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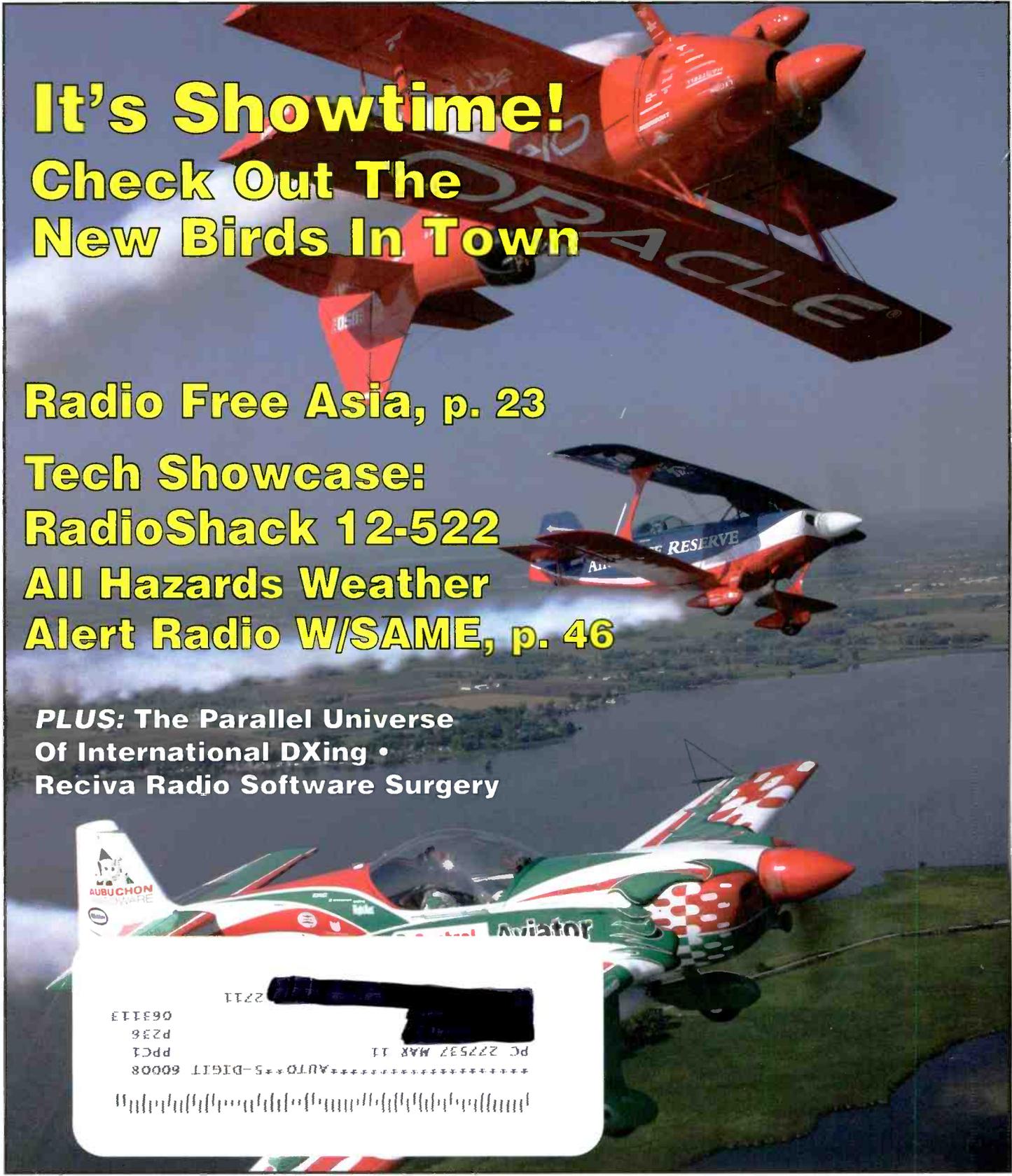
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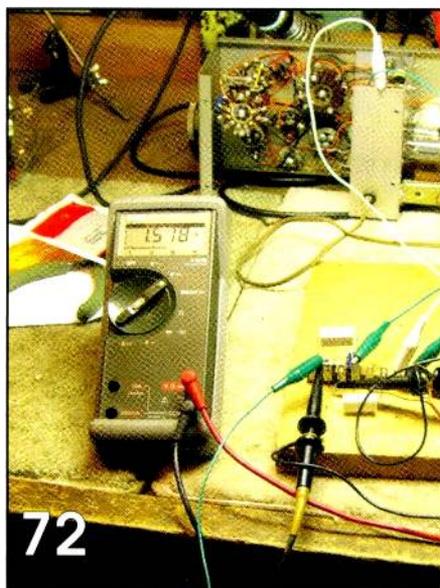
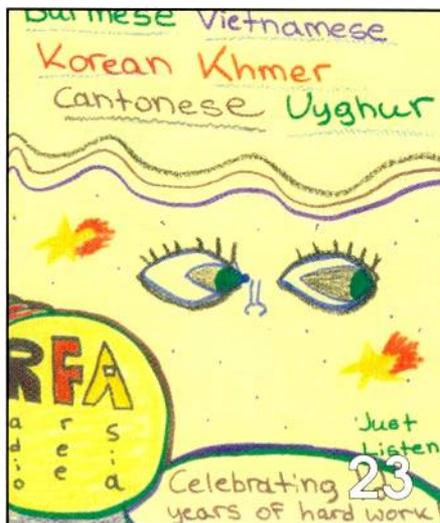
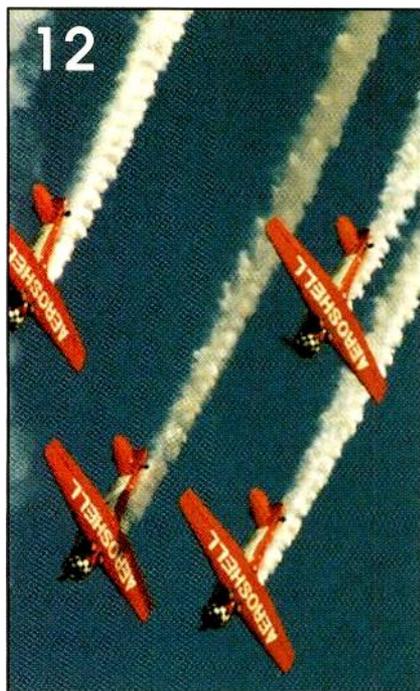
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ON THE COVER

Scanner? Check. Sunscreen? Check. Excitement? You better believe it! Aviation demos are heading your way. See "Air Show Season Takes Off," starting on page 12, and make your plans accordingly. Cover photo shows pilots (from top) Sean D. Tucker, Ed Hamill, and Mike Goulian flying in a unique formation during EAA AirVenture (www.airventure.org) at Oshkosh, Wisconsin, one of the world's largest aviation gatherings and attracting 500,000 people and 10,000 airplanes each summer. (EAA photo by Craig Vander Kolk)

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Radios & High-Tech Gear

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Your best value . . . 1000 Channel, 25-1300 MHz, Analog Police/Fire Scanner

Hear the inner secrets of your community!

MFJ-8322 Analog Trunking Scanner tunes 800 MHz public service bands and trunks analog Motorola (type I, II and hybrid), EDACS Wide and LTR systems. Most city and county Police/Fire/Emergency services have moved from conventional VHF and UHF frequencies to 800 MHz multi-frequency trunked systems. Monitoring them today requires a scanner that can change the receive frequency with each transmission -- just like the police radios!

Monitoring trunked radio communications is easy. Each service on a trunked system is assigned a "talkgroup ID" or TID. Simply program in the trunked system frequencies and enter the TID's you want to monitor.

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Most trunked systems are analog. You can confirm your local trunked system is analog (not digital) at www.RadioReference.com and compatible with the MFJ-8322.

The MFJ-8322 handheld also tunes all the VHF and UHF bands and has all the features of MFJ-8310 desktop scanner. You can monitor Police/Fire, Business Bands, Aircraft, Marine, NOAA Weather, Skywarn, favorite repeaters - all the frequencies tuned by the MFJ-8310 *plus* the 222-225 MHz ham band, Military Aircraft frequencies and the 1240 - 1300 MHz ham band, too!

MFJ-8322 stores up to 1,000 frequencies, 10 trunked systems and 1,500 total TID's. Decodes CTCSS and DCS. Enter your county FIPS code and hear *only* NOAA SAME

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MFJ-8322
\$199⁹⁵



severe weather alerts for your county.

An extremely sensitive *Spectrum Sweeper* mode lets you rapidly search, find, monitor and store nearby transmissions of unknown frequencies in *less than a second*. If that's *not* the signal you were looking for, lock out the undesired frequency and search again -- this *cannot* be done by other scanners. You can sweep the scanner's entire frequency range or specify and exclude frequency ranges.

www.RadioReference.com gives you frequencies for both conventional and trunked systems. There may be hundreds of interesting frequencies for your local area. They are all organized complete with descriptions. It couldn't be easier to select what you want to listen to.

It's free to print lists for your city, county or state and it's easy to manually program the MFJ-8322.

Most people prefer to program a scanner this powerful using a computer and readily available third party software. By upgrading your *RadioReference.com* membership to premium the programming software can access and download the *Radio Reference* database directly to your MFJ-8322!

MFJ-5432, \$29.95. USB Cable lets you connect your scanner to your computer.

MFJ-8322 Frequency coverage: 25-54; 108-137; 137-174; 216-225; 225-512; 764-960; 1240-1300 MHz.

Includes flex antenna, AC adapter/charger. Uses 4 AA Alkaline or NiMH (charges in scanner) batteries. On/off/volume, squelch controls, 3.5mm phone jack. 5 3/4"Hx2 9/16"Wx1 1/8"D in. 8.5 oz.

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You can select any range of frequencies and search at 80 frequencies per second to find new unknown frequencies *super-fast!* It's PC programmable and you can clone its memory to another MFJ-8310.

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Set a **Priority Frequency** and MFJ-8310

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will switch there whenever it goes active so you'll never miss an important transmission.

Scan Delay delays scanning for 2 seconds before moving to another channel so you can hear more replies that are transmitted on the same channel.

A one-touch *Skywarn* button lets you instantly hear advanced Skywarn weather observer reports minutes *before* they are rebroadcasted by NOAA, radio and TV stations. This can literally be a life saver during life threatening weather. You can enter your county FIPS code and the MFJ-8310 will *only* alert you when severe weather is for your county.

Patented Zeromatic Tuning continuously adjusts for best signal clarity.

Includes telescoping antenna, 120VAC to 9 VDC adapter. Has bright backlit LCD display, large 3 inch *HighClarity™* speaker, on/off switch, volume and squelch controls, 3.5mm headphone jack, BNC antenna connector. 8 3/4"Wx6 7/8"Hx2 3/8" inches. 1 1/2 lb.

MFJ 25-1300 MHz Discone Antenna

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MFJ-7708, \$3.95. Adaptor lets you use coax with PL-259 connector on your BNC MFJ-8310/8322.



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EDITORIAL

Tuning In

To Friends, New And Old

by Edith Lennon, N2ZRW

editor@popular-communications.com

This month brings the spring equinox, the day when the Earth looks equally forward and back in its journey. Even the sun is teetering on the boundary of two sunspot cycles, pausing between a beginning and an ending. So it seems especially fitting to me that I'm doing the same on this page. There are both happy hellos and sad farewells to be made.

Regarding the greetings, I'm excitedly preparing to attend my third Winter SWL Fest (this is the 23rd go-around of the convention). You can't find a more interesting and convivial congregation of radio cronies of all stripes than the one that yearly descends on Kulpsville, Pennsylvania, just outside Philadelphia. It's a wonderful place to begin friendships with like-minded folks.

While it's sponsored by the North American Shortwave Association (NASWA), you'll find so much more than that discussed and celebrated at this two-day (and well into the night!) event. Forums, featured speakers, and informal gatherings cover topics like mediumwave (AM), scanning, satellite TV, pirate broadcasting, amateur radio, computers, and radio-related emerging technologies. For sheer enjoyment, there's a listeners' lounge, a silent auction, and a pretty much "till-whenever" hospitality suite. The last night's banquet is highlighted by entertainment, a talk by a radio luminary, and a raffle with prizes ranging from wacky to "Wow!" The final extravaganza, the infamous midnight ride of Pancho Villa, is *not* to be missed (I can say no more...).

I knew "the Fest" was special when I had to sign a statement saying the window screen in my room was intact when I checked into the host hotel. If you can attend this unique, well, *Festival* of all things radio, it will be a much-needed breath of spring. You'll have to move fast, though, because it's held at the very beginning of the month, on March 5–6 at the Inn at Towamencin, Kulpsville. Visit www.swlfest.com for registration information. Friends await.

With Gratitude

But now also come the goodbyes—and thank you's—to a couple of our own luminaries who recently left us.

Harry Helms, W5HLH, passed away on November 15, 2009, at age 57. An energetic promoter of the radio hobby and a prolific writer, Harry authored many books, including *Shortwave Listening Guidebook: The*

Complete Guide to Hearing the World, All About Ham Radio, How to Tune the Secret Short Wave Spectrum, and Handbook of Radio Communications Servicing and Maintenance. For readers and the staff of *Pop'Comm*, he holds an especially important place: Harry was the first "Communications Confidential" columnist, introducing it in *Pop'Comm's* premier issue, later penning "You Should Know" for the magazine. He had a huge impact on our editorial development, as well as on the many loyal readers who learned so much from his writings. Known equally for his wit and good nature, Harry's time at *Pop'Comm* preceded mine, so unfortunately I never met him. But I, like so many of us, am indebted.

I did, however, have the privilege of knowing Jerry Seveck, W2FMI, who became a Silent Key on November 29 at 90 years of age. Incredibly accomplished, Jerry attended Wayne State University on an athletic scholarship and was drafted by two professional football teams. His life took a different path after he became a U.S. Army Air Corps pilot in World War II and, thanks to his background in amateur radio, was sent for radar training to Harvard University, where he earned a Ph.D. in Applied Physics. He taught for a time at Wayne State before joining Bell Laboratories, from which he retired as Director of Technical Relations in 1985.

Like Harry, radio amateurs knew Jerry from his influential writings, including books such as *Transmission Line Transformers, Understanding, Building, and Using Baluns and Ununs*, and *The Short Vertical Antenna Handbook*, as well as his numerous articles in *CQ (Pop'Comm's* sister magazine), *QST*, and others. In 2005, he received the Dayton Hamvention Technical Excellence Award.

As editor of an update to his *Baluns and Ununs* book, I had the honor of working closely with Jerry, and was also lucky enough to spend many enjoyable hours with him at Dayton Hamventions. What a wonderful man, and what a wonderful experience to have known him.

An Oops

To another friend, Pete Bertini (still very much with us!), I offer a quick apology for mistakenly crediting his column to another, equally fine, writer, Bill Price. Mea culpa and sorry to put you in a blender there, guys. And sorry to readers left scratching their heads.

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Bearcat® BCT8 Trunk Tracker III

Manufacturer suggested list price \$299.95
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250 Channels • 5 banks • PC Programmable

Size: 7.06" Wide x 6.10" Deep x 2.44" High

Frequency Coverage: 25,000-54,000 MHz., 108,000-174,000 MHz., 400,000-512,000 MHz., 806,000-823,995 MHz., 849,012-868,995 MHz., 894,012-956,000 MHz.

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



Bearcat® BCD396T Trunk Tracker IV

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

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

Frequency Coverage:

25,000-512,000 MHz., 764,000-775,987.5 MHz., 794,000-823,987.5 MHz., 849,012-868,876.5 MHz., 894,012-956,000 MHz., 1,240,000 MHz. -1,300,000 MHz.

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



Useful for intelligence agencies for use at events where you don't have advance notice or knowledge of the radio communications systems and assets you need to intercept. The BCD396T scanner is designed to track Motorola Type I, Type II, Hybrid, SMARTNET, PRIVACY PLUS, LTR and EDACS* analog trunking systems on any band. Now, follow UHF High Band, UHF 800/900 MHz trunked public safety and public service systems just as if conventional two-way communications were used. **Dynamically Allocated Channel Memory** - The BCD396T scanner's memory is

organized so that it more closely matches how radio systems actually work. Organize channels any way you want, using Uniden's exclusive dynamic memory management system. 3,000 channels are typical but **over 6,000 channels are possible** depending on the scanner features used. You can also easily determine how much memory you have used and how much memory you have left. **Preprogrammed Systems** - The BCD396T is preprogrammed with over 400 channels covering police, fire and ambulance operations in the 25 most populated counties in the United States, plus the most popular digital systems. **3 AA NiMH or Alkaline battery operation and Charger** - 3 AA battery operation - The BCD396T includes 3 premium 2,300 mAh Nickel Metal Hydride AA batteries to give you the most economical power option available. You may also operate the BCD396D using 3 AA alkaline batteries. Unique Data Skip - Allows your scanner to skip unwanted data transmissions and reduces unwanted birdies. Memory Backup - If the battery completely discharges or if power is disconnected, the frequencies programmed in the BCD396T scanner are retained in memory. Manual Channel Access - Go directly to any channel. LCD Back Light - A blue LCD light remains on when the back light key is pressed. Autolight - Automatically turns the blue LCD backlight on when your scanner stops on a transmission. Battery Save - In manual mode, the BCD396T automatically reduces its power requirements to extend the battery's charge. Attenuator - Reduces the signal strength to help prevent signal overload. The BCD396T also works as a conventional scanner to continuously monitor many radio conversations even though the message is switching frequencies. The BCD396T comes with AC adapter, 3 AA nickel metal hydride batteries, belt clip, flexible rubber antenna, wrist strap, SMA/BNC adapter, RS232C cable, Trunk Tracker frequency guide, owner's manual and one year limited Uniden warranty. Not compatible with AGEIS, ASTRO or ESAS systems. Order on-line at www.usascan.com or call 1-800-USA-SCAN.

3 AA NiMH or Alkaline battery operation and Charger - 3 AA battery operation - The BCD396T includes 3 premium 2,300 mAh Nickel Metal Hydride AA batteries to give you the most economical power option available. You may also operate the BCD396D using 3 AA alkaline batteries. Unique Data Skip - Allows your scanner to skip unwanted data transmissions and reduces unwanted birdies. Memory Backup - If the battery completely discharges or if power is disconnected, the frequencies programmed in the BCD396T scanner are retained in memory. Manual Channel Access - Go directly to any channel. LCD Back Light - A blue LCD light remains on when the back light key is pressed. Autolight - Automatically turns the blue LCD backlight on when your scanner stops on a transmission. Battery Save - In manual mode, the BCD396T automatically reduces its power requirements to extend the battery's charge. Attenuator - Reduces the signal strength to help prevent signal overload. The BCD396T also works as a conventional scanner to continuously monitor many radio conversations even though the message is switching frequencies. The BCD396T comes with AC adapter, 3 AA nickel metal hydride batteries, belt clip, flexible rubber antenna, wrist strap, SMA/BNC adapter, RS232C cable, Trunk Tracker frequency guide, owner's manual and one year limited Uniden warranty. Not compatible with AGEIS, ASTRO or ESAS systems. Order on-line at www.usascan.com or call 1-800-USA-SCAN.

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More Radio Products

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

Bearcat® BC246T Trunk Tracker III

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

Frequency Coverage:

25,000-54,000 MHz., 108,000-174,000 MHz., 216,000-224,980 MHz., 400,000-512,000 MHz., 806,000-823,987.5 MHz., 849,012-868,987.5 MHz., 894,012-956,000 MHz., 1,240,000 MHz. -1,300,000 MHz.

The handheld BC246T TrunkTracker scanner has so many features, we recommend you visit our web site at www.usascan.com and download the free owner's manual. Popular features include **Close Call Radio Frequency Capture** - Bearcat exclusive technology locks onto nearby radio transmissions, even if you haven't programmed anything into your scanner. **Dynamically Allocated Channel Memory** - Organize channels any way you want, using Uniden's exclusive dynamic memory management system. 1,600 channels are typical but **over 2,500 channels are possible** depending on the scanner features used. You can also easily determine how much memory is used. **Preprogrammed Service Search (10)** - Makes it easy to find interesting frequencies used by public safety, news media TV broadcast audio, Amateur (ham) radio, CB radio, Family Radio Service, special low power, railroad, aircraft, marine, racing and weather frequencies. **Quick Keys** - allow you to select systems and groups by pressing a single key. **Text Tagging** - Name each system, group, channel, talk group



ID, custom search range, and S.A.M.E. group using 16 characters per name. **Memory Backup** - When power is lost or disconnected, your BC246T retains the frequencies that were programmed in memory. **Unique Data Skip** - Allows the BC246T to skip over unwanted data transmissions and birdies. **Attenuator** - You can set the BC246T attenuator to reduce the input strength of strong signals by about 18 dB. **Duplicate Frequency Alert** - Alerts you if you try to enter a duplicate name or frequency already stored in the scanner. **22 Bands** - with aircraft and 800 MHz. The BC246T comes with AC adapter, 2 AA 1,800 mAh nickel metal hydride batteries, belt clip, flexible rubber antenna, wrist strap, RS232C cable, Trunk Tracker frequency guide, owner's manual and one year limited Uniden warranty. For more fun, order our optional deluxe racing headset part #HF24RS for \$29.95. Order now at www.usascan.com or call 1-800-USA-SCAN.

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The Weirder Side Of Wireless

by Staff

Off With His Head!

According to the BBC, a British radio DJ was fired for cutting short the Queen's Christmas Day speech, with the pronouncement, "Two words. Boring." After switching off the Queen's remarks, Tom Binns, DJ for Birmingham radio station BRMB, introduced the song "Last Christmas" by Wham!, adding "from one Queen to another." George Michael, front man for the '80s duo, is openly gay.

The *Birmingham Mail* reported that the 39-year-old DJ then riffed on tourism being the main reason for having a monarchy and noted that Paris still gets lots of tourists even though the French royal family was beheaded. "Maybe we should think about executing them and see how that does," Binns told his listeners, referring to British royalty, and meriting the ax falling on his own neck.

"Appy" Ending For Radio Stations?

Just when commercial radio broadcast stations' business model seemed to be doomed in the age of the iPod, an unlikely boost to their listenership is coming from—who knew?—mobile phone apps.

USA Today reported that "Local stations are racing to create software applications—called apps—and more appealing talk and music programming to help them reach the burgeoning number of consumers who see their iPhones, BlackBerrys, and Droids as portable entertainment devices...With the help of apps, smartphone users can listen to live broadcasts from hundreds of radio stations as well as services such as Pandora that offer music tailored to the listener's taste."

One year after Clear Channel introduced its iHeartRadio app for iPhones, mobile phone users accounted for 10 percent of its digital audience. "We expect to at least double that number in 2010," said Clear Channel Executive Vice President Evan Harrison. Fifty-five years ago the first handheld transistor radio, the Regency TR-1, was the hottest electronic gadget for listening to hit music. It was almost exactly the size of the iPhone and other devices now being used by the same demographic to do the same thing.

Proposed T-Mobile Cellsite Tower Disguised As Giant Cross

KESQ-TV3 in Palm Springs, California, reported that more than 40 local residents attended an open house to discuss a proposal for a 60-foot-high cell phone tower disguised as giant white cross. If approved by the city, the tower would be owned by T-Mobile USA and would lease the space from the Community Presbyterian Church. A source report-

edly told KESQ that T-Mobile would pay Community Presbyterian Church \$15,000 per year for 20 years on an escalating pay plan.

Some locals are angry, but for practical reasons. Residents like Steve Salkin said they are not opposed to the cross, but to the 60-foot tower. "It's another thing to lower housing prices and it's going to detract from everything up here." The church already has a 30-foot-tall cross in front of its building. If the proposal passes, perhaps other carriers will hide their cellular towers inside a minaret, Star of David, or statue of Buddha. At least we'd be able to answer the question, "What cell phone carrier would Jesus use?"

"Tweet, In The Name Of The Law!"

In an odd twist on Twitter and the law, New York's *Newsday* reported that Island Def Jam Records' Senior VP James A. Roppo was arrested after failing to comply with a Nassau County police request: to send out a Twitter message to disperse an unruly crowd of screaming teenage girls packed into Roosevelt Field mall to see Canadian teen sensation Justin Bieber and get their albums signed. Police feared the crowd was becoming unmanageable and asked Roppo for help. Kevin Smith of the Nassau County Police said, "By not cooperating with us, we feel he put lives in danger and the public at risk." Roppo could face charges including criminal nuisance, endangering the welfare of a minor, and obstructing government administration.

Family Radio Worldwide President Says World To End Next May

The *San Francisco Chronicle* reported that Family Radio Worldwide president and cofounder Harold Camping has developed a mathematical system to interpret prophecies hidden within the Bible, and has determined that the world will end on May 21, 2011. Previously, Camping had promised this would occur on September 6, 1994, but the world did not end. He spent the next decade running new calculations, as well as overseeing a media company that has grown significantly in size and reach. "We are now translated into 48 languages and have been transmitting into China on an AM station without getting jammed once," he said. "How can that happen without God's mercy?" He says his company owns about 55 stations in the United States alone and that his message arrives on every continent via shortwave, AM, and FM stations.

At least there will be time left for one more SWLfest in Kulpville, Pennsylvania.

Tap into secret Shortwave Signals

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



MFJ-462B
\$199⁹⁵

Plug this self-contained MFJ MultiReader™ 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

MFJ-1024
\$159⁹⁵

"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 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."



MFJ-1020C
\$99⁹⁵

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 1/8x1 1/4x4 in.

MFJ-1022
\$69⁹⁵



Eliminate power line noise!

MFJ-1026
\$199⁹⁵



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



\$119⁹⁵

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.



MFJ-1045C
\$89⁹⁵

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-752C
\$119⁹⁵

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 1/4Wx2 1/2Hx5 1/4D inches.

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



MFJ-1800
\$29⁹⁵

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 1/4Hx1 1/4D 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.



MFJ Shortwave Headphones



MFJ-392B
\$24⁹⁵

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-281
\$12⁹⁵

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
\$59⁹⁵

MFJ Antenna Switches

MFJ-1704 **\$79⁹⁵** MFJ-1702C **\$39⁹⁵**



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 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-461
\$89⁹⁵



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 1/8Wx1Dx2H inches.



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News, Trends, And Short Takes

by D. Prabakaran

Italian Police Silence “Voice Of God”

Police have silenced a radio station that spread the good word to Roman Catholics in an Italian village, but interfered with local air traffic, *La Repubblica* newspaper reported. With its antennas inside a church steeple, the low-powered radio station—in operation since the mid-1980s—relayed services live to the elderly, ailing, and handicapped of Asolo village, northwest of Venice. But its broadcasts at 108-MHz FM, the bottom end of the aviation radio band, led to complaints from pilots at nearby Treviso airport, which is used by low-cost airlines, and triggered a police raid. Some 160 Italian towns and villages have similar radio stations that are too small to require a government license, the newspaper said. Using technology from a company in Milan, they typically use a low-power transmitter that costs up to 10,000 (approximately \$14,500) as well as fixed-frequency receivers that parishioners can buy for 60 (approximately \$87) each.

(Source: AFP)

RFI Confirmed Dropping Of Several Languages

At press time, Radio France International (RFI) had confirmed that radio broadcasts in four languages—German, Polish, Laotian, and Albanian—would end on December 19, 2009. These services, however, were to continue to be available on the Internet until a definite date was fixed for their closure. Broadcasts in Turkish, which had been Internet-only for the past two years, were to cease completely on December 31. Programs in Serbo-Croat, which were originally earmarked for closure, were to continue via the station Beta-RFI. RFI said it intended to maintain its FM relay stations in Berlin, Vientiane, and Albania, which would continue to carry programs in French.

(Source: AFP)

RTBF International Confirms Dropping Shortwave

Also at press time, RTBF (Radio Télévision Belge de la Communauté Française) International confirmed that its shortwave transmissions (9970 kHz) would cease as of 2215 UTC on December 31, 2009. The station said that transmissions would continue on the mediumwave transmitter in Belgium on 621 kHz, on FM 99.2 MHz in

Kinshasa, and via the AB3 satellite in Africa. It was not clear if the station would continue to use the Hotbird satellite in Europe, as the website only said that listeners in Europe can listen via the Internet, either streaming or on demand.

(Source: RTBF)

RTLM Journalist Jailed For Life Over Rwanda Genocide

A former journalist was sentenced to life in prison for her role in inciting genocide in Rwanda, in the latest of a series of trials for the 1994 slaughter. Valerie Bemeriki, who worked for the influential Radio Télévision Libre des Mille Collines (RTLM), admitted using the network to call on Hutus to seek out and kill Tutsis. The genocide claimed the lives of some 800,000 people, mainly Tutsis killed by extremist Hutu militia, in the space of just 100 days. Bemeriki was convicted by a grassroots Gacaca court in Kigali of planning genocide, inciting Hutus, and complicity in several murders. Based on the age-old concept of a traditional village council, the Gacaca courts are empowered to try those alleged to have participated in the killings and can hand down sentences ranging from community service to life in jail.

(Source: AFP)

Pakistan Broadcasting Corporation Launches Live Streaming

Pakistan Broadcasting Corporation (PBC) has started live streaming of its broadcasts. A PBC official said that programs of the National Broadcasting Service (NBS) could now be listened to live on the Internet. NBS is a dedicated Current Affairs Channel of Radio Pakistan, which broadcasts news bulletins, sports news, business updates and stock market reports, talk shows and interviews with prominent personalities as well as social and cultural programs 17 hours a day (0155–1900 UTC).

Broadcasts from NBS mainly originated from Islamabad, but major regional stations of PBC, including Lahore, Karachi, Peshawar, and Quetta, also made contributions to the daily transmission. Radio Pakistan listeners around the world can now get easy access to various programs in all regional languages as well as in Urdu and English. NBS programs can be accessed live on www.radio.gov.pk.

(Source: *Daily Times*)

Capitol Hill And FCC Actions Affecting Communications

by Richard Fisher, KI6SN **Amateur Radio Bill OK'd In Senate Moves To House**

The Amateur Radio Emergency Communications Enhancement Act of 2009, known in the U.S. Senate as S 1755, passed by unanimous consent on December 14, clearing the way for the bill's move to the U.S. House of Representatives. If passed into law, the act would direct the U.S. Department of Homeland Security to perform a study on nationwide emergency communications. The Senate bill was sponsored by Sen. Joseph Lieberman (ID-CT) and Sen. Susan Collins (R-ME).

According to a report posted in the American Radio Relay League's *ARRL Letter*: "S 1755 points out that 'there is a strong Federal interest in the effective performance of Amateur Radio Service stations, and that performance must be given – (A) support at all levels of government; and (B) protection against unreasonable regulation and impediments to the provision of the valuable communications provided by such stations.'"

The Senate bill, with language similar to that of the U.S. House of Representatives' HR 2160 (also called The Amateur Radio Emergency Communications Enhancement Act of 2009) directs DHS "to undertake a study on the uses and capabilities of Amateur Radio Service communications in emergencies and disaster relief and then to submit a report to Congress no more than 180 days after the bill becomes law." The House version was introduced in April 2009 by Rep. Sheila Jackson-Lee [D-TX-18]).

FCC Eyes TV As Vehicle To Expand High-Speed Internet Reach

In an effort to protect access to high-speed Internet across the nation, the FCC says it would like to re-tool "the market for TV-set-top boxes—the channel-switching devices that cable and satellite subscribers typically lease for \$5 or \$10 a month—and equip the machines with Internet-surfing capability," according to a story by Mike Zapler of the San Jose (CA) *Mercury News*.

"The thinking is simple: 99 percent of households have a television, and 76 percent have a personal computer," Zapler wrote. "So why not piggyback on the TV to extend the reach of high-speed broadband, which lawmakers and regulators see as a necessity for anyone to function in the 21st century economy?"

"If you had a set-top box that can access traditional cable but also get to the Internet, more people could start to see the value of having broadband," Zapler quoted Matt Wood, associate director of Media Access Project, a public interest law firm. "But beyond pushing high-speed Internet into more homes, advocates say the FCC's effort could spark a transformation of the basic set-top cable box into a high-tech, multi-use machine, much like the cell phone has been revolutionized by the BlackBerry and the iPhone."

Safety Organizations Discuss Inter-operable Broadband Network Plan

Nine major public safety organizations gathered in New York City in late 2009 to discuss development of a nationwide interoperable broadband network to help meet the needs of emergency communicators. The Association of Public-Safety Communications Officials (APCO) International and the Major Cities Chiefs Association (MCCA) jointly hosted the session, which included representatives from the International Association of Chiefs of Police (IACP), International Association of Fire Chiefs (IAFC), Major County Sheriffs' Association (MCSA), Metropolitan Fire Chiefs Association (MFCA), National Emergency Management Association (NEMA), National Emergency Number Association (NENA), and the National Sheriffs' Association (NSA).

Held at NYPD headquarters, the meeting "focused on continuing to foster consensus on the development and implementation of a public safety wireless broadband network," according to a report posted on APCO's website. The New York City Police Department's Real Time Crime Center and a citywide wireless network were featured as key examples of the use of broadband communications technology to enhance public safety.

Proposed Change To Amateur Station ID Rules Denied By FCC

The FCC has ruled it will not consider changing regulations pertaining to amateur radio station identification, dismissing a petition by Glen Zook, K9STH, of Richardson, Texas. Zook had requested that "the Commission's Rules 'be amended to incorporate certain portions of the Commission's former station identification rule.' He said that 'the provisions... in Section 97.119(a) are open to individual interpretation which may, or may not, meet the expectations of the Commission,' and that certain portions 'are, on a very routine basis, ignored by a significant number of amateur radio operators.'"

According to reports, "the FCC noted that Section 97.119(a) currently provides that an amateur station 'must transmit its assigned call sign on its transmitting channel at the end of each communication, and at least every 10 minutes during a communication, for the purpose of clearly making the source of the transmissions from the station known to those receiving the transmissions.'"

In dismissing Zook's petition, the FCC said "Your current proposal... does not demonstrate that revising the station identification requirement as requested would address the concern that many amateur radio operators do not identify their station timely or at all, or that the problem of station operators not complying with the present rule cannot be addressed by enforcement of the present rule rather than a rule change.'"

Sorting The Radio Sources

by Rob de Santos
commhorizons@gmail.com

“With the invention of the micro-processor and the advent of the computer came an explosion in new delivery methods. Let’s consider just a few of the many new radio technologies.”

Last month I talked about the changing sources for television. This month, we’ll take up radio. As I write this, I am listening to my Internet radio and a radio station from thousands of miles away is coming through the speaker. Not very many years ago, that would have been impossible without the use of a shortwave radio.

Radio is just over a century old. It has undergone a transformation over that century, but the pace of change is increasing. The “race is on” now, and we’re witnessing a revolution in the delivery of sound to listeners. Several decades passed after the invention of radio before the introduction of broadcasting. Another several decades passed before we saw the wider use of “frequency modulation” and introduction of smaller and smaller receivers (transistor radios). Ham operators gravitated to the use of SSB. It was several more decades before FM overtook AM as the preferred mode of transmission for most U.S.-based listeners. That transformation is still underway in many less developed countries.

With the invention of the microprocessor and the advent of the computer came an explosion in new delivery methods. Let’s consider just a few of the many new radio technologies. There is digital delivery via technologies such as DAB, HD, and DRM. The home computer has developed into an easily used means to stream broadcasts and provide on-demand audio streams and podcasts. Stand-alone Internet radios, such as the Grace Wireless, Logitech Squeezebox, and CC WiFi, provide audio as mentioned in the opening to this column. Another rapidly growing alternative is the use of smart mobile phones (iPhone, Blackberry, etc.) as a way to listen. There’s also satellite radio, and of course shortwave, which hasn’t completely sailed off into the sunset.

What will radio look like in a few decades? Here are some of my thoughts:

- Radio broadcasting via mediumwave, shortwave, and even UHF (FM bands) will still be with us for a very long time but will shrink in importance in the “Internet-developed” world. It’s a case of cost-effectiveness, not on the part of broadcasters but for listeners. An inexpensive computer chip, a crank, and a primitive antenna mean that a radio can be used almost anywhere around the globe, at any time.

- Handheld devices will continue to evolve with access to more and more sources of radio. Some devices are already capable of multiple sources, including FM, HD radio, podcasts, Internet radio,

and more. As noted last month, there’s a convergence going on in the handheld space and this affects radio delivery as well as television. As with computers, “feature-itis” is a risk. How much is too much and which sources will become dominant? It’s too early to tell which sources will prove to be long-term survivors. Which ones will consumers want on their devices?

- Future generations will no longer remember radio as something you “tune” into on a specific frequency. Even as radio broadcasters continue to use related slogans (“Hot 107”), the differences in technology ensure that frequency references will have little meaning and identifiers of producer and content will matter. After all, if it’s the BBC World Service, does it matter how I’m getting it to the consumer? Is just listening to the content what matters?

- Convenience of time and place will dominate. As a listener, as long as the content is available when and where I want, it won’t matter if it’s on at the “same Bat time, same Bat channel.” We see this already with on-demand listening, and the trend will accelerate.

- The diversity of sources and delivery methods will continue to grow. All means that electromagnetic information can be transmitted to listeners are fair game for audio delivery.

- Listener-customized content will become more widespread. The emergence of personalized content such as Pandora, Slacker, and listener response-driven products like Listener Driven Radio are the harbingers of the closure of the feedback loop between listeners and the creators of content.

- Advertising as the way to pay for the costs of production and reimbursement to creators will become less important and more diverse as listeners begin to pay for content directly and indirectly via subscription payments. Rights fees will become more tangled before the copyright laws are finally rewritten to reflect the technological realities. The use of geo-tagging will allow more specific advertising targeting.

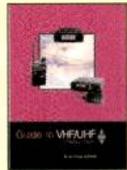
- The cost of producing a minute of audio content will continue to decline and move away from the “studio.” As a general trend across communication, it’s clear that the need to have the writers, performers (screen or audio talent), producers, and distributors co-located will decrease.

What do you think? How do you listen to radio now? Is your listening different from a decade ago, and do you see it changing again in the future? Produce some audio or text and let me know.

RSGB Books from **CQ**



Guide to VHF/UHF Amateur Radio

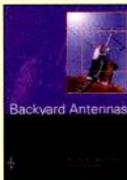


By Ian Poole, G3YWX

RSGB 2000 Ed., 112 pgs. Everything you will need to help you enjoy VHF/UHF to the fullest. Choosing the right transmitter, receiver, antenna, utilizing the correct part of each band and more!

Order No. RSGVUAR **\$16.00**

Backyard Antennas



RSGB, 1st Ed., 2000, 208 pgs.

Whether you have a house, bungalow or apartment, Backyard Antennas will help you find the solution to radiating a good signal on your favorite band.

Order: RSBYA **\$33.00**

Practical Wire Antennas 2



By Ian Poole, G3YWX

RSGB, 2005 Edition, 176 pages This significantly expanded and fully revised edition includes designs for a wide range of practical wire antennas. You'll find just about every type of wire antenna you could possibly imagine with complete and easy to understand designs.

Order: RSPWA2 **\$23.50**

Packet Radio Primer

By Dave Coomber, G8UYZ & Martin Croft, G8NZU

RSGB, 2nd Ed., 1995, 266 pages Detailed practical advice for beginners. Completely revised and greatly expanded to cover developments in this field and beyond bare basics into advanced areas such as satellite operations.

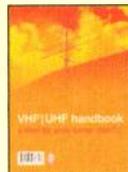


Order: RSPRP **\$16.00**

VHF/UHF Handbook

Edited by Andy Barter, G8ATD

RSGB, 2nd Ed., 320 pages. This second edition guides you through the theory and practice of VHF/UHF operating and transmission lines. Includes info on getting started, antennas, constructing your own equipment, satellite ops, local nets and specialized modes.



Order: RXVUH **\$29.50**



HF Antenna Collection

RSGB, 2nd Ed., 2002. 252 pages.

A collection of outstanding articles and short pieces which were published in *Radio Communication* magazine. Includes single- and multi-element, horizontal and vertical antennas, extremely small transmitting and receiving antennas, feeders, tuners and much much more!

Order: RSHFAC **\$33.00**



QRP Basics

By Rev. George Dobbs, G3RJV

RSGB, 2003 Edition, 208 pages

How to get the best results from a QRP station whether from home or outdoors. Explains how to construct your own station, including complete transmitters, receivers and some accessories. Other sections include toroidal coils, construction techniques and equipping a workshop. You'll also find a listing of QRP contests and awards.

Order: RSQRPB **\$28.50**

World at Their Fingertips



by John Clarricoats, G6CL

RSGB, 1st Ed., 1993, 307 pages

The story of amateur radio in the U.K. and a history of the Radio Society of Great Britain. Its pages and illustrations give an account of the development of a hobby that has provided technical knowledge and service to the community.

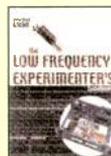
Order: RSWTF **\$16.00**

The Low Frequency Experimenter's Hdbk

By Peter Dodd, G3LDO

RSGB, 2000 Ed., 296 pages.

An invaluable reference written to meet the needs of amateurs and experimenters interested in low power radio techniques below 200kHz.



Order: RSLFEH **\$33.00**

Technical Topics Scrapbook

1995-1999

By Pat Hawker, G3VA

RSGB, 2000 Ed., 314 pages. This third compilation of 'Tech Topic' articles is a fascinating collection of circuit ideas, antenna lore, component news and more!

Order: RSTTC99 **\$27.50**



IOTA Directory

Edited by Roger Balister, G3KMA
RSGB, 2007 Ed..

Fully updated, lists all islands that qualify for IOTA, grouped by continent, and indexed by prefix. Award rules and includes application forms.

Order: RSIOTA **\$18.00**

Low Power Scrapbook

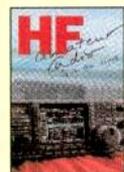
RSGB, 2001 Ed., 320 pages.

Choose from dozens of simple transmitter and receiver projects for the HF bands and 6m, including the tiny Oner transmitter and the White Rose Receiver. Ideal for the experimenter or anyone who likes the fun of building and operating their own radio equipment.



Order: RSLPS **\$18.00**

HF Amateur Radio



RSGB, 2007 Second Ed.

HF or shortwave bands are one of the most interesting areas of amateur radio. Guides you through setting up an efficient amateur radio station, equipment to choose, installation, the best antenna for your location and MUCH more.

Order: RSHFAR **\$23.00**

Technical Topics Scrapbook 1985-1989

by Pat Hawker, G3VA

RSGB, 1st Ed., 1993, 346 pages A collection of popular 'Technical Topics' published in RadCom. Info, ideas, mods and tips for amateurs.



Order: RSTTC89 **\$18.00**

Power Supply Handbook

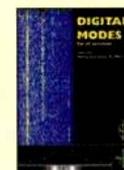
By John Fielding, ZS5JF

RSGB, 2006 Edition, 288 pages How power supplies work, selecting components, building and modifying supplies, measuring the finished supply, batteries, chargers, test equipment - it's all here!



Order: RSPSH **\$28.50**

Digital Modes for All Occasion



By Murray Greenman, ZL1PBPU

RSGB, 2002 Ed., 208 pgs. Simply the most "complete" book on Digital Modes available. Over 100 illustrations!

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The Aeroshell Aerobatics team flying T-6 Texan trainers at EAA AirVenture Oshkosh in 2005.
(Public domain photo via Wikipedia)

Air Show Season Takes Off, And So Do "Birds" Of A Different Feather

With Flying Giants, Classic Turbo Trainers, And High-Performance Aerobatic Craft, There's More To An Air Show Than Fighter Jets

by Tom Swisher, WA8PYR

Ah, air show season. The clear blue skies. The scent of jet exhaust. The scorching heat. The smoke trails. The big lumbering aircraft creeping across the sky...

Big lumbering aircraft?

That's right, big lumbering aircraft. *Really* big.

While fighters like the F-16 and F/A-18 are usually the stars of an air show thanks to their high speed, high performance, and dazzling maneuvering, there are other aircraft there as well.

Tom Swisher, WA8PYR, is *Pop'Comm's* "Civil Aviation Monitoring" columnist.

Transports, bombers, helicopters, and vintage warbirds are all likely to be found at an air show. Many air shows will also showcase high-performance and experimental civilian craft and demonstrations.

Transport Behemoths

An often overlooked category of planes at an air show are the transport aircraft. Ranging from the World War II classic C-47 to the modern C-17 jet transport as well as the occasional civilian freight aircraft, transport aircraft are the workhorses.

“Re-enactment drops of airborne troops using C-47 aircraft have been performed, and more modern transport aircraft may also participate, giving air show patrons a taste of another facet of the modern military, or of military history.”

es of military aviation, carrying troops, hardware and other supplies all over a theater of action or all over the world.

Most often, transports are flown in to an air show location and remain in place as static displays, offering an impressive backdrop to the action in the skies overhead. Sometimes, though, these aircraft can be seen as an integral part of the flight demonstration. A good example of this is the C-130 used by the U.S. Navy’s Blue Angels. Known as “Fat Albert,” this aircraft (crewed entirely by Marines) is used to carry the maintenance and support personnel, their personal gear and enough spare parts and communication equipment to ensure a successful Blue Angels show. When the show begins, though, Fat Albert is anything but a static display. With the aid of jet-assisted takeoff (JATO) bottles, Fat Albert can perform a very short takeoff run of 1,500 feet followed by a rapid 45-degree angle climb to 1,000 feet in just 15 seconds.

Other flight demonstrations of transport aircraft might be conducted as well. Re-enactment drops of airborne troops using C-47 aircraft have been performed, and more modern transport aircraft may also participate, giving air show patrons

a taste of another facet of the modern military, or of military history.

Bombers

Other aircraft often found at air shows include bombers. Classic warbirds like B-17, B-24 and B-25 bombers regularly show up at these events, especially the B-17 Flying Fortress. First flown in the mid-1930s and undergoing continual improvement during the 10 years it was in production, the B-17 was incredibly durable, able to absorb an astonishing amount of damage yet still complete the mission and bring the crew home. It’s the best-known workhorse bomber of World War II, and with 15 in fully restored flying condition (most in the United States), there’s a pretty good chance that at least one will show up at larger air shows.

Other medium and heavy bombers can also be seen, both vintage and modern, including World War II veteran B-24s and B-25s, as well as the British Avro Lancaster, of which only two remain in flying condition.

Bombers are often used for demonstration flights. One notable demonstration occurred during the 2007 Gathering

of Mustangs and Legends at Rickenbacker International Airport in Columbus, Ohio. This largest gathering of vintage warbirds in many years featured a reenactment bombing run against the airfield, complete with heavy (B-17, B-24, and Lancaster) and medium (B-25) bombers flying a mission, escorted by a large contingent of P-51 escort fighters, topped off with explosions and fire in the middle of the airfield to simulate the impact of the “bombs.” It was an impressive and noisy display.

Non-Military Demos

While they’re typically the stars of the show, military aircraft are not the only game in town. There are other aircraft at the show, too. Most air shows generally feature a mixture of military and civilian demonstration flying, by both solo pilots and demonstration teams. Teams like the Aeroshell Aerobatics Team (flying the AT-6 Texan); the Lima Lima Flight Team (T-34 Mentor); the Horsemen Aerobatic Team (P-51 Mustang), and individuals like Patty Wagstaff (Extra 300S) and Rich Perkins (L-39C Alabros) all add to the excitement. The solo pilots especially feature some pretty wild flying, with extreme spins, loops, and turns to wow the crowd.

On The Ground

Don’t forget about the ground displays. Many air shows feature a wide vari-



USAF A-10 Thunderbolt II in front of C-17 Globemaster III transport at the Gathering of Mustangs & Legends in 2007. (Photo by the author)

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A C-47 transport on the flightline at the Gathering of Mustangs & Legends in 2007. (Photo by the author)

ety of displays, from military equipment and vehicles to static aircraft under restoration or just there to “show the flag.” Some shows have even hosted reenactment wartime encampments in order to give visitors an idea of the conditions air-crews and their ground crews lived in during their deployments. Many of the hosts of these displays are retired military personnel with first-hand experience. These

men and women offer a wealth of knowledge and tell fascinating stories of their time spent in front of, behind, and above the lines.

Tips For Listening In

You’ve heard all about the planes and the displays that you can see, but this is a radio magazine, so you want to know

what you can *hear*. With so much to monitor, what should you concentrate on listening to at the show, and what radio should you use for the purpose?

While civilian demonstration teams use VHF civil air frequencies, military demonstration teams often use military UHF frequencies. So, if you have to limit yourself to one scanner, it really needs to be capable of monitoring the military air



T-34 trainers of the March Field Aero Club in formation during the March Field Air Fest. (USAF photo by SSGT Hector Garcia, courtesy of DOD Media)

Air Show Schedule

Mar 12-14	Tico Warbird Air Show	Space Coast Regional Airport, Titusville, FL	Jun 11-13	Québec Int'l Air Show	Quebec City, Quebec, CAN
Mar 13	NAF El Centro Air Show	NAF El Centro, CA	Jun 11-13	Golden West Regional Fly-In & Airshow	Yuba County Airport, Marysville, CA
Mar 13-14	Air Fiesta 2010	Brownsville, TX	Jun 11-13	Indianapolis Air Show	Mt. Comfort Airport, Indianapolis, IN
Mar 20-21	Thunder in the Valley Air Show	Columbus Airport, Columbus, GA	Jun 12-13	Milwaukee Air & Water Show	Lakefront, Milwaukee, WI
Mar 20-21	Aerospace and Arizona Days	Davis-Monthan AFB, AZ	Jun 12-13	Festival of Flight	New Garden Flying Field, PA
Mar 20-21	MacDill Air Fest	MacDill AFB, Tampa, FL	Jun 19	Vertical Challenge 2010: Helicopter Air Show	Hiller Aviation Museum, San Carlos, CA
Mar 27	MCAS Yuma Air Show	MCAS Yuma, AZ	Jun 19-20	Star Spangled Salute	Tinker AFB, OK
Mar 27-28	Wings Over South Texas	NAS Kingsville, TX	Jun 19-20	Cape Girardeau Air Festival	Cape Girardeau, MO
Mar 27-28	Maxwell-Gunter Open House & Airshow	Maxwell AFB, AL	Jun 26-27	Quad City Air Show	Davenport Municipal Airport, Davenport, IA
Apr 10	Bluebonnet Air Show	Burnet, TX	Jun 26-27	Air Show Ottawa	Carp, Ottawa, Ontario, CAN
Apr 10-11	Florida Int'l Air Show Punta Gorda, FL	Charlottee County Airport, Punta Gorda, FL	Jun 26-27	Rhode Island Open House and Air Show	Quonset State Airport, North Kingstown, RI
Apr 10-11	Eglin AFB Open House and Air Show	Eglin AFB, FL	Jul 01-04	Battle Creek Field of Flight Air Show	W.K. Kellogg Airport, Battle Creek, MI
Apr 13-18	Sun'n Fun Fly-In	Lakeland Linder Regional Airport, Lakeland, FL	Jul 03-04	National Cherry Festival Air Show	West Arm of Grand Traverse Bay, Traverse City, MI
Apr 17	Thunder Over Louisville	Louisville, KY	Jul 07-11	Arlington Fly-In	Arlington, WA
Apr 17	American Heroes Air Show	Camp Mabry, Austin, TX	Jul 09-11	USAM Air Show—The Gathering of Eagles	Lost Nation Airport, Willoughby, OH
Apr 17	Warbirds In Action Air Show	Minter Field, Shafter, CA	Jul 09-11	Geneseo Air Show	Geneseo, NY
Apr 17	Charleston Air Expo 2010	Charleston AFB, Charleston, SC	Jul 10	Pensacola Beach Air Show	Pensacola Beach, FL
Apr 24-25	Vidalia Onion Festival Air Show	Vidalia Regional Airport, Vidalia, GA	Jul 10-11	Gary's South Shore Air Show	Gary, IN
Apr 24-25	Air Lauderdale Beach Fest	Fort Lauderdale, FL	Jul 17-18	Duluth Air & Aviation Expo	Duluth, MN
Apr 24-25	Barksdale AFB Open House and Air Show	Barksdale AFB, Bossier City, LA	Jul 17-18	Dayton Air Show	Dayton Int'l Airport, Dayton, OH
Apr 25	Pacific Coast Dream Machines Show	Half Moon Bay Airport, CA	Jul 21	Cheyenne Frontier Days	Cheyenne, WY
May 01	Dyess AFB Open House & Air Show	Dyess AFB, Abilene, TX	Jul 23-25	Prairie Air Show—River City Air Expo	Peoria International Airport, Peoria, IL
May 01-02	March Air Reserve Base Airshow	March ARB, CA	Jul 24-25	Idaho Falls Air Show	Idaho Falls, ID
May 01-02	Canadian Aviation Expo CAN	Hamilton Airport, Ontario, CAN	Jul 24-25	Fairchild AFB Air Show	Fairchild AFB, Spokane, WA
May 01-02	Sound of Speed Air Show	St. Joseph, MO	Jul 24-25	Alberta Int'l Air Show	Lethbridge, Alberta, CAN
May 02	Altus AFB Airshow	Altus AFB, OK	Jul 26-27	EAA Air Venture 2010	Wittman Regional Airport, Oshkosh, WI
May 08-09	Shaw Fest '10	Shaw AFB, Sumter, SC	Aug 01	Arctic Thunder Air Show 2010	Elmendorf AFB, AK
May 08-09	Tuscaloosa Air Show	Tuscaloosa, AL	Jul 31-31	Rockford Airfest 2010	Rockford Int'l Airport, Rockford, IL
May 15	Heroes Take Flight Fly-In	Auburn, Opelika, AL	Aug 01	EAA Air Venture 2010	Wittman Regional Airport, Oshkosh, WI
May 15-16	Andrews AFB Joint Service Open House	Andrews AFB, Camp Springs, MD	Jul 31-31	Arctic Thunder Air Show 2010	Elmendorf AFB, AK
May 15-16	Planes of Fame Airshow	Chino, CA	Aug 01	Rockford Airfest 2010	Rockford Int'l Airport, Rockford, IL
May 22	Grand Forks AFB Air Show	Grand Forks AFB, ND	Jul 26-27	EAA Air Venture 2010	Wittman Regional Airport, Oshkosh, WI
May 22-23	MCAS Cherry Point Air Show	MCAS Cherry Point, NC	Aug 01	Arctic Thunder Air Show 2010	Elmendorf AFB, AK
May 22-23	Virginia Regional Festival of Flight	Suffolk, VA	Jul 31-31	Rockford Airfest 2010	Rockford Int'l Airport, Rockford, IL
May 28-30	Southern Wisconsin Air Fest	Southern Wisconsin Airport, Janesville, WI	Aug 07-08	Wetaskiwin Air Show	Wetaskiwin, Alberta, CAN
May 29-30	New York Air Show	Jones Beach State Park, Wantagh, NY	Aug 07-08	Seafair 2010 Air Show	Lake Washington, Seattle, WA
Jun 04-06	Mid-Atlantic World War II Weekend	Reading, PA	Aug 14-15	Abbotsford Int'l Airshow	Abbotsford, British Columbia, CAN
Jun 05-06	Thunder on the Lakeshore Airport, Manitowoc, WI	Manitowoc County	Aug 14-15	Chicago Air & Water Show	Chicago Lakefront, Chicago, IL
Jun 05-06	OC Air Show 2010	Ocean City, MD			
Jun 05-06	Borden Canadian Forces Day	CFB Borden, Ontario, CAN			
Jun 05-06	Chippewa Valley Air Show	Chippewa Valley Regional Airport, Eau Claire, WI			

CQ calendar

15 months
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through
March 2011

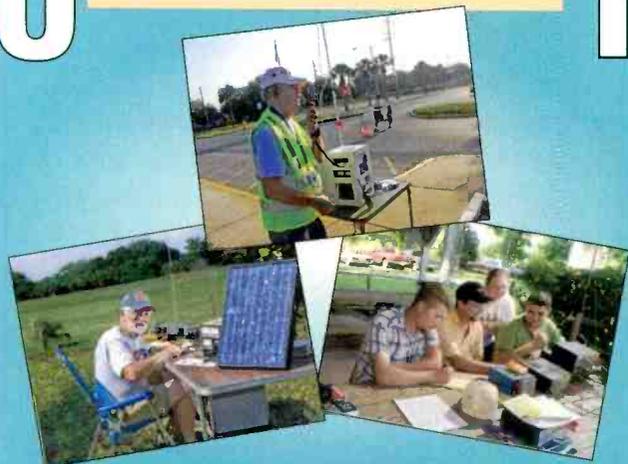


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2010

This year's calendar brings you 15 spectacular color images of some of the biggest, most photogenic shacks, antennas, scenics and personalities from across the country!

Calendar includes dates of important Ham Radio events such as major contests and other operating events, meteor showers, phases of the moon, and other astronomical information, plus important and popular holidays. The CQ Ham Radio Operators calendar is not only great to look at, it's truly useful, too!



Aug 21	Wings Over Alpena Air Show	Alpena, MI
Aug 21-22	Windsor Int'l Air Show	Windsor, Ontario, CAN
Aug 25	Atlantic City Air Show—Thunder over the Boardwalk	Atlantic City Beachfront, Atlantic City, NJ
Aug 28	Thunder over the Coconino 2010	Valle Airport, Williams, AZ
Aug 28	Lake in the Sky Air Show	Lake Tahoe Airport, South Lake Tahoe, CA
Aug 28-29	Pease Air Show—Wings of Hope 2010	Pease ANGB, Portsmouth, NH
Aug 28-29	Colorado Sport Int'l Air Show	Jefferson Cnty, Denver, CO
Sep 03-05	Watsonville Fly-In & Airshow	Watsonville Municipal Airport, Watsonville, CA
Sep 04-05	Martinsburg Air Show	Martinsburg, WV
Sep 04-06	Cleveland Nat'l Air Show	Burke Lakefront Airport, Cleveland, OH
Sep 11	American Heroes Air Show	Canton, GA
Sep 11-12	Wings Over Pittsburgh	Corapolis, Pittsburgh, PA
Sep 11-12	Scott AFB Air Show	Scott AFB, IL
Sep 15-19	Reno Nat'l Championship Air Races	Reno Stead Airport, Reno, NV
Sep 18-19	NAS Oceana Air Show	NAS Oceana, Virginia Beach, VA
Sep 18-19	Wings over Whiteman	Whiteman AFB, MO
Sep 24-26	Chico Air Show 2010	Chico Municipal Airport, Chico, CA
Sep 25-26	Blues on the Bay	MCAS Kaneohe Bay, HI
Sep 25-26	McConnell AFB Open House 2010	McConnell AFB, Wichita, KS
Oct 01-03	MCAS Miramar Air Show	MCAS Miramar, San Diego, CA
Oct 02-03	California Int'l Airshow	Salinas Municipal Airport, Salinas, CA
Oct 02-03	Colorado Springs "In Their Honor" Air Show	Old Colorado Springs Airport, Colorado Springs, CO
Oct 08-10	CAF Airshow	Midland Int'l Airport, Midland, TX
Oct 09-10	Southside SkyFest	Danville, VA
Oct 09-10	San Francisco Fleet Week Air Show	Waterfront, San Francisco, CA
Oct 09-10	Airpower Arkansas	Little Rock AFB, Jacksonville, AR
Oct 16-17	Amigo Airshow	El Paso, TX
Oct 16-17	Wings Over Marietta	Dobbins ARB, Marietta, GA
Oct 23-24	NAS Jacksonville Air Show	NAS Jacksonville, FL
Oct 23-24	Wings Over Houston Air Show	Ellington Field, Houston, TX
Oct 30-31	Fort Worth Alliance Air Show	Fort Worth Alliance Airport, TX
Oct 30-31	Cocoa Beach Air Show	Cocoa Beach, FL
Nov 06-07	Lackland AirFest '10	Lackland AFB, San Antonio, TX
Nov 06-07	Warriors and Warbirds 2010 Air Show	Charlotte-Monroe Airport, Monroe, NC
Nov 06-07	Wings Over Homestead	Homestead ARB, FL
Nov 12-13	Blue Angels Homecoming Air Show—NAS Pensacola Open House	Sherman Field, NAS Pensacola, FL
Nov 13-14	Aviation Nation 2010—Las Vegas Air Show	Nellis AFB, Las Vegas, NV



CQ Communications, Inc.

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www.cq-amateur-radio.com





An Avro Lancaster bomber on the flightline at the Gathering of Mustangs & Legends in 2007. (Photo by the author)

frequencies between 225 and 380 MHz. Two scanners are even better; you can use one to monitor the VHF air channels, including the primary show controller (“Air Boss”) frequency, and the other for monitoring the military frequencies. You could also dedicate the military scanner to monitoring the VHF and UHF frequencies used by whatever military team is performing, and the other solely for the civilian side. How you do this is entirely up to your own personal preference.

If you’re in a stationary location close to the show where you can see and hear the action (like the lucky folks who live near an air show venue), you can also use your computer to run control and logging software for your computer-capable scanner. This will allow you to better see active frequencies as well as control the radio and log what the scanner catches; some programs even record the audio from transmissions and index the audio files to a log file.

Don’t forget to take along extra batteries; if you run dry, there aren’t going to be any places to charge up. You might find a vendor at the show selling extra batteries, but they would be astonishingly expensive and you can’t count on finding them anyway, so bring along extras!

Another *must-must*-have is a set of good-quality earphones. The best are comfortable “ear bud”-type earphones used with the Apple iPod and other sim-

ilar music players. You’re looking for a type that will block much outside noise so you can hear the action. Most stores such as Best Buy and Circuit City carry these earphones, which cost around \$20. That’s pretty pricey for earphones, but you need something that’s comfortable yet will allow you to hear the action.

Finally, what frequencies should you

listen to? In addition to the frequencies of the host airport, one frequency often used is 123.150 MHz, a common Air Boss frequency. You’ll also often hear the 122-MHz Unicom frequencies used. See the accompanying box for some other common frequencies.

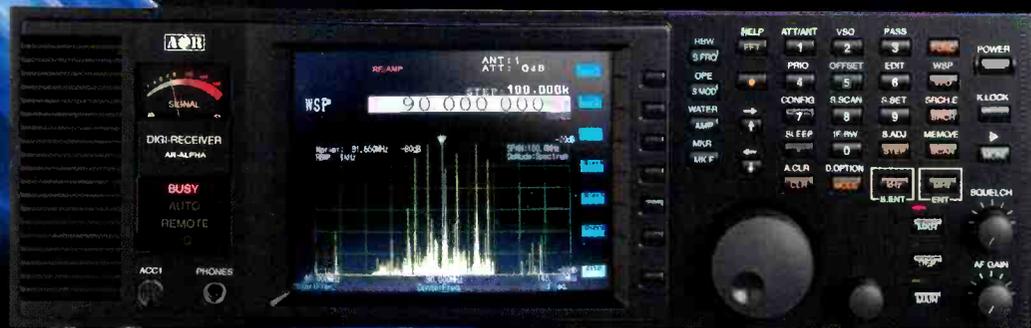
As far as specific air show frequencies go, there are almost as many such listings



A Stearman N2S trainer, a popular aerobatics aircraft. (Photo by Juergen Lehle [albspotter.eu], via of Wikipedia)

AR-ALPHA

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- Multi-mode unit capable of receiving AM (synchronous), ISB, RZ-SSB, USB, LSB, CW, WFM including FM stereo, NFM, APCO-25 digital, and TV in both NTSC and PAL formats
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- 6-inch TFT color panel can display received video signals or depict spectrum activity over a wide choice of bandwidths including a

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AOR proudly presents the AR-ALPHA, the first in a new class of professional monitoring receivers! Designed to cover 10KHz to 3.3GHz continuous, with no interruptions*, this receiver features sophisticated I/Q control software that enables it to perform unattended datalogging for extended periods. It boasts a 6-inch color TFT display, five VFOs, 2000 alphanumeric memories that can be computer programmed as 40 banks of 50 channels, 40 search banks, a "select memory" bank of 100 frequencies, and a user designated priority channel. It also includes APCO-25 digital capability and a DVR with six channels that can record up to a total of 52 minutes of audio. Monitoring professionals will appreciate the world class engineering and attention to detail that makes the AR-ALPHA such an amazing instrument.

"waterfall" function to show signal activity over a specified time period

- Composite video output on the rear panel of the unit
- Selectable IF bandwidths: 200 Hz, 500 Hz, 1 KHz, 3 KHz, 6 KHz, 15 KHz, 30 KHz, 100 KHz, 200 KHz and 300 KHz along with the ability to shift the IF
- CTCSS and DCS selectable squelch functions; DTMF tone decode
- Built-in voice-inversion descrambling**
- CW pitch control, AGC, AFC
- Auto-notch feature
- User selectable spectrum display function from 250 KHz through 10 MHz in 1 KHz increments. Above 10 MHz bandwidth, it can display 20 MHz, 50 MHz, 100 MHz or 1 GHz, but above 20 MHz bandwidth, no audio will be available
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- Use desktop or with 19" rack mount

The AR-ALPHA redefines excellence in professional monitoring receivers. No wonder so many monitoring professionals including government, newsrooms, laboratories, military users and more, rely on AOR.



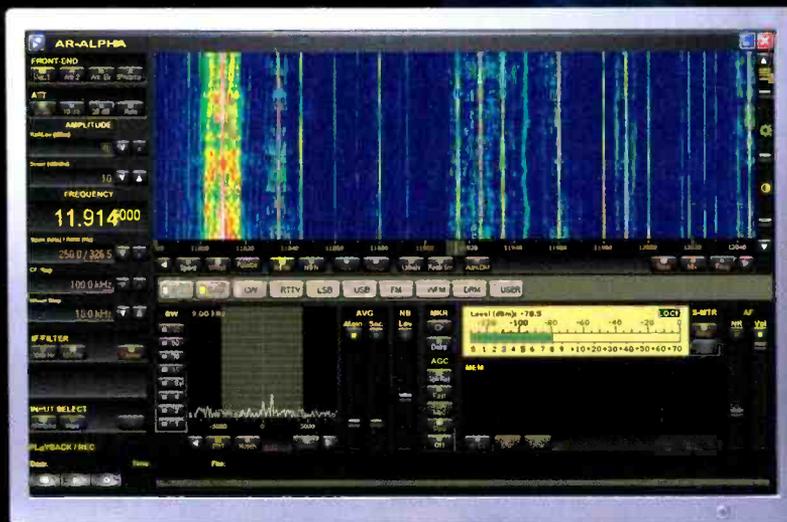
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*Documentation required for qualified purchasers in the USA.
**Not available on US consumer version.

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Signal searching is easy with playback capabilities through a PC



PC screen displays waterfall function to capture signal bursts

- Up to 1MHz bandwidth can be recorded for later evaluation
- High recovered audio quality with no deterioration of recorded data
- Can be used to perform unattended datalogging
- Spectrum display, full color waterfall and averaging functions support signal evaluation and analysis
- Easy to use. No training required.

can even listen repeatedly to a loop in time to decode a transmission received in difficult conditions.

AR-IQ software can be uploaded to multiple PCs so that you can transfer data from a PC connected to the AR-ALPHA over to another PC for playback and review.

The AR-ALPHA with AR-IQ software sets a new standard for professional grade multimode monitoring receivers! To order, contact your AOR dealer today.

AOR has brought a new level of receiver control to the AR-ALPHA with the addition of AR-IQ software. This free software enables the AR-ALPHA to store and playback a full 1MHz of bandwidth activity without any loss of quality. Raw data can be easily transferred from the AR-ALPHA to the hard drive of almost any computer*** for later analysis and review. It is even possible to listen to a frequency off-line by recording

data and storing it on a PC. Operators can also create loops to cover a particular time frame so that no signal is missed. Signal bursts are easily seen with the full color waterfall display function.

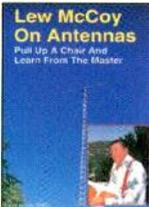
Using the control panel of the AR-ALPHA through a PC monitor, operators are able to enjoy added capabilities. You can perform unattended datalogging for extended periods of time depending on storage capacity. So, for hours, days or even weeks, you can capture up to 1MHz bandwidth between 10kHz and 3.3 GHz for later playback and analysis. You

***AR-IQ software can be used with any dual core class PC operating Windows® XP or Vista with 2.0GHz CPU and 1GB RAM.



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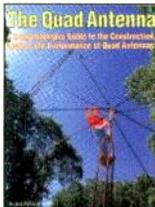


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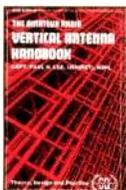


The Quad Antenna

by Bob Haviland, W4MB

A comprehensive guide to the construction, design and performance of Quad Antennas. Chapter titles include General Concepts, Circular-Loop & Arrays, Rectangular & Square Loops, Multi-Element Quads, Delta Loops & Arrays, Design Variations, Optimizing a Quad Design and more!

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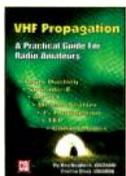


The Vertical Antenna Handbook

by Paul Lee, N6PL

You'll learn basic theory and practice of the vertical antenna. Discover many easy-to-build construction projects.

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VHF Propagation Handbook The Practical Guide for Radio Amateurs

by Ken Neubeck, WB2AMU & Gordon West, WB6NOA

The combined ham radio experience of the authors represents many years of VHF observations and research. Tropo Ducting, Sporadic-E, Aurora, Meteor Scatter, F2 Propagation, TEP, Combo Modes, it's all here!

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33 Simple Weekend Projects

by Dave Ingram, K4TWJ

Do-it-yourself electronics projects from the most basic to the fairly sophisticated. You'll find station accessories for VHF FMing, working OSCAR satellites, fun on HF, trying CW, building simple antennas, even a complete working HF station you can build for \$100. Also includes practical tips and techniques on how to create your own electronic projects.

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Fat Albert takes off at the 2009 California International Air Show. (U.S. Navy photo by MCC Steve Johnson)

on the Internet as there are blades of grass on a golf course. Most vary from one to another in some details, and some are wildly outdated. However, there are so many frequencies that are or could be used at the various air shows around the country that listing them all here would take half the magazine. So instead we'll provide a few Internet locations to try:

www.panix.com/clay/scanning/frequencies/aircraft/airshow.txt

www.zoncom.com/Flying_High/html/Bulletin_Airshow_Frequencies.html

www.fordyce.org/scanning/scanning_info/airshofq.htm

By using these lists as starting points and researching others based on the performer list for the air show you'll be attending, you'll be able to come up with a fairly accurate list for your own purposes. If you don't have access to a computer, ask a friend to print out the information for you.

Enjoy The Show

So there you have it. Check out the list of scheduled shows and find one near you, load the scanners and cameras in the car, pack the sunscreen, a folding chair, and a few bottles of water, and head for the local aerodrome to watch the (man-made) birds fly.

Some Common Air Show Frequencies

Aeroshell	123.150
Patty Wagstaff	122.750, 123.475
USAF Thunderbirds	141.850, 143.850, 235.200
USN Blue Angels	237.800, 275.350, 305.500, 346.500
USAF F-15 Eagle Team	123.150, 376.025
USAF F-16 Fighting Falcon Team	283.700, 365.700
USAF F-22 Raptor Team	238.900, 290.225
Common Air Boss frequencies	123.150, 123.450

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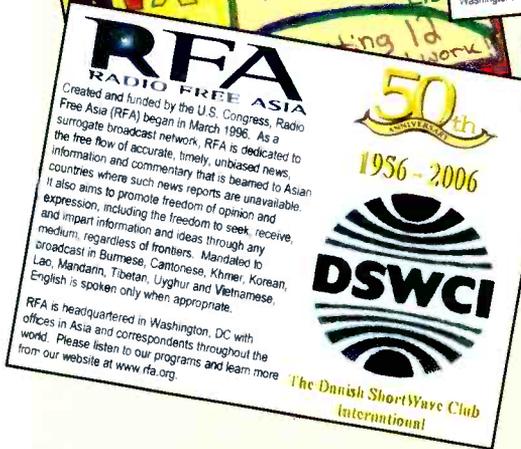
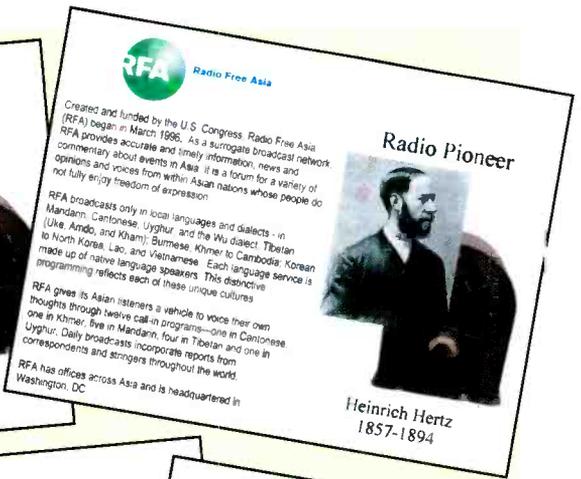
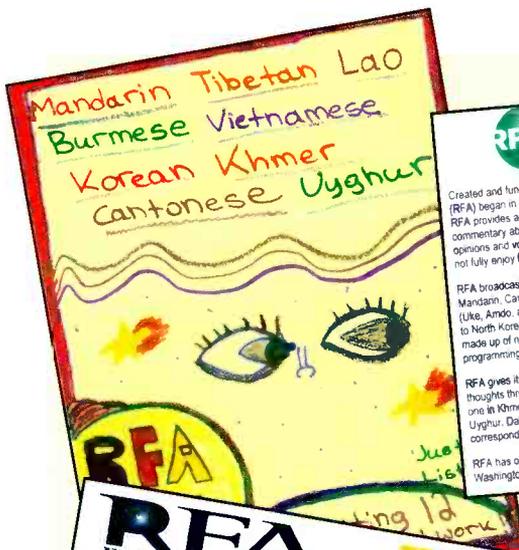
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RFA's QSL cards celebrate anniversaries, people, and events. Several were designed by the children of RFA's staff.

The Mighty Radio Free Asia

Setting The Gold Standard For Journalistic Excellence In Some Dark Corners

By Gerry Dexter

"I listen to Radio Free Asia every day along with my breakfast."
—The Dalai Lama, RFA interview, 1997

From the revered Dalai Lama to the crushed and cowered common folk, they listen. From among the dispirited, disheartened, and disillusioned, they listen. They probably listen in secret, likely with a wary eye watching the road or the neighbors, but they listen anyway, by unknown numbers. They listen in Vietnam, Cambodia, and Laos; they listen in China, Burma, and North Korea. They listen to native speakers of their own lan-

guage giving them news and information about the real world, the world beyond that of their closed societies. They hear that which their "people's" governments do not want them to hear. And sometimes they respond with their own voices, in thanks.

Established by Congress in 1994 and on the air two years later, Radio Free Asia (RFA) is a private, non-profit organization dedicated to serving as a "free press" for the closed countries of Asia by providing objective news and commentary. RFA also aims to add to the cultural lives of its audience by airing works of literature those governments have banned.

From its Washington, D.C studios, RFA's programs go out in 13 languages and dialects, including Burmese, Vietnamese, Korean, Lao, Khmer, Mandarin, Cantonese, Uyghur, and Wu, as well as three Tibetan dialects (Uke, Amdo, and Kham). Each language service is specifically and individually designed for

Gerry Dexter is *Popular Communications'* "Global Information Guide" columnist.

 B09 Daily Broadcast Frequencies As of October 25, 2009 All times UTC	
Burmese (4 hours daily)	
0030-0130	13710, 13615, 15700
1230-1330	11795, 12105, 15700
1330-1400	9670, 11795, 13855
1400-1430	11795, 13855
1630-1730	7505
Cantonese (2 hours daily)	
1400-1500	5810, 7280
2200-2300	9570, 11740, 11775
Khmer (2 hours daily)	
1230-1330	13725, 15160
2230-2330	9355, 11850
Korean (5 hours daily)	
1500-1700	1350, 5860, 7210, 9385
1700-1900	1350, 5860, 9385
2100-2200	1350, 7460, 9385, 12075
Lao (2 hours daily)	
0000-0100	11830, 15535
1100-1200	9355, 15120
Mandarin (12 hours daily)	
0300-0600	11980, 13710, 15150, 15665, 17615, 17880, 21540
0600-0700	11980, 13710, 15150, 15665, 17615, 17880
1500-1600	5810, 7445, 9440, 9905, 11945, 13725
1600-1700	5810, 7415, 7445, 9455, 9905, 11945, 13725
1700-1800	5810, 7415, 7445, 9355, 9455, 9905, 11945, 13670
1800-1900	5810, 7385, 7415, 7445, 9355, 9455, 9905, 11790, 11945, 13670
1900-2000	1098, 5810, 5990, 6095, 7385, 9355, 9455, 9875, 9905, 11790, 11945
2000-2100	1098, 5810, 5990, 6095, 7355, 7495, 9355, 9455, 9875, 11900, 11945
2100-2200	1098, 5810, 6095, 7355, 7495, 9355, 9455, 9875, 11945, 13745
2300-0000	7540, 11775, 11975, 15265, 15430, 15550
Tibetan (10 hours daily)	
0100-0300	7470, 9670, 11695, 15220, 17730
0600-0700	17515, 17715, 21500, 21695
1000-1100	9690, 15140, 17750
1100-1200	7470, 11540, 11590, 15375
1200-1400	7470, 11540, 11590, 13625, 15375
1500-1530	7530, 9410, 11500, 15145
1530-1600	7470, 7530, 11500, 15145
2200-2300	5820, 7470, 9835
2300-0000	6010, 7470, 7550, 9875
Uyghur (2 hours daily)	
0100-0200	7480, 9480, 9645, 9690, 13605
1600-1700	7470, 7510, 11720, 11730
Vietnamese (2.5 hours daily)	
0000-0030	5855, 11605, 11965, 15135
1400-1430	1503, 5855, 7515, 9990, 11605, 12130, 13865, 15195
1430-1500	5855, 7515, 9990, 11605, 12130, 13865, 15195
2300-2330	1359
2330-0000	1359, 5855, 11605, 11965, 15135

RFA's B09 language and frequency schedule.



An RFA announcer presents a program in one of Asia's native languages.



Exiled Uyghur leader Rebiya Kadeer being interviewed at an RFA studio.

that country—RFA does not produce a blanket, one-size-fits all service.

True Journalism

“Radio Free Asia is the best present the American people have ever given to the Chinese people. RFA is like an ear-eye-throat specialist. It makes us see and hear, and it allows us to speak.”

—Message left by a Shanghai listener in 2004

RFA prides itself on its journalistic integrity, knowing that that is key to building trust among its listeners and that it also sets an example for current and would-be domestic journalists to follow when freedom and democracy finally arrive. Most recently RFA was named Broadcaster of the Year at the 2009 New York Festivals, capturing three gold, one silver, and three bronze medals for excellence in journalism at that international competition.

RFA's newscasts focus mostly on domestic events and information about the target country. The information is gathered by offices in Hong Kong, Taipei, Phnom Penh, Dharamsala (India), Bangkok, Seoul, and Ankara, and by individual reporters (or “stringers”) in other Asian locations, as well as here in the U.S.

and elsewhere. RFA reporters are not generally allowed to operate within the target country. According to Richard Richter, RFA's founding president, they often must rely on telephone calls and encrypted Internet communications. General world news is minimized, unless it affects or would otherwise be of interest to the people of the target country. RFA reporters have been known to secretly enter closed off areas to check on a tip. In one case they snuck into the jungle near the Thailand-Myanmar borders to follow up on a lead. Some work from unmarked offices, some use pseudonyms for their on-the-air names, and some have received death threats.

An annual federal grant (currently \$34 million) is administered by the Broadcasting Board of Governors (BBG), which also serves as a sort of board of directors for RFA.

RFA's Offerings

“RFA broadcasting means more than food, drink and air to us, because it gives us hope and inspiration. We hope RFA increases broadcasting in the Uyghur language.”

—Message from an RFA Uyghur listener

Due to the nature of the beast, RFA does not have any reliable numbers as to how large an audience it reaches. According



A portion of the "business end" of the RFA website.

to John Estrella, RFA's director of external relations, RFA listeners have to hide their listening activity from all but the people they trust most; otherwise it's jail, a labor camp...or worse. In North Korea the fear of detection reaches an extremely paranoid level, and listeners may not even trust their own spouses and (especially) children—parents never know what they'll say in their innocence, and moreover, children are frequently primed by their teachers to spy and report on their parents.

As they are here in the West, call-in programs are popular with RFA's audience. The station accepts collect calls to numbers in Washington and elsewhere. Sometimes the phone lines are "jammed" by a computer-automated dialing program, but somehow enough calls reach the studio to fill up the program time. The call-in shows also give RFA's staff news tips or leads or just useful background information. So, in that regard, the programs serve two purposes.

In addition to its broadcasting effort, RFA publishes its news content on the Web. The RFA website provides text and streaming audio for each of its broadcast languages, in addition to making maps and slide shows available. There's also a YouTube channel offering RFA's video production services as well as a link to redistribute journalistic content if submitted by others. The website offers easy-

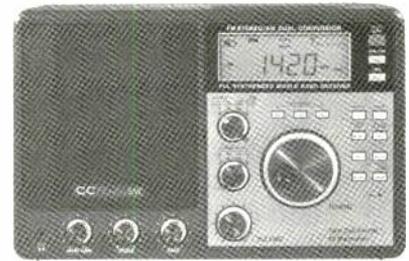
to-follow instructions on how to get around the Internet blockage applied by some of the more restrictive governments. There is even advice on how to receive RFA news via email. In all, there are five or more pages describing and explaining various alternate methods of getting around Internet blocks to receive RFA's information.

Transmitting Challenges

"I am very grateful to your most valuable work for the people of Myanmar by leading the fight for the better life of the people. Don't give up. Many poor and frightened people are looking up to you as their heroes and hopefully as saviors."

—Message from a Burmese monk
from Rangoon

It would surprise no one that RFA has to deal with jamming of its shortwave broadcasts. China, in particular, is believed to be the source of the so-called Firedrake, or Firedragon, jammer, which broadcasts non-stop Chinese opera on dozens of frequencies against RFA, as well as some other broadcasts aimed at China, such as Taiwan's Sound of Hope. The broadcasts are believed to come from a facility on Hainan Island. There's also reported to be a transmitter at Kashgar, in the far western area of Sinkiang (Uyghur Province) of China, among, possibly, others.



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www.hamtestonline.com

Any day you don't learn something new is a wasted day!

Listening To Radio Free Asia

Freq.	Time (UTC)	Language	Site	Freq.	Time (UTC)	Language	Site
5810	1400-2200	Mandarin	Tinian, N. Marianas	11720	1600-1700	Uighur	Saipan, N. Marianas
5820	2200-2300	Tibetan	Tinian, N. Marianas	11730	1600-1700	Uighur	Dhabbaya, UAE
5825	1400-1500	Vietnamese	Tinian, N. Marianas	11740	2200-2300	Cantonese	Saipan, N. Marianas
5825	2330-0030	Vietnamese	Iranawila, Sri Lanka	11775	2200-2300	Cantonese	Tinian, N. Marianas
5860	1500-1900	Korean	Tinian, N. Marianas	11775	2300-0000	Mandarin	Tinian, N. Marianas
5990	1900-2100	Mandarin	Tinian, N. Marianas	11790	1800-2000	Mandarin	Tinian, N. Marianas
6010	2300-0000	Tibetan	Dhabbaya, UAE	11795	1230-1330	Burmese	Tinian, N. Marianas
6095	1900-2200	Mandarin	Tinian, N. Marianas	11795	1330-1400	Burmese	Iranawila, Sri Lanka
7210	0930-1000	Korean	Irkutsk, Russia	11795	1400-1430	Burmese	al-Riman, Kuwait
7280	1400-1500	Cantonese	Tinian, N. Marianas	11830	0000-0100	Lao	Iranawila, Sri Lanka
7355	2000-2200	Mandarin	Paochung, Taiwan	11850	2230-2330	Khmer	Tinian, N. Marianas
7385	1800-2000	Mandarin	Paochung, Taiwan	11900	2000-2100	Mandarin	Saipan, N. Marianas
7415	1600-1900	Mandarin	Tinian, N. Marianas	11945	1500-2200	Mandarin	Tinian, N. Marianas
7445	1500-1900	Mandarin	Tinian, N. Marianas	11975	2300-0000	Mandarin	Tinian, N. Marianas
7460	2100-2200	Korean	Ulaan Baatar, Mongolia	11980	2300-0700	Mandarin,	Irkutsk, Russia
7470	0100-0300	Tibetan	Al-Riman, Kuwait	12095	2100-2200	Korean	Tinian, N. Marianas
7470	1100-1400	Tibetan	Ulaan Baatar, Mongolia	12105	1230-1330	Burmese	Iranawila, Sri Lanka
7470	1530-1600	Tibetan	al-Riman, Kuwait	12130	1400-1500	Vietnamese	Iranawila, Sri Lanka
7470	1500-1700	Uighur	Iranawila, Sri Lanka	13605	0100-0200	Uighur	Tinian, N. Marianas
7470	2200-2300	Tibetan	Tinian, N. Marianas	13670	1700-1900	Mandarin	Tinian, N. Marianas
7470	2300-0000	Tibetan	Ulan Baatar, Mongolia	13710	0030-0130	Burmese	Tinian, N. marianas
7480	0100-0200	Uighur	Yangiyul, Tajikistan	13710	0300-0700	Mandarin	Tinian, N. Marianas
7495	2000-2200	Mandarin	Tinian, N. Marianas	13725	1230-1330	Khmer	Iranawila, Sri Lanka
7510	1600-1700	Uighur	Iranawila, Sri Lanka	13725	1500-1700	Mandarin	Tinian, N. Marianas
7515	1400-1500	Vietnamese	Tinian, N. Marianas	13745	2100-2200	Mandarin	Tinian, N. Marianas
7530	1500-1600	Tibetan	Gavar, Armenia	13815	0030-0130	Burmese	Iranawila, Sri Lanka
7540	2300-0000	Mandarin	Yangiyul, Tajikistan	13855	1330-1430	Burmese	Iranawila, Sri Lanka
7550	2300-0000	Tibetan	al-Riman, Kuwait	13865	1400-1500	Vietnamese	Iranawila, Sri Lanka
7570	1620-1730	Burmese	Tinian, N. Marianas	15120	1100-1130	Lao	Iranawila, Sri Lanka
9355	1100-1200	Lao	Iranawila, Sri Lanka	15120	1130-1200	Lao	Saipan, N. Marianas
9355	1700-2200	Mandarin	Saipan, N. Marianas	15135	2330-0030	Vietnamese	Saipan, N. Marianas
9355	2230-2330	Khmer	Iranawila, Sri Lanka	15140	1000-1100	Tibetan	Lampertheim, Germany
9385	1500-1700	Korean	Saipan, N. Marianas	15145	1500-1600	Tibetan	Dhabbaya, UAE
9355	1700-1900	Korean	Iranawila, Sri Lanka	15160	1230-1330	Khmer	Tinian, N. Marianas
9355	2100-2200	Korean	Tinian, N. Marianas	15195	1400-1500	Vietnamese	Tinian, N. Marianas
9410	1500-1530	Tibetan	Biblis, Germany	15220	0100-0300	Tibetan	Tinian, N. Marianas
9455	1600-2200	Mandarin	Saipan, N. Marianas	15265	2300-0000	Mandarin	Saipan, N. Marianas
9480	0100-0200	Uighur	Stikuani, Lithuania	15375	1100-1400	Tibetan	Dhabbaya, UAE
9570	2200-0000	Cantonese	Tinian, N. Marianas	15430	2300-0000	Mandarin	Tinian, N. Marianas
9670	0100-0300	Tibetan	Wertachtal, Germany	15535	0000-0100	Lao	Tinian, N. Marianas
9670	1330-1400	Burmese	Tinian, N. Marianas	15550	2300-0000	Mandarin	Tinian, N. Marianas
9690	0100-0200	Uighur	Dhabbaya, UAE	15605	0300-0900	Mandarin	Tinian, N. Marianas
9690	1000-1100	Tibetan	Sitkuani, Lithuania	15700	0030-0130	Burmese	Saipan, N. Marianas
9875	1900-2200	Mandarin	Medorn, Palau	15700	1230-1330	Burmese	Tinian, N. Marianas
9875	2300-0000	Tibetan	Sitkuani, Lithuania	17515	0600-0700	Tibetan	Yangiyul, Tajikistan
9905	1500-1800	Mandarin	Medorn, Palau	17615	0300-0700	Mandarin	Saipan, N. Marianas
9905	1800-2000	Mandarin	Tinian, N. Marianas	17715	0600-0700	Tibetan	al-Riman, Kuwait
9900	1400-1500	Vietnamese	Saipan, N. Marianas	17730	0100-0300	Tibetan	Ulaan Baatar, Mongolia
11500	1500-1600	Tibetan	al-Riman, Kuwait	17750	1000-1100	Tibetan	al-roman, Kuwait
11540	1100-1400	Tibetan	Yangiyul, Tajikistan	17780	0300-0700	Mandarin	Saipan, N. Marianas
11590	1100-1400	Tibetan	al-Riman, Kuwait	1500	0600-0700	Tibetan	Tinian, N. Marianas
11605	1400-1500	Vietnamese	Tanshui, Taiwan	21540	0300-0600	Mandarin	Tinian, N. Marianas
11605	2330-0030	Vietnamese	Tanshui, Taiwan	21695	0600-0700	Tibetan	Dhabbaya, UAE
11695	0100-0300	Tibetan	Dhabbaya, UAE				



Computers control much of what goes out on RFA transmitters.

No single transmitter site could handle all the frequencies for all RFA's separate services. The station's transmitter line-up is considerable, and also something of a problem, being a mix of sites controlled by the government's International Broadcasting Bureau (IBB), mixed with a few others located in countries that, for geo-political reasons, would be placed in an uncomfortable position should their involvement be generally known. So RFA wisely does not advertise or otherwise acknowledge those sites. These frequency-site pairings change with each broadcast season, like a kaleidoscope does when it's slightly rotated. The *World Radio TV Handbook* and the various on-line frequency listings (EiBi, Aoki, etc) will show you most of what's where. The accompanying frequency list sorts them all out for you, effective through March 28 of this year. When the A10 broadcast schedule kicks in you can get the full language schedule at www.rfa.org/english/frequencies. (The RFA schedule accessible from this official website does not list any of the sites, not even those that are officially acknowledged.)

QSLs From RFA

"You have given courage and strength to defectors...I am sending my tribute from the bottom of my heart...we defectors, all of us, are listening to your broadcasts every day...if we miss one single day, we feel emptiness."

—Letter to RFA's Korean service from a North Korean defector

RFA gladly issues QSL cards to DXers. In fact, it has a history of going all out to please, aside from being unable to indicate certain transmitter sites in countries sensitive to the release of such information. The station has issued over two-dozen QSL card designs since its first one in 2002 (prior to that verifications were issued in letter form). At present

RFA is averaging a new QSL design every four months, which probably encourages people to keep the reports flowing.

Dealing with reports is sometimes left to volunteers, although currently the job of "verie signer" is handled by RFA's receptionist, Mrs. Valerie Johnson. RFA will only confirm sites operated by the U.S. IBB. These include Biblis and Lampertheim in Germany, IBB relays in Kuwait, Saipan and Tinian in the Northern Marianas and Iranawila in Sri Lanka. Any other site is indicated as "Asia" or "Other." (Like the CIA, RFA can neither confirm nor deny!)

RFA wants these fairly standard requirements included in reports: day and date of reception, the broadcast language, time in UTC, the time listening began and ended, and the frequency on which you heard the broadcast. Reception reports can be sent via postal mail to Radio Free Asia, Reception Reports, 2025 M Street NW, Washington, D.C. Email reports to qsl@rfa.org. You can also submit reports through RFA's Automated Reception Reports System. Go to www.techwevb.rfa.org and follow the link labeled "QSL Reports." The same site has a "QSL Card Gallery" showing all the cards issued by RFA since 2002.

Global Impact Unfolding

"A few months ago I explained the Universal Declaration of Human Rights to the son of a businessman I worked for. The mother and the son asked me how I learned about it because they were in disbelief that a coolie could have a sophisticated understanding of politics."

—Message to RFA left by a Burmese laborer

Back in the dark days of the Cold War, Radio Free Europe/Radio Liberty was the first of the U.S. surrogate broadcasters. RFE/RL is credited by many with having had no small role in contributing to the collapse of the "evil empire," though its mission was long and difficult. It's not much of a stretch to believe that RFA is traveling a similar road.

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Prague Still On Shortwave, But Tougher Times Elsewhere

by Gerry L. Dexter
gdex@wi.rr.com

“There is no little confusion surrounding IBC-Tamil and whether or not it still breathes.”

Return to your seats: it was a false alarm! Radio Prague will not be discontinuing its shortwave service; it will only cut back a bit. This according to a letter from Robert Rehak, of the Czech Foreign Ministry, received by Anker Peterson, head of the Danish Shortwave Club International. The 20-percent cutback equals the government’s across-the-board budget reduction. Extra effort will be given to the Czech Radio website.

However, there’s still a killer virus on the loose in Europe. Belgium’s Radio Vlaanderen International and RTBF (Radio Télévision Belge de la Communauté Française) practically fell all over each other in their scurry to achieve shortwave oblivion. No sooner did RVI announce a cessation of its shortwave service than RTBF released a plan covering the next three years and did a “me too!” indicating that shortwave would cease at some point during that future period.

Another broadcaster that seems to be in near-permanent trouble is Radio Slovakia International. Its coffers are nearly empty and its staff has been reduced to practically zero. It’s kinda hard to operate a shortwave station without people! Since we are already a few steps into 2010,

it’s likely you’re not finding it on at its usual times or frequencies.

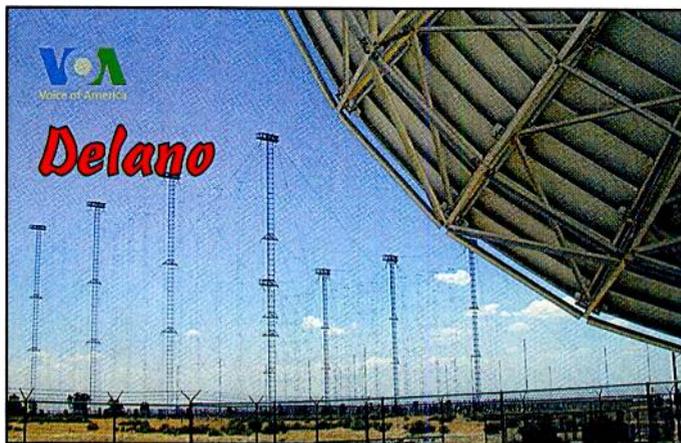
Another U.S. “religious” broadcaster has eaten dust. World Harvest Radio’s WHRA, transmitting from Greenbush, Maine, is no longer. All frequencies used by WHRA have been turned over to co-owned WHRI. It may be yet more evidence that this particular format has reached a point well beyond its natural limit—yet we have two more broadcasters all set to try their luck.

That U.S. commercial religious station in Tennessee that we’ve been expecting should be active by now. No frequencies have been announced at this point, but if you should hear an ID with the call letters WTWW, you’ve got it.

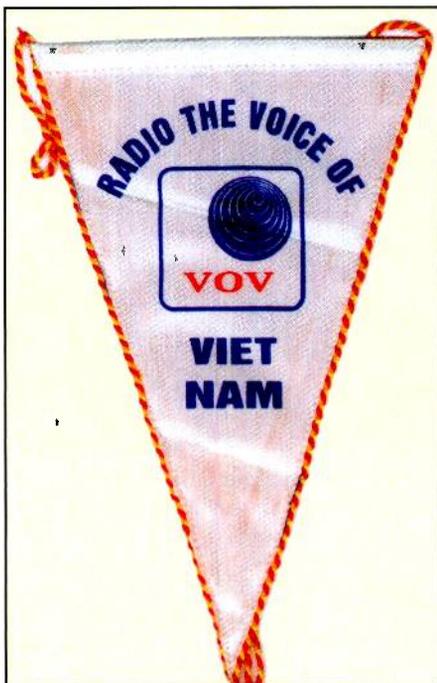
Longtime religious broadcaster Trans World Radio has changed its name and now simply uses “TWR,” having removed the word “Radio” because it feels it’s so much more than that and is seeking to employ (or has already employed) as many digital formats as possible. TWR says it’s not downgrading the radio aspect but is, in fact, increasing broadcasts to some areas on AM, FM, and shortwave.

There is no little confusion surrounding IBC-Tamil and whether or not it still breathes. There were recent reports that it had shut down its broadcasts (as well as its website). There were also somewhat contradictory reports that the change involved only a name and/or a shift in emphasis, and that the broadcast is now going under the name Voice of the Tigers. Given that the Tamil efforts to gain their own, independent territory in Sri Lanka did not end at all well for them, the confusion involved is probably the result of a sort out. In other words, the dust hasn’t yet settled. IBC-Tamil is headquartered in London and broadcasts via Wertachtal, more recently via Nauen, Germany.

Vatican Radio and Radio Veritas Asia in the Philippines have agreed to give access to each other’s transmitters. So, you’ll soon be hearing Vatican Radio via the Philippines and Veritas via the Vatican, if you haven’t already been.



What’s the VOA doing advertising the now-defunct Delano (California) transmitter site?



Peter Ng of Malaysia got this standard pennant from the Voice of Vietnam.

We can look for more Spanish to be aired by the Voice of America as the Obama administration puts a stronger emphasis on Latin America—the result of several governments on the continent having elected leaders from the far left. The VOA has announced its intention to bring about a significant upgrade in broadcasts to Central and South America. So far, though, the plan is short on specifics.

Once upon a time there was something called the Guyana Broadcasting Corporation, which broadcast regularly on 90 meters. The GBC eventually became the National Communications Network, and something has spurred it to plan on resuming shortwave broadcasting. NCN has had to relocate its facilities to make way for an expansion of its national airport and was to have completed the move by the end of 2009. The company says it has “moved” to acquire the equipment needed to modernize and strengthen a shortwave service. Let’s hope!

Let’s also hope that next month we’ll have more positive news to report, rather than the mostly negative that’s seemed to dominate recently. For good measure, maybe we can even sing that ancient ditty “On the Sunny Side of the Street.”

Reader Logs

Remember, your shortwave broadcast station logs are always welcome. But *please* be sure to double or triple space

Help Wanted

We believe the “Global Information Guide” offers more logs than any other monthly SW publication (560* shortwave broadcast station logs were processed this month!). Why not join the fun and add your name to the list of “GIG” reporters? Send your logs to “Global Information Guide,” 213 Forest St., Lake Geneva, WI 53147. Or you can email them to gdex@wi.rr.com. Please note that attachment files do not always go through. See the column text for formatting tips.

**Not all logs get used. There are usually a few which are obviously inaccurate, unclear, or lack a time or frequency. Also discounted are unidentifieds, duplicate items (same broadcaster, same frequency, same site), and questionable logs.*

between the items, list each logging according to its home country, and include your last name and state abbreviation after each. Also needed are spare QSLs or good copies you don’t need returned, station schedules, brochures, pennants, station photos, and anything else you think would be of interest. And how about sending a photo of you at your listening post? It’s your turn at bat!

Here are this month’s reader logs. All times are in UTC. Double capital letters are language abbreviations (SS = Spanish, RR = Russian, AA = Arabic, etc.). If no language is mentioned English (EE) is assumed.

ALASKA—KNLS, Anchor Point, 6890 with EE talk monitored at 1420. (Ng, Malaysia) 9780 with news to Asia at 1202. (Brossell, WI)

ALBANIA—Radio Tirana, 6150 with music at 0345. (Maxant, WV) 7425 at 0244 with Albanian pops. (Brossell, WI) 13625 with news by W heard at 1435. (Ng, Malaysia)

ALGERIA—Radio Algerienne, 5865 in AA at 0623 and 7295 in AA to Central Africa at 0513, both via Issoudun. (Parker, PA)

ANGUILLA—University Network 6090 with Melissa Scott at 0715. (Maxant, WV)

ARGENTINA—Radio Argentina al Exterior, 5990 at 0015 with M/W in SS and many mentions of “Nacional Argentina.” (MacKenzie, CA) 6050 at 2350 with tangos and ballads. Clobbered by REE-6055 sign on at 2355. (Strawman, IA)

ASCENSION ISLAND—BBC Atlantic Relay, 7255 with African news at 0428. (Parker, PA) 9915 at 2252 on Taliban terrorists. (MacKenzie, CA) 17830 at 1710 with African sports. (Fraser, ME)

AUSTRALIA—Radio Australia, 6020 at 1110 with domestic sports news, 7240 at 1410 on Australia’s heritage, 9710 at 0720 on WW2 troops, 15515 at 0445 and 15560 with news at 0000. (Maxant, WV) 9580 with sports news at 1950, 9710 at 0734, //12080, 13630, 15160. Also, 15160 at 0503, //15240, (Yohnicki, ON) 9580 at 1757 which was unusually good for this hour. (Strawman, IA) 1141 with a commentary. (Padazopulos, NJ) 1245, //9590. (Fraser, ME) 9630 in II with an EE lesson at

2255. (Ng, Malaysia) 17795 at 2354 with *Connect Asia* pgm. (MacKenzie, CA)

ABC Northern Territories Service: VL8T, Tennant Creek, 2325 at 0941 with M anc and slow music. (Parker, PA) 1010 with a call-in for country songs. (Barton, AZ) 1030-1045. (Wilkner, FL) VL8A, 2310 Alice Springs at 0935, weak, though the carrier was better. (Parker, PA)

HCJB Global, 15400-Kununurra with *Voice of Hope* pgm at 0350. (Ng, Malaysia) 15400 at 1305 with news, gospel readings. (Maxant, WV)

CVC, 15535-Darwin at 1120 with EE pops. (Ng, Malaysia)

AUSTRIA—Radio Austria International, 6155 with news at 0655 to past 0700. (Padazopulos, NJ) 7435 in GG at 0040. (MacKenzie, CA)

BELGIUM—RTBF Intl, 9985-Wavre, in FF to Africa heard at 0427. (Parker, PA)

BOLIVIA—Radio Mosoj Chaski, Cochabamba, 3310 heard at 1003 with M in (I) Quechua. Only held momentarily. (Parker, PA)

Radio Eco, Reyes, 4409.8 heard at 2312 with music, ID mentioned in passing. (Wilkner, FL)

Radio Santa Ana, Santa Ana de Yacuma, 4451 in SS heard at 2310 to 2340 close. (Wilkner, FL)

Radio San Jose SJ de Chiquitos, 5580.2 with music in SS at 2330. (Wilkner, FL)

BOTSWANA—VOA Relay, Mopeng Hill, 4930 with news at 0406. (Parker, PA) 17895 at 1822 with news. (MacKenzie, CA)

BRAZIL—(All in PP—*gld*) Radio Educadora, Limeira, Sao Paulo, 2380 at 0915. (Wilkner, FL)

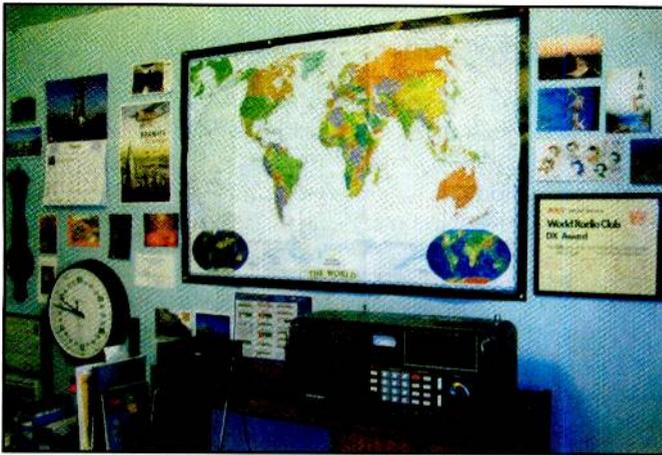
Radio Mundial, Osasco, 3325 at 1016 with M/W talk. (Parker, PA), Radio Municipal, Sao Gabriel da Cachoeira, 3375.4 at 0900. (Wilkner, FL) 0950 with faint audio and M talk. (Parker, PA)

Radio Imaculada Conceicao, Campo Grande, 4755 at 0155 with talk and short music bridges, slow vocal. (Parker, PA)

Radio Difusora do Amazonas, Manaus, 4805 heard at 0032 with W anc and flute. (Parker, PA)

Radio Cultura Ondas Tropicais, Manaus, 4845.2 at 0017 with M/W talk. (Parker, PA)

Radio Difusora Acreana, Rio Branco,



A look at part of the shack of Brian Rogers, KD8HAZ, in Michigan.



It's hard to imagine any station issuing more QSL designs than Adventist World Radio! This card shows its transmitter site on Guam.

4885 at 0224 with music, W talk. Colliding with RC do Para. (Parker, PA)

Radio Novo Tempo, Campo Grande, 4895 at 2340 with M talk, music. (Wilkner, FL) 0050 with M and inspirational music. (Parker, PA)

Radio Alvorada, Londrina, 4865 at 0235 with W leading M on telephone with repetitive prayer. (Parker, PA)

Radio Educacao Rural, Tefe, 4925.2 at 0123 with M ancr and pops. (Parker, PA)

Radio Clube do Para, Belem, 4885 at 0224 with two M talk. (Parker, PA) 0304 with excited ancr talking over pops. (Wood, TN)

Radio Anhanguera, Araguaia, 4905 at 0217 with pops, M ancr. (Parker, PA)

Radio Difusora, Macapa, 4915 at 0414 with live coverage of a beauty pageant, including contestants from the U.S. (Parker, PA) 0733 with rowdy song featuring M/W singers. (Taylor, WI)

Radio Alvarado, Parintins, 4965 at 2342 with slow pops, clear ID at 2347. (Parker, PA)

Radio Brazil Central, Goiania, 4985 with soccer coverage at 0024. (Parker, PA) 2330 with nice Brazilian music. (Wilkner, FL)

Radio Aparecida, Aparecida, 5035 at 0116 with W ancr and short bits of music. (Parker, PA)

Radio Cultura do Para, Belem, 5045 at 0122 with slow M vocal and M ancr with pops. Excellent strength and audio. (Parker, PA) 0450 with continuous PP ballads. (Alexander, PA) 0746 with excited DJ and mellow samba. (Taylor, WI)

Radio Gazeta, Sao Paulo, 9685 at 0114 with long M talk, Brazil pops. (Taylor, WI)

Radio 9 de Julho, Sao Paulo, 9820 at 0422 with M ancr, piano. (Parker, PA)

Radio Nacional Amazona, Brasilia, 6185 at 0825 with W with ID, pops. (Parker, PA) 11780 at 0326 with PP songs. (Brossell, WI)

Observatorio Nacional, Brasilia, 10000 at 0157 with ID, hours, minutes, and seconds repeated every second with single pip, two short and one long pip at the top of the minute. No trace of WWV/H. (Parker, PA)

Radio Gaucha, Porto Alegre, 11915 at 2309 with futbol discussion, time pips under

talk at 2315 and W with ID at 2331, back to sports talk. (D'Angelo, PA)

BURKINA FASO—Radio Burkina, 5030 with rustic tribal music and vernacular talk. Closes at 0000 and opens again by 0530. (Alexander, PA)

BULGARIA—Radio Bulgaria, 15700 at 1302 with (p) news in BB. (Brossell, WI)

CANADA—Radio Canada Intl, 9520 in AA at 0318. (Brossell, WI) 9880 via Xi'an at 0000. (Ng, Malaysia) 11845 in FF at 2140, 12025 at 2114 in EE/SS and 15305 in PP at 2123. (MacKenzie, CA)

CBC Northern Service, 9625 at 1440 on dangers of hockey injuries. (Maxant, WV)

CFRX, Toronto, 6070 heard at 1415. (Maxant, WV)

CKZN, St. John's (Newfoundland) 6160 at 1020. (Maxant, WV)

CHU, Ottawa, 3330 at 2355, 7850 at 0605 and 14670 at 1857. (Maxant, WV) 3330 at 0450. (Yohnicki, ON) 0534 and 7850 heard at 0548 with time signals. (Parker, PA)

CHAD—Radio Nationale Tchadienne, 4905 to 2231 close in FF, off with anthem. Sign on at 0428 with balafon IS and anthem. Also 6165 at 2220 with Afro-pops, FF talk, off at 2230. (Alexander, PA) 6165 at 2218 to 2230 with highlife vocals, FF anmts and anthem by marching band. (D'Angelo, PA)

CHILE—CVC-La Voz, 17680 at 1459 in SS. (Yohnicki, ON) 1837. (MacKenzie, CA)

CHINA—China Radio Intl, 5915 (p) Hohhot in RR at 1328. Contemporary CC vocals with W ancr. CC lesson for RR speakers at 1345. (Taylor, WI) 6005 via Canada in CC at 0018, 9685 in CC at 2316, 9695 in JJ at 2318, 11620 in VV at 2337, 13700 via Canada in SS at 2243 and 17790 via Canada at 1831. (MacKenzie, CA) 6190 via Cuba at 0440 giving website, email and postal addresses. (Maxant, WV) 9790 via Cuba in Cantonese at 0448 and 15120 to Asia at 0330. (Parker, PA) 9925 (t) with CC lesson at 1958, 11875 closing EE at 1355, 13665 with news in CC at 1215 and 17650 at 1137. (Padazopulos, NJ) 11620-Xi'an in (l) JJ at 1212 and 13790 at 1254 on China's political future. (Brossell, WI)

China National Radio: Voice of Pujiang, Shanghai. 5075 in CC at 1200 and Beibu Bay Radio (ex-Guanxi PBS). 9820 at 2300 with CC weather and music bits. (Ng, Malaysia) Xizang PBS (p) 5960-Urumqi in Mandarin at 1420. Also, Xinjian PBS, 6120-Urumqi in Uighur at 2344. (Taylor, WI) Voice of the Strait, 7280-Fuzhou in CC at 1256. Off at 1300. (Brossell, WI)

Firedrake music jammer, 13500 at 1119. (Brossell, WI)

COLOMBIA—La Voz de tu Concencia, Puerto Lleras, 6010 at 0412 with two M in SS. (Parker, PA)

CONGO (Dem. Rep.)—Radio Okapi, 11690 via Meyerton at 0400 sign on with Afro-pop, FF and vernacular anmts and jingles. FF talk at 0400. (Alexander, PA)

CROATIA—Hrvatski Radio, Deanovic, 3985 at 0334 in Croatian with mellow jazz-fusion, Croatian blues song. (Parker, PA) 6165 in Croatian at 0700. (Padazopulos, NJ)

CUBA—Radio Havana Cuba, 11760 in SS at 0713. (Padazopulos, NJ) 2110 in EE. Ringing telephone in the background. (Fraser, ME) 13790 in SS at 2248 and 13780 in SS at 2253. (MacKenzie, CA) 13680 in SS at 1500. (Yohnicki, ON)

Radio Rebelde, 5025 in SS at 0334. (Yohnicki, ON) 0845. (Maxant, WV)

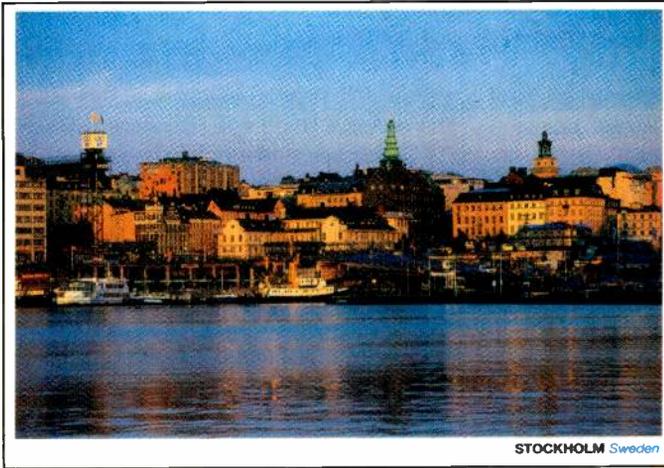
CZECH REPUBLIC—Radio Prague, 9440 at 0020. (Maxant, WV) 9855 at 0433 with music and *Business Roundup*. (Wood, TN) 9955 via WRMI at 0410 on the Czech film industry. (Parker, PA) 9880 with news at 0707 and 17545 at 1212. (Padazopulos, NJ)

DOMINICAN REPUBLIC—Radio Amanecer, Santo Domingo, 6025 in SS at

In Times Past...

Here's your blast from the past for this month...

Cuba—Radio Aeropuerto, Havana, 9833 at 0515 on March 10, 1957 in SS. (Dexter, IA)



A Radio Sweden QSL shows off Stockholm—back when it still issued QSLs. (Thanks Paul Gager, Austria)



Still another very attractive card from Radio Tirana. (Paul Gager, Austria)

0232 with W song, ID and several short anmts over classical-type music. M with apparent sports. (Taylor, WI) 1055–1110 with SS religious talk, IDs and promos. (Alexander, PA) 1500 with religion in SS. (Wilkner, FL)

ECUADOR—La Voz del Napo, Tena, 3280 with W and long SS talk heard at 1025. (Barton, AZ)

EGYPT—Radio Cairo, 6255 with *Today's Roundup* at 2205. (Fraser, ME) 6270 with news by a W at 2130. (Ng, Malaysia) 6290 with AA Koran recitations at 0317. (Brossell, WI)

ENGLAND—BBC, 5875-Rampisham at 0627 on the Berlin Wall, 5905-Skelton in AA at 0215, 6110-Rampisham in AA to North Africa at 0545, 6190 Cyprus Relay on Catholicism at 0250, 7325-Rampisham in AA to North Africa at 0528, 7385 at 2311 on global warming and 9410 at 0427 with *World Briefing*. (Parker, PA) 6005 at 0635 and 11810 with commentary at 2030. (Padazopulos, NJ) 6005 to Africa at 0610, 7255 to Africa with news at 0505 and 7310 to Africa at 0435 on an anti-corruption agency in Nigeria. (Maxant, WV) 6145 South Africa Relay at 0259, time pips and *The World Today*. (Taylor, WI) 9580 Singapore Relay at 1402 after Radio Australia signed off. (Strawman, IA) 15420 South Africa Relay in EE at 1848. (MacKenzie, CA)

CVC Intl, 9425 via (p) Tashkent in Hindi at 0112. (Taylor, WI) 13630-Uzbekistan relay with two M in Hindi at 0520. (MacKenzie, CA)

EQUATORIAL GUINEA—Radio Nacional, Bata, 5005 from *0505 open with Afro-pops, rustic vocals. (Alexander, PA) 0520 with M in SS but very weak. (Parker, PA) 2153 to 2158 close in SS. Orchestral anthem at close. Poor but steadily improving to fair by sundown. (D'Angelo, PA)

Radio Nacional, Malabo, 6250 at 0548 with SS talk, Afro-pops, IDs. News pgm at 0603. Irregular. (Alexander, PA)

Radio Africa, 15190 at 1605 with EE religious programming. Pgm contact address and

mailto:radioafrica@myway.com (Alexander, PA) 1932 with an EE sermon. (Parker, PA)

ERITREA—Voice of the Broad Masses, 7165-Asmara, at 0406 with HOA music, M in vernacular, more HOA with a jammer, which left 7175 to settle here. (D'Angelo, PA) 0606 in (l) AA. Talk with HOA music. (Taylor, WI) 7175 at *0354 with IS. Fair to good until a noise jammer covered it. Also, 7210 from *0354 with talk in unid language at 0400. HOA music and co-channel QRM. (Alexander, PA)

ETHIOPIA—Radio Ethiopia, 7110 at 0400 with (p) news in Amharic. (Parker, PA) 2024 with M hosting music pgm in Amharic, headlines by another M at 2057 f/by closing anmts and anthem. (D'Angelo, PA)

Radio Oromia, 6030 at *0322 with xylophone IS, unid language, light instrumental music, HOA music. (Alexander, PA) 0402 with M in (p) Oromo ending news at 0407, music segment, W with talk and more HOA vocals. (D'Angelo, PA)

Radio Fana, 6890 monitored at 0324 with HOA vocals, flutes, M/W talk, ID and news at 0400. //6110 fair to good. (D'Angelo, PA) 2035 with HOA music, vernacular talk. Stronger on 6110. (Alexander, PA) (6890 now blocked by U.S. religious powerhouses for most of the Fana schedule.—gld)

Voice of the Tigray Revolution, 5980 at *0326 with IS, vernacular talk, instl and HOA music. (Alexander, PA)

FRANCE—Radio France Intl, 7265-Issoudun in FF to West Africa at 0502. (Parker, PA) 7340 in FF at 0650, 15425 in FF at 1204 and 17610 in FF at 1148. (Padazopulos, NJ)

GABON—Africa Number. One, 9580 in FF at 2145. (Yohnicki, ON) 0526 with M/W FF ancrs, EZL and Afro-pops. (Parker, PA)

GERMANY—Deutsche Welle, 5905 via Wooferton in EE at 0448, 7245 Rwanda Relay in EE at 0424, 7310 Portugal Relay at 0523, 7430 Portugal at 0523 and 9480 via Rampisham in GG at 0457. (Parker, PA) 6075 with news at 0635 and 9480 at 0710 with news.

(Padazopulos, NJ) 7245 at 0420 on technology on new airplanes. (Maxant, WV) 7245 Rwanda with world news at 0403, 11885 via England in RR at 1826, 15610 on Internet marketing at 1835 and 17680 Rwanda Relay in AA at 1814. (Brossell, WI) 9685 Sri Lanka Relay in RR at 0120 and 15345 via Singapore in Hindi at 0130. (Ng, Malaysia) 9730 Rwanda Relay in PP at 2324. (Taylor, WI) 9755 Rwanda Relay at 0502. (D'Angelo, PA)

GREECE (*All in Greek—gld*)—Voice of Greece, 7475 at 0632, 9420 at 0710 and 15630 with news at 1200. (Padazopulos, NJ) 7475 at 0007. (MacKenzie, CA) 0355 and 9420 at 1420. (Maxant, WV) 9420 at 0440. (Parker, PA) 15650 at 1330. (Ng, Malaysia)

RS Makedonias, 7450 in Greek at 0420. (Brossell, WI) 0520. (Parker, PA)

GUINEA—Radio Conakry, 7125 at 2145 in FF and vernacular, Afro-pops. Off at 0029, later than usual. (Alexander, PA) (t) at 2154 with non-stop FF talk by man ancr. (D'Angelo, PA)

GUAM—Adventist World Radio/KSDA, 15275 in CC monitored heard at 1345. (Maxant, WV)

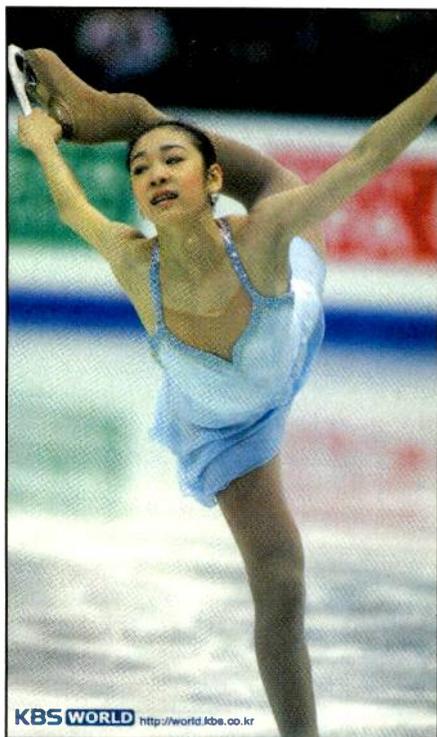
HAWAII—AFN/AFRTS, 10320u-Pearl Harbor at 0520 on the Taliban. (Maxant, WV)

HONDURAS—Radio Misiones Intl/HRMI, Comayaguela, 3340 at 1026 with SS M ancr and inspirational music. (Parker, PA)

Radio Luz y Vida, San Luis, 3250 monitored at 0338 with religious talk and prayers in SS. (Wood, TN) 1120 and 2320. (Wilkner, FL)

INDIA—All India Radio, 4920-Chennai at 0036 with W and news. Later M in vernacular and “Balliwood” music. (Parker, PA) 7550-Bangaluru on polo, Hindi vocals at 2144 and 9445-Bangaluru with EE news and ID for General Overseas Service, commentary, f/by Indian flutes. (D'Angelo, PA) 11735-Aligarh in (p) Hindi at 0220 and 15075-Bangaluru at 2104 in (p) Hindi at 0225. (Brossell, WI) 15795-Bangaluru in CC monitored at 1205. (Ng, Malaysia)

INDONESIA—Radio Republik Indo-



Ice skating champion Yu-na Kim graces this KBS World Radio QSL sent to Paul Gager

nesia, 3961.3-Palau (Sulawesi) (p) at 1135 with ancr in II and short music breaks. Cut short by hams opening on 3960. Also 3976-Pontinak (Kalimantan) in II at 1204 with talk by M. Fades out by 1207. (Taylor, WI) 4790-FakFak (Irian Jaya) at 0039 with M in II with local music and krongcong. Only heard briefly and weakly. (Parker, PA) 4925-Jambi (Jawa) in II at 1300. (Ng, Malaysia)

Voice of Indonesia, 9525 at 1025 with EE news, ID. (Alexander, PA) 1206 with talks in II. (Brossell, WI) 1458 with two EE IDs, previews and news at 1502. (Strawman, IA)

IRAN—IRIB, 3945-Sahedan at 0210 in (p) Urdu with M/W ancrs, music bridges. (Parker, PA) 6055 via Sitkuani from 2030 with NA, into SS with ID, anmts and into Koran recitations. (D'Angelo, PA) 6130 battling with RHC at 0219. Iran in EE, RHC in SS. (Taylor, WI) 9935 in AA monitored at 2323. (MacKenzie, CA)

ISRAEL—Galei Zahal, 6973 heard at 0458 in HH. (Parker, PA) 15783 in HH at 1450. Still slightly off its nominal 15785. (Alexander, PA)

JAPAN—NHK World Radio Japan, 6110 via Canada in SS at 0550 and 21560 at 1425 on the station's anniversary. (Maxant, WV) 9675-Yamata with pgm *Focus* at 1215 and 13630 via England with EE/JJ lesson at 1425. (Ng, Malaysia) 9695 in JJ at 2350, 9835 in JJ at 1743, 11665 in JJ at 2344, 11910 in JJ at 2335, 13640 in JJ/EE at 2159, 13650 in VV at 2332, 17605 via Bonaire in JJ at 2205 and 17810 in II at 2337. (MacKenzie, CA) 9875-Yamata in JJ with pops and news at 1315. (Strawman, IA) 11705 with news at 1500.

This Month's Winner

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

This month's prizewinner is **Joe Wood** of Tennessee who now drinks his coffee from a Universal Radio mug. Remember Universal should be your prime source for shortwave stuff—it's got everything you need except the QSLs! Contact the company for its big *free* catalog at 6830 Americana Parkway, Reynoldsburg, OH 43068; Phone: 614-866-4267; Email: dx@universal-radio.com; Web: www.universal-radio.com. You can't do better! Please mention *Pop'Comm* and the "Global Information Guide" when you write or call!

(Padazopulos, NJ) 13660 in JJ at 1231, 13740 via UAE in JJ at 1134 and 15400 in FF at 1249. (Brossell, WI)

Radio Nikkei, Tokyo, 9595 in JJ at 1330 with jazz. Equal to //6055, while 3925 was much weaker. (Strawman, IA)

KUWAIT—Radio Kuwait, 11630 at 2026 with U.S. C&W mixed in with pops without anmts. News at 2045–2050, ID, sked, and off with NA and pips. (Wood, TN) 11990 at 1843 with W in EE about the Iraqi army's attack on Kuwait. (D'Angelo, PA) 1915 with U.S. pops and talk about Iraq. (Maxant, WV) 2000 with news in EE. (Yohnicki, ON)

LIBYA—Libyan Jamahiriya Broadcasting/"Voice of Africa," 21695-Sabrata at 1531 with frequent IDs, news headlines and in detail, f/by features. (D'Angelo, PA)

MADAGASCAR—Radio Madagaskara, 5010 heard at 0101 in Malagasy with W doing phone interview. (Parker, PA) 0315 in (I) Malagasy and short bits of music. (Alexander, PA)

Radio Mada Intl, 15670 via Moldova monitored at 1530 with test tones prior to 1530 sign on. Talk in (p) Malagasy and short bits of music. Sat–Sun. only. (Alexander, PA; D'Angelo, PA)

MALAYSIA—Voice of Malaysia, 15295-Kajang at 0745 with '80s songs. Off at 0800. (Ng, Malaysia)

MALI—RTV Malienne, 5995 at 2350 with local hi-life music, FF talk, ID, anthem at 0000 sign off. Also 7285.9 at *0252 abrupt sign on with rustic tribal music, flute IS and FF DD anmts. (Alexander, PA)

MAURITANIA—Radio Mauritanie, 4845 at 0023 in vernacular with long story and occ music bridges. (Parker, PA) 0218 with AA talks. (Brossell, WI) 0750 with AA talk, local rustic guitar, rooster crows and off at about 0816. (Alexander, PA) 2151 with AA vocals to 2158, apparent ID by a W f/by M and news. More music at 2209. (D'Angelo, PA)

MEXICO—XERTA/Radio Transcontinental, Mexico City, 4800 at 0444 with man in SS, mostly trashed by CODAR. (Parker, PA) 1020–1200 poor to fair with M talk, possible news. (Wilkner, FL)

XEQM/Candela FM, Merida, 6104.7 at 1020 with SS talk and ballads. (Alexander, PA) 1500. (Wilkner, FL)

Radio Educacion, 6185 in SS at 0028. (MacKenzie, CA) 0627 with M vocal and acoustic guitar. (Parker, PA) 0850 with Mexican instls. (Maxant, WV)

MOLDOVA—Radio PMR (Pridnestrovie), 6240 in FF at 0034. (MacKenzie, CA)

MOROCCO—RTV Marocaine, 15435 in AA at 1936. (Brossell, WI)

MYANMAR—Myanmar Radio, 5985 at 1430 in Burmese, tentative here after Shiokeze went off. Western-sounding music and W ancr in (p) Burmese. (Taylor, WI)

NETHERLANDS—Radio Nederland, 6035 via Philippines at 0725, 9895 in DD at 1155. (Padazopulos, NJ) 9475 via Philippines in DD at 2306. (MacKenzie, CA)

NEW ZEALAND—Radio New Zealand Intl, 6170 monitored at 0855 on installing warning sirens in bell towers, 11725 with news items at 0505 and 15720 on sports at 0035. (Maxant, WV) 6170 with a commentary at 1140. (Padazopulos, NJ) 9655 with news items at 1305. (Fraser, ME) 11725 at 0522 on their housing market recovery. (MacKenzie, CA) 13660 at 1200 with news, weather. (Ng, Malaysia)

NIGERIA—Radio Nigeria, Kaduna, 4770 at 0556 with M in EE, W with ID, music bridges, news. (Parker, PA)

Voice of Nigeria, 9690 at 1425 on government planning. (Maxant, WV) 15120 at 1920. (Yohnicki, ON)

NORTH KOREA—Voice of Korea, 9335 at 1350 on Western politicians and 11710 at 1350 demanding a resumption of nuclear talks. (Maxant, WV) 15180 in SS at 0035. (MacKenzie, CA)

Korean Central Broadcasting System, 3250 at 1030 with long talk in KK by an unhappy-sounding woman. (Barton, AZ) 1205 in KK with M talk. (Taylor, WI) 6250 at 0941 with Korean opera. (D'Angelo, PA) 11710 at 1640 with patriotic vocals. (Strawman, IA)

OMAN—Radio Sultanate of Oman, 9515 in AA at 0525 and 15140 in AA at 0340. (Parker, PA)

OPPOSITION—Shiokaze, (to North Korea), 5985 at 1429 ending with something repetitive-sounding over piano music. EE ID “This is Shiokaze—Sea Breeze.” (Taylor, WI)

Radio Voice of the People (to Zimbabwe), 9895 via Meyerton at 0400 with ID and open anmts, news in local language. ID and frequency anmts at 0415. (Alexander, PA) 0425 with W in EE. (Parker, PA)

National Radio of R.A.S.D. (to Morocco), 6297 at 2337 in AA with ME music. (Taylor, WI) (*Nominal 6300—gl'd*)

Voice of the People (to North Korea), (p) 3912 with long KK talk by W at 1100. (Barton, AZ)

Denge Mesopotamia (to Kurdistan), 11530 via Moldova in Kuridsh at 1354. M/W in phone conversation. (Taylor, WI)

PAKISTAN—Radio Pakistan, 11580 at 0105 with M in Urdu. (Ng, Malaysia)

PALAU—T8WH/World Harvest Radio, Koror, 9965 at 0531 in (p) CC with W talk with trans-polar flutter and multi-path echo. (Parker, PA)

PAPUA NEW GUINEA—Radio East Sepik, Wewak (New Guinea), 3335 heard at 1020 with M/W in Tok Pisin. (Parker, PA)

Radio Milne Bay, Alotau (New Guinea), 3365 heard at 1030 in Tok Pisin with M anc and upbeat native pops. (Parker, PA)

Radio East New Britain, Rabaul (New Britain), 3385 with W in Tok Pisin at 1040. (Parker, PA) 1200 with just some audio. (Wilkner, FL)

PERU—Ondas del Huallaga, Huánuco, 3319.5 at 2310 with music, talks in SS. (Wilkner, FL)

Radio Vision, Chiclayo, 4790 at 0218 with M in SS preaching, applause, and cheers. (Parker, PA) 0335 with M in SS religious talk. (Strawman, IA) 0726 with SS preaching. (Taylor, WI) 2340. (Wilkner, FL)

Radio Maranon, Jaen, 4835.5 at 0207 with M and occ traces of flute music and M vocal. (Parker, PA) 1136 with OA music and SS anmts. (Alexander, PA)

Radio La Hora, Cusco, 4857.4 at 2320. (Wilkner, FL)

Radio Santa Monica, Cusco, 4965 heard at 0402 with W anc, slow W vocal, quickly gone in a sea of QRM by 0407. (Parker, PA)

Radio del Pacifico, Lima, 4974.8 at 0028 with M/W in SS, very weak. (Parker, PA)

Radio Manantial, Chilca, 4990 at 0045 with M/W in SS discussion. (Parker, PA)

Radio Libertad, Junin, 5039.2 heard with M in SS, fading out about 1040. (Wilkner, FL)

Radio Bolivar, Cd. Bolivar, 5459.6 with music at 2320. (Wilkner, FL)

Radio Tawantinsuyo, Cusco, 6173.9 at 2320 with M talk. (Wilkner, FL)

PHILIPPINES—Radio Veritas Asia, 9615 at 1151 with talks in CC and EE ID. (Brossell, WI) 15530 in Tamil at 0105. (Ng, Malaysia)

FEBC Intl, 9435 in II monitored at 2256 with choirs, W with comments, ID at 2300. (MacKenzie, CA)

PIRATES—MAC, 6924.at 1951 and

2124, the *Ultraman Show* with mostly instl themes from old TV shows and numerous renditions of the old Radio Prague IS. Gave two addresses for reports: machshortwave@gmail.com and macshortwave@yahoo.com. (Zeller, OH) 1957 with Prague IS, various rock and novelty tunes. (Hassig, IL)

Blitzkrieg Radio, 6925u at 0215 with various vaudeville tunes, later klezmer and Yiddish songs. (Hassig, IL)

IARN, Belgrade Lakes, MN, 38901 at 0413 with slickly produced “Amateur Radio News” and ID with Glenn Baxter’s revoked callsign. KIMAN. (Parker, PA)

WEAK, 6930 with punk rock at 1852. (Gay, KY)

Radio Free Speech, 6900 monitored at 2030. (Gay, KY)

Psycho Radio, 6925 via WBNY relay at 2145. (Gay, KY)

Wolverine Radio, 6930u at 0100 with pop/rock, SSTV and fax tones at the end. (Hassig, IL)

WZAK, 6925u at 1908 with rock and various robot-like voices over songs. At close W IDed as “WZAK ? Radio.” (Zeller, OH)

Undercover Radio, 6925u at 0447 with a replay of show from 2005. Recipe for “Hotel Hot Dogs.” (Wood, TN) 0434, special pgm with Dr. Benway discussing alien dreams and what it would be like to be a ghost, frequent IDs, and contact info. (D’Angelo, PA)

WBNY Relay Service, 6925u at 2113 with Captain Ganga and Maharishi hosting a special pgm. (D’Angelo, PA)

Radio Gaga, 6925 to 1657* with rock, SSTV and off with ID. (Gay, KY)

Captain Morgan, 6925u at 2154 with rock and novelty things. *Twilight Zone* audio themes, and some howling noises. (Zeller, OH)

Northstar Radio, 6880 with rock/pop/Motown/bubblegum things from ’50s through the ’90s. Off suddenly at 0039, carrier on/off several times, and then back at 0039. They need to ID more often! (Hassig, IL)

Liquid Radio, 6925 at 2230 with nice pgm of dance music, similar to college radio. (Hassig, IL)

FRS-Holland (Euro), 7600 at 0822 with light pops, IDs. (Alexander, PA)

Radio Amica (Euro), 7610 (nf) at 2135 with pops, II anmts. (Alexander, PA)

PORTUGAL—RDP Intl, 7420 with PP commentary and songs at 0635. (Padazopulos, NJ) 12020 at 1154 with instls, time pips at 1200 and a pause for an amt that never came. (D’Angelo, WI) 15560 in PP at 1832. (Brossell, PA) 17825 in PP at 1732. (MacKenzie, CA)

ROMANIA—Radio Romania Intl, 7220 at 2325 with listener essay contributions, 7305-Galbeni in EE with news at 0530. (Parker, PA) 7350 in (I) Romanian at 0410 and 9645 on Romanian authors at 0321. (Brossell, WI) 7370 with news in EE at 0634 and 15415 (t) at 1200 with EE news. (Padazopulos, NJ) 7380 with *Radio Newsreel* at 2130. (Ng, Malaysia) 9745 in SS at 2303. (MacKenzie, CA)

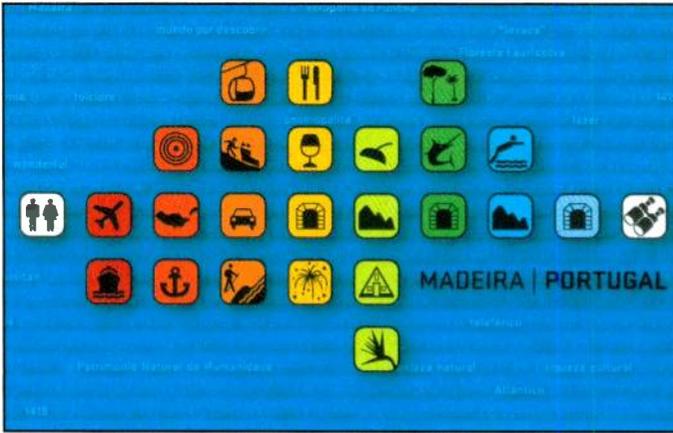
Pop’Comm March 2010 Reader Survey Questions

It’s been awhile since we’ve checked, so this month we’d like to again ask you about your favorite aspects of *Pop’Comm*. Please use the Reader Survey Card and circle all appropriate numbers. We’ll pick one respondent at random for a free one-year subscription, or extension, to *Pop’Comm*, so don’t forget your address. We also need the survey issue indicated for tracking. As always, thanks for participating.

What do you like best/read regularly in *Pop’Comm*?

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We ran no survey last November, so there are no results to report to you and no drawing winner for a free sub from that month. But we’ll be sure to pick one from this survey’s responses!



RDP International touts the offerings of Madeira in this QSL. (Paul Gager, Austria)



Radio Slovakia International may be fighting to stay afloat but it still sends a nice series of cards. (Paul Gager, Austria)

RUSSIA—Voice of Russia, 4975 via Yangiyul (Tajikistan) in Pasto at 1259 with test tones, NA at 1300, anmts by W and (p) news. 5900-Armavir in EE at 0110 with M/W ancns. music, talk with short talk features. (Taylor, WI) 7250 at 2320 on Afgan elections and 13775-Vladivostok to North America at 0403. (Parker, PA) 9665 via Moldova at 0235 with ID, talk on Pushkin. (Maxant, WV) 9900-Samara in Pashto/Dari heard at 1400 with comments, local music. (Strawman, IA) 12030-Petropavlovsk-Kamchatka in EE at 0517. Off suddenly at 0529. (MacKenzie, CA) 15425-Petropavlovsk-Kamchatka on the EU at 0222. (Brossell, WI)

Radio Rossii, 5940-Magadan at 1427 in RR and 6085-Krasnoyarsk in RR at 0058, M with ID at 0100. Wiped out by noise at 0101. Also 6195-Ulan Ude at 2323 with M/W chatting in RR. 7200-Yakutsk in RR at 0055 with same M/W ancns as noted half an hour earlier on 6195. (Taylor, WI) 0350 with rapid news separated by music bridges, folk music, into news at 0400. (Parker, PA) 0425 with M/W alternating comments. (Strawman, IA) 13665-Moscow in RR at 1253. (Brossell, WI) Kyzyl Radio, Kyzyl, 6100 at 1200 with sign on and ID in RR f/by (p) news. (Brossell, WI)

SAO TOME—VOA Relay, 4960 at 0402 on the election feud in Afghanistan. (Parker, PA) 0445 with current events panel. (Barton, AZ) 12080 in PP at 1806. (Brossell, WI)

SOUTH AFRICA—Channel Africa, 6135 at 0340 with promo for a radio doctor pgm. 7230 at 0510 with news about Iraq. (Maxant, WV)

Radio Sondergrense, 3320 at 0256. (Yohnicki, ON) 0348 in Afrikaans with slow ballads. (Wood, TN) 0507 with M and news in Afrikaans. (Parker, PA)

SOLOMON ISLANDS—SIBC, 5020 at 1000-1100 with splatter from Rebelde-5025. Generally better in the winter months. (Wilkner, FL) 1223 with BBC Relay, several pgm promos heard at 1228 and BBC ID, news headlines. (Taylor, WI)

SOUTH KOREA—KBS World Radio,

9580 at 0240 with domestic instrumentals. 9650 on talks with the North. (Maxant, WV) 15365 via England in AA at 1936. (Brossell, WI)

SLOVAKIA—Radio Slovakia Intl, 7200 (NF) at *0229 with EE ID, IS and into SS. (Alexander, PA)

SPAIN—Radio Exterior de Espana, 6055 at 0023 on bank failures in Europe, 9665 in SS at 2245, 9765 Costa Rica Relay in SS at 2308, 12040 in SS at 2138, 17715 in SS at 1835 and 17850 Costa Rica with live sports in SS at 1726. (MacKenzie, CA) 9640 with soccer coverage in SS at 2025, 13720 in SS at 0938, 21610 at 1344 with sports, news in Catalan. (Padazopoulos, NJ)

SRI LANKA—Sri Lanka Broadcast-ing, 15745 with *Gospel of the Kingdom* at 0300. (Ng, Malaysia)

SUDAN—Republic of Sudan Radio, 7200 with AA talks at 0405. (Brossell, WI) 2101-2104* with news in AA by Man. Carrier cut at 2104 (D'Angelo, PA)

Miraya FM, 15560 via Slovakia at *1500 with time pips, EE IDs and news. (D'Angelo, PA; Alexander, PA)

SURINAME—Radio Apinte, (p) 4990 at 0505 with continuous light pop vocals, M talk briefly at 0518. Difficult to make out the language. (D'Angelo, PA)

SWAZILAND—Trans World Radio, 4775 in GG at 0420 with M talk and hymn. 9500 in EE with religious talk. (Parker, PA)

SWEDEN—Radio Sweden, 6010 at 0250 via Canada on the Green Party and the Social Democrats there. Also, 13820 at 1445 on Sweden's Muslim population. (Maxant, WV) 9360 at *1458 with IS, multiple IDs and into Swedish to ME. (D'Angelo, PA)

TAIWAN—Radio Taiwan Intl, 5950 via Florida at 0515 and 9680 via Florida at 0245. (Maxant, WV) 11550 with W and news at 1005. (Ng, Malaysia)

Sound of Hope, 9450-Yunliin (p) in Mandarin at 1535. M ancyr with possible Firedrake underneath. (Taylor, WI)

TANZANIA—Radio Tanzania-Zanzibar, 11735 with time pips at 1759, EE news from

local Spice FM, IDs, Swahili talk and local pops at 1808. (Alexander, PA)

THAILAND—Radio Thailand, 9680 at 0004 in EE news, coml for "Spa on the Lake." Abruptly off at 0029 when switched to 12095 at *0030 with talk about a local fiber optics company and EE news, coml for Thai Airways. (Alexander, PA) 9680 at 0000 with time pips, EE ID and news. 9725 at 1401 with W and EE news. (Strawman, IA) 9680 with *Newshour* at 0000. (Ng, Malaysia)

TUNISIA—RT Tunisienne, 7295-Sfax at 0407 with AA talks. (Brossell, WI) 0435 with indigenous music in AA. (Parker, PA)

TURKEY—Voice of Turkey, 13635 at 1252 with TT beamed to Europe. (Brossell, WI) 15300 with *Review of the Turkish Press*. (Ng, Malaysia)

UKRAINE—Radio Ukraine Intl, 7440-Kharkov, with *Ukrainian Diary* at 0015. (Fraser, ME) 0350 with local music. (Maxant, WV) 0415 on Ukrainian influences in the arts. (Wood, TN)

USA—Voice of America, 9370 Lampertheim Relay at 0052 in Pashto with various ancns and short articles, ID 0100 and (p) news. (Taylor, WI) 9380 Sri Lanka relay in (I) Farsi at 0255 to 0300, 9490 Northern Marianas Relay in (I) Korean at 1232. Also, 11990 Northern Marianas in CC at 1216. 17550 via Bonaire in FF at 1850 and 17765 Philippines Relay in CC at 0229. (Brossell, WI) 9435 Thailand Relay at 0100 with news. (Ng, Malaysia) 9460 ending FF at 0628 and into EE. (Padazopoulos, NJ) 9490-Greenville at 2250, 9845 Northern Marianas in CC at 2340, 9885-Greenville in SS at 2300 and 17850-Greenville in FF at 1840. (MacKenzie, CA) 9705 Northern Marianas Relay in (I) Cantonese at 1335. (Strawman, IA) 9885-Greenville at 1714. (Fraser, ME) 9885 in EE heard at 0430. (Parker, PA)

Radio Liberty, 7205 via Biblis in RR at 0419 and 11700 Philippines Relay in RR at 1221. (Brossell, WI)

Radio Marti, 15330-Greenville in SS to Cuba at 1758. (MacKenzie, CA)

Radio Free Asia, 9355 Northern Marianas

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RX-340



1254



in (I) Laotian at 1150, 11590 Kuwait Relay in (I) Dari at 1215 and 13830 in (I) Tibetan at 1224. (Brossell, WI) 11605 via Taiwan in CC at 2332 and 11775 Northern Marianas Relay in CC at 2325. (MacKenzie, CA) 11605 via Taiwan in VV at 1415 and 15120 Thailand Relay in Laotian at 1115. (Ng, Malaysia) 15130 via Tinian, N. Marianas in CC at 0339 and 17880 in CC at 0310. (Parker, PA) 15265 Northern Marianas Relay in (I) CC at 2340. (Strawman, IA)

Radio Farda, 5860 in Farsi at 0208. (Parker, PA) 15680 Sri Lanka Relay in Farsi at 1050. (Ng, Malaysia)

Radio Payam e-Dost, 7460 via Moldova in (I) Farsi heard at 0245. (Brossell, WI)

Armed Forces Network/AFRTS, 5446u at 0515. (Maxant, WV) 5446.5u-Saddlebunch Keys, at 0128 and 7811u Saddlebunch Keys at 0550 with *All Hands Radio News*. (Parker, PA)

WYFR, 6890-Florida at 0303 in SS. New here and wiping out any chance for Radio Fana during this time period. (Alexander, PA) 7250 with AA news at 0635. (*Site?—gld*) 11580 in FF at 0617. (Padazopoulos, NJ) 5950-Florida at 0010, 17535-Florida in SS at 1740 and 17555-Florida at 1739. (MacKenzie, CA) 11535 via Taiwan in (I) Mandarin at 1215, 11650 via Tajikistan in CC at 1219 and 13850 via Vladivostok in (I) Tagalog at 1234. (Brossell, WI) 11610 via Nauen (Germany) in Gujarati at 1503. Also, 9845 via Yakutsk with *Open Forum* at 1415. (Taylor, WI)

World Harvest Radio, 7465 at 2232. (MacKenzie, CA)

Adventist World Radio, 11675 via Wertachtal in Nepalese heard at 1507. (Taylor, WI)

WTJC-North Carolina, 9370 at 2240. (MacKenzie, CA)

WWCR, Tennessee, 7465 in EE/SS at 2152, 7485 at 2222, 9980 at 2325 and 15825 at 1748. (MacKenzie, CA)

WINB, Red Lion, 9265 at 2245 and 13570 monitored at 1857. (MacKenzie, CA)

WBCQ-Maine, 7415 at 0015. (MacKenzie, CA)

WEWN-Alabama, 5810 in SS at 0005. (MacKenzie, CA) 11520 at 0305 and 12160 at 1445. (Maxant, WV)

VATICAN—Vatican Radio, 6040 in SS at 0340, 7335 in SS at 0355 and 7430 in EE at 0250. (Maxant, WV) 9660 via Madagascar at 0325. (Strawman, IA)

VIETNAM—Voice of Vietnam, 5975-Hanoi in VV monitored at 1240. (Ng, Malaysia)

VENEZUELA—Radio Nacional, 6060 via Cuba in SS at 1105. (Maxant, WV) 11670 via Cuba in SS from *2200 sign on. (Fraser, ME)

ZAMBIA—Radio Zambia, 5915 at 0416 in possible (I) Nyanja, tribal chants and music. (Parker, PA)

CVC Intl, 4965 with ID at 0259 and 13590 with hip-hop or rap-type things at 1927. (Yohnicki, ON) 9430 with African vocals and "One Africa" ID at 0445. (Maxant, WV) 0448. (Parker, PA) 13650 at 1657 with Christian vocals to 1700 close. (D'Angelo, PA)

ZIMBABWE—Voice of Zimbabwe, 4828 heard at 0220 with carrier at good strength but only traces of man talking. (Parker, PA)

And, once again, order is restored! An Everest of thanks to those who did the work this month: Brian Alexander, Mechanicsburg, PA; Stewart MacKenzie, Huntington Beach, CA; Peter Ng, Jahor Bahru, Malaysia; Joe Wood, Greenback, TN; William Hassig, Mt. Prospect, IL; Chris Gay, Lexington, KY; Michael Yohnicki, London, ON; Rich D'Angelo, Wyomissing, PA; Robert Wilkner, Pompano Beach, FL; Folios Padazopoulos, NJ; George Zeller, Cleveland, OH; Robert Fraser, Belfast, ME; Jerry Strawman, Des Moines IA; Robert Brossell, Pewaukee, WI; Rick Barton, Phoenix AZ; Richard Parker, Pennsburg, PA; and Mark Taylor, Madison, WI. A very sincere thanks to each of you.

Until next month—good listening!

Back To Basics

by Ken Reiss
radioken@earthlink.net

I often wonder how people get started in various hobbies. Some hobbies, like radio, seem to really benefit a little extra help from those already experienced. These days, getting into scanning if you don't know where to look for help can be a bit daunting. I suspect that many of us had a friend who got us started and showed us the basics of scanning. Others may have had some radio background of their own through their jobs and expanded on it by reading everything they could find.

However, if you come at it from some angle that doesn't give you a leg up in radio, and you don't have a friend to smooth the path, it can be a rough ride, particularly with today's complicated choices for radios and the new terminology that's almost essential to understand before you get started. I get a lot of questions related to scanning basics, so every once in a while I like to revisit the fundamentals in this column. It's good to see beginners coming to the hobby, and I'm happy to help where I can.

With that in mind, let's take a look at some basic scanning information. If you're just getting started, hopefully we can get you on the right track, although I doubt we'll answer all your questions, but at least you'll have a better idea of what



One thing to consider with a handheld is how it's powered. There's nothing like the cost-effectiveness of today's rechargeable batteries, but if you're out someplace and they run dead, the convenience of being able to find AAs at any store can't be beat!

"I get a lot of questions related to scanning basics, so every once in a while I like to revisit the fundamentals in this column. It's good to see beginners coming to the hobby, and I'm happy to help where I can."

questions to ask. And, if you're an old hand, you can use it as a fun test of your knowledge and skills—and maybe as inspiration to reach out a helping hand to a newcomer.

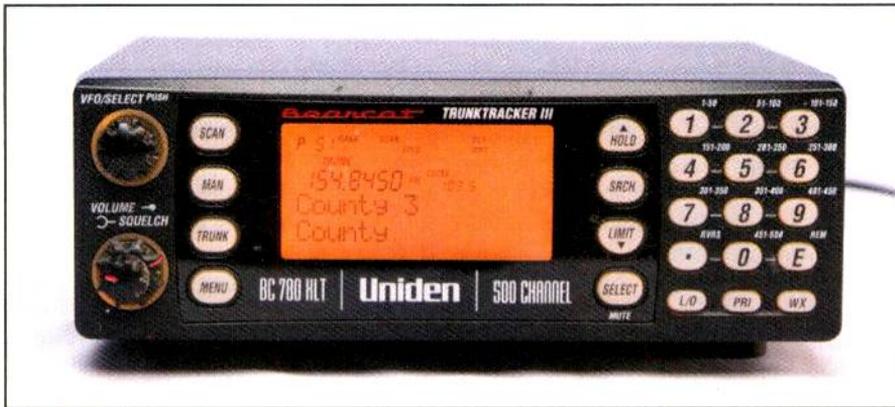
Who Scans?

Most scanner fans are motivated by a desire to hear what's going on around them, or by a professional need to keep up with something that uses radio, or sometimes both. Volunteer fire fighters and off-duty police officers are often scanner hobbyists by necessity. Older retired folks often get into scanning just for something to listen to besides daytime dramas, and younger people are often fascinated with users of radio (police or fire) or with the technology itself. Regardless of the reason, radio and radio listening can be a lifelong hobby that will serve you well for many years.

Of course, there's lots of other stuff to listen to besides police and fire. Airplanes, airports, ships in the harbor or on the river, corporate communications of all sorts, retailers, mall security, and a host of other users will show up on your scanner if you have the interest to find out where to tune in. Some are as boring as watching paint dry, but others can be good entertainment. Of course, one person's good entertainment is another person's boring, so if you're just getting started, look around a bit and find out what you like.

Trunking And Digital

Two terms that have recently entered the hobby and still cause even seasoned pros some grief are trunking and digital. If you're going to scan, you probably need to understand these before you can get very far—even before you start shopping for a radio! If you live in an area where the communications you want to listen to use a trunking system, you'll need a trunking scanner. While that



This mobile radio can be mounted in a car (check your local laws before you install) or used as a base unit at home.

may seem obvious, it can be a difficult thing to get a straight answer to. Furthermore, in many areas of the country, trunking will one day play a major role in scanning if it doesn't at the present.

So just what is this trunking thing? Trunking is a way of managing frequencies with a computer system to give the users of the system the appearance of having many more channels than there actually are. Think of it as virtual channels under computer control.

It's important to understand that trunking is accomplished on the transmitter end and is not under your control. Trunking systems are very difficult to listen to unless your scanner is configured for that particular system.

How can you tell if you need trunking? The best way is to ask another listener who's been at it for a while. If you can't find anyone to ask, there are a couple of ways to get indications at least of whether or not you should be looking for a trunked scanner. The first thing to do is get a list of frequencies (try www.radioreference.com if you can't find a local source). Look up the city you're interested in listening to and check out the information available. Radio Reference has some excellent listings and, particularly for major metropolitan areas, can sometimes tell you which frequencies are used for police/fire/ambulance activity. It may also identify trunking systems and give you valuable information about the type of system and the frequencies it uses.

If not, all is not lost. There should be a list of frequencies (or several) in use for the area. If the frequencies are in the 861–869 MHz range (designated as output frequencies for trunked systems), there's a strong possibility of trunking. If they're in the 700–900 MHz range, and

there's a group of them (5–60 will be listed), there's a very good chance that the system is trunked.

If the frequencies are in other ranges, you're probably safe...for now, anyway. There are trunking systems beginning to show up on other bands as well, but they're still pretty rare. But in five years, say, all bets will be off. Trunking is almost certainly in the future for any major agency, and a lot of smaller ones may be put onto statewide trunked systems as well. There's a lot of politics and expense involved in this process, so the conversion will be slow, but it will happen over time.

Types Of Trunking

The other important thing to know is that not all trunking systems are the same. The most common systems in use are the

Motorola (type I and II), Astro, Ericson's EDACS system, and Johnson LTR. Johnson LTR is very rarely used for public safety, although that may change with an upgrade to the LTR system. Motorola type I and II can be followed with a number of radios; in fact most trunking scanners concentrate on the Motorola systems first as they are by far the most common.

Digital

Until about the last 10 years or so, all public safety and two-way business communications were FM, and much like the FM broadcast radio that you listen to, but narrower because they didn't need the same quality as music. Prior to the mid-40s they were AM, and some of the early transmissions could be tuned at home on your AM radio! Those days are long gone, however.

Today, new systems are being installed that use a new kind of radio signal: a digital one. Just like everything else, computers are changing radio, and one of the developments is digital radio. Because a digital radio can cram more signals into smaller space, the FCC has taken quite a liking to this newfangled gizmo. Digital transmission is just a new way to get the voice from here to there, and as in all things digital, there are standards to be aware of. Not all systems use the same standard, but the one that is gaining the most traction is APCO 25.

APCO 25 is a digital standard employed to improve communications and interoperability. Most APCO 25 sys-

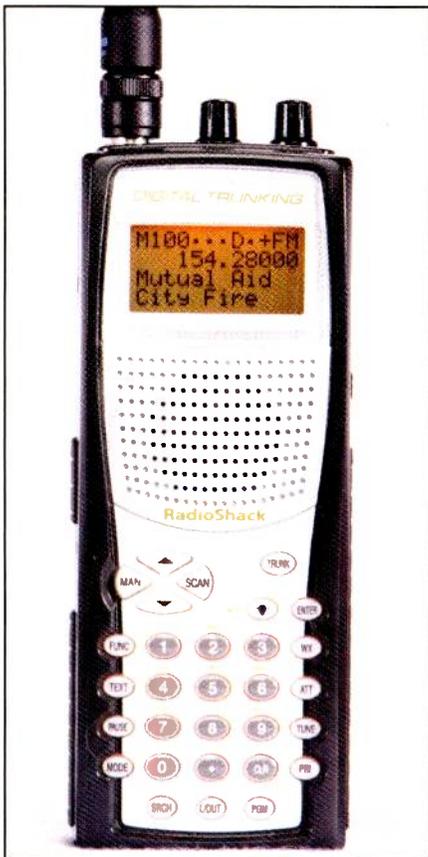
Frequency Of The month

Each month we ask our readers to let us know what they're hearing on our "Frequency Of The Month." Give it a listen and report your findings to me here at "ScanTech." We'll pick a name at random from the entries we receive and give that lucky winner a free one-year subscription, or extension, to *Pop'Comm*. Remember to include your address in case it's your name that's drawn! Good luck!

Our frequency this month is **450.5750**. Let me know what you hear, or don't hear, and we'll enter your name for our monthly drawing. I'd also be interested in your story of how you got started, so even if you don't hear anything don't hesitate to send a note. Contact me via email at radioken@earthlink.net, or via more traditional methods at Ken Reiss, 9051 Watson Rd. #309, St. Louis, MO 63126-2220. Please note Frequency of the Month entries with the frequency on the envelope or subject line for correct routing. And don't forget that address!

Let me also take a moment to thank those of you who send in your entries on a regular basis. I don't always have the time to respond to all of them, but I do read every one and your input is valuable! As space permits, we run a few here in the column, so please keep them coming...and your questions, too!

The most recent winner of our drawing is **Marvin W. Tyndall** of **Absecon, New Jersey**. His entry was for 853.9625, but he didn't hear a sound. Congratulations on the free sub. Marvin!



This RadioShack model is a full-fledged trunktracking scanner with lots of bells and whistles in a handheld package. Note the Alpha Tags displayed for Mutual Aid (Channel) and City Fire (bank).

tems are trunked, though some may use stand-alone channels. Eventually APCO 25, or some replacement system, will become as common as AM or FM, but we're still a long way from that right now. In the meantime, having the option to go digital will give you a more versatile radio with a longer lifespan, but it will add to the cost up front.

What Kind Of Scanner?

Any discussion of scanners for beginners inevitably leads to the question, "Which radio should I buy?" Since we were all beginners at some point, we've all faced this quandary at least once. And, these days especially, it can be overwhelming when you're getting started.

Scanners basically come in three flavors (well, sort of). Portable scanners are easy to carry around, generally small, and don't need much space. The second type comprises modern base and mobile scanners, which used to be two very different categories but today are pretty much the same thing. The important question here is do you mount the scanner in the car or

plug it in at home? The third type is the communications receiver that is generally used only by those people who need peak performance from the receiver itself. If you're just getting started, I don't recommend these at all. Having said that, it's worth noting that some of today's portables approach "communications receiver" price and performance.

Before you even go shopping, you need to answer some questions for yourself. What do you want to do with this radio? Do you want a portable that's convenient to carry around, or would a base or mobile unit serve your needs better? All factors being equal, you should get slightly better performance from a base or mobile. The key word there is *should*. In theory, because of the additional power available, and a steadier source of power, as well as the possibility of better performance from the antenna system, it *should* work that way. Having said that, the reality is that there are many handhelds that can perform just as well, or better, than their base/mobile counterparts. Today, it probably shouldn't be much of a factor in your decision-making process. Concentrate on how you want to use the radio, and then make your selection accordingly.

If you don't have a trunking system to contend with, your choices are much more extensive. Don't rule out the trunk-tracker scanners, however, just because you don't have a trunking system in your area yet. They are all above average conventional scanners as well, and when (not if) a trunking system arrives, you'll be all set. The same argument can probably be made for digital, so you might want to consider that as well, although both options will increase the up front cost of the scanner.

Other Features

When you go shopping for a scanner, trunking and digital occupy just the tip of the iceberg. You'll find all kinds of information, some of which makes sense and some of which sounds like Greek. Ignore the Greek stuff for now and concentrate on the basics. You can dig into that language when you're ready to upgrade to your next scanner.

Memories

Generally speaking, more memory channels is a good thing, but there is a point of too much. Really, memories themselves are not as important as banks. Banks help to organize groups of things

that belong together. All the police channels, or all the fire channels, or perhaps all the south side and all the north side channels can be grouped together for easy switching in and out of the scan list.

Most scanners on the market today (except for the very few that have less than 100 channels) will be divided into at least 10 banks. A 200-channel scanner is likely to have 10 banks of 20 channels each. A 1,000-channel radio is likely to have 10 banks of 100 channels, which is not as convenient as 50 banks of 20 channels. That's probably enough for most applications. Twenty banks of 10 channels would be more versatile than the 10-bank system we were discussing, but you can't always have everything at a price we're willing to pay for a scanner.

Tagging

Some of the newer radios include the ability to store an alphanumeric label (or alpha tag, as they're called) with some or all of the memories. This feature tends to appear mostly on the higher-end models, but can be well worthwhile in a larger scanner. Remembering what frequency goes with what in a 500- or 1,000-channel scanner is downright difficult to say the least, even if you have a good memory. It's also available on computer systems for any of the computer-controlled scanners, which also makes data entry much easier.

Frequency Coverage

Frequency coverage is an important aspect to pay attention to, particularly on the introductory models. Most of the high-end radios will include the standard VHF-Lo, High, UHF and 800-MHz ranges. Some offer continuous coverage from the shortwave bands through 1 or 2 GHz. However, some of the introductory models leave out segment or two, usually at the high or low end, to cut costs.

It's also worth noting that we will begin to see some public safety frequencies being assigned in the 700-MHz (764-806) range in the not-too-distant future. The allocation has been approved by the FCC, and a few stations have been licensed. In many areas of the country, it's simply a matter of waiting for an existing service to relocate. Currently, only the continuous coverage scanners include this range. It's also likely that trunking will be the normal mode of operation in this range, although conventional operation is permitted as well. No doubt, new models will appear as soon as the band becomes com-



This Uniden ultra portable packs a lot of scanner into a small package. The performance of many modern portables is equal to that of base/mobile units.

mon, but if a service you're interested in moves, that won't be much help.

Delay

Another extremely useful feature is selectable delay. Almost all scanners today have a delay function that will cause the radio to pause for a few seconds before continuing the scan to see if a reply is received on that same channel. On many radios, this feature is either on for all channels or off. Again, on the high-end units, you can turn this feature on and off per channel, so that you can customize your scanning to the agencies you're listening to and to suit your own preferences.

Get Scanning!

Regardless of which scanner you choose, know that you'll probably want to upgrade it in a few years once you get more involved. Hopefully, your first scanner will still be useful and you can continue to use it beside your new and improved model. Spending a little more now for features that you may not need just yet will add to its lifespan, but even a low-end scanner will give you lots of listening fun. You might not be able to listen to everything you want to hear, but there should be plenty to keep you interested in your new hobby.

Until next time, good listening!

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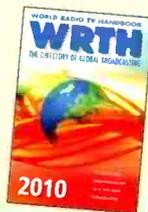
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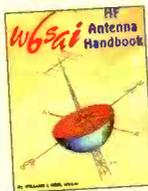
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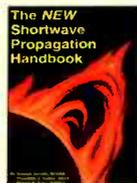
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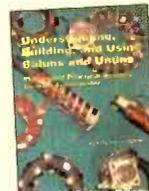
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This listing is designed to help you hear more shortwave broadcasting stations. The list covers a variety of stations, including international broadcasters beaming programs to North America, others to different parts of the world, as well as local 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	5990	Radio Argentina al Exterior	SS	0300	9645	Radio Romania Intl	
0000	4700	Radio San Miguel, Bolivia	SS	0300	7200	Radio Rossii, Russia	RR
0000	6240	Radio PMR, Priednestrovie (Moldova)		0300	15130	Radio Free Asia, Northern Marianas Relay	CC
0000	9680	Radio Thailand		0300	17880	Radio Free Asia, Northern Marianas Relay	CC
0000	9370	Voice of America Relay, Germany	Pashto	0300	9660	Vatican Radio, via Madagascar	
0000	7415	WBCQ, Maine		0300	5910	Marfil Estereo, Colombia	SS
0000	4965	CVC, The Voice-Africa, Zambia		0300	4780	Radio Djibouti	AA
0030	12095	Radio Thailand		0330	6135	Channel Africa, South Africa	
0100	4755	Radio Imaculada Conceicao, Brazil	PP	0330	7215	TWR, via South Africa	Amharic
0100	5025	Radio Rebelde, Cuba		0400	5045	Radio Clube do Para, Brazil	PP
0100	5035	Radio Aparecida, Brazil	PP	0400	4930	Voice of America, Botswana Relay	
0100	11780	Radio Nacional Amazonas, Brazil	PP	0400	11690	Radio Okapi, Congo, via South Africa	EE/FF
0100	9425	CVC Intl, via Uzbekistan	Hindi	0400	6010	La Voz de tu Concencia, Colombia	SS
0100	15530	Radio Veritas Asia, Philippines	Tamil	0400	6190	China Radio Intl, via Cuba	
0100	5900	Voice of Russia		0400	9820	Radio 9 de Julho, Brazil	PP
0200	11760	Radio Havana Cuba	SS	0400	7165	Voice of the Broad Masses, Eritrea	AA
0200	6025	Radio Amanecer, Dominican Republic	SS	0400	9895	Radio Voice of the People, via South Affrica Vern	
0200	4985	Radio Brazil Central	PP	0400	7350	Radio Romania Intl	Romanian
0200	10320u	AFN, Hawaii		0400	4775	TWR, Swaziland	GG
0200	11735	All India Radio	Hindi	0400	7275	RTV Tunisienne, Tunisia	AA
0200	5905	BBC	AA	0400	7440	Radio Ukraine Intl	
0200	4790	Radio Vision, Peru	SS	0400	7335	Vatican Radio	SS
0200	9580	KBS World Radio, South Korea	KK	0400	5915	Radio Zambia	Vern
0200	7200	Sudan Radio TV	AA	0400	7205	Radio Liberty ,USA, Germany Relay	RR
0200	9665	Voice of Russia, via Moldova		0430	4905	Radio National Tchadienne, Chad	FF
0200	15425	Voice of Russia		0430	7255	BBC, Ascension Island Relay	
0200	4835	Radio Maranon, Peru	SS	0430	9790	China Radio Intl, via Cuba	CC
0200	5860	Radio Farda, USA		0500	7450	Voice of Greece	Greek
0200	9380	Voice of America Relay, Sri Lanka	Farsi	0500	7265	Radio France Intl	FF
0200	6175	Voice of Vietnam, via Canada		0500	13650	CVC, Zambia	
0230	7425	Radio Tirana, Albania		0500	7430	Deutsche Welle, Germany, Portugal Relay	
0230	6010	Radio Sweden, via Canada		0500	7310	Deutsche Welle, Germany, Portugal Relay	
0230	7200	Radio Slovakia Intl	SS	0500	5005	Radio Nacional, Equatorial Guinea	SS
0230	12050	Radio Biafra, via england	Fri	0500	11725	Radio New Zealand Intl	
0230	4828	Voice of Zimbabwe		0500	9965	World Harvest Radio, via Palau	CC
0230	7430	Vatican Radio		0500	7285	Radio Sondergrense, South Africa	Afrikaans
0300	9520	Radio Canada Intl, via Austria	AA	0500	9500	TWR, Swaziland	
0300	4915	Radio Difusora Macapa, Brazil	PP	0500	7811u	AFN, Florida	
0300	6290	Radio Cairo, Egypt	AA	0500	5950	Radio Taiwan Intl, via Florida	
0300	7110	Radio Ethiopia	Amharic	0530	6250	Radio Nacional, Equatorial Guinea	SS
0300	6973	Galei Zahal, Israel	Hebrew	0530	4770	Radio Nigeria	
0300	15140	Radio Sultanate of Oman	AA	0600	5865	Radio Algerienne, Algeria	AA
0300	5010	Radio Madagasikara, Madagascar	Malagasy	0600	7475	Voice of Greece	Greek

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0600	6185	Radio Educacion, Mexico	SS	1430	13820	Radio Sweden	
0600	7240	RDP Intl, Portugal	PP	1500	15785	Galei Zahal, Israel	Hebrew
0700	6155	Radio Austria Intl		1500	11675	Adventist World Radio, via Germany	Nepalese
0700	6165	Croatian Radio	Croatian	1500	15560	Miraya FM, Sudan, via Slovakia	EE/AA
0700	9710	Radio Australia		1500	17745	Sudan Radio Service, USA, via Portugal	AA
0700	6010	Radio Inconfidencia, Brazil	PP	1500	9360	Radio Sweden	Swedish
0800	7285	RTV Malienne, Mali	ff	1600	11710	Korea Central Broadcasting Station, N. Korea	KK
0900	3945	Radio Vanuatu		1600	13650	CVC, Zambia	
1000	3280	La Voz del Napo, Ecuador	SS	1700	15330	Radio Marti, USA	SS
1000	3340	Radio Misiones Intl, Honduras	SS	1800	17680	CVC-La Voz, Chile	SS
1000	6105	Candela FM, Mexico	SS	1800	15420	BBC, South Africa Relay	
1000	13720	Radio Exterior de Espana, Spain	SS	1800	13740	Radio Japan, via UAE	JJ
1100	6020	Radio Australia		1800	12080	Voice of America Relay, Sao Tome	PP
1100	15535	CVC, Australia		1800	15560	RDP Intl, Portugal	PP
1100	6160	CKZN, Canada		1800	11735	Radio Tanzania, Zanzibar	EE/Swahili
1100	3310	Radio Mosoj Chaski, Bolivia	SS	1800	17895	Voice of America Relay, Botswana	
1100	3250	Radio Luz y Vida, Honduras	SS	1900	9580	Africa Number One, Gabon	FF
1100	17610	Radio France International	FF	1900	15190	Radio Africa, Equatorial Guinea	
1100	9895	Radio Nederland	DD	1900	15345	RTV Marocaine, Morocco	AA
1100	6170	Radio New Zealand Intl		1900	11990	Radio Kuwait	
1100	4800	Radio Transcontinental, Mexico	SS	1900	15365	KBS World Radio, South Korea	AA
1100	3365	Radio Milne Bay, Papua New Guinea	Tok Pisin	1900	13590	CVC, Zambia	
1100	3335	Radio East Sepik, Papua New Guinea	Tok Pisin	1900	15120	Voice of Nigeria	
1100	5020	Solomon Is. Broadcasting Corp.		1900	9780	Republic of Yemen Radio	AA
1100	3385	Radio East New Britain, Papua New Guinea	Tok Pisin	2000	9330	Radio Damascus, Syria	
1100	6060	Radio Nacional Venezuela, via Cuba	SS	2000	9690	Deutsche Welle, Germany, via England	
1130	9615	Radio Veritas Asia, Philippines	CC	2000	8675	Broadcasting Service of the Kingdom, Saudi Arabia	AA
1130	15295	Voice of Malaysia	Mandarin	2100	11845	Radio Canada Intl	FF
1200	7280	Voice of the Strait, China	CC	2100	15305	Radio Canada Intl	PP
1200	9780	KNLS, Alaska		2100	9445	All India Radio	
1200	17545	Radio Prague, Czech Republic	EE/Czech	2130	6170	Radio Cairo, Egypt	
1200	5075	Voice of Pujiang, China	CC	2200	7465	World Harvest Radio, South Carolina	
1200	9525	Voice of Indonesia	II	2200	6165	Radio Nationale Tchadienne, Chad	FF
1200	4790	Radio Republik Indonesia (Irian Jaya)	II	2200	13830	Radio Havana Cuba	SS
1200	15630	Voice of Greece	Greek	2200	13700	China Radio Intl, via Canada	SS
1200	11650	Far East Broadcasting Co./KFBS, N. Marianas	RR	2200	17605	Radio Japan, via Bonaire	JJ
1200	13660	Radio Japan	JJ	2200	9265	WINB, Pennsylvania	
1200	11700	Radio Liberty, USA	RR	2200	11670	Radio Nacional Venezuela, via Cuba	SS
1200	13635	Voice of Turkey	TT	2200	7485	WWCR, Tennessee	
1200	13830	Radio Free Asia, USA, via Tajikistan	Tibetan	2200	4319u	AFN, USA, Diego Garcia	
1200	11590	Radio Free Asia, USA	Dari	2300	9695	China Radio Intl	JJ
1200	11535	Family Radio via Taiwan	Mandarín	2300	5030	Radio Burkina, Burkina Faso	FF
1300	15400	HCJB Global, Australia		2300	15560	Radio Australia	
1300	9580	Radio Australia		2300	4925	Radio Educacao Rural, Brazil	PP
1300	15700	Radio Bulgaria	BB	2300	9935	Islamic Republic of Iran Broadcasting	AA
1300	5070	CFRX, Canada		2300	9730	Deutsche Welle, Germany, Rwanda Relay	PP
1300	8655	Radio New Zealand Intl		2300	630v	National Radio of R.A.S.D., Algeria	AA/SS
1330	15275	Adventist World Radio/KSDA, Guam	CC	2300	9475	Radio Nederland, via Philippines	DD
1330	9595	Radio Nikkei, Japan	JJ	2300	9765	Radio Exterior de Espana, Spain, via Costa Rica	SS
1330	15300	Voice of Turkey		2300	7250	Voice of Russia	
1330	11530	Denge Mesopotamia, via Ukraine	Kuridsh	2300	9435	Far East Broadcasting Co., Philippines	II
1400	6890	KNLS, Alaska		2300	15265	Radio Free Asia Relay, Northern Marianas	CC
1400	9625	CBC Northern Service, Canada		2300	9820	Beibu Bay Radio, China	CC
1400	9690	Voice of Nigeria		2330	7125	Radio Conakry, Guinea	FF
1400	5940	Radio Rossii, Russia	RR	2330	4845	Radio Mauritanie, Mauritania	AA
1400	9725	Radio Thailand		2330	7105	Sound of Hope, Taiwan	CC
1400	7505	Far East Broadcasting Corp., Philippines	Mandarin				

Trivia And Toons

by R.B. Sturtevant, AD7IL

Q. I've heard that Marconi tried to monopolize wireless when he first got started. Is that true?

A. Yes it is. He refused to allow the wireless operators he supplied to various shipping companies to send or receive traffic to stations or ships using Telefunken equipment, although I'm not sure how you can tell what kind of equipment a signal is sent on. Maybe Marconi just didn't like Germans. At any rate the courts decided against Marconi in a legal challenge, and in 1914 the rules officially stated that all coast stations were required to receive and transmit to ships, regardless of the type of equipment in use. Ships had the same obligation when transmitting to coast stations. British ships, however, were not required to exchange traffic with either British or foreign ships except in cases of Distress Messages. After all, Marconi was a British citizen and had a lot of clout with the government.

Q. Recently you mentioned Technical Intelligence specialists and the work they have done on captured enemy equipment by analyzing its capabilities? What kind of problems do those folks face?

A. As you can imagine, there were many, but here's one example for you. During World War II most of the enemy equipment evaluation was done at Fort Monmouth, New Jersey. Someone in Washington, D.C., had set up a program called JAPLATE that also was intended to conduct Economic Intelligence analysis at the same time

to tell us how much and how fast equipment was being turned out by the various enemy nations.

The bean counters involved didn't need to actually see the equipment, they just wanted the data plates removed from every piece of captured signal gear and sent to them. The plates were removed by the troops that captured the gear, and those that didn't go into the G.I.s' pockets as souvenirs went to Washington, and then on to Fort Monmouth. There was no way to figure out which devices were the latest models: captured pieces might have undergone design changes or represent earlier models that incorporated shortcuts due to facilities being damaged by bombing or material shortages. This program involved only the Pacific Theater and was discontinued after 1943.

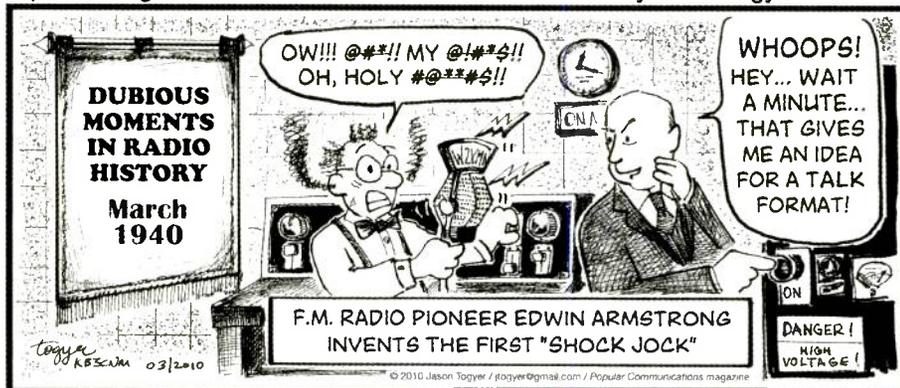
Q. If soldiers are behind enemy lines, aren't they required to maintain radio silence to avoid being captured by the "bad guys"?

A. Not necessarily. It all depends on the intercept capabilities of the "bad guys." On January 29, 1991, during Operation Desert Shield/Desert Storm, the Iraqis sent a large tank force over the border between Kuwait and northeast Saudi Arabia in an area controlled by the 1st Marine Division. The Iraqis were heading for the small city of Khafji on the Saudi seacoast. Stopped by Marine Corps artillery, they dug into positions in and around the city. Incensed by the invasion of their country, the Saudis insisted that they and their Arab allies be allowed to retake the territory.

In the city were two Marine Artillery Spotter Teams that had stayed behind as the Iraqis came into the town. The Marines were working on the second floors and roofs of buildings (many of which had Iraqi soldiers on the first floor!). Fearing capture, the Marines burned their crypto material. Nevertheless the Devil Dog radio operators called in artillery support for two days while the Saudis made their attack against the invaders. When they were finally rescued, after 48 hours, by the advance Saudi infantry and tank forces, the Marines were still calling in coordinates for their gunners' friends.

Spurious Signals

By Jason Togyer KB3CNM



New, Interesting, And Useful Communications Products

SWIFT Weather's Weather Defender Software

SWIFT Weather's new software, Weather Defender 1.1, lets users track weather threats in real time and better prepare for storms, extreme temperatures, and other weather-related conditions. Weather Defender 1.1 can provide immediate customized severe weather alerts for users' specified geographic areas through an on-screen computer monitor display, an audible alarm, email message, or even by SMS text to any mobile handheld device. It gives users the ability to track severe Storm Watches, Warnings & Advisories as they are issued in real time, live weather radar with precise rain, sleet, and snow color-coding, up-to-the-minute updates such as Snow Depth Reports and Road Conditions, and extreme temperature maps. Automated alerting, based on any weather threat to the nearest 1/10 of a mile, can be sent directly to a user's preferred email or mobile handheld device. Separating Weather Defender 1.1 from similar products, according to SWIFT, is its ease of use as well as the types of advanced notice and robust customization options included. It is compatible with Windows 2000/XP/Vista/7 operating systems.

The Residential edition of SWIFT Weather's Weather Defender 1.1 is \$29.95 per month plus activation; the Commercial edition is \$49.95 per month plus activation.

For additional information and a free seven-day trial, visit www.weatherdefender.com.

Array Solutions' Six-Element 11-Meter Yagi Antenna

The Array Solutions AS-611/HP 11-meter antenna is a six-element monoband Yagi on a 40-foot boom. Rated for 120 mph and >10 kW, it is also designed with large-diameter elements and solid tips for corona suppression. The AS-611/HP features a direct feed design for 50 ohms without the need of any matching devices, such as gamma or hairpins, which can be sources of failures. There is a reflector, a driver, and four director elements. Its Open Wireless Architecture and simple feed system offer extremely wide-band VSWR operation where the gain and pattern vary minimally. Using large elements, corona control, and special insulators, this antenna is capable of handling huge power levels. Frequency coverage of the AS-611/HP is 27.100 MHz \pm .3 MHz. The VSWR curve allows full coverage, and VSWR does not exceed 1.2:1 anywhere in the band. Gain and Front-to-Back ratio also remain constant over the entire frequency range on the 11-meter band due to its unique design.

For more information and pricing, contact Array Solutions at 2611 N. Bellline Rd., Suite 109, Sunnyvale, Texas 75182; Phone: 214-954-7140; Web: www.arrayolutions.com.

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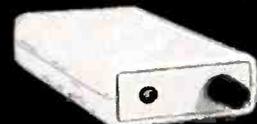
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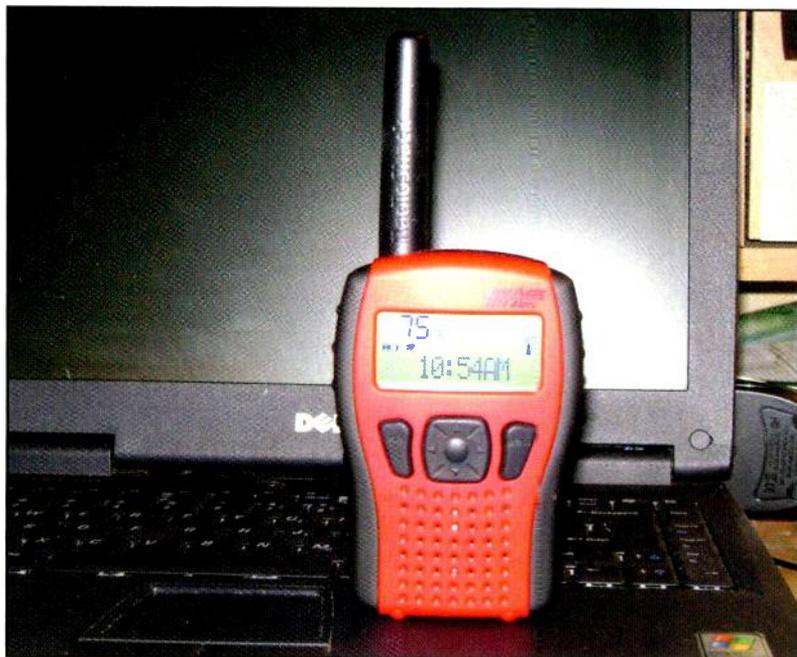
by John Kasupski, W2PIO

The RadioShack 12-522 is a handheld Public Alert-certified weather radio (Public Alert-certified radios meet stringent performance standards specified by the Consumer Electronics Association and are recommended by NOAA, the National Oceanic and Atmospheric Administration). The radio incorporates SAME (Specific Area Message Encoding) technology and also has an auto-tune feature that automatically selects the strongest signal, a very useful feature in a portable radio that may be used when traveling.

Out Of The Box

The 12-522 requires three AA batteries (not supplied), which can be either alkaline or rechargeable, or it can be powered from an optional AC/DC adaptor (also not supplied). The radio has a switch inside the battery compartment, which when in the "rechargeable" position, lets the user connect a 6-volt, 500mA AC/DC adaptor

John Kasupski, W2PIO, is *Popular Communications'* "EmComm Essentials" and "Utility Communications Digest" columnist.



RadioShack Model 12-522, seven-channel handheld weather radio with SAME. (Author photo)

"The volume for both the alert tone and the voice broadcast is adjustable, but even at minimum volume the audio produced by this radio is LOUD! There is no danger of accidentally setting the volume too low and missing an alert message."

(not supplied) to a jack on the left side of the radio. The radio will then display an LED on the front panel to indicate that the batteries are being charged. The LED remains on until the adaptor is unplugged. For using non-rechargeable alkaline batteries, or for powering the 12-522 from the AC/DC adaptor without batteries installed, the switch is placed in the "alkaline" position.

The 12-522 features an LCD display with dark blue characters on a backlit light blue background. The display includes a clock (which has an alarm function) and temperature display, various icons indicating current settings, a battery condition indicator, and of course, alphanumeric displays for the various alert functions. The backlighting automatically turns off after a few seconds to conserve battery power, but comes back on immediately when any of the five controls on the radio is pressed.

Upon removing the radio from the box and installing the batteries, it took me approximately five minutes to set the clock for the correct time and to program the 12-522 to respond to several desired alert events in the two adjacent counties I'm primarily concerned with, referring to the appropriate section of the user manual to accomplish these tasks. Of course, I'm an experienced ham, SWL, and scanner listener, so I'm no stranger to programming radios. Your mileage may vary. Some people may succeed in programming this radio the way they want it only after considerable trial and error. This should not reflect on the radio, however. The 12-522 is a fairly sophisticated device with a comprehensive set of features. It is worth carefully reading the manual if you encounter difficulty.

Radio Controls

Ah, yes, the controls. Two of these are on top

of the radio, next to the non-removable stubby antenna. One turns the power on and off, and also turns the backlighting on when pressed momentarily when the power is already on. The other one switches the radio between HOME and TRAVEL mode. When in HOME mode, the radio operates on the user-selected NOAA Weather Radio channel and responds according to the user-entered settings for alerts. It does not re-scan the seven NOAA Weather Radio channel frequencies if the signal is lost; it simply reports the signal loss. In TRAVEL mode, the radio scans these seven frequencies, locks onto the strongest signal it finds, and responds with a tone alert for any watches, warnings, and advisories received on that channel. If the signal is lost while in TRAVEL mode, the radio will re-scan the seven NOAA Weather Radio channels automatically.

The other three controls are located in a cluster on the front of the radio. The left-most button is labeled WX and toggles the voice broadcast on the current NOAA Weather radio channel on and off, allowing the user to listen to the broadcast at any time. The button on the right is the MENU button, which permits access to the menu items used to program the radio. The center button is a multi-function key, used to navigate the menu items and to adjust the volume on the radio.

The 12-522 comes preprogrammed with the Federal Information Processing System (FIPS) codes for all U.S. counties. The user can select up to a total of 10 counties that the radio will monitor for watches, warnings, and advisories issued by the National Weather Service for those counties. These can be selected from the preprogrammed items, or programmed manually. The radio recognizes 16 warnings, 14 watches, and 21 advisory events, plus two additional advisory events for "unrecognized emergency" and "unrecognized statement." These cover virtually any type of NOAA emergency broadcast one might encounter, from tornado warnings to child abduction emergencies.

Important Alert Features

When an event occurs that the user has programmed the radio to respond to, the radio generates an alert according to the user's selection of either VOICE or TONE alert mode. In VOICE mode, the radio will sound a two-tone alert sound for about eight seconds and begin playing the voice broadcast from the NOAA Weather Radio station being monitored. The voice broadcast plays for about five

minutes, or until an End Of Message (EOM) is received from the NOAA Weather Radio station. In TONE mode, it will produce the alert sound for about five minutes, or until an EOM is received. The radio also produces an audible alert when signal loss occurs when in HOME mode.

The volume for both the alert tone and the voice broadcast is adjustable, but even at minimum volume the audio produced by this radio is LOUD! There is no danger of accidentally setting the volume too low and missing an alert message. Nonetheless, in the event that an alert is missed—or multiple alerts are sent at the same time—the radio will store up to four different alert

events and allow you to scroll through them using the multi-function key.

Sizing It Up

At 6 9/16 x 2 13/16 x 1 7/16 inches (HWD) and weighing only 5.6 ounces, this is a truly portable receiver that fits easily into a jacket pocket, trouser cargo pocket, or can be carried in a woman's purse or on the belt. The radio also has a provision for a wrist strap (not supplied).

The 12-522 retails for \$49.99 and comes a swivel belt clip and the owner's manual. It's quite a good deal for a very good little radio.

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FEMA, FCC Moving Forward On IPAWS

by John Kasupski, W2PIO
W2PIO@verizon.net

“As the development and application of this technology expands, perhaps people will look upon radio and cellular communications towers a bit differently.”

In early December, FEMA and the FCC announced the adoption of the design specifications for the development of the Commercial Mobile Alert System (CMAS), a gateway interface that will enable wireless carriers to provide their customers with emergency alerts and warnings via their cell phones and other mobile devices as part of the Integrated Public Alert and Warning System (IPAWS), the nation’s next generation of emergency alert and warning networks.

CMAS is one of many projects within IPAWS intended to provide officials at all levels of government the ability to send 90-character geographically targeted text messages to the public, including warnings of imminent threats to life and property, Amber alerts, and other emergency messages. CMAS is a combined effort of the federal government and cellular providers to define a common standard for cellular alerts.

The December 7 announcement kicked off a 28-month period, mandated by the FCC in August 2008, for commercial mobile service providers who have elected to participate in the development of the design specifications known as CMAS to develop, test, and deploy the system and deliver mobile alerts to the public by 2012. Those rules require participating wireless carriers to transmit messages with both vibration cadence and audio attention signals, ensuring that persons with disabilities who subscribe to wireless services will also receive the emergency alerts.

In a FEMA press release issued on December 7, FCC Chairman Julius Genachowski said, “Today’s announcement brings us one step closer to ensuring that Americans receive critical emergency alerts and warnings to protect themselves on the go, anywhere, anytime.” Genachowski added that he was looking forward to working with FEMA and the wireless industry to deliver this public safety service to consumers.

The same press release quoted FEMA Administrator Craig Fugate, who said, “Our goal is simple, to give one message over more devices to more people for maximum safety.”

Wireless carriers who participate in CMAS will relay authorized text-based alerts to their

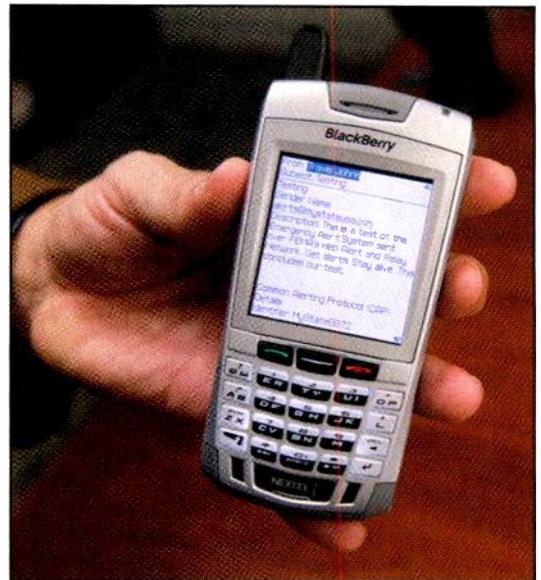


Photo A. An Internet-based textual test alert displayed on a wireless telephone device. (Courtesy Sandia National Laboratories)

subscribers. Although not mandatory, several wireless providers, including T-Mobile, AT&T, Sprint, and Verizon have announced their willingness to participate in the system. The adoption of CMAS is the result of development work done by FEMA, the Department of Homeland Security Science and Technology Directorate, the Alliance of Telecommunications Industry Solutions, and the Telecommunications Industry Association. It is a key component of IPAWS, the nation’s next-generation infrastructure of alert and warning networks, and expands upon the traditional audio-only radio and television Emergency Alert System (EAS) by providing one message over more media to more people before, during, and after a disaster.

Why IPAWS Makes Sense In Today’s Electronic Environment

In the past, the public has depended on radio and television to receive alerts via EAS, but research has demonstrated that today the reach of

radio and TV is less than 40 percent of the population during the workday, and that less than 12 percent of the population is watching TV in the middle of the night. An even smaller number is tuned into the radio (only 5 percent of the population). By comparison, one study showed that the Internet has a 62-percent usage rate.

Furthermore, TV and radio can only target a limited area. And then there's the matter of alerting people who don't speak English, or those with disabilities, such as the estimated 29 million Americans suffering from hearing impairment.

Recognizing the importance of using those methods of distributing emergency alert information that will reach the greatest audience, the IPAWS developers conducted a 2007 pilot program in Alabama, Louisiana, and Mississippi, sending English messages as well as Spanish and Vietnamese translations to 60,000 residential phones over a period of 10 minutes. The program also provided individual alerts to people who signed up via the Internet, posting videos on the Internet and distributing video links to email and compatible cell phones (**Photo A**) to address the issues related to persons with hearing impairment.

The tests proved that adding new media can enhance the government's ability to respond to the public's information-consuming preferences, providing officials with access to more means of communications to ensure that alerts and warnings reach the maximum number of Americans through as many means as possible.

Common Alerting Protocol: The Nuts And Bolts Of IPAWS

The foundation technology for IPAWS is the Common Alerting Protocol (CAP), a data format for exchanging public warnings and emergency information between alerting technologies. Based on XML (Extensible Markup Language, a set of rules for encoding documents electronically), CAP allows a warning message to be consistently disseminated simultaneously over many warning systems to many applications.

The CAP data structure is backward-compatible with existing alert formats, such as the EAS and the Specific Area Message Encoding (SAME) used in NOAA Weather Radio. It adds several new capabilities, however, including flexible geographic targeting using latitude/longitude and other three-dimen-



Photo B. FEMA's Damon Penn at the House IPAWS hearing update in September 2009. (FEMA photo)

sional geospatial representations, multilingual messaging, digital encryption and signature capability, and the capability to include digital images, audio, and video.

Several CAP implementations have been demonstrated by various agencies and companies within the United States, as well as in Australia, the Caribbean, Canada, and Sri Lanka. The International Telecommunication Union (ITU) adopted CAP as Recommendation X.1303 in 2007, and the ITU's Telecommunication Standardization Sector (ITU-T) is studying further evolution of the standard. Implementations have been discussed during Federal regulatory proceedings related to emergency alert systems, including the September 2009 hearings in the U.S. House of Representatives (**Photo B**). The original CAP specifications were also approved in 2004 by the Organization for the Advancement of Structured Information Standards (OASIS), a worldwide consortium that supports the development and adoption of electronic business and Web service standards.

CAP applications can be divided into three major classes, based on the sender and recipient of the message. Most obvious are messages sent by humans that are intended to be received by other humans, but CAP also allows a message created by a human to control a device or machine. It can furthermore allow machines to create CAP messages in response to some condition or in response to other messages, to be sent to other devices or to human users for action or to indicate receipt of a message and completion of a particular automated task.

As the development and application of this technology expands, perhaps people will look upon radio and cellular communications towers a bit differently. Rather than being "ugly" and an "eyesore" folks may come to realize that one day, those towers may help save their lives!

WorldRadio
is now part of the CQ family!

**Here's a peek at a few
of the columns scheduled
for the March issue of
WorldRadio Online**

- **Trail-Friendly Radio**
- **DX World**
- **Rules & Reg**
- **Propagation**
- **Aerials**

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Standardized Phonetics: Get With The Program!

by Kirk Kleinschmidt, NTØZ
kirk@cloudnet.com

“When properly used, phonetics can go a long way toward smoother voice operation and can definitely improve your success rate when trying to break overseas pileups or pass traffic on an emergency net (and everything in between).”

Every now and then, if only to make life interesting, a topic or situation will come up over and over in a short period of time, but in slightly different ways. This week’s “cavalcade of coincidence” was centered around phonetics, so I naturally present it here because phonetics is a perennial topic of interest to hams, beginners and experts alike.

In one incident, I was on the telephone with an administrator at my local medical clinic. When she asked me for my health insurance policy’s “group number,” which begins with the letters XZG, I put on my best radio voice and clearly stated “X-ray, Zulu, Golf...,” followed by an almost incomprehensibly long string of numbers.

She perked right up and immediately asked me if I was a police officer! I didn’t have the heart to remind her that no self-respecting police officer or municipal employee of any stripe would have insurance coverage as crappy as mine, but I focused instead on the phonetics and mentioned that I was a ham operator.

“Oh, yeah,” she said, her voice trailing a bit, “you guys use that stuff, too.”

We do indeed. Although our designated ITU phonetics have more in common with military radio users than the guys driving squad cars, who typically use a male name-based phonetic alphabet (had I been one of them, I would have said “X-ray, Zebra, George”).

Later that same week I was chatting with a couple of brand-new hams who were listening to utility stations (aeronautical services, maritime radiotelephone calls, etc.) on SSB. They noticed that the operators were using different phonetics and asked me which system they should be using as hams.

I mentioned the ITU standards (detailed later in the column and listed in the **Table**), which they had been exposed to at least a little bit when studying for their license tests, but we all had a good laugh about more creative, nonstandard, phonetic alphabets!

To further highlight the topic of the week, one of the new hams had just started working for the

local cable TV provider as a signal leakage inspector. After I jealously played around with his handy new spectrum analyzer, he went on to tell me about how everyone at work sort of makes up their phonetics as they go when exchanging alphanumeric data on the telephone during install and repair calls.

My friend was worried about getting confused (am I a ham today, or a cable guy?), so I suggested

ITU Phonetics

A	Alfa (AL FAH)
B	Bravo (BRAH VOH)
C	Charlie (CHAR LEE)
D	Delta (DELL TAH)
E	Echo (ECK OH)
F	Foxtrot (FOKS TROT)
G	Golf (GOLF)
H	Hotel (HOH TELL)
I	India (IN DEE AH)
J	Juliett (JEW LEE ETT)
K	Kilo (KEY LOH)
L	Lima (LEE MAH)
M	Mike (MIKE)
N	November (NO VEM BER)
O	Oscar (OSS CAH)
P	Papa (PAH PAH)
Q	Quebec (KEH BECK)
R	Romeo (ROW ME OH)
S	Sierra (SEE AIR RAH)
T	Tango (TANG GO)
U	Uniform (YOU NEE FORM)
V	Victor (VIK TAH)
W	Whiskey (WISS KEY)
X	X-RAY (ECKS RAY)
Y	Yankee (YANG KEY)
Z	Zulu (ZOO LOO)

Note: The syllables highlighted in bold are emphasized. These pronunciations were designed for those who speak other languages. The pronunciations given for Oscar and Victor may seem awkward for English speakers from the U.S.

NTØZ		<input type="checkbox"/> QRP 1 Watt <input type="checkbox"/> QRO _____ Watts <input type="checkbox"/> QRP _____ Watts <input type="checkbox"/> Fixed <input type="checkbox"/> QRP 5 Watts <input type="checkbox"/> Mobile / Portable					
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	M	D	Y				
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After being bombarded by emails throughout the entire pre-Holiday shopping season heralding the fantastic sale prices at online specialty printer Vistaprint, I noticed that the company's "postcard" offerings could be made into standard-size QSL cards with a little trimming. I downloaded the postcard design template and fired up an ancient copy of Photoshop 7 to recreate—and update—a favorite QSL card of mine from years past. Wrangling with Photoshop made the project a wash on cost effectiveness, but for \$7 delivered (about \$25 at the regular price), my 100 shiny new QSL cards are printed on high-quality, glossy stock and look fantastic. To transform the squarish postcards into rectangular QSL cards I trimmed off the extra half-inch on the bottom of the cards while watching TV one evening (as planned). See www.vistaprint.com to see if this will work for you. Be sure to wait for a sale (there's always something on sale there).

that he simply use ITU phonetics while at work, too. No problem!

It all comes down to standardization, and whether we're talking about the diameter of plumbing pipes made by different manufacturers, measurement systems used by various countries (a crashed Mars space probe is a shrine to that snafu!) or hams talking on the radio, standardization is almost always a good thing.

We use standardized QSO procedures (RST, QTH, etc.) to make sure our comms are as universal and as understandable as

possible for hams from every country and culture. When properly used, phonetics can go a long way toward smoother voice operation and can definitely improve your success rate when trying to break overseas pileups or pass traffic on an emergency net (and everything in between).

Phone + Etiquette = Phonetics

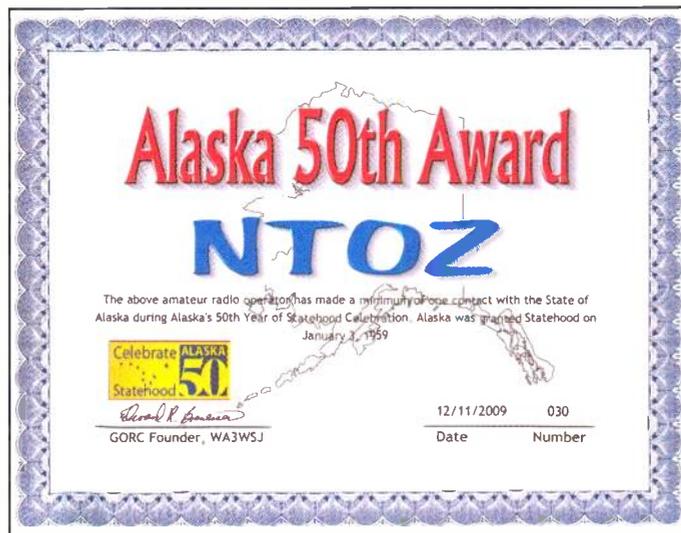
Over the years, several phonetic alphabets have come and gone. As mentioned,

ITU Phonetics Through The Ages

According to a very interesting Wikipedia article on the subject (http://en.wikipedia.org/wiki/NATO_phonetic_alphabet), the international phonetic alphabet used by ITU-subscribing amateur radio societies is also used by NATO, the FAA, ANSI, international maritime organizations, and more! Our phonetic system, Wikipedia says, is a subset of the much older International Code of Signals (INTERCO), which originally included visual signals and one-, two-, or three-letter codes for common phrases.

The first internationally recognized version of what would evolve into today's phonetic alphabet was adopted by the ITU in 1927. Joint international operations during World War II ushered in the Joint Army/Navy Phonetic Alphabet. Watch any old war movie and you'll be sure to hear the phonetics as "Able," "Baker," "Charlie," and so on.

With input and test results from some 31 nations, the version of the alphabet we use today was adopted by the ITU in 1956.



I hadn't qualified for any new operating achievement awards in a while, so when I came across the Alaska 50th Award, given to hams who have worked at least one Alaska ham in calendar year 2009 (honoring the state's 50th year of statehood), I jumped on it! Working KL7, even in the doldrums of the present solar cycle, isn't exactly earth shattering, but I was still reasonably pleased that, in a year of sporadic, casual operating, I had worked four Alaska stations on 80, 40, and 20 meters, all with 5 watts and my indoor attic loop antenna. If I had put a fifth contact in the log my award would have included a postage stamp minted for Alaska's statehood celebration. Oh, well, there's always the state's 75th celebration! The award is sponsored by GORC, the Great Outdoors Radio Club.

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many radio services (police, fire, aviation, etc.) use their own variants. Remember the TV show *Adam-12*? (If you do you're getting old!) Officers Reed and Malloy called in license plate numbers of suspected felons and scofflaws using the same phonetic alphabet that's still used today by the Los Angeles Police Department. "Lincoln, X-ray, Ida..." Phonetics at your service!

Thanks to our country's membership in the International Telecommunication Union, or ITU, hams generally use the ITU phonetic alphabet, which all amateurs should know and are encouraged to use. You're not *forced* to use it, however, and you'll hear a lot of nonstandard lingo on the air to back that up. Many hams devise "cutesy" personal phonetics specifically for their call signs. SSB operators often vary from approved ITU phonetics on occasion, especially in pileups, when many stations might be calling a rare call sign.

"Germany" and "kilowatt"—definitely not on the ITU list—are popular substitutes for Golf and Kilo, respectively. Being longer and stronger words, they're

more likely to be heard under tough conditions. In the push and shove of a pile-up, for example, just the "watt" might get through, and the DX station might come back, "Ending in Kilowatt, go ahead." Some hams think other phonetics sound better in the wacky world of sideband. They may be right, too, but the substitutes are certainly not standard.

So why use ITU phonetics? Language, for one thing. Until Esperanto rises to its prophesied glory, English is still the world's universal language, and your "special" phonetics—the ones you use when you talk to your radio buddies on the local repeater—may not be so catchy to a foreign ear. But even when spoken with a foreign accent, "Uniform," "Whiskey," "Victor," and so on are easily recognizable.

Standardization also helps with speed. Much like learning Morse code, when you hear someone spell his name as "Juliett Oscar Hotel November," you won't simply hear the words, your brain will instantly register them as J-O-H-N, with no middle "translation" step required. Without standard phonetics you

couldn't do that. Stick with ITU phonetics; almost everybody does!

Nobody wants to be saddled by rules for trivial reasons, but useful conventions are something else. We need them for smooth operation and to better our chances of being understood. And there may well be a time in your amateur radio career when you'll need to be understood without delay. If you're providing emergency communications with hurricane debris swirling around you, really *knowing* ITU phonetics may very well save lives—perhaps even your own!

That said, don't get carried away and overuse phonetics when they're not needed. Sure, use them for call signs and use them for names, if required, but don't say everything phonetically, especially when conditions are good and you're using common words.

Smooth Talker

Using standard phonetics is all about maximizing communication quality and increasing information transfer when using a variety of voice comms. In that light there are a few additional steps you can take to further improve your ability to be understood on the other end of a radio connection.

- When conditions aren't good, be sure to speak slowly and distinctly (when using phonetics or plain speech).
- Keep your rig's mic gain set correctly (not too high). Overdriving your transmitter will quickly ruin an otherwise decent voice signal. If your audio is heavily distorted, even ITU phonetics can't help your comms! The same thing goes for your rig's speech processor. Too much compression or clipping will hurt more than it helps.
- Make sure you're "working" your mic correctly. Some mics sound a lot better if you're "talking across" the element instead of speaking directly into the mic. Similarly, some mics are quite sensitive to "plosives" and "breathing." You want good, clear enunciation, not popping sounds and heavy breathing! Try to listen to your own recorded transmit audio to make sure your station is set up properly (and to get used to hearing your own voice).

If you standardize on ITU phonetics right from the start they'll roll off your tongue with nary a second thought—and that's the point, isn't it? Plus, you'll always be able to tell whether your cable guy is a ham!

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It Awakens!

by Tomas Hood,
NW7US, nw7us@arll.net

Sunspot Cycle 24 is certainly alive with intensifying sunspot activity. From November through December 2009, both the number and size of sunspots increased (Figures 1 through 6). While the latter part of November was void of official sunspot regions, by December 9, the sun began to show signs of activity, ending 16 days of zero spots. Sunspot region 1034, as numbered by the National Oceanic and Atmospheric Administration (NOAA), emerged near the eastern limb of the sun. Though small, it belonged to the new Cycle 24 and resulted in an initial sunspot count on December 9 of 13. By December 12, it appeared to be fading, yet on December 13 it increased in spots with a count of 14. Then on December 14 another new sunspot region, numbered 1035, emerged and kicked the sunspot count up to 28. By December 15, its width was seven times greater than Earth's! Over the next

“...on December 14 another new sunspot region, numbered 1035, emerged and kicked the sunspot count up to 28. By December 15, its width was seven times greater than Earth's!”

several days, through December 18, this new Cycle 24 sunspot group rapidly increased in size.

On December 16, the complex magnetic structures within this sunspot region triggered a coronal mass ejection (CME) toward Earth. This massively huge cloud of solar plasma (billions of tons!) arrived about three days later, but did not cause any geomagnetic disturbance. This is one of the down-sides of an increase in solar activity:

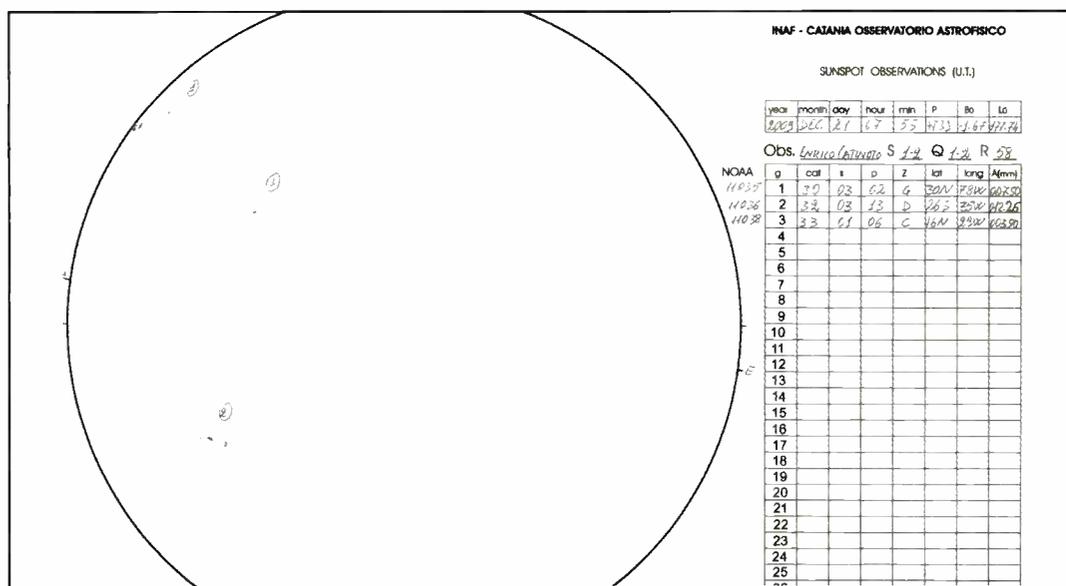


Figure 1. The official Catania drawing of sunspots on December 21, 2009. Note that the solar disc is flipped, so that the left side of the drawing is the western limb, the edge around which sunspots rotate out of view. This drawing shows sunspot groups 30, 32, and 33 as numbered by the Catania Observatory in Italy. There was a flurry of sunspot activity at the end of 2009. (Source: Solar Influences Data Analysis Center, Belgium)

When active sunspot regions breed MCEs, the possible result is geomagnetic storms that counter any positive effect that the increased solar activity may have on radio signal propagation.

Another downside to increase sunspot activity is the direct impact of solar flares. On December 16, region 1035 produced three C-class flares. (For a scale showing the size of C-class flares, refer to www.swpc.noaa.gov/NOAAscales/). During the rest of the period until press time in late December, a number of new C-class flares were produced. These flares result in degradation of HF propagation of radio waves, starting at the lower frequencies if the flare is weak. The stronger the flare, the higher the frequencies affected.

By December 19, the sun kicked into high gear with the total sunspot count climbing to 43, the highest yet in the new Sunspot Cycle 24. This pushed the 10.7-cm flux up to 87 on December 17. Along with the increase in sunspot activity and the higher daily 10.7-cm flux (remaining in the mid-80s) came noticeable changes in shortwave radio propagation. After several days of this increased activity, many paths that were non-existent or weak at best became reliable, and many radio enthusiasts started enjoying exciting DX.

Speaking of size, active sunspot regions are measured in units equivalent to one millionth of the sun's visible hemisphere. Active region 1034 that emerged on December 9 measured 10 of these units, or 10 millionths of the visible solar disc. By December 11, it grew to 20 millionths. With the new sunspot region, 1035, emerging on December 14, the total area of all active regions only totaled 30 millionths. However, 1035 quickly grew in size, and by December 20 the total area of all sunspot regions equaled a huge 330 millionths!

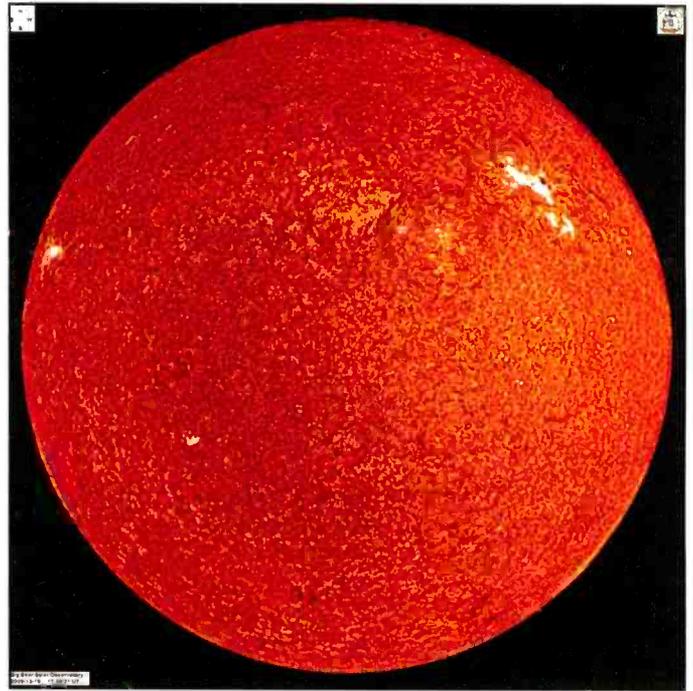


Figure 2. The High-Resolution H-alpha image of the sun on December 18, 2009, showing the very large sunspot region, NOAA Active Region 1035, days before rotating around the western limb of the solar disc. This region birthed many flares, the largest measuring in the "C" size classification (moderate). This one region contributed to a rise in the 10.7-cm solar flux index, which reached the upper 80s during mid-December. (Source: Kanzelhöhe Observatory for Solar and Environmental Research, Austria)



Figure 3. Another view of massively large sunspot region 1035. This "intensity-gram" (IGR) image closely resembles the sun as seen with the naked eye (never look directly at the sun, as it will damage your eyes!). (Source: Solar and Heliospheric Observatory)

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NORTHERN SOUTH AMERICA	29	28	26	24	21	20	18	17	16	15	14	14	13	13	19	21	23	25	26	27	28	28	29	29	
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SOUTH PACIFIC	29	30	30	29	27	25	23	21	19	18	17	16	15	14	14	13	15	14	14	19	22	25	26	28	

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NORTHERN SOUTH AMERICA	26	26	24	22	20	19	17	16	15	14	13	13	12	15	18	20	22	23	24	25	26	26	27	27
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CHINA	17	15	12	10	10	9	9	9	9	8	8	10	15	12	10	10	9	9	9	8	8	8	9	15
SOUTH PACIFIC	30	29	27	25	23	21	19	18	17	16	15	14	14	16	15	14	14	13	19	23	25	27	29	30



Figure 4. This “magnetogram” image reveals the magnetic structures of sunspots and other activity on the sun. There are a lot of magnetic disturbances, including the active region 1035. (Source: Solar and Heliospheric Observatory)



Figure 5. The white-light image of active region 1035. Notice the size comparison in the lower right corner, where the size of Jupiter and Earth are given. This sunspot region (1035) is larger than Earth! (Source: Solar and Heliospheric Observatory)

At press time, three additional sunspot regions had emerged: 1036, 1037, and 1038. Region 1037 quickly ended, but the others continued to help keep things exciting. Perhaps now we can start to accept the idea that the new cycle is well underway. With that comes overall improvement on the higher frequencies in the HF shortwave spectrum.

HF Propagation

March is one of the optimal DX months. As the Spring Equinox approaches, the gray-line begins to run straight North and South. With the return of sunlight to the polar north, north to south openings on 11 through 25 meters are improving. However, since we are still at the very beginning of the new solar cycle, openings on east/west paths on higher frequencies will be short, if they occur at all.

Sixteen meters will still stay open into the evenings. You'll occasionally find 16 meters open all night long into regions in the opposite hemisphere. Daytime paths will not significantly degrade until midsummer. You'll experience early closures if you live closer to the North Pole, if any openings occur at your latitude.

Twenty-two and 19 meters will remain in excellent shape. Both short- and long-path circuits are reliable and solid. All nighttime paths are open during March, though they will be short and weak. The prime evening hours in the United States are sunrise hours across Russia, Africa, and both the Near East and Far East. Expect occasional short- and long-path DX from these areas of the world.

Between sunset and midnight, you can expect occasional DX openings on all bands between 15 and 41 meters. Conditions should favor openings from the east and south. These bands should peak for openings from Europe and Africa near midnight.

From midnight to sunrise, expect optimum DX conditions on 31 through 90 meters, and occasionally, 120 meters. Conditions should favor openings from the west and south. Some rather good openings on 19 and 22 meters should also be possible from the south and west during this time.

Noise levels are slowly increasing as we move toward the spring season. Geomagnetic storms will increase, disrupting the mid- and high-latitude ionosphere. During the spring equinox, Earth's magnetic field is sufficiently perturbed by solar wind particles flowing into the auroral zone (between 50 and 70 degrees north geographic latitude) to cause the ionosphere to be depleted. During days of high solar activity (coronal hole mass ejections, high-speed solar winds, flares, and so on), an increase in aurora and geomagnetic storms will shut down many paths, while VHF openings off the auroral zone may increase.

Daytime maximum usable frequencies continue to drop and the planetary A index (A_p) is on the rise, so take advantage of the current conditions, and hunt for those weaker signals. Look for gray-line DX in the mornings and evenings on lower frequencies. Transequatorial propagation will be more likely toward sunset during days of high solar flux and a disturbed geomagnetic field (look for days with an A_p greater than 15, or a planetary K index (K_p) greater than 3). Sporadic-E openings should be increasing, for shorter-range openings.

VHF And Above

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

Auroral activity often occurs during periods of radio storminess on the HF bands. Look for days where the A_p is climbing and when the K_p reaches 4 or higher. These are the

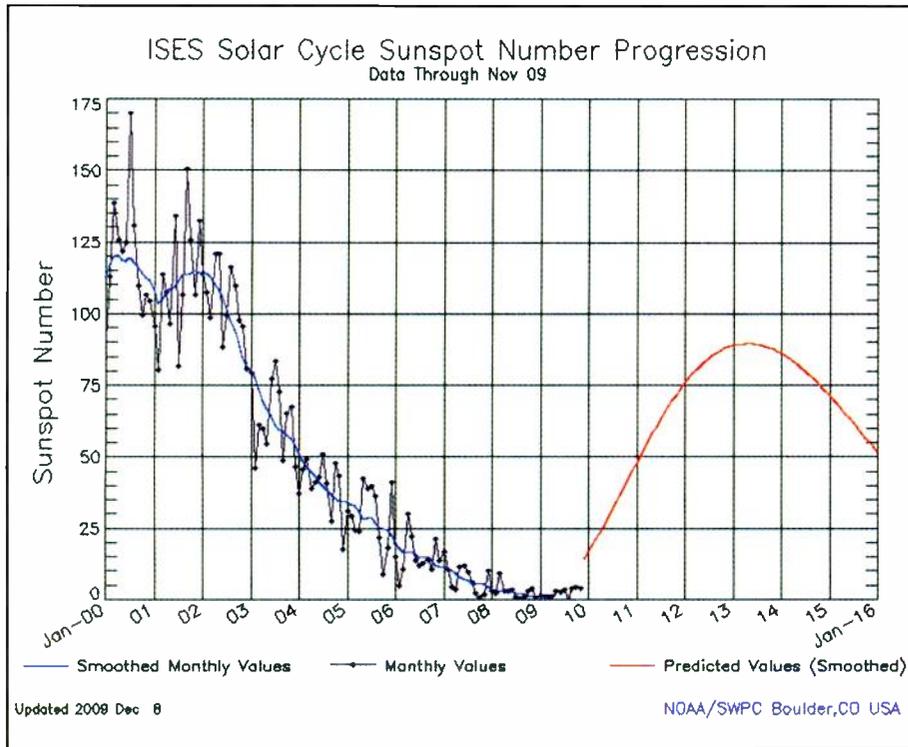


Figure 6. This graph charts the monthly progress of solar cycle activity. The left side of the chart plots Cycle 23 through the end of the cycle at the middle of the chart. Notice now how the progression is slowly, yet clearly, rising again in the new cycle, Sunspot Cycle 24. (Source: Space Weather Prediction Center, NASA)

days on which VHF auroral-type openings are most likely to occur.

Current Sunspot Cycle 24 Progress

The Dominion Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-cm observed monthly mean solar flux of 73.6 for November 2009, up from October's 72.3, continuing a slow but steady monthly rise. The 12-month smoothed 10.7-cm flux centered on May 2009 is 69.7. The predicted smoothed 10.7-cm solar flux for March 2010 is about 79, give or take about 9 points.

The Royal Observatory of Belgium reports that the mean monthly observed sunspot number for November 2009 is 4.2. The lowest daily sunspot value during November 2009 was zero, occurring on November 1-4, 7, 8, 12, 17, 23-30. The highest daily sunspot count for November was 17 on November 19. The 12-month running smoothed sunspot number centered on May 2009 is 2.3. A smoothed sunspot count of 20 is expected for March 2010, give or take about 9 points.

The observed monthly mean A_p for November 2009 is 3. The 12-month smoothed A_p index centered on May

2009 is 4.1. Expect the overall geomagnetic activity to be quiet during most days in February. At the time of writing, the forecast holds that March will be an active month with occasional geomagnetic storminess due to recurring coronal holes and possible CMEs (if flaring occurs from possible sunspot activity). Visit the last minute forecast page at http://hfradio.org/lastminute_propagation.html for an up-to-the-minute propagation condition forecast that incorporates the geomagnetic conditions expected based on the 27-day rotation of the sun.

I'd Like To Hear From You

I invite you to visit my online propagation resource at <http://propagation.hfradio.org/>, where you can get the latest space data, forecasts, and more, all in an organized manner. If you have a cell phone with Internet capabilities, try <http://wap.hfradio.org/>.

Do you have a question that you'd like me to tackle in this column? Drop me an email or send me a letter, and I'll be sure to cover it. I'd love to hear any feedback you might have on what I have written.

Until next month, 73 de NW7US, Tomas Hood

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The Parallel Universe Of International DXing

by Bruce A. Conti
BAConti@aol.com

Adjacent channel interference, propagational fading, and a lack of station identifications are challenges faced by all long-distance AM radio broadcast listeners (DXers) when attempting to log exotic signals. However international DXers are confronted with an additional challenge: the language barrier. Even if a language is familiar, copying audio in a non-native language is often difficult at best through noise and interference. Sometimes the safest bet for identification of a received signal will be through what's commonly referred to as a parallel; a simultaneous relay or simulcast, a network of stations on multiple frequencies, or an online live streaming audio Internet feed.

One listener's search for parallels led to three online Internet services that have become particularly popular among DXers: DeliCast.com, www.listenlive.eu, and www.GlobalTuners.com. Accomplished DXer Jim Renfrew in upstate New York shares some of his experiences with "Broadcast Technology" as we investigate the parallel universe of international DXing.

"One listener's search for parallels led to three online Internet services that have become particularly popular among DXers: DeliCast.com, www.listenlive.eu, and www.GlobalTuners.com."

DeliCast.com

DeliCast is essentially a huge online database of direct links to television and radio station Internet feeds worldwide and is perhaps the largest online directory of its kind. Nearly 10,000 radio stations from all around the world are listed, including well over 3,000 stations in the United States alone. Looking at the website, you see television stations listed first. Selecting "Radio" gives you access to the directory of radio stations. The listing will appear to be in no particular order, but is actually sorted by popularity according to DeliCast tracking of the number of hits. The list can be narrowed by nation and sorted alphabetically by radio station name, ratings, or popularity. Each streaming audio link is identified by the station name and includes the bit rate, a five-star rating, and an alternative "www" link to the station's home page. After selecting a nation, a station search can be further narrowed by selecting a city or category (format). DeliCast lists both over-the-air simulcasts and Internet-only stations. Lists are divided into pages at 20 radio stations per page.

Though listening is primarily through a convenient on-site DeliCast player, some links color-coded in yellow use an off-site media player provided by the radio station. Once a streaming audio link is established, you may rate the station, giving it one to five stars. "Ratings are the result of voting (there is a small dropdown form after you click on the station), and the popularity is the function of number of clicks over a 24h period," according to Tomas Lenz at DeliCast. "No multiple votes/clicks are counted for the same user (same IP address)."



The DeliCast database contains links to nearly 10,000 radio stations, shown here with the first 20 of 112 listed stations from Spain.

listenlive.eu				
European radio stations streaming live on the internet				
Home	Spain			
New additions				
Contact				
Radio station	Location	Listen Live	Format/Comments	
RNE Radio 1	Madrid	20 Kbps 64 Kbps	News/information/features	
RNE Radio Clásica	Madrid	32 Kbps 128 Kbps	Classical/cultural programming	
RNE Radio 3	Madrid	32 Kbps 128 Kbps	News/music for young people	
RNE Radio 4	Barcelona	16 Kbps 64 Kbps	News/music/features (Catalan)	
RNE Radio 5	Madrid	20 Kbps 48 Kbps	News	
Radio Exterior de España	Madrid	16 Kbps 64 Kbps	External service	
Ace FM	Alhaurin El Grande	128 Kbps	Current/Classic Hits (in English)	
Activa FM	Marrá de Altea	128 Kbps	Pop	
Alzira Rádio	Alzira	32 Kbps	Local service	
AMC Radio 5	Murcia	64 Kbps	Diverse local programming	
Antena-6	Madrid	64 Kbps	Top 40	
Aragón Radio	Zaragoza	128 Kbps	Music/news for "Aragon" region	
Atlantis FM 89.2	Tenerife	64 Kbps	Pop/rock (English)	
Bay Radio	Javea	64 Kbps	Adult Contemporary (in English)	
The Beat	Costa del Sol	32 Kbps	Top 40 (in English)	
Cadena 100	Madrid	64 Kbps	Adult Contemporary	

The listenlive.eu directory, shown here for Spain, offers a selection of available bit rates for each listing.

Radio Banovina from Croatia was listed as the most popular station on our last visit to DeliCast, followed by Narodni Radio also in Croatia, and Vibre Bogotá from Colombia. The service is free to users, supported by Google ads.

"DeliCast.com requires some self-orientation, that's for sure," said Jim Renfrew in his report to "Broadcast Technology." He continues:

The initial list of radio stations is in random order, so I immediately re-list it according to "Name" on the tab above the list. Then I have to guess which page to head for: say RNE 1 [Radio Nacional de España, Radio 1], is going to be about page 12 or so in the listings for Spain. In some cases the name we all know for the station may be slightly different from the way DeliCast names it. Looking for Alger Chaîne 1 from Algeria required me to find Radio Algerie 1 as the link to hit. Some are less obvious. The Egyptian General Programme as listed in the *European Medium Wave Guide* and *World Radio TV Handbook* is "Radio Cairo" on DeliCast. Russia is also that kind of case. Do you look for Radio Rossii, Radio Rossiya, Voice of Russia, or Golos Rossiya?

Listenlive.eu

Listenlive.eu is a Web radio directory showcasing over 4,000 radio stations from across Europe streaming live on the Internet. You may browse the directory by country or by genre, listed alphabetically by station name with links to the home page and streaming audio, though

accommodations are made for key stations to top some listings.

"Listenlive.eu is better organized than DeliCast because the list is shown alphabetically from the start. Except in the case of Spain the RNE stations are listed ahead of everything else—I guess government is privileged over commercial," said Renfrew of his experience. "Listenlive also gives you choices in bit rates with the individual stations."

The choice of links to different streaming audio bit rates available from radio stations is advantageous over DeliCast for the listener with limited bandwidth or a dial-up connection. Bit rates above 32k may require a broadband connection; otherwise constant buffering interruptions may occur on a slow Internet connection.

In other respects, listenlive isn't as versatile as DeliCast. While the links on DeliCast for the most part are accessed through its own on-site media player, listenlive requires a variety of media software, including Windows Media, Real Audio, Flash Player, aacPlus, Ogg Vorbis, or AOL Media Player, for compatibility with the streaming audio link provided by an individual radio station. However, if necessary, the media software required for listening to a specific station can usually be downloaded for free via the radio station website.

Listenlive is limited to AM/FM broadcasts with streaming audio, and does not include Internet-only radio. Though listenlive doesn't rate the radio stations like

DeliCast, a few are highlighted on the home page. The listenlive.eu top picks are Radio 1 Slovenia featuring Top 40 hit music, Antenne from Austria with pop/oldies, classical music on Catalunya Música from Spain, and the Netherlands' Radio 10 Gold oldies. Listenlive is a free service offered by European radio enthusiast Mike Dean without any advertising.

Global Tuners

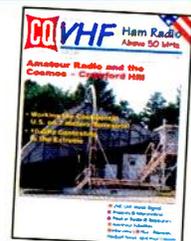
"Some stuff just isn't there to be found on DeliCast and listenlive.eu," reports Renfrew of his ongoing search for parallels, saying:

I never found a webstream to match China Radio International programs heard on 702 Monaco or 963 Finland. When I tentatively had Syria on 783 kHz, the Radio Damascus audio stream sounded like a scratchy skipping record. I checked back several days later, same thing. The IT department must have been on vacation. In these cases I had better luck getting a parallel by using Global Tuners (www.globaltuners.com).

Global Tuners offers access to remotely controlled radio receivers worldwide via the Internet. You can tune in and listen live using receivers located in places like Australia, Finland, Hong Kong, and

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This Month In Broadcast History

75 Years Ago (1935)—*Radio-Craft* magazine featured a one-tube regenerative receiver construction project that could be built from \$1 worth of parts. The Radiobar Company of America advertised the Radiobar floor model as a handsome piece of furniture and a fine radio. But wait...there's more: The Radiobar top unfolded to serve as a cocktail bar, complete with glassware and decanters!

50 Years Ago (1960)—President Eisenhower approved a CIA plan for covert actions against the Castro regime in Cuba, which included an "opposition" radio station to be located on Swan Island off the coast of Honduras. 890 WLS Chicago dropped the *Prairie Farmer Barn Dance* show in anticipation of the switch from country music to a rock 'n' roll format with a lineup of disc jockeys that included the legendary Dick Biondi from WKBW Buffalo.

25 Years Ago (1985)—FCC General Docket 79-144 adopted a safety standard for human exposure to RF energy emitted by amateur radio and broadcast licensees.



Venezuela. Global Tuners provides an on-site user interface for receiver control that's operated like the typical front panel of a general coverage communications receiver, complete with a tuning dial, push buttons, and digital display. The user may change receiver settings such as bandwidth, AM/SSB/CW/FM modes, attenuation, AGC, frequency, and volume. It's like DXpeditioning around the world without ever leaving home. The service is free but requires registration with a user ID and password to be issued before access to receivers is granted. DXers are encouraged to connect their receivers to Global Tuners and are given extra privileges in return.

Regarding this service, Renfrew explains:

Global Tuners has its own learning curve. You have to figure out which radios are equipped for medium wave (many are not), and then be prepared to skip around until you find an available receiver. "Hijackjng" a radio that someone else is using is frowned upon and may be grounds for expulsion from the group. You also have to figure out which buttons to push to get the best sound, bandwidth, mode, etc. I found the hard way that the "Best Quality" option is always the best. I was thinking lower quality would get the signal to me faster, but it typically froze up.

In some cases, it simply works best to go to the official webpage of a radio station to find the best audio stream. But then you have to be careful that you are not getting a podcast instead of the live audio. If everything's in English it can be figured out, but sometimes with odd languages you just have to guess. For example, the little speaker icon on a radio station webpage could mean several things. I have a shortcut that allows me to translate webpages into English, but this is rarely worth doing. The translation either doesn't work at all or comes up with some very odd phrases.

"Live Feed" = "Food Not Yet Dead" (I made that one up).

And, like with American Web audio, the audio stream sometimes starts with an advertisement that is not part of the live stream to follow. On top of this you also have to hope that the Web audio delay is somewhat in sync with what you're hearing on the radio; five or 10 seconds is manageable, but 30 or 60 seconds delay makes it very difficult unless the music is distinctive.

Oh, did I mention that all of this is going on while trying to DX and waiting for webstreams to kick in rather than freeze, during which a once-strong signal may then fade away? Often hit or miss!

Shortwave Parallels

If an Internet connection is unavailable, then it's time for Plan B: shortwave parallels. In the United States, shortwave is reserved solely for international broadcasting; in other parts of the world domestic AM/FM radio stations are allowed to simulcast on shortwave as well. The accompanying list shows some common shortwave parallels for AM broadcast band stations. The list is by no means all inclusive, but does offer some of those frequencies most widely reported by DXers as useful parallels. Not all frequencies operate 24/7; consult the 2010 *World Radio TV Handbook* for more details.

Broadcast Loggings

Although so many radio stations are now just a mouse click away via streaming audio on the Internet, there's still nothing like the thrill of the hunt for distant signals over the airwaves. This month's selected loggings feature reports

Common Shortwave Parallels

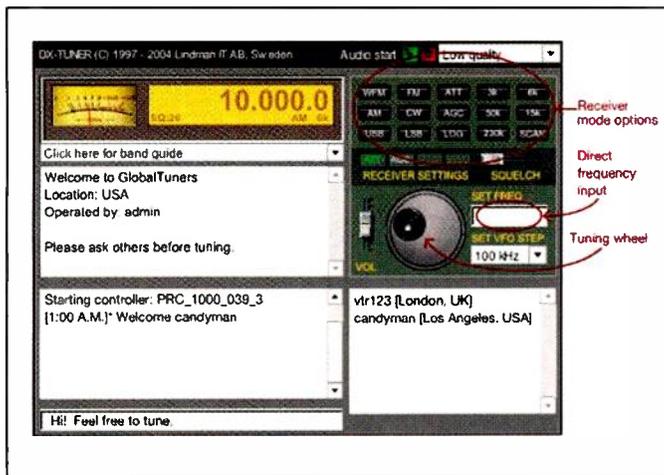
- Algeria**
RASD 1550, 6300
- Canada**
CBC Radio One 640, 6160
- China**
CNR1 639, 945, 1134, 1377, 1593, 4800, 5030
- Croatia**
Hrvatski Radio 1134, 3985, 6165, 7375
- Cuba**
Radio Rebelde 600, 670, 710, 1180, 5025
- Egypt**
ERTU 819, 6290
- Germany**
Deutschlandfunk 549, 756, 1269, 1422, 6190
- Greece**
ERA 1404, 1494, 1512, 7475
- India**
AIR 1566, 5010, 5040
- Israel**
Galei Zahal 945, 1224, 1368, 6973
- Mauritania**
Radio Mauritanie 783, 4845
- Mexico**
Radio Educación 1060, 6185
- Moldova**
Voice of Russia 1548, 5940
- Saudi Arabia**
BSKSA 594, 1521, 9555, 9870
- Sudan**
SRTC 1296, 7200
- Sweden**
Radio Sweden Int'l 1179, 5850
- Vatican**
Radio Vaticana 1530, 1611, 4005, 5885, 6185, 7250
- Vietnam**
Voice of Vietnam 729, 783, 5925

Frequencies in kilohertz

of signals identified with the help of parallels. Longwave from Iceland was a hot target, too! All times are UTC.

171 Radio Rossii, Bolshakovo, Kaliningrad, heard at 2112 good; Russian language talk on top of the channel with music underneath. The music seemed to parallel Morocco on 9575 kHz. (Barstow-MA)

189 Ríkisútvarpid, Gufuskálar, Iceland, at 0536 a very beautiful '80s Icelandic melodic new wave track followed by an instrumental techno-dance cover version. Very good, almost excellent! (Chiochiu-QC) At 0956 a woman in Icelandic, then top of the hour theme



The Global Tuners virtual receiver interfaces with real radios located around the world.

music into presumed news. Excellent Barcalounger copy. (Black-MA) 1050 through 1103 UTC a good signal at this late hour with rock music including Bon Jovi's "You Give Love a Bad Name." At 1057 heard a long announcement in Icelandic followed by news at 1100. Back to music at 1103 as the signal faded when the sun finally rose over Iceland. I like to call this "Breakfast with Iceland." (DeLorenzo-MA)

530 Radio Rebelde, Cuba, at 1033 parallel 710 kHz and other Rebelde outlets with a man in Spanish. Earlier approaching 1000 UTC noted mixing with co-channel Radio Enciclopedia and RVC. (Black-MA)

531 Kringvarp Føroya Útvarpid, Akraberg, Faroe Islands, at 0600 pop music leading up to the hour was parallel Listenlive.eu web audio, but the pips I heard were not on the Web program, so they may have been from co-channel Spain instead. (Renfrew-NY) At 2138 fair atop channel with Eagles tune "The Best of My Love," parallel to web-stream. (DeLorenzo-MA)

531 RNE5 Spain, at 0049 one of the most common transatlantic signals this season, music at this time parallel DeliCast Web audio. (Renfrew-NY) At 2130 fair, topping co-channel Faroe Islands and Algeria; time pips, news by man and woman in Spanish, and two "Radio Cinco" IDs. (DeLorenzo-MA)

585 RNE1 Madrid, Spain, at 2115 fair; news by man and woman in Spanish with occasional music bridges parallel to 531, 621, and 639 kHz. (DeLorenzo-MA)

594 Radio Sim, Muge, Portugal, at 0614 music parallel Web audio. Previously logged as Radio Renasçenca. (Renfrew-NY)

603 RNE5 Spain, heard at 0446 several speakers, a Coca Cola ad, music by Depeche Mode, and pips on the hour parallel Web audio. (Renfrew-NY)

621 RTBF Wavre, Belgium, heard at 0624 heard this morning with French talk and music, parallel Global Tuners receiver in Breda, Netherlands. I'd been hoping to catch this one for some time! (Renfrew-NY)

648 BSKSA Jeddah, Saudi Arabia, at 2130 parallel 1521 kHz with a man in Arabic. Fair, under co-channel Spain. (Black-MA)

648 RNE1 Badajoz, Spain, heard at 0000 fair; time marker and fanfare into news parallel 684, 747, and 774 kHz. (Conti-NH)

702 RMC Col de la Madone, France, at 2227 French talk with music, China Radio International Web addresses given before the top of the hour for French and Italian listeners, parallel Global Tuners receiver in Rome. (Renfrew-NY)

720 RNE5 Finca España, Canary Islands, at 0100 surprisingly good; time marker and fanfare into "Radio Nacional de España, Informativos" parallel 639, 648, 657, and 684 kHz. (Conti-NH)

738 RNE1 Barcelona, Spain, at 0028 music and talk parallel Web audio. Not easy to hear this one due to 740 CFZM Toronto. (Renfrew-NY)

783 Radio Syria 1, Tartus, Syria, monitored at 0300 Koranic vocals through the hour, then multiple cycles of short stringed interval signal, "Guardians of the Homeland" through 0302, verified via Interval Signals Online. Interference too heavy on 828 kHz for parallel. (Black-MA)

864 France Bleu, Villebon-sur-Yvette, France, at 0140 good; Saturday night disco program, Andrea True Connection "More, More, More" among the hits. (Conti-NH) At 2217 "après-match" phone calls parallel Web audio. (Renfrew-NY)

882 BBC Radio Wales, Washford, United Kingdom, at 2109 fair, battling co-channel Spain/Canary Islands; instrumental and vocal Celtic music parallel to Web audio from DeliCast. Web audio only a few seconds behind 882 audio making parallel effort very simple. (DeLorenzo-MA)

909 VOA Sebele Pikwe, Botswana, at 2100 end of English transmission, sign-off with, "This is the Voice of America, Washington D.C., signing off," and "Yankee Doodle." Fair under co-channel BBC Radio 5 Live. (Black-MA)

963 RTT Tunis, Tunisia, at 2252 while digging for Spain I found Middle Eastern pop music instead, quickly paralleled with the Web audio on DeliCast. MW country #66. (Renfrew-NY)

981 RTVA Chaîne 2, Algiers, Algeria, at 2100 Arabic music and singing. Top of the hour pips (5 regular and last higher pitch), theme music per Interval Signals Online, then man in Arabic-accented French. (Black-MA)

1134 Glas Hrvatske, Zadar, Croatia, at 2040 good; pop music parallel 6165 kHz. (Conti-NH) At 2327 noted with English programming parallel shortwave 7375 kHz, though the mediumwave signal was stronger by far. (Renfrew-NY)

1179 Radio Sweden International, Sölvesborg, Sweden, at 2030 good with distinctive interval signal, ID in English into program in Russian. (DeLorenzo-MA) At 2200 good; interval signal, "Radio Sweden, Stockholm," and news/talk in Swedish parallel 5850 kHz. Then at 2230 interval signal and ID into English program. 5850 kHz signed off. (Conti-NH)

1260 KGIL Beverly Hills, California, at 2329 adult standards with big-band accompaniment, ID, "...on Retro 1260." Very strong for a moment, then it was gone, only making a few reappearances between 2330-2400, but never as strong. First time heard so early and with this new format. (Barton-AZ)

1260 KTRC Santa Fe, New Mexico, at 0900 "1260 KTRC" bubbled up out of the mumble jumble, silence, then the signal suddenly ramped up to S9 with talk host interviewing U.S. soldiers regarding Afghanistan. The signal held at that level for a good half hour. (Barton-AZ)

1330 KXLJ Juneau, Alaska, sent a nice handwritten folding QSL card received in 63 days for a CD report, signed Jacob Caggians-GM, who mentioned that this is their first report from North America, as all other reports are from Finland, Sweden, and Norway. Alaska QSL #61, MW QSL #3009, and all three Juneau radio stations now heard and QSLed, too. (Martin-OR)

1394.82 TWR Filakë, Albania, heard at 2158 good; contact info with background folk guitar instrumental. 2200 one cycle of interval signal and off immediately. Presumed carrier from 1395 Big L noted after, but without readable audio. (Conti-NH)

1467 TWR Roumoules, France, at 2300 one cycle of TWR interval signal, carrier momentarily off, then back on with English program. (Conti-NH)

1521 BSKSA Duba, Saudi Arabia, at 1926 fair; a man in Arabic through 1520 WTHE splatter, parallel to 9555 and 9870 kHz. At 2:26 p.m. EST, this is my earliest TA audio ever—1 hour 46 minutes before local sunset. (DeLorenzo-MA)

Thanks to Roy Barstow, Rick Barton, Chris Black, Bogdan Chiochiu, Marc DeLorenzo, Patrick Martin, and Jim Renfrew. Mediumwave DX conditions continue to be hot while solar activity remains cool. Now's the time to tune in, then check in and let everyone know what you're hearing.

Until next time, 73 and Good DX!

The State Of The Hobby— UTE Monitoring Past, Present, And Future

by John Kasupski,
KC2HMZ,
kc2hmz@verizon.net

Owing to the three-month lead time on production of *Pop'Comm*, I'm writing this column in December 2009. This makes it roughly 11 years since I was first enticed in earnest into the hobby of utility station listening, in December 2008. Back then, Richard "R.D." Baker, who was at the time also writing this column, was one of the pillars of the Worldwide Utility News (WUN) club and had started a contest for WUN members during the week between Christmas and New Year's Day. Whoever logged the most utility stations during that week would receive a free copy of the WUN CD for that year.

I had dabbled in a bit of utility listening prior to that, mainly monitoring USCG and USAF GHFS transmissions (**Photos A and B**), but I'd

"Back [in 1999], ALE (Automatic Link Establishment) was primarily an annoyance to me as a utility listener, and I regarded it as little more than a collection of funny-sounding noises that interfered with my ability to copy USB voice transmissions..."

never bothered logging what I heard. I was just a casual listener at that point. R.D.'s contest changed all that. In order to be active in the contest, you had to log your catches and email them to R.D., and I spent several nights searching out



Photo A. USCG HH-60 Jayhawk helicopters on the flight line at Air Station Kodiak, Alaska. (USCG Photo)

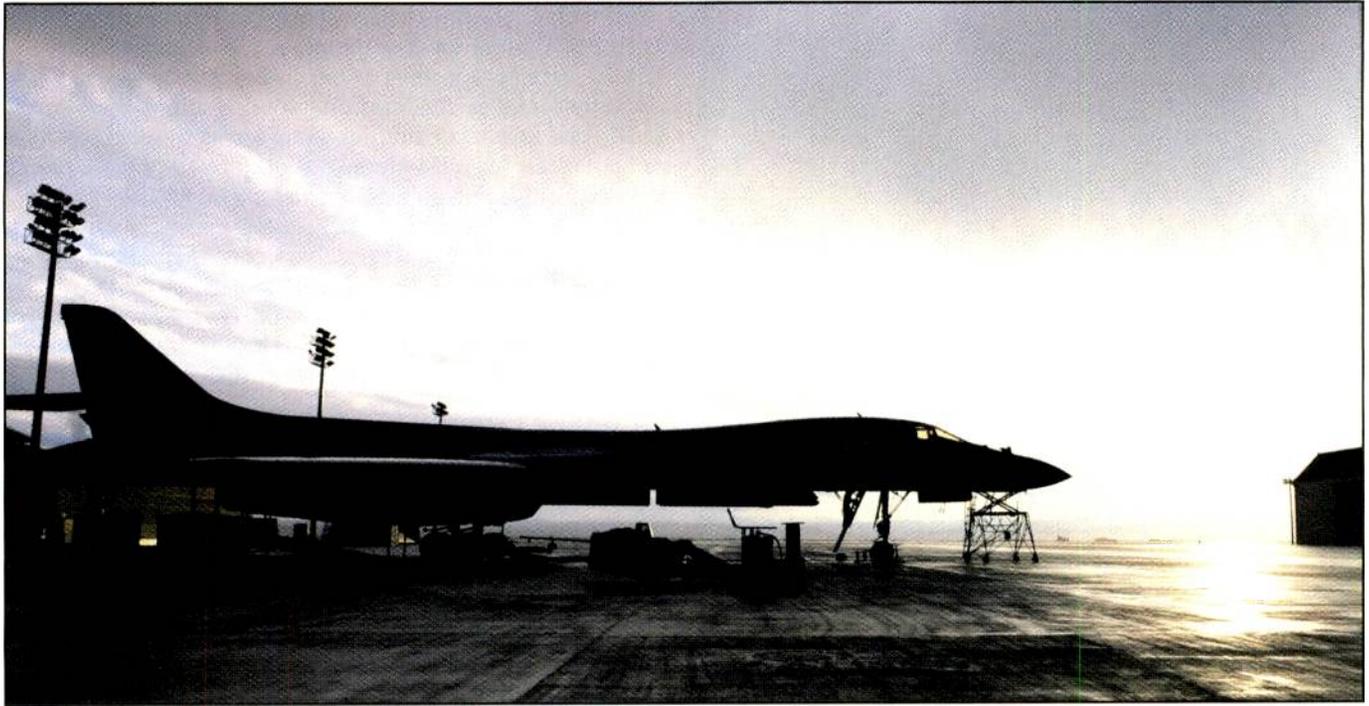


Photo B. USAF B1B bomber on the flight line at Ellsworth AFB, South Dakota. (USAF Photo)

new stations to add to my logs. I ended up finishing second in the contest, which I suppose wasn't too shabby given my lack of experience in utility listening at the time, but it wasn't quite good enough to earn me that free WUN CD. In retrospect, though, I received what has proven to be an even better prize: an interest in utility listening that has now lasted more than a decade.

By May 1999, I'd invested in a spiral-bound notebook and, for the first time in my life, began regularly logging utility intercepts. I still have that first notebook, and opened it to a random page while writing this column. That page listed my logs for August 4, 1999. I noted that on that day, I filled an entire page and 3/4 of another one of the college-ruled notebook (the kind with the skinnier lines) with loggings of GHFS (now known as HF-GCS) transmissions on 11175, 6739, and 8992 kHz. The stations logged included ASCENSION, ANDREWS, CHILL 12, REACH 280, FAIRCHILD RADIO, REACH 6007, SIGNPOST, MCCLELLAN, ARCHITECT, HAWK 86, INCIRLIK, HITMAN 22, HICKAM, CHILL 11, S4JG, KING02, THULE, REACH 8090, GHOST 602, ANDERSEN, and LINE MAINTENANCE, as well as a couple of stations that I failed to identify (one of which was almost certainly either CROUGHTON or INCIRLIK again)—all on a single day. By

February 2000, the notebook was full and I had to start another one.

Looking Back On Utility Monitoring In 1999

Now, it didn't hurt a bit that this was during the high point of the last sunspot cycle. That undoubtedly had a lot to do with the fact that I logged seven GHFS ground stations, including one in Turkey, one in Greenland, two in the Pacific region, one in the south Atlantic region, and two on opposite ends of the continental United States, all within the span of a few hours.

Back then, ALE (Automatic Link Establishment) was primarily an annoyance to me as a utility listener, and I regarded it as little more than a collection of funny-sounding noises that interfered with my ability to copy USB voice transmissions on frequencies like 4724.0, or on 11178.0 where stations such as GANTSEC, PIRHANA SIERRA, and ORANGE GUARD were frequently logged, engaged in drug interdiction operations as part of a multinational task force in the Caribbean. I can recall often tuning to another frequency because strong ALE transmissions were making it impossible to copy the voice transmissions underneath.

While ALE was a hindrance, ANDVT

(Advanced Narrowband Digital Voice Terminal) was something I learned to tolerate—for hours if necessary—because eventually the operators would switch back to clear USB voice communications. Often they would then forget they were no longer using “green comms” and let slip a clear station ID (such as “Coast Guard Cutter *Galveston*, uh-hh, I mean TOMAHAWK, this is SHARK 21, over...”) or some other juicy intel nugget that supplied a key piece of information in the struggle to figure out who was who and what they were up to.

Today...And Tomorrow?

Today, of course, I have the capability to decode ALE transmissions and identify many of the stations from which they originate. As mentioned, the GHFS has become the HF-GCS and has an ALE component as well as the familiar USB voice net. With the sunspot cycle in a low period, some of the HF-GCS ground stations aren't as easy to log. Some of them, such as INCIRLIK and THULE, have been closed and are gone forever. But other, new stations have sprung up to provide new targets for adding to the logbooks. Some of the offshore drilling platforms in the Gulf of Mexico that I used to log on HF were destroyed by Hurricane Katrina (Photo C) and are gone. Sadly,



Photo C. Offshore oil rig washed aground by Hurricane Katrina. (NOAA Photo)

even WUN itself is gone, but the Utility DX Forum (UDXF) on Yahoo has taken its place as the premier email exchange for UTE listeners worldwide.

The drug interdiction operations noted back then continue on the COTHEN (Customs Over The Horizon Enforcement Network) frequencies and elsewhere, making liberal use of ALE (and ANDVT) as well as clear USB voice. Many of the other targets I used to log frequently 10 years ago are also still around—especially aeronautical MWARA (Major World Air Route Area) and VOLMET (from French for “flying weather”) stations—though some are rarely heard now because of the difference in propagation, especially as you get up into the higher frequencies (shorter wavelengths). However, by mating our computers to our radios, we can now use HFDL (High Frequency Data Link), the HF equivalent of ACARS (Aircraft Communications Addressing and Reporting System), to log additional aircraft and thus fill in some of the blank lines the sunspot cycle might otherwise leave in the logbook.

The trend here is somewhat obvious, and comes as no surprise. Digital transmission modes have taken on a prominent role in utility communications, and since the march of technology is as relentless as the march of time, we can probably expect to find ourselves in an “arms race” of sorts, scrambling to keep up with the advances in digital communications and to acquire and maintain the hardware and software needed to decode these transmissions. We can expect new digital networks to keep popping up. Some of these will be secure systems, but fortunately for us, the technology to assemble secure, interoperable digital communications nets is rather pricey, and that level of security isn’t always a necessity. Therefore, we can safely assume that there will be enough decodable digital traffic on HF to keep us happily filling pages in our logbooks as we head into the next decade.

Finally, there’s that pesky matter of HF propagation. Although the current state of propagation on the HF bands is by no means as conducive to utility listening as it was a decade ago, the sun will wake up from its current slumber sooner or later. When it does, we may well find that one or more entirely new and interesting HF communications nets have been operating right under our noses (or our noise levels!) all along, and we simply didn’t notice because band conditions weren’t all that great for a few years.

Furthermore, as the next sunspot cycle unfolds, we may find that users on the HF bands—the military, government, and commercial stations that serve as our listening targets—may find HF more useful as conditions improve, resulting in more use of HF, and thus more transmissions for us to intercept. This perhaps offers the most promise as we look toward the future: HF will always remain a viable and useful tool for long-distance communications, especially during emergency situations or for temporary use during military operations. Forget about satellites and cell phones, in many situations and areas, HF remains the only reliable and immediately available method of communications. After all, it’s still a lot easier to throw a wire up in a tree than it is to erect a satellite dish, let alone a tower!

Readers’ Logs

Despite what I said above about band conditions, the business of logging utility stations goes on, and the readers of *Pop’Comm* have again come through with another excellent collection of loggings to illustrate that point.

Needless to say, your logs are welcome. The easiest way to add your contributions to the “kitty” here is to email them to me at the address that appears at the beginning of this column. We also have a definite fondness for shack photos, QSLs, and other tidbits of this nature, so fire up your computers and participate!

Those to whom we are indebted for this month’s catches are Allan Stern, Satellite Beach, FL. (ALS); Mark Cleary, Charleston, South Carolina. (MC/SC); Glenn Valenta, Lakewood, CO. (GV/CO); Chris Gay, Lexington, KY. (CG/KY); Spencer Sholly, Killeen, TX. (SS/TX), and me. (JK/NY).

3330.0: CHU, Canadian time/frequency standard station, weak but readable, in USB at 0343Z. (JK/NY)

3455.0: New York radio working TRANSAT 882 (at FL350) for posrep in USB at 2342Z; NY working CONTINENTAL 881 for posrep in USB at 2345Z; NY working CACTUS 741 for SELCAL check in USB at 2346Z; NY working AIR CANADA 949, unable higher due to traffic, in USB at 2349Z. (ALS)

4032.9: AAA3VA, net control FOR US Army MARS Region 3 Virginia Net, working AAM3VA, in LSB at 1201Z. (MC/SC)

4316.0: NMG (USCG New Orleans, LA) w/synth OM maritime WX BC, remoted from NMN (USCG Portsmouth, VA), fair levels, in USB at 0336Z. (JK/NY)

4372.0: INDIA FOXTROT and DELTA in US Navy Link-I1 coordination net, in USB at 2130Z. (MC/SC)

4426.0: NMN (USCG Portsmouth, VA) synth OM maritime WX BC, QRM from CODAR, in USB at 0344Z. (GV/CO)

4500.0: USAF MARS Region 4 “4S1” net in progress, in USB at 1315Z. (MC/SC)

4724.0: ANDREWS HF-GCS with EAM transmission of 18 characters, IDM65U etc., strong here, in USB at 0410Z. (GV/CO)

5316.0: SIERRA WHISKEY, MIKE, ROMEO, NOVEMBER, OSCAR, KILO in US Navy Air Defense Net, in USB at 1243Z. (MC/SC)

5316.0: IW and other stations such as D, F, I, H, M, N and O in “COMPTUEX” Navy exercise, in USB at 2020Z. (CG/KY)

5643.0: South Pacific MWARA working DELTA 417, both sides heard, in USB at 0755Z; Auckland Radio working various aircraft w/position reports, hearing both ends of QSOs, in USB at 0759Z. (GV/CO)

5732.0: Unid USCG QSO, discussed spotting of unid ship with crane and smokestacks, set up future conference call and phone patch, only one side heard; followed by ALE exchanges, in USB at 0410Z. (GV/CO)

6577.0: New York Radio working TRANSAT 882, they QSY to 3455.0 kHz, in USB at 2340Z. (ALS)

6977.0: CFARS net resuming on alternate frequency here after QSY from 14452.5 kHz, some players unheard, in USB at 2222Z. (GV/CO)

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7457.0: USAF MARS Region 4 "4S2" net in progress, in USB at 1402Z. (MC/SC)

8156.0: C6WH, C6SH, and CORAL HARBOUR BASE calling each other with no joy, in USB at 1242Z. (MC/SC)

8502.0: NMG (USCG New Orleans, LA) w/synth OM maritime WX BC, remoted from NMN (USCG Portsmouth, VA), good levels, in USB at 0356Z. (JK/NY)

9025.0: 220109 (C-17A, 62 AW) calling OFF (Offutt HFGCS) in ALE USB at 2127Z. (MC/SC)

10051.0: New York VOLMET, aviation WX, strong signal, not heard on parallel freqs, in USB at 1708Z. (JK/NY)

11175.0: HF-GCS Station OFFUTT working REACH 6018 (possible C-5 86-0018) for radio check only, in USB at 1933Z. (ALS)

11494.0: NOVEMBER 03 (HC-144A, ATC Mobile) radio check with CAMSLANT in USB at 2113Z. (MC/SC)

12350.0: WCY (Caribbean Weather Center coastal station, Tortola, British Virgin Islands) working vessel *Paradise* with WX info in USB at 1340Z. (SS/TX)

12993.0: KSM (Maritime Radio Historical Society coastal station at Bolinas, CA) calling CQ, strong here, in CW at 2122Z. (GV/CO)

13927.0: OPEC 76 p/p via AFA9AY (CA) to REEF CONTROL at Homestead, FL in USB at 2319Z. (MC/SC)

13927.0: USAF MARS Operator AFA5QW (Greenwood IN) working KING 24 for phone

patch to a Colorado area code, inquires about runway, in USB at 2140Z. (ALS)

13927.0: AFA5QW working Air Force Rescue 101 (HC-130N #88-2101, NY-ANG, Gabreski ANGB, LI, NY) for DSN phone patch to Gabreski ANGB 106RQW Rescue Ops; passes msg "Ops Normal; nothing sighted" in USB at 1714Z; another ops normal message passed by same means at 1916Z. (ALS)

13927.0: USAF MARS Operator AFA6DD (Texas) working RICAN 78 (C-130E, PRANG 156AW, Muniz ANGB, San Juan, PR; over Pittsburgh, PA) for radio check in USB at 1717Z; USAF MARS Operator AFA5RS (Shelbyville, IN) working RICAN 78 (over Ohio) for phone patch to 787 area code, in USB at 1749Z. (ALS)

13927.0: AFA5RS working RICAN 77 (C-130E, PRANG 156AW, Muniz ANGB, San Juan, PR; over West Virginia) for phone patch; they attempt to QSY to 7633.5 kHz but lose contact; several MARS stations have difficulty hearing RICAN 77, but all parties were loud/clear here, in USB at 1759Z. (ALS)

13927.0: USAF MARS Operator AFA6DD (Houston, TX), then AFA5QW (Greenwood, IN) working DARK 21 (B-1B, Dyess AFB, over New Mexico, for DSN phone patch to Dyess AFB "BAT OPS" in USB at 1730Z. (ALS)

13927.0: REACH 2103 (C-17A #02-1103, McChord AFB 62AW; over Andrews AFB) via USAF MARS operator for M&W phone

patch to Colorado area code; may be diverting to Colorado Springs: in USB at 2005Z. (ALS)

13927.0: AFA5RS working KING 64 (HC-130P #64-14864, Patrick AFB 920RQW; on ground at Patrick AFB) for two radio checks in USB at 1947Z. (ALS)

14373.5: Unid casual-sounding simplex maritime QSO in Spanish, engine noise evident in audio, in LSB at 2204Z. (GV/CO)

14390.0: USAF MARS operator AFAIRE, calling the USAF MARS Sunday Net, in USB at 1600Z. (ALS)

14452.5: CFARS net with CIW516, CIW202, CIW681, CIW308, CIW202; calling for more 600 series; moved to 6977.0 kHz due to propagation conditions, but all heard here very well, in USB at 2206Z. (GV/CO)

14670.0: CHU, Canadian time/freq standard station, in USB at 2243Z. (GV/CO)

15034.0: Trenton Military VOLMET, weak but readable, in USB at 2237Z. (GV/CO)

16545.0: Unid QSO, 2 OM in Tagalog, both heard with deep fades, phrase "zero zero" heard often, in USB at 2229Z. (GV/CO)

16550.0: Several unid stations in QSO in Tagalog, in USB at 2147Z. (GV/CO)

16914.0: KSM, Bolinas, CA handling traffic in CW at 2154Z. (GV/CO)

17237.0: Unid QSO, 2 OM/SS, suspect maritime traffic, significant engine noise on one station's audio, in USB at 2218Z. (GV/CO)

Reciva Radio Software Surgery For Acoustic Energy's AE-1

by Dan Srebnick, K2DLS
k2dls@arrl.net

Remember “The Happy Station” from Radio Nederland in Hilversum, Holland? It was the long-running Sunday show of “Smiles Across the Miles,” hosted first by Eddie Starz then later by Tom Meijer (Meyer) and others. Keith Perron, currently of Taiwan, has founded PCJ Media and brought back this entertaining interlude for short-wave listeners, and online listeners as well. He’s done programs on Part 15 broadcasters in the U.S., interviewed well-known personalities like Steve Lawrence and Dody Cowan, and did a live New Year’s Eve show from Hong Kong to ring in 2010.

SWLs can listen via WRMI on 9955 kHz (check www.wrmi.net for times and more info), and online listeners can catch the podcast at www.pcjmedia.com. I’m listening right now via my Acoustic Energy AE-1 Internet radio, and like Steely Dan said in “FM,” there’s no static at all.

I was an early adopter of the Internet radio appliance. I first read about the AE-1, based upon

“I began to wonder if somehow the newer Reciva features could be loaded onto my still functional orphan. Apparently, a bunch of guys working on a project called Sharpfin were wondering the same thing, too...”

the Reciva chipset, in March 2006 through Jonathan Marks’ Critical Distance blog (<http://criticaldistance.blogspot.com>). As soon as C. Crane made them available in this country, I plunked down the almost \$300 to be one of the first in my neighborhood to bring one home. I was not disappointed.

Fodder From The Mailbag

In November 2009, we took a look at some of the current offerings from WiFi radio manufacturers. In response to that column, we heard from George Santulli of Washington, D.C., who wrote:

Was reading with interest your article in *Pop’Comm* tonight about Internet radios. I discovered the fun and joy of Internet radios about two years ago. I have an AE radio, not sure of the model, the bottom tag says AE-17-16B...I was really interested in what you were saying about “sharkfinning” (sic), not sure what that is, but it seems like some software to upgrade these radios?

My AE is currently stuck with old firmware and no one—C. Crane where I bought it, AE, or Reciva—can tell me how to get the AE radio to configure the new updates. Presently, I am stuck with version v255-c-105.

Can you walk me through the steps you took to get the latest firmware so I can try it? Is there software to download, free or otherwise? I love the radio, sitting here in Virginia listening to Radio Cook Islands, Sydney, Australia etc., but figure I am missing out on more good stuff with the firmware I have now.

Any help would be most appreciated!

George, you have come to the right place! Today, the AE-1 is an orphan. Acoustic Energy never followed up with updated models, and soft-

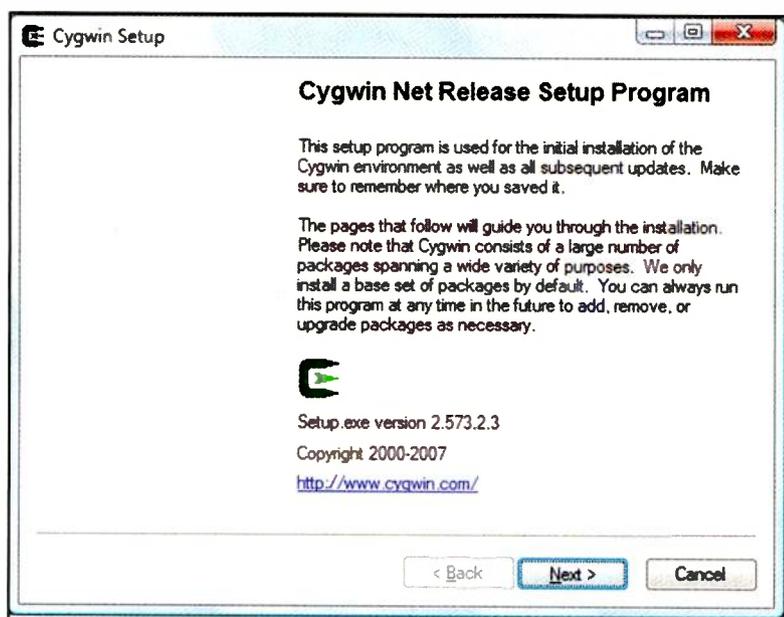


Figure 1. The Cygwin initial setup program provides the tools necessary for the rest of the upgrade process.

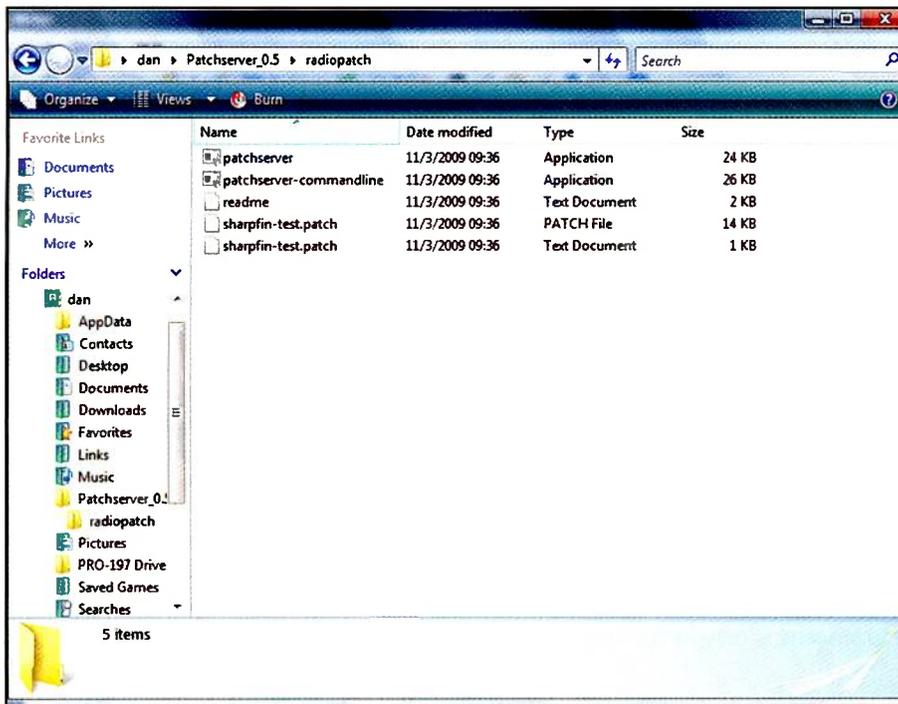


Figure 2. It's important to first install the sharpfin-test.patch to confirm that it's safe to proceed with the base patch.

ware updates are no longer available. Other manufacturers have jumped on the Reciva bandwagon, introducing radios with features such as scrolling data on the display and access to Pandora and Sirius. I began to wonder if somehow the newer Reciva features could be loaded onto my still functional orphan. Apparently, a bunch of guys working on a project called Sharpfin were wondering the same thing, too—and their curiosity paid off. They came up with a way to hack a Reciva-based WiFi radio into accepting updated software.

Caveat Surgeon

Warning: I'm going to describe how to modify the software on an AE-1 in a way that is completely unsupported by the manufacturer. This explanation will have some level of detail but I do not represent it to be an all inclusive step-by-step cookbook recipe. While it works for me and others, I cannot guarantee in any way that if you try this at home that you will not turn your radio into a doorstop. In most cases, there is a way to back out of any changes that you make, but there are no guarantees. If you can't reconcile yourself to the possibility that your treasured Internet radio will be rendered useless, don't try this.

Step 1: Download and install Cygwin

For this upgrade attempt, I'm using

Windows. In order to use Windows, a free software package called Cygwin is required. Cygwin is a software environment that simulates the bash shell found on Linux systems and adds Linux commands to your Windows environment. Cygwin can be downloaded and installed from www.cygwin.org/cygwin/. Scroll down a little from the top of the page and click on "Install or update now!"

Run the setup.exe program and you'll see the screen shown in **Figure 1**. It's OK to accept all the defaults during the installation process. Do not change the installation directory from the default c:\cygwin. The patchserver that we're going to install operates under the assumption that Cygwin is installed at that default location.

Step 2: Download and install the Sharpfin patchserver

Much of the software that you'll need to get started can be found at <http://sharpfin.zevv.nl/index.php/Releases>. We're going to use the Windows Patch Server. There is also a Linux-based patch server, but in a previous attempt I was able to install the server but could not connect, so this is a project for another day. Select the link for Windows Patch Server and download a file called Patchserver_0.5.zip. This file contains a directory called "patchserver." Once running, it will intercept upgrade attempts from your Reciva-based radio.

Extract the files in patch server to a directory of your choosing. I placed my files under c:\Users\dan\Patchserver_0.5. Change to the patchserver directory and you should see a file listing similar to the one shown in **Figure 2**. Next, open a command prompt and change your working directory to the same patchserver directory. In my case, the command prompt windows opened in c:\Users\dan, and I had to type `cd \Patchserver0.5\radiopatch`. I then executed a `dir` command and saw my Sharpfin files.

Step 3: Installing the test patch

From the command prompt window opened in Step 2, run the patchserver executable. Answer "yes" or "allow" to any Windows User Account Control (UAC) questions and then read the Sharpfin Terms and Conditions notice as shown in **Figure 3**. By clicking yes, you agree to hold harmless the Sharpfin project if they turn your Reciva radio into a brick. (Pop'Comm's legal beagles will also interpret your "yes" as an assurance they you won't hold any negative consequences against us either!)

You'll see a popup window asking for the IP address of your real DNS server. Sharpfin patches your radio by intercepting DNS calls and fooling your Reciva chipset into thinking that a local PC is really the Reciva website. If you're not sure of your real DNS server IP address, open another command prompt and type `ipconfig/all`, then press enter. Some IP address information, including your DNS server address, will reveal itself. Fill in the popup windows with the DNS server address. Your ipconfig output will likely show multiple DNS server addresses. The first one listed will normally do the trick. Click "OK" to proceed.

You'll see a file listing and should first select the sharpfin-test.patch. Answer "allow" to the firewall permissions question and your patchserver is ready for testing. Next you'll need to edit the network configuration of your AE-1.

You'll provide the IP address of your patchserver PC in answer to the DNS server prompt (this time on your radio) and you also need to know your network and default gateway. This information can be gleaned from the ipconfig/all command that you ran on your PC a few minutes ago. We want the DNS of the AE-1 to point to the computer on which the patchserver is now running. The patch server will "fake out" your Reciva into connecting to it, rather than the Reciva

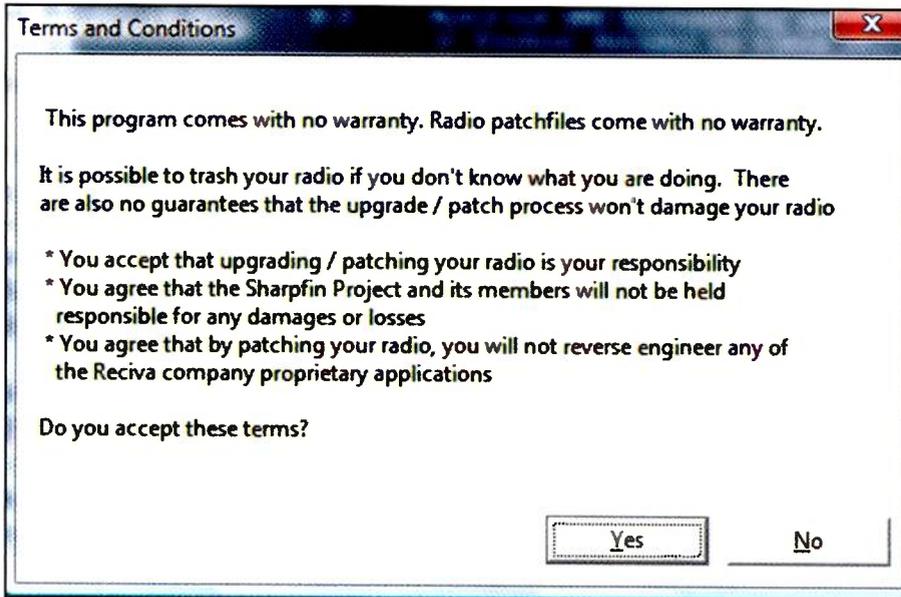


Figure 3. As the patchserver warning says, this process is only for the brave or the technically proficient.

site for software updates. This is how we will ultimately put a newer firmware version on your radio.

If you are configured to use DHCP you'll have to temporarily assign an unused IP address to the AE-1 radio as part of a static configuration. These settings are all found under Configure/Network Config/Edit Config on the AE-1 menu system.

Next, using the AE-1 menu system, select "Configure/Upgrade Firmware." Your AE-1 will contact the patchserver running on your local PC instead of Reciva for updates, because we spoofed the DNS to do so. It will try to install the sharpfin-test.patch and, if successful, will print a message on the screen of the radio that you have succeeded.

If the steps above did not work, power

off and unplug the radio. Then plug it back in and power on. You may be more successful the second time around. Check to make sure that your static network configuration is still in place and, if not, re-enter. Once successful, you can terminate the patch server.

Step 4: Installing the base patch

Now that you've successfully installed the test patch, it's time to install the base patch for the first time. The base patch will install a telnet server and a Web server on your AE-1 so that you can remotely connect to the radio and make configuration changes. You will actually have to do this twice—once to get the new firmware installed and once after installing the new firmware—because the new Reciva firmware will overwrite the base patch.

From a command prompt, again run the patchserver. To do this, select the sharpfin-base_0.3.patch. Repeat the "Upgrade Firmware" command from the AE-1 control panel. You'll see some "patching" messages on the screen of your AE-1, and when done, the base patch is installed. You now should be able to connect to your AE-1's Web server! Simply open your Web browser and navigate to the IP address of your radio that you assigned during the static network configuration. **Figure 4** shows a directory listing from my AE-1. You'll note that it is running Linux.

Step 5: Installing the new firmware

We're going to upgrade our AE-1 to firmware version a257-a-756-030. There are lots of choices, but this seems to be a good one for our hardware. The Sharpfin website has lots of options and you can always try a different firmware version later.

Use your Web browser to navigate to the IP address of your radio. Your radio is now running a Web server to help you modify its software. Look for "Change Firmware" over on the left side of the screen (**Figure 5**). You'll have to enter a firmware version to download. I used 257-a-756-a-030. Copy the downloaded files into your patch server directory, and it's time to run the patchserver again. This time the patchserver will serve up the new firmware to your Reciva. You'll again go to the configure option of your Reciva and again "Upgrade Firmware." This will take a few minutes, so don't unplug the radio. You can watch the progress on your radio's display panel. After upgrade, yet again install the base patch, as the upgrade wipes that out. You'll need the base patch

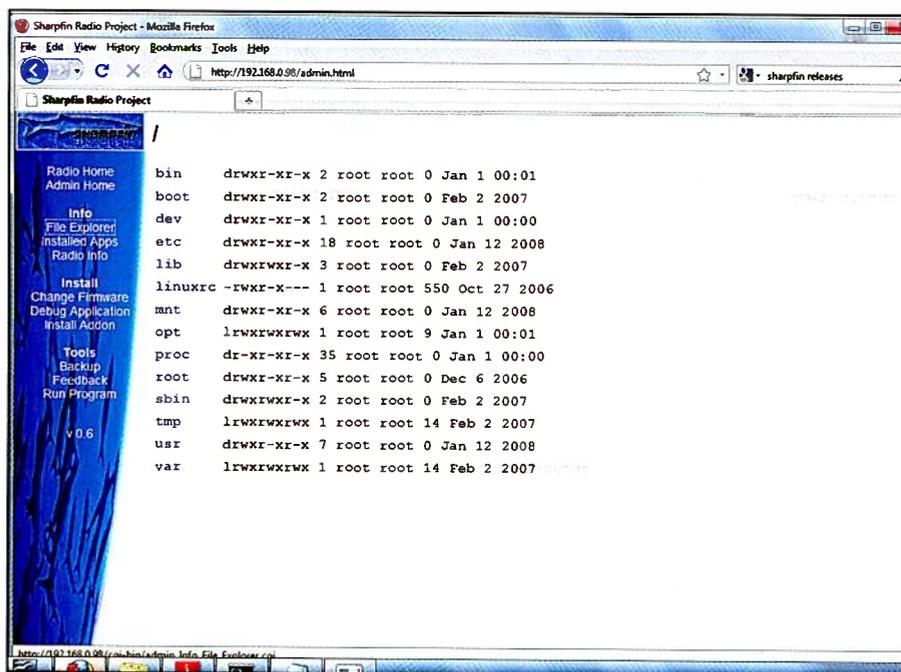


Figure 4. The File Explorer shows a directory listing for my AE-1 Reciva-based WiFi radio. Yes, I am connected to a Web server running on the AE-1.

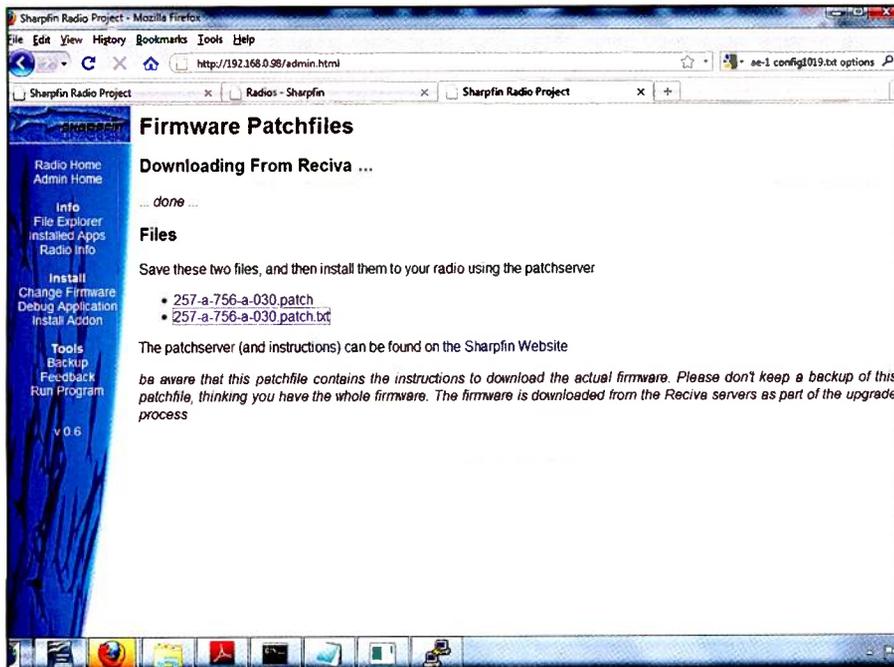


Figure 5. I downloaded the patchfiles from Reciva using a Web browser on my PC to control the Web server on my Internet radio!

installed so that you can telnet to the radio and make some configuration changes to take advantage of the new firmware.

Step 6: Enhance your AE-1 configuration

It's been a long journey so far. We're now at the point where you have upgraded firmware and can telnet to your radio to add some options to the configuration.

You'll need a telnet program to connect to the command line of your radio. I use putty for this purpose, as it seems that Microsoft has omitted telnet from recent Windows versions. You can "Google" for "Download Putty."

Once your telnet software is installed, telnet to your radio using "admin" as the username and "admin" as the password. You'll have to know some Unix/Linux command lines and how to use the vi editor. The file to explore is /root/hwconfig/config1019.txt. This is the configuration file for the AE-1 radio.

From the Sharpfin website, here are some basic steps for modifying the config1019.txt file.

- Log into the radio using telnet (user & password = admin)
- Look in ('chdir /root/hwconfig') /root or /root/hwconfig, depending on the current firmware version of your radio
- Find your config1019.txt file (the 1019 is the Hardware ID, which you can find in 'Configure/Version')
- Look in that and others in the same directory to work out what modifications you wish to make
- Issue the command 'mount /-orw,remount' to unprotect the partition
- Edit the config1019.txt file with 'vi config1019.txt'
- 'i' to enter Insert mode
- Double check your edits
- Now treble check them!
- Hit <ESC> to leave Insert Mode and enter Command mode
- ':w<ENTER>' to write current file (if you are sure and wish to save it)

- ':q!<ENTER>' to exit 'vi'
- Write protect the drive with 'sync;mount/-oro,remount'
- Reboot the radio

Here are the changes that I made to my config file. They add station history and search capability. The firmware update also added an "Add to Favorites" function when pressing the reply button and fixed a streaming problem with some podcasts that caused them to staff and start over.

Add station history to the menu

Option:
stations-history
on

Retain the last 20 stations in the history list

Option:
history-size
20

Add a search function to the menu

Option:
stations-substring-search
on

Post Op

If you have not bricked your radio, you have now added some significant features, such as a history list and a search function. The new firmware also fixes a bug with podcasts spontaneously restarting from the beginning. This is not too shabby for an investment of an hour or two. You may have also surmised that this same Reciva software surgery can be performed on other models of Reciva-based radios from other manufacturers. The important thing is to understand the process and to select your firmware wisely.

Read the information found on the Sharpfin website along with the Sharpfin Google group. There is a lot of good stuff there concerning firmware versions and configuration options. Not all options will work on every radio. You should especially read the Quickstart guide found at <http://sharpfin.zevv.nl/index.php/Quickstart>.

If any of this was too technical and involved for you, don't feel bad. There's plenty to enjoy in online listening and there are attractive choices under \$100 available for Internet listening that may outperform your older WiFi radio.

See you in Kulpsville, Pennsylvania, at the Winterfest, March 5-6! What, you still didn't register? It's not too late—just visit www.swlfest.com and start making plans to join us.

Sharpfin Upgrade Web Links

Sharpfin Website

<http://sharpfin.zevv.nl>

Sharpfin Google Group

<http://groups.google.com/group/sharpfin>

Putty Telnet Client

www.chiark.greenend.org.uk/~sgtatham/putty/download.html

Fixing Up A Vintage Heath IM-13 VTVM

by Peter J. Bertini
radioconnection@juno.com

“Heath manuals provide ample documentation regarding VTVM calibration, but I’ll offer additional guidance since the material is dated by today’s standards.”

I left off last month promising to discuss VTVMs in more detail, so I’ll do that, and a bit more, in this issue. While many of you may not be interested in our topic per se, before you go running off, at least take a look at the information regarding the use of half-wave rectifiers and how they can damage marginally rated transformers—it’s good stuff.

Our Guinea pig for this month’s effort is my bench VTVM, an elderly Heath model IM-13 (Photo A) that’s seen duty in my workshops since the early 1960s. But the current valuable bench real estate it occupies is perhaps granted more out of nostalgia than utility.

Forty years ago VTVM technology was still relevant, but today’s digital meters have largely supplanted it. There are still a few things that large analog meters can do better than their modern digital cousins, however. For instance, it’s easier to follow a moving analog meter needle than flashing digits when making tuning adjustments, and the ability to zero-center-scale the VTVM meter is handy when aligning an FM discriminator coil. While some digital meters include a bar graph dis-

play for this purpose, there’s some time lag and resolution ambiguity between bar segments.

Most of the following information applies to Heath VTVMs. Like many companies, Heath would frequently add a touch of fresh lipstick to its offerings by modernizing the enclosures, though few (if any) changes were made to the proven electrical designs. Heath did most of the electronic updates during the 1950s to counter a dwindling supply of war surplus eight-pin octal tubes in favor of the more common miniature tube equivalents. For example, where a 6SN7 dual triode and 6H6 dual diode served in a VTVM previously, a revamped design changed to 12AU7 and 6AL5 vacuum tubes. If your Heath VTVM uses 6AL5 and 12AU7 vacuum tubes, most of this information will likely be pretty close to what you’ll encounter in your particular model. When in doubt, be sure to refer to the assembly/instruction manual.

Before we go further, I should point out that the project ideas outlined below are for more experienced builders and experimenters; that is, folks who are comfortable with electronics and confident in their ability to work with the scant the information conveyed in schematics or photos.

Getting Started

For VTVMs of this era, I’d start by checking the fixed carbon resistor values; the instrument is full of vintage carbon resistors that may have shifted in value over time. If your meter is currently working to your satisfaction, you may skip this step. Personally, I did a *wholesale* replacement using 2% tolerance metal oxide replacements from NTE¹.

Most VTVMs will work—to some degree—as found, and some may be as good as new. But they all can stand some preventative maintenance if they’re going to be used on a regular basis. At a minimum, I’d replace the IM-13 filter capacitor (C6 on the Heath schematic) with a 22- μ Fd at 160-volt electrolytic. Next, I’d also replace the three non-polarized tubular capacitors. The .047- μ Fd at 1600-volt capacitor (C1) and both .05- μ Fd at 400-volt tubular capacitors (C2 and C3) can be replaced with modern .047- μ Fd at 630-volt axial



Photo A. The IM-13’s gimble bracket allows mounting under a shelf or on top of the workbench. The plastic meter cover has been removed to reduce glare in the photographs.

or radial lead capacitors, available from Just Radios². Their "orange-dip" line will do fine for the non-polarized tubular capacitor replacements if you're unsure what style to order.

Check the power supply voltages shown on the schematic. If they're both below the limits shown, the small selenium rectifier is probably suspect. It can be replaced with a 1N4007 rectifier diode with a 470-ohm 2-watt resistor connected in series.

Again—and this is worth repeating—if you want to be a bit more aggressive, replace all the carbon resistors with more modern film or metal oxide resistors. Use the same values and wattage shown in the assembly manual, or increase to the next higher wattage. The bulk of the resistors used in the Heath VTVM are carbon composition 1/2-watt components. I replaced mine using 2% tolerance metal oxide resistors from NTE; 5% carbon film resistors are also suitable and are cheap. *Do not replace the precision resistors in the range switch unless they are damaged or defective.*

I suspect most older VTVMs will exhibit some small problems. Needing excessive rebalancing when going between function switch positions, having to set the zero setting control to near endpoints when trying to use the center-zero feature, or similar nagging nuisances may be indicative of aging and drifting resistance values. The NTE line of 1/2-watt, 2% tolerance metal oxide resistors is an excellent choice. Even replacement film resistors available from your local RadioShack will be a major improvement. Fortunately, unlike the carbon resistors in the Hickok model 155 Indicating Traceometer (see "The Wireless Connection" in *Pop'Comm's* March and April 2009 issues), most VTVMs use precision resistors for that application. These seldom change value, unless the meter was abused or damaged.

If you can't get the balancing right when going between functions, the problem might be caused by an aging 12AU7. Replace that with a new tube, and run the VTVM for several days to age the tube before attempting to recalibrate the meter.

Calibrating Your Meter

Heath manuals provide ample documentation regarding VTVM calibration, but I'll offer additional guidance since the material is dated by today's standards. For starters, some of the outlined procedures may produce erroneous

Basic Parts List

- Phenolic eight-terminal soldering strip (see photos)
- 1 amp. 200 piv bridge rectifier (RadioShack)
- LM317T adjustable three-terminal rectifier (RadioShack)
- 2200 μ Fd at 10-VDC electrolytic capacitor (NTE product line)
- 8.2-ohm 5-watt wire-wound resistor (NTE product line)
- 220-ohm 1/2-watt 2% metal oxide resistor (NTE product line)
- 220-ohm 1/2-watt 2% metal oxide resistor (NTE product line)
- 2400-ohm 1/2-watt 2% metal oxide resistor (NTE product line)
- Insulated hardware kit for LM317T chassis mounting (NTE product line)



Photo B. Three holes to the right of the meter body provide access to the AC balance, AC calibrate, and DC calibrate trimmers. Just to the left of the 1.5-vDC meter scale you'll see a small red dot. That's used for the DC calibration when a fresh carbon zinc battery supplies the calibration voltage.



Photo C. The voltage regulator IC can be set to produce a voltage that's very close to the 1.54 to 1.55 volts sourced from a fresh carbon zinc cell. Adding a test pin jack allows front panel access to the calibration voltage, which provides a means to quickly verify the meter's DC calibration.

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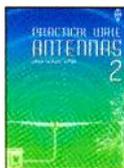
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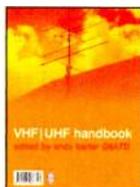
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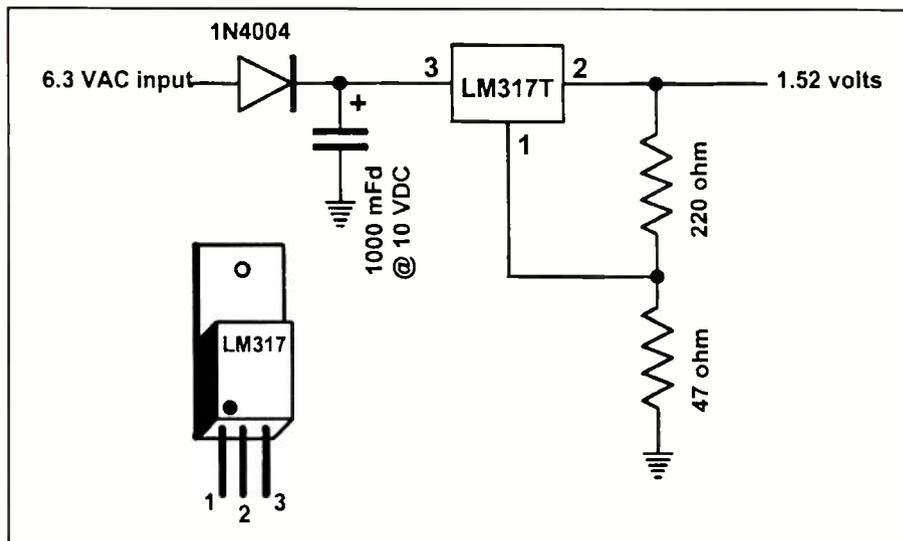


Figure 1. While this circuit will do the job, it may place undue stress on the filament winding.

results, especially if an alkaline battery, rather than a carbon zinc-type C or D cell as called for in the Heath manual calibration procedures, is used for the DC reference. (Heath's approach for DC calibration was based on the voltage of a fresh carbon zinc flashlight cell, which is about 1.54 to 1.55 volts. Modern alkaline cells are over 1.6 volts and cannot be used for this procedure.)

The meter function switch was set to DC volts, and the range switch to the 1.5-volt scale. Just to the right of the "1.5" on the 1.5-volt scale you'll see a small red dot (**Photos B and C**). The red ink used on some of the meter scales fades in time, so the dot may be hard to see. This dot is off scale, but it is the proper calibration point for 1.55 volts. Place the cell between the probe (anode) and test lead common return (cathode). Now carefully adjust the DC calibrate pot until the meter needle moves directly over the red dot, which will calibrate the DC meter readings. This is probably close enough for most shop needs.

Fortunately, we have digital meters available that are far more accurate than the 2% the IM-13 offers. You can also use a digital meter and a variable DC supply to provide accurate reference voltages to calibrate the DC ranges on the VTVM. Use a known reference voltage that is equal to the full-scale reading on any of the DC ranges to set the VTVM's DC calibration pot. For brevity, I've left out a few preliminary steps that are covered in the manual.

For AC calibration, I'd again use a modern digital meter to accurately mea-

sure the calibrating voltage. The Heath manual suggested using the AC line voltage as a reference standard, with the assumption that the AC line voltage is nominally at 117 volts, but that is far too crude a reference.

A Better Mousetrap

Did I mention a C-sized zinc cell was provided with the kit? Besides being used for the DC calibration, the battery is also used in the ohmmeter circuit of the VTVM. This leads to several problems. First, the cell's voltage will slowly fall off over time, and the cell will develop a higher internal resistance as it ages. Since measuring a dead short (zero ohms) draws a whopping 150 mA from the battery, any excessive internal resistances (in the cell) will probably lead to non-linearity problems with different resistance measurements made across the ohmmeter's lowest range scale. Old batteries can leak with resulting corrosive damage to the electronics and case hardware. Modern alkaline cells may work as replacements, but the voltage is still about 0.5 volts higher than the meter was designed for, plus they will still eventually leak. So let's get rid of the battery.

Here are a few circuit suggestions that will work in any VTVM design that uses a 1.5-volt cell for the ohmmeter function and where the battery cathode is connected to the common chassis return.

Take a look at the circuit in **Figure 1**. To be honest, this is a fairly generic circuit, and it (or similar circuits with very slight variations) has been suggested as a

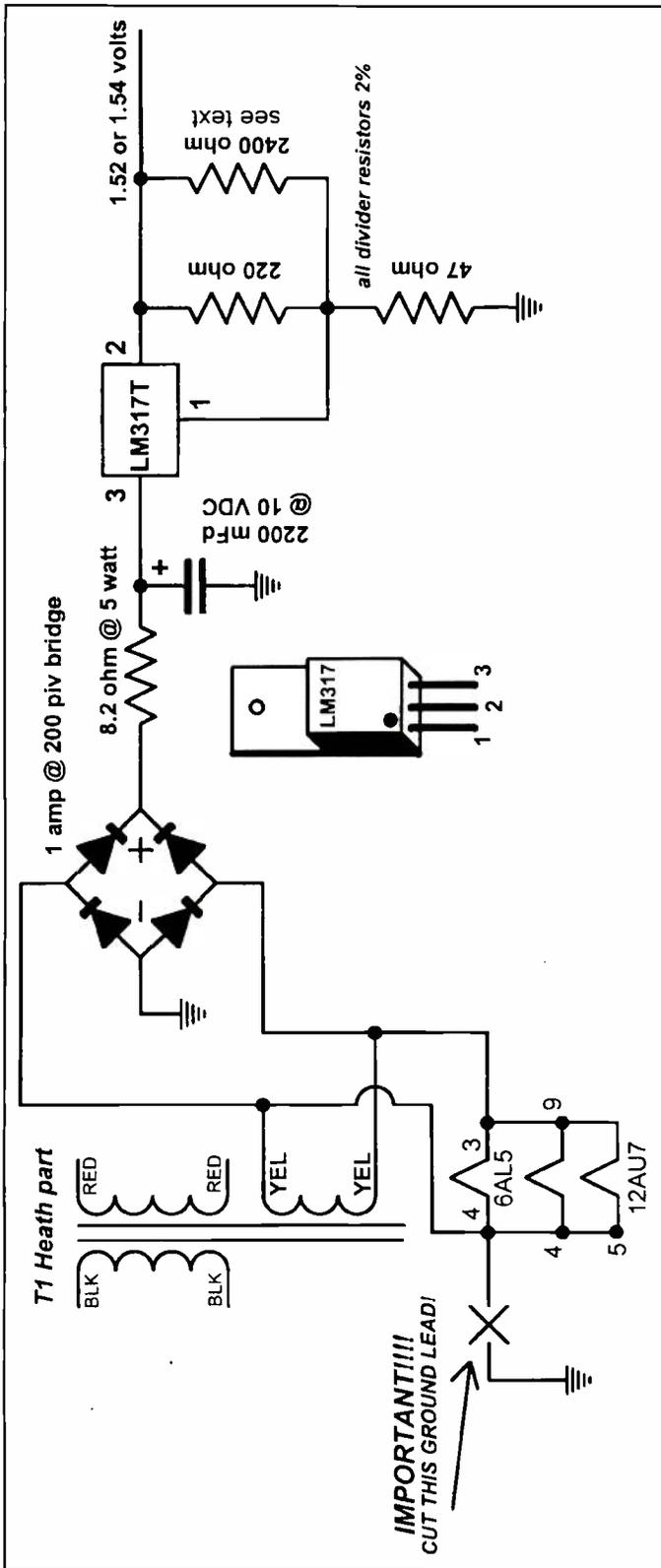


Figure 2. This is my improved version of the circuit shown in Figure 1. This design uses a full-wave bridge rectifier and resistor input filtering to reduce the stress placed on the transformer. Adding a 2400-ohm resistor in parallel with the 220-ohm fixed resistor will increase the voltage from 1.52 to 1.54 volts so it can also be used for the DC calibration reference, per the instructions in the Heath manual. This pertains to the red calibration dot present used for this purpose on the IM-13.

replacement for the ohmmeter battery over the years—I claim absolutely no originality for this idea. The circuit is also rather simple. A half-wave rectifier on the 6.3-volt AC filament winding yields about 8 volts of poorly regulated DC voltage. This DC voltage is passed through, and regulated by, a three-terminal adjustable LM-317T regulator IC that is programmed by fixed resistor values to produce a well-regulated 1.5-volt output voltage. This is used to replace the C cell. The LM317T will easily supply the maximum 150 mA drawn by the ohmmeter on the lowest resistance ranges. Some variations use a small pot to set the voltage.

Here's my main concern. Take a look at the rectifier data presented on the Hammond transformer website at this URL: www.hammondmfg.com/pdf/5c007.pdf. Note the limitations imposed by the use of a half-wave rectifier with an input capacitor filter. It may be a simple approach that easily fits into the scheme of things, but according to the Hammond data, a half-wave rectifier with a brute force input filter capacitor is the worst possible choice. To provide 150 mA of current, the transformer winding needs to be rated at a minimum of 400 mA! The filter capacitor draws an enormous peak surge charging current on half cycles, placing a severe asymmetrical load on the transformer. This unbalance reduces the current that the transformer is capable of supplying. That's like having a phantom DC voltage on the secondary winding, decreasing the maximum current rating (due to core saturation limitations) of the winding.

How much reserve is built into the Heath power transformer? Both vacuum tubes require a total of 6.3 VAC at 600 mA for the filaments. Add the half-wave rectifier and you're at over 1 amp. Do you feel lucky in pushing the transformer to what could be almost twice the design ratings? Granted, the maximum load only occurs when the meter is being used to measure a very low resistance on the lowest resistance scale, but is it good engineering practice? What if the meter leads happen to be left touching for a few hours while on the lowest ohmmeter range?

I spent a bit of bench time to come up with an alternative design. My idea is shown in Figure 2. First, the half-wave rectifier is replaced with a full-wave bridge. Second, the filtering is changed to a resistive input, further limiting the surge current drawn by the filter capacitor. Design data in the Hammond URL mentioned above will confirm that the benefits derived from this approach are substantial. Photos D and E show some of the research design work and the mockup for the first prototype I tested.

There is a rub, however. You'll need to modify the IM-13 so the filament winding and the tube filaments are floating above ground. This is easily accomplished by simply removing the ground to pin 4 of tube socket V1. Note that the ground connection to pin 5 of tube socket V1 must remain. If the meter is wired according the manual, cutting the wire jumper between pins 4 and 5 on the socket for V1 should accomplish this modification. Double check the wiring changes to ensure that everything was done properly.

Wrapping It Up

I wired the circuit point-to-point on an eight-position Phenolic terminal strip, which comfortably mounts on the existing IM-13 subchassis. Photo F shows how it all went together. Note that I added an insulator kit between the LM317T and the aluminum chassis for improved heat transfer; this is optional.

The fixed resistor values (all 2% tolerance or better) were selected to provide a voltage that is very close to 1.52 volts DC output. The ohmmeter function works fine at 1.52 volts. If you wish, paralleling a 2400-ohm resistor across the 220 reference resistor will provide a voltage that's very close to the 1.54 to 1.55 volts of a fresh carbon zinc cell. Add a small pin jack on the front panel and you've also come up with a convenient means to provide a 1.54-volt precision DC reference level to calibrate the "red dot" DC calibration mark on the IM-13. And that is exactly what I did, as can be seen in **Photo C!**

And with that my friends we'll wrap it up for this month. Until next time, keep those soldering irons warm and those old tubes glowing!

References

1. NTE Phone: 973-748-5089; Web: www.nteinc.com; Email: sales@nteinc.com.
2. Just Radios, Dave and Babylyn Cantelon, 6 Ferncrest Gate, Scarborough, Ontario, Canada, M1W 1C2; Web: www.justradios.com; Email: justradios@yahoo.com.

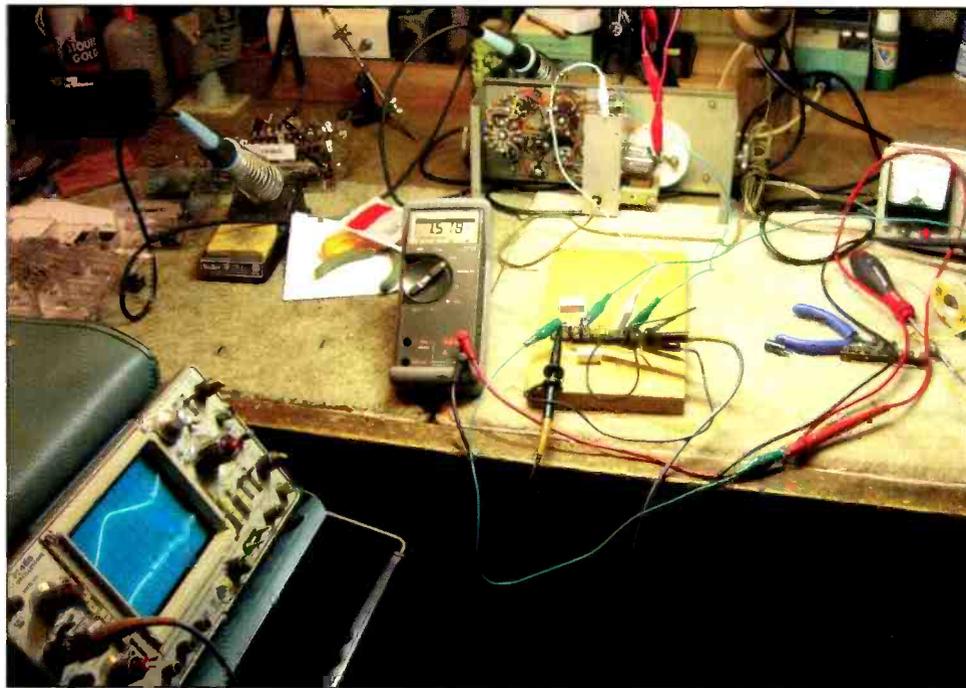


Photo D. I constructed and evaluated several circuits using breadboard layouts before committing to a final design.



Photo E. A final circuit mockup that was used to replace the ohmmeter battery in the IM-13.



Photo F. The new battery eliminator circuit is mounted on the existing IM-13 sub-chassis. Note that the LM317T is heat sunk to the aluminum chassis to reduce its body temperature; this is optional.

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Money For Nothing But Grooves

by Shannon Huniwell
melodyfm@yahoo.com

"The commercial broadcasting industry is highly unique," boasts Frank Fitzsimmons, a retired radio advertising salesman friend of my Dad's, "because it possesses the only inventory in the entire business world that replenishes itself every midnight—for free!" Of course, costs associated with towers, transmitters, buildings, programming, and personnel need to be tacked onto that claim's fine print, but essentially the old gentleman is right, as commercial radio and TV's primary product is time.

"Each of us is granted the same amount of time each day," my father's buddy always offers in his favorite observation's conclusion, "and it's up to

"Rummaging through three heavy cardboard boxes on an L-shaped table supporting the broadcast equipment, Fitzsimmons searched for two elusive record albums that he credited as being 'easy money in the bank.'"

the broadcast sales executive to sell as much of it as possible." The latest occasion for these words of wisdom occurred in the pine-paneled basement of Fitzsimmons' home, a modest though well-kept mid-century ranch house in the upper Midwest.

My father met him sometime in the late 1970s on a business trip with some now forgotten purpose. Dad had walked into a coffee shop where he overheard Fitzsimmons convincing the owner to sponsor a radio program. After the deal was signed, the broadcast sales guy ordered a large celebratory cup of hot chocolate and a of couple donuts. He was navigating this treat toward a small table when my father asked if he was "a member of the noble radio profession." It didn't take long for the two gregarious men to strike up a friendship driven by Dad's hobby-esque fascination with AM & FM topics and Fitzsimmons' seemingly inexhaustible tales of the broadcasting biz.

Their animated conversation ended with Fitzsimmons exacting a promise from my father that he'd call Fitzsimmons for the "nickel tour" of his employer's station on his way back through the area. Regular readers of this column can quickly figure that Dad followed through on that opportunity. What surprised even him, however, was Fitzsimmons' insistence that following the station visit, my father be Mr. and Mrs. Fitzsimmons' guest for dinner and a night of rest. "I told Phyllis all about you and your family," Fitzsimmons encouraged him, "and she said you must stay with us and not bother with a motel." There was congeniality all around that eventually extended to the Fitzsimmons staying with us when they took a vacation through New England a year or so later.

Since that time, my folks have been on their visitation list, and visa versa, whenever in each others' neck of the woods. Mom and Dad were

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Frank Fitzsimmons scored a real vintage radio gear coup when he extricated a matching pair of these 1950s Gray Research turntables during his former employer's Nixon-era studio rebuild. Marketed primarily to very upscale Hi-Fi buffs, the Connecticut-manufactured turntables were often touted as "so outstanding that many major radio stations purchased [them] for their on the air programming." In that capacity, though, the units were custom-fitted into studio furniture, as opposed to getting packaged in the cabinet noted in this ad. Three wood finishes were available. The turntable was mated to Gray's famed "viscous-damped" model 108C tone arm that was said to practically float into a record's grooves.



Who'd be much enthused by hearing an announcer simply introduce—as “exciting sound”—instrumentals by Milton Delugg and his orchestra? Add a few lines of spooky narration in Dracula-voiced reverb before and after each album cut, however, and you've got the witch's brew for a bargain-basement Halloween radio special! Tunes on this mid-1960s LP included perfect October 31 fare, such as themes from *The Munsters*, *Bewitched*, *The Addams Family*, *Alfred Hitchcock Presents*, and *The Outer Limits*. Ooooh, scary stuff!

there last winter, arriving on the afternoon before a big snow-fall that kept them cozily stormbound for a few days. While the ladies compared notes about children, grandchildren, and things decidedly geared towards feminine tastes, my father and Frank retreated to the basement. There, the host had fashioned a deluxe stereo system from pieces of decommissioned studio gear from his former place of employment. An early 1970s five-channel Harris/Gates audio control board served as the command center between two vintage Gray Research turntables/tone arms and a pair of strategically placed Realistic OPTIMUS Pro-7 speakers.

“Sid,” Fitzsimmons began, “Did I ever tell you how the radio business gets free inventory every night?” My father had heard that before, but didn't much mind because he knew it was merely the preamble to Frank's interesting demonstration of how he had made a living selling little segments of the clock.

Must Be Here Somewhere...

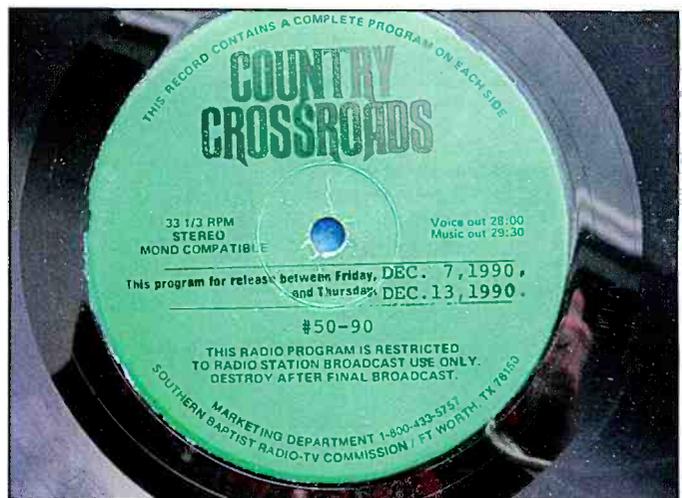
Rummaging through three heavy cardboard boxes on an L-shaped table supporting the broadcast equipment, Fitzsimmons searched for two elusive record albums that he credited as being “easy money in the bank.” Both, he noted, were obscure 33 1/3 rpm LPs (for our younger readers, that stands for long playing discs, which were developed in the 1940s by CBS Labs as a replacement of 78 rpm records) aimed at promoting particular television shows. One hailed from about 1960 and featured *Bonanza* star Lorne Greene reading short scripts of greetings and holiday cheer sandwiched between Christmas carols reportedly sung by his neighbors partying at the Ponderosa. The other, entitled *A Walton's Christmas*, similarly included Will Geer, the elderly gentleman who played Grandpa Walton on the homey



Besides depicting what looks to be a hot working environment, this photo appears to be from the late 1930s and shows a transcription disc press operator plying his manufacturing craft. Note that only the bottom side of the press contains the groove mold, as most broadcast transcriptions were designed to play only on one side. Unlike the 12-inch long playing records (introduced in 1948 by CBS' Columbia Records) meant for home use, the 16-inch discs were almost the exclusive province of broadcast stations needing recording/playback time in excess of the two or three minute capacity of the pre-war era's 78 rpm records.

1970s series *The Waltons*, reciting reminiscences of Decembers past on Walton's Mountain. These touching vignettes were bounded by a simple children's choir singing such favorites as “Silent Night” and “Good King Wenceslas.” Fitzsimmons couldn't find these records in any of his three boxes, but vowed he'd locate them and show Dad next time.

In the meantime, he explained how he'd found the *Christmas At The Ponderosa* LP in pile of records that the station program



Each *Country Crossroads* LP contained two ready-to-air radio programs running between 28 and 29 and a half minutes apiece. The rest of the time (to the standard half-hour mark) could be used for a station ID and commercial spot advertising the local Southern Baptist Church. Typically, two to four of these records were mailed in one slim box to radio stations. Rather than requesting the discs' return, the Southern Baptist Radio-TV Commission, suggested that stations hold some sort of simple contest in which the show record is awarded to a listener for replay at home.



Master Control, the Southern Baptists' weekly radio show for stations with middle of the road music, or M-O-R formats, often featured recorded word content as delivered by respected ABC commentator Paul Harvey. A program director's scribbling on this label indicates the show included Harvey's treatise on the signers of the Declaration of Independence. The PD probably collaborated with one of his station's sales staff to lift the segment so it could be aired for sponsorship on July 4th.

director deemed "not for regular airplay" and consigned for contest consolation prizes. Fitzsimmons sampled the album at home, where he and Phyllis agreed it would make for nice holiday season listening. He then grabbed a pencil and piece of paper and, using the LP cover as a writing surface, jotted down some scripting notes that customized it to a local sporting goods store. Several days after the following Thanksgiving, Fitzsimmons sold the proprietor on the idea of sponsoring this outdoorsy version of the *Bonanza* Christmas Party Special, padded to an hour-long feature by way of some additional songs.

"I got the top of the rate card on that one." Fitzsimmons beamed, continuing:

I had several other shop owners asking if they could sponsor it next year. All it was, was our announcer reading a sponsorship introduction, hitting the start switch on that throwaway album, offering "season's greetings and happy new year" from the store a few strategic times, and repeating those well wishes when the LP ended. That concoction actually generated a few thank you letters to the sporting goods proprietor, which made my job even easier. The *Bonanza* thing got business every Christmas until I took it with me upon my retirement from the station in 2005! Sometime in the 70s, I had our chief engineer dub it to tape when I realized that if one of the DJs scratched or broke the rare LP, that'd be all she wrote!

Around that time, Fitzsimmons discovered his second big holiday star in the same way that the *Bonanza* gem materialized. Marked as a "stiff," and tossed into a plastic laundry basket near the (skeet shooting enthusiast) PD's office, *A Walton's Christmas* was saved from being used for target practice. Frank and Phyllis listened to it that night and knew Will Geer's haunting narration would prove irresistible to any advertiser seeking to melt the hearts of family-oriented audiences. Within the first minute of a sales call outlining the program content to the president of a local savings bank, Fitzsimmons was interrupted by the executive directing, "Just give me something to sign. My

wife loves that TV show, but says I'm not sentimental enough to appreciate it. She'll be impressed with me when I tell her I'm going to promote my bank with the Waltons."

This specialty record, too, ran on Fitzsimmons' station during several decades' worth of Christmas seasons. This inexpensive, or "reconditioned" as he called it, programming became his hallmark. "Whenever I saw any LP that could be re-vamped into a salable concept," he said, "I'd write a brief script to tie into some potential advertiser and got them to sponsor the whole thing, usually as a weekend special. It was like getting money for nothing but squiggly grooves on a record!"

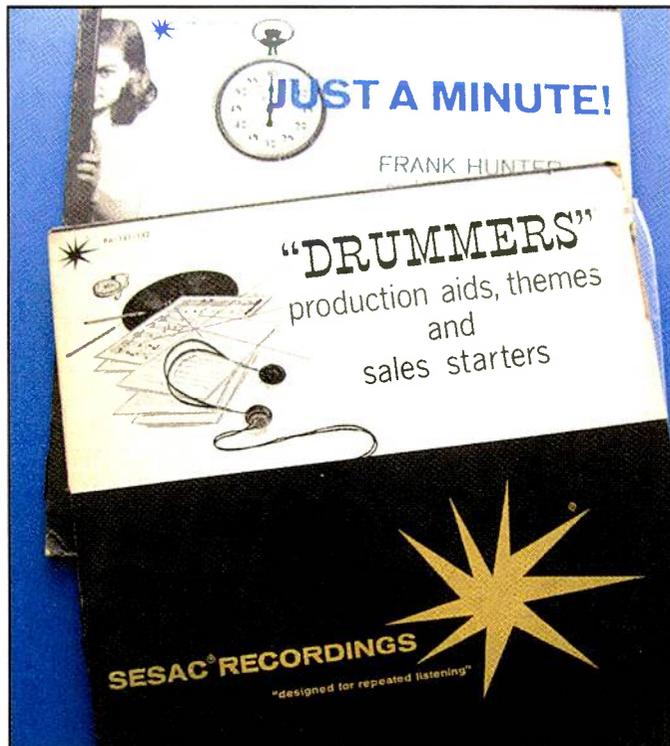
He showed my Dad an album with the characters from TV's *The Munsters* on its cover. None of the program's actors were included in the audio, as the record simply contained an instrumental version of *The Munsters* theme along with orchestral versions of music from other so-called "spooky" television fare and movies. In the jacket was a script Fitzsimmons typed up with a dozen short paragraphs related to the songs and the show's characters. A card and novelty shop grabbed his offer for it to be "exclusive sponsor" of the "Halloween Treat."

"We're Open This Sunday!"

During the 1960s, while one mainline religious denomination used some of its church members' contributions to sue broadcast stations it accused of not having a diverse enough staff, the Southern Baptists focused on a more inclusive version of the Gospel message and started producing a diverse stable of weekly, half-hour radio programs targeted to everyone from teens to senior citizens. Among the most popular was *Country Crossroads*, hosted by famed C&W announcer Bill Mack (with country comic sidekick, Jerry Clower) and including top country hits, Nashville artist interviews, and tastefully interwoven calls to live the Christian life. The LPs of these programs would be sent free to any station requesting them.



Checking to see if the latest pressing of his denomination's radio program looks clean, a Southern Baptist official would probably sample the 16-inch transcription disc on that big turntable. Note that it has two tone arms: The one along the back is for riding in grooves that track from the inside (near the label) out. This photo appears to come from the late 1940s, a decade or so before the Southern Baptists branched out from traditional preaching on their broadcasts to produce programming especially attractive to music radio audiences.



A couple of SESAC LPs (see text) containing enough jingles and music beds to liven up any Eisenhower-era radio operation. In fact one of the :13 second cuts sings, “We’re the snappiest station in town!” Now that’s really hip, isn’t it?

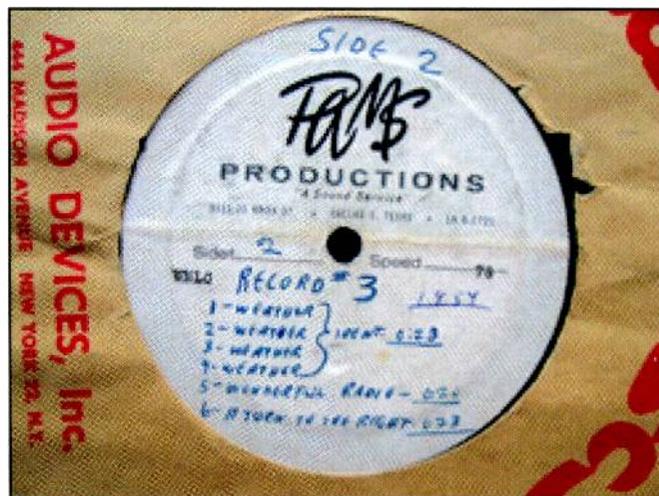
Another friend of my father’s built a little FM in a very rural region of upstate New York. That fellow recounted that on the same happy 1981 morning he received the FCC construction permit grant notification postcard, he also received a letter from the Southern Baptists offering to supply him with one or all of their specialty shows for his new venture. He took it as a good omen and ran the entire lineup for the three years he operated the station before handsomely cashing out.

When Dad mentioned this feat to Fitzsimmons, he replied,

Sid, I’ll go that guy one better, as I bet your FM buddy didn’t sell a sponsorship to the local Southern Baptist church like I did! The pastor there was glad to oblige and said his colleagues around the country did the same as an effective way to invite new folks into their congregation. On tape, I had the preacher open and close each *Country Crossroads* with the church’s address and service/Sunday school times, as well as the slogan, “Don’t forget folks, we’re always open on Sundays.”

“A Bribe From The Foreigners”

That’s the way Fitzsimmons described the next two LPs he pulled from one of the boxes. They were identified as SESAC recordings from the Society of European Stage Authors and Composers. This Nashville-headquartered organization (born in the States to amalgamate musicians with a European connection) originally represented a tiny slice of music aired over U.S. airwaves, but like major music licensing firms, such as BMI (Broadcast Music, Inc.) and ASCAP (American Society of Composers Authors and Publishers), SESAC exacted fees from anyone performing its groups’ music. SESAC knew it was an also-ran in the minds of most U.S. broadcast execs—especially in bucolic areas where the chances of European tunes being broadcast was slim to none—but nonetheless it would



My father provided a shot of an early 1950s PAMS jingle disc he liberated from the trash can at the now defunct WNLC New London, Connecticut. While PAMS typed the call letters on the label, the fledgling Dallas firm hand printed the track identification. Cut 6, A TURN TO THE RIGHT, is 23 seconds of upbeat singing related to the fact that WNLC resided at 1490 kilocycles at the right hand side of the AM dial. The jingles were aired until WNLC upped power and moved a bit further right (1510 kc) in the early 1960s.

warn that a purloined polka or some such ethnic selection “inadvertently” run on one’s non-SESAC member radio station could result in litigation.

For the average small market operator, SESAC’s fees represented a fraction of the BMI and ASCAP extractions, so most just held their nose and paid up. To mitigate this expenditure, SESAC wisely assembled a few of its people into a team that wrote and recorded short, jingle-like cuts that could be easily utilized in the station production room when matched to a particular advertiser’s message. These “production aids, themes, and sales starters” were soon staples at even the most modest AM daytimers. Examples include a 30-second “donut” (themed vocal at open and close with a music bed in the middle) spots containing material appropriate for an entire Main Street of establishments, from used car dealers to camera shops.

“It was not uncommon,” Fitzsimmons said, “for a store owner and his or her family to come to the station to sample our available SESAC commercial music vignettes, select something, and then stay with it year after year.” He laughed as he recounted that one of the cuts had been used on so many commercials for a nearby dry cleaner that the album cut became quite noisy in places. Being long out of “print” by that time, however, the SESAC disc couldn’t be replaced (at least by any sources Fitzsimmons beseeched), so Fitzsimmons suggested the business put something in the commercial about the cleaners not being able to remove scratches in its musical spot but was expert in removing spots from customer’s clothes! They agreed and the “excuse” ad campaign created new business for the dry cleaners.

Something For Radio Programmers To Digest In Dallas

Ever so carefully, Frank Fitzsimmons slid a sleeved disc out of another of the cartons. On its label, a logo instantly recognizable to jingle buffs was printed: PAMS. Dallas-based



The stipulation for stations to receive this LP disc of simulated 1st Century Christmas newscasts said that the producer (Mennonite Church) should get \$15 for the record if the station sold advertising before or after its content, but didn't have to pay anything if aired without a sponsor. Especially on Christmas, it's better to give than receive ad dollars.

Production Advertising Merchandising Service had been established by musician Bill Meeks in 1951 to offer advertisers musical signatures for their businesses. Among his first clients was pioneer Top-40 radio station KLIF in Dallas. Meeks' singers set every KLIF function—from weather forecasts to station identification—to lively musical greetings that listeners couldn't help but commit to memory. The mnemonic results no doubt played an important role in skyrocketing KLIF to the Big D's number one rated radio outlet.

Word spread that any AM or FM hoping to duplicate KLIF's success needed PAMS' product. The earliest were transcribed on an LP disc for direct airplay. Circa 1957, when Fitzsimmons broke into the radio sales game, his station's jingles originated in that fashion. By the early 1960s, however, PAMS delivered its wares on reel-to-reel tape and clients would dub them on tape cartridges for instant airing on their then new-fangled "cart" machines. Fitzsimmons had been given the old PAMS jingle disc by an engineer who saved it for historical reasons. My father was subsequently treated to its entire repertoire and verified that—despite a few scratchy patches—each jingle still exhibited the enchanting crisp optimism for which PAMS was often imitated.



My father's friend Frank Fitzsimmons never missed a December 31st without finding some willing business owner to sponsor Guy Lombardo's New Year's Eve party music. A bit of party-goer crowd noise from a sound effects record mixed in with tunes on the Lombardo LP did the trick. That *Happy Holidays* album was one of the most serendipitous time sales Fitzsimmons ever scored. He told my Dad that he noticed a display of the promotional records near the check out at the local True Value hardware store. Fitzsimmons hinted that he'd see if his station might consider airing it, but only if the hardware guy would see fit to sponsor the music. He must have proposed that deal very smoothly, as the store owner not only agreed to the advertising, but gave Fitzsimmons a couple of the records.

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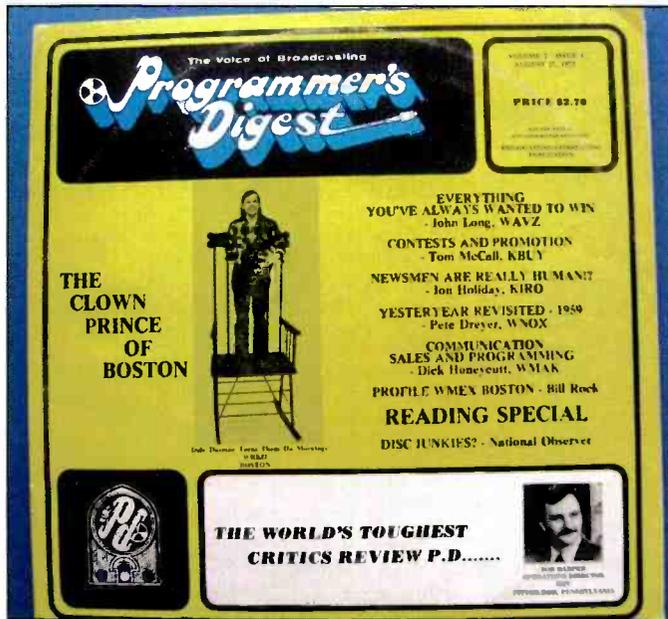


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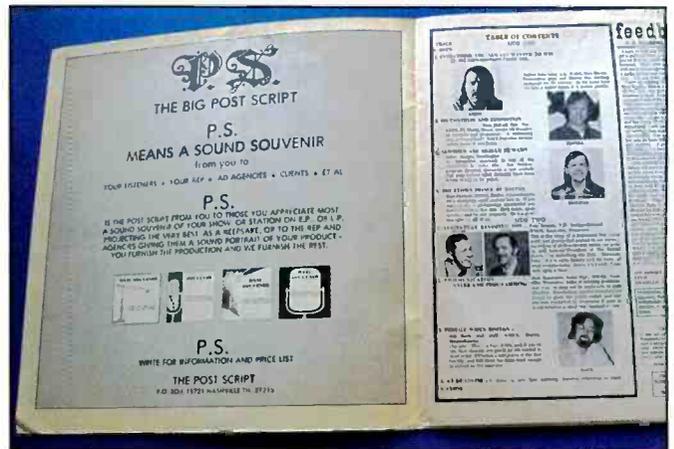
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Programmer's Digest for August 27, 1973, gave radio pro far from Massachusetts a sample of air-personality Dale Dorman's work. That big chair he's standing on denotes his station WRKO's moniker, the Boston Rocker. The audio magazine for radio people also included the inside scoop on the early 1970s format trends, programming and sales strategies, as well as news of the occasional highly rated FM outlet making waves in the then-AM world.



Open the book-like *Programmer's Digest* LP cover and a few pages of traditional print appear. There, publisher Buddy Blake and his associate editor Bobbye Byrd offered industry insider info, radio business commentary, radio-related book reviews, and a column's worth of classified ads. Once the PD subscriber read this part of the *Digest* from cover-to-cover (sometimes it ran only two pages), he or she got to the real reason for the unusual publication's existence: the LP record "magazine" inside.

As the last call letter was sung, Fitzsimmons had already removed an even rarer record from its jacket. That LP, pressed with a 1973 edition of something called *Programmer's Digest*, was never meant for broadcast, though recorded specifically for consumption by radio station personnel. Within a few revolutions of the turntable, Fitzsimmons and Dad were transported back to the Nixon days and well before contemporary radio lost the creative local flare that kept it a vital part of each media market's cultural personality.

Mailed "26 Mondays a year with a special issue at year end," *Programmer's Digest* was founded in 1972 by Buddy Blake who served as its publisher and editor. The audio magazine provided subscribers (\$60 annually if regular post/\$99 per year via air-mail) with a pretty good idea of what their counterparts were doing and/or recommending. *Programmer's Digest* ran everything from air-checks to advice on how to hire good personnel. In a world that seems eons prior to the Internet, the unusual weekly represented the only realistic way (other than by snagging night time sky-wave signals from big city flame throwers or trading tapes with radio associates) to hear what the top DJs sounded like or how some talked about on-air contest promotion was being executed in Los Angeles, Seattle, Chicago, or maybe Boise. Blake's unique offering was short-lived, and copies were being passed down—typically via tape dub by young radio enthusiasts—years after the *Digest's* circa 1975 demise.

Back To The Present

"Are you boys still alive down there?" Phyllis Fitzsimmons called at the top of the basement stairway. She and Mom had been promised dinner at one of the new national chain restaurants in town, and they suddenly realized they were getting hungry. "Frank, you and Sid have pretty unique wives," Mrs. Fitzsimmons declared with a more than a hint of playfulness, "but unlike your radio commercial inventory, they do need to be replenished at least every 6 to 8 hours!"

And so ends another day of broadcast history at *Pop'Comm*.

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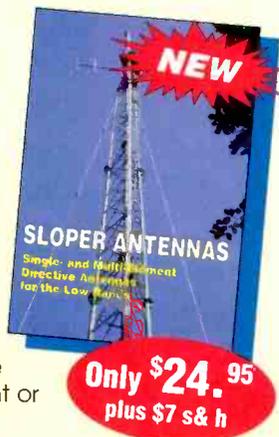
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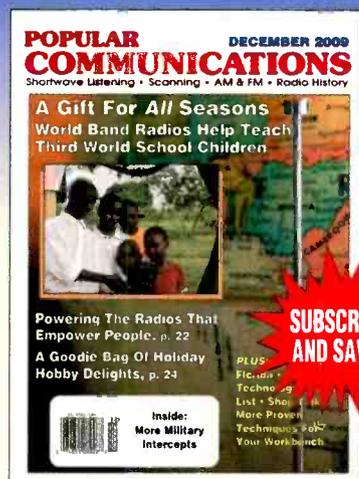
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The Winds Of March

by Bill Price, N3AVY
chrodoc@gmail.com

“Only after watching the last globule of solder from a one-pound roll fall onto the metal roof...did Norm finally admit that perhaps we should drop the cable to the ground and work on it inside the building.”

For some reason, I've never liked wind. It's always been an adversary as long as I can remember. Between this past Christmas and New Year's day, we had enough wind to rattle all the windows of the stately Price Manse and run the heating bills up to right around the price of a new Oldsmobile. (Oh, wait, there *are* no more *new* Oldsmobiles, are there?) And I find myself dreading the necessary early spring outdoor antenna sprucings.

Wind has always entered into any outdoor activity I can remember. The most painful and frustrating event involving wind was my first one—and although I was an avid SWL at that time, my first wind-dominated event didn't involve radio at all.

My younger brother was about three, which would have made me about 10, and I decided that he'd really appreciate an adventure on this particular Saturday morning, so I got him up and dressed, packed the necessary equipment for a brisk breakfast off in the nearby woods (maybe a mile hike across open fields), and told him what a great morning it would be for him. He seemed to be excited and up for it, and he traipsed along with me as best a three-year-old could do in about six inches of crusted snow. A 10-year-old is not wise enough to realize what a brisk wind can do to a 20-degree day, so we headed off over hill and dale, through barbed wire fences. As I remember it now, it was perhaps the coldest I've ever been in my life.

About halfway to our sheltered destination in the woods, I noticed that his boot (and shoe, and sock) had come off and gotten stuck in the crusty snow some ways back. He never once complained, even walking with one bare foot in the snow. At that point, I was blessed with possibly the smallest amount of wisdom a human has ever been given, and decided to stop there, give him one of my boots, and prepare us our breakfast.

Bringing a soup can full of snow to a boil over a Sterno stove in a 20-mph wind is not what you'd call a quick process. My brother stoically waited for the first bubbles to appear and was not nearly so daunted as I was when I saw the water go cold again when I dropped in our two eggs, which were now frozen from the same exposure that we'd had so far that day. He never knew why I took my own egg out of the water and tossed it aside so that his could cook faster.

After a very long time, a few bubbles appeared and he ate an almost raw (but warm) egg from its

shell as I held it in my hand, and helped him spoon it from the shell. I packed our gear and we hurried back along our trail toward home, and I picked up his boot, shoe, and sock along the way. He just wore mine until we got back home.

We had hardly spoken along the way. I was so cold and feeling so stupid, and he must have been rapt with the adventure. When we arrived home, frozen, my father asked where the *&!# we'd been and what were we doing.

“We had breakfast. It was good,” my brother told him—the first of many understatement he made involving me.

More recently Norm engaged me in two rooftop soldering events. The first was on the windswept roof of “That place which will remain nameless,” on a bright, sunny New England winter day. I can't remember *why* the SO-239 connector couldn't have been a screw-on or crimp-on or dropped to the ground and passed through a window and soldered inside, but as you might suspect, there was some reason why that could not be done initially.

Only after watching the last globule of solder from a one-pound roll fall onto the metal roof and I had lost most of the faith I'd ever had in anything, did Norm finally admit that perhaps we should drop the cable to the ground and work on it inside the building. I look back and wonder why *I* was always the one doing the soldering in these escapades.

And it could have been that same winter—or another one exactly like it—that had me on the roof of Norm's apartment building—this time with an extremely underpowered butane soldering iron, attempting the same trick in what had to be gale-force winds. We filled the torch *twice* on that trip before Norm thought maybe the project could wait for a day with less wind.

There was another time (also in New England) when my son and I decided to ride a “half-century,” which translated into a 50-mile bicycle ride on the seacoast. Of course, we did not train beyond a 20-mile ride for this event, and of course, the first half of the ride was with the wind squarely at our backs, but the last 25 miles were generally *into* the wind, which if I recall correctly, was blowing at what felt like 100 mph as we crossed the finish line.

I am eternally grateful for the Internet, and for indoor SWL antennas. May your antennas survive until at least the summer months.

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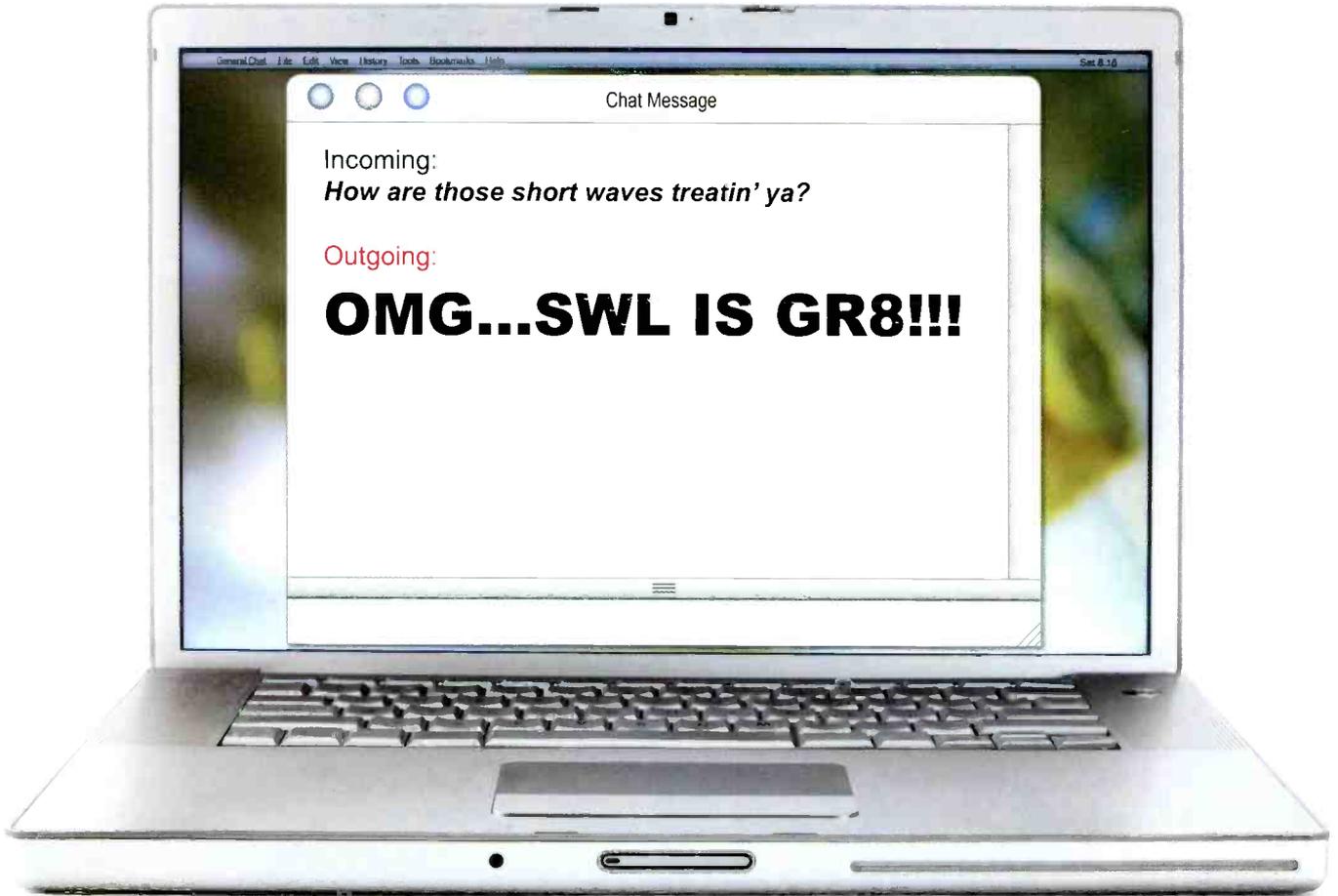


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