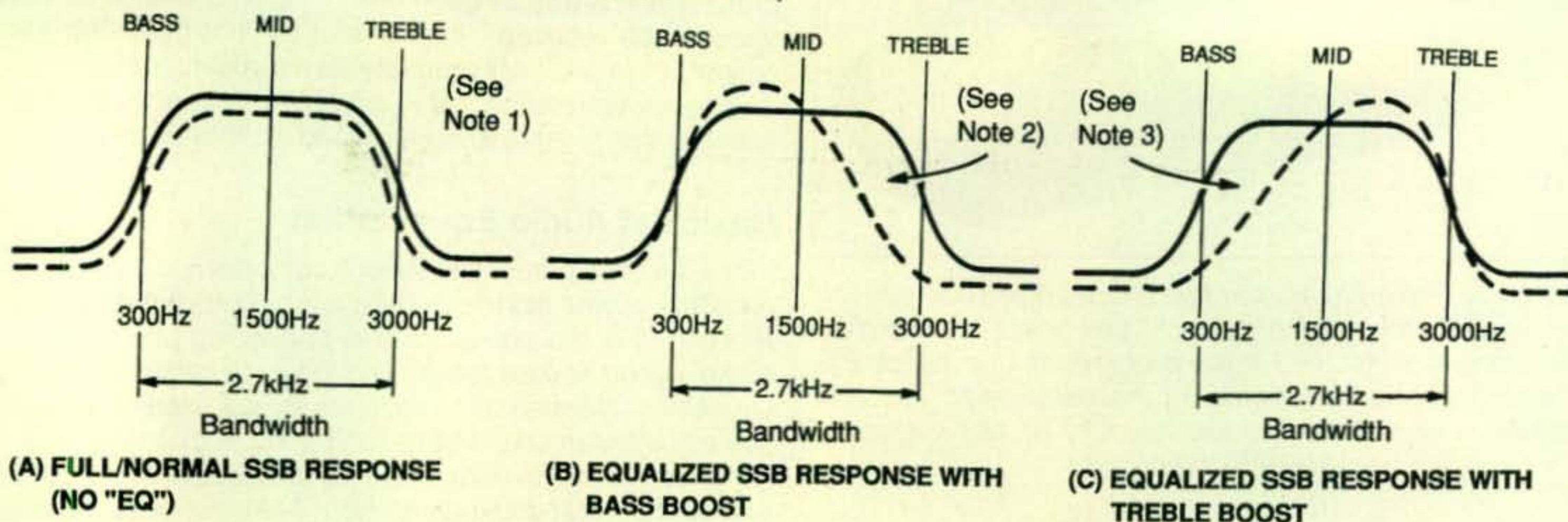


Fig. 1— Illustration of how equalization can tailor an SSB transceiver's transmit audio response. (A) Shows a typical non-equalized response curve with 2.7-kHz overall bandwidth. (B) Curve equalized by increasing lows and decreasing highs. (C) Equalization of the curve with decreased lows and increased highs. A similar effect can also be accomplished with the transceiver's transmit Carrier Frequency Adjustment. (Discussion in text.)

put level. In some transceivers the adjustments are menu-selected in fixed steps, such as bass boost, high boost, etc. In other transceivers the menu-

accessed adjustments are continuously variable around a center "zero dB" or "no change" reference point. Once you start working with these adjust-

ments, you may never stop (oh the joys of "EQ"!).

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equalizer settings/adjustments, incidentally, is not recommended here. That is because it is not an off-the-air monitor, and all transmit stages from mic pre-amp to final RF amplifier are influenced by audio equalization. What to do? Set your transceiver for low power, connect it to a dummy load, and then tune in its signal on a separate receiver or transceiver while remembering that the separate receiver must have a wide and accurate audio response to hear the full results of your adjustments. Keep an accurate record of your "EQ" settings and resultant sounds or comments from others in your station log, too. It is an endless search for perfection, so enjoy the pursuit.


I should also point out that in some SSB transceivers equalization is accomplished at the IF or RF level rather than at the AF level. Kenwood's TS-50 and ICOM's IC-706 are two examples that come to mind quickly. Here, menu selections let you adjust the transmit carrier oscillator's frequency, which has an overall effect similar to an IF-shift adjustment for transmit. How so? The width and shaping factor of a transceiver's passband are established by its crystal filter. The exact frequency of the IF's carrier oscillator that converts transmitted signals to the crystal filter's frequency may be adjustable. In that case, shifting the frequency moves audio within the passband and effectively emphasizes or attenuates high- or low-pitched tones just like adjusting a tone control. These effects are illustrated in fig. 1.

Some Additional Notes

Most of you have probably heard the classic adage "all that glitters is not gold," and that fact also applies to speech compressors and audio equalizers. They are neat, but they also have down sides.

Probably the most often cited "cockpit error" associated with speech compressors is using excess mic gain. As I said earlier, always watch your rig's meter(s) and reduce mic gain to avoid splatter when using compression. If in doubt, *just use a small amount of compression and take advantage of the resultant treble boost.*


Stay alert to other aspects of the station, too. Since speech compression raises a transceiver's average input and output power level, it places slightly heavier demands on the rig's power supply and RF output stages, plus the station's power amplifier (if used). An extra cooling fan always helps here,



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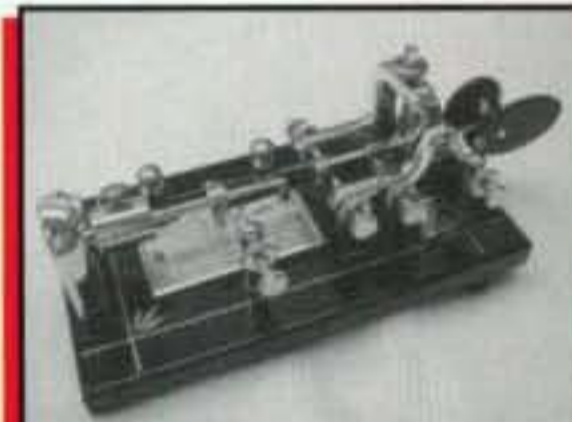
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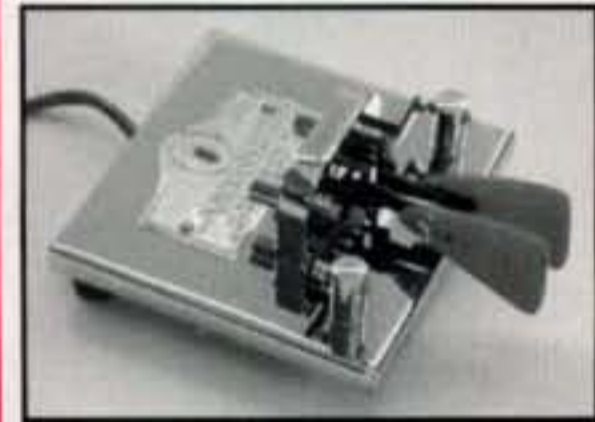
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especially during increased operating times (such as during contests). Also remember your antenna; a higher average output power level could stress its matching devices and/or traps, particularly during hot summer weather.

If there is a down side to using equalization, I would say it is trying to equalize a low-grade microphone or making blind adjustments and listening to "how it sounds" opinions from others rather than using your own judgment while monitoring on a second setup as discussed earlier. Many folks have flat spots in their hearing range, and many folks have flat spots in their speech

range. Equalization can improve this factor and really glamourize a voice, so give it a go!

Conclusion

That wraps up the discussion for this time, friends, and we trust it helped clarify some of the mysteries surrounding speech compression and equalization. Remember, too, that understanding how your gear works is only part of the amateur radio experience. Using your gear on the air is the real thrill. Enjoy some good on-the-air time every day!

73, Dave, K4TWJ

Mobile Communications Emergency Response

This is the third draft of the "Mobiling" column. The first two were overcome by events. As this is written, flood waters are still being pumped from New Orleans. The toll in deaths, injuries, and property damage is still mounting. Across the country people are asking, "What went wrong?"

There is not a single response to that question. There are many, and they will be probed in the months ahead. From the early-warning system to the breakdowns in so many different aspects of emergency response, to the recovery phase, Hurricane Katrina will be a "learning lab" from which we model future responses. At this point, it would seem to be the only intelligent thing we can do to honor those whose lives were lost in the catastrophe.

At no time in the modern era of our nation's history has there been a more critical need for radio communications over a broad region. Following the storm, landlines and cell phones were cut off, antennas were blown down, power failed, batteries were depleted, emergency generators ran out of fuel, and in many instances what did remain was

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A fully outfitted communications van such as this one is a vital asset in a large-scale emergency or disaster. However, even a well-equipped personal mobile unit can be worth its weight in gold (or oil) when nothing else will work.

flooded. In my opinion, the perfect answer to many of the critical communication needs in the storm's aftermath would have been a cadre of well-equipped mobile stations. No doubt there have been several that did respond, but the need was for hundreds, if not thousands.

Amateur Radio's Role

As far as we know at the early stage in which this column is being written, amateur radio may well have been the last radio service to go off the air and the first to return following the storm. No doubt you have heard some of the stories already rising from the event, with more than a few critical situations being addressed because ham radio was there. The strength of the Amateur Service lies in its diversity and its simplicity. Across the Deep South, cell-phone systems failed miserably. Likewise expensive public-safety radio systems, which were overcome by the onslaught at the time they were needed most. Most galling to me was a cheap shot leveled at the Amateur Service by a Motorola employee in the *Wall Street Journal* of September 6, 2005—pure sour grapes from an organization that should have more class. Its systems went down; amateur radio was on the air. (*Editor's note: Motorola apologized—quickly and profusely—for the comments of its employee, which it says were taken out of context.—W2VU*)

Before we're overcome with hubris, this is no time to gloat. Our systems are limited, but they are diversified. If someone's station goes down, another can probably fill the gap. In the aftermath of Katrina, a well-equipped (HF+VHF+UHF) mobile station would be worth its weight in gold, or perhaps even oil. However, it's also just one piece of a very large jigsaw puzzle. It's not enough to be able to communicate; it's getting the communications where they are needed most by people who are well-trained and effective.

I believe one of the lessons learned from Katrina that should be applied is that FEMA and other response agencies need to become more familiar with the capabilities amateur radio brings to a disaster scene. As many found out, once a repeater-dependent system goes down, the dominoes begin to topple, particularly in the public-safety theater of operations. Unfortunately, the trend in emergency management has been to spend vast sums of money on increasingly exotic systems, including satellite phones and repeater systems, some digital, some analog, and all complex, not to mention failure-prone. Some of these same shortcomings manifested themselves in New York in September 2001. Apparently, little was learned from that experience. If my life were on the line, I'd want simple, easy-to-operate, dependable, and redundant communications supporting my efforts.



The Red Cross in Virginia has one of the most thoroughly equipped mobiles you could imagine. (AA6JR photo)

We, as hams, also need to review our thinking. Evolving disaster management practices are built on reliability and redundancy. In the past, communications coming from hams were viewed as a separate component in the response matrix. No more. Organizations such as the Red Cross and Salvation Army want their own communicators, captive within and integrated into their organizations. They want people who are familiar with their command structure, functions, and capabilities *before* a disaster callout. Time taken to learn during an emergency is time lost in mounting the relief effort. The same holds true in assisting public-safety agencies. You need to be familiar with them and vice-versa. In the post 9/11 world many public-safety agencies require security clearances and training before you get near their operating structure.

Convergent Volunteers

The two words above send shivers through most emergency managers. During an emergency response it is quite common for generous, kind-hearted, and well-meaning people to respond to the scene, offering to help in some way. The unfortunate part is that most often they create more problems than they address.

Put yourself in the position of an emergency manager. What do you know about these people? Are they well trained and familiar with safety procedures? Do they know their equipment? Do they have adequate food and water supplies? How long can they be of assistance? Is someone among them a criminal, perhaps looking for an opportunity to loot?

At a recent hamfest I spoke with an emergency manager who was in Florida following a 2004 hurricane. He told me of communications volunteers who showed up at the scene offering to help. His description of a few were summarized

as people showing up in a T-shirt, shorts, and flip-flops with a hand-held radio they did not know how to program and one battery. Another public-safety professional told me untrained people have been showing up at shelters in Louisiana and Mississippi offering to help for "two or three hours," and others have balked at some of the assignments.

Spontaneous, untrained volunteers consume already stretched resources, including time, food, water, and administrative efforts. Some enter the affected area and frequently end up as victims of the event, getting injured or worse, often because they are ill-equipped, untrained, or both. One startling statistic from the Mexico City earthquake a few years back was that the number of people rescued by volunteers was just about equal to the number of volunteers killed attempting to mount rescues. A disaster scene is not the place to be a "cowboy" or spectator. Much of what has been applied to the Urban Search and Rescue (USAR) function rose from the Mexico City and Northridge, California earthquakes. There's a reason USAR professionals undergo extensive training and wear protective gear.

If you really want to have a positive effect on the outcome of some future emergency, *start now* by joining an organization that can put your skills to good use. Get trained. Become familiar with the organization's mission. Learn the "ABCs" of disaster management. You'll be amazed at some of the things you thought were important but are not. You'll also learn why spontaneous volunteers are, more often than not, a drain on the recovery effort.

The Mobile Command Post

By joining an organization now, you may become a valued addition to future disaster response planning. You can apply what you've learned about mobile operations, what works and what doesn't. You may be able to learn from your affiliated organization some of the things the group has tried in the past. Most important, you'll learn their mission and what their communication objectives may be.

If you have experience in putting together a mobile command or communications post, I'd like to help you share what you've learned through this column. Please send photos of your vehicle and a brief description of its capabilities. Also share your thoughts on items that didn't work out as expected, so we all can avoid making the same mistake(s).

I'm also interested in running "action" photos of any mobile units that were deployed in the response to Hurricane Katrina. You may send your photos and info to the e-mail address that appears on the first page of this column.

The Future Starts Here

As mentioned above, Katrina will be a learning experience.

As hams, we rightly take pride in our capabilities to communicate under adverse conditions. However, we need to "market" those capabilities to "customers" who have a need for those services. We need to adjust our thinking, realizing that we are not the "stars" of the recovery effort, but that we can—and must—have an important role in the response by supporting the agencies that are primary actors.

By virtue of your being an experienced mobile operator, you already have great value. Your personal vehicle or your club's mobile operations unit already has a power source, antenna, climate control, the ability to carry your own supplies, and can even provide shelter for a period of time. That's a great start. Let's not let it stop there. And to all those tireless volunteers giving their time to help others . . . amateur radio is proud of you.

73, Jeff, AA6JR

Hurricane Katrina Mobilizes VHF+ Ham Radio Operations

Elsewhere in this issue is coverage of amateur radio operators' response to Hurricane Katrina. In addition, I have written an article pertaining to the secondary stress and trauma issues associated with being deployed to a disaster site. More coverage of ham radio's involvement will be found in the Fall 2005 issue of *CQ's* sister publication, *CQ VHF*. An example of such coverage is the following excerpt from *CQ VHF's* FM columnist, Bob Witte, KØNR:

Operation Safe Haven

As I write this, people from New Orleans are being evacuated to the Denver area. Dormitories at the Colorado Community College, Lowry Campus (former Lowry Air Force Base) are being used to house the evacuees. According to the *Denver Post*, Operation Safe Haven will transport up to 1000 refugees to Buckley Air Force Base and then take them by bus to Lowry, where they will be housed in 500 dorm rooms.

Communications support for this effort is being provided by multiple ARES groups, with Arapaho County ARES taking the lead. This is a classic VHF FM utility mode communications operation, making use of several VHF/UHF repeaters, including the Rocky Mountain Radio League 449.450-MHz machine, the 146.88-MHz Denver Radio League repeater, and the 146.805-MHz WA2YZT repeater. While not in the heart of the disaster area, this is an important support operation to provide housing for people evacuated from the disaster area.

Disaster Response Team: The Colorado ARES/RACES Disaster Response Team has been called into service at the request of the ARRL Section Manager in Louisiana. As of September 9th, they are heading to the city of Covington, LA to support EOC and Red Cross operations. This team was created with this kind of response to another geography in mind. Team members are Mike Allen, NØMIK; Tom Dawson, KCØNRZ; Dean Haskins, KAØPII; Paul Garvey, KCØMIR; and Wes Wilson, KØHBZ. Good luck, guys.

I've used examples from my own state, but I know that many other hams across the country are doing similar work. It is a good day for volunteerism and ham radio.

AMSAT Cancels 2005 Symposium

As you may know by now, the 2005 AMSAT Symposium became a victim of Hurricane Katrina. Its cancellation became effective on September 6. In order to accommodate those who had planned on attending this year's symposium and who had purchased non-refundable airline tickets to fly to Lafayette, Baton Rouge, or New Orleans, the AMSAT Board at the same time of canceling this year's symposium made the decision to choose a location for the 2006 AMSAT Symposium, which will be in the San Francisco Bay area.

From AMSAT's website comes the following announcement:

The AMSAT Board of Directors voted September 6, 2006 to accept an offer from Project OSCAR to host the

e-mail: <n6cl@sbcglobal.net>

VHF Plus Calendar

Nov. 2	New Moon.
Nov. 6	Very poor EME conditions.
Nov. 9	First Quarter Moon and Moon Perigee.
Nov. 12-13	ARRL EME 50 MHz – 1296 MHz Contest. See text for details.
Nov. 13	Good EME conditions.
Nov. 16	Full Moon.
Nov. 17	Leonids Meteor Shower Peak.
Nov. 20	Poor EME conditions.
Nov. 23	Last Quarter Moon and Moon Apogee.
Nov. 27	Moderate EME conditions.

—EME conditions courtesy W5LUU.

2006 Symposium in the San Francisco Bay area in the month of October. Emily Clarke, WØEEC, will serve as host chairperson and will coordinate the symposium. "San Francisco is a great place to hold the Symposium," says Emily. "The roots of the Amateur Satellite Service can be found here, as Project OSCAR began building the first amateur satellites in the Bay Area." Emily also notes the allure of the area for both "geeks" and families alike. "We have everything from beaches to mountains, cities, and wine country, so come to the symposium and plan your vacation, too!"

In addition to the AMSAT Symposium, San Francisco is planned as a joint meeting with the ARISS International Delegates. "We're looking forward towards another successful joint meeting with AMSAT" says ARISS International Chairman and AMSAT VP-Human Space Flight Frank Bauer, KA3HDO.

More W2UK Remembered

My September 2005 piece on Tommy Thomas, W2UK, resonated with three hams who had recollections of their own. What follows are comments from Dennis Kopecky, WJ2R; Van Field, W2OQI; and Bud Weisberg, K2YOF:

Dennis wrote:

Really enjoyed the Tommy Thomas article in September *CQ*, and as requested I have a bit of a memory of Tommy that wasn't mentioned.

I had just gotten my ham license in March 1964 (effective the 17th, St. Paddy's Day) and begun my subscription to *QST*, after having read sporadic copies that came my way, either through the Jr. High School library (Oh, thank God for that nasty old lady!) or from various ham friends. Anyway, I had already gotten to work 2 meters AM with a Gonset II, and was encouraged to go over to the ARRL National Convention at the New York Hilton, in August, by the "new" friends I was meeting on those frequencies.

I remember riding up the elevator to the ballroom with Tommy, and also remember all the adulation he was graciously receiving, as the very nice guy he was. I remember the badge showing the KH6UK call, and I'm not sure if he also had something on as W2UK. The ARRL Nationals, judging from what I saw there, had to be the "Dayton" of that day and age, the gathering of the many and the mighty! (It's interesting to note that his call and address still appear on QRZ.com! And I wonder if Frances, KH6IJ, could add some light on Tommy, since she is maintaining her dad's call.)

The conversation by those riding with me seemed to be welcoming Tommy back to New Jersey and inquiring about whether he was here to stay. So, I can only assume, being the wide-eyed teenager for whom this was all new, that he was some sort of notable and well regarded. Nice guy, shorter than me, and balding, upper middle age, who for some reason I always wondered about all the years after . . . what became of him. Of course, I learned later on of his accomplishments. I never worked him or heard him on the air, and this was easily possible from my Linden, NJ QTH then and now. But, at least, now we can know that one of his activities during that rather sparsely known period was to go to that event. Whether he was a speaker at one of the various presentations or forums, I don't remember. I don't know whether I saved the program or not, or if it would still be around here. Maybe some more research in *QST* would have included program highlights in the issues preceding the convention.

About the only other speculation I have of Tommy was that living in the Colts Neck area, he had to be acquainted with Carl Scheidler, W2AZL, another one of our VHF pioneers, with his widely built and known AZL converter for 2 meters. I wonder if the two of them ever discussed 2 meters, and VHF in general! I think Carl worked for the Bell Labs facility over there in Holmdel, and when I did finally meet him at his QTH, I was surprised that his station was just a modest, average-looking, average amount of equipment, that, with some of the stations now on the covers of *CQ*, would pale by comparison.

I was privileged to meet W2AZL through Ron Todd, K3FR (then WA2JAM), who also designed and built his own converter, which later appeared in *73 Magazine*. I would think Ron's mentor was W2AZL, which is why I think Ronnie made it a point to meet up with and be friendly with Carl.

Ron and I, and his cousins, who were not hams, met at Drexel University ("Institute of Technology" back then. I was in the last graduating class of DIT; next year, it was DU!). Ron's father, W2UM (SK, mid '70s) worked at RCA over there in Somerville, and I can't help thinking that with a call as close to Tommy's, they too were acquainted, maybe even having taken the tests together. Perhaps Ron would have some memories of things his father, Paul, might have said along the way that referred to Tommy. Or you could maybe pick Ronnie's brain for a future article on Carl. I know Ron and I had also talked about VK3ATN's work with moonbounce from Australia, and we were both members of W3MGF, Drexel's ham radio club. At that time I was WB2MXZ, and I haven't talked to Ron since maybe the time when his father passed on.

The sad part about it today is that with all the FM and repeater work, sure there are plenty of stations on those frequencies, but so few of us are around who would consider or are working with experimenting with the other modes and propagation. It's going to be left to the commercial interests soon, and

there's so much fun to be had if people would realize that there is life after the repeater!

There are a number of us here in NJ who are actively refurbishing any of the old Gonsets and Cleggs we can find, and some schedules are being set up once they are up and running. I can count 13 of us in various stages of keeping these antiques active, and more are in the thinking process. Whether any of us ever gets to build some of the old circuits anymore, with all these all-mode rigs available, remains to be seen, but at least some of us remember how it once was.

That ARRL convention was a real eye opener, as I probably brushed elbows with W1HDQ, Ed Tilton, a tall, thin gentleman, and didn't even know why I should be happy to get to meet him. Then there was Leo Meyerson, W0GFG, cigar in mouth, in person, hawking his World Radio gear from all the catalogs I had read for the days when I'd set up my own station. And of course Heathkit was there, and what a brilliant idea the Heath Monitor Scope was; you could see where there was a station on the band that you could pounce on if you liked! Gus Browning, W4BPD, might have even been there, as I remember Collins pushing his exploits with their equipment.

Ah, those were such "Good Old Days," "Golden Years" in ham radio, even with their damn incentive licensing rearing its ugly head! I hope you enjoyed this walk down memory lane, and maybe you can use some of it in your column.

Van wrote:

W2UK sort of rang a bell when I saw it. His VHF-UHF operation from Hawaii was sort of a second career in the spotlight. I knew Tommy when I was a teenager. I also used to meet him for an RCA get-together in Riverhead a few years before he went SK.

He lived in Quogue on Montauk Highway. The wooded lot west of his house was used to hold the rhombics he used to keep in contact with Howard Hughes in his round-the-globe flight. They had a commercial license for that.

He won the DX contest in 1937 and 1938, the only person to win two years in a row back then. Eimac or maybe Taylor used his feat as an ad with his rig in *QST*.

Also in Quogue were resort hotels. One was run by my father (later W2PDU). He knew Tommy because Tommy married his head waitress.

Tommy arranged for my first job interview! I guess all this goes under the heading of trivia. Tommy liked to do things that others didn't bother to try, I guess. I imagine his VHF operations were inspired by Gil Wickizer, W2DOG, another engineer at RCA in Riverhead. He wrote several papers on VHF-UHF propagation for RCAC.

In response to my question concerning Tommy's call signs, Bud wrote: "Enjoyed the article on W2UK, though I knew nothing about him. You mentioned no evidence that he relinquished his mainland call, yet I found no listing for W2UK



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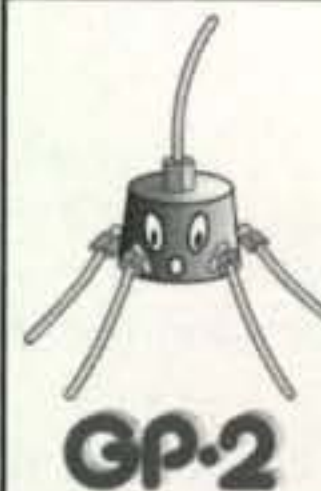
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in the Fall 57 and Winter 57-58 *Radio Amateur Callbooks*, though KH6UK (Ralph E. Thomas, RCA Comm., POB 96, Kahuku, Oahu) appears in both. Could it be he reclaimed his call when he returned to the mainland?"

Eric Roy, TI2NA, Silent Key

On July 11, 2005 the world of 6 meters lost a favorite son. Eric Roy, TI2NA, became a Silent Key. In recent years Eric had been in poor health and was less frequently active on 6 meters, his favorite band.

The following was posted to the eHam website (<http://www.eham.net>) by Phil Krichbaum, NØKE:

Eric was very active on 6 meters and was the first TI to operate 6 meters. He gave many 6-meter ops their first TI QSO. A graduate of Renselear Polytec, Erik was quite the experimenter. He had a low-power UHF TV station (licensed by the GNR) where he would broadcast movies and satellite feeds for those to enjoy in his San Jose neighborhood. He made the first-ever EME QSO from TI on 432 MHz. He was the prominent VHF technical person in the Central American area. He also recently retired the annual award given by the Costa Rica Orchid Growers society for the best orchids by winning three years in a row, and he had donated a new cup. At his estate in eastern San Jose he also raised excellent coffee beans and cut flowers for the European and North American markets. Eric built the original TI2NA 6-meter beacon and kept it going for many years. Hopefully the new beacon can continue to operate under his call.

I met Eric in July 1991 while on a mission trip to Costa Rica with my church. It was in the aftermath of the April 1991 earthquake that caused so much damage to the east coast of Costa Rica that my church sent a team to work on reconstruction in the affected area. Here is part of what I wrote about our meeting from my November 1991 "VHF" column:

On the last night I was in the country Eric invited me over for dinner. Before dinner, I got the grand tour of the QTH of the most active VHF operator in Costa Rica.

Eric has been active on VHF since 1957. He has maintained a beacon on 6 meters for many years. In his early days, he built a mechanical scanner that physically moved the dial of his radio. He presently scans from 50.100 to 50.110 MHz with his ICOM 575. He cannot scan higher in the band due to a local birdie on 50.113 MHz. Eric has a modest station but manages many contacts on 6 meters.

Eric explained that 6 meters is the only band he operates, since there is not enough activity on 144 MHz. He also said that 220 MHz is plagued by bootleggers and 432 MHz is presently hampered by other radio services interfering with weak-signal activity. Besides, when you are the only one active, who else can you contact? Eric also ex-

plained that living in a valley prevents him from mounting much of a terrestrial effort on 144 MHz.

Eric pointed out that although he lives in the shadow of the Irzu volcano, it presents him with no opportunity, since every other VHF service in Costa Rica has a transmitter on the volcano. He did cite one interesting anecdote about the volcano. A group of hams maintain a digipeater on the volcano. One morning they discovered that they had picked up traffic from Stateside, indicating that, at least for a short time, there was terrestrial propagation between the two countries. Eric has operated EME on 432 MHz. However, he has made only five contacts, three of them with the same station. He plans no future effort from his present location, since the path most favorable for EME has him pointing his antenna right over the RF hot volcano.

Eric has a very interesting solution to local TVI problems. He has installed a huge parabolic reflector on his roof for satellite reception and he picks off several TV stations with that antenna. He has built a very low-power transmitter that broadcasts on several TV channels that are not being used in the San Jose area. With that transmitter he rebroadcasts some of the TV stations he receives with his parabolic antenna. The coverage is only a few hundred feet, but sufficient enough for his surrounding neighbors to have reception of these TV stations. His neighbors have learned not to complain about his occasional interference to their televisions from his 6-meter activity, for fear that they might lose the reception of these other TV stations.

On the Air

Julio Medina, NP3CW, writes

Here is the activity for August 2005 from FK68: August 7: KP2BH, FK77; August 22: KG4RWO, EL96, K5DNL, EM15, and KP4EOR/W4 in Miami; August 25: K3TKJ, N3DB, FM28, and K4RX; August 26: KD4MDC, EM78, KY5R, EM68, N4NUM, EM84, VE3CDP/W9, EM58, KI4OT, EM67, K4GMP, FM14, W3HDH, EN50, N3JPU, FM19, W4EJG, FM05, K8SMC, EN72, N4LI, EM55, WA4MMS, WB2TQE, KB8ZMJ, EM99, K3PLV, EN92, N8XPK, EN91, KD8BMY, KA4HYY, EL98, KØVUY, EM48, KA4ZPE, EM89, KI4IH, FM05, NØZQU, EM29, N4UOA, EM84, K5DNL, EM15, KF4TEN, W8LU, EN82, NG4C, FM16, KE2DN, FN12, KG4PSR, EM65, K2PS, FM29, W4PV, EN86, WØPKI, EM56, and KB3LFD, FN20; August 27: W1RUO, FN44, VE3DO, EN94, N1KJW, FN43, VE3FGU, FN04, N1VMJ, FN32, KE2B, FN12, N1PML, FN42, KO2OK, FN20, VE2QRA/P, FN47, KT2Q, and WA2WQZ, FN32; August 28: VE9KAR, FN65 in NB, W1AIM, FN34, KC2KXV, FN31, K2KOQ, W4IVW, EL97, KB1DMX, FN31, N1DVL, FM32, AA1YB, FN54, W2IGO, FN12, W1BS, FN32, VE2XK, FN07, K4MS, EM93, NA2P, FN30, VE3GIB, FN25, and KB1LKB, FN31; August 29: W3BTX, FN00, K1DG, FN42, KB1FBN, FN43, VE3AOU, FN03, and W4IVW, EL97.

From Ed Swiderski, KU4BP:

The following contacts were made running 10 watts on 2 meters into an 8-element beam from an overlook on the Blue Ridge Parkway in northwest North Carolina. Elevation is 3744 feet. I'm still overwhelmed by them. All QSOs were made from EM96kk on 144 MHz.

ARRL VHF contest on Sunday, Sept. 11, 2005: WB1GCR, FN33, K1TEO, FN31, KA2LIM/2, FN22, KA1ZE/3, FN01, K3YTL, FN11, K2TXB, FM29, K3EAR, FM19, WC4J, FM18, K8GP, FM08, and KG4HOT, FM07.

CQWW VHF July 17, 2005: K2SMN, FN20, K3TUF, FN10, W3SO, FN00, N4MM, FM09, and K8WDQ, EN90.

Meteor Showers

The *Leonids* meteor shower is predicted to peak around 1317 UTC on November 17. An additional peak is predicted for around 1911 UTC. Finally, a third peak is predicted for 0140 UTC on November 21. None of these peaks is expected to be much more than background noise. For more information on this and other meteor shower predictions, please visit the International Meteor Organization's URL: <<http://www.imo.net>>. Also see the "Propagation" column by NW7US elsewhere in CQ.

Current Contest

The second weekend of the **ARRL 50 MHz to 1296 MHz EME Contest** is November 12-13. For ARRL contest rules, see the issue of *QST* prior to the month of the first weekend of the contest or go to: <<http://www.arrl.org>>.

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, email, etc., please contact the person listed with the announcement. To date the following conference organizer has announced a call for papers for the forthcoming conference:

EME Conference 2006: The EME Conference 2006 will be held next year in Wuerzburg, Germany on August 25-27. Interested authors are invited to present a paper(s) for the conference. Electronic submissions in Word97, Word2000, Acrobat5 (PDF), or text format will be accepted by e-mail or CD. Please ask first if you are using another format. If you are interested in writing and/or presenting a paper, send an e-mail to Rainer Allraun, DF6NA, at:

<df6na@df6na.de>. Please contact him as soon as possible with an abstract or even a general idea. This will help the conference team with its planning activities. For more information about the EME Conference 2006 see: <<http://www.eme2006.com>>.

And Finally . . .

As mentioned at the beginning of this month's column, elsewhere in this issue is my article on secondary stress and trauma. I urge you to take a look at it, especially if you are planning on assisting in any type of disaster communications. There is a growing body of evidence that indicates that we may be sensitive to secondary stress and trauma when we work with victims of disasters. I saw evidence of this type of

stress when I was at the site of the Oklahoma City Murrah federal building in the aftermath of the April 19, 1995 bombing.

What is more alarming about any kind of stress and trauma is that what we feel as a result of one traumatic situation seems to pass on and accumulate with the next and the next. For those of us who have worked at multiple disaster sites, this may be problematic, as something seemingly minor may cause us much stress. Please take a look at the article as a way of taking preventative precautions before going to the next disaster site.

Thank you again for supporting this, your column. I look forward to receiving your input for future columns. Until next month...
73, de Joe, N6CL

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Is Contesting a Closed Club?

November's Contest Tip

Operating contests is always about the mix between running stations and S&P (searching and pouncing). When you are in S&P mode, don't miss an opportunity to try a quick stint at running if you bump into a clear frequency. A solid mix of the two while tuning the bands is a great operating strategy that may yield surprising results!

Some of us, including myself, consider our closest friends to be fellow testers. As I look back at my 35+ years of contesting activity, I feel blessed to have made so many good friends over the years who share common interests with me that go well beyond ham radio. However, do the majority of testers share this experience or is my situation unique?

As it turns out, breaking into the social genre of contesting is no different than with any other group. If you're new to an activity and simply show up on the scene, it's not likely the group will stop everything it's doing to get your point of view. However, the social nature of contesting is an interesting subject. By our very nature, we thrive on interaction. Unlike the on-line culture, testers are a group of individuals who love to share, tell war stories, and communicate ideas in person. If you've ever been to the Dayton Hamvention® or any other major hamfest, you'll always find the testers chatting about their sport late into the night.

As a new person, breaking into this group can be intimidating. For starters, you may barely be able to speak the language of contesting. It's likely you don't really have a big station to talk about. The wallpaper on your shack walls is more likely the kind you find at Sears and not the type provided by contest administrators. It takes real courage just to approach a group in conversation and join in. As experienced testers, we often don't make the task any easier for a newcomer. Human nature says that we gravitate to people we know who speak our contesting language. It's an unusual person indeed who takes the time to embrace a newcomer.

Help is Available

Being a "member" of the contesting community begins by getting involved. The easiest way to do that is to get proactive and learn the skills needed to be active tester. Most of us began our contest careers simply by jumping in. We were hardly skilled at the sport in the beginning. Some of you may remember the description of my first contest—the 1970 ARRL Novice Round-up—where I spent nearly 30 hours of operating time to work approximately 200 stations. However, it was a start, and

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e-mail: <K1AR@contesting.com>

Calendar of Events

Oct. 22–23	ARCI Fall QSO Party
Oct. 29–30	CQ WW DX SSB Contest
Oct. 29–30	10-10 Int'l Fall CW Contest
Nov. 5–6	Ukrainian DX Contest
Nov. 5–7	ARRL CW Sweepstakes
Nov. 12–13	Worked All Europe RTTY Contest
Nov. 12–13	JIDX SSB Contest
Nov. 12–13	OK/OM CW Contest
Nov. 19–20	LZ DX Contest
Nov. 19–20	RSGB 1.8 MHz CW Contest
Nov. 19–21	ARRL SSB Sweepstakes
Nov. 26–27	CQ WW DX CW Contest
Dec. 2–4	ARRL 160M Contest
Dec. 10–11	ARRL 10M Contest
Dec. 17–18	Stew Perry Topband Challenge

after working a few more contests I started to get the hang of it. The same can be true for you—and without a big station. There is a contest almost every weekend. If you review any of the available on-line contest calendars, you can make plans months in advance to operate in events that align with your interests (e.g., state QSO parties, CW contests, DX events, etc.). Here is a good list to start with when researching scheduled events:

<http://www.sn.no/~janalme/hammain.html>
<http://www.hornucopia.com/contestcal/>
<http://www.sk3bg.se/contest/>
<http://rzhhome.rrze.uni-erlangen.de/~unrz45/BCC/>

There is nothing like on-the-air contest experience to give you something to share with another tester.

Another tactic is for you to read and study more about the sport. Fortunately, in today's modern world there are numerous on-line sources, as well as several books and videos (see the CQ ad of available books and videos elsewhere in this issue) dedicated to contest operating. Here are just a few of the internet resources at your disposal (most containing interesting links to other sites):

<http://www.contesting.com>
<http://www.k5kj.net/contest.htm>
<http://www.qth.com/ka9fox/>
<http://personal.eunet.fi/pp/salor/>
<http://www.qsl.net/oh1noa/>
<http://www.cqww.com/>
<http://www.wyc.net/>

Then there is the matter of contest clubs. These clubs are great repositories of information and resources focused on contest operating. Whether you choose to join one in your local area or simply access the clubs' readily available resources, it's a fantastic way to get more involved. The K5KJ internet site, for example, has a long list of clubs that will place your surfing activities for information

and knowledge at new highs. If you simply Google the phrase "Ham Radio Contest Clubs," you'll be very busy indeed. In addition, almost all of the contest clubs publish a newsletter, and most will let you subscribe, even if you are not a member. Check out their sites for more information. More important, a local club is a great way to meet people without the overhead and social pressures of a huge hamfest such as Dayton. Today's clubs are generally hungry for new members. Simply showing a little initiative and interest on your part will go a long way toward becoming more integrated into the group. A quick note to a club officer or activities manager often is all it takes to get the ball rolling. The Potomac Valley Radio Club, based in the metro-DC area, recently has led the field in recruitment and interest with its widely acclaimed contest university seminars. Check out <<http://pvrc.org/>> for more information and reach out to the officers.

Speaking of hamfests, although the throngs of people who seem to know "everyone but you" abound, they also can be a great resource for learning about contesting and getting involved. Nearly every major convention has a forum dedicated to contesting. It's a great opportunity to gain knowledge and meet people. Also, it's usually possible to hear contest speakers and obtain copies of their presentations after the fact.

If you're like many new contesters, you probably don't have a very good station. As it turns out, it's very common for contest station owners to look for operators to fill the chairs in major contests. If you're new to the game, you probably can't expect to sit in a high-profile operating position (e.g., 20 meters in the CQ WW DX SSB Contest), but you almost always can be part of the team and learn the ropes. The key is to get involved and express interest. Drop a line to a station owner near you and ask if he's looking for any assistance in an upcoming contest. You'll be surprised how many owners will jump on the opportunity to bring you into the fold. As an example, Dave Robbins, K1TTT, is always looking for operators. His fine station is active in nearly every contest, so there is an opportunity to play in smaller events to get your feet wet. A quick check of contest entries and use of a local map will help you build your list of candidates to contact. The rest is up to you!

There is another great source of information exchange on the subject of contesting, and that is the readily available

contest reflectors. Whether you choose to simply read the published archives of comments, which can be found at: <<http://lists.contesting.com/pipermail/cq-contest/>>, or actually subscribe to the list, you will be more informed and involved. In recent months there have been several introductory e-mails published by hams who were new to the contest game. The response from experienced contesters was overwhelming, with offers of encouragement, answers to basic questions, and the opportunity to "come over and operate."

The bottom line is that as with any specialized interest group, there is a barrier to entry. It's simply human nature. Not all of us are as outgoing as others, so the introverted types may find the specific barriers within contest circles to be nearly impenetrable. However, if there is any common theme within the contest world right now (and ham radio in general), it's the concern about our lack of new members—and not just 15-year-olds. The good news is that there is an incredible amount of information about contest operating at your

disposal. The ultimate key to entering the world of contesting lies with your own initiative and drive. Yes, you may be burned a bit along the way when someone doesn't answer your e-mail or call you back. You may find it discouraging to engage with fellow contesters in a social setting at times. However, on balance, contesters are eager to have more contesters join the fold. It's the secret to our future. Fortunately, there are many of us who want to help, so feel free to simply ask!

Final Comments

Well, that's it for this month. If you haven't gotten to it already, don't forget to complete your 2005 CQ Contest Survey published in September's column. This has turned out to be a record year for participation so far, so I thank those of you who have already submitted your responses. If you prefer, you can submit an electronic version by going to: <www.ham-gallery.com/survey>. Time is running out, so be sure to send your response as soon as possible. 73, John, K1AR

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Three Awards from Europe

We begin this month with an award sponsored by Russia's Tambov Award Group. The award is very popular and closely corresponds to CQ's USA-CA Award. We then continue on this time with an award from Croatia and one from the Ukraine, plus include biographical sketches from USA-CA All Counties recipients KM9X and W4OV.

The Russian Districts Award

The Tambov Award Group sponsors the Russian Districts Award, which is available to amateurs and SWLs. Although it is very similar to the USA-CA award, Russia does not have counties, and since the split up of the old Soviet Union, even the number of "oblasts" has shrunk to about 100 or so. The sponsor of this award uses the concept of "districts," and there are five types: districts, municipal districts, administrative districts, areas, and cities. All of these designations are carefully laid out on the official RDA list found on the website <<http://rdaward.org/indexeng.htm>>.



The Russian Districts Award is issued in various levels for contacting the districts of Russia.

How many districts are there? Right now there are 2747. However, just as the U.S. county total changes, although infrequently, the same is possible with the number of districts in Russia. The Russian Districts Award is recommended due to its immense challenge and its support of so many Russian operators.

If you look at a number of recent Russian QSL cards, many of them have a notation with two letters and two numbers, such as AD-02 on a card from a UA6 station. The QTH on the card should show that the location of the station is somewhere in the city of Adygejsk. Russia is a gigantic country that covers 12 time zones, and there is no interstate road system. Much of the country lies in re-

*12 Wells Woods Rd., Columbia, CT 06237
e-mail: <k1bv@cq-amateur-radio.com>

USA-CA Special Honor Roll

Michael Elliott, KQ0B
USA-CA All Counties #1124
July 26, 2005

Bob Gagliardi, N4XML
USA-CA All Counties #1125
August 15, 2005

USA-CA Honor Roll

500	1500	2500
KQ0B3359	KQ0B1422	KQ0B1237
N4XML..... 3360	N4XML.....1423	N4XML.....1238
1000	2000	3000
KQ0B1698	KQ0B1316	KQ0B1146
N4XML.....1699	N4XML.....1317	WA5VGI.....1147
N2LYV1700		N4XML.....1148

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 Melnosky, K1BV, 12 Wells Woods Road, Columbia, CT 06237 USA. DX stations must include extra postage for airmail reply.

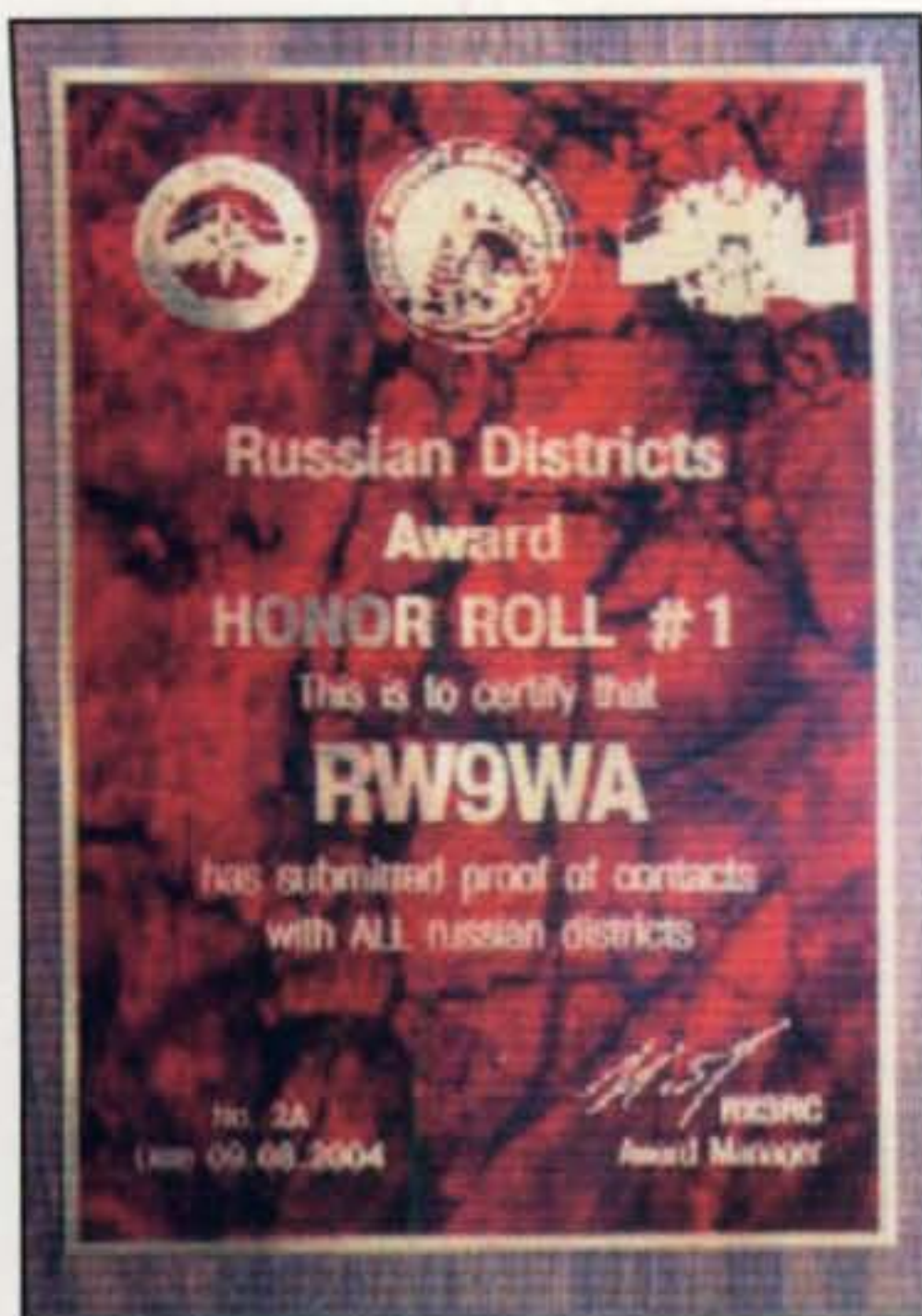
mote areas served by rail or what we would call secondary roads. That's why there is a separate internet-based reflector recording activity by DXpeditions to rare districts, similar in nature to the websites run by U.S. county hunters.

Putting a rare district on the air is not like running a county line; it's a commitment to stay for a couple of days. Because of the distance involved, and the variable propagation these days, a longer stay is a definite advantage.

The basic award is available for contacting 100 districts of Russia. There are also separate awards for 250, 500, 1000, 1500, and 2000 districts of Russia, plus the Honor Roll plaque for 2500 districts and the Honor Roll #1 plaque for all 2747 districts.

All bands and modes apply. Contacts must be after June 12, 1991. A GCR list is required and must contain the official RDA district numbers, which may be found on the group's website. The award manager reserves the right to request any specific cards to satisfy any doubt whatsoever.

The fee for Russian amateurs is the sum equivalent to \$US2 paid by postal money order at the rate of the Central Bank at date of payment. Fee for other CIS amateurs is \$US4 or 8 IRCs. Fee for all others is \$US10, 10 Euros, or 10 IRCs. Fee for the RDA-2500 Honor Roll plaque is \$US35 or 35 Euros. Cost of the Honor Roll #1 plaque is \$US40 or 40 Euros. Apply to: RX3RC, Roman A. Novikov, P.O. Box 21, 392000 Tambov, Russia. (Because of the problem



The Russian Districts Honor Roll #1 plaque for contacting all 2747 districts.

of sending money through the mail to Russia, USA/VE applicants may apply to: Tom Baugh, AE9B, 14716 S. Bynum, Lone Jack, MO 64070.)

Worked 9A DIG Members Award

The Diplom Interessen Gruppe (DIG) is a European awards hunting club based in Germany and having branches in many European countries. The local group in Croatia offers the 9A DIG Members Award for contacting its members. Kresimir, 9A7K, is very active in the group, and his usual high-quality design effort is again reflected in the certificate.

All contacts after July 5, 1992 are valid for the award. No use of repeaters, packet radio, or satellite allowed. SWL okay. The award is available for CW, phone, RTTY, and mixed contacts. All contacts on HF and WARC bands are allowed. The diploma is available for both 50-MHz and 144-MHz contacts as well.

Requirements and fees are as follows: Basic, Class I—three contacts with 9A DIG members required, \$US6 or 5 Euros. Basic, Class II—two contacts required, \$US6 or 5 Euros.

Gold Medal—five contacts, \$US17 or 15 Euros.

9A Members Trophy—ten contacts, \$US35 or 30 Euros.

Honor Roll, gold endorsement—15 contacts, \$US2 or 2 Euros.

GCR list should include callsign, DIG number, date, time, frequency, mode, and signal report. Apply to: Kresimir Juratovic, 9A7K (DIG 5738), P.O. Box 88, HR - 48001 Koprivnica, Croatia.

Member list: 9A1BTU (DIG 0934), 9A1CAY (0524), 9A1CBM (0525), 9A2AA (0513), 9A2AU (1257), 9A2AZ (0453), 9A2CB (0593), 9A2CC (3658), 9A2HF (5286), 9A2JK (1256), 9A2LA (0469), 9A2LM (2449), 9A2TX(5703), 9A2WJ (0537), 9A3IJ (5078), 9A3SM (4740), 9A3ZG (5565), 9A5I (0558), SK 9A7K (5738), and 9A2KL (5948).

Dan Mulford, KM9X, USA-CA All Counties #1117

I started out in ham radio after being influenced by a local operator as a teen. I passed the Novice test, and worked on code and theory and passed the FCC test for Technician and an FCC testing session in Indianapolis in 1983. I became heavily involved in working 6 meters and was 23rd in the world in grids at one point before selling out to buy HF equipment. I upgraded to General at a VE session in 1986. I then began to teach classes for our local club and became a VE myself shortly thereafter. I have been active in RTTY contesting since 1986.

A change in employment led me to long-haul trucks, and with HF installed, I found the 3905 Century Club and have been active there since 1987. I left the road and went into Public Safety Communications in 1988, working for the Ripley County, Indiana Sheriff's Department. We took on 9-1-1 in 1992, and with more training and responsibility, I was appointed Assistant Supervisor. In 1996 I left for a better position at the City of Greensburg, IN Police Department Communications Center, where I am currently Supervisor and 9-1-1 Coordinator.

I have 31 years with the Osgood Volunteer Fire Department, and 21 years with the Ripley County Emergency Management Agency, currently as Deputy Director. I have presented countless hours of hazmat, RACES, and severe weather spotter classes since 1986. As an active storm chaser, and part of the county spotter team, I have been in the right place at the right time on several occasions.

I am a charter and life member of the local Ripley County Repeater Association since 1982. I held the position of president six times and secretary/treasurer for ten years. I am an ARRL member and have been for many years.

I was spending Thanksgiving weekend of 2002 looking for something to do. I was tuning around on 20 meters and heard a pile-up, nowhere close to the DX areas. I listened to a mobile running his county and worked him. I continued for the weekend and found I had a pile of counties. More research into this newly found challenge soon had me going back through all the cards for 25 years of hamming and putting them into the Excel database I got free from someone. I was hooked!

I began going HF mobile for the first time since my old truck-driving days, and put out every county in southeastern Indiana on Christmas weekend that year. I found I was not only hooked on county hunting, but running counties as well. It seemed everyone wanted KM9X, but I didn't know why. I also found it was much hard-



Dan, KM9X, USA-CA All Counties #1117, March 8, 2005.

er to write and drive, so I stopped and ran county lines if possible. then I asked Judy, KB9MGI, to come along to log.

In the spring of 2003 we were running across southern Indiana and she told me I had a callsign wrong while I had the mic keyed. That was bad. Immediately the question was "Is there a licensed YL in that car?" We didn't know why, but she began giving out counties from then on.

On a planned county hunting vacation in August 2003 we happened to meet Randy, AA8R, and his wife Patty, who spent hours explaining all about county hunting, the awards available, what we were good for when running, plus gave us hints on how to do it all. they answered a barrage of questions that we both had pent up inside, as they were the first *real live* county hunters we had talked to!

Now, after several Michigan Minis, MMM Minis, and other meetings with county hunters, I have learned much more. To date I have driven 37,914 miles and run 1698 counties on 20 and 40 meters, and some on CW by request. I'd be out more, but it seems that work keeps getting in the way of county hunting!—73, Dan, KM9X

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The Worked 9A DIG Members Award is available for contacting Croatian members of the Diplom Interessen Gruppe.



Sponsored by the Chuguev, Ukraine radio club Radiohwylya, the Earth Through the Porthole Award honors the nine cosmonauts who graduated from the Chuguev military pilots school.

Earth Through the Porthole Award

Many of us here in the U.S. are at least somewhat familiar with the names of American astronauts and the achievements of NASA and military pilots in recent history. However, there were brave pilots from other countries as well. This award recognizes the nine Ukrainian cosmonauts, all graduates of the Chuguev military pilots school.

Contact members of the Chuguev radio club Radiohwylya, stations of the Kharkovskaja oblast, and members of The Fifth Ocean club. The award may be earned in two ways:

Ukraine stations

Nine QSOs with members of radio club Radiohwylya.

Two QSOs with members of radio club Radiohwylya, two QSOs with members of The Fifth Ocean club, and 16 QSOs with stations of Kharkov city.

For stations outside of Europe

One QSO with a member of radio club Radiohwylya and five QSOs with stations of Kharkovskaja oblast.

One QSO with a member of radio club Radiohwylya and two QSOs with members of The Fifth Ocean club.

The same station may be contacted on different bands or modes for credit. Contacts on or after January 1, 2003 count. Cost of the award for the radio amateurs of Ukraine is the

Bruce Phegley, W4OV
USA-CA All Counties #1118

My first contact with the county hunters was on 40 meters in 1964. I was traveling in Kansas for the Endicott Johnson Shoe Company. I had a lot of time to give out counties to people such as K9EAB. Other mobiles on the road at that time were W0KZZ, K8CIR, W5HDK, K4ISE, W0JWD, WA9DCQ, and W4BPC ("Baker Peter Charlie," as back then we were allowed to use those phonetics—hi hi!). I was not collecting counties, but many of the mobile stations filled out MRCs (mobile reply cards) for the counties they were in when they worked me. I certainly appreciate all of their work.



Bruce, W4OV, USA-CA All Counties #118, March 14, 2005.

A couple of years ago I became interested in the YASME award and started going over old cards to see how many I had that would qualify. I was looking for cards from Lloyd and Iris Colvin, Dick Spenceley, and others. That is when I started running across the cards from some of the county hunters I had worked and had eyeball QSOs with years ago. I found I had almost 1000 counties already confirmed! the chase was on.

During the next year or so I worked the rest of the counties on 20, 30, and 40 meters. As propagation diminished on 20 meters, 30 proved to be an important band as mobile activity increased.

I want to thank the mobiles who covered all the counties and gave me the contacts. A lot of things can be learned from this exceptionally nice bunch of hams.—73, Bruce, W4OV

equivalent of 1 Euro; for those from other republics of CIS is the equivalent of 1.5 Euros or 3 IRCs; all others cost is 5 Euros or 10 IRCs. Send log extract and fee to: Stanislav Logvinenko, UT2LY, P.O. Box 43, Chuguev 63503, Ukraine.

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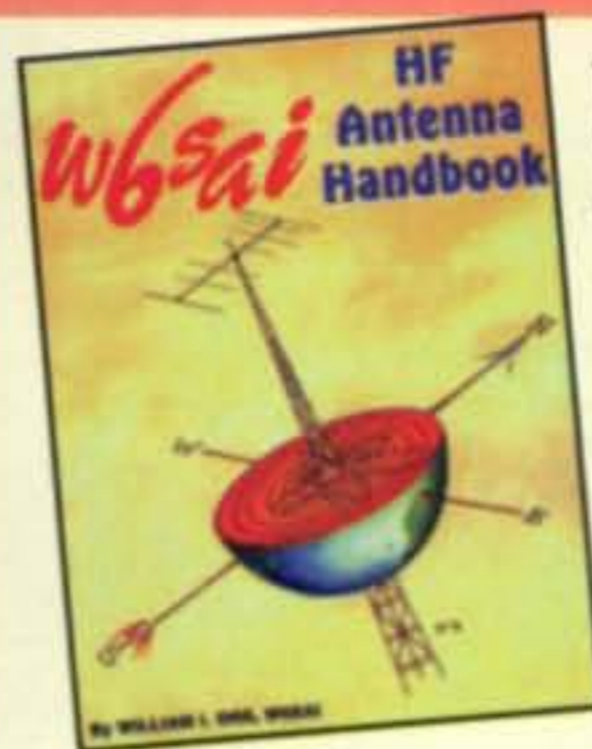
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Solar Cycle 23 Minimum Looking Strangely Like Solar Cycle Maximum

A Quick Look at Current Cycle 23 Conditions (Data rounded to nearest whole number)

Sunspots

Observed Monthly, August 2005: 36
Twelve-month smoothed, February 2005: 34

10.7 cm Flux

Observed Monthly, August 2005: 91
Twelve-month smoothed, February 2005: 99

Ap Index

Observed Monthly, August 2005: 16
Twelve-month smoothed, February 2005: 15

Quite a bit of excitement occurred during September, when sunspot region 808 (a return of sunspot region 798) rotated into view with a bang. On September 7, 2005 this sunspot unleashed the fifth-largest flare of the whole Cycle 23. The flare measured in at X17! From that point onward, it continued to stir up space weather and influence radio propagation with at least nine more X-class flares (the region is still active as I write this column, so it has the potential to unleash yet more X-class flares). During some of these solar flares, CMEs (coronal mass ejections) were hurled toward the Earth, triggering geomagnetic storms and aurora.

Is this what we should expect with only a year left before Cycle 23's end and a period of least activity?

The solar cycle minimum is the lowest point of the sun's 11-year activity cycle. We're expecting

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e-mail: <cq-prop-man@hfradio.org>

Flash!

CQ WW SSB Contest Forecast Shows a Challenge! Poor to Good Conditions Expected

Since this issue of CQ should reach most subscribers prior to the start of the CQ World-Wide DX SSB Contest weekend of October 29-30, here is an updated forecast made at press time for the general propagation conditions expected.

Based on the 27-day recurrence tendencies of solar and geomagnetic conditions, it looks as if conditions will be poor to fair on October 29 and fair to good on October 30. Expect Below Normal to High Normal HF conditions during the contest weekend.

Daily 10.7-cm solar flux levels are expected to be around 80 during the contest weekend. The geomagnetic planetary A-index is expected to be about 10 during the SSB contest.

There is a chance for a geomagnetic storm before or at the start of the weekend, so propagation conditions during this year's SSB contest will be a challenge. To maximize scores, be sure to plan your operation based on the details covered in last month's column.

LAST-MINUTE FORECAST

Day-to-Day Conditions Expected for November 2005

Propagation Index.....	Expected Signal Quality			
	(4)	(3)	(2)	(1)
Above Normal: 2, 9-11, 13, 17-20 27, 29	A	A	B	C
High Normal: 1, 3, 12, 16, 26, 28, 30	A	B	C	C-D
Low Normal: 4, 8, 15, 22, 25	B	C-B	C-D	D-E
Below Normal: 21, 23-24	C	C-D	D-E	E
Disturbed: 5-7, 14	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 on the following pages.
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 3 will be good (B) on Nov. 1st and 3rd, excellent (A) on the 2nd, fair to good (C-B) on the 4th, and no openings are expected on Nov. 5th to the 7th, etc.

that to happen sometime during the end of 2006. It's reasonable to expect rather quiet conditions, this close to the end of the cycle.

However, 2005 began with an X-class flare on New Year's Day. Since then we've experienced four severe geomagnetic storms and at least 15 more X-flares.

"That's a lot of activity," says solar physicist David Hathaway of the National Space Science and Technology Center in Huntsville, Alabama.

Compare 2005 to the most recent solar cycle maximum: "In the year 2000," he recalls, "there were three severe geomagnetic storms and 17 X-flares." In both the number of storms and flares, 2005 registers about the same. The solar cycle minimum is looking strangely like the solar cycle maximum.

If you have followed this column over the last couple of years, you know that the sunspot numbers have declined since 2000. How can this level of activity be happening now?

Hathaway answers: "The sunspots of 2005, while fewer, have done more than their share of exploding." No kidding. The X-class flares of September 2005 from sunspot region 808 have made this September the most active month on the sun since March of 1991.

Hathaway points out that much about the sun's activity cycle remains unknown. "X-ray observations of flares by NOAA's Earth-orbiting satellites began in 1975, and CMEs were discovered only a few years earlier by the seventh Orbiting Solar Observatory. Before the 1970s, our records are spotty."

	1994	'95	'96	'97	'98	'99	2000	'01	'02	'03	'04	'05
Oct.	27	12	9	32	71	108	115	114	91	58	36	19*
Nov.	26	11	10	35	73	111	113	116	85	57	35	17*

*Predicted values expected during the 2005 contest

Table I— Smoothed sunspot numbers recorded during CQ WW DX Contests since 1994 (October SSB, November CW).

This means we don't know what is typical. Scientists have monitored only three complete solar cycles using satellite technology. "It's risky to draw conclusions" from such a short span of data, he says.

It sure has caused some excitement with VHF enthusiasts, though. I saw a good bit of 6- and 2-meter aurora-mode DX spots on the reflectors during September. We had one period with the K-index reaching the highest level of nine. Aurora was observed as far south as Arizona.

The CQ WW DX CW Contest

The 2005 CQ WW DX CW Contest will start at 0000 UTC, Saturday, November 26 and continue until 2400 UTC, Sunday, November 27. Expect High Normal conditions for the first contest day, and Above Normal for the second. The planetary A- (*Ap*) index should remain at about six for both days.

The best tool available to predict HF propagation conditions in advance is the 27-day recurrence tendencies of geomagnetic, solar, and ionospheric conditions. It is not an absolute method, but it does give a very good indication of what is expected. Predictions for one 27-day

rotational period are far more accurate than for three 27-day rotational periods. Be sure to carefully check conditions on October 30 and 31, since this would be one rotational period before the CW contest weekend. There is better than a 90-percent chance that conditions observed on those days will recur during the November contest weekend.

See the "Last-Minute Forecast" at the beginning of this column for additional information concerning expected day-to-day conditions for the entire month of November. An updated day-to-day forecast for the CW contest weekend will appear as a bulletin at the beginning of next month's column. December's issue should reach most subscribers before the CW contest begins. You can also see an up-to-the day "Last-Minute Forecast" on my propagation resource center at <<http://prop.hfradio.org/>>.

Table I tabulates the observed sunspot count during previous WW DX Contest periods since 1994, and what's predicted for the 2004 contest. Contest conditions could be somewhat like those of 1994. Low- to middle-latitude propagation paths should be fairly good, with openings even on 15 meters. With the low probability of geomagnet-

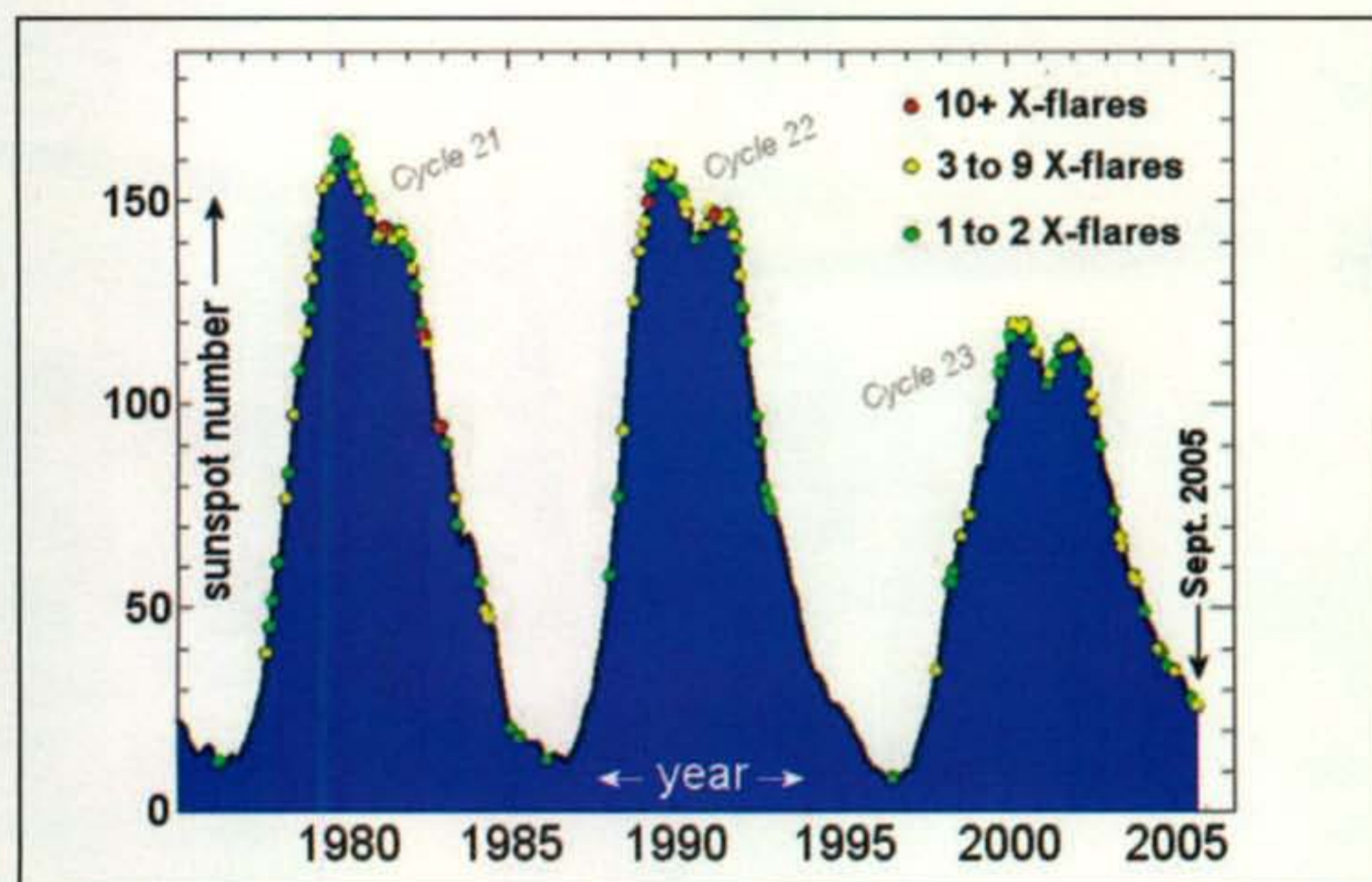
ic disturbance during the contest weekend, the bands should be stable, and the lower frequency bands will be much quieter than the past few years.

November Propagation

Last month's column had a detailed review of conditions expected during October. Let's look at what we can expect this month.

160 Meters: Expect an increase in DX openings on this band during the hours of darkness and into the sunrise period. Since we are getting very close to the end of Cycle 23, this season will be quite a bit more favorable for stable conditions on this and the other bands. With the cycle predicted to reach its end by the beginning of 2007, we're only about a year away from the least amount of geomagnetic disturbance conditions since the start of Cycle 23. This winter season will be reasonably quiet. The combined effect of the decreased static levels and longer hours of darkness in the northern latitudes will make 160 a pleasurable band all winter. During this month's CQ WW CW contest, participants should experience a fair to good possibility of scores on this band. Look for openings toward Europe and towards the south from the eastern half of the U.S. and towards the south, the Far East, Australasia, and the South Pacific from the western half of the country. These openings should be strong during the contest period. Remember, the best propagation aid for this band (and for 80 and 40 meters as well) is a set of sunrise and sunset curves, since DX signals tend to peak when it is local sunrise at the easterly end of the path.

80 Meters: This should be a great band for DX openings to many areas of the world during the hours of darkness and into the sunrise period. Eighty meters becomes a reliable long-distance band throughout the entire period of darkness. The band should peak towards Europe and in a generally easterly direction around midnight. For openings in a generally western direction, expect a peak just after sunrise. The band should remain open towards the south throughout most of the night. Noise levels will be considerably down



Sunspot counts and X-flares during the last three solar cycles. Note how solar activity continues even during solar minimum. (Image credit: David Hathaway, NASA/NSSTC)

Two Great Calendars for 2006/07

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Classics Calendar - This year we're going back to the full color version of our Classic Radio Calendar! 15 spectacular images by the renowned photographer, Joe Veras, K9OCO. Included in this year's calendar you'll find: Collins, Hammarlund, Meissner, National, Eldico, Johnson, Millen, WRL, Hallicrafters, Heath, Swan and more!

Amateur Radio Operators Calendar - Photographer Larry Mulvehill, WB2ZPI has done it again! Larry zig-zagged across the nation and captured 15 spectacular images. This year's calendar includes some of the biggest, most photogenic Amateur Radio shacks, antennas, scenics and personalities in the country!

These 15 month calendars (January '06 through March '07) include dates of important Ham Radio events such as major contests and other operating events, meteor showers, phases of the moon, and other astronomical information, plus important and popular holidays. Great to look at, and truly useful!



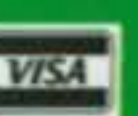
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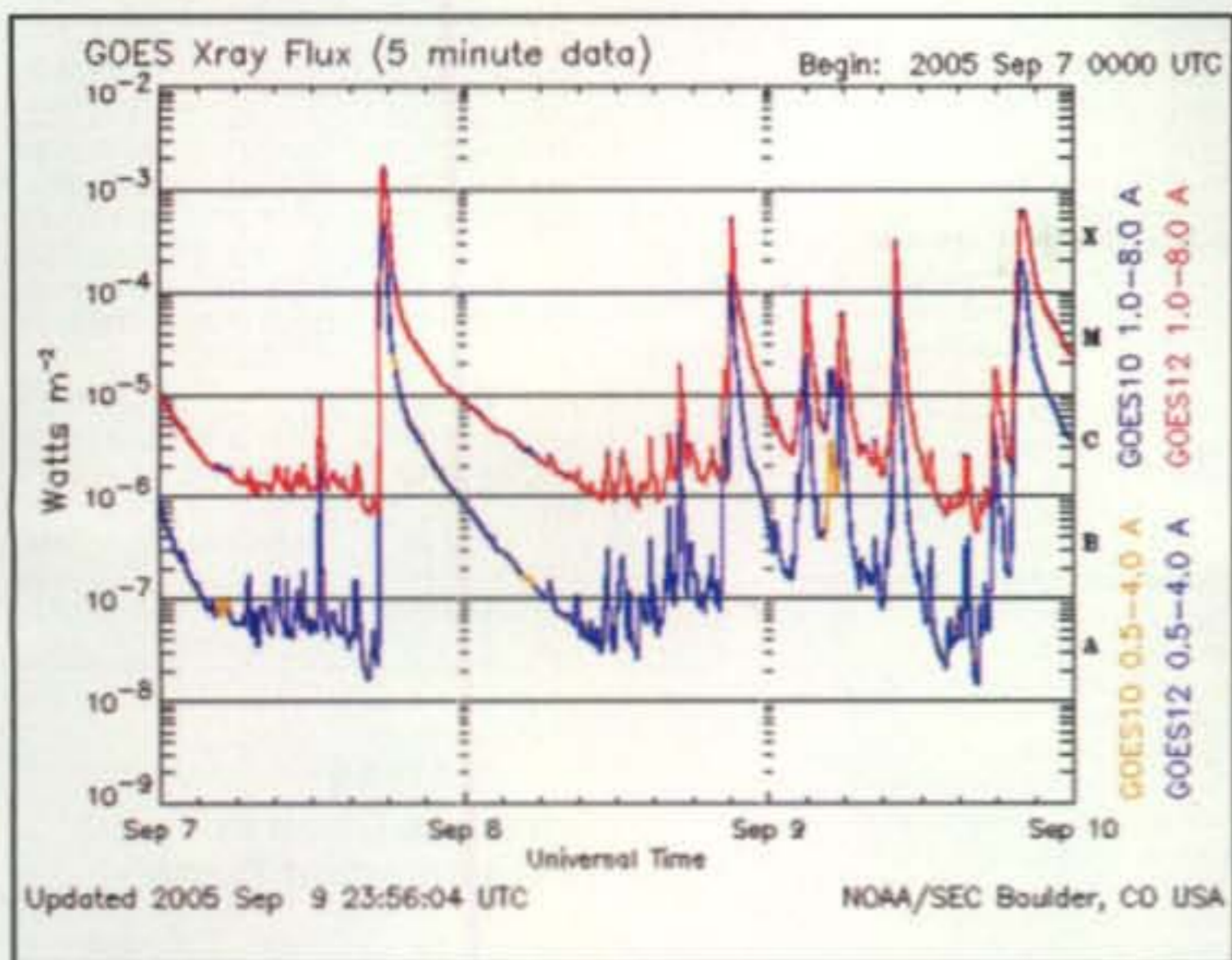
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Sunspot region 808, returning a second time on September 7, 2005, unleashed the fifth largest flare of solar Cycle 23 and caused September 2005 to be the most active month since March of 1991. This shows the first of the X-class flares from September 7 to September 10. (Source: NOAA/SEC)

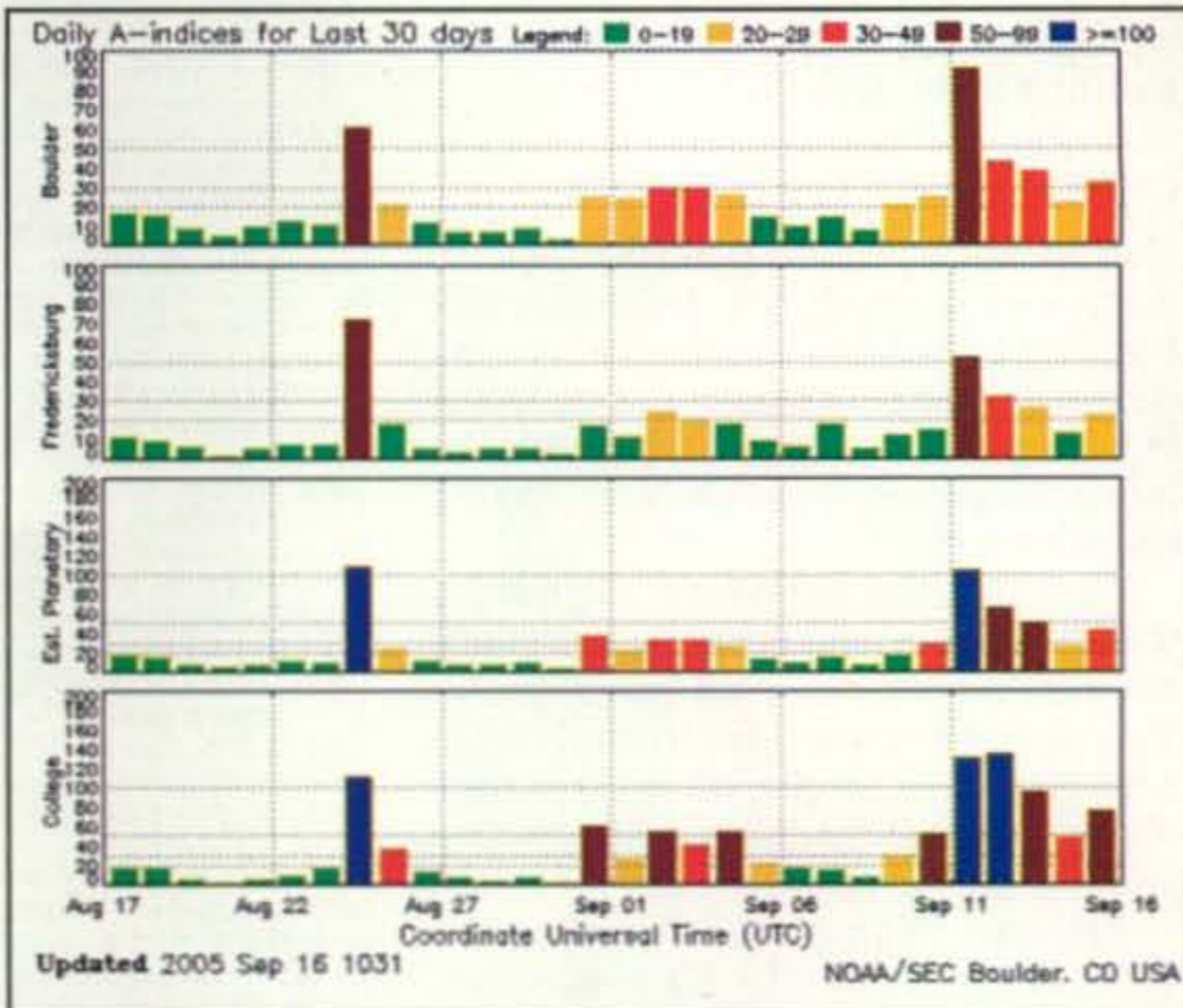
from October, and the period for band openings in a particular direction will be a bit longer. Some contest operators may take the challenge of operating exclusively on 80, an adventure in skill and patience. The conditions are expected to be favorable for high scores on this band.

40 Meters: Competing with 80 meters, this should be a hot DX band during the dark hours as the seasonal static levels are lower than they were during the summer. Nighttime MUFs (maximum usable frequencies) could fall below 7 MHz this month for many paths, so it might lose some steam until morning hours. The band should be open first for DX toward Europe and the east during the late afternoon. Signals should increase in intensity as darkness approaches. Signals should peak from an easterly direction closer to midnight, and from a westerly direction just after sunrise. Remember, just as with 80, signals tend to peak as the sun rises on the eastern end of a propagation path. Working against the CW operator is the interference that increases when the propagation is excellent.

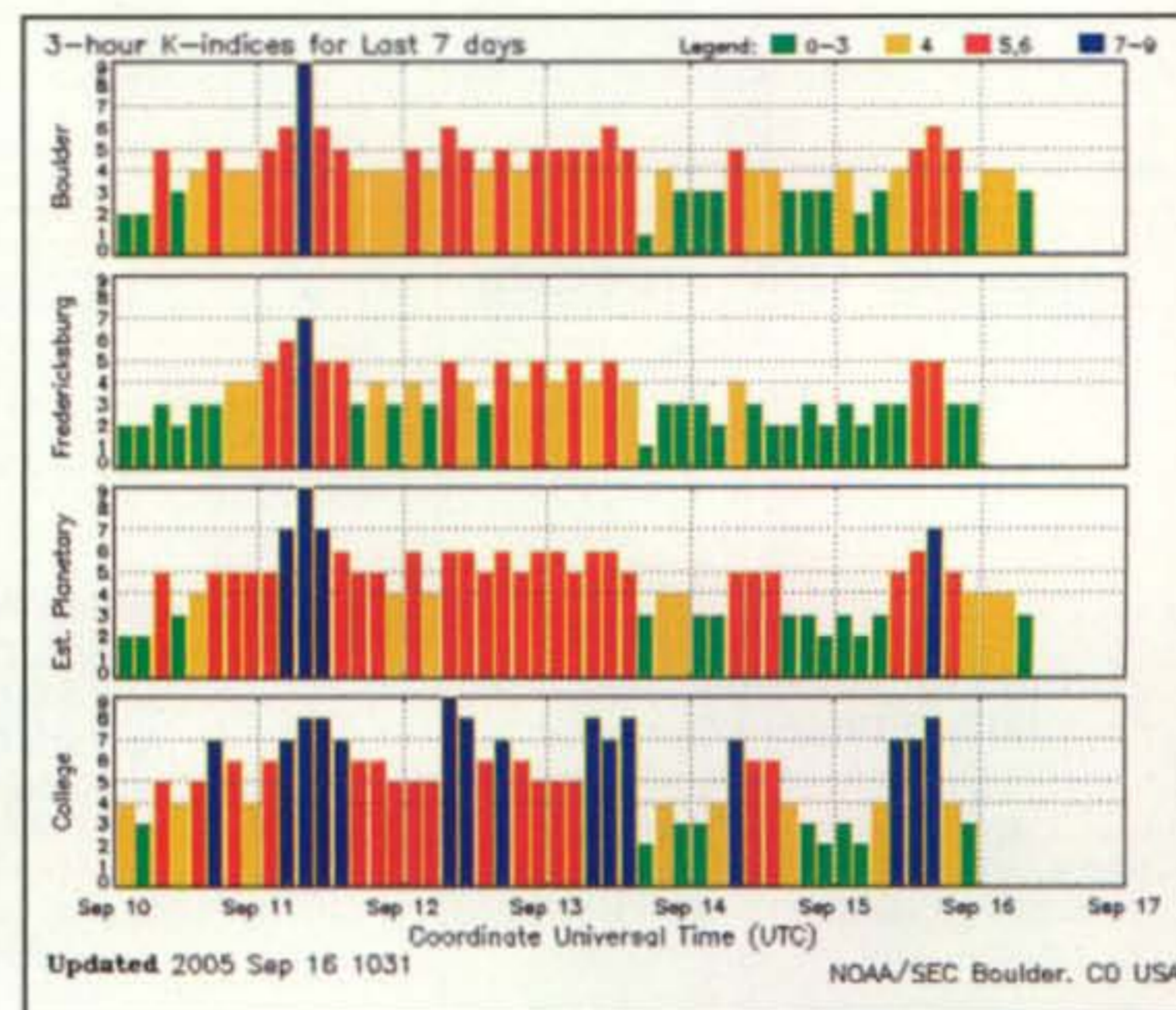
20 Meters: DX openings should be possible on this band mostly during the day, and somewhat during the night. However, because of the shorter daylight hours in the Northern Hemisphere, nighttime path openings will be open for a shorter period this month compared to October, with signal peaks from about an hour or two after sunrise and again during the late afternoon and early evening hours. Don't forget to look for long-path openings for about an hour or so after sunrise and again for an hour or so before local sunset. On days with quiet geomagnetic conditions look for transpolar DX.

15 Meters: DX propagation conditions should be fair to good on this band, especially at low latitudes. A daytime band, reasonable conditions are expected from shortly after sunrise through the early evening hours. The band could remain open into the evening towards southern and tropical areas. While 15 meters might possibly be the best daytime band for the contest weekend, it will be close a bit earlier and open a bit later than it did in October.

10 Meters: With an expected flux no higher than about 90 on the best days of the month, 10 meters will be a poor band. Those in low- and middle-latitude locations can expect some daytime contacts during the contest weekend, mainly on



The A-index from August through September 2005. Note that we had a strong geomagnetic storm in August (where the K-index reached 9). However, then in September, with the activity from sunspot region 808, the stormy geomagnetic activity lasted days. (Source: NOAA/SEC)



September 7, 2005 was the start of a long period of geomagnetic storms, caused by the CMEs related to the strong flares from solar region 808. This made HF communication rough most of the time. Also, during each major X- and M-class flare that was unleashed by this large sunspot group, shortwave fadeout occurred. (Source: NOAA/SEC)

north/south paths. If open, the band will peak right after sunrise and just a bit before sunset, local time. Openings towards Europe and in a generally easterly direction will be sparse, if at all, and should peak an hour or two before noon, while those towards South America and Africa are expected to peak during the early afternoon hours. Optimum conditions towards the Far East, Australia, southern Asia, and the South Pacific are forecast for the late afternoon and early evening hours, especially from stations in lower latitudes. This band

will require a lot of skill and better-than-average antennas.

CW Contest Tips

Overall, expect good conditions on 15 meters, and good to excellent conditions on 20 meters during most of the daylight hours. For stations in the lower latitudes, 20 meters will be usable for most of the contest period, well into the hours of darkness.

From sundown to midnight, 40 meters should be the best band for openings toward the east, north, and south. Twenty meters will close in many locations before midnight, while 80 meters will be a hot band with openings into the same areas as for 40.

Between midnight and sunrise the best DX band should be 80 meters, with 40 a close second. Openings on both bands should be possible to most areas of the world, with conditions peaking towards the south and west. Some good 20-meter openings are also expected during this period, mainly towards the south and west. The 160-meter band should wake up, offering some good DX openings, similar to 80 meters but with somewhat weaker signals.

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HOW TO USE THE SHORT-SKIP CHARTS

1. In the Short-Skip Chart, the predicted times of openings can be found under the appropriate distance column of a particular meter band (10 through 160 meters) as shown in the left-hand column of the chart. For the Alaska and Hawaii Charts the predicted times of openings are found under the appropriate meter band column (15 through 80 meters) for a particular geographical region of the continental USA as shown in the left-hand column of the charts. An * indicates the best time to listen for 80 meter openings.

2. The propagation index is the number that appears in () after the time of each predicted opening. On the Short-Skip Chart, where two numerals are shown within a single set of parentheses, the first applies to the shorter distance for which the forecast is made, and the second to the greater distance. The index indicates the number of days during the month on which the opening is expected to take place, as follows:

- (4) Opening should occur on more than 22 days
- (3) Opening should occur between 14 and 22 days
- (2) Opening should occur between 7 and 13 days
- (1) Opening should occur on less than 7 days

Refer to the "Last Minute Forecast" at the beginning of this column for the actual dates on which an opening with a specific propagation index is likely to occur, and the signal quality that can be expected.

3. Times shown in the charts are in the 24-hour system, where 00 is midnight; 12 is noon; 01 is 1 AM; 13 is 1 PM, etc. In the Short-Skip Chart appropriate standard time is used at the path midpoint. For example on a circuit between Maine and Florida, the time shown would be EST, on a circuit between New York and Texas, the time at the midpoint would be CST, etc. Times shown in the Hawaii Chart are in HST. To convert to standard time in other USA time zones add 2 hours in the PST zone; 3 hours in the MST zone; 4 hours in the CST zone; and 5 hours in the EST zone. Add 10 hours to convert from HST to GMT. For example, when it is 12 noon in Honolulu, it is 14 or 2 PM in Los Angeles; 17 or 5 PM in Washington, D.C.; and 22 GMT. Time shown in the Alaska Chart is given in GMT. To convert to standard time in other areas of the USA subtract 8 hours in the PST zone; 7 hours in the MST zone; 6 hours in the CST zone; and 5 hours in the EST zone. For example, at 20 GMT it is 15 or 3 PM in New York City.

4. The Short-Skip Chart is based upon a transmitted power of 75 watts CW or 300 watts PEP on sideband; the Alaska and Hawaii Charts are based upon a transmitter power of 250 watts CW or 1 KW PEP on sideband. A dipole antenna a quarter-wavelength above ground is assumed for 160 and 80 meters, a half-wave above ground on 40 and 20 meters, and a wavelength above ground on 15 and 10 meters. For each 10 dB gain above these reference levels, the propagation index will increase by one level; for each 10 dB loss, it will lower by one level.

5. Propagation data contained in the charts has been prepared from basic data published by the Institute for Telecommunication Sciences of the U.S. Dept. of Commerce, Boulder, Colorado 80302.

CQ Short-Skip Propagation Chart November & December 2005 Local Standard Time At Path Mid-Point (24-Hour Time)

Band (Meters)	Distance Between Stations (miles)			
	50-250	250-750	750-1300	1300-2300
10	Nil	Nil	11-16 (0-1)	11-16 (1-0)
15	Nil	10-16 (0-1)	09-10 (0-1)	09-10 (1)
			10-12 (1)	10-12 (1-3)
			12-16 (1-2)	12-14 (2-4)
			16-17 (0-1)	14-15 (2-3)
				15-16 (2)
				16-17 (1)
				17-18 (0-1)
20	Nil	09-11 (0-1)	08-09 (0-1)	07-08 (0-1)
		11-16 (0-2)	09-11 (1-4)	08-09 (1-3)
		16-19 (0-1)	11-16 (2-4)	09-11 (4)
			16-17 (1-3)	11-15 (4-3)
			17-18 (1-2)	15-16 (4)
			18-19 (1)	16-17 (3)
			19-21 (0-1)	17-18 (2-3)
				18-19 (1-2)
				19-20 (1)
40	07-09 (0-1)	07-09 (1-3)	07-09 (3)	07-08 (3-2)
	09-10 (1-3)	09-10 (3)	09-14 (3-1)	08-09 (3-1)
	10-15 (3-4)	10-15 (4-3)	14-15 (3-2)	09-14 (1-0)
	15-16 (2-3)	15-16 (3-4)	15-16 (3)	14-15 (2-0)
	16-18 (1-2)	16-18 (2-4)	16-18 (4)	15-16 (3-1)
	18-20 (0-1)	18-20 (1-2)	18-20 (2-4)	16-17 (4-2)
		20-00 (0-2)	20-22 (2-3)	17-18 (4-3)
		00-07 (0-1)	22-00 (2)	18-20 (4)
			00-04 (1-2)	20-22 (3-4)
			04-07 (1-3)	22-00 (2-3)

				00-02 (2)
				02-04 (2-3)
				04-06 (3)
80	08-16 (4)	08-09 (4-2)	08-09 (2-1)	08-09 (1-0)
	16-18 (2-4)	09-16 (4-1)	09-16 (1-0)	09-16 (0)
	18-20 (1-3)	16-18 (4-2)	16-18 (2-1)	16-18 (1-0)
	20-06 (1-2)	18-20 (3-4)	18-20 (4-3)	18-20 (3-2)
	06-08 (2-3)	20-06 (2-4)	20-06 (4)	20-04 (4-3)
		06-07 (3-4)	06-07 (4-2)	04-06 (4-2)
		07-08 (3)	07-08 (3-1)	06-07 (2-1)
				07-08 (1)
160	07-09 (3-2)	07-09 (2-1)	06-07 (2-1)	06-07 (1-0)
	09-11 (2-0)	09-17 (0)	07-09 (1-0)	07-19 (0)
	11-17 (1-0)	17-19 (2-1)	17-19 (1-0)	19-20 (2-1)
	17-19 (3-2)	19-04 (4)	19-20 (4-2)	20-21 (3-2)
	19-07 (4)	04-06 (4-3)	20-21 (4-3)	21-04 (4-2)
		06-07 (4-2)	21-04 (4)	04-06 (2-1)
			04-06 (3-2)	

HAWAII Openings Given In Hawaiian Standard Time#

	10 Meters	15 Meters	20 Meters	40/80 Meters
Eastern USA	09-12 (1)	07-09 (1)	06-07 (1)	16-18 (1)
		09-10 (2)	07-09 (2)	18-21 (2)
		10-12 (3)	09-12 (1)	21-02 (3)
		12-13 (2)	12-13 (2)	02-03 (2)
		13-14 (1)	13-15 (3)	03-04 (1)
			15-16 (2)	18-20 (1)*
			16-17 (1)	20-02 (2)*
				02-03 (1)*
Central USA	09-10 (1)	07-08 (1)	06-07 (1)	16-18 (1)
	10-12 (2)	08-09 (2)	07-08 (3)	18-20 (2)
	12-13 (1)	09-11 (3)	08-12 (2)	20-02 (3)
		11-13 (4)	12-13 (3)	02-04 (2)
		13-14 (3)	13-15 (4)	04-05 (1)
		14-15 (2)	15-16 (3)	18-20 (1)*
		15-16 (1)	16-17 (2)	20-02 (2)*
			17-18 (1)	02-04 (1)*
Western USA	09-11 (1)	07-09 (1)	06-07 (1)	15-17 (1)
	11-13 (2)	09-10 (2)	07-08 (2)	17-18 (2)
	13-15 (1)	10-13 (4)	08-10 (3)	18-20 (3)
		13-14 (3)	10-15 (4)	20-02 (4)
		14-15 (2)	15-16 (3)	02-05 (3)
		15-17 (1)	16-18 (2)	05-06 (2)
			18-20 (1)	06-07 (1)
				17-18 (1)*
				18-20 (2)*
				20-04 (4)*
				04-05 (2)*
				05-06 (1)*

ALASKA Openings Given In GMT

	10 Meters	15 Meters	20 Meters	40/80 Meters
Eastern USA	20-22 (1)	18-20 (1)	12-14 (1)	00-11 (1)
		20-22 (2)	17-20 (1)	11-13 (2)
		22-23 (1)	20-23 (2)	13-14 (1)
			23-01 (1)	07-12 (1)*
Central USA	20-23 (1)	18-20 (1)	13-15 (1)	01-12 (1)
		20-23 (2)	18-20 (1)	12-14 (2)
		23-00 (1)	20-21 (2)	14-15 (1)
			21-23 (3)	07-13 (1)*
			23-01 (2)	
			01-02 (1)	
Western USA	21-23 (1)	19-20 (1)	17-19 (1)	00-01 (1)
		20-21 (2)	19-20 (2)	01-02 (2)
		21-23 (3)	20-21 (3)	02-03 (3)
		23-00 (2)	21-23 (4)	03-14 (2)
		00-01 (1)	23-00 (3)	14-16 (3)
			00-02 (2)	16-17 (1)
			02-03 (1)	04-09 (1)*
				09-12 (2)*
				12-14 (1)*

*Indicates best times to listen for 80 meter openings. Openings on 160 meters are also likely to occur during those times when 80 meter openings are shown with a propagation index of (2) or higher.

For 12 meter openings interpolate between 10 and 15 meter openings.

For 17 meter openings interpolate between 15 and 20 meter openings.

For 30 meter openings interpolate between 40 and 20 meter openings.

Note: The Alaska and Hawaii Propagation Charts are intended for distances greater than 1300 miles. For shorter distances use the preceding Short-Skip Propagation Chart.

It is unlikely that there will be any major solar or geomagnetic storm during the November contest weekend. However, if a major flare occurs, work higher bands; but if a geomagnetic storm should develop, work the lower bands. Either way, look for openings on a north/south propagation path.

During the contest, be sure to check my propagation page, <<http://prop.hfradio.org/>>, for up-to-the-minute conditions. If you have a WAP/WML device, you may gather the latest propagation information, warnings, alerts, and a look at conditions by pointing your WAP device to <<http://wap.hfradio.org/>>. This is a special URL for wireless access to this free resource. There are more resources listed in the October "Propagation" column.

VHF Conditions

The *Leonids* meteor shower is typically the big event for November. This year it is expected to peak on November 17 at 1317 UT. There is a possible second outburst from a side trail from the comet, the 55P/Tempel-Tuttle, due at 0140 UT on November 21, most suited for Europeans. The full *Leonids* period is from about November 14 through November 21.

Unfortunately, most are predicting that this year's shower will be dismal. An expected rate of only 16 to 20 bursts per hour will make the prospect for exciting meteor-shower radio propagation bleak.

The reason behind the low hourly rate lies in the size of the debris clouds left by the passing comet. These dust clouds are stretched out into long and narrow trails. The younger remains of recent passages are only ten or so Earth-diameters wide. The chances of Earth hitting something so narrow and filamentary are slim. For most years this has proven true in November, when we miss them completely. During these misses, Earth slips between the clouds, where there is only a sprinkling of meteoroids. At such times *Leonid* rates remain low: only 10 or 15 meteors per hour.

The most recent excitement during the November *Leonids* shower was between 1998 and 2002. In 1998 the comet returned to its perihelion (this term refers to the point where the comet is closest to the sun, during its orbit around the sun). This increased the debris trail enough to provide a nice increase in the hourly meteor rate. Since then, however, we've seen a steady decrease. However, it is possible that we could be surprised, if the Earth hits the dust cloud directly.

Remember that the *Leonids* radiant is best around local midnight in the Northern Hemisphere. Working VHF propagation off meteor trails (the highly ionized plasma trails left by the meteor) requires some reasonable power and gain, and good operating skill. With the latest high-speed burst-mode CW software, you can possibly work even the smaller meteors.

Check out <<http://www.imo.net/calendar/cal05.html>> for a complete calendar of meteor showers in 2005.

Current Solar Cycle Progress

The Dominion Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-cm observed monthly mean solar flux of 90.7 for August 2005, down a bit from July's 96.6. The 12-month smoothed 10.7-cm flux centered on February 2005 is 98.5, down from January's 100.3. The predicted smoothed 10.7-cm solar flux for November 2005 is about 79, give or take about 17 points.

The Royal Observatory of Belgium reports that the monthly mean observed sunspot number for August 2005 is 36.4, down from July's 39.9. The lowest daily sunspot value during August

2005 was 16, occurring on August 10. The highest daily sunspot count for August was 69 on August 2. The 12-month running smoothed sunspot number centered on February 2005 is 34.0. A smoothed sunspot count of 18 is expected for November 2005, give or take about 12 points.

The observed monthly mean planetary A-index (*Ap*) for August 2005 is 16, the same as for July. The 12-month smoothed *Ap*-index centered on February 2005 is 14.6, about the same as January's 14.7. Expect the overall geomagnetic activity to be quiet during most days in November, with a slight possibility of a major geomagnetic storm during the month. Refer to the Last-Minute Forecast 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 amateur bands. Please come and participate in my online propagation discussion forum at <<http://hfradio.org/forums/>>. See you on the air, perhaps during the contest weekend!

73, Tomas, NW7US/AAA0WA

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Our Readers Say (from page 46)

Editor, CQ:

Thanks for a good editorial, Rich. I was particularly gratified by your idea about making a bandplan a part of Part 97 regs by citing that adherence to a published bandplan is considered part of mandated good amateur practice and thus carries more authority than just a "gentlemen's agreement." I have been espousing that very idea for some time, and am happy to see someone with your pulpit step out front with it. The most worrisome aspect of the League's proposal is the potential for interference from automatic or "semi-automatic" ops that could most readily be fitted into their own spectrum by an effective bandplan (or by specific citation in the regulations).

On the other hand, I cannot agree with you on either ISB or ESSB. Amateur radio is not intended to be used for anything other than communication. Ours is not to broadcast Turandot or Beach Boys' goldies. AM has been accorded a special exception to the 3 kHz maximum by the ARRL because it is part and parcel of ham radio from earliest days and continues to enjoy a devoted following. No less important, AM is, by its very nature, a wide mode that cannot be narrowed substantially without suffering.

SSB, however, was created specifically to impart intelligence in a far narrower bandwidth than AM. There is no technical justification whatever for expanding SSB's bandwidth just to make it sound "better," when all we are authorized to do is communicate clearly and effectively, something SSB does very well within a 3 kHz stricture. Bob Heil's comment about audio experimentation, besides being somewhat self-serving for a man in the business of selling high-end mics, leads to the logical question: to what end?

Similarly, ISB has no place in amateur radio. We need no stereo transmissions, and any other analog uses—e.g., mixing video and audio in a single transmission or the RTTY use you cited—would result in a waste of spectrum that could better be served by employing digital techniques, such as a digitized image accompanied by a binary text file that could be translated back into audio by any one of the ubiquitous text-to-speech processors now on the market. Soundcard-based digital RTTY, if anything, is already far superior to any previous iteration of that popular mode.

All in all, I believe the 3 kHz maximum bandwidth for phone is sufficient to our needs, and I believe it is proper to require "boutique" modes such as ESSB and ISB to either fit in or stay out. To my mind, that is where any "audio experimentation" should lead: to ever narrower and more efficient use of spectrum that can only shrink as more and more of us gain HF privileges.

Albert Schramm, W3MIV

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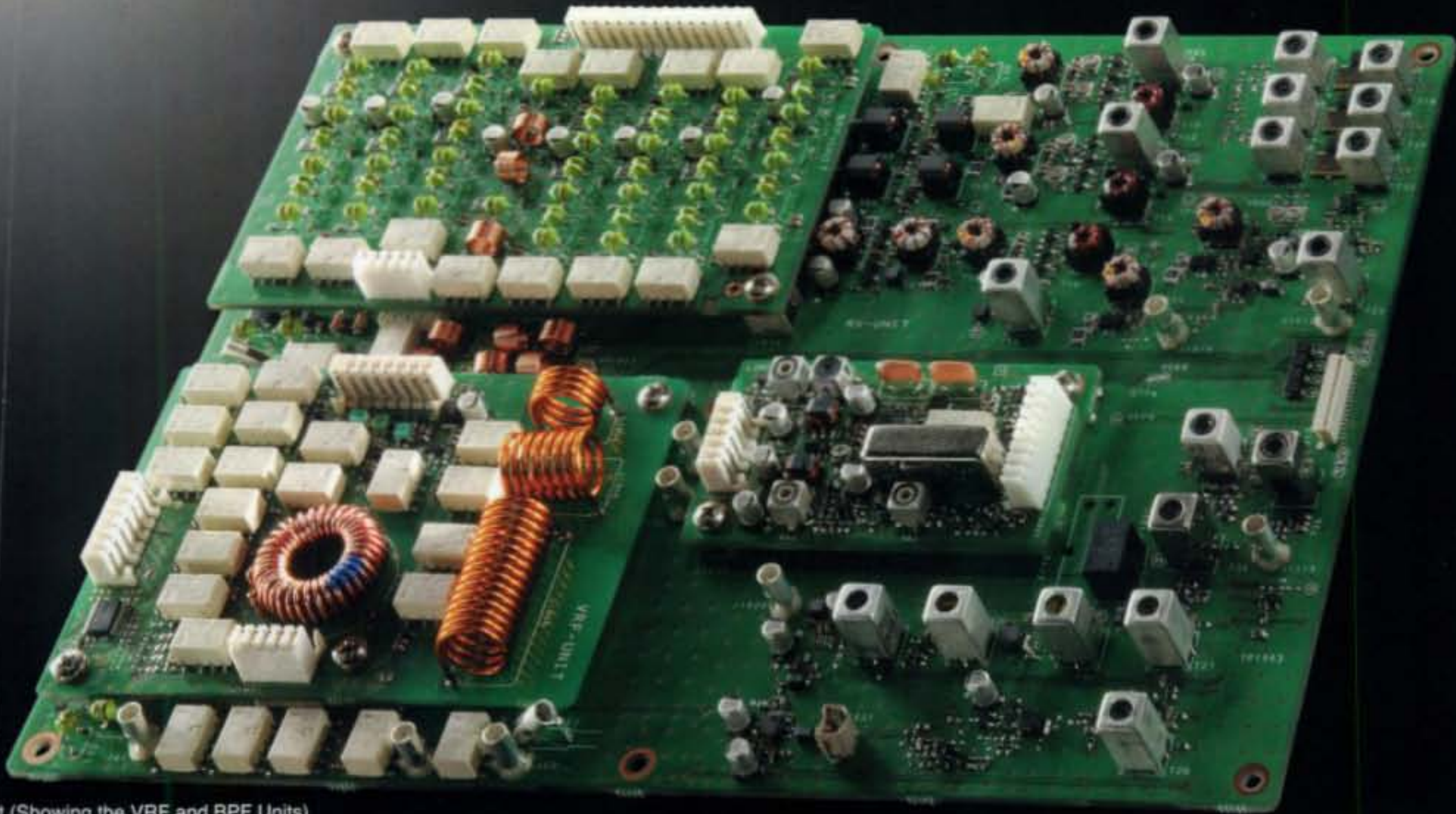
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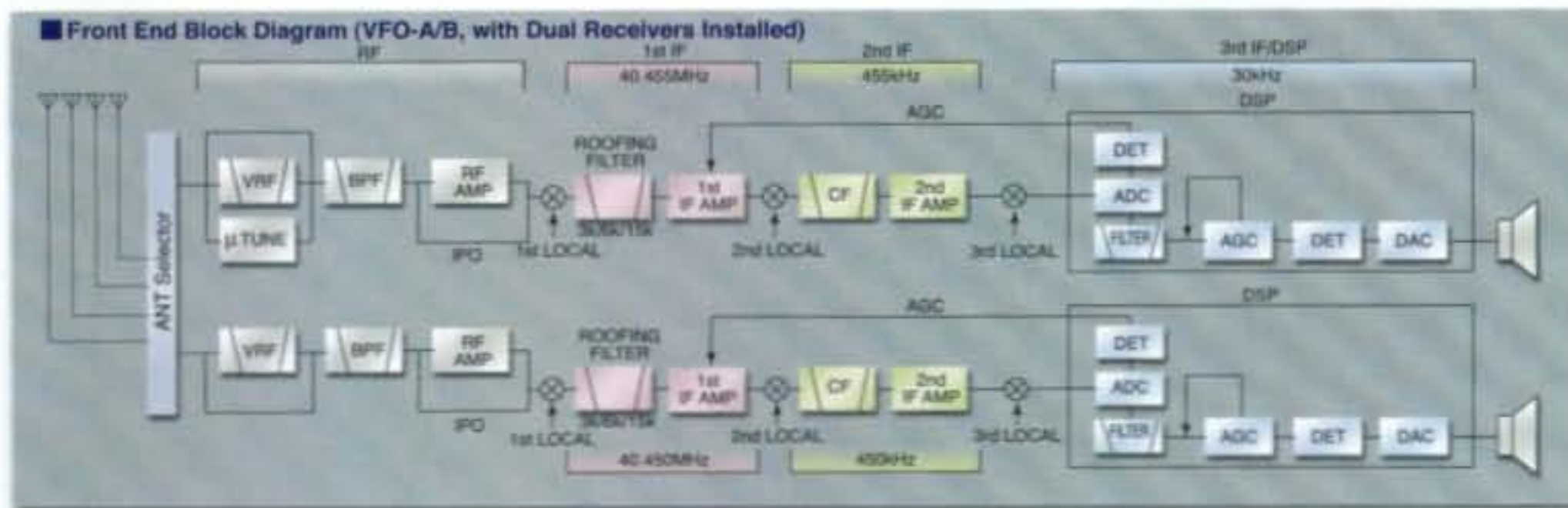
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