



45635

# POPULAR COMMUNICATIONS

JANUARY 2007

## Calling All Mediumwave DXers! DX Tests-All New-And *Very* Different

**Expert MW  
Propagation  
Guide  
Page 20**

- **Severe Winter Storm Monitoring: Are You Ready To Monitor The Action?**
- **Tech Showcase: Alinco's DJ-V17T 2-Meter Transceiver With Extended Receive!**

**PLUS: New Ham Radio Rules, History Of Scanning, Build A CAT Program For Ten-Tec's RX-320, and New Iranian SW Station!**

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|||

# 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)
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- "RF Tune" Front-end Preselector (1.89-1000 MHz)
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- Two Antenna Ports
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## 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



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# Universal Radio — Quality equipment since 1942.

*eton*

E1 XM

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G4000A

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



OPTION



The *eton* 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 [KCK] 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 01/31/07 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.

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### On The Cover

Calling all Mediumwave DXers! US broadcast band stations now conduct what's known as the 'Inventory DX Test' that's a lot different from DX tests of yester-year. How and when it's done will surprise you! Be sure to read BruceConti's Broadcast Technology column beginning on page 14 for details. Also, especially for mediumwave enthusiasts, is a special Propagation Corner column this month by Tomas Hood with a complete, in-depth look at MW DXing and how you can become an active mediumwave explorer. The Propagation Corner begins on page 20. (Photo by Larry Mulvehill)



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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 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 1/2 x 1 1/4 x 4 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 1/4 Wx 2 1/2 Hx 5 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 1/4 Hx 1 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

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 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-1777  
\$49<sup>95</sup>  
Ship Code A

## 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 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 Wx 1 D x 2 H inches.

## Dealer/Catalog/Manuals

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## Life In A Cocoon—"It Can't Happen Here"

**W**e're now seven years into the 21st Century, so it seems like a good time to take "inventory." I don't mean a physical count of our personal goodies, radios and the like, but our mindset, specifically how we position ourselves as radio-loving Americans. To do that requires that we look at where we've come in the past few years. For me personally, the defining moment for much of our radio hobby was 9/11/2001.

I've mentioned this before in these pages, but as I turn the calendar to another year, I get that nagging gut feeling that we've got a lot of work to do. Less than *two months* after 9/11 I was on one of my regular PR "Let's talk about radio and *Pop Comm*" road trips to the wilds of Vermont. I like Vermont. No, actually I love Vermont (except, of course, the winters, which probably even Vermonters don't like).

And I suppose the Bennington area of the state where I was headed, only about a four-hour drive from lower Manhattan, is really no different than a similar friendly town in the middle of Wisconsin or Montana—other than the relative distance from the epicenter of 9/11, which I learned back then means a lot more to many people than most of us want to talk about. Distance, I find, has much to do with how much folks actually believe there's truth to the "it can't happen here" syndrome. Truth is, "it" *can* happen anywhere.

I don't mind talking about it, frankly because I think talking about such things is not only patriotic, but vital to what should be a two-way flow of information among the public, the government, and the media—a dialogue of sorts. At least that's the way it's supposed to work. Lately, though, I wonder.

So, less than two scant months post-9/11 I visited a radio station Up North, talking, as I have many times, about all the great things radio in all its forms has to offer: staying in touch around town, monitoring the cops and firefighters and aircraft, listening to international broadcasters, getting on the air with ham radio or FRS/GMRS and CB, and just having fun—and staying safe in our "new world" with radio.

It was a very provocative exchange of thoughts, ideas, and yes, shameless free promotion for our magazine. Yet, interestingly, what works for one media in Grassroots America, doesn't always work for another, even given the fact that collectively our country was most certainly still reeling from the events of 9/11.

In an effort to maximize the coverage for that trip, I decided to approach the local newspaper, pitching all those "fun" radio things you and I know about, but also the "staying safe" aspect. The response from the editor was that, essentially, "that can't happen here." Of course I could have been knocked over by a feather. I was floored, not just because of the timing of that statement, but because a member of the media actually said it to another member of the media. Strange, don't you think?

Some things you remember forever, and that's one moment I'll remember until the end. But I remember it with mixed feelings about how we Americans can sometimes become so blind

to what's going on around us that we somehow convince ourselves that just because we live in a comfy little town with a real Main Street and downtown shopping area in fill-in-the-blank-America we're immune from attack. And it doesn't matter if that attack is from a terrorist from a foreign country, or a homegrown doofus such as the one who took so many lives in Oklahoma City, or more recently in a quiet Amish town.

Tragedy happens, and with the variety of communications we've all got at our disposal today there's really no excuse for not being aware of many events before the media or even helping our public safety/emergency responders in time of need.

Of course, there may be no way to prevent some acts of terrorism. But we are in a unique position to not just hear what's going on from the scene, but to be part of our American process. Inevitably we learn from history that many acts of terrorism could have been prevented had government agencies and even ordinary Americans taken the time to interact and speak up. Before the events of 9/11 and in the early unfolding of the day itself, there were clues: overheard comments from would-be pilots about not needing training to land a plane, just fly it; communications on VHF air frequencies that certainly indicated a hijacking in progress despite the fact that NORAD (according to official government documents and numerous press reports) apparently wasn't notified by the FAA within the required 30-minute timeframe; controllers trying to make contact on VHF frequencies and monitoring apparent cockpit comms from the hijackers telling people to remain in their seats.

You hear something, say something, or at least document it so when "it" hits the fan you're one step ahead of being spoon-fed PR by politicians or, in many cases, the mainstream media, working in concert with the government, whether federal, state, or local.

To that end, don't ignore media comms; you'll be surprised (or perhaps you won't) at what is discussed prior to airtime or after a news report. And those normally quiet public safety channels take on a whole new dynamic during unusual events or presidential visits, as do federal frequencies, whether you're living near a military base or out in Middle America.

In a radio moment that I'm sure virtually no one except a few monitors and the other pilots in the area heard, as I recall, two days *after* 9/11, on a well-publicized UHF CAP military frequency, one fighter pilot chatted with another saying, "It sure is boring up here today..."

Boring? Let's hope he's awake enough to spring into action with the right emergency alert!

As I've said before, when everything around us comes down to the lowest common denominator, you and I with our radios and ears to the world stand a pretty good chance of hearing what Uncle Sam either can't hear *or* refuses to hear, much less talk about once he does hear it. Keep listening and tell people about

(Continued on page 70)

## News, Trends, And Short Takes

### Radio Sweden Adds Extra Swedish Transmissions To Middle East

Because of the continuing crisis in the Middle East, Radio Sweden is adding two extra transmissions for Swedish listeners in the region. The domestic service half-hour news program, "Lunchebot," is being relayed daily at 1030 UTC on 9490 and 21810 kHz. The Radio Sweden broadcast at 1200 UTC is also being broadcast to the region on 21810 kHz.

### UK Media Regulator Proposes Legalizing Low-Power FM Transmitters

UK media regulator Ofcom has proposed legalizing the use of low-power FM transmitters that can be used to connect MP3 players and other personal audio devices wirelessly to radios and in-car entertainment systems. Ofcom points out that simple and low-cost wireless devices are commonly used in other countries to enable people to listen to music transmitted from an MP3 player or other audio device to radios in the home or while mobile.

Currently, low-power FM radio transmitters for MP3 players are unauthorized for use in the UK and Europe because of the potential to cause interference to broadcast services. Ofcom has also proposed deregulating Citizens' Band services, allowing around 20,000 licensees to use short-range transmitters for hobby and leisure purposes without the administrative and cost burden of an Ofcom license. Ofcom says the deregulation of Citizens' Band services could also support the growth of Community Audio Distribution Systems (CADS), simple and inexpensive wireless public address systems that are used to transmit information on local community services.

Ofcom's proposals also include making more spectrum available to meet consumer demand for other low-power devices, such as hearing aids, alarms systems, tracking and tracing systems, and meter reading devices. Under the proposals these will be able to operate from 169.4 to 169.8125 MHz.

### Underground Radio Revolutionizes Subterranean Emergency Rescue Capabilities

Vital Alert Technologies, Inc., has signed two exclusive license agreements with the Los Alamos National Laboratory for Underground Radio, a technology that will provide "Through-the-Earth Communication" (two-way voice and text) for first responders, rescue and security teams, underground miners, and the public for use in critical emergency situations around the world. Underground Radio, originally developed by Los Alamos for the Department of Energy, is being commercialized by Vital Alert Technologies for use by emergency rescue crews in urban centers and by the mining industry.

Underground Radio is a through-the-earth communications mechanism that offers high-level security to critical government,

industrial, military, commercial, and public infrastructure. It can also be used to respond to threats of terrorism and natural disasters, such as hurricanes, earthquakes, and fires. It uses very low frequency (VLF) electromagnetic radiation and digital audio compression technology to carry voice and text data. The VLF signals also can transmit tracking and location data for radio users in the case that they are unable to respond. Funding for Underground Radio came from the U.S. Department of Energy's Office of Industrial Technology and from Laboratory Directed Research and Development, a program through which a portion of the Laboratory's operating budget is used to fund outstanding, emerging, or innovative science and technology.

### Sangean To Introduce "First DRM Radio" In Europe

After a long wait, a major manufacturer has announced plans to release what it calls "the first DRM Radio" in Europe. The release was scheduled for October. The Sangean DRM-40 will have DRM coverage on longwave, mediumwave, and shortwave. It will also have DAB coverage, which Sangean describes as "the digital alternative for the FM band." The radio will offer RDS (radio data system), and a USB connection and an SD-card slot allowing the radio to play and record MP3 files. The DRM-40 uses the same case as the existing DPR-1 DAB (digital audio broadcasting) receiver. The recommended retail price in Europe, including VAT, will be 299 euros.

### Advanced Car Radio Claimed To Improve Reception In Critical Signal Conditions

STMicroelectronics has announced that it is sampling a new digital AM/FM radio receiver chipset for use in automotive applications. The company says that sophisticated digital signal processing techniques allow the chipset to feature excellent reception quality while reducing interference even in the presence of challenging signal conditions. Jointly developed by ST and Bosch's subsidiary, Blaupunkt, this advanced digital receiver integrates audio signal processing and Radio Data System (RDS) decoding.

### Samsung Working On Atmospheric Broadcasting

Researchers and employees of Korean company Samsung are devising a method to use the ionosphere as a medium for "long distance communication" without the need for expensive satellites. The ionosphere already plays a role in communications as a "radio reflector" for shortwave signals, but by launching UHF signals behind a 1-GHz carrier signal, scientists hope to alter the behavior of the ionosphere to create an alternating current, which can then be modulated at a particular frequency in order to create an antenna of global proportions. ■

## 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](mailto:popularcom@aol.com).

### NF5B's Mobile Installation

Dear Editor:

I read with interest your mobile mounting tips, as I've been through that wrestling match with a 1990 GMC full-sized van and a Yaesu FT-2800m transceiver recently. This is not a little lightweight handheld with rubber duck attached. I tired real fast of those anemic little things for mobile use. Adding a dual-band amp for my Kenwood dual-band HT was even less preferable when I studied my options, along with those little dinky SMA connectors on the handheld.

My XYL and I are both hams and enjoy ham radio while on the road. I don't enjoy those trips to Wal-Mart etc. with her; however, yet I like to keep in touch with her when she's out wandering around in the big city. Since we live in the country, and she needs to use the radio too, we studied our mounting options carefully. Shifter on the column, a doghouse with glove compartment, no good place down low with good sight lines and airflow for the radio.

Our Yaesu required the XYL to see it, especially as she may need to select frequency, CTCSS tones, etc. Being a blind man I usually don't buy Yaesu equipment because of its difficulty programming without sight, but I gave it some study. We put the XYL in the driver's seat in the driveway with the van stationary, and I held the radio in different positions until we found what worked. Our final decision was to mount it head-up above and in back of the rearview mirror where it didn't obstruct any sight lines. I looked on top of the doghouse, but there was not enough room.

Down low where dad mounted the CB when he delivered the van to me from Iowa; NOT good ventilation, poor sight lines to radio, much less than ideal. This left me again studying the head up option. Then came the real grumbling.

The Yaesu supplied bracket wouldn't give us the angle we wanted. I happened to have some fairly heavy scrap sheet metal available, and a son-in-law who's handy with sheet metal work "beat to fit,



Here's the mobile installation belonging to NF5B.

painted to match." An hour or two and we were ready to tackle the job with a custom-mounting bracket. After taking careful measurements of radio and bracket we fashioned one of our own, which holds the radio securely and bonds it to the van. The coax cable runs along the headliner, secured with conduit clips, and screws to the roof itself. Power cabling runs directly to the battery, using an Anderson power pole inside down near the doghouse. The radio's power cable runs around the edge of everything, connected with conduit clips as well. The microphone is held by a regular microphone holder and is easily accessible to either of us. My wife can see the radio, it has plenty of cooling, and it doesn't obstruct the driver's sight lines.

Sometimes with larger transceivers, heads up is the only way to fly, and radio manufacturers should take this into consideration when fashioning mobile mounting brackets. Of course one should use one's intelligence when choosing this method to be sure that the radio doesn't obstruct sight lines for the driver.

NF5B  
Via e-mail

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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 beeps. **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.



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# Monitoring Severe Winter Storm Events

## *Preparedness Is The Key To Monitoring Success*

By John Kasupski, KC2HMZ



*A massive snowdrift trapped vehicles inside the tunnel under the main runway at the Buffalo Airport during the Blizzard of '77. (Photo courtesy of NOAA)*

**T**his month's issue hits the newsstands—and our subscribers' mailboxes—with the Northern Hemisphere in the midst of winter. For many of us, this brings with it the prospect of severe winter storms and the problems such events inevitably bestow upon us human beings. Many of the difficulties are mere inconveniences, such as poor visibility, lengthy travel delays, and closing of schools and businesses. Unfortunately, however, some of effects go far beyond the realm of simple inconvenience and can very serious, including power outages, damage to buildings and homes, and in the worst winter storms, loss of human life.

Coping with severe winter weather events is always a learning experience. Every time you survive one, you learn something new. As this issue goes to press, for example, I've just learned that when you live in or around Buffalo, New York, it doesn't even have to be quite winter for a severe winter storm to plunge parts of four western New York counties into a state of emergency.

On Friday, October 13, 2006, a tricky blend of climate conditions brought us almost two feet of heavy, wet snow over a period of less than 24 hours. Since all the trees around here still have nearly all their leaves intact at that time of year, the combined weight of wet leaves and record snowfall resulted in major

damage to trees, which brought down power lines, as branches snapped off and fell, and even entire trees. There has been widespread damage to the power grid, and at least three deaths were blamed on the storm.

As I write this article FEMA is in town to determine if a federal disaster declaration should be issued. The National Guard is hitting town to assist in the cleanup of *30 million tons* of debris from local streets. Hundreds of thousands of area residents are facing their fifth cold night without heat and electricity.

### **Don't Wait, Act Early!**

Fortunately for me, as a ham operator who's also an ARES (Amateur Radio Emergency Service)/RACES (Radio Amateur Civil Emergency Service) member and a Red Cross volunteer, I make it a point to make sure that I and my equipment are ready when something like this happens. For example, I already had half a tank of gas in my van, and I filled it up as soon as it became evident there was going to be a problem. Don't wait and learn this lesson the hard

way. Once the power goes out, many gas stations will no longer have electricity to run their pumps, and when you try to get gas, you'll have a hard time finding a gas station that both has power to stay open and still has gas left to sell you! So drive on the top half of the tank, and fill it up at the first sign of trouble brewing.

In the past few days, I spent over 40 hours doing disaster relief work. I'm not new at this by any means. My first practical experience in emergency communications came in the aftermath of what those of us from the Buffalo area who survived it refer to as The Blizzard of '77. With over 25 years of experience in these matters, I've learned a few vital lessons about radio during disasters. Some I had to learn the hard way, but, luckily, most were learned through the invaluable training opportunities I took advantage of when I had the chance. Still, I learned something new during this week's event, and learning to be more effective in an emergency is a never-ending process in any case.

If the area where you live is hit with a severe winter storm, there are two keys to monitoring the event, and both of them are related to *preparedness*. First, you need to be prepared for human needs. Your basic needs are food, water, and heat. This is really just common sense—you can't monitor your radios if you have died of starvation or dehydration, or have frozen to death—but if you forget to plan for these considerations, you



*A split tree blocks a street the day after The October Surprise hit the western New York area on October 13, 2006. (Photo by Rebecca Brady, KC2IRK)*

stand a good chance of becoming a victim. This means that instead of being in your shack monitoring communications from the local Red Cross shelter, you'll be a client at the shelter, hoping for the day you can finally return home. I can't emphasize this enough: The most important consideration is to see to your own safety and that of your family members!

This is not that difficult to accomplish, provided that you give some thought to it and take action well in advance. Ideally, you want to build up a stash of enough food and water to last you and your family at least a week without outside assistance. Federal, state, and local emergency management agencies as well as private organizations like the Red Cross offer a wealth of free information on preparing for these emergencies. Take advantage of it ahead of time. It's much too late to begin preparing when the roads are already blocked and your heat and electricity are out. Find out about foods that don't have to be cooked, how much water is needed per person per day, etc., and do it right now!

## Keeping Your Station Running

Once you're sure you and your family will be able to survive the effects of severe winter weather, you can turn your attention to ensuring that your monitoring station will be operational, and that you'll have the information you need to

effectively keep on top of the situation. If you have done your job well with respect to planning for human needs, you will already have alternative power sources on hand. I have two 17 amp-hour lead-acid battery packs and a 110-AH deep-cycle marine battery, augmented with an assortment of alkaline and rechargeable cells and battery packs for my radios. Nevertheless, as I write this, my supplies have just become severely depleted, and I'm buying a generator as soon as I can.

Incidentally, don't wait until the storm hits to buy a generator if you choose to go that route. During the storm here this past week, one area resident who waited too long ended up having to drive clear across New York State from Buffalo to Watertown and back to get a generator. Once something happens, area stores will sell out of generators, batteries, and other supplies, in short order. That includes extension cords and outlet strips. Once again, don't wait; get this stuff taken care of well in advance.

You also want to have the necessary hardware to connect your equipment to your power sources. For example, if the external power cord for your scanner is designed to plug into an automotive outlet like a cigar lighter plug, it's not going to do you much good if the output of your power source is designed to accept banana plugs. Hook up all your gear well ahead of time, so that if you need additional hardware, you can be sure to have it on hand when you need it. If you're

going to be using a generator to provide AC power, you'll want to have outlet strips and extension cords on hand to route the power to where you will be using it.

The main point here is to think ahead, plan carefully, and pay attention to detail. Your radios can have everything from DC to daylight programmed into them, but if you can't power them up because the cords don't match, you won't hear much on them!

If you have outdoor antennas, bear in mind that high winds can have a way of making a mess out of them, as does the weight of ice and snow building up on antennas and feedlines. Therefore, give some thought to the question of what you're going to do if the storm knocks down your outdoor antennas.

There are numerous options for emergency antennas. Ham operators in particular have elevated this subject to a science, so if there's a ham radio club in your area, it might be a good idea to contact them and take advantage of their considerable expertise in this regard. There's also a wealth of information on the Internet, and past issues of *Pop'Comm* have included articles on antennas for emergency use. Do some Web surfing, and dig through that pile of back issues and make use of the information provided. Needless to say, no radio will perform very well without an antenna of some sort, so this is just as important as making sure you have power for your radios.

Once you've done everything you can to make sure that your monitoring equipment is ready to go in case of an emergency, start collecting the frequency information you'll need to effectively monitor the event and get it preprogrammed into your radios. Do this now, before the storm approaches! Once the storm hits, you'll have more important things to do than program your radios. When the time comes, you'll want to be able to hook up the power, connect an emergency antenna if necessary, turn on the radios, and start monitoring.

## Okay, So What Should I Listen To?

Once you've prepared your family and your station to survive a severe winter storm, you can start programming frequencies of interest into your scanners. Naturally, your local law enforcement, fire, and emergency medical services are among the things you'll want to be able

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Private contractors assist in clearing some of the estimated 30 million tons of debris after The October Surprise left area streets littered with downed trees and power lines. (Photo by Mike Brier, KC2FEN)

to monitor. These may already be programmed into your radios, and in fact they probably are, but if not, get them in there.

Next add in the frequencies for the highway crews, public works, and municipal utility departments, such as the water department, for your area. These are the guys who drive the snow plows, maintain the roads, and operate

the vital water distribution systems. Remember, depending on where you happen to live, these services may be provided at the state, county, or local level, or some combination thereof.

You'll also want to dig up the frequencies that hams in your area will use in case of an emergency. In particular, you'll want the repeaters and simplex frequencies used

by the local ARES and RACES organizations where you live, as well as any repeaters operated by local radio clubs. Local clubs often have EmComm (emergency communications) teams of their own that operate on the club repeaters and maintain liaison with ARES and RACES on the designated ARES and RACES systems.

It's also worth noting that as this article is being written, the FCC has just issued a Report & Order that makes several changes to the Part 97 rules that govern the use of ham radio here in the United States, and one of the changes is that the frequency bands and segments specified for RACES stations are going to be deleted. This may or may not result in the RACES organization in your area changing its frequency usage, so you'll want to check on this once these changes go into effect.

I strongly recommend that you obtain up-to-date frequency information specific to your area from people who are "in the know" about such things. Don't simply rely on frequency listings you find on the Internet. If there's a local scanner club in your area, chances are that they keep pretty good track of things, so contact them—it's worth the effort in terms of the information they'll have available. And you'll get to meet some fellow radio enthusiasts, and per-



This large tree limb was brought down by the combined weight of wet leaves and wet, heavy snow. Note the power lines entangled in the branches at right of photo. (Photo by Rebecca Brady, KC2IRK)

haps make some new friends who share your interest in monitoring.

## Monitoring Tips

If you are unable to find a knowledgeable source for local frequency information and have to "tough it out" on your own, make liberal use of whatever search capabilities your scanner has, and keep generous notes on what you hear. References to street names, businesses, and other easily identifiable locations are all keys to identifying the source of transmissions you hear when searching a range of frequencies.

With respect to ham radio, the vast majority of emergency communications is conducted on the VHF and UHF bands, with the 144 to 148-MHz (2-meter) band being the most widely used for this purpose. The most widely used band plan for 2 meters has repeater outputs clustered in the range from 145.20 to 145.50, from 146.61 to 146.97, and from 147.00 to 147.39 MHz. Simplex frequencies for 2-meter FM are clustered in the ranges from 146.40 to 146.58 and 147.42 to 147.57 MHz.

While the actual 2-meter band plan in use may vary in major metropolitan areas throughout the country, these ranges are a good place to start if you have to hunt for the ham radio EmComm group(s) in your area. Most of these groups have weekly nets and also can be found during drills and public service events, such as parades and charitable functions, since they often provide radio communications as a community service and training aid.

## Are You Ready?

The underlying idea here, as with anything that is disaster-related, is *preparedness*. If, as an old adage holds, an ounce of prevention is worth a pound of cure, then an ounce of preparedness is worth tons of scrambling to catch up when a disaster actually happens. This is true of any type of disaster. Now that you've read this article, I hope you've picked up some helpful tips on preparing for a possible disaster to hit your area, although I sincerely hope you never have use the information I've presented.

In closing, I'd like to express my most sincere thanks to those hams who assisted the operations conducted by the Amateur Radio Association Of The Tonawandas (ARATS) in the aftermath of what is now being referred to locally as The October Surprise. Stay tuned, be safe, and good monitoring!

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# How You Can Be Part Of A Future DX Test!

**A**re you prepared for a DX test? No, it's not a pop quiz to test your knowledge of long-distance radio reception. It's a test of just how far an AM broadcast radio signal can reach. Read on to learn how you can become an active participant in a future DX test.

## DX Test Time Capsule

During the early days of radio, every listener was in essence a DXer, carefully tickling crystal receivers and regenerative tube sets to pull in signals out of the ether from hundreds, if not thousands, of miles away. Radio stations were genuinely interested in how far signals would carry, and often aired "DX specials" to solicit responses from the most distant listeners. Through the 1920s and '30s as more and more radio stations were signing on for the first time each would conduct initial DX tests, or "fidelity tests," to measure coverage area. Fledgling groups of enthusiasts like the Newark News Radio Club and the National Radio Club became an integral part of the equation in those days. Each club established its own "Courtesy Programs Committee" to assist radio stations with the arrangement of DX specials, while promoting the programs in club bulletins, magazines, and newspapers.

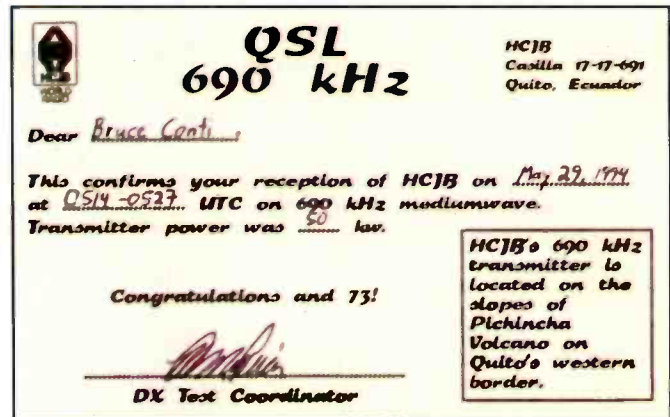
By the 1930s and into the '40s, the DX test became a popular pastime, with several tests scheduled on any given night during the FCC-defined "experimental hours" between midnight and 5 a.m. The overnight DX program was indeed a big event as most radio stations weren't capable of operating 24 hours a day like they do today. Some DX programs included elaborate live performances and even offered prizes to attract listeners. In addition to DX tests, the FCC began to require regular frequency checks to monitor compliance with technical standards. The clubs published frequency checklists to inform DXers when radio stations would be testing.

Then World War II abruptly interrupted special DX programs and frequency checks. During the war many radio stations instituted around-the-clock operation to better serve the public with the latest news and information, thus marking the end of the glory days of DX programs on the AM broadcast band. The incidence of DX tests has been in a slow but steady decline ever since. Although FCC frequency checks continued through the '70s, the monitoring of radio station technical parameters was eventually replaced by computer automation, rendering manual maintenance checks obsolete.

## DX Tests Today

These days the DX test is somewhat of an anachronism. In terms of engineering and the overall business plan, the DX test no longer serves a purpose. Most AM radio stations operate 24/7 with commercial programming that contributes to the bottom line, so giving up valuable airtime for a DX test isn't an option.

While a DXer might believe that a report of reception over thousands of miles would be useful information for promoting the reach of a radio station, the sales department is primarily



DX test QSL card from HCJB Ecuador on 690 kHz.

focused on selling time to advertisers in the local coverage area. After all, it's highly unlikely that a long-distance listener will travel thousands of miles just to have dinner at the local restaurant heard advertised on a DX signal. The engineering department's main concern is, instead, local signal strength. Furthermore, since the FCC breakdown of the coast-to-coast clear channel frequencies in favor of local broadcasting that evolved through the 1980s, DX reception on the AM broadcast band has become more or less a novelty. Only a handful of radio stations like 850 KOA Denver and 1030 WBZ Boston still actively promote overnight multi-state coverage.

## The "Inventory DX Test"

In response to the needs of modern radio stations and DXers, now there's something called the "inventory DX test." Developed by Fred Vobbe, producer of the National Radio Club's DX Audio Service, the inventory DX test is designed to be inserted during regular programming. It's basically a pre-recorded one-minute spot consisting of Morse code identification and an announcement to DXers, aired at intervals throughout the night in place of station promos or otherwise unsold commercial time. An inventory DX test is most likely to be scheduled between ratings sweeps periods, typically during midwinter and midsummer.

Both the International Radio Club of America and the National Radio Club have volunteer broadcast professionals who will produce customized spots for these inventory DX tests. Otherwise, with the exception of the pre-recorded inventory test, live tests often are performed solely by dedicated DXers who happen to be in the radio business themselves, such as broadcast personalities, engineers, and station owners.

## DX Test Anatomy

Morse code identification and what have become known as the "NRC sweep tones" (NRC stands for the National Radio Club) are synonymous with modern DX tests. As any amateur radio operator will attest, Morse code has the ability to cut



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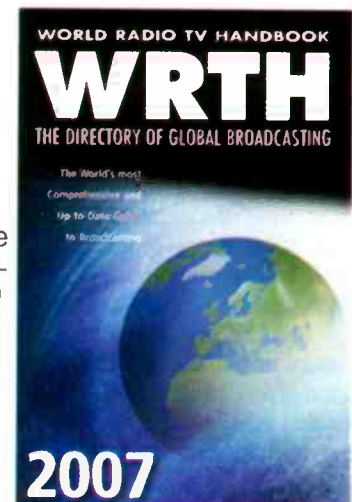
This 2006 edition really has outdone all previous ones. I do not know how a serious radio listener could be without the yearly *WRTH* and its online supplements, and I cannot imagine any radio professional doing without it – *Joe Analssandrini, Italy*

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## FCC Callsign Changes

New Call	Location	Freq	Old Call	New Call	Location	Freq	Old Call
				WMOJ-FM	Connersville, IN	100.3	WIFE-FM
				WQSW-LP	Fort Wayne, IN	100.5	New
				KHDK	New London, IA	97.3	KKNL
				WPNS	Brodhead, KY	101.9	New
				WANK	Mount Vernon, KY	102.9	New
				WCXV	Van Buren, ME	98.1	New
				WUPG	Crystal Falls, MI	94.9	New
				WHPD	Dowagiac, MI	92.1	WDOW-FM
				WUPF	Gwinn, MI	100.3	New
				WRCC	Marshall, MI	104.9	WWKN
				WUPZ	Republic, MI	96.7	New
				WUCL	Meridian, MS	102.1	WMMZ
				WHGO	Pascagoula, MS	105.9	WXRG
				WWMR	Salttillo, MS	102.9	New
				KZMC	McCook, NE	102.1	New
				WEZW	Wildwood Crest, NJ	93.1	WDTH
				KYCT	Ruidoso, NM	91.3	New
				WBDR	Cape Vincent, NY	102.7	WXKK
				WBDI	Copenhagen, NY	106.7	WBDR
				WRTN	New Rochelle, NY	93.5	WVIP-FM
				WBZZ	Queensbury, NY	105.7	WNYQ
				WSNP	So. Bristol Twnshp, NY	107.3	WNVE
				WAOG-LP	Aberdeen, NC	104.1	New
				WMKS	Clemmons, NC	105.7	WFMX
				WPRV	Fairfield, OH	94.9	WMOJ
				KPVN-LP	Woodburn, OR	96.3	New
				WZTF	Scranton, SC	102.9	WWRK-FM
				WKIM	Munford, TN	98.9	WMPW
				WTNV	Tiptonville, TN	97.3	WOGY
				KALD	Caldwell, TX	91.9	New
				KAKI	Ingram, TX	96.5	New
				KYMV	Brigham City, UT	100.7	KEGH
				KXBN	Cedar City, UT	92.5	KXFF
				WIDE-LP	Madison, WI	99.1	New
				WHSW-FM	Platteville, WI	89.1	New
				WRGW-LP	Shawano, WI	94.5	New
				KWYX	Casper, WY	93.5	New
				KCUG	Chugwater, WY	99.5	KWHO
				KWHO	Cody, WY	96.7	New
				KHNA	Hanna, WY	103.3	New
				KPAD	Wheatland, WY	107.5	New
				KPBI	Eureka Springs, AR	34	KBBL-TV
				WSFL-TV	Miami, FL	39	WBZL
				KCWI-TV	Ames, IA	23	KPWB-TV
				WWJX	Jackson, MS	51	New
				KRBK	Osage Beach, MO	49	New
				KMCB	Coos Bay, OR	23	KUCW
				KRCW-TV	Salem, OR	32	KWBP
				KUCW	Ogden, UT	30	KUWB

through noise and interference like nothing else, often readable under the worst conditions. Taking it one step further, sometime in the 1980s broadcast engineer and NRC magazine columnist Dave Schmidt introduced piercing sweep tones as an innovative method of cutting through interference during a DX test. These NRC sweep tones, comparable to police or emergency sirens, have proved quite effective, resulting in many successful DX tests over the years.

A full DX test may include Morse code and NRC sweep tones, plus unusual musical selections, such as patriotic marches and lively polkas, to help a radio station stand out on the crowded AM broadcast band. Of course, there will be repeated announcements during the test for the uninitiated non-DX

listeners. Otherwise imagine the surprise if someone tuned in the local country music station only to hear Morse code, sirens, and polkas!

### Calling All DXers

On rare occasions, a radio station may still call for the aid of DXers. Such was the case at radio station WTIC Hartford, Connecticut, on 1080 kHz. In 2001 a test was coordinated with co-channel sister station KRLD Dallas, Texas. In a verification of KRLD reception, Director of Engineering Erik Disen explained,

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cooperated in a coordinated "silent period." This enabled many east coast DXers to hear KRLD for the first time. There was a business purpose to all this from our perspective. KRLD went off the air to replace its common point antenna ammeter, while WTIC was looking for stations on 1080 that might have been causing interference. By staggering our off-air times, we hopefully made it enjoyable for everyone!

As a result of this unique DX test, engineers were able to determine the sources of interference to WTIC were WVCG Coral Gables, Florida, and CMCH Guines, Cuba, both also broadcasting on 1080 kHz.

## Join the Fun!

Visit the blogsite [www.dxtests.info](http://www.dxtests.info) for the latest list of scheduled DX tests, including QSL information. There you'll also find links to free WinMorse text to Morse code conversion software and audio files of the famous NRC sweep tones, both useful for radio stations to prepare their own DX test programs.

I'd like to invite radio station owners and operators interested in scheduling a DX test to drop me an e-mail. You may also contact Les Rayburn at [les@highnoonfilm.com](mailto:les@highnoonfilm.com) for assistance. Rayburn is the DX test coordinator for the Courtesy Programs Committee, which cooperates with the two leading AM broadcast DX clubs in the United States: the International Radio Club of America and the National Radio Club.

## Broadcast Loggings And Pogo Radio

Welcome to Jack Linonis in western Pennsylvania, a regular reporter in Gerry Dexter's "Global Information Guide." Jack

IRCA DX TEST QSL CARD

Thank you for listening to WHVW  
 operating on 950 kilocycles  
 with 500 watts  
 with 57 watts  
 on Monday Morning  
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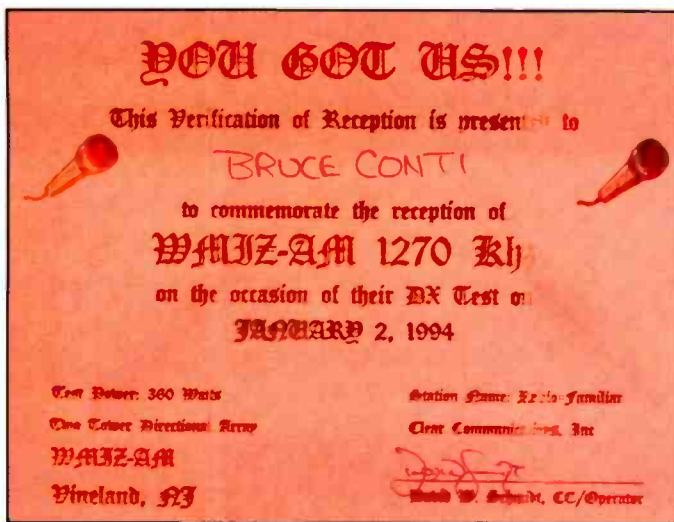


Good DX and Best Wishes!

Al Weiner J.P. Ferraro  
 General Manager Owner  
 Chief Engineer P.M. D.J.



The name Al Weiner on this DX test QSL should be familiar to shortwave listeners.



Dave Schmidt, the creative engineer behind the NRC sweep tones, ran this DX test for WMJZ.

says his interest in broadcast DXing was piqued after logging WPCV Florida on 97.5 FM, as he explains here.

I casually listen to WONE Akron, Ohio, on 97.5 FM, a classic rock station. All of a sudden, I'm hearing country music, as well as an ad for a Ford dealership—in Winter Haven, Florida? This skip only lasted about 10 minutes, but the signal was blowing away WONE. That same afternoon, I also picked up KHOU-TV 2 from Houston, Texas, on top of KDKA-TV Pittsburgh! The joys of TV, FM, and MW DXing.

In last month's "Broadcast Technology" we took a look at the Pogo Radio Your Way mp3 player/recorder, which uses SD memory cards to expand capacity. One GB memory cards were reported to be available at under \$80. Well, the price of memory has been dropping like a rock, and we recently found a 1-GB SD memory card on sale for under \$25, so it pays to shop around. Check the various big box electronics and office supply stores for competitive prices.

Meanwhile, I ask you, are this month's selected logs an indication of a DX test revival? All times are UTC.

**540 CBGA-1 New Carlisle, Quebec**, at 1000 with news report, local weather, and an ad for a local Chevrolet dealership, all in French. (Linonis-PA)

**550 WDUN Gainesville, Georgia**, at 0930 "News/Talk 550" with a discussion about the movie *Snakes on a Plane*, over WGR Buffalo, New York. (Linonis-PA)

**585 Radio Nacional de España, Madrid, Spain**, heard at 0008 with a woman in Spanish, very weak. It is my most reliable low-band transatlantic signal. The high-band regular is 1134 Croatia. (Chiochui-QC)

**590 WARM Scranton, Pennsylvania**, at 1050 with several Frank Sinatra songs, news at the top of the hour. (Linonis-PA)

**630 CFCY Charlottetown, Prince Edward Island**, heard at 1930, "This is CFCY AM 630" and mention of simulcasting 95.1 FM, country music. Completely topping combination groundwave and skywave CHLT and WPRO pests. (Chiochui-QC) This and 720 CHTN may be off the air by now, both moving to FM, leaving the province without any AM radio stations.

**660 WMIC Sandusky, Michigan**, heard at 1000 with news items about the Sanilac County teachers union, and local corn farmers going to a national convention in Greensboro, North Carolina. (Linonis-PA)

**675 Arrow Rock, Lopik, Netherlands**, at 0005 jam-band power-guitar blues-rock, "Arrow" ID, then Steely Dan song "Rikki Don't Lose that Number," good with WRKO phased. (Connelly-MA)

**720 CHTN Charlottetown, Prince Edward Island**, at 0435, "We play everything, Ocean 100," FM simulcast pending AM shutdown. (Conti-NH)

**765 RSR Option Musique, Sottens, Switzerland**, at 2349 like a local with the 1972 Billy Paul hit "Me and Mrs. Jones." (Connelly-MA)

**790 WAXY South Miami, Florida**, at 0300 sports news and information, "SportsTalk 790, WAXY South Miami." Weak but steady signal mixed with unidentified urban contemporary gospel music. (New-GA)

**890 CMDZ Radio Progreso, Chambas, Cuba**, at 0030 a radio drama noted in passing. Stronger than residual remnants of nulled WLS Chicago. (Chiochui-QC)

**960 CHNS Halifax, Nova Scotia**, at 0245, "Classic Rock 89-9 Hal FM," and "Thanks for making the switch to the new home of power classic rock, 89-9 Hal FM," all heavy metal rock hits, then at 0300 a CHNS-FM ID, simulcast pending AM shutdown. (Conti-NH)

**1008 Radio 10 Gold, Flevoland, Netherlands**, monitored at 0030 "Radio 10 Gold" jingle and Culture Club "Karma Chameleon," over SER Spain and Punto Radio from the Canary Islands. (Conti-ME)

**1017 SWR Cont. R., Wolfsheim, Germany**, at 2300 slightly reverberated German talk, time check "ein uhr" (1 a.m.), pips, news, "MDR Info, nachrichten," good. (Connelly-MA)

**1116 Rai Radiouno, Italy**, at 0354 pre-sign on test tones parallel 1062 and 1575 kHz. (Conti-NH)

**1230 WODI Brookneal, Virginia**, at 0400, DX test with sweeps, beeps and Morse code cutting through the mix. Gone at 0005. (New-GA)

**1260 XESA Culiacán, Sinaloa, Mexico**, heard with spots for businesses in Culiacán and Los Mochis, ID at 0705, "SA" and "Radio Culiacán," then cumbia music. Very strong signal. (Barton-AZ)

**1340 WWNH Madbury, New Hampshire**, at 0506, DX test with Morse code cutting through the mix in the null of WGAU Athens, Georgia. (New-GA)

**1359 RNE, Arganda del Rey, Spain**, heard at 2226 parallel 1152 kHz with a woman, then a man, in Spanish; loud, blowing out 1360 WLYN and WDRC. (Connelly-MA)

**1360 WNJC Vineland, New Jersey**, at 0405, DX test with sweeps, beeps and Morse code above a steady tone and WSAI Cincinnati, Ohio. Continuing at 0030. (New-GA) The steady tone was likely a het from 1359 Spain!

**1395 Big L, Trintelhaven, Netherlands**, at 2300 a Big L mention, "Rio" by Duran Duran, time pips at the top of the hour, talk, "This is London calling." Fair. (Connelly-MA)

**1580 CKDO Oshawa, Ontario**, at 0135 heard with a "DXers Night" special program celebrating 60 years of broadcasting, featuring Morse code IDs, oldies music requests, and live call-ins from DX listeners as far away as Oregon and Finland! (Conti-NH)

**97.5 WPCV Winter Haven, Florida**, at 1800 with country music, over co-channel WONE. (Linonis-PA)

Thanks to contributors Rick Barton, Bogdan Chiochui, Mark Connelly, WA1ION, Jack Linonis, and Bert New. Until next time, 73 and Good DX!

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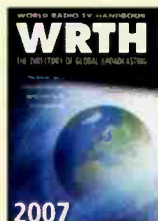
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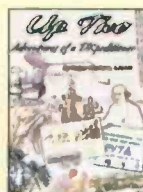
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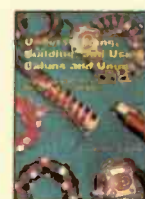
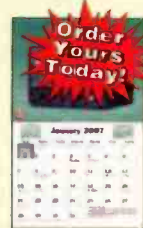
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# A New Year's Resolution— And Special Mediumwave DX Invitation!

**A**s we start out the New Year of 2007, some of us make a feeble attempt at setting resolutions, and with just a small ounce of resolve to actually make the change we half-heartedly announce. It's become a well-worn, yet fun, custom that all of us who've survived yet another year will confess with one another the things we want to change about ourselves and our lives. We want to end old habits, start a new hobby, and gain better health.

Some of us actually accomplish our lofty goals during the course of the year. Year after year, this cycle repeats itself. We resolve, we try, we look back (with regret or with pride), and then we do it again with the next New Year.

The sun has its cycles, too. One of the best known of these cycles is the approximately 11-year cycle during which the sun changes in its level of "activity." Over the course of hundreds of years, solar observers have defined a solar cycle based on the monthly average of a daily sunspot count. At the start of a typical sunspot cycle, there are very few sunspots

observed. This is known as the *solar minimum*. The *solar maximum* is the period of months when the number of sunspots reaches the peak of the cycle.

## A Transition Year

This year, 2007, marks the transition between the last solar cycle, Cycle 23, and the new cycle that might have already begun, Cycle 24. This period is marked by very few sunspots, and the result is the continuing doldrums we're experiencing on most of the shortwave radio spectrum. Of course, the lower shortwave frequencies and the mediumwave (MW) spectrum tend to be more useful during the solar minimum. Nevertheless, many shortwave and amateur radio operators long for the more active period of the solar cycle, because the increased solar activity causes the higher shortwave frequencies to become much more active.

## 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 trans-polar 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>.

Looking forward to what's coming our way this year, we can expect a moderate rise in solar activity, but not significant enough by the end of 2007 to really see much change in conditions compared with those of 2006. However, this means that we'll continue to have the sort of conditions that favor the tropical shortwave bands (below 6 MHz), as well as the MW frequencies during the longer hours of fall and winter, 2007.

## Mediumwave DX

The MW broadcast band, also known in the United States as the AM broadcast band (or AM band) currently extends from 525 to 1700 kHz. In the United States and Canada, channels are spaced in even 10-kHz increments starting at 530 kHz. Elsewhere, channels are spaced in 9-kHz increments starting at 531 kHz.

The hunt for signals from distant AM broadcasting stations is an exciting activity, especially during the late fall and winter seasons. The distant stations you're able to hear depend largely upon signal propagation. Propagation at these frequencies is very different than it is for frequencies in the high-frequency range (3 MHz through 30 MHz). Propagation of MW signals varies depending upon the time of day, the season, and other factors.

For MW, the most obvious factor for good DX is the time of day. The *D* layer of the ionosphere almost always absorbs MW radio signals during the daylight hours. As a result, nearly all MW signals received during midday hours will arrive by groundwave propagation, rather than by skywaves, refracted off of the ionosphere. Groundwave propagation makes reception of signals over a few hundred miles away unusual in daylight. At night, however, the ionosphere refracts these MW signals, making it possible for radio stations to be heard at much greater distances, sometimes as far away as Australia, Europe, and Asia.

The groundwave, as its name implies, travels along a path close to the Earth's surface. The distance a groundwave can travel depends upon the transmitter power, frequency, antenna pattern, and the Earth's conductivity along the path of the signal. Lower frequencies travel greater distances, all other factors remaining the same. A signal on the lowest-end of the AM broadcast band, say, 540 kHz, will travel twice as far as a signal broadcast on, say, 1600 kHz, if all other parameters remain the same for both stations.

If the land between the transmitting antenna and the receiving antenna is rocky, a groundwave signal might only travel 150 to 300 miles. On the other hand, if the signal is moving over salt water, the groundwave signal could make it some 1,000 miles away! While most groundwave signals are stable and strong, some fading and changes in reception can occur for groundwave signals. Sometimes, this fading is caused by signal cancellation due to weak skywave reception at the same point where the groundwave component is received.

Groundwave propagation provides a broadcast station with reliable, stable coverage to its target audience; radio station engineers optimize the antenna system to ensure the best delivery of that groundwave signal. During the day, because the *D* layer of the ionosphere so completely absorbs the MW radio signals, groundwave is the only mode of propagation a MW station can rely on. At night, however, because of the recombination that occurs in the *D* layer, and the sharp reduction in MW signal absorption that results, many stations must reduce their power so that they do not interfere with other stations. Some stations must even cease transmitting during the night hours. Those stations that do not need to cease transmitting will have signals radiating up into the ionosphere and possibly refracting back to Earth at far distant locations, making for AM DX.

The ionosphere is, therefore, directly responsible for MW DX signals. After sunset, when the *D* layer is no longer under the direct radiation from the sun and nearly disappears, MW signals make it up to the *E* and *F* layers, to be refracted back to the Earth, much like a flashlight beam might be reflected off a mirror. The distance of the skywave skip is anywhere from 10 to 500 or so miles. MX DX signals may travel farther, if the ground is highly conductive, providing a reflection of the signal back up into the ionosphere. Multiple hop skywave signals can enable a broadcast signal at night to span thousands of miles. It is typical to hear European and Asian stations from across the salt water of the oceans.

## Signals Out Of Phase

There is a region between about 10 miles out to about 500 miles where both the groundwave and the skywave signals can be heard. This typically causes a cancellation of the radio waves when the two

signals arrive out of phase. The listener will experience deep fades, slow at times, or fast. Sometimes it's strong enough to cause severe distortion of the signal. Out beyond 500 miles, past the influence of groundwave signals, skywave signals also experience some fading and variations due to changes in the ionosphere.

Reception of MW signals tends to be better in winter than in summer, due to lower levels of atmospheric noise and longer hours of darkness. During times of severe geomagnetic storms, when the planetary K index is above 4, auroral ionization can absorb the skywave MW signals, causing any higher-latitude broadcast signals to disappear, which would allow weaker mid- and low-latitude stations to be heard. At the same time, it has been observed that mid- and low-latitude skywave signals may be enhanced during these periods because of ionospheric tilting and other phenomena. DXing stations from south of the equator is often possible during highly active geomagnetic storms.

## Looking Into, Or Out Of, The Window?

One of the most exciting aspects of MW DXing is known as the "sunrise and sunset DXing window." The most fruitful times to reap distant MW signals are from just before sunset to a few hours after sunset and again just before sunrise to a few hours afterward. The sunset skip period is particularly useful to DXers in the eastern part of North America, because stations in time zones farther west become audible after local daytime stations have stopped transmitting. Western DXers, on the other hand, have an advantage in being able to pick up many eastern stations as they begin their broadcast days in the morning.

Because of the seasonal decrease in geomagnetic activity during December and January, and because of the longer hours of darkness in the Northern Hemisphere, you'll find a rich selection of MW AM signals from as far away as Europe, South America, Asia, and even the South Pacific. Let me know your experiences.

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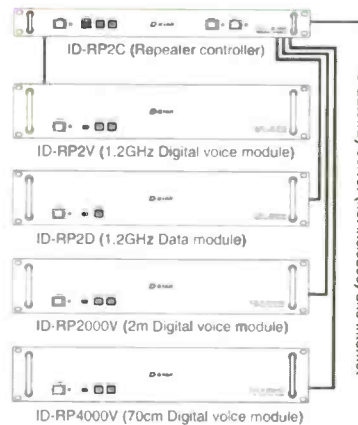
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FCC? This experiment is known as the "500 KC Experimental Group for Amateur Radio." The FCC issued the callsign WD2XSH to the ARRL 600-meter experimental group. This allows the group to establish positively that there is no interference problem with other services in this part of the radio spectrum, and it's the first step toward establishing a new amateur band. A band is preferred to having specific frequencies (like those in the 5 MHz segment) as it allows the avoidance of locally generated interference (from computers and power supplies, for example).

This was all started by the "Six-Hundred-Meter Research Group" (600MRG), organized by Ken Gordon, W7EKB, in 2001. It initially included 35 members at various locations across the United States. In December 2001, the 600MRG was granted experimental license WC2XSR and authorized to use 440, 470, 480, 495, and 166.5 kHz. Several members began experimental transmissions almost immediately.

However, within a week or two, the USCG complained to the FCC and the authorization for 440 to 495 kHz was withdrawn. A few members operate experimental transmitters on 166.5 kHz, but many others were primarily interested in 600 meters. A dozen more members have asked to be added to the license. About half a dozen members have 500-kHz equipment ready to go as soon as a license is granted. Another dozen could be on the air within a short period thereafter.

## Historical Perspective

ARRL member Frederick H. Raab, Ph.D., W1FR, shares a bit of the historical perspective on the 600-meter radio spectrum:

Maritime telegraphy in the 500-kHz band has been used almost since inception of radio communication. However, the occasional special-event operations by legacy maritime stations is doubtfully sufficient reason to allow them to retain exclusive use of 500 kHz. It is probable that these frequencies will be converted to some other use in the not too distant future. Users such as DGPS, traffic information, or broadcasting will not be willing to share the frequencies with the legacy maritime users.

In contrast, a transition to amateur service would allow it to become a working monument that preserves the traditions of telegraphy and emergency com-

munication. Amateurs would gain valuable spectrum for experimentation and emergency communication, and the ARRL would protect the band from intruders. Amateurs using a new 600-meter band will welcome special-event transmissions from stations such as KPH. It may even be possible on special occasions to arrange for cross-service communication between amateurs and legacy maritime stations such as KPH (much as is done with DoD stations on Armed Forces Day).

Thus an amateur allocation in the 500-kHz maritime-telegraphy band is not a threat to the present special-event maritime operators, but something of mutual benefit. This will create a sort of "spectrum national park" that will preserve the traditions of maritime communications and honor the memory of the operators.

## Why Does The Amateur Radio Service Need A New Band At 600 Meters?

According to the 600MRG:

[A] 600-meter (500-kHz) band will give the amateur service a unique capability for ultra reliable regional ground-wave communication. Such communications are based upon groundwave propagation and therefore not subject to interruption by solar storms or other events that disrupt the ionosphere. This frequency range also offers unique opportunities for experimentation with antennas, propagation, modulation, and signal processing. The frequency band from 495–510 kHz is recommended, as it is no longer used for maritime telegraphy in the western hemisphere, has not yet been claimed by another service, and is not used for power line communications. A group of experimenters is applying for part-5 experimental licenses for these frequencies. The ARRL is encouraged to begin work toward obtaining an amateur allocation in this frequency range before another entity lays claim to the unused frequencies.

## How You Can Participate

Are you interested in becoming a participant in WD2XSH? Transmitting under the WD2XSH license is limited to those stations specifically identified in the FCC-approved grant. Additional amateur radio stations cannot be simply added. After all, this is an experimental license, not just ham radio on a new frequency!

However, anyone who is curious enough to put up a reasonable *receiving* antenna, and engineer or obtain an adequate radio receiver for the 500-kHz

range used in this experiment, can be an observer. When you log your reception of the stations licensed to transmit as part of this experiment, and then submit your logs to the group, you become a most valuable resource for the success of this experiment. In other words, **YOU ARE NEEDED, TODAY.** Join this exciting group by becoming an official reception participating station. For more information, visit the official "500 KC Experimental Group for Amateur Radio" at [www.500kc.com/](http://www.500kc.com/).

## HF Propagation

We are in the heart of the winter season, with very short daylight hours. Average daily MUFs are at their seasonal lowest, but so are noise levels. During the winter months the maximum usable frequencies (MUFs) are generally higher during the daylight hours than during the summer daylight hours (see the notes at <http://vesuvius.jsc.nasa.gov/er/seh/sun.html>). This provides short but strong openings on higher shortwave (SW) bands during the winter day. Then, at night, the MUF dips down much lower than what would be seen during the summer nights.

Summertime MUFs are generally higher during the night hours than during the winter nights, in part because the ionosphere stays energized through the short nights. Winter nights are longer, so recombination of the ionosphere (which results in a lowering of the MUF) is more complete. This also means that the *D* layer of the ionosphere is less ionized during the winter, allowing MW and SW frequencies to propagate through the *D* layer and off the *E* and *F* layers.

Finally, the seasonal decrease in weather-related noise makes it easier to hear the weaker DX signals on lower frequencies. With thunderstorms few and far between, storm-related static and noise is greatly reduced.

Seasonally, the geomagnetic activity tends to quiet down during the winter months. The most active geomagnetic seasons are centered on the two equinoxes, in the spring and autumn. Combined with the seasonal decrease in geomagnetic activity, the 11-year solar cycle geomagnetic activity is continuing its downward trend toward the end of the current cycle. This results in more stable and reliable propagation on the shortwave spectrum, especially on the lower frequencies.

Paths on 31 through 15 meters remain in their seasonal peak, especially between

North America and Europe in the morning, and between North America and Asia during the late afternoon hours. Twenty-two and 19 meters continue to be the best daytime DX bands, with 31 and 25 running a close second. Plenty of surprises are possible on 31 meters during the morning and evening hours, and well into the hours of darkness. North/south paths on 25 through 15 meters will be reliable and open for most of the daylight hours, especially where paths terminate in the Southern Hemisphere. Nighttime conditions on these higher frequencies remain short and weak, with mostly north/south path openings since the Southern Hemisphere has longer daylight hours.

Signals are strong on 90 through 41 meters this year, and seasonally they are at their nighttime peak. 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.

Seventy-five through 120 meters continue to remain stable, with very low noise levels. Some high noise may occur during regional snowstorms, but on average you can expect great nighttime DX conditions with the longer hours of darkness. 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 are also greatly improved, unless we experience those intense CME events, where conditions will become degraded. MW DX is really hot during this season.

## VHF And Above Propagation

Don't forget to monitor the low VHF frequencies for DX TV signals (remember European TV uses AM for their audio, instead of FM), as there might be sporadic-E (*Es*) openings once or twice this month. I'd like to hear from you if you catch one.

*Es* activity can appear three to four days during January on the low VHF frequencies for stations in the Northern Hemisphere. The average opening may last an hour or two with distances of up to 1,000 km. A particularly good time to monitor for *Es* activity is during the ARRL VHF contest, which begins at

1900 UTC on January 22 and ends at 0400 UTC on January 24, 2006. A surprise one- or two-hour opening has been known to occur during the contest period in the past and this has led to increased multiplier counts for contest efforts. This contest is on 50 MHz and higher on amateur radio bands.

The Quadrantids meteor shower is the major shower for January, and it can appear any time during the first week of the month. It can sometimes be quite intense, so it may be a good idea to set up some 2- and 6-meter schedules. Morning meteor openings may be the best bet during this month. The Fall/Winter Meteor Scatter Sprints on 50 MHz is held on January 26 from 0100 UTC to 0500 UTC. This might afford you a chance to hear some of these meteor contacts.

## Current Cycle 23 Progress

The Royal Observatory of Belgium reports that the monthly mean observed sunspot number for September 2006 is 14.5, a bit up from the 12.9 of August. The lowest daily sunspot value recorded was zero (0), on September 3 and 4. The highest daily sunspot count was 30 on both September 9 and 10. The 12-month running smoothed sunspot number centered on March 2006 is 17.4. A smoothed sunspot count of 8, give or take about 8 points lower to 12 points higher, is expected for January 2007.

The Dominion Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-centimeter observed monthly mean solar flux of 77.8 for September 2006. The 12-month smoothed 10.7-centimeter flux centered on March

2006 is 81.6. The predicted smoothed 10.7-centimeter solar flux for January 2007 is 70, give or take about 14 points.

The observed monthly mean planetary A-Index (*Ap*) for September 2006 was 8. The 12-month smoothed *Ap* index centered on March 2006 was 8.4. Expect the overall geomagnetic activity to vary greatly between quiet to active during most days in January.

## Where's Your E-Mail Or Letter?

Let me know how you fare with hunting beacons and other signals on the low frequencies. I'd love to share your propagation observations on the low-frequency spectrum, so please send an e-mail or drop me a letter. Don't forget to share a bit about your radio equipment and antenna you use for your longwave DXing.

You can join in with others in discussing space weather, propagation, and LF, MW, SW, or VHF listening, at <http://hfradio.org/forums/>. 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 you've noticed. Do you have questions about propagation? I look forward to hearing from you. Happy signal hunting! ■

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# A Photographic History Of Scanning—Part I

**S**ome years back we ran a brief article that examined some of the receivers that have been important in the history of scanning. No single piece has ever generated more mail (outside of “Frequency of the Month” entries). A few were along the lines of, “Why are you wasting space on these old clunkers?” but most were positive reminiscences of old friends, often of a first radio that got someone into the hobby.

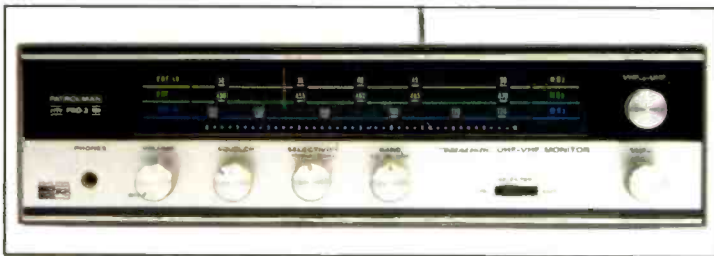
With that in mind, I thought it worthwhile to run the topic again. Once I started shooting pictures, however, I quickly realized that there’s more material here than can fit into a typical column. So here’s the first part of “A Photographic History of Scanning,” and we’ll follow up with Part II soon.

Have a great New Year, and let me know what you’re hearing! We’ll have our Frequency of the Month report next month.



Here’s an early VHF receiver. All tubes, of course, and no squelch! No scanning either. Pick a frequency and listen. This one is probably 1950s vintage, but the “scanner” didn’t come along until the late 1960s. It was really the CB radio craze as much as anything else that drove scanning and shortwave listening forward in the 1970s.

This was a portable tuner from 1976. It was a good way to get started in the public safety listening area. Scanners were available, but expensive, and frequency coverage was often limited. A tunable let you hear it all, just not at the same time. This one included the UHF band from 450 to 512 MHz, its present limits.



RadioShack’s Realistic line produced a number of receivers, both tunable and scanning, in the mid-’70s. These multi-band tuners were considered better receivers than the scanner and actually had a squelch control to boot. This one, from the late ’70s had VHF-Low, VHF-Hi, and UHF! Of course the UHF band only went from 450 to 470 MHz in those days.



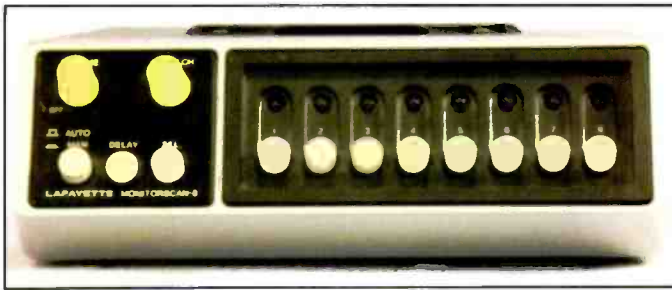
There were scanners. This is actually a Bearcat III, the UHF variant of a very early model by Electra. Electra was later bought by Uniden, which has kept the Bearcat name. This one featured individual channel lockouts, a luxury many scanners didn’t have for quite some time. But it would scan! No more single channel listening!



The early scanners and tunables seem to prefer the Motorola pin plug antenna connection. This rear view of the tunable receiver shows the separate antenna jacks for UHF and VHF (behind the antenna showing the plug).



Here was an attempt at the best—or worst—of both worlds. The early scanners required a crystal that had to be purchased separately for each channel you wanted to receive. I remember them at about \$5 each, so there’s an additional \$40 to load up an eight-channel scanner (not so bad until you consider today’s 400-channel units!). This one had seven crystal positions and a tuner for the eighth. If you found something worth hanging onto, you had to then figure out what frequency it was to get the right crystal.



Many companies entered the scanner market in the late 1970s with the CB and radio craze. This one from Lafayette electronics had eight channels and a switchable delay on the front panel.



This handheld included a screw-in antenna and added the air band as a bonus to the VHF-Hi coverage. Of course, you still had four channels.



It may seem like a small thing, but having a scan delay on the front panel was quite a feature. Having it on the back panel was equally common, as was not having a choice.



Another little known scanner company was Tennelec. This crystal-controlled unit was one of their early models.



Here's a company you probably don't think of anymore when you shop for scanner equipment. This scanner was made for them, but sold in all Sears stores and through the catalog. Not a bad performer on VHF-Hi, not so much on anything else though.



Tennelec gained a lot of notoriety when it introduced a programmable scanner. This is the later variant, the MS2, which was programmed with a set of 0 and 1 buttons, rather than setting the channel lockout switches like on the BC-101. Unfortunately, outside of the programming features, it wasn't all that good of a receiver and Tennelec didn't stay in the scanner business very long.



This early RadioShack Pocketscan was a popular handheld in its day. It had four channels and was crystal controlled, so you were pretty much stuck with your choice once you loaded up the crystals and left the house. Later models could do VHF-Hi and Lo in one scanner, but UHF was a separate radio for sure. The radio shown here is VHF-Hi only, and the pin plug (similar to what's used for earphones) that connected the antenna meant that the antenna fell out and got lost quite often.



This was the scanner enthusiast's ultimate scanner. No crystals required! Programming the very early processor was done by entering the program mode and then setting the channel switches to up and down positions as dictated in the frequency guide. Once set, you pressed the "enter" button on the right and the frequency was "programmed." It took about an hour to program all 16 channels, but at \$5 to \$7 a crystal, it was a lot cheaper! It wasn't the first device to allow this, but it was the most popular because it was made by Bearcat. Not too long after, keyboard entry made its debut, but we'll save that for another column!

# Alinco's DJ-V17T Handheld 2-Meter Transceiver

So many of today's tiny ham transceivers have outstanding features that were only on our radio "wish lists" just a few years ago. It's no wonder that today many hams program not only local repeater frequencies in these new radios, but also public safety, marine, media and business frequencies, frequently using the transceiver as a back-up scanner. That's primarily how I've been using the new Alinco DJ-V17T for the past few months. And its extended receive, from 130 to 173.995 MHz, sure does make it great for monitoring!

The DJ-V17T is one of the new breed of single-band 2-meter amateur transceivers that does what it's designed to do—transmit and receive in the 2-meter band—very well. It's billed as a "Tough Talker" by Alinco, and in our talking tests, it lived up to that claim with flying colors. It offers two user-selectable power settings, high and low (5 watts or 0.8 watts), and the transceiver will "remember" your selected power setting until you turn it off. If you want to change it when turning the unit back on, it's simply a matter of a couple of key presses. I found that the low-power setting was quite adequate most of the time.

Make no mistake, it's certainly not a scanner in the strict sense of the word. But if you've got one scanner already monitoring local public safety channels, you may want to devote the DJ-V17T to monitoring—and storing in its 200 memories—a couple of local ham repeater frequencies and a whole load of nice-to-have-ready frequencies. And you can even name the memory channels with up to seven alphanumeric characters, say something like "PD Main," or "NOAA," or perhaps "FireOne"—you get the idea.

However you look at it, the fact that you can plug railroad, medical, and other frequencies of interest in to a great ham transceiver, and give each of up to 200 frequencies a name, is certainly worth the typical \$139 street price of the DJ-V17T.

Alinco has also gone a few steps further with this handheld, though, making it waterproof down to three feet for 30



*The Alinco DJ-V17T weighs in at under 10 ounces with the supplied NiMH battery pack.*

minutes, provided you keep the two small rubber covers properly closed.

## Testing The DJ-V17T

There's nothing more annoying than a small radio—make that *any* radio—with poor audio. Like they say in New York, fuggedabout, because the DJ-V17T's loud, crisp audio will blow you away. It did me, so much so that when I use this handheld in our car I don't need an external speaker! And believe me, for many of us older radio nuts, the hearing isn't half what it used to be! Louder audio certainly helps.

So, here's a rig with great audio, a good number of memory channels, two-touch repeater access, waterproof, highly visible backlit display window, multiple scan modes, 39 CTCSS tone squelch settings, standard NiMH battery and charger, two-level attenuator that's a

cinch to use, DTMF autodialer with redial function—all in a palm-sized package that weighs under 10 ounces. What more could we ask for from Alinco?

They must be reading our minds, because once again congratulations are in order to Alinco: the buttons on this small handheld are actually large enough to be used *without* trampling on another nearby button!

## Who Would Really Do This Test? We Did, And...

If you're prone to heart palpitations or fainting, don't read the following. Okay, if you're going to put a manufacturer's claim to the test, well, we say, just do it.

Alinco says the DJ-V17T is waterproof for 30 minutes in three feet of still water. I filled the mop bucket with cool water and made sure that the radio's SMA antenna was on snug and the rubber covers were properly closed. Now, believe me when I say this isn't for the faint-hearted; no one in their right mind would ever deliberately dunk any radio—even for a split second—unless they're ready for the looney bin or already in a looney bin! But sometimes you've got to do it and face the consequences or, perhaps more accurately, let the chips fall where they may.

So I lowered the DJ-V17T into the water and went downstairs for breakfast. There were no bubbles or odd sounds of electronics in their death throes—certainly good signs!—just the gentle sound of the radio entering the water and my walking out of the room.

About 20 minutes later (okay, I admit it, I was eager to pull it out of the deep) I reached in and carefully brought the radio out of the bucket and dried it off. No water dripped from the case—surely another good sign! Pressing the small orange on/off button brought the DJ-V17T to life just as if nothing had happened; the same great audio and all of the 200 programmed frequencies and parameters were intact.

But remember, as Alinco's website says,

The IEC 60529/IPX7 is a European system of test specification standards for classifying the degrees of protection provided by the enclosures of electrical equipment. An IPX7 designation means that the unit withstands immersion in one meter (approx 3ft) of still water for up to 30 minutes. The factory guarantees this grade for 1 year provided all the jack covers are properly and securely closed. However, please understand that DJ-V17T is not an IPX8 (water-resistant) grade, NOT even IPX7 COMPLIANT (but compatible); water-pressure such as washing the unit with running water may cause damage to the unit and voids warranty. Never immerse the unit uselessly under the water. V/UHF signal does not propagate in water. If the unit is dropped in water, please pick it up immediately and wipe with a clean dry cloth.

### Scanning With The DJ-V17T

Scanning is easy; press the "scan" key and that's all there is to it. If you're in the VFO mode, the DJ-V17T will start moving through the spectrum wherever the VFO is set, and in the direction of the last dial operation. The actual scan "rate" isn't part of the radio's specs, but it scans in any of seven tuning steps that you set with a couple of simple key presses. Mine is set at 5 kHz; the DJ-V17T scanned at the rate of about 1 MHz in 18 to 20 seconds.

Granted, that's not rocket-fast scanning, and while you can't program it to "scan" (or search if you will) in smaller segments, it's still good enough for finding an elusive frequency at a sporting event or during an emergency when your other scanner's batteries poops out and you didn't write down two or three frequencies on a waterproof notepad!

There are two scan "modes" in the DJ-V17T: "timer" and "busy." You can set either of these in less time than it takes you



Supplied with an SMA flexible rubber duck antenna, the DJ-V17T is waterproof for up to 30 minutes in three feet of water.

to read the next two sentences. In the "timer" mode scanning stops when the radio detects a signal and resumes scanning in five seconds. In "busy" scan mode it stops when a signal is detected, and it stays with that signal until it's gone, then the radio resumes scanning. You can also press any key (except MONI) to stop scanning, and during scanning you can simply rotate the dial on the top of the radio to change direction of the scan. Of course any "found" frequencies can be immediately stored into the radio's memory; simply stop the scanning, do a few easy key presses, and it's done.

Reception using the supplied SMA-mount flexible antenna was very good in my area; local and regional repeaters were loud and clear as were most of our public safety users.



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Using the 5-kHz step in each of the modes I found the DJ-V17T to be a good scanning receiver. While not a zippy scanner *per se*, it's very straightforward and intuitive and definitely worth looking at if you're a licensed ham in need of that second scanner.

## Other Great Features

Certainly standard on most of our gear today is APO "auto power off," which you can set by pressing the "FUNC" key then the "6" key; if there's no activity on the DJ-V17T in 30 minutes it shuts off. Incidentally, the radio retains the APO setting if it's turned off then back on again.

You can also program any of the standard 39 CTCSS tone squelch codes (obviously required to access many repeaters), or 104 DCS digital code squelch tones (used to unmute the squelch so you only hear a station on the frequency that has that tone added to its transmission). Programming either is a cinch—and, frankly, anything you can't figure out with the well-written 64-page manual, Alinco's tech support will fix for you in a matter of minutes.

The one thing you must be aware of at the outset with the DJ-V17T is that after attaching the included NiMH battery pack, you have to set the type of battery in radio's "set mode," which only takes a few seconds, and set the "battery charge function" to "CHG-ON." The same is true if you purchase the optional "AA" battery pack (EDH-34); "CHG-OFF" *must* be set and you'd also need to set the radio to "BATT-AL." Alinco notes that the optional AA dry cell case is *not* waterproof!

A quick few words about the batteries and charging times is in order here. Standard with the Alinco DJ-V17T is the EBP-65 NiMH battery pack, a 7.2-volt 700mA pack that with the sup-



*You can't do this with your cell phone or most other radios. The DJ-V17T survived The Dunk. Okay, I didn't leave it in the water for the full 30 minutes—even my insanity has its limits!*



*This close-up of the very visible (and lighted constantly if you want to drain those batteries quickly!) display window clearly shows "Asbury." It took all of a minute to label the No. 1 memory slot with easy keypresses. You can give all 200 memories an alphanumeric name (up to seven characters). It sure helps when you're looking at numerous frequencies; I don't have to remember that 154.430 is the fire/EMS frequency for Asbury Park (and other nearby New Jersey towns).*

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plied wall charger takes 10 hours to fully charge; with the optional EDC-143 trickle charger it takes 10 hours to charge; with the EDC-144 Rapid Charger, charging time is only two hours.

## Don't Do What I Did

By the way, if you buy the DJ-V17T—and I heartily recommend you do—please don't give it a bath. Let's face it, while it's an ideal radio for a rugged environment, no radio is destruction-proof. And when you need it most, so says Murphy's Law, if you've mistreated it, it'll go belly-up.

The Alinco DJ-V17T is an ideal transceiver and second scanner for anyone, on the go or at home, and is a great performer with great audio, regardless of the surrounding noise or weather conditions.

For more information on the Alinco DJ-V17T, visit [www.alinco.com/usa](http://www.alinco.com/usa) or just take some of that leftover holiday cash you got and go buy one from your favorite dealer. ■



# Voltages, Heat, And Old Radios—Tips And Techniques To Extend Your Radio's Life

**H**eat and time...the enemies of most things electronic! It's ironic because vacuum tubes and old radios by their very nature will run hot; after all they rely on thermionic emission for electron flow from the cathode to plate. It takes energy to produce that warm tube glow we all love so much.

Power transformers also generate heat due to losses. The wire windings have resistance, resulting in unwanted voltage drops and resistive heating when current is drawn. The alternating AC-induced magnetic field realigns the molecules in the ferrous core material 60 times a second, creating friction between molecules that produces more heat energy. The magnetic field can produce eddy currents in the magnetic core material, creating areas that act like shorted windings—and more power lost equals more heat produced.

So let's talk about heat in old radios, how much is too much, what causes over heating, and what we can do as restorers to minimize it.

## Resistive Heat

Look under any chassis, and the largest number of components are most likely to be resistors. Cathode resistors (especially the one on the audio output tube's cathode), plate-dropping, and screen-dropping resistors all run warm. Any voltage across a resistor will produce heat; remember when we discussed this power formula,  $W = V^2 / R$ .

When I first started fixing radios many years ago, I insisted on using new carbon resistors in my restorations. Now I prefer to use modern metal oxide or carbon film resistors as replacements for low-wattage carbon resistors. Why? Because I've learned that all carbon resistors are affected by heat.



*Photo A. This small Zenith chassis will be the guinea pig for our tests. It's a five-tube chassis from a Zenith 5S127 tombstone radio. Many restorers opine that the transformers used in these chassis were underrated by the factory and failure prone, making the Zenith an ideal example for this column.*



*Photo B. Here's how I took the temperature measurements. The first instrument converts temperature to a 1 mV-per-degree output for use on a sensitive DVM. It uses a thermistor pickup, which must be placed in direct contact with the part being measured to take a reading. The other instrument is an infrared thermometer made by Fluke. It's marketed for locating hot circuit breakers in electrical boxes. It doesn't require physical contact to take readings, but the most accurate readings are made on dark and non-shiny surfaces.*

Try a simple experiment. Hook a carbon resistor across an ohmmeter and hold a match or lighter under it. You'll be surprised how much the resistor will move in value! Often the resistor will return to, or near to, its original resistance when it cools back down. After many hundreds of cycles, however, it may not. A gassy tube or failing bypass capacitor can subject resistors to extremes capable of causing permanent value shifts or real physical damage, quickly or over time. Fortunately, most resistance values are not that critical; and I've seen sets where most of the resistors have shifted values over 50 percent, with no discernable change in performance.

My point is don't be penny wise and pound foolish when restoring a radio! Saving a buck or two on a chassis isn't worth it if you use parts that might fail in a few years time. Humidity can also affect carbon composition resistor values, and even those sitting unused in a parts drawer can be way off tolerance decades later.

## Line Voltages

Regular readers will recall how the engineers who designed the Majestic 90 radio (that restoration was featured in several columns this year) used a line-dropping ballast tube to regulate line voltage at the primary of the power transformer. The special low-voltage primary winding on the unique power transformer, with the added expense of the ballast tube, was an elegant solution for an expensive radio marketed to the wealthiest social strata of that era.



Photo C. This power resistor was made by Dale and is enclosed in an aluminum metal case with mounting tabs. The aluminum case ensures good heat transfer, and the tabs are ideal for mounting the resistor to the metal chassis.

A few of the better-engineered radios in my collection have tapped power transformer primary windings permitting the user to select the primary winding tap to match the local line voltage conditions. But these sets are the exception rather than the rule. Oddly enough, these are often superbly engineered large chassis sets in less-than-desirable cabinets that are shunned by collectors who follow the crowd.

Power transformers often run warm, even painfully hot, to the touch. This may be acceptable for a modern design that incorporates modern insulation for the wire and between winding layers, but heat will eventually destroy the organic based insulation used in early transformers. What usually happens is a breakdown in the enamel insulation that permits adjacent windings to short. This may not immediately cause a failure, but it will cause a hot spot that can cause the problem to cascade to other windings until the transformer fails in a most spectacular

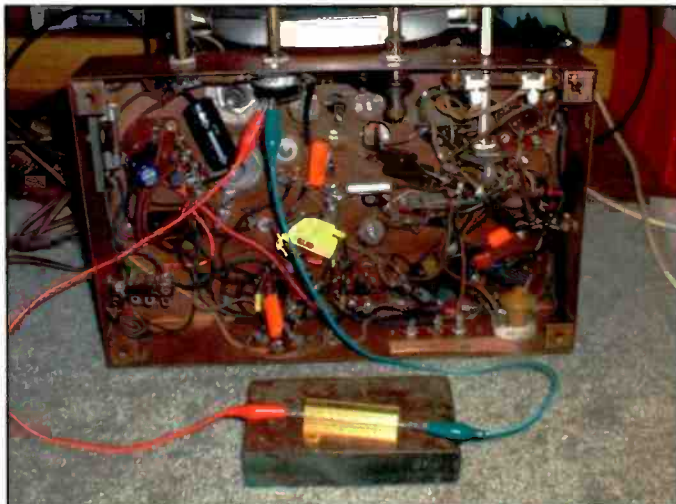


Photo D. A quick lash up with jumper leads verifies that the 25-ohm 30-watt resistor is just what's needed for this particular radio! Note that the resistor is resting on a good-sized piece of steel to protect the bench from heat. Take extra care to avoid contact with exposed dangerous AC voltages when doing tests like these.

manner. Replacement transformers are pricey and may exceed the value of the set!

One solution uses a 6- or 12-volt filament transformer wired as an autotransformer to buck the line voltage down several volts to reduce the AC line voltage going to the set's power transformer. This approach, to be practical, is usually used external to the set. Such an accessory will make a good project for a future column.

## Too Hot To Handle!

If a vintage power transformer reaches temperatures that make it too hot to touch for several seconds, measure the filament voltage. The permissible filament voltage operating range for an indirectly heated cathode tube is 10 percent from the nominal value shown in the tube manuals. For example, a 6.3-volt tube, with good cathode emission, will work with filament voltages between about 6.9 volts and 5.7 volts (that's plus or minus roughly 0.63 volts).

Let's do some bench experiments on a typical transformer power set from the mid-1930s. Our guinea pig, shown in **Photo A**, is a small five-tube chassis from a Zenith 5S127 tombstone.

For this experiment the chassis is being powered from my Heath IP-5220 variable AC power supply, which allowed me to vary the AC voltage to the radio and to monitor the AC current being drawn by the radio. First, I set the AC voltage to 130 volts, which should be a bit higher than the radio would encounter. At 130 volts, I measured a whopping 7.41 volts on the filaments—well over the 10-percent rating! Continuing my measurements, I found that at 125 volts the filaments were still running over 7 volts! (Remember, any of the voltages or currents I mention have some margin of error, in some cases instrument meter calibrations may be off, or there may be other things that introduced some small errors.) The **Table** shows my readings.

These measurements prove that for typical modern AC line voltages (110 VAC to 125 VAC) this set's filament voltages can be reduced by an appreciable amount without compromising emission. The total current drawn varied from .49 amps at 110 VAC up to .60 amps at 130 VAC line voltage.

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# Popular Communications January 2007 Survey Questions

I'm a mediumwave DXer.  
 Yes.....1  
 No .....2  
 I used to be, but no longer pursue that aspect of the hobby.....3

My main mediumwave receiver is a:  
 General coverage receiver.....4  
 Older "classic" tube-type receiver...5  
 Broadcast band-specific receiver...6

I've been a MW DXer:  
 Many decades—since my early days of radio monitoring.....7  
 More than five years, but less than 10.....8  
 Two to four years.....9  
 Under a year.....10

My MW antenna is:  
 The same one I use for shortwave listening/DXing.....11  
 A Beverage antenna.....12  
 A random-length longwire.....13  
 A large outdoor loop.....14  
 An outdoor active antenna.....15  
 An indoor active antenna with loop.....16  
 Short wire behind the desk/curtain inside the house.....17

I've logged the following number of MW stations:  
 More than 100.....18  
 About 75-100.....19  
 Fifty.....20  
 A few dozen.....21

I am an active MW QSL collector:  
 Yes.....22  
 No .....23  
 Not anymore—because of postage costs .....24

Most of my MW QSLs are from:  
 The USA.....25  
 USA and Canada.....26  
 Mostly Europe.....27  
 Africa and the Middle East.....28  
 South America.....29  
 Asia/Pacific.....30  
 Central America.....31  
 Mexico.....32

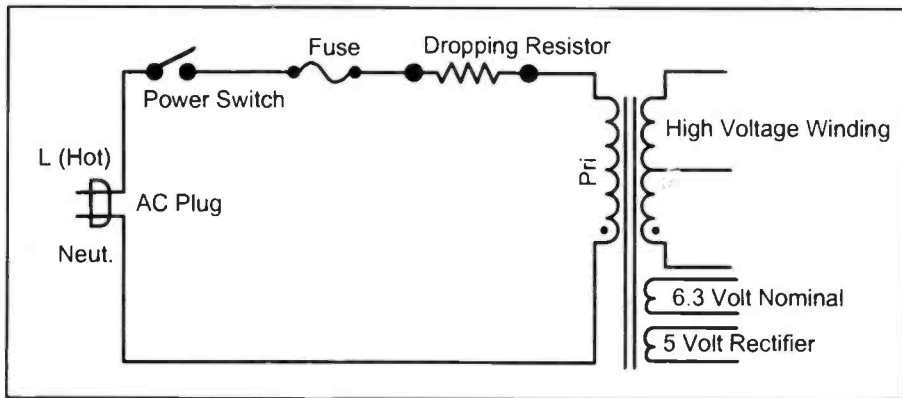


Figure 1. Here's how I suggest wiring the dropping resistor in the AC primary. Use a polarized plug, and connect the hot lead to the switch, followed by the fuse and dropping resistor. An ICL can be added in series at any junction after the switch (between the fuse and resistor is a good spot).

Here's the interesting part: I decided to measure some temperatures in the radio to see what benefits could be derived by dropping the AC line voltage. I used two instruments, as shown in **Photo B**, to measure the temperature of the 6F6 audio tube envelope and the power transformer laminations. The first device is a UAE, Inc. type TE1 temperature adapter. The device converts the temperature to a 1 mV per degree reading. The thermocouple must be in contact with the surface to be measured (it's shown attached to the shop's Fluke 77 DVM). The other device is a Fluke infrared thermometer; the infrared device works best on dark, not shiny surfaces.

## Transformer Temperatures

The transformer measured 68° F, or room temperature, at the start of this experiment. I set the line voltage to 130 volts, and within a few hours the transformer temperature had stabilized at 127 degrees. After dropping the voltage down 110 volts, the transformer temperature had dropped to 109 degrees in less than an hour!

The 6F6GT audio reached 292 degrees with 130 volts AC line voltage, and that was reduced to 260 degrees at 110 VAC line voltage. The DC supply voltage varied between 325 and 270 volts DC at both extremes.

It isn't always bad to have a transformer run a bit warm; the insulation between the windings is paper based, and I've seen instances where transformers had excessive leakage currents between the windings and shell. Often the leakage would go away when the transformer warmed up and the heat had dried up

moisture absorbed during years of being stored in damp barns or cellars.

## Conclusions

I'd be comfortable with either DC plate voltage, and I am sure that many components (tubes, resistors) would run cooler at the reduced voltage with little loss of performance, especially with good tubes in the set. The filament voltage readings were a surprise; there was considerable margin available for reducing the AC line voltage! Even at 110 volts, the tubes were being run at close to nominal filament voltages! The lower transformer temperature was exactly what I had hoped to see. The question was how to modify the radio to obtain these benefits.

I've suggested using NTC (negative temperature coefficient) ICL (inrush current limiter) thermistors in previous columns. These neat devices eliminate the initial inrush current surge when a radio is turned on, thus reducing strain on filaments and other components. A side benefit is that a few volts of voltage drop remain across these devices after they

**Table. Measured Filament Voltages Compared To AC Line Voltages Between 110 Volts And 130 Volts**

AC Line Voltage	Filament Voltage
110 VAC	6.04 VAC
115 VAC	6.34 VAC
120 VAC	6.78 VAC
125 VAC	7.04 VAC
130 VAC	7.41 VAC



Photo E. Once you're sure that the selected resistor will do the job, find an open location, preferably on the rear chassis apron, where it can be mounted. Heat conducted to the chassis will be eventually dissipated to the room by air currents and radiation.

reach operating temperature. It isn't much of a voltage drop, but every bit helps!

## Line Voltage Dropping Resistor

Fellow restorers have suggested using a power resistor in series with the primary winding to reduce the line voltage. This is one of those techniques that took me some time to become comfortable with before I started using it on a regular basis. The style of power resistor best suited for this application is shown in **Photo**

C. The resistor shown was made by Dale and is rated at 25 ohms and 30 watts. Its tab-mounted aluminum body shell permits it to be bolted to a metal surface to improve heat dissipation.

The current drawn by the radio and the amount of voltage we wish to drop will determine the resistor value. For example, if the radio draws about .5 amps at 125 volts, and we wish to drop the voltage to 115 volts, the desired voltage drop across the resistor is 10 volts, and the current will be close enough to 0.5 amps for our purposes. Using the Ohm's Law formula,  $R = \text{Voltage} / \text{Current}$  ( $R = E / I$ ), we find that  $R = 10 / 0.5$  determines that a 20-ohm resistor will do the job.

Since we know the current, voltage, and resistance, any solution for the power formulas will be a snap, since we know all three of the possible unknowns to solve for W (power)! The simplest formula for determining wattage is  $W = IE$  (Power, or Watts is equal to current times voltage). Taking 0.5 amps times 10 volts shows us 10 watts will be dissipated as heat. Allowing a safety margin of at least two, any 20 ohm, 20 watt resistor will do fine! Since I had a 25-ohm, 30-watt resistor on hand, I decided to use it. I calculated it should drop roughly 12.5 volts in my Zenith.

## Test Run

For a quick test I used a few clip leads to hook up the resistor in series with the power transformer primary (see **Photo D**). Note that the resistor is resting on a small steel block. It serves as a heatsink and prevents burning my bench. At 125 volts the resistor dropped around 11 volts and the filament voltage was at 6.3 volts. *Viola!* Success! Another benefit provided by the line-dropping resistor is a small amount of current surge limiting; it will limit the initial power on surge almost in the same manner as an ICL does.

The next step was to find a spot on the chassis to mount the resistor. The best location is usually along the inside side or rear chassis walls. The ideal location is the one furthest away from other parts and wiring, and in a spot where the heat transferred to the chassis will easily radiate to the outside environment. The rear apron is best; heat conducted from the resistor to the metal chassis is then radiated or carried away by surrounding air currents into the room. Don't mount the resistor too close to the lower edge of a chassis lip where it might be too near a wood cabinet's baseboard! Alas, space was a wee tight in the Zenith chassis, and **Photo E** shows my compromised mounting location. I may redo it, since I'd prefer to see more clearance to the cabinet.

As a final test, I powered the radio up using my regular 125-VAC line voltage and took a few more measurements. The highest temperature the resistor body reached was 140° F. **Figure 1** shows how the dropping resistor, and suggested fuse, is wired in series with the transformer primary. Adding some thermal compound between the resistor and chassis will help, but since many other components run at much higher temperatures than this, 140 degrees is probably reasonable. Dropping resistors work well in radio receivers because they draw a constant current for a given voltage. Don't try using one in a ham transmitter—it won't in that application!

## Stay Cool

Well, that's it for this time. I hope I've imparted some useful knowledge or ideas for your restoration efforts. Until next time, keep those soldering irons hot and those old tube radios glowing! ■

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# Radio Fun And Going Back In Time

**Q.** How far back does communications law go?

**A.** I'm not exactly sure about "law," per se, but one early form of regulation was instituted by Queen Elizabeth I of England. In about 1560 she got worried about spies sending secret information out of England by putting messages into bottles and throwing them into the sea. She passed a law that said if anyone found a bottle with a message in it, afloat or ashore, opening the bottle and reading the message was an offense against the Realm and could result in hanging. To be in compliance with English Law you had to turn the unopened bottle over to an official known as "Opener of Sea Bottles."

After nearly 200 years, in 1760 Parliament finally struck down the Queen's Law and retired the title of "Opener of Sea Bottles." So if you find a message in a bottle today in the UK it's alright to open it yourself—but, just to be safe, check with local authorities.

The one thing my source didn't mention was how many "Opener of Sea Bottles" there had been and if their work load was very heavy. I wonder if there was a civil service test?

**Q.** What is Interpol and how does it use radio to do its job?

**A.** Despite what you may read or see on TV, Interpol, short for International Police Organization, does not have international police powers. Started in 1914, it is primarily a repository of international criminal records and communicates this information between its 182 member states.

Originally the information was distributed by telegraph, but in 1935 an International Radio Network was initiated for Interpol members. Interpol collapsed during the Second World War, but in 1946 France was selected as the host country for Interpol, partly because of superior communications facilities. In 1949 the International Radio Communications Regulations were adopted as part of Interpol's General Regulations, thereby standardizing radio procedures.

In 1990 the X.400 Communications System was started to allow two-way exchange of electronic messages. In 1992 the X.400 system was expanded to include its Automatic Search Facility, allowing remote searches of Interpol databases. In 2002 the I-24/7 Web system replaced the obsolete X.400.

**Q.** What is the origin of the word decibel, and what exactly does it mean?

**A.** Alexander Graham Bell invented the telephone, perfected the phonograph, and invented a sonic probe for locating bullets inside the human body, among other things. In the course of his experimentation he needed a scale to measure electronically generated signals. Taking one letter off his own name, the primary unit became the "bel." One tenth of a bel is a decibel, which has become a more useful measurement.

Originally used for electrical measurement, the term came to be used for sound measurement as well. If someone tells you that your signal is "20 over," he really means it's 2 bels.

**Q.** Nazi Germany was very skillful in the use of radio propaganda. Did they ever try to cultivate an American audience?

**A.** Yes, they did. On April 1, 1933, on the orders of Chancellor Hitler, all German shortwave broadcast stations were required to give their station IDs in both German and English. The programming was mostly in German, aimed at German-speaking Americans and recent immigrants because they were the audience most likely to respond to the German-American Bund, or bond.

Things didn't go too smoothly though. In 1932, WLS in Chicago started broadcasting experimentally at the then unheard of power level of 50,000 watts. Herr Goebbels' Propaganda Ministry's Radio Department sent in complaints that the Chicago station was interfering with the Nazi message with programs like "The Prairie Farmer,"

"The Smile Awhile Show," and "The National Barn Dance." WLS is still there, but I think the Nazi's radio stations have "gone dark."

**Q.** When did radio amateurs start working with microwave frequencies?

**A.** It's been about 50 years since folks started playing around with "giggle Hertz." In 1943 The Radio Society of Great Britain ran a series of articles called "Communications on Centimetre Waves" in the *RSGB Bulletin*, or *The Bull*, as it's known over there. At the time, however, amateurs there and in the States were off the air "for the duration," but there must have been some interest.

In 1946, when things had calmed down, the first experimental contact was made at a range of 2 miles on 10 GHz. The record was extended to 7.65 miles in 1947. Also in 1947 the RSGB followed up its articles with a 54-page booklet called "Microwave Technique." In 1949 and January 1950 the first UK contact was made at a range of 1.75 miles near Manchester. Things have gotten a lot more long-range, but that was how things got started.

**Q.** Mistakes in the station control room and "dead air" are things that have been with us as long as we have been listening to the radio. Have you heard of any "really big ones"?

**A.** One screw up that came over the radio was during a large church meeting being broadcast on a nationwide hook-up. A large listening audience had been assembled to hear the Word of God preached by the leaders of their Church. Suddenly someone at the radio station "pulled the wrong switch" and everyone at home and in the meeting hall heard part of a World Series Game being broadcast live. For seven minutes the worshipers were treated to play-by-play of a second base steal. By the time things got corrected the spirit of the worshipers had undergone something of a change. Maybe our readers can give us some examples of their favorite on-air fouls-ups, but not *too* foul, please.

## Looking Back

### Five Years Ago In Pop'Comm...

Papua New Guinea—it'll always be one of those exotic South Pacific places, and it was featured as a DX target in our January 2002 *Pop'Comm* as New Guinea, always inviting, forever difficult to hear. New was Magellan's MAP 330 GPS, which we showed bike-mounted and ready for action!

### Ten Years Ago In Pop'Comm...

Yes, it's that time of year again—snow and more snow as Mother Nature does her thing. Our January 1997 issue had the inside skinny on where to search for winter scanning action, unless you were so far South you didn't know what a snow shovel looks like! The late Don Patrick, in his "The Old CB Shack" column, featured the old Polycomm II CB, a classic CB from a company that actually published a non-watered-down performance guarantee. It's a great back issue to have in your library.

### Twenty Years Ago In Pop'Comm...

New 20 years ago (seems like yesterday!) was the Kenwood R-5000, Ten-Tec RX 325, and something that wasn't a product, but a law—remember the Electronic Communications Privacy Act? Page 9 of our January '87 issue may have been vague in retrospect: "...not having final details...about to be signed by President Reagan..." But, as they say, the rest is history. Check out page 13 for a blast from the past with an ad from Heathkit, stating, "The Heathkit Catalog is filled with high-quality ham radio products that you'll enjoy. Plus you'll get the unique challenge and satisfaction of kit building."

## How Safe Are YOU?

This month marks the fifth year I have written the "Homeland Security" column for *Popular Communications* magazine. In that time we've covered a lot of topics, I've met some tremendous people, received some very interesting and sometimes constructive e-mails, and had a lot of fun. But I digress.

The month of September saw every media news agency airing some form of documentary regarding the events of September 11, 2001. Depending upon their political orientation (yeah, right... *just try* and convince me that the various news agencies don't have agendas!) you got a different spin on the events, what actually caused them, and the present state of readiness and safety of the United States. Ted Koppel had a three-hour special that aired on cable, NBC, CBS, and ABC. All the networks had other programs about the 9/11 debacle, as did CNN and others.

So exactly how "safe" are we in America? If you believe Koppel we've made some progress but are a long way from "safe." If you watched CNN or Fox News, you got two different views: both based upon their political leanings: pro and con on the Bush Government. We must go through Orwellian security checks when we fly nowadays. Check the shoes, check the carry-on baggage, X-ray the hold baggage, throw away any liquids, no nail clippers, or Bowie knives, and the list goes on.

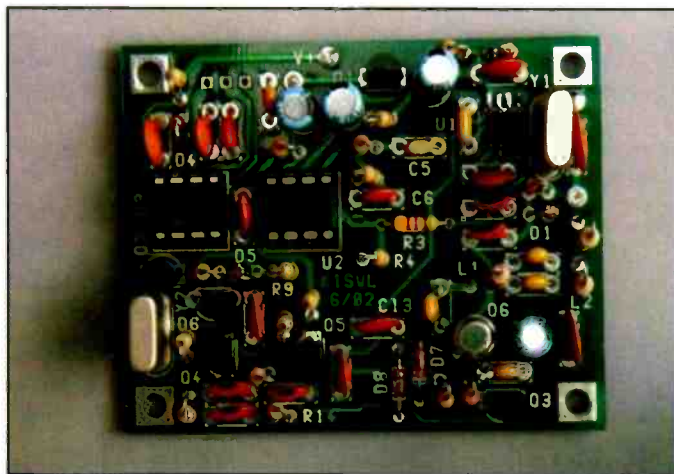
What are my personal feelings regarding how safe we are in the United States? We aren't! It's that simple. While the government has implemented some really strict security guidelines on mass transportation and border security has been stepped up, it will not take our enemy, the radical Islamic fundamentalists, long to find ways around our efforts.

If history teaches us one thing it's that people with a cause, properly motivated and equipped, can accomplish almost anything they can conceive. It was only just over 200 years ago that a bunch of "colonials," using what could be interpreted as "terrorist tactics," challenged and won their independence from the King of England. More recently, the Israelis achieved their goal of a Jewish state in the Middle East in the midst of a whole bunch of Arab states. It wasn't easy, nor was it neat and tidy. Lots of people died, but in the end, the State of Israel was established.

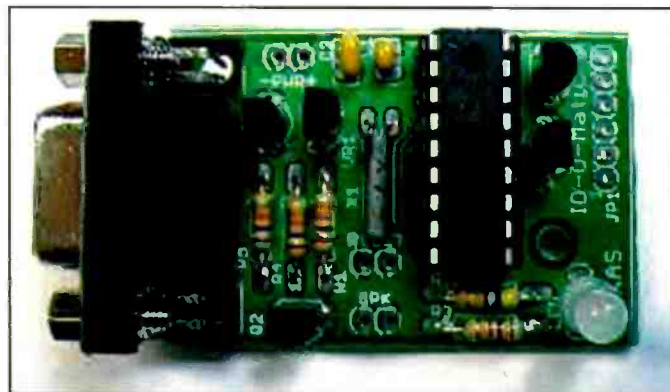
### We're A Little (A Lot) Spoiled

With the upcoming mid-term elections on the immediate horizon, people on both sides of the political isle are questioning the tactics the Bush Government is employing in the War on Terror in the Middle East. To be truthful, the American people were spoiled during Desert Storm. It took the United States and coalition forces only a couple of months to defeat the fourth largest standing army in the world. The unbelievably swift defeat of the Iraqi forces was a stunning display of military power, discipline, and training.

Unfortunately, after the September 11, 2001, the United States decided to take the War on Terror to the enemy by invading Afghanistan to pursue Al Qaeda. Then came the invasion



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of Iraq. Most of the American public thought that within six to nine months our troops would be back home, the bad guys would be imprisoned or dead, and life would get back to normal.

Well, here we are, over four years into this War on Terror in Iraq and we are no closer to putting a bullet in bin Laden's brain nor defeating the Taliban or Al Qaeda than we were at the get-go. Why? Our enemy is a slippery little devil. Much like the Viet Cong of 30 years ago, the Taliban and Al Qaeda can blend in with the local populous where they enjoy a very large support base within the Islamic community. We, on the other hand, have little or no human intelligence on the ground in the Middle East to give us late-breaking information that is crucial to capturing terrorists and dismantling their networks. The whiz-bang high-tech toys of the U.S. military can only do so much. It takes

intelligence, providing reliable and timely information, to get the job done.

Make no mistake about it, folks, this war is going to go on and on and on. It will not be "won" in our lifetimes, nor would I expect it to be resolved in our children's lifetimes. The radical Islamic fundamentalists have a long history of playing a waiting game with their enemies. In the meantime, we have to be ever vigilant and proactive in identifying and thwarting future attempts by these religious zealots to disrupt our society and assault our freedoms.

## Security Is Everyone's Business!

One theme I've repeatedly emphasized in this column is that Homeland Security is everyone's business. Ditto your personal security. *You* are responsible for your own security and the security of your loved ones. No one else—just you. You cannot offload that responsibility onto the federal government, the state police, or the city or county law enforcement agencies. Your personal security and the security of your family and home start and end with you, simply because you have the ability to keep yourself and your loved ones safe and secure.

Now I'm not recommending you go out and buy a bunch of guns, join a paramilitary militia group, or build a bunker and stock it with guns, ammo, food, and fuel. Just take a close look at your home and your work locations and approach the problem from the standpoint of someone trying to get at you or your family. Realize that there are a number of ways to ensure that security on the home front and at the office can be tightened with little or no outlay of cash.

## Obvious And Not-So-Obvious Precautions

First of all, is your home locked up every time you and your family leave? If not, why not? Locks won't stop a determined thief or burglar, but they'll slow them down to the point that they may look for an easier, "softer" target. No self-respecting burglar will fool with locks when he can find a home a couple of doors away that's unlocked just waiting for a thief to walk through the front door and steal the owner blind.

Be sure all the windows on the both the ground floor and upper floors are locked, or if left open during the summer

months, are secured by toggles that won't allow the windows to open more than a few inches, prohibiting someone from climbing in. Yes, thieves and burglars can and do "second story jobs" on a regular basis. So don't be fooled into believing

that if your ground floor windows and doors are locked, you're safe. Lock up the whole darned house!

Invest in a surveillance camera system. Wal-Mart and Sam's Club have inexpensive video surveillance systems for under

### Recommended Items to Include In a Basic Emergency Supply Kit:



Water, one gallon of water per person per day for at least three days, for drinking and sanitation

Food, at least a three-day supply of non-perishable food

Battery-powered or hand crank radio and a NOAA Weather Radio with tone alert and extra batteries for both

Flashlight and extra batteries

First aid kit

Whistle to signal for help

Dust mask, to help filter contaminated air and plastic sheeting and duct tape to shelter-in-place

Moist towelettes, garbage bags and plastic ties for personal sanitation

Wrench or pliers to turn off utilities

Can opener for food (if kit contains canned food)

Local maps



### Additional Items to Consider Adding to an Emergency Supply Kit:

Prescription medications and glasses

Infant formula and diapers

Pet food and extra water for your pet

Important family documents such as copies of insurance policies, identification and bank account records in a waterproof, portable container

Cash or traveler's checks and change

Emergency reference material such as a first aid book or information from [www.ready.gov](http://www.ready.gov)

Sleeping bag or warm blanket for each person. Consider additional bedding if you live in a cold-weather climate.

Complete change of clothing including a long sleeved shirt, long pants and sturdy shoes. Consider additional clothing if you live in a cold-weather climate.

Household chlorine bleach and medicine dropper – When diluted nine parts water to one part bleach, bleach can be used as a disinfectant. Or in an emergency, you can use it to treat water by using 16 drops of regular household liquid bleach per gallon of water. Do not use scented, color safe or bleaches with added cleaners.

Fire Extinguisher

Matches in a waterproof container

Feminine supplies and personal hygiene items

Mess kits, paper cups, plates and plastic utensils, paper towels

Paper and pencil

Books, games, puzzles or other activities for children

Uncle Sam's Ready.gov website offers this checklist to help you stay prepared for emergencies. Clip it out and use it today!

\$200 that will offer some peace of mind. They can be installed by almost anyone who can read at a sixth-grade level. Some of the systems are wireless and don't require any effort to install aside from positioning the camera and finding a source of nearby power.

These systems can feed your old VHS VCR and you can have a record of activities on and around your property when you're away or during the night. One thing about black and white video cameras, they respond very well to infrared. Therefore, by placing a bunch of IR diodes in a cluster and illuminating a given area with IR, your black and white camera can literally see in the dark. A two- to four-camera system can be installed by most homeowners in a weekend. You might want to check with your homeowner's insurance company; possibly they offer a reduced rate for an active video surveillance system installed on your property.

Contact your local police department. Possibly one or more of the off-duty officers will be agreeable to coming out and inspecting your home and give you a laundry list of things to do to increase the security of your dwelling. Face it, cops have enough things to deal with on each shift.

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If they can be pro-active and offer you advice on how to burglar-proof your home, that's one less thing they may have to investigate.

Speaking of the police, all law enforcement agencies are "reactive" departments. By that I mean that they cannot do anything until a crime has been committed. They can't go out and arrest people just on a whim (despite what Hollywood would have you think). If you're a victim of a crime, then law enforcement can get involved. Until then, you're virtually on your own. Kinda scary, huh? Well, it need not be. Realize that your security begins with YOU and you're well on the way to becoming much more secure and can sleep peacefully at night. My solution for things that go "bump" in the night: "BUMP" back!

## SOS Radios

Bruce Prior, N7RR, recently authored an article for the QRP Amateur Radio Club International's newsletter, *The QRP Quarterly*, entitled "RockMite SOS Radios." What, you might ask, is a RockMite? This is one of those little radio kits that has captured the imagination of a lot of the QRP fraternity and become almost a cult radio of sorts.

The RockMite was designed by David Benson, K1SWL, of Small Wonder Labs, a supplier of transceiver kits. David is one of the most gifted electronic engineers I have ever had the pleasure to meet. Over the years we have become good friends, and his innovative ideas regarding simple transceiver sets for portable and back-packing use never cease to amaze me. Several years ago Dave came up with the design for this simple transceiver kit that sells for about \$25.

Yes, you read that correctly—\$25! This little high-performance, ultra-simple kit was originally designed for use on 40 meters (7040 kHz) as a CW-only radio. Why CW only? Well, CW radios are easy to construct, are a lot less critical, and they're less expensive to design and build than single sideband rigs. Simplicity is the name of the game in QRP.

But while most low-power operations are use Morse code, there are those who prefer to operate voice and data modes to the exclusion of CW. So if you're hesitant to try QRP because you don't copy CW well (or at all) don't let that hold you back. SSB and PSK31 are two prime modes that have a lot to offer the budding low-power communicator.

Anyway, Bruce's article outlined how he developed two of the RockMite radios as backwoods "SOS" emergency radio systems in the event he was ever in trouble while in the bush. This is not as far fetched as one might think. In many wilderness areas out in the western United States, hams monitor 146.520-MHz simplex for other hams who may be hiking or camping and might need assistance while in the wild.

But 2-meter voice comms are extremely short range. Even if the hiker or camper is on a mountain ridge, a 2- to 5-watt handheld 2-meter rig with a rubber duck antenna won't go that far. Enter HF comms.

Dave Benson now offers the RockMite kit for 80, 40, 30, and 20 meters. Fifteen meters will soon be offered, too, so there's literally something for everyone regarding band of choice. Bruce has taken an 80-meter and a 20-meter RockMite and made two entirely stand-alone emergency radio sets that can be deployed during emergencies. The rigs will run on any DC voltage between 8 and 15 volts; Bruce uses 9-volt lithium batteries as a primary power source. He has assembled power adaptors, which will allow him to use lithium 9-volt batteries in series to provide extra operating time for one or both of his emergency rigs.

Each "SOS Radio" has its own antenna made from nine-strand copperweld wire (AWG 26) encased in a polyvinyl sheath, called Stealth Wire and available as PolySeath-26 from the RF Connection ([www.therfc.com/antenna.htm](http://www.therfc.com/antenna.htm)). I've used this antenna wire for several portable HF antennas and it's fantastic stuff. It's extremely rugged (in fact, almost unbreakable) and the poly sheath won't hang up on tree limbs or bark. In short, it's really neat antenna wire. Bruce's antennas are cut for the operating frequency on each radio (3560 kHz and 14060 kHz respectively). The idea is to get the antenna into a nearby tree (or two) and use the built-in keyer chip inside the RockMite in the "beacon" mode with the name, call, and approximate location of the injured or lost party.

While some of you may doubt if one or two watts is even worth the effort to put on the air, let me remind the dubious that the U.S. military used far less power in their portable and handheld squad radios for many years with great success. The frequencies were not chosen at random, either. Both 3560 and 14060 kHz are QRP calling frequencies and are often highly populated—3560 in the evenings (with



local and regional QRP nets) and 14060 during the daytime for longer-distance QRP operations.

The fact that the antennas would be low to the ground also offers NVIS (Near Vertical Incidence Skywave), a radio propagation mode that utilizes antennas with a very high radiation angle (90 degrees) and which is the mainstay of many EmComm HF radio systems. After all, you're not out to work DXCC with this emergency system. All you're really trying to do is get someone's attention to get help in an emergency. The RockMite and a low antenna can perform wonders.

Bruce has certainly provided a workable solution should a wilderness emergency situation ever occur. And many thanks to him for allowing me to capitalize on his article for this installment of "Homeland Security."

### Not Into CW? It Doesn't Matter

I realize that many of you are not CW operators. This should not matter in the least. During times of emergency when lives are in danger, the FCC has ruled that any and all means and modes available to a ham radio operator can be used to communicate and ask for help and assistance. So what if you're a no-code tech who's broken a leg in the woods and needs immediate medical help? If you have pre-programmed the keyer chip inside your trusty RockMite all you have to do is get the wire into a tree, turn on the radio, and hit the button: instant beacon mode with your name, call, and approximate area. The rest is up to the SAR folks.

Speaking of keyer chips, there are several direct replacement keyer chips for the one that comes stock with the RockMite kit (oh, did I forget to mention that the RockMite was pretty well tricked out with little "extras" like a keyer chip?). Check out Dale Botkin, NØXAS's "Ham Gadgets" website at [www.hamgadgets.com/index.php](http://www.hamgadgets.com/index.php) for the PicoKeyer chipset that's a direct replacement for the stock RockMite chip. The PicoKeyer offers 100 characters in each of the two programmable memories, and these can be daisy-chained to offer 199 characters of continuous information. This keyer chip is really cool, and at \$6.95 is a steal of a deal.

What? No key or paddle set for your RockMite? All is not lost. My good friend Ed Breneiser, WA3WSJ, has a very compact paddle set that will work nicely with

the RockMite (or any other rig for that matter). Check out Ed's site at [www.wa3wsj.com/](http://www.wa3wsj.com/). While you're there, look over his array of portable antennas for QRP and QRO operations from the bush. I have one of Ed's Black Widow Verticals and it works like gangbusters! Oh, yeah, I guess I better tell you where you can get a RockMite, huh? Go to Dave Benson's site at [www.smallwonder-labs.com/](http://www.smallwonder-labs.com/) to check out his full line of QRP

radios kits, PSK transceiver kits, frequency displays. You'll just drool! I do, every time I go there!

### Until Next Time...

That's a wrap for this month, folks. I hope you found the information helpful and that you'll put it to good use for your safety and that of your loved ones. Remember: preparedness is not optional.

## When Disaster Strikes...



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# 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	9715	RDP International, Portugal	PP	0300	4790	Radio Vision, Peru	SS
0000	6135	Radio Santa Cruz, Bolivia	SS	0300	11675	Radio Kuwait	AA
0000	6145	Radio Japan, via Canada		0300	7110	Radio Republica, via UK	SS
0000	9845	Radio Nederland, via Netherlands Antilles		0300	7210	Radio Fana, Ethiopia	Amharic
0000	11780	Radio Nacional Amazonas, Brazil	PP	0300	5014.5	Radio Altura, Peru	SS
0000	9570	China Radio Int., via Albania		0300	7200	Republic of Sudan Radio	AA
0000	4845	Radio Mauritanie, Mauritania	AA	0330	5975	Voice of Turkey	
0030	11680	Radio Exterior de Espana, Spain	SS	0330	3291v	Voice of Guyana	
0030	5910	Marfil Estereo, Colombia	SS	0330	5025	Radio Rebelde, Cuba	SS
0100	11800	RAI International, Italy	II/EE	0330	3240	Trans World Radio, Swaziland	unid
0100	4819	La Voz Evangelica, Honduras	SS	0330	4990	Radio Apinte, Suriname	
0100	4885	Radio Clube do Para, Brazil	PP	0400	9780	Rep. of Yemen Radio	AA
0100	11705	VOA relay, Sri Lanka		0400	3345	Channel Africa, South Africa	
0100	4319u	AFRTS, Diego Garcia		0400	9720	Radio Victoria, Peru	SS
0130	6175	Voice of Vietnam, via Canada		0400	9660	Radio Japan, via French Guiana	SS
0130	7125	Russian International Radio, via Moldova	RR	0400	7275	RT Tunisienne, Tunisia	AA
0130	7250	Voice of Russia		0400	4052.5	Radio Verdad, Guatemala	SS
0130	13760	Voice of Korea, North Korea		0400	9630	Voice of Germany, via Rwanda	
0130	6973	Galei Zahal, Israel	HH	0400	6065	Christian Voice, Zambia	
0130	9870	Radio Austria International	SS	0400	9805	Radio France International	
0130	4780	Radio Cultural Coatan, Guatemala	SS	0400	4960	VOA relay, Sao Tome	
0200	11570	Radio Pakistan	Urdu	0430	4775	Trans World Radio, Swaziland	GG
0200	6135	Radio Romania International	FF	0430	7120	BBC via South Africa	
0200	6185	Radio Educacion, Mexico	SS	0500	7250	Vatican Radio	
0200	7270	Radio Cairo, Egypt	EE/AA	0500	9685	Channel Africa, South Africa	
0200	6110	REAI International, Italy, via Ascension	II	0500	4770	Radio Nigeria	
0200	5840	Radio Canada International, via Sweden	AA	0500	5005	Radio Nacional, Bata, Equatorial Guinea	SS
0200	7235	VOIRI, Iran		0500	11690	Radio Okapi, Congo (Dem. Rep.)	via S. Africa
0200	10320	AFRTS, Hawaii		0500	9515	China Radio International, via Albania	AA
0200	17665	KWHR, Hawaii		0500	4950	Radio Nacional Angola	PP
0200	4800	Radio Buenas Nuevas, Guatemala	SS	0500	4777	Radio Gabon	FF
0210	4985	Radio Brazil Central	PP	0600	4915	Ghana Broadcasting Corp.	
0230	9560	KBS World Radio, South Korea		0600	6160	CKZN, Newfoundland	
0230	7305	Vatican Radio		0630	9700	Radio Nederland	
0230	6010	Radio Sweden, via Canada		0700	5940	Radio Melodia, Peru	SS
0230	4834	Radio Maranon, Peru	SS	0800	4835	ABC No. Territory. Service, Australia	
0230	9345	Kol Israel	HH	0900	4939	Radio Amazonas, Venezuela	SS
0230	9795	Radio Budapest, Hungary		0930	3279	La Voz del Napo, Ecuador	SS
0230	7475	Voice of Greece	GG	0930	6060	Radio Nacional, Argentina	SS
0230	7450	Radio Tirana, Albania		0930	4754	Radio Educacao Rural, Brazil	PP
0230	12025	RTV Algerienne, Algeria, via UK	AA	0930	3310	Radio Mosjo Chaski, Bolivia	QQ
0230	4990	Radio Senado, Brazil	PP	0930	6010	La Voz de Su Concencia, Colombia	SS
0230	9935	VOIRI, Iran	AA				
0300	7440	Radio Ukraine International					

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
1000	4805	Radio Difusora Amazonas, Brazil	PP	1700	17485	Radio Prague, Czech Republic	
1000	9970	RTBF, Belgium	FF	1700	15640	Kol Israel	HH
1000	4900	Radio San Miguel, Bolivia	SS	1700	9525	Voice of Indonesia	EE/II
1000	7270	Nei Menggu PBS, China	unid	1700	17705	Voice of Greece, via Delano, USA	GG
1030	4909	Radio Chaskis, Ecuador	SS	1730	15450	IBRA Radio, Sweden, via Germany	unid
1030	12085	Voice of Mongolia		1730	15435	BSKSA, Saudi Arabia	AA
1100	11550	Radio Taiwan International	unid	1730	15345	RT Marocaine, Morocco	AA
1100	6150	Mediacorp Radio, Singapore		1730	9885	Far East Bc. Assn, via Rwanda	unid
1100	15190	Radio Africa, Equatorial Guinea		1730	15715	Christian Vision via Germany	
1100	11580	KFBS, Saipan, No. Marianas	CC	1730	15475	Africa Number One, Gabon	FF
1100	4810	Radio Transcontinental de America, Mexico	SS	1800	17895	VOA relay, Botswana	
1100	9910	Trans World Radio, Guam	CC	1800	15120	Voice of Nigeria	EE, others
1130	117585	Radio Nederland, via Madagascar	unid	1800	13760	China Radio International	
1130	2325	ABC Northern Territories Service, Australia		1800	17630	Radio France International	SS
1130	15700	Radio Bulgaria		1900	17810	Radio Nederland	
1200	11850	Radio Polonia, Poland		1900	13865u	Rikisvarpid, Iceland	Icelandic
1200	13760	Voice of Turkey	GG	1900	13605	All India Radio	
1200	3925	Radio Nikkei, Japan	JJ	1900	15640	Kol Israel	
1200	11735	Korean Central Bc Station, No. Korea	KK	1930	15560	RDP International, Portugal	PP
1200	15295	Voice of Malaysia	CC	1930	12133u	AFRTS, Key West, FL	
1200	6010	Radio Mil, Mexico	SS	1930	17850	Radio Exterior de Espana, Spain, via Costa Rica	SS
1200	9580	Radio Australia		1930	9705	La Voix de Sahel, Niger	FF
1200	6080	Radio Australia		1930	15085	VOIRI, Iran	FF
1200	3275	Radio So. Highlands, Papua New Guinea		2000	15455	Voice of Russia	
1230	9845	Voice of Vietnam		2000	11785	Radio Free Asia, No. Marianas	unid
1230	9870	Radio New Zealand		2030	11735	Radio Tanzania-Zanzibar	Swahili
1230	15240	Radio Sweden		2040	13790	Deutsche Welle, Germany, via Portugal	AA
1230	11740	Radio Japan, via China	CC	2100	12085	Radio Damascus, Syria	AA, EE, etc.
1230	7120	Wantok Radio Light, Papua New Guinea		2100	11820	BSKSA, Saudi Arabia	AA
1230	9805	Radio Marti, USA	SS	2100	15495	Radio Kuwait	AA
1230	9455	Radio Free Asia, via Sri Lanka	unid	2100	9445	All India Radio	
1230	6348	Echo of Hope. So. Korea to No. Korea	KK	2130	9420	Voice of Greece	GG
1230	12065	Bible Voice Radio, England, via Russia		2130	9575	Radio Medi Un, Morocco	AA
1230	9605	BBC, via Japan	CC	2130	9590	Radio Jamahiriya, Libya, via France	AA
1230	3995	Radio Republik Indonesia-Kendari	II	2200	9830	Voice of Turkey	
1300	6080	Radio Singapore		2200	15220	Radio Japan, via Ascension	JJ
1300	7115	VOA relay, Philippines	CC	2200	11620	All India Radio	
1300	7145	Radio New Zealand		2200	12030	Radio Budapest, Hungary	HH
1300	9745	HCJB, Ecuador	SS	2200	9300	Radio Varna, Bulgaria	BB; Sun.
1300	9335	Voice of Korea, North Korea		2200	9760	Cyprus Broadcasting Corp.	Greek; wknds
1300	9625	CBC Northern Service, Canada		2200	9635	Sound of Hope, Taiwan	CC
1300	15400	YLE/Radio Finland International	Finnish	2230	12050	Egyptian Radio	AA
1300	7295	Traxx FM, Malaysia		2230	7125	RTV Guineenne, Guinea	FF
1300	9495	Shiokaze, Taiwan	KK, EE, etc.	2230	17785	Radio Australia	
1330	9585	KTWR, Guam		2300	13680	Radio Nacional Venezuela, via Cuba	SS
1330	11510	VOA Deewa, USA	unid	2300	11920	HCJB, Ecuador	PP
1400	15140	Radio Sultanate of Oman	AA	2300	7135	RT Marocaine, Morocco	AA
1400	13775	Radio Austria International, via Canada		2300	11700	Radio Bulgaria	SS
1430	17850	Radio Jamahiriya, Libya, via France	AA	2300	9925	Voice of Croatia via Germany	
1500	15245	BBC relay, Oman	RR	2330	9875	Radio Vilnius, Lithuania	
1500	15650	Voice of Oromiya Independence, via Germany	Oromo	2330	5910	Radio Republica (anti-Castro) via WRMI	SS
1530	11690	Radio Jordan	AA/EE	2330	11950	Radio Cairo, Egypt	FF/EE
1530	17660	Sudan Radio Service, via England		2330	4835v	RT Malienne, Mali	FF
1530	15220	China Radio International, via Canada	CC	2330	9550	Radio Havana Cuba	Ss
1530	15575	BBC Relay, Cyprus	unid	2330	11925	Radio Bandeirantes, Brazil	PP
1600	11775	Caribbean Beacon, Anguilla (University Network)		2330	7425	Radio Nacional de RASD, Algeria	AA/SS
1600	17680	Voz Cristiana, Chile	SS				

# New, Interesting, And Useful Communications Products



MFJ's new atomic wristwatches feature a stainless steel band, a handsome brown leather band, or stainless steel band with non-numerical display.

## Three New Atomic Wristwatches, And New Speaker/Microphones From MFJ

MFJ's new atomic wristwatches come with a stainless steel band, a brown leather band, or stainless steel band with non-numerical display. Each watch gives precision 12-hour time format (accurate to  $\pm 1$  second per day) and automatically receives daily updates from the WWVB signal from Fort Collins, Colorado, updating itself as needed. The watches also feature a backlight, automatic Daylight Savings Time feature, manual time setting, 5 ATM water resistance, and included lithium battery. The silver-metallic face has large analog digits and second hand/second notches.

Priced at \$49.95, the MFJ-188MRC, has a stainless steel band; the MFJ-188LRC, \$49.95, has a genuine brown leather band; and the MFJ-189RC, \$39.95, is similar to the others but has a genuine black, leather band and non-numerical 12-hour and second notches on the silver-metallic face.

Also new from the company are compact speaker/microphones, measuring 2 1/2 x 1 3/8 x 1/2 inches (HWD). The devices have sturdy PTT switches, 3.5-mm earphone jacks, and long, curly, retractable cords. The MFJ-285I, priced at \$15.95, fits ICOM and compatibles; the MFJ-285K, \$15.95, fits Kenwood and other compatibles; the MFJ-285Y, \$15.95, fits Yaesu R-series, ICOM Q7A and others; and the MFJ-285R, \$19.95, fits the VX7R series.

The MFJ-296, priced at \$21.95, is a new deluxe speaker microphone that has a volume control knob that allows you to set it for a super quiet room or noisy environment like a ham-fest or banquet. It has a 360-degree rotating lapel clip, an electret element mic, and a full-size speaker for high-quality receive audio. This new speaker/mic also has 3.5-mm earphone, momentary PTT switch, and retractable cord. It fits ICOM, RadioShack, older Yaesu, Kenwood, Alinco, and compatibles. The MFJ-296R, \$24.95, fits VX7R handheld series only.

MFJ Atomic wristwatches and speaker-microphones 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, 300 Industrial Park Road, Starkville, MS 39759; Phone: 800-647-1800; Fax: 662-323-6551; Web: [www.mfjenterprises.com](http://www.mfjenterprises.com).

## Uniden Portable GPS Navigation Units

The company has recently debuted a new line of portable GPS navigation tools, called Uniden MapTrax. According to the manufacturer, the new GPS series will be characterized by compact designs, large displays and cutting-edge technology. Innovative features offered include Bluetooth capabilities, text-to-speech navigation, and pin-point positioning accuracy down to three meters.

They're powered by NAVTEQ navigation software, and all the Uniden models feature TFT (thin film transistor) digital color LCD screens that automatically adjust between night and daylight viewable settings in accordance with the time of day. The daylight viewable setting minimizes glare while the night-view setting offers a bright, easy-to-read display.

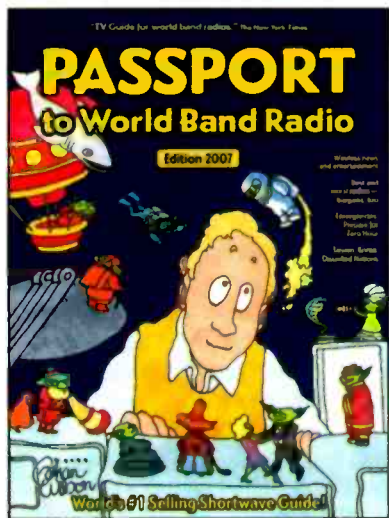
In addition, Uniden's portable GPS systems are all equipped with intuitive user-interfaces with EZ touch screens, a pre-loaded map of North America, 2 GBs of map memory, a windshield mount for use in the car, voice prompt, and the fastest available processors for real-time accuracy.

With access to up to 14 million points-of-interest, these new models offer navigational information for a wide-range of locations. The portable GPS series features display sizes ranging from 3.5 inches to 7 inches. Some of the models within the series will feature user-friendly designs that provide an accurate navigation experience, such as external turn signals, text-to-speech navigation, and WAAS mapping accuracy. In addition, Uniden plans to introduce a second generation of this product line which may include Bluetooth capability, allowing the GPS system to synchronize with any Bluetooth-enabled cell phone to permit caller ID on the GPS display, providing a central location for all in-vehicle communications.

For more information on Uniden's products, visit [www.uniden.com](http://www.uniden.com).



The new Uniden GPS units are compact and feature display sizes from 3.5 to 7 inches.



The latest edition of *Passport To World Band Radio* is full of shortwave radio information.

## 2007 Passport To World Band Radio Available

The latest edition of this resourceful publication for shortwave enthusiasts (and anyone interested in becoming a shortwave enthusiast!) is now on sale. It's prepared each year by International Broadcasting Services, Ltd. and is available from bookstores and world band specialty firms throughout the United States, United Kingdom, Canada and other parts of the world. You may also order it online for \$22.95 (US postpaid) at [www.passband.com](http://www.passband.com) or phone their 24/7 automated line for charge card customers: 215-598-9018 or by mail to [Passband.com](http://Passband.com), Box 300, Penn's Park, PA 18943.

The new 592-page edition includes information on kit building, choosing a receiver (and even receivers for emergencies!), professional receivers, black box radios and a whole lot more. Don't forget to tell them you read about "Passport" in *Popular Communications*.

## Klingenfuss' 2007 Shortwave Frequency Guide

The 11th edition of the Shortwave Frequency Guide is now available from Klingenfuss Publications. The company news release says it's "Simply the most up-to-date worldwide shortwave radio handbook available today." It's priced at 40 EUR including worldwide postage. Included is a multitude of worldwide broadcast and utility radio stations.

For more information contact the company directly at [www.klingenfuss.org](http://www.klingenfuss.org) and for more information phone ++49-7071-

62830 or via e-mail to [info@klingenfuss.org](mailto:info@klingenfuss.org). As we always request, please tell them you read about it in *Popular Communications*.

## Cutting Edge Enterprise's New Radio Wallet

PowerPort by Cutting Edge Enterprise's Radio Wallet is the company's answer to what it says were, "ongoing requests from our customers [for] a padded box to carry your handheld radio and a few accessories while traveling." When you leave home, you might have your handheld on your belt, but the charger, the extra antennas, the frequency lists, and extra battery end up scattered throughout the car or the luggage.

Cutting Edge suggests storing it all in their compact, easy-to-carry case, the Radio Wallet. The cases come in three different sizes to accommodate a variety of radios and are constructed of padded, heavy-duty nylon with all the edges fully finished for strength and durability. A smooth padded divider pocket separates the two halves of the cases, giving you a way to protect all your equipment. You can put your radio on one side, the battery and charger on the other, and notes, along with an antenna and a pen, in the divider pocket in between. Both the small and large Radio Wallets have adjustable hand straps; the small Radio Wallet has a sturdy spring-steel belt clip, covered in vinyl to protect your belt from scratches; the Mini-Radio Wallet has a snap hook.

Priced at \$9.95 (mini), \$29.95 (small), and \$34.95 (large), they're available from the company directly at 800-206-0115 or online at [www.powerportstore.com](http://www.powerportstore.com). Please tell them you read about it in *Popular Communications*.



The small Radio Wallet. No. HI-32, sells for \$29.95 from [www.powerportstore.com](http://www.powerportstore.com).

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## Capitol Hill And FCC Actions Affecting Communications

### FCC Launches New Public Safety Communications Bureau

A new bureau, tasked with developing, recommending, and administering public safety communications, was launched by the FCC in September, authorities said.

The Public Safety and Homeland Security Bureau will address communications issues including 911 and E911, operability and interoperability of public safety communications, communications infrastructure protection, and network security and reliability. The Commission said the new bureau also "will act as a clearinghouse for public safety communications information and take the lead on emergency response issues."

After the announcement, the Association of Public-Safety Communications Officials (APCO) International pledged its support of the new office. "APCO International congratulates the commission on the creation of the new Public Safety and Homeland Security Bureau, which should lead to effective and efficient consideration of public safety communications matters," APCO International President Wanda McCarley said. "We look forward to working closely with the new bureau."

### Radio Jammer Fined, Sentenced To Seven Years In Prison

Jack Gerritsen, a 70-year-old Los Angeles-area resident convicted of willful and malicious radio interference and operating without a license, has been sentenced to seven years imprisonment and more than \$15,000 in fines following his trial in U.S. District Court.

"I'm sorry, and I apologize to everyone here," Gerritsen said in the courtroom, according to published reports. The sentencing took place September 18. It took a jury less than an hour to return its verdict on December 9 of last year. Gerritsen could have received up to 15 years in federal prison.

"How many times have you said you would not do this again?" Judge R. Gary Klausner asked Gerritsen, according to the American Radio Relay League's website. "But based on your history, you come back again and again for this. I believe you will continue to do it, and it would send the wrong message to others, that five years is not long enough either."

Over a four-year period, the FCC received numerous complaints about illegal radio transmissions linked to Gerritsen, who briefly held an amateur radio Technical class license with the call sign KG6IRO. The federal investigation revealed that he transmitted both live and pre-recorded harassing and profane messages through Southern California VHF repeaters, frequently to the point where owners had to shut their machines down.

Gerritsen, a resident of Bell, California, was also found guilty of a felony count of "causing malicious interference to a communications system operated by the United States—the U.S. Coast Guard Auxiliary—during a 2004 search-and-rescue operation," according to the ARRL. Additionally, the League said, "he was convicted of misdemeanors for interfering with

American Red Cross radio transmissions in early 2005 while the agency was preparing for disaster relief operations and for causing the cancellation of a U.S. Army Reserve homeland security training exercise in 2005 by interfering with the U.S. Army Military Affiliate Radio System (MARS) communications. He also was convicted of transmitting on amateur radio frequencies without a valid license on three separate occasions in 2003 and 2004, all misdemeanors."

Previously, Gerritsen had been fined \$10,000 for FCC rules violations and days before his December trial the Commission affirmed two additional \$21,000 forfeitures. In 2000, a California court convicted Gerritsen of interfering with a Highway Patrol radio system and sentenced him to a year in prison. Upon his release, he obtained a Technician class amateur radio license. However, the FCC set aside the license after determining that he had been convicted of interfering with public safety radio frequencies.

Gerritsen has been directed to participate in a substance abuse program and faces two years of supervised probation following his release from prison. Additionally, he is prohibited from "owning, possessing or using any radio transmitting equipment."

### Maine Governor Gets Amateur Radio Technician Ticket

After passing the Technician license examination in early September, Maine Governor John E. Baldacci has become what is believed to be "the only sitting state chief executive holding an Amateur Radio license," according to the American Radio Relay League's *ARRL Letter*.

"Following up on an effort begun a few years ago, Baldacci took and passed his Technician license test September 6, and the FCC issued his new call sign, KB1NXP, the following day," the *Letter* said. "Bill Crowley, K1NIT, is the liaison for the ARRL VEC volunteer examiner team that administered Baldacci's Amateur Radio license examination."

"We heard that he was interested in getting his license," Crowley told the ARRL. "So I talked to a couple of other people in the Augusta Amateur Radio Association and said, 'You know, we're the guys who could do this. We're right here, right in his backyard, and I think we ought to help him get a license.'"

Gov. Baldacci said he was interested in getting his license after learning about amateur radio's role in the 1998 ice storm that crippled the northeast. "At the time, Baldacci was representing Maine's Second District in the U.S. House," the ARRL reported. "He renewed his interest in 2003, shortly after becoming Maine's governor, promising to add the goal of getting his ticket to his to-do list and seeking the encouragement and help of Maine's hams to achieve it.

"Former Maine State Treasurer Rod Scribner, KA1RFD—a longtime radio amateur and instructor—was recruited to help make it happen. 'Rod went up there once a week, very early in the morning, and tutored him—went through all the material,' Crowley recounted. But the pressures of office compelled Baldacci to put the project on a back burner." Crowley said he

occasionally relayed messages to remind the governor the Augusta club was still eager to give him his ham radio test.

In July, Crowley greeted the governor during an official occasion. "I said, 'You know, we've got to get this going.'" Baldacci asked Crowley to call his office and set up an appointment. The governor was "a little concerned at that point that he might be behind the curve since the Technician question pool had changed since he'd worked with Scribner," Crowley was quoted as saying in the *ARRL Letter*. "But he assured the governor that the club members could get him back up to speed in short order." Over coffee early on September 6, Scribner, Crowley, and other members of the VE team reviewed the current Technician material. "Then, he sat down and took the test and did very well," Crowley said.

## APCO International Enters Global Alliance Agreement

The Association of Public-Safety Communications Officials (APCO) International, APCO Australasia, British APCO, and APCO Canada have jointly announced a new collaborative agree-

ment called the APCO Global Alliance for Cooperation and Development. The formation was solidified at the CN Tower in Toronto on October 2.

"The purpose of the alliance is to align the APCO organizations to promote the sharing of information, experiences, ideas and best practices," a statement from APCO International said. It continued, "To address the specific needs of each location, the independent APCO organizations are currently structured by geography, however, The Global Alliance for Cooperation and Development will build common platforms for progress across geographic borders. In addition, the alliance will encourage the development of organizations that share the common purpose and espouse the same values and goals in other nations of the world."

In a statement, APCO International President Wanda McCarley said, "the international APCO family has been working towards this goal for a long time and we are extremely excited to be moving forward with the alliance. We look forward to the continued work with our international partners and to enhancing this work through the alliance." ■

## Full 800 MHz Coverage



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# New Iranian SW Station, And VOA Adds Another Program Service

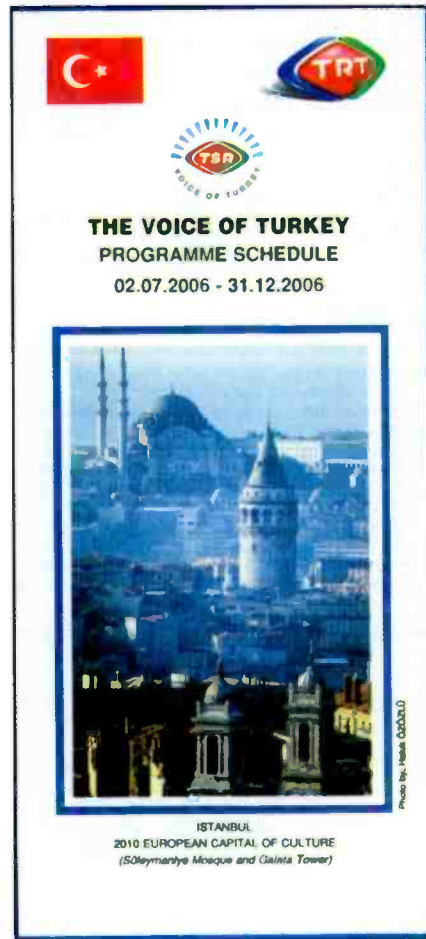
**A** new Iranian opposition station has taken to the air. Radio Zalmaneh, which has been on shortwave since early September and is intended to appeal to Iranian youth, is using 6245 in Farsi daily to 2100. The station is based in Amsterdam, but as yet the transmitter site is uncertain, although Russia seems a possibility. When first noted, Radio Zalmaneh was being heard in the Eastern Time Zone at good to excellent levels.

It may be that one of these months we'll be enjoying somewhat better reception of Radio Nepal. Japan has given the Nepalese government more than \$8 million for improvements to its medium and shortwave broadcasting facilities. As things stand today, DXers here rarely hear Radio Nepal. It's currently most likely to be found on 5005 in the early morning, supposedly using 100 kW.

The Voice of America has added another program service, this one aimed at the largely lawless Pakistan-Afghanistan border area. Called "VOA Deewa" (meaning "light"), at the moment it consists of an hour-long newscast and special features in the Pashto language. Eventually the broadcasts will expand to six hours per day. At its outset VOA Deewa was scheduled from 1300 to 1400 on 11510 via Sri Lanka (Iranawila) and 15645 via Brieich, Morocco. The VOA Deewa website is [www.voadeewaradio.com](http://www.voadeewaradio.com).

If long-silent WRNO ever returns to the air it will be with a more defined mission. The station, now owned by Good News World Outreach of Arlington, Texas, plans to beam Christian programming to the Middle East in the hope of converting Muslims. We keep seeing reports that the repairs are about done and the station is nearly ready for reactivation. But somehow nothing has jelled so we assume that there's quite a way to go before they fire up the transmitter for real. No schedule or frequency has been announced yet.

International programming from Radio Canada International was to have been completely revamped for the B06



season now underway. Most of the regularly featured programs were cancelled but, as of this writing, no announcement had been made as to what the new program line-up will include.

## WEWN Transmitters Damaged, And News From Germany

Charles Maxant in West Virginia has been in touch with WEWN and has learned that one of their 500-kW transmitters has been "severely damaged," although how was not clear. The other three transmitters have been cut back to 200 kW due to budgeting reductions made necessary by a decrease in donations.

Beginning in January, shortwave broadcasts from Deutsche Welle will start coming from a number of new sites as VT Communications begins to relay DW from its sites in the UK as well as its facility in Austria. Part of this will include a heavy investment in facilities improvement, including new transmitters at some of their sites.

The Latvian international broadcast site at Ulbroka on 9290, which has been off the air for some months, should have resumed operations by now, carrying various independently produced programs over its 100-kW transmitter. In the past this has been active from 0700 to 2100, which means it is best heard late at night or late afternoons during the winter months.

We're sad to report that the International Listening Guide (ILG), the website shortwave broadcasting frequency list, has suspended operations due to some problems they've been having. We can only hope that their troubles can be cleared up and that this excellent information source will soon be back in operation.

## Reader Logs

Remember, your shortwave broadcast station logs are always welcome. Only please be sure to double or triple space the items so we have room to navigate scissors when the logs are cut for sorting. List each log by country and include your last name and state abbreviation. Also much wanted are spare QSLs you don't need returned, SW station schedules, brochures, pennants, station photos, and anything else you think would be of interest. And don't forget that shack photo...oh, never mind—you won't do it anyway!

So let's begin the tour. All times are in UTC and those double capital letters are language abbreviations (SS = Spanish, RR = Russian, AA = Arabic, etc.). If no language is specified, the broadcast is assumed to have been in English (EE). Here we go!

**ALBANIA**—Radio Tirana, 7450 opening in English at 0230 and into news. (Maxant,



## Help Wanted

The "Global Information Guide" consistently presents more shortwave broadcast loggings than any other monthly SW publication! (This month we processed 517 loggings!)\* 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 your columnist at 213 Forest St., Lake Geneva, WI 53147. Or e-mail them to [gdex@genevaonline.com](mailto:gdex@genevaonline.com). Our deadline is the 25th of each month. See the column text for 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.*

WV) 7455 on Albanian artists at 0240. (Brossell, WI) (7450 has replaced 7455—gld)

**ALGERIA**—RTV Algerienne (p), 12025 via England in AA with presumed Koran at 0229. (Wood, TN)

**ANGUILLA**—Caribbean Beacon, 11775 with preaching by the late Gene Scott at 1607. (Newbury, NE)

**ARGENTINA**—Radio Nacional, 6060 in SS at 0954. (DeGennaro, NY) 15345 in SS at 0226. (Brossell, WI)

**ASCENSION IS.**—BBC, 12095 with an opera at 2242, //15400. (MacKenzie, CA)

## 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

(l) — (after a frequency) lower sideband

(p) — presumed

(t) — tentative

(u) — (after a frequency) upper sideband

v — variable time or frequency

// — in parallel

AA — Arabic

ABC — Australian Broadcasting Corporation

AFN — Armed Forces Network

AFRTS — Armed Forces Radio TV Service

AIR — All India Radio

Alt — alternate

AM — amplitude modulation, AM band

Anmt(s) — announcement(s)

Anncr — announcer

AWR — Adventist World Radio/BC broadcast(er)

BSKSA — Broadcasting Service of Kingdom of Saudi Arabia

CA — Central America

CC — Chinese

Co-chan — co-channel (same frequency)

comml(s) — commercial(s)

CP — Bolivia, Bolivian

CRI — China Radio International

DD — Dutch

DJ — disc jockey

DS — domestic service

DW — Deutsche Welle/Voice of Germany

EE — English

ECNA — East Coast of North America

f/by — followed by

FEBA — Far East Broadcasting Association

FEBC — Far East Broadcasting Company

FF — French

freq. — frequency

GBC — Ghana Broadcasting Corp

GG — German

GMT — Greenwich Mean Time (UTC)

HH — Hebrew, Hungarian, Hindi

HOA — Horn of Africa

ID — station identification

I — Italian, Indonesian

Int/Intl — international

Irr. — irregular use

IRRS — Italian Radio Relay Service

IS — interval signal

JJ — Japanese

KK — Korean

LSB — lower sideband

LV — La Voz, La Voix (the voice)

MW — mediumwave (AM band)

NBC — National Broadcasting Corporation (Papua New Guinea)

OA — Peru/ Peruvian

OC or O/C — open carrier

PBS — People's Broadcasting Station

PP — Portuguese

PSA — public service announcement

QQ — Quechua

QRM — man-made interference

QRN — noise (static)

QSL — verification

RCI — Radio Canada International

Rdf. — Radiodifusora, Radiodiffusion

REE — Radio Exterior de Espana

RFA — Radio Free Asia

RFE/RL — Radio Free Europe/Radio liberty

RNZI — Radio New Zealand International

RR — Russian

RRI — Radio Republik Indonesia

RTBF — RTV Belge de la Communate Françoise

Relay — transmitter site owned/operated by the broadcaster or privately operated for that broadcaster

relay — transmitter site rented or time exchanged

SA — South America

SEA — Southeast Asia

SCI — Song of the Coconut Islands (transition melody used by Indonesian stations)

s/off — sign off

s/on — sign on

SIBC — Solomon Is. Broadcasting corp.

sked — schedule

SLBC — Sri Lanka Broadcasting Corporation

SS — Spanish

SSB — single sideband

SWL — shortwave listener

TC — time check

TOH — top of the hour

TT — Turkish

TWR — Trans World Radio

Unid — unidentified

USB — upper sideband

UTC — Coordinated Universal Time (as GMT)

UTE, ute — utility station

Vern — vernacular (local) language

via — same as "relay"

VOA — Voice of America

VOIRI — Voice of Islamic Republic of Iran

WCNA — West Coast of North America

ZBC — Zimbabwe Broadcasting Corporation



This colorful card went to Rich D'Angelo for reception of World Harvest Radio on 9840.

15400 at 1930 with "World Briefing." (Paradis, ME) 2058 with sports items. (Newbury, NE)

**AUSTRALIA**—Radio Australia, 5995-Brandon, at 1044 in Pidgin and EE. 6020 in Pidgin and EE at 1048, 6080 at 1034, 9580 at 1028, 9590 at 1030 and 9710 in Pidgin at 1013. (DeGennaro, NY) 6020//9475//9580//9590 at 1206. Also 15240//15515 at 0234. (Yohnicki, ON) 6080 at 1206. (Brossell, WI) 7240 at 1400, 9580 at 1225 and 17785 at 2300. (Newbury, NE) 9580 at 1312. (Wood, TN) News at 1200. (Paradis, ME) 9710 with news and sports at 0700, 15515 with a breakfast pgm at 0220 and 17715 with "The World Today" at 0150. (Maxant, WV) 9580 at 1725, //11880, 13630 at 2205, //12080, 15240, 15515 and 17785. Also 15240 at 0307, //15515 and 15515 at 0410, //15240. (MacKenzie, CA) 13630 at 2220 and 17785 at 2320. (Charlton, ON) 17785 at 2239. (Jeffery, NY)

ABC-Tennant Creek, 2335 at 1136 with apparent football match. Parallel 2485-Katherine was somewhat stronger but //2310-Alice Springs was not heard. (Strawman, IA)

**AUSTRIA**—Radio Austria Int., 9870 in SS at 0130. (Charlton, ON) 12775 with "Report From Austria" heard at 1425. (Maxant, WV)

**BELGIUM**—RTBF International, 9970 at 0230-0300 with pops. ID at 0300 and into FF. (Brossell, WI) 1021 in FF to Southern Europe. (DeGennaro, NY)

**BOLIVIA**—Radio San Miguel, Riberalta, 4900.9 at 1000 with SS talk, ID, CP music. (Alexander, PA)

Radio Santa Cruz. Santa Cruz, 6134.8 at 0010 with continuous SS talk, IDs at 0017 and 0059, many music bridges. Closing anmts over flute at 0100 and off at 0103. Best in ECSS-LSB. (Alexander, PA) 1006 with SS grammar lesson. (DeGennaro, NY)

Radio Mosoj Chaski, Cochabamba, 3310 in QQ at 0947. (DeGennaro, NY)

**BOTSWANA**—VOA Relay, 9885 at 0310 carrying "Daybreak Africa." Into world news at 0330. (D'Angelo, PA) 17895 with news at 1803. (Charlton, ON)

**BRAZIL**—(All in PP) Radio Nacional Amazonia, 6180 at 1020, mixing with Radio Nacional Venezuela via Cuba. (Yohnicki, ON) 11780 at 0027. (DeGennaro, NY) 0115. (Charlton, ON)

Radio Nacional, Sao Gabriel Cachoeira, 3375 with domestic music at 0959. Competing with Radio Educadora (below). (DeGennaro, NY)

Radio Educadora, Guajara Mirim, 3375 at 0953. (DeGennaro, NY)

Radio Intergracao, Cruziero do Sul, 4765 with music, anmts, commls at 0932. (DeGennaro, NY)

Radio Cultura Ondas Tropicais, Manaus, 4845.2 heard at 1006 with man/woman talk, commls, anmts. (DeGennaro, NY)

Radio Marumby, Florinapolis, 9665 with hymns and religious message at 1021. (DeGennaro, NY)

A Voz do Sao Francisco, Petrolina, 4945 at 1018 with music and anmts. (DeGennaro, NY)

Radio Difusora, Taubate, 4925 with commls and product testimonials at 0946. (DeGennaro, NY)

Radio Educacao Rural, Tefe, 4925 heard at 1011 with ID, anmts, commls. (DeGennaro, NY)

Radio Anhanguera, Goiania, 4915 with two men talking heard at 0943. (DeGennaro, NY)

Radio Clube do Para, Belem, 4885 promoting a local event at 0937. (DeGennaro, NY)

Radio Difusora, Roraima, 4875 with music heard at 0942. (DeGennaro, NY)

Radio Educadora Rural, Campo Grande, 4754 with religious service at 0932. (DeGennaro, NY)

Radio Difusora da Amazonas, Manaus, 4805 with music and commls at 1016. (DeGennaro, NY)

Radio Brazil Central, Goiania, 4985 with talks and music heard at 0210. (Brossell, WI)

Radio Rural, Santarem, 4765 at 0234 with man hosting pgm of ballads and romantic vocals, anmts, more music. Closed at 0301. (D'Angelo, PA)

**BULGARIA**—Radio Bulgaria, 9700 heard at 0220 discussing the European Parliament. (Maxant, WV) 9700 on Internet fraud at 2317. (Wood, TN) 11500 in BB to South America at 0049 and 11700 in BB to ECNA at 0037. (DeGennaro, NY) 11700 with SS ID at 2305 and 15700 in BB at 1245. (Charlton, ON) 15700 with DX pgm at 1146. (Brossell, WI)

Radio Varna, 9300 at 2205 with US & European light pops, folk, techno-pop, ballads and occasional short ID anmts. Time pips and news in BB at 0100. Sundays only. (Alexander, PA)

**CANADA**—Radio Canada Int., 5840 via Sweden in AA at 0213. (Brossell, WI) 13665 with a variety show at 1550. (Newbury, NE) 15180 via Austria in AA at 1920, 17765 in FF at 1737 and 17800 with a comedy pgm heard at 1558. (Charlton, ON)

CBC Northern Service, 9625 at 0308 with man hosting jazz and mentioning festivals in Halifax and Montreal. (Wood, TN) 2340 with light rock. (Newbury, NE)

CKZN, St. John's, 6160 heard at 0635 with Dvorak selections. (Maxant, WV)

**CHILE**—Voz Cristiana, 5960 in SS with music and religious messages at 1041. Also 6110 in PP to Brazil opening at 1000. (DeGennaro, NY) 17680 in SS at 1618. (Newbury, NE) 2233 with talk in SS by man. (Jeffery, NY) 2307. (Charlton, ON) 2327. (Wood, TN)

**CHINA**—China Radio Int., 5990 via Cuba at 2335 with letters, ID, Web address. (Wood, TN) 6020 via Albania at 0010. (Newbury, NE) 6040 via Canada to North America at 1029. (DeGennaro, NY) 6145 via Canada at 2310, 9570 via Albania at 0005, 11930 via Canada in CC at 0002, 13760-Kashi at 1816 and 15220 via Canada in CC at 1547. (Charlton, ON) 7180-Jinhua in JJ at 1320. (Strawman, IA) 9570 at 1300 via Cuba with news and *Life in China*. (Paradis, ME) 9580 via Cuba in CC at 0223. (Newbury, NE) 9665 via Brazil in SS at 0347, 9790 via Cuba at 0340 and 15160 in CC at 0425. (MacKenzie, CA)

China National Radio, 5240 via Lhasa with listed Mongolian Service at 1206. (Strawman, IA) 5955-Beijing in CC to Taiwan at 1024. (DeGennaro, NY)

Music Jammer, 9355 at 1708. //9455 and 9680. (MacKenzie, CA)

**CONGO**—Dem Republic, Radio Okapi, 11690 via South Africa at 0455 with FF talk, ID jingles, some Afro pops but mostly continuous talk to 0600 close. (Alexander, PA)


**COSTA RICA**—University Network, 6150 with preaching by a woman at 0213. (Newbury, NE) 9725 at 0320 with Gene Scott. (Maxant, WV) 1324. (Wood, TN)

**CROATIA**—Croatian Radio, 9830 in Croatian at 1008 and 9925 via Germany in Croatian at 0100. (DeGennaro, NY) 2220. (MacKenzie, CA) 2215 with ID and into "Croatia Today." (Fraser, ME) 2300 with ID in Croatian. (Charlton, ON)

**CUBA**—Radio Havana Cuba, 9550 in SS at 2344. (Newbury, NE) 11655 in SS at 1609 and 11760 in FF at 2007. (Chandler, ON) 2025. (Yohnicki, ON) 0030 in SS. (DeGennaro, NY)

Radio Rebelde, 5025 in SS at 1037 and 9505 in SS at 1043. (DeGennaro, NY)

**CYPRUS**—BBC Relay, 7165 in an Asian language at 0215. (Brossell, WI) 9410 in EE at 0427. (MacKenzie, CA) 15575 in unid language heard at 1548. (Jeffery, NY)





**Northwoods Radio**  
Pirate Shortwave

Date: 07/08/06 Time: 01:00-02:11  
Frequency: 6925 usb Antenna: Western Array

# Playing in Traffic

QSL #29  
Richard A. D'Angelo

This e-mailed QSL is for Rich D'Angelo's reception of the pirate Northwoods Radio on 6925 upper sideband.

Cyprus Broadcasting Corp., 9760 in Greek heard at 2225. Weekends only. (Ziegner, MA)

**CZECH REPUBLIC**—Radio Prague, 6200 in SS at 0218. (Brossell, WI) 0141 in Czech. Also 9410 in EE at 2127 and 9880 in GG at 1002. (DeGennaro, NY) 17485 with ID at 1703. (Charlton, ON)

**ECUADOR**—Radio Chaskis (p). Otavalo, 4909.2 with Andean flutes and HC vocals at 1030. (Alexander, PA)

La Voz de Saquisilí, Saquisilí, 4900 in SS at 1000 with anmt about malaria, local events. (DeGennaro, NY)

La Voz del Napo, Tema, 3279 with music and local news at 0944. (DeGennaro, NY)

HCJB, 3220 at 0941. Also 6050 at 1031 in PP to Brazil and 11720 in SS at 0035. (DeGennaro, NY) 9745 in SS at 0313. (Newbury, NE) 0343, 12000 in SS at 2225 and 12040 in GG at 2232. (MacKenzie, CA) 1326. (Wood, TN) 11920 in PP at 2324. (Charlton, ON) 12040 in GG at 2300. (Barton, AZ)

**EGYPT**—Radio Cairo/Egyptian Radio, 7270 in EE at 0202. (DeGennaro, NY) 0208. (Newbury, NE) 0234 with AA songs. (Brossell, WI) 11740 with EE language lessons at 1706 and 11950 with news in progress at 2328. (Charlton, ON) 11950 at 2352 with AA vocals and a little French thrown in. (Wood, TN) 12050 in AA at 2235. (MacKenzie, CA)

**ENGLAND**—BBC, 7120 at 0410. (Maxant, WV) 0454. (MacKenzie, CA) 7330 via Vladivostok, Russia, in Mandarin at 1310. (Strawman, IA) 9605 via Japan in CC at 1235. (Brossell, WI) 11675 via French Guiana at 2144 with ID and news. (Newbury, NE) 12095 at 1800. 15390 via French Guiana at 2146, 15400 via Ascension at 1711 and 17830 via Ascension at 1825. (Chandler, ON)

Far East Bc. Assn, 9885 via Rwanda in unid language heard at 1740. (MacKenzie, CA)

Sudan Radio Service, 17660-Wooferton at 1540 with economics pgm. ID, reggae, high life, East African music. (Paszkwicz, WI)

Bible Voice Radio, 12065 via Krasnodar, Russia, at 1240 with a sermon. (Brossell, WI)

**EQUATORIAL GUINEA**—Radio Nacional, Bata, 5005 at 2220 with continuous highlife music. Off with three-minute NA. No voice anmts at all during that period. (Alexander, PA) 2247 with man and SS talk, short instl segment, more talk, vocals and long NA version. Carrier cut at 2303. (D'Angelo, PA)

Radio Africa, Bata, 15190 with the usual US-produced EE religious pgmng. Closing ID anmts heard at 1153 with address, e-mail and IDs as "Radio Africa and Radio Africa Number Two." (Alexander, PA)

**ETHIOPIA**—Radio Fana, Addis Ababa, 7210 (*new—gld*) at 0255 sign on, local music, vernacular talk. Very weak under BBC which came on at 0258 to 0329 close and //6110 (*also new—gld*) very weak under BBC. (Alexander, PA)

**FINLAND**—YLE/Radio Finland Int., 11755 in Finnish to Europe at 1026. (DeGennaro, NY) 13715 in Finnish at 1239. (Brossell, WI) 15400 with IS to 1300, one time pip and woman with ID and talk in Finnish. (D'Angelo, PA) 1310 in Finnish. (Charlton, ON)

**FRANCE**—Radio France Int., 9800 via French Guiana in SS at 0119, 15300 in FF at 1922, 17605 at 1706, 17630 in SS at 1820 and 17815 via Ascension at 1221. (Charlton, ON) 9805 at 0415. (Maxant, WV) 13640 in FF at 1145. (Fraser, ME)

**GABON**—Africa Number One, 15475 in FF at 1746 and 17630 in FF at 1247. (Charlton, ON)

**GERMANY**—Deutsche Welle, 7105-Wertachtal in RR at 0149, 9440-Wertachtal at 2121, 9545-Nauen in GG at 1035 and 9900 via Irkutsk, Russia, in GG at 1018. (DeGennaro, NY) 9620 via Rwanda in GG at 0426, 9630 via Rwanda at 0420, //7225 and 9830 via Bonaire in GG at 0338. (MacKenzie, CA) 9630 via Portugal in EE at 0519. (D'Angelo, PA) 13780-Wertachtal at 1930. (Wood, TN) 11865 via Portugal in GG at 2310, 13780 at 1905 and 15275 via Rwanda in GG at 1921. (Charlton, ON) 13790 via Portugal in AA at 2044. (Barton, AZ) 15275 at 11824. (Yohnicki, ON) 17860 at 1946. (Newbury, NE) CVC Int, 15715 signing off at 1800. (Paszkwicz, WI)

**GHANA**—Ghana Broadcasting Corp., 4915 at 0645 but suddenly lost. (Maxant, WV)

**GREECE**—Voice of Greece, 7475 with Greek music at 0243. (Brossell, WI) 9420 in GG at 0432. (MacKenzie, CA) 2124. (DeGennaro, NY) 17705 in GG at 1731. (Charlton, ON)

**GUAM**—Trans World Radio/KTWR, 9585 at 1340. (Maxant, WV) 9910 in CC at 1121. (Brossell, WI)

**GUINEA**—RTV Guineenne, 7125 at 2150 in FF with highlife and rustic tribal vocals, ID 2201. Good until the Russian comes on at 2259. (D'Angelo, PA)

**GUATEMALA**—Radio Verdad, Chiquimula, 4052.5 with EE religious programming at 0445 to closing anmts in EE and SS at 0453 and long NA to 0500 off. (Alexander, PA)

Radio Cultural Coatan, San Sebastian, 4780 heard at 0210 with rustic vocals and man in SS talks. ID, frequency and sign off anmts at 0233, off at 0234. (D'Angelo, PA) 1058 with ID and talks in SS. (Brossell, WI)

Radio Buenas Nuevas, San Sebastian, 4800 at 0253 in SS. ID at TOH and some CODAR QRM. (Wood, TN) 0347 with religious vocals and SS talk. ID at 0401. (D'Angelo, PA) 1213 with marimba music and man in SS. (Barton, AZ)

**GUYANA**—Voice of Guyana, 3291.2 at 0346 with light classical music, man in EE with ID at 0402, carrier off, then back but no further programming noted. (D'Angelo, PA)

**HAWAII**—KWHR, 17655 with a sermon at 0209. (Brossell, WI) 0330 with ID and preaching. (MacKenzie, CA)

AFN/AFRTS, Pearl Harbor, 6350U at 0710 with woman hosting interview pgm. (D'Angelo, PA) 10320 at 0216 with NASCAR racing. (Newbury, NE)

**HONDURAS**—La Voz Evangelica, 4819.2 at 0110 with religious talk by man in SS. (D'Angelo, PA) Religious pgm in SS and ID at 1022. (DeGennaro, NY)

**HUNGARY**—Radio Budapest, 9770 in HH at 0005 and 11695 in HH at 2005. (Charlton, ON) 9795 at 0230. (Maxant, WV) 12030 in HH heard at 2228. (MacKenzie, CA)

**ICELAND**—Ríkisutvarpid, 13865u heard in Icelandic to 1902 close. (Paszkievicz, WI)

**INDIA**—All India Radio, 9475-Bangaluru in EE at 2118 and 10330-Bangaluru in HH at 0052. (DeGennaro, NY) 10330 in HH at 0137 with Indian film music and traditional Hindi vocals. (D'Angelo, PA) 0215. (Maxant, WV) 11620-Bangaluru with ID at 2220 and 13605-Bangaluru in EE at 1924. (Charlton, ON) 13605 with news at 1800. (Fraser, ME) 15075-Bangaluru in Hindi at 0221. (Brossell, WI)

**INDONESIA**—Voice of Indonesia, 9525 at 1210 with talk in II. (Brossell, WI) 1215 with traditional music. (Paradis, ME) 1326 in II with pops. (Strawman, IA) 1715 in SS with EE ID at 1717. (MacKenzie, CA)

**IRAN**—VOIRI/"Voice of Justice," 7235 with telephone interview with someone in Maryland at 0210. (Maxant, WV) 13790 in AA at 0313. (MacKenzie, CA) 15085 in FF at 1955. (Paszkievicz, WI) 15150 in AA at 1253. (Brossell, WI)

**ISRAEL**—Kol Israel, 9345 in HH at 0236. (Yohnicki, ON) 9400 at 1925 with news in FF and 11590 in EE at 0335. (Maxant, WV) 13675 in EE at 1230. (Fraser, ME) 1739 in EE and 15640 in EE at 1901. (Charlton, ON) 15640 in HH at 1720 and 15760 in HH at 1219. (Brossell, WI)

Galei Zahel, 6973 in HH at 0145. (DeGennaro, NY)

**ITALY**—RAI Int., 6110 via Ascension in II at 0220. (Brossell, WI) 0132 in II and 11800 in II to NA at 0024. (DeGennaro, NY) 2347. (Wood, TN) 11800 in II heard at 0156. (Charlton, ON)

**JAPAN**—Radio Japan/NHK, 6120 via Canada in EE at 1043, 9530 via French Guiana in PP at 1038 and 9695 in EE at 1017. (DeGennaro, NY) 6145 via Canada at 0003. (Newbury, NE) 6145 via Canada at 0017. 11895 via French Guiana in JJ at 2236. 11705 via Canada in JJ at 1323 and 15355 via Gabon in EE at 1744. (Charlton, ON) 9535 at 1719. //9660, 11970 via French Guiana in SS at 0417, 15325 in JJ at 0415. //15195 and 17825 in JJ at 0325. (MacKenzie, CA) 11740 via Singapore in CC at 1223 and 17870 via Ascension in FF at 1243. (Brossell, WI) 15220 via Ascension in JJ at 2211. (Jeffery, NY)

Radio Nikkei, 3925 in JJ with some EE at 1210. (Strawman, IA) 9595 in JJ at 0428. (MacKenzie, CA)

**JORDAN**—Radio Jordan, 11690 at 1530 with AA pops, news in EE at 1600, Euro-pops and "Radio Jordan—96.3 FM" at 1630 close.

(Alexander, PA) 15290 in AA at 1131. (Brossell, WI)

**KUWAIT**—Radio Kuwait, 11675 in AA at 0332 with non-Arabic music. (MacKenzie, CA) 15495 in AA at 2030. (Paradis, ME) 0201. (Brossell, WI)

**LIBYA**—Radio Jamahiriya/Voice of Africa, 17850 via France, at 1405 with ID and news in EE. ID and opening anmt by woman for "The Voice of Africa from the great Jamahiriya." (D'Angelo, PA) 1451 with EE talk, ID at 1501 and more talk. (Wood, TN) 1406 sign on to 1557 close with various pgms about the revolution in Libya, women in Africa, African Union, etc. Annd 17850 and 21695, the latter with a slight het. (Alexander, PA) 1510 in EE. (Charlton, ON)

**LITHUANIA**—Radio Vilnius, 9875 with ID at 2332. (Charlton, ON) 2340 with a report on the Lithuanian basketball team. (Brossell, WI) 0039 with talk on relations with Russia. (DeGennaro, NY)

**MALAYSIA**—Voice of Malaysia, 15295 heard at 1224 with western and Middle Eastern flavored instl. music. (Strawman, IA)

**MALI**—RT Maliene, 4835.4 at 2345 with FF talk, Afro-pops. Off at 0003 with march-style national anthem, weaker on //5995 with splatter from Cuba on 6000. (Alexander, PA) 5995 heard at 2335 with FF vocals, splatter from RHC. (Strawman, IA)

**MEXICO**—Radio Mil, 6010 in SS at 1207. (Brossell, WI)

Radio Transcontinental, 4810 at 1100 with IS, ID, instrumentals. (Brossell, WI)

Radio Educacion, 6185 in SS at 0208. (Brossell, WI)

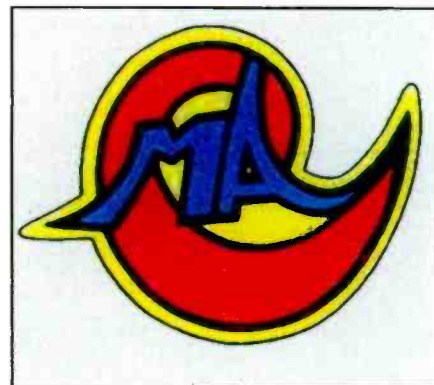
**MOLDOVA**—Russian Radio Int., 7125 via Moldova in RR at 0012. (Charlton, ON) 0152. (DeGennaro, NY) 0348 with RR pops. (Wood, TN)

**MONGOLIA**—Voice of Mongolia, 12085 at 1028 with IS. (Ziegner, MA)

**MOROCCO**—RTV Marocaine, 7135 at 2302 with woman reading news in AA, brief music and ID. Close at 2359. Also 15345 at 2137 in AA to 2159 close. (D'Angelo, PA) 15345 in AA with woman anncr. (Jeffery, NY) 1742 in AA. (Charlton, ON)

**NETHERLANDS**—Radio Nederland, 9700 with interview at 0650. (Maxant, WV) 9895 in DD monitored at 0959. (DeGennaro, NY) 9795 via Singapore in an Asian language at 1119. Also 17585 in an Asian language at 1142. (Brossell, WI) 17810 in EE at 1908. (Charlton, ON)

**NETHERLANDS ANTILLES**—Radio



*The neatly designed logo of pirate station MAC Shortwave. (Thanks Rich D'Angelo)*

Nederland Bonaire Relay, 6020 in DD at 0959. (DeGennaro, NY) 9830 in GG at 0228 and 9845 at 0015. (Newbury, NE) 11970 in DD at 2307. (Charlton, ON) 17735 monitored at 2030. (Maxant, WV)

**NEW ZEALAND**—Radio New Zealand Int., 6095 with news heard at 0930. (Barton, AZ) 1039. (DeGennaro, NY) 6095 at 0710 with birthday greetings, 9630 at 1930 discussing the BBC, 9870 at 1215. (Maxant, WV) 7145 at 1337 with DX report and 9870 at 1235. (Newbury, NE) 7145 at 1315. (Strawman, IA) 0659 sign on, IS, time pips and ID. Also 9615 at 0655 with news, intro into a BBC feature interrupted by ID giving frequency and noting listener should re-tune to 7145. (D'Angelo, PA) 9870 at 1220. (Fraser, ME) 1230. (Brossell, WI) 13730 at 0323. (MacKenzie, CA) 15720 at 2223. (Charlton, ON)

**NIGER**—La Voix du Sahel, 9704 with FF talks heard at 1952. (Paszkievicz, WI) 2248 with two men in FF talks, brief music, Koran, ID, close down anmts and choral anthem. Off at 2301. (D'Angelo, PA)

**NIGERIA**—Voice of Nigeria, 15120 with AA pgmng at 1640, opening in EE at 1659. Usual poor audio. (Alexander, PA) 1809 with interview in EE. (Charlton, ON) 1830 with music. (Yohnicki, ON)

Radio Nigeria, Kaduna, 4770 at 0504 with EE news, ID at 0511 and more news. Tribal vocals and drums from 0523. (D'Angelo, PA)

**NORTH KOREA**—Voice of Korea, 9335 in EE at 1323. (Newbury, NE) 1345. (Barton, AZ) 13760 in EE at 0130, //15180. (Paszkievicz, WI) 15180 in FF at 1130. (Brossell, WI)

KCBS, 11735 in KK heard at 1206. (Brossell, WI)

**NORTHERN MARIANAS**—KFBS, Saipan, 11580 with talk in CC at 1120. (Brossell, WI)

VOA Relay, Tinian, 7235 in KK at 1325. (Strawman, IA)

**OPPOSITION**—Radio Republica, 7110 via England at 0325 with talk about Castro and numerous breaks featuring a cock crowing. (Wood, TN) 9510 via WRMI in SS at 2354

### In Times Past...

And now for a bit of fun. We'll give you a blast from the past here each month; perhaps a logging or station tidbit from the *Pop'Comm* shortwave history book. Here's one for the memory books...

**GUATEMALA**—La Voz de Atitlan, TGDF in Santiago Atitlan, on 2390 at 0225 with SS talks on January 8, 1972. Power 300 watts. (Dexter-WI)

with an anmt at 2359 mentioning Radio Miami International. (D'Angelo, PA)

Echo of Hope, 6348 at 1330 with vocals and woman in KK. There was a jammer present but more serious QRM came from AFN-Hawaii on 6350. (Barton, AZ)

Voice of Oromiya Independence, 15650 via Julich from 1459 opening with Radio Miami International ID by Jeff White and into Oromo. Ends at 1530. (D'Angelo, PA)

Radio Solh, 17700 via Rampisham in unid language at 1725. (Charlton, ON)

Radio Marti, 9805 in SS at 1237 with jamming in background. (Newbury, NE)

Radio Free Asia, 9455 via Sri Lanka in unid. Asian language at 1240. (Brossell, WI) 11785 in Asian language at 2003 to 2100. (Wood, TN) 15685 via No. Marianas in CC heard at 0335. (MacKenzie, CA)

**OMAN**—Radio Sultanate of Oman, 15140 at 1400 with sign on and into EE news, commentary and pops. (Alexander, PA; Ziegner, MA) 1435 in EE with call-in pgm. country songs, into news at 1446, chimes and into AA at 1459. (Wood, TN)

BBC Relay, 15245 in RR heard at 1517 with news and ID as "BBC Russian." (Jeffery, NY)

**PAKISTAN**—Radio Pakistan, 11570 in Urdu at 0200 with talk about Taliban, ID, commentary about Pakistan to 0215 close. (Paszkiwicz, WI)

**PAPUA NEW GUINEA**—Wantok Radio Light, 7120-Port Moresby at 1230 with an apparent church service. Very weak. (Strawman, IA)

**PERU**—Radio Maranon, Jaen, 4835.5 at 1005 with OA vocals. SS talk. (Alexander, PA) 1024. (DeGennaro, NY)

Radio Victoria, Lima, 9720 at 0416 ending SS religious program. m/w talk to ID at 0431. (D'Angelo, PA)

Radio Tarma, Tarma, 4775 in SS with music and strident commls at 1008. (DeGennaro, NY)

Radio Vision, Chiclayo, 4790 at 1013 with SS talks and songs, religious messages. (DeGennaro, NY)

Radio La Hora, Cusco, 4855.6 in SS with ID heard at 1009 and music. (DeGennaro, NY)

Radio Melodia, Arequipa, 5939.3 heard at 0710 with variety of OA music. IDs after every couple of songs. Poor. (Alexander, PA)

**PHILIPPINES**—VOA Relay, Tinang, 7115 in Cantonese at 1312. (MacKenzie, CA)

**PIRATES**—(Euro)—Mystery Radio, 6220 at 0105 with continuous pop, techno, etc. Very few IDs. (Alexander, PA)

Robot Radio, 6925u on several dates at 2246 to 2249 close, 2307 to 2327 close and 2350 to 0124. Rock and synthesized voice, computer voices and singing, reciting some Shakespeare. No address announced. (Zeller, OH)

Altered States Radio, 6925u from 0009 sign on to 0108 close, another day from 0159 tune to 0257 close. Outer Limits TV audio. Some rock, reggae and rap. Said their music was for listeners who want to "get high." Merlin address anned. (Zeller, OH) 0015 with heavy metal, rap, reggae. (Hassig, IL)

Take It Easy Radio, 6925u with lots of rock and occasional stand-up comic routines. In support of American troops. Claimed 1 kW. Reports to takeiteasyradio@yahoo.com. Noted various days at 2256, 0014, 0018, 0112 closing at 0027, 0110 and 0237. Also Merlin address. (Zeller, OH) 0115 with rambling talk, pops, ballads. (Hassig, IL) Heard 0250 to 0255 close, returning at 0255 with pgm featuring The Eagles. (D'Angelo, PA) 0022 with songs dedicated to NYC police, fire departments and victim of 9/11. (Burgess, MA)

Radio Chaos and Take It Easy Radio, 6925u at 0250 sign on to 0316 close; perhaps a Radio Chaos show relayed by Take it Easy? Radio Chaos ID at 0306 with gongs and tolling bells, into rock and ending with "Ghost Riders in the Sky." (Zeller, OH)

Northwoods Radio, 6925u signing on at 0027 one day, 0031 the next with woosy noises. One bc was new age with some pow-wow sounds and mentioned that they were coming from the Great Lakes. Another was an old time radio drama. Closes with a CW ID. (Zeller, OH) 0257 to 0304 close with rock and woman anncr. (D'Angelo, PA) 6950u 0040

## 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!

Our book winner this month is **Sheryl Paszkiewicz** of Manitowoc, Wisconsin, who receives a copy of the 2007 edition of *Passport to World Band Radio* from Universal Radio. If you still aren't on the mailing list to receive Universal's super catalog of really cool radio things each time it's released then it's high time you signed up. Call Universal at (614) 866-4267 or e-mail them at dx@universal-radio.com, or you can write to them at 6830 Americana Parkway, Reynoldsburg, OH 43068.

to 0140 close with several mentions of the Motor City and Wayne County, several IDs included "CKOW." E-mail given as northwood-radio@yahoo.com. Off with call of the loon and pips. (Wood, TN)

Dr. Who, 6925u heard from 0222 sign on to 0224 off with nothing but IDs and e-mail as drwho@yahoo.com at close. (Zeller, OH)

Undercover Radio, 6925 monitored at 2232 with various sketches and dramas. E-mail to undercoverradio@mail.com. (Zeller, OH)

WMPR, 6925 with new age and techno at 2337. (Wood, TN) 6955 at 2330 with usual dance but with extreme audio compression so bad it was unlistenable, in fact the synchro on my Drake R8 would not even lock! (Hassig, IL)

Cracker Radio, 6925u, monitored sign on at 0134 with a synthesized version of the Canadian National anthem. Most of the show was novelty music and Doug MacKenzie sketches about beer. Unsure of e-mail as announced, possibly crackerradio@pmlol.com or similar. (Zeller, OH)

Touch Tone Radio, 6925u at 2202, an apparent new station with interesting music mix, perhaps best characterized as "semi-new age." Touch-tone phone sounds during some of the IDs. Said the transmitter was in Bermuda. No address anned. (Zeller, OH)

The Crooked Man, 6925u at 0053 sign on with several IDs and some music. (Wood, TN)

WTPR—Tire Pressure Radio, 6925u monitored at 0036 to 0046 close. Talk of noted pirate DXers in Michigan and of other pirate operators. (Wood, TN)

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This confirms your reception of the American Forces Radio and Television Service Short wave signal.

Original Station **DIEGO GARCIA**  
Frequency **4319 KHZ**  
Date **9 JANUARY 2006**  
Time **23:49 - 00:01**

We thank you for your interest and confirmation of our signal's quality.

Sincerely **Robert Winkler**

**ROBERT BROSELL**  
**PEWAUKEE, WI**  
**53072**

*Robert Brossell of Pewaukee, Wisconsin, went through a hellish time trying to get this QSL for his reception of AFRTS in Diego Garcia.*



KIPM (p), 6950u at 2347 with a drama at 2347 to 0017 plus. (Wood, TN)

**POLAND**—Radio Polonia, 11850 at 1200 with IS, into EE. (Paszkievicz, WI)

**PORTUGAL**—(All in PP) RDP International, 9715 at 0008, 15560 at 1925. (Charlton, ON) 12020 at 1035. (DeGennaro, NY) 15295 at 2304. (Jeffery, NY) 15560 heard at 1235. (Brossell, WI)

**ROMANIA**—Radio Romania International, 6:35 in FF at 0225. (Brossell, WI)

**RUSSIA**—Voice of Russia, 7165-Vladivostok in RR to SEA at 1220. Also 7300-Komsomolsk-Amur in Mandarin at 1305. (Strawman, IA) 7250 in RR at 0220. (Maxant, WV) 7250-Armavir in EE at 0159 and into RR

at 0200. (DeGennaro, NY) Here at 0220. Also 15585-Petropavlovsk-Kamchatsky in RR at 0240. (Brossell, WI) 7250 in EE at 0126 and 15455 ending news in EE at 2009. (Charlton, ON) 11675 in EE with "Music and Musicians" at 1710. (Fraser, ME) 11980 with EE jazz show at 2053 and request for letters, //9800. (Wood, TN) 15425 in RR at 0256 and 15595 in EE at 0250. (Newbury, NE) 15455 with news at 2000. (Paradis, ME) 15595-Petropavlovsk in EE heard at 0338. //9665-Moldova, 15555-Vladivostok. (MacKenzie, CA)

**SAUDI ARABIA**—BSKSA, 11820 in AA at 2100. (Paszkievicz, WI) 15315 in AA at 1700. (Ziegner, MA) 15435 in AA at 1745. (Charlton, ON) 17895 in AA at 0318. (MacKenzie, CA)

**SINGAPORE**—Radio Singapore, 6080 with news items at 1326. (Newbury, NE)

BBC Relay, 9510 in EE at 1710. (MacKenzie, CA)

**SOUTH AFRICA**—Channel Africa, 3345 at 0415 on NASCAR racing in America. Also 9685 heard at 0510. (Maxant, WV)

**SOUTH KOREA**—KBS World Radio, 9560 via Canada at 0225 on Korean population passing 48.5 million. (Maxant, WV) 0259 closing EE. (Newbury, NE)

**SPAIN**—Radio Exterior de Espana, 3350 via Costa Rica in SS at 0240. (Wood, TN) 11680 in SS at 0047. (DeGennaro, NY) 15110 in SS at 2154. (Newbury, NE) 15110 in SS at 1915. 15385 in EE with "Spain by Day" at 0014. 17715 in SS at 1820 and 17850 via Costa Rica in SS at 1915. (Charlton, ON) 17850 via Costa Rica with futbol in SS heard at 1900. (Barton, AZ)

**SWEDEN**—Radio Sweden, 6010 via Canada in EE at 0238. (Yohnicki, ON) 0248. (Newbury, ON) 15240 at 1225 with theme melody and into news in EE. (Maxant, WV) 1230 with "Inside Sweden." (Paradis, ME) 1237. (Charlton, ON) 1245 on EU and its constitution. (Brossell, WI) 15735 at 1333 on architecture, cooking, //15240 via Canada which was a few seconds off. (Wood, TN)

**SWAZILAND**—Trans World Radio, 4775 at 0359 sign on with IS and opening program ID and annts in GG. (D'Angelo, PA)

**SYRIA**—Radio Damascus, 9330 in SS to SA at 2135, also 12085 at 2040 but technical problems with their carrier. (Maxant, WV)

**TAIWAN**—Radio Taiwan Int., 5950 via Florida in EE at 0310. (Newbury, NY) 9365 via France in FF to West Africa at 2132. (DeGennaro, NY) 11550 in an Asian language at 1116. (Brossell, WI)

WYFR, 15195 in EE monitored at 2038. (Paszkievicz, WI)

**TUNISIA**—RT Tunisienne, 7275 in AA at 0450. (MacKenzie, CA)

**TURKEY**—Voice of Turkey, 5975 at 0330 with Turkish military music. (Maxant, WV) 9460 in TT at 2120. (Paszkievicz, WI) 9830 with "Letterbox" at 2215, 9785 with Turkish pops at 1900 and 15450 with IS and news in EE at 1330. (Fraser, ME) 13760 in GG for Europe at 1207. (Brossell, WI) 15450 with news items at 1240. (Ziegner, MA)

**UKRAINE**—Radio Ukraine International, 7440 with EE news at 0007. Also in EE at 0300. (Wood, TN) 0239 in RR. (Brossell, WI)

**USA**—Pan American Broadcasting, 15650 via Germany at 1610, closing with a URL anncd at 1628. (Charlton, ON)

AFN/AFRTS, Key West, 12133.5u heard at 0218 (Newbury, NE) 1230. (Brossell, WI) 1945. (Wood, TN)

**VATICAN**—Vatican Radio, 4005 at 0229 with ID and into SS. Also 15570 in FF at 1718. (Brossell, WI) 6020 in CC at 1330 completely covering Radio Australia. (Barton, AZ) 7250 with discussion at 0515, also 7305 in EE at 0250. (Maxant, WV, Newbury, NE) 13675 at 1958 opening with IS, ID and into EE. //9755. (Wood, TN) 13765 at 2012 and 15570 in EE at 1747. (Charlton, ON)

**VENEZUELA**—Radio Amazonas, Puerto Ayacucho, 4939.7 heard at 0915 with SS talk, vocal, ID at 0927. Irregular operation. (Alexander, PA) 0951. (DeGennaro, NY)

Radio Nacional, Caracas, 6060 in SS at 1100. (D'Angelo, PA) 6180 at 1053 with IDs "La Voz de Venezuela a la exterior" and "La Voz de Venezuela al mundo" at 1058, and off. (DeGennaro, NY) 13680 at 2300 opening in SS and totally covering CRI via Sackville. (Barton, AZ) (All frequencies via Cuba.—gld)

**VIETNAM**—Voice of Vietnam, 5925 at 1245 with continuous chatter to music through TOH and into VV by woman. (Strawman, IA) 6175 in EE via Canada at 0137. (DeGennaro, NY) 0242. (Yohnicki, ON) 0245. (Newbury, NE) 7220-Son Tay, with RR at 1250. (Strawman, IA) 1320. (Barton, AZ)

**YEMEN**—Republic of Yemen Radio, 9780 at 0405 with continuous AA vocals and instrumentals. (Wood, TN)

**ZAMBIA**—The Voice-Africa, 6065 at 0425 with frequency and time annts and into gospel music. (Maxant, WV)

And once again, order is restored! A big package of thanks to the following who did the good thing this time: Joe Wood, Greenback, TN; Rick Barton, Phoenix, AZ; Jerry Strawman, Des Moines, IA; Ray Paradis, Pittsfield, ME; Bob Fraser, Belfast, ME; Stewart MacKenzie, Huntington Beach, CA; William Hassig, Mt. Pleasant, IL; George Zeller, Cleveland, OH; Michael Yohnicki, London, ON; Ed Newbury, Kimball, NE; Tricia Ziegner, Westford, MA; Dean Burgess (state unspecified); Robert Charlton, Windsor, ON; Charles Maxant, Hinton, WV; Robert Brossell, Pewaukee, WI; Rich D'Angelo, Wyomissing, PA; Dave Jeffery, Niagara Falls, NY; Brian Alexander, Mechanicsburg, PA; Cero DeGennaro, Feura Bush, NY; and Sheryl Paszkiewicz, Manitowoc, WI. Thanks to each of you.

Until next month, good listening! ■

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# Most Hams Happy With New Rules— Here's The Latest

**A**mateur radio operators holding high-frequency privileges with a General, Advanced, or Extra class license are relatively happy with the recent FCC Report and Order on WT Docket 04-140.

"On behalf of the ARRL, and the Commission's licensees in the Amateur Radio Service, I want to express appreciation for your release of this Report and Order," said ARRL president, Joel Harrison, W5ZN. He continued, "...this proceeding will assist the Amateur Radio Service in meeting its objectives, particularly with regard to providing emergency and public service communications." The rules will likely take effect as you're reading this month's column.

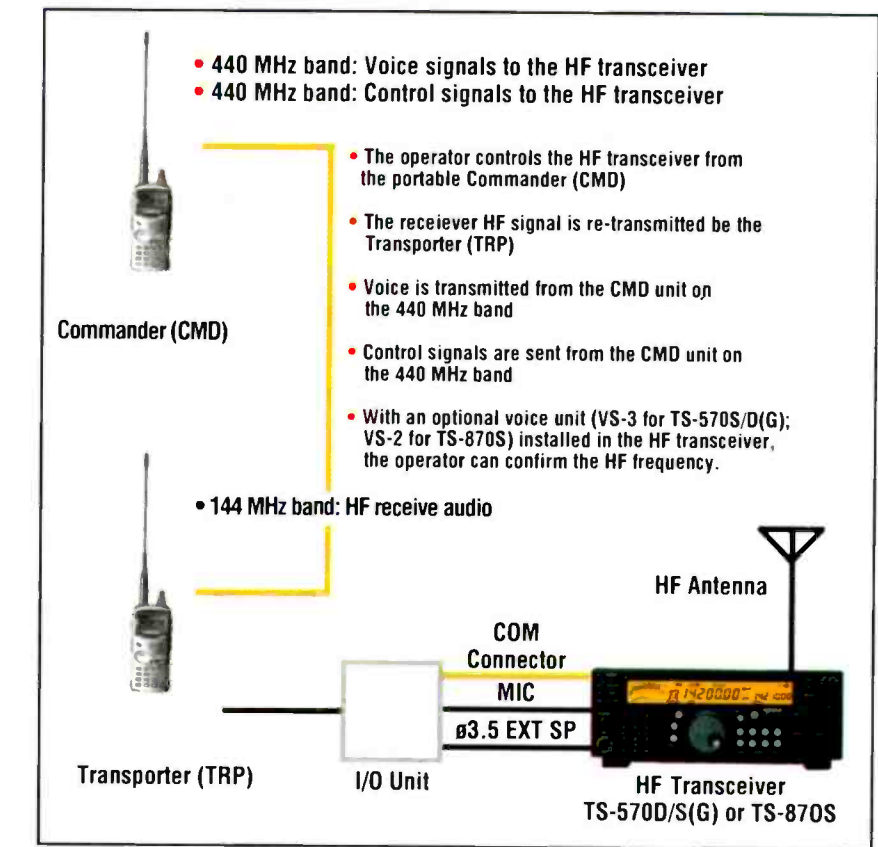
Technician Class ham operators were hoping the FCC would concurrently announce the elimination of the five-word-per-minute code test for General class privileges. This is coming soon in WT Docket 05-235, likely to take effect July 1, 2007, when new revised General class written exam questions hit town. So stay tuned, Technician class operators, because the required code test may soon be dropped.

And for you seasoned hams who love Morse code—as I do—you should understand that the elimination of the General class code test will bring new hams onto the worldwide airwaves who will soon have a better appreciation of the importance of Morse code. CW will always be a part of ham radio legacy, even though a code test may no longer be required.

For General class and higher ham operators, the new rules will expand 75/80-meter, 40-meter, and 15-meter voice allocations for additional voice elbow room on these important ham radio bands. Ham operators using important digital modes may need to change frequencies downward (it's always a hassle to reestablish a specific digital spot for a certain type of digital emission).

Novice and Tech Plus CW operators now have added frequencies in the CW subbands on 80, 40, 15, and 10 meters.

New FCC rules on the vanity callsign filings will give everyone a fairer shot at



*Using the Kenwood SkyCommand system is easy, and the new rules changes have many folks waiting for the moment it becomes official!*

obtaining a specific vanity callsign. Also, ham operators may designate a specific amateur radio club to receive their callsign in memoriam.

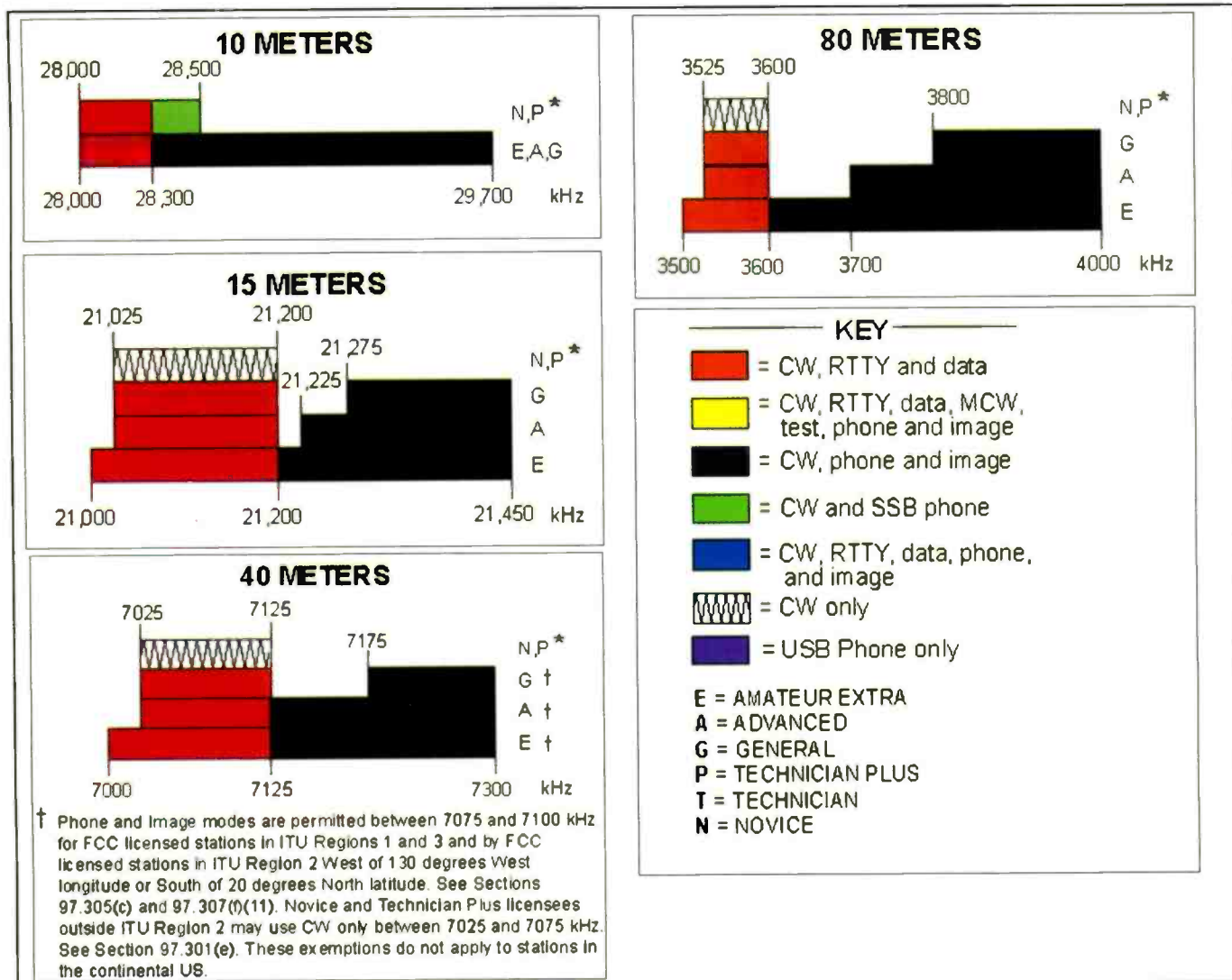
Previously licensed hams who let their original General class license expire will now be able to receive code credit at 5 wpm. You can imagine the frustration of a ham who passed a 13-wpm code test in front of the FCC not being able to receive minimum 5 wpm code credit today; this has been fixed. Also, examination groups giving tests on the fly no longer need to make public on-air announcements.

## Big News Almost Goes Unnoticed

In Part 97.201 Auxiliary Station (b) it says, "An auxiliary station may transmit

only on the 2 meter and shorter wavelength bands..." This is good news for General class licensees and higher. Now you'll be able to tie in your home high-frequency base station to your little dual-band handheld to control and operate the HF base on your five-element triband beam, all while sitting on the beach with a handheld, or driving around town with a 2-meter/440 transceiver.

Previously, auxiliary stations were not allowed to transmit on the 2-meter band, so you could not set up your home high-frequency radio for auxiliary operation with a 2-meter/440 dual-band handheld or mobile. But the FCC decided that there was no apparent basis to conclude that allowing auxiliary stations to transmit on the 2-meter band would cause harmful interference to other stations' communications.



Here's the new frequency privileges information straight from the ARRL. While General, Advanced and Extra licensees got a larger part of the phone spectrum, there's a small net loss on CW frequencies for General and Advanced. Novice and Technician (with Code) license holders get an increased CW allocation across the board. (Illustration courtesy ARRL)

The FCC also noted that user coordination would be possible and that the additional 2-meter frequency segments would not affect the frequency segments currently authorized to automatically control beacon stations, space stations, earth stations, or those frequency segments that amateur radio operators have voluntarily agreed to use for simplex and weak signal communications. In other words, the FCC said no auxiliary operation below 144.5 MHz, or in the satellite segment of 145.8 to 146.0 MHz, for the 2-meter band. There are similar restrictions on 70 centimeters for avoiding satellite subbands.

The FCC stated:

We agree with the commenters who support allowing the 2 meter band to be used by auxiliary stations, because such use could result in the expansion of amateur service communications systems that incorporate Voice Over Internet Protocol operations, or other sophisticated amateur radio communications systems...enhanced communication capabilities for emergency communications supporting disaster relief efforts, or permit direct communications with HF radio networks using commonly available such as 144/440 MHz handheld transceivers.

In their paragraph 23, the FCC studied carefully the arguments that an amateur station may engage in high-frequency

communications on a particular 2-meter/440 frequency tying up the airwaves for a considerable amount of time, stating,

...large segments of the 2 meter band are underutilized, or where unused spectrum is available in the 2 meter band to permit auxiliary station operation...we conclude...that we no longer need to limit auxiliary stations to amateur service bands above 220 MHz. Accordingly, we amend section 97.201 (b), as proposed to allow auxiliary stations to transmit on the 2 meter band.

## Kenwood's SkyCommand System II+

The Kenwood Corporation SkyCommand System II+ would allow global communication through remote operation on high frequencies at home, or in the field, utilizing Kenwood's TS 2000 series transceivers and a Kenwood TH-D7A(g) dual-band handheld or Kenwood TM-D 700A mobile. And once the Kenwood equipment establishes the link, anyone else with a dual-band handheld can join in on the conversation, including Technician Class operators under the supervision of a General class operator (or higher) who has full command of the "third party" transmissions. The entire system operates without any



required software or computer at the base station shack—everything is built into the Kenwood TS 2000.

The Kenwood SkyCommand system incorporates a data stream in addition to normal DTMF (two-tone) functions, giving the control operator complete command. You first put the Kenwood HF into the VFO mode, then select the 2-meter band, activate the subband by pressing the SUB volume control, and move the PTT and Control to the subband by pressing "SUB." Then you toggle back to the main band, select the 2-meter frequency approved for this type of operation by your local frequency coordinator for operating simplex.

Reduce the power to minimum for your initial tests. Then move the PTT/CTRL to the subband by pressing "SUB." Set the frequency within your local band plan and reduce power to minimum. Now set both squelch levels, adding CTCSS on both 2 meters and 440 MHz to minimize random noise capturing the receiver, as suggested.

Now select menu 62, press "SUB" and then use the multi-function knob on your Kenwood base station to set your callsign. Your regular callsign would be assigned to the base station, and for your handheld, your callsign followed by a dash and a single number. Once finished with each callsign, hit the M-in button.

Remember, the Kenwood TS 2000 is called the "transporter" in the instructions, and your handheld is called the "Commander." Select menu 62 E, and using the + button, select T-Porter and push MENU to confirm. You'll see on the screen that T-Porter may now be dialed into your favorite worldwide high-frequency allocation for the privileges you hold as the control operator.

Now follow the instructions for programming your Kenwood handheld D-7 or mobile D-700, with menu 4-1 putting you into the SkyCommand mode. Follow the additional steps in your SkyCommand instructions, and refer to your own instruction book for a list of commands available on the system.

Finally, you'll see a message on the handheld or mobile that says, "Push 0 to start." Give it a try, remembering that your entire system is on low power or maybe even on a dummy load so you can try it right there, looking at your high-frequency station on 20 or 40 meters.

If you followed all the steps carefully, your system is on the air, LEGALLY NOW, and anyone else with any type of


radio using the correct CTCSS can join in the conversation, but only *you* with your Kenwood handheld properly sending a data stream to your big Kenwood HF base station can change frequencies, scan up and down the band, or shut down the system when finished. And as the control operator, you **MUST** remain at your handheld or mobile dual-band operating position to ensure that any Technician class licensee on the air is properly "controlled" by you. It's not much different than letting a Technician come over to your HF base station and say hi to that distant station at T32GW!

Phil Parton, N4DRO, Kenwood's Top Gun, tells me that there are hundreds of potential SkyCommand stations ready to go on the air across the country. They're just waiting for the upcoming rule change to become official. "And many of those

mobile stations are tied into the AvMap G4T for added GPS emergency communications capability when operating in the field at a location difficult to find. Our APRS ready radios, now with SkyCommand, are the perfect solution for high tech emergency communications and coordination," says Parton. And once a SkyCommand system is "up," the control operator can allow less sophisticated dual-band radios to get in on the action.

## Enhancing Amateur Radio's Capabilities

The new rules will definitely enhance the capability of the Amateur Radio Service in those times when emergency communications is needed. Let us know your thoughts on the changes and how you'll be using your gear!



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## Clandestine Radio 101

**Y**ou may have noticed that I've been doing a lot of grousing in the column lately about the fact that my new digs are, shall I say, less than perfect when it comes to operating ease? I've still had no luck with the townhouse association's bylaws concerning flagpoles. I haven't given up searching for a loophole, but if I don't succeed soon, I'll have to wait until spring anyway. Digging dirt in a Minnesota winter takes more motivation than even I can muster!

A recent test-run confirmed that I can successfully load up the 4-plex's big aluminum downspouts—a real no-brainer for my trusty SG-237 autocoiler—but installing a decent RF ground may have to wait until the immediate neighbors move out at the end of the month! And, despite the relative ease afforded by the use of the SG-237, I'm reluctant to run more than a few watts with the downspout "antenna elements" so close to everyone's bedrooms (with TVs, stereos, etc.).

I'm certainly not alone in my plight. Several have written to me over the past few months, offering encouragement and sharing the pain. It's a fact: A lot of hams who are stuck in apartments or deed-restricted dwellings want to get on HF, get out a usable signal, and do so without alerting the neighbors that they're on the air. If you're in the same boat, here are a few tips to get your "clandestine" operation underway.

### An Inside Job

When operating indoors, low-power operation is *strongly* encouraged. Potential interference is minimized, as is your exposure to nearby RF energy fields. I, and many other stealth-mode ops, have had success running only 5 watts to various indoor (or "just a few inches outdoors") antennas. Besides, if you run more than about 50 watts output, you're asking for big trouble.

Fifty watts indoors will likely couple into the AC power mains and dim everyone's lights in time to your Morse code or speech modulation, not to mention messing with TV sets, A/V equipment, and electric blankets (who knew?). The reduction in power will only make you a better operator—a bitter pill, perhaps, but true nonetheless!

Because apartments and condos are often several stories up in the air, away from dependable RF grounds, an alternative grounding technique is often needed for HF operation. An effective substitute "RF ground" can be obtained by using a counterpoise. Simply connect a quarter-wavelength piece of insulated wire to the ground terminal of your transceiver (one for each band of operation) and run the counterpoise wire(s) along the floor moldings, out of the way. Make sure the far end of each counterpoise wire is insulated (wrapped with electrical tape). Hint: Counterpoise wires for 80 meters may be unmanageable in small spaces!

Don't ground your gear to water pipes, telephone lines, or telephone company grounds. They may be at DC ground potential, but will probably *not* provide a good RF ground and may cause interference. Nowadays, most residential plumbing contains at least one run of nonconductive PVC tubing, effectively

insulating the upper-level plumbing from a direct connection with the earth below. Think *counterpoise* instead.

### HF Operation

Even in a small apartment, it's usually possible to find the space to put up a dipole for 10 and/or 15 meters (a dipole for 10 meters is only a little more than 16 feet long). You've probably tried this arrangement for SWL antennas a time or two. If space (and family cooperation) permits, a dipole may be the easiest way to get on the air. After all, it's pretty much a given that you won't be installing a full-size beam inside your apartment. (If you have access to a large, airy attic, however, a wire beam or other conventional antenna may work fine.) To maintain some semblance of household harmony, perhaps the best way to install an indoor dipole is to run the wire elements along the wall/ceiling juncture and run the coax up the wall in a corner.

Horizontal loops are also possible. As with the dipole, run the coax up the wall in a corner. Instead of feeding the dipole, however, run a full-wavelength loop around the perimeter of the ceiling. An antenna tuner will probably be required for both



*MFJ's 935B loop tuner is an interesting solution for some apartment-dwelling or deed-restricted hams. Simply connect a short length of heavy-gauge, stranded, insulated wire, formed in a loop, and the 935B will match the antenna without the need of any ground systems, counterpoises, etc. Just tune and go! There are no free lunches, however, and even MFJ can't defy the laws of physics. The trade-offs for such simplicity are potentially touchy tuning and very narrow SWR bandwidths. By using the unit's built-in current meter (with adjustable sensitivity to accommodate various power levels) you can tune just about any short loop to resonance with a low SWR and high efficiency, but if you move even a few kilohertz you'll have to re-tune. It's potentially tedious for band hoppers, but if it gets you on the air with a good signal in a compromising situation: Bravo! The unit will handle 150 watts, but if the tuner is at your operating position, I'd stick to 25 watts or less. Check it out at [www.mfjenterprises.com](http://www.mfjenterprises.com).*

antennas. With indoor installations, having a naturally resonant antenna isn't necessary, and sometimes it's not even possible. Use an antenna tuner to "work" the antenna against a counterpoise or other ground connection (if you're sure you have another ground connection, that is). Whatever the configuration, give it a try. You may have to experiment a bit.

Ready-made indoor antennas are available from several sources, and some work better than others, depending on your exact circumstances. MFJ makes several mini loops and vertical antennas designed for space-restricted and indoor operation. The units generally cover 40 through 10 (or 6) meters and have been used effectively by many stealth-mode hams. MFJ also makes an "artificial ground" that can make indoor hamming a lot easier, depending on your specific situation.

Some ops have taken to mounting mobile whip antennas, large and small, to their balcony railings, working them against a set of counterpoise wires instead of a car body (the counterpoise wires probably work better anyway!).

Other stealthy antenna solutions are limited only by your ingenuity and your situation. Over the years I've loaded up my apartment building's downspout with a 1-watt QRP signal (a sunspot cycle peak helped a lot!), worked the steel fire escape on my dormitory building against a counterpoise (same sunspot cycle peak), tuned up an aluminum window screen with a low-power signal, put up an outdoor "invisible" end-fed wire made from 30-gauge steel wire, shirt-button insulators, and monofilament line (it worked great, and the motel didn't even know it was there), and I've even laced full-size wire Yagis and a full-size 40-meter horizontal loop in a fourth-floor walk-up attic. Where there's a will, there's a way.

My experience with indoor antennas is certainly not unique. Other success stories come to mind. I know of a Midwestern ham who ran a successful 40-meter DX net with 1 kW to an attic dipole (definitely not recommended under today's RF exposure limits!), and of a Georgia ham who has worked DXCC with 5 watts using only attic-mounted wire antennas. These "hidden HFers" are out there, but they're hard to spot because they don't have any outdoor aluminum.

And speaking of outdoor aluminum, if there's *any way* to run a wire or two outside, even if it's only a thin steel wire run-

ning from a window sill or a balcony railing, it will usually outperform indoor antennas, which are more compromising in nature.

## VHF/UHF Operation

The VHF/UHF bands are prime turf for space-restricted amateurs. At these high frequencies, antennas are physically small. Putting up a small Yagi antenna isn't out of the question. When I was getting acquainted with 440-MHz FM, I simply aimed a small beam out my third-floor window. I hit several area repeaters with no trouble and had many simplex QSOs, too. In many metro areas, the rubber-ducky antenna that comes with VHF/UHF handhelds will be more than enough to access several local machines. Here, indoor antennas may be no sacrifice at all!

## Exotic Alternatives

If money isn't a pressing issue, setting up a remote station is mostly an "off-the-shelf" project nowadays. A computer (with a mic and keyer interface) talks to the Internet in your "shack," while a radio (and perhaps a computer) awaits your command at a remote, radio-friendly site. With the prevalence of high-speed Internet connections, deed-restricted hams are making great strides in this area. I plan to report on this in more detail in a future column.

If you can't get out any signal—or if you don't even have a radio!—"Internet-to-radio" linking systems like Echolink ([www.echolink.org](http://www.echolink.org)) can provide hours of fascinating QSOs, propagated not by the ionosphere, but through the Internet. You still have to be a licensed ham to use the system (so it's not like Internet chatting), and the whole operation is managed by hams in an orderly fashion. Again, more on this in a future column.

## Hang In There

Don't give up on ham radio just because you lack the real estate for conventional antennas. There's a lot of fun to be had with indoor alternatives. Remember, practice and experimentation make perfect. If necessary, enlist the help of some ham buddies or the hams you'll meet at a local club to help you get started. ■

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## Profile: The Army's Fort Rucker, Alabama

**A**nd now for something completely different this month. From time to time, we're going to deviate slightly from the normal format of this column and present a profile of a military facility of the United States. We'll begin with the Army.

The United States Army is made up of many branches that our readers may, or may not, be familiar with, including (to name just two) the Signal Corps and the Medical Service Corps. At the forefront of the Army, however, are the combat branches: Armor, Aviation, Infantry, Field Artillery, Air Defense Artillery, and the Corps of Engineers. Each of the combat branches has a facility considered the home of that branch. These are:

- Armor: Fort Knox, Kentucky
- Aviation: Fort Rucker, Alabama
- Infantry: Fort Benning, Georgia
- Field Artillery: Fort Sill, Oklahoma
- Air Defense Artillery: Fort Bliss, Texas
- Corps of Engineers: Washington, DC

Of the various combat arms, Aviation was not considered as a separate combat branch of the U.S. Army until 1983. This recognition came after many years of studies and discussions as to the need for aviation to even be a separate branch. So, as

the home of the newest of the combat arms, we'll start off with a history of Fort Rucker, Alabama.

### A Brief History Of Fort Rucker

Fort Rucker, located in southeastern Alabama and surrounded by the communities of Enterprise, Daleville, and Ozark, was created as a training base called Camp Rucker and opened in May 1942. Named for Colonel Edmund Rucker, a Confederate officer who became a well-known business leader after the Civil War, Camp Rucker was used to train the 81st, 35th, 98th, and 66th Infantry Divisions, as well as several smaller units during the war, and later was used as a Prisoner of War facility.

An airfield known as Ozark Army Airfield was added to Camp Rucker in September 1942. In March 1946, Camp Rucker was deactivated and lay dormant until August 1950, when it was occupied by the 47th Infantry Division to train replacement troops for the Korean War.

Deactivated once again in June 1954, the post was suddenly reopened in August 1954 as the Army Aviation School moved in from Fort Sill, Oklahoma. Army Aviation training had, up to that point, been under the auspices of the Artillery Branch; apart from the strategic and tactical forces of the Army Air Corps



*The view from the cockpit of a UH-1V "Huey" medical evacuation helicopter during a training exercise. (Photo by Staff Sgt. Matthew Hannen, courtesy U.S. Army)*

**Table 1.  
Cairns Army Airfield**

Tower/CTAF: 135.2/248.55  
 Ground: 121.9/288.25  
 ATIS: 111.2/316.15  
 Approach/Departure: 121.1/319.25  
 (north) 125.4/327.125 (east)  
 133.45/239.4 (west)  
 133.75/270.35 (south)  
 Clearance Delivery: 118.075/120.325/  
 380.1  
 Jacksonville ARTCC Approach/  
 Departure: 134.3/353.5 (when  
 Cairns tower is closed)  
 Emergency: 121.5/243.0  
 FM: 39.95  
 Operations: 126.2/371.35  
 Radar: 128.55/229.6

(which later became the Army Air Forces and later the U.S. Air Force). Army Aviation had traditionally been used for artillery spotting. A few months later, Camp Rucker was officially designated the Army Aviation Center, and shortly thereafter was renamed Fort Rucker, a permanent military facility.

Over the years, Fort Rucker has played a major role in the development of aircraft for Army use. One especially important development was effective armament for helicopters; since the creation of the Air Force, the USAF had been given exclusive responsibility for aerial fire support, but had primarily concerned itself with strategic and theater level tactical missions, while close air support of the ground forces languished. Fort Rucker played a pivotal role in the development of armed aircraft for the Army by conducting much of the testing and development work that led to effective ground support capabilities, which were wholly integrated with the ground forces. While the Air Force still provides valuable close air support assistance to Army ground forces to this day, much of the support comes from Army aircraft.

Another important development was aerial battlefield mobility. An outgrowth of the parachute and glider troops used during World War II, battlefield mobility by helicopter allows light infantry troops to be transported to the battlefield quickly and in sufficient numbers to achieve the desired objective. In-depth study and extensive testing of the aerial battlefield mobility (known today as Air Cavalry) concept was conducted between 1963 and 1965, and resulted in the redesignation of



*A UH-60 "Blackhawk" like those flown daily around Fort Rucker. (Department of Defense image courtesy U.S. Army)*

the 1st Cavalry Division (Dismounted) as the 1st Cavalry Division (Airmobile), which was then promptly sent to Vietnam. Fort Rucker was instrumental in this development, as well as many other developments in equipment, tactics, and doctrine.

**Fort Rucker Today**

Today, Fort Rucker serves as the home of the Aviation Branch. It hosts all aviation training activities of the U.S.

Army, including Aviation Officer Basic and Advanced Courses, the U.S. Army Air Traffic Control School, the Aviation Noncommissioned Officers Academy, and the Army Aviation Logistics School, in addition to all primary flight training activities.

Major units based at Fort Rucker are the 1st and 110th Aviation Brigades. Units of the 1st include the 1st Battalion, 13th Aviation Regiment, which handles training of enlisted personnel in aviation



*An AH-64 Apache attack helicopter lifting off from Cairns Army Airfield. (Department of Defense image courtesy U.S. Army)*

specialties; the 1st Battalion, 145th Aviation Regiment, which handles leadership training of commissioned and warrant officers in aviation specialties; 1st Battalion, 210th Aviation Regiment, which is in charge of base support and operations at Fort Rucker, including Military Police and firefighting. Also part of the 1st Aviation Brigade is the Dunker/HEED Facility, which is an advanced water egress training facility.

The 110th Aviation Training Brigade handles all flight training at Fort Rucker. In addition to Headquarters and Headquarters Company, units of the 110th include the 1st Battalion, 14th Aviation Regiment, which operates from Hanchey Army Heliport and conducts advanced training in AH-64A, AH-64D and OH-58D helicopters; 1st Battalion, 223rd Aviation Regiment, which operates from Cairns Army Airfield and Knox Army Heliport and conducts training in CH-47 helicopters and C-12 fixed-wing aircraft, as well as running Maintenance Test Pilot Courses; 1st Battalion, 212th Aviation Regiment at Lowe and Shell Field Army Heliports, which conducts combat skills and night combat training in the OH-58, UH-1 and UH-60 helicopters; and the Helicopter School Battalion at Lowe Army Heliport, which trains allied personnel from other nations.

Other tenant units at Fort Rucker

### Table 2. Fort Rucker Heliports

#### Hanchey Army Heliport

Tower: 141.8/387.7

Ground: 149.6/225.575

ATIS: 141.375

Approach/Departure: 121.1

Clearance Delivery: 118.075

Emergency: 121.5/243.0

Radar: 134.1/135.4/229.6/242.6

#### Knox Army Heliport

Tower: 141.8/387.7

Approach/Departure: 125.4

Clearance Delivery: 118.075/380.1

#### Lowe Army Heliport

Tower: 141.3/289.15 AM, 46.95 FM

Ground: 357.15

ATIS: 364.9

Approach/Departure: 133.45

Emergency: 243.0

#### Shell Army Heliport

Tower/CTAF: 140.3/244.5

Ground: 148.8/310.6

Approach/Departure: 133.45

include, to name just a few, the Aeromedical Research Laboratory; the Army Research Institute Aviation R&D Activity; the Aviation Center Logistics Command and the Aviation Branch Safety Office; the U.S. Army Combat Readiness Center; and the U.S. Army Warrant Officer Career Center. Another major tenant is the U.S. Army Aviation Technical Test Center, which handles all airworthiness qualification and developmental testing of U.S. Army aircraft, aviation systems, and associated aviation support equipment.

### Plenty Of Airfields

As the aviation training facility for the U.S. Army, Fort Rucker naturally has numerous airfields, including Cairns Army Airfield, various heliports, and several remote training fields known as stagefields. Most are named for Army aviators who gained fame in one way or another, or other persons who had a significant impact on Army Aviation.

The primary facility, Cairns Army Airfield, is located just south of Daleville. Built in late 1942 to support the training base at Camp Rucker, it was originally known as Ozark Army Airfield. The field was renamed Cairns Army Airfield in 1959, in honor of Major General Bogardus S. Cairns, commander of Fort Rucker and the Army Aviation Center from May 1957 to December 1958, when he was killed in a helicopter crash. Cairns is currently one of the busiest airfields in the United States, handling nearly 1,000 aircraft movements per day, five to six days per week. With the tower open Monday through Friday 6 a.m. to 1 a.m. local time, there's nearly always a time of day for anyone to listen in to the activity, (see **Table 1**). But traffic doesn't stop just because the tower is closed—it just slows down a bit, and the pilots control themselves via transmissions on the tower frequency. Cairns also hosts the Army Aviation Museum, which is well worth a visit.

There are several heliports surrounding the Fort Rucker area (see **Table 2**), each of which handles a specific aspect of primary and advanced rotary wing (helicopter) flight training. All were built in the late 1950s and early 1960s and are either named for Army aviators who performed various acts of bravery, or those who had a major hand in the development of Army Aviation. The heliports are Hanchey Army Heliport, located south of

### Table 3. Fort Rucker Stagefields (all use 126.2 MHz)

- (05AL) Allen, Wicksburg
- (06AL) Brown, New Brockton
- (07AL) TAC-X, Samson
- (11AL) ECH, Ozark
- (13AL) Hatch, Ozark
- (12AL) Goldberg, Kirkland Crossroads
- (14AL) High Bluff, Hartford
- (15AL) High Falls, Hartford
- (16AL) Hooper, Ozark
- (17AL) Hunt, Newton
- (18AL) Louisville, Louisville
- (19AL) Molinelli, Ozark
- (20AL) TAC-Runkle, Elba
- (21AL) Skelly, Opp
- (22AL) Stinson, New Brockton
- (23AL) Tabernacle, Ozark
- (24AL) Toth, Dothan
- (25AL) 10-C/Lucas, Goodman

*Note: The numbers in parenthesis are the ICAO airport designators for each stagefield.*

Ozark; Knox Army Heliport, located northeast of Daleville; Lowe Army Heliport, located just northeast of Fort Rucker; and Shell Army Heliport, located just outside Enterprise.

In addition to Cairns Army Airfield and the various heliports, Fort Rucker has several stagefields. Stagefields are auxiliary fields ranging from four to 20 miles from the main post, with most being within eight miles of Enterprise. Activated and deactivated as needed for training requirements, stagefields are used to support various aspects of flight training, including navigation and tactical exercises. Currently, TAC-X, TAC-Runkle, Louisville, High Falls and Hatch are unused, but could be reactivated at a moment's notice. See **Table 3** for a list of the stagefields and the towns they are near.

### Plenty To See And Hear

And there you have it, a profile of the Army Aviation Center and Fort Rucker, Alabama. With a wealth of things to monitor as well as plenty of Army aviation traffic to see nearly every day of the week, the Fort Rucker area is well worth a visit.

So if you're traveling during the holidays, remember to bring that wideband receiver along—and then let our readers know what you're hearing in the military bands. Have a great holiday! ■



## Building A CAT Program For Ten-Tec's RX-320D

respond to 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.

As I outlined in last month's column, using those command codes as a foundation, you need to design a software program that can convey those command codes to the radio's CPU via the serial cable.

Fortunately Ten-Tec has provided all the necessary information needed on its website (<http://radio.tentec.com/Amateur/Receivers/TT320/Downloads>). There you can download the software programmer's reference manual, which contains all the command codes and example programming code in BASIC for MS DOS. Our task then will be to transfer that information into a new software program based upon Microsoft's new Visual BASIC Express program, which is available for free at <http://msdn.microsoft.com/vstudio/express/vb/default.aspx>.

So let's take a look at what you need to get started using Visual BASIC express and how to do the necessary preliminary planning before you begin to write code for the RX-320D CAT program.

### Getting Started With Visual Basic Express

I've focused on learning Microsoft Visual BASIC Express in particular because it's offered for free and has an extensive on-line training program. While, initially this software development application and training program was to last for one year, in April 2006 Microsoft announced that both of offerings will be free permanently. This offer is available through the Microsoft Express program (<http://msdn.microsoft.com/vstudio/express/default.aspx>), where you can download the application. This service was set up by Microsoft to allow as many people as possible to become computer programmers at a hobbyist level.

Thanks to the availability of relatively cheap and extremely powerful personal computers, people no longer have to sit in

Today, thanks to the availability of inexpensive high-speed computing equipment, easy-to-run programming software, and affordable programmable radios, the digital revolution we've been discussing in this column is very accessible for the radio hobbyist. This month we resume the series I began last spring when I began to show you how to build "virtual" radios using Microsoft's new "free" Visual BASIC and Ten-Tec's RX-320 as the foundation.

I've already covered the inner workings of the RX-320 in great detail in a series of columns, so now let's get down to business. Ten-Tec's first SDR "black box" radio, the RX-320, was initially offered in 1998. It was recently updated as the RX-320D, and is now capable of receiving the new shortwave digital mode called DRM (Digital Radio Mondiale).

This radio was one of the first software-defined radios (SDRs) on the market and its design is notable because all the digital signal processing takes place in the radio itself through a built-in computer on a chip, rather than having to be processed in an external computer. Because 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 the RX-320D 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 needs in order 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-320D. 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.

The command codes used in the operation of the RX320D are composed of a set of seven digital signal processing (DSP) functions that the radio's CPU chip uses to perform various tasks (see **Table**). The command set also controls two requests for information that the radio's ADSP-2101 computer chip can

**Table—Command Codes**

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



*Photo A. When you start using Microsoft Visual Basic Express, you'll find helpful information right on the start-up page. Take some time to go through the getting-started tutorials and then try some of the example programs provided. Remember that, just like learning to use a musical instrument, it takes time, patience, and practice to become a successful computer programmer.*

front of a computer screen for hours on end in order to write good computer software. And thanks to the Internet, everyone who's "plugged in" now has access to a huge library of information about computer programming.

Today's computer industry is welcoming more and more people who are outside the traditional "geek" stereotype, and it's doing so deliberately because it wants the participation of people from diverse backgrounds. The biggest problem the industry has is a leery public that considers computers too complicated, particularly when it comes to computer programming. So that's why we now have initiatives like Microsoft's Express program, that can appeal, not simply to geeks, but to anyone who wants to become creative with a computer. The Express software that Microsoft is offering is not a toy, but the real thing; it's simply done away with some non-essential bells and whistles found in the professional package.

Given the great learning experience that Microsoft is offering at no cost (other than your own computer and time investment) this is a wonderful opportunity. You now have the ability to master an increasingly valuable set of skills that will directly benefit your radio monitoring hobby (not to mention being a potential start of a new career if you are so inclined).

## First Steps With Visual BASIC

To get you started learning how to create a practical computer program for use in your radio shack, let's begin with a CAT program for the RX-320D using Visual BASIC Express.

Before we get into the details of this project, you need to download and install the Visual BASIC program and avail yourself to the free training provided. Frankly, it's impossible not to be able to get started with this programming application given the way it's set up. If you take a look at the opening screen for the program you'll see that the first thing displayed is a "Getting

Started" screen that walks you through the program step by step. There are several tutorials and pre-built templates that will help you become familiar with the mechanics of using Visual BASIC (see **Photo A**). You should try to create several working software applications using those tutorials before undertaking the project I describe here.

It's impossible for me to outline everything you should know to be able to successfully program in Visual BASIC. All I can do is point you toward the tools and give you a road map on which direction to take to increase your chances of success in this project. There's no guarantee of success, but in the end your level of achievement will be determined by your ability and your willingness to apply yourself. In the end, the only real failures in life take place when you don't even *try*. So even if you don't achieve 100 percent success, you're still much further ahead than most people.

Having said all that, let's talk about what you need to do to get started on the CAT software project. In general, you will find that there are five main steps involved in creating a software application in Visual BASIC, along with many little steps between them. These five main steps are:

1. Define the main functions to be performed by the completed software application
2. Design and then create the user interface
3. Customize the look and behavior of the user interface
4. Place the Visual BASIC code into the application
5. Run and test the software application

As I outlined in last month's column, nobody writes an application program by sitting down and directly typing into a programming software program without doing some preliminary planning.

You must first download the background information that Ten-Tec provides for software programmers and study it in detail



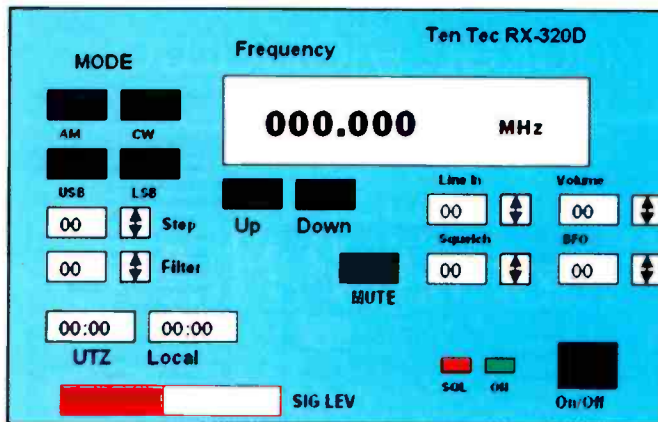


Photo B. This is the prototype display for the Ten-Tec RX-320D CAT (computer-assisted tuning) software application to be created using Microsoft Visual BASIC Express. The layout of the buttons was based on the "best-practice" approaches in contemporary human factors, user interface design, and ergonomics.

so you'll understand the seven main features found in the RX-320D and what tasks you need to do.

The seven main features/tasks are:

- Tune AM, USB, LSB, CW signals
- Tune in the frequency range of 100 KHz to 30 MHz
- Control a BFO offset frequency of between 0 and 2000 Hz
- Control a multiple step audio filter that ranges between 300 and 8000 cycles
- Provide AGC control in slow/medium/fast settings
- Provide line-in level
- Provide speaker output level

Sit down with a notebook and write out a plan for controlling those seven features and create some drawings of what you think the applications user interface (UI) should look like. Set a clear goal for the project, and then set out a mission statement for yourself, such as:

"To successfully control the seven main features provided for the operation of Ten-Tec's RX320D and provide a simple and easy-to-understand user interface when doing so."

You want to list everything so that later on you can create a checklist to ensure that everything you wish to include in your software design is in place. If you don't have a checklist or design notes you're simply setting yourself up for frustration and possible failure.

Once you have all of that preliminary information in place, you can begin to actually use Visual BASIC to build your CAT program. This month we'll look at the design of the UI and next month at putting BASIC code into that interface to make it work.

## Creating The CAT User Interface

One of Visual BASIC's strong points for the hobbyist software programmer is that it provides you with a powerful set of graphic design tools with which you can easily design the UI for your software application. This is perfect for software programming in the Microsoft Windows environment, which is, of course, graphically oriented, and you don't have to waste valuable time writing software code for those graphical elements.

However, before you begin in the programming environment, you need to create a prototype design from which to work. There's an art and science to computer interface design

that's known by a number of different names, such as human factors, user interface design, ergonomics, and so on. You need to prototype your design, because there are as many ways to get something "wrong" as to get it "right."

An effective interface is visually apparent and forgiving, and it gives the user a sense of control. The layout and design of your interface should allow for a natural flow of activity, with absolute minimum of searching and selecting. In general, there should also be a consistency to all the functions shown on the screen; for example, buttons that you point to and click on perform "on and off" functions, as opposed to something unexpected, like control sound volume.

You'll also want to cluster frequently used buttons like frequency tuning, mode selection, and volume control in one area. If you look at the prototype of my own design (Photo B) you will see that I have grouped the buttons and display items in a very deliberate way following this basic tenet of human factors: frequently used buttons should be placed together and in a specific order.

Physiological studies of how the human eye tracks an object show that it does so in an arc, starting in the lower left hand corner and going to the right. So the person using the software program will gather information in this order:

- Signal Strength
- Time
- Audio Bandwidth
- Tuning Step
- Mode
- Tuning Frequency
- Audio Volume
- Line In level
- BFO
- Squelch
- Status (Power on/off, Squelch on/off)

You'll notice that Mute and Tuning are in the "neutral" middle area of the user interface. That's because they are not "information," but function and don't need to be scanned. Likewise the Frequency display is at the top of the viewing arc, which is the neutral point in the arc and the most restful area to view. Furthermore, while the primary scanning track is from left to right, the eye can go to either way if there's a need to find specific information. Just make sure the most important tasks, such as tuning, changing modes, or volume control are where they're easy to see and access. Less important tasks should be placed further away as their importance diminishes.

Once you've laid out your design on paper (or with a computer graphics program), you can begin to "translate" that design into the Visual BASIC working area. As you can see in the illustration of the working area you start out with, you're working with a blank form as you begin building your user interface upon. This form will reflect the default shape and display of the application program when you're finished, so literally "what you see is what you get" (see Photo C).

Again, as you can see in the illustration, I've begun to place the buttons and other visual objects that will make up the final UI onto the form. These are being drawn from the "toolbox" panel on the left hand side of the screen, which contains a wide range of items to choose from. At this point all I'm doing is placing selected items onto the form. I've chosen "point and click" buttons, text display boxes, numerical display buttons, and text labels. My next task will be to customize the look and behavior of the UI and to then place the Visual BASIC code into

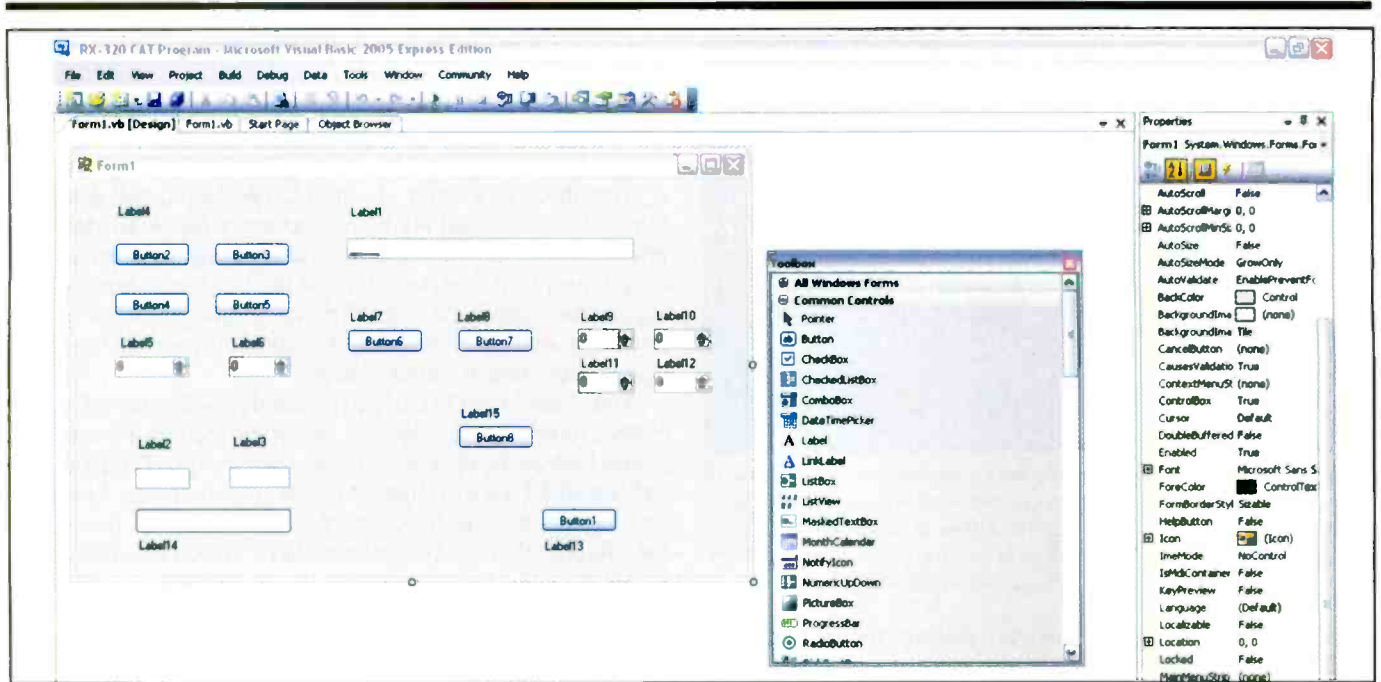


Photo C. After you design the user interface for the CAT application, it's time to begin building it in Microsoft Visual BASIC Express. As you can see, you have a palette of buttons and display screens that you can choose from. Once you have created the visual elements, you can begin to program functions into them, which will be covered next month.

the application, but we'll cover that in next month's column.

### Further Reading...

For now, take some time to learn more about human factors in computer interface design—it's as important to know how to create good interfaces as it is to be able to write good computer code. Failure to do so can waste the effort you put into your "hidden" design features and frustrate people who want to use your software.

There are many sources of information on human factors available on the Internet, as well many books on the subject. A good starting point is the Human Factors and Ergonomics Society ([www.hfes.org/web/Default.aspx](http://www.hfes.org/web/Default.aspx)), made up of professionals who develop the "best practices" for many different types of industries.

For a lighter point of view, there's the "Bad Human Factors Designs" webpage ([www.baddesigns.com](http://www.baddesigns.com)), which contains some humorous examples on how not to implement a design. An excellent checklist for good human factors design is be found at [www.useit.com/papers/heuristic/heuristic\\_list.html](http://www.useit.com/papers/heuristic/heuristic_list.html); it lists 10 usability heuristics (a fancy word for "rule of thumb") that can definitely help you make the best decisions possible on your design. Lastly, probably one of the best sources for software design comes from Microsoft's own on-line library, found at [http://msdn.microsoft.com/library/default](http://msdn.microsoft.com/library/default.asp?url=/library/enus/dnanchor/html/a_nch_uidesigndev.asp)

[asp?url=/library/enus/dnanchor/html/a\\_nch\\_uidesigndev.asp](http://msdn.microsoft.com/library/default.asp?url=/library/enus/dnanchor/html/a_nch_uidesigndev.asp).

The key point in any UI design is the old standby KISS principle: Keep It Simple Stupid. Remember, radio monitoring is a hobby, so whatever you create, make it enjoyable to use, as this is supposed to be a recreational activity and not a test of a person's endurance when trying to tune in stations.

### Coming Up

In February I'll explain how to customize the look and behavior of the UI and then place the Visual BASIC code into the application itself. This isn't as tricky as it sounds as long as you take your time, keep notes, and have a plan worked out ahead of time. The key tasks will be to "build" the command codes into the user interface that you've designed and to ensure that the application can open a link between the computer and the RX-320D using a serial cable.

The following month, we will take our newly created software out for a test drive and examine how the application transforms button clicks into actions taking place within the RX-320D itself.

Do not forget you can e-mail me with any questions at [carm\\_popcomm@hotmail.com](mailto:carm_popcomm@hotmail.com). As mentioned before, I cannot answer general questions on computers, but will be more than happy to help with any issues raised in the columns.

This year we have been blessed by avoiding the devastating effects of the natural disasters that occurred throughout 2005. While the reprieve is appreciated, do not think for one moment that we can sit back and rest on our laurels. As I have said many times before, 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 visible support, particularly as levels of violence continue to escalate in the Middle East, Afghanistan, and indeed many other parts of the world. The U.S. Department of Defense has set up a new support program, called "America Supports You," for the benefits of all the men and women in the military. Visit its new website at [www.americasupportsyou.mil/americasupportsyou/index.aspx](http://www.americasupportsyou.mil/americasupportsyou/index.aspx) for a wide range of activities that you can participate in to support our troops. You can also use this site to send messages to our troops and to read messages from them.

Again, if you are fortunate to live in the United States of America, have a safe and secure home, a paying job, and your loved ones around you when so many don't, please remember to give thanks for your personal blessings. Remember to pass on that blessing to others through regular acts of selfless sharing. Happy New Year, and I'll see you in February. ■

## Kudos In Order For You

**D**id you know that readers like you indirectly make possible the fine work REACT Teams do for their communities? Perhaps you didn't realize that, but it is the case. Thanks are due you. When you operate your radio station within the power regulations of the FCC, for example, you virtually eliminate the possibility of interference to REACT operations. That can save lives, perhaps even thousands of miles away.

Operators who disregard FCC regulations place lives at risk, both nearby and at great distances. I recall monitoring CB Emergency Channel 9 and receiving "skip" distress calls. I vividly remember one such call some years ago from a Kansas truck driver.

An early February blizzard had stopped his truck in its tracks. He feared freezing to death. In Ontario, 1,500 miles away, I could hear him clearly at 2 a.m., but he couldn't hear me. A lady changing channels also heard him. She got vital details from him since he could hear her. I heard them, too, and immediately notified his dispatcher. Hopefully, together we helped save his life.

Fortunately, that night no one was "shooting skip" or that trucker could have paid with his life. Other callers have not been so blessed. I can recall trying in vain to pull out distress calls amid skip shooting. The skip shooters, using illegal linears on the official CB emergency frequency, overpowered the callers in trouble. Hopefully, other REACT monitors in other locations, or operators like you, were able to handle those calls and maybe help save those lives.

Have you perhaps come upon a REACT Team using a frequency to provide safety communications for a local event? When you willingly move to another frequency, you contribute to the safety of that event. Again, that simple courtesy can save lives. Emergencies arise in an instant. An operator who argues his "right" to use that frequency can delay a call for medical assistance. REACTers are thankful for operators like you.

On behalf of REACT volunteers everywhere, I want to take this opportunity to extend to our readers the deepest gratitude for your consideration over the years. Little things you have done may well mean that you helped save a life or two, or three in your radio career. You likely never even thought of it, right? Well, now you know. And thanks again!



### Double-Teaming For Safety

Two REACT Teams that were once one link-up again each year to mount safety comms for an Easter Seals Run/Walk that's nearly three decades old. REACT Lake Simcoe has assisted with 25 of the 28 events, and REACT Don Valley, a



*Strategy session in progress. Members of REACT Don Valley and REACT Lake Simcoe prepare to monitor the route of the 28th annual Easter Seals Run/Walk in Newmarket, Ontario, where they'll be providing safety communications.*

"daughter" Team, has been involved in about 20.

After the first three events, organizers of the Persechini Easter Seals Run/Walk in Newmarket, Ontario, realized that the walk's growth demanded a means of monitoring safety over the 10-kilometer route. They contacted newly established REACT Lake Simcoe for help, and the rest is history (Easter Seals Run/Walk 29 will take place this spring!).

Later, several REACT Lake Simcoe members who drove 40 miles to the Team meetings created REACT Don Valley in a Toronto suburb. The two Teams have continued to work together on large events over the years. The Easter Seals run now attracts over 2,000 participants and has outgrown several routes so the combined skills and resources of the two REACT teams are much needed and appreciated.

## 9/11 Operators Honored

Hill Country REACT, San Antonio, Texas, coordinated a National Preparedness Month event to honor amateur radio

***"REACT Teams continue to show that they're up to meeting new training standards mandated by FEMA for all participants in disaster relief operations."***

contributions in the wake of 9/11. REACT established a Special Event amateur station in a busy downtown park. It operated from 9 a.m. to 11 p.m. on 9/11 and offered QSL certificates to those who made contact. The REACT station operated on 15, 20, and 40 meters.

Several other emergency organizations participated in the REACT event with displays and activities, including Citizen Corps groups and members of Volunteer Organizations Active in Disasters (VOAD). San Antonio police, fire, and EM also took part, as did Red Cross Disaster Services.

Bob Hejl, W2IK, one of the first hams on the air following the World Trade Center attack, now resides in San Antonio. His presence prompted the Hill

Country REACT observance honoring those hams who assisted early in the disaster, helping the public understand the real need for emergency preparedness by families.

## Teams Train For FEMA

REACT Teams continue to show that they're up to meeting new training standards mandated by FEMA for all participants in disaster relief operations. FEMA now requires that any official or volunteer wishing to assist in the wake of a disaster hold a minimum of two National Incident Management System (NIMS) courses, ICS-100 and ICS-700.

Reports keep rolling in from REACT Teams nationwide about how they meet, and often exceed, the FEMA requirement. University of Oklahoma REACT and Oklahoma County REACT are among those. Both Teams "work" for the same EM Director so he must be one happy fellow. Apollo VII REACT, Illinois, is another. Multi-County REACT, Ohio, and Burke County REACT, North Carolina, are two more.

These and other REACT Teams often hold additional qualifications that enhance their value to officials when a major emergency arises. If you're lucky enough to reside in their areas, you have some very competent volunteers that you can count on when needed.

## Now's The Time

Have you been thinking about joining your local REACT Team or forming a Team if none currently exists? The membership year is just beginning. Visit [www.REACTintl.org](http://www.REACTintl.org) and click on "Teams and Councils." If there is a Team nearby, contact it today about joining. Call 1-866-REACT-9-9 (toll free) or e-mail [REACT@REACTintl.org](mailto:REACT@REACTintl.org) to request a "Team Charter Kit" if no Team is listed in your area. The things you read about in this column you can help make happen in your community through a REACT Team.

There couldn't be a better time to drop us a line to let us know about a REACT Team you'd like recognized for its help to you or to others. We'd like to hear from you. We welcome your comments about the column, too. Drop us a note at [Popularcom@aol.com](mailto:Popularcom@aol.com).

Thanks for all your help and I'll see you again in March. ■

## TUNING IN (from page 4)

all the things radio in all its many forms can do for Americans during these unusual times.

How ready are we today? With respect to communications, the Official National Commission On Terrorism Attacks Upon the United States report concluded,

It is a fair inference, given the differing situations in New York City and Northern Virginia, that the problems in command, control, and communications that occurred at both sites will likely recur in any emergency of similar scale. The task looking forward is to enable first responders to respond in a coordinated manner with the greatest possible awareness of the situation.

From what I'm hearing from first responders and public safety officials, that part of the report could have been written last week.

Perhaps you're like most Americans and are weary of hearing about pre- and post-9/11 blunders, but as our writer "Homeland Security" columnist, Rich Arland, says every month, "preparedness is not optional." And although we like to think we're so hip, frankly we Americans are still rather myopic and in many ways blissfully ignorant of the

world around us. The "it can't happen here" mentality is indeed still alive and well because, as I heard one network commentator say as this was being written, "it" hasn't happened since 9/11. So, we're pretty safe. Can't argue with that flawed logic, can we?

You know, if you've got still got a few bucks left after all that holiday spending, it's not too late to spend \$20 on a pair of FRS/GMRS walkie-talkies and give one to your kid—just to be extra safe. Perhaps a scanner and portable shortwave receiver would give him or her a unique perspective of our world—a perspective many of us, including members of the Mainstream Media and politicians, could use as well. If we keep driving home the point about being informed through the wonderful medium of radio in all its forms, at least you and I as patriotic Americans won't live in a cocoon. Let's leave that to the folks who believe everything Washington churns out.

Maybe that brand new 1,000-channel scanner Santa brought you *can* be filled with frequencies after all, and that small portable shortwave receiver you got Dad can help you both understand our world—and America's place in it—a little better. ■

# The Alphabet Soup Of Navigational Aids Demystified

I've been in the "business" of air traffic since 1972. (Now my daughter thinks it's been longer, like since Wilbur Wright lost the luggage after the flight in 1903.) During the years, I've seen a great deal of change in the types, designations, and performance of aircraft, as well as in navigation and maps.

In the early days of cross-country flying many pilots would follow roads on the ground during daylight hours and at night would follow a series of bonfires. By the 1950s much of instrument flying was using low-frequency non-directional beacons (NDBs). Automatic direction finder (ADF) radios found in most aircraft manufactured since the '50s have an LF/AM radio that allows the pilot to hone in on these NDBs. The NDB frequencies are below 540 kHz and transmit in AM Morse code.

These NDBs are normally located either at the airports or in a specific position on final approach to particular runways. Many of those NDBs are co-located with an outer marker (OM) on instrument landing systems (ILS) at many public and military airports. However many of these NDBs are being phased out and the positions of the OMs are slowly being replaced by global positioning system (GPS) waypoints. Many pilots may use the NDB receivers to pick up AM radio transmissions for news, weather, and entertainment.

In the '60s and '70s the NAVAID of choice turned to VHF omni-directional ranges (VORs, also see the "Glossary" for explanations of some frequently used acronyms). Frequencies are between 108.1 to 117.995 MHz, and also transmitting in AM. Some were collocated with tactical air navigation (TACANs) equipment, called VORTACs, used by the U.S. military. These transmitters send out 360 radials of informa-



*The Shuttle Discovery landing at the Kennedy Space Center, Florida.  
(Photo courtesy NASA)*

tion. This allows pilots to fly a much more precise course to or from VORTACs.

Information received from VORTACs can also give mileage from a particular NAVAID. The main problem is the higher the aircraft, the greater error of mileage information. It's called "slant range error." If the pilot crosses a VORTAC 5,000 feet above the surface it will never show that it's less than one mile from the NAVAID. And crossing the NAVAID above 15,000 feet won't give an indication of less than three miles from it.

## Two Types Of Maps

From my previous "Plane Sense" columns you may remem-

### Glossary Of Terms And Acronyms

**ARTCC (Air Route Traffic Control Center)**—A facility established to provide air traffic control service to aircraft operating on IFR flight plans within controlled airspace, principally during the en route phase of flight.

**ATC (Air Traffic Control)**—Means what it sounds like.

**FSS (Flight Service Station)**—Air traffic facilities that provide pilot briefing, en route communications and VFR search and rescue services. They also assist lost aircraft and aircraft in emergency situations and relay ATC clearances. Similar is **AFSS (Automated Flight Service Station)**.

**ICAO (International Civil Aviation Organization)** Headquartered in Montreal, Canada, this agency of the UN develops the principles and techniques of international air navigation and fosters the planning and development of international air transport to ensure safe and orderly growth.

**IFR (Instrument Flight Rules)**—A set of rules governing the conduct of flight under instrument meteorological conditions.

**ILS (Instrument Landing System) Approach Plate**—Diagram published by the FAA and privately that depicts the procedure pilots need to follow to execute an ILS approach.

**NAVAID (Navigational Aid)**—Transmitter that helps pilots navigate from one point to another.

**NOTAM (Notices To Airmen)**—A notice of information that contains timely data concerning the establishment, condition, or change in any component (facility, service, or procedure of, or hazard in the National Airspace System) which is essential to personnel concerned with flight operations.

**UNICOM**—An aeronautical advisory station primarily for private aircraft.

**VFR (Visual Flight Rule)**—A set of regulations that a pilot may operate under when weather conditions meet certain minimum requirements. They are to be followed when there is sufficient visibility for aircraft to be seen and avoided.

**VORTAC**—The VOR system is the backbone of air navigation in the US and most other countries. It is composed of usually round buildings, about 30-feet in diameter, with a cone sticking out of the top. Many are painted in a red and white checkerboard pattern. VOR is an acronym for Very high frequency Omni Range. VORTAC is the same with TAC, standing for TACAN, a military designation for its distance information on a VOR signal.

**WSI (Weather Services International)**—Headquartered in Andover, Massachusetts with offices in Birmingham, England, WSI provides weather-related products and information to professionals in the energy, aviation, and media markets, as well as multiple federal and state government agencies.

ber that the airways for instrument flying in the United States are found on primarily two types of maps.

Aircraft flying from the surface up to, but not including, 18,000 feet use low altitude charts. Airways there are indicated as Victor airways and are depicted as a letter "V" with one to three numbers, such as V3 or V441. They are pronounced "Victor Three" or "Victor Four Forty One."

Aircraft flying between 18,000 and 60,000 feet (or flight levels one-eight-zero and six-zero-zero) use high altitude charts and fly jet airways, which are described with the letter "J" and one to three numbers, such as J59. Oddly enough the letter is pronounced as the letter "J." J59 is stated as "Jay Fifty Nine," not "Juliet Fifty Nine."

All of this leads up to a question I received from René N. of Delray Beach, Florida, who asked, "What are Q routes and T routes? And I have also heard of Bahama Route One Lima. What are these?"

To answer René's question, this deals with two different types of instrument routes that I haven't covered earlier. Let me address the second question first.

Not all navigational aids found outside the United States are based on VORs and VORTACs, but use the older NDB system and as such are not as precise as VOR/VORTAC airways. In the case of Bahama Route One Lima, this airway connects two NDBs. It runs from the Satellite NDB (SQT) (257 kHz) at the Melbourne Florida southeast to the Freeport NDB (BHF) (326 kHz) on the Freeport Bahama Airport (MYGF). These airways require additional separation between en route aircraft because of the lack of precision location. These airways, which have been in use for years, will probably remain as they are for many more years as it's far less expensive to maintain the NDB than to replace them with the more modern, precise, and expensive equipment.

The first routes René mentioned are new GPS-based routes that will probably replace the VOR/VORTAC-based en route airways in use today. The Q routes are currently found over the Gulf of Mexico and have already replaced the older Victor and Jet routes. These routes are referred to with the letter "Q," not the ICAO Quebec, with the numbers.

For example, the route that leaves Sarasota (SRQ) Florida en route to Leeville (LEV) Louisiana is called "Q One Hundred." I get a kick out of it as it sounds

## George Bush Intercontinental Airport

UNICOM:	122.95
ATIS:	124.05(281-443-1744)
WX ASOS:	PHONE 281-443-6397
HOUSTON GROUND:	118.575 119.95 121.7
HOUSTON TOWER:	120.725 125.35 127.3 135.15 288.25 290.2
HOUSTON APPROACH:	120.05 EAST 124.35(WEST) 316.15(WEST) 379.1(N AND E)
HOUSTON DEPARTURE:	119.7(NORTH) 123.8(WEST) 133.6(EAST) 257.2(EAST) 257.7(WEST) 281.4(NORTH)
CLEARANCE DELIVERY:	128.1
CLASS B:	119.7 NORTH 123.8 WEST 133.6 EAST 134.45 SOUTH 257.2(EAST) 257.7(WEST) 281.4 NORTH 284.0 SOUTH
EMERG:	121.5
IC:	118.575 119.95 120.05 EAST 120.725 121.7 124.35(WEST) 125.35 127.3 135.15 288.25 290.2 316.15(WEST) 379.1(N AND E)
WX ASOS at DWH (12 nm NW):	124.95 (281-251-7853)

like an FM rock station. Q-100 uses en route fixes of REDFN (pronounced appropriately red-fin) and REMIS. As of this writing all Q routes over the Gulf of Mexico use fixes starting with the letter R. On these routes GPS is mandatory. The earlier VOR/VORTAC routes have been completely decommissioned.

The other routes are known as T routes, again only pronounced with the letter "T," not "tango." Thus T211 is pronounced "Tee Two Eleven." They are shown as blue-colored routes on the maps to differentiate from the standard black-colored Victor routes. Like the Q routes over the Gulf, no VOR/VORTACs are used—strictly GPS info. However, unlike the Q routes, the T routes are strictly for low-level flight, below 18,000 feet. Q routes are apparently used at all altitudes up to flight level 600 (60,000 feet).

When the shuttle *Discovery* returned to the Shuttle Landing Facility (TTS) at the Kennedy Space Center with a picture perfect landing we all breathed a

sigh of relief. One thing that has puzzled and perplexed many native Floridians is the fact that when the shuttle is in orbit it's controlled not at the Kennedy Space Center, but in Houston, Texas. My personal feelings about the late president Johnson placing it in his home state will remain private. But if you're in the Houston area you may enjoy listening to the two major airports: Houston Intercontinental (IAH) or Houston Hobby (HOU).

For monitoring the George Bush Intercontinental Airport, use the frequencies in the box we've provided. William P. Hobby Airport, commonly known as Houston Hobby, frequencies are also provided for your listening pleasure. Note that all frequencies are in the AM mode.

Keep listening. I hope to have more info on the Civil Air Patrol aviation communications in the near future as I'm rejoining after a six-year hiatus as the Vice Communications Office for the Albert Whitted Composite Squadron. ■

## William P. Hobby Airport

UNICOM:	122.95
ATIS:	124.6
WX ASOS:	PHONE 713-847-1462
HOBBY GROUND:	121.9
HOBBY TOWER:	118.7 256.9
HOUSTON APPROACH:	120.05 EAST 124.35(WEST) 134.45 SOUTH
HOUSTON DEPARTURE:	119.7(NORTH) 123.8(WEST) 134.45 SOUTH
CLEARANCE DELIVERY:	125.45
AS ASSIGNED:	120.2
CLASS B:	119.7(NORTH) 123.8(WEST) 134.45 SOUTH
EMERG:	121.5 243.0
FINAL:	119.1
IC:	120.05 EAST 124.35(WEST)
PTC:	125.45

**NEW/CHANGED/DELETED FREQUENCIES**

**NEW**

**AK**  
King Cove (KVC/PAVC)  
AWSS 118.325/907-497-4279

**AZ**  
Ajo, Eric Marcus Municipal (P01)  
Prescott AFSS RCO 122.65

**AR**  
Social Hill (ISH)  
Jonesboro AFSS RCO 122.075

**CO**  
Eagle County Regional (EGE)  
ATIS 135.575

**GA**  
Warner Robins, Robins AFB (WRB)  
PMSV METRO 349.85  
Waynesboro, Sandy Hill Airport (GE30)  
UNICOM 122.75

**IA**  
Grinnell Regional (GGI)  
AWOS-3 120.725/641-236-9720

**KS**  
Wellington Municipal (EGT)  
AWOS-3 118.875/620-326-2470

**NY**  
Seneca Falls, Finger Lakes Regional (0G7)  
AWOS-3 120.0/315-568-5362

**OH**  
Green Springs, Weiker Airport (82D)  
CTAF 122.9

**TN**  
Memphis ARTCC (ZME)  
Tupelo Low RCAG 279.55  
Tullahoma, Arnold AFB (AYX)  
AWOS-3 128.325/931-454-2052  
PTD 126.2/257.975

**VA**  
Culpepper Regional Airport (DZH)  
ILS Rwy 04 (I-DZH) 109.95

**CHANGED**

**AR**  
Huntsville Municipal (H34)  
Rogers Municipal (ROG)  
Springdale (ASG)  
Memphis ARTCC (ZME) RTR was 128.15, now 126.6

**CA**  
Atwater (MER)  
CTAF was 123.0, now 123.075  
Groveland, Pine Mountain Lake (E45)  
RTR was 126.58, now 121.25

**IL**  
Carmi Municipal (CUL)  
AWOS was 332 kHz, now 118.425

**MS**  
Batesville, Panola County (PMU)  
Grenada Municipal (GNF)  
Oxford University (UOX)  
Tupelo Regional (TUP)  
Memphis (ZME) RCAG was 381.4, now 279.55

**MO**  
Kansas City International Airport (MCI)  
Aph was 132.95, now 123.95

**DELETED**

**FL**  
Tallahassee Regional Airport (TLH)  
ILS RWY 27 Outer Marker 332kHz

**GA**  
Greensboro, Green County Regional (3J7)  
ASOS 124.525/706-639-976

**NEW/CHANGED IDs/CLOSED & ABANDONED AIRPORTS**

**NEW**

**ID**  
Oreaha, Ez Lope Rance Airport 0ID5

**IN**  
Indianapolis, St. Francis Hospital, Southcampus Heliport  
9IN1

**IA**  
Jewell, Lund Airport 931A

**MI**  
Farmington Hills, Express Heliport M181  
Fife Lake, Tannehill Airfield Airport M160

**NY**  
Inlet, Seventh Lake Seaplane Base NK15

**PA**  
Tidioute, Mountain Crest Airport 17PS

**CHANGED IDs**

**OH**  
Green Springs, Weiker Airport was 0OH5, now 82D

**CLOSED & ABANDONED AIRPORTS**

**FL**  
Opa Locka West X46

**IN**  
Linden, Wilkins Strip Airport IN16

**NJ**  
Absecon, McGinnis Airport NJ01  
Weehawken, Arcorp Properties Heliport 57NJ

**NM**  
Eunice Airport E04

**PA**  
Caleton, Cherry Springs 5G6  
Johnstown, Richard F. Seifert Medical Arts Center Heliport  
PS09

## Monitoring Operation Deep Freeze

**H**ere in the suburbs of Buffalo, New York, where each month's "Utility Communications Digest" is created, the month of January conjures up images of snow, ice, and bone-chilling winds. The Blizzard of 1977 comes immediately to mind for those of us who survived it. If you live in western New York State, when you think of January, you think of winter.

That's undoubtedly the case in many other places as well, for January finds the northern latitudes in winter's frigid grip. Contrary to popular belief, however, the coldest, windiest, most inhospitable climate on the globe does not belong to Buffalo, or to Minnesota, or Upper Michigan, or the northern provinces of Canada, for that matter. No, this distinction belongs to the continent of Antarctica, where the relatively few souls hardy enough to brave the outdoors must contend with only two hours of daylight and wind chills of more than 100 below zero as this is being written—and it's *summer* there right now!

Thus, I can think of no better way to take our minds off the winter doldrums than to consider that, no matter how nasty the weather gets where you live, it's even worse in Antarctica. This also provides the perfect backdrop for us to examine the aptly named Operation Deep Freeze.

### Support For A Continent

Operation Deep Freeze is the unclassified code name given to operations conducted by the U.S. military in support of the United States Antarctic Program, or USAP. The USAP is an initiative overseen by the National Science Foundation, and Operation Deep Freeze facilitates the scientific research by providing operational and logistical support for projects such as IceCube, a \$272 million, six-year project to bury more than

4,800 sensors in 80 holes more than a mile deep into the Antarctic surface, which requires, among other things, the world's heaviest ice drill. When completed, this underground observatory will measure and chart the path of neutrinos, the smallest particles of matter, as they travel from space through the Earth.

As you might imagine, it is quite a task to support such a project, especially when you consider that the logistical hub, located in Christchurch, New Zealand, is 2,415 miles from the main Antarctic research site. That's where Operation Deep Freeze comes in. Every man, machine and piece of equipment needed to construct IceCube is delivered to the South Pole by Air Force LC-130H aircraft from the 109th Airlift Wing out of Stratton Air National Guard Base in Scotia, New York, near Schenectady. The LC-130H (see **Photo A**) is equipped with ski-landing gear that allows the aircraft to land on ice or snow for airlifting supplies to remote locations throughout the Antarctic continent.

The three-phase Operation Deep Freeze season runs August through mid-February. Phase One, dubbed "Winfly," was completed in August by the C-17 crews who delivered advance teams and equipment to McMurdo. The second and third phases are known as "mainbody" and "redeployment." Mainbody runs from late September through mid-November; redeployment runs late January through mid-February.

### A Bit Of History

The name Operation Deep Freeze has been used for over 50 years, beginning with "Operation Deep Freeze I," which was used in 1955-56, followed by "Operation Deep Freeze II," "Operation Deep Freeze III," and so on. As a result of the continuing U.S. presence in Antarctica, the name has become a general term for U.S. operations in that continent, particularly regular missions to resupply U.S. Antarctic bases.

Operation Deep Freeze I started as a collaborative effort between 40 nations to carry out scientific studies on a global scale. As part of this project, the United States, along with Great Britain, France, Japan, Norway, Chile, Argentina, and the U.S.S.R., agreed to go the South Pole, the least explored area on Earth, to study Antarctic hydrography and weather systems, glacial movements, and marine life.

The U.S. Navy already had experience exploring Antarctica, dating back to 1839 when Captain Charles Wilkes led the first U.S. Naval expedition into Antarctic waters, and later when Admiral Richard Byrd conducted several expeditions and charted the Ross Sea and most of the Antarctic coastline. In 1948 Commander



A NYANG LC-130H sits while crews unload fuel and cargo at Amundsen-Scott South Pole Station in Antarctica during a recent mission. (USAF photo by Master Sgt. Efrain Gonzalez)



Finn Ronne led an expedition that photographed over 450,000 square miles by air. Then, in 1954–55, the icebreaker *USS Atka* (AGB-3) made a scouting expedition for future landing sites and bays. Operation Deep Freeze I prepared a permanent research station, setting the stage for later operations. The Navy remained responsible for these operations until early 1996, when the transition to control by the Air National Guard began.

## Work Began In Summer

This season's work for Operation Deep Freeze actually began in August. When most of us were enjoying the last month of nice, warm summer weather, a C-17 Globemaster aircraft from the 62nd Airlift Wing at McChord Air Force Base in Washington flew four missions from Christchurch to McMurdo Station, Antarctica, to stage men and equipment and to prepare the ice runway at McMurdo Station for the main C-17 and LC-130 operations that began in October and will continue into February.

This part of the mission used to be handled by C-141 Starlifter aircraft from the 452nd Air Mobility Wing at March Air Reserve Base in California. However, since the Air Force has retired the last of the aging C-141s, the C-17s from McChord have assumed responsibility for Operation Deep Freeze. They have some big shoes to fill: Although over the years, missions involving other aircraft and crews sometimes ended tragically, leaving behind crashed and abandoned airplanes partially buried in ice and snow, the C-141 crews never had to leave an "aircraft monument" in Antarctica.

I'm employed in the commercial aviation industry, and I must comment that this perfect safety record in the most extreme environment on Earth is nothing short of amazing to me. Unlike most flights in civilian aviation, the aircrews do not have an alternate location to land in case something goes wrong. They get a weather report prior to reaching the "point of no return" at about the four-hour point of the trip and roughly an hour out of Antarctica. At that point, they have a few minutes to decide whether to continue to the ice cap or turn around and fly back to New Zealand. Once they pass the point of no return they cannot turn around, regardless of how severe conditions may become, because they don't have enough fuel to get back to New Zealand.

Upon reaching McMurdo Station, landing the aircraft can also be an adven-



*The USNS Lawrence H Gianella, a USN transport tanker, which has participated in Operation Deep Freeze. (Photo courtesy of the U.S. Navy)*

ture. Flying into one of the few places on Earth where even a basic handheld magnetic compass can become confused, sudden weather changes can blend the whiteness of the sky and horizon, producing what pilots refer to as "Zero-Zero": zero visibility, zero ceiling.

In extreme cases, under conditions where the commercial flights that I work with would undoubtedly divert to another airport, these pilots perform a white-out landing with the help of the entire crew acting providing extra sets of eyes, picking a descent profile and following it to the ground while the flight engineer counts off the distance from the ground—"30 feet, 20 feet,..."—and then putting the aircraft safely onto the frozen runway. That, readers, has to be one high-pucker landing!

## A Safe Landing

Once the aircraft lands, it is then subject to the harsh environment of Antarctica. The aircraft's engines are shut down to prevent damage to the snow-compacted frozen runway. Heaters are strategically placed in areas such as wheel wells to keep grease, pins, and other parts from freezing. Nevertheless, hydraulic fluid, oils, and lubricants thicken. Fuel gels up. Electrical wiring gets brittle. Seals leak and windows crack from the extreme cold. Moreover, if a plane breaks on the ice, it must remain there until parts can be flown from Christchurch.

Despite all this, the C141 crews from March produced a perfect safety record. They deserve a tip of the hat for this feat, and hopefully the C-17 crews will be able to equal it.

After the C-17 arrives and is unloaded, LC-130 aircraft provide the logistical movement of cargo to remote operating

locations on the continent. These aircraft augmented by the U.S. Coast Guard icebreakers, the USAF Air Mobility Command (AMC), and the Military Sealift Command, are known collectively as Operation Deep Freeze. The operation is managed from Christchurch by a detachment of the U.S. Air Force and Air National Guard. As of 2005, the detachment consisted of a full-time officer (Commander) and four full-time non-commissioned Officers (Logistics, Communications, Security Forces, and Information Management); the detachment remains in New Zealand year round.

In addition, U.S. Navy Cargo Handling Battalion One (NCHB1) provides critical port services at McMurdo Station. The only active-duty component of the Naval Expeditionary Logistics Support Force (NAVELSF), headquartered in Williamsburg, Virginia, NCHB1 is a component of the U.S. Fleet Forces Command.

## Resupply Ops And Support Craft

Vessel resupply operations consist of two Military Sealift Command (MSC) vessels delivering fuel and supplies to McMurdo Station. In early January, prior to the vessels' arrival, Coast Guard icebreakers cut a channel through miles of ice allowing the ships access to the McMurdo Ice Pier. An example of one of these vessels is the USNS *Lawrence H. Gianella* (see **Photo B**), one of MSC's four transporter tankers purchased by the Navy in 2003. A Champion-class T-5 tanker, the *Gianella* displaces 39,624 tons, is 615 feet long, and can carry 237,766 barrels of fuel. Carrying its crew complement of 24, its Sulzer diesel engine can sustain 18,400 horsepower and propel the ship to a speed of 16 knots.

Air support is provided by LC-130s, a variant of the C-130 Hercules aircraft built in several variations by Lockheed. The first of the LC-130s, delivered in the early 1960s, were originally designated C-130BL, but the designation was changed to LC-130F when the U.S. Defense Department changed aircraft nomenclature in the early 1960s. These aircraft were bought by the Navy to support Operation Deep Freeze, and the National Science Foundation bought a second set of aircraft as replacements.

These aircraft were designated LC-130R and were delivered in two lots, the first in 1974 consisting of three airplanes, and the second in 1976 consisting of two more aircraft. The LC-130R has engines that are more powerful, has wing-mounted external fuel tanks, and can carry a heavier payload than the original LC-130F.

The Navy originally operated the LC-130 aircraft, initially out of NAS Quonset Point, Rhode Island, and later at NAS Point Mugu, California. This continued until operation of the aircraft was transferred to the 109th Airlift Wing of the New York Air National Guard in the 1990s. Currently all LC-130 aircraft are operated by the New York Air National Guard. There are three versions. Four aircraft are LC-130H-2, three are LC-130H-3, and three are LC-130R—the second-generation Navy version—which have since been converted to the ANG LC-130H-2 version.

In addition to the polar airlift functions, the Air National Guard contingent at Stratton Air National Guard Base also supports aero medical evacuation, combat construction, field hospital, and other missions. Like all National Guard units, the 109th also provides assistance to civil authorities during disasters or civil disturbances. For example, they provided personnel and resources in response to the destruction of the World Trade Center on 9/11. They also support the National Counter Drug Program, the Civil Air Patrol, and the Weapons of Mass Destruction-2nd Civil Support Team.

## Callsigns, Frequencies

While flights in past years have used a variety of callsigns, including POLAR, INDIA, XD-### (reportedly Navy flights delivering civilian personnel), and SKIER, the most recently logged flights between Christchurch and McMurdo station have used the callsign ICE followed by two numbers, such as ICE 07 or ICE 09.

As I write this in early October, the “Mainbody” phase of Operation Deep Freeze is underway, and ICE flights can be heard working Auckland on 8867.0 kHz and 9032.0 kHz and McMurdo station on 9032.0 kHz. In the past, other frequencies have also been logged in use for Antarctic activity, including 4067.0, 4125.0, 4242.0, 5643.0, 7665.0, 8898.0, 9106.0, 11255.0, 11558.0, 13261.0, and 13385.0. The ICE flights will also provide the occasional cameo appearance on one of the Air Force HF-GCS frequencies.

The USCG icebreakers have frequently turned up on 11553.0, on 8924.0 (a maritime HF simplex frequency), as well as on the normal Coast Guard SCN paired frequencies (4426.0/4134.0, 6501.0/6200.0, 8764.0/8240.0, and 13089.0/12242.0). The first frequency of each pair is the coastal station, while ships transmit on the second frequency.

One station you’re not likely to hear anymore is NNN0ICE, which was the Navy MARS station at McMurdo that could often be heard just above and below the 20-meter ham band. This sta-

tion has been gone since 1998, but for some reason, it still keeps showing up on Internet frequency listings.

## You Just Had To Mention The Blizzard, Didn't You?

I find it somewhat ironic that I chose to open this month’s column with mention of what was probably the worst winter storm in Buffalo history, the Blizzard Of ’77. Just a few days after I wrote what you have read thus far, my area received The October Surprise of 2006. Parts of four counties in western New York were plunged into a state of emergency, with severe damage to the power grid resulting in widespread power outages. As a result, this month’s column is somewhat abbreviated. However, please check out my separate article on page 8, which reports on The October Surprise and offers some advice on radio disaster planning as well.

## And Now, On To The Logs!

This month’s reader logs come to us from the following gentlemen, whose contributions are, as always, greatly appreciated: Chris Gay, Lexington, KY (CG/KY); Mark Cleary, Charleston, South Carolina (MC/SC); Glenn Valenta, of Lakewood, Colorado (GV/CO); Stephen Jones, of Lexington, Kentucky (SJ/KY); and John Kasupski, Tonawanda, New York (JK/NY).

**2187.5**—3FGZ3, *PARNASO*, 99,371-ton Panama-registered crude oil tanker w/Global Maritime Distress and Safety System (GMDSS) Digital Selective Calling (DSC) call at 0613Z to sister tanker 3FQC3, *EOS* requesting voice contact on 4143.0 kHz; HOGM, *SMART*, 36,205-ton Panama-registered bulk carrier w/DSC routine position update to NMN, USCG CAMSLANT, Portsmouth, VA, 75 mi SW of tip of Long Island, at 0716Z: 9VIE4, *OLMECA*, 15,472-ton Singapore-registered chemical tanker w/DSC position update, 60 mi S of Galveston, at 0809Z. (SJ/KY)

**3104.0**—F5A & M7L (US Navy vessels) in Link-11 coordination net in USB at 1236Z (MC/SC)

**4021.5**—R26604 (UH-60L # 95-26604) c/g B1Z171 (1-171st AVN) in ALE USB at 0220Z. (MC/SC)

**4125.0**—WDC7173, *CHRISTIAN CHOUEST*, 4,801-ton U.S.-registered offshore supply ship in casual simplex QSO w/vessel WDC6617, USB at 0618Z. (SJ/KY): COMSTA KODIAK (USCG Kodiak, Alaska) asked to relay message for *GULF STATE*, and taking position and status reports, in USB at 0608Z. (GV/CO)

**4146.0**—WDB5790 (U.S.-Registered R/V *SOLITAIRE*) w/unIDed talking about fishing and supplies in USB at 0611Z. (GV/CO)

**4207.5**—H3VS, *CARNIVAL MIRACLE*, 7,089-ton Panama-registered passenger/cruise ship w/GMDSS DSC call to C6NQ7, *RAMLAH*, 300,361-ton Bahamas-registered crude oil tanker requesting voice contact on 4142.0 kHz, at 0522Z: ONCE, *EXCALIBUR*, 77,822-ton Belgium-registered LNG tanker w/DSC call to 76,500-ton LNG tanker sister ship ONCD, *EXCELSIOR* requesting voice contact on 2182.0 kHz, at 0926Z. (SJ/KY)

**4372.0**—9VU, N3J, A1R (US Navy vessels) in Link-11 coordination net in USB at 2356Z. (MC/SC)

**4500.0**—AFA2TO (USAF MARS) as net control for regional net, taking check-ins from many stations, in USB at 0016Z. (JK/NY)

**4518.0**—AFF3C (USAF MARS) sending MARS related traffic, in MFSK16 at 0244Z. (GV/CO)

**4521.5**—T12 (12th Aviation Bn, Davison AAF) c/g R24609 (UH-60A # 87-24609) in ALE USB at 1157Z. (MC/SC)

**4928.5**—R26610 (UH-60L # 95-26610) c/g OPS171 (1-171st AVN Ops) in ALE USB at 0159Z. (MC/SC)

**4991.0**—NK1 (FBI, Newark, NJ) clg QT1 (FBI, Quantico, VA) in ALE USB at 0302Z. (MC/SC)

**5320.0**—SECTOR ST. PETERSBURG radio check with DISTRICT 7 COMMS CENTER in USB at 1314Z. (MC/SC)

**5676.55**—Several unid males in casual simplex QSO in English w/profanity and "come in" instead of "over." New England accents, mentioned "Connecticut boat," probably fishermen but out of band in aero frequencies. USB at 0345Z. (SJ/KY)

**5696.0**—CG 2127 (HU-25, ATC Mobile) requests CAMSLANT notify Sector New Orleans they are on scene on patrol over Gulf in USB at 2233Z. (MC/SC)

**5732.0**—RESCUE 09 (MH-60J, CGAS Elizabeth City) in position 36-19N 076-11W with 4 POB en route to York River for SAR requests guard from CAMSLANT in USB at 2237. (MC/SC)

**5732.0**—CG 1716 (HC-130, CGAS Sacramento) requests guard from CAMSPAC in USB at 0227. (MC/SC)

**5787.5**—RUH958 (UH-60, 1-228 AVN) clg WAROPS (1-228 AVN, Soto Cano AB) in ALE USB at 0138Z. (MC/SC)

**6312.0**—C6IS, *DUNCAN ISLAND*, 14,140-ton Bahamas-registered refrigerated cargo ship w/GMDSS DSC call to sister reefer C6LU4, *HOOD ISLAND* requesting voice contact on 4077.0 kHz, at 0544Z; 3FQC3, *EOS*, 99,440-ton Panama-registered crude oil tanker w/DSC calls to sister tankers 3FUV3, *NEREO*, 3FCV3, *PROTEO*, and 3FX13, *HERO* requesting voice contact on 4143.0 kHz, monitored at 0625-0631Z. (SJ/KY)

**6416.0**—WLO, Mobile R., AL w/services offered info BC, also on parallel frequency 13051.5, in SITOR-B at 0057Z and again at 0456Z. (SJ/KY)

**6483.0**—PBB, Dutch Navy, Van Helder, Netherlands w/ITA2 marker: "02A 04B 06A 08A 12A 16X PBB," 75 baud/850 Hz RTTY at 0450Z. (SJ/KY)

**6580.0**—Several unid. males in casual simplex QSO in Arabic or Farsi but w/frequent Spanish "cambio," USB at 0225Z. (SJ/KY)

**6721.0**—450034 (KC-10A # 85-0034, 305 AMW) clg ADW (Andrews HF-GCS) in ALE USB at 0700Z. (MC/SC)

**6761.0**—RUH958 (UH-60, 1-228 AVN) clg SKYWAT (USA Flight Following, Soto Cano AB) in ALE USB at 0134Z. (MC/SC)

**6985.0**—R23329 (UH-60A # 79-23329) clg T1085 (1085th Medical Co., Rapid City, SD) in ALE USB at 0132Z. (MC/SC)

**7313.6**—AFA2VA & AFF2V net control opening USAF MARS 2S1 Net in USB at 1301Z. (MC/SC)

**7527.0**—JULIET 09 (MH-60J, CGAS Elizabeth City) airborne for Hampton Roads patrol, requests guard from CAMSLANT in USB at 1253Z. (MC/SC)

**7527.0**—TWVS2 (Spanish Police, Salamanca, Spain) clg TXX2 (Spanish Police, Madrid, Spain) in ALE USB at 0306Z. (MC/SC)

**7650.0**—R23351 (UH-60A # 79-23351) clg T2Z238 (2-238 AVN) in ALE USB at 2351Z. (MC/SC)

**7710.0**—VFR, Canadian CG, Resolute, NWT w/inverted Marine Surface Analysis FAX chart followed by corrected Marine Wind Prognosis chart, at 2330Z. (SJ/KY)

**7718.5**—G24165 (CH-47D # 84-24165) clg STPOPS (AASF, St. Paul Airport) in ALE USB at 0037Z. (MC/SC)

**7975.0**—YL/SS numbers (Enigma V2A) with 5-fig grps in AM at 1607Z. (CG/KY)

**7993.5**—US Navy MARS net w/msg recipient list, in PACTOR at 0140Z. (SJ/KY)

**8301.6**—SECTOR SAN JUAN clg STINGRAY 02 (HU-25) in USB at 2032Z. (MC/SC)

**8379.0**—WAAH, *SEALAND MOTIVATOR*, 47,171-ton U.S.-registered container ship w/TEST command, IN SITOR-A monitored at 1410Z. (SJ/KY)

**8381.0**—C6KC8, *CHIBA SPIRIT*, 60,900-ton Bahamas-registered chemical/crude oil tanker w/AMVER/PR 50 m NW of Havana, en route to Port Everglades, FL in SITOR-A at 2025Z; C6FX6, *DOLE ECUADOR*, 11,613-ton Bahamas-registered container ship w/AMVER/SP for departure from Caldera on W coast of Costa Rica, en route to San Diego to arrive in 7 days, in SITOR-A at 2320Z. (SJ/KY)

**8388.0**—H3PX, *GLOBAL HIGHWAY*, 15,148-ton Panama-registered vehicles carrier w/AMVER/FR for arrival at Jacksonville, FL, in SITOR-A at 1520Z. (SJ/KY)

**8389.5**—S6PW, *IZUMO*, 24,362-ton Singapore-registered container ship w/AMVER/FR for arrival at Honolulu, SITOR-A monitored at 1135Z. (SJ/KY)

**8414.5**—ZCOB2, *MALASPINA CASTLE*, 32,587-ton Cayman Islands-registered general cargo ship w/GMDSS DSC call to EHY, Madrid R., Spain w/routine position update, 500 mi W of Gibraltar Strait, at 0040Z; 3EJO6, *HUME HIGHWAY*, 16,169-ton Panama-registered vehicles carrier w/DSC position update, 800 mi W of San Salvador, at 0626Z. (SJ/KY)

**8416.5**—NMC, USCG CAMSPAC San Francisco, Point Reyes Station, CA w/navigational warnings re firing operations at Pacific Missile Range Facility, Barking Sands, Kauai, HI and contact info for requested course alterations, SITOR-B at 0110Z. (SJ/KY)

**8502.0**—NMG, USCG New Orleans LA, OM/EE synthesized voice with wx info in USB at 1617Z. (CG/KY)

**8891.0**—Aircraft CGOXB calling Arctic R., Baffin, Canada for radio check, no contact, in USB at 1929Z. (SJ/KY)

**8971.0**—PELICAN 71B (P-3C) wkg FIDDLE to pass ETA to homeplate in USB at 2353Z. (MC/SC)

**8971.0**—GOLDENHAWK clg TRIDENT 45 (P-3C, VP-26) in USB at 2154Z. (MC/SC)

**8971.0**—FIGHTING TIGER 11 (P-3C, VP-8) reports OCE has received green range from GIANTKILLER in USB at 1719Z. (MC/SC)

**8983.0**—SECTOR UPPER MISSISSIPPI radio check with CAMSLANT in USB at 1457Z. (MC/SC)

**9007.0**—CANFORCE 3736 p/p via TRENTON MILITARY to WING OPS to pass 2230Z ETA in USB at 2111Z. (MC/SC)

**11175.0**—KING 22 (HC-130, 106 RQW) p/p via Offutt HF-GCS to ANGEL OPS at Moody AFB in USB at 0155Z. (MC/SC); BD760 in QSO with McClellan AFB in USB at 2150Z. (CG/KY)

**11232.0**—TRENTON MILITARY wkg RESCUE 310 to pass message from RCC that boat has been located. It had run out of fuel. Crew is safe. RESCUE 310 can RTB. In USB at 0023Z. (MC/SC)

**11494.0**—53A (UH-60) requests guard from PANTHER in USB at 2148Z. (MC/SC)

**12479.0**—SYQH, *OLYMPIC FUTURE*, 155,039-ton Greece-registered crude oil tanker w/AMVER/PR 700 mi W of Guadalajara, MX en route to Long Beach, CA. SITOR-A at 2120Z. (SJ/KY)

**12486.5**—P3CF9, *DONATA SCHULTE*, 33,800-ton Cyprus-registered container ship w/partial AMVER/PR in SITOR-A at 2002Z; DYFU, *STAR VICTORY*, 52,394-ton Philippines-registered bulk carrier w/AMVER/PR, 500 mi W of Nicaragua headed toward Asia; in SITOR-A at 2110Z (same vessel heard 25 hours later 350 mi S of Acapulco, 411 miles further along on course 300). (SJ/KY)

**12577.0**—SZYO, *MSC SICILY*, 24,355-ton Greece-registered container ship w/GMDSS DSC routine position update, in Montreal Harbor, Quebec at 1905Z; C6DK7, *CHIQUITA BELGIE*, 13,390-ton Bahamas-registered refrigerated cargo ship, w/DSC distress call from 350 mi NW of Spanish coast at 2008Z, call acknowledged by NOJ, USCG, Kodiak, AK at 2013Z and relayed by H8WX, *CAPRICORNUS LEADER*, 20,120-ton Panama-registered vehicles carrier, at 2015Z; ELPU9, *PIONEER*, 96,724-ton Liberia-registered crude oil tanker, responding to DSC call by V7BP7, *CONSTITUTION*, 104,700-ton Marshall Islands-registered crude oil tanker w/current position 300 mi SE of Houston, at 2009Z. (SJ/KY)

**12581.5**—WLO, Mobile, Alabama with beacon in SITOR and CW at 1912Z. (CG/KY)

**15016.0**—ARCHIBALD (US Mil) with 36-char. EAM, in USB at 1909Z. (JK/NY)

**15043.0**—CONDOR 01 (E-3 AWACS) with ALE initiated call to RAYMOND 24 at Tinker AFB at 1843Z. (MC/SC)

**16804.5**—SWPM, *MAJESTIC*, 150,184-ton Greece-registered crude oil tanker, w/GMDSS DSC call to sister ship SVIDM, *AUTHENTIC*, 150,249-ton tanker requesting voice contact on 16580.0 kHz, at 1743Z. (SJ/KY)

# The Democratic Peoples Republic Of Korea

**N**orth Korea, like most names in the news today, means different things to many people, but to most Americans it's synonymous with a militaristic government-controlled society that's seemingly always walking on the edge, thanks largely to a repressive regime and its isolationist policy.

Then, of course, what comes to mind is the Korean War. It has been called the "Forgotten War," one in which 37,000 Americans lost their lives in only three years, from 1950 to 1953. How it could ever have been "forgotten" is, frankly, beyond my personal comprehension. But thanks to the current North Korean "leader," Kim Jong Il, the country itself is constantly in the news as one of the world's most scorching of hot spots.

The proverbial "rest of the story" is the history leading up to this country's taking on the rest of the world. For that we need go back only about 100 years.

## Getting To The Brink

North Korean troops crossing the 38th parallel in June 1950 invading South Korea wasn't a momentary flash in the pan, but a well-calculated invasion. The significance of North Korean, Japanese, Chinese, and U.S. concerns over the Korean peninsula becomes obvious after a quick look at a timeline going back only 97 years!

Back in 1905 after the Russo-Japanese War, the Japanese had occupied Korea and weren't forced to surrender until 40 years later, in 1945. That year the U.S., the UK, China, and former Soviet Union were given what amounted to a "trusteeship" over the country with the U.S. the driving force in establishing the 38th parallel, which at the time was not foreseen as a permanent division. That year Japan surrendered, in the North to the Soviet Union and in the South to the U.S.

In the ensuing two years, repeated attempts to bring all parties to the table and establish elections under a UN directive were met with opposition by the north and the Soviet Union, which ignored the resolution. Meanwhile, regardless, elections were held in the south and, separately, in the north. This effectively established two "countries," one backed by the Soviet Union, the other by the U.S., each claiming to be the legitimate Korean government.

After numerous skirmishes along the 38th parallel, the escalation finally reached the boiling point with the North invading the South on June 25, 1950. This was after the U.S. had withdrawn its occupation forces, leaving a small contingent of about 500 "advisors," and with Stalin's approval—and equipment!

A lot can sure happen in the span of only three days. The same day the UN voted to order the 135,000 Korean forces to move behind the 38th parallel, Truman ordered MacArthur to evacuate remaining American dependents and to repel the invading troops with naval and air forces. The next day the president authorized MacArthur to strike above the 38th parallel and to protect the port city of Pusan with ground forces. Two days later the North's troops captured Seoul.



In a stunning defeat at the Battle of Osan, in early July 1950, the first "battle" of the War, American forces were forced to retreat. But it wasn't long before the tide turned at numerous bloody battles, including the Battle of Inchon, retaking Seoul and driving the North Korean People's Army back to the Chinese border.

Then, what MacArthur called "an entirely new war," began as the Chinese, numbering nearly a quarter-million troops pushed the U.S. Eighth Army back below the 38th parallel, and eventually back below Seoul in mid-January of '51. That wasn't to last either, however. With General Matthew Ridgway in command, the North was pushed back again to the 38th parallel in fierce battles under deplorable conditions.

Truce talks were signed that summer, and an armistice was subsequently signed two years later. Times were not easy, with many issues continually resurfacing, including the exchange of POWs. To this day, the truce that was signed by the U.S., China, and North Korea was never signed by the South. Even after the signing, battles and skirmishes raged on, taking the names of nearby hills—Pork Chop, Baldy, and Whitehorse.

The past few years have witnessed talks on reunification, the continuing POW/MIA dispute, and other thorny issues, all amid a backdrop of UN sanctions against the North, the North's

deeply rooted hatred for Japan, and a failing economy north of the 38th parallel.

## Light At The End Of Any Tunnel?

Today, North Korea is again at the top of the news hour after, for threatening nuclear development, despite warnings from the global community—including China—then conducting an underground test and vowing yet another. Of course, what's happening is not that surprising when one looks at the history of the North.

Today the country maintains an army of over a million troops and engages in seemingly unending propaganda, accusing the U.S. of readying an invasion. Despite this, the country continues to get international aid to feed its 23 million people, while pouring most of its money into the militarization of the country.

In direct violation of a 1994 agreement, it was found in 2002 that the North had been developing enriched uranium. Shortly thereafter the North withdrew from the Non-Proliferation Treaty and expelled monitors from the International Atomic Energy Agency. It wasn't long before the North publicly announced it was developing a "nuclear deterrent."

Just two years ago at the Six-Party Talks in Beijing, involving China, Japan, South Korea, the U.S. and North Korea, the North agreed to "abandoning all nuclear weapons and existing nuclear programs and returning, at an early date, to the Treaty on the Non-Proliferation of Nuclear Weapons and to IAEA safeguards." The U.S. affirmed it has no intention of invading the north or having nuclear weapons on the Korean Peninsula. Regardless, the North's fearless leader popped an underground nuke in early October and the saga continues.

## Tensions Mount Once Again

As this was written, just days after threatening another test, reports from the North on state radio and TV said Kim Jong Il was apologetic for the first test. Could it be a power struggle behind closed doors in Pyongyang? Anything is possible in a country that's seemingly impossible to figure out.

Reuters recently reported that Russian leader Vladimir Putin is urging restraint by world leaders and cautioning them not to back North Korea into a corner. Shortly afterward the North said,

according to Reuters, "...any participation by South Korea in U.S.-led sanctions would be seen as a serious provocation leading to a 'crisis of war' on the Korean peninsula."

But it's apparent that the crisis on the peninsula is reaching the Red Alert stage with the UN now reporting the food crisis is "at the critical stage," and what was recently thought of as tough times in North Korea is nothing compared to what the new year will bring its way.

Of course, it's always the people who suffer under repressive regimes, and the CIA reports serious water pollution problems in North Korea, inadequate supplies of potable water, and even waterborne disease making a bad situation even worse. The agency also reported "prolonged malnutrition and poor living conditions," all recalling that only about 12 years ago, the people of North Korea faced near famine conditions.

## Communications Under Direct State Control

In a country about the size of Mississippi, there are four TV stations, 17 AM, 14 FM, and 14 shortwave stations. Want to listen to North Korea? It's easy, if you can stand the incessant propaganda, reminiscent of the rants from Hanoi and Moscow during the Vietnam era.

Reporters Without Borders' annual report last year said, "Despite police campaigns to check radios (every radio, once sealed up, can only be tuned to official radio frequencies), a growing number of radios do enter by the Chinese border, allowing some people to listen to broadcasts from South Korean radio or to Radio Free Asia."

If you understand Korean, check out Radio Free Asia (RFA) from 1500 to 1700 UTC on 7210, 9385, and 13625; and 2030 to 2230 UTC on 7460, 9385, 9770, and 12075. RFA is operated by the U.S. government, but is officially billed as a "private, nonprofit corporation that broadcasts news and information in nine native Asian languages to listeners who do not have access to full and free news media."

Of course radio has no boundaries—provided people can get their hands on a non-doctored receiver—and as such Radio Free North Korea, run by eight North Korean defectors in Seoul, broadcasts programs into the North hoping to reach enough people there to oust Kim Jong Il. You won't hear this "opposition"

station here, but you might want to check out 6348 or 3985 for Echo of Hope (previously known as the Voice of Reunification). It's a tough catch here in North America, though, partly because of its erratic schedule.

For North Korea's international programming on shortwave, keep an ear on 9335 and 7570 from 1300 to 1400 and from 1500 to 1600 UTC to hear the Voice of Korea (formerly Radio Pyongyang). It's also been heard on approximately 6399 and 6520, 7505, 9325, 9345, 9665, 9975, 11710, 11335, 11735, 13760, and 15180. You won't have trouble hearing this one because it's on at least one of these frequencies throughout the day in a variety of languages.

Then there's the Pyongyang Broadcasting Station on shortwave in the early morning hours on 6250 and more often on 6400. Another good bet here in North America is the Korean Central Broadcasting Station, currently on 9665 and 11680 from about 2000 through 1800.

South Korea (KBS World Radio) is on 9650 from 1200 to 1300 and on 11810 and 9560 from 0200 to 0300 UTC. Other frequencies for KBS World Radio include 9640, 9770, and 5975 at various times of the day to other parts of the world. But remember, in a major crisis, all bets are off as many broadcasters in affected areas might remain on the air for longer (or shorter) periods and adjust their frequencies as necessary.

## What's Next?

Will North Korea continue to ride the nuclear train and expend its treasure on the military? Clearly neither can go on indefinitely without the world community—particularly the U.S.—stepping up to the parallel and declaring enough already.

Will the nearly five million men—and equal number of women in North Korea—considered ready and fit for military duty be called into service if the country is backed up against the wall and claws at Japan or South Korea? No one has the answer to these questions, but we'll keep our ears to the radio, listening to North and South Korea, China, Russia, and Japan during what's sure to be an interesting 2007.

*Note: Some of the information for these monthly reports was obtained from official U.S. government sources, including the CIA World Factbook.* ■



## Radio Faces

**T**his column is dedicated to listeners who've caught a glimpse of their favorite radio personality and been hit by a proverbial ton of bricks. "Holy smokes!" you might have thought, "his (or her) face sure doesn't match up with his (or her) voice!" It happens to me all the time.

In fact, just last week I was clicking through dozens of cable TV channels and finding nothing worthwhile until landing on a news commentary show featuring a clean-cut, middle-aged guy wearing a nicely tailored suit and glasses with Buddy Holly-style black plastic frames. The fellow's voice sounded very familiar, but for four or five minutes, I just couldn't place it. Suddenly it dawned on me that I was hearing and seeing nationally syndicated radio talk show host Glen Beck. But no, it couldn't be! After all, Mr. Beck has long dark hair, is at least 6-foot, three, and wears blue jeans and a tee shirt, or so I had always pictured "GB," based solely on *listening* to him on the radio.

Of course, ever since viewing Glen Beck's television program, I now can't help but see his real image in my mind's eye whenever tuning to the audio editions of his fascinating broadcasts.

### Megacycle Mix-Up Really Reduces Recognition!

That's the nicely alliterative headline to the following comedy of errors. It involves two completely unrelated daytime AM stations in the middle of the Empire State, a pair of simultaneous supermarket remote broadcasts, and coincidental VHF frequencies. Here's what transpired.

One Saturday in 1993, a WMCR Oneida, New York-announcer packed up his Marti Remote Pick-Up (RPU) unit and headed for a TOPS food store in a town about a dozen miles distant. A couple of counties away, an air personality from WZZZ Fulton, New York, slid his station's Marti onto the front seat of his trusty Dodge Colt and then drove five minutes to the Fulton-based TOPS market. Once at their respective destinations, each guy hooked the RPUs' RF output to a magnetic whip antenna stuck to the roofs of their autos, clicked the XLR-type microphone plug into one of the audio inputs, flipped the switch to transmit, and turned on his Walkman-style headphone radio to listen for a "you're on the air" cue from the announcer back at the studio. Coincidentally, both RPUs were authorized to operate on the same pinpoint within the 140- to 180-MHz spectrum. (Today, most RPU work happens in the 450-MHz UHF zone, but our story's subjects possessed pioneer VHF licenses for their remote transmission gear.)

The story gets interesting because of a classic example of frequency modulation's line-of-sight transmission. Cutting to the chase, the 45-watt Marti signal from the Fulton store made it to the Oneida RPU antenna with just a bit more "oomph" than did the RF out of WMCR's remote Marti transmitter, which was faced with several hills between the transmit and receive points.

Imagine yourself as a control board operator on duty at WMCR that morning. The program log says, "Remote

Here's a 1972 version of a Marti Remote Pick-Up (RPU) unit. It was enlivened with both tubes and transistors. During the 1950s, George Marti devised a portable VHF-FM transmitter that could transmit the audio from remote broadcasts back to the main control board at his Cleburne, Texas-AM station, KCLE. This unit eliminated the need to rent temporary broadcast-quality telephone lines for each away-from-the-studio event that a station produced, and it greatly increased flexibility for on-the-spot coverage with crystal clear audio. So many other broadcasters wanted the kind of equipment that Marti pioneered that, by 1960, he began manufacturing it for general sale to the broadcast community. Since that time, the term "Marti Unit" has come to mean to remote pick-up or electronic news gathering what Kleenex means to tissue.



Broadcast from TOPS Supermarket," you saw your colleague take the RPU gear and make his way there, and now—after announcing the top of the hour news/weather—you introduce him and bring up the audio on the fader marked "Marti." A voice comes over the main air monitor and is telling people he's at TOPS...but it belongs to nobody you recognize and the delicatessen manager he's interviewing is talking about towns that aren't on your local map. Who could blame the fellow at WMCR master control for doing double takes?

Fortunately, the WZZZ guy was fond of giving station IDs and, as a result, the 'MCR man dialed information for the Fulton station's phone number and put in a frantic call to his counterpart running the board there. Fortunately, WZZZ's Marti had been equipped with both of the VHF remote pick-up frequencies for which it was licensed. During the deli segment, the store's assistant manager handed the WZZZ remote host a scribbled note that read, "Your engineer is on the phone. It's an emergency!" The mic was handed to the cold cut expert who was requested to "ham it up about TOPS' low cold cut prices for a few minutes while I consult with my tech person via the land-line." The incredulous remote announcer then got word that his sandwich fixin' seminar was being inadvertently simulcast to listeners up to 60 miles away!

"That poor fellow doing the 'MCR remote," speculated the WZZZ engineer, "probably wonders why somebody else's voice is coming back through his headphones. And you can imagine how the TOPS personnel and shoppers might be a little confused watching the Oneida host's mouth move while unrelated conversation flowed from a radio playing at their remote!"

Happy to help out a like-minded local broadcast outlet, the WZZZ host instructed his engineer to fade in an instrumental record, and switch the Marti receive unit to the station's alternate RPU channel. As Nelson Riddle's 1960s hit "Route 66" spun for about 30 seconds, the WZZZ guy at Fulton's TOPS clicked his Marti transmitter's dual-frequency selector to correspond with the studio-based receiver. The next quick steps

included fading down the music and then throttling up on the Marti volume at its new frequency. The delicatessen master hadn't missed a beat and, in the absence of WZZZ's RPU signal locking out the Oneida station's RPU pathway, the WMCR remote began to make a whole lot more sense.

## My Mother Listens To You And She Says You Aren't Supposed To Look Like That

Just for the sake of getting the next story airborne, we'll call our tale's radio personality Jack Jackson. The actual subject of the scenario says he's still pretty sensitive about revealing his real name, though this incident happened way back when Gerald Ford was president.

"Sure, I'll admit I love to eat," Jackson confessed, "but something a kid exclaimed during a remote at a new strip mall stripped me of my self esteem."

Jackson was doing fine on location with his small market AM/FM's Marti unit on a card table and the transmit antenna magnetized to the top of a metal shelf that one of the little mall stores had positioned nearby for displaying some promotional giveaway items. The station had equipped him with a mini DJ studio, a commercially produced package consisting of a pint-sized control board, two turntables, and an XLR-style plug for a microphone. The mini studio's output plugged right into one of the Marti RPU's inputs and got transmitted back to the main studio with crystal clarity.

Adding to the event's zest were about 35 to 40 people gathered around the announcer in hopes of winning prizes and/or getting a requested song spun. Having the heady experience of assembling this respectable crowd and then being praised by the mall association's chairman for "sounding extremely talented on the air," Jackson threw his normal interviewing caution to the wind. He'd noticed an elementary school-age girl staring at him from the midst of the audience. She would cock her head as Jackson began talking, often looking back at the outdoor speaker a storeowner had activated to draw attention to the remote and his shop.

"I still remember one of the records I was playing as if it were yesterday," Jackson recalled. "While the Monkees' 'Daydream Believer' ended, I said something like, 'We have a nice young woman here enjoying our mall grand opening broadcast, but she appears to be *daydreaming* about something. I believe I



*Any community-minded radio station of the mid-1960s that didn't own one of these portable DJ studios certainly had it at the top of its wish list. Quickly set up at any remote broadcast site, Gates Radio Company's model KD-20A Disc Jockey System could be instantly coupled to a Marti RPU and soon be sending an FM-quality signal of music and voice back to the station's main studio. Quintessential accessories for this rig included an Electrovoice 635A mic and a shoe box filled with 45-rpm records, stacked on end so the on-location air personality could conveniently flip through that portable library of hits.*

shall take the mic over her way... Hey little lady, were you imagining being the grand prize winner of the mall merchants' fantastic prize drawing for the \$75 shopping spree?"

"No," the kid admitted, "My mom listens to you everyday. Before she went into that store there, she told me she was absolutely amazed by your appearance."

"Oh," Jackson smiled, "did she want you to listen for when I hand out autographed bumper stickers?"

"No, she just told me to stay outside and see if I could hear if you sounded as fat on the radio as she said you really look in person."

## Fuzzy DJs Need Not Apply!

My father wanted me to re-visit a mistaken identity radio story first chronicled in my March 2004 *Pop Comm* column. It outlined how a thin, 20-something DJ at Adult Contemporary/Top-40 formatted WNLC 1510 (New London, Connecticut) disappointed a senior citizen couple who dropped by the station unexpectedly one Saturday morning. They'd taken the ferry from their hometown on Long Island in order to give their best regards to the "mature-voiced announcer" heard smoothly delivering flowery station identification "liners" on co-owned WTVD-FM "Tide 101" in New London.

The duo was shocked to discover that their favorite radio personality was at least four decades younger and much, much lighter than the fellow they'd long envisioned at the beautiful music outlet's

diamond-shaped RCA microphone. (Actually, it was a comparatively inexpensive Shure model SM58 mic.) "We always thought that voice belonged to a gentleman wearing nicely tailored tweed," the old woman stated, "not to some kid in tattered dungarees."

Dad suggested I check my "source documents" related to the interview that netted me that anecdote. He'd originally put me in contact with Peter Hunn, the former fledgling DJ at the erstwhile WNLC/WTVD-FM. And right in the folder where my father predicted they'd be, I found notes about another "looks vs. sound" tale, as well as a jpeg file showing Hunn in the New London studio circa 1976. According to what I'd jotted down, Hunn was slated to do a remote broadcast at a local hobby shop. Reportedly, the proprietor listened to him regularly and wanted "the DJ with the friendly mellow voice" to appear live on-location at his store. As Hunn explained,

The salesman who arranged the event was a big believer in prompting the air personality scheduled for a remote to stop by the store a week or so beforehand to establish some rapport with the proprietor and any clerks who'd be there during the remote. That way, the broadcast would have a greater chance of coming across like the announcer knew what he was talking about and that the store personnel were comfortable being interviewed on air. To that end, I walked into the hobby shop and began chatting with the guy I figured to be the owner. "Oh neat!" I pointed, "You've got a nice selection of Lionel trains!" In fact, being a bit of an 027 gauge Lionel buff, I even spent a week's worth of mad money buying some commemorative Coke train set that the fellow seemed to take great pleasure showing me. Of course, the next day, I enthusiastically reported this encounter to the appropriate WNLC salesman. He gave me the thumbs up and a pat on the back.

Imagine my surprise when I subsequently got notified that our buzz cut, portly afternoon guy would be doing the hobby shop remote. "Sorry about that, Sport" the sales guy frowned, "but when I revealed to the store owner that you were the fellow who bought a Lionel train from him yesterday, he started spouting something about your hair looking like it could stuff a mattress. Said you sound a lot more well groomed than you actually are, and that he didn't want *some disheveled hippie* representing his establishment.

Hunn's hurt feelings began recuperating after the shop owner's wife got wind of that sudden cancellation. She phoned the DJ with word that her middle-aged spouse had long been very sensitive about being bald. "You see," she delicately explained, asking Hunn to keep this information under his hat, "my husband Jim resents anybody with a healthy



If WNLC's Peter Humm looks a bit depressed, it's because a station advertiser who'd enjoyed listening to him didn't like the way he looked in person. As a result, the sponsor told WNLC to get someone with "a more conservative hair style" to do a remote broadcast scheduled for the fellow's hobby shop.

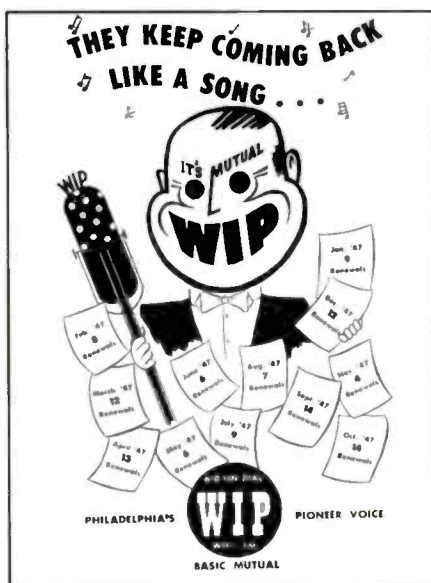


Talk about putting a face on a radio station! Circa 1947, some imaginative promotions personified the then 5000-watter as an Indian Chief capable of milking lots of audience share for smart advertisers.

head of hair. Though it's irrational, he's probably afraid that some wisecracking shopper you'd be interviewing might make a comment on the radio about maybe trading Jim several locks of your hair for Lionel merchandise."

## Historic Radio Facials

Vintage broadcast literature offers a tidbit or two relating to the visual aspect of the aural medium. In his 1972 autobiography, *Rambling With Gambling! The First 50 Years*, John A. Gambling, who enjoyed a decades-long morning show run on WOR New York, commented on the early days' studio attire donned by his father, John B. Gambling, the wake up program's founder. John A. indicated that, during the early 1930s at WOR, his dad typically wore a "vest, striped tie, and pin-striped suit...for informal daytime



Incorporating the Philadelphia station's Mutual network affiliation and call letters into an announcer cartoon, WIP officials wanted to show what they looked like with a huge satisfied smile. After all, this early 1948 WIP MAN is ecstatic about the large number of sponsor contracts that had recently been renewed, and the resulting ad dollars that'd continue flowing into Philly's 610 spot.

broadcasting. Announcers who worked at night wore tuxedos." Admittedly, folks were more formal in that era, but the monkey suit evening prerequisite resulted from programs with studio audiences. And, even when a primetime show was performed only in the company of station personnel, it was assumed that the more fashionably one dressed, the better one would sound over thousands of loudspeakers out in radio-land.

When legendary Big Apple DJ Bruce Morrow was honing his style at New York's WINS 1010 (one of the first major market stations to air rock 'n' roll), his radio home wasn't known for being particularly palatial. Purchased in the mid-1950s for a bargain price by J. Elroy McCaw, a parsimonious Seattle businessman, 50-kW WINS was soon relocated from an upscale venue to a seedy two-story building in which its original owner, newspaper magnate William Randolph Hearst, had built basement access to the New York subway system. Hearst had also authorized the construction of a gothic interior courtyard complete with a private chapel where his mistress could arrive by train, rendezvous with Hearst, and then go to confession without having to be subjected to the public.

After leasing these quarters in 1956 (at 7 Central Park West, then a low-rent dis-

trict of Manhattan), sections of some upstairs walls were knocked out so interior windows could be installed. Viola! Instant big city radio station—or at least the appearance of the kind of studio one might expect to see across town while touring the CBS or NBC facilities. According to famed New York radio programmer, Rick Sklar, who as a cub WINS employee helped with this transformation, "Some of the [internal window equipped] rooms began to resemble [broadcast] studios, even though they weren't soundproof." Engineers were instructed to replace any bright lights there with 60-watt bulbs in an effort to lower the station's utility bills.

But Bruce Morrow didn't give a hoot what the place looked like. *My Life In Rock 'n' Roll Radio*, his 1987 book, clearly identifies Morrow's primary visual emphasis at WINS:

I wanted my audience to be able to see me [in their mind], to feel me, to know me also. I felt I wanted to give them a picture of me beyond what my voice told them about me. I wanted to have something that was mine and mine alone so I could be picked out from among all the other voices coming out of the magic box. I wanted people to relate to me.

WINS' security wasn't especially tight at its newly converted headquarters. "Anyone could wander into the studio," Morrow remembers; "the station thought it was good public relations. And since there were lots of [station staff members] around, and since it was a simpler, safer time, [management believed] nothing too bad could happen" if a curious listener wanted to get a look at his or her favorite radio personality. That's how an elderly African-American woman was able to meander into WINS, peer at Morrow through the studio glass, and hand signal him that she'd like permission to enter his studio.

Unlike the phonies who acted friendly at their own convenience, Morrow has always been a true people person. Immediately, he invited the senior citizen in. She simply declared she was chilly and wanted a warm place to sit down for a while. Morrow was happy to oblige, though wondered why someone who probably didn't care for rock music would visit WINS. The old gal sat quietly and indicated that she'd soon be leaving. Rising to go, she pointed at Morrow. "Do you believe all people are related?" she wondered. Bruce Morrow replied with a heartfelt, "Yes, I really do." She studied him for another few seconds and then asked, "Well, *cousin*, can you give me



fifty-cents please? I want to get home to the Bronx."

After handing the lady some change, Morrow thought nothing more of the small gift until he was headed home, mulling over ways he might best relate to his listeners. Suddenly, the woman's words popped into his thinking process. "That's it!" he realized. The next evening on WINS, Bruce Morrow began relating to folks by suggesting they were part of his family. "I'm your Cousin Brucie!" he announced on the air. "For all you cousins everywhere, I've got the music you want!"

Mel Leeds served as WINS program director. He told Morrow that calling oneself a "cousin" was too corny for the sophisticated New York metropolitan market. But the Cousin Brucie moniker proved very effective, especially because Morrow's persona—whether on the radio or at a personal appearance—was what one would genuinely expect from a sincere relative with whom you shared a common interest in music. The leopard print tuxedo and matching shoes he wore at remote broadcasts only served to amplify this image of gregarious cousin whom the whole clan couldn't help but love.

## Mean Streets

As I prepare to sign-off for now, my dad is on the phone asking if the WEZE Boston tale has been woven into this column. Back in the early 1970s, he promised my mom a trip to Bean Town for some sightseeing and shopping. While she perused the stores, he endeavored to tour all of the city's radio stations. His stops included the old WEZE 1260-AM. It featured a small window through which passersby could catch a glimpse of the station's on-air talent in action. A small speaker over the portal issued WEZE's audio output to people on the sidewalk.

Having cajoled a WEZE secretary to show him the studios, father asked her why there were thick curtains covering the master control room's street view window. The 'EZE employee explained,

Well, that's because apparently not everybody enjoys the records our DJ happens to be playing as they walk by, or maybe they don't like the way the on-air guy looks, or it could be because people get frustrated if they don't understand we can't hear what they're yelling at us through the soundproof glass. In any event, on several occasions, some of those who've stumbled by our building after staying too long at a nearby bar have smashed bricks through the "courtesy" window.

And so ends another day of broadcast history at *PopComm*. ■

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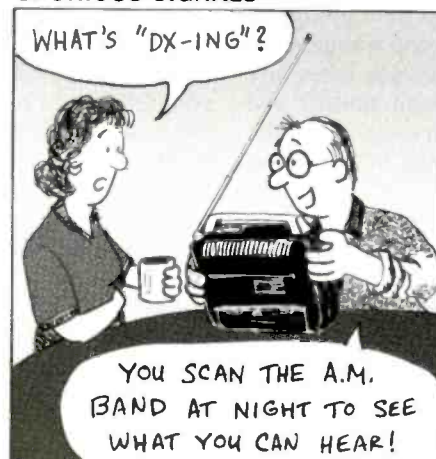
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### SPURIOUS SIGNALS

By Jason Togyer KB3CNM



## Is That An R-390 In Your Pocket?

I feel like Andy Rooney, only slightly younger and just slightly less curmudgeonly. I want to start this month's column by saying (with a really high squeaky voice), "Dijyevver notice how things change as you get older?" And that really is how I feel, and it is the question I'd like to ask.

I've just finished packing for a four-day trip to (oh, I know this'll get letters) a *harmonica convention* in Paramus, New Jersey (that'll probably get at least a postcard or an e-mail, too). And to satisfy at least one curious ham, yes, there will be at least two of us who will communicate across the room occasionally by tootling some Morse code in the key of C, because there are hams in every other hobby, too. It just occurred to me that by using the push-button slide on a chromatic harmonica we might even be able to simulate FSK (c'mon, someone must remember what that is) and maybe send some RYRYRYs to a waiting teletype. Not too likely, though, but possible.

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***"...in Coast Guard Radioman 'A' school in Groton, Connecticut, I was introduced to the Collins R-390 general coverage communications receiver."***

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But as usually happens, I have digressed. My squeaky intro was about how things change, and they sure have. When I really got interested in communications, in Coast Guard Radioman "A" school in Groton, Connecticut, I was introduced to the Collins R-390 general coverage communications receiver. Those of us who were smitten with communications immediately saw the beauty of these mechanical monsters and began to covet them and wait for a day when one might become available through surplus channels. They have, but even today, no one is giving them away. They are huge, heavy, rack-mounted mechanical nightmares requiring more wrenches and screwdrivers to work on than electronic test equipment, and for years they were the standard by which all others were judged.

Eventually, I got hold of a nice used Kenwood general coverage receiver. Solid-state, digitally tuned, requiring no weekly and monthly PM (preventive maintenance), which on the R-390 even included *oiling* some of the gears along with cleaning tube sockets and pins. And, truth be told (but only grudgingly), the smaller, lighter, less-expensive Kenwood was generally a superior receiver. But it didn't smell as nice when you turned it on. And it didn't *feel* as nice when you tuned it and fiddled with the bandwidth selectors and other options. I could, however, take it from room to room—something NO ONE ever did with an R-390.

Then came the Sangean, a nice portable general coverage receiver, not quite as good as the Kenwood, but, oh, so portable. Take it anywhere. Take it to the beach and listen to the Coast Guard (well, not on VHF, but they were still active on 2182 when I got mine). In fact, when I first got my Sangean, I could tune the merchant ships on 500 and 468 kc (those were pre-kilohertz operators) and listen to a little history before they pulled the plug on CW.

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***"You can't lose an R-390 in your house. No matter how absent-minded you may be, or how bad your eyesight or your memory is, you will remember exactly where you have seen it, or tripped over it, or stubbed your toe on it."***

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And within the last six months or so, my favorite RadioShack store (the Kamp Washington store in Fairfax, Virginia, if anyone is keeping track) had the tiny little shirt-pocket Eton digitally tuned general coverage receiver on clearance for something like \$69! How could I NOT buy it?

I never did get an R-390, so I don't have one to compare this with. But how would you compare a shirt-pocket digitally tuned general coverage receiver to an R-390? Would you measure it "pound-for-pound"? I know that if you were carrying an R-390 and someone fired on you with a high-powered rifle, it would probably stop the bullet and save your life, but in preparation for writing this little piece, I looked on the Internet for people who had been shot at while carrying an R-390 and did not find any.

I don't really want to try my second test: using the little Eton as a boat anchor. I don't think it would hold much more than a child's toy boat (say that three times really fast) and I don't think anyone will ever call a shirt-pocket receiver a 'boat-anchor.'

I don't think I have to try my third test: the power-drain test using two AA alkaline batteries. Even if I could find someone foolish enough to help me step-up two AA batteries to give me 117 VAC I'd never even get the filaments to glow before the batteries fizzled. The Eton runs for many hours on two AAs (longer if you use earphones).

While I have never owned an R-390, I have had a few similarly large receivers. This brings me to the next comparison: You can't lose an R-390 in your house. No matter how absent-minded you may be, or how bad your eyesight or your memory is, you will remember exactly where you have seen it, or tripped over it, or stubbed your toe on it. I had to look for *two hours* to find my Eton. It turned up in a plastic bag from a discount store with some automotive accessories. *Someone* must have thought it belonged there. (I am such a patient person.)

The two guys I'm riding with to the convention will see the little radio tomorrow and ask, "Whatcha got there?" in a voice not too dissimilar from Mr. Rooney's. This is a good thing. I can show them how we can hear shortwave broadcasts, hams, CB, even SSB, and I'm sure they'll at least feign an interest in my toy. Now compare this to the reaction I'd get if I tried to load an R-390 in the back of the mini SUV. I assure you that the question would not in any way resemble "Whatcha got there?" but would more likely be construed by a passerby to be a short prayer.

Finally, there is the matter of theft. I think it goes without saying that if I were to leave my nice little Eton radio, in its leatherette case, lying on the hood of my pickup while I ran into a convenience store for a loaf of bread, it would likely be gone when I returned. The R-390 would still be there the next day. A couple guys might move it to steal the truck, but the R-390 would still be there. ■

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