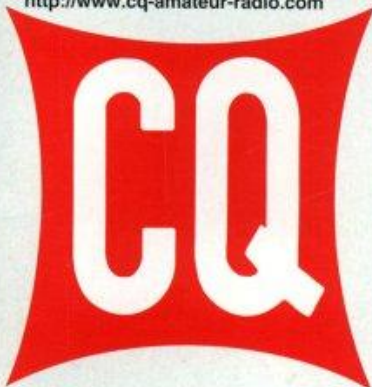


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COMMUNICATIONS & TECHNOLOGY
JANUARY 2006



100 Years of Phone, p. 18

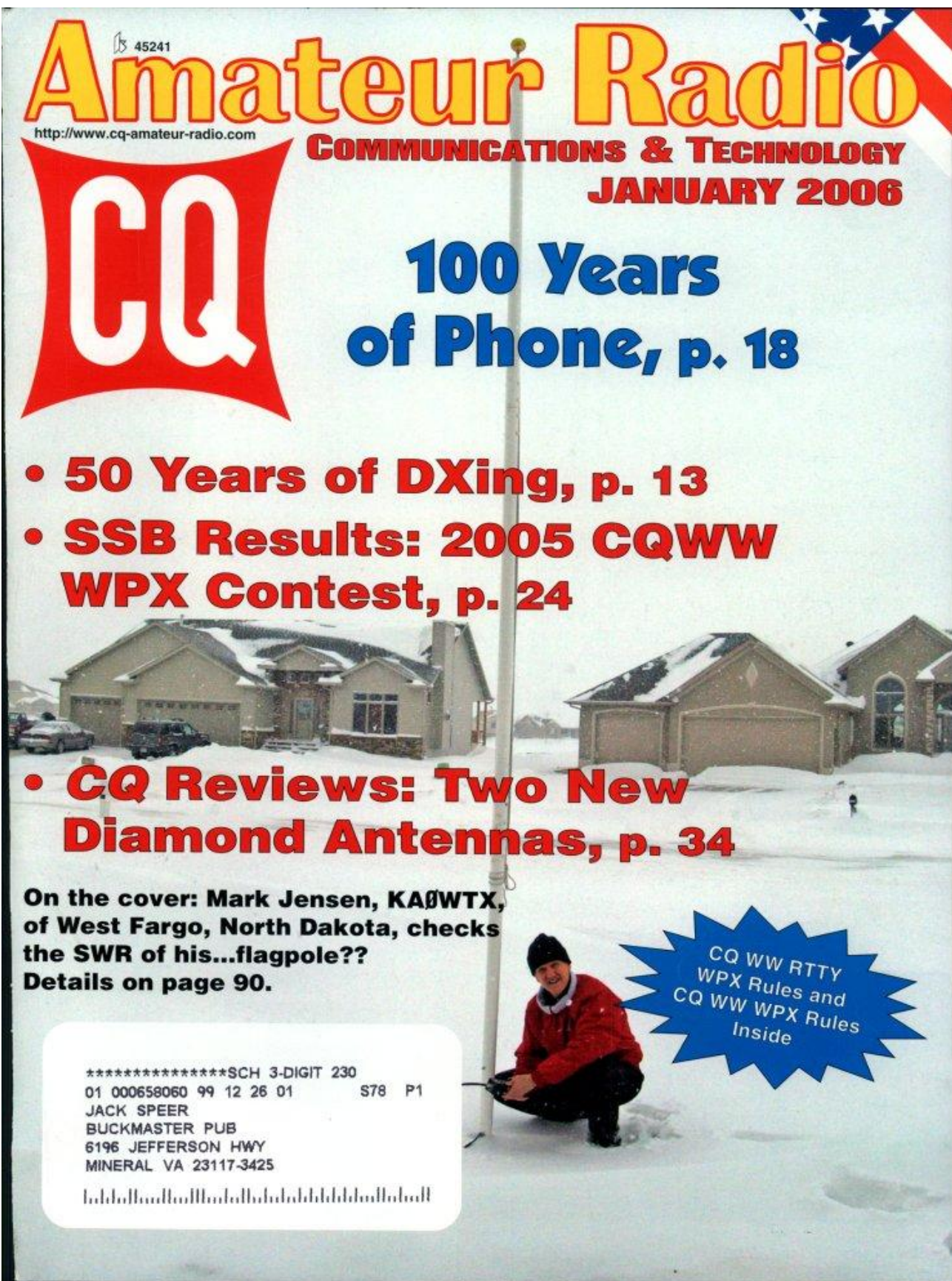
- **50 Years of DXing, p. 13**
- **SSB Results: 2005 CQWW WPX Contest, p. 24**

- **CQ Reviews: Two New Diamond Antennas, p. 34**

On the cover: Mark Jensen, KAØWTX, of West Fargo, North Dakota, checks the SWR of his...flagpole?? Details on page 90.

**CQ WW RTTY
WPX Rules and
CQ WW WPX Rules
Inside**

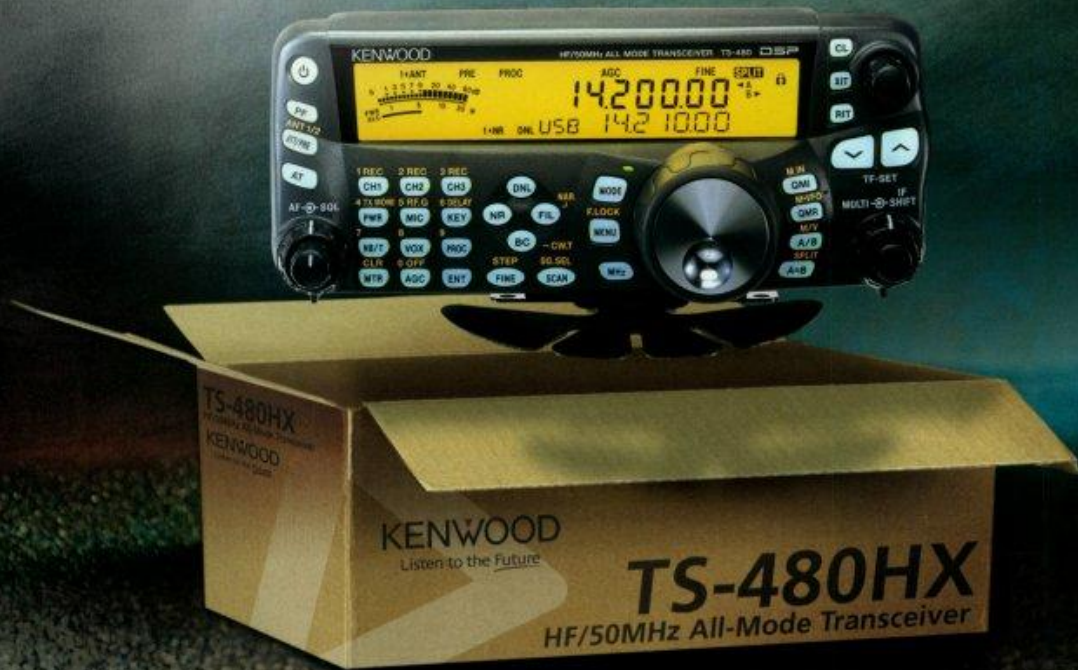
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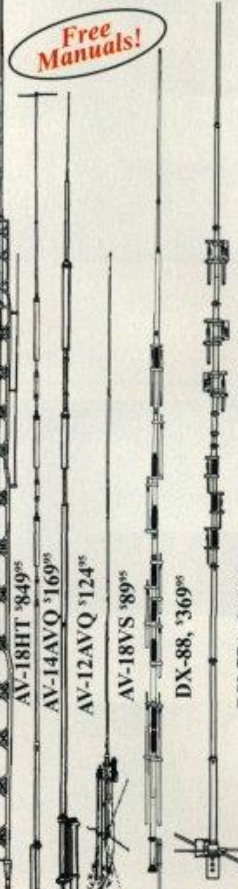
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AV-12AVQ	\$134.95	10/15/20 M	1500 W PEP	13 feet	9 pounds	80 MPH	1.5-1.625"
AV-18VS	\$89.95	10 - 80 M	1500 W PEP	18 feet	4 pounds	80 MPH	1.5-1.625"
DX-88	\$369.95	10 - 80 M	1500 W PEP	25 feet	18 pounds	75 mph @ 80'	1.5-1.625"
DX-77A	\$449.95	10 - 40 M	1500 W PEP	29 feet	25 pounds	60 mph @ 20'	1.5-1.625"

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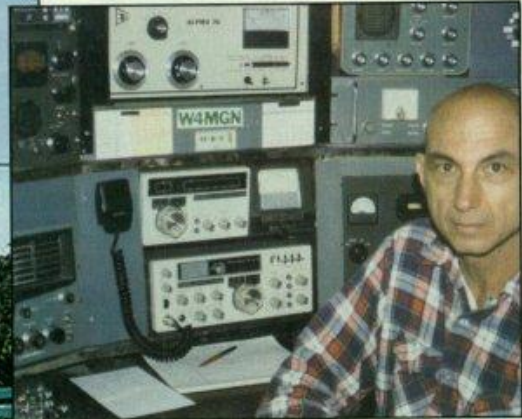
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CQ contents

JANUARY 2006



p. 24

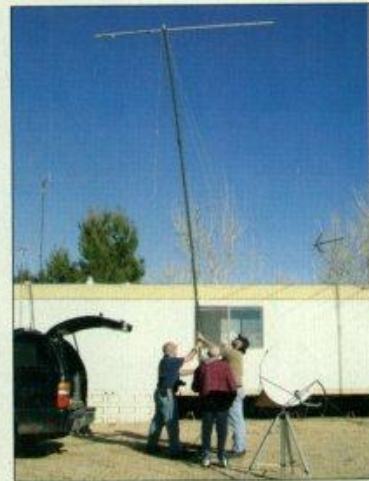


p. 13

features

Vol. 62 No. 1

- 13 **RECOLLECTIONS OF A DXER:** 50 years in the pile-ups and still counting
By Edmun B. Richmond, W4YO
- 18 **A CENTURY OF TALKING ON THE RADIO:** Amateur voice communicating history
By Bob Shrader, W6BNB
- 24 **RESULTS OF THE 2005 CQ WW WPX SSB CONTEST**
By Steve Merchant, K6AW
- 31 **ANNOUNCING:** 2006 Nominations Open for the CQ Amateur Radio Hall of Fame
- 34 **CQ REVIEWS:** Two New Diamond Antennas—the Tunable Foxhunt Beam and the D220 Discone Antenna
By Gordon West, WB6NOA
- 38 **ANNOUNCING:** The 2006 CQ WW RTTY WPX Contest
- 48 **ANNOUNCING:** The 2006 CQ WW WPX Contest
- 60 **MATH'S NOTES:** Oscilloscope probe potpourri
By Irwin Math, WA2NDM
- 70 **ANTENNAS:** Getting Sirius, and a look at the Buckmaster off-center-fed dipole
By Kent Britain, WA5VJB
- 74 **HOW IT WORKS:** Vacuum tubes revisited
By Dave Ingram, K4TWJ
- 81 **WORLD OF IDEAS:** A newcomer's guide to DXing
By Dave Ingram, K4TWJ
- 84 **MAGIC IN THE SKY:** The last radiogram
By Jeff Reinhardt, AA6JR



p. 86

departments

- 44 **WASHINGTON READOUT:** New technology may allow BPL and ham radio to co-exist
By Frederick O. Maia, W5YI
- 52 **PUBLIC SERVICE:** Lockdown!
By Bob Josuweit, WA3PZO
- 64 **WHAT'S NEW:** DJ-X7T receiver, RB5000 calibrator, SKYPOLE support system, and more
By Karl T. Thurber, Jr., W8FX
- 86 **BEGINNER'S CORNER:** Time to tell your story in CQ!
By Wayne Yoshida, KH6WZ
- 88 **DX:** Peter I update
By Carl Smith, N4AA
- 92 **CONTESTING:** 2006 contesting resolutions; 2004 CQ WW DX and 2004 CQ WPX SSB contests errata
By John Dorr, K1AR
- 94 **AWARDS:** Utah award series; AA9GZ, USA-CA All Counties #1122
By Ted Melinosky, K1BV
- 98 **VHF PLUS:** How to rejuvenate your club
By Joe Lynch, N6CL
- 102 **PROPAGATION:** Good conditions for 2006; Short-Skip Charts for January and February 2006
By Tomas Hood, NW7US



p. 88

- 4 **HAM RADIO NEWS**
- 8 **ZERO BIAS**
- 10 **ANNOUNCEMENTS**
- 10 **OUR READERS SAY**
- 40 **READER SURVEY**
- 112 **HAM SHOP**

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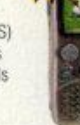
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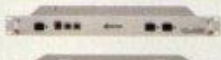
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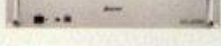
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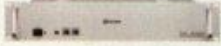
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Federal Funds May Help Replace Storm-Damaged Repeaters

Certain amateur radio emergency communications systems may be eligible for federal grants to help replace hurricane-damaged equipment. According to the ARRL, an extension of the federal "Ham Aid" grant that helped cover some out-of-pocket costs for volunteers heading into hurricane disaster areas will also make funds available to help replace hurricane-damaged amateur radio emergency communication systems. Eligible systems include ARES-group or club-owned open-access repeaters, critical amateur radio infrastructure, or other essential communication backbone equipment damaged by Hurricanes Katrina, Rita, or Wilma. Interested groups must contact ARRL Chief Development Officer Mary Hobart, K1MMH, before December 31.

Disaster Volunteers Asked to Log Service

The ARRL has asked hams who provided communications during any recent disaster to log their service by filling out a form on the ARRL website (www.arrl.org). The goal, according to the *ARRL Letter*, is to document the thousands of volunteer hours and service provided by hams in disaster communication work. ARRL Chief Operating Officer Harold Kramer, WJ1B, says this information will send "a strong message that volunteer radio operators are essential to a successful response to any disaster."

Hurricanes Shut Down Vanity Call Processing

None of the hurricanes that did so much damage in the U.S. last year came anywhere near Gettysburg, Pennsylvania, but they managed to shut down the FCC's vanity callsign program until at least late December. According to the *ARRL Letter*, this is because the Commission has extended filing deadlines for license renewals for amateurs in areas affected by Hurricanes Katrina, Rita, and Wilma, which also extends the grace period on expired licenses in those areas. Since that can affect availability of callsigns under the vanity program, the FCC has suspended all vanity call processing until December 23 at the earliest.

Abernathy Leaves FCC

FCC Commissioner Kathleen Abernathy has stepped down as of December 9, joining former Chairman Michael Powell in leaving the Commission in recent months. Abernathy gained notoriety among hams two years ago when she described Broadband over Power Lines, or BPL, as "broadband Nirvana," despite mounting evidence that virtually all of the BPL systems in use at the time were causing significant interference throughout the HF radio spectrum. At press time, President Bush had not nominated a replacement for Abernathy on the FCC.

On the topic of BPL, *CQ* "Washington Readout" Editor Fred Maia, W5YI, reports in his column this month (page 44) that a new approach to BPL signal transmission—if widely adopted—may allow BPL and ham radio to peacefully coexist.

Comatose Ham Satellite Given OSCAR Number

The SSETI Express ham satellite has been designated as Express OSCAR-53 (XO-53) by AMSAT-North America, despite the fact that it went silent after five and a half orbits of near-perfect operation. *Newsline* reports that controllers are hopeful that the satellite may be able to recover on its own the ability to recharge its batteries, and if that happens, the radios may be able to come back to life.

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

ARRL Comments on Code Proposal Very Similar to CQ's

The ARRL has joined *CQ* magazine's publisher, CQ Communications, Inc., in calling on the FCC to retain a 5 word-per-minute code test for the Amateur Extra Class license, and if it removes the code requirement for General Class, to extend entry-level HF privileges to all Technician Class licensees. These are the privileges currently granted to Novices and Technicians who have passed the 5 wpm code exam. If the code test requirement for General is dropped, noted both the ARRL and CQ, there will be virtually no difference between Technicians with and without code credit, and therefore all Technicians should enjoy the limited HF privileges now granted to Techs with code credit. The League's comments were filed on the deadline for commenting on the FCC's proposal to eliminate the code test requirement altogether, but not to change any license privileges or to create a new HF-focused entry-level license. CQ had filed similar comments several weeks earlier.

"Dragon's Fire" QRM on 160

A wideband signal dubbed "Top Band Dragon's Fire" has been causing significant interference to amateur communications on the 160-meter band, according to the *ARRL Letter*. The signal, described as sounding like "a diesel motor with a ticking sound," is primarily causing interference to hams in Asia and Oceania, but has also been heard in the northwestern and northeastern United States. The source of the signal is still a mystery. Reports and recordings should be sent to Chuck Skolaut, KØBOG, at ARRL Headquarters, via e-mail to <cskolaut@arrl.org>.

Loveless Headlines ARRL Toy Drive

Country music star Patty Loveless, also known as KD4WUJ, has become the lead spokesperson for the ARRL/Salvation Army toy drive collecting holiday gifts for children left homeless or displaced by Hurricanes Katrina and Rita. The collection deadline was December 10, in order to assure that toys could be distributed in time for Christmas. Loveless recorded public service announcements for radio and television promoting the toy drive. The toys were being collected at a warehouse in Memphis, Tennessee for distribution throughout the affected areas by the Salvation Army.

ARRL Files Petition for Regulation by Bandwidth

After more than a year of seeking input from hams and developing, then refining, a draft proposal, the ARRL has formally asked the FCC to change the way it regulates amateur radio subbands from divisions based on operating modes to divisions based on bandwidth. On HF ham bands, the proposal would create subbands with maximum bandwidths of 200 Hz (current CW areas), 500 Hz (which would accommodate most current and anticipated HF RTTY and data modes), 2.8 kHz on 60 meters only, 3.5 kHz in the current phone bands (with an exception to permit AM signals with a maximum bandwidth of 9 kHz), and 16 kHz in the upper (FM) portion of the 10-meter band. There would be no specific mode restrictions as long as a signal did not exceed the maximum bandwidth, and semi-automatic RTTY/data stations would be permitted throughout the HF bands except those with a maximum bandwidth of 200 Hz. At press time, the FCC had not responded to the petition or issued it a Rule Making (RM) number.

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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.



Wind load 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 brgs
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 brgs
Mounting Hardware	Clamp plate/steel U-bolts
Control Cable Conductors	8
Shipping Weight (lbs.)	22
Effective Moment (in tower)	1200 ft/lbs.

HAM-V
\$949⁹⁵
 with DCU-1
 For medium antenna arrays up to 15 square feet wind load area. Similar to the HAM IV, but includes *DCU-1 Pathfinder* digital control unit with gas plasma display. Provides automatic operation of brake and rotor, compatible with many logging/contest programs, 6 presets for beam headings, 1 degree accuracy, auto 8-second brake delay, 360 degree choice for center location, *more!*

ROTATOR OPTIONS
MSHD, \$99.95. Heavy duty mast support for T2X, HAM-IV and HAM-V.
MSLD, \$39.95. Light duty mast support for CD-45II and AR-40.
TSP-1, \$34.95. Lower spacer plate for HAM-IV and HAM-V.

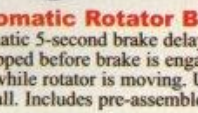
Digital Automatic Controller
 Automatically controls T2X, HAM-IV, V rotators. 6 presets for favorite headings, 1 degree accuracy, 8-sec. brake delay, choice for center of rotation, crisp *plasma* display. Computer controlled with many logging/contest programs.



AR-40
\$289⁹⁵
 For compact antenna arrays and large FM/TV up to 3.0 square feet wind load area. Dual 12 ball bearing race. Automatic position sensor never needs resetting. Fully automatic control -- just dial and touch for any desired location. Solid state, low voltage control, safe and silent operation. 2 1/16 inch maximum mast size. MSLD light duty lower mast support included.

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.

AR-35 Rotator/Controller
 For UHF, VHF, 6-Meter, TV/FM antennas. Includes automatic controller, rotator, mounting clamps, mounting hardware. 110 VAC. One Year Warranty.



HDR-300A
\$1379⁹⁵
 For king-sized antenna arrays up to 25 sq. ft. wind load area. Control cable connector, *new* hardened stainless steel output shaft, *new* North or South centered calibration, *new* ferrite beads on potentiometer wires reduce RF susceptibility, *new* longer output shaft keyway adds reliability. Heavy-duty self-centering steel clamp and hardware. Display accurate to 1°. Machined steel output.

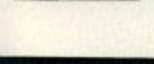
Wind load capacity (inside tower)	25 square feet
Wind Load (w/mast adapter)	not applicable
Turning Power (in lbs.)	5000
Brake Power (in lbs.)	7500
Brake Construction	solenoid operated locking
Bearing Assembly	bronze sleeve w/rollers
Mounting Hardware	stainless steel bolts
Control Cable Conductors	7
Shipping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

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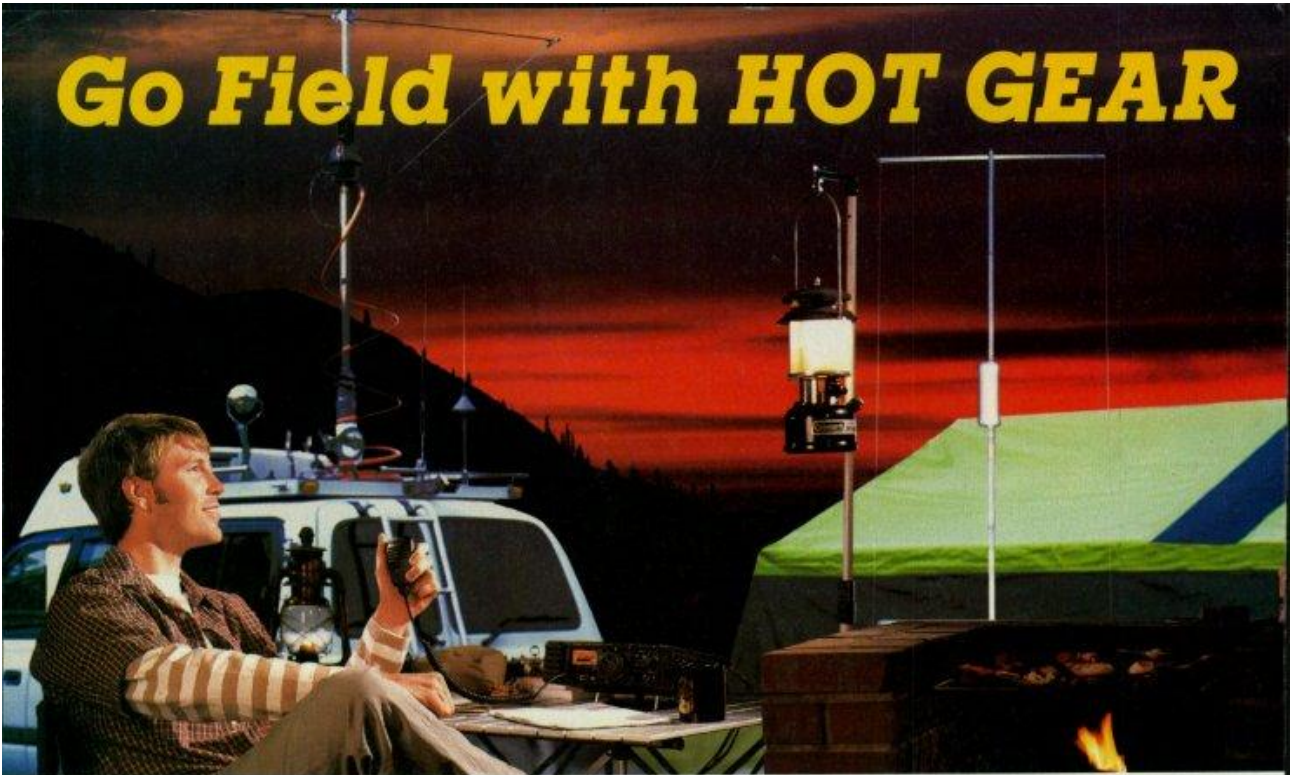
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 308 Industrial Park Road, Starkville, MS 39759, USA
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RBD-5 **NEW! Automatic Rotator Brake Delay**
\$29⁹⁵
 Provides automatic 5-second brake delay -- insures your rotator is fully stopped before brake is engaged. Prevents accidentally engaging brake while rotator is moving. Use with HAM II, III, IV, V, T2Xs. Easy-to-install. Includes pre-assembled PCB, hardware.



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TCXO DSP 60 m Band



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Transceiver, now Including Built-in
DSP and 60-Meter Coverage!**

FT-857D
HF/50/144/430 MHz
100 W All Mode Transceiver
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DSP 60 m Band



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FT-817ND
HF/50/144/430 MHz
5 W All Mode Transceiver (AM 1.5 W) **60 m Band**

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FT-897/857 Series Transceivers**



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200-Memory
Antenna Tuner

WATERPROOF

•Operational on 1.8 ~ 54 MHz when used with 66' (or longer) wire, or 7~ 54 MHz with standard 8.2' whip antenna (wire/whip antenna not supplied).
•Required Drive Power: 4 ~ 60 Watts. Maximum TX Power: 100 Watts.

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The University of Amateur Radio

First of all, wishes for a Happy and Healthy New Year to each and every one of you from all of us here at CQ magazine.

Last fall, I was helping teach a ham radio licensing course at one of our local universities, and as I walked back to my car after the first class, I realized how much ham radio is like a busy college campus. There were things going on everywhere. Classrooms were filled with students and professors, of course, but there was more. As I walked past the art building, I saw students working on projects. As I walked past the theater, there was a dance class going on in one room, while in the lobby, a few people were practicing dance moves on their own. People were busy everywhere, in many cases with a focus on learning by doing, rather than just reading a book or listening to a professor. Our own ham class blended right in. Yes, we spent some time in a classroom, but we also had gone to the roof to look at antennas and to the club station to listen to hams on the air to try to make a couple of contacts on our own. Even back in class, we split up at one point with HT-equipped hams spreading out with students to different parts of the building and giving everyone the opportunity to talk on the radio.

But it was the wide variety of activities—all going on separately but together in one location—that really caught my attention. I began to visualize the imaginary campus of the University of Amateur Radio.

An Imaginary Campus

In the international studies building, the DXers would be discussing the latest DXpeditions, techniques for breaking through pileups and, in the graduate-level courses, perhaps developing strategies for encouraging the growth of amateur radio in countries with reluctant governments, or maybe meeting with foreign regulators to discuss how ham radio can become a cornerstone of training for a developing country's own cadre of telecommunications experts.

Over in the social sciences building, a class of freshmen would be working on basic emergency communications techniques while in another class, students would be working with emergency management officials on integrating amateur radio into their communities' emergency response plans.

Meanwhile, at the earth science building, one group of hams might be studying gray-line propagation while another might be investigating long-delayed echoes, and yet another will be working on building antennas. Next door in computer science, classes might include how to build high-speed multimedia amateur networks, the latest developments in digital voice and digital techniques for meteor-scatter and moonbounce communications. Classes on circuit design and construction techniques would be under way in the electronic engineering building, as well as graduate courses in multiple receive sites and networking for repeaters.

Over at the radio sports center, contesters would be practicing for the next major on-air competition (or maybe planning a trip to some Caribbean island for "spring break"), while the football field was being used for antenna gain measurements and the foxhunting team was scattered around campus trying to track down a hidden transmitter.

All of these things are going on, every day, at the University of Amateur Radio, although not in a centralized location such as a college campus, and often, not in a formal classroom setting. We tend to be more like the dancers working out new steps on their own in the theater lobby. Another way that ham radio resembles a university is that being "admitted"—getting your license—really marks only

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

the beginning of your education. Like college, ham radio is what you make of it. Many opportunities are offered, but it is up to you seek them out, although it's important for more experienced hams to offer guidance. As in college, your chances of success improve if you have an "academic advisor" for your studies at the University of Amateur Radio, someone who can—without necessarily being an expert in a given area—point you in the right direction for learning more about your area(s) of interest.

A Way of Thinking

Another major similarity is in the broad perspective of a university education. Beyond teaching specific facts and other information, a major goal of college is to teach students how to think in an organized way—how to approach, research, analyze and resolve a problem. Ham radio does the same thing. Ham radio teaches a way of thinking that emphasizes problem-solving, and figuring out how to meet a goal by using available resources. Hams know how to make things work and get things done, and learn not to be intimidated by machines with lots of parts. Everything works in a logical way.

For example, there's my washing machine, and being a ham just saved me from a big repair bill. The washer kept cutting off in the middle of a cycle. At first—using my ham thinking—I figured it was some bad switch contacts and tried skipping around the dial until it started working again. But there was no predictability to that, and I was about to put in for a service call when I finally realized that what *really* made a difference was whether I was leaning on the lid while fiddling with the dial! If I did, the machine often started up; if not, it generally didn't. That led me to the interlock on the lid, and the realization that the lid had warped somewhat over the years—so the little bar that pressed the interlock switch was out of line. A little twist to the inner lip with a pair of pliers solved the problem and saved us the cost of a service call. Without "ham thinking," I doubt I would have thought about the problem in a way that led me to figuring out that simple fix. This way of thinking can be applied not only to washing machines but to our jobs and other aspects of our lives as well.

A Few Differences

There are also some significant differences between the University of Amateur Radio and real colleges. First and foremost, there is no tuition. There are also no grades, no papers, no deadlines. If a "course" doesn't turn out to be what you expected, you can "drop" it at any time without a penalty. Plus, there's never a need to "declare a major," although many hams choose to do so, diving into a particular area of amateur radio with great gusto, sometimes becoming leading experts in that field, or perhaps "changing majors" after a period of time. Others, such as your editor, are "liberal arts majors," learning a little bit about a lot of things rather than specializing in one or two specific areas. (As a result, I know a little about a lot of things, and a lot about nothing!)

One other difference is that you never graduate. There are no degrees, no diplomas (no massive loans to pay off), just more knowledge and a greater understanding of part of our world and how it works. Being a ham should be a lifelong learning experience. In the class I was helping to teach, two of the other instructors were brand new hams themselves, having taken the same course earlier in the year. They taught not only to share what they'd learned but also to reinforce it by learning even more about their chosen topics in order to be better teachers. Make yourself a new year's resolution to be like them: Keep learning. Keep teaching.

73, W2VU