

45635

# POPULAR COMMUNICATIONS

FEBRUARY 2007

## WDEV: Community Radio At Its Best

- **The Best Radio Websites For SWLs, pg. 8**
- **Tech Showcase: Magellan's Roadmate 2000 GPS, pg. 55**

**Bidirectional Mapping Radios— Wave Of The Future, pg. 63**

\*\*\*\*\*3-DIGIT 662  
 02 000380028 2902 2702  
 MR. DAVID C STEARNS KC0DAA  
 11712 MELROSE ST APT 103  
 OVERLAND PARK KS 66210-3819



**PLUS: CHU On The Endangered Species List • VHF Scanner Antennas • Low Sunspots And World Hotspots • Cuba: Communism's Last Stand In The West • And Radio Quito Is Back!**



# THE PROFESSIONAL STANDARD

The compact desk-top VR-5000 is Yaesu's most versatile Communications Receiver ever! With ultra-wide frequency coverage and a host of operating features, you'll be on top of the monitoring action with the VR-5000!

- **CONTINUOUS FREQUENCY COVERAGE:** 100 kHz ~ 2.6 GHz / LSB, USB, CW, AM-Narrow, AM, Wide AM, FM-Narrow, and Wide FM (cellular frequencies are blocked)
- **2000 MEMORY CHANNELS / 100 MEMORY GROUPS**
- **DUAL RECEIVE**
- **DIGITAL SIGNAL PROCESSING / BANDPASS FILTER, NOISE REDUCTION, NOTCH FILTER, NARROW CW PEAK FILTER (Optional DVS-1 requires)**
- **REAL-TIME SPECTRUM SCOPE**
- **WORLD CLOCK WITH UTC/LOCAL SETTINGS**
- **PRESET SHORTWAVE BROADCAST STATION MEMORY BANK**
- **EXTENSIVE SCANNING CAPABILITY/SMART SEARCH™**

## ● AND MUCH, MUCH MORE...

- "RF Tune" Front-end Preselector (1.89-1000 MHz)
- 20 dB Attenuator for strong signal environments
- IF Noise Blanker
- DVS-4 Digital Voice Recorder (option) with two memories of up to 8 seconds each
- 10.7 MHz IF Output Jack
- Field Strength Meter
- Audio Tone Control
- All-Mode Squelch Control for silent monitoring
- Password-protected Panel and Dial "Lock" feature
- Display Dimmer/Contrast Control
- Clone Capability for copying memory information from one VR-5000 to another
- Personal Computer Interface Port
- Two Antenna Ports
- Audio Wave Meter provides display of incoming signal's wave characteristics

## COMMUNICATIONS RECEIVER

# VR-5000

0.1~2599.99998MHz\*  
LSB/USB/CW/AM-N/AM/  
WAM/FM-N/WFM  
\*Cellular blocked

Enjoy the wide world of communications monitoring with the action-packed VR-5000, available from your Yaesu Dealer today!



### Wideband Receiver VR-120D

- Wideband Coverage: 0.1-1299.995\* MHz AM/FM/Wide-FM
- Rugged outdoor-ready case construction
- Ultra-long battery life
- BNC-type antenna connector
- Straightforward 4-button operation
- Versatile 640-channel memory system



### All-Mode Wideband Receiver VR-500

- Frequency coverage : 0.1-1299.99995 MHz\*\*
- Modes : NFM, WFM, AM, USB, LSB, CW
- Multiple Power Source Capability
- Polycarbonate Case
- Real-Time 60-ch\* Band Scope \*Range 6 MHz / Step 100kHz
- Full Illumination For Display And Keypad
- Convenient "Preset" Operating Mode
- Front-end 20 dB Attenuator



Vertex Standard  
US Headquarters  
10900 Walker Street  
Cypress, CA 90630 (714)827-7600

For the latest Yaesu news, visit us on the Internet:  
<http://www.vertexstandard.com>

Specifications subject to change without notice. Some accessories and/or options may be standard in certain areas. Frequency coverage may differ in some countries. Check with your local Yaesu Dealer for specific details.



# Universal Radio — Quality equipment since 1942.



etón

E1 XM

GRUNDIG

G4000A

**FREE**

Receive a **FREE Grundig G4000A** with your E1 purchase!



OPTION

The etón E1 XM is the world's first radio that combines AM, FM, shortwave and XM Satellite radio into one ultra high-performance unit. In development for nearly ten years, in collaboration with RL Drake Company and XM Satellite Radio, the E1 is simply the finest full-sized portable in the world. The E1 is an elegant confluence of performance, features and capabilities. The look, feel and finish of this radio is superb. The solid, quality feel is second to none. The digitally synthesized, dual conversion shortwave tuner covers all shortwave frequencies. Adjacent frequency interference can be minimized or eliminated with a choice of three bandwidths [7.0, 4.0, 2.5 kHz]. The sideband selectable Synchronous AM Detector further minimizes adjacent frequency interference and reduces fading distortion of AM signals. IF Passband Tuning is yet another advanced feature that functions in AM and SSB modes to reject interference. AGC is selectable at fast or slow. High dynamic range permits the detection of weak signals in the presence of strong signals. All this coupled with great sensitivity will bring in stations from every part of the globe. Organizing your stations is facilitated by 500 user programmable presets with alpha labeling, plus 1200 user definable country memories, for a total of 1700 presets. You can tune this radio many ways such as: direct shortwave band entry, direct frequency entry, up-down tuning and scanning. Plus you can tune the bands with the good *old fashioned* tuning knob (that has *new fashioned* variable-rate tuning). There is also a dual-event programmable timer. Whether you are listening to AM, shortwave, FM or XM, you will experience superior audio quality via a bridged type audio amplifier, large built in speaker and continuous bass and treble tone controls. Stereo line-level output is provided for recording or routing the audio into another device such as a home stereo. The absolutely stunning LCD has 4 levels of backlighting and instantly shows you the complete status of your radio.

Many receiver parameters such as AM step, FM coverage, beep, kHz/MHz entry etc., can be set to your personal taste via the preference menu. The E1 has a built in telescopic antenna for AM, shortwave and FM reception. Additionally there is a switchable antenna jack [KOK] for an external antenna. Universal also sells a PL259 to KOK antenna jack adapter (#1052 \$14.95) as well as a sturdy angled Lucite radio stand (#3873 \$16.95).

The E1 comes with an AC adapter or may be operated from four D cells (not included). 13.1"W x 7.1"H x 2.3"D Weight: 4 lbs. 3 oz. We are shipping latest production, high serial number units. **Free G4000A** for a limited time. **E1 XM** Order #0101 \$499.95



AUDIOVOX

CNP2000



The Eton E1 is XM ready. This means you may purchase the Audiovox CNP2000DUO XM antenna module at any time. The CNP2000 can be moved from one E1 to another E1, or even to some other compatible electronic products. It has a 25 foot cable. (An optional 50 foot extension cable is also available #0393 \$17.95.)

**CNP2000DUO** Order #0072 \$58.95



The legend of the famous Yacht Boy 400 lives on in this latest model the **Grundig G4000A**. Dollar for dollar no other radio offers this much performance and so many features. Coverage is complete including long wave, AM band to 1710 kHz and shortwave from 1711 to 30000 kHz. FM stereo is provided to the headphone jack. A thumb wheel knob on the side of the radio provides smooth single sideband (SSB) tuning. The illuminated digital display provides tuning resolution at 1 or 5 kHz on shortwave. Two bandwidths are featured to reduce interference. The narrow position affords maximum selectivity, or the wide position may be chosen for best audio fidelity. The keypad will quickly get you to any frequency or store up to 40 of your favorite stations in the presets. The dual digital clock is visible while the radio is playing. Other refinements include: snooze and sleep buttons, lock, High/Low tone switch, Local/DX switch, and 9/10 kHz MW scan selection. External jacks for: earphone, antenna and 9 VDC input. The G4000A comes with: AC adapter, stereo earbuds, wind-up antenna, *Owners Manual*, and upgraded carry case that can be folded to support the radio at an angle. Requires six AA cells (not supplied). The cabinet has a stunning titanium colored finish. 8"Wx5"Hx1.5"D. 1 Lb. 5 oz. One year limited warranty.

**G4000A** Order #4000 \$149.95

► Purchase your Eton E1 from Universal Radio before 03/31/07 and receive a **FREE Grundig G4000A** with your order! [Also sold separately. See above].

Note: The CNP2000 DUO antenna module and XM subscription are sold separately. Activation and monthly subscription fee required for XM.

universal  
radio inc.

Universal Radio, Inc.  
6830 Americana Pkwy.  
Reynoldsburg, Ohio  
43068-4113 U.S.A.

800 431-3939 Orders & Prices  
614 866-4267 Information  
614 866-2339 FAX Line  
dx@universal-radio.com

[www.universal-radio.com](http://www.universal-radio.com)

Visit our website for more exciting new and used shortwave radios.

- Visa
- MasterCard
- Discover
- JCB

- Prices and specs. are subject to change.
- Special offers are subject to change.
- Returns subject to a 15% restocking fee.
- Prices shown do not include shipping.



# Contents

## POPULAR COMMUNICATIONS

Volume 25, Number 6

February 2007

### Features

#### 8 Radio Websites For SWLs

If You Want Good, Quality Radio Information From The Web, Check Out These Sites

by Gerry L. Dexter

#### 15 Radio Quito Returns, Plus A New Station In Micronesia

by Gerry L. Dexter

#### 24 WDEV, A Vermont Treasure

For 75 Years It Set A Standard By Resisting Trends

by Shannon Huniwell

#### 55 Technology Showcase: On The Right Track With The Magellan RoadMate 2000

by Harold Ort, N2RLL

### Columns

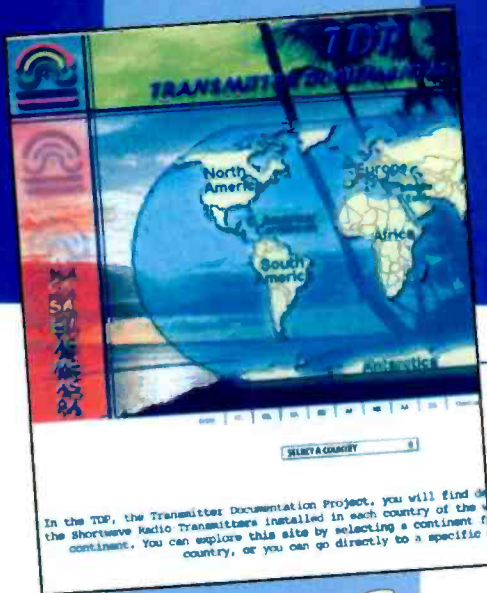
- |    |   |                                    |
|----|---|------------------------------------|
| 30 | Low Sunspots And World Hotspots   | Broadcast Technology               |
| 36 | What Goes Around Comes Around   | The Propagation Center             |
| 42 | World News, Commentary, Music, Sports, And Drama At Your Fingertips               | World Band Tuning Tips             |
| 46 | Hidden Antennas: Out Of Sight, Out Of Mind, Not Out Of Luck                       | ScanTech                           |
| 50 | VHF Scanner Antennas  | The Antenna Room                   |
| 60 | Nuclear Nightmare—How Ready Are You?  | Homeland Security                  |
| 63 | Bidirectional Mapping Radios—The Wave Of The Future                               | Radio Resources                    |
| 66 | Wallpaper "Special" For Your Shack  | Ham Discoveries                    |
| 68 | Building A CAT Program In BASIC To Control Ten-Tec's RX-320/D                     | Computer-Assisted Radio Monitoring |
| 72 | CHU Joins The Endangered Species List   | Utility Communications Digest      |
| 80 | Cuba: Communism's Last Stand In The West, And Lots Of Interesting Radio Listening | World View                         |
| 84 | School Days   | The Loose Connection               |

### Departments

- 4 *Tuning In*—An Editorial
- 5 *InfoCentral*—News, Trends, And Short Takes
- 6 *Our Readers Speak Out*—Letters
- 23 *The Pop'Comm Trivia Corner*
- 44 *Power Up*—Radios & High-Tech Gear
- 58 *Washington Beat*—Capitol Hill And FCC Actions Affecting Communications
- 62 *V.I.P. Spotlight*—Congratulations To David Gardner Of Lapeer, Michigan

### On The Cover

Mark Johnson at the WDEV, Waterbury, Vermont, mic doing—what else?—"The Mark Johnson Show." It's local and it's live. AM radio—hometown AM radio—is alive and well at WDEV. With many stations across the country all sounding alike, with syndicated programming and running without an announcer in the building, WDEV prides itself on doing it the right way, as it has for 75 years. Read Shannon Huniwell's article on page 24 for details. (Photo by Larry Mulvehill)



8



24



46

Visit us on the Web: [www.popular-communications.com](http://www.popular-communications.com)



# Tap into secret Shortwave Signals

Turn mysterious signals into exciting text messages with the MFJ MultiReader™!

MFJ-462B  
\$189<sup>95</sup>

Plug this self-contained MFJ Multi-Reader™ into your shortwave receiver's earphone jack.

Then watch mysterious chirps, whistles and buzzing sounds of RTTY, ASCII, CW and AMTOR (FEC) turn into exciting text messages as they scroll across an easy-to-read LCD display.

You'll read interesting commercial, military, diplomatic, weather, aeronautical, maritime and amateur traffic . . .

## Eavesdrop on the World

Eavesdrop on the world's press agencies transmitting unedited late breaking news in English -- China News in Taiwan, Tanjug Press in Serbia, Iraqi News in Iraq -- all on RTTY.

Copy RTTY weather stations from Antarctica, Mali, Congo and many others. Listen to military RTTY passing traffic from Panama, Cyprus, Peru, Capetown, London and others. Listen to hams, diplomatic, research, commercial and maritime RTTY.

## Super Active Antenna

"World Radio TV Handbook" says MFJ-1024 is a "first-rate easy-to-operate active antenna... quiet... excellent dynamic range... good gain... low noise... broad frequency coverage." Mount it outdoors away from electrical noise for maximum signal, minimum noise. Covers 50 KHz-30 MHz.

Receives strong, clear signals from all over the world. 20 dB attenuator, gain control, ON LED.

Switch two receivers and auxiliary or active antenna. 6x3x5 in. Remote has

MFJ-1024 \$149<sup>95</sup> 54" whip, 50 feet coax. 3x2x4 inches. 12 VDC or 110 VAC with MFJ-1312, \$15.95.

## Indoor Active Antenna

Rival outside long wires with this tuned indoor active antenna. "World Radio TV Handbook" says MFJ-1020C is a "fine value... fair price... best offering to date... performs very well indeed."

Tuned circuitry minimizes intermod, improves selectivity, reduces noise outside tuned band. Use as a preselector with external antenna. Covers 0.3-30 MHz. Tune, Band, Gain, On/Off/Bypass Controls. Detachable telescoping whip. 5x2x6 in. Use 9 volt battery, 9-18 VDC or 110 VAC with MFJ-1312, \$15.95.

## Compact Active Antenna

Plug this compact MFJ MFJ-1022 \$59<sup>95</sup> all band active antenna into your receiver and you'll hear strong, clear signals from all over the world, 300 KHz to 200 MHz including low, medium, shortwave and VHF bands. Detachable 20" telescoping antenna. 9V battery or 110 VAC MFJ-1312B, \$15.95. 3 1/8x1 1/4x4 in.



Listen to maritime users, diplomats and amateurs send and receive error-free messages using various forms of TOR (Telex-Over-Radio).

Monitor Morse code from hams, military, commercial, aeronautical, diplomatic, maritime -- all over the world -- Australia, Russia, Japan, etc.

Monitor any station 24 hours a day by printing transmissions. Printer cable, MFJ-5412, \$11.95.

Save several pages of text in memory for later reading or review.

## High Performance Modem

MFJ's high performance PhaseLockLoop™ modem consistently gives you solid copy -- even with weak signals buried in noise. New threshold control minimizes noise interference -- greatly improves copy on CW and other modes.

## Easy to use, tune and read

It's easy to use -- just push a button to select modes and features from a menu.

It's easy to tune -- a precision tuning indicator makes tuning your receiver easy for best copy.

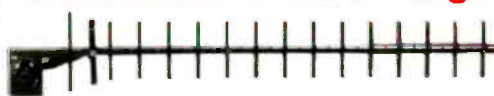
It's easy to read -- front-mounted 2 line 16 character LCD display has contrast adjustment.

Copies most standard shifts and speeds. Has

MFJ AutoTrak™ Morse code speed tracking.

Use 12 VDC or use 110 VAC with MFJ-1312D AC adapter, \$15.95. 5 1/4x2 1/2x5 1/4 D inches.

## WiFi Yagi Antenna -- 15 dBi 16-elements extends range



16-element, 15 dBi WiFi Yagi antenna greatly extends range of 802.11b/g, 2.4 GHz WiFi signals. 32 times stronger than isotropic radiator. Turns slow/no connection WiFi into fast, solid connection. Highly directional -- minimizes interference.

N-female connector. Tripod screw-mount. Wall and desk/shelf mounts. Use vertically/horizontally. 18Wx2 3/4xHx1 1/4 D inches. 2.9 ounces.

MFJ-5606SR, \$24.95. Cable connects MFJ-1800 WiFi antennas to computer.

Reverse-SMA male to N-male, 6 ft. RG-174.

MFJ-5606TR, \$24.95. Same as MFJ-5606SR but Reverse-TNC male to N-male.

## Eliminate power line noise!



MFJ-1026  
\$189<sup>95</sup>

Completely eliminate power line noise, lightning crashes and interference before they get into your receiver! Works on all modes -- SSB, AM, CW, FM, data -- and on all shortwave bands. Plugs between main external antenna and receiver. Built-in active antenna picks up power line noise and cancels undesirable noise from main antenna. Also makes excellent active antenna.

## MFJ Antenna Matcher

Matches your antenna to your receiver so you get maximum signal and minimum loss. MFJ-959C \$109<sup>95</sup>

Preamp with gain control boosts weak stations 10 times. 20 dB attenuator prevents overload. Select 2 antennas and 2 receivers. 1.6-30 MHz. 9x2x6 in. Use 9-18 VDC or 110 VAC with MFJ-1312, \$15.95.

## High-Gain Preselector

High-gain, high-Q receiver preselector covers 1.8-54 MHz.

Boost weak signals 10 times with low noise dual gate MOSFET. Reject out-of-band signals and images with high-Q tuned circuits. Push buttons let you select 2 antennas and 2 receivers. Dual coax and phono connectors. Use 9-18 VDC or 110 VAC with MFJ-1312, \$15.95.

## Dual Tunable Audio Filter

Two separately tunable filters let you peak desired signals and notch out interference at the same time. You can peak, notch, low or high pass signals to eliminate heterodynes and interference. Plugs between radio and speaker or phones. 10x2x6 inches.

## MFJ Shortwave Headphones



MFJ-392B  
\$24<sup>95</sup>

Perfect for shortwave radio listening for all modes -- SSB, FM, AM, data and CW. Superb padded headband and ear cushioned design makes listening extremely comfortable as you listen to stations all over the world! High-performance driver unit reproduces enhanced communication sound. Weighs 8 ounces, 9 ft. cord. Handles 450 mW. Frequency response is 100-24,000 Hz.

## High-Q Passive Preselector

High-Q passive LC preselector boosts your favorite stations while rejecting images, intermod and phantom signals. 1.5-30 MHz. Preselector bypass and receiver grounded positions. Tiny 2x3x4 in.

## Super Passive Preselector

Improves any receiver! Suppresses strong out-of-band signals that cause intermod, blocking, cross modulation and phantom signals. Unique Hi-Q series tuned circuit adds super sharp front-end selectivity with excellent stopband attenuation and very low passband attenuation and very low passband loss. Air variable capacitor with vernier. 1.6-33 MHz.

## MFJ Shortwave Speaker

This MFJ ClearTone™ restores the broadcast quality sound of shortwave listening. Makes copying easier, enhances speech, improves intelligibility, reduces noise, static, hum. 3 in. speaker handles 8 Watts. 8 Ohm impedance. 6 foot cord.

## MFJ All Band Doublet

102 ft. all band doublet covers .5 to 60 MHz. Super strong custom fiberglass center insulator provides stress relief for ladder line (100 ft.). Authentic glazed ceramic end insulators and heavy duty 14 gauge 7-strand copper wire.

## MFJ Antenna Switches

MFJ-1704 \$69<sup>95</sup> MFJ-1702C \$29<sup>95</sup>

MFJ-1704 heavy duty antenna switch lets you select 4 antennas or ground them for static and lightning protection. Unused antennas automatically grounded. Replaceable lightning surge protection. Good to 500 MHz. 60 dB isolation at 30 MHz. MFJ-1702C for 2 antennas.

## Morse Code Reader

Place this pocket-sized MFJ-461 \$89<sup>95</sup> MFJ Morse Code Reader near your receiver's speaker. Then watch CW turn into solid text messages on LCD. Eavesdrop on Morse Code QSOs from hams all over the world!

## MFJ 24/12 Hour Station Clock

MFJ-108B, \$21.95. Dual 24/12 hour clock. Read UTC/local time at-a-glance. High-contrast 5/8" LCD. brushed aluminum frame. Batteries included. 4 1/2 Wx1 D x2 H inches.

## Dealer/Catalog/Manuals

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

• 1 Year No Matter What™ warranty • 30 day money back guarantee (less s/h) on orders direct from MFJ

**MFJ ENTERPRISES, INC.**  
300 Industrial Pk Rd, Starkville, MS 39759 PH: (662) 323-5869  
Tech Help: (662) 323-0549

FAX: (662) 323-6551 8-4:30 CST Mon.-Fri. Add shipping. Prices and specifications subject to change. © 2006 MFJ Enterprises, Inc.



## Mr. Martin's Snooze Button

Where would we Americans be without the ol' snooze button? I don't just mean our alarm clock's snooze button, but the snooze button on our *lives* that allows us to conveniently brush important things aside—essentially, procrastinate on a grand scale—while at the same time keenly focusing on other matters.

It doesn't mean those "other" matters are more, or less, important, it's just how we prioritize that's interesting, to say the least. I do it all the time. I'll have an extra donut and coffee (with *two* sugar packets) yet get regular checkups and religiously take my BP meds every day. I'm A-OK, thank you. I could probably take a few less meds if I'd give up the donut, but why should I? The BP *is* under control—today, at least.

I know plenty of radio nuts who sometimes snooze while watching that low-battery indicator on their scanner or HT, while at the same time being very concerned about adding another 200 or more frequencies into the radio's memory. That's fine, of course, until a week later when you've got to either replace the batteries or charge the unit overnight, right in the middle of a local event you'd rather be monitoring.

And, of course, there's the "my coax is fine" snooze button. We all know what happens when that snooze button is hit a few times, and it's always in the middle of winter *and* during an ice storm.

Uncle Sam hits the snooze button quite frequently, sometimes intentionally, as it focuses our attention on what the bureaucracy considers (always, it tells us, on our behalf) to be more important. While *we* collectively snooze, contracts are let, deals are made, and troops go to war and die, all in the name of "national security," when in reality sometimes national security means big buckaroos for big companies. Some things we must leave to historians who will look back at how we conducted ourselves. Too bad, though, we can't live our lives backwards at times like these and correct our ills.

That's what I think the FCC historians will—eventually—see: big bucks and plenty of promises behind closed doors, *if* someday they're smart enough to actually take the time to look at all sides of the Broadband over Powerline story (BPL). BPL has certainly been *proven* to wreak havoc on the radio spectrum, and its testing and deployment has been met with staunch opposition from the ARRL. There's even a court appeal by the League that the National Association of Broadcasters (NAB) and Association for Maximum Service Television (MSTV) support in a joint motion for leave to, as the ARRL says, "...intervene in support of the ARRL..."

The appeal, dated November 9, states, "MSTV and NAB believe that the regulations under review are arbitrary, capricious, and contrary to law, and will adversely impact their members by, among other things, permitting unlicensed users of radio spectrum to interfere with licensed uses of the spectrum." The ARRL's CEO, Dave Sumner, K1ZZ, hit the nail on the head in a statement issued from Newington, Connecticut, saying, "It is gratifying that these two prestigious broadcasting organizations recognize the danger posed to all FCC licensees by the FCC's flawed BPL rules. It's good to have them on our side."

Of course, this is all because the Commission continues to do far more than hit the snooze button—they're actually turn-

ing over, pulling the warm, fuzzy BPL blankets over their heads, and showing America's hams their backside in the process. If the FCC were your kid you'd send him or her to the shrink for some serious couch time. It's high time the Commission changed its tune and worked for America and licensed spectrum users, not Big Business. Remember, they're supposed to be a regulatory agency, not in the business of promoting business x or y.

The League and others have attempted to get the Commission to do the right thing, but the Commission continues to turn a deaf ear, caving in to BPL Industry Bigs, all at the expense of our precious spectrum. Like I've said before, if you or I ever conceived a scheme such as BPL in which overhead power lines would be used for carrying RF into homes and businesses, we'd be laughed out of the board room!

Why the Commission continues to enthusiastically embrace—the League appropriately calls it "cheerleading"—the BPL industry is, frankly, baffling. I really thought that when Chairman Kevin Martin came on board, taking over from Number One BPL Cheerleader Chairman Michael Powell, that attitudes at the Commission *might* change, but it was not to be. Martin says, "...[BPL]...holds great promise as a ubiquitous broadband solution that would offer a viable alternative to cable, digital subscriber line, fiber, and wireless broadband solutions."

The League reports that Deborah T. Tate, his Republican colleague,

...echoed Martin's enthusiasm, calling the FCC's goal of ubiquitous broadband deployment in the US "an exciting prospect." She went on to say that the FCC will continue to find an appropriate balance between regulation to mitigate potential negative "side effects" that accompany BPL "and a hands-off approach that gives BPL the room it needs to develop in a free market." She said the MO&O "strikes the right balance with minimal regulatory burdens."

I think not. It seems to me that the Commission is doing whatever it can to accommodate BPL from changing their own Part 15 regulations to blatantly ignoring proven interference. What's troublesome—and nearly criminal in scope—is that when presented with the interference problem the Commission gets on the money train and rides it, blowing the whistle at every stop and ignoring the crossings. Those crossings are wracked with pitfalls and potholes, yet the Commission plows on.

Remember please, it's not just "hobby" radio communications—those same communications that can be vital in a national or local emergency—it's also a multitude of licensed radio signals to which BPL has been proven to cause interference, including public safety and broadcast signals. When the Commission denies a request from the aeronautical industry to exclude BPL operations from certain operational frequencies, you know there's something odd going on inside the portals.

I don't know what it is, and chances are we'll never know the whole truth, but if you read Chairman Martin's November 22 news statement in which he says, "I will continue to work to provide a regulatory environment that promotes competition and drives investment and innovation while protecting consumers and promoting public safety," you quickly realize his "promoting public safety" snooze button is permanently "on" and undoubtedly directly linked to the wallet. ■

# News, Trends, And Short Takes

## Vietnam To Launch Mobile TV Service

Vietnam Multimedia Corporation (VTC) was scheduled to offer the country's first broadcasting television service on mobiles beginning December in Hanoi and Ho Chi Minh City before going nationwide by 2008. The corporation plans to run the service on a trial basis to test technical systems and content via eight television broadcasting channels and four radio channels to provide both foreign and domestic content. The four radio channels will include two from Voice of Vietnam (VoV) and two others by VTC offering mostly music. The service will also include video on demand on a pay-per-view basis.

The company started commercializing the PayTV service after a year-long pilot network using digital video broadcasting-handheld (DVB-H) technology, the first service provider to do so in the Asia Pacific region and the second in the world after Italy. The plan was announced a month after the corporation signed a technical support agreement with Nokia to ensure the service was received by Nokia's Nseries DVB-H-enabled multimedia devices, including Nokia N92, at the highest end.

## Sri Lanka Suspends Private Radio Channel For Broadcasting "Sexually Explicit" Programs

Sri Lanka suspended a private radio channel for broadcasting "sexually explicit" programs about young people's personal problems. The Sinhalese-language Raja FM channel was shut down because it ignored requests to drop the program called "Three Hours with Sumali," the government's information department said. "It has been proved beyond doubt that these programs are aimed at corrupting the young, especially the children, and to harm the dignity of women," the department said in a statement. There was no immediate comment from the station, but journalists there said they had used a professional psychologist to answer listeners' queries. There is no censorship in Sri Lanka, but the Paris-based media watchdog, Reporters without Borders (RSF) this week said Sri Lanka was one of the most dangerous places for journalists.

## Vietnam To Try Americans As Terrorists In Alleged Radio Plot

Vietnam will try three naturalized U.S. citizens on terrorism charges over an alleged plot to use radio transmitters to take over state airwaves and call for an uprising against the Communist government. Vietnamese-born Thuong Nguyen "Cuc" Foshee and Le Van Binh, both of Florida, and Huynh Bich Lien "Linda" of California, are scheduled to stand trial in the Ho Chi Minh City People's Court along with four Vietnamese nationals.

The defendants are accused of bringing 14 radio transmitters and five generators into Vietnam in early 2005, allegedly planning to electronically seize control of the Voice of Vietnam Radio and call for an uprising against the government, according to

*Nhan Dan*, the official Communist Party newspaper. The government would not elaborate on how the alleged radio jamming could be interpreted as a deadly act, which it did, but the *Nhan Dan* article briefly mentioned that the alleged plot also involved plans to "jam and disturb" aviation radio communication.

## The UN Radio Starts Broadcasts In Russia Via WRN

The Russian service of the UN radio has started to broadcast in Moscow, the Moscow Region and St. Petersburg through the World Radio Network. The 15-minute UN news and thematic programs will include comments of the Permanent Representative of the Russian Federation to the UN in New York. The broadcasts are available three times a day: at 9 a.m., 11:15 a.m., and 11:30 p.m. on weekdays plus 6 a.m., 8:15 a.m., and 8:30 p.m. on weekends (all times local).

## Brazil Moving Aggressively With HD Radio Rollout

iBiquity Digital Corporation, the developer and licensor of digital HD radio technology, has announced that Brazilian broadcasters have formed the "Brazilian Alliance for Digital Radio" to promote and support the deployment of HD Radio technology in that country. The announcement is the latest development in the country's increasingly rapid adoption of the HD Radio system. There are 16 stations in Brazil broadcasting with HD Radio technology to a coverage area of 30 million people.

The Brazilian Alliance for Digital Radio is composed of the major broadcast groups: the Brazilian Association of Radio and Television Broadcasters (ABERT), the Association of Broadcasters of Sao Paulo (AESP), and other Brazilian groups, including Sistema Globo de Rádio; Sistema Clube de Rádio; Rede Record; Rede Itatiaia; Grupo Bandeirantes de Comunicação; Rede RBS; Rede Energia; and Grupo O Estado de São Paulo e Rede CBS. Substantial HD Radio field test data obtained from these major radio networks was presented at the recent Brazilian society of Engineering of Television and Telecommunications (SET) convention. In addition, numerous HD Radio operation reports have been presented to Brazilian regulatory authorities.

Brazil, and South America in general, has been among the leaders in the international rollout of HD Radio technology. KISS FM in São Paulo was one of the first radio stations outside the United States to begin HD radio broadcasting when it went on the air in September 2005. Chilean broadcast equipment manufacturer Continental Lensa also recently became the first licensed HD radio broadcast equipment manufacturer outside of North America.

In addition to Brazil and the United States, the list of countries deploying or testing HD Radio technology now includes Australia, Canada, France, Indonesia, Mexico, New Zealand, Philippines, Poland, Switzerland, Thailand, and Ukraine.

(Continued on page 82)



## OUR READERS SPEAK OUT

Each month, we select representative reader letters for "Our Readers Speak Out" column. We reserve the right to condense lengthy letters for space reasons and to edit to conform to style. All letters submitted must be signed and show a return mailing address or valid e-mail address. Upon request, we will withhold a sender's name if the letter is used in "Our Readers Speak Out." Address letters to: Harold Ort, N2RLL, Editor, Popular Communications, 25 Newbridge Road, Hicksville, NY 11801-2909, or send e-mail via the Internet to popularcom@aol.com.

### Watch Those Legs!

Dear Editor:

You and I have vast differences on mobile radio mounting. For one thing, your concept of the pedestal mount looks to me that it will give us medical professionals (I've been an ER nurse) more business than we need when it lays open the side of your leg in a crash. Plus, it's tough to conceal from would-be thieves.

I advocate mounting radios, control heads, and speakers securely on the dash and rear deck shelf, because it aims the speakers at your head, where most people's ears are, instead of under your chin and armpits, and it puts the display and controls in the same line of sight as the oncoming 18 wheeler, tree, or bridge abutment, which are always good to keep track of. The tricky things with on-dash mounting are security and protection from theft and solar heat. That can be achieved by fashioning a false dash over the top of the radio gear, and if you add a blank upper dash held in place by Velcro, it's invisible to thieves. Some wires and connectors protruding from under the dash that make it look like the goodies have been removed, even if there are antennas on the car, is a nice finishing touch.

David Bogart  
Via e-mail

### Jerry's Antenna Woes

Dear Editor:

I read with great interest your excellent article on page 17 in the December *Pop'Comm*. "Pre-Winter RX For Your Antennas," and am very interested in using anything but guy wire. The Phillystran is good, but can be expensive. I'd like to use something that's not an eyesore (especially for my wife and family). I have a large vertical MFJ antenna, atop two poles that are currently guyed in two places with aluminum guy wire, and I'm sure it affects my signals. Any help you can provide would be sincerely appreciated.

Jerry Bogen  
Via e-mail

Dear Jerry:

There are probably as many ideas for guy wires as there are types of antennas and guy wire out there. I've even heard of folks

using hay bale twine. At the other end of the spectrum, some radio enthusiasts even use standard clothesline. That's not a smart idea as it stretches and can rot away (just check out your Aunt Mildred's clothesline). A good marine-grade nylon rope works quite well, but of course installing it on the ring assembly without the edges tearing it at some point becomes the challenge. I once found a spool of green (I've also heard of a light blue color) rope and use it on my vertical antenna—a Stepp IR antenna that still stands after suffering near-hurricane-force winds for more than two years. UV resistant Dacron rope is also a great guy "rope." Shop the hamfests and check online for good deals. Whatever you do, though, inspect the rope/wire frequently!

### Bob Says Thanks!

Dear Editor:

Just a short note to let you know that I look forward to receiving my monthly copy of *Popular Communications*. Your staff does a great job putting together a quality publication. Your editorials are especially interesting, and I usually agree with your viewpoint. I found a reference to your U.S. Army service in Germany when you referred to Tempelhof AB of particular interest, since I served in the USAF and was stationed at Tempelhof from 1960 to 1963.

Again, thank you for the good job you do on a monthly basis on *Pop'Comm*.

Bob Paciorowski  
Morristown, NJ

### TV Manufacturers Cunning Or Crazy?

Dear Editor:

Your article in the December issue about HD TV (clever headline, too, I might add: "What's In Store For You Will Cost You") was a real eye-opener for me. I showed the article to my coworkers, one of whom is now pretty honked off at the "industry" for pushing the new high-def TV—without much media coverage letting consumers know the "rest of the story," as you say. Thanks again for another great issue.

Robert Gallup  
Via e-mail

## POPULAR COMMUNICATIONS

### EDITORIAL STAFF

Harold Ort, N2RLL, Editor

(E-mail: Popularcom@aol.com)

Tom Kneitel, W4XAA, Senior Editor

Edith Lennon, N2ZRW, Managing Editor

Richard S. Moseson, W2VU, Editorial Director

(E-mail: w2vu@popular-communications.com)

### CONTRIBUTING EDITORS

Rich Arland, W3OSS, Homeland Security

Peter J. Bertini, K1ZJH, Restoration/Electronics

Kent Britain, WA5VJB, Antennas And Accessories

Bruce A. Conti, AM/FM Broadcasts

Joseph Cooper, Computer-Assisted Radio

Gerry L. Dexter, Shortwave Broadcast

Richard Fisher K16SN, Capitol Hill News

Bill Hoefler, KB0ULJ, Aviation Communications

Tomas Hood, NW7US, Propagation

Shannon Huniwell, Classic Radio

John Kasupski, KC2HMZ, Utility Communications

Kirk Kleinschmidt, NT0Z, Amateur Radio

Ron McCracken, WPZX-486/KG4CVL, REACT

Bill Price, N3AVY, Humor/Communications

Ken Reiss, Technical/Scanning

Bob Sturtevant, AD7IL, Puzzles and Trivia

Tom Swisher, WA8PYR, Military Monitoring

Jason Togyer, KB3CNM, Cartoons

Gordon West, WB6NOA, Radio Resources

### BUSINESS STAFF

Richard A. Ross, K2MGA, Publisher

Arnold Sposato, N2IQO, Advertising Manager

Emily Leary, Sales Assistant

Sal Del Grosso, Accounting Manager

Doris Watts, Accounting Department

Melissa Gilligan, Operations Manager

Cheryl DiLorenzo, Customer Service Manager

Ann Marie Auer, Customer Service

### PRODUCTION STAFF

Elizabeth Ryan, Art Director

Barbara McGowan, Associate Art Director

Dorothy Kehrwieler, Production Manager

Emily Leary, Assistant Production Manager

Hal Keith, Technical Illustrator

Larry Mulvehill, WB2ZPI, Photographer

A publication of



CQ Communications, Inc.  
25 Newbridge Road  
Hicksville, NY 11801-2953 USA

Offices: 25 Newbridge Road, Hicksville, NY 11801. Telephone (516) 681-2922. FAX (516) 681-2926. Web Site: <http://www.popular-communications.com/> Popular Communications (ISSN-0733-3315) is published monthly by CQ Communications, Inc. Periodical class postage paid at Hicksville, NY and additional offices. Subscription prices (payable in U.S. dollars). Domestic—one year \$28.95, two years \$51.95, three years \$74.95. Canada/Mexico—one year \$38.95, two years \$71.95, three years \$104.95. Foreign Air Post—one year \$48.95, two years \$91.95, three years \$134.95.

U.S. Government Agencies: Subscriptions to Popular Communications are available to agencies of the United States government, including military services, only on a cash with order basis. Requests for quotations, bids, contracts, etc. will be refused and will not be returned or processed.

Entire contents copyright © 2007 by CQ Communications, Inc. Popular Communications assumes no responsibility for unsolicited manuscripts, photographs, or drawings. Allow six weeks for change of address or delivery of first issue.

Printed in the United States of America.

Postmaster: Please send change of address to Popular Communications, 25 Newbridge Road, Hicksville, NY 11801.



# Big Savings on Radio Scanners

# Uniden®

# SCANNERS



## Bearcat® 796DGV Trunk Tracker IV with free scanner headset

Manufacturers suggested list price \$799.95  
CEI Special Price \$519.95

1,000 Channels • 10 banks • CTCSS/DCS • S Meter  
Size: 6<sup>15</sup>/<sub>16</sub>" Wide x 6<sup>9</sup>/<sub>16</sub>" Deep x 2<sup>3</sup>/<sub>8</sub>" High

Frequency Coverage: 25,000-512,000 MHz., 806,000-956,000 MHz.  
(excluding the cellular & UHF TV band), 1,240,000-1,300,000 MHz.

When you buy your Bearcat 796DGV TrunkTracker package deal from Communications Electronics, you get more. The GV means "Great Value." With your BC796DGV scanner purchase, you also get a free deluxe scanner headphone designed for home or race track use. Headset features independent volume controls and 3.5 mm gold right angle plug. The 1,000 channel Bearcat 796DGV is packed with features to track Motorola Type I/II/III Hybrid, EDACS, LTR Analog Trunk Systems and Motorola APCO 25 Phase I digital scanner including 9,600 Baud C4FM and CQPSK. Also features control channel only mode to allow you to automatically trunk many systems by simply programming the control channel, S.A.M.E. weather alert, full-frequency display and backlit controls, built-in CTCSS/DCS to assign analog and digital subaudible tone codes to a specific frequency in memory, PC Control and programming with RS232C 9 pin port (cable not supplied), Beep Alert, Record function, VFO control, menu-driven design, total channel control and much more. Our CEI package deal includes telescopic antenna, AC adapter, cigarette lighter cord, DC cord, mobile mounting bracket with screws, owner's manual, trunking frequency guide and one-year limited Uniden factory warranty. For maximum scanning enjoyment, order magnetic mount antenna part number ANTMMBNC for \$29.95. For complete details, download the owners manual from the [www.usascan.com](http://www.usascan.com) web site. For fastest delivery, order on-line at [www.usascan.com](http://www.usascan.com).

## Bearcat® BCT8 Trunk Tracker III

Manufacturer suggested list price \$299.95  
CEI Special Price \$169.95

250 Channels • 5 banks • PC Programmable  
Size: 7.06" Wide x 6.10" Deep x 2.44" High

Frequency Coverage: 25,000-54,000 MHz., 108,000-174,000 MHz., 400,000-512,000 MHz., 806,000-823,987.5 MHz., 849,0125-868,9950 MHz., 894,0125-956,0000 MHz.

The Bearcat BCT8 scanner, licensed by NASCAR, is a superb preprogrammed 800 MHz trunked highway patrol system scanner. Featuring TrunkTracker III, PC Programming, 250 Channels with unique BearTracker warning system to alert you to activity on highway patrol link frequencies. Preprogrammed service searches makes finding interesting active frequencies even easier and include preprogrammed police, fire and emergency medical, news agency, weather, CB band, air band, railroad, marine band and department of transportation service searches. The BCT8 also has preprogrammed highway patrol alert frequencies by state to help you quickly find frequencies likely to be active when you are driving. The BCT8 includes AC adapter, DC power cable, cigarette lighter adapter plug, telescopic antenna, window mount antenna, owner's manual, one year limited Uniden warranty, frequency guide and free mobile mounting bracket. For maximum scanning enjoyment, also order the following optional accessories: External speaker ESP20 with mounting bracket & 10 feet of cable with plug attached \$19.95. Magnetic Mount mobile antenna ANTMMBNC for \$29.95.



## Bearcat® BCD396T Trunk Tracker IV

Suggested list price \$799.95/CEI price \$519.95

APCO 25 9,600 baud compact digital ready handheld TrunkTracker IV scanner featuring Fire Tone Out Paging, Close Call and Dynamically Allocated Channel Memory (up to 6,000 channels), SAME Weather Alert, CTCSS/DCS, Alpha Tagging. Size: 2.40" Wide x 1.22" Deep x 5.35" High

### Frequency Coverage:

25,000-512,000 MHz., 764,000-775,9875 MHz., 794,000-823,9875 MHz., 849,0125-868,8765 MHz., 894,0125-956,000 MHz., 1,240,000 MHz - 1,300,000 MHz.

The handheld BCD396T scanner was designed for National Security/Emergency Preparedness (NS/EP) and homeland security use with new features such as **Fire Tone Out Decoder**. This feature lets you set the BCD396T to alert if your selected two-tone sequential paging tones are received. Ideal for on-call firefighters, emergency response staff and for activating individual scanners used for incident management and population attack warning.

**Close Call Radio Frequency Capture** - Bearcat exclusive technology locks onto nearby radio transmissions, even if you haven't programmed anything into your scanner. Useful for intelligence agencies for use at events where you don't have advance notice or knowledge of the radio communications systems and assets you need to intercept. The BCD396T scanner is designed to track Motorola Type I, Type II, Hybrid, SMARTNET, PRIVACY PLUS, LTR and EDACS\* analog trunking systems on any band. Now, follow UHF High Band, UHF 800/900 MHz trunked public safety and public service systems just as if conventional two-way communications were used. **Dynamically Allocated Channel Memory** - The BCD396T scanner's memory is organized so that it more closely matches how radio systems actually work. Organize channels any way you want, using Uniden's exclusive dynamic memory management system. 3,000 channels are typical but **over 6,000 channels are possible** depending on the scanner features used. You can also easily determine how much memory you have used and how much memory you have left. **Preprogrammed Systems** - The BCD396T is preprogrammed with over 400 channels covering police, fire and ambulance operations in the 25 most populated counties in the United States, plus the most popular digital systems. **3 AA NiMH or Alkaline battery operation and Charger** - 3 AA battery operation - The BCD396T includes 3 premium 2,300 mAh Nickel Metal Hydride AA batteries to give you the most economical power option available. You may also operate the BCD396D using 3 AA alkaline batteries. **Unique Data Skip** - Allows your scanner to skip unwanted data transmissions and reduces unwanted birdies. **Memory Backup** - If the battery completely discharges or if power is disconnected, the frequencies programmed in the BCD396T scanner are retained in memory. **Manual Channel Access** - Go directly to any channel. **LCD Back Light** - A blue LCD light remains on when the back light key is pressed. **Autolight** - Automatically turns the blue LCD backlight on when your scanner stops on a transmission. **Battery Save** - In manual mode, the BCD396T automatically reduces its power requirements to extend the battery's charge. **Attenuator** - Reduces the signal strength to help prevent signal overload. The BCD396T also works as a conventional scanner to continuously monitor many radio conversations even though the message is switching frequencies. The BCD396T comes with AC adapter, 3 AA nickel metal hydride batteries, belt clip, flexible rubber antenna, wrist strap, SMA/BNC adapter, RS232C cable, Trunk Tracker frequency guide, owner's manual and one year limited Uniden warranty. Not compatible with AGEIS, ASTRO or ESAS systems. Order on-line at [www.usascan.com](http://www.usascan.com) or call 1-800-USA-SCAN.

**Close Call Radio Frequency Capture** - Bearcat exclusive technology locks onto nearby radio transmissions, even if you haven't programmed anything into your scanner. Useful for intelligence agencies for use at events where you don't have advance notice or knowledge of the radio communications systems and assets you need to intercept. The BCD396T scanner is designed to track Motorola Type I, Type II, Hybrid, SMARTNET, PRIVACY PLUS, LTR and EDACS\* analog trunking systems on any band. Now, follow UHF High Band, UHF 800/900 MHz trunked public safety and public service systems just as if conventional two-way communications were used. **Dynamically Allocated Channel Memory** - The BCD396T scanner's memory is organized so that it more closely matches how radio systems actually work. Organize channels any way you want, using Uniden's exclusive dynamic memory management system. 3,000 channels are typical but **over 6,000 channels are possible** depending on the scanner features used. You can also easily determine how much memory you have used and how much memory you have left. **Preprogrammed Systems** - The BCD396T is preprogrammed with over 400 channels covering police, fire and ambulance operations in the 25 most populated counties in the United States, plus the most popular digital systems. **3 AA NiMH or Alkaline battery operation and Charger** - 3 AA battery operation - The BCD396T includes 3 premium 2,300 mAh Nickel Metal Hydride AA batteries to give you the most economical power option available. You may also operate the BCD396D using 3 AA alkaline batteries. **Unique Data Skip** - Allows your scanner to skip unwanted data transmissions and reduces unwanted birdies. **Memory Backup** - If the battery completely discharges or if power is disconnected, the frequencies programmed in the BCD396T scanner are retained in memory. **Manual Channel Access** - Go directly to any channel. **LCD Back Light** - A blue LCD light remains on when the back light key is pressed. **Autolight** - Automatically turns the blue LCD backlight on when your scanner stops on a transmission. **Battery Save** - In manual mode, the BCD396T automatically reduces its power requirements to extend the battery's charge. **Attenuator** - Reduces the signal strength to help prevent signal overload. The BCD396T also works as a conventional scanner to continuously monitor many radio conversations even though the message is switching frequencies. The BCD396T comes with AC adapter, 3 AA nickel metal hydride batteries, belt clip, flexible rubber antenna, wrist strap, SMA/BNC adapter, RS232C cable, Trunk Tracker frequency guide, owner's manual and one year limited Uniden warranty. Not compatible with AGEIS, ASTRO or ESAS systems. Order on-line at [www.usascan.com](http://www.usascan.com) or call 1-800-USA-SCAN.

## More Radio Products

Save even more on radio scanners when purchased directly from CEI. Price includes delivery in the continental USA excluding Alaska.

Bearcat 898T 500 channel TrunkTracker III base/mobile.....	\$209.95
Bearcat 796DGV Digital 1,000 ch. TrunkTracker IV base/mobile.....	\$519.95
Bearcat BCD396T APCO 25 Digital scanner with Fire Tone Out.....	\$519.95
Bearcat 246T up to 2,500 ch. TrunkTracker III handheld scanner.....	\$214.95
Bearcat Sportcat 230 alpha display handheld sports scanner.....	\$184.95
Bearcat 278CLT 100 channel AM/FM/SAME WX alert scanner.....	\$129.95
Bearcat 248CLT 50 channel base AM/FM/weather alert scanner.....	\$104.95
Bearcat 244CLT 30 channel base AM/FM/weather alert scanner.....	\$94.95
Bearcat 92XLT 200 channel handheld scanner.....	\$105.95
Bearcat 72XLT 100 channel handheld scanner.....	\$89.95
Bearcat BR330T handheld shortwave/scanner with Fire Tone out.....	\$274.95
Bearcat BCT8 250 channel Information mobile scanner.....	\$169.95
Bearcat 350C 50 channel desktop/mobile scanner.....	\$96.95
AOR AR16BQ Wide Band scanner with quick charger.....	\$199.95
AOR AR3000AB Wide Band base/mobile receiver.....	\$1,079.95
AOR AR8200 Mark IIIB Wide Band handheld scanner.....	\$594.95
AOR AR8600 Mark II Wide Band receiver.....	\$899.95
Deluxe Independent Dual Volume Control Racing Headphone.....	\$29.95
Scancat Gold For Windows Software.....	\$99.95
Scancat Gold For Windows Surveillance Edition.....	\$159.95

## Bearcat® BC246T Trunk Tracker III

Suggested list price \$399.95/CEI price \$214.95  
Compact professional handheld TrunkTracker III scanner featuring Close Call and Dynamically Allocated Channel Memory (up to 2,500 channels), SAME Weather Alert, CTCSS/DCS, Alpha Tagging. Size: 2.72" Wide x 1.26" Deep x 4.6" High

### Frequency Coverage:

25,000-54,000 MHz., 108,000-174,000 MHz., 216,000-224,9800 MHz., 400,000-512,000 MHz., 806,000-823,9875 MHz., 849,0125-868,9875 MHz., 894,0125-956,000 MHz., 1,240,000 MHz - 1,300,000 MHz.

The handheld BC246T TrunkTracker scanner has so many features, we recommend you visit our web site at [www.usascan.com](http://www.usascan.com) and download the free owner's manual.

Popular features include **Close Call Radio Frequency Capture** - Bearcat exclusive technology locks onto nearby radio transmissions, even if you haven't programmed anything into your scanner. **Dynamically Allocated Channel Memory** - Organize channels any way you want, using Uniden's exclusive dynamic memory management system. 1,600 channels are typical but **over 2,500 channels are possible** depending on the scanner features used. You can also easily determine how much memory is used. **Preprogrammed Service Search (10)** - Makes it easy to find interesting frequencies used by public safety, news media TV broadcast audio, Amateur (ham) radio, CB radio, Family Radio Service, special low power, railroad, aircraft, marine, racing and weather frequencies. **Quick Keys** - allow you to select systems and groups by pressing a single key. **Text Tagging** - Name each system, group, channel, talk group ID, custom search range, and S.A.M.E. group using 16 characters per name. **Memory Backup** - When power is lost or disconnected, your BC246T retains the frequencies that were programmed in memory. **Unique Data Skip** - Allows the BC246T to skip over unwanted data transmissions and birdies. **Attenuator** - You can set the BC246T attenuator to reduce the input strength of strong signals by about 18 dB. **Duplicate Frequency Alert** - Alerts you if you try to enter a duplicate name or frequency already stored in the scanner. **22 Bands** - with aircraft and 800 MHz. The BC246T comes with AC adapter, 2 AA 1,800 mAh nickel metal hydride batteries, belt clip, flexible rubber antenna, wrist strap, RS232C cable, Trunk Tracker frequency guide, owner's manual and one year limited Uniden warranty. For more fun, order our optional deluxe racing headset part #HF24RS for \$29.95. Order now at [www.usascan.com](http://www.usascan.com) or call 1-800-USA-SCAN.



**Close Call Radio Frequency Capture** - Bearcat exclusive technology locks onto nearby radio transmissions, even if you haven't programmed anything into your scanner. **Dynamically Allocated Channel Memory** - Organize channels any way you want, using Uniden's exclusive dynamic memory management system. 1,600 channels are typical but **over 2,500 channels are possible** depending on the scanner features used. You can also easily determine how much memory is used. **Preprogrammed Service Search (10)** - Makes it easy to find interesting frequencies used by public safety, news media TV broadcast audio, Amateur (ham) radio, CB radio, Family Radio Service, special low power, railroad, aircraft, marine, racing and weather frequencies. **Quick Keys** - allow you to select systems and groups by pressing a single key. **Text Tagging** - Name each system, group, channel, talk group ID, custom search range, and S.A.M.E. group using 16 characters per name. **Memory Backup** - When power is lost or disconnected, your BC246T retains the frequencies that were programmed in memory. **Unique Data Skip** - Allows the BC246T to skip over unwanted data transmissions and birdies. **Attenuator** - You can set the BC246T attenuator to reduce the input strength of strong signals by about 18 dB. **Duplicate Frequency Alert** - Alerts you if you try to enter a duplicate name or frequency already stored in the scanner. **22 Bands** - with aircraft and 800 MHz. The BC246T comes with AC adapter, 2 AA 1,800 mAh nickel metal hydride batteries, belt clip, flexible rubber antenna, wrist strap, RS232C cable, Trunk Tracker frequency guide, owner's manual and one year limited Uniden warranty. For more fun, order our optional deluxe racing headset part #HF24RS for \$29.95. Order now at [www.usascan.com](http://www.usascan.com) or call 1-800-USA-SCAN.

## Buy with Confidence

### Order on-line and get big savings

For over 37 years, millions of communications specialists and enthusiasts worldwide have trusted Communications Electronics for their mission critical communications needs. It's easy to order. For fastest delivery, order on-line at [www.usascan.com](http://www.usascan.com). Mail orders to: Communications Electronics Inc., P.O. Box 1045, Ann Arbor, Michigan 48106 USA. Price includes \$30.00 UPS Ground shipping/handling/insurance per scanner to a street address in the continental USA excluding Alaska. Add \$20.00 shipping for all accessories. For shipments to Canada, Puerto Rico, Hawaii, Alaska, Guam, P.O. Box, APO/FPO, USPS Priority Mail or UPS 2 business day delivery, add \$30.00. Michigan residents add sales tax. No COD's. For Bearcat scanners your satisfaction is guaranteed or return item in unused condition in original packaging within 61 days for refund, less shipping charges. 10% surcharge for net 10 billing to qualified accounts. All sales are subject to availability, acceptance and verification. Prices, terms and specifications are subject to change without notice. We welcome your Discover, Visa, American Express, MasterCard, IMPAC or Eurocard. Order toll free, call 1-800-USA-SCAN or 1-734-996-8888 if outside Canada or the USA. FAX anytime, dial 1-734-663-8888. Dealer and international inquiries invited. Order your radio scanners from Communications Electronics today.

For credit card orders call  
**1-800-USA-SCAN**

e-mail: [cei@usascan.com](mailto:cei@usascan.com)

[www.usascan.com](http://www.usascan.com)

PO Box 1045, Ann Arbor, Michigan 48106-1045 USA  
For information call 734-996-8888 or FAX 734-663-8888  
Price schedule effective January 2, 2006 AD #010206 © 2006 Communications Electronics Inc.

**COMMUNICATIONS ELECTRONICS INC.**  
Emergency Operations Center

Visit [WWW.USASCAN.COM](http://WWW.USASCAN.COM) • 1-800-USA-SCAN



# Radio Websites For SWLs

## If You Want Good, Quality Radio Information From The Web, Check Out These Sites

by Gerry L. Dexter


Call it the Internet or the World Wide Web, whether or not you're into being online only "kinda sorta" depends on what generational level you hail from. The younger you are, the more likely you've been a Web Wrangler practically forever. On the back side of the coin, the more years you're carrying, the more likely you are to be a bit set in your ways and thus not much interested in exploring this vast and often confusing world—or you have come to it only gradually, maybe out of necessity as much as anything else.

Perhaps you've been online for quite awhile but still, when the need arises to look something up or do some research your first thought is "book" or "dictionary." If a few years went by before "Yahoo" or "Google" began to replace "atlas" or "library" as the first thing you thought of when you needed to find some information well, you're still making progress!

But maybe you haven't taken even so much as the first step toward the online world. If that's the case you should know that you're missing out on the biggest source of information the world has ever seen, not to mention the sea change that having access to the Web can mean for the success and enjoyment you get out of your shortwave hobby.

There are approximately 1.3 gazillion websites out there, the vast majority of which have absolutely nothing to do with shortwave, or even radio in general. But that still leaves us with an Everest of sites we can visit for assistance and specific information to help us further our SWL pursuits. Our purpose here, then, is to introduce you to a few sites (in no particular order) that we feel can be especially useful, so warm up your mouse and let's get started.

### International Listening Guide



## ILGRadio

### The Advanced World Radio Database System

---

- **ILGRadio - Short Wave Radio Software and Databases**  
for Amateurs, Short Wave Listeners, DXers...  
**Free ILGRadio Software Download here for amateurs**
- **ILGRadio's World Top Online Broadcasting Databases**
- **ILGRadio's International Programme Guide**
- **ILGRadio's International Broadcasting Web Directory**
- **ILG's Professional Software (non public area)**

http://ilgradio.de/ 11/18/2005

*The International Listening Guide site probably has the most complete by frequency listing of SW stations anywhere, but it's not easy for the average guy to figure out.*

## High-Frequency Coordinating Conference

The High-Frequency Coordinating Conference (HFCC), located on the Web at [www.hfcc.org/](http://www.hfcc.org/) is a group of about 60 international broadcasters who meet twice a year to map out their broadcast schedules in an effort to reduce conflicts which might create unnecessary interference to each other's broadcasts. The site shows the results of these consultations in a listing of broadcasts, times, frequencies, etc. (look under "public data"). Actually the listing provides a lot more information than the ordinary SWL needs or probably even wants—enough to spread out over two screen widths. And almost everything is abbreviated so you'll need to print out the accompanying explanation files in order to figure out what a lot of it means. Furthermore, the listing can't be complete since there are a couple of broadcast organizations that do not want their information included, nor are domestic broadcasters listed. Still, if you're wondering about a transmitter site for a particular VOA or other major broadcaster this list will likely show it.

## International Listening Guide

The International Listening Guide at [www.ilgradio.de](http://www.ilgradio.de) is—or was—an excellent source. Currently the site is "down" due to some internal problems they're having which we hope will be cleared up soon. When operating it has a full frequency listing, color-coded as to the type of broadcast, and includes days, language, mode, and so on. There's too much information for each listing to print out on a single page, so if you want a hard copy you have to download it into some kind of database that will let you play around and delete portions you don't want so it will fit (a feat we've never been able to accomplish).

Another section of the site will give you everything sorted by broadcast language. There's also a list of stations, a click on



any one of which will give you the complete schedule for that station. They say a complete listing of English language programs on the air is under development. Bottom line: this is an excellent source—let's hope it comes back to life.

## The EIBI

EIBI, at [www.eibi.de.vu/](http://www.eibi.de.vu/), is yet another list (by time and by frequency), but its information *does* fit on a single page should you want to print it out—just be prepared, it'll run to 160 or so pages! The listing includes time, days, country, station, language, target area, and (often) the transmitter site. To find the "by frequency" listing, go to "DX Pages" shown on the right side of your screen under "English." Like the others, this is updated for each broadcast season, although the season is usually a month or so old before the compilation is completed. One person, Eike Bierwith of Germany, does all this work and certainly deserves a great deal credit, complete with all the thanks one can muster.

Although it advertises itself as "all stations—all SW frequencies" it isn't quite. A number of the Latin American domestic broadcasters are not included. But even so we like this listing, use it regularly, and eagerly await its completion each broadcast season. We print it out, three-hole punch it, put it into a binder, and are ready for action.

## World Radio TV Handbook

The *World Radio TV Handbook (WRTVH)* is a shortwave mainstay in its own right. Of course you have this annual DXing necessity on your bookshelf, but it becomes less useful when the "A" broadcasting season gets underway in late March. But once the "A" season has started you can visit the *WRTH* site, located at [www.wrth.com](http://www.wrth.com), and download a mini *WRTH* with all the adjusted international schedules in the same format as the book itself. It's kind of like the "Summer Supplement" they used to publish back in the good old days. You can print it out if you like (PDF format). Very nice. And they include opposition broadcasters, too!

## DXing Info

DXing Info, at [www.dxing.info](http://www.dxing.info), is a site filled with information for the radio hobbyist. General radio and DXing news, with the latest solar-terrestrial conditions right there on the main page, links to general news from the BBC, NHK, VOA, and several other international broadcasters, info on what people are hearing and reporting, QSLs received, equipment notes, reports from DXpeditions, and a number of articles on sub-



The North American Shortwave Association (NASWA) site offers a lot of interesting features.



## GeoClock 8.4



If you have any problems accessing this site, try our native address.



**GeoClock**  
2218 N Tuckahoe St voice 703-241-2661  
Arlington VA 22205 FAX 703-241-5809

One of the maps Geoclock provides, showing the real-time grayline.

jects such as monitoring the Iraq war, using the MP3 player for DX, the broadcasting scene in several Asian countries, and so on. There are also various subject areas where you can post your logs, comments, or questions.

## BCL News

BCL News, at [www.bclnews.it](http://www.bclnews.it), is where you can sign up to get DX news and tips via e-mail, find many international SW station schedules, and logs from other DXers, including mediumwave, clandestine, pirate, and utility station loggings. The site also has a large gallery of QSL cards, a large selection of audio clips from various stations, and even many clips of national anthems!

## Geoclock

Geoclock, at [www.home.att.net/~geoclock/](http://www.home.att.net/~geoclock/), is a remarkably useful site, especially after you've paid your money and downloaded the Geoclock software. Geoclock is a world map that shows you a view of the Earth revealing which portions are in sunlight and which in darkness. You can follow the progress of the "grayline" in real time, and that can be very helpful in isolating the handful of minutes when tropical band stations from a particular area will (or should!) be hearable at your location. You can look ahead or backwards to see what things looked like or will look like on any particular hour and date. You can view the Earth from space, as well as narrow in on a particular geographical area of

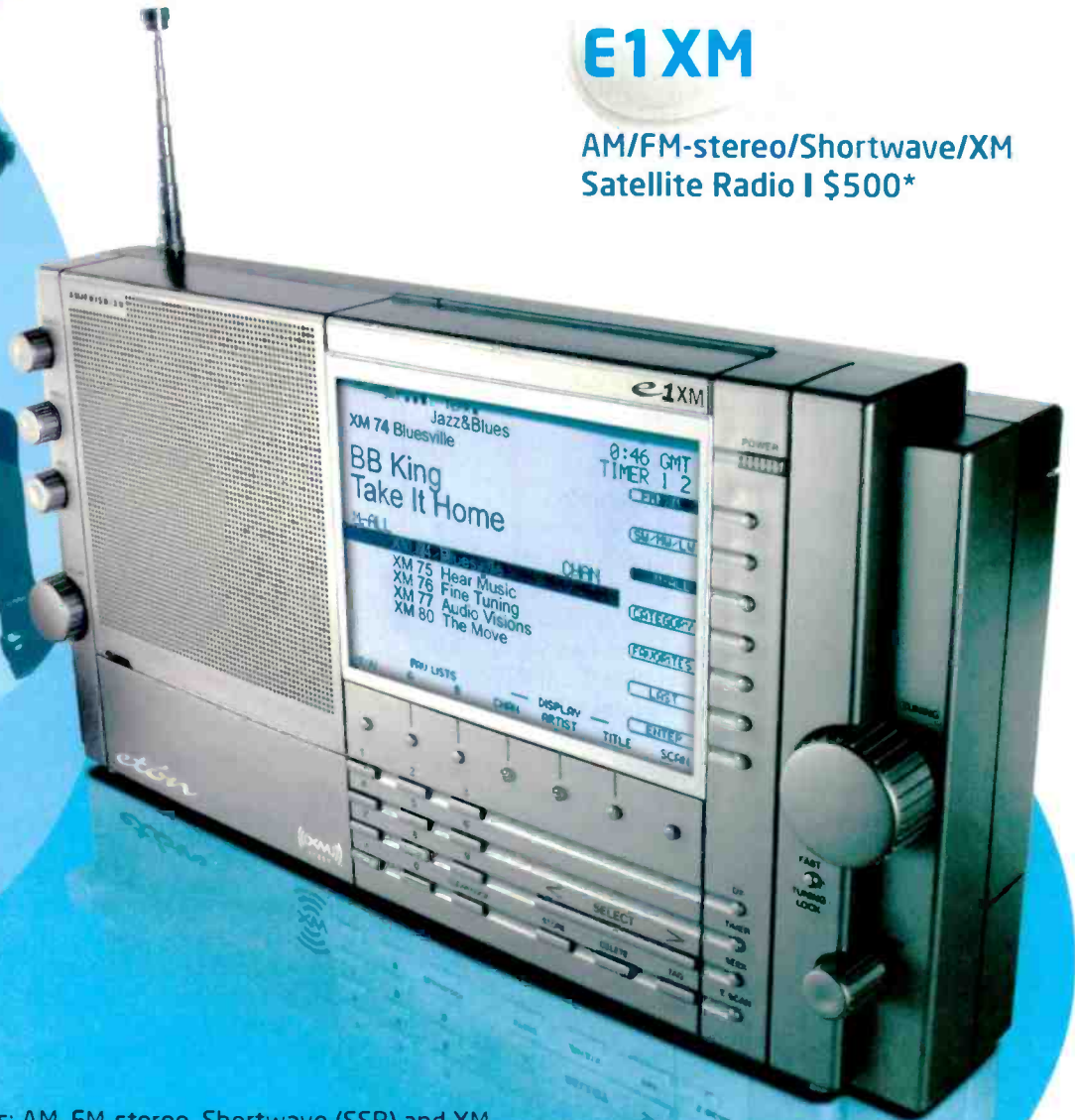


# hello earthlings!

the most powerful radio on the planet.

## E1XM

AM/FM-stereo/Shortwave/XM  
Satellite Radio | \$500\*



- Reception Modes: AM, FM-stereo, Shortwave (SSB) and XM Satellite Radio.
- Programmable Memories: 500 user programmable with alpha labeling plus 1200 user definable country memories, for a total of 1700
- Synchronous Detector with selectable sideband and Passband Tuning
- Direct Shortwave Band Entry, allows instant access to the shortwave band of choice



AM



FM



Shortwave



Satellite  
Radio



Stereo-  
Speaker

**etón**  
re.inventing radio  
[www.etoncorp.com](http://www.etoncorp.com)





## GS350DL Field Radio

AM/FM/Shortwave



- AM/FM/13 International shortwave bands
- Highly sensitive analog tuner with digital display
- Large, full range speaker with bass & treble control
- Clock, alarm, and sleep timer
- Digital clock with selectable 12/24 hour format
- Variable RF Gain Control
- Built-in antennas and connections for external antennas

**\$100.00**



## G5 Portable Radio

AM/FM-Stereo/Shortwave



- FM-stereo, AM and Full-Shortwave coverage (1711-29999 KHz)
- PLL Dual Conversion AM/SW Circuitry With SSB
- 700 programmable memory presets with memory scan and auto tuning storage
- Clock, sleep timer and alarm functions with world zone settings
- Tunes via auto-scan, manual-scan, direct key-in entry and tuning knob
- Station name input

**\$50.00**



© Copyright 2006 Etón Corporation. All Rights Reserved. For more information on the product, visit [www.etoncorp.com](http://www.etoncorp.com).  
 \* Price does not include Shipping/Handling and applicable taxes. To order please call us toll free at 1-800-637-1648





# On the shortwaves.com

**INSIDE**

**New Material!**

"On the Short Waves, 1923-1945: Broadcast Listening in the Pioneer Days of Radio" - THE BOOK

The Committee to Preserve Radio Verifications

Articles, Research, etc.

Comments

Book Reviews

Information for Collectors

Shortwave History on the Net

*This site is intended to be a resource and a meeting place for all those with an interest in the subject. It features research and comments, book reviews, information for collectors, and links to related sites. It is also home to the Committee to Preserve Radio Verifications, and the book, "On the Short Waves, 1923-1945: Broadcast Listening in the Pioneer Days of Radio."*

*We invite you to contact us and contribute your knowledge to ontheshortwaves.com.*

*The co-producers of this web site are:*

JERRY BERG, 38 Eastern Avenue, Lexington, MA 02421, 781/861-6481 (voice or FAX), jberg@ontheshortwaves.com  
 JOHN C. HERKIMER, P.O. Box 54, Caldoona, NY 14423, 585/538-2582 (voice), 585/538-6410 (FAX), jherkimer@ontheshortwaves.com

On The Shortwaves is a top-notch place for shortwave history.

interest. There's even a 5,000-place gazetteer. Geoclock costs from \$25 to \$90 depending upon what features you want.

## Pirate Radio Central

Ahoy matey! Check out [www.blackcatsystems.com/radio/pirate.html](http://www.blackcatsystems.com/radio/pirate.html) for a huge source of info about pirate broadcasters, including station links and QSL addresses. There's an area where you can post your pirate station logs. But, unfortunately, we couldn't find an up-to-date list of active pirates listed, specifically who's active or recently has been.

## North American Shortwave Association


The North American Shortwave Association, or NASWA as it is known at [www.naswa.net](http://www.naswa.net), is North America's oldest, largest, and only all-shortwave broadcast club. At the NASWA site you can view a sample bulletin and even join the organization from your keyboard. The site also includes the club's "Company Store," which sells books, reprints T-shirts, and other items with the NASWA logo. The site also has the current solar-terrestrial situation and a database of programs with frequencies in the *Shortwave Listening Guide* (see below). You can also download a copy of the famous NASWA Country List in PDF format.

## Shortwave Listening Guide

You can access this from the NASWA site, but we've listed it separately because it's yet another listing of English language programs. This one, however, lets you search for a particular type of program, say science, music, sports, or whatever. You can also call up a list of programs for a given day and time.

## On The Shortwaves

If you like radio history, check out [www.ontheshortwaves.com](http://www.ontheshortwaves.com) for On The Shortwaves (OTSW) because this is one of the most fascinating sites you'll ever discover. Run by




**TDP TRANSMITTER DOCUMENTATION PROJECT**

SELECT A COUNTRY

In the TDP, the Transmitter Documentation Project, you will find detailed information about all the Shortwave Radio Transmitters installed in each country of the world. The arrangement is by continent. You can explore this site by selecting a continent first and then choosing a country, or you can go directly to a specific country.

All information contained herein is accurate to the best of the author's knowledge. The author apologizes in advance for any error of fact and to persons, if any, affected by any such misstatement. No liability is accepted for such inaccuracy but corrections will be made in future updates.

The Transmitter Documentation Project provides info on the world's shortwave transmitters, including locations, owners, powers and even how to buy shortwave airtime from TDP.



**DX-TUNERS** Free Trial Two-way Radios Find the right two-way radios for you, your facility or your campus.

AM FM Shortwave Radios Shortwave Radios of Low Prices Grundig Sengen Kaito Elan Emerson

DX-Tuners on the web since 1997

Welcome to dx-tuners.com - Explore the radio world with us

DX-Tuners are remotely controlled receivers

DX-Tuners provide access to a truly global network of remotely controlled shortwave and VHF/UHF receivers for radio enthusiasts across the world all from the comfort of your own home via the internet.

"Experience radio as heard from different areas of the world at any time of the day or night. Follow the "gray line" and continue to listen to DX long after your local radio conditions deteriorate."

Start here!

Special Receivers

**Broombe, Western Australia**  
 Located in a very remote area of the world in Western Australia's tropics. This receiver is good for tropical DX and other unusual sites.

**Vidablick, Scandinavia**  
 Housed in an outlook tower 100 m a.s.l. Very good for Scandinavian HF and VHF coverage.

**Rummele, Northern Europe**  
 If you are a shortwave DXer, this will be your favorite radio. Control an array of 7 EWE antennas located in a very low noise area in northern Europe. The radio puts in a lot of DX. Covers 100kHz to 30 MHz.

**ACARS Receiver**  
 We have a dedicated ACARS receiver for UK and central Europe. This receiver is solely for 131-134 MHz listening. You will need an ACARS decoder.

**San Antonio, Venezuela**  
 If you are a Latin American shortwave DXer, this is the place for you. This NRD545 rig is located in the mountain ridge above Caracas. Very low noise environment.

News  
 Administrator | 11/16/05 | 2:12 AM  
**FM DX Europe**  
 Finally we have launched the brand new FM DX receiver on the southern shores of Sweden. We have installed a modified Panfare PT1A FM tuner. The antenna is a 2 x 17 element horizontal stack.

Welcome to the world of FM DXing.  
 James | 11/16/05 | 4:08 PM  
**North Devon FM DX**  
 Hi I am having problems with the reception on the North Devon FM DX radio. I hope to have it back online soon.

Paul | 11/12/05 | 9:38 PM  
**Skurup**  
 Skurup is now back online after a short break, and is excellent for Northern European ACARS Reception. Enjoy.

Paul | 11/12/05 | 8:14 PM  
**Demo Receiver Update**  
 Demo receiver is now online, after a few technical problems. It has it's original 40m Delta loop antenna, and not the ave antenna. Welcome back!

Administrator | 11/9/05 | 1:20 AM  
**Cumbria Back**  
 We have managed to restore the Cumbria node after its disc-crash. Some frequency guides are still missing but we are working on that. Welcome!

Talk about DX listening! You can go on a DXpedition and still stay at home with the DX Tuners site.




Jerome S. Berg, author of the absolutely superb book by the same title as the site, OTSW is a treasure trove of articles on now silent shortwave stations, including audio clips of old broadcasts from the Falklands War and much more. The site also has information about the Committee to Preserve Radio Verifications along with an amazing gallery of old QSLs. In addition there are features on clubs like the long defunct Newark News Radio Club, notes on old radio-related books, and links to other radio history sites. There's even a complete *PopComm* issue index! Don't visit this site unless you have plenty of time to explore!

## Hard-Core DX

Hard-Core DX, at [www.hard-core-dx.com](http://www.hard-core-dx.com), is "probably the best DX site in the world," as they say. It includes recent DX-related news and loggings, station schedules, antenna articles, and links to clubs and DX search engines. You can also subscribe to the Hard-Core DX mailing list here.

## Clandestine Radio/ Clandestine Radio Watch

The Clandestine Radio/Clandestine Radio Watch, at [www.clandestineradio.com](http://www.clandestineradio.com), is all yours if you dig the mysteries and intrigue of clandestine radio broadcasting. There are numerous articles and research on various clandestine and opposition broadcasters with links to some of them. Stations and groups are listed by areas of interest; so to find something on



**Welcome to the NW7US Amateur and Shortwave Radio Command Center**

your resource center for shortwave listening and amateur radio propagation, news, dx, education, and more

{ Amateur Radio } { more options, far below }  
{ SWL / Shortwave Listening } { CW / MORSE CODE }

[ See the current Washington State Mt. Saint Helens Volcano Video CAM here. ]

Brought to you by NW7US - Tomas - in Brinnon, Washington USA  
Ten Ten 10x56526 | FISTS #7055 | FISTS Northwest #57  
ITU Region 2, Zone 6 | 122.93 W 47.67 N - **CN7MQ** | CQ Zone 3  
Amateur Radio Lighthouse Society 144  
US Army MARS Member: AAR01A/AA0VA  
Join me on Starchat.net - /Join #swl  
Join me on Schullink! Either as **NW7US** (normal Node),  
or as **NW7US-L** Link Node **182703**

**Main Menu:**

Main News Center || Propagation Center || DX Bulletins  
Discussion Forums || Emergency and Disaster Public Service  
Shortwave Resources || SWL Frequency Search || English SW Frequencies  
Callbooks || Prefix Lookup || About NW7US || Guest Book || Support || Bookstore  
Award-Winning Space Weather and Propagation Education Course  
Support HFRadio.org - and monitor Space Weather from your PC  
Support HFRadio.org - and monitor the Aurora from your PC  
PROPLAB Pro - PC Propagation Modeling and Forecasting Software

**New!** KK7UQ Digital Radio Resources - Sound Card Interface, IMD Meter, and more...

Current Solar Flux: 105 | Sun Spots: 62 as of 11/17/2001  
A-index: 2 | R-index: 2 (18 NT) | Aurora: 0  
3-ray Solar Flares:  
0h M [C6.2][18272 11/18] 24h M [M6.2][00342 11/18]  
more propagation...

(sign up for space weather and propagation eAlert emails...)

There seems no end to the stuff you can access on the HF Radio website.

the Democratic Voice of Burma, for example, you would have to look in the Asia category. You can also subscribe to the *Clandestine Radio Watch* newsletter on the site (look under "Watch Reports"). There are also audio clips from a number of the broadcasters, a QSL gallery, a list of broadcasts sorted by time, and a "What's On Now" section.

## Prime Time Shortwave

Prime Time Shortwave (PTSW), at [www.primetimeshortwave.com](http://www.primetimeshortwave.com), is a site that provides you with a list of English language shortwave broadcasts, updated weekly, which you can sort by time, country, or frequency. There's also a nice separate listing of DX and media programs. The site also features links to various broadcasters and other radio-related links as well as a UTC-to-local time conversion table. You can sign up for the PTSW newsletter, which will update you on schedule changes and such.

## Transmitter Documentation Project

The Transmitter Documentation Project (TDP), at [www.tdp.info](http://www.tdp.info), is an interesting site that provides information on the world's shortwave transmitters (locations, powers, and manufacturers, etc.) divided by continent and then by country. Also there are links to some 500 broadcasters, categorized by type (government, commercial, religious, etc.). TDP brokers program time (often those of opposition groups) over several shortwave outlets and it seems a little odd that there was no listing of these with their current frequencies and schedules, at least we couldn't find it.

## Patepluma Radio

If you like DXing Latins, Patepluma Radio, at [www.donmoore.tripod.com](http://www.donmoore.tripod.com), is for you. Site owner Don Moore is well traveled through much of that area and has even visited many of the stations. You'll find articles on the culture, countries, and individual stations, as well as station histories and many pho-



**Spy Numbers Stations on Shortwave Radio**

Front Page | Stations | Numbers Racks | Books | Database | Resources | About | Press

"48372 68324 [M6] 7803 9320" - The mentioned female voice drives on and on. What have you stumbled on? Instructions to spies? Messages exchanged between drug dealers? Deliberate attempts at deception and mis-information?

Chances are, all of the above! What you've found is so-called a "Spy Numbers Station". They've been on the air for several decades and only recently have the mysteries started to unfold. But there's still much we don't know about these mysterious stations. With the information on these pages, you'll discover the little that we do know about these stations, what we're still trying to learn, and how you too can tune in to the spies.

Be sure to visit our listing of links related to spy numbers stations. Click here!

**NEW!**

- Shortwave Radio Related Internet Relay Chat (IRC)
- Y-senate Sam Mystery Station
- Italy V2 Cuban America Spy Numbers Station Schedule
- Mystery CW Beacons on the South West USA
- MORSAD ELO Schedules

**Hint!** We have a new numbers station even if it is a parody. Read all about the Russian Revolution numbers station!

**Amateur Radio Programs**

- Books: Call CW Keyer
- DA ToolBox
- ETX
- GRACULATOR
- Micro-Move
- Multituner
- Mac Pro
- Mac Controller
- HF ToolBox

**About Blank Call Systems**

- Gauge: Counter
- Site Map
- Call Software for Mac OS
- Privacy Policy
- Upload Policy
- Proprietary
- Consulting
- Macintosh Links
- Shortwave Radio
- Private Radio
- Spy Numbers Stations
- Science and Electronics
- Ham Radio Software
- Gauge: Counters

Cinco, cinco, quarto, dos, siete. It's all numbers stations all the time at [Spynumbers.com](http://Spynumbers.com).



tos. There are also articles on tropical band DXing, QSLing Latins, and the like.

## DX Tuner

DX Tuner, at [www.dxtuner.com](http://www.dxtuner.com), is totally different from radio as you might know it. If your computer is properly equipped you can actually use it to operate receivers in distant locations. This site gives you access to radios in over 50 different locations, letting you check on shortwave reception as well as local AM, FM, utilities, and even the air band, just as if you were there in person. There are also some "how to" and explanatory articles (on ACARS, the Aircraft Communication Addressing and Reporting System, for instance).

There, however, are a couple of negatives, too. For one thing, it's not free. Access to the receivers costs you \$5 a week, a result, say the operators, of people abusing their listening privileges. It also seems that a number of people have had problems accessing the receivers or being able to hear what the receivers are hearing, at least that's the impression we got based on the number of questions appearing on the Frequently Asked Questions (FAQ) page.

One other note: If you avail yourself of this service, *Pop'Comm's* "Global Information Guide" column won't welcome any "logs" made using this method.

## HF Radio

HF Radio, at [www.hfradio.org](http://www.hfradio.org), is run by *Pop'Comm's* own propagation guru, Thomas Hood, NW7US. The site offers a score of features and links. You can find out what's on a par-

ticular shortwave frequency at a particular time just by entering the frequency into the appropriate box. There's a nice intro to shortwave listening and links to many informational sources on hot topics, including pirates, clandestines, and spy/numbers, you can also find out what the optimal frequencies are for the current month.

## Spy Numbers

And speaking of spy numbers, you've probably run across one or more of these weird transmissions in your career, or at least know of them. *Spy Numbers*, located at [www.spynumbers.com](http://www.spynumbers.com), explores the numbers mystery and offers a searchable database of loggings. You can check to see what's likely to be on during the current or coming hour. There's also an explanation of the various designators number hunters assign to specific station formats. You can also subscribe to the "Spooks" mailing list and get the latest info (news and loggings) via e-mail.

## Dig In

So there you have a heaping helping of Web delicacies to whet your appetite and hopefully get you going. Our brief look at these sites couldn't cover every feature each one offers. You'll inevitably find more to explore on each of the sites we've mentioned, never mind the hundreds we didn't mention. We wish you much fun and fascination in the process. But remember, the Internet is just a tool. Use it as such. Don't let the Web keep you from your receiver. Keep your radio(s) in the center ring of your communications hobby! ■



## 2007/08 calendars



**Better than ever! Still 15 months of value - January 2007 through March 2008**

**The 2007/2008 CQ Classic Radio Calendar** features fifteen magnificent full-color vintage radio images including Comcraft, Collins, GROSS, Heathkit, Hammarlund, Millen, National, Hallicrafters, E. F. Johnson, Allied Radio and more.

**The 2007/2008 CQ Amateur Radio Operators Calendar** brings you fifteen spectacular full-color images of some of the biggest, most photogenic Amateur Radio shacks, antennas, personalities and scenics in the country.

These great calendars are better than ever! All calendars 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. The CQ calendars are not only great to look at, but they're truly useful, too!



**CQ Communications, Inc.**

25 Newbridge Road, Hicksville, NY 11801

Call 1-800-853-9797 or FAX 516-681-2926 • [www.cq-amateur-radio.com](http://www.cq-amateur-radio.com)





## Radio Quito Returns, Plus A New Station In Micronesia

In these days when it seems the negatives are fully in charge it's always a welcome relief to see a positive show up here and there. So let's start off with one, namely the return of an old-time Latin—Radio Quito. “la voz de la capital” in Quito, Ecuador, which recently came out of hibernation and showed up in its old spot of 4919.

While the return did not see a correction back to its original 4920 frequency, the change did seem to include a much stronger signal, although it's hard to know for certain whether these early receptions were a matter of better conditions or a new or refurbished transmitter or antenna. Either way, it is nice to have the station back. If you want to send a reception report or a note of appreciation, the address is Casilla 17-21-1971, Quito, Ecuador; e-mail: radioquito@ecuadoradio.com

And there's more from the positive side of the shortwave ledger: A new shortwave station is a-building on the island State of Pohnpei, the capital of the Federated States of Micronesia, which includes the states of Yap, Kosroe, Caroline, and Truk (also known as Chuuk). Not much info about the station is known yet, other than that construction is underway. It's being built by Pacific Missionary Aviation, a name that implies it will be a religious broadcaster. We also know that it will be a significant DX challenge for us since it will operate on one of the tropical bands and run only 500 watts, probably just enough to provide local coverage.

### On The European Front...

Quite a few moons ago there was a rumor—perhaps more of a tickle—to the effect that Radio Polonia was taking steps to improve reception of its international service. That has now come to pass as Radio Polonia has joined the growing list of broadcasters riding the relay route. The current B06 broadcast schedule has the station being aired by a number of sites outside Poland, namely Wertachtal, Julich, and Nauen in Germany, Issoudun, France, and Montinsery, French Guiana. The schedule is way too involved to lay out here, but the French Guiana transmissions should be quite well heard. Check 9640 and 11940 (in GG) from 2030 to 2100 and 9660 at 2200 to 2300. If you can access the Web, the Radio Polonia website may offer the full schedule, though it did not when we checked it early in the season.

### Japan Fights Back

Japan has gotten enthused about those Shiokaze broadcasts aimed at North Korea, and now the Japanese government wants Radio Japan to air programs on the subject of the North's kidnapping of Japanese citizens, even to the point of threatening to order NHK to air programming on that subject via shortwave aimed at North Korea. As things stand now, the North is said to



*It's been a while since we've seen a QSL from RTV Algerienne. This one went to Rich D'Angelo.*

be jamming the Shiokaze broadcasts, which are believed to be transmitted via Taiwan.

### Odd Thinking

Here's still more proof that the misguided approach, which says it's fine for an international broadcaster to forego shortwave and just rely on local AM and FM stations to carry their programs—can no longer be guaranteed (nor could it ever). Azerbaijan has decided that local stations airing programs from the BBC, Voice of America, Radio Free Europe/Radio Liberty, and such are breaking the law. Stations that were carrying this “foreign” programming were ordered to cut it out. And that's way not the first time this sort of thing has happened to the BBC and others.

### Serbia Is Back

Welcome back! Radio Serbia International has returned to shortwave. It is active (at various times) in English, Slovak,



## Help Wanted

The "Global Information Guide" consistently presents more shortwave broadcast loggings than any other monthly SW publication! (A whopping 653 shortwave broadcast loggings were processed this month!\*) Why not join your fellow SWLs, let us know what you're hearing, and also become eligible for our monthly shortwave book prize! Send your logs to Gerry Dexter, "Global Information Guide," 213 Forest St., Lake Geneva, WI 53147. Or e-mail them to [gdex@genevaonline.com](mailto:gdex@genevaonline.com) (please see the column text for basic formatting tips.) Come join the party—we look forward to hearing from you!

*\*Not all logs get used; there are usually a few which are obviously inaccurate, unclear, or lack a time or frequency.*

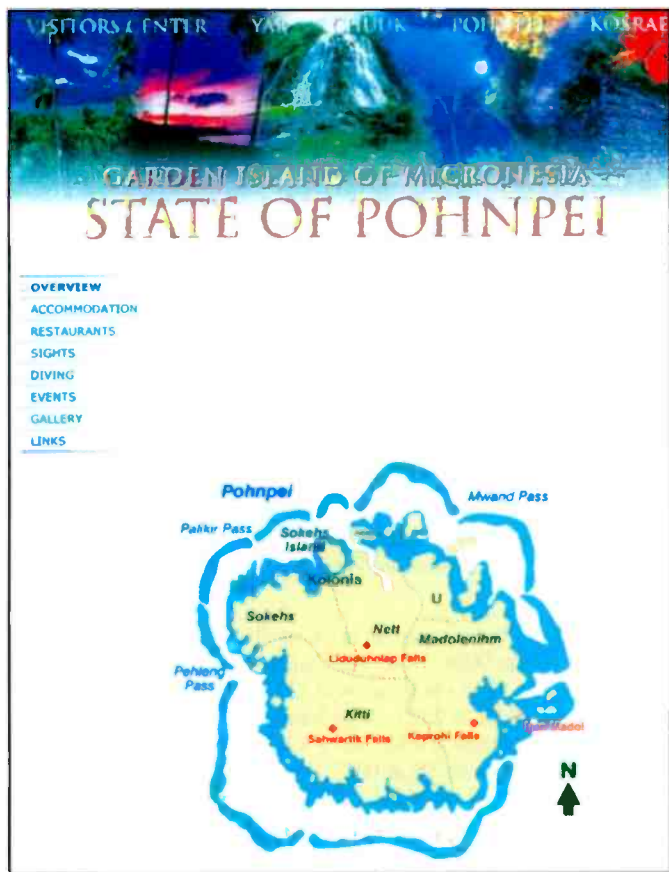
French, Spanish, German, and Russian. Broadcasts to North America are at 0100 to 0300 with half-hour English language segments on 7110, 7230, and 9440. Other frequencies used at different times include 5915, 6055, 7345, 9485, 11600, 11610, 13710, 13715, and 15460, in use variously from 0700 to 0830 and 1400 to 2130. Consider it your duty in supporting the shortwave medium to listen in and drop them a card or letter of appreciation.

## A Guide To "GIG-Speak"

Here's a partial list of abbreviations used in the "Global Information Guide."

*	— (before or after a time) time the station came on or left the air	LSB	— lower sideband
(l)	— (after a frequency) lower sideband	LV	— La Voz, La Voix (the voice)
(p)	— presumed	MW	— mediumwave (AM band)
(t)	— tentative	NBC	— National Broadcasting Corporation (Papua New Guinea)
(u)	— (after a frequency) upper sideband	OA	— Peru/ Peruvian
v	— variable time or frequency	OC or O/C	— open carrier
//	— in parallel	PBS	— People's Broadcasting Station
AA	— Arabic	PP	— Portuguese
ABC	— Australian Broadcasting Corporation	PSA	— public service announcement
AFN	— Armed Forces Network	QQ	— Quechua
AFRTS	— Armed Forces Radio TV Service	QRM	— man-made interference
AIR	— All India Radio	QRN	— noise (static)
Alt	— alternate	QSL	— verification
AM	— amplitude modulation, AM band	RCI	— Radio Canada International
Anmt(s)	— announcement(s)	Rdf.	— Radiodifusora, Radiodiffusion
Anncr	— announcer	REE	— Radio Exterior de Espana
AWR	— Adventist World RadioBC broadcast(er)	RFA	— Radio Free Asia
BSKSA	— Broadcasting Service of Kingdom of Saudi Arabia	RFE/RL	— Radio Free Europe/Radio liberty
CA	— Central America	RNZI	— Radio New Zealand International
CC	— Chinese	RR	— Russian
Co-chan	— co-channel (same frequency)	RRI	— Radio Republik Indonesia
comm1(s)	— commercial(s)	RTBF	— RTV Belge de la Communate Françoise
CP	— Bolivia, Bolivian	Relay	— transmitter site owned/operated by the broadcaster or privately operated for that broadcaster
CRI	— China Radio International	relay	— transmitter site rented or time exchanged.
DD	— Dutch	SA	— South America
DJ	— disc jockey	SEA	— Southeast Asia
DS	— domestic service	SCI	— Song of the Coconut Islands (transition melody used by Indonesian stations)
DW	— Deutsche Welle/Voice of Germany	s/off	— sign off
EE	— English	s/on	— sign on
ECNA	— East Coast of North America	SIBC	— Solomon Is. Broadcasting corp.
f/by	— followed by	sked	— schedule
FEBA	— Far East Broadcasting Association	SLBC	— Sri Lanka Broadcasting Corporation
FEBC	— Far East Broadcasting Company	SS	— Spanish
FF	— French	SSB	— single sideband
freq.	— frequency	SWL	— shortwave listener
GBC	— Ghana Broadcasting Corp	TC	— time check
GG	— German	TOH	— top of the hour
GMT	— Greenwich Mean Time (UTC)	TT	— Turkish
HH	— Hebrew, Hungarian, Hindi	TWR	— Trans World Radio
HOA	— Horn of Africa	Unid	— unidentified
ID	— station identification	USB	— upper sideband
II	— Italian, Indonesian	UTC	— Coordinated Universal Time (as GMT)
Int/Intl	— international	UTE, ute	— utility station
Irr.	— irregular use	Vern	— vernacular (local) language
IRRS	— Italian Radio Relay Service	via	— same as "relay"
IS	— interval signal	VOA	— Voice of America
JJ	— Japanese	VOIRI	— Voice of Islamic Republic of Iran
KK	— Korean	WCNA	— West Coast of North America
		ZBC	— Zimbabwe Broadcasting Corporation





*The State of Pohnpei in the Federated States of Micronesia will be home to a shortwave broadcast station one of these months!*

The address is Hilendarska 2, P.O. Box 200, 11000 Belgrade, Serbia; e-mail: [radioyu@bitsyo.net](mailto:radioyu@bitsyo.net).

## Reader Logs

Remember, your shortwave broadcast station logs are always welcome. But please be sure to double or even triple space the items, list their country name first, and include your last name and state abbreviation after each log. Also very welcome are spare QSLs you don't need returned, station schedules, brochures, pennants, station photos, and anything else you think would be of interest. And the postman continues to cause tears without your logs. Where's that pic of you at your listening post?

Some changes in the way we do things go into effect beginning this month. Hereafter logs are going to be placed under the broadcaster's home or "flag" country, rather than scattered around among several countries' sites used as relays. The only exceptions to this are where a relayed broadcaster provides the only opportunity to hear that country, and even then just the main user or owner will appear. So the BBC will be placed under Ascension Island, but not all the others that are relayed from English Bay. VOA will still show under Sao Tome since the VOA relay there is the only way you can hear that country. If you can arrange your log placements more or less along that line it will make the processing go more smoothly.

Here we go with this month's logs. All times are in UTC. Double capital letters are language abbreviations (SS = Spanish, RR = Russian, AA = Arabic, etc.). If no language is specified the broadcast is assumed to be in English (EE).

**ALASKA**—KNLS, 9615 opening in CC at 1600 with male announcer and repeated IS. (Barton, AZ)

**ALBANIA**—Radio Tirana, 7450 at 0145 sign on. (Maxant, WV)

**ANGUILLA**—Caribbean Beacon, 11775 at 2100 with Dr. Gene Scott. (DeGennaro, NY)

**ARGENTINA**—Radio Nacional, 6060 in SS at 0953. (DeGennaro, NY) 1016. (Barton, AZ)

RAE, 11710 monitored at 0200 with tangos, DX pgm and news. (Maxant, WV) 1018 in JJ and 15345 in GG to Europe heard at 2129. (DeGennaro, NY) 2232 in SS. (MacKenzie, CA) 2305 in SS. (Charlton, ON)

**ARMENIA**—Voice of Armenia, 9960 at 1828 sign on with IS, NA and into FF, then IS and NA at 1849, GG at 1851, IS and NA at 1909, EE at 1910. (Alexander, PA)

**ASCENSION ISLAND**—BBC Relay, 6005 at 0343 and 12095 at 1810. (MacKenzie, CA) 6005 at 0540. (Wood, TN) 12095 to South Africa at 2103, 15400 at 2053, 17830 at 2032 and 21740 to South Africa at 1744. (DeGennaro, NY) 17830 with news at 1601. (Brossell, WI) 1723. (Jeffery, NY)

**AUSTRALIA**—Radio Australia, 5995-Brandon and 7240 on health issues at 1530. Also 9580//11880 at 1748 on American football. (Mackenzie, CA) 5995 at 1210 carrying ABC Local Radio. (Brossell, WI) 5995 in Pidgin at 0902, 6020-Shepparton in Pidgin at 1336, 9580-Shepparton to Pacific at 1011, 9590-Shepparton to Pacific at 1031, 9710-Shepparton at 1013, 11660-Shepparton at 2035 and 11880-Shepparton to SEA at 1204. (DeGennaro, NY) 9580 at 1110, 9710 at 0750 and 17715 at 0110. (Maxant, WV) 27785//17795 at 2308. (Burrow, WA)

CVC, 13775 in CC at 1239. (Brossell, WI) 15715 at 1511 in EE with address in Queensland for reception reports. (Charlton, ON)

ABC Northern Territories Service, 4835-Alice Springs with domestic news at 0831. (DeGennaro, NY)

**AUSTRIA**—Radio Austria Int., 9870 at 0130, 13775 at 1420 and 17715 with "Austria Today" at 1210. (Maxant, WV) 13730 in GG at 1042. (DeGennaro, NY) 13775 via Canada with IS and news at 1545. (Brossell, WI) In GG at 1522. (Charlton, ON)

**BANGLADESH**—Bangladesh Betar, 7185 about SE Asia at 1240 with severe ham QRM. (Maxant, WV)

**BELARUS**—Radio Belarus, 7105-Minsk at 2208 with two men in Byelorussian. (DeGennaro, NY)

**BELGIUM**—RTBF, 9970 in FF to Southern Europe heard at 1044. (DeGennaro, NY)

**BOLIVIA**—Radio San Miguel, Riberalta, 4900.6 at 0155 with man in SS, rustic vocals from 0200 and close at 0217. (D'Angelo, PA)

Radio Mallku, Uyuni, 4796.4 at 0955 with local music and talks in SS. (DeGennaro, NY)

**BOTSWANA**—VOA Relay, 15580 with sports news at 1841. (Brossell, WI) 1930 with news in Special English. (Jeffery, NY) 17895 heard at 1809. (Charlton, ON)

**BRAZIL**—(All in PP) Radio Nacional Amazonia, 6180 at 0830. (Maxant, WV) 2323. Also 11780 at 2345. (DeGennaro, NY) 0030. (Charlton, ON)

Radio Gazeta, Sao Paulo, 9685 at 2357 with woman giving program info. (DeGennaro, NY)

Radio Tupi, Curitiba, 9565 with religious message at 2342. (DeGennaro, NY)

Radio Senado, Brasilia, 5990 with news items and phone calls at 0250. (Paszkievicz, WI)

Radio Clube, Varginha, (t) 3245 at 0225 with carrier and periodic Brazilian music. Very poor. (Taylor, WI)

Radio Gaucha, Porto Alegre, 6020 with religious talk heard at 0842. (DeGennaro, NY)

Radio Marumby, Florianopolis, 9665 with woman talk heard at 2346. (DeGennaro, NY)

Radio Clube do Para, Belem, 4885 with two men talking at 0930. (DeGennaro, NY) 0222 with several mentions of "Para." (Brossell, WI) 0430 with dinner club music. (Wood, TN)

Radio Anhanguera, Goiania, 4915 with men talking at 0933. Also 11915 with news at 2217. (DeGennaro, NY)

Radio Capixaba, Vitoria, 4935. indicated as temporarily inactive, with religious broadcast heard at 2339. (DeGennaro, NY)

Radio Meteorologia, Ibitinga, 4845 with talks and commercials at 1013. (DeGennaro, NY)

Radio Difusora, Taubate, 4924.5 with local commls and talks at 1021. (DeGennaro, NY)

Radio Cancao Nova, Cachoeira Paulista, 9675 with religious talk at 2356. (DeGennaro, NY)

Radio Trans Mundial, Santa Maria, 11735 at 1026 with music and many anmts. (DeGennaro, NY)

Radio Brazil Central, Goiania, 4985 at 0005 with two men in rapid talk. (D'Angelo, PA) 0854 and also 11815 at 2324 with commls, music, coming events. (DeGennaro, NY) 0007. (Charlton, ON)

Radio Record, Sao Paulo, 6150 with local news, commls heard at 0018. (DeGennaro, NY)

Radio Cultura, Sao Paulo, 9615 at 2320 with songs from the 1930s. (DeGennaro, NY)

Radio Mundial, Sao Paulo, 4975 with fervent preacher heard at 0035. (DeGennaro, NY)

Radio Difusora Roraima, Boa Vista, 4875 at 0836 with time check, PSAs, music. (DeGennaro, NY)

Radio Educacion Rural, Campo Grande, 4754 at 0008 with music, commls, call-ins. (DeGennaro, NY)

Radio Bandeirantes, Sao Paulo, 9645 at 0939 with religious talk, commls, time checks. (DeGennaro, NY)

Radio Inconfidencia, 6009.5, Sao Paulo at 2308 with Brazil pops, talk, commls, ID. (D'Angelo, PA)

Radio Aparecida, Aparecida, 5035 heard at 0020 with talk, ballads. //6135 good, 9630 and 11855 very weak. (Alexander, PA) 6135 with domestic news at 0015 and 9630 with religion heard at 2356. (DeGennaro, NY)

Radio Educadora, Guajara Mirim, 3375 with music heard at 0903 with man/woman talk, Brazil pops. (D'Angelo, PA) 0920. (DeGennaro, NY)

Radio Congohas, Congohas, 4775 with notices and commls at 0827. (DeGennaro, NY)

A Voz do Sao Fransisco, Petrolina, 4945 with anmts and music at 0848. (DeGennaro, NY)

Radio Guaiba, Porto Alegre, 11785 with talk and songs heard at 1118. (Brossell, WI)

Radio Guaruja Paulista, Presidente Prudente, 5045 with talk by man at 0835. (DeGennaro, NY) 5940 at 0550 with Brazil pops and ballads. (Alexander, PA)

Radio Educadora Rural, Tefe, 4925 at 1009 with opening, ID, notices, coming events. (DeGennaro, NY)

**BULGARIA**—Radio Bulgaria, 5800 in FF at 2000, 9500 in SS at 2317, 9700 in BB at 0000, 11600 in RR at 1056, 11700 in BB at 1008 and 11800 in SS at 2104. (DeGennaro, NY) 9700 with IS, ID, schedule at 2300. (Burrow, WA) 11500 in unid language at 1758. (MacKenzie, CA) 11700 at 1205. (Maxant, WV) 2343. (Charlton, ON) 15700 in BB at 1320. (Linonis, PA)

**CANADA**—RCI, 5850 via Sweden with EE to Europe at 2004, 11765 via Skelton, UK at 2058 with "Canada Today," 15180 via Austria in AA at 1914, 11990 in SS at 2205, 13650 in AA at 2135, 15325 in FF at 1921 and 17765 at 2020. (DeGennaro, NY) 9755 with discussion at 0050. (Maxant, WV) 0123. (Moser, IL) 11975 via China in FF at 2143. (MacKenzie, CA)

CBC No. Quebec Service, 9625 with comedy monitored at 0750. (Maxant, WV)

CHU Time station, 7335 in FF/EE at 1720. (Maxant, WV)

CKZN, St. John's, 6160 with news items at 0900. (Linonis, PA) 1135 with discussion. (Maxant, WV) 2339 with interview. (DeGennaro, NY)

CFRX, Toronto, 6070 at 0725. (Maxant, WV)

**CHILE**—Voz Cristiana, 5960 in SS at 0941, 6070 in SS at 0956, 6110 in PP at 0959 and 17680 in SS at 2015. (DeGennaro, NY) 6070 in SS at 0840. (Maxant, WV) 6110 in SS at 0420. (Wood, TN) 11655 in SS at 0200. (Barton, AZ) 17680 in SS at 2339. (Charlton, ON)

**CHINA**—CRI, 5955 with current events at 1330, 5965 in RR at



*These broadcast towers belong to Radio Albania. (Thanks Charles Maxant, West Virginia)*

1515 and 15160-Jinhua opening in CC at 0100. (Barton, AZ) 6020 via Albania to NA at 0008, 6145 via Canada to NA at 2351, 6175 via Albania at 2329, 7175 via Moscow at 2217, 7210 via Albania at 2335, 7250-Urumqi in SS at 2325, 9490-Kashi in Sinhala to Sri Lanka at 2332, 9570 via Albania at 0005, 9590-Kashi in SS at 0001, 9600-Kashi at 2134, 9800-Kashi in SS at 0017, 11640 via Mali at 2039, 11980-Xi'an at 1220, 13630 via Mali in FF at 2133 and 13650 via Albania at 1250. (DeGennaro, NY) 9570 via Albania at 0009, 13700 via Canada in SS at 2235, 13740 via Canada in SS at 2235, 13740 via Cuba at 1515 and 15220 via Canada in CC at 1551. (Charlton, ON) 9580 and 9790 at 0104 but not in parallel. (Moser, IL) 13650 via Albania at 1236 and 13860 in RR at 1555. (Brossell, WI) 15100-Jinhua in Cantonese at 2332 but off suddenly at 2343. (Jeffery, NY) 11900 at 1753, 15125 at 0012 and 17495 at 0045. (MacKenzie, CA) 15160-Jinhua opening in CC at 0100. (Barton, AZ)

CNR/CPBS, 6165 in CC at 1208. Also 11610 at the same time but not in parallel. (Brossell, WI) 9500-Shijiazhuang in CC at 1026, 9820-Xi'an in CC at 2113, 11720-Shijiazhuang in CC at 1022, 11760-Shijiazhuang in CC at 1030 and 11905-Beijing in CC at 1038. (DeGennaro, NY) 11960-Beijing at 0830. (Barton, AZ)

Firedrake (China Music Jammer) 11700 against RFA at 1522 and 13625 at 1235. Also 13830 at 1240. (Brossell, WI) 13625 at 2152 and 15150 at 0036. (MacKenzie, CA)

**COLOMBIA**—La Voz del Guaviare, San Jose Guaviare, 6035 in SS at 0947. (DeGennaro, NY)

Radio Lider, Santa Fe de Bogota, 6139.8 in SS at 1005 with news, time checks, notices. (DeGennaro, NY) 0056 with Latin vocals canned ID at 0100. (D'Angelo, PA) 0145 with romantic SS ballads. Reactivated. (Alexander, PA) 0500 with ID, doorbell-like chimes. (Barton, AZ)

La Voz de su Concencia, Puerto Lleras, 6009.5 at 0655 with SS talks, lively music, mentions of Colombia. (Alexander, PA) 1043. (DeGennaro, NY)

**CONGO (REP.)**—RTV Congolaise, 5985 at 0430, weak in FF. (Linonis, PA)

**CROATIA**—Voice of Croatia, 9925 via Germany at 2341 in Croatian. (DeGennaro, NY)

**CUBA**—RHC, 5965 in SS at 0001. (DeGennaro, NY) 11760 in FF at 2140. (Charlton, ON) 17705 in SS at 2300 after ID. (Barton, AZ)

Radio Rebelde, 5025 in SS at 1027. (DeGennaro, NY) 11655 in SS at 1719. (Charlton, ON)

**CZECH REP.**—Radio Prague, 5990 via Canada at 0335. (MacKenzie, CA) 7345 to NA at 0008, 0440 in Czech at 2329, 9685 in SS at 2356, 9880 in GG at 1016 and 11600 in SS at 2055. (DeGennaro, NY) 7345 to NA at 0000. (Linonis, PA) 0005. (Charlton, ON) 0015. (Maxant, WV) 2253. (Burrow, WA)





Here's a look at KJES in Vado, New Mexico. (Courtesy Charles Maxant, West Virginia)

**DJIBOUTI**—RTV de Djibouti, 4780 at 0258 sign on with O/C. instl. music, opening ID in FF and annms. (D'Angelo, PA) 2105 to 2200 close. On late for Ramadan. (Alexander, PA)

**ECUADOR**—HCJB, 6050 in SS at 0418. (Wood, TN) 6125 in SS at 0850. (Maxant, WV) 6125 in QQ at 0928 and 12000 in SS at 2201. (DeGennaro, NY) 11920 in PP at 0026 and 15295 in PP at 1646. (Charlton, ON)

La Voz del Napo, Tena, 3279v at 0546 with slow SS ballads. (Wood, TN) 0915 with SS religious talk. (DeGennaro, NY)

Radio El Buen Pastor, Saraguro, 4815 at 0243 with QQ talks, off with local vocal at 0256. (D'Angelo, PA)

Radio Quito, Quito, 4919 at 0220 with SS drama program, ad string and multiple IDs. News at 0300. (D'Angelo, PA) 0842 with ID at 0844. (DeGennaro, NY)

La Voz de Saquisilí, Saquisilí, 4900 with man and woman in SS at 2344. (DeGennaro, NY)

**EGYPT**—Radio Cairo/Egyptian Radio, 7270 with "It's a Distant Theatre" at 0242. ID at 0250. (Burrow, WA) Political talk to close at 0255. (Moser, IL) 7270 in SS at 0110, 9735 in AA at 0008, 9990 in FF at 2101, 11755 in AA at 2332 and 12050 in AA at 2128. (DeGennaro, NY) 9990 in EE at 2141, 11950 in EE at 2305. (Charlton, ON) 12050 in AA at 1643. (Brossell, WI) 1814 in AA. (MacKenzie, CA)

**ENGLAND**—BBC, 6190 via Singapore to SEA at 2318, 7165 via Cyprus in Pashto to Pakistan at 0057, 11680-Rampisham in AA at 2035, 13660-Skelton in AA at 1254, 13745-Rampisham in PP to Angola at 2047, 13765 via Cypress Creek to NA at 2145, 15180-Rampisham in AA at 1310. (DeGennaro, NY) 7160 at 0330, 9660 at 1140, 11740 at 1645 and 21740 at 1650. (Maxant, WV) 7330 via Vladivostok in Mandarin at 1155 and 9605 via Japan at 1354. (Taylor, WI) 7325 in AA at 0518 and 11675 via French Guiana at 2130. (MacKenzie, CA) 11675 at 2143, 12095 at 1845 and 17640 at 1518. (Charlton, ON) 15180-Rampisham in AA at 1542 and 17885-Rampisham in EE at 1732. (Jeffery, NY)

Bible Voice Radio, 15650 via Germany with sermon at 1548. (Brossell, WI) 15750 via Germany in AA at 1713. (MacKenzie, CA)

**EQUATORIAL GUINEA**—Radio Nacional, Bata, 5005 with abrupt sign on at 0512 and into Afro-pops and SS talk. (Alexander, PA) 0530 with SS, mentions of Bata and into music. (Wood, TN)

Radio East Africa, 15190 at 1100 with canned religious programming, CA address at 1155 and off at 1156. (Alexander, PA)

**FINLAND**—YLE Radio Finland, 11755 in Finnish at 2051. (DeGennaro, NY) 11920 in Finnish or similar to sudden off at 1657. (Barton, AZ) 13715 in Finnish with a presumed interview at 1240. (Linonis, PA)

**FRANCE**—RFI, 9790-Issoudun in FF at 2116, 11995 via Gabon in FF at 2010, 15155-Issoudun in RR at 1307, 15195-Issoudun in RR

at 1313, 15300-Issoudun in FF at 1042 and 17630 via French Guiana in SS at 2120. (DeGennaro, NY) 9805 via Gabon at 0401. (Wood, TN) 17605 at 1655 with music, African news. (Maxant, WV) 11600 via China in an Asian language at 1218 and 17605 at 1617. (Brossell, WI) 15160 via South Africa with "Spotlight on Africa" at 1610, 17605 at 1708, 17630 via French Guiana in SS at 1815 and 17850 in FF at 1528. (Charlton, ON)

**GABON**—Africa Number One, 9580 in FF at 2140. (DeGennaro, NY) 15475 in FF at 1726. (Charlton, ON) 1820. (Linonis, PA) 1839. (Brossell, WI) 17630 in FF to close at 1555. (Jeffery, NY)

**GERMANY**—Deutsche Welle, 6140-Julich in EE at 0851, 9545-Nuen in GG at 1009, 9620 via Portugal in AA at 2131, 9900 via Irkutsk, Russia, in GG at 1041, 11865 via Rwanda in GG at 2117, 13780-Wertachtal in GG at 1049, 15275-Nauen in Turkish at 1033, 13790 via Portugal in AA at 2034 and 17860 via Rwanda in FF at 1747. (DeGennaro, NY) 9545 via Rwanda in GG at 0129, 15275 via Rwanda in GG at 1549, 15620-Wertachtal in EE at 1936 and 17820-Wertachtal in FF at 1716. (Jeffery, NY) 9700 via Rwanda in EE at 0505. (Wood, TN) 11865 via Rwanda in EE and GG at 2137, 13650 via Rwanda at 2155 to close (at 2200?—gld), 15135 via Petropavlovsk-Kamchatka, Russia, at 0025 in RR, 15640 via Petropavlovsk in GG at 2210. (MacKenzie, CA) 11965 via Rwanda in African dialect at 1811. (Brossell, WI) 15190 in GG at 1730, 15205 via Rwanda at 2144, 15445 via Canada in GG at 1527 and 17860 via Rwanda in AA at 1831. (Charlton, ON)

Deutschlandfunk, Berlin, 6190 in GG at 2315. (DeGennaro, NY)

Free People's Mission Krefeld, 11865-Wertachtal monitored from 1630 sign on under WYFR, which went off at 1645. Free People's closed at 1659. (D'Angelo, PA)

**GREECE**—Voice of Greece, 7475 at 0045. (Maxant, WV) 0031 and 9420 at 2308. (Charlton, WV) 7475 at 0013 and 9420 at 2313. (DeGennaro, NY) 12105 at 1610. (Barton, AZ) (all in Greek—gld)

Radio Stathmos Makedonias, 7450 in Greek heard at 2343. (DeGennaro, NY)

**GUATEMALA**—Radio Cultural Coatan, San Sebastian, 4780 in SS at 0013. (DeGennaro, NY)

Radio Verdad, Chiquimula, 4052.5 at 0347 with instrumental inspirational music and SS talk. (D'Angelo, PA)

Radio Buenas Nuevas, San Sebastian, 4800 in local language monitored at 0017. (DeGennaro, NY) 0216 in SS. (Brossell, WI)

**GUYANA**—Voice of Guyana, 3291 at 0320 with man in EE to a live audience about local events, children's chorus with NA, commls, ID, somber music with obits. (Alexander, PA) 0541 with BBC programming. (Wood, TN) 0715. (Maxant, WV)

**HONDURAS**—Radio Luz y Vida, 3250 in SS monitored at 0231. (Taylor, WI)

La Voz Evangelica, 4819 in SS at 1102. (Brossell, WI)

**HUNGARY**—Radio Budapest, 9590 with music at 0103. (Moser, IL) 9770 in HH at 0014 and 11695 in HH at 2041. (DeGennaro, NY) 9795 at 0235. (Maxant, WV)

**INDIA**—All India Radio, 5010-Thiruvananthapuram, supposedly in Vietnamese service at 1233 tune. (Strawman, IA) 9425-Bangaluru in apparent CC at 1210, 10330-Bangaluru in HH at 0133 and 11620-Kingsway/Delhi in Urdu at 0135. (Taylor, WI) 10330-Bangaluru in Hindi at 1050, 11620-Delhi in Hindi at 1055, 11715 in EE at 2048, 13605-Bangaluru in FF at 1952 and 13620-Bangaluru in FF at 1955. (DeGennaro, NY) 10330-Bangaluru in Hindi at 0040. (Maxant, WV) 11585 to Mideast at 1830. (Barton, AZ) 11620-Aligarh in an Asian language at 1220. (Brossell, WI)

**INDONESIA**—Voice of Indonesia, 11785 with Western vocals at 0810. (Maxant, WV)

Radio Republik Indonesia, 4604.9-Serui, in II at 1250. Strong carrier, low audio. 4790-FakFak, with non-stop Koranic style recitations at 1250. (Strawman, IA)

**IRAN**—VOIRI/VOJ, 7235 at 0210 and 15085 at 1733 with Koran recitations. (Brossell, WI) 7370//9635 in EE at 1543. (Burrow, WA) 7540 at 2015, 9495 at 0210. (Maxant, WV) 15085 in FF at 1835. (Charlton, WV) 15150-Sirjan in AA at 1305. (DeGennaro, NY) 21520 in Farsi at 1415. (Linonis, PA)

## In Times Past...

And now for some nostalgia. Here's a blast from the past.

**TOGO**—Radio Kara, Lama-Kara, 3222 in FF at 0602 on September 2, 1996. 50 kW. (Dexter-WI)

**ISRAEL**—Kol Israel, 7530 in HH at 0340 and 9345 at 0315. (Maxant, WV) 7530 in unid language at 0328. (Burrow, WA) 9345 in HH at 0022. (DeGennaro, NY) 11590 in SS at 1950, 13675 in HH at 1828 and 15760 in HH at 1605. (Charlton, ON)

Galei Zahal, 6973u in HH at 0001. (DeGennaro, NY)

**ITALY**—RAI Int., 6060 in II at 0120 and 11800 in II at 0008. (Charlton, ON) 7235 with birdcall IS and into music at 0425 and 11800 at 0105 (Maxant, WV) 11800 with news at 0101. (Moser, IL) 11800 in II at 2328 and 11875 in PP at 2109. (DeGennaro, NY)

**JAPAN**—Radio Nikkei, 3925 with symphonic music and woman in JJ at 1145. (Barton, AZ) 1228 in JJ. (Strawman, IA)

Radio Japan/NHK World, 6120 at 1030 with "Japan Unplugged." 9835 in JJ at 1645, 11895 via French Guiana opening in JJ at 2200 and 12045 in JJ at 1700. (Barton, AZ) 6120 via Canada at 1000, 9530 via French Guiana in SS at 1102, 11895 via French Guiana in JJ at 2209, 13680-Tokyo-Yamata in JJ at 2053 and 21600 via French Guiana in JJ at 1740. (DeGennaro, NY) 9535 at 1740, 9835 in JJ at 1735, 13680 in JJ at 2210 and 21670 via Ascension at 2138. (MacKenzie, CA) 9335 at 1705, 9530 via French Guiana in JJ at 0810 and 11935 with "Tokyo Calling" at 0140. (Maxant, WV) 11730 in JJ at 1520. (Brossell, WI) 11855 via Ascension in EE at 2155, 15355 via Gabon in JJ at 1841 and 21600 via French Guiana in JJ at 1714. (Charlton, ON) 11895 via French Guiana in SS at 0517. (Wood, TN) 11930 in EE at 0127. (Moser, IL) 17825 in EE heard at 2142. (Paszkiwicz, WI)

**JORDAN**—Radio Jordan, 9830 with apparent news in AA at 1833. (Brossell, WI) 11690 in EE at 1455. (Burrow, WA) 1500 with news in EE, ID and rock. (D'Angelo, PA) 1600 sign on and into news. (Moser, IL) 15290 in AA at 1038. (DeGennaro, NY)

**KUWAIT**—Radio Kuwait, 9855 in AA at 1832. 15495//15505 at 1843. (Brossell, WI) 9855 in AA at 2109 and 15505 in AA at 2008. (DeGennaro, NY) 11990 in AA at 1729 and 15505 in AA at 1845. (Charlton, ON)

**LIBERIA**—Star Radio, 9525 via Ascension on African unity at 0715. (Maxant, WV)

**LIBYA**—(All frequencies via France) Radio Jamahiriya/V of Africa, 7320 in EE at 2352 and 17840 in AA at 1750. (DeGennaro, NY) 17695//17870 in FF at 1710. (Jeffery, NY) 17725 in EE at 1400. (Linonis, PA) 17840 in AA at 1602. (Brossell, WI) 17850 in EE at 1547. (Charlton, ON) 17850 at 1400 sign on with EE. //21695 was very weak. (Alexander, PA)

**MALAYSIA**—Radio Malaysia, 5030 at 1500 with time pips. (Barton, AZ) 7295 carrying Traxx FM in EE at 1501. (Burrow, WA)

**MAURITANIA**—Radio Mauritanie, 4845 with two men in AA at 0024. (DeGennaro, NY) 0140 with music, phone calls, Koran. (Alexander, PA) 0310. (MacKenzie, CA) 0426 in AA but also some FF (normally closes at 0100—*glad*) (Wood, TN)

**MEXICO**—Radio Educacion, 6185 in SS with music heard at 0911. (DeGennaro, NY)

Radio Transcontinental de America, 4810 in SS heard at 1056. (Taylor, WI)

Radio Mil, 6010 at 0655 with SS talk, IDs, local music. (Alexander, PA) 1202 with news, ID jingle, music, man in SS. (Taylor, WI)

**MOROCCO**—Radio Medi Un, 9575 in AA heard at 2330. (DeGennaro, NY)

RTV Marocaine, 7135//15345 in AA at 2050. (DeGennaro, NY) 15345 in AA at 1543. (Brossell, WI) 2145 in AA. (Charlton, ON)

**NEW ZEALAND**—Radio Reading Service, ZLXA, 3935 (p) at 1225. (Strawman, IA)

Radio New Zealand, 6095 at 0900 on their Ministry of Health, 9630 at 1935 on farming, 9870 at 1120 airing National Radio. (Maxant, WV)

ГОЛОС РОССИИ www.vor.ru VOICE OF RUSSIA letters@vor.ru

QSL Verification Card

Dear Mr. Brossell,

This verifies your report on the reception of the Voice of Russia's broadcast in Vietnamese

Date April 2, 2006  
Time 1205-1228 UTC  
Freq 12055 kHz via Chita



We invite you to continue listening. Please feel free to write again with comments or questions about our programming.

Best wishes from the Voice of Russia

*The Voice of Russia confirmed Robert Brossell's reception via Chita on 12055.*

6095 at 1025. (DeGennaro, NY) 13730 at 2304 with weather from National Radio. (Burrow, WA) 15720 with birdcall IS at 2258. (Charlton, ON)

**NETHERLANDS**—Radio Nederland, 9895-Flevo in SS at 2344 and 13700-Flevo in DD at 1034. (DeGennaro, NY) 15335 via Madagascar in DD at 1638. (Brossell, WI)

**NETHERLANDS ANTILLES**—Radio Nederland Relay, Bonaire, 6165 in EE at 0409, 11675 at 1130. (Maxant, WV) 9845 in EE at 0037 and 11970 in DD at 2340. (Charlton, ON) 15540 in DD at 2225 and 17895 in DD at 2150. (MacKenzie, CA) 17810 in EE at 2029. (DeGennaro, NY)

**NIGER**—La Voix du Sahel, 9705 at 2150 with FF talk, local music, Koran. Off at 2301. (Alexander, PA)

**NIGERIA**—Radio Nigeria, 4770 at 0428 sign on with drum IS, choral NA, ID, news and sked. (Wood, TN)

Voice of Nigeria, 7255 at 2222 and 15120 in EE at 2038. (DeGennaro, NY) 15120 in African dialect at 1648. (Brossell, WI) 1710 in EE. (Maxant, WV) 1845. (Charlton, ON) 1922 with program previews. (D'Angelo, PA) 2011 with news, ID. (Burrow, WA)

**NORTH KOREA**—Voice of Korea, 6285 at 1045. (Barton, AZ) 9335 with news at 1509, 15100 in CC at 0010 and 15245 in SS at 2245. (MacKenzie, CA) 11734.9 at 1058 with traditional vocal selections and SS pgm opening with ID and frequency anmts. (D'Angelo, PA) 13760 in GG at 2043. (DeGennaro, NY)

**OPPOSITION**—Sudan Radio service, 17660-Wooferton at 1639 in unid language. (Jeffery, NY)

Radio Solh, 17770-Rampisham with Middle Eastern music heard at 1310. (Jeffery, NY)

Shiokaze, 9485 via Irkutsk, 1315 with man and woman in JJ reading short selections, including names, over piano music. (Taylor, WI)

Radio Zalmaneh, 6245 in unid lang (*Farsi—glad*) at 1850 to 2101 close. (Alexander, PA)

Voice of Democratic Path of Ethiopian Unity, 15565-Julich at 1900 sign on with open carrier, HoA music, ID and frequency anmts. News and talk features. Close at 1959. (D'Angelo, PA)

Radio Farda, 9865-Brieich, Morocco, in AA at 0511. (Wood, TN) 15170-Brieich in Farsi at 1655. (Brossell, WI)

Radio Nacional de la Republica Arab Saharaui Democratica, 7425 in AA/SS at 2115. AA ID at 0001 and off at 0002. (Strawman, IA) 2330 to 0002 with music and news in AA and SS. (D'Angelo, PA)

Radio Republica, 5910 via Germany in SS at 2355 and 6185 in SS at 2346. (DeGennaro, NY)

Radio Free Asia, 11765 via Tinian, Northern Marianas in CC at 1600. (Barton, AZ) 11795 via Tinian, with EE ID at 1628, into CC at 1630. Also 12025 via Saipan, No. Marianas in CC heard at 1530. (Brossell, WI)

**OMAN**—Radio Sultanate of Oman, 9760 in AA at 0012 and 13640 in AA at 1246. (DeGennaro, NY) 15140 in AA at 1524. (Jeffery, NY) 1651. (Brossell, WI)

**PAKISTAN**—Radio Pakistan, 11570 at 1558 with IS, time pips, possible ID and news. (Burrow, WA)



## This Month's Book Winner

To show our appreciation for your loggings and support of this column, each month we select one "Global Information Guide" contributor to receive a free book. Readers are invited to send in loggings, photos, copies of QSL cards, and monitoring room photos to me at *Popular Communications*, "Global Information Guide," 25 Newbridge Road, Hicksville, NY 11801, or by e-mail to popularcom@aol.com. The e-mail's subject line should indicate that it's for the "Global Information Guide" column. So come on, send your contribution in today!

This month's prize winner is Jerry Strawman of Des Moines, Iowa, who receives a free membership in the North American Shortwave Association, North America's premier shortwave broadcast DX club. That includes a one-year subscription to the club bulletin, the *NASWA Journal*, the free weekly e-mail Flashsheet, as well as access to the NASWA website ([www.naswa.net](http://www.naswa.net)). NASWA membership is \$29 per year. A sample bulletin can be had by sending \$3 to Bill Oliver, 45 Wildflower Rd., Levittown, PA 19057. Please mention *Pop Comm* and the "Global Information Guide" when writing.

**PAPUA NEW GUINEA**—3290 Radio Central, Port Moresby, with religious and political messages at 0815. (DeGennaro, NY)

**PERU**—Radio La Hora, Cusco, 4885.6 in SS at 2329. (DeGennaro, NY)

La Voz de la Selva, Iquitos, 4824.4 in SS with non-stop music monitored at 1028. (DeGennaro, NY)

Radio Sicuani, Sicuani, 4826 in SS at 1000 with ID, commls, and coming events. (DeGennaro, NY)

Radio Vision, Chiclayo, 4790 in SS with religious message, commls at 0952. (DeGennaro, NY)

Radio Maranon, Jaen, 4835.5 at 0215 with SS talk, ID, ballads, (Alexander, PA) 1006 with Andean music. (DeGennaro, NY)

Radio Victoria, Lima, 6020.5 with music and talk in SS at 0800. (Barton, AZ) 9720 with preaching at 0508. (Wood, TN)

**PHILIPPINES**—Radio Pilipinas, 11720//15190//17720 in EE and Tagalog with a speech at 1912. (Burrow, WA)

FEBC Int., 9430 in CC at 1230. (Brossell, WI) 9435 in EE and unid language at 2245. (MacKenzie, CA)

Radio Veritas Asia, 9900 in CC at 1128. (Brossell, WI)

**PIRATES**—WBNY, 6925u with Commander Bunny and a "special announcement" at 1446. (Gay, KY) 2220 with parodies and Belfast address. (D'Angelo, PA)

Partial India Radio, 6925.1 at 1549 mostly discussing events at the '06 SWL Fest in Kulpsville, PA. (Zeller, OH)

The Crystal Ship, 3274.6 at 0030 with Beatles, ID at 0045. (Alexander, PA) 6875 with rock at 2325. (Gay, KY)

Take It Easy (TIE) Radio, 6925u at 0027 with distorted audio and rambling talk. Also at 0025 with tune from a live concert, guest speaker raving about something in the Chicago area, R-rated material to 0220 close. Another date at 0117 with distorted audio, host "Bill O' Rights," C&W, pgm dedicated to vets, rants about the FCC. Also noted on 6930u at 2255 with rock selections ending with "Take It Easy" at 2307. (Hassig, IL)

Several logs at 0002 to 0009, 0024 to 0048 when lost and 2318 open to 0044 with mostly Dean Martin vocals and some rock. (Zeller, OH) 2143 with Eagles selections, frequent IDs, said broadcasting since 1997, gave Merlin address. (Wood, TN)

Mystery Radio, England, 6220 at 0347 with disco. (Wood, TN) 2310 with music and talk. (DeGennaro, NY)

Radio 66 ? 6935.7 at 0005 with distorted audio, 50s oldies. (Hassig, IL)

Radio First Termer, 6925u heard at 2152 with rock and anncr with "spicy" language. (Gay, KY) 2300 with a parody on Iraqi Fashion News. Off at 2315. (Wood, TN)

WDDR (or WDVR), 9650u at 2238 with Warren Zevon vocals, closing with "Knocking on Heaven's Door." (D'Angelo, PA) 2318 closing with Heaven's Door at 2322. (Hassig, IL)

Undercover Radio, 6925u at 2116 opening with many "Hello Radio" calls, anncd as a test, claimed a 1-kW transmitter and to be mobile at a fish fry. Switched to AM at 2132 and into rock with Dr. Benway anncing. Asked for reports on his modulation. (Zeller, OH)

Radio Six X, 6936 at 0025 with Wolfman Jack-style anncr and Motown selections. Off at 0123. (Parker, PA)

**POLAND**—Radio Polonia, 11850 heard at 1205 with news and music. (Maxant, WV)

**PORTUGAL**—RDP Int., 9715 at 0005, 12020 at 1028, 15560 with fuibol at 1930 and 21655 at 1734. (DeGennaro, NY) 11865 in GG at 2200 after DW-Kigali closes. (Barton, AZ) 17680 at 1705 (*all others in PP-gld*). (Jeffery, NY)

**ROMANIA**—Radio Romania Int., 7265 in EE with ID at 2230, 9645 in EE to ECNA at 2342, 11920 in Romanian at 1210, 11940 in SS at 2018 and 15465 in SS at 2003. (DeGennaro, NY) 9780 in EE to 0456 close. (Burrow, WA)

**RUSSIA**—Russian Radio Int., 7125 via Moldova at 0453. (Wood, TN) 2314 in RR (DeGennaro, NY) 9665 via Moldova in RR at 0200. (Linonis, PA)

Voice of Russia, 7250 via Armenia in EE

to ECNA at 0107, 7330-Moscow in SS at 0006 and 11980-Armavir in EE with listeners letters at 2014. (DeGennaro, NY) 11500 via Dushanbe in Hindi at 1217 and 13590-Novosibirsk in CC at 1233. (Brossell, WI) 15605 in EE at 1430. (Charlton, ON)

Radio Rossii, 5920 in RR at 0727 and 6075 with long RR talk and ID heard at 1059. (Barton, AZ)

Kamchatka Radio, 5920 in RR at 0324. (MacKenzie, CA)

Kyzyl Radio, 6100 in RR at 1206, audible to past 1300. (Brossell, WI)

**SAO TOME**—VOA Relay, 4960 in vernacular with Afropops at 0522. (Wood, TN) 15410 with news at 1840. (Brossell, WI)

**SAUDI ARABIA**—(All in AA) BSKSA, 9555 with call-ins at 2145, 9870 with news at 2106, 11820 with two men talking, 11915 with two men in discussion at 2120 and 11935 with discussion at 1024. (DeGennaro, NY) 15205 at 1639 and 15315 at 1732. (Charlton, ON) 11920 at 1700 and 15205 heard at 1630. (Barton, AZ)

**SEYCHELLES**—BBC Relay, 9605 with talks at 2200. (Linonis, PA)

**SINGAPORE**—Radio Singapore Int., 6150 heard at 1454 with talk and ID as "9-3-8 Live," then news at 1500. (Burrow, WA)

**SOUTH AFRICA**—Channel Africa, 3345//5960 at 0308. Weak with mentions of South Africa. (Burrow, WA) 9685 at 0500 with African news items. (Wood, TN) 15235 in FF at 1640 and 17770 at 1520. (Chandler, ON) 17770 to close at 1556. (Moser, IL; Brossell, WI)

Radio Sondergrense, 3320 in Afrikaans with ballads at 0358. (Wood, TN) 0930 with African pops and possible news at 1000. (Linonis, PA)

**SOUTH KOREA**—KBS World Radio, 9650 via Canada at 1220. (Maxant, WV) 11815 in SS at 0147. (Taylor, WI) 15365 in AA at 1912. (Jeffery, NY) 15365-Rampisham in AA at 1957. (DeGennaro, NY)

**SPAIN**—Radio Exterior de Espana, 6155 in FF heard at 2343, 9535 in SS at 2324, 9620 in SS at 2339, 13720 in SS at 1039, 15110 in SS at 2142, 15290 in EE at 2044 and 21610 in AA at 1737. (DeGennaro, NY) 15170 via Costa Rica in SS at 1315. (Linonis, PA) 15325 in RR at 1718. (MacKenzie, CA) 15290 in EE at 2001. (Burrow, WA) 17850 via Costa Rica in SS at 1655 and 17595 in SS at 1804. (Charlton, ON)

**SURINAME**—Radio Apinte (p), 4990 at 0350 with continuous vocals. (D'Angelo, PA) 0524 with man in DD and pops. (Wood, TN) 0856 with DD anncr. (DeGennaro, NY)

**SWEDEN**—Radio Sweden Int., 6010 via Canada on economics at 0139. (Moser, IL) 9490 in Swedish to North Africa at 1006 and 13580 in EE at 1240. (DeGennaro, NY) 11550 to Asia/Pacific at 1415, //15240 via Canada. (Taylor, WI) 15735 with news at 1235. (Maxant, WV)

IBRA Radio, 15450 via Germany in Somali at 1731. (Charlton, ON)

**SYRIA**—Radio Damascus, 9330 in AA at

2334 and 12085 in FF at 2004. (DeGennaro, NY) 1214 with Koran. (Brossell, WI)

**TAIWAN**—Radio Taiwan Int., 7445 in CC poor at 1345 under "Firedrake" jamming. Also 11665 in GG at 2107. (Barton, AZ) 11550 in Indonesian at 1050. (DeGennaro, NY) 15600 via Florida at 2220. (MacKenzie, CA) 15690 in EE at 1746. (Charlton, ON)

Voice of Asia (p) 7445 to China at 1515 under Firedrake jamming. (Barton, ON)

**THAILAND**—Radio Thailand, 5890 via Greenville in EE at 0041. (Chandler, ON) 0050. (Moser, IL) 0320. Also 15280 at 0040. (MacKenzie, CA) 9680 at 2015 with IS, ID and into FF. (Burrow, WA) 9695 at 0058. (Moser, IL)

**TURKEY**—Voice of Turkey, 5975//7270 at 0300 with IS, ID, sked and news. (Burrow, WA) 5975 at 0345. (Maxant, WV) 7270 at 0259 after Egypt leaves. (Moser, IL) 9460 in TT at 1816. (Brossell, WI) 9560 in TT at 1020, 11850 in FF at 2023 and 13770 in TT at 1045. (DeGennaro, NY) 9830 with IS at 0115. (Charlton, ON) 9860 closing at 2247. (Wood, TN)

**TANZANIA**—Radio Tanzania-Zanzibar, 11735 at 1715 in Swahili to EE news from local Spice FM at 1800. (Alexander, PA) And 1954 to 5 + 1 time pips and woman with ID. (D'Angelo, PA) 2045 in Swahili. (DeGennaro, NY)

**TUNISIA**—RTV Tunisienne, 7275 at 0434 in AA with ME music. (Wood, TN)

**UKRAINE**—Radio Ukraine Int., 5820 at 0250 on churches in Kiev. (Maxant, WV) 5840 in GG at 2350. (DeGennaro, NY) 7440 in EE at 0033. (Charlton, ON)

**UNITED STATES**—VOA, 6160 via Philippines at 1233, 9575 via No. Marianas in CC at 1122 and 12150 via Sri Lanka at 1532. (Brossell, WI) 7235 via Tinian in KK at 1213, 11705 (p) via Sri Lanka at 0139, 11925 via Tinian in Mandarin at 0115. (Taylor, WI) 9780 via Philippines at 2236 and 15290 via Philippines at 2240. (MacKenzie, CA) 15410 via Morocco at 1918. (Jeffery, NY) 17565 in Creole to 1700 close. Also 7785 in SS at 1830. (Charlton, ON)

## AMERICAN FORCES Radio and Television SERVICE



*After frustrating many DXers, AFRTS has lately become better at responding to reception reports.*

Deewa Radio (VOA—gld) 11510 via Sri Lanka in Pashto at 1353 to 1401 close. (D'Angelo, PA)

Adventist World Radio, 15225 via UAE in EE heard at 1531 but weak. (Burrow, WA)

15265 via Germany in AA at 1905. (Jeffery, NY)

AFN/AFRTS, 12133.5u Key West at 1647. (Brossell, WI)

Trans World Radio, 3240 via Swaziland in listed Ndau language to 0345 IS and off. (D'Angelo, PA) 6100-Swaziland at 0401 with ID and music. (Maxant, WV) 7445 via Guam in CC at 1213. (Brossell, WI) 13690-Guam in CC at 2217. (MacKenzie, CA)

Family Radio, 9450 via Irkutsk in an Asian language at 1119. (Brossell, WI)

University Network, 6150 via Costa Rica with Gene Scott preaching at 0930. (Maxant, WV) 9725 via Costa Rica with Dr. Scott at 0010. (Charlton, ON)

WINB, Red Lion, 13570 heard at 2149 with utility QRM. (MacKenzie, CA)

WRMI, 7385 with health feature at 2249. (Wood, TN)

VATICAN—Vatican Radio, 7305, //9610 at 0250, the latter not readable. (Moser, IL) 0255, 9600 at 2336, 11625 in FF and 13765 in FF at 2038, (DeGennaro, NY) 9755 at 2025. (Maxant, WV) 9860 at 0405. (Wood, TN)

VENEZUELA—(All via Cuba) Radio Nacional, 6180 in SS at 1022, 17705 in SS at 2025. (DeGennaro, NY) 11760 in SS at 2330. (Barton, AZ) 17750 in SS at 1818. (Charlton, ON)

VIETNAM—Voice of Vietnam, 6175 via Canada at 0116. (Charlton, ON) 9725 via Austria in VV at 1826. (Brossell, WI) 9840-Son Tay, at 1514. (Burrow, WA) 9845 at 1300. (Linonis, PA)

ZAMBIA—ZNBC, 5915 from sign on at 0242 with Fish Eagle IS, instrumental anthem and talk in unid language. (Alexander, PA)

The Voice-Africa, 4965 with hymns at 0030. (DeGennaro, NY)

And once again, order has been restored! A mountain of thanks to the following great folks who did the good thing this time: Jerry Strawman, Des Moines, IA; Mark Taylor, Madison, WI; Joe Wood, Greenback, TN; Sheryl Paszkiewicz, Manitowoc, WI; Rick Barton, Phoenix, AZ; Richard Parker, Pennsylvania, PA; Charles Maxant, Hinton, WV; Arnold Zeck, Bayberry, NY; George Zeller, Cleveland, OH; Jack Linonis, Hermitage, PA; William Hassig, Mt. Prospect, IL; Stewart MacKenzie, Huntington Beach, CA; Robert Charlton, Windsor, ON; Bruce Burrow, Snoqualmie, WA; Chris Gay, Lexington, KY; Robert Brossell, Pewaukee, WI; Howard Moser, Lincolnshire, IL; Rich D'Angelo, Wyomissing, PA; Bruce Alexander, Mechanicsburg, PA; Ciro DeGennaro, Feur Bush, NY and Dave Jeffery, Niagara Falls, NY.

Thanks to each of you and, until next month, good listening!

**CQ VHF** Ham Radio  
Above 50 MHz

*The magazine for the  
VHF/UHF Enthusiast*

Within the pages of CQ VHF you'll find more meaty reading aimed at the really serious VHFer. That's what our surveys told us you wanted and that's what we deliver!

By taking advantage of our subscription specials you'll save money and have CQ VHF delivered right to your mailbox. Only \$25 for four information-packed quarterly issues. Or better yet, enter a two or three year subscription at these special prices. As always, every subscription comes with our money back guarantee.

*Don't miss out  
take advantage  
of these special prices today!*

1 yr only \$25.00 • 2 yrs \$50.00 • 3 yrs \$75.00

Canada/Mexico - 1 yr \$35, 2 yrs \$70, 3 yrs \$105;

Foreign 1 yr \$38, 2 yrs \$76.00, 3 yrs \$114

Payable in U.S. dollars

25 Newbridge Road Hicksville, NY 11801

www.cq-vhf.com

FAX: 516 681-2926 • Toll-Free: 800-853-9797





## Radio Fun And Going Back In Time

**Q.** What was Project Hope and what did it have to do with amateur radio?

**A.** Back around 1961 Dr. William B. Walsh, a prominent Washington, D.C. physician, conceived the idea of fitting a mothballed Navy hospital ship and taking it around the world as a teaching facility to train local medical personnel in modern techniques of treatment. The only communications gear that "came with" the ship was a 250-watt CW rig. Manufacturers donated the gear and hams installed two complete stations on board. Regular transmissions were made from the *U.S.S. Hope* en route to its first port of call, Indonesia. By special agreements the amateur band transmissions were copied by RCA in California, edited, and rebroadcast over commercial radio stations. Amateurs aboard ship kept in contact with field hospital units and jeeps sent out from the ship to spread the message of health and peace. Last I heard, the Project Hope team was still on the high seas and on the air.

**Q.** Our military stopped using CW on the airwaves officially in September 1996. Who are the only military personnel in our armed forces still using Morse Code?

**A.** The sailors who work the blinker lights between ships. Their messages may be in the clear or coded, but they are always in Morse.

**Q.** I've heard that radio operators in combat areas sometimes try to insert traffic on the other side's nets. How does that work?

**A.** It was done by all sides, of course, but a good example comes from a trick the Germans played during the North African Campaign. Using short-range radio, which is often used unencoded during combat, conflicting orders would come in given by the voice of someone who sounded like a radio operator known to the operators at the receiving station. Using excellent English these orders would be directed by name to a specific officer who was about to go into action. Valuable time would be lost finding out that the new order was a hoax. And, of course, lives would be lost if the new orders weren't checked out properly. When the hoax was discovered more valuable time would be lost retuning the whole net to a new frequency.

**Q.** I have a metal tower. What are the odds that I will suffer a lightning strike in the future?

**A.** I have figures that indicate the Earth experiences somewhere in the neighborhood of nine million strikes per day coming from about 44,000 storms, more or less. In America, northern Illinois gets an "average" of 45 storms per year, while Tampa, Florida, gets about 90 storms that produce lightning. Every square mile of America gets about 45 lightning strikes per year, 19 is a low average with 65 possible in a bad year. For some reason, the Pacific coast gets less than elsewhere. There are so many variables predicting lightning strikes it's not something you'd want to put money down on.

Lightning does strike twice in the same place, which is usually the highest point in the area. If your tower is 50 feet and your QTH is in flat terrain that has an average number of 30 strikes per year, plan on about one strike every four years. If your tower is 100 feet high you'll get a strike about every two and a half years. So make sure you've got that puppy ground-

ed. And by all means, don't transmit during a lightning storm. That's asking for trouble.

**Q.** What are the Q codes and where did they come from?

**A.** The Q codes are shorthand questions and answers that are part of radio history. Has anyone ever asked you for your "QTH?" The question is "where do you live?" The answer would not be "I live in Boston." but "QTH Boston." As you may have guessed it was originally telegraphic code abbreviations. Originally they were adopted by the International Radio-telegraphic Convention held in London in 1912. Without the Q they date back to 1908 and were two-letter abbreviations devised by the British Post Office to speed up traffic handling between ships and shore stations. Over the years the definitions and importance of the various codes have changed or gone out of use. Some of the codes have very little to do with radio and more with navigation, search and rescue, and other things related to shipping and operating vessels. But they are still very much a part of radio communications on CW or phone.

### A Trivia Moment

Bet ya didn't know this: During World War II America was building one airplane every five minutes once they got rolling. Some genius invented explosive rivets that were detonated by radio frequency energy. It surely sped up aircraft production, and that ended the war sooner than might otherwise have been the case.

### Looking Back...

#### Five Years Ago In Pop'Comm

Still vitally important and as relevant as the day he wrote it, "Interpreting Scanner Specs," by columnist Ken Reiss is a must-read for anyone with an interest in buying a new scanner: it's on page 26 of our February 2002 *Pop'Comm*. Grundig was advertising its big Satellit 800 Millennium receiver, and one of the more interesting antennas, the Ewe, was featured in Bruce Conti's "Broadcast Technology" column.

#### Ten Years Ago In Pop'Comm

The topic of freebanding was discussed in our February '97 issue. Seems the age-old question, "does it really harm anyone?" never dies! We reviewed the AR-5000 and IC-R8500 receivers, and Lentini was advertising the new RELM HS-200 "multi-band programmable scanner."

#### Twenty Years Ago In Pop'Comm

The newest scanner around was the Regency HX-1500, and we reviewed it in depth in February 1987. Speaking of Regency, a great ad on page 5 with none other than Clint Eastwood holding that new HX-1500 ran the headline: "Make Your Day, Buy A Regency Scanner." Also new was the AR-2002 "professional monitor receiver," shown on page 55; you could put selected frequencies in "any of 20 memory channels."

# WDEV, A Vermont Treasure

## For 75 Years It Set A Standard By Resisting Trends

by Shannon Huniwell

**T**ed Rollins quietly threw some clothes in a paper shopping bag, stuck a shoebox filled with five-inch reel-to-reel audition tapes under his arm, and placed a scrap of paper on his college roommate's desk. The note consisted only of a couple of sentences indicating he'd be back in about a week, and that if anybody wondered why he'd disappeared, to simply say he'd "gone to look for America."

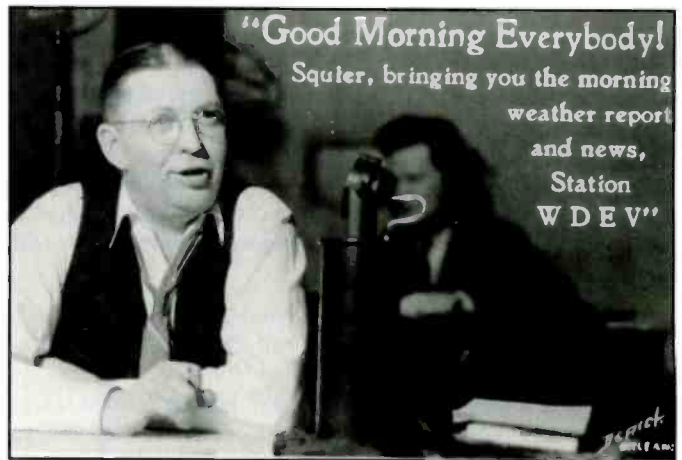
At 5:53 a.m., nobody on that Delaware campus was up to notice him heading towards his 10-year-old Volkswagen in the dormitory parking lot. Rollins hesitated for a moment, but then a brisk gust of early spring air strengthened his resolve to invest a week or so, and the \$118 he'd scraped together, in venturing deep into New England.

For at least two years he'd talked with friends about how neat it'd be to take such a radio trip. They could see new sights, be spontaneous, have little adventures, and—most of all—hear what radio was like in faraway places listed in the school library's shopworn 1971 *Broadcasting Yearbook*, its content inspiring northeastern broadcast station itineraries with memorable monikers such as Great Barrington, Massachusetts; Old Saybrook, Connecticut; South Paris, Maine; Conway, New Hampshire; and White River Junction, Vermont.

Somebody in the group contributed a tattered *ESSO Map of the New England States*. Over its seemingly infinite surface, call letters, program formats, dial positions, and other vital stats were penciled in. Though the value of a New England AM/FM excursion was enthusiastically seconded by at least three or four of the other radio buffs at his college carrier current station, Rollins turned out to be the only one serious enough about broadcasting to put the plan into action.

The VW's engine warmed up while its owner unfolded the map and meticulously spread it out on the passenger seat. Then Rollins switched on the car radio. A split second later, the open carrier wave from a local daytimer cut through the pre-sunrise AM hash. And, as if his Bug's pedals were somehow wired to that station's cart machine, the sign-on occurred simultaneously with his releasing of the clutch. He smiled at the coincidence and considered it a good omen. Humming along to the national anthem, Rollins rolled over the last of the campus driveway speed bumps and accelerated onto a main road pointing north.

Four mornings later, at a small Vermont diner, the 21-year-old tallied up his "stations visited" on a thin paper napkin. So far, he'd seen two-dozen—some AM, several AM & FM combos, and a few FM-only operations. Serendipitously, the program director in one of the New Hampshire facilities listened to Rollins' audition tape right on the spot, liked it, and gave him \$35 to record a stack of commercial copy. He was extra flattered when the PD offered him a noon to sign-off on-air shift. "That's very flattering," he practically blushed, "but I've still got to finish college."



Postcard of Lloyd "the Old Squier," circa 1930s.

Another station paid him 20 bucks to voice a bunch of station identification breaks and promotional announcements. The funds gave him an additional day before having to turn back, plus the luxury of splurging on a motel room near Montpelier where he could wash away the effects of three previous nights spent sleeping in his car.

### Back At The Motel...

"What's that you're listening to?" Rollins had asked the middle-aged woman checking him out at the motel's front desk.

"It's what we Vermonters call a *radio*," she dryly replied, then chalked-up the remark to "native Yankee humor." He politely chuckled and mentioned how his interest in broadcasting prompted him to take some time off from classes and come explore New England radio.

"Well, then, you should go see the folks at WDEV," the lady suggested. "That's what me and my mister got on this radio all the time. I guess you could say WDEV is like a true friend," she said as she jotted down directions to the station's studio. Rollins hadn't ever heard such listener enthusiasm and his interest was piqued. He thanked her, got into his car, and immediately twirled the VW radio dial over to 550 kHz. Just as the motel owner promised, WDEV blasted in.

### Live Musical Fare And Lots Of Local Programming!

Route 89 twisted as it went up and down through the Green Mountains. Suddenly, three majestic self-supporting towers





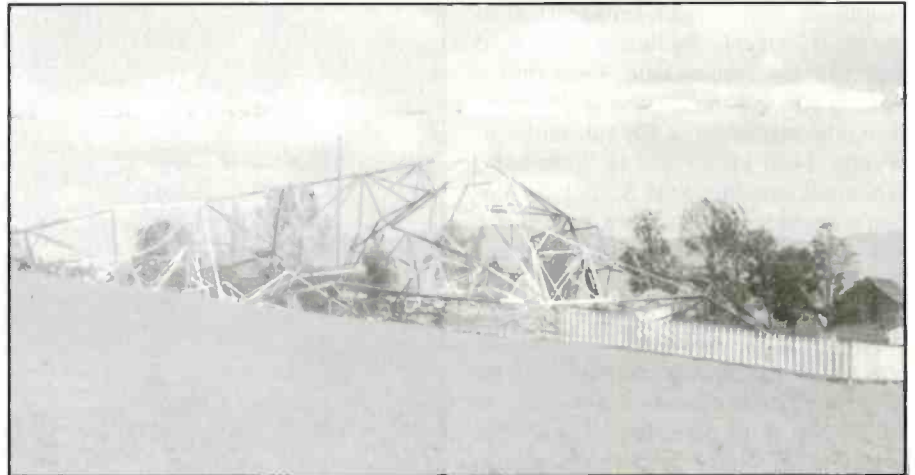
*Rusty Parker and Sponsor, Tip-Top, circa 1950s.*

came into view. Their reds and whites contrasted against the pine trees, blue sky, and a single billowing cloud.

Unlike all the other stations he'd encountered, WDEV's musical fare was live. Between songs, band members identified their country tunes, and Rollins was delighted to hear this perfect example of local expression. He slowed down to have a little more time to consider the uniqueness of WDEV. But, at the exit prescribed by the motel employee, Rollins remained on the interstate, in fact, pressing harder on the accelerator. "Neat station! Maybe I'll stop by on my way home," he said aloud mostly to convince himself.

Simultaneously, he recalled how the motel lady raved about WDEV and its staff as if they were all part of her immediate family. She proudly stated that the station played all kinds of music, broadcast local sports, and did a lot of remotes from country fairs, too, providing a "nice service to the community." Rollins had nodded, though he felt that it just didn't seem like the kind of place an outsider could use as a fast steppingstone to some big city Top-40 station. He figured such a down-home AM might prove more of a study in social science than in standardized, mass appeal, cookie-cutter formulaic radio that anyone from Boston to Los Angeles would instantly recognize.

In his rearview mirror, WDEV's towers got smaller and smaller, breaking the spell originally cast at the motel desk. Rollins quickly rolled the tuning knob away from 550 and up towards 1400 kHz. There, the map noted Burlington's WDOT, a Top-40 outlet that he reasoned



*The WDEV main antenna tower, downed by the 1938 hurricane.*

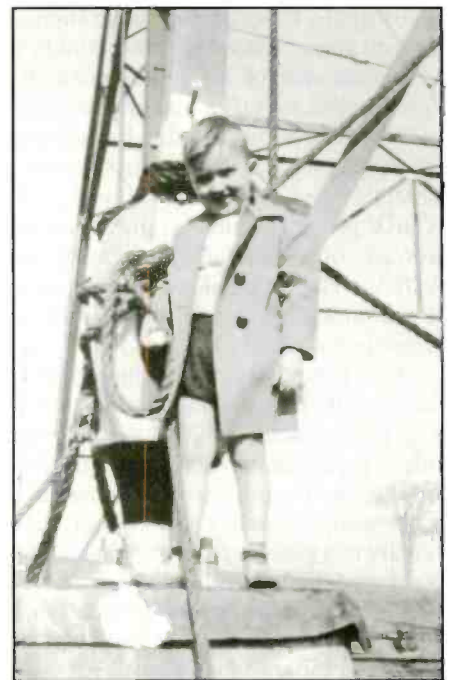
would better appreciate his fast-paced, accent-free, resonant-toned audition tape filled with punchy jingles, hit records, and time/temperature checks. After graduation, he could start at a station like that, maybe stay a year, make an even better air check, and move on to Hartford, Boston, Philadelphia, or perhaps New York.

The song "Brandy" by Looking Glass scratched through a fringe signal on 1400. Even in that weakened condition, however, the tune made Rollins feel like he was choosing wisely. Still, he kept thinking about WDEV. Not only had its variety been proudly featured on the motel radio, he remembered the Waterbury AM being played prominently at the diner and a gas station where he'd filled-up earlier that morning. "What was this rural station's secret?" he asked himself. "Could it be that WDEV is more about people than it is about radio?" Rollins the radio enthusiast considered. He couldn't help but wonder who started the station and why.

### **"Radio Broadcasting... Darned Good Idea!"**

Those in the publishing business are fond of saying that "books make for more books." In other words, a writer will read a book and then be inspired to pen one of his or her own. There's a strong parallel in the radio business, and WDEV can be said to be a result of Vermont's first commercial station, WQDM in St. Albans. (Some say WLAK Bellows Falls was Vermont's first commercial broadcaster; it ran from 1922 to 1925 and promoted products of its ownership, the Vermont Farm Machinery Corp.)

Situated about 25 miles north of Burlington, the Green Mountain State's



*Future broadcaster Young Kenley D. Squier, age three, on tower.*

biggest city, WQDM St. Albans debuted in late 1929 from the cellar of a music store in St. Albans' merchant district. The 100-watt daytimer on 1390 began with a rather slim schedule: lunch hour, noon to 1:00! As reception reports rolled in from 35-plus miles away, though, WQDM's management lengthened the airtime (to three hours daily by 1936) and improved programming.

One of the modest AM's early listeners was the publisher of two newspapers some 35 miles southeast of WQDM, the *Stowe Journal* and *Waterbury Record*. Legend has it that radio instantly appealed to Harry C. Whitehill's business sense because, he reasoned, "more

people can hear [a radio broadcast] than can read [a paper]." By June of 1931, he'd parlayed his enthusiastic logic into a Federal Radio Commission (FRC) construction permit for a 50-watt outlet to occupy 1420 kilocycles at Waterbury. Whitehall convinced the St. Albans station's engineer to concoct a transmitter and rig it to a long-wire antenna strung from the rooftop of the *Waterbury Record* headquarters on Stowe Street.

Like WQDM, Whitehill's authorization stated that this gear could only be used for daytime operation. He'd selected WDEV as the new station's moniker as a nod to Waterbury's Green Mountain beauty that he believed surely Delighted Every Visitor who did sightseeing there. In fact, Whitehall directed that this be the on-air slogan to accompany each station identification. Whitehill, who couldn't drive, had one of his newspapermen, Lloyd Squire, chauffeur him around, typically decked out in vest, suit, bowler hat, and puffing a pipe, so he could sell commercials and generally spread the WDEV gospel. Squire became a sort of protégé of Whitehill's, as well as WDEV's chief announcer and program director not long after the station took to the air in July 1931.

During the inaugural transmission, Senator Warren Austin stepped to the mic and predicted WDEV would provide a great public service by offering those in the bucolic coverage area "the opportunity to sell a cow or an idea quickly to a great number of people." He exclaimed that such electronic communication "has value beyond calculation." The Vermont lawmaker was followed by another dignitary who noted, "We usually think of a radio station as being properly located near a large center of population, but when one stops to consider it, there is a real need and place for a local station to serve more intimately the local communities."

This down-home flair was quickly evident on Squier's morning program. According to the Vermont Association of Broadcasters' 1989 booklet, *Voices From The Hills*, Squier liked to add a bit of an unrehearsed flavor to his show by hanging a microphone outside to capture the sounds of nature. "Once, the mic picked up a farmer and his team of horses coming up the road," the booklet described, "and 'Giddup, you sons of bitches!' was broadcast loud and clear." Another time, a man who obviously hadn't noticed the heavy metal microphone dangling out the



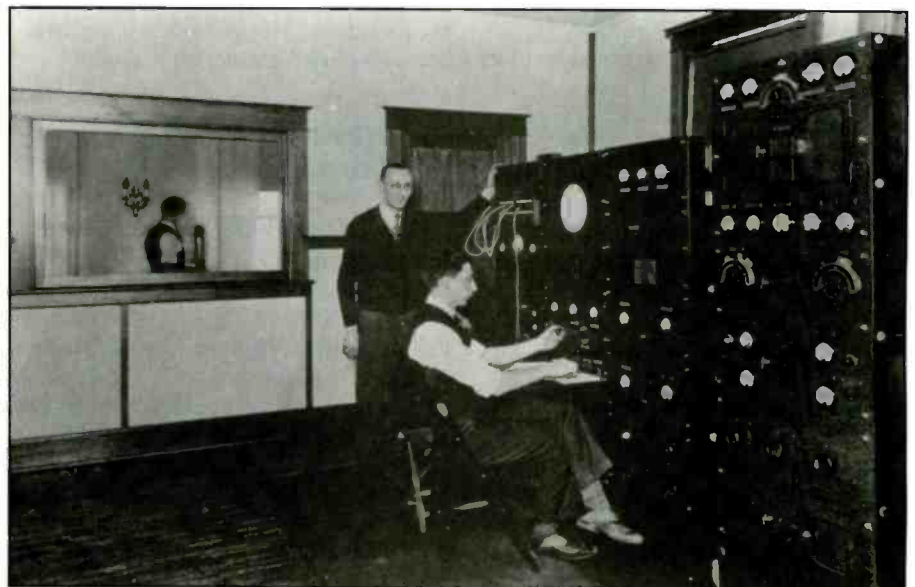
*Inside the WDEV Blush Hill, Waterbury, Vermont Studios, circa 1940s, complete with "old" lamp and phone.*

studio window walked right into it, "and listeners heard a loud 'thunk' followed by some very colorful language."

In the exciting days after the station's grand opening, as they were travelling the rudimentary roadways of mid-Vermont, Whitehill told Squire of his plan to seek an FRC power increase and treat WDEV to a huge antenna on his farm at Waterbury's Blush Hill. The old gentleman's sudden passing in 1935 might have put the kibosh on the project had his widow not decided to go ahead with the construction of a state-of-the-art, self-supporting Blaw-Knox brand steel tower on the picturesque site. At 435 feet, that

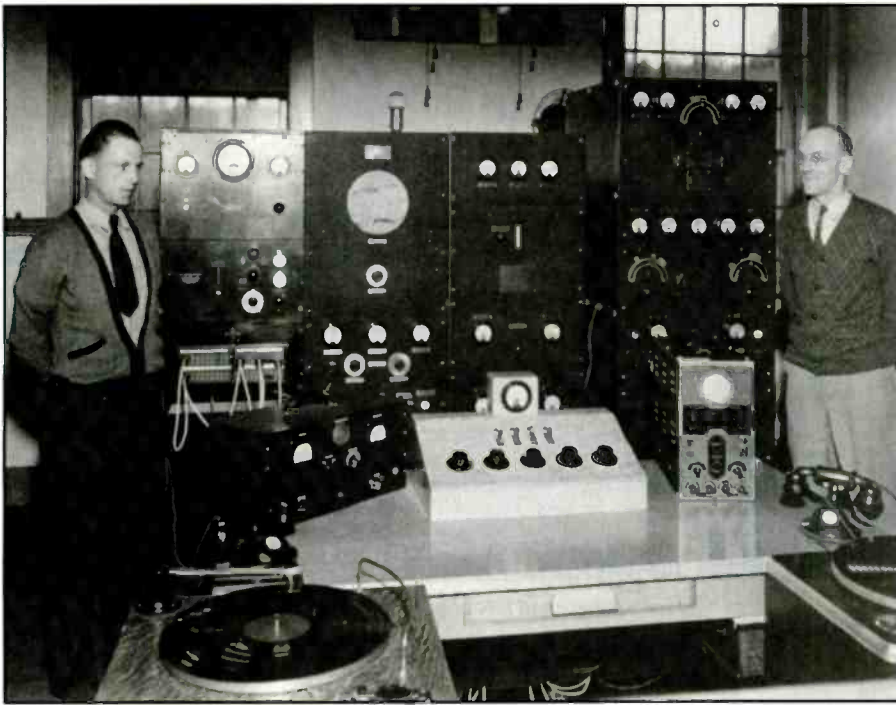
"stick" became, for a while anyhow, the tallest made structure in all of New England. Erected by a crew of Native Americans from the New York area, it replaced WDEV's second antenna incarnation erected in 1933, another long wire array suspended between poles on Whitehill's farmland.

It's believed that the transmitter shack at this site, which housed a 500-watt transmitter tuned for WDEV's new 550-kilocycle frequency, was the first Vermont building specifically constructed for commercial broadcasting. The opening of an auxiliary studio locale, in Montpelier's Pavilion Hotel, coincided



*How much room do you suppose this would require today?*





Another look inside the WDEV Blush Hill Studios, circa 1930s.

with the 1933 facility change. With a dual city/dual studio presence, an enviably low dial position (550 kc), higher RF output, and the aforementioned tall tower in the works, when Whitehill died, his electronic pride and joy was well equipped to serve as a useful legacy.

### The Official Start Of Radio's Longest Running Family Business

Today, it is Lloyd Squier's descendants who are most closely associated with WDEV. That was set in motion with his 1937 purchase, along with business partner (and Whitehill's nephew) William G. Ricker, of WDEV. Ricker was the less excitable of the two new broadcast entrepreneurs, though he is remembered as an accomplished ad salesman who enjoyed driving well over the speed limit to meet with his sundry advertising clients. In fact, *Voices From The Hills* reports that Ricker's speedy travel and Vermont's back roads were responsible for his "wearing out a car a year." But when the hurricane of 1938 ripped down WDEV's beautiful—and uninsured—Blaw-Knox tower, causing four-foot gashes in the earth where it fell, and making Squier cry, "This is terrible, just terrible!" Ricker simply remarked, "Yup, and it blew my back porch off, too."

In that stoic spirit, he joined the Vermont State Guard shortly after the

outbreak of World War II. As the fighting dragged on, he felt compelled to serve in action and convinced his wife and Squier that he'd be the most useful in the U.S. Army infantry. By February 1945, 2nd Lieutenant Ricker had volunteered for a Battle of the Bulge mission and was subsequently listed as missing in action. His body was found in 1946 by Army Graves Registration, but a file mix-up prevented its return to Vermont until 1950. Nearly a half-century later, researchers learned that Ricker had been severely wounded by enemy fire, found by a Belgian family who tried treating his injuries, and then died the next night. They buried him near their house and kept quiet about the incident.

In 1946, the War Department officially classified Ricker dead, triggering the sale of his portion of WDEV to Squier. Just prior to enlisting, Ricker had arranged that his associate would exercise a \$35,000 option to buy, should Ricker not return from battle.

### The Makings Of A Mini Broadcast Empire, And A One-Man Poetry Factory

Not long before Ricker entered the military, he and Squier purchased WQDM, the St. Albans station that arguably spawned WDEV. Coinciding with this 1941 transaction, they switched the callsign to WWSR, its key letters like-

ly denoting Whitehill, Squier, and Ricker. WWSR was included in the 1947 WDEV asset transfer to Squier.

The FCC had recently given WDEV the green light to become a fulltime outlet with a two-pattern directional system. Responsibilities of running WDEV for some 18 hours a day as well as overseeing daytimer WWSR impacted Squier to the point of his "suffering a massive heart attack around 1950." *Voices From The Hills* indicates that this prompted him to scale back at the stations, although he remained "involved in a non-stressful way when he began reading his own poetry on a show called *The Old Squire*." One verse from this nearly three decade-long WDEV series, a regional rhyme called "Chicken Pie Supper," went like this:

Of all the traditions in Vermont—The ones folks know the best—The one that's universal here—In North, South, East, and West—Takes place about October—It has for many years—And folks will travel miles and miles—When chicken pie appears.

### WDEV's New Voices

During the 1950s, others began playing major roles at WDEV. Among them was Craig "Rusty" Parker, who rose from hanging around the Blush Hill transmitter (a pretty electronically impressive installation of glowing tubes, dancing meters, patch cord bays, and master control board) after school to General Manager/part owner. He helped orchestrate WDEV's 1954 studio move to quarters across the street from the original installation, a 1958 daytime power hike from 1 to 5 kilowatts, the 1959 sale of WWSR, and the coverage of national and world-class winter sports from major Vermont skiing venues.

The high energy, high-pitched-voiced Parker was among several personalities happily considered by thousands of loyal audience members permanently entwined with WDEV. No doubt many of this legion felt that a piece of the station vanished when Parker passed away on the air one 1982 morning while he broadcast the 8 a.m. news.

By then, Lloyd Squier had been gone for three years. His radio legacy continued, though, through his son, Ken Squire, who, in 1979, took the CEO reins of WDEV's parent corporation, Radio Vermont, Inc. This changing of the guard contained not a shred of textbook nepotism. As broadcast excellence goes, Ken Squire spent years earning his stripes, and

from the ground up. According to *Voices From The Hills*, he was,

...practically raised at the station [and] began his radio career at age *one* performing children's parts in live dramas at WDEV. He once accidentally knocked the station off the air at the age of 3 while playing with some [transmitter control] buttons. His first official job at WDEV was to take the stamps off [letters sent to the station] so their envelopes could be recycled [during the World War II rationing years].

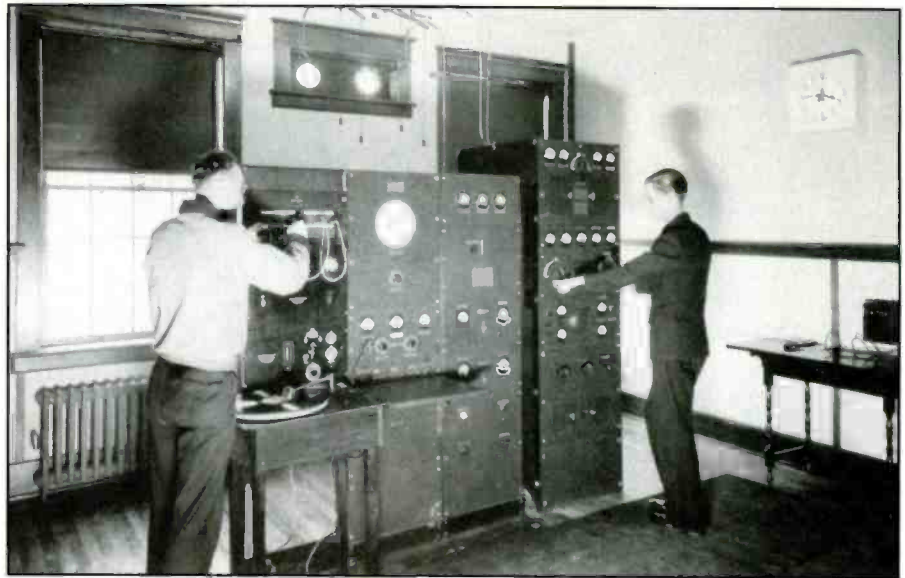
When accompanying his dad to help with remote broadcasts from local fairs and tracks, the younger Squier developed an eye for racing. This led to his trying out his announcer's voice at stock car events while still a teenager. The results were promising enough for more local race-course announcing, as well as subsequent stints at the Daytona mic, and calling the NASCAR auto action for CBS Sports.

It was a far cry from WDEV's pioneering late 1930s "tele-graphic recreations," in which an announcer imaginatively described the plays after being fed details from a colleague on the phone at the gymnasium, of central Vermont area high school basketball. Of Ken Squire's motor sports broadcasting talent, the publicity paper *Exit 10* quoted a fan as exclaiming, Squires "could make a wheelbarrow race sound exciting."

## "Formatics"

On the surface, it may seem that a small state's small-town station that has been airing pretty much the same fare for three-quarters of a century stubbornly stuck itself in a time warp. The truth is, however, that WDEV has embraced only the most enduring elements of radio history: community service broadcasting that seeks to inform and entertain all in its coverage area and the spirit of wholesome fun that imbues many of the station's program offerings.

Those programs include "Music To Go To The Dump By," hosted by Ken Squire and Buster his Wonder Dog; live country music from WDEV's Radio Rangers; the half-hour daily "Trading Post," where folks could get on the air to buy or sell whatever; a birdwatchers program called "For the Birds"; live coverage of opening day at deer camp; Vermont State snowplow and backhoe events; and something dubbed the Intergalactic Winter Croquet Championships. The station also offers lots of traditional sports



*Patch panels and lots of now classic radio gear.*

reporting, as well as conservative and liberal political talk shows.

There's airtime for jazz, too. Over the years, WDEV has been listed in broadcast directories as featuring middle-of-the-road tunes, adult music and news, oldies, adult contemporary, farm-oriented, and "diverse" programming. The latter label is arguably best because, more than anything, the pioneering AM is really an audio snapshot of those it so diligently seeks to serve.

A spring 2006 *Vermont Life* epigraph summed it up nicely, explaining, "...if you listen to WDEV long enough you will get a sense of what your neighbors are doing and thinking...which is a pretty good way not only to define *community* but to keep it alive and well."

## Stepping Out

When, in the 1990s, the FCC opened the doors for conglomerates to invade the radio business, Squier's organization decided to turn the onslaught, which many prescient broadcasters accurately warned would drain radio of much of its trademark localism, into an opportunity to deliver WDEV's local flavor to an even wider audience. Resultantly, his Radio Vermont, Inc., purchased a high-elevation FM (recast as 96.1 WDEV-FM) in Warren, founded another FM (country-formatted WLVB) in Morrisville, and secured low-power FM "translators" to fill in certain main signal gaps.

Actually, Squier's post-WWSR expansion began in swanky Stowe, Vermont, often touted as Mecca by the ski

and tennis set. There, in 1977, he helped a WDEV alumnus, Brian Harwood, put WRFB-FM on the air. This outlet developed its own following with upscale, though somewhat eclectic, programming, but it was sold to a large group owner that offered a purchase price exponentially greater than the WDEV-based associates' original investment.

Happily, however, Harwood and Squier, et al. reacquired this 101.7 spot and transformed it from an "also-ran" station into a 24-hour commercially supported classical facility dubbed WCVT-FM. It's not only a favorite of many highbrow music buffs, but also serves as a soothing soundtrack for countless boutiques and shops in scenic Central Vermont and New York's Lake Champlain Valley. Combined with WDEV AM/FM's diverse fare, WCVT, WLVB, and related translators all serve to genuinely extend Whitehill's, Ricker's, and "The Old Squier's" original friendly public service radio brand.

## Does WDEV Ring A Bell?

Radio station group owner Dennis Jackson is one of many life-long broadcasters who have fond memories of WDEV. As soon as I mentioned the Waterbury facility's calls, he fairly beamed, saying

It is a wonderful station for sure...first listened to them as a kid in 1958 at summer camp way over in Conway, New Hampshire. Years later, when I was on the air at a Burlington AM, I recall WDEV's longtime morning man and general manager, Rusty Parker, also



owned the local funeral parlor of choice, and was, I believe, a Waterbury Selectman. Talk about a jack-of-all-trades! Also, that coming up on the three-tower array from either direction on Interstate 89 is enough to awe the most cynical environmentalist tower-hater.

Used to have on "From the Woodlot," a music show that followed "Music To Go To The Dump By" as I would split wood at home on Saturday mornings in the late '70s, and I also enjoyed the live music show that followed from their big old Stowe Street studio. Adjacent was the control room, with a control board from the 1940s, a vintage Altec "salt-shaker" mic, and those huge RCA turntables in sand-filled bases driven by quarter horse motors that started instantly. Each wore those fat Gray tone arms and GE VR-2 "needle" cartridges. In the next room was a huge record library!

When doing some ad agency work, I once bought airtime from them for a Montpelier client who really wanted to reach hunters in the early weekend mornings. Seems to me WDEV ad rates were much more expensive than the Bare and Montpelier stations. And with all the loyal listeners virtually glued to 550 kilohertz, they were worth it!"

## What About That Radio Hopeful From The Nixon Era?

Ted Rollins never did venture to WDEV during that long-ago week in the 1970s. He'd gone north to hit the Burlington stations, then decided to visit WWSR and its FM in St. Albans (where the DJ with whom he chatted about great radio asked if he'd yet experienced WDEV), as well as Newport's WIKF, the little AM named for President Eisenhower. That made him at least a day behind schedule in getting back to his Delaware college and anxious enough to maintain the speed limit on I-89, even when WDEV's beckoning trio of statue-like towers again came into view.

You might wonder if he did choose radio as a career. The answer is yes, Rollins got several offers from his AM/FM exploration, and two days after graduation started as the overnight jock at a Springfield, Massachusetts, station he'd briefly seen on his way to Vermont. He only worked there for about eight months, though, before heading to a series of nine other Top-40 or adult contemporary outlets, "each only long enough," he admits, "to make another audition tape good enough to go someplace better."

Rollins pursued his dream long enough to net a couple of major market



Ken Squier, circa 1959.

gigs, one on a Boston FM and the other in Minneapolis. Much to his chagrin, but par for the course, both of these outlets changed format while he was there. The Twin Cities job evaporated so fast that he found himself out in the cold for a month before managing to snag something at a Michigan country-formatted AM.

By the late 1980s, as the old TV show, *WKRP in Cincinnati* warned in its opening theme, this trek "town to town, up and down the dial" produced a yearning for something that felt like home. The now 50-something Rollins says he's done okay since then, but in the insurance business rather than broadcasting. Still, from time to time he can't help but wonder how his radio life might have been different had he taken the Waterbury exit and maybe convinced the folks at WDEV that he could be a hard-working, loyal member of their on-air family.

And, I suppose in a small, tangential way, the station did touch his life. This past summer he took his wife, Carole, on a long-promised Vermont vacation where they happened upon an ice cream social being covered by WDEV and commemorating the unique AM's 75 years on the airwaves. While Carole nibbled some complimentary Ben & Jerry's, sipped iced tea, and sat on a blanket enjoying the live music of The Radio Rangers in Waterbury's Rusty Parker Memorial Park, Rollins spent a little time there chatting with people from the station. They gave him some literature covering

WDEV's history. He sent it my way with the request that I tell *Pop'Comm* readers about Vermont's radio treasure that has managed quite nicely to keep up with the times, essentially by staying the same.

If you'd like to check out WDEV's charm for yourself, visit [www.wdevradio.com](http://www.wdevradio.com). For those wondering about the friendly pioneer's early days of live music on the air, there's a CD available from the likes of [www.amazon.com](http://www.amazon.com), titled, *Don Fields and His Pony Boys: Last Sessions and Historic WDEV Broadcasts*. ■

**POWERPORT**  
**RadioWallet travel case**  
 Keep your scanner and it's accessories in one place and protected in this tough, padded case. Big enough for your scanner, extra antenna, batteries and charger. Zippered case comes in two sizes to fit any receiver.

800 206-0115 [www.powerportstore.com](http://www.powerportstore.com)

**ADVANCED SPECIALTIES INC.**  
 Orders/Quotes 1-800-926-9HAM  
[www.advancedspecialties.net](http://www.advancedspecialties.net)

**BIG ONLINE CATALOG** **NEW!**  
 BCD996T  
 6000 Channel Digital Trunking Scanner

**UNIDEN BEARCAT DIGITAL SCANNERS • CB • AMATEUR • RADIOS & ACCESSORIES**  
 ALINCO • YAESU • GALAXY • RANGER • COBRA  
 (201)-VHF-2067

114 Essex Street, Lodi, NJ 07644  
 Closed Sunday & Monday

**FREE SAMPLE COPY!**

**ANTIQUE RADIO CLASSIFIED**

*Antique Radio's Largest-Circulation Monthly Magazine*

Articles - Classifieds - Ads for Parts & Services  
 Also: Early TV, Ham Equip., Books, Telegraph, 40's & 50's Radios and more...  
 Free 20-word ad each month. Don't miss out!

**VISA** 1-Year: \$39.49 (\$57.95 by 1st Class) **MC**  
 6-Month Trial - \$19.95. Foreign - Write.  
 A.R.C., P.O. Box 802-T14, Carlisle, MA 01741  
 Phone: (978) 371-0512; Fax: (978) 371-7129  
 Web: [www.antiqueradio.com](http://www.antiqueradio.com)

## Low Sunspots And World Hotspots

**W**hen sunspots are low, mediumwave DX reception is hot. When the world's political hotspots flare up, the monitoring of long-distance mediumwave signals, satellite television, and Internet streams can be quite intriguing, especially for news junkies. Here's an overview of broadcasting from a couple of the hottest regions to help keep you warm this winter.

### The Latest Dish On Satellite TV

The Middle East is estimated to have the largest concentration of satellite television receivers in the world. At least two thirds of the population gets its news and information from satellite television via free-to-air (FTA) and direct-to-home (DTH) services. From Syria to Yemen, satellite dishes sprout like weeds on rooftops as viewers hunger for information and popular entertainment like soap operas and music videos.

"Damascus, the oldest, continuously inhabited city in the world, is now pockmarked with satellite dishes," reported correspondent Simon Marks in a feature story about Arab media that aired in 2006 on PBS' *The NewsHour with Jim Lehrer*. "They sit on every rooftop, hang from every balcony, and bring previously banned discussion and debate from around the world into virtually every Syrian living room."

The availability of a wide range of broadcasts has indeed become an integral part of the democratization process throughout the Middle East as people become better informed, but not all is well. Satellite television is banned by law in Iran, and although it initially appeared that the government was "overlooking" the spread of satellite dishes, police have lately been enforcing the law by destroying antennas on sight. Religious fundamentalism has been on the rise in Iran, and Western pop culture is considered contrary to fundamental ideals.

Al Jazeera and Al Arabiya are the most popular among the news channels available via satellite. Others include U.S. networks like CNN and MSNBC, plus the Voice of America's Al Hurra TV. Al



Jazeera ([www.aljazeera.net](http://www.aljazeera.net)), Arabic for "The Island," originates from Qatar. It was originally created to be an island for objective unbiased news and information, free of government censorship and political agendas. As a result, this satellite TV news organization has gained worldwide notoriety for its unedited broadcasts of videos provided by various terrorist organizations and Osama Bin Laden, as well as its unvarnished reports from the battlefields of Afghanistan, Iraq, Lebanon, and the Palestinian territories, countering often sterile Western news perspectives.

November of last year marked the 10-year anniversary of Al Jazeera, celebrated with the launch of its first live English news channel. Introduction of the channel was an instant success, reaching double its original target. "This is unprecedented in the broadcasting industry—no other international news channel has launched with such a high number of homes across the world. We will continue to build on this figure after launch and will be looking to expand our reach significantly," said Wadah Khanfar, director general of the network. He continued, "This is another reflection of the strength of Al Jazeera brand."

If the Al Jazeera English news channel isn't yet available on your cable TV system, it can be viewed via broadband Internet at Virtual Digital Cable

([www.vdc.com](http://www.vdc.com)) or on the Al Jazeera website.

While Al Jazeera remains a worldwide news leader, relative newcomer Al Arabiya TV ([www.alarabiya.net](http://www.alarabiya.net)) took over the top position in the ratings among Middle Eastern viewers last year. A more balanced, less offensive approach to news reporting by Al Arabiya has contributed to its success. Launched in 2003, the Al Arabiya mission has remained intact as a source of truthful news reporting that doesn't insult the intelligence of its worldwide Arab audience. Al Arabiya originates from Dubai, Saudi Arabia, and is available worldwide via FTA satellite. Its most popular news programs include "From Iraq," featuring uncensored images and reports about living with war, and "Across the Ocean," an ongoing discussion about U.S. policy and how it affects the Arab world.

Realizing the potential of broadcast media via terrestrial, satellite, and Internet venues, terrorist organizations are launching their own outlets. There are literally hundreds of Internet domain names reserved by such organizations, which are under a constant state of flux as government agencies work aggressively to block access and shutdown sites. Perhaps the most successful was Al Manar TV ([www.almanar.com.lb](http://www.almanar.com.lb)), the broadcast voice of Hezbollah located in Lebanon. Its website has been down since



---

Israel bombed the Beirut studios last year, but Al Manar is now reported to be back on the air via terrestrial transmissions.

Following in the footsteps of Al Manar, Hamas now aspires to enter the world broadcast arena from the Palestine territories.

## U.S. Broadcasting In The Middle East And Southeast Asia

---

The International Broadcasting Bureau (IBB), which operates the Voice of America, maintains several radio networks in the Middle East and Southeast Asia, all funded by the Broadcasting Board of Governors (BBG) through the U.S. Congress. The BBG is an independent and autonomous federal agency responsible for all U.S. government-sponsored non-military international broadcasting, self-described as a “fire-wall” to protect journalistic integrity from political interference.

While some may argue over how well the IBB is insulated from the influence of Washington D.C. politics, and others debate taxpayer support, the broadcast media is without doubt a critical component toward democratization of the region and U.S. involvement is therefore deemed crucial.

Radio Sawa ([www.radiosawa.com](http://www.radiosawa.com)), Arabic for “Together,” is the primary IBB service to the Middle East, broadcasting up to six separate network feeds to Egypt, the Gulf Region, Iraq, the Levant, Morocco, and Sudan-Yemen, all available in streaming audio. Most over-the-air broadcasts are via local FM transmitters. There are three AM mediumwave outlets, but no shortwave. Egypt-Levant is broadcast on 990, Sudan-Yemen on 1431, and Iraq and the Gulf on 1548 kHz. The powerful signals on 1431 and 1548, both 600 kW, are received regularly along the east coast of North America. Programming consists of Western and Middle Eastern popular music with announcements and hourly news in Arabic.

Radio Farda ([www.radiofarda.com](http://www.radiofarda.com)), pronounced Far-DAH with the emphasis on the last syllable, is the IBB Farsi/Persian language broadcast with a popular music format similar to Radio Sawa, but aimed specifically toward Iran. Farda means “Tomorrow” in Persian. In addition to FM and one powerful AM signal, Radio Farda broadcasts on several shortwave frequencies.

Located in the United Arab Emirates, and with only 400 kW of power, the Radio Farda AM station is among the most solidly received by DXers in North America because of its split frequency on 1575 kHz, essentially a clear channel between local 1560 and 1570 frequencies. However, reception in Iran is reported to be difficult due to government jamming. In fact reception of all IBB signals is limited by competing radio stations that occupy most frequencies inside Iran, broadcasting the domestic Radio Sarasary and the international Voice of the Islamic Republic of Iran (VOIRI) programs and preventing reception of external signals. The Iran government also blocks access to the Radio Farda website.

Radio Dunyaa ([www.voanews.com/aapkidunyaa](http://www.voanews.com/aapkidunyaa)) is the IBB Urdu language service with programming aimed toward Pakistan and northeast India. Dunyaa, which means “World” in Urdu, has its primary mediumwave outlet on 972 kHz with 1000 kW of power from Tajikistan. Radio Dunyaa is also broadcast in major cities across Pakistan via the FM 101 network, and also on several shortwave frequencies. Programming features a mix of Pakistani, Indian, and U.S. popular music with hourly news updates and periodic in-depth analysis.

Radio Ashna ([www.voanews.com/dari](http://www.voanews.com/dari)) is the IBB Dari and Pashto language broadcast to Afghanistan. Ashna means

“Friend” in Dari. Transmissions are via 1296 kHz with 400 kW from Kabul, 100.5 FM in major cities across Afghanistan, and to the world over several shortwave frequencies. Programming is similar in format to its Radio Farda and Sawa counterparts, in addition to locally produced listener call-in talk shows.

Al Hurra ([www.alhurra.com](http://www.alhurra.com)), Arabic for “The Free One,” is the IBB satellite TV channel. Al Hurra TV features news and information, as well as sports and entertainment programs, designed to provide an alternative window to the world for Middle Eastern viewers.

## BBC TV Relaunch

---

BBC Arabic TV is scheduled to launch later this year. This is the second attempt by the BBC to provide television programming for a Middle East audience. The first entry in 1994 failed after just a couple of years, likely due in large part to various government restrictions as well as what the BBC reports as editorial issues with its partner in the endeavor, the Saudi-owned Orbit company. Former staffers were later recruited by Al Jazeera during its inception. In a BBC news report, BBC World Service Director Nigel Chapman indicated that a “strong demand” now exists for an Arabic TV service in the Middle East from a trusted news organization like the BBC.

## The Missing Link

---

Link TV ([www.linktv.org](http://www.linktv.org)) presents an interesting alternative to the self-monitoring of reports from Mideast sources. Link TV does all the work for you with “Mosaic: World News from the Middle East,” a daily compilation of Middle Eastern television reports. A recent Mosaic episode featured reports from Iraqiya TV, IBA TV (Israel), Al Alam TV (Iran), Islamic Republic of Iran Broadcasting, Syria TV, Abu Dhabi TV (United Arab Emirates), and Al Jazeera. News reports are unedited and, when necessary, translated into English.

Part of the Link TV mission is to provide viewers with a global perspective absent the U.S.-centric bias typical of domestic news reports. Link TV is available via DirecTV and Dish Network DTH satellite services, or the Link TV website.

## Miami Heat

---

The cold war between Cuba and the United States is as hot as ever, especially over the airwaves. The latest evidence of this can be received on 530 kHz, where U.S. PsyOps began airborne Commando Solo broadcasts of Radio Martí via EC-130 flyovers from Florida. Radio Martí ([www.martinoticias.com](http://www.martinoticias.com)) is the IBB service aimed toward Cuba. It's a remnant of the cold war against the Soviet Union and communism and is named after revolutionary folk hero José Martí, a prominent leader in Cuba's fight for independence from Spain at the beginning of the 20th Century.

Radio Martí continues to broadcast programs in Spanish for Cuban listeners, although both medium and shortwave transmissions are subject to bubble jamming and co-channel interference by Cuba. Its mission is to offer listeners a balanced perspective without government censorship. “en total contraste con los medios cubanos”—in contrast to Cuban media. The PsyOps EC-130 also hosts TV Martí transmissions to Cuba.

Now back to the 530 kHz story. After the U.S. PsyOps instituted the airborne broadcasts of Radio Martí programs on the frequency last year, Cuba retaliated with new transmissions of



*A light winter blanket of snow isn't enough to hide a growing crop of satellite dishes on Syrian rooftops.*

Radio Cadena Habana powerful enough not only to block reception of Radio Martí, but capable of overpowering the 100-kW signal of Radio Visión Cristiana from the Turks & Caicos Islands. This is the latest example of an ongoing radio war between Cuba and the United States over the AM broadcast band. The original 100-kW Radio Martí signal, on 1180 kHz from a transmitter located at Marathon Key, Florida, is blocked by a powerful Radio Rebelde station near Havana and additional lower power signals. Cuban interference on 1180 is experienced by listeners as far away as upstate New York where nighttime reception of WHAM Rochester has been compromised.

Not only are Radio Martí broadcasts subject to interference, but U.S. commercial broadcasters on other frequencies must combat a Cuban cacophony of signals, most notably in Florida. As a result, the FCC has issued Special Temporary Authority (STA) to radio stations for increased power to overcome harmful Cuban interference. For instance, 610 WIOD Miami operates with 10 kW of power per an STA, double its licensed 5 kW.

Over the years, some radio stations have been licensed to increase power permanently. For example, 740 WQTM Orlando, at one time only licensed to transmit with 1 kW nights, now boasts a full 50 kW of power. Most recently the FCC issued a construction permit for 690 WOKV Jacksonville to increase night power from 10 kW to 25 kW.

Consult the March 2006 issue of *Pop'Comm* for the "Broadcast Technology" list and map of major Cuban network stations, or Google search "BAMLog" and select

"Todopoderosos." For a complete list of Cuban radio stations, plus detailed listings of Middle Eastern radio and TV outlets, the *2007 World Radio TV Handbook* is the most comprehensive reference available.

## The Heat Is On

Of course Cuba and the Middle East aren't the only world hotspots. Keep your ears and eyes wide open for developing conflicts involving the Colombia drug cartels, North Korea nuclear testing, the Sudan Darfur crisis, the Thailand coup, and the Venezuela relationship with Cuba, just to name a few active hotspots. Let us know what you hear.

## Broadcast Loggings

Mediumwave reception has been nothing less than outstanding, courtesy of the current sunspot minimum. Some world hotspots are featured in this month's selected logs. All times are UTC.

**530 Radio Cadena Habana, Cuba**, at 0210 an excellent signal, over Radio Visión Cristiana-Turks & Caicos, and CIAO Ontario; Roberta Flack "Killing Me Softly," time check with ID, then talk about "cultura habana" and salsa, parallel 1100 kHz. (Conti-NH)

**531 4KZ Innisfail, Australia**, a very nice friendly note and QSL card in 21 days for CD report, signed Al Kirton-GM. Address: Coastal Broadcasters Pty. Ltd, PO Box 19, Innisfail, Qld 4860, Australia. Mentioned running non-directional 7 kW days, 3 kW nights, after cyclone destroyed one of their towers. Also sent coasters, stickers, and info sheet on Coastal Broadcasters. I am really pleased with this after trying over 27 years to log it. Australian QSL #225. (Martin-OR)

**640 Radio Progreso, Cuba**, at 0545 Cuban tropical music, network ID. Good, over/under KFI Los Angeles. New log. (Wood-HI)

**702 VOIRI Rasht, Iran**, at 0030 a good signal; choral national anthem, then Koranic recitations. (Conti-NH)

**730 WVFN East Lansing, Michigan**, at 2305 sports news and information, spot for high school football playoffs, "Sportsradio 730, WVFN." Decent signal in the evening static. (New-GA)

**730 HJCU Radio Lider, Bogotá, Colombia**, at 0125 heard "Radio Lider...Colombia" ID and talk in Spanish, popped up while working unidentified gospel and country music stations, CKAC Montreal nulled out. (Conti-NH)

**730 CMBB Radio Progreso, Nueva Gerona, Cuba**, at 0150 on top now; Monchy y Alexandra duet parallel a strong 640 kHz signal. (Conti-NH)

**760 KFMB San Diego, California**, at 0430 break from "Jerry Doyle Show" for ID, "760 KFMB San Diego," into network news. (Barton-AZ)

**840 CMHW Doblebé, Santa Clara, Cuba**, at 0225 good in WHAS Kentucky null; Spanish pop music, "Desde Santa Clara...;Qué Doblebé!" and telephone talk. (Conti-NH)

**882 BSKSA Dammam, Saudi Arabia**, at 1503 Arabic news by a man, in progress. Quite good. (Wood-HI) Great Circle distance 8851 miles. Nice catch!

**972 Radio Dunyaa, Orzu, Tajikistan**, at 1442 ID, "Voice of America, Radio Aap ki Dunyaa," and news in Urdu, often referring to Bharat (India), Pakistan, and Afghanistan. Gave address as [www.voa.us](http://www.voa.us). Discussed students, graduation, men-



tioned Taliban, ID, "Washington, Radio Dunyaa." 1524, man and woman discussing education and employment of Pakistanis in U.S. (Wood-HI)

**1110 YVQT Carúpano, Venezuela,** at 0300 fading in and out of nulled WBT North Carolina; "En Venezuela..." time check into nostalgia, sounded like a Radio Venezuela time check, then heard at 0310, "Esta es Venezuela Carúpano" ID. (Conti-NH)

**1320 KCTC Sacramento, California,** at 0450 with Air America, over KFNZ Salt Lake City, which previously had been alone on the frequency carrying sports. (Barton-AZ)

**1431 Radio Sawa, Arta, Djibouti,** at 2135 Sawa ID, then a male Arabic vocal; good. (Connelly-MA)

**1480 WABB Mobile, Alabama,** at 0400 Jerry Doyle talkshow, ID into CNN news, "What'd you say your call letters were? WABB Mobile." Fair signal on top the mix with slight fades. (New-GA)

**1503 IRIB Sarasary, Bushehr, Iran,** at 2359 with Koran; good, over Spain. (Connelly-MA)

**1521 BSKSA Duba, Saudi Arabia,** at 0310 an excellent signal, het wiping out 1520 WWKB Buffalo; woman in Arabic. (Conti-NH) At 2112 a live performance with male Arabic vocal, strings, flute, and percussion; local-like. (Connelly-MA)

**1548 Radio Sawa, Kuwait City, Kuwait,** at 0007 "Kiss Me" by Sixpence None the Richer, then Sawa ID; over two UK stations. (Connelly-MA)

**1550 RASD Tindouf, Algeria,** at 2330 clandestine broadcast parallel 7425 with "tribal" vocal music and droning strings; fair over CBE Ontario and others. (Connelly-MA)

**1570 XERF Ciudad Acuña, Mexico,** at 0400 with local issues, back to music, and bottom of the hour commercial spots, slogan as "Radio Frontera" or "La Frontera." (Barton-AZ)

**1575 Radio Farda, Al Dhabiya, United Arab Emirates,** at 0240 good on peaks with excerpts of President Bush's speeches on terror with explanations, "Radio Farda" IDs by a woman. (Hayes-PA) At 2121 Mideast rock music; good signal. (Connelly-MA)

**1670 KNRO Redding, California,** at 0100 with ESPN and sports play-by-play. Break at six past the hour for local spots and ID. (Barton-AZ)

Thanks to fellow broadcast DXers Rick Barton, Mark Connelly, WA1ION, Harry Hayes, Patrick Martin, Bert New, and Richard Wood. Till next time, 73 and good DX!

## Popular Communications February 2007 Survey Questions

### I regularly listen to AM radio for news or entertainment.

Yes ..... 1  
No ..... 2

### The main reason I like AM radio is (mark all that are appropriate):

I've always listened to my local/regional AM station;  
it's a part of my routine..... 3  
It's more informative than FM music stations..... 4  
I like my local AM radio personalities..... 5  
Where I live, AM reception is better than FM..... 6  
I'm an AM DXer, so naturally like to listen casually when I'm not DXing... 7  
I have friends that work at my local AM station..... 8  
I work at an AM station..... 9

### The main reason I don't like AM radio is (mark all that are appropriate):

I can't receive local AM as well as I do FM..... 10  
There's too much static and noise..... 11  
The AM stations all sound the same..... 12  
It's not very informative..... 13  
There's just too much network-type programming..... 14

### I listen to AM radio mostly:

Early morning before going to work..... 15  
On the way to work in my vehicle..... 16  
At work - on a radio..... 17  
At work - on my computer..... 18  
All day at home..... 19  
When I'm outside in the yard..... 20  
When I'm working in the garage..... 21  
At my "shack" at night, DXing for at least an hour..... 22  
At my "shack" at night, DXing for two or more hours..... 23  
In my vehicle, DXing while driving..... 24  
While exercising at the gym..... 25

### I've recently (the past six months) purchased an item or service after hearing an ad on AM radio:

Yes ..... 26  
No ..... 27

### At home, my main AM DX receiver is a:

Dedicated AM/FM receiver such as a Sangean or GE portable..... 28  
Wideband communications receiver..... 29  
Classic AM radio from the '60s..... 30  
Antique AM console that also has shortwave coverage..... 31  
Antique tabletop AM radio..... 32  
A homebuilt AM receiver..... 33

### I think AM radio is (mark all that are appropriate):

Here for the long haul..... 34  
Being replaced by satellite and Internet radio..... 35  
Unchanged from the past 10 years..... 36  
The same across the entire broadcast band..... 37

## What Goes Around Comes Around

If you've been following this column over the last year or so, you know that the current Solar Cycle, number 23 since these cycles have been officially recorded, has been winding down. Most likely, we can now say that number 23 is over, and the new cycle, Solar Cycle 24, has begun.

A Solar Cycle lasts on average about 11 years, from a point of least solar activity, through the period when the sun is very active, and finally to the point where solar activity is again at its lowest. The way solar activity is recorded is by counting the daily sunspots that can be observed. The daily counts are averaged for each month. These monthly numbers are used to determine the solar cycle progression.

When the daily sunspot count is plotted over a month's time, the graph displays a wide range between high counts and low counts. Averaging daily sunspot numbers over a month results in the monthly average sunspot number. When these are plotted over a longer period, the graph displays again quite a range between high and low counts. A smoother plot is desired. To get that, solar observers use a more averaged, or smoothed, calculation. By using these nicely smoothed plots, the rise and fall of solar cycles can easily be seen.

The so-called "smoothed sunspot number" (SSN) is calculated across five and a half months of data before and after a desired month, plus the data for the desired month. The amount of smoothing leaves the official SSN a half year behind the current month, which is why I report two "sunspot counts" in this column: the monthly observed count, and the smoothed count.

### Solar Cycle 24 And Solar Cycle 25

Solar scientists are working hard to discover the complex workings of our sun. They do this for many reasons, including our need to understand the affect of the sun on our weather and to better protect our space assets like satellites and space stations. We radio hobbyists benefit from this research, because we know that the sun influences the propagation of radio waves.

In the last few years, solar researchers have been able to refine models of the sun and are using these newer models to predict the possible solar activity during Solar Cycle 24. One of these models is called the Sun's Conveyor Belt. The Sun's Conveyor Belt has slowed to a record-low crawl, according to research by

### The Ap Index And Understanding Propagation Terminology

The Ap index, or Planetary A index, is a 24-hour averaging of the Planetary K index. The Planetary K index is an averaging of worldwide readings of Earth's geomagnetic field. High indices ( $K_p > 5$  or  $A_p > 20$ ) mean stormy conditions with an active geomagnetic field. The more active, the more unstable propagation is, with possible periods of total propagation fade-out. Especially around the higher latitudes and especially at the Polar Regions, where the geomagnetic field is weak, propagation may disappear completely. Extreme high indices may result in aurora propagation, with strongly degraded long distance propagation at all latitudes. Low indices result in relatively good propagation, especially noticeable around the higher latitudes, when transpolar paths may open up. Maximum K-index is 9, and the A-index can exceed well over 100 during very severe storm conditions, with no maximum.

Classification of A-indices is as follows:

A0-A7 = quiet	A30-A49 = minor storm
A8-A15 = unsettled	A50-A99 = major storm
A16-A29 = active	A100-A400 = severe storm

**Solar Flux (SFI):** This flux number is obtained from the amount of radiation on the 10.7-cm band (2800 MHz). It is closely related to the amount of ultraviolet radiation, which is needed to create the ionosphere. Solar Flux readings are more descriptive of daily conditions than the Sunspot Number. The higher the Solar Flux (and, therefore, the higher the Sunspot Number), the stronger the ionosphere becomes, supporting refraction of higher frequencies.

**Ionosphere:** A collection of ionized particles and electrons in the uppermost portion of the Earth's atmosphere, which is formed by the interaction of the solar wind with the very thin air particles that have escaped Earth's gravity. These ions are responsible for the reflection or bending of radio waves occurring between certain critical frequencies, with these critical frequencies varying with the degree of

ionization. As a result, radio waves having frequencies higher than the Lowest Usable Frequency (LUF) but lower than the Maximum Usable Frequency (MUF) are propagated over large distances.

**Smoothed Sunspot Number (SSN):** Sunspots are magnetic regions on the Sun with magnetic field strengths thousands of times stronger than the Earth's magnetic field. Sunspots appear as dark spots on the surface of the Sun. Temperatures in the dark centers of sunspots drop to about 3700° K (compared to 5700° K for the surrounding photosphere). This difference in temperatures makes the spots appear darker than elsewhere. Sunspots typically last for several days, although very large ones may last for several weeks. They are seen to rotate around the sun, since they are on the surface, and the sun rotates fully every 27.5 days.

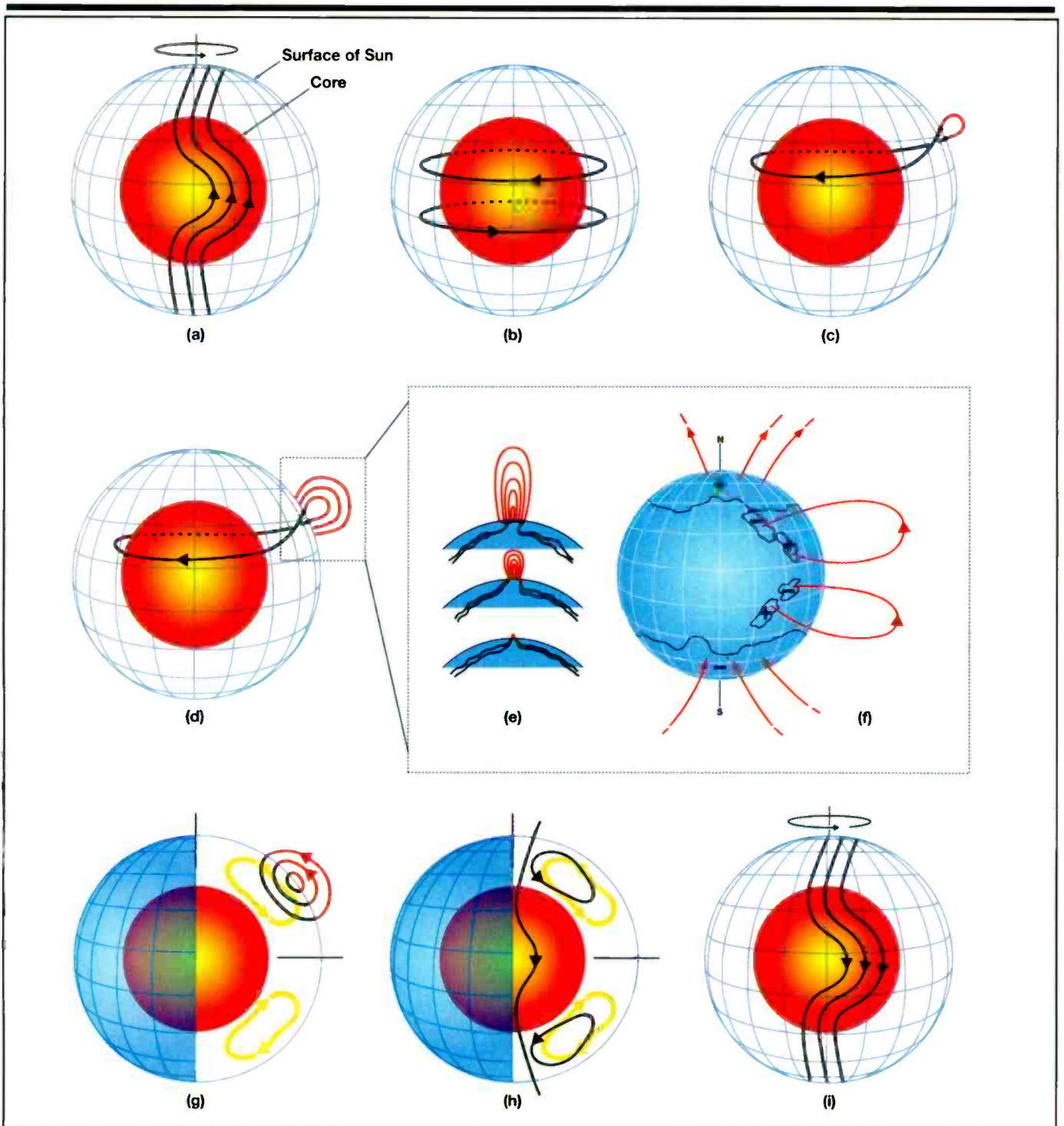
Sunspots usually occur in a group, with two sets of spots. One set will have positive or north magnetic field while the other set will have negative or south magnetic field. The field is strongest in the darker parts of the sunspots (called the "umbra"). The field is weaker and more horizontal in the lighter part (the "penumbra").

Galileo made the first European observations of sunspots in 1610. The Chinese and many other early civilizations have records of sunspots. Daily observations were started at the Zurich Observatory in 1749; continuous observations were begun in 1849.

The sunspot number is calculated by first counting the number of sunspot groups and then the number of individual sunspots. The "sunspot number" is then given by the sum of the number of individual sunspots and 10 times the number of groups. Since most sunspot groups have, on average, about 10 spots, this formula for counting sunspots gives reliable numbers even when the observing conditions are less than ideal and small spots are hard to see. Monthly averages (updated monthly) of the sunspot numbers show that the number of sunspots visible on the sun waxes and wanes with an approximate 11-year cycle.

For more information, see <http://prop.hfradio.org>.





Physical process in the flux-transport dynamo that simulates and predicts solar cycles. The red inner sphere represents the sun's radiative core and the blue mesh represents the solar surface. In between is the solar convection zone where the dynamo resides. This image has three rows of three slides each, starting with slide "a" and ending with slide "i."

(a) Shearing of the poloidal field by the sun's differential rotation near the bottom of the convection zone. The sun rotates faster at the equator than at the pole.

(b) Toroidal field produced due to this shearing by the differential rotation.

(c) When the toroidal field is strong enough, buoyant loops rise to the surface, twisting as they rise due to rotational influence. Sunspots (two black dots) are formed from these loops.

(d, e, f) Additional flux emerges (d, e) and spreads (f) in latitude and longitude from decaying sunspots.

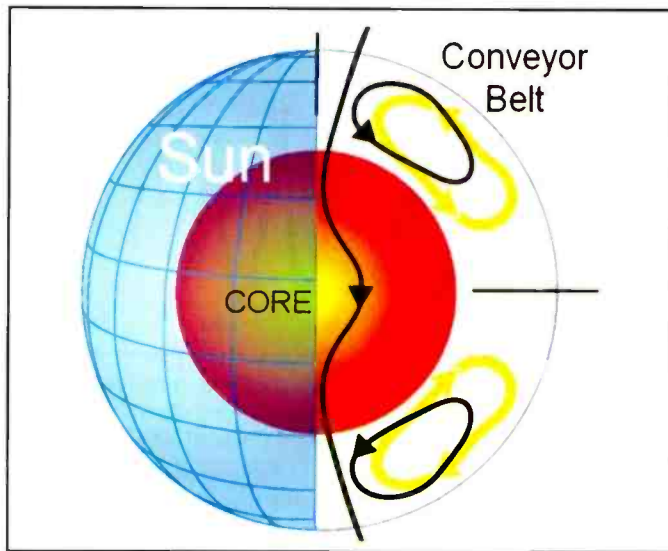
(g) Meridional flow (yellow circulation and arrows) carries surface magnetic flux toward the poles, causing the polar fields to reverse.

(h) Some of this flux is then transported downward to the bottom and towards the equator. Those poloidal fields have the opposite polarity to those at the beginning of the sequence, in frame (a).

(i) This reversed poloidal flux is then sheared again near the bottom by the differential rotation to produce the new toroidal field opposite in sign to that shown in (b).







The sun's Conveyor Belt model of sunspot cycle activity. (Source: NASA)

NASA solar physicist David Hathaway. "It's off the bottom of the charts," he says. "This has important repercussions for future solar activity."

The Great Conveyor Belt is a massive circulating current of hot plasma within the sun. It has two branches, north and south, each taking about 40 years to perform one complete circuit. With this model, the turning of the convection belt controls the sunspot cycle, and that's why the slowdown is important.

"Normally, the conveyor belt moves about 1 meter per second—walking pace," says Hathaway. "That's how it has been since the late 19th century." In recent years, however, the belt has decelerated to 0.75 meters per second in the north and 0.35 meters per second in the south. "We've never seen speeds so low."

According to theory and observation, the speed of the belt foretells the intensity of sunspot activity roughly 20 years in the future. A slow belt means that solar activity will be lower, while a fast belt means stronger activity is ahead.

"The slowdown we see now means that Solar Cycle 25, peaking around the year 2022, could be one of the weakest in centuries," says Hathaway. However, Solar Cycle 24 is being hailed as possibly the strongest cycle since the 1950s. The next sunspot cycle will be 30 to 50 percent stronger than Solar Cycle 23, and it may begin as much as a year late (by the end of 2007). The last two cycles, 22 and 23, were moderate cycles. However, Cycle 24 should be quite a bit more exciting than Cycle 23.

A team of scientists at the National Center for Atmospheric Research (NCAR) has predicted that Cycle 24, peaking in 2011 or 2012, will be intense. These scientists have confidence in the forecast because, in a series of test runs, the newly developed model simulated the strength of the past eight solar cycles with more than 98 percent accuracy. The forecasts are generated, in part, by tracking the subsurface movements of the sunspot remnants of the previous two solar cycles (the conveyor belt).

The NCAR team's computer model, known as the Predictive Flux-transport Dynamo Model, draws on research by NCAR scientists indicating that the evolution of sunspots is caused by a current of plasma, or electrified gas, that circulates between the sun's equator and its poles over a period of 17 to 22 years. This current acts like a conveyor belt of sunspots.

"Our model has demonstrated the necessary skill to be used as a forecasting tool," says NCAR physicist Mausumi Dikpati,

the leader of the forecast team at NCAR's High Altitude Observatory that also includes Peter Gilman and Giuliana de Toma. David Hathaway agrees: "Cycle 24 will be strong. Cycle 25 will be weak. Both of these predictions are based on the observed behavior of the conveyor belt. "This means that radio hobbyists are in for quite a treat in the next eight years. As the cycle develops, "tune in" to this column for all the details.

How do you observe a belt that plunges deep below the surface of the sun? "We do it using sunspots," Hathaway explains. Sunspots are magnetic knots that bubble up from the base of the conveyor belt, eventually popping through the surface of the sun. Observers of the sun have long known that sunspots have a tendency to drift. Sunspots move from mid solar latitudes toward the sun's equator. According to this current conveyor belt model, this drift is caused by the motion of the conveyor belt. "By measuring the drift of sunspot groups," says Hathaway, "we indirectly measure the speed of the belt."

The sunspot process begins with tightly concentrated magnetic field lines in the solar convection zone (the outermost layer of the sun's interior). The field lines rise to the surface at low latitudes and form bipolar sunspots, which are regions of concentrated magnetic fields. When these sunspots finally die, they imprint the moving plasma with a type of magnetic signature.

Two major plasma flows govern the cycle. The first acts like (you guessed it) a conveyor belt. Deep beneath the surface, plasma flows from the poles to the equator. At the equator, the plasma rises and flows back to the poles, where it sinks and repeats. As the plasma nears the poles, it sinks about 200,000 kilometers (124,000 miles) back into the convection zone and starts returning toward the equator at a speed of about three feet per second or slower. The increasingly concentrated fields become stretched and twisted by the internal rotation of the sun as they near the equator, gradually becoming less stable than the surrounding plasma. This eventually causes coiled-up magnetic field lines to rise up, tear through the sun's surface, and create new sunspots.

The second flow acts like a taffy pull. The surface layer of the sun rotates faster at the equator than it does near the poles. Since the large-scale solar magnetic field crosses the equator as it goes from pole to pole, it gets wrapped around the equator, over and over again, by the faster rotation there. This is what periodically concentrates the solar magnetic field, leading to peaks in solar storm activity.

"Precise helioseismic observations of the 'conveyor belt' flow speed by the Michelson Doppler Imager (MDI) instrument on board the Solar and Heliospheric Observatory (SOHO) gave us a breakthrough," Dikpati said. "We now know it takes two cycles to fill half the belt with magnetic field and another two cycles to fill the other half. Because of this, the next solar cycle depends on characteristics from as far back as 40 years previously—the sun has a magnetic 'memory.'"

The magnetic data input comes from the SOHO/MDI instrument and historical records. Computer analysis of the past eight years' magnetic data matched actual observations over the last 80 years. The team added magnetic data and ran the model ahead 10 years to get their prediction for the next cycle. The sun is in the quiet period for the current cycle (Cycle 23).

The subsurface plasma flow used in the Conveyor Belt model has been verified with the relatively new technique of *helioseismology*, based on observations from both National Science Foundation—and NASA—supported instruments. This technique tracks sound waves reverberating inside the sun to reveal details about the interior, much as a doctor might use an ultrasound to see inside a patient.

Using historical sunspot records, Hathaway has succeeded in clocking the conveyor belt as far back as 1890. The numbers are compelling: For more than a century, "the speed of the belt has been a good predictor of future solar activity." Using this and the conveyor belt model, we would expect that Cycle 24 will be a great cycle for radio, while Cycle 25 might be dismal. Solar Cycle 25 in 2022 could be, like the belt itself, "off the bottom of the charts."

In the meantime, we have Solar Cycle 24 to enjoy, and it's likely that we'll have plenty to keep us busy if the forecast of high solar activity holds true.

## Solar Cycles And Radio

The sun is always emitting electromagnetic radiation as well as spewing out vast amounts of plasma. Its electromagnetic radiation occurs at many wavelengths, a number of which ionize particular regions of the Earth's atmosphere (the group of regions known as the ionosphere). Hard X-rays (1 to 10 angstroms in wavelength) ionize the *D* region, the lowest (or closest to the Earth) region of the ionosphere. Soft X-rays (10 to 100 angstroms in wavelength) ionize the *E* region (where sporadic-*E* and aurora-*E* propagation occurs), while ultraviolet light (100 to 1000 angstroms) ionizes the *F* regions (these regions are most useful for world-wide propagation of shortwave frequencies).

An angstrom is the unit of measurement, equal to one hundred-millionth of a centimeter, used by astronomers to measure wavelength (typically of electromagnetic radiation and light). The length of an electromagnetic wave (a wavelength) is the distance between its peaks. We use this wavelength to define the energy of the radiation. Using such units makes it easier for us to refer to measurements of light radiation, because it allows us to avoid using lots of zeroes.

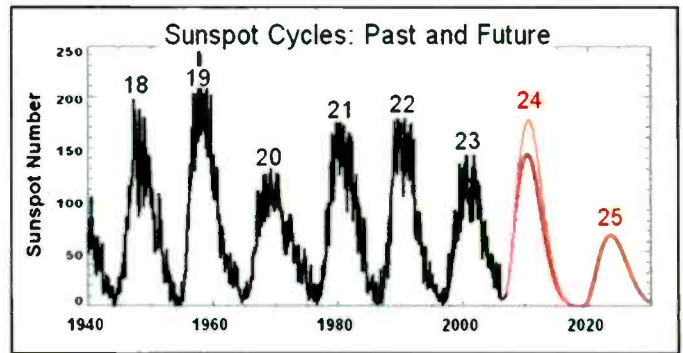
Visible light covers the range from 4,000 to 8,000 angstroms. By comparison, a page from this magazine is approximately 1,000,000 angstroms thick. When the sun is barely active, like it is right now since we are at the very end of Solar Cycle 23 (or at the very beginning of Solar Cycle 24), a meager amount of solar radiation is produced. This results in the ionosphere being energized at a much lower level than during the peak years of a solar cycle.

During the peak solar activity, however, the solar radiation is so intense that it can over-energize the ionosphere and cause radio blackouts on the entire shortwave radio spectrum. Of course, that's the most intense possibility during the peak of a solar cycle. Most of the time during this solar maximum, the radio spectrum is useful for worldwide communications, because the ionosphere is highly energized.

When electromagnetic radiation from the sun strips an electron off a neutral constituent in our atmosphere, the resulting electron can spiral along a magnetic field line. Thus the condition of the ionosphere depends on the state of Earth's magnetic field. This is important because Earth's magnetic field plays a big part in the propagation of radio signals around our planet. Generally an *A* index at or below 15, or a *K* index at or below 3, is best for propagation.

## HF Propagation

Let's look at this month's solar activity and the resulting radio propagation environment. We're starting to approach the end of the winter season. The period of darkness is growing shorter, causing the average daily maximum usable frequencies (MUFs)



*In red, David Hathaway's predictions for the next two solar cycles and, in pink, Mausumi Dikpati's prediction for Cycle 24. (Source: David Hathaway/Mausumi Dikpati/NASA)*

to rise a bit, but noise levels are still low, making for reliable DX. The solar activity is moderate and holds enough energy to keep the mid-HF spectrum alive with signals. General conditions are expected to be good to excellent for HF propagation throughout February.

Nineteen meters through 15 meters will open shortly after sunrise, and will remain open until early to late evening. Morning and evening DX openings between some areas in the Northern Hemisphere on these bands are very short, because the band in question closes on one end of the path before it opens on the opposite end. Transequatorial propagation on these bands will be more likely toward sunset during days of high solar flux and disturbed geomagnetic fields. Look for days with planetary *A* (*Ap*) index greater than 15, or a planetary *K* (*Kp*) index greater than 3.

Paths on 31 through 22 meters remain in their seasonal peak, much as they were in January, but with longer openings. Continue to look for great openings between North America and Europe in the morning and between North America and Asia during the late afternoon hours. Twenty-two meters will often be the best daytime DX band, with 31 and 25 running close seconds.

Ninety through 41 meters will be useful almost 24 hours a day. Daytime conditions will resemble those of 25 meters, but skip and signal strength may decrease during midday on days with high solar flux values. Nighttime will be good except after days of very high MUF conditions. Generally, the usable distance is expected to be somewhat greater on the higher of these bands than it will be on 90. DX activity tends to increase later in the evening toward midnight. Look for Africa and South Pacific (Australia, Papua New Guinea, and so on) on 90 through 60 meters throughout the night. On 41, 49 and 60 meters, long path DX is possible along the gray line.

The 120-meter band continues to remain stable, with very low noise levels. Throughout the winter season, high noise may occur during regional snowstorms. The band opens just before sunset and lasts until the sun comes up on the path of interest. Except for daytime short-skip signal strengths, high solar activity has little impact. Continue to look for Europe and Africa around sunset until the middle of the night, and then Asia, the Pacific, and the South Pacific as morning approaches.

Signals below 120 meters will remain strong and exciting, except during times of regional storms and high geomagnetic activity. Mediumwave DX is still quite hot throughout February.

## VHF And Above

There are no major meteor showers during February that could provide any VHF meteor scatter propagation, but other



modes may be possible. Check for 6-meter short-skip openings during the daylight hours. Some short-skip openings over distances of about 1,200 to 2,300 miles may occur. The best times for such openings are during the afternoon hours.

Auroral activity often occurs during periods of radio storminess on the HF bands. Look for days when the Ap index is climbing and when the Kp index reaches 4 or higher. These are the days on which VHF auroral-type openings are most likely to occur.

## Current Cycle 23 Progress

The Royal Observatory of Belgium reports that the monthly mean observed sunspot number for October 2006 is 10.4, down from September's 14.5 and 12.9 for August. However, this is not the lowest monthly figure during the decline of this solar cycle. Already during 2006, we observed a monthly mean sunspot number of 5.3 for February. The lowest daily sunspot value recorded was zero (0), on October 11 through October 18, October 26, and October 29. Clearly, activity is quickly diminishing the closer we get to the end of Cycle 23.

The highest daily sunspot count was 27 on October 23. The 12-month running smoothed sunspot number centered on April 2006 is 17.1, not even a full point less than the 17.1 figure from March. A smoothed sunspot count of 7, give or take about 7 points lower to 12 points higher, is expected for February 2007.

The Dominion Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-centimeter observed monthly mean solar flux of 74.3 for October 2006, down from 77.8 for September 2006. The 12-month smoothed 10.7-centimeter flux centered on April 2006 is 80.9. The predicted smoothed 10.7-centimeter solar flux for February 2007 is 70, give or take about 14 points.

The observed monthly mean Ap index for October 2006 is 7. The 12-month smoothed Ap index centered on April 2006 is 7.9. Expect the overall geomagnetic activity to vary greatly between quiet to active during most days in February.

## I'd Like To Hear From You

You can join in with others in discussing space weather, propagation, and LF, MW, shortwave or VHF listening, at <http://hfradio.org/forums/>.

Some of you may have noticed that my website was down for over a month, from the end of October through November. This was caused by a series of issues all happening at the same time! First, it appeared that the server hardware was overheating. Second, it appeared that a hacker broke into the server and was using it for illegal activity. Third, I decided to upgrade the entire server, hardware and software. It took over a month to complete the project! Thank you for being patient during that time.

Be sure to check out the latest conditions, as well as the educational resources about propagation, which I have put together for you at <http://prop.hfradio.org/>. I also provide a WAP/WML resource for wireless devices. If you want the latest propagation information like the solar flux, Ap reading, and so forth using a cell phone or other WAP device, check out <http://wap.hfradio.org/>, the wireless version of my propagation site.

Please don't hesitate to write and let me know about any interesting propagation that you've noticed. Do you have questions about propagation? I look forward to hearing from you. Till next time, happy signal hunting! ■

## Full 800 MHz Coverage

**\$5499 US** **AOR**  
**AR-ONE**  
Wideband receiver

- 0.01 to 3300 MHz continuous. (unlocked)
- All modes: AM, NFM, WFM, USB, LSB, CW and Data
- 1000 Memory Channels - Two RS-232C ports plus control head port - Triple conversion superheterodyne front end - Hi Intercept - Adjustable BFO and more!

**\$1179 US** **AR-8600MKII**  
Wideband receiver

- 0.1 to 3000 MHz continuous. (unlocked)
- All modes: NFM, WFM, NAM, WAM, USB, L/USB
- Alphanumeric memory - Improved front end - Computer control - Improved TCXO - 1000 memories - 20 banks x 50 mem - 40 search banks - 2 VFO's - Optional cards

**AR-8200MKIII**  
Wideband portable receiver

- 0.5 to 3000 MHz continuous. (unlocked)
- NFM, WFM, NAM, WAM, USB, LSB & CW
- Alphanumeric memory Identification
- Spectrum scan
- Ni-MH Battery
- Flexible dynamic memory
- Optional CTCSS & Extra memory boards

**\$679 US**  
We also sell Icom and Alinco Scanners!

**ICOM ALINCO**

Guaranteed Delivery to USA.

**www.Radioworld.ca**  
4335 Steeles Ave W., Toronto, ON. M3N 1V7  
**Phone: 416.667.1000**  
**email: <sales@radioworld.ca>**

# ATOMIC TIME

1010 Jorie Blvd. #332  
Oak Brook, IL 60523  
1-800-985-8463  
[www.atomictime.com](http://www.atomictime.com)



**ADWA101 - \$49.95**

**14" LaCrosse Black Wall**  
WT-3143A \$26.95  
This wall clock is great for an office, school, or home. It has a professional look, along with professional reliability. Features easy time zone buttons, just set the zone and go! Runs on 1 AA battery and has a safe plastic lens.

**Digital Chronograph Watch**  
ADWA101 \$49.95  
Our feature packed Chrono-Alarm watch is now available for under \$50! It has date and time alarms, stopwatch backlight, UTC time, and much more!



**WT-3143A - \$26.95**



**WS-8248 - \$64.95**

**LaCrosse Digital Alarm**  
WS-8248U-A \$64.95  
This deluxe wall/desk clock features 4" tall easy to read digits. It also shows temperature, humidity, moon phase, month, day, and date. Also included is a remote thermometer for reading the outside temperature on the main unit, approx. 12" x 12" x 1.5"

**1-800-985-8463**  
[www.atomictime.com](http://www.atomictime.com)  
Quantity discounts available!



**WS-9412U - \$19.95**

Tell time by the U.S. Atomic Clock - The official U.S. time that governs sleep movements, radio stations, space flights, and war-planes. With small radio receivers hidden inside our timepieces, they automatically synchronize to the U.S. Atomic Clock (which measures each second of time as 9,192,631,770 vibrations of a cesium 133 atom in a vacuum) and give time which is accurate to approx. 1 second every million years. Our timepieces even account automatically for daylight saving time, leap years, and leap seconds. \$7.95 Shipping & Handling via UPS. (Rush available at additional cost) Call M-F 9-5 CST for our free catalog.

# World News, Commentary, Music, Sports, And Drama At Your Fingertips

This listing is designed to help you hear more shortwave broadcasting stations. The list includes a variety of stations, including international broadcasters beaming programs to North America, others to other parts of the world, as well as local and regional shortwave stations. Many of the transmissions listed here are not in English. Your ability to receive these stations will depend on time of day, time of year, your geographic location, highly variable propagation conditions, and the receiving equipment used.

AA, FF, SS, GG, etc. are abbreviations for languages (Arabic, French, Spanish, German). Times given are in UTC, which is five hours ahead of EST, i.e. 0000 UTC equals 7 p.m. EST, 6 p.m. CST, 4 p.m. PST.

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0000	7330	Voice of Russia	SS	0330	3279	La Voz del Napo, Ecuador	SS
0000	5035	Radio Aparecida, Brazil	PP	0330	4052.5	Radio Verdad, Guatemala	SS
0000	9760	Radio Sultanate of Oman	AA	0330	7530	Kol Israel	HH
0000	7475	Voice of Greece	GG	0330	6220	Mystery Radio, Europe (pirate)	occasional
0000	9770	Radio Budapest, Hungary		0330	6010	La Voz de su Concencia, Colombia	SS
0000	6973	Galei Zahel, Israel	HH	0400	4810	Radio Transcontinental, Mexico	SS
0000	7345	Radio Prague, Czech Republic		0400	6050	HCJB, Ecuador	SS
0000	5965	Radio Havana Cuba	SS	0400	6110	La Voz, Chile	SS
0030	7165	BBC, via Cyprus	Pasho	0430	9780	Radio Romania International	
0030	11620	All India Radio		0430	7125	Russian Radio International, via Moldova	
0030	7440	Radio Ukraine International		0430	4770	Radio Nigeria	
0100	6165	Radio Nederland, via Bonaire		0430	7235	RAI International, Italy	
0100	4919	Radio Quito, Ecuador	SS	0430	5985	RTV Congolaise, Congo	FF
0100	6175	Voice of Vietnam, via Canada		0500	7275	RT Tunisienne, Tunisia	AA
0100	11800	RAI, Italy		0500	9685	Channel Africa, South Africa	
0130	11815	KBS World Radio, South Korea	SS	0500	7255	Voice of Nigeria	
0130	4780	Radio Cultural Coatan, Guatemala	SS	0500	5005	Radio Nacional, Equatorial Guinea	SS
0130	9870	Radio Austria International		0500	4960	Voice of America relay, Sao Tome	
0200	4965	The Voice-Africa, Zambia		0500	9865	Radio Farda Morocco relay	Farsi
0200	4885	Radio Clube do Para, Brazil	PP	0530	4990	Radio Apinte, Suriname	Dutch
0200	11710	RAE, Argentina		0600	6185	Radio Educacion, Mexico	SS
0200	4835	Radio Maranon, Peru	SS	0700	5920	Radio Rossii, Russia	RR
0200	4800	Radio Buenas Nuevas, Guatemala	SS	0700	9625	CBC No. Quebec Service, Canada	
0200	9795	Radio Budapest, Hungary		0700	6070	CFRX, Canada	
0200	9495	VOIRI, Iran	Farsi	0800	6020	Radio Victoria, Peru	SS
0200	7450	Radio Tirana, Albania		0800	3291	Voice of Guyana	
0200	6035	La Voz de Guaviare, Colombia	SS	0900	6160	CKZN, Newfoundland, Canada	
0200	10330	All India Radio	Hindi	0900	4835	ABC No. Terr. Service, Alice Springs	
0200	11655	La Voz, Chile	SS	0930	4915	Radio Anhanguera, Brazil	PP
0230	4790	Radio Vision, Peru	SS	0930	9656	Radio Bandeirantes, Brazil	PP
0230	7270	Radio Cairo, Egypt		1000	6060	Radio Nacional, Argentina	SS
0230	4815	Radio Buen Pastor, Ecuador	SS	1000	4796	Radio Mallku, Bolivia	SS
0250	5820	Radio Ukraine International		1030	9970	RTBF, Belgium	FF
0300	5915	Radio Zambia		1100	6010	Radio Mil, Mexico	SS
0300	7270	Voice of Turkey		1100	9870	Radio New Zealand International	
0300	5890	Radio Thailand, via USA		1100	11735	Voice of Korea, North Korea	KK
0300	3320	Radio Sondergrense, South Africa	Afrikaans	1100	15190	Radio East Africa/Radio Africa	
0300	3345	Channel Africa, South Africa		1100	4819	La Voz Evangelica, Honduras	SS
0300	6140	Radio Lider, Colombia	SS	1130	6020	Radio Australia	
0300	4780	RTV Djibouti	FF	1130	9900	Radio Veritas Asia	CC
0330	3240	Trans World Radio, Swaziland	vern	1200	1200	Voice of America, via Philippines	



UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
1200	11920	Radio Romania International	Romanian	1830	15475	Africa Number One, Gabon	FF
1200	11500	Voice of Russia, via Tajikistan	Hindi	1830	15085	VOIRI, Iran	FF
1200	7185	Bangladesh Betar		1830	13675	Kol Israel	HH
1200	9525	All India Radio	CC	1830	9855	Radio Kuwait	AA
1200	4890	NBC, Papua New Guinea		1830	9830	Radio Jordan	AA
1200	11850	Radio Polonia		1900	15265	Adventist World Radio, via Germany	AA
1200	7455	Trans World Radio, Guam	CC	1900	15410	Voice of America, via Morocco	
1200	6165	CPBS, China	CC	1900	15190	Radio Pilipinas	EE/Tagalog
1200	9650	KBS World Radio, South Korea, via Canada		1900	15120	Voice of Nigeria	
1230	13580	Radio Sweden		1900	15565	V of Democratic Path of Ethiopian Unity, via Germany	
1230	9430	FEBC International, Philippines	CC	1930	15560	RDP, Portugal	PP
1230	4790	RRI-Fak Fak, Indonesia	II	2000	9755	Vatican Radio	
1230	3925	Radio Nikkei, Japan	JJ	2000	11735	Radio Tanzania, Zanzibar	Swahili
1230	13590	Voice of Russia	CC	2000	17705	Radio Nacional Venezuela, via Cuba	SS
1230	15735	Radio Sweden		2030	12085	Radio Damascus, Syria	
1230	4605	RRI-Serui, Indonesia	II	2030	15290	Radio Exterior de Espana	SS
1230	13775	CVC International, Australia		2030	13790	Voice of Germany Relay, Portugal	AA
1300	7235	Voice of America, Northern Marianas	KK	2030	13760	Voice of Korea, N. Korea	GG
1300	9580	Radio Australia		2030	6245	Radio Zalmaneh - clandestine to Iran	
1300	9845	Voice of Vietnam	VV	2100	15345	RT Marocaine, Morocco	AA
1300	6150	Radio Singapore		2100	15110	Radio Exterior de Espana, Spain	SS
1300	15700	Radio Bulgaria	BB	2100	11775	Caribbean Beacon, Anguilla	
1400	11550	Radio Sweden, via Canada		2100	17630	Radio France International	SS
1500	15715	CVC International, Australia		2130	13570	WINB, Pennsylvania	
1500	11730	Radio Japan/NHK World	JJ	2130	11675	BBC, via French Guiana	
1530	12150	Voice of America, via Sri Lanka		2130	9990	Radio Cairo, Egypt	
1530	17770	Channel Africa, South Africa		2130	9580	Africa Number One, Gabon	FF
1530	15225	Adventist World Radio, via UAE		2130	9705	La Voix du Sahel, Niger	FF
1530	13755	Radio Austria Int., via Canada		2200	15600	Radio Taiwan International, via Florida	
1530	15680	Bible Voice Radio via Germany		2200	9605	BBC relay, Seychelles Islands	
1530	13860	China Radio International	RR	2200	11895	Radio Japan/NHK World, via Fr. Guiana	JJ
1600	11570	Radio Pakistan		2200	7105	Radio Belarus	Belorussian
1600	15160	Radio France International, via South Africa		2230	9860	Voice of Turkey	
1600	12105	Voice of Greece	GG	2230	7425	Radio Nacional de la RASD (clandestine)	SS/AA
1600	11690	Radio Jordan		2230	15720	Radio New Zealand International	
1600	11765	Radio Free Asia, No. Marianas	CC	2230	7385	WRMI, Florida	
1600	9615	KNLS, Alaska	CC	2300	9675	Radio Cancao Nova, Brazil	PP
1630	12133.5	AFRTS, Florida	USB	2300	4845	Radio Mauritanie, Mauritania	AA
1630	17605	Radio France International		2300	13730	Radio New Zealand International	
1630	12050	Egyptian Radio	AA	2330	9575	Radio Medi Un, Morocco	AA
1630	15205	BSKSA, Saudi Arabia	AA	2330	9895	Radio Nederland	SS
1630	15335	Radio Nederland Relay, Madagascar	DD	2330	5840	Radio Ukraine International	GG
1630	17660	Sudan Radio Service, England		2330	9600	Vatican Radio	
1700	17695	Radio Jamahiriya, Libya, via France	AA/FF	2330	7450	RS Makedonias, Greece	GG
1700	17830	BBC, England, via Ascension		2330	5910	Radio Republica, USA, via Germany	SS
1700	17680	RDP, Portugal	PP	2330	9665	Radio Marumby, Brazil	PP
1700	11655	Radio Rebelde, Cuba	SS	2330	11700	Radio Bulgaria	
1730	11990	Radio Kuwait	AA	2330	9925	Voice of Croatia, via Germany	Croatian
1730	15450	IBRA Radio, Sweden, via Germany	Somali unid				
1800	11965	Voice of Germany relay, Rwanda					
1800	17895	Voice of America relay, Botswana					
1830	9960	Voice of Armenia	various				
1830	9725	Voice of Vietnam, via Austria	VV/FF				

# New, Interesting, And Useful Communications Products

## Alinco Introduces DJ-X30T "Pocket Size" Wideband Communications Receiver

Alinco has announced the release of the DJ-X30T, a new "pocket-size" wideband communications receiver featuring a high-performance design to capture shortwave signals and more. The selectable keyboard system ensures everyone from beginner to experienced monitoring enthusiasts will be able to enjoy the many advanced features that are standard on the new receiver. The DJ-X30T was scheduled to be available in the United States in January.

This new model also offers optional remote control capability using an EDS-12 cable. The cable allows users to remotely control many basic functions, such as mode, band, and scan start/stop. The EDS-12 cable can also be used to connect the DJ-X30 with the AUX input of a portable media player.

The DJ-X30T offers newly redesigned audio circuitry for improved audio so, in addition to shortwave listening, it can be used to monitor fire, public safety, traffic, and many other frequencies. It offers five operating modes, three different antenna modes, triple conversion AM/NFM plus double conversion WFM in a compact design that weighs just 5.32 ounces. The DJ-X30T receives 100 kHz to 1.3 GHz (with cellular frequencies blocked in the U.S.) and features 1,000 memory channels, which are easy to manage using free software to rearrange the bank partitions from the standard 10 up to 50. The software is available for download from [www.alinco.com](http://www.alinco.com).

The DJ-X30T comes standard with a large illuminated LCD screen with up to six digit alphanumeric display, a removable keypad, internal AA battery, two-way keylock, 39-tone Tone Squelch, Attenuator (approx. 20 dB), Battery-save, Auto Power Off, Monitor/Mute, cable-cloning capabilities and priority receive.

*The new Alinco DJ-X30T handheld wideband receiver tunes 100 kHz to 1.3 GHz with 1,000 memory channels. Also pictured is the EDS-12 optional remote control cable that allows you to remotely control many of the receiver's basic functions.*



At press time no price was available for the new DJ-X30T, but we'll note it here in "Power Up" as soon as it's announced by Alinco.



*AOR's AR-ALPHA is a high-end communications receiver that tunes from 10 kHz to 3.3 GHz.*

## AOR's AR-ALPHA Begins Production

AOR USA has announced that the AR-ALPHA, a new high-end receiver, has begun production, with deliveries to the U.S. market expected in January 2007. We gave you a sneak peek at the AR-ALPHA in the September "Power Up," before the price was announced. AOR now tells *Pop'Comm* that the MSRP of the radio will be \$9,499, but dealers frequently post prices that vary from MSRP.

The unit can be 19-inch rack-mounted or operated as a desktop receiver and will tune from 10 kHz ~ 3.3 GHz continuous, with no interruptions. AOR is also considering production of a "cellular blocked" version for sale to the general public in the United States.

In addition to the wide tuning range, the AR-ALPHA features five VFOs, 2,000 alpha-numeric memories (40 banks of 50 channels), 40 search banks, a "select memory" bank of 100 frequencies, and a user-designated priority channel.

This multi-mode unit is capable of receiving AM (synchronous), ISB, RZ-SSB, USB, LSB, CW, WFM, including FM stereo, NFM, APCO-25 digital, and TV in both NTSC and PAL formats. The six-inch TFT color panel can display received video signals and there is a composite video output on the rear panel. The display can also depict spectrum activity over a wide choice of bandwidths. In addition, the receiver offers the operator an array of selectable IF bandwidths, including 200 Hz, 500 Hz, 1 kHz, 3 kHz, 6 kHz, 15 kHz, 30 kHz, 100 kHz, 200 kHz and 300 kHz, along with the ability to shift the IF.

The AR-ALPHA supports CTCSS and will decode DTMF tones, it offers DCS-selectable squelch functions, an auto-notch feature, and the government (professional) version will also feature built-in voice-inversion descrambling.

Other selectable features include CW pitch control, AGC, AFC, and a built-in digital recorder that can capture up to six channels of information for a total recording time of 52 minutes. When activated by the operator, the digital recorder will actually "start" capturing information some 12 seconds before the record function was enabled.



Additional details just made available include news on the spectrum display function, which is user selectable from 250 kHz through 10 MHz in 1 kHz increments. Above 10 MHz bandwidth, it can display 20 MHz, 50 MHz, 100 MHz or 1 GHz, but above 20 MHz bandwidth, no audio will be available. The display is also capable of a "waterfall" function, showing signals over a time-lapse scenario. Fast Fourier Transform (FFT) algorithms are widely used in the AR-ALPHA

Rear panel connections include 12 VDC power, RS-232C, USB 2.0, I/Q output with 1-MHz bandwidth, two antenna ports (one SO-239 and one Type N) and up to four antennas may be selected through the receiver's controls with the optional AS5000 antenna relay selector.

For more information, check out the company website at [www.aorusa.com](http://www.aorusa.com) and *Popular Communications*.



*We've reviewed Pelican products in the past and found them to be outstanding. Chances are you'll find the company's new 1440 case equally durable and useful for your radio goodies.*

## Pelican Takes The 1440 Case On The Road

For "On-the-Go" professionals, Pelican Products, Inc., manufacturer of high-impact, all-purpose watertight Protector Cases, has announced the 1440 Case. With more than 2,000 cubic inches of possible storage space, the 1440 features a unique top loading design that gives immediate, easy access to its contents. Standard features include stainless steel, ball-bearing, polyurethane wheels; an extra-long, telescoping, metal handle for easy transport; and rubberized top and side grips. The

case also features stainless steel reinforced padlock protectors for added defense against cutting and theft.

Additional features include a lid equipped with a polymer o-ring for a dust and waterproof seal, and an automatic Gore-TEX pressure equalization valve that stops moisture from entering the case and prevents vacuum-lock so the case opens easily at any altitude. The 1440 is available with many optional accessories, including a "mobile office" file kit, lid organizer, and a utility customizable padded divider set. Also available as an optional accessory is the TSA Accepted PeliLock, which airport personnel (who have special access keys) won't need to cut for security inspections.

The 1440 Case has an MSRP of \$219.95 and is backed by Pelican's "Lifetime Guarantee of Excellence." For more information, call Pelican direct at 310-326-4700 or visit [www.pelican.com](http://www.pelican.com). Be sure to tell them you read about their new 1440 case in *Pop'Comm*.

## MFJ RF Bypass Switches For 300 And 1500 Watts

The MFJ-1705, priced at \$19.95 and rated at 300 watts, lets you connect your antenna and transceiver to the switch; you can then switch in or bypass your antenna tuner, liner amp, preamp, wattmeter, or other devices. The MFJ-1705H priced at \$29.95 is rated at 1500 watts. Both units are compact at 1.5 x 3 x 2.5 inches (HWD), and are protected by MFJ's "No Matter What" one-year limited warranty.

To order, get a free catalog, or for your nearest dealer, contact MFJ at 300 Industrial Park Road, Starkville, MS 39759; Phone: 800-647-1800; Web: [www.mfjenterprises.com](http://www.mfjenterprises.com).



*The new MFJ-1705 300-watt RF bypass switch is \$19.95 direct from MFJ.*

## INFORMATION & ORDERING WWW.SCANCAT.COM

INTERNET DOWNLOADS AVAILABLE  
**ORDER TOLL FREE**  
**888-722-6228**

**NEW! All-In-One COMBO CD**

ScanCat-Lite-Plus.....	Reg. \$29.95
Mr. Scanner FCC Public Safety.....	29.95
Nat-Com's FCC Scancat Files.....	9.95
Bonus List Of Frequencies .....	15.00
	<b>\$84.85</b>

**SPECIAL \$49.95**

## SCANCAT®

Since 1989, The Recognized  
Leader in Computer Control



Once you use SCANCAT with YOUR radio, you'll NEVER use your radio again WITHOUT SCANCAT!

### ScanCat-Lite-PLUS

Limited Time \$29.95 Intro Special

Program Your Scanner

As Easy As 1-2-3-CLICK!

SC-Lite Supports PRO-83, PRO-95, PRO-96, BC246 & over 15 more Trunking Scanners

### Scancat-Gold for Windows

Version 8.50 \$99.95

Supports all radios in ONE program - share files with all radios.

Two Scanning modules:

A Simple Basic Module - for beginners  
**Plus**—An Advanced Scanning System for the "experts".

### Scancat-Gold for Windows-SE -

\$159.95

All the features of our "Standard Scancat" plus additional functions.

- Long term logging of frequencies to hard drive.
- Record Audio to hard drive using sound card.
- Improved spectrum analysis with several great graphical analysis screens.

### Skysweep Decoder Software



Advanced Digital Signal Processing Software For HF/VHF Applications

All you need is any Windows® soundcard demo on our website

Order On Line \$99.95



### COMPUTER AIDED TECHNOLOGIES

P.O. Box 18285 Shreveport, LA 71138

ORDERS: (318) 687-4444 FAX: (318) 686-0449

Info/Tech Support: (318) 687-2555

(9 a.m. - 3 p.m. Central M-F)

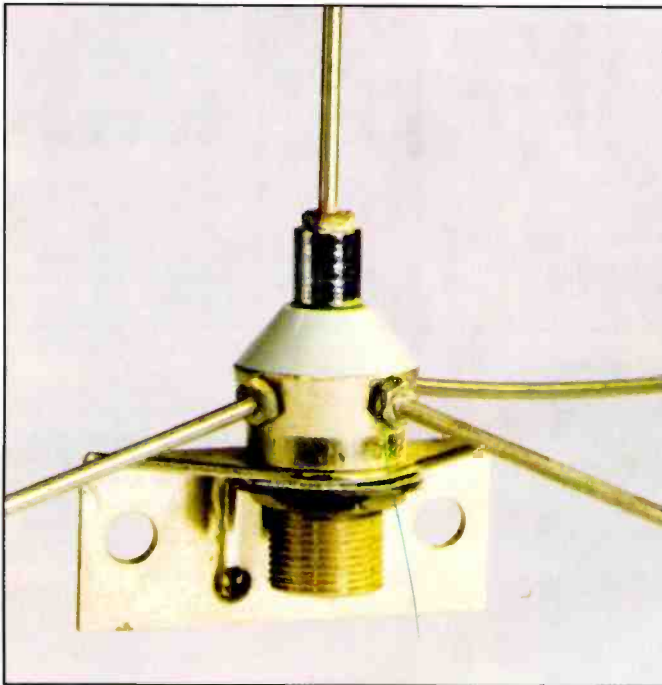
INTERNET DOWNLOADS AVAILABLE  
INFORMATION & ORDERING  
WWW.SCANCAT.COM

# Hidden Antennas: Out Of Sight, Out Of Mind, **Not** Out Of Luck

**T**he old saying about antennas is that the bigger and higher they are the better. And up north they add "and if it didn't fall down last winter it wasn't big enough or high enough." Perhaps that's true, but it's not an option for all of us. Neighborhood association rules, or the necessities of apartments and high-rise condos make that an impractical rule for most of us. Finding a place for antennas is easy if you live out away from the city or don't have restrictions. Just string a wire up between two trees, or run some coax up along the chimney and nail up a ground plane.

The ideal performer is an outdoor antenna up as high as you can get it and tuned specifically for the frequencies you're interested in receiving. But reality usually demands something else, so we all live with compromise. But just how much do you have to compromise?

Let's look at some antennas that can be used in a limited space/visibility environment, but will still let you enjoy the hobby. Before we do that, however, it's worth noting that not all these ideas are going to perform well for everyone. For instance, if you're on the ground floor of a 30-story apartment building made from steel-reinforced concrete, you've got a much bigger problem than someone in a single family home with wood siding and just a few neighborhood restrictions to worry about. Performance is also dependent on frequency. Some shortwave



*Removing one radial and mounting the antenna on a bookshelf works quite well for this ground plane antenna. The newer versions from RadioShack also have some UHF radials that come out of the center at an angle, but it still works very well (depending on building construction, of course).*

signals may be completely blocked, while scanner signals make it through. Of course, the reverse is also possible.

It's also worth pointing out that we are talking about *receiving* antennas here. Much of the information also applies to transmitting antennas, *but* you have to be careful if you intend to transmit through an antenna that it can handle the power and that the antenna is matched to the frequencies in use. You can do substantial damage to a transmitter in a big hurry, so be careful. On the receiving side, you can get away with a lot more. The absolute worst case is that you'll wind up with an antenna that doesn't pull the signal you're after out of the air, but no harm can come to the equipment if you follow basic safety rules.

## Scanners

Scanner antennas tend to be a bit smaller, so you'd expect that they're a lot easier to hide than the larger shortwave antennas. Well, that's true, the antenna itself is easier to hide, but scanners are also subject to line-of-sight communications. If your antenna is stuck inside, especially on a lower floor, you may be severely limiting your range. If you're in a metropolitan area, this may not be a problem, but if you want to listen to departments or other services that are not close by, it can be a real limitation.

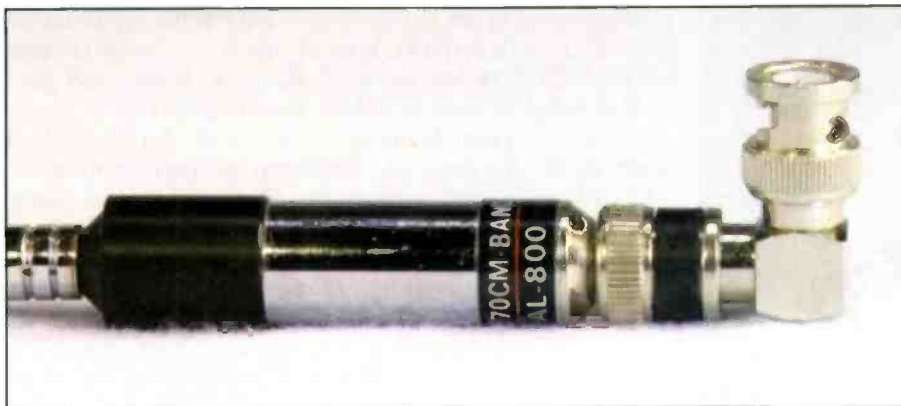
In fact, the first thing I tell new scanner listeners is to try the whip that came with your scanner and your neighbors won't notice a thing. A lot of times in a metropolitan area or an area served by repeaters, this is all you need. You're not likely to overload the radio with this simple antenna, and you can get all the action that's close by, which is what you probably want to listen to while learning anyway.

After that, however, you may wish to branch out a bit or expand your range. While there's no substitute for outdoor antennas high on a tower, right out there with the lightning (hmmm, maybe indoor has advantages, too!), attic antennas can offer a lot of performance and minimize most of the risk and neighborhood hassles. Again, a lot depends on the construction of the building and the distance of the coax run, but it's worth a look. If an attic antenna gets hit by lightning, you have much bigger problems than a damaged antenna.

If you don't have an attic, don't despair. There are still lots of things you can do to help your reception. Antennas meant for outdoor installation will work just fine indoors (of course, the steel and concrete building folks are excluded here). The difference is that there is some loss because of the building material, although minimal, and there is a big loss of height; height is equal to range in the scanner world, don't forget. But it can be beneficial to use these antennas anyway in a variety of situations.

First of all, if you can find an antenna that has gain, it's got to help (unless it causes overload). I've gone so far as to clamp a piece of mast onto a bookcase and then mount an antenna on the mast in the middle of the room. It didn't win any decorator





Almost any handheld antenna can be adapted for "back of the set" use with these right-angle BNC connectors available at any electronics supply store. This Alinco antenna is a dual-band 2-meter/70-centimeter antenna that works quite well on the VHF Hi and UHF public service frequencies.



I know I've said it before, but every scanner enthusiast should have one of these. With the right-angle connector above, it's a versatile and very stealthy antenna that's adjustable in frequency range by raising and lowering sections.

showcase awards, but it did improve my reception.

I've also used some other techniques for indoor antennas, but for a different reason. You'll remember from up above that I recommended trying the built-in whip, and in fact, I've been in situations where that would have been plenty, except that the radio was stored on a bookshelf and the shelf wouldn't allow the antenna to be extended. I found two solutions to this, and you can pick whichever works better for you.

In the first, I took a quarterwave groundplane antenna (the kind available from RadioShack, item No. 20-176 \$25.99) and removed one or two of the radials as necessary. Then I mounted the whole assembly upside down on the back of the bookcase. This put the antenna up close to the ceiling and, since it was a two-story building, this worked amazingly well. Discones and ground planes don't offer any gain, but do provide good solid antennas, and they'll work just fine without a radial or two. Of course a discone needs quite a bit of space behind

what it's mounted on or you'll have to leave off several radials, but don't hesitate to experiment.

The other was to use magnetic mount antennas somewhere else in the room. The problem with magnetic mounts is that they're designed with the idea that they'll be stuck onto a vehicle and have all that metal underneath to a) hold on to, and b) use as a ground plane for the antenna. So for it to be effective, you have to mount the antenna on something metal. A two-drawer metal filing cabinet seems to work pretty well, and you can spread a few antennas out over one cabinet if you're tight on space.

You can also get some mileage for specific bands by using an antenna for that band. Several trunktracker users have reported increased performance by using an antenna dedicated to the 800-MHz band. Lots of handheld users swear by the RadioShack collapsible antenna. This one has the advantage of being tunable to a specific band by expanding or reducing the segments accordingly. It also has the advantage of being cheap, so it's worth a

try (20-006 \$16.99). Putting one of these outside on a mag-mount, clip mount, or even suction cups on a window might be the only option for one of those concrete and steel buildings I was droning on about earlier. Mounting on a balcony is another idea that sometimes works, but that can annoy the landlord or neighbors.

If you're "lucky" enough to live in an older building, you might have an antenna already on the roof that nobody's using. Ahhh, the TV antenna. Think about it: TV Channel 2 runs from 54 to 60 MHz and the high UHF channels end about 896 or so, how convenient! This antenna is designed to cover almost exactly the frequency range we need. The only tiny fly in the ointment is that if it's been in use as a TV antenna, it's probably turned horizontal, and it will work better if you can get it vertically mounted. Maybe no one will notice. Or maybe you can put up your own antenna if it looks like a TV antenna. It's worth a try if you don't get free cable in your apartment.

Another possibility that shortwave listeners are used to is known as "rolling your own." There's nothing magical about building scanner antennas, and you can build them out of some pretty easy-to-hide materials. Dividing 492 by the frequency in MHz will give you the half-wavelength for any antenna you might want to build;  $246/F$  MHz will give you the quarter-wave dimensions. A very simple quarter-wave dipole can be built with wire and a staple gun and can be fairly easily camouflaged almost anywhere. Simply attach quarter-wave length wires of a small gauge, but insulated, to the center of a coax and the braid—instant dipole. Mount it vertically and you're on. That's why we're using insulated wire, and where the staple gun comes into play. Tack it up in some out-of-the-way place or at least somewhere not highly visible and you're set.

Many other designs can be laid out on window frames, windows, or balconies without anyone ever noticing. Indoors or out, this can be a powerful technique. Keep a few kites around in case anyone wonders what you're doing with all that wire. If someone asks, you can either profess your strong interest in aviation, or suggest that they go fly one themselves if you're not bothering anyone.

Finally, *splitting* antenna signals is another help if you have more than one radio (I know, I know, why do we need more than one radio?). Many cable TV-type splitters perform in the exact fre-



*These board-on-board fences that are so popular in subdivisions make a perfect place to hide a wire. Tack it along the top rail, or underneath if you need to be particularly stealthy. You may have to tuck it underground to get past gates or into the house, but a switch to coax at that point should make the transition secure. You can even do a dipole with a little imagination. Unless you have "Sparky, the radio poodle" on patrol, nobody will ever spot it!*

quency ranges we need and will work quite well. This allows for one antenna to serve all the radios where necessary. Granted, there are some losses associated with splitting, but if you're limited on antennas, it's better than idle radios with *no* antenna connection.

Having said all that, what's the performance really like? Well, it depends a lot on your location. Are you giving up signals? Absolutely. Like I said at the beginning, you're not going to get the performance of an outdoor antenna that's carefully tuned by using indoor antennas. But how much are you losing? Probably not enough to lose any sleep over. Sure, the guys with the 1000-foot longwires were receiving things I couldn't tell were there, but I was hearing plenty of stuff I needed to ID. Maybe it made me focus on slightly different things? The reality is that in many situations I've been in, my option was compromise or stop listening.

## Shortwave

It turns out that, unless you're in a steel and concrete building, shortwave antennas are almost easier to deal with than scanner antennas. The reason is that shortwave signals are arriving from all angles, and most shortwave receivers of any caliber are designed to receive the weak signals and process them efficiently. In fact, adding external antennas to some portables can result in reduced performance from overloading.

However, assuming you're using a desktop receiver and really need an antenna, or want to listen to the much weaker signals of utility stations rather than 250K-kW international broadcasters, let's talk about some options. My favorite is wire in the attic. You can get excellent performance from random length wire just thrown or tacked the length of the house in the attic. And nobody but you will have to know it's there. Of course, that

assumes you can get to the attic. Watch out for any electrical lines that may be up there. You not only don't want to come in contact with them, but you don't want your antenna too close to them either as they can induce tremendous noise.

If that's not practical, there are some other ideas that deliver some results. Of course, the further away you move from an outdoor, half-wavelength antenna, the more compromises you're making in performance. Not to worry, you can still have fun.

Probably the next best option, if the attic isn't available, is to put the same wire in the room with your receiver. I've wrapped 75 or 100 feet of wire around the perimeter of the room on hooks at the ceiling, or lying on the floor. The ceiling approach works better, but the floor did offer some results, too, and was a bit easier to hide. You can also use very thin wire for this and go around the entire apartment if your spouse is willing, or you can do it when nobody's watching and hope for the best. Of course, if you're single, or your significant other is involved in radio, too, then there's no limit on bad taste.

I've also heard of people lowering wires out of windows (multi-story building, obviously) only during the time they're using the receiver. If you have a spot that you can do this safely, by all means, give it a try. If you're in one of those steel and concrete buildings I were mentioning earlier, you'll have to find a way to get wire outside to get any kind of performance at all. Putting a small weight at the end of the wire can help pull it down and keep it stable in wind, but be careful that it's not whipping around so much that it might go through someone's window three stories below you!

## Other Antennas

If you can't do wires, there are still a couple of other options for shortwave reception. Active antennas of recent years have gotten quite good. While probably not a complete replacement for outdoor wires, they can still be quite usable if your situation demands it. I have logged many a station with an active antenna.

We simply don't have room here to present the pros and cons of various models of active antennas. However, I can tell you that *in general*, you'll get what you pay for. And I can also tell you that putting an amplified antenna in front of most portables is not advisable, although I have seen a few cases where it helped. If you're using a portable receiver, see if there's an active anten-

## Frequency Of The Month

The Detroit, Michigan, Police department is credited with being the first to install a one-way radio transmitter for the purpose of sending police calls. The automobile had given the criminals the advantage of speed, and the forward-thinking police chief thought this was a good way to even the odds a bit. The city applied for a broadcast license, but was told it would have to provide "entertainment" to qualify. So, they broadcast music—interrupted with police calls and updates as necessary. Of course, the cars were only equipped with receivers and couldn't talk back, but it worked. Detroit received the call letters KOP for its station on 1.050 MHz. In honor of scanner history month, have a listen to **1.050 MHz** today (hint, it's not on your scanner) and see what you can hear today. You may hear different things at night depending on where you are.

Let me know what you hear at [radioken@earthlink.net](mailto:radioken@earthlink.net) or via more traditional methods at Ken Reiss, 9051 Watson Rd. #309, St. Louis, MO 63126.



na made specifically for it by the same manufacturer. Often these are optimized for portable use. Try to talk with someone who's used a particular model, or buy from a dealer with a favorable return policy if you're going to experiment with actives.

The last type of antenna worth mentioning for shortwave listeners is the loop. Low band and AM broadcast band listeners have long been aware of the advantages of loops, both to peak the signal they're after and to null out noise that may be generated locally. Recently, some loops have become available that support

the shortwave frequencies, too. And a few designs combine a loop with an active amplifier for very nice results.

### Obligatory Safety Notice!

Now is probably a good time to put in the required safety notice. You have to make sure that your antenna is put in a safe place, no matter where it's ultimately located. Tangling with power lines outside is a good way to spoil your whole day, and it really reduces the resale value of your receiver. Inside, make sure that

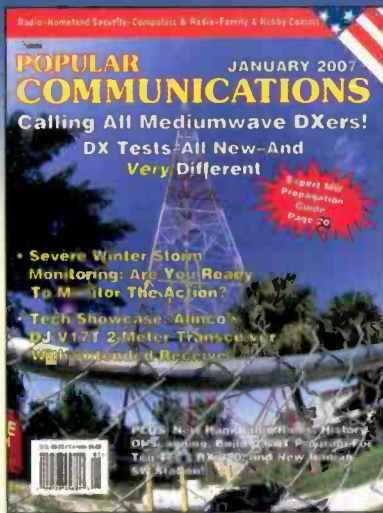
there is no possible way of crossing electrical lines and that you don't drill into electricity or some other household service in the process of installing a hidden antenna. Don't connect to gas lines thinking it's the cold water pipe. Think before you act so you can continue to enjoy this hobby for a long time. If you're not sure about something, don't do it. Safety first, always. I need all the readers I can get.

And now I'll step off my soapbox and resume our regularly scheduled radio programming.

### If At First You Don't Succeed...

My final piece of advice is to experiment. Antennas tend to be relatively easy to play with, and the cost of mistakes isn't too great (assuming the mistakes are not safety violations, which, of course, are not allowed). See what works. Remember that this is a hobby. One of the neat things about experimenting with indoor antennas is that you don't have to worry about the weather, and you don't have to mess with ladders...too much. Have fun. If you come up with something that works, drop us a line! And shoot a photo or two!

Until next month, good listening! ■



Listening is only half the fun...

# POPULAR COMMUNICATIONS

is the other half!

The World's most authoritative monthly magazine for Shortwave Listening and Scanner Monitoring.

Read by more active listeners world-wide.

You'll find features on scanner monitoring of police; fire, utility, and aircraft communications; international shortwave listening; CB radio; amateur radio; FRS; GMRS; monitoring radio digital communications including CW, RTTY, SITOR, etc; AM/FM commercial broadcasting; weather and communications satellites; telephone equipment and accessories; radio nostalgia; alternative radio; clandestine radio; and military radio.

## SUBSCRIBE TODAY!

Popular Communications

25 Newbridge Road, Hicksville, NY 11801

Phone: 516-681-2922; Fax 516-681-2926

Visit our web site: [www.popular-communications.com](http://www.popular-communications.com)

USA	
1 Year	<input type="checkbox"/> 28.95
2 Years	<input type="checkbox"/> 51.95
3 Years	<input type="checkbox"/> 74.95
Canada/Mexico	
1 Year	<input type="checkbox"/> 38.95
2 Years	<input type="checkbox"/> 71.95
3 Years	<input type="checkbox"/> 104.95
Foreign	
1 Year	<input type="checkbox"/> 48.95
2 Years	<input type="checkbox"/> 91.95
3 Years	<input type="checkbox"/> 134.95

# VHF Scanner Antennas

**G**ot a favorite channel in the 150-MHz band that's just a little weak? One of these Cheap Yagi antennas can boost it up to full quieting (see **Photo A**). Let's get started on one right now!

I'll be covering both 50- and 75-Ohm versions of this antenna, although I find that there are just so many advantages to 75-Ohm coax. For instance, it's often cheaper, you see left-over lengths from cable or satellite installations, it has less loss than the same size 50-Ohm coax, and 75-Ohm Yagis work over a broader range of frequencies than their 50-Ohm cousins. However, the 50-Ohm version will fill the bill for some of you, so refer to **Table 1** for help with those dimensions; **Table 2** gives dimensions for the 75-Ohm Yagi.

For the 50-Ohm Yagi I've traded a dB or two of gain for broad frequency response. Expect about 9-dBi gain out of the five-element, 8.5 dBi from the four-element, 6 dBi from the three-element, and about 4 dBi from the two-element design. But if you're trying to listen to signals from a broad area, more gain is not necessarily a good thing. (See **Photos B** and **C**.) The idea is to match the width of the antenna beam to your desired coverage area.

The antennas are centered for 155 MHz with good performance over the 150- to 165-MHz band. If you need to optimize the antenna for a frequency near this range, then just multiply the element length and element spacing by Current Frequency/New Frequency. As an example, if you wanted to tweak the antenna to 170 MHz, then multiply the lengths and spacings by 155/170, or .91; now the reflector element becomes 38 x .91, or 34.6 inches. To peak them on the NOAA weather frequencies, just multiply the dimensions by 155/162, or .96; you can move the Cheap Yagi designs about ±10 percent before other scaling factors mess things up.

As already mentioned, the 75-Ohm version has a much wider bandwidth so it works over a wider range of frequencies. Gain is also much more constant over its 145 to 170 MHz usable bandwidth. Typically you will see nearly 10 dBi for the five-element, 9 dBi for the four-element, 6 dBi for the three-element, and about 4 dBi for the two-element design. But again, a wider spread might be more important than more gain and a narrow beam. (See **Figure 1**.)

## Construction

The boom is 3/4 x 3/4-inch wood. One-inch-square can be used, but I don't suggest going bigger than that. If you like PVC (I don't for a long list of reasons) PVC water pipe can be used. Long-term water proofing of the wood can be done with one of the many water sealer products, varnish, or even house paint. Be sure to put some RTV or some other sealant on the coax to keep water from going back

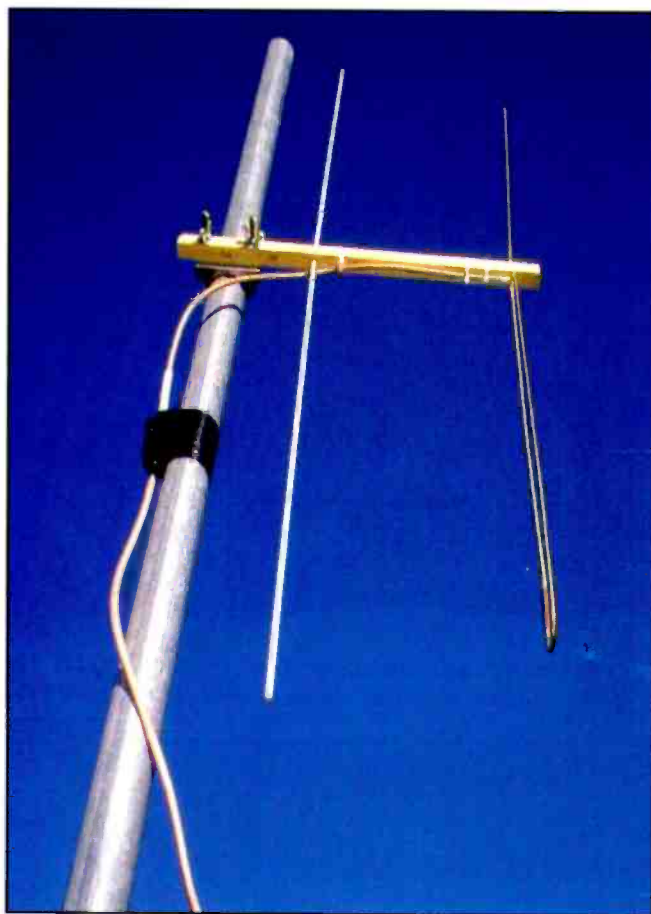


Photo A. An easy-to-build VHF Cheap Yagi for the 150-MHz scanner band.

**Table 1. 50-Ohm 155-MHz Cheap Yagi**

(All dimensions in inches)

	Reflector	Driven Element	Director 1	Director 2	Director 3
<i>2 Element</i>					
Length	38.0	Figure 1			
Spacing	0	7.0			
<i>3 Element</i>					
Length	38.0	Figure 1	33.0		
Spacing	0	7.0	21.0		
<i>4 Element</i>					
Length	38.0	Figure 1	33.0	30.0	
Spacing	0	8.0	18.0	28.0	
<i>5 Element</i>					
Length	38.0	Figure 1	33.5	30.0	29.0
Spacing	0	8.0	18.0	27.0	41.0



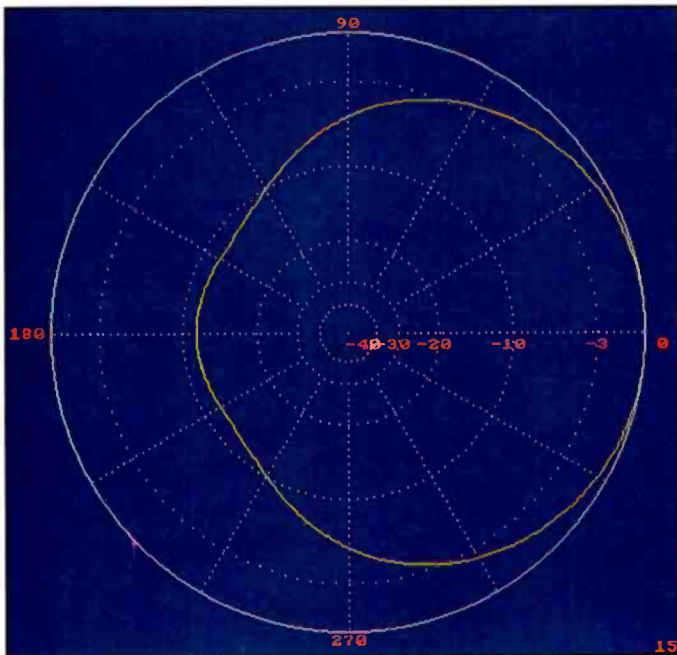


Photo B. Pattern for the two-element Cheap Yagi when vertically polarized.

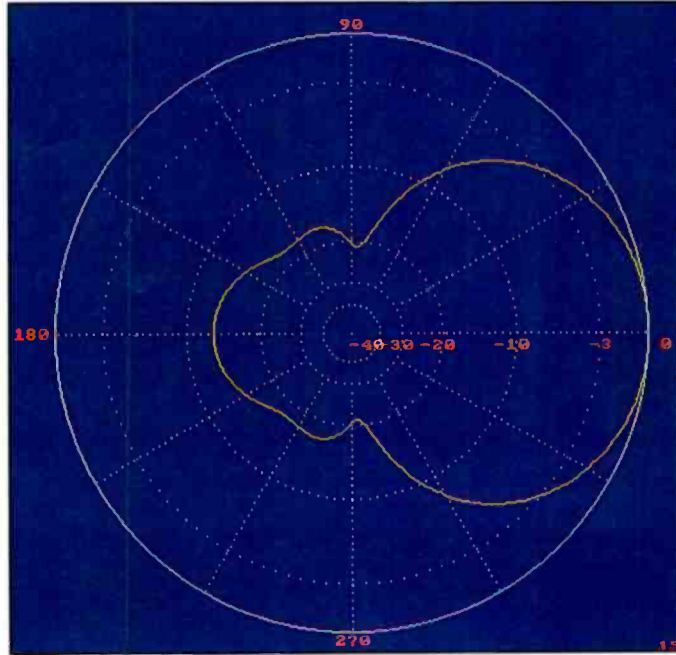


Photo C. Pattern for the five-element Cheap Yagi when vertically polarized.

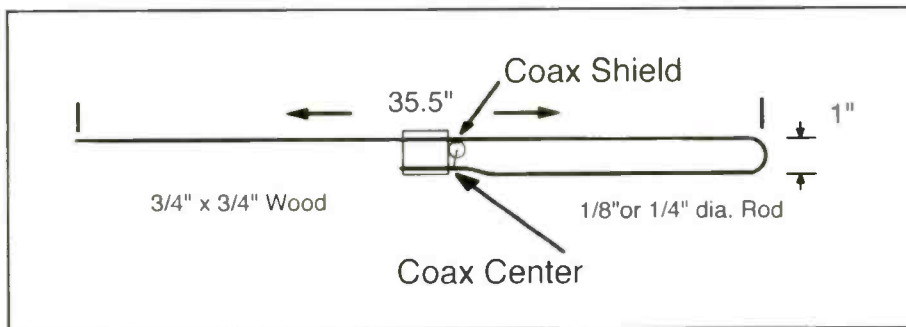


Figure 1. The dimensions for the driven element used with all eight versions.

**Table 2. 75-Ohm 155-MHz Cheap Yagi**  
(All dimensions in inches)

	Reflector	Driven Element	Director 1	Director 2	Director 3
2 Element					
Length	38.0	Figure 1			
Spacing	0	11.0			
3 Element					
Length	38.5	Figure 1	32.5		
Spacing	0	9.0	18		
4 Element					
Length	38.0	Figure 1	33.0	31.0	
Spacing	0	9.5	18.0	36.5	
5 Element					
Length	38.0	Figure 1	33.0	32.0	31.0
Spacing	0	9.5	19.5	33.5	46.0

down the coax. Most of my Cheap Yagis are mounted inside my attic crawl space. While outside is better since an antenna pulls in more signal when it's outside, my Yagis have been doing a fine job up in the attic for 13 years now. Inside the attic also hides them from the prying eyes of neighbors and may even be necessary if you live in one of those neighborhoods with rules on antennas.

I like to make the driven element out of something I can solder to so the coax is soldered directly to the element and I don't have any corrosion problems later. No. 10 or 12 bare copper wire works, as does bronze welding rod. But if you want to use aluminum for the driven element, you can make up some brass clips for attaching the coax. If you have some stainless steel screws, these clips are a good place to use them.

Remember that the coax shield goes to the flat part of the element, and the coax tip goes to the tip of the J. (See Photos D and E.)

You need about 60 inches of metal rod to form the driven element. This is longer than typical welding rod sections, but with a piece of copper hobby tubing you can solder two pieces of bronze welding rod to get that 60 inches or so. You need to watch the total length of the driven element, but the width of the loop is not a critical dimension. (See Photo F.)

The reflector and director elements can be made from most any metal rod

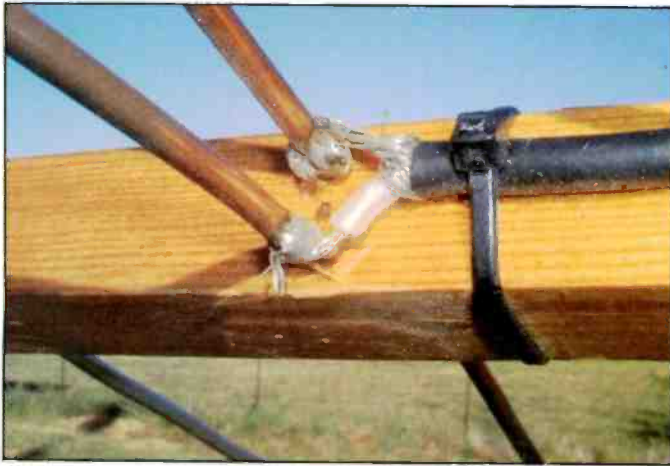


Photo D. Coax soldered directly to the driven element.



Photo E. Soldering clips for an aluminum rod driven element.



Photo F. Splicing a brass or copper element.

material from 1/8 inch to 1/4 inch in diameter; using anything thicker than a 1/4 inch would change the tuning of the antenna. I usually hold the elements in place with a drop of Superglue, but RTV type glues and even construction adhesives work well.

## Mounting

The Yagis really “prefer” to be end-mounted. We have all these carefully calculated lengths to 1/10th of an inch or so, and then people stick a metal mast all the way through it! Know that the metal mast through a Yagi in the same plane as the elements



Photo G. Wires and antenna egg insulators.



Photo H. TV accessories you can use with your scanner.

detunes the antenna! As in the photos, the mast should be at least two or three inches behind the last antenna element.

## A Cheap Yagi Story

Nearly 10 years ago I was designing TV antennas for a New York-based company. My boss’s wife is Korean, and he had a little UHF TV antenna on the roof with one preamp into another preamp. It pulled in the New York Korean broadcast, UHF Channel 18 from about 50 miles away, as I recall, but with a very fuzzy picture. As a Christmas present, I built him a 10-element 495-MHz Cheap Yagi and a matching GaAs FET preamp. He installed it and got a P5 picture. He had a simple response later, “You know how they say if mama ain’t happy, then no one’s happy? Well, mama was happy!” A happy boss is always a plus.

I bring this one up only because I saw two bad examples at a flea market last week. Referring to **Photo G**, on the left you see the proper way to run guy wires through an egg insulator. The ceramic is in compression and, should the ceramic break, the wires are still looped through each other and the guy wire will hold. On the right is the *wrong* way to use an egg insulator; the ceramic is in tension and easily breaks. And when the insulator breaks, the antenna or guy wire falls. Loop those wires through each other!

## Scanners And TV Hardware

Next time we’ll cover many of the common TV accessories that can be very handy for connecting up a first class scanner system (see **Photo H**), so at the flea markets, garage sales, and dollar stores, keen an eye out for those TV splitters, amps, and filters. In the meantime, keep those questions and suggestions for column topics coming. Just drop me an e-mail at [WA5VJB@cq-amateur-radio.com](mailto:WA5VJB@cq-amateur-radio.com). ■



# On The Right Track With The Magellan RoadMate 2000

**T**oday I just can't get lost. There were those days, however, when "getting lost" was—for me at least—a hobby in its own right, complete with marked-up maps, large upper-case typed notes on getting from point A to B taped to the dashboard, and frequent stops at pay phones to "get directions." All that changed a few years ago with the advent of in-vehicle GPS (Global Positioning System) units.

The company I rely on for quality, easy-to-use GPS systems is Magellan. They're not the only GPS player out there, but when it comes to GPS, either handheld or in-vehicle systems, they have a very good and varied product line. We reviewed their 700 series vehicle GPS in July 2005 and found it to be top-notch, uncomplicated, user-friendly *and* reasonably priced, especially considering all the features you get standard.

## A Step Above

The one aspect of many of these GPS units that gets tricky, not only from a review standpoint but also in real-world use, is the various windshield mounting systems. The GPS units themselves are very good, but when it comes to staying put...well, in my experience you've got to work with the mount a bit—and follow the directions.

With the Magellan 700 series, the standard mounting arm is comprised of a flexible gooseneck and small suction cup assembly. But even if you follow the directions explicitly and clean the windshield, ensure it's free of any special after-market coatings (anti-fog and anti-glare material), and *still* wipe the glass squeaky-clean with the provided small alcohol wipe, it still has a tendency to fall, especially in colder weather if the windshield isn't warmed. Repeated moving of the arm for the best viewing angle can also bring the thing down into your lap. Add to that the daily rigors of driving, and, well, it's sometimes easy for me to say something aloud while driving with the family that would better be left in Marine boot camp!

If only the larger Magellan 700 series had a mount as sturdy as the one included with new, *smaller* 2000 series! Okay, the mounting criticisms aside, you're going to fall in love with the Magellan 2000, and the company's four other higher-end units: the 2200T, 6000T, 3050T, and 3000T which range in price from \$499.99 to \$699.99.

## Small, Compact, And Portable

The 2000 itself, priced at \$399.99, measures 3.4 x 4.3 x 1.1 inches (HWD) and is designed to fit in your pocket when you're not in the vehicle. You can disengage the large suction cup mount assembly and toss it in your vehicle's CD compartment or on the back seat if you want. I haven't separated the unit from the mounting assembly since putting it together the day the 2000 arrived, however. When leaving the vehicle, depending on where it's going to be parked, I sometimes leave the whole thing



*The Magellan RoadMate™'s adhesive mounting pad is included with the 2000. Clean a very flat surface on your dashboard, ensuring it's free of any commercial vinyl cleaner/coating, and press the disc in place. Wait at least an hour or two before mounting the 2000's suction cup mount to the disc.*

attached to the windshield, and when removing it from the windshield, I bring the entire thing in the house.

The 2000 comes with three main parts: the GPS unit itself, mounting arm with suction cup, and cradle. The parts simply snap together and fit snugly on the back of the unit. You can attach the suction cup either to your windshield (check to be sure it's legal in your state) *or* alternatively to the palm-sized thin, flat plastic disc that has a 3M adhesive on one side that you stick to a flat portion of your dashboard.

Powering up the 2000 is done as you would any other Magellan RoadMate GPS—just plug it in to the cigarette lighter, and you're ready to set up your GPS the way you want and hit the road. There's no complicated time-consuming configuration necessary, other than choosing the language you want to use (ours only allowed English by default) and whether you want to use miles/feet or kilometers/meters. As soon as the unit acquires satellites you're ready to go.

I "programmed" in our home location by simply touching the "home" key and entering the city, then street and address. Then when you're out in the boonies and want to go home (provided you don't want to escape for just a couple more days!) just turn on the 2000 and press "home." You get a choice of route preferences, as you do with the other Magellan RoadMate series, for shortest time, shortest distance, most use of freeways, or least use of freeways.



*The RoadMate 2000 in the 3D mode.*



*The tracking screen showing the unit locked onto nine GPS satellites in the 3D mode.*

What's unique about the 2000 is that it's battery powered—not "AA" batteries, but a sealed-in-the-unit rechargeable lithium-ion battery. After purchasing a Magellan 2000 you've got to prepare it for charging by lifting the small rubber tab on the upper left side of the unit and, using a pen, flicking a small slide switch to the "up" position. Plug in the included cigarette lighter adapter/charger and you're in business.

I went up to north Jersey for lunch with my wife one day, driving an hour up and over an hour back during rush hour, charging the unit's battery sufficiently to see five bars illuminated on the "system" screen. The company recommends charging it for four to five hours, so the next day I turned the car's ignition key to "acc," which activates the receptacle, and charged it for another two hours while I worked in the garage.

On our next short trip to Pennsylvania's Dutch Country that charge lasted coming and going to Paradise, Pennsylvania, so I was able to toss the charger cord into the glove compartment, operating the unit on the internal battery without having a cord dangling and getting in the way of reaching for the CB microphone (which my wife says gets in the way, anyway, but that's another story altogether!). Upon returning I kept the cord plugged in (and the unit off) charging the unit for several days.

Since the 2000 is so new as of this writing, there is no 110-volt AC adapter available from Magellan (and while you might have a wall adapter lying around the house, I'd recommend not improvising), so your powering option, short of driving for four or five hours to fully charge the unit, is to use the provided cigarette lighter adapter/charger in your vehicle for a few trips to fully charge the internal battery. Let's face it, there's nothing worse than having Murphy creep into your daytrip just as you're a few minutes from your destination and the unit poops out because of a low battery condition! Mine did not after several charges; it's still going strong, but this weekend I'll give it another boost with the cigarette lighter cord.

## Performance On The Road

Magellan is correct in its trademarked statement, "Turn it on and go." because other than charging the 2000, that's all there is to do. Our unit was so new it didn't include the CD-ROM reference manual, so we were referred to [www.magellangps.com](http://www.magellangps.com)



*The five green bars at the bottom center of the screen show the charging status and that the 2000 is plugged into 12 VDC.*

for a quick download (or viewing) of the reference manual, which is very complete and detailed. You're walked through each step of the 2000's operation without having to turn back a few pages, while simultaneously scratching your head.

Out of the box mine was operating within five minutes. The color touch-screen works very well and the audio is loud (and adjustable) and easily understood even with the windows down in suburban traffic. Even if you miss an audible direction, you've still got the crystal-clear 3.5-inch display, which you can view in either 2D or 3D. The 3D image took some getting used to, but then again I had also been using the 700 series GPS units with the 2D screen.

New with the 2000 is the large "+" and "-" at the top left and right of the screen: touch either to zoom in or out on the map display. Also easily accessible at the extreme top right of the screen is a green signal strength status bar that is displayed when the unit is getting good signals; one touch on those bars and you're shown a simulated graphic portion of the Earth and where each acquired satellite is located. Also shown is the number of





The larger-than-normal cigarette lighter adapter/charger plugs into your vehicle's 12-VDC power supply receptacle. It takes four to five hours to completely charge the unit.



Here's a view of the RoadMate 2000 turned sideways to show the two small thumbwheels for adjusting the left/right and up/down angle of the unit for best viewing. The small pushbutton on the top of the unit turns it on and off. It truly is a power-up-and-go GPS.

satellite the unit is currently receiving, along with large signal strength bars indicating relative signal strength, and a note such as "3D position fix Tracking 12."

Also with the Magellan 2000 you can now enter a U.S. zip code when planning a route you'd like the unit to give you directions to. A couple of easy key presses gets to you that screen and the rest is, as they say, a piece of cake. You can save up to 250 addresses for easy routing, and there's also an SD/MMC memory card slot on the side of the unit that gives you the option of backing-up/saving the address book to a SD/MMC memory card. Once the addresses have been saved to the memory card through the Options menu, the address book can be restored to the Magellan RoadMate 2000 at a later time or to another Magellan RoadMate 2000—certainly helpful if the unit is damaged and has to be replaced. Magellan says that you can pur-

chase an SD/MMC memory card at your local retail store and that it has found the SanDisk brand to be reliable. The company also recommends purchasing the smallest size available.

Using the Magellan 2000 is a pleasure. While you're not supposed to be using the touch screen while driving, it's very easy to do so—much easier, in fact, than the larger 700 series because the 2000 isn't mounted on the gooseneck type arm. It's almost as if it's an integral part of your vehicle's windshield! Touch the 2000's screen and the unit doesn't move, period.

The Magellan RoadMate 2000 comes complete with the mounting bracket (including the adhesive mounting disc in case you want to use it on your dashboard), USB cable, and cigarette lighter cable/adaptor. There are a grand total of 1.3 million points of interest (POIs), ranging from restaurants and recreation areas to vehicle service centers and motels, preloaded into the unit. While the 2000 is ready to go for the 48 contiguous states, the other models offered by Magellan include all of North America.

For bikers, Magellan also has a motorcycle mount for \$49.99. There's also a slightly beefier vehicle windshield mount for the same price.

You just can't get lost with the RoadMate™ 2000 GPS. Its portability, intuitive operation, and excellent battery life (about three hours continuous use) add to the tremendous versatility of this outstanding vehicle GPS. For the price, it's quite a deal. If you don't need the additional features found on their other RoadMate units, such as music player, live traffic reports, and picture viewer, the 2000 is the perfect driving companion.

Be sure to tell Magellan—or your dealer—that you read about the RoadMate 2000 right here in *Popular Communications!* ■

## Videos & CDs from CQ!

### Ham Radio Magazine on CD

Hot Item!

Brought to you by CQ & ARRL

Enjoy quick and easy access to every issue of this popular magazine, broken down by years!

Three sets, each containing 4 CDs -

1968-1976	Order No. HRCD1	<b>\$59.95</b>
1977-1983	Order No. HRCD2	<b>\$59.95</b>
1984-1990	Order No. HRCD3	<b>\$59.95</b>



Buy All 3 Sets and Save \$29.90!  
Order No. HRCD Set  
**\$149.95**

### videos



Getting Started in VHF	Order No. VVHF	<b>\$19.95 NOW ONLY \$12.95 ea.</b>
Getting Started in DXing	Order No. VDX	
Getting Started in Ham Radio	Order No. VHR	
Getting Started in Contesting	Order No. VCON	
Getting Started in Packet Radio	Order No. VPAC	
Ham Radio Horizons: The Video	Order No. VHOR	
Getting Started In Amateur Satellites	Order No. VSAT	

Buy all 7 for your Club for only **\$69.95**

Shipping and Handling: US and Possessions - Add \$5.00 for the first book, \$2.50 for the second, and \$1 for each additional book.

**FREE SHIPPING ON ORDERS OVER \$75.00** (merchandise only).

Foreign - Calculated by order weight and destination and added to your credit card charge.

**CQ Communications, Inc.**

25 Newbridge Rd., Hicksville, NY 11801

516-681-2922; Fax 516-681-2926

Order Toll-Free 800-853-9797

Visit Our Web Site [www.cq-amateur-radio.com](http://www.cq-amateur-radio.com)

## Capitol Hill And FCC Actions Affecting Communications

### FCC Designates BPL As "Information Service"

Putting it on an equal regulatory tier as cable modem and DSL Internet access services, the Federal Communications Commission in November designated Broadband over Powerline technology (BPL) as an "information service."

"By ruling BPL service's transmission component is 'telecommunications,' and an 'information service,' BPL will find it easier to deploy beyond the handful of networks that are currently scattered around the country, mostly in the Northeast," it was reported in a story by W. David Gardner on TechWeb News.

According to FCC Chairman Kevin Martin, "The Commission's broadband statistics show that subscribers to BPL Internet access services, although few in number overall, increased by nearly 200 percent in 2005." Martin has been a supporter of BPL technology. "By finding that BPL Internet access services are information services, the Commission provides the regulatory certainty necessary to foster competition between different broadband platform providers," he said.

Radio amateurs, principally through the American Radio Relay League, based in Newington, Connecticut, have raised serious concern about potential radio interference from the expansion of BPL.

### Amateur Radio Receives EmComm Status

With the signature of President George W. Bush last October, radio amateurs have been formally included in a section of the Department of Homeland Security 200 Appropriations Act-HR 5441, officially designating them as part of the emergency communications community.

According to a report in the American Radio Relay League's *ARRL Letter*:

...radio amateurs are among the entities with which a Regional Emergency Communications Coordination Working Group (RECC Working Group) must coordinate its activities. Included within the DHS' Office of Emergency Communications—which the measure also creates—RECC Working Groups attached to each regional DHS office will advise federal and state homeland security officials. The final version of the legislation incorporated language from both House and Senate bills and was hammered out in a conference committee.

The stipulation for amateur radio is included in the legislation's 21st Century Emergency Communications Act," Subtitle D, Section 671.

RECC Working Groups coordinate, in addition now to radio amateurs, with communications equipment manufacturers and vendors, including broadband data service providers, local exchange carriers, local broadcast media, wireless carriers, satellite communications services, cable operators, hospitals, public utility services, emergency evacuation transit services, ambulance services, and representatives from other private sector entities and nongovernmental organizations, the *ARRL Letter* reported.

"The RECC Working Groups will assess the survivability, sustainability and interoperability of local emergency com-

munication systems to meet the goals of the National Emergency Communications Report," the *ARRL Letter* continued. "That report would recommend how the U.S. could 'accelerate the deployment of interoperable emergency communications nationwide.' They also will coordinate the establishment of 'effective multi-jurisdictional, multi-agency emergency communications networks' that could be brought into play in an emergency or disaster."

Amateur radio operators, in an earlier version of the 21st Century Communications Act (HR 5852), were included as members of the RECC Working Groups.

### FCC Adopts Changes In "Omnibus" Proceeding

An FCC Report and Order adopted October 4, 2006, and released October 10, has adopted the so-called "Omnibus" amateur radio proceeding, enacting almost all of the proposed changes in a Notice of Proposed Rulemaking released in 2004.

Highlights include:

- Expansion of the phone subbands in the 75- and 40-meter bands
- Auxiliary station permission to transmit on portions of the 2-meter band
- Permission for use of spread spectrum on 222 to 225 MHz
- Permission for radio amateurs to retransmit communications from the International Space Station
- Permission for licensees to designate a specific amateur radio club to receive their call signs in memoriam
- Prohibition of applicants from filing more than one application for a specific vanity call sign
- Elimination of certain restrictions on equipment manufacturers
- Granting amateur radio stations in Alaska and surrounding waters more flexibility in providing emergency communications
- Clarification that "amateur stations may, at all times and on all frequencies authorized to the control operator, make transmissions necessary to meet essential communication needs and to facilitate relief actions"
- Deletion of the frequency bands and segments specified for RACES stations
- Deletion of the requirement for public announcement of test locations and times

According to the *ARRL Letter*, in "refarming" the frequencies currently authorized to Novice and Technician Plus licensees, the Commission increased the voice segments for General, Advanced and Amateur Extra licensees.

"On 75 meters, Generals will be able to use voice from 3800–4000 kHz, an increase of 50 kHz. Advanced class licensees will be able to use voice from 3700–4000, and increase of 75 kHz and Amateur Extras will be able to use voice from 3600–4000 kHz, a generous increase of 150 kHz," the *Letter* said. "On 40 meters, Advanced and Extra class licensees will be able to use voice from 7125–7300 kHz, an increase of 25 kHz. General class licensees will be able to



use voice on 7175-7300, an increase of 50 kHz.

"On 15 meters, General class operators will have phone privileges on 21275-21450 kHz, an increase of 25 kHz," the Letter continued.

The changes will go into effect 30 days after the R&O is published in the Federal Register, the ARRL reported. Following the announcement, ARRL President Joel Harrison, W5ZN, said that

...on behalf of the ARRL and the Commission's licensees in the Amateur Radio Service, I want to express appreciation for your release (Oct. 10) of the Report and Order in WT Docket 04-140 (FCC 06-149) amending Part 97 of the Commission's rules.

The Commission's action in clearing this pending proceeding will assist the Amateur Radio Service in meeting its objectives, particularly with regard to providing emergency and public service communications.

## A Year After Katrina, APCO Continues Relief Effort

Communications centers in the Mississippi coast areas damaged by Hurricane Katrina received additional relief from The Association of Public-Safety Communications Officials (APCO) International in October 2006—a year after the storm hit.

Immediately following the storm, the organization's Mississippi Chapter "established a disaster relief fund and hand delivered gift cards worth \$175 each to 133 individual dispatchers affected by the hurricane... To celebrate the anniversary of this event, the group returned to the coast to distribute additional gift cards to the affected communications centers," APCO reported.

"It is always nice to know you have a friend in deed when tragedy hits your home and work place," Tanya Mayo, media director of the APCO Mississippi Chapter, said. "We all know everyone that goes into the public safety field are wonderful people that love to help their neighbor and colleagues and that is why we have organizations like APCO to join hands together and step up to the plate and be there when our colleagues need us the most."

The association's Mississippi Chapter, along with the Mississippi Chapter of the National Emergency Number Association (NENA), provided the additional relief to the communications centers, according to a news report on APCO's Internet website. ■

# RSGB Books from CQ

## HF Antenna Collection



RSGB, 1st Ed., 1992. 233 pages. A collection of outstanding articles and short pieces which were published in Radio Communication magazine during the period 1968-89. Includes ingenious designs for single element, beam and miniature antennas, as well providing comprehensive information about feeders, tuners, baluns, testing, modeling, and how to erect your antenna safely.

Order: RSHFAC **\$16.00**



## Packet Radio Primer

By Dave Coomber, G8UYZ & Martin Croft, G8NZU

RSGB, 2nd Ed., 1995, 266 pages. Detailed practical advice for beginners. Completely revised and greatly expanded to cover developments in this field and beyond

bare basics into advanced areas such as satellite operations.

Order: RSPRP **\$16.00**



## HF Amateur Radio

RSGB, 2002 Ed. HF or short wave bands are one of the most interesting areas of amateur radio. This book discusses setting up an efficient station, which equipment to choose, installation, and the best antenna for your location and more.

Order: RSHFAR **\$21.00**

## Digital Modes for All Occasion

By Murray Greenman, ZL1PBPU  
RSGB, 2002 Ed., 208 pages. Simply the most "complete" book on Digital Modes available. Over 100 illustrations!

Order: RSDMFAC **\$27.50**



## VHF/UHF Handbook

Edited by Dick Biddulph, M0CGN



RSGB, printed 2002., 317 pages. One of the most complete guides on the theory and practice of reception and transmission on VHF/UHF band. Hundreds of illustrations and photos.

Order: RXVUH **\$35.00**

## Practical Receivers for Beginners



By John Case, GW4HWR

RSGB, 1996 Ed., 165 pages. Selection of easy-to-build receiver designs suitable for amateur bands (including microwaves) and simple fun projects and test equipment.

Order: RSPRN **\$24.00**

## Practical Antennas for Novices



By John Heys, G3BDQ

RSGB, 1st Ed., 1994, 52 pages. How to build simple but efficient antennas for each of the Novice bands up to 434MHz plus ancillary equipment to ensure they're working!

Order: RSPAN **\$12.50**



## Antenna Topics

by Pat Hawker, G3VA  
RSGB, 2002 Ed. 384 pages. A chronological collection of selections of G3VA's words over the years. Hundreds of areas and subjects are covered.

Order: RSSAT **\$29.00**

View more RSGB Books on our web site  
[www.cq-amateur-radio.com](http://www.cq-amateur-radio.com)

Name \_\_\_\_\_ Callsign \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Qty	Item #	Description	Price	Total Price
Shipping and Handling: US and Possessions - \$5.00 for the first book, \$2.50 for the second, and \$1 for each additional book. FREE SHIPPING ON ORDERS OVER \$75.00 (merchandise only). Foreign - Shipping will be calculated by order weight and destination and will be added to your credit card charge. ALLOW 3 TO 4 WEEKS FOR DELIVERY			Total	

Method of payment  Check  Visa  MasterCard  Discover  AmerExpress

Credit Card No. \_\_\_\_\_ Exp. date \_\_\_\_\_

CQ Communications Inc., 25 Newbridge Rd., Hicksville, NY 11801  
516-681-2922; Fax 516-681-2926; Order Toll-Free 800-853-9797

## Nuclear Nightmare—How Ready Are You?

**T**he CBS network has, over the last nine months, produced or couple of rather interesting dramatic series, specifically *The Unit* and *Jericho*.

*The Unit* is a fictional dramatization of life in Delta Force. One of the executive producers is Eric Haney, an original member of Delta upon its formation in 1978. If you have the time, grab a copy of Eric's book, *Inside Delta Force* and be prepared for a good read. Since Eric is one of the producers and also a technical advisor for the series, what you see on the screen is, I believe, a relatively accurate portrayal of what it is like to be a member of Delta. These guys are "shadow warriors." They take the fight to the enemy who are out to destroy our country and our way of life. I realize that there is a lot of Hollywood in this series, but I wouldn't be surprised to discover some, if not all, of the episodes are actually based upon factual occurrences.

*Jericho*, on the other hand, is a pure fiction drama about a nuclear attack on the United States. It takes about five episodes to finally realize that the nuclear attack was staged by Islamic extremists. It seems that an undisclosed number of portable nuclear devices were secreted into the United States and detonated around the country at specific locations. (Hmmm, where have I heard that before?)

Over the years, I've developed a theory that we're not in any real danger from a thermonuclear exchange with another country. That was typical Cold War thinking that existed for 40 years. Having said that I do, however, seriously believe that America will eventually be subjected to nuclear terrorism. While not as totally devastating as a thermonuclear exchange involving hundreds of high yield nuclear warheads, a few well placed tactical nukes sprinkled around the country at major population centers could definitely overwhelm the disaster response forces of FEMA and the U.S. military. This is no secret and the "bad guys" know this, which is why they are constantly trying to procure man-pack nuclear devices and weapons grade nuclear bomb making material similar to our SADAM devices used by special operations forces.

It's also no secret that there are at least 100 extremely small, low-yield man-pack nuclear devices missing from the former USSR nuclear arsenal. These devices were (are?) to be used by Soviet Special Forces (Spetsnaz) units in the event of war between the USSR and Western Powers. There seems to be some evidence that Al Qaeda operatives have purchased up to 20 of these weapons. That is a chilling thought.

In his book *Al Qaeda: Brotherhood of Terror*, author Paul L. Williams, a former FBI consultant, identifies the purchase of 20 man-pack nukes as one part of a three-part deal in which al-Qaeda operatives purchased nuclear devices or fissionable nuclear material at a cost of around \$30 million. These "suitcase nukes" are small, easily transportable, and extremely deadly and could easily be smuggled into the United States via the thousands of miles of international borders between the U.S. and Canada and Mexico. There is also evidence that Islamic extremists have infiltrated the United States via underground tunnels on the Tex/Mex border. Are we seeing a pattern here?

Taking a look back at the CBS series *Jericho*, it now doesn't seem so unimaginable that we could be the victims of nuclear

*Potassium iodide pills, recommended for radiation exposure and offered at the [ki-4u.com](http://ki-4u.com) website, are in high demand—so much so that the federal government actually bought from the company after 9/11!*



terrorism. In the series, the nuclear devices used were in the 20- to 50-kiloton (equivalent to 20,000 to 50,000 pounds of TNT) range. By way of comparison, "Little Boy," the atomic bomb dropped on Hiroshima in 1945 had a yield of 20 kilotons and killed approximately 140,000 people. The Hiroshima blast was an air burst, detonated approximately 2,000 feet above ground, which accounted for the vast destruction of the city and the relatively small amount of nuclear fallout. Had "Little Boy" been detonated at ground level, the blast damage would have been more localized, but the subsequent fallout would have been much greater owing to the enormous amount of debris and soil that would have been sucked up into the blast and irradiated by the nuclear fission process.

I believe that should the United States come under attack by nuclear terrorism the blasts will be at ground level. It would be easier to transport a nuclear device in a truck or car to the desired area and detonate it as opposed to renting an airplane and trying to deliver an air burst over the target. A ground burst would involve a lot more fallout and cause much more widespread disruption than an air blast. But the scariest part is that it's absolutely doable. Al Qaeda and other extremist/terrorists groups are, for the most part, very well financed. As the old saying goes, "money talks, BS walks," and these guys have plenty of money.

What follows is but one scenario of how relatively easy it would be to transport nuclear fissionable material into the United States and manufacture a low-yield, compact, easily transportable nuclear device suitable for terrorist purposes.

### Baseball Size

According to my research, the amount of plutonium needed to construct a 20-kiloton nuclear device is about the size of a baseball. Not very big, huh? It's actually small enough to fit inside the cylinder of an imported automobile. Just pull the engine head, slide the plutonium down into the cylinder, rebolt the head, and you have a way to import weapons-grade pluto-



nium into the States with little chance of being detected. The engine block, although not made of lead, would offer some shielding, as would the container that the automobile was transported in. Add some additional steel or heavy metal shielding to the container, and you have a pretty well disguised way to get some really nasty stuff into the United States without attracting attention.

My research also indicates that only about 2 percent of the containers off-loaded at major ports of entry into the States are checked by customs officials. Although customs and the U.S. Coast Guard employ some rather sophisticated electronic devices to detect nuclear materials, there is a better than 50-50 chance that the plutonium would make it through the port without being detected. That's scary.

Once cleared through customs, the recipient of the "cargo" would be able to transport the container with the automobile containing the plutonium to a location where it could be recovered and incorporated into a nuclear bomb. It would take special handling and knowledgeable technicians, but remember, these guys have the money it takes to buy the expertise they need. There are a lot of scientifically trained folks in the old USSR that are out of work and need money. It's no small leap to figure that they could be bought for the right price.

Once assembled, the nuclear bomb could be stored until needed. Careful shielding of the device would render background radiation levels not out of standard, so our nuclear specialists would be clueless about the existence of this and other devices. With the hard work is done, it would only be a matter of transporting the devices to the selected target areas, arming the devices, and watching the fireworks.

I don't mean to be flippant—this is deadly serious. And this is just one scenario I took right off the Internet. There is nothing secret about this idea, or the methods used to smuggle weapons-grade plutonium into the country. What worries me is that there may be one or more such devices already in the States, just waiting for the right moment to be detonated.

### Forget The Lump In Your Throat And Get To Work!

Okay, now that I've got your attention, how prepared are you and your family to

deal with a limited nuclear emergency? The old days of the Cold War and everyone digging a blast shelter, stocking it with oxygen, food, water, guns, ammo, two redheads in short skirts (hey, I can dream, can't I?), and being ready to survive in the aftermath of a nuclear exchange between the United States and the USSR are long gone. So, too, is the mass of literature on how to prepare and survive a nuclear event. Ditto with the fallout shelters that used to be in every major public building in the '50s and '60s. Sure these shelters, for the most part, still exist, but they've been turned into storage areas; the food, water, and radiological measuring equipment long ago taken out and disposed of.

The point that I am trying to make here is that, basically, you're on your own when it comes to preparing for a nuclear emergency.

The Internet is a great resource tool, offering all sorts of sites that deal with just about everything imaginable, and nuclear survival is no exception. However, you must be wary as there are some sites solely for the benefit of survivalist and/or militia groups. Yes, there are still some "survivalists" out there who have their bunkers stocked and are waiting (hoping?) for a chance to play nuclear war survival! Thankfully these folks are in the minority.

One source of solid information I've found can be accessed at [www.ki4u.com/guide.htm](http://www.ki4u.com/guide.htm). It's a very informative site, so stop and take a good look around. You'll also find links to other excellent information resources, including the updated version of Cresson Kearny's outstanding book, *Nuclear War Survival Skills*. This manual is a must-have for anyone who wants to know how the layman can cope during a nuclear event. Many of the things in Kearny's book are MacGyver-type solutions that require very little in the way of specialized tools or engineering knowledge. Expedient radiation meters, air filtration units, along with shelters, food storage, and medical issues are all thoroughly covered in this book.

The KI4U site also offers a PDF form of the paper "What to do if a Nuclear Disaster is Imminent!" which is packed with much needed (and forgotten) information. Just reading that one document may save your life and the lives of your loved ones. There's a wide selection of products relating to nuclear survival and even has a section devoted to the *Jericho* TV series ([www.ki4u.com/jericho.htm](http://www.ki4u.com/jericho.htm))!

## CCRadio<sup>plus</sup> The Best Long Range AM Radio



- AM, FM, TV Audio, Weather Band + Alert
- Audio Shaped for Human Voice
- 5 Memory Buttons per Band
- Rotary Tuning Knob with 1kHz Fine Tuning
- Lighted Display, Timer, and Alarm
- \$164<sup>95</sup> Incl. FREE U.S. Shipping

# FREE CATALOG



800-522-8863 • [ccrane.com](http://ccrane.com)

**TERRORISM FORCES  
US TO MAKE A  
CHOICE. WE CAN BE  
AFRAID. OR  
WE CAN BE READY.**

**READY**

**WWW.READY.GOV**

**1-800-BE-READY**



## Our February Winner: David Gardner of Lapeer, Michigan!

The one theme that the KI4U site tries to hammer home is that preparedness for a nuclear incident starts with concerned individuals taking the time to get informed about what we are facing. Many of us Baby-Boomers remember the old Cold War days of the late 1950s and 1960s, with the duck-and-cover drills practiced in school and newspaper articles about how to survive a nuclear event. I still can picture the on-going series about nuclear war survival, shelter building, radioactivity monitoring, and survival skills that appeared in Spokane's *Spokesman Review* newspaper during that era.

Another great informative read (although fictional) is *Pulling Through* by Dean Ing available through [www.amazon.com](http://www.amazon.com). This is similar to *Jericho*, but was written during the height of the Cold War when the threat of a nuclear holocaust was very real. There are some extremely interesting and elegantly simple solutions regarding nuclear war survival that Dean Ing covers in fine style. He's an inventive guy whose knowledge and writing style entertain as well as inform. While you're on Amazon, take a look at *Lucifer's Hammer* by Jerry Pournelle and Larry Niven. This book is another TEOTWAWKI (the-end-of-the-world-as-we-know-it) novel, but nonetheless a first-rate and informative read, especially on the psychology involved in a wide-scale disaster.

### A Challenge To Act

This month's column is not designed to scare the heck out of the readers, but to wake people up to the fact that we have lost some skills regarding nuclear survival that we need to reclaim. Now's the time to act. Believe it or not, there were survivors at or near ground zero at Hiroshima and Nagasaki. Those two bombs were in the same range of yield that we are talking about here. I'm not trying to trivialize the possibilities of a nuclear terrorist event, but you have to believe that this would be a survivable situation.

That is a wrap for this month. Don't let the threat of a nuclear terrorist event scare you to the point of *inaction*. While a nuclear detonation would be horrendous, it would *not* be the end of the world. Life will go on—if you're prepared. Be there to participate.

Remember, preparedness is not optional—for real! ■



Here's David Gardner of Michigan in his radio room.

*Pop'Comm* reader David Gardner tells us,

I've been reading *Popular Communications* since 1990. I first became interested in radio in the '50s when a neighbor, Bob Schaafl, got a Junior Experimenter's Electronic kit from National Radio Institute. You could build 10 different circuits, including radios and transmitters. He used acid core solder, and I would clean all that off to neutralize the acid and put it back together. I had so much fun with it that I got one for myself and also for a couple of my neighbors. Then my aunt gave me an old Zenith upright radio. I started listening to shortwave on it and got a real kick out of doing so.

The church we went to had a radio station in the basement and the engineer had an old BC923 receiver out of a tank from World War II. He could listen to our police department on 3910, which was the only frequency they used. I listened to it for years until they came out with a Regency scanner that used crystals. Interestingly, there was an article in *Pop'Comm* in October 1996 about WMPK, which was the church radio station I frequented.

I put together several kits, about 50 alto-

gether, including a Knight Kit by Allied Radio No. R-100A, Heathkits, Eico kits, and Lafayette Radio kits, along with miscellaneous kits from my neighbors. I had fun with that and loved listening to shortwave.

Some of my basic scanners are two RadioShack PRO-210s, two 2026s, a 2006 and 2052, and handheld PRO-43. I also have a Uniden Bearcat BC895XLT and an old Allied Radio A-2589 tunable scanner. I've really enjoyed these!

For communications receivers I have a RadioShack Realistic DX390, a Hallicrafters SX-100, 101, and the good old one, a Hammarlund HQ180A, the first big receiver I got. I have a Zenith Royal 3000-1 Transoceanic.

I once put up an 80-foot tower when I first started playing around with radios, but I wouldn't go up an 80-foot tower now. Years ago I was joking around with the local florist and asked if he would deliver flowers anywhere; he said yes, so I said I'd like flowers delivered on top of the 80-foot tower sometime. About a week later, during Christmas, lo and behold, there was a wreath on top of the tower. The florist's son had climbed up and hung the wreath, even though he about froze!

*Popular Communications* invites you to submit, in about 300 words, how you got started in the communications hobby. Entries should be typewritten, or otherwise easily readable. If possible, your photo should be included.

Each month, we'll select one entry and publish it here. All submissions become the property of *Popular Communications*, and none will be acknowledged or returned. Entries will be selected taking into consideration the story they relate, and if it is especially interesting, unusual or even humorous. We reserve the right to edit all submitted material for length, grammar, and style.

The person whose entry is selected will receive a one-year gift subscription (or one-year subscription extension) to *Popular Communications*. Address all entries to: "V.I.P. Spotlight," *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801 or e-mail your entry to [popularcom@aol.com](mailto:popularcom@aol.com).



# Bidirectional Mapping Radios— The Wave Of The Future

**W**hen the topic is radio location, the term “bidirectional” refers to the capability of a global positioning system (GPS) receiver and mapping unit to send and receive latitude and longitude position fixes. A GPS mapping receiver, on its own, will display your current position on a map screen, generally accurate to the diameter of a 15-foot circle.

That same GPS might also offer a NMEA 0183 output data stream that can upload to a two-way radio to transmit a position data burst. There are hundreds of radio systems that would upload single-direction position fix data bursts, but “going bidirectional” could allow that same GPS mapping device to display the precise position of other units on the same frequency.

Garmin ([www.garmin.com](http://www.garmin.com)) was granted an FCC experimental waiver of the rules to test bidirectional portable GPS equipment on Family Radio Service (FRS) channels. One potential use for this equipment would be enabling a scout leader to call out to another distant FRS radio, and not only hear the response on the speaker, but actually see his or her position on the FRS screen.

“We regularly get letters from wilderness trekkers who say their Garmin FRS bi-directional GPS radio equipment had located a lost party,” says a Garmin representative at a local electronics trade show.

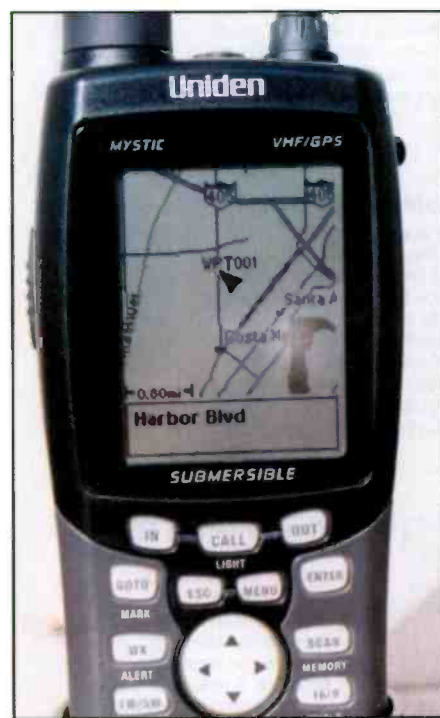
## What You See Is What You Get— And More!

For boaters, kayakers, or fishermen out on a lake, another radio, an under-\$400 submersible marine 55-channel VHF handheld, includes bidirectional signaling with a GPS receiver built in! It’s manufactured by Uniden and is called Mystic. You can obtain more information at [www.uniden.com](http://www.uniden.com).

The trans-reflective LCD screen will also show land mapping, including lakes and rivers with a MapSend Streets CD-ROM, or detailed ocean charts from



*The Uniden Mystic as a radio.*



*The Uniden Mystic as a GPS charting receiver.*

Magellan BlueNav. The detailed mapping software adds another \$150 to the \$399 price, but what you get is a powerful marine VHF radio, completely submersible, with a built-in GPS, detailed screen mapping, and the ability to send and receive GPS data bursts using marine digital selective calling (DSC) data bursts on 156.525 MHz, VHF Channel 70.

“I went overboard and I watched my boat slowly sail away,” says a lake fisherman who owes his life to bidirectional radio/GPS signaling. “I realized I had my Mystic handheld on my belt, so I grabbed the radio, turned it on, and pushed the red distress button. I did it a couple of times to make sure the GPS had acquired my position fix,” adds the lucky overboard fisherman. Within minutes, park patrol marine police units picked up the emergency DSC alert and headed for the position indicated on the GPS equipment attached to the marine radio.

Without pushing any buttons again, the soggy fisherman was happy to hear a friendly voice coming from his speaker

since the DSC radio knew to switch automatically to Channel 16 when it received a digital acknowledgement. This handheld marine radio may ONLY be used on navigable waters, and it is NOT intended for use onshore.

## Historical First

Until recently, park rangers and other marine rescue squads required two separate pieces of equipment to manage the VHF radio system and GPS charting. For the first time in marine VHF radio history, a trans-reflective color radio screen now turns into a bidirectional 25-watt radio charting device. It’s manufactured by Standard Horizon ([www.standard-horizon.com](http://www.standard-horizon.com)), a competitor of Uniden, and has been seen for under \$999 with one included C-Map marine chart cartridge.

The Standard Horizon GPS radio chart plotter, model CPV350, offers a seven-inch diagonal, 256-color TFT (thin film transistor), sunlight-viewable, high-resolution screen.

# RSGB Books

now available from



## IOTA Directory - 11th Edition

Edited by Roger Balister,  
G3KMA.

RSGB, 2002 Ed., 128 pages  
This book is an essential guide to participating in the IOTA (Islands on the Air) program. It contains everything a newcomer needs to know to enjoy collecting or operating from islands for this popular worldwide program.



Order: RSIOTA **\$15.00**

## Antenna Toolkit 2

By Joe Carr, K4IPV

RSGB & Newnes, 2002 Ed.  
256 pages. A definitive design guide for sending and receiving radio signals. Together with the powerful suite of CD software included with this book, the reader will have a complete solution for constructing or using an antenna; everything but the actual hardware!



Order: RSANTKIT2 **\$40.00**



## The Antenna File

RSGB. ©2001. 288 pages.

**\$34.95. Order: RSTAF**

50 HF antennas, 14 VHF/UHF/SHF antennas, 3 receiving antennas, 6 articles on masts and supports, 9 articles on tuning

and measuring, 4 on antenna construction, 5 on design and theory, and 9 Peter Hart antenna reviews. Every band from 73kHz to 2.3GHz!

Order: RSTAF **\$32.00**

## Amateur Radio Mobile Handbook

RSGB, 2002 Ed., 128 pages.

The Amateur Radio Mobile Handbook covers all aspects of this popular part of the hobby. It includes operating techniques, installing equipment in a vehicle and antennas, as well as maritime and even bicycle mobile. This is essential reading if you want to get the most out of your mobile station.



Order: RSARMH **\$21.00**

**Shipping and Handling:** US and Possessions - Add \$5.00 for the first book, \$2.50 for the second, and \$1 for each additional book. **FREE SHIPPING ON ORDERS OVER \$75.00** (merchandise only). Foreign - Calculated by order weight and destination and added to your credit card charge. ALLOW 3 TO 4 WEEKS FOR DELIVERY



**CQ Communications Inc.,**

25 Newbridge Rd.,

Hicksville, NY 11801

516-681-2922; Fax 516-681-2926

Order Toll-Free 800-853-9797

Visit Our Web Site

[www.cq-amateur-radio.com](http://www.cq-amateur-radio.com)



Combo radio and GPS charting radio from Standard.

This big screen can read out radio settings, navigation information, GPS data, and also offers the ability to customize the display windows that could also tie in a depth sounder, radar, or an underwater search camera.

The 55-channel marine VHF radio presents a unique positioning of tuning controls, angled on the right side of the unit. This lets you dial around while holding on for your life in heavy weather! The radio system also incorporates a loud hailer, complete with fog signals, bell sounds, whistles, horns, and, when rolling Code 3 out on the lake, an electronic siren.

The VHF radio is continuously running, even though the screen may be filled with mapping information of the local harbor, bay, lake, or river. C-Map cartridges for inland fishing, lake boating, river rafting, or ocean navigating are available from \$99 to \$199, depending on how much of a region you want to have stored on the tiny chip card. The C-Map electronic charts are vector-based and come in three geographical sizes: local, wide, and super wide. Slip the cartridge in the bottom of the radio navigator, and watch the screen go all the way down to individual dock pilings and piers.

The bidirectional signaling could allow position polling of other Standard VHF radios in the area. If someone in your group hits a hot fishing spot, you can poll their position and read out bearing and distance to the blinking x on the screen. Of course, emergency calls instantly turn the radio into a powerful digital direction finder. Like the marine



Garmin RINO GPS and position sender.

VHF handheld, the Standard Horizon GPS radio chart plotter is intended specifically for on-the-water use.

## Ham Hopes

Ham radio operators were hoping Kenwood Corporation would include a built-in GPS to their popular D-7 handheld. It hasn't happened yet, but the Kenwood D-7 now has a plug-in, bidirectional GPS mapping receiver, the AvMap G4T ([www.avmap.us](http://www.avmap.us)), coincidentally manufactured by C-Map.

"The ultra bright five-inch TFT color screen features preloaded North American mapping on an included 2-GB SD card,"

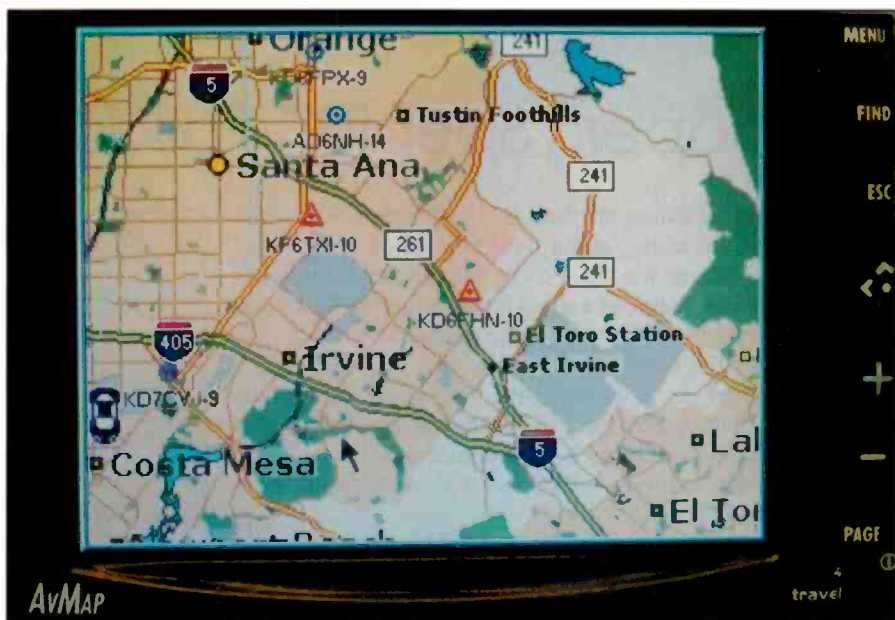


says Don Arnold, W6GPS, AvMap guru. The color screen is daylight viewable, and the AvMap G4T is entirely portable with its own built-in batteries. This means you can take it along on the next geocache and work it into bidirectional signaling with the portable Kenwood D-7 or mobile Kenwood D-700.

When the Kenwood ham radio is in the APRS mode on 144.390, the AvMap GPS will show all incoming position fix data bursts as callsigns on the screen. It also will show if the other ham is moving or stationary. The Kenwood radio automatically transmits your *own* position every 30 seconds or at any specified interval of your choice.

The bidirectional capabilities of the GPS gives the radio YOUR position fix, and the radio gives the AvMap *other* position fixes and stores that information in an APRS incoming signal folder.

Here in Southern California hams who are members of our local Orange County Red Cross chapter can be seen on the portable screen as roving red triangles as they head to a call. Once they get to where they're going, they turn into a blue circle along with their callsign. You can watch other units on the screen sending their positions with Kenwood equipment or



AvMap tied into the Kenwood D7, showing bidirectional signaling.

ICOM and Alinco equipment with the optional built-in APRS software and external GPS receiver.

### No Two Ways About It

This new technique of bidirectional radio and position exchange of informa-

tion will be the wave of the future for GPS and radio. We already have GPS built in to tiny cell phones, so it should be only a matter of time before the hams get one radio that does it all, much like the marine Mystic portable charting radio or the 25-watt big screen radio and mapping monitor.

It's only a matter of time. ■



## ORDER TODAY!



Do you own a radio, a shortwave receiver, a scanning receiver, or a ham radio? Then Monitoring Times® is your magazine! Open a copy of MT, and you will find news, information, and tips on getting more out of your radio listening. In fact, it's the most comprehensive radio hobby magazine in the U.S.

**MT Express** - Not only do we offer a premium monthly printed magazine, but we also offer the popular

MT Express digital version of Monitoring Times. This is the best way to get your magazine as soon as it's released, right from the internet! All you have to have is an internet connection with an e-mail address and you're ready for all the excitement of a truly interactive publication. For less than the cost of a printed subscription, you get the full magazine in pdf format with **color** photos throughout and active links to all web sites mentioned in the text.

Packed with up-to-date information concisely written by the top writers in the field, Monitoring Times® is your foremost guide to profiles of broadcasting and communications installations; home projects; and tips on monitoring everything from air, sea, and space to distant ports of call.

**GROVE**  
 800-438-8155  
 828-837-9200 fax: 828-837-2216  
 WWW.GROVE-ENT.COM  
 7540 Highway 64 West  
 Brasstown, NC 28902

#### Order TODAY and use code MTSPECIAL to get all the great offers!

7540 Hwy. 64 W., Brasstown, NC 28902  
 1-800-438-8155 US and Can.; 828-837-9200; Fax 828-837-2216  
 e-mail order@grove-ent.com

	6 months	One Year	Two Years	Three Years
US Rates	<input type="checkbox"/> \$15.50	<input type="checkbox"/> \$28.95	<input type="checkbox"/> \$51.95	<input type="checkbox"/> \$76.95
US 1st Class	<input type="checkbox"/> \$30.00	<input type="checkbox"/> \$57.95	<input type="checkbox"/> \$112.00	<input type="checkbox"/> \$168.00
Canada Surface*	<input type="checkbox"/> \$20.50*	<input type="checkbox"/> \$39.50*	<input type="checkbox"/> \$75.95*	<input type="checkbox"/> \$112.95*
Foreign International*	<input type="checkbox"/> \$30.75*	<input type="checkbox"/> \$59.50*	<input type="checkbox"/> \$115.95*	<input type="checkbox"/> \$175.95*
Electronic Subscription		<input type="checkbox"/> \$19.95	<input type="checkbox"/> \$38.90	<input type="checkbox"/> \$57.85

\*All payments must be in U.S. Funds drawn on a U.S. Bank!

Name \_\_\_\_\_ Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ Country \_\_\_\_\_  
 CC# \_\_\_\_\_ Expiration Date \_\_\_\_\_ CVV2 Code \_\_\_\_\_  
 Signature \_\_\_\_\_  
 E-mail address \_\_\_\_\_  
 MasterCard, Visa, and Discover Card accepted!

Or just go to [www.grove-ent.com](http://www.grove-ent.com) to order NOW!

## Wallpaper “Special” For Your Shack

Ever dream of a futuristic ham shack, complete with white walls, white tables, and a matching set of white transceivers? Where the air is triple filtered and all you can hear is the soothing burble of a small indoor waterfall? This perfect, blissful void **MUST** be ham radio nirvana!

Before I get too carried away (and, yes, I recently saw a Kubrick film), let me point out that I have never seen a ham shack so minimally presented. Even if the transceivers are precisely rack-mounted and nary a cable goes astray, the walls are covered—in some fashion—with QSL cards, awards, and “wallpaper” of various designs.

“Wallpaper,” in this context, consists of ham radio goodies that ops want to show off to visitors (or to themselves). It’s an Old-Time Radio slang that’s still in the lexicon. And it’s here to stay. Although the term usually refers to operating award certificates, it’s Special Event wallpaper that we’re talking about this month. By using just a few of these tips you’ll be knee deep in certificates before you know it!

### Special Event Stations

Special Events are on-air activities designed to generate interest in specific happenings. Clubs or groups try to contact as many people as they can in a given time period (usually over the course of a weekend), and they produce special QSL cards and suitable-for-framing certificates to issue to the stations they work. Even if you’re just getting started, Special Event stations are usually easy to work, and there are hundreds of them on the air each year! If you become an avid Special Events collector you can *actually* wallpaper your shack with the certificates you’ll receive.

Special Event stations show up year round, although the busiest months seem to be April and May, as many groups use them as a warm-up for Field Day. The “events” can range from a town festival, the commemoration of historical events, the opening of museums, club anniversaries, or even holidays, such as operating from Christmas, Florida, in December.

Clubs use these opportunities to get on the air in a big way, not only to publicize these events to the ham community, but also to demonstrate ham radio to the public. Just ask anyone who’s been bitten by the Special Event bug: any excuse will do when it comes to getting on the air!

Regardless of their diversity, all Special Events operations have something in common: awards, special certificates, or collectible QSL cards! They range from commemorative color QSL cards to full-blown, giant-size color certificates. Some are truly impressive, and they’re available just for making one contact with the station(s) involved.

### Finding Them

How do you find Special Event stations? Most ham radio magazines devote some space in each issue to publicizing the Special Event operations occurring that month. These generally appear as brief announcements listing the sponsoring club, the reason for the event, a frequency or two, and details on how to claim your certificate. Perhaps the easiest way to get started is by pointing

**Trinity Site Special Event Station**  
Commemorating the 60th Anniversary of the world's first atomic bomb  
July 16, 1945 – July 16, 2005

Various New Mexico hams, sponsored by the Sandia National Laboratories ARC (W5MPZ) will be operating a special event station from the Trinity Site as part of the 60th anniversary activities.

The world's first atomic bomb was detonated before sunrise in the New Mexico desert about 35 miles east of Socorro, N.M., on July 16, 1945, at 5:29:18 am. Located on the McDonald Ranch, the Trinity Site is now part of the White Sands Missile Range (WSMR). A shallow crater about 200 yards across still remains from the explosion. The stations will be operating, by special permission of WSMR, from “ground zero.”



**W5MPZ**  
SATURDAY, JULY 16, 2005  
1100-2100UTC (0500-1500MDT)  
SSB: 7.260, 14.330 & 21.330  
CW: 7.040 & 14.060 (QRP)



**QSL/Certificates**  
#10 or 6x9 envelope SASE to: (callbook adr.)  
Sandia National Laboratories ARC, W5MPZ  
Attn: Brian Milesosky, N5ZGT  
1021 Dakota SE  
Albuquerque, NM 87108

Ops: Dave KQ5M, Ed K8BJMW, Paul N45N, Jan N0QT, Bob W9YA, Doc K0EVZ & Mark K5LXP  
Additional information available from N45N@zianet.com or http://www.zianet.com/QRP  
The official Trinity Site website is: <http://www.wsmr.army.mil/pao/TrinitySite/trinst.htm>

Sponsored by Sandia Labs' ARC, W5MPZ, this informative certificate was awarded to hams who contacted the station on July 16, 2005, commemorating the successful detonation of the world's first atomic bomb.

your Web browser to [www.arrl.org/contests/spev.html](http://www.arrl.org/contests/spev.html) for up-to-date, online listings. Armed with a list of dates and frequencies, all you need to do is get on the air and begin the hunt.

Most operations will use only one or two transmitters, and antennas can range from verticals to multi-antenna beam arrays. Almost everyone operates on the 40-, 20-, and 10-meter bands and will usually accommodate a Morse code contact if you ask for one.

When beginning your search, remember that interference and band crowding can force the stations to move up or down in frequency, depending on the bands. If the operation doesn't list any

ROYAL SIGNALS AMATEUR RADIO SOCIETY



**GB6VIE**

**VICTORY IN EUROPE**

**8<sup>TH</sup> MAY 1945**



Certificate awarded to \_\_\_\_\_ For having worked this special event station commemorating the 60<sup>th</sup> anniversary of the Battle of the Bulge on PNA

The Royal Signals Amateur Radio Society sent this special certificate to hams who worked GB6VIE starting May 8, 2005 (and running for 28 days), to celebrate the Allies WWII Victory in Europe (see [www.rsars.org.uk/specarch2.htm](http://www.rsars.org.uk/specarch2.htm) for more information).



The Shreveport Amateur Radio Association produced this nifty certificate to commemorate the 60th anniversary of the last combat mission flown over Germany by the U.S. 8th Air Force. The Special Event station was in operation from April 15 to 17, 2005 (see [www.k5sar.com/HTML/SE\\_W5E.htm](http://www.k5sar.com/HTML/SE_W5E.htm) for more information).



frequencies, careful tuning of the General class subbands or the Novice/Technician 10-meter phone subband (28.300 to 28.500 MHz) should turn up what you're looking for. Some stations even include VHF or packet operations.

### Put Them In The Log

So how hard is it to work a Special Event station once you've found one? As I mentioned, most Special Event stations are relatively easy to work. The most popular events, however, generate a lot of interest, and pileups can result. (This merely makes the chase a bit more interesting!) When you work a station, be sure you carefully mark down all the QSO information.

Some stations will give you a contact number to help the operators track you down when it comes time for them to confirm your QSO. Many groups work upwards of 3,000 hams in the course of a weekend, so if your information is more than a little off, they may not find your contact and you'll wind up in the dreaded position of being "not in the log."

### Getting Your QSLs And Certificates

Well, I worked one, so what do I do now? If you first discovered the event in a magazine, it probably listed what the award was (a special QSL card, a certificate, or both), and how to obtain it. Usually, you send in your QSL card with all of the information about the contact, including the day, time, the callsign you worked, the band, and the signal report you gave. If the op mentioned a contact number, make sure you display it prominently on the card. And make sure you've included an SASE (self-addressed, stamped envelope).

If a group says it's offering certificates, it's best to send a 9 x 12-inch SASE. Most certificates are printed on 8 1/2- x 11-inch stock, and this will ensure that yours will not come back folded beyond recognition. Remember that larger envelopes often require extra postage!

### Deck The Walls!

That's all there is to it! In a few weeks you should get your certificate in the mail, ready to be framed and displayed. Before too long, you'll have your own "wall of fame" for all to behold!

## Earn Your HAM RADIO LICENSE The Quick and Easy Way! No Morse Code Required!!



Start earning your Technician ham license today! Get on the air and enjoy the fun hobby of amateur radio. Learn from the "Master" – Gordon West, WB6NOA. Study manual includes all possible test Q&A and more – or study at your PC using interactive practice exam software – NCS \$44.95 + \$6 S&H.

**GWTM**  
\$18.95  
+ \$6 S&H



**Getting Started in Electronics** is a complete electronics course in 128 pages! Forrest Mims teaches you the basics, takes you on a tour of analog and digital components, explains how they work, and shows how they are combined for various applications. 100 electronic circuits you can build and test!

**GSTD**  
\$19.95  
+ \$6 S&H

## The W5YI Group

POB 565101 – Dallas, TX 75356

Order today on the web or call:  
[www.w5yi.org](http://www.w5yi.org) ♦ 800.669.9594

Want to know more about ham radio? Call us!  
Mention this ad to receive a free gift with your order!

## If you enjoy Amateur Radio, you'll enjoy CQ



It's a different kind of ham magazine.

Fun to read, interesting from cover to cover, written so you can understand it. That's CQ. Read by thousands of people each month in 116 countries around the world.

It's more than just a magazine. It's an institution.

CQ also sponsors these world-famous award programs and contests: The CQ World-Wide DX Phone and CW Contests, the CQ WAZ Award, the CQ

World-Wide WPX Phone and CW Contests, the CQ World-Wide VHF Contest, the CQ USA-CA Award, the CQ WPX Award, the CQ World-Wide 160 Meter Phone and CW Contests, the CQ World-Wide RTTY Contest, the CQ 5 Band WAZ Award, the CQ DX Award, CQ iDX Award, CQ DX Field Award, CQ DX Marathon and the highly acclaimed CQ DX Hall of Fame.

Also available in the Spanish language edition. Write for rates and details.

	USA	VE/XE	Foreign
1 Year	31.95	44.95	56.95
2 Years	57.95	83.95	107.95
3 Years	83.95	122.95	158.95

Please allow 6-8 weeks for delivery of first issue

## SUBSCRIBE TODAY!

CQ Magazine, 25 Newbridge Rd., Hicksville, NY 11801  
Phone 516-681-2922 FAX 516-681-2926

# Building A CAT Program In BASIC To Control Ten-Tec's RX-320/D



**T**his month's column continues our series on how to build "virtual" radios using Microsoft's new "free" Visual BASIC and Ten-Tec's RX-320/D as the foundation. My goal is to give you a good understanding of what takes place in a typical RX320/D control program. I won't be teaching you computer programming in detail, but you will be able to create and run a very simple command program that you can use to control the RX320/D from within Windows.

What makes Ten-Tec's radio so interesting is that when you take off the cover and look inside you find that the main components are all contained on a small number of ICs (integrated circuits).

The most important point about these circuits is that the one that actually does most of the work is actually a small computer, not unlike the personal computer you connect to it in order to run it. It has no external controls other than an on/off power switch; you have to connect the radio to a personal computer via a serial cable in order to operate it using a CAT (computer-assisted tuning) software program.

One reason why the RX-320/D is an excellent SDR computer to begin with is Ten-Tec's "open source" philosophy regarding sharing information about the "command codes" that a CAT software program requires to operate the radio.

CAT software sends (and sometimes receives) unique command codes that are used to change the setting of the virtual components within the RX-320/D. So if you want to change the frequency, control the audio volume, or set the operating mode, you need to send a command code to the computer in the radio to operate these virtual controls.

Given the importance of understanding how software code is used to initiate various functions within a software-defined radio, I thought it would be a good idea to look at how the programming language BASIC is used in its pure form. There's no point in jumping into Microsoft's Visual BASIC without first understanding what BASIC is and how it's employed. Once you

understand what's taking place "under the hood" of the radio, using CAT software to perform various tasks (e.g. changing frequencies or bandwidths) becomes much easier in more complex settings, such as within Visual BASIC.

## What Makes The SDR Radio Work

Taking off the cover of the Ten-Tec RX320/D, you notice that it's made up of only three IC chips. The RX320/D relies on two types of software in order to operate. The first is an internal software program that's built into the radio via a special memory chip called an EPROM (or Erasable Programmable Read Only Memory). This software is used by the radio's primary IC chip (labeled ADSP-2101), which is actually a small computer used to define virtual radio circuits.

Since the stored software code resides in a semi-permanent state, it's called Firmware, meaning it's pretty firmly in place, but can be erased if needed. That software is a special code written by the engineer at Ten-Tec who designed the radio, and in general it doesn't need to be updated, often for the life of the radio.

The second piece of software is the control software that you run in your personal computer. While the control software can have many different forms and appearances on your personal computer's screen, in all cases its primary task is to send command codes to the RX320/D's CPU (central processing unit). These command codes control the operation of a set of seven DSP (digital signal processing) functions that the ADSP-2101 chip is programmed to perform through the firmware (see **Table**). The command set also controls two requests for information that the ADSP-2101 IC chip can respond to with information that can be displayed on your computer screen. These are:

Request	Response
Signal Strength	0 – 10,000
Firmware Version	VER XXX, where "X" equals a numeric value

## Understanding Command Code

The actual command code used to control the RX320/D's CPU is very simple: a combination of a letter, a number, and a

**Table**

Function	Command Code Variable
Mode	AM, USB, LSB, CW
Frequency	100 KHz to 30 MHz
BFO offset frequency	0-2000 Hz
Audio Filter	300 cycles to 8,000 cycles
AGC Control	Slow/Medium/Fast
Line-in Level	0-63
Speaker Output Level	0-63



carriage return. Each function has its own letter to represent it (for example, the letter "M" for Mode) and a number to represent either a fixed function (M0 = AM mode and M1 = USB mode) or a range of numbers.

When the control software on your personal computer is operating and connected to the RX320/D via its serial cable, it is the command codes that are being passed to the radio. Likewise, when a request for the signal strength is made, the response comes back from the radio via the serial cable to the personal computer and is displayed there in the control software user interface (what you see on the computer screen when you run the program).

That's all very fine and good, but exactly how does that command code get generated, then directed into the serial cable? I'm going to answer that by looking directly at how a software program does this, using a simple example of control software that can be used to run the RX320/D. This control software is written in the BASIC programming language and is available for free from Ten-Tec along with a great deal of support information.

What makes it particularly valuable for our purpose is that the program does not come in a compiled form (an independent software program). Instead it's provided in its "raw" form of lines of code. This is good because it lets us see exactly how the program was written and also lets us modify it if we wish.

To run the code as a program you need a BASIC interpreter, and I'll tell you how to download a free one from the Internet in a bit. But first let me give you some background on BASIC programming, and then introduce you to the BASIC program that we're going to use to control the RX320/D.

## What Is BASIC Programming?

To keep things simple, I'll be using the previously mentioned software program written in BASIC to illustrate the programming technique. BASIC, which stands for Beginners All-Purpose Symbolic Instruction Code, was developed at Dartmouth College in 1964 and was first used on big mainframe computers. At that time the main programming language was FORTRAN, which was designed by engineers and scientists for their own use and, therefore, very complicated.

BASIC was intended for "ordinary" people, so it was designed with the following specifications:

- general purpose rather than specialized
- easy to use
- expandable
- interactive
- offering debugging help
- efficient
- hardware independent
- operating system independent

After several attempts to create an easy-to-use programming language, the first version of BASIC was developed. It had only 14 commands, but fit the bill for ease and usability by people without specialized training in computers or programming.

BASIC was notable because each line of code had one command and the program's flow of information could be traced backward and forward, as each line had its own number (as we'll see). More importantly, BASIC has never been copyrighted and is still in the public domain. As a result there are many different variations of BASIC, but they all follow the same basic (pardon the pun) flow and structure.



*Ten-Tec's RX-320 gave radio technology of the 21st Century an excellent start. As you can see it's a true "black box" radio, having no controls other than an on-off switch. The RX-320D, which was introduced in 2003, supports Digital Radio Mondiale (DRM), a popular digital transmission mode for some shortwave broadcasters.*

For our purpose I'm going to use an old reliable version called GWBASIC to show you how to create your control software. The GW (which stands for Gee-Whiz) version was released in the early 1980s by Microsoft and is identical to IBM's BASICA, which came with the original IBM PC.

(By the way, Microsoft's founder Bill Gates will be remembered in the computer history books for having created a significant new version of BASIC in 1975 that he called Altair. It was the last real bit of programming that he did because he soon decided to turn his attention to the more profitable business of running a successful computer company—and the rest, as they say, is history.)

An interpreter for running GWBASIC (called simply enough GWBASIC.EXE) is still available today for free on the Internet and can be downloaded from [www.geocities.com/KindlyRat/GWBASIC.html](http://www.geocities.com/KindlyRat/GWBASIC.html) (along with several other sources that you can find using your favorite search engine). Even though this software program dates back to the days before MS Windows, you can still run it in any version of Windows, including XP. It will run in its own window, but you won't be able to control it with your mouse; you'll have to instead use your keyboard's function keys.

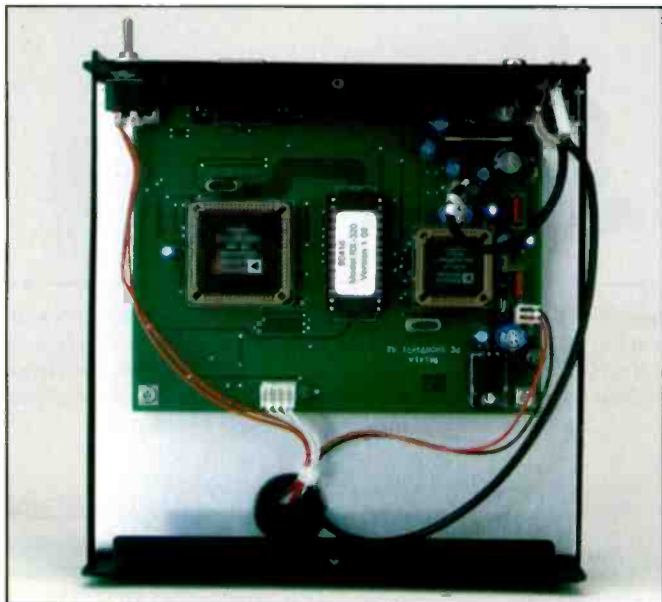
## Getting The Necessary Files

The programming code we'll use is available by downloading the RX320 Programmer's Reference Guide (or PRG), which is available in PDF format. This file is found at [www.rfsquared.com/rx320/rx320main.htm](http://www.rfsquared.com/rx320/rx320main.htm) and is downloadable by clicking on a link provided. When you've finished downloading you'll find that you've actually ended up with two files.

The first is the PRG called `rx320prg.pdf` (PDF stands for Portable Document Format, a file format frequently used to distribute documents). You can view or print the file using an Adobe Acrobat Reader, which is also available for free at the same website where you found the guide.

The second file is in ASCII (text) format and contains a complete BASIC program, called `TTRCX3.BAS`, for running the RX320/D. Ten-Tec's engineers used the program to test the operation of the RX320 to ensure that it was functioning properly. It's not very fancy and certainly not the best way to control your radio, but it will provide the foundation for the Visual BASIC application we're building.

Let's go through this BASIC program to see what code it contains and how that code is used to send command codes to the RX320/D. Remember, even if you don't own an RX320/D



When you take the lid off the Ten-Tec RX320/D, all you see are three integrated circuit chips and some coils. Pictured, from left to right, are the "Computer on a Chip," which creates the software-defined radio, the EPROM that contains the semi-permanent code, and a serial port controller chip. The third chip allows you to connect your computer to the radio and transfer command codes to the computer contained within the radio. Those codes perform all of the key functions needed to run the radio, such as tuning and volume control.

you can still run the GWBASIC interpreter and then run the BASIC controller program in order to explore or experiment with it. What I am outlining here for the RX320/D is also applicable to other computer-controlled radios, probably including yours, except they may use a different set of command codes to operate them. So let's get down to it and learn how BASIC computer software actually runs the RX320/D.

## Getting Started In BASIC

If you are not familiar with elementary programming, you might want to check your local library or used bookstore for a good beginner's book on BASIC and Visual BASIC so you'll get more out of upcoming columns. There are also many websites that will teach you BASIC programming, such as [www.codepedia.com/1/BeginnersGuideToBasic](http://www.codepedia.com/1/BeginnersGuideToBasic). If you go through that website step-by-step you'll begin to understand the command and structure of the BASIC program I'm introducing here.

Let's take a look at the BASIC program we're going to be using with the BASIC interpreter. To better understand how the program works, first print out a copy of the file contents and make notes directly on the printout. Break the software down into its primary functions, marking on the paper where things begin and end, as well as make note about special functions. The best way to do this is to break it down according to the lines of code, using the line numbers to demark where things begin and end. If you do this with the TTRCX3.BAS file you'll find that there are nine main sections of code that are used to run the program.

Make dividing lines on the paper the program's printed out on. Next, when you perform a function by selecting a value (such as Mode), make a note of what happens in the programming code by following the flow of information.

The most important aspect of this flow is the following four lines of code:

```
170 GOSUB 320 (calculate the tuning factor)
180 GOSUB 1030 (turn all inputted values, both default and
                user selected, into hexadecimal and
                send to radio)
190 GOSUB 440 (display the menu of items to be selected)
200 GOSUB 1130 (display the current values being used to
                operate the radio)
```

This is then followed by:

```
210 C$=INKEY$: IF C$="" GOTO 210
```

Next follows a series of lines of code that, if you choose a number from 1 to 8, selects one of the eight functions you can use to control the RX320/D. When you select a number it runs a subroutine, so say you choose the number "1," it runs:

```
220 IF C$="1" THEN GOSUB 570:GOTO 150:ELSE
```

This takes you to line 570, which runs:

```
570 LOCATE 16,25: INPUT "Enter Frequency (MHz)
";RADIOFREQ
580 RETURN
```

You enter the frequency you wish to use, after which you return to where you started. If you select a wrong number you will also be sent back to where you started, which would be the default screen asking you to make a selection.

Probably the software's most important task is getting the input data (both default and what you provide it with) into the radio. This is done via the serial port, and there are several lines of code involved.

The first line that defines the serial port is:

```
140 OPEN "com1:1200,n,8,1,rs,ds" AS #2
```

What that line says is "use serial port 1, set it to a data flow rate of 1200 baud and set the parity of the data flow to no parity bit, 8 start bits and 1 stop bit, plus define it as printer number 2 so that it does not conflict with any other printing device."

Let's say that you wanted to change the speaker volume. The line of code that does that is:

```
1100 C$="V"+CHR$(127)+CHR$(63-SPKVOL)+D$:PRINT
#2,C$;
```

"V" is the code for speaker volume, CHR\$(63-SPKVOL) is the desired level and D\$ is the carriage return (or enter). The line then finishes up by saying "print" (meaning, send the information to the radio via the serial cable) the resulting value of C\$.

So when the control software reaches that line, all of the input values are "plugged" into it, the calculation is made and the result is sent off to the RX320/D, which "reads" it and sets the speaker output to the desired level.

Again, start by sitting down with the program code printed out and broken down into the nine sections, and then follow the flow as you actually run the program and hear the results on the RX320/D, if you have one.

Now let's run the program.

## Using BASIC

First ensure that your RX320/D is hooked up properly to your computer via the serial cable, making certain that you're plugged into the correct serial port if you have more than one. Next, make



certain that you have the BASIC interpreter (basic.exe) and software program (TTRCX3.BAS) in the same software directory. Now run the interpreter by either using the "run" function found when you click "Start" on Windows toolbar, or by clicking on the file twice using the Window's Explorer program.

Once you've done that you'll see a window appear with the GWBASIC program running. You now need to "load" the lines of code into the Interpreter in order for it to "run." You can use the "LOAD" command that's activated by pressing the F3 function key on your keyboard. Remember that you'll have to type in the name of the file to run, so it will look something like this:

LOAD"C:\Basic\TTRCX3.BAS

If you get an error message you may have placed the file into a different drive or directory than the one I've used here.

Once you've properly loaded the program you can run it using the F2 function key. You'll immediately see the opening screen, and if the RX320/D is turned on, you'll hear sound coming out of the speaker. You can now begin to experiment with the operation of the radio by changing settings, remembering to look at the printout of the software code so you can follow the flow of information taking place within the program. If you're feeling confident you may also want to try changing some aspects of the original program to see how you can affect how things appear on the screen.

As with all experiments, keep notes of what happens and don't forget to make back-ups of the original code and the modifications you make, but under a file name that's different from the original.

And above all, learn and have fun while doing all of this.

## Wrapping Up

Next month I'll be taking a more detailed look at the BASIC programming outlined here as it's placed into the Visual BASIC program. I'll also be looking at how the programmers take the programming principles used in the Visual BASIC program and apply them in more situations, such as with the graphics used to simulate knobs, buttons, and dials found in many popular Windows-based control programs for the RX320/D.

As you'll see, it's really not that difficult, and certainly in the case of Ten-Tec's

RX320/D you're more than welcome to try your hand at developing your own control software with the downloadable reference material that they provide for free!

You can e-mail me with any questions to [carm\\_popcomm@hotmail.com](mailto:carm_popcomm@hotmail.com). While I can't answer general questions on computers, I'll be more than happy to help you with any issues raised in the columns.

As always, if you have a job, a family around you and are living in a stable neighborhood, then frankly show your thanks for that wonderful good luck by sharing of that with someone less fortunate and remember to do so regularly.

Our troops overseas continue to need our support, and while we may now begin to see their slow return home from hot spots like Iraq, don't forget that there is

still a significant number stationed in other areas that may flare up, such as South Korea. Take some time to support those military personnel, and tell them that we have not forgotten their contributions. The U.S. department of Defense has set up a new support program called "America Supports You" that's directed at all the men and women in the U.S. military. The new website is [www.americasupportsyouth.mil/americasupportsyouth/index.aspx](http://www.americasupportsyouth.mil/americasupportsyouth/index.aspx) and acts as a clearinghouse for a wide range of activities that you can participate in. You can also use this site to send messages to our troops and to read messages from them.

Remember, to pass on any blessing you may have to others through regular acts of selfless sharing. See you next month! ■



**ELECTRIC RADIO**  
MAGAZINE

**ELECTRIC RADIO**  
MAGAZINE

Tired of modern radios you can't work on and are hard to understand? ER is the monthly magazine for you! Send \$1 for a sample to:

ER, PO Box 242,  
Bailey CO 80421-0242  
720-924-0171 or email:  
1Editor2@indra.com  
[WWW.ERMAG.COM](http://WWW.ERMAG.COM)



**Leather or Neoprene pouches**

New for the ICOM IC-T90  
Beautiful glove leather with a spring steel belt clip or sporty neoprene in red or black.  
Well padded with water proof material.

**IC-T90**

HI-MSX HI-7B



STARTING AT \$14.49 800 206-0115 [www.powerportstore.com](http://www.powerportstore.com)

# POP'COMM BookShop

## The NEW Shortwave Propagation Handbook

by W3ASK, N4XX & K6GKU  
A comprehensive source of HF propagation principles, sunspots, ionospheric predictions, contains photographs, charts, tables galore!

Order No. SWP **\$19.95**



## Understanding, Building & Using Baluns & Ununs

by Jerry Sevick, W2FMI

The successor to the popular and authoritative Baluns and Ununs. Great deal of new tutorial material, includes new designs, and crystal clear explanations of how and why they work.

Order No. 2BU **\$19.95**



## MIL SPEC Radio Gear

KOREAN WAR TO PRESENT DAY  
by Mark Francis, KI0PF

Detailed write-ups for many familiar sets: PRC-25/-77, RT-68, PRC-1099, GRC-106, GRR-5, R-392 and more. Over 230 pages of operation, modification, and maintenance tips & info.

Order No. MILSPEC **\$27.95**



## W6SAI HF Antenna Handbook

by Bill Orr, W6SAI

Inexpensive, practical antenna projects that work! Guides you through the building of wire, loop, Yagi and vertical antennas.

Order No. W6SAI **\$19.95**



## The Short Vertical Antenna & Ground Radial

by Jerry Sevick, W2FMI

Small but solid guide walks you through the design and installation of inexpensive, effective short HF vertical antennas.

Order No. SVERT **\$10.00**



## Heathkit - A Guide to the AR Products

by Chuck Penson, WA7ZZE

This greatly expanded Second Edition is a must for collectors and Ham history buffs! Pick up this 328-page volume and you won't be able to put it down!

Order No. HEATHKIT **\$29.95**



Shipping & Handling: U.S. & Possessions - add \$5 for the first item, \$2.50 for the second and \$1 for each additional item.  
\*FREE shipping on orders over \$75.00 (merchandise only). Foreign-Calculated by order weight and destination and added to your credit card charge.

**Popular Communications**  
25 Newbridge Rd., Hicksville, NY 11801  
516-681-2922; Fax 516-681-2926  
Order Toll-Free 800-853-9797

**FREE**  
Shipping & Handling  
on every \$75 purchase!




## CHU Joins The Endangered Species List

Anyone who's listened to short-wave radio for a significant number of years probably has a story about one or more favorite listening targets that's no longer on the air. This is true regardless of whether the listener prefers to monitor the broadcast stations or utility stations. Technology and economics have been the primary reasons why so many of our favorite stations have vanished from the airwaves, never to be heard again. As this issue of *Pop'Comm* goes to print, another shortwave utility station is in danger of disappearing, namely CHU in Ottawa, Ontario, Canada.

For those unfamiliar with radio station CHU, it's operated by the Institute for National Measurement Standards (INMS) at the National Research Council (NRC) of Canada. The CHU call letters were first used for time transmission in 1938, on the same frequencies that are still in use at press time: 3330 kHz, 7335 kHz, and 14670 kHz. Before 1938, the call letters of essentially the same transmissions were VE9OB.

According to the NRC, the carrier frequency has been the specified standard since 1938, prior to which the quartz oscillators had been tuned to standard wavelengths. Continuous transmissions at 20.4 meters started in 1933, joining the 40.8-meter and 90-meter transmissions, which began as a daytime-only operation in 1929. The NRC also notes that while daily transmission on 52.5 meters had begun in 1928 under the call letters 9CC and later VE9CC, this ceased with the startup of 40.8-meter operation. The NRC further notes that 9CC had started experimental time transmission in 1923 on 275 meters, and that license 3AF had operated in 1922, thus providing quite a range of possible dates to assign to the establishment of CHU. The NRC says it leans towards 1929 as the start of daily time transmissions at essentially the modern frequencies.

### Their Largest Improvement

While there have been many changes in equipment and accuracy over the years, the NRC considers the biggest improvement to be the change to cesium atomic



Photo A. Cesium atomic clock operated by the Institute for National Measurement Standards (INMS) at the National Research Council (NRC) of Canada.

clocks in 1967. In 1970, the responsibility for operating CHU was transferred from the astronomers at the Dominion Observatory to the physicists at the NRC.

Canada and other countries have official time scales in agreement within 10 microseconds, in accordance with international recommendations. CHU's transmissions are well within 100 microseconds of Canada's official time. For distant users of the station, such as you or me listening in our shacks, the main source of any time errors come from the time that passes while the radio signal is bouncing off the ionosphere on its way from the transmitter in Ottawa to the receivers in our shacks.

NRC has calculated the delay to be 3.3 microseconds per kilometer of distance (path) and states that this delay generally varies by less than one microsecond due to inconsistencies in the number of "skips" made by the radio wave being reflected from the ionosphere to the Earth and back up again. The NRC says that for a fixed receiver when the number of skips does not change, the variation in the path delay will usually be less than 100 microseconds, although a small addition-

al delay is introduced by the receiver itself and may be significant.

### Times Changed In 1990

Originally, CHU's time announcements were given as Eastern Standard Time, but beginning on April 1, 1990, the announcements were changed to Coordinated Universal Time (UTC) because of recommendations from the International Consultative Committee on Radio that UTC be utilized for standard time broadcasts on standard frequencies. The NRC notes that since CHU does not broadcast on the frequencies allocated for frequency standards, those recommendations do not necessarily apply to CHU, but that since the station is received across all six Canadian time zones and around the world, the change to UTC was made anyway once it became possible to do so without great technical difficulty.

CHU's actual signal, which is in the upper sideband (USB) mode, is a series of 300-millisecond-long, 1000-Hz tones, transmitted once per second, on the second. The top of each minute is marked by a half-second-long beep, and the top of



each hour is marked with a one-second-long beep followed by nine seconds of silence. Thereafter, every second, except for the 29th second past the minute, the 300-millisecond tone is transmitted.

Between one and 16 seconds past the minute, the station transmits the difference between UTC and UT1 (a timescale based on the rotation of the Earth, a modern continuation of the old Greenwich Mean Time, the mean solar time on the meridian of Greenwich, England, which is often incorrectly believed to be the same thing as UTC; more on this myth below) with split tones (WWV does the same thing but uses doubled ticks). Between 31 and 39 seconds past the minute, the once-per-second tones are reduced to 10-millisecond ticks while a digital time code is transmitted.

Incidentally, this feature is unique to CHU in that the warble tones allow any computer with a Bell 103-compatible modem to receive and decode an accurate source of time. Bell 103 is the standard on which the old 300-baud modems were based, back when I was writing on an Atari 800XL home computer and saving my work on single-sided, single-density, 5 1/4-inch floppy disks (some of you may have had a Commodore 64 instead, perhaps with the plug-in SWL cartridge). If you still have an old 300-baud modem lying around, you now have a new use for it. But, I digress.

At 10 seconds before each minute, the once-per-second tones are again cut to 10 milliseconds each while the brief voice identification is transmitted, followed by voice announcements of the next minute in UTC, alternating between French and English. The French announcements are transmitted first on the odd minutes, while English announcements are transmitted first on the even minutes.

## A Matter Of Time

Since I'm a stickler for detail, at this point I'm going to back up a bit and explain the difference between Greenwich Mean Time (GMT) and Coordinated Universal Time (UTC). I've often read that they're the same thing under two different names, and I know this to be incorrect. GMT and UTC are not the same. What's worse is that I cannot recall reading a good explanation of the difference between the two, even in reports that have bothered to note that there is a difference. Since, as the saying goes, inquiring minds want to know, a

brief science lesson is in order. Get yourself a fresh cup of coffee and pay careful attention while we clear up this misconception once and for all.

GMT has been handed down to us from the days when astronomers, rather than physicists, were in charge of keeping track of the official time. GMT refers to the solar mean time at the Royal Observatory in Greenwich, England. However, it does not necessarily refer to the moment when the sun crosses the meridian of Greenwich and reaches its highest point in the sky in Greenwich. The daily rotational speed of the Earth is somewhat irregular, and its axial tilt also throws things out of kilter. In fact, the event may actually be up to 16 minutes from noon GMT, because GMT uses a fictitious mean sun that is the annual average of the non-uniform motion of the real sun, which is why the word "mean" is included in the name Greenwich Mean Time.

The modern continuation of GMT is known as UT (Universal Time), and there are several versions of UT, which are referred to as UT0, UT1, and UT2, respectively.

UT0 is UT as determined at an observatory by observing the motion of stars or extragalactic radio sources, and from ranging observations of the moon and artificial Earth satellites. UT0 is not corrected for the Earth being tilted on its rotational axis. The reason this tilt throws things out of kilter somewhat is that it causes a displacement of the Earth's geographic pole from its rotational pole (called polar motion), which in turn causes the geographic position of any place on the planet to vary by several meters, with the result that different observatories will come up with a different value for UT0 at the same moment. In other words, it's not actually "universal" at all!

UT1 is computed by correcting for the effect of polar motion on the geographic location of the observing site. Therefore, it really is universal—UT1 is the same everywhere on Earth. However, it still has an uncertainty of plus or minus three milliseconds per day because the Earth's rotational speed is not constant.

UT2 is a smoothed version of UT1 that is rarely used. It's arrived at using a mathematical equation to filter out most of the effects of irregular, as well as periodic, variations in UT1.

Unlike GMT and its modern derivatives that are based on astronomy, UTC, which is the international standard on

which civil time is based, is measured with atomic clocks. The length of a UTC second is defined by International Atomic Time, a weighted average of the time kept by approximately 300 atomic clocks in over 50 national laboratories around the world. The participating institutions each broadcast in real time a frequency signal with time codes that is their estimate of International Atomic Time.

The length of a second in International Atomic Time is defined in terms of the frequency supplied by a cesium atomic clock (see **Photo A**), using a cesium atom at rest and at a temperature of absolute zero (-459.67 degrees Fahrenheit or -273.15 degrees Celsius). UTC is kept within 0.9 seconds of UT1 by the periodic introduction of "leap seconds" to UTC, but if you don't need an accuracy of better than one second, you can use UTC as an approximation of UT1.

## An Uncertain Future

Now that you're thoroughly confused, let's get back to the problem at CHU. Regular readers of this column may recall that I made mention of CHU in a discussion of time stations in the October 2006 issue of *Pop'Comm*. It now appears that a textbook example of The Law Of Unintended Consequences may cause CHU to join them come April 2007 in order to comply with changes in International Telecommunications Union (ITU) regulations.

The ITU changed the status of the 7.335-MHz frequency, one of three used by CHU, from "fixed service" to "broadcast." The reason for the change was to make room for broadcasters who formerly shared the 7.000- to 7.300-MHz band with ham radio operators. The broadcasters are being moved out of the ham band so that hams and broadcast listeners alike may be free of the heavy interference that has characterized this band in the past. Soon, that slice of the RF spectrum will belong exclusively to hams.

The problem as it pertains to CHU is that CHU is currently licensed as a "fixed service," which means that the station will somehow have to re-invent itself in order to continue operating on 7.335 MHz when the new ITU regulations go into effect on April 1.

Raymond Pelletier of the Institute for National Measurement Standards, the division of National Research Council Canada that operates CHU, explained that re-licensing might be possible, call-

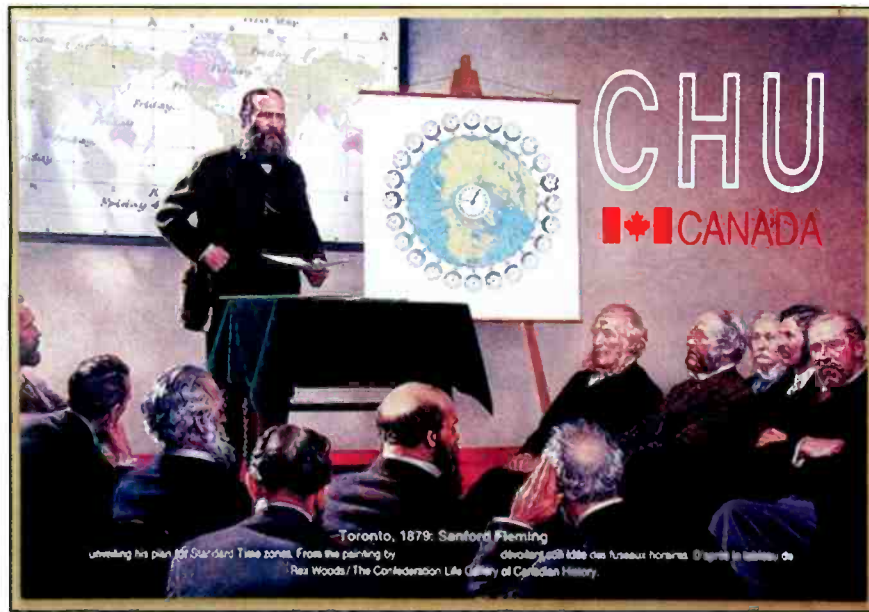


Photo B. This is CHU's current QSL card, which you can obtain by submitting a reception report to the address provided in this month's column.

please let them know and ask them to contact the station about any essential uses.

Also, if you have an important use for CHU signals, the agency asks that you tell them how you use CHU's signals. In the meantime (if you'll pardon the pun), if you haven't QSLed CHU yet, you may want to do so now, just in case the station becomes the latest time station to vanish from the airwaves forever come April. CHU gladly accepts reception reports from listeners around the world and will respond with a QSL card (see **Photo B**). Your reception reports should be sent to Radio Station CHU, National Research Council of Canada, 1200 Montreal Road, Bldg. M-36, Ottawa, Ontario, Canada K1A 0R6, or via e-mail to [radio.chu@nrc-cnrc.gc.ca](mailto:radio.chu@nrc-cnrc.gc.ca).

## THEMIS Launch Slated For February 15

This next item is an update for those who read my November 2006 column, in which I reported that THEMIS, NASA's mission to study auroras such as the Northern Lights, was scheduled for launch late that month. Unfortunately for anyone who made plans to monitor the communications in and around the Kennedy Space Center on launch day, the scheduled launch never happened. As this issue goes to press, the launch of the first Delta II rocket carrying THEMIS has been rescheduled for February 15.

While hams have observed auroras for decades, the THEMIS mission is expected to provide unprecedented data from coordinated measurements along the sun-Earth line and give scientists their first comprehensive look at the onset of substorms and how they trigger auroral eruptions. According to NASA, over the mission's lifetime, the THEMIS probes should be able to observe some 30 substorms. Scientists believe that this should be sufficient to finally know the origin of these substorms.

Because of the effects of auroras on radio wave propagation, I'll be following with interest in this particular NASA mission. On HF, LF, and VLF bands, an aurora causes the field strength of distant radio signals to fluctuate rapidly. On VHF/UHF bands, auroras frequently result in the auroral backscatter of signals as curtains of visible auroras develop in the ionosphere, with peak heights up to several hundred kilometers.

While I'm on the subject of rocket launches, I should also note for our read-

ing the 7.335-MHz transmission a "broadcast" (since the ITU decision does not affect 3.330 MHz and 14.670 MHz, the other two frequencies used by the station). It's also possible to simply stop using the 7.335-MHz frequency, but Pelletier noted that 7.335 is the most useful of the three CHU frequencies. Thus, while discontinuing one signal is the easiest solution, it could create problems for some clients who are counting on this particular signal.

Another option is to change the frequency to a nearby fixed-service frequency, but that would require some investment in manpower and new hardware and still create problems for clients. As is inevitable with frequency changes, somewhere out there is someone whose radio simply won't pick up the transmissions on the new frequency.

Pelletier further notes that economic conditions also come into play. This means that in order to be seriously considered, any of the above alternatives would require budgeting justification against the least expensive alternative—closing CHU entirely. Pelletier adds that the station is entering a phase where a major investment in new transmitters will be needed if CHU is to be kept in operation.

In response to this quandary, two new voice messages were added to CHU during October 2006, transmitted once per minute and alternating between French and English. The French announcement is, "En Avril 2007, CHU doit soit cesser

ses operations, soit changer de fréquence, soit renouveler sa licence. Contactez [radio.chu@nrc.gc.ca](mailto:radio.chu@nrc.gc.ca) ou écrivez à CHU Canada, Conseil national de recherches, K1A 0R6."

Not fluent enough in the French language to understand that? Well, don't feel too badly about that, because many Canadian citizens aren't, either. That's why practically everything in Canada is in both French and English, and the other new voice message on CHU says, in English, "On April 1, 2007, CHU needs to stop operating, change frequencies, or re-license. Contact [radio.chu@nrc.gc.ca](mailto:radio.chu@nrc.gc.ca) or mail CHU Canada K1A 0R6."

The announcements are an attempt to collect information from users of CHU to help shape the changes to CHU that must be in place by April 2000. But, as Pelletier points out,

The CHU code is also used as a radio clock, which can be used as a reference clock for an NTP time server. Software drivers have been written that can obtain the date and time from the code and that tune a digitally tuned radio to one of our three frequencies, to get the best signal. Users of this service generally don't listen to the audio broadcast, so we cannot gauge the usage by sending this announcement.

This refers to the use of Bell 103-compatible 300-baud modems and a computer to receive and decode the time, as mentioned above. At any rate, because of this CHU asks that if you know of anyone using CHU who is not aware of the possible changes to its frequency usage to



ers on the west coast that another non-orbital ICBM test launch is scheduled for "no earlier than" this month. This event involves launching a Minuteman III with a payload of one or more unarmed warheads for testing purposes. The impact area is probably the Reagan Test Site at Kwajalein in the central Pacific. The Air Force will announce the launch window a few days in advance. While launch dates are generally fluid, tending to change over time, historically Minuteman III launches have been an exception to the chaos, and once the Air Force announces a launch window for these, they generally stick to it.

## 2006 Hurricane Season Revisited

Based on e-mails I received since its publication, my September 2006 column on monitoring hurricane-related communications seems to have been rather popular. Fortunately, it appears that the monitoring community ended up being well prepared for events that did not materialize. I use the word "fortunately" because, although storms of such magnitude do provide radio hobbyists with many choice targets for listening, they're anything but enjoyable to the people living in the affected areas.

Although a very active 2006 hurricane season was originally predicted, that it did come to pass is definitely a Good Thing. The initial estimates from NOAA for the 2006 North Atlantic hurricane season were for 13 to 16 named storms, with eight to 10 becoming hurricanes, of which four to six were expected to become major hurricanes of Category 3 strength or higher. That would have been milder than the 2005 season (which produced 28 named storms, 15 hurricanes, and seven major hurricanes, six of which struck the United States), but it still would have meant a lot of destruction and hardship for those affected.

While we now know that this didn't happen, you might be a bit surprised to learn that the NOAA Hurricane Research Division suspects that *dust storms in the Sahara Desert* may have had something to do with the mild hurricane season we had this year, in comparison to the nightmarish 2005 season.

According to a recent NOAA press release, Jason Dunion, a hurricane researcher at the Atlantic Oceanographic and Meteorological Laboratory's Hurricane Research Division in Miami,

Florida, and his colleagues at the University of Wisconsin-Madison, studied 25 years of satellite data. They found that during times of intense hurricane activity the large clouds of dust that periodically blow westward from the Sahara Desert were relatively scarce, but that in years with fewer hurricanes, the dust storms were stronger and tended to spread over much of the Atlantic and Caribbean Sea.

This past summer, Dunion led a program conducted by NOAA as part of a NASA field campaign designed to look at Saharan dust storms and tropical cyclone formation in the eastern and central Atlantic. Part of the field work used the NOAA WP-3D Orion aircraft and G-IV high-altitude jet (mentioned in my September column) to study the interactions between tropical cyclones and Saharan dust storms.

The NOAA Hurricane Hunters flew eight missions during the peak of the Saharan dust storm activity last year to analyze the storms, which tend to be most intense in the early summer and are responsible for ejecting vast amounts of dry, dusty air into the Atlantic throughout the hurricane season. The dust storms can cover an area roughly the size of the lower 48 U.S. states and can often travel as far west as Central America, the Gulf of Mexico, and South Florida, according to NOAA.

## Readers' Mailbag

Having just mentioned e-mails from readers concerning the September 2006 column, I'm reminded of the old refrain, "Letters, we get letters." Like many such well-known phrases, the origin of this one is something that may have been lost over time. I do know that Perry Como released an album titled *We Get Letters* in 1957, which is before I was born. I also know that if Como were releasing that album today, the title might well be *We Get E-Mails* instead.

At any rate, reader Tom Trott of Mobile, Alabama, read the comments about Q-signals in the November 2006 column and wrote to remind me about Z-signals. Tom says he was in the Air Force from 1955 to 1959, and graduated from the Ground Radio Op school at Keesler AFB in Mississippi in the spring of 1956, where he was introduced to these codes in a spiral bound book about an inch thick. During his overseas tour, Tom worked in Pacific airways stations on Kwajalein, Eniwetok, and Guam. The Z-signals were

used for RTTY, interspersed with Q-signals. The Z-signals were not to be used for voice communications.

"During this time," Tom writes, "only QSY was ever used on voice. On CW, if an op had a sloppy fist, we'd send INT ZZO (are you a junior op; ZBM-1 is senior op), and if his signal was equally bad, QQQ was sent." Tom explains that QQQ was understood to be a suggestion that the operator go outside and clean the bird droppings from his station's antenna.

"When I returned to the ZI," Tom continues, "I was assigned to MARS (AF5/K5FHU) station at Holloman AFB in New Mexico. There the codes were really mixed up, as was the phonetic alphabet, i.e., ZED ABLE FOX for phone patch." Tom says that after six hours a day spent listening to and learning Morse code at Keesler, he's sure it will never go away—he, like several of the ops he went to school with and has kept in touch with, hears Morse when a horn blows, in a train whistle, even in music.

Well, Tom, you're obviously right, I didn't mention the Z-signals, and there are undoubtedly others I omitted, too. For example, the U.S. Navy has a set of X-codes that are generally associated with LINK-11 voice coordination nets. I neglected to mention these in the column as well. Then there are the routing indicator codes used by NATO forces, and the QSA (signal strength) and QRK (signal readability) codes used by the Canadian military.

The codes, phonetic alphabets, and other such material is undoubtedly as old as field communications itself. And I'm sure the list is endless, but if we tried to cover them all here, I'd end up submitting a book instead of a magazine article, and my editor most likely would not be amused. In fact, considering that he frowns on technical jargon to begin with, I'm certain of it!

Also, Steven Jones of Lexington, Kentucky, a reader and regular contributor to the Reader Logs that accompany this column, wrote to say that after two years of owning his Universal M-8000 decoder, he recently discovered that it will decode GMDSS/DSC signals. By sending the output to a printer so he can look over the transmissions in detail when he has time, Steven noticed a flurry of digital signals and matched up the vessels' IDs with a database he's building, which allowed him to make another discovery.

"I discovered that the ships in Hugo Chavez's crude oil tanker fleet have regular voice contacts nightly on 4143.0 kHz

USB,” Steven reports. Chavez, of course, is the Venezuelan leader who is often at odds with U.S. interests in the region.

Steven, I’ll give a listen there and see what I can hear, and I’m including the information here in the hope that sharing it with other readers will help more folks add something new to their logbooks. Thanks for the tip!

The maritime bands are often alive with official and unofficial (chit-chat) communications originating from various seagoing vessels, whether military,

commercial, or pleasure craft. Fishing boats, in particular, often provide some amusing conversations on which to eavesdrop as trawler captains discuss their successes and failures in trying to snare your next seafood dinner.

For example, some time ago, Dean Burgess of Manchester, Massachusetts, e-mailed me with a logging of two fishing trawler captains having a friendly conversation during which they discussed possible positions for fishing. Dean reported, “They talked about some

fellow fishing buddies with some salty language. They also talked about fishing along the Hague Line and the Triangle,” from which Dean deduced that they were somewhere in the Atlantic. Dean snagged this logging with an Eton E-1 radio and a Grove Skywire antenna.

Unfortunately, by the time I received his logging, I had already submitted my column for that month, and although I filed his e-mail away for later use, I hadn’t had the chance to squeeze some reader e-mails into the column until now.

## Glossary Of Utility Terms And Acronyms

**AFB**—Air Force Base

**ALE**—Automatic Link Establishment, a link control system that includes automatic scanning, selective calling, sounding, and channel selection, without human intervention using processor control.

**AM**—Amplitude Modulation

**ANDVT**—Advanced Narrowband Digital Voice Terminal, a secure voice mode used by the military.

**ATC**—Air Traffic Control

**CAMSLANT**—Communications Area Master Station Atlantic, the U.S. Coast Guard’s primary HF radio station for the Atlantic region, located at Portsmouth, Virginia.

**CAMPAC**—Communications Area Master Station Pacific, the U.S. Coast Guard’s primary HF radio station for the Pacific region, located at Pt. Reyes, California.

**COMMSTA**—Communications Station, for example: COMMSTA Kodiak, a communications station of the U.S. Coast Guard, located at Kodiak, Alaska.

**CGAS**—Coast Guard Air Station

**Cut Numbers**—The use of letters in place of numbers when sending a long string of numbers, for brevity’s sake. This is often done by “numbers” stations, such as sending one long dash instead of five normal dashes to indicate a zero, or the letter N instead of the number nine, etc.

**CW**—Continuous Wave (Morse code)

**DE**—The Morse code operating prosign DE, meaning “from,” as in DE NMN, meaning from station NMN

**D-Layer Absorption**—A phenomenon where the sun’s rays ionize the D layer of the atmosphere causing it to absorb, rather than propagate (reflect/bounce), radio signals at certain frequencies.

**Duplex**—A means of radio communication where a station can both transmit and receive at the same time.

**EAM**—Emergency Action Message, coded instructions commonly sent by U.S. military stations. Despite the name, they usually aren’t emergency traffic at all.

**EHF**—Extremely High Frequency (30-300 GHz)

**FAX**—Facsimile, a transmission mode used to send maps, charts, and other non-textual material.

**FEMA**—Federal Emergency Management Agency, a part of the Department of Homeland Security.

**FM**—Frequency Modulation

**Ham Station**—A licensed station operating in the Amateur Radio Service under the control of an operator who is licensed to operate the station.

**HF**—High Frequency (3–30 MHz)

**LINK-11**—Also called TADIL-A for TACTical DIGital Link, a

secure digital data mode used by the military. Utilizes a 16-tone data modem to allow assets to share digital information, such as radar data.

**MV**—Merchant Vessel

**NAS**—Naval Air Station

**Propagation**—The means by which radio signals get from one place to another; some forms are quite simple (such as line of sight) while others are much more complex (such as EME, or earth-moon-earth).

**QRM**—Man-made interference to radio signals

**QRN**—Natural interference to radio signals, such as the static crashes often heard due to thunderstorms

**QSO**—A contact between two or more stations

**QSY**—Change frequency.

**QTH**—Location

**RTTY**—Radio Teletype

**SELCAL**—SElective CALling, a method for activating a radio or data terminal at one station without disturbing other stations that are monitoring the same frequency.

**Simplex**—A means of radio communication where a station may transmit or receive at any given time, but not do both at the same time.

**SITOR**—Simplex Teletype Over Radio, a transmission mode used to transmit text messages over radio. There are two SITOR modes: SITOR-A (also called AMTOR) uses Automatic Repeat Request (ARQ); SITOR-B uses Forward Error Correction (FEC).

**SWL**—Shortwave Listener, a person who enjoys listening to shortwave radio stations.

**UHF**—Ultra-High Frequency (300–3000 MHz)

**USAF**—United States Air Force

**USB**—Upper Sideband

**USCG**—United State Coast Guard

**USMC**—United States Marine Corps

**USN**—United States Navy

**UTC**—Coordinated Universal Time, formerly known as Greenwich Mean Time, and also commonly referred to as ZULU time and abbreviated as in 1200Z.

**UTE**—Utility Station

**Utility Station**—Stations transmitting material that is not intended for reception by the general public and is not originating from an amateur (ham) station.

**VHF**—Very High Frequency (30–300 MHz)

**VOLMET**—Station that transmits aeronautical weather information. Comes from a French term that literally means, “flying weather.”



Hopefully, though, I can do this more often. After all, Steven and Dean have not only given us a couple of good tips on monitoring HF maritime communications, they've also given me an idea for a future column, and at some time in the very near future, I'll probably write a column on the subject. Bravo Zulu!

## 109th AW Commemorates First South Pole Landing

In last month's column, we examined Operation Deep Freeze, the U.S. military's ongoing operation in support of the National Science Foundation U.S. Antarctic Program in its mission to explore Antarctica. Since there's a three-month lead time on the production of this magazine, that article was submitted in mid-October 2006 (the deadline was October 15).

Right on cue, an LC-130 from the New York Air National Guard's 109th Airlift Wing touched down at the South Pole on October 30 to commemorate the first plane landing there 50 years earlier.

On October 31, 1956, Navy Lt. Commander Gus Shinn landed a ski-equipped R4D-5 named "Que Sera Sera" at the South Pole. Shinn kept the engines running on the aircraft, a Navy version of the DC-3, while USN Admiral George Dufek stepped out of the plane to stand at the Pole, with the temperature at a brisk minus 50 degrees Fahrenheit.

Last October's LC-130 flight was piloted by Air Force Major Carlyle Norman and used the callsign Skier 00. The temperature, according to 109th AW officials, was a relatively balmy minus -50° Fahrenheit.

## And Now, On With The Logs

Many thanks to those readers who've e-mailed me on various topics. I'm still waiting for the rest of you to send in your shack photos, loggings, suggestions for future columns, and whatever else you want to share with the rest of us. In the meantime, we'll get on with this month's reader logs, which come to us from the following: Steven Jones, Lexington, KY (SJ/KY); Mark Cleary, Charleston, SC (MC/SC); and Glenn Valenta, Lakewood, CO (GV/CO).

**2187.5:** 3FGZ3, *PARNASO*. 99,471-ton Panama-registered crude oil tanker, initiating a series of GMDSS (Global Maritime Distress and Safety System) DSC (Digital Selective Calling) exchanges at 0427-0459Z w/sister

tankers 3FCV3, *PROTEO*. 99,392 tons, and 3FMP3, *TESEO*, 99,477 tons, all vessels in Venezuelan dictator Hugo Chavez's VENTFLEET plying between Houston, TX, and Puerto la Cruz, Venezuela, to establish USB voice contact on 4143.0 kHz. VRWY4, *YONG TAI*, 74,061-ton Hong Kong bulk carrier w/DSC call to NMA. USCG, Miami, FL, at 0539Z to establish USB voice contact on 2182.0 kHz. (SJ/KY)

**4125.0:** USCG CAMSLANT asking maritime chit-chatters to switch to another freq at 0546Z in USB. (GV/CO)

**4143.0:** Several vessels in simplex USB QSO in Spanish at 0505Z after exchange of multiple GMDSS DSC calls on 2187.5 kHz for J3E mode on this freq, mentioned Venezuela, el pobre, Cuba, etc. (SJ/KY)

**4146.0:** 3FIX6, *OYSTER I*, 2,346-ton Panama-registered oil products tanker in sim-

## When Disaster Strikes...



# REACT is Ready!

**REACT** Teams work with local, state, and national disaster response agencies. Often **REACT** plays a unique role in disaster relief because **REACT** is the only volunteer communications organization whose members are trained to use **all types of two-way communications** from CB to packet radio, Amateur radio to GMRS.

Fortunately, disasters don't happen every day. **REACT** Teams maintain their readiness and serve the public by monitoring emergency channels and by providing communications services for a variety of activities and community events.

Find out how **you** can be part of the **REACT** Team! Visit [www.reactintl.org](http://www.reactintl.org) to find a Team in your area – or information on starting your own Team.



**REACT International, Inc.**

(301)316-2900 or (866)REACT99  
5210 Auth Rd., Ste. 403 \* Suitland, MD 20746

plex USB QSO in Spanish w/HPKZ, *EBRO*, 67,031-ton chemical/oil products tanker after initial contact at 0007Z via DSC on 2187.5 kHz. (SJ/KY)

**4207.5:** H3VS, *CARNIVAL MIRACLE*, 10,000 Panama-registered passenger/cruise ship in DSC contact w/sister ship 3FPQ9, *CARNIVAL CONQUEST* to establish voice contact on 4142.0 kHz at 0505Z, again at 0509Z for another try on 4149.0 kHz. 8PNQ, FEDERAL SAGUENAY, 34,372-ton Barbados-registered bulk carrier w/routine position update to OXZ, Lyngby R., Denmark at 0559Z, in St. Lawrence Seaway SW of Quebec City. (SJ/KY)

**4372.0:** 5DF wkg Z2P (USN vessels) at 1254. (MC/SC)

**4443.5:** R24391 (UH-60A #85-24391) clg T1Z137 (1-137th AVN) in ALE USB at 2227. (MC/SC)

**4469.0:** FLORIDA CAP 90 opening net at 1131. (MC/SC)

**5058.5:** CL1 (FBI, Cleveland) clg OM2 (FBI, Omaha) in ALE USB at 0607. (MC/SC)

**5320.0:** SECTOR ST. PETERSBURG, SECTOR JACKSONVILLE, and CGAS CLEARWATER in radio checks with DISTRICT 7 at 1301. (MC/SC)

**5690.0:** RESCUE 2112 p/p to DISTRICT 7 MIAMI OPS regarding PIW SAR at 2320. (MC/SC)

**5696.0:** E-CITY AIR wkg JULIET 6001 (MH-60J, CGAS Elizabeth City) monitored at 1847. (MC/SC)

**5708.0:** 450027 (KC-10A #85-0027, 305 MW) clg HIK (Hickam HF-GCS) in ALE USB at 0257. (MC/SC)

**5732.0:** PANTHER wkg 17C to ask if Ambassador wants to view an ongoing Haitian migrant interdiction operation at 1331. (MC/SC)

**5778.5:** R26608 (UH-60L #95-26608) clg B1Z171 (1-171st AVN) in ALE USB monitored at 1904. (MC/SC)

**5851.5:** R23677 (UH-60A #82-23677) clg T1Z137 (1-137th AVN Ohio NG) in ALE USB at 2246. (MC/SC)

**6312.0:** FMHZ, *NAMUR*, 298,552-ton French Antarctic Territories-registered crude oil tanker w/DSC BUSINESS call at 0016Z to FNHR, France-registered *ALGARVE* 298,969-ton sister tanker w/position update, 20 mi NE of Havana. (SJ/KY)

**6697.0:** DUTCH BOY checking in and authenticating with QUIET MAN monitored at 2137. (MC/SC)

**6911.5:** R26604 (UH-60L #95-26604) clg B1Z171 (1-171st AVN) in ALE USB at 2004. (MC/SC)

**6985.0:** R26954 (UH-60L 02-26954) clg T12 (12th Aviation Bn, Davison AAF) in ALE USB at 1155. (MC/SC)

**7361.5:** T2Z82 (2-82nd AVN, Simmons AAF, Fort Bragg, NC) clg T5B159 (5-159th AVN, Felker AAF, Fort Eustis, VA) in ALE USB at 0851. (MC/SC)

**7527.0:** RESCUE 6010 (HH-60J) wkg

PANTHER to report airborne from Autec en route to rescue at 2132. (MC/SC)

**7633.6:** AFA1WP radio check with KING 34 (HC-130) at 1946. (MC/SC)

**7650.0:** R23351 (UH-60A #79-23351) clg T2Z238 (2-238 AVN) in ALE USB at 1959. (MC/SC)

**8184.5:** R23677 (UH-60A #82-23677) clg T1Z137 (1-137th AVN Ohio NG) in ALE USB at 1549. (MC/SC)

**8240.0:** C6RT, *CELTIC SEA*, 11,902-ton Bahamas-registered refrigerated cargo ship in simplex USB Spanish QSO w/14,140-ton sister reefer C61S, *DUNCAN ISLAND* after DSC initial contact on 8414.5 kHz, 2158Z. (SJ/KY)

**8414.5:** ELXX8, *SANKO ABILITY*, 84,999-ton Liberia-registered crude oil tanker in DSC exchange w/twin ELXY2, *SANKO AMITY* at 1321Z to establish voice contact on 16544.0 kHz. ZCDG8, *CARIBBEAN PRINCESS*, 8,418-ton Bahamas-registered passenger/cruise ship to sister cruise ship ZCBU6, *SUN PRINCESS* at 1338Z requesting voice contact on 16540.0 kHz. ZSC, Cape Town R., South Africa w/DSC call to V2NG, *GLORIA*, 9,531-ton Antigua & Barbuda-registered cargo ship at 2137Z. TAH, Istanbul R., Turkey w/DSC call at 2239Z to TCCA7, *ASK-ABAT*, 18,855-ton Turkey-flag general cargo ship to establish contact on 4219.0/4178.0 kHz. 3FIX6, *OYSTER I*, 2,346-ton Panama-

registered oil products tanker w/DSC call to HPKZ, *EBRO*, 67,031-ton Panama-registered chemical/oil products tanker at 2338Z requesting voice contact on 8294.0 kHz. V7FH8, *MST CALLAO*, 38,888-ton Marshall Islands-registered self-discharging bulk carrier w/DSC call to NOQ, USCG, Mobile. AL w/position update at 0544Z, just off Venezuelan coast. (SJ/KY)

**8971.0:** TRIDENT 42 (P-3C, VP-26) wkg GOLDENHAWK at 1438. (MC/SC)

**8992.0:** LL 47 (P-3C) p/p via Andrews HF-GCS to VP-30 DUTY at 2107. (MC/SC)

**9007.0:** CANFORCE 3958 (CC-130) p/p via TRENTON MILITARY to 435 OPS regarding flight to Las Vegas heard at 2130. (MC/SC)

**9022.0:** SABER 21 line code report to ALLEYCAT (E-8 JSTARS) at 1915. (MC/SC)

**9025.0:** REACH 403 p/p via Croughon HF-GCS for 0100z WX at McGuire AFB at 1955. (MC/SC)

**9120.0:** Several NIGHTHAWK aircraft (USMC HMX-1 Presidential transport helos) in ANDVT and clear radio checks at 1403. (MC/SC)

**10242.0:** CG 1712 (HC-130, CGAS Clearwater) position report to CAMSLANT at 1259. (MC/SC)

**10242.0:** 39C wkg PANTHER with request from Agents that they notify the strike force at 2107. (MC/SC)

**11175.0:** REACH 7464 (KC-135E) p/p via Offutt HF-GCS to TORCH CONTROL at McGuire AFB at 1215. (MC/SC)

**11187.0:** Link-11 data transmission at 2259. (MC/SC)

**11191.0:** WOLF01 (E-2C, VAW-77) wkg KOKOMO to report status of WOLF 02 at 2105. (MC/SC)

**11205.0:** EVERGREEN 422 checking in with SMASHER at 1530. (MC/SC)

**11226.0:** DARKSTAR PAPA (E-3 AWACS) ALE initiated call to CHARLIE FLIGHT for troubleshooting at 1533. (MC/SC)

**11232.0:** OTIS 80 (KC-130, VMGR-252) wkg TRENTON MILITARY for WX at St. John's, Goose Bay, and Gander at 1334. (MC/SC)

**11232.0:** CANFORCE 2573 (CC-130) p/p via TRENTON MILITARY to Thule Ops at 1431. (MC/SC)

**11232.0:** CANUCK 332 (CC-130) p/p via TRENTON MILITARY to WING OPS to update drop time at Drop Zone Thumperhead at Mountain View Airport at 2243. (MC/SC)

**11282.0:** San Francisco ARINC working NW221 and handoff to Honolulu Approach on VHF in USB at 0139Z. (GV/CO)

**11407.1:** AFA1WP radio check with KING 34 (HC-130) at 1946. (MC/SC)

**11494.0:** CG 1720 (HC-130, CGAS Clearwater) p/p via SERVICE CENTER to DISTRICT 7 OPS regarding search at 1730. (MC/SC)

**12577.0:** 9VGH9, *BOW PROSPER*, 45,655-ton Singapore-registered chemical/oil products tanker w/DSC routine position update to OXZ, Lyngby R., Denmark at 1718Z, 200 mi WNW of Bermuda. SVIQ, *SYMPHONIC*, 298,000-ton Greece-registered crude oil tanker w/DSC call to 150,247-ton sister tanker SVGB, *ROMANTIC* at 1842Z requesting voice contact on 12353.0 kHz. ELQU4, *GATEWAY BULKER*, 151,439-ton Liberia-registered bulk carrier w/DSC position update to NMA, USCG Miami at 1945Z, 200 mi NE of San Juan. (SJ/KY)

**13907.0:** JULIET 01 (MH-60J, CGAS Elizabeth City) en route to Wilmington requests guard from CAMSLANT at 1337. (MC/SC)

**13927.1:** ETHYL 99 (KC-135) morale p/p via AFA4DD to pass late arrival at McGuire AFB at 2207. (MC/SC)

**14389.1:** PEACH 32 (E-8 JSTARS) p/p via AFA3HS to PEACHTREE for WX at Robins AFB at 2059. (MC/SC)

**16804.5:** 4XGS, *ZIM CANADA*, 47,230-ton Israel-registered container ship w/DSC call to sister container ship 4XFC, 45,850-ton *ZIM PACIFIC* at 1517Z for voice contact on 16530.0 kHz. VFF, Canadian CG, Iqaluit, Nunavut acknowledging DSC test from ONCG, CMB *FLORENTINA*, 76,838-ton Belgium-registered bulk carrier at 1608Z. (SJ/KY)

**22389.0:** USCG station NMO (Honolulu, HI, but transmitter probably keyed remotely by CAMSPAC in Pt. Reyes, CA), with ARQ/CW Marker at 2117Z. (GV/CO) ■



# Pop'Comm books, calendars, cds & more!

## The Complete DXer Third Edition

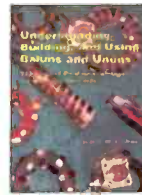
The joy of the chase, the agony of defeat, the thrill of victory are the stuff of The Complete DXer, a book that is almost as seductive as the DX chase it describes. It excites, it entertains, it teaches!



## Understanding, Building & Using Baluns & Ununs

by Jerry Sevick, W2FMI

The successor to the extremely popular and authoritative Baluns and Ununs. Great deal of new tutorial material, includes new designs, and crystal clear explanations of how and why they work.



Order: COMPDXer **\$19.95**

Order No. SVERT **\$19.95**

## Contesting in Africa Multi-Multi on the Equator

by Roger Western, G3SXW  
and the Voo Doo Contest Group

An array of contesting and DXing experiences from one of the most unique operating venues on earth - the African continent. A must have in any ham radio library.



## W6SAI HF Antenna Handbook

by Bill Orr, W6SAI

Inexpensive, practical antenna projects that work! Guides you through the building of wire, loop, Yagi and vertical antennas.

Order No. W6SAI **\$19.95**

Order No. AFRI **\$19.95**

## Passport to World Band Radio

Edition 2007

The World's #1 selling shortwave guide! Have the world at your fingertips! Details on what to buy and where to tune.



## The Short Vertical Antenna & Ground Radial

by Jerry Sevick, W2FMI

This small but solid guide walks you through the design and installation of inexpensive, yet effective short HF vertical antennas. Antenna restrictions a problem? This book could keep you on the air!

Order No. 2BU **\$10.00**

Order No. PASS **\$22.95**

## VHF Propagation A Guide For Radio Amateurs

by Ken Neubeck, WB2AMU  
& Gordon West, WB6NOA

A comprehensive source-book by two great authors! Here's a sampling of what's inside: Tropo Ducting, Aurora, Meteor Scatter, TEP, Sporadic-E, Combo Modes.



## The NEW Shortwave Propagation Handbook

by W3ASK, N4XX & K6GKU  
A comprehensive source of HF propagation principles, sunspots, ionospheric predictions, with photography, charts and tables galore!

Order No. SWP **\$19.95**

## Heathkit - A Guide to the AR Products

by Chuck Penson, WA7ZZE

This greatly expanded Second Edition is a must for collectors and Ham history buffs! Pick up this 328-page volume and you won't be able to put it down!

Order No. HEATHKIT **\$29.95**



**Blow Out SALE!**

**videos**

~~\$19.95~~

**NOW ONLY \$9.95 ea.**

Buy all 7 for your Club for only **\$59.95**

Ham Radio Horizons: The Video.....Order No. VHOR  
Getting Started in Packet Radio.....Order No. VPAC  
Getting Started in Ham Radio.....Order No. VHR  
Getting Started in Contesting.....Order No. VCON  
Getting Started in DXing.....Order No. VDX  
Getting Started in VHF.....Order No. VVHF  
Getting Started in Amateur Satellites...Order No. VSAT

## 2007 World Radio TV Handbook

The Directory of Global Broadcasting  
The most up-to-date information on mediumwave, shortwave, and FM broadcasts and broadcasters. Includes articles on topics of great interest to both listeners and dxers, reviews of the latest equipment, updated maps showing SW transmitter sites and more.

Order No. WRTH **\$29.95**



## 2007/08 calendars

**Hot Item!**

January 2007 - March 2008

**Ham Radio Operators Calendar**  
15 spectacular color images of some of the biggest, most photogenic shack, antennas, scenic & personalities.



Order No. HRCAL

**Classic Calendar**  
15 magnificent, full-color vintage radio images



Order No. CCAL

**\$10.95 ea.**



## MIL SPEC Radio Gear

Korean War To Present Day  
by Mark Francis, KI0PF

Detailed write-ups for many familiar sets: PRC-25/-77, RT-68, PRC-1099, GRC-106, GRR-5, R-392 and more. Over 230 pages of operation, modification, and maintenance tips and info, including 200+ illustrations.

Order No. MILSPEC **\$27.95**

## Ham Radio Magazine on CD

Brought to you by CQ & ARRL  
Enjoy quick and easy access to every issue of this popular magazine, broken down by years!



Three sets, each containing 4 CDs -

1968-1976 Order No. HRCDD1 **\$59.95**

1977-1983 Order No. HRCDD2 **\$59.95**

1984-1990 Order No. HRCDD3 **\$59.95**

Buy All 3 Sets and Save **\$29.90!**

Order No. HRCDD Set **\$149.95**



## HR Anthologies

**\$19.95 ea.**

Buy all 4 for only **\$75**

Now you can enjoy collections of the best material published in *Ham Radio magazine*, conveniently arranged by subject and original publication date. Choose your interest, your time period and choose your anthology!

**Homebrewing Techniques** ..... Order # AHOME

**Test Eqp't & Repair Techniques**...Order # ATEST

**Antennas - 1968 - 1972** ... ..Order # ANTS1

**Antennas - 1973 - 1975** .....Order # ANTS2

Get all 4 for **\$75 plus Free shipping**...Order # ASET

Shipping & Handling: U.S. & Possessions-add \$5 for the first item, \$2.50 for the second and \$1 for each additional item. FREE shipping on orders over \$75. Foreign-calculated by order weight and destination and added to your credit card charge.

**CQ Communications, Inc., 25 Newbridge Rd., Hicksville, NY 11801**

**Call 1-800-853-9797 - FAX your order to 516-681-2926 - www.cq-amateur-radio.com**

# Cuba: Communism's Last Stand In The West, And Lots Of Interesting Radio Listening

**W**ho could ask for more? A large tropical Caribbean island with a superb climate, with seemingly endless beaches, mountains, and rolling plains, and all only about 90 miles south of Key West, Florida. Of course, that's the good news. Sort of.

The other side of the Cuban Peso reveals an island nation with problems on steroids and a longstanding (perhaps *sitting* as this is written) Communist dictator who might be smiling for those rare on-camera interviews, but rules his country with an iron fist. Add to this what the United States termed, "hostile actions" by the Cuban government back in 1963 (remember the Cuban Missile Crisis?) and you also get Title 31, Part 515 of the U.S. Code of Federal Regulations aimed at keeping Cuba isolated by more than water. That simply states that Americans, American companies, and organizations can't import Cuban goods, either directly or through third parties, nor can they export to Cuba (with some exceptions, including publications, artwork, etc.). Certainly the restrictions have impacted the nation, for better or worse, but it doesn't change the fact that Cuba lives on, despite the tight economic noose and stringent government controls.

## How Did We Get Here?

Cuba's lot wasn't always this dismal. There was a time when the sugarcane industry was booming, and way back in 1899 Cuba was actually under U.S. protection as a republic. Major U.S. investments in Cuba continued, as did U.S. intervention in Cuba's affairs during the Spanish-American War, ending Spain's rule of the island. Cuba officially gained independence in 1902.

Fidel Castro Ruz, with his brother, Raul, and Ernesto Guevara (better known as Che) led a successful revolution in 1959, and Castro became the big guy on the block. Five years later, in 1961 the United States ended relations with Cuba after Castro established military-type rule and became allied with the former Soviet Union.



Determined not to lose control of Cuba, later that year, in what became known as the Bay of Pigs Invasion, President John F. Kennedy approved the landing of a group of Cuban exiles on the island, but the invasion failed miserably. The world was brought to the edge of a nuclear nightmare a year later after the Soviet threat to place nuclear missiles on Cuba was challenged by JFK. Soviet premier Khrushchev blinked and disaster was averted, but just how close we were to living in bunkers is best left to the historians.

In 1977 America established limited diplomatic relations with Cuba, unknowingly opening the flood gates for over 100,000 Cubans to seek refuge in Miami, and many that Castro released were those the Cuban government had no use for, including prisoners and internal refugees.

Eleven years ago the noose was further tightened around Cuba. It couldn't have come at a worse time for the country. With the collapse of Communism in Europe, Cuba had already lost untold amounts of foreign aid (reported to be up to \$6 billion annually) from Russia, and the Cuban economy went into a tailspin.



President Bush further strengthened the embargo, changing the rules allowing Cuban Americans to return to their homeland only once every three years, instead of every year. Bush also restricted the amount of American money that could be spent in Cuba to only \$50 per day. Of course one action isn't without a reaction, so Castro banned the use of American dollars.

As the island's economy slowly recovers, there have been calls to ease the embargo and increase "democracy assistance" to the island dissidents and groups weary of the constant changes in travel



---

***“Despite the U.S. tourism embargo, well over two million people, mostly from Canada and Europe, visit Cuba each year as the industry continues to grow.”***

---

restrictions, so often eased under one administration, then subsequently tightened under another.

## Cuba Today

---

Castro's declining health has become front page news around the world, and there's growing concern that he's terminally ill with cancer. What happens when he's gone is a topic for much speculation by political pundits, but there's no question that there will be a humanitarian situation that hopefully both the United States and Cuban governments are willing and able to work out. They do have a plan in place, don't they?

Meanwhile, illegal migration to the United States continues. The latest figures from the U.S. Coast Guard reveal that over 2,700 people were "intercepted" trying to cross the Straits of Florida in one year alone.

How the U.S. Naval Base at Guantanamo Bay, made infamous recently for alleged prisoner abuse by the U.S. guards/officials during the War on Terror, will come into play upon Castro's death is anyone's guess. The base, which is still technically a part of Cuba, is "leased" to the United States; the agreement can only be broken if *both* governments agree or if the United States abandons the facility. Don't look for either to happen in our lifetime!

Cuba certainly isn't among the world's most technological-hip countries, largely because of a jittery economy and government controls, however it is making positive strides in becoming more wireless. For the most part, forget about using a computer if you're an ordinary Cuban resident; the government forbids owning one, or accessing the Internet without special authorization. Cell phone service is expensive and mostly available to well-placed government officials only, although many Cubans illegally "procure" cell phone service from foreigners, according to the CIA.

Despite the U.S. tourism embargo, well over two million people, mostly from Canada and Europe, visit Cuba each year as the industry continues to grow. After all, who can resist those beaches and Havana's nightlife?

## The Cuban Airwaves

---

There are, at last official count, some 169 AM radio stations, 55 FMs, and one shortwave outlet in Cuba—that's a lot of radio for a country about the size of Pennsylvania! You've also got a ringside seat to all the news, music, and much more with a multitude of radio stations from Cuba, many of which can be heard in the United States, especially with the continuing radio "war" between the two countries. Check out Bruce Conti's "Broadcast Technology" column on page 31 for an excellent report on Cuba, complete with frequencies of interest and insight into Cuban broadcasting.

Whatever happens in Cuba, it's a good bet that while he's still in the driver's seat Mr. Castro, the world's longest serving ruler, along with his brother will continue to orchestrate Cuba's

future. Make no mistake about it, Cuba's radio voice, Radio Havana, is run as if Castro himself were in the studio. For proof, just listen, and then read what the Radio Havana website says:

Radio Havana Cuba, the first Cuban international shortwave radio station, was officially inaugurated on May 1, 1961. Born as an alternative to international news agencies and stations that distort the image of the island's revolutionary process, since its founding, Radio Havana Cuba has been an authentic Cuban voice devoted to broadcasting the island's social, economy and political panorama...It broadcast to the world accurate and timely information on the Bay of Pigs invasion in April of that year, perpetrated by US-trained mercenaries. That US aggression was repelled by the Cuban people in less than 72 hours.

Radio Havana is on 9550 to Western North America from around 0500 to 0700 UTC; to Eastern North America on 6000 from 0100 to 0500 UTC, and to Central North America on 9820 from 0100 to 0700 UTC, along with many other broadcasts directed to other parts of the world in numerous languages. The best schedule/frequency reference is its own website at [www.radiohc.org](http://www.radiohc.org) and regular reader reports in our "Global Information Guide" and Gerry Dexter's monthly "Tuning Tips" on page 42. If you speak Spanish, you're in for a treat, especially if you've got a good AM broadcast receiver. Bruce Conti's "Broadcast Technology" column here in *Pop'Comm* is always hopping with AM station loggings from Cuba and the Caribbean.

---

***“Cubans crave information, and perhaps the best source is Radio Marti.”***

---

Cubans crave information, and perhaps the best source is Radio Marti. The station, with a budget of about \$15 million, is operated by the Office of Cuba Broadcasting/International Broadcasting Bureau. As you might expect, it's constantly jammed by Cuba, but is audible on 5980, 6030, 7365, 7405, 9565, 9805, 11775, 11845, 11930, 13820, and on mediumwave 530 and 1180. Things here get quite interesting, and you can also expect frequency changes to avoid the jamming.

Jose Marti International airport in Havana on 2887, 5550, 6577, 8918, and 11396, along with other air facilities on 3407, 5562, 6673, 8876, and 11321 can be easily heard in the United States.

U.S. Coast Guard and military operations frequencies include, but are by no means limited to, 4327.1, 4588.5, 3955.5, 3845.0, 4985, 6580, 8160, 8621.2, 13105.5, 15505.5, and 12151.0. You'll hear all kinds of interesting ship radio traffic in USB, from rescues at sea to drug interdiction comms.

During any emergency in the area check out 7110 (LSB) and 14185 Cuba Emergency frequencies, and 8291, a maritime calling/emergency frequency. The amateur frequency 14300 is a mainstay for maritime operations with the daily Maritime Mobile Service Net.

Also jot down the Caribbean Inter-Island Watch frequency, 7165, along with 7105, 7090, 7158, and a multitude of HF frequencies. It's always a good idea to keep an eye on our "Utility Communications Digest" for readers' logs, including ship traffic in the Caribbean and Straits of Florida.

From a country where having a satellite dish is illegal without a special nearly-impossible-to-obtain permit from the Cuban government, there's enough going on there with *radio* across a broad spectrum to keep you busy today *and* long after Castro has departed the planet. Good listening! ■

## DRM News

RTBF International, the external service of the French-speaking community in Belgium has begun test transmissions in DRM (Digital Radio Mondiale) mode. The station recently invested in two new DRM-capable transmitters. The broadcasts are at 1000 to 1200 UTC on 5925 kHz. Flanders-based TDPradio has extended its DRM transmissions from weekends to two hours every day. Broadcasts are at 1500 to 1600 UTC on 6015 kHz to Europe and from 0000 to 0100 UTC on 9790 kHz to North America. Each day a different type of dance music is broadcast to suit different tastes and to show the wide variety of dance music styles. TDPradio is also online 24/7 via a live Internet stream. Check out [www.tdpradio.com/](http://www.tdpradio.com/) for more details about the shows.

Radio Romania International has commenced its first ever broadcast using DRM with the assistance of WRN, the London-based digital radio and television transmission provider. Since last October RRI, the international voice of Romania, has been broadcasting a daily, 30-minute, English language show to Europe from 1400 UTC during the Summer season on 7160 kHz and during the Winter season from 1500 UTC on 7340 kHz at 60 kW. WRN has organized these DRM broadcasts for RRI using a transmitter site in Germany and is undertaking service monitoring and technical support.

Radio Prague, the international service of Czech Radio, launched digital broadcasting within the DRM system. The broadcasts can be heard in central and south eastern Europe. English and German broadcasts are from 1330 to 1430 UTC on Friday and from 1300 to 1400 UTC on Saturday on the frequency 9505 kHz from a transmitter in Rampsham, UK.

### aacPlus Adopted By WorldDAB As New Audio Codec In DAB

Coding Technologies, which provides audio compression for digital broadcasting, mobile media, and the Internet, announced at the recent 12th WorldDAB General Assembly held in Seoul, Korea, that the company's flagship product, aacPlus, has been adopted by WorldDAB as the new audio codec in Digital Audio Broadcast (DAB) according to the Eureka 147 standard. The WorldDAB technical specifications also support MPEG

Surround, the new fully backward-compatible multichannel option that paves the way to simulcast multichannel without using additional spectrum.

DAB with MPEG-4 aacPlus is being embraced in evolving markets, such as China and Australia, for digital broadcasting. In Europe where markets have been slow to adopt the DAB standard they can easily switch to aacPlus, offering new opportunities to broadcasters. In established markets such as the UK, the use of both the new audio codec alongside the existing Layer-2 allows broadcasters to add new services in the available spectrum.

MPEG-4 aacPlus is already standardized in all digital mobile TV technologies, including DVB-H, MediaFlo, ISDB 1-seg and T-DMB, the worldwide standard based on DAB. In addition, aacPlus is a standard feature in a growing list of more than 200 media/entertainment products from companies such as Nokia, Motorola, Sony Ericsson, Alcatel, Casio, Hitachi, Kyocera, LG, Siemens, and Toshiba. Coding Technologies estimates there are more than 100 million mobile devices supporting aacPlus.

### Sri Lankan Air Force Reportedly Hits Tamil Eelam Radio Tower

Two Sri Lanka Air Force (SLAF) bombers have reportedly destroyed the main broadcast tower of the Tamil Eelam Radio (Tamil Eelam Vanoli) that broadcasts three radio signals: two commercial radio broadcasts, the Tamil Eelam Vanoli Tamil and Sinhala services, and the official broadcast of the Liberation Tigers of Tamil Eelam (LTTE), Voice of Tigers (VoT).

LTTE political head S.P. Thamichelvan visited the attack site and condemned the Sri Lanka Air Force bombing as a planned attack on freedom of expression. The radio stations continued to broadcast the services. Two employees were wounded in the attack; an electricity generator and two vehicles of the station were also destroyed.

### DAB Digital Radio In 50 Percent Of UK Households By 2010

Figures released by the DRDB (Digital Radio Development Bureau) show DAB set penetration in the UK is on track to top 50-percent household penetration by 2010. In its annual forecast,

the DRDB says sales in 2006 will be around the two million mark, delivering a household penetration of 13.9 percent by the end of the year. This is expected to rise to more than 40 percent by 2009 and top 50 percent in 2010.

The forecast, which tracks DAB set sales across all categories, was audited by media analysts Oliver and Ohlbaum. Using a bottom-up analysis of the current DAB set market, it also considers the dramatic shift within the audio market in recent years as listeners find non-traditional ways to use radio, a trend that is expected to continue.

The DRDB says that with the recent launch of the first mobile phone able to receive DAB stations—the Virgin Mobile Lobster 700—a new path to DAB reception is expected to emerge. There is already a range of combined DAB/MP3 players available, and this market was expected to double by last Christmas as this issue of *Pop'Comm* went to press.

### Radio France International To End Turkish Broadcasts

Radio France International (RFI) has announced an end to its Turkish broadcasts. Speaking about the decision, Antoine Schwarz, the head of RFI's board of directors, said RFI is planning to create a forum for the discussion of Turkish-French relations instead of the Turkish radio programming. RFI programming in Turkish was launched in 1971, when broadcasts were aimed at Turkish immigrants to France who did not yet speak French. The programming provided the immigrants with news about social and cultural events, as well as information on daily life in France.

### XM Satellite Radio Announces Successful Launch Of Its XM-4 Satellite

Liftoff occurred from the Sea Launch Odyssey Launch Platform in open waters of the Pacific Ocean on the equator. The XM-4 satellite was inserted directly into a geosynchronous transfer orbit, on its way to an orbital location for in-orbit testing prior to placement in its final orbital position at 115 degrees West Longitude. A ground station in South Africa acquired the first signal from the satellite in orbit as planned.

Built by the Boeing Satellite Development Center, the XM-4 spacecraft carries



a high-power S-band Digital Audio Radio Service (DARS) payload provided by Alcatel Alenia Space. Replacing two co-located XM satellites currently at 115 degrees, XM-4 will transmit XM Radio's direct broadcast of digital radio programming to cars, homes, and portable radios throughout the continental United States and Canada.

The XM-4 satellite will have 18 kW of total power at the beginning of life on orbit. Specified for a 15-year lifespan, Sea Launch's accurate insertion into transfer orbit should provide additional years of service life. This is Sea Launch's fourth successful launch for XM Satellite Radio, completing previous missions in March 2001, May 2001, and February 2005.

## China To Implement Mobile TV Standard

China's State Administration of Radio, Film and Television (SARFT) have released a recommended standard for the mobile multimedia broadcasting industry. It was expected to formally implement it last December. SARFT said that it will be responsible for distributing this standard, which is based on the Satellite Terrestrial Interactive Multiservice Infrastructure (STiMi) technology, and will promote it among various mobile and portable terminal companies providing broadcasting programs and information services.

SARFT said that the country's mobile TV standard brings a golden opportunity for China as there is not yet a unified mobile TV standard on the global market. Mobile phone television also provides an important opportunity for the telephone network, cable television network, and computer network to integrate, and the standardization will directly affect China's process in the merger of the three networks.

## Laser TV Will Make Plasma Screens Obsolete

Australian company Arasor International and its U.S. partner Novalux have unveiled a laser television, which they say could make plasma screens obsolete. The companies claim the laser television is a world first and assert that it will be cheaper than conventional plasma LCD TVs, give a better picture, and use a quarter of the electricity.

Arasor produces the optoelectronic chip central to the laser projection device built by Novalux, which is in turn being

used by a number of television manufacturers, reports *The Engineer Online*. The launch date for the laser TVs is scheduled for Christmas 2007 through electronics manufacturers including Mitsubishi and

Samsung. The optoelectronic chip-laser technology is also being tested in mobile phones, where it will be used to project images onto any surface, and in home theaters and cinemas. ■

## ADVERTISERS' INDEX

Advertiser	Page #	Website Address
AOR USA, Inc. ....	Cov III .....	www.aorusa.com
Advanced Specialties .....	29 .....	www.advancedspecialties.net
Antique Radio Classified .....	29 .....	www.antiqueradio.com
Atomic Time, Inc. ....	41 .....	www.atomictime.com
C. Crane Company .....	61 .....	www.ccrane.com
CQ Bookshop .....	71,79 .....	www.cq-amateur-radio.com
CQ Calendars .....	14 .....	www.cq-amateur-radio.com
Communications Electronics .....	7 .....	www.usascan.com
Computer Aided Technology .....	45 .....	www.scancat.com
Electric Radio Magazine .....	71 .....	www.ermag.com
ETON .....	10,11 .....	www.etoncorp.com
Homeland Security .....	61 .....	www.ready.gov
ICOM America, Inc. ....	Cov. IV .....	www.icomamerica.com
MFJ Enterprises, Inc. ....	3 .....	www.mfjenterprises.com
Monitoring Times .....	65 .....	www.grove-ent.com
PowerPort .....	29,71 .....	www.powerportstore.com
RSGB .....	59,64 .....	www.cq-amateur-radio.com
REACT International, Inc. ....	77 .....	www.reactintl.org
Radioworld, Inc. ....	41 .....	www.radioworld.ca
Universal Radio .....	1 .....	www.universal-radio.com
W5YI Group, The .....	67 .....	www.w5yi.org
Yaesu .....	Cov II .....	www.vxstdusa.com

Reach this dynamic audience with your advertising message, contact Arnie Sposato at 253-853-4080, FAX 253-853-4070, or e-mail: [advertising@popular-communications.com](mailto:advertising@popular-communications.com).

## readers' market

**Advertising Rates for Readers' Mart:** Non-commercial ads are 30 cents per word, including abbreviations and addresses; minimum charge \$6.00 per issue. Ads from firms offering commercial products or services are \$1.00 per word; minimum charge \$20.00 per issue. Boldface words are \$1.20 each (specify which words). Leading key words set in all caps at no additional charge. All ads must be prepaid in full at time of insertion; a 5% discount is offered for prepaid 6 time insertions. All ads must be typewritten double spaced.

**Approval:** All ad copy is subject to Publisher's approval and may be modified to eliminate references to equipment and practices which are either illegal or otherwise not within the spirit or coverage scope of the magazine.

**Closing Date:** The 10<sup>th</sup> day in the third month preceding date of publication. Because the advertisers and equipment contained in Readers' Market have not been investigated, the Publisher of *Popular Communications* cannot vouch for the merchandise listed therein. Direct all correspondence and ad copy to: Attention: Classified Dept., PC Readers' Market, 25 Newbridge Rd., Hicksville, NY 11801.

**COMMUNICATIONS MONITORING ANTENNAS.** HF/VHF/UHF Super Discone \$49.75. AntennaCraft Scantenna \$47.70, 30-1200 MHz. 4-12 dB Log Periodic \$69.50, 806-900 MHz. 13 dB 9 element Yagi \$74.00. MURS/GMRS Dual Band Base \$48.95. All prices INCLUDE Priority S&H&I. See these antennas plus many, many more for Amateur, Business, CB, and Monitoring radio, plus cellular phone antennas on the web at: [www.antennawarehouse.com](http://www.antennawarehouse.com) MC/Visa Order line 877-680-7818. To help maintain our low pricing, we do not print catalogs.

**ALL TYPES OF RADIO REPAIR, ALIGNMENT, AND REFURBISHING** done by FCC commercial licensed technicians. Amateur, Business, Shortwave, Citizens Band and GMRS. Reasonable rates. Fast turn around on most items. Call today for shipping authorization. Cook Towers Inc. Toll free: 877-992-2665 or [CookTowersInc@aol.com](mailto:CookTowersInc@aol.com)

## School Days

**J**ust this past Saturday, I mentioned to some new friends that I had been writing this column for about 10 years. “How do you come up with something funny every month? That must be awfully hard!” they said.

I told them a little about Norm. They began to laugh.

See? Any of you with a computer, a book on grammar, a spell checker, and a memory that still fires on at least three cylinders could do this...*IF* you had a friend like Norm.

And lest you think I abuse him here on these pages because of some nasty streak, well, you should know that Norm is as good a friend as you’ll find. Along with that, he provides me endless episodes to keep you amused. George had Gracie, Martin had Lewis, Laurel had Hardy. Well, maybe that’s backwards—actually I look more like Oliver Hardy, and Norm, well he’s Stan Laurel. In fact, if we were ever together at Halloween, that would be a perfect pair of costumes for us.

While we were in our Laurel and Hardy mode, Norm decided to teach a crash course in ham radio. He wanted to see if it was possible to send out some books and information for prospective hams to read, then have them attend an intense weekend course where they were in class Friday evening, all day Saturday, and all day Sunday, and then have a volunteer examiner arriving late Sunday to administer the tests for some of the first “no-code” licenses.

I am not the only friend Norm has. I am the only one who writes about him, but he’s got friends all over the country—friends he’s made during his travels and by his “travels” on ham radio. I’m not even the only friend of Norm’s who gets roped into helping him with some of his really crazy and difficult undertakings, and this crash course in ham radio was certainly one of the most difficult, even though it wasn’t crazy at all.

The other friend that Norm roped into helping with this enormous project was Larry the cop. Norm has called him that for as long as I’ve known him. It’s never just “Larry,” but always “Larry the cop.” It’s his way of identifying Larry. In fact, that has me wondering what he calls me to his other friends. I probably don’t want to know.

So Larry the cop arranged for us to use a lecture hall in a large community college in his jurisdiction. You’ll notice that I’m avoiding even *hinting* at where that jurisdiction might be. And with good reason. Larry is a pretty normal person, a career law enforcement officer with a good record. There’s no way he’d want his boss reading about him in the same story as Norm.

Norm and I drove a long way in a very small car in some miserable weather to get to this location, and true to form, Norm paid for the motel room, though his choice of lodging was, well, *frugal* to say the least. It was very hot in that room. This place had a broken heater—broken in that it was stuck in the “always on high” mode, and we could not even get into the control panel to untwist a wire nut and disable the thing. It’s all coming back now.

The distance from the motel to Larry’s house and then to the school where our lecture hall was located had us hopping. It was about 20 minutes between each of the three sites, and no matter what we did, we always had to go back to somewhere we had just been to get something we needed where we were.

---

***“The big event was about to begin. Norm, Larry, and I brought in a whole bunch of ham radio gear for people to see and (we hoped) get a little motivation from.”***

---

Friday night came. The big event was about to begin. Norm, Larry, and I brought in a whole bunch of ham radio gear for people to see and (we hoped) get a little motivation from.

There were more people than we had expected. Some who said they couldn’t make it showed up at the last minute, and that had us running off for more coffee and donuts. (What’s this. “Us” kemosabe? It had *ME* running off for more coffee and donuts.) And some books that we had left at Larry’s house, and some sample exams that we had left in the motel room. And. And. And.

And I remember that Norm would not spend the \$60 for an idler pulley for his power steering belt, so I was driving a car that was almost impossible to steer at any speed under 50 mph, which was not very safe in suburbia. And Larry told me *NOT* to get in trouble with his fellow officers and expect him to get me out of it.

Norm’s lectures and instruction went smoothly. I found myself pointing to the illustrations on the blackboard in much the same way that Vanna White turns letters, but without that nice smile (and pretty dress, but that’s another story). As Norm would talk, I would draw diagrams and sketches to illustrate his topics, and it became obvious that my artistic skills were lacking. They were *laughing* at me! Norm and I made the best of it and used it to keep the students—our audience—from becoming bored or overtaxed from some intense cramming.

---

***“When he got to the part where he said I could use a few hours on the stair-climber, I told him he was getting carried away with his position.”***

---

We would break every hour and during that time, Larry, who had been sitting in the audience watching us, watching our students, and taking notes, would come down to the front of the room and critique us. When he got to the part where he said I could use a few hours on the stair-climber, I told him he was getting carried away with his position.

In the end, a whole bunch of newly licensed hams left that classroom pretty exhausted on a Sunday night. About 80 percent of the people who tried passed and got their “no-code” license and were on their way to becoming hams. Larry has gotten to know a few of them on 2 meters. Norm and I headed back to our meaningless little lives at a nondescript radio equipment company that shall remain nameless to avoid countless lawsuits. We got to take all the donuts that no one liked for the ride home. The class was a success, but way too hard to repeat, a “fun thing that we’ll probably never do again,” for which I am eternally grateful. ■



# AR-ALPHA

## Communications Receiver



- Multi-mode unit capable of receiving AM (synchronous), ISB, RZ-SSB, USB, LSB, CW, WFM including FM stereo, NFM, APCO-25 digital, and TV in both NTSC and PAL formats
- 6-inch TFT color panel can display received video signals or depict spectrum activity over a wide choice of bandwidths including a "waterfall" function to show signal activity over a specified time period

## Welcome to the Future!

AOR proudly introduces the AR-ALPHA, the first in a new class of professional monitoring receivers! Designed to cover 10KHz to 3.3GHz, with no interruptions,\* this receiver features a 6-inch color TFT display, five VFOs, 2000 alphanumeric memories that can be computer programmed as 40 banks of 50 channels, 40 search banks, a "select memory" bank of 100 frequencies, and a user designated priority channel. It includes APCO-25 digital and a DVR with six channels that can record up to a total of 52 minutes audio. Monitoring professionals will appreciate the world class engineering and attention to detail that makes the AR-ALPHA such an amazing instrument.

- Composite video output on the rear panel of the unit
- Selectable IF bandwidths: 200 Hz, 500 Hz, 1 KHz, 3 KHz, 6 KHz, 15 KHz, 30 KHz, 100 KHz, 200 KHz and 300 KHz along with the ability to shift the IF.
- CTCSS and DCS selectable squelch functions
- DTMF tone decode
- Built-in voice-inversion descrambling
- CW pitch control, AGC, AFC
- Auto-notch feature
- User selectable spectrum display function from 250 KHz through 10 MHz in 1 KHz increments. Above 10 MHz bandwidth, it can display 20 MHz, 50 MHz, 100 MHz or 1 GHz, but above 20 MHz bandwidth, no audio will be available
- Resolution bandwidth is also user-selectable in increments of 1 KHz, 4 KHz, 32 KHz, 64 KHz, and 128 KHz.
- Fast Fourier Transform (FFT)
- Rear panel connections include 12 VDC power, RS-232C, USB 2.0, I/Q output with 1 MHz bandwidth, two antenna ports (one SO-239 and one Type N) and up to four antennas may be selected through the receiver's controls with the optional AS5000 antenna relay selector.
- Use desktop or with 19" rack mount

*The AR-ALPHA redefines excellence in professional monitoring receivers. No wonder so many monitoring professionals including government, newsrooms, laboratories, military users and more, rely on AOR.*



AOR U.S.A., Inc.  
20655 S. Western Ave., Suite 112 Torrance, CA 90501, USA  
Tel: 310-787-8615 Fax: 310-787-8519  
info@aorusa.com • www.aorusa.com

Specifications subject to change without notice or obligation.  
\*Documentation required for qualified purchasers in the USA.

CANDY STORE



YEAH, IT'S LIKE THAT.



## Introducing Icom's **IC-R9500** Wide Band Receiver\*

We've raised the bar with our super performance, multiple function wide band "measuring" receiver. The IC-R9500 has normal and wide spectrum scope functions. With five roofing filters before the first amp, two independent 32 bit floating point DSP processors, and 7-inch wide color TFT LCD, this is something to get excited about!

Visit [www.icomamerica.com/downloads](http://www.icomamerica.com/downloads) to download the pre-release brochure.

\*This device has not been approved by the FCC. This device may not be sold or leased, or be offered for sale or lease, until approval of the FCC has been obtained.

©2006 Icom America Inc. The Icom logo is a registered trademark of Icom Inc. All specifications are subject to change without notice or obligation. 9021

  
**ICOM**<sup>®</sup>