

POPULAR COMMUNICATIONS

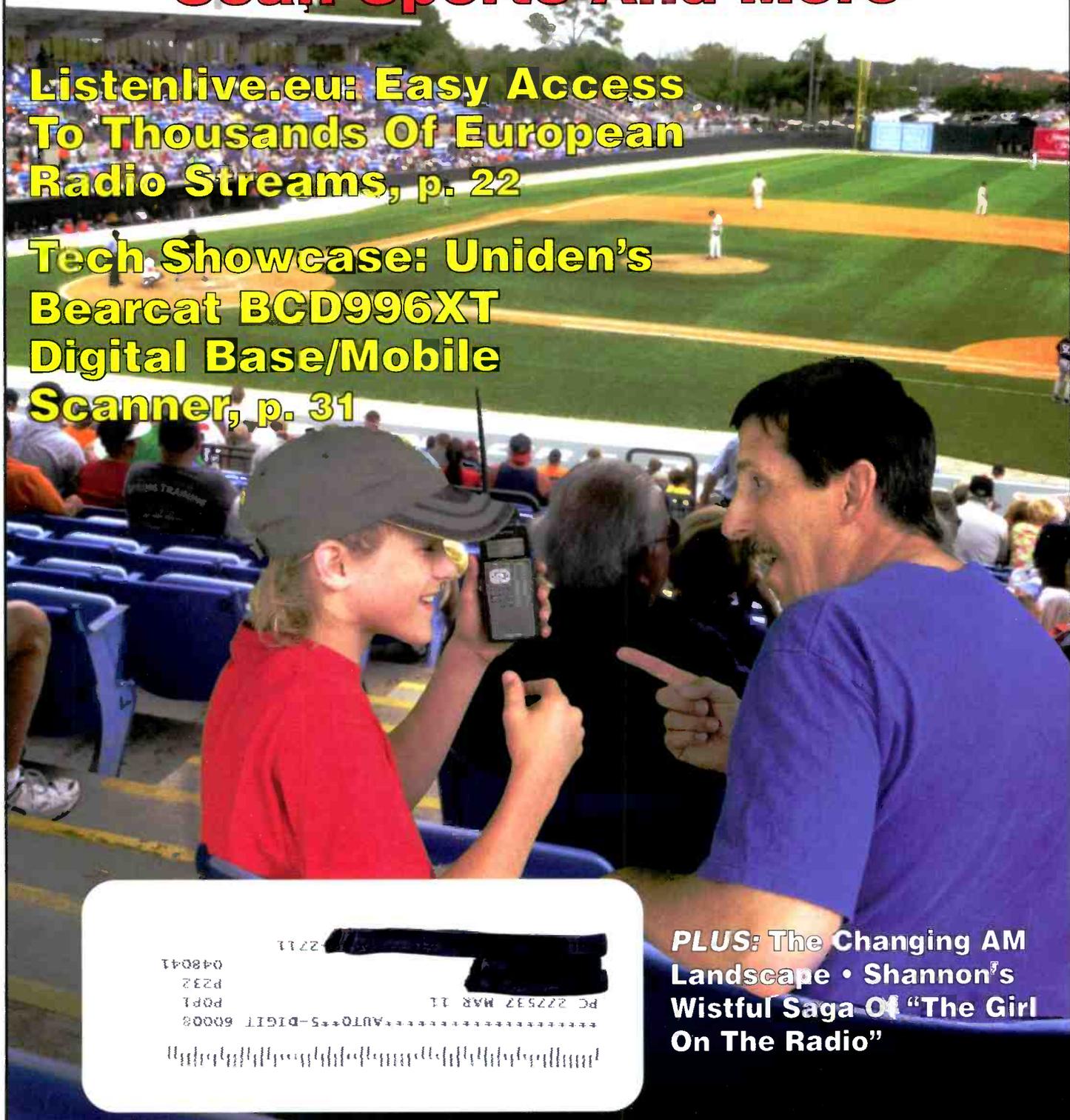
JULY 2010

Shortwave Listening • Scanning • AM & FM • Radio History

Hot Summer Tunes Scan Sports And More

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To Thousands Of European
Radio Streams, p. 22**

**Tech Showcase: Uniden's
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Scanner, p. 31**



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Landscape • Shannon's
Wistful Saga Of "The Girl
On The Radio"**

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- Preset Shortwave Broadcast Station Memory Bank
- Extensive Scanning Capability/Smart Search™



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ALL-MODE WIDEBAND RECEIVER

VR-500



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R6

The **Icom R6** covers 100kHz to 1309.995 MHz (less cellular gaps) in: AM, FM Narrow and FM wide. Enjoy local VHF-UHF coverage plus international shortwave broadcast. 1300 memories store: frequency, mode, step size, duplex, CTCSS, tone squelch and skip settings. Other features include: attenuator, LCD lamp, AM ferrite bar antenna, auto power off, CTCSS decode, weather function and battery save. You can put the world in your pocket for under \$200.00.

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IC-RX7



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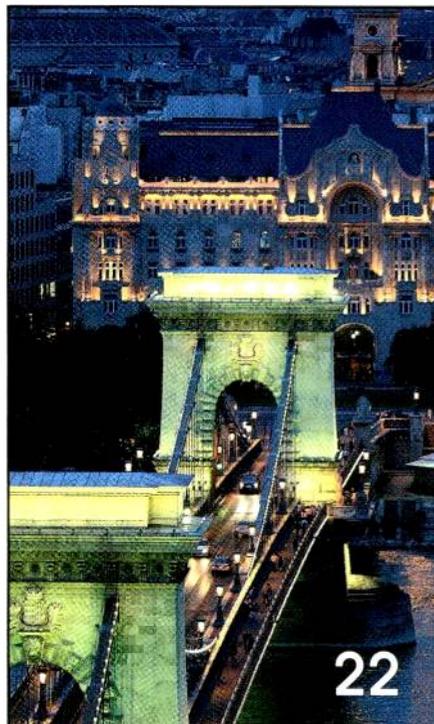


Universal Radio is also pleased to carry the complete Icom amateur radio equipment line. The **IC-7700** shown.

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- Special offers are subject to change.
- Returns subject to a 15% restocking fee.
- Prices shown are after mfg. coupons.

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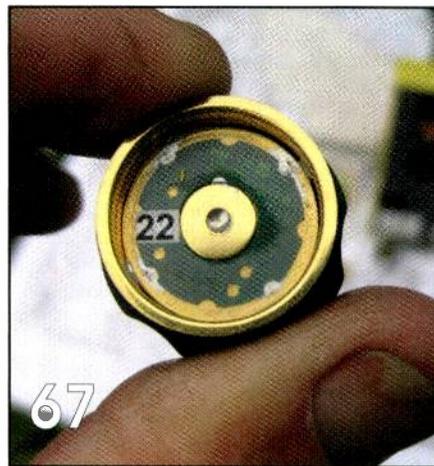


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ON THE COVER

With the warmer weather and longer days upon us, it's time to get outside and enjoy your favorite pastimes—with your favorite scanner programmed for action. Tune in on the excitement in baseball, NASCAR, the PGA, horse racing, and more; see "Summertime Fun...Radio Style," by Ed Muro, K2EPM, starting on page 10, for where to listen to the sounds of summer.

(Photo: by Larry Mulvehill, WB2ZPI)

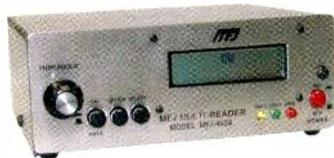
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web: www.popular-communications.com

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.

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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

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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. 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.



MFJ-959C
\$119⁹⁵

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



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-956
\$69⁹⁵



MFJ-1046
\$119⁹⁵

MFJ Shortwave Speaker



MFJ-281
\$12⁹⁵

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

MFJ All Band Doublet

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



MFJ-1777
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MFJ Antenna Switches

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MFJ-1704
\$79⁹⁵



MFJ-1702C
\$39⁹⁵

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

Dual 24/12 hour clock. Read UTC/local time at-a-glance. High-contrast 5/8" LCD, brushed aluminum frame. Batteries included. 4 1/2Wx1Dx2H inches.



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EDITORIAL

Tuning In

Ya Gotta Have Friends— Facing Up To Facebook

by Edith Lennon, N2ZRW

editor@popular-communications.com

Look, it's not that I'm unfriendly. Maybe it's the old "I wouldn't want to belong to anything that would have me as a member," but I'd fought hard against the tide of social networking websites, even to the point of avoiding *Pop'Comm's* own Facebook page for as long as my conscience would allow. (We now know that my conscience has a half-life of approximately four months.) Last night, though, I braved the virtual waters, taking the plunge as *Pop'Comm's* 334th friend on Facebook.

As hobbyists we're supposed to be early adopters of new technology—if not actual innovators and inventors—so I guess it was the "social" rather than the "networking" aspect of Facebook that put me off. A similar desire to be off the grid and not instantly findable 24/7 was also behind my foot-dragging acceptance of keeping a cell phone on my person.

OK, here's the real reason I stalled: The fear of the memories from my early hyper-geek stage that might come back to haunt me. Frankly, I'm a little unsettled by the prospect of Jr. High alumni "friending" me. (C'mon, really, after all these years? Now you want to be friends?)

I'm still in the awkward early stages of "friending" Facebook itself, and currently my personal page is all but non-existent except as a conduit to *Pop'Comm's*.

One of the unexpected benefits of joining, however, is that I now deeply empathize with our readers who aren't quite comfortable with the new technologies that zip around the corner like so many new drivers and try to run you over in your shack. I thought it would be a cakewalk, but I literally hit virtual walls. I felt the initial pain of strangeness, and still have twinges. Still, I soldier on for the greater good of better connecting with a broader range of readers.

And that, of course, is the real reason I'm there.

Facebook is one more way we on the magazine staff can get your feedback, and

"Facebook is one more way we on the magazine staff can get your feedback, and I hope as more readers adopt the service, we'll create something of a Pop'Comm community...among readers, writers, and the simply curious."

I hope as more readers adopt the service, we'll create something of a *Pop'Comm* community—of who knows how many "friends"—among readers, writers, and the simply curious. I've been really enjoying reading your posts and feeling your love for the hobby. Meandering through all the photos has been great, too (and now maybe Gerry Dexter can get some of those shack pictures he's always asking for!).

So, whaddya say? Let's be friends. If you're on Facebook, friend *Pop'Comm* and stop by. I'll be there more far often than on my own page (shyness dies hard), I'm pretty certain. I have one request though: If you did know me in Jr. High, please be kind.

For those of you who are sticking to your guns—and off Facebook—I encourage you to send your feedback the snail mail way, via our Reader Survey. For the price of a stamp, you can send us your feedback and put yourself in the running for a free sub or extension to *Pop'Comm*.

Missing From The Masthead

It's my sad duty to inform readers that columnist John Kasupski, W2PIO, will no longer be informing, inspiring, and helping us (that last one's from me) with his vast knowledge and experience. John has helmed the "Utility Communications Digest" column since the August 2006 issue and "EmComm Essentials" since I asked him to introduce it in November 2008. We thank John for his many contributions and wish him all the best in the future. I certainly will miss him.

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CEI Special Price \$519.95

1,000 Channels • 10 banks • CTCSS/DCS • S Meter
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Frequency Coverage: 25.000-512.000 MHz., 806.000-956.000 MHz. (excluding the cellular & UHF TV band), 1,240.000-1,300.000 MHz.

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

Bearcat® BCT8 Trunk Tracker III

Manufacturer suggested list price \$299.95

CEI Special Price \$169.95

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

Frequency Coverage: 25.0000-54.0000 MHz., 108.0000-174.0000 MHz., 400.0000-512.000 MHz., 806.0000-823.9950 MHz., 849.0125-868.9950 MHz., 894.0125-956.0000 MHz.

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



Bearcat® BCD396T Trunk Tracker IV

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

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

Frequency Coverage:

25.0000-512.0000 MHz., 764.0000-775.9875 MHz., 794.0000-823.9875 MHz., 849.0125-868.8765 MHz., 894.0125-956.000 MHz., 1,240.0000 MHz.-1,300.0000 MHz.

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



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

organized so that it more closely matches how radio systems actually work. Organize channels any way you want, using Uniden's exclusive dynamic memory management system. 3,000 channels are typical but **over 6,000 channels are possible** depending on the scanner features used. You can also easily determine how much memory you have used and how much memory you have left. **Preprogrammed Systems** - The BCD396T is preprogrammed with over 400 channels covering police, fire and ambulance operations in the 25 most populated countries 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 BCD396T 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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Suggested list price \$399.95/CEI price \$214.95
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Size: 2.72" Wide x 1.26" Deep x 4.6" High

Frequency Coverage:

25.0000-54.0000 MHz., 108.0000-174.0000 MHz., 216.0000-224.9800 MHz., 400.0000-512.0000 MHz., 806.0000-823.9875 MHz., 849.0125-868.9875 MHz., 894.0125-956.000 MHz., 1,240.0000 MHz.-1,300.0000 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 1,800mAh 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

You Say Potato, I Say Potatoe

When birds of a feather flock together, luckily the threat of a trademark infringement lawsuit can help sort them all out. Happily, after an 18-month legal dispute, Absolut (vodka) reached a settlement with Absolute (Radio) before any mischief could ensue. According to published reports, Absolut, the Swedish vodka brand owned by the V&S Group (V&S Vin & Spirit AB), had launched high court proceedings for trademark infringement and “passing off,” or misrepresenting services, against TIML Radio Limited for its brand Absolute Radio, a British broadcasting station. Distilling the argument: In 2008 UK’s Virgin Radio was bought by a consortium that included TIML, but the buyer could not acquire the rights to the name “Virgin,” opting instead for “Absolute.” While V&S argued that consumers could be confused over the similarity between the product names, to the detriment of the vodka brand, an Absolute Radio spokeswoman said, “We absolutely believe that our five million listeners can distinguish between a vodka brand and a radio station.” The terms of the settlement are confidential, but allow Absolute Radio and Absolut vodka to continue to trade using their existing names. Good news for radiophiles and imbibers? Absolutely, umm, absolutely.

“Mafia Radio” All-Request Line

Radio Olimpia, a station in the Italian town of Rosarno, Calabria, was apparently broadcasting more than the favorite tunes of a lonely prisoner from its unlicensed transmitter. Prosecutors allege that mafia boss Salvatore Pesce, jailed on suspicion of international narcotics trafficking, used the station to send coded messages to his crime family operating outside the prison. The station was one of five companies raided and closed in a police take-down, aptly dubbed “Operation All Inside,” as reported on the Telegraph.co.uk website. Authorities monitoring conversations between Pesce and his wife overheard him requesting certain songs on the radio. “Initially the officers put it down to a love of music, but then they realized that Pesce was using the songs to find out about the outcome of his application for release,” according to the report. Suspicions that Pesce wasn’t just being wistful seemed confirmed by a transcript leaked to the daily *Il Giornale*, in which Pesce is recorded telling his wife, after scribbling

down the name of a tune, “If it’s positive you send me [this] song on the radio tonight. If it’s negative you send me another.”

Pelosi Harasser’s “Doh!” Moment

San Francisco resident Gregory Giusti is now infamous for two reasons: for placing dozens of threatening phone calls to House Speaker Nancy Pelosi’s California and Washington, D.C., homes, her San Francisco office, and her husband’s California office; and for doing it *really* badly. In one call Giusti recited her home address and said that if she voted for the then-pending health-care overhaul legislation, “don’t bother coming back to California cause you ain’t gonna have a place to live.” A report on *ArsTechnica.com* said that, in addition to threatening Pelosi, Giusti taunted her staff, saying, “This number is, and the number I’m calling from is, untraceable so if you’re trying to trace it, have fun.” Authorities did, and it wasn’t. The calls were made from a phone number assigned to the supposedly untraceable VoIP provider magicJack, but a grand jury subpoenaed the number’s account information. While Giusti listed a different name and address, it was that of a man he knew, who was able to identify Giusti’s voice. When questioned by authorities, Giusti initially denied being the caller, until an agent dialed the number in question from another room...and Giusti picked up, saying, “Hello?” He faces two years in prison and a fine of \$250,000, as well as “being known as the worst anonymous caller in the entire world,” reported *ArsTechnica.com*.

Take Two Transmitters And Call Me In The Morning

Researchers at the University of Florida working with the Florida biomedical research and engineering firm Convergent Engineering have designed a technology for tracking when medications are taken as aid in the detection of “medication regimen compliance,” according to a news item in the *RFID Journal*. Developed to ensure that patients or clinical trial participants stay on drug regimens, the system’s unique recipe includes a microchip, a digestible antenna, and software. Several of the researchers involved have launched a company called eTect to further develop and market the technology under the name ID-Cap. Thanks, we’ll pass.

News, Trends, And Short Takes

by D. Prabakaran

Senators Call For Radio/TV Martí To Become Part Of VOA

U.S.-government-backed radio and television broadcasts into Cuba reach a tiny audience there and suffer from poor editorial standards, a U.S. Senate Committee said in a scathing report. Founded to give Cubans accurate, unbiased news programming, Radio and TV Martí “have failed to make any discernable inroads into Cuban society or to influence the Cuban Government,” said the Senate Foreign Relations Committee. The panel’s report noted that U.S. government-sponsored research found that less than two percent of Cubans listen to Radio Martí, and “claims that TV Martí has any stable viewership are suspect.” The panel, led by Democratic Senator John Kerry, sharply criticized the Office of Cuba Broadcasting (OCB) that oversees both outlets of having “failed to adhere to generally accepted journalistic standards.”

“Both internal and external investigations have criticized OCB for broadcasting unsubstantiated reports from Cuba as legitimate news stories, for using offensive and incendiary language in news broadcasts, and for a lack of timeliness in news reporting,” the committee said. The report calls for moving OCB to Washington and integrating it with Voice of America (VOA) to boost its standards.

(Source: AFP via Media Network)

Ebbing Sunspot Activity Makes Europe Freeze

Periods of low sunspot activity are associated with changes in the winds that tear through the upper atmosphere, bringing unusually cold winters to northern Europe, a new study finds. The study, published in *Environmental Research Letters*, analyzed 350 years of temperature data recorded in central England since 1659, comparing it to astronomical observations of sunspots. The research team, led by Mike Lockwood, a solar-terrestrial physicist at the University of Reading, UK, found that after allowing for global climate change, European winters tended to be 0.5 °C colder than average during low-solar-activity years. Sunspot activity also affects the ionosphere, which reflects shortwave signals, so there is apparently an indirect connection between the weather and shortwave propagation.

(Source: Nature News via Media Network)

RNW Partners With WRN To Launch “Radio With Pictures”

International broadcast services company WRN announced the launch of its Radio With Pictures product, which aims to revolutionize satellite radio broadcasting by allowing satellite and cable radio stations to

display visual content on TV screens. Visuals could include live graphics, existing Web content, or interactive SMS and Twitter feeds. Radio Netherlands Worldwide is the first of WRN’s clients to take advantage of the product for its Arabic service, which broadcasts to the Middle East on Arabsat and Nilesat, enabling it to transform the radio programming into a 24-hour TV channel.

(Source: WRN)

Somalia Government Threatens Radio Stations Complying With Islamist Militant Music Ban

Days after Islamist insurgent group Hizbul Islam banned radio stations in Mogadishu from playing music of any kind, journalists in the embattled Somali capital found themselves facing an ultimatum from the government after it announced that all radio stations complying with the ban would face closure. According to the National Union of Somali Journalists (NUSOJ), 14 radio stations in Mogadishu had stopped broadcasting music, substituting it with the sounds of gunfire, car horns, and animal cries. The stations were reacting to the Hizbul Islam ban, a move by the Islamist group to counter what it sees as Western imports not in accordance with its strict definition of Islam. Two radio stations refused to comply. Radio Mogadishu, which is run by Somalia’s Transitional Federal Government (TFG), and Radio Bar-Kulan, which is funded by the UN and operates from Nairobi, were the only radio stations to continue broadcasting music in the capital. Days after the other stations complied with the ban, however, the TFG issued a counter-order stating that all radio stations that had done so would be considered as “working with the insurgents.”

(Source: International Press Institute via Media Network)

Kenyan Radio Stations Warned Over Signal Violations

Kenyan radio stations whose frequencies are interfering with the aviation industry and emergency hotlines have been given four weeks to switch off or face legal action. The broadcasters are operating outside their allocated frequencies or are using high-powered transmitters, causing radiation and interference with airline communications, which can affect aircraft landing and take-off, posing a great risk to passengers lives, says the regulator, the Communications Commission of Kenya (CCK). In addition to the aviation industry, the interference of the frequencies also affects other services, such as public emergency hotlines, including hospitals’ ambulance emergency services, or other broadcasters.

(Source: Business Daily)

Capitol Hill And FCC Actions Affecting Communications

by Richard Fisher, K16SN

Congress Hailed For Support To Allocate 700-MHz D-Block To Public Safety

Five lawmakers have been applauded by the Association of Public-Safety Communications Officials (APCO) International for their “introduction of bipartisan legislation to allocate the (700 MHz) D Block spectrum to public safety for the development of a national interoperable public safety broadband network.” The U.S. House of Representatives’ Peter King (3rd Dist., NY), Anh Cao (2nd Dist., LA), Yvette Clarke (11th Dist., NY), Candice Miller (10th Dist., MI), and Mike Rogers (3rd Dist., AL) are behind the “Broadband for First Responders Act of 2010 (H.R. 5081);” introduced one day after the 15th anniversary of the Oklahoma City bombings, highlighting in part “the vital need for improved interoperable communications for large-scale incidents, as well as day-to-day public safety response.” APCO hailed introduction of the legislation as taking a step toward “ultimately improving the public’s immediate and short- and long-term security for everyday public safety, during critical events and in the midst of any future national terror attacks or large-scale natural disasters,” APCO President Richard Mirgon said.

FCC Grants Waiver To Texas Radio Amateurs In Disaster Drills

A public health department in Forth Worth, Texas, has been granted a waiver by the Federal Communications Commission allowing “certain Amateur Radio Service licensees to transmit communications on behalf of their employers during upcoming government emergency drills.” The Tarrant County Public Health Department’s Preparedness and Bioterrorism Division had sought the waiver of Commission Rules Part 97.113(a)(3) to allow monthly radio-check disaster preparedness drills between April and December. The FCC rule “prohibits amateur licensees from transmitting communications in which they have a pecuniary interest, including communications on behalf of an employer.” However, Section 1.3 of the Commission rules “provides that the Commission may waive its rules if good cause for waiver is shown.” The exercises were scheduled to “test radio equipment readiness in the event of an emergency. The drills [were to be held] at various locations in north

Texas” in consecutive months between April and the end of 2010 and last 20 to 30 minutes each.

Force Behind National Broadband Plan Announces Resignation

Blair Levin, who headed the FCC’s National Broadband Plan initiative and was also a long-time Commission official, has announced his resignation and plans to join the Aspen Institute. He will be the Institute’s Communications and Society Fellow. According to a piece on the TopNews website, “Levin said that by joining [the] Aspen Institute—which has a non-partisan Communications and Society Program for reviewing the impact of electronic technology societies—he ‘can reflect on the impact of the National Broadband Plan and particularly its application to the international arena.’” Prior to his involvement in the National Broadband Plan, Levin shared leadership, with current FCC Chairman Julius Genachowski, of the Technology, Innovation & Government Reform Policy Working Group of the Technology Transition Team of President Barack Obama.

FCC Considers Decreasing Vanity Callsign Regulatory Fee

An FCC Notice of Proposed Rulemaking (NPRM) issued in mid-April calls for a reduction in the regulatory fee for an amateur radio vanity callsign—possibly lowering it by a dime. A vanity callsign now costs \$13.40 for a 10-year period; if the FCC plan goes through, the fee will be reduced to \$13.30 for 10 years. The vanity callsign regulatory fee is required both upon application for a vanity callsign and when renewing it. Regulatory fees are not associated with those required to administer the vanity callsign program.

Historically, the vanity call sign regulatory fee has varied from \$11.70 in 2007 to a high of \$70, as initially proposed in an FCC Report and Order in 1994. The FCC lowered the fee from \$20.80 to \$11.70 in 2007. The Commission is expecting 14,800 vanity callsign applications in the next fiscal year, generating almost \$197,000 in regulatory fees. The first vanity callsign licenses issued under the current program, beginning in 1996, were up for renewal in 2006. Amateurs with vanity callsigns obtained before 1996 are exempt from the regulatory fee at renewal.

Essential Communications Tools

by Rob de Santos
commhorizons@gmail.com
Twitter: @shuttleman58

“In... ‘Desert Island Medium,’ you also have to choose the device to receive your entertainment—and you only get one choice. What would you choose?”

If you had to give up most of your communications devices, which ones would you choose to save? Would you keep a radio? An Internet connection? A television? What do you think the members of your family or your neighbors would choose? I’ve reached the point where the Internet is probably what I would keep, with radio a close second, and my Blackberry closing in fast, too. However, I’m not the norm and perhaps you, the readers of this magazine, aren’t either.

In the larger society, the answer to this question tells us a great deal about where the next “horizon” in communications lies. With so many options today, we don’t give much thought to which technologies matter most to us. But producers and advertisers pay *a lot of* attention to where we direct our eyes, ears, and—most importantly—our money.

The longest running program on the BBC is called *Desert Island Discs*. The premise is simple. Guests, often people who are well known but not necessarily in the music or radio business, are asked to discuss their life stories. Along with that, the guests are asked to select a number of musical recordings (usually about eight) they would take with them if they knew they would be stranded on a desert island with no other means of entertainment. These recordings are interwoven into the host’s interview of the guests.

In our version of the program, which I call “Desert Island *Medium*,” you also have to choose the device to receive your entertainment—and you only get one choice. What would you choose? What would the typical person choose? A recent survey* provides some interesting insight to the likely answer to this question, and not surprisingly, it seems to be generational.

When Americans were asked: “*Suppose you could never watch television again OR you could never access the Internet again. Which would you be more willing to eliminate from your life?*” the answers broke down clearly by generation. Those between the ages of 44 and 65—roughly those born during the “baby boom” years of 1945 to 1965—choose television over the Internet. These years roughly track from the birth of television to the peak of its transformative effect on society. Those born after 1965 choose the Internet. Those over age 65 (born prior to 1945), choose television by a three to one margin. Additional light was shed on the subject in the same survey when participants were asked if they listened to radio

online each week. Not surprisingly, the largest population group for online radio was those between the ages of 25 and 34. The fewest were in the group over the age of 55.

From these survey answers, it seems clear that the imprint of the dominant technology during our formative years is significant and long lasting, and it guides what we use and value—our “Desert Island” choices, as it were. I call this *technology imprinting*.

What does this tell us about the future? What device would those who today are 21 or younger choose if they were asked the same question 20 years in the future? If my hypothesis of *technology imprinting* is correct, those born after 1990 will form the “hardheld” generation. Walk around a mall today or sit in a room with high school students. Ask them what device they most value in their lives. I’ll bet it’s a handheld device, such as a smartphone or MP3 player.

While those of us who are long out of high school tend to think of inventions like the transistor or personal computer as the most important breakthroughs of recent times, they are not the devices that are transformative for this younger group. Rather it’s the devices’ second and their generation offspring, such as the iPhone, that will prove to be the important ones, I believe. In this analysis, the inventions that are important for now—historical reasons (transistor, PC) give rise to those that create today’s technological imprints.

The cutting edge of today’s communications is driven by the offspring of yesterday’s key inventions, and it will probably remain so in the future. Harder to forecast is just what those offspring devices will be. If you know, I hope you’re investing in them right now (and feel free to let me know so I can beef up my retirement accounts, too!). It’s the difficulty of guessing the next hot tool or device that has always clouded technology forecasting and no doubt always will. But I’m pretty sure that whatever that device is, those now in their youth will be affected by it all through their lives, even as it becomes obsolete or is superseded by something newer.

What communications devices would you keep with you if you had to choose? Let me know your Desert Island Medium decision via one of your modern communications devices.

**The Infinite Dial*, Edison Research and Arbitron, April 2010

Summertime Fun... Radio Style

Roll Out Those Lazy, Hazy, Crazy Days Of Scanning For Exciting Monitoring Targets

by Ed Muro, K2EPM



Ah, summer! The days are longer and the weather's warmer, and best of all, it's a great time to take your hobby out of doors. Just because you're spending more time outside your home and away from your shack doesn't mean your enjoyment of our favorite hobby has to suffer. Far from it; in fact, there's a whole world of summer scanning opportunities waiting for you out there. I'd like to share some of my favorites with you now, and I'm sure you have your own. Hopefully, with your trusty scanner in your hand, you'll find new places and events to "play radio."

Use Common Sense In Public Spaces

First off, I have to admit that it's a different world we live in than when I was actively scanning the Mets games at Shea Stadium, both in terms of radio technology and terrorism awareness, and in many respects radio monitoring isn't what it once was.

Between encrypted signals and security screenings at many public venues, in all honesty, it's not always easy to fully enjoy listening to your scanner. With so many metal detectors being used to screen people in all sorts of places, it's definitely a good idea to find out ahead of time what is and what isn't allowed in your stadium, at your racetrack, county fair, or wherever you're going.

Even if your scanner is perfectly acceptable, it's still smart practice not to do anything to make anyone uncomfortable. One good rule of thumb when doing any scanning in public these days is to try to not stand out like the proverbial sore thumb. If

Ed Muro, K2EPM, has been a radio hobbyist since his early teens. He has served three terms as vice-president of the Long Island Mobile Amateur Radio club and is a Public Information Officer and VE for the ARRL.

The Air Force Thunderbirds flew their trademark Delta formation during the opening ceremony at a NASCAR race. (U.S. Air Force photo by Tech. Sgt. Sean Mateo White)

you're in a venue where it's unusual, scanning in "stealth mode" may be called for.

For instance, some of my favorite summertime scanning is done at NASCAR races and airshows, events at which someone following the action with a radio is a pretty common sight. On the other hand, when I attend Fleet Week festivities in New York City, I'm not so sure how scanning would be received. To be on the safe side, I scan these events using either my Uniden BC396T or my Yaesu VX-3R, which are both pretty easily concealable radios. I keep these tucked inside my jacket or sweat shirt pocket, add a set of ear-buds, and while I'm scanning away, most people would just assume I'm listening to an iPod or other MP3 player.

So, what is there to scan? In a word: lots! Obviously, exactly what there is will depend largely on where you live, but let's take a look at some of the more popular targets.

America's Pastime

Baseball season in New York always adds lots of activity to the local bands, because we're blessed with two major league teams in our area (in addition to three minor league teams!). Even if your hometown isn't quite so lucky, chances are you have a minor league or college team not too far away—and if not baseball, perhaps another sport is played near you (football, hockey, and basketball season are never too far away).

If you can't get to the game and enjoy a foot-long hotdog, you may still be able to get a taste of the scene from a distance,



Johan Santana, now with the New York Mets, speaking on the radio after a victory in Tampa Bay in May 2005 while still with the Minnesota Twins. In the background are Venezuelan flags brought by fellow Venezuelans. (Via Wiki Commons by Googie Man)

depending on your location. For instance, the New York Police Department has special channels for “stadium details” that operate on exclusive frequencies during major events, they’re usually quite active. I’m fortunate that I can listen to the NYPD details from just about anywhere within 40 miles of the New York City.

See “Major League Baseball Frequencies” for frequencies to tune to on your scanner. Or, take a short break from the scanner when the sun goes down and grab your AM radio to try for a mediumwave DXing of the summertime baseball fun. There’s sure to be a game or two you can tune in to.

Hot Wheels

Hugely popular, auto racing presents scanner monitors with terrific opportunities for exciting radio listening. From NASCAR and Indy Car to local dirt tracks and drag racing, summertime roars with high-speed (or high-impact) action all across the country.

Scanning at NASCAR events, in particular, has become something of a cottage industry over the years (see “NASCAR Sprint Cup Frequencies”). We radio monitors are a lucky bunch, because there’s no better way to enjoy a race than by getting to listen to the “inside scoop” on the scanner while watching the action on the track. The race is a lot more exciting when you know the behind-the-scenes story of what’s going on. To enjoy monitoring NASCAR communications, you don’t even need to own your own equipment—clever entrepreneurs realized how popular this aspect is and cater to the race fan by selling or rent-



Horses head down the stretch on the main track at Belmont Park. The Long Island racecourse is home to the third jewel in the U.S. Thoroughbred Triple Crown series, the Belmont Stakes. (Photo by Dave Mock, via Wiki Commons)

Major League Baseball Frequencies

Baseball Hall of Fame	461.175	462.400	936.6375	463.2875
461.075	462.175	462.7625	936.6625	464.375
	462.2125	463.300		464.675
Anaheim Angels	462.8625	463.575	Minnesota Twins/ Metrodome	469.3125
461.925	467.2125	463.600	153.965	TRUNKED 856- 860.0375
469.525		463.8375	155.025	
469.575	Cleveland Indians/Cleveland Stadium Corp.	463.9375	461.050	San Diego Padres/ Jack Murphy Stadium
469.600	151.655	464.4125	461.250	151.925
	151.685	464.9375	464.575	151.955
Atlanta Braves	151.715	466.1375	464.775	
464.325	151.745	466.7125		New York Mets
	151.835	466.7375	151.625	151.570
Baltimore Orioles/ Camden Yards	154.515	467.025	151.835	154.600
461.1375	154.570	467.075	904.375	461.6375
461.1625	154.600	468.030	904.400	462.8875
461.200		468.8375	904.425	464.100
461.300	Colorado Rockies	468.9375	904.450	464.150
461.500	461.0875	469.9375	904.475	464.200
461.6375	461.2125		904.475	464.250
464.3625	461.3875	Kansas City Royals	904.500	464.3875
464.4375	461.4125	463.450	904.525	464.425
464.6625	461.425	464.875	904.550	464.5125
464.6375	461.9625	467.825	904.575	464.5625
469.6375	461.9875		904.600	469.3875
	462.0375	Los Angeles Dodgers	915.750	469.425
	462.0625	151.625	919.750	
Boston Red Sox	463.2625	151.745	921.750	San Francisco Giants/3COM Park
461.1375	463.2875	154.570	922.000	151.775
463.325	463.6625	461.4625	927.375	151.805
463.3625	463.6875	463.2125	927.625	153.875
463.3875	463.9625	464.2875		464.550
463.4125	464.1375	464.4125	New York Yankees	936.6375
464.075	466.8125	464.4625	151.625	936.6625
466.1375	467.8125	464.500		
466.3875	469.500	464.550	Oakland A's	
	469.950	469.4625	464.475	Seattle Mariners/ Kingdome
Chicago Cubs		469.500	464.825	182.300
463.5875	Detroit Tigers		469.475	462.0875
464.5875	464.475	Milwaukee Brewers	469.825	462.1125
469.3125	466.1875	151.295		
	466.850	151.625	Oakland Coliseum	462.550
Chicago White Sox		151.805	464.375	462.600
151.625	Houston Astros	151.925	464.475	462.675
151.685	463.2375	453.100 (Sheriff)		
151.835	464.1125	469.500	Philadelphia Phillies	Texas Rangers
461.1625	469.1125	469.550	154.570	170.900
461.200		896.175	154.600	463.7125
462.8125	Houston Astrodome	896.200		464.5375
463.725	171.045 (Wireless Mic)	896.250	Pittsburgh Pirates	464.5625
464.750	461.1375	896.6875	151.625	896.000
464.950	461.1375	897.6375	467.750	935.025
466.200	461.7125	897.6625	467.7625	935.0375
468.725	461.7375	935.1625	467.850	935.050
469.950	461.950	935.175	467.925	935.0625
	462.025	935.200		935.075
Cincinnati Reds/ Riverfront Stadium	462.050	935.250	Saint Louis Cardinals/Busch Stadium	935.0875
154.600	462.075	935.600		935.100
460.275 (Police F-5)	462.1375	935.6875		935.1125
	462.175	935.700		935.125

2010 NASCAR Sprint Cup Frequencies

Car #	Driver	Primary	2nd	Alt1	Alt 2
00	David Reutimann	463.2125	469.1125		
07	Casey Mears	469.2375	464.4625	464.2100	469.4600
08					
1	Jamie McMurray	466.6875	457.6000	464.9300	451.3300
2	Kurt Busch	451.8250	464.8250	451.3375	452.6800
3					
5	Mark Martin	468.2125	467.0375	469.4900	
6	David Ragan	460.9500	466.7500	468.5600	463.4000
7	Robby Gordon	469.4500	463.6500	466.3400	461.8500
8	none	464.9500	463.7250	453.7300	451.9000
9	Kasey Khane	451.8500	452.6500	462.7600	462.5900
11	Denny Hamlin	467.4750	462.4250		
12	Brad Keselowski	457.4750	466.2125	464.8500	465.9800
13	Max Papis	452.9875			
14	Tony Stewart	459.7375	469.1375		
15					
16	Greg Biffle	468.4500	465.0250	462.0250	461.3500
17	Matt Kenseth	458.4750	462.4500	463.9500	463.7100
18	Kyle Busch	467.4500	462.5000	451.3000	451.3500
19	Elliott Sadler	456.8500	452.4500	452.9800	465.9900
20	Joey Lagano	462.5250	462.4750		
21	Bill Elliott	452.2000	461.7250	452.0125	
23					
24	Jeff Gordon	467.0625	465.8625		
25					
26	Boris Said	465.9750	460.7250		
27		459.3625	460.0125		
28		466.9500	466.4500		
29	Kevin Harvick	469.0125	462.0250		
31	Jeff Burton	468.5750	468.6000		
33	Clint Bowyer	469.6375	464.5875		
34	John Andretti	467.1125			
36	Mike Bliss	465.6675	466.2625		
37	Travis Kvapil	463.3125			
38	Robert Richardson	467.8500			
39	Ryan Newman	469.1375	469.7375		
41		466.1500	458.0000		
42	Juan Pablo Montoya	452.7000	466.1000		
43		456.53	464.4500	467.7750	464.3300
44	A.J. Almendinger	461.6250	462.5875		
46		464.6625	468.7125		
47	Marcos Ambrose	457.5375	461.9375		
48	Jimmie Johnson	452.2375	452.2375	466.3400	
51	Michael Waltrip	451.4275			
55	Michael McDonnel	467.4375	452.1125	460.1630	
56	Martin Truex	452.1125			
57		453.2375	469.1375		
71	Bobby Labonte	453.6625			
75		464.4130	464.5500		
77	Sam Hornish Jr.	461.4125	451.7500		
78	Regan Smith	452.2625	466.0250		
82	Scott Speed	452.0875	456.5625		
83	Brian Vickers	451.6125	451.9750		
87	Joe Nemechek	464.2875			
88	Dale Earnhardt Jr.	462.0625	466.7875		
90		458.1750	459.7750		
96					
98	Paul Menard	468.5250	466.3750		
99	Carl Edwards	466.2750	466.8625		

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TRAVELER II DIGITAL G8

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PGA Tour Golf Course Frequencies

PGA 151.955 154.6 462.05 467.05	461.1875 461.2125 461.6625 461.9625 466.1375	Muirfield (Dublin, OH) 461.0125 461.0875 461.1125 461.1375 466.0625 466.0875 466.1125 466.1375	TPC at Sawgrass (Ponte Vedra Beach, FL) 464.325 464.525 469.325 469.525
Annandale (Madison, MS) 151.955	Doral (Miami, FL) 154.74		TPC of Scottsdale (Scottsdale, AZ) 464.575 469.575
Augusta National (Augusta, GA) 151.805	English Turn (New Orleans, LA) 464.425 464.525 469.525	Olympic (San Francisco, CA) 151.805 464.475 469.475	TPC at Sugarloaf (Duluth, GA) 462.0 463.725 467.0 468.725
Bay Hill (Orlando, FL) 151.835 463.9625 468.9625 469.6625	Firestone (Akron, OH) 151.745 154.54	Pebble Beach (Pebble Beach, CA) 464.400 464.750 469.400 469.5125 469.5375 469.5625 469.5875 469.750	TPC at Summerlin (Las Vegas, NV) 463.375 468.375
Bermuda Dunes (Indian Wells, CA) 462.025 467.025	Forest Oaks (Greensboro, NC) 464.425	PGA West (La Quinta, CA) 464.525 464.675 469.525 469.675	Tucson National (Tucson, AZ) 151.925
Callaway Gardens (Pine Mountain, GA) 463.875 468.875	Grayhawk (Scottsdale, AZ) 464.775 464.825 469.775		Waialae (Honolulu, HI) 461.0125 461.7875 464.175 466.0125 466.7875 469.175
Castle Pines (Castle Rock, CO) 461.1375 461.7875 462.0375 462.9125 463.4375 464.0125 464.325 464.6125 464.9875 466.1875 466.6625 467.1375 468.3375 468.7875 469.1625 469.325 469.6125	Indian Wells (Indian Wells, CA) 460.8875 465.8875	Pleasant Valley (Sutton, MA) 464.475 469.475	Westchester (Rye, NY) 464.9625 467.8125 467.8375 467.8625 467.8875 467.9125 469.6875 469.9625
Chateau Elan (Braselton, GA) 463.8 468.8	Kingsmill (Williamsburg, VA) 464.875		Westin Innisbrook (Palm Harbor, FL) 464.425 469.425
Colonial (Ft. Worth, TX) 154.6 461.1375	La Costa (Carlsbad, CA) 43.0 463.3125 464.425 464.475 464.675 464.775 468.3125 469.475 469.775	Torrey Pines (La Jolla, CA) 461.7375 466.7375	
	Lahaina (Maui, HI) 461.025 462.600	TPC at Avenal (Potomac, MD) 464.325 464.675 464.925 469.675	
	La Quinta (Indian Wells, CA) 461.625 466.625	TPC at Heron Bay (Coral Springs, FL) 463.3125 463.4125	



Beach lifeguard vehicle patrols the beach on a busy august day. The vehicle equipped with lifesaving equipment that includes radio, two rescue boards, and a rescue tube. (Via Wiki Commons)

ing scanners, frequency lists, and accessories, such as headsets.

At the racetrack you have a number of targets for scanning, some more interesting than others, depending upon your taste. There are always communications taking place between the race teams and their drivers during which strategy will be discussed. At pretty much any course, you'll also find track and timing officials to listen to, to one degree or another.

Of Ponies And Bogies

The horse track is another fun place to bring the scanner, and with thoroughbred, harness, steeplechase races and more scheduled all over the country all summer long, there's no shortage of events to enjoy. And as a side benefit, concentrating on your monitoring may just keep you away from the betting window. See "Horse Racing Tracks" for where to listen.

Horse Racing Tracks

Arlington Park

463.925
464.275
464.325
464.35
464.425
464.475
464.550
464.575
464.600
464.625
464.800
464.900
464.925
464.975

Atlantic City

154.570
158.460
464.525

Calder

151.805
154.570
461.1875
461.4375
461.950
462.0625
463.4375
463.625
464.275
464.450
464.5125
464.775

Churchill Downs

154.600
457.575
457.600
461.8875
462.7875
463.4625
464.0375
464.1875
464.7625
469.5375
469.8875
858.7875
859.7875
860.7875

Del Mar

151.715
151.745
151.865
461.225
464.525
464.700
939.200
939.2125
939.2375
939.250

Dover Downs

151.865
151.895
460.825
461.0625
461.450
461.525
462.1875

462.9125

463.425
463.900
465.825
467.825
469.55

Finger Lakes

157.680

Golden Gate Fields

464.775

Gulfstream

151.625
151.805
151.835
151.925
154.600
154.600

Hawthorne

469.375

Hollywood Park

154.515
154.570
154.600
463.4375
463.9625
464.1125
464.1875
464.4625
464.5125
464.5625

Keenland

464.400

Laurel

151.655
461.5375
464.375

Louisiana Downs

464.050
464.100
464.875

Monmouth

154.515
464.825

New York Racing Association

151.685
151.865
152.480
464.500

Oaklawn

151.655
152.300

Pimlico

464.375
464.975

Saratoga

151.895
462.1375



The midway at the Orange County Fair, 2008. (Photo by Kafziel, via Wiki Commons)

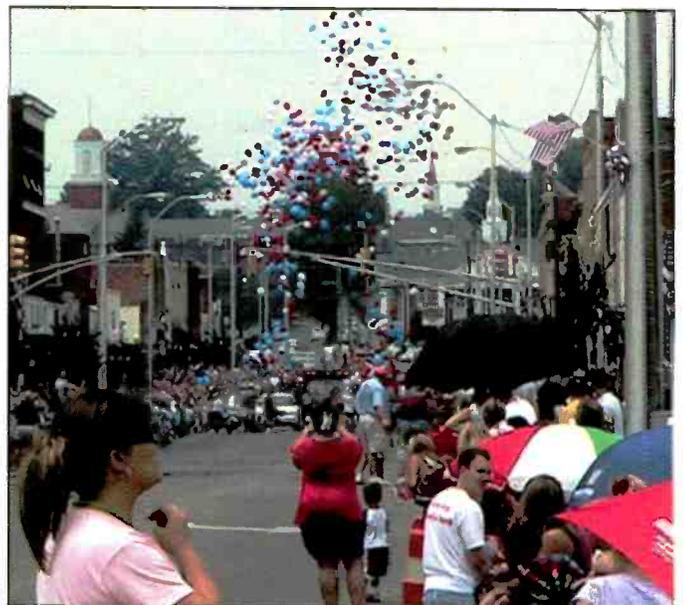
If that action's too fast and you want to slow things down a little bit, take your radio to the green for some eavesdropping on the golf pros. Check out "PGA Tour Golf Course Frequencies" for fairway chatter.

Sport Support

Even if you find yourself foiled by encryption for the juiciest communications, don't despair: for the most part, support services are common to all sporting events and provide some interesting scanning. You'll hear ushers, housekeeping, maintenance, and food & beverage concessions, parking attendants, among others. There are also usually news media and broadcast feeds to monitor. Depending upon the size of the venue, they'll also be public safety traffic, including private security agencies, police, fire, and EMS.

Out Of The Arena And Off Track

Aside from sporting events there are many other things that brings the scanner frequencies alive when the weather gets warm. I live along a coastline that attracts swarms of sun worshipers each year. When people flock to the beach, again the support staff will require communications to keep operations moving along safely and efficiently. Channels for Security,



The Fourth of July Parade in downtown Elizabethton, Tennessee, begins with launching of red, white, and blue balloons. (Via Wiki Commons)

Parking, Maintenance, and Food hum with traffic, and once again on the usual frequencies for such users in locations where people will flock.

Whether it's a private or public beach or landlocked public pool, there will be lifeguards. Also, anywhere near the water, the marine band will light up a scanner like fireworks on the Fourth of July—especially on the Fourth of July!

Monitoring is a great way to maximize your time on the sand. When I go to the beach, Instead of listening to music while I tan, I bring my scanner and an ear bud and listen to the local law enforcement and Marine Channels 16, 22, and 22A. Not only do I get to soak up the great outdoors and spend time with the family, but I also get to enjoy a lot of great scanning entertainment.

Here's a useful tip for you for seaside scanning—and really not a bad idea for anytime you bring your scanning hobby outdoors: if you don't already have one, pick yourself up an inexpensive, factory-refurbished scanner that you can pretty much use exclusively at the beach and for other summer events. This way if sand or moisture ruins it, or it gets knocked about in the crush of people, you're not out a lot of money.

The landlocked also have hundreds of summertime events, activities, and venues that will again provide the same common denominator of scanning targets. These include golf or country clubs, air shows, county & state fairs, amusement parks, municipal parks, parades, fire department drill teams, and assorted cultural activities.

Aside from the local public safety bands and support services on the business band that are common to so many of these activities, another area that's sure to entertain you is the Family Radio Service and possibly the General Mobile Radio Service bands (see "Other Frequencies"). Here's where you'll get a chance to "people watch," um, "listen" to all those families and friends attending these events as they communicate with each other and coordinate their own activities.

Listen Up—It's Summer

So, with summertime channels buzzing like bees, grab your sunglasses, SPF lotion, a cooler of snacks, and don't forget your scanner. You'll have fun in the sun—and stay informed. Then drop us a line and tell us what you heard.

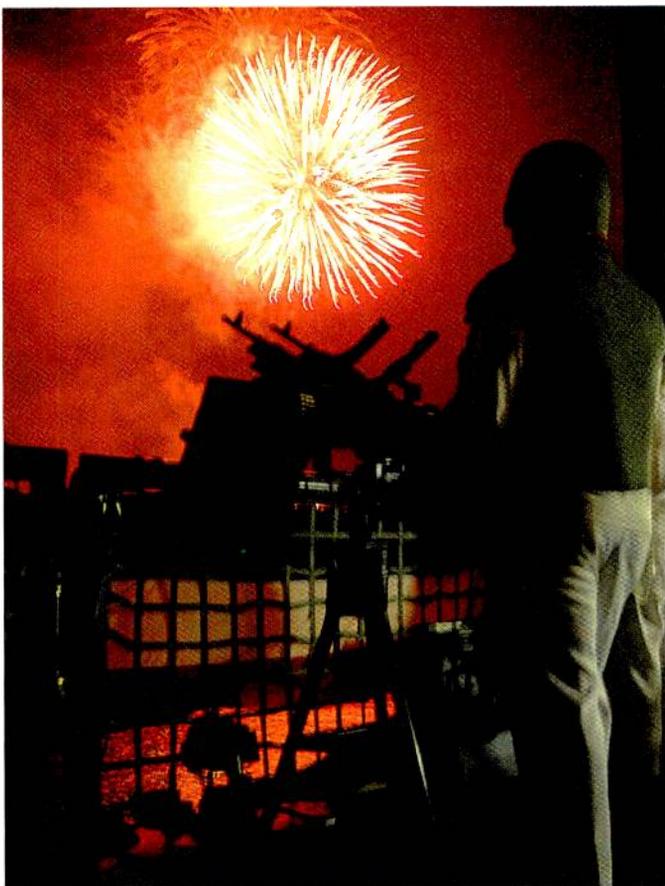
Other Frequencies

FRS/GMRS

Channel	Type	Frequency
1	FRS / GMRS	462.5625
2	FRS / GMRS	462.5875
3	FRS / GMRS	462.6125
4	FRS / GMRS	462.6375
5	FRS / GMRS	462.6625
6	FRS / GMRS	462.6875
7	FRS / GMRS	462.7125
8	FRS	467.5625
9	FRS	467.5875
10	FRS	467.6125
11	FRS	467.6375
12	FRS	467.6625
13	FRS	467.6875
14	FRS	467.7125
15	GMRS	462.5500
16	GMRS	462.5750
17	GMRS	462.6000
18	GMRS	462.6250
19	GMRS	462.6500
20	GMRS	462.6750
21	GMRS	462.7000
22	GMRS	462.7250

Business Itinerant Frequencies

Dot/Star	Frequencies
Blue Dot	154.570
Red Dot	151.625
Green Dot	154.6000
Purple Dot	151.955
Brown Dot	464.500
Yellow Dot	464.550
White Dot	462.575*
Black Dot	462.625*
Orange Dot	462.675*
J Dot	467.7625
K Dot	457.8125
Silver Star	467.850
Red Star	467.900
Gold Star	467.875
Blue Star	467.925



Fire Controlman 2nd Class Joshua Murray, assigned to guided-missile frigate *USS Rentz* (FFG 46), stands force protection watch aboard ship during a Fourth of July fireworks display during a Port of Los Angeles stop in support of Navy Days LA. (Navy photo by Mass Communication Specialist 2nd Class Elizabeth Thompson)

AR-ALPHA

Professional Grade Communications Receiver



- Multi-mode unit capable of receiving AM (synchronous), ISB, RZ-SSB, USB, LSB, CW, WFM including FM stereo, NFM, APCO-25 digital, and TV in both NTSC and PAL formats
- Up to 1MHz of bandwidth can be recorded for later playback and review
- 6-inch TFT color panel can display received video signals or depict spectrum activity over a wide choice of bandwidths including a

With New I/Q Control Software!

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
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- Auto-notch feature
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- Resolution bandwidth is also user-selectable in increments of 1 KHz, 4 KHz, 32 KHz, 64 KHz, and 128 KHz
- Fast Fourier Transform (FFT)
- Rear panel connections include 12 VDC power, RS-232C, USB 2.0, I/Q output with 1 MHz bandwidth, two antenna ports (one SO-239 and one Type N) and up to four antennas may be selected through the receiver's controls with the optional AS5000 antenna relay selector
- Use desktop or with 19" rack mount

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



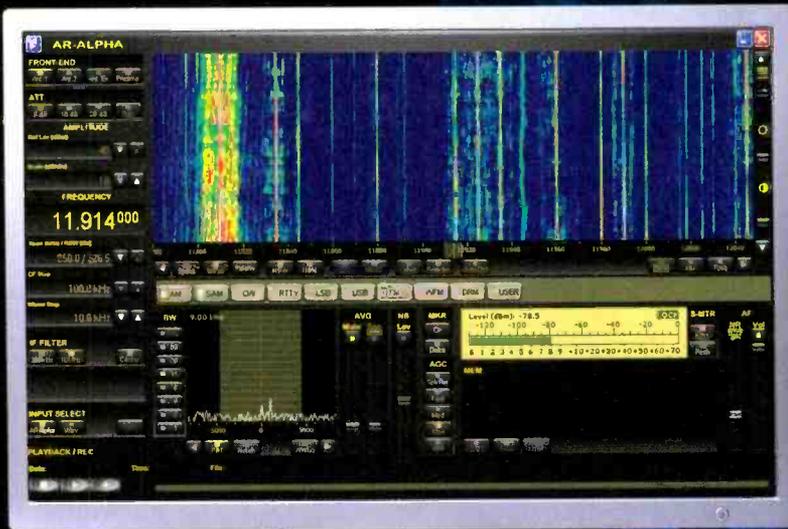
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Signal searching is easy with playback capabilities through a PC



PC screen displays waterfall function to capture signal bursts

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- Can be used to perform unattended datalogging
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- 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.GHz CPU and 1GB RAM.

One-Stop Online Shopping For Traditional Music Fare

Listenlive.eu Is Your Central Terminus For Live European Radio Streams

by Eric Bryan

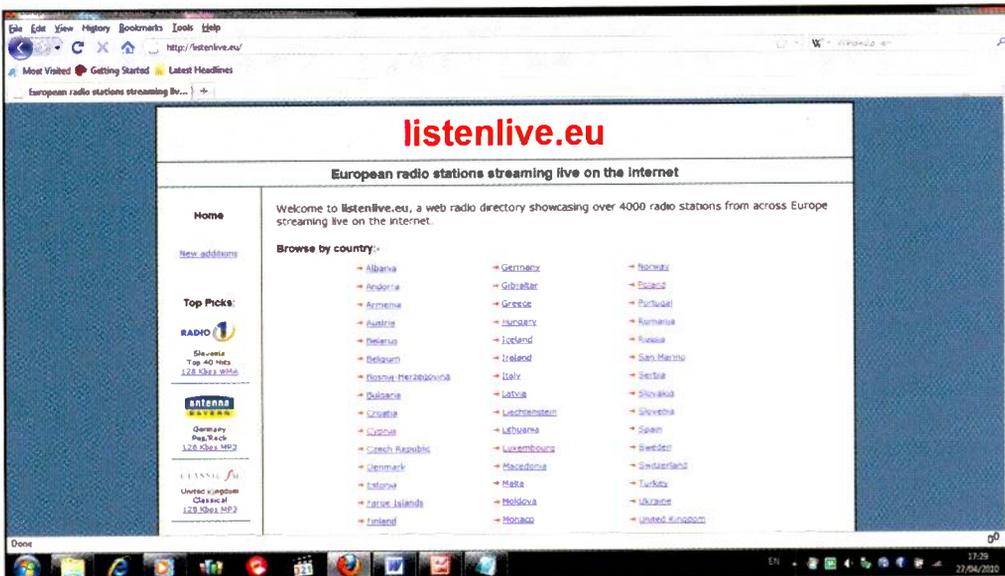
The Budapest Chain Bridge, Hungary's convenient website, listenlive.eu, lets you savor the sounds emanating from this beautiful city, and many others. Thousands of streams from all across Europe are instantly accessible—live—from this site with the click of a mouse button. (Ey Il conte di Luna, via Wikimedia Commons)

With the decrease of international shortwave broadcasts, especially those with English programming, we shortwave listeners have had to play catch up via FM and medium wave relays and streams on the Internet. For the latter, this is sometimes a simple matter, since most of these broadcasters have websites where live or on-demand streaming can be accessed. But for a wide array of live-streaming European stations, there's an even easier way of sampling and listening to their programming.

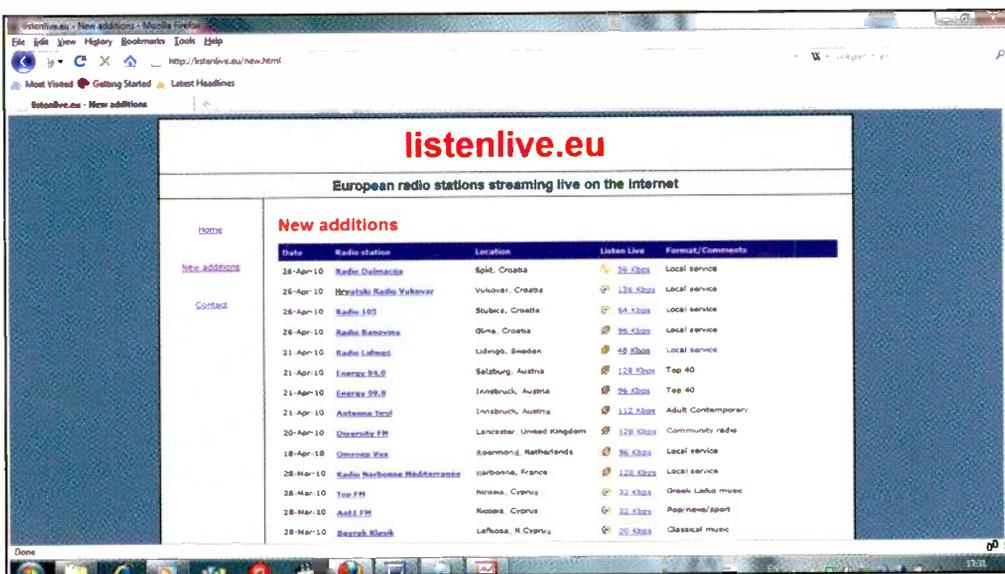
Listen Live

If you're interested in European live radio streams, your first step is to point your browser to the terrific resource you'll find at <http://listenlive.eu/>. This simple and clear website is a labor of love created and maintained by Mike Dean, a UK-based radio hobbyist, who works constantly to keep its thousands of links current. The home-

Eric Bryan is a freelance writer and shortwave enthusiast whose articles have appeared throughout North America and Britain.



Listenlive.eu's homepage, where you can search for radio streams by country. It's a foreign radio enthusiast's dream come true.



Listenlive.eu's New Additions page, where you can see what radio streams have recently been added to the listenlive.eu lineup.

page describes the site as “a web radio directory showcasing over 4000 radio stations from across Europe streaming live on the internet.” Apparently, the only criteria of inclusion on this site is that the broadcaster must also be a bona fide radio station, with transmitters, and not just a webcasting station (though in going through all the streams, I found several Internet-only stations).

The main body of the homepage is a “Browse by country” selection of links running alphabetically from Albania to Vatican State. Though you can chase down international broadcasters here, leaving that focus aside for the moment, there are many streams on this site featuring folk or traditional music from the broadcaster’s respective country or region.

To hear these streams, you’ll need to have Windows Media Player, Real Player, iTunes, and Winamp or VLC Media Player or Foobar2000 (different streams require different players). For some, you’ll need the Flash Player.

A Smorgasbord Of Traditional Fare

Going alphabetically by country, what follows is a list of some streams that feature folk or traditional music, or have music with these influences. For countries without streams with

folk or traditional music, I’ve included pop streams, if the music mostly derives from and is indicative of that country or region.

I’ve sometimes listed world music or other streams, if the content is interesting and something one wouldn’t normally find on mainstream radio. I haven’t included classical music streams, since classical music is mostly drawn from a now-worldwide canon, rather than being considered as having roots in a specific culture (there are, of course, many streams on the website with classical music).

Albania

Radio Emigrante: Folk-influenced pop music and pure traditional music. When I listened, it sounded sometimes almost Turkish, and sometimes Gypsy or Roma.

Radio Dardania: Pure, earthy, traditional music, but some pop, and also rap with folk instrumentation.

Austria

Armenian National Radio: Pop music with a folk flavor. Also haunting selections bordering on operatic.

Austria

Arabella Wiener Schmah: Viennese music, mainly ballads, some waltz-influenced.

UI Melodien aus den Bergen: Polka vocal music and other Austrian folk songs.

Radio Volksmusik: Mellow, orchestral polka, and energetic polka with yodelling, and other Austrian folk music.

Emap.FM: World/ethnic music, including selections of Spanish classical guitar, atmospheric guitar and flute with a Middle Eastern flavor, Gypsy, Japanese koto, Indian sitar, plus station IDs in English describing Emap.FM as "worldwide ethno-music."

Belgium

RTBF Francofonik: French Indie music. An interesting variety, some sung in English.

Radio Al Manar: Traditional Arabian, Middle Eastern music, plus Middle Eastern pop.

BRF 2: A German service, with what sounded like German beer hall songs sung with great gusto.

Bosnia and Herzegovina

Radio BN: Folk music from the region. There was an emphasis here on accordions or concertinas and what sounded like mandolin or lute overlaid with vocals, with a clear Central and Eastern European sound.

Czech Republic

Rádio Petrov: Simple acoustic guitar-based folk music, interspersed with pop and rock songs.

Denmark

DR Dansktop: Some traditional Danish music.

DR Electronica: Ambient, electronica music stream. Usually creates a soundscape conducive to thinking or relaxing.

DR Folk: Instrumental folk rock. Traditional folk instrumentation backed with some rock/pop instruments.

DR Dansk Pop: Danish pop music.

DR Spillemand: Nordic folk. Traditional jigs with bagpipe, penny whistle, guitar, fiddle, etc.

DR World: World music. A huge variety, including French bossa nova, and ambient or electronica with Turkish or Middle Eastern flavors.

France

Altermusica: World music, including reggae and Afropop.

Arvorig FM: Breton service, for the Brittany region of north-west France. The Bretons are Celtic, and you'll hear traditional reels and jigs on this stream, similar to those of Ireland and Scotland.



If it's Tuesday it must be Belgium...or Bosnia...or Belarus...and you can easily listen to any of them instantly through listenlive.eu. (Via Wikipedia)

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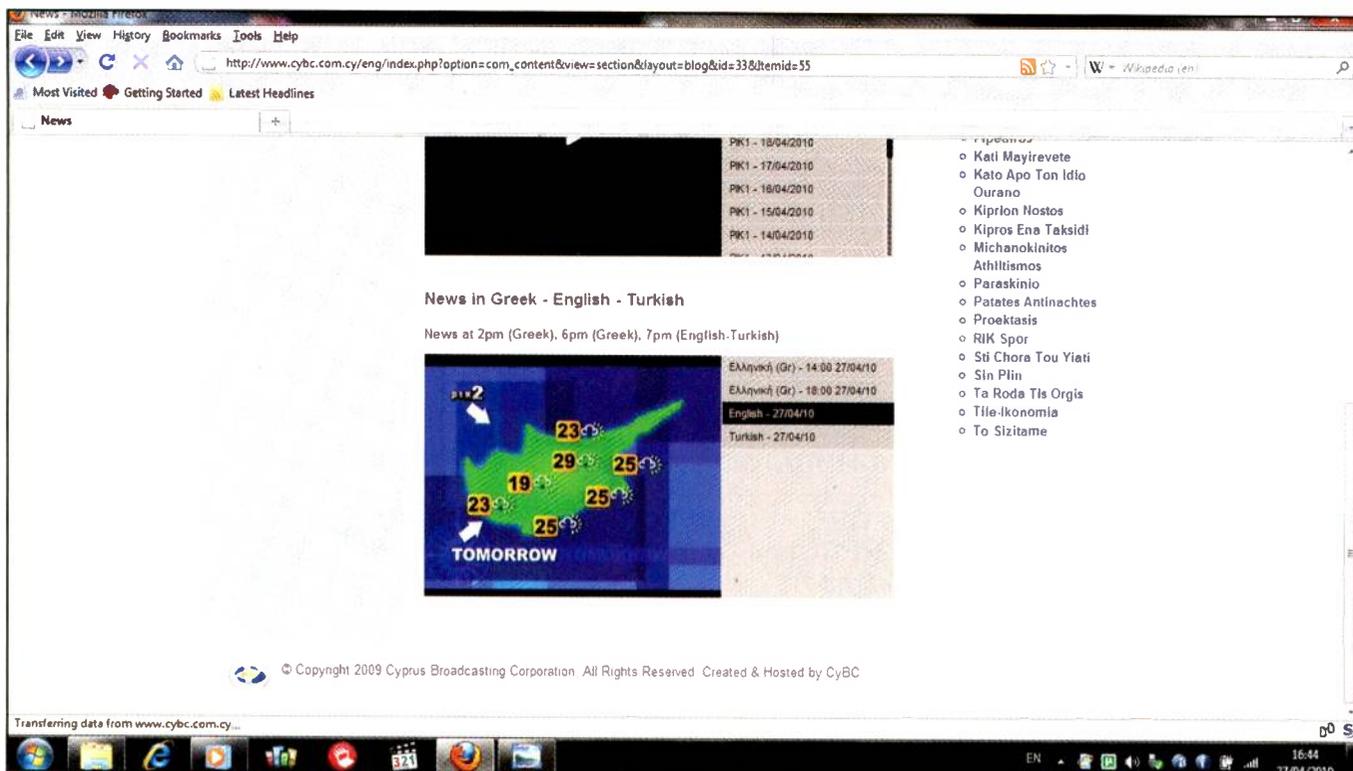
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The Cyprus Broadcasting Corporation's webpage with the embedded Flash Player—simply click to watch Cyprus and regional news in English.

Beur FM: Maghreb channel. (Maghreb is the name for the area of North Africa between Egypt and the Atlantic Ocean. Moorish Spain was formerly part of Maghreb.) Traditional Arabian music interspersed with rap and pop.

Corsica Radio: Corsican music. Traditional and folk-influenced pop.

Ràdio Arrels: Catalan service. Catalonia is an autonomous region in northeast Spain, where Catalan is spoken. It is also spoken in Andorra (a self-ruling principality between Spain and France), the Balearic Islands, and parts of southern France. On this stream is folk, French sidewalk café or chanson style, and traditional Middle Eastern music.

Radio Orient: Traditional Middle Eastern music.

Georgia

Radio Inedi: "Guantanamo," electronica, and dramatic, apparently Georgian, pop sung in English.

Radio Muza: Classical and Georgian folk music.

Germany

Antenne Bayern Kino Hits: Soundtrack music.

MDR Figaro Folk in Concert: Live folk and world music.

Radio Heimatmelodie: German folk music.

WDR KoelnradysuNet: Turkish service with some traditional Turkish music.

Greece

Astro FM: Laika music. Laika, or laïko, is a form of Greek folk music, developed in urban areas of Greece mainly in the 1960s. It was a melding of folk songs and instrumentation with electrified instruments and drums. Since the 1980s, laika has been mingling with Western pop, dance, and rock.

Derti 98.6: Laika music.

Kriti FM: Traditional and folk music from Crete, and folk-influenced pop.

Methorios 96: Laika music.

Peiratikos FM 107.7: Laika music.

Radio Akrites: Traditional Pontos music (Turkish, Middle Eastern feel). Pontos, or Pontus, is an area on the south coast of the Black Sea. This formerly Persian and Greek or Macedonian region is now part of northeastern Turkey.

Radio Faros 91.8: Traditional Greek music.

Sindos FM: Laika music.

Hungary

FIKSZ Rádió: Described as "eclectic, free radio," this stream was featuring bluesy songs from Johnny Winter at 2205. During the 2300 hour was some big-band jazz, almost Dixieland music.

Folk Radio: Plaintive, melancholy, Hungarian folk music. The stream describes itself as "Folk Music of the Carpathian Basin." (Music to read *Dracula* by?)

Rádió C: The Romany service, with Gypsy folk music. Some of the sweetest music in the world can be found in this genre, especially the ballad-type songs based around acoustic guitar.

Iceland

Rás 2: Scandinavian and Icelandic pop music, much sung in English.

Bylgjan 98.9: Scandinavian Top 40, much in English. Also included pop music from the UK and U.S., some older.

Ny Bylgjan: New Scandinavian pop music.

Ireland

RTÉ Raidió Na Gaeltachta: Gaelic service, with some mysterious, atmospheric ambient music.

Mid West Irish Radio: Traditional Irish reels and jigs and folk songs.

Live Ireland Channel 1: Traditional Irish music.

Live Ireland Channel 2: Contemporary Irish and Celtic music.

Italy

Radio Cuore: Italian love songs.

Radio Kiss Kiss Italia: Romantic Italian pop.

Radio Margherita Napoli: Italian, Neapolitan music.

RMC Monte Carlo Nights Story: Pop, soul, and world music.

Featured some Burt Bacharach. Announcements are in English.

RMC Film: Music from movie soundtracks.

RTL 102.5 Italian Style: Some fairly melodic, romantic pop.

Latvia

Latvijas Radio 2: Latvian popular music stream. Some of the songs had traditional elements, and one was a daring pop-tango.

Radio Oira: Latvian folk music and folk-influenced pop.

Lithuania

Lietus: Lithuanian pop music.

Start FM: The Vilnius University campus radio stream, with some unusual ambient and experimental music.

Pūkas: Some traditional Lithuanian music.

Luxembourg

Eldorado: A stream with music described as “chillout.” Interesting, mellow, meditative music.

RTL Radio Lëtzebuerg: A stream described as full service (music, news, traffic, weather?) with an interesting assortment of Europop.

Radio Ara: A stream with an intriguing assortment of experimental pop music.

Macedonia

Folk Radio: Folk-influenced pop.

Radio Holidej: More folk-influenced pop, with a stronger folk flavor. Some announcements in English.

Moldova

Radio Moldova Muzical: Some traditional and folk music.

Monaco

Riviera Radio: Samba music, jazz, and mellow “adult contemporary.”

Montenegro

Radio Gusinje: Haunting, traditional Montenegrin music.

Netherlands

3 FM Alternative: “Alternative” music. Experimental, some electronic, music, mostly sung in English, with some announce-

ments in English. A nice discovery here was “The Golden Age,” by Danish group The Asteroids.

Concertzender Oriënt Express: World music. There was mysterious lute music here with a Middle Eastern flavor.

Radio 6: Mixture of hypnotic world music and whispery jazz.

Radio 6 Folk It!: Strange mixture of Dutch folk and folk-rock, mostly sung in English.

Norway

NRK P3 Urørt: Norwegian pop.

NRK Alltid Folkemusikk: Norwegian folk music. This included a spooky selection of a lone female voice sounding as though it was echoing richly between icy mountains and along fjords, and more traditional instrumental folk songs.

Poland

Radio Szanty 24: Polish folk music and sea shanties. (*The Oxford English Dictionary* defines sea shanty as “a song with alternating solo and chorus, of a kind originally sung by sailors while hauling ropes etc.”) Some of the songs on this stream were rock-influenced interpretations of folk tunes.

PolskaStacja Muzyka Francuska: Moody French pop.

PolskaStacja Szanty: World sea shanties.

PolskaStacja Tylko Polskie Przeboje: Polish pop music.

PolskaStacja Biesiada: Energetic Polish folk music.

PolskaStacja Muzyka filmowa: Music from film soundtracks.

Portugal

RDP Rádio Lusitânia: A stream described as Portuguese music, here there were plaintive ballads accompanied by some traditional instruments.

Rádio Universidade de Coimbra: Eclectic mix of experimental music.

Romania

Radio Eveniment: Traditional Romanian music.

Radio Favorit FM: Traditional Romanian music.

Radio Lynx-Popular Lynx: Traditional and folk music.

Russia

Dobrye Pesni: Russian pop songs, some with folk elements.

Love Radio Russian: Soft Russian pop.

101.ru Russkie Pesni: Russian songs, some folk or traditional.

101.ru Chanson: Russian chanson music, some with electronic and pop elements. (Russian chanson, named after the



The English homepage of FIKSZ Rádió, Budapest, Hungary. Its content is aimed at a “cultured, educated, youthful audience.”

French *chanson*, or “song,” is a genre of criminal-themed music, first appearing in the early 20th Century.) The songs are usually sung by a man in a rough-voiced, almost spoken style, sometimes with a desperate edge.

101.ru Etnika: Russian national and ethnic songs, some in a pop and electronic format.

101.ru Vysotskiy: Russian *chanson*, the rough vocals backed with orchestra or folk instruments.

101.ru Kavkaz hits: Pop from the Caucasus region, with a heavy folk influence.

101.ru Sha-2: More Russian *chanson* style music.

Serbia

Boss Radio: Romany service, with folk and Gypsy music.

Bum Bum Radio: Serbian folk music.

Radio Buca: Popular Serbian songs, with traditional elements.

Radio Stotka: Serbian folk music.

Slovakia

Fun Rádio Czechoslovakia: Czech and Slovakian pop.

Radio Hey!: Slovakian pop.

Spain

RNE Ràdio 4: Catalan service with mellow songs sung in French, Spanish, and other languages.

iCat Mediterràdio: Mix of pop, jazz, and more traditional music from throughout the Mediterranean region.

RTVA Canal Flamenco Radio: Flamenco music.

Son Galicia Radio: Galician folk and traditional music. Galicia is a self-ruled region of northwest Spain. Some earthy, raw selections here.

Sweden

Sveriges Radio P3 Svea: Swedish pop.

Sveriges Radio SR Sápmi: Sápmi service. Strange mix of world music with some folk elements. (The Sápmi are the indigenous people of northern Norway, Sweden, Finland, and part of Russia, known in particular for their history as reindeer herders.)

Sveriges Radio SR Världen: Eclectic mix of world music, including folk.

Switzerland

Buureradio: Full-on Swiss folk music.

Energy Swiss: Stream with Swiss rock and pop.

neo zwei: Swiss folk music.

Volksmusiknet: Swiss folk music.

Turkey

TRT Radyo 4: A stream rich in Turkish classical and folk music.

Mydonose Türk Pop: Turkish pop music.

Radyo Metropol: Turkish songs with some traditional elements.

Ukraine

Okey FM (Khmelnitskiy stream): Songs in the *chanson* style (see Russia).

Radio Maydan: Crimean Tartar music. (Stream was dead when checked.) (Crimea is a peninsula in Ukraine, extending southward into the Black Sea. The Tartars are among the major ethnic groups of Crimea. Tartar folk music is distinguished by its use of the pentatonic scale, familiar in traditional Chinese music.)

Radio Chanson: Ukrainian *chanson* songs.

Stilnoe Radio: Ukrainian pop with folk elements.

UH Radio: Ukrainian folk music.

MyRadio Ethno: Traditional Ukrainian ethnic music.

United Kingdom

BBC Radio nan Gaidheal: Gaelic service with Celtic folk music.

Celtic Music Radio: Traditional Celtic folk music, and modern folk-influenced Celtic music.

Radio Acen: A stream described as “Welsh language learning,” there was Welsh folk music here.

International Broadcasters' Streams

On the listenlive.eu homepage, near the bottom, there is also a “Browse by genre” menu. You can search the streams here by style of music, and there are also search links for “Student radio” and “External services.”

Clicking the latter brings up a page with links to some familiar (and some former) shortwave broadcasters: VRT Radio Vlaanderen, Radio Prague, Radio France International, Deutsche Welle, Voice of Greece, Radio Netherlands, Polish Radio, Radio Romania International, Voice of Russia, Radio Exterior de España, Voice of Turkey, Radio Ukraine International, and the BBC.

It's handy to have all these streams on one page; it's so easy to sample them, since you don't have to go from website to website looking for streaming links. But this page has only a partial list of the international broadcasters' streams available on listenlive.eu. To find the rest of them, search by country, again from the homepage.

Sampling the available international and foreign language broadcast streams (excepting the usual giants), here are some things I came across in a wide variety of programming (all times in UTC).

Albania

Radio Tirana 3: Foreign service, with traditional Albanian music at 2055.

Belarus

Radio Station Belarus: News in English at 2100, with topics relating to Russia, Kazakhstan, India, Ukraine, Moldova, the US, Poland, Slovakia, and Serbia.

Belgium

VRT Radio Vlaanderen Internationaal: At 2112, folk music, or folk-pop crossover songs.

Croatia

Voice of Croatia (HF Glas Hrvatske): Croatian pop and Europop at 2128. (Note: Don't click the Real Player link here, it will send you on a wild goose chase; use one of the other links.)

Cyprus

CyBC Radio 2: Foreign language service, with American blues songs at 2132. At 2343, ID and program in English with some progressive rock. “...91.7 FM for all of Cyprus...”

Czech Republic

Cro 7 Radio Prague: Magazine, a cultural variety program in English, with discussions on ancient footwear, water-pipe smoking, some Czech news, music, etc., at 2135. At 2140, *Soundcheck* in English, with Czech folk music.

Estonia

Raadio Tallinn: Various languages streams, at 2145, carrying the BBC in English with *The Interview*, about fiber optics and Internet broadband in Africa. This stream also carries RFI and Deutsche Welle, plus some Estonian programming.

Greece

ERA 5, Voice of Greece: At 0228, Greek folk music with the characteristic use of *bouzouki*.



The headquarters of Polskie Radio in Warsaw, Poland. (By Kocio, via Wikimedia Commons)

ERA Filia: A stream with content described as “Multilingual programmes,” at 2310 there was jazz, some with tropical or Latin elements, versions of “Bésame Mucho,” “Cheek to Cheek,” and other standards sung in English. (“Filia” translates as “friendship.”)

Italy

Rai International: This link appeared to be broken, but the working Rai Satelradio link is at least partly a simulcast of the Rai International stream. At 0006 there was news in English about Afghanistan, a Moroccan cleric, and various Italian topics, to 0008, into French. After the news in French was an interesting assortment of classic supper club music. (Remember those Rai broadcasts on 11800 kHz, with 10 to 20 minutes of daily English programming? On the odd lucky day we even got up to 30 minutes in English. They were always worth listening to, not only to catch the news in English, but for the music.)

Poland

Polskie Radio dla zagranicy: Polish Radio international service. At 2035, Polish pop with traditional influences, some jazzy, with an almost cabaret feel.

Portugal

RDP Internacional: At 1942, a live concert, romantic pop songs in Portuguese. At 0136, Portuguese pop, and some traditional songs, some with folk elements.

Romania

Radio Romania International 1: At 1949, traditional and folk music. At 0007, *Radio Newsreel* in English. News on economy and elections in Romania. There followed *Business Club*, going into the Romanian business of construction materials manufacture. After that was a Romanian pop song sung in English. Next was *European House*, about politics in Romania and Europe, and *Network Europe*, about the PKK and Turkey, the Cyprus question, Roman Polanski’s extradition status, and Basque ETA leader arrest in Spain. After some pop music, the program continued with the popularity of fish and chips in Italy, and a bizarre cycling story from Greece.

Slovakia

SRO Radio Slovakia International: At 2208, program in English, about foreign workers employed in Slovakia, and violence at sporting events in the country. There was also some Slovakian pop music.

Spain

Radio Exterior de España: At 0105, a Spanish ballad with traditional elements. At 0143, a much more Latin selection. At 1745, some folk music based on acoustic guitar, sung in an almost traditional Arabian or Moorish manner. During the 2300 hour, occasional Spanish pop. Unfortunately, at 0000, this stream, though labeled as “Radio Exterior,” does not simulcast the English broadcast to North America.

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Turkey

TSR: At 2046, Turkish pop influenced by traditional Turkish music.

Voice of Turkey-West: At 2024, haunting, traditional Turkish music. This is an example of the real deal that transports you to the mysterious East.

Voice of Turkey-World: At 2030, news in English, with topics on Cyprus, Afghanistan, Armenia, the PKK group, France, Azerbaijan, Pakistan, India, the U.S., and Iraq. After this was *Review of the Turkish Press*, with more focus on the PKK, and coverage of Russia and Sudan. Next was *Agenda*, which was about Central and Eastern European candidate countries for EU membership.

Voice of Turkey-East: At 2026, Turkish pop in the style of traditional Turkish music.

Ukraine

Radio Ukraine International: At 2054, energetic Ukrainian pop music. At 2100, the English program began with news on the Ukrainian election, Ukrainian minimum wage, Spanish cinema festival in Kiev, and other news tightly focused on Ukraine. There followed *Ukraine Today*, with more on the elections, the Ukrainian economy, and a drama festival. After this was *Outlook*, a cultural program, with topics including the Ukrainian National Circus, and more on drama and stagecraft in Ukraine.

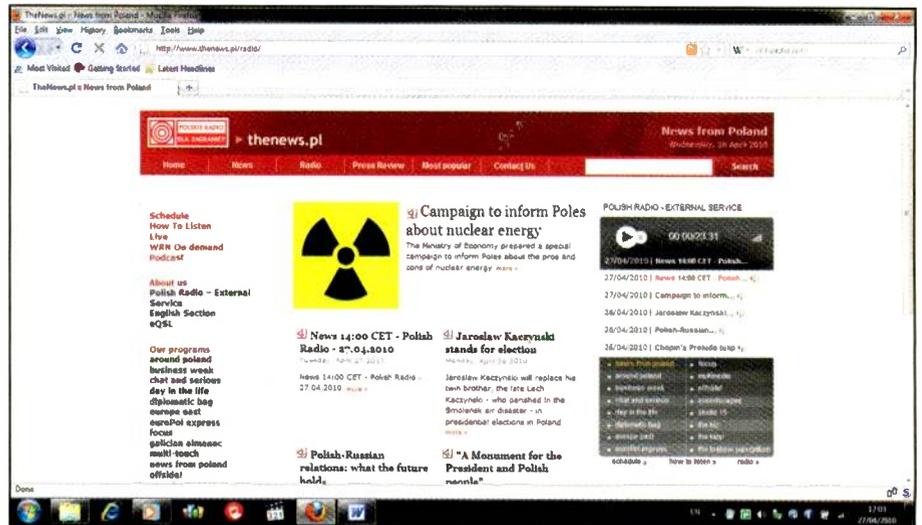
Vatican State

Vatican Radio Ch 1: The players ID this stream as *Rete Bianca* or “Vatican Radio Channel 5-105 LIVE.” (The link “Vatican Radio Ch 2” the players ID as “Channel 1.”) At 2124, Gregorian chant. At 2200, a sort of folk-dance music. At 2330, classical music.

Station Websites

Another convenient aspect of listenlive.eu is that along with each of the streaming links are links to the different stations’ websites. Whether it’s a government-run international broadcaster or a tiny college station, you can visit its website with a click to see what else the broadcaster has to offer.

For instance, for Polish Radio, click the “Polskie Radio dla zagranicy” link and you’ll land on the Polskie Radio main page. You’ll see some English there, and to the left, a menu with an “English section” link. Click that and you’ll have access to all the Polish news in English, plus podcasts, contact info, and a Polish press review, among other offerings.



Polskie Radio’s homepage in English. Here you’ll have the news in English, plus podcasts, a Polish press review, and more at your fingertips.

For news and information on Cyprus, try the “CyBC Radio 2” link. In the upper right of the CyBC webpage, click “English.” Along the top of the next page, click “News,” and you’ll be greeted with the Flash Player to watch the Cyprus Public Broadcasting television channel’s news in English.

Even little FIKSZ Rádió, in Budapest, Hungary, has an English page on its site. After clicking the “FIKSZ Rádió” link on the listenlive.eu page for Hungary, click the Union Jack near the top. Here you’ll find out that Rádió FIKSZ is geared for “the thinking youth...who are not interested in disco music and pulp fiction, but who like nice pop music, classical music and high standard literature...”

North America & Down Under, Too

If you want to explore beyond European radio streams, you’re in luck. Scroll to the bottom of the listenlive.eu homepage, and look for “More Live Radio:” You’ll see links for Canada, the U.S., Australia, and New Zealand.

Clicking the link for Canada brings you to www.canadianwebradio.com/. On this page you can browse over 600 live Canadian radio streams by province or territory, or genre. A convenient link in the latter category gives you a list of many of the CBC links, some carrying international programming.

The U.S. link takes you to www.usliveradio.com/ where you’ll find a long list of U.S. streaming links, including one for *VOA News Now*. This page is a little different in that you can

sort the U.S. stations by clicking one of the column headings, such as “State” or “Format.” Sorting by state is handy, since it gives you the stations by state alphabetically. You can chase down some international programming via the public broadcasting and NPR links.

The Australia link brings you to www.australianliveradio.com/, a page listing over 200 streaming links. These are divided into National/International (Radio Australia is here), Australian Capital Territory, New South Wales, Northern Territory, Queensland, South Australia, Tasmania, Victoria, and Western Australia.

Hitting the New Zealand link lands you on www.nzradio.guide.co.nz/, the “NZ Radio Guide” page. Here there is a listing of over 50 streams from New Zealand, though not divided by north or south island or region. Radio New Zealand is available here.

A Central Terminus

If you’re curious about online European radio (or other regions, as we’ve seen), or if your hobby already extends to that area of monitoring but you’d appreciate a more convenient way to enjoy it, think of listenlive.eu as your central terminus, with thousands of branch lines running off into many different European countries. You can “take a seat” on any one of these streams and within seconds sample what’s being broadcast or webcast. Requiring just your Internet connection and a bit of electricity, it’s the cheapest and easiest way to “travel.”

The Uniden Bearcat BCD996XT Digital Base/Mobile Scanner

by Tom Swisher, WA8PYR

Uniden continues on its pioneering path in scanner technology with a leap forward in the form of the BCD996XT mobile/desktop scanner. The newest in the TrunkTracker IV line, the BCD996XT, boasts several new features, all enhancements or improvements of the features on the BCD996T. The end result is a very, very powerful radio.

“CTCSS, DCS, and NAC tone discovery was very quick—nearly instantaneous, in fact—and certainly much faster than in earlier TrunkTrackers.”

Out Of The Box

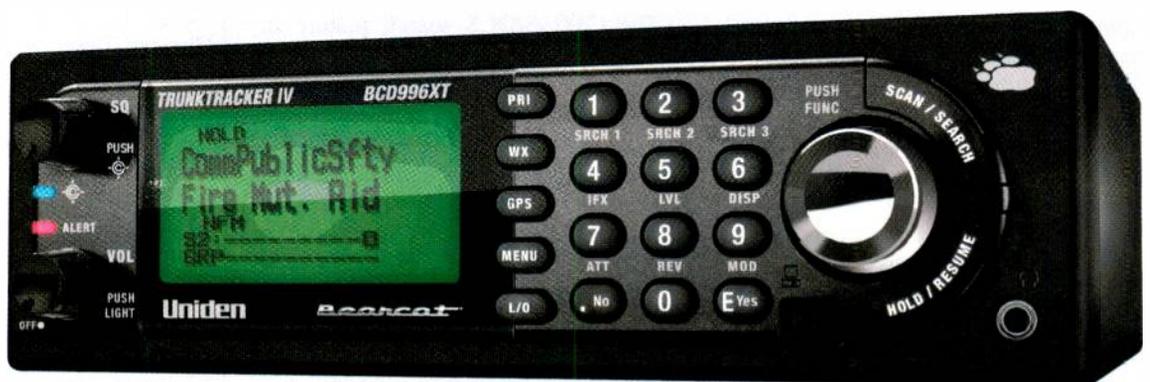
The package includes the radio, a telescoping metal antenna, a “wall-wart” power supply, and a DIN adapter for mounting the radio in a vehicle dashboard as well as a DC power cord and an accessory power cord. The BCD996XT is capable of scanning conventional systems as well as Motorola, EDACS, EDACS ESK, LTR, and APCO P25 trunked systems in the VHF/400/500/700/800/900-MHz bands. The radio offers extensive coverage from 25 to 1300 MHz, with the cellular bands and majority of the UHF-TV band excluded (see “Uniden Bearcat BCD996XT Frequency Coverage”).

The radio has quite a nice feel and is very comfortable to use, with a large, informative alphanumeric LCD display and a well-designed keypad. The display and keypad are backlit; the display

Tom Swisher, WA8PYR, is *Pop’Comm’s* “Civil Aviation Monitoring” columnist.

Uniden Bearcat BCD996XT Frequency Coverage

- 25–28 MHz Land Mobile & CB
- 28–29.7 MHz 10-meter Amateur
- 29.7–50 MHz Land Mobile
- 50–54 MHz 6-meter Amateur
- 54–72 MHz VHF TV Broadcast 2-4
- 72–76 MHz Intersystem and Astronomy
- 76–88 MHz VHF TV Broadcast 5-6
- 88–108 MHz FM Broadcast
- 108–137 MHz Aviation
- 137–144 MHz Military & Government
- 144–148 MHz 2-meter amateur
- 148–174 MHz Land Mobile and Government
- 174–216 MHz TV Broadcast 7-13
- 216–222 MHz Government and business
- 222–225 MHz Amateur
- 225–380 MHz UHF Military Aircraft
- 380–400 MHz Government land mobile
- 400–420 MHz Government
- 420–450 MHz 70-cm Amateur
- 450–470 MHz Land Mobile
- 470–512 MHz Land Mobile “T” band
- 764–776 MHz Land Mobile
- 794–806 MHz Land Mobile
- 806–960 MHz Land Mobile
- 1240–1300 MHz Amateur



The BCD996XT is Uniden’s latest addition to its popular TrunkTracker IV line. This powerful scanner boasts a new and enhanced features that would take a book to cover completely.

backlight color is selectable, giving you the option to select from cyan, green, magenta, yellow, white, violet, blue, and red. (The really cool blue color reminds me of radios from R.L. Drake of Miamisburg, Ohio—my personal favorites—which used blue as their standard dial color for many years.) The display and keypad backlight is excellent, and the audio is quite good as well, with quite a bit of punch.

How It Works

Like the BCD996T before it, programming the BCD996XT is menu driven. The Dynamic Memory Allocation feature of this scanner allows for programming of up to 500 trunked or conventional systems, with up to 20 scan groups per system; up to 500 talkgroups per trunked system; up to 1,000 channels per conventional system, or a maximum of 25,000 channels. Systems and groups in the BCD996XT are accessed using Quick Keys. There are 100 System Quick Keys available, and each system can have up to 20 Group Quick Keys within it. This feature makes storing multiple “personalities” in the radio much easier; you can simply select the Quick Key(s) for the area of interest, and disable the others.

Dynamic Memory Allocation is great, but you still have to bend your brain into different modes of thought when programming the radio. Using the menu for programming is absolutely essential, as many of the settings can only be accessed in this way—plus it’s much, much easier. Programming is straightforward. With the menu, I was able to program the basics for my local public safety system in a matter of minutes, especially since I was using Control Channel Only mode. This method allows you to enter only the control channels of a Motorola system; the scanner reads the data from the control channel and uses it to set the scanner to the proper voice channels (just like a Motorola radio). I then programmed Ohio MARCS (the Multi-Agency Radio Communications trunking system in my area), and finding it to work quite well moved on to some area conventional programming, which was also quite easy.

I quickly discovered that the sensitivity of the BCD996XT is excellent, even with the stock antenna. With that antenna, reception of my local public safety system, as well as other area systems (including multiple sites of Ohio MARCS), was superb, as was railroad and aircraft reception. While the stock

antenna is quite good, I also tried out my extensive collection of BNC-mount antennas as well as external antennas. My primary choice is a base station scanner antenna very similar to the Channel Master Monitenna, and it does make quite a difference, especially for VHF/UHF reception, and 800-MHz sensitivity is also somewhat improved.

As with most recent Uniden products, the BCD996XT’s selectivity is quite good as scanners go. I continue to experience less trouble receiving my local monitoring targets with recent Uniden offerings than with some other radios. There were some problems with intermod in certain downtown areas, but that’s almost a given with any scanner.

Notable Features

One essential feature found in the BCD996XT as well as in previous models is tone squelch decode. Like previous models, the BCD996XT includes CTCSS/DCS decode capability, but also includes the excellent addition of NAC (Network Access Code), which is the P25 equivalent to CTCSS/DCS. Wireless is the way of the world these days, and this leads to increased noise and congestion in the RF spectrum, which is a very limited resource. As such, the tone squelch decode capability in the BCD996XT is a necessary feature. Most agencies today use CTCSS/DCS on their radio systems to reduce or eliminate interference from co-channel and adjacent channel users, as well as quite a bit of the RF interference emanating from paging, cellular phone and other transmitters. The CTCSS/DCS/NAC decoding in the BCD996XT allows the user to program a conventional frequency with CTCSS/DCS/NAC codes, thus eliminating quite a bit of noise reception.

The CTCSS/DCS search feature in previous models left a great deal to be desired, taking entirely too long to catch the correct CTCSS tone; in most cases, it was too slow to catch tones during the brief transmissions typical in public safety. However, like the earlier TrunkTracker IV models, the BCD996XT is way out in front. CTCSS, DCS, and NAC tone discovery was very quick—nearly instantaneous, in fact—and certainly much faster than in earlier TrunkTrackers.

Another terrific feature is the Auto setting for digital audio threshold. Older models required you to fuss around with the threshold settings to obtain the best audio. Or worse, it could only be adjust-

ed once per band (VHF, UHF, 800 MHz); this meant that if the settings varied widely for different systems in the same band, you were pretty much out of luck for any but the ones for which the threshold setting was approximately the same. Fortunately, the BCD996XT’s Auto setting automatically adjusts the threshold on a system-by-system basis, so you’ll have decent P25 digital audio as long as you have a decent incoming signal.

I found the Auto setting to work reasonably well on the trunked and conventional P25 systems that I monitor. However, I have yet to try out a Uniden scanner where the Auto setting gave me truly clean audio right out of the box. I don’t know if it’s a peculiarity of the sys-

At A Glance

The Uniden Bearcat BCD996XT Scanner

Major Features:

TrunkTracker IV (Motorola APCO 25 Digital, Motorola, EDACS, LTR)
25,000 Dynamically Allocated Channels
Close Call RF Capture Technology
Location-Based Scanning
Fire Tone-Out with Tone Counter
Multi-Colored Display Backlight
Alpha Tagging
100 Quick Key System Access
Band Scope
Continuous Band Coverage (see box)
Audio AGC
Automatic Digital Threshold Adjustment
Temporary Lockout
Search with Scan
NAC Decoding
DCS/CTCSS Rapid Decode
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tems around me or due to some other cause, but I've always had to fiddle about with the P25 settings to get the cleanest audio possible.

There's also an excellent set of features on the BCD996XT relating to trunked systems.

The first of these, the Trunked System Search, allows you to look for Motorola or P25 control channels and then track what is found. Since the voice channel assignments are broadcast by the control channel the radio will automatically track the system with no further effort needed in most cases. This feature works for Motorola and LTR systems, but not EDACS.

Another handy feature in this set allows you to track individual radio identifiers on trunked systems. Each radio in a trunked system has a unique ID that differentiates it from others, allowing use of a feature known as Individual Call (EDACS) or Private Call (Motorola). This lets users conduct car-to-car transmissions without tying up a regular talkgroup. These conversations can often be quite informative and entertaining to monitor.

Also in this set is Multi-Site trunking support. Networked trunking systems cover wide areas with multiple sites using different frequencies. Multi-Site allows you to set up a system with multiple sites, all sharing the same set of talkgroups, instead of entering each site as a separate system. This means that you can either travel around and track the system as you go, or monitor multiple sites within range of a fixed location, thus increasing what you can monitor. It's an excellent feature.

And The Features Just Keep On Coming

As in the other recent TrunkTrackers, the BCD996XT has excellent pre-programmed search banks. These allow the user to select a specific service and begin searching with just a few touches of the keypad. The included search banks are Public Safety, News Media, Ham Radio, Marine, Railroad, Aircraft, CB, GMRS/FRS, Racing (can you say NASCAR?), FM Broadcast, Special, and Weather. The radio also features "Custom Search," which lets you program up to 10 personal search banks and search them in any combination.

The search banks are all pretty standard except the "Special" service, which appeared to be mostly Business and MURS frequencies. The scanner also features Auto Search and Store, which will

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Pop'Comm July 2010 Reader Survey Questions

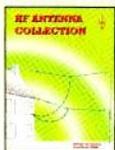
This month, we'd like to ask about the different modes of communications you use or listen to. Please use the Reader Survey Card and circle all appropriate numbers. We'll pick one respondent at random for a free one-year subscription, or extension, to *Pop'Comm*, so don't forget your address. Thanks for participating.

What devices/technology do you use on a regular basis?

Shortwave radio	1
AM/FM radio	2
FRS/GMRS band radio	3
Scanner	4
CB radio	5
Ham radio	6
Marine/Aviation band radio.....	7
Satellite radio	8
Software-controlled radio	9
Internet radio.....	10
DRM	11
Computer/Internet	12
Telephony	13
Texting/Messaging.....	14
VoIP/Skype	15
Social network site (e.g., Facebook, LinkedIn)	16
Twitter.....	17
Other	18

I'm afraid we're again out of room for highlights from March, but the winner of a free subscription or extension to *Pop'Comm* for sending in a response that month is **John Kasl** of **Silverdale, PA**. Congratulations, John!

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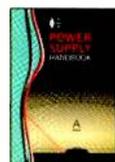
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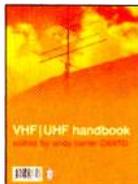
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automatically store located frequencies to the System/Group of your choice.

The BCD996XT also has the interesting Close Call RF Capture feature. This is similar to a frequency counter and allows the scanner to pick up any nearby transmission and display the frequency much more quickly than the regular search function. It works very well indeed; I was pretty impressed with it and had quite a bit of fun latching onto all sorts of eclectic communications.

Other useful features include variable delay times, RF attenuator, lockout restore, and NWR-SAME alert decode. The latter allows you to enter the codes designated for your area and receive weather alerts sent to your area, and only those, without hearing alerts for areas 50 miles away. The rich feature set means there are plenty of options for even the most persnickety of scanner users.

One really slick feature I particularly liked is the Fire Tone Out capability. This lets you use your scanner like a fire pager and set it to monitor quietly until the local fire department's paging tones are activated. You can program up to 10 tone sets and frequencies and any one of several interesting tone alert sounds into this feature; if multiple tone sets are entered for a single frequency, the radio will listen for any of those tones while monitoring the frequency. When a page is received, the radio will beep at you and open the squelch for the selected period of time to allow you to hear the dispatch message.

There are a couple of things to keep in mind with this feature, however. First is that Fire Tone Out does not function while you are scanning; it must be activated separately and then the radio will simply sit there quietly until it receives the specified tones. Second is that there is not a whole lot of tone information available, and you will likely have to contact your local fire department to ask for the information—and even then they may not give it to you. However, if you program "0" for the tones the BCD996XT will automatically provide you with the values of the latest tone-out it received.

Another nice feature is a good selection of frequency step sizes. The BCD996XT offers 5, 6.25, 7.5, 8.33, 10, 12.5, 15, 20, 25, 50 and 100-kHz steps. I'm quite glad to see the 8.33-kHz step included on the scanner; this step size is being implemented in much of Europe in the VHF aviation band in order to increase the number of available channels. While the U.S. has been balking at this, it may

eventually knuckle under and make the switch in the interests of safety and interoperability (funny how that word keeps popping up in different places, isn't it?).

Channel Alert is a very nice feature that allows you to set audio tone and/or color light alerts on specific channels or talkgroups; typically this would be "hot-shot" or regional alert broadcast channels. When the channel goes active, the scanner will sound an alert and/or light the LED, making sure that you know an important channel is active.

The BCD996XT is computer programmable, like most of its trunktracking predecessors. There are several software options available, each of which makes the task of programming the scanner much easier.

The Nits

There are, unfortunately, a couple of drawbacks to the BCD996XT, all of a relatively minor nature when taken in context with the overall scanner.

There is a fairly steep learning curve for features commonly used on a day-to-day basis. For instance, selecting and deselecting systems and groups to scan, or setting the scanner on a specific talkgroup, is somewhat challenging. It's not like the approach on previous scanners, where all you had to do was hit Manual and select the list ID number. It gets easier as you get used to it, but getting used to it takes some time. However, in this latest implementation of Uniden's DMA scanners, you can tag a channel with a channel number and then quickly jump directly to that channel by simply entering its number and pressing MENU.

Another fussy issue for me, but one that might have as much to do with personal taste as anything else, is the digital audio quality. While it's perfectly intelligible (at least, after I fiddled with the settings), it tends rather toward the bass end of the audio spectrum, and isn't as crisp and clean as it could be. It works well, but it's just not as crisp as the audio one gets from other scanners.

A Big Bang For The Bucks

The drawbacks notwithstanding, overall the BCD996XT is a great scanner in a convenient size and offering excellent sensitivity. Its MSRP is \$549, but street price runs somewhat lower. Its quality and numerous powerful features (the radio is loaded with enough to fill a book, much less a magazine article!) make it well worth the price.

AM Radio Changing Its Tune

by Bruce A. Conti
contiba@gmail.com

“Here in the United States, AM radio stations are scrambling for low-power FM translator frequencies.”

As **mediumwave** AM broadcasting continues to slowly fade away worldwide, the most recent and **shocking** news to listeners came from Radio Sweden, a beacon of DX conditions over northern latitudes. As followers of Gerry Dexter’s column know, Radio Sweden announced that it will terminate medium and shortwave broadcasts on October 31 in favor of Internet services, with management stating that it’s the best use of resources and in line with international trends.

“We have to be where the audience is, and today our audience in the rest of the world is on the Web,” said Swedish Radio Program Director Björn Löfdahl. “It doesn’t feel relevant to broadcast on short or medium wave, and it isn’t economically defensible or journalistically justified. Now the money can be directed to where it is needed.”

The English-language service on a high-power 1179-kHz signal and shortwave will move to the Web and national FM broadcasts. Radio Sweden also plans to expand programming in Arabic and other Middle Eastern languages via the Internet. Radio Sweden currently operates the only AM radio station in the nation at 1179 kHz with 300 kW of power. So once 1179 AM is shutdown, mediumwave DXers will lose Sweden as a radio country. One last hope would be if another broadcaster, such as China Radio International (CRI), were to resurrect the station, though there haven’t been any indications of such a deal in the works. CRI has kept a number of European AM radio stations in operation including transmitters in Finland, Luxembourg, and Monaco (France).

Switzerland could be the next AM radio country lost. This year has already been marked by the toppling of the historic 531 Beromünster, Switzerland, transmitter site, leaving the nation with only one remaining AM radio station—765 RSR Sottens, with 170 kW of power. Sadly, this favorite DX target is scheduled to be closed, too, perhaps by the end of the year.

Meanwhile the transition from AM to FM continues in Canada. The days are numbered for the few remaining AM radio stations carrying CBC Radio One in English. Though turning off the AM signal for CBI in Nova Scotia on 1140 kHz has been delayed, the CBC still plans to complete a move to FM. The 50-kW clear channel flamethrower CBE in Ontario is scheduled to vacate 1550 kHz sometime this year, if not already



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by the time you read this, completing a move to CBEW 97.5 FM. Other stations moving to FM include 1270 CFGT Alma, Quebec, to 104.5 FM; 790 CIGM, the last AM station in Sudbury, Ontario, now on 93.5 FM; and 980 CKRU Peterborough, Ontario, on 100.5 FM. Two coastal powerhouses 690 CBU Vancouver and 640 CBN Newfoundland have not announced future plans to abandon AM, at least not yet, although both stations have FM relays. Our neighbors south of the border also appear to be preparing to make the switch from AM to FM. Last year the Mexican government opened the process for AM radio stations to apply for a limited number of FM frequencies.

FM Translators To The Rescue

Here in the United States, AM radio stations are scrambling for low-power FM translator frequencies. Last year, the FCC amended the rules for FM translators to allow the relay of AM radio

stations. In an FCC Report and Order issued June 29, 2009, the Commission detailed the reasoning behind the rules change:

In this Report and Order, we adopt changes in our FM translator rules to allow AM stations to use currently authorized FM translator stations to retransmit their AM service within their AM stations' current coverage areas. Specifically, AM broadcast stations will be allowed to use currently authorized FM translator stations (*i.e.*, those now licensed or authorized in construction permits that have not expired) to rebroadcast their AM signals, provided that no portion of the 60 dBu contour of any such FM translator station extends beyond the smaller of: (a) a 25-mile radius from the AM transmitter site; or (b) the 2 mV/m daytime contour of the AM station. In addition, AM broadcast licensees with Class D facilities will be allowed to originate programming on such FM translators during periods when their AM station is not operating. We take these steps to permit AM broadcasters to better serve their local communities and thus promote the Commission's bedrock goals of localism, competition, and diversity in the broadcast media.

For decades, AM radio service has been an integral part of American life. AM radio remains an important component of the mass media landscape and a vital provider of broadcast service to local communities across the country. As the Commission has previously stated, AM often offers the only radio service to listeners in a variety of circumstances, particularly those living in and traveling through rural areas. AM radio stations commonly provide unique, community responsive formats to distinguish themselves in an increasingly competitive media market. All-news/talk, all-sports, foreign language, and religious programming formats are common on the AM band, as are discussions of local news, politics and public affairs, traffic announcements and coverage of community events such as high school athletic events. In fact, over 90% of all news/talk formats are on stations operating in the AM band.

The AM band's ability to serve local needs has been threatened by a well-documented shift of AM listeners to newer mass media services that offer higher technical quality and superior audio fidelity. Although the Commission has taken various steps to revitalize the AM band, there are inherent technical limitations to AM service for which there is no easy solution. AM broadcasts provide lower fidelity than other sources of audio programming, including FM broadcasts, satellite radio, personal media players and podcasts and audio streams provided through the Internet. In addition, the propagation characteristics of the AM band cause substantially increased interference among AM broadcasts at night. Accordingly, during nighttime hours, many AM stations are required to reduce their operating power substantially (and/or directionalize their signals), thereby eliminating service to certain swaths of their audience, while others (daytime-only stations) are prohibited from broadcasting at night. This situation became worse as of last year, when Daylight Saving Time ("DST") was extended. DST now begins three weeks earlier than it previously did, and ends one week later. As a result, during those extended DST periods many AM facilities, and particularly daytime-only stations, either completely lose an hour of early morning drive-time programming or are forced to operate at very low power during that important period of the broadcast day. In addition to nighttime interference issues, the Notice of Proposed Rule Making (NPRM) and commenters in this docket noted that increased electronic interference to AM signals occurs during all hours of the day from various sources. We expect such interference to increase in the future, particularly as sources of manmade interference continue to proliferate.

The combination of higher fidelity alternatives to AM radio and increased interference to AM radio have caused an erosion of the AM radio audience and the loss of young listeners to other programming outlets. Fifty years ago, AM was the dominant form of audio entertainment. Until 1978, AM claimed more than half of all hours spent with radio. The most recent figures show that AM's audience share has dropped to 17%. Among younger listeners, the decline is even more dramatic. Among persons aged 12-24, AM accounts for only 4% of listening, while FM accounts for 96%. Among persons aged 25-34,



The Sony SRF-M37V Walkman was once a popular model for TV audio before the switch from analog to DTV last year.

AM accounts for only 9% of listening, while FM accounts for 91%. The median age of listeners to the AM band is 57 years old, a full generation older than the median age of FM listeners. The story of AM radio over the last 50 years has been a transition from being the dominant form of audio entertainment for all age groups to being almost non-existent to the youngest demographic groups.

The use of FM translators to relay AM is limited to fill in current primary service areas where deficiencies are proven to exist. To speed up the application process and minimize potential interference issues due to FM band congestion, the FCC has also limited AM relays to presently assigned FM translators. "The opportunity to use an FM translator for fill-in AM service will only exist where a translator is authorized and available," states the Commission Report and Order.

Radio station WGNS on 1450 kHz in Tennessee claims to be the first to use FM translators. Under an experimental license issued by the FCC, WGNS was allowed to simulcast on 100.5 and 101.9 FM translators beginning in March of 2007, after years of work trying to convince the Commission of the need for FM service, followed by engineering studies and the proposed rule changes put forth by the National Association of Broadcasters. Many more AM stations were allowed to use FM translators under temporary authorizations to test out the concept prior to the rules change.

AM Radio Stations Relayed By FM Translators

This list is by no means complete. The status of FM translators has been quite volatile lately. In addition to AM relays, a new trend has been to use translators as simulcasts of FM HD channels. Keep in mind that unlike full-power AM/FM stations that are required to provide full identification hourly, FM translator legal identification by call sign and city of license is only required three times a day, making these translators sometimes challenging to log.

540	WGOP Pokomoke City, MD	100.7 W264BJ
550	WAME Statesville, NC	92.9 W225BD
560	WOOF Dothan, AL	100.1 W261AT

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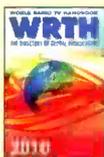
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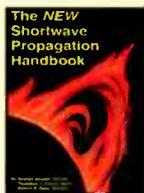
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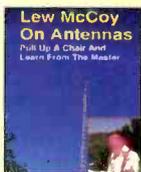
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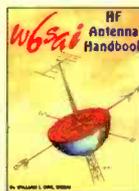
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		99.9 K260??	1590	WAUB Auburn, NY	98.1 W251AJ
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730	WUMP Madison, AL	103.9 W280BA	1600	WJSA Jersey Shore, PA	100.5 W263AG
730	KURL Billings, MT	97.5 K248BL			
740	WRPQ Baraboo, WI	99.7 W259BC			
770	KUOM Minneapolis, MN	104.5 K283BG			
780	WJAG Norfolk, NE	105.9 K290AT			
800	WNNW Lawrence, MA	92.1 W221CH			
810	WCKA Jacksonville, AL	94.3 W232BS			
860	WNOV Milwaukee, WI	102.5 W273AT			
900	WMOP Ocala, FL	100.1 W261BA			
900	WBRV Boonville, NY	105.9 W219CT			
910	WGTO Cassopolis, MI	101.1 W266BS			
920	KKLS Rapid City, SD	97.5 K248BT			
930	KKXX Paradise, CA	104.5 K283AR			
930	WRVC Huntington, WV	94.1 W231BS			
940	WIDG St. Ignace, MI	95.3 W237CF			
970	KNWZ Coachella, CA	94.3 K232CX			
970	WHA Madison, WI	107.9 W300BM			
1010	WCNL Newport, NH	94.7 W234BN			
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1040	KGGR Dallas, TX	102.5 K273BJ			
1050	WLYC Williamsport, PA	104.1 W281AR			
1110	WTBQ Warwick, NY	99.1 W256BD			
1140	WCJW Warsaw, NY	100.9 W265BX			
		103.7 W279BO			
		105.5 W288BZ			
1150	KIMM Rapid City, SD	106.7 K294BT			
1210	WTXK Pike Road, AL	107.5 W298BC			
1220	WSTL Providence, RI	93.7 W229AN			
1230	WTCJ Tell City, IN	100.5 W263BG			
1260	WCHV Charlottesville, VA	94.1 W231AD			
1270	WMKT Charlevoix, MI	92.1 W221BQ			
1280	WPKZ Fitchburg, MA	105.3 W236BX			
1300	WTLS Tallahassee, AL	106.5 W293BK			
1310	KAHL San Antonio, TX	103.7 K279AB			
1330	WEBO Owego, NY	107.9 W300BV			
1340	WJAM Selma, AL	96.3 W239BP			
1340	WRHI Rock Hill, SC	94.3 W232AX			
1370	WGIV Pineville, NC	103.3 W277CB			
1390	WSPO Charleston, SC	99.3 W257BQ			
1400	WJLD Fairfield, AL	104.1 W281AB			
1400	KDTA Delta, CO	99.5 K258BP			
1400	KQDJ Jamestown, ND	97.1 K246AM			
1420	WRCG Columbus, GA	106.9 W295AY			
1420	WVJS Owensboro, KY	100.5 W263BG			
1440	WHDM McKenzie, TN	98.9 W255BF			
1450	WGNS Murfreesboro, TN	100.5 W263AI			
		101.9 W270AF			
1450	KONP Port Angeles, WA	102.1 K271AZ			
1460	WGMF Tunkhannock, PA	104.5 W283BJ			
1490	WSYA Anniston, AL	99.1 W256BH			
		104.3 W282BD			

AM Radio On FM HD Digital Channels

In addition to FM translators, AM radio is finding another path to a better signal. AM radio programming has been popping up on FM HD digital channels. An FM HD digital signal is capable of “multi-casting”—offering more than one channel of programming on a digital signal. For example, WFAN New York on 660 AM is relayed by 92.3 WXRK FM HD3; WBZ Boston on 1030 AM is now available on 98.5 WBZ-FM HD3; KYW Philadelphia on 1060 AM can be found on 94.1 WYSP-FM HD2; and KNX at 1070 on the AM dial in Los Angeles is also on 94.7 KTWV FM HD2. Hourly station identification will include an FM HD callsign if such a relay is in use.

On a personal note, with the availability of FM translators, FM HD channels, and Internet streaming audio or wi-fi for AM, it’s probably time for the HD digital broadcasting experiment on AM to come to an end. Digital broadcasting in HD on AM has proven to be relatively useless and causes harmful interference on a band already plagued with noise issues. Because of the narrow bandwidth available for each AM frequency, the digital portion of an AM HD signal is transmitted on the adjacent upper and lower frequencies of the assigned carrier frequency. While an AM HD digital signal can be stable during the daytime via groundwave, nighttime skywave propagation interference renders the digital signal useless over any appreciable distance. Furthermore, the analog portion of the AM signal must

This Month In Broadcast History

75 Years Ago (1935)—The inaugural broadcast of *Hawaii Calls* was relayed to radio stations in California via shortwave, later expanding its reach to stations across the U.S. and internationally, sharing Hawaiian music with the world for 40 years thereafter. The first radio station in Ghana went on the air with callsign ZOY, relaying BBC programs.

50 Years Ago (1960)—The Pilkington Committee was commissioned to study the state of broadcasting in the United Kingdom, concluding two years later that the public had no desire for commercial broadcasting. The first television station in Egypt went on the air upon completion of broadcast center construction by RCA. “Alley Oop” by the Hollywood Argyles was number one on the 1240 WKBR Thirty Top Tunes of Manchester.

25 Years Ago (1985)—The Live Aid rock concert to raise money for famine relief in Ethiopia was broadcast to an estimated 400 million television viewers worldwide.



be limited to 5-kHz bandwidth in order to accommodate the digital signal. AM HD digital should be discontinued, and AM analog restored to high-fidelity sound to ensure any possible future for AM.

No Future For TV Radio

Yelena Baranova works on the production line of an electronics manufacturing plant, and like many on the line she misses being able to listen to TV audio while at work. "Now all I can hear other than music is Rush Limbaugh and Glen Beck," said Yelena. "And I don't like either of them." Daytime television news and talk programs such as *Good Morning America*, *Ellen*, and *The View* used to be popular among factory workers with portable TV radios, before the switch from analog to digital took effect last year.

"For the time being, TV audio is a thing of the past," explains John Wilder of the C. Crane Company. He continues:

Many companies such as ourselves would love to make a radio capable of receiving the audio portion of ATSC signals (DTV). Unfortunately the current ATSC chips on the market are completely unsuitable for radios. The audio and video are interlaced and the power requirements are incredibly high. If the ATSC chips are made to be with the power needs of a radio then radios with DTV would be viable. The ATSC Mobile DTV Standard released on October 16, 2009, is a step in the right direction for portable devices. Once chips that address the power and interlacing issues are available we will see DTV audio radios soon to follow. In the meantime there are a few portable DTVs built. The most notable is by Accurian and marketed by RadioShack under another name. Unfortunately portable DTVs are not receiving the best of reviews. The power consumption problem with these portables is evident in that an overnight charge gets you roughly three hours of mobile use.

Broadcast Loggings

Solar activity continues to be on the rise, resulting in enhanced reception of signals from the tropics. Though summer thunderstorms can make AM DXing especially challenging, here are a few targets to attempt if the weather breaks. All times are UTC.

600 CMKV Radio Rebelde, Urbano Noris, Cuba, at 0059 fair, over WELI; Rebelde sounder and speaker parallel 670 kHz. (Conti-NH)

750 HIDB Radio Jesús, Santiago, Dominican Republic, at 0859 ID in Spanish, "Radio Jesus 750 AM twenty four hours," and religious tag. Very good in co-channel Cuba fade. (Black-MA)

760 WORA Mayagüez, Puerto Rico, at 0259 hourly NotiUno full ID listing all stations with Pep Boys and T-Mobile mentions. Good under RCN Barranquilla, Colombia. (Black-MA)

780 YVMN Radio Coro, Venezuela, at 0201 adverts with phone numbers for Coro and Punto Fijo businesses or government offices; fair. (Connelly-MA)

820 Radio Paradise, Charlestown, St. Kitts & Nevis, at 0205 evangelistic preaching, gospel singing; slightly over Radio Reloj Cuba and WNYC. (Connelly-MA)

840 Radio 4VEH, Cap-Haitien, Haiti, at 0201 four notes lifted from "Jingle Bells," then "Vous écoutez Radio 4VEH. Il est neuf heures." Good, over WHAS and splatter from 850 WEEL. (Connelly-MA)

939.88 XEQ Iztapalapa, Mexico City, at 0205 an off-frequency signal poor but splittable on LSB from the 940 blob. (Connelly-MA)

940 WIPR San Juan, Puerto Rico, at 0259 with the end of a Radio Nederland relay and sign-off ID. Very good signal. (Black-MA)

1020 Cadena CMKS, Guantánamo, Cuba, at 0259 brass fanfare and theme music, then "CMKS Guantánamo" and "Guantánamera" melody. Fair under 1030 WBZ HD digital hash. Thanks to Sylvain Naud via RealDX for ID help. (Black-MA)

1160 VSB3 Hamilton, Bermuda, at 0200 BBC ID and start of news; briefly over WSKW and WVNJ. (Connelly-MA)

1280 XEBW Chihuahua, Mexico, at 0200 fair to poor in noise with Spanish inspirational music. Full top of the hour ID included, "Esta escuchara XEBW, Palabra Viva Doce-ochenta...en Chihuahua, México." Mixing with a gospel station. (Vance-TX)

1370 XEMON Monterrey, Mexico at 0400 fair with talk program into full ID on the hour as "XEMON...Radio Fórmula Monterrey." Announced 400 watts. In and out for most of the evening. (Vance-TX)

1370 XEJE Dolores Hidalgo, Mexico, at 0105 fair to poor coming out of cumbia with full ID, including city of license, address, power, telephone number, and Radio Reyna slogan, then into announcements. Mixing with a U.S. station at times. (Vance-TX)

1530 VOA Pinheira, São Tomé, at 0258 "This is the Voice of America, Washington, D.C." and "Yankee Doodle," then "This is the Voice of America signing on" and more "Yankee Doodle," into VOA African news in English. Fair to good under WCKY. (Black-MA)

1700 XEPE Tecate, Mexico, at 0450 English UC San Diego sports; English ID, "...on XX-1090," Spanish call-letter ID on the hour. Noted earlier with Sporting News Radio. Fighting with KVNS but good when on top. (Vance-TX)

Thanks to DX troopers Chris Black, N1CP; Mark Connelly, WA1ION; and Robert Vance for this month's selected logs. Until next time, 73 and Good DX!

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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	17795	Radio Australia		0300	3350	Radio Exterior Espana, Spain, Costa Rica Relay	SS
0000	5865	Radio Algerienne, Algeria	AA	0300	5919	Affia Darfur, USA, via Vatican	Farsi
0000	5045	Radio Cultura do Para, Brazil	PP	0300	4965	CVC-One Africa, Zambia	
0000	4985	Radio Brazil Central	PP	0300	3200	TWR, Swaziland	Ndeble
0000	5900	Radio Bulgaria		0400	4915	Radio Difusora Macapa, Brazil	PP
0000	5910	Marfil Estereo, Colombia	SS	0400	4885	Radio Clube do Para, Brazil	PP
0000	17680	CVC-La Voz, Chile	SS	0400	6100	Radio Bulgaria	BB
0000	5875	BBC, Thailand Relay	Burmese	0400	6190	China Radio International	
0000	6145	Radio Japan, via Canada		0400	11960	China National Radio	CC
0000	12095	Radio Thailand		0400	7345	Radio Prague, Czech Republic	
0000	9680	Radio Thailand		0400	6010	La Voz de tu Concencia, Colombia	SS
0000	5080	WTWW, Tennessee		0400	3255	BBC, South Africa Relay	
0000	5830	Radio Ukraine International	GG	0400	9805	Radio France International	
0000	11605	Radio Free Asia, USA, via Taiwan	VV	0400	4800	Radio Transcontinental, Mexico	SS
0100	5580	Radio San Jose, Bolivia	SS	0400	5960	Radio Japan	JJ
0100	11780	Radio Nacional Brasilia, Brazil	PP	0400	6130	Radio Romania International	
0100	7355	Radio Prague, Czech Republic		0400	6240	Voice of Russia, via Moldova	
0100	9870	All India Radio	Hindi	0400	7310	Radio Romania International	
0100	4840	WWCR, Tennessee		0400	12040	Voice of Russia	
0100	11575	VOA-Radio Deewa	Pasho	0400	4790	Radio Vision, Peru	SS
0200	3340	Radio Misiones International, Honduras	SS	0400	4990	Radio Apinte, Suriname	DD
0200	11710	Radio Argentina al Exterior	EE	0400	4775	TWR, Swaziland	GG
0200	9710	China Radio International	SS	0400	4960	Voice of America, Sao Tome Relay	
0200	6035	La Voz del Guaviare, Colombia	SS	0400	6040	Voice of Turkey, via Canada	
0200	9755	Radio Canada International	SS	0400	6020	Voice of Turkey	
0200	7250	Voice of Russia		0400	7505	WRNO, Louisiana	
0200	9965	Voice of Russia	SS	0400	7811	AFRTS, Florida	usb
0200	9855	RDP International, Portugal	PP	0400	4976	UBC Radio, Uganda	
0300	6090	University Network, Anguilla		0400	6175	Voice of Vietnam, via Canada	
0300	15515	Radio Australia		0400	9660	Vatican Radio	FF
0300	9790	Radio Havana Cuba		0400	4950	Radio Nacional, Angola	PP
0300	3985	Hrvatski Radio, Croatia	Croatian	0500	3975	Radio Budapest, Hungary	HH
0300	6165	Radio Nationale Tchadienne, Chad	FF	0500	5940	Radio Voz Missionaria, Brazil	PP
0300	7375	Croatian Radio		0500	4930	VOA, Botswana Relay	Hausa
0300	13760	Radio Havana Cuba	SS	0500	5960	China Radio International	
0300	4780	Radio Djibouti	AA	0500	5005	Radio Bata, Equatorial Guinea	SS
0300	6270	Radio Cairo, Egypt		0500	9755	Deutsche Welle, Germany, Rwanda Relay	
0300	5980	Voice of the Tigray Revolution, Ethiopia	Tigray	0500	15160	Radio France International	FF
0300	7110	Radio Ethiopia	Amharic	0500	9790	Radio France international	FF
0300	5010	Radio Madagasikara, Madagascar	Malagasy	0500	7475	RS Makedonias, Greece	GG
0300	15720	Radio New Zealand International		0500	7450	Voice of Greece	GG
0300	11655	RDP International, Portugal	PP	0500	9760	Radio Nikkei, Japan	JJ
0300	7200	Sudan Radio TV Corp.	AA	0500	6195	Radio Japan	SS

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0500	11725	Radio New Zealand International		1500	11710	Voice of Korea, North Korea	
0500	7285	Radio Sondergrense, South Africa	Afrikaans	1500	15435	Broadcasting Svc of the Kingdom, Saudi Arabia	AA
0500	5950	Radio Taiwan International, via Florida		1530	15660	Radio Mada, Madagascar, via Moldavia	Malagasy
0500	7275	Radio Tunisienne, Tunisia	AA	1600	12095	BBC South Atlantic Relay, Ascension Island	
0500	5925	Radio Farda, USA, Germany Relay	Farsi	1600	9970	RTBF International, Belgium	FF
0500	9430	CVC - One Africa, Zambia		1600	9625	Radio Canada International	
0500	7360	Vatican Radio		1600	12080	Deutsche Welle, Germany, Portugal Relay	RR
0600	9915	BBC, Cyprus Relay	AA	1600	15140	Radio Sultanate of Oman	AA
0600	6075	Deutsche Welle Relay, Germany, via England	GG	1600	15235	Channel Africa, South Africa	FF
0600	7315	Radio France International		1600	17700	Southern Sudan Interactive Radio, USA, via Ascension	AA
0600	4845	Radio Mauritanie, Mauritania	AA	1600	11805	Radio Liberty, USA via Biblis	RR
0600	11640	TWR, USA, via South Africa		1700	13800	Radio Darbanga, via Madagascar, (to Sudan)	
0600	11625	Vatican Radio		1800	9650	Polish Radio, via Canada	
0700	6105	Cadena RASA, Mexico	SS	1900	11605	Deutsche Welle, Germany, Sri Lanka Relay	AA
0700	7125	Radio Guineenee, Guinea	FF	1900	11690	Deutsche Welle, Germany, via South Africa	
0800	6185	Radio Educacion, Mexico	SS	1900	11655	Radio Nederland, Madagascar Relay	
0900	9765	Radio New Zealand International		1900	15120	Voice of Nigeria	
0930	6060	Radio Argentina al Exterior	SS	1900	6100	International Radio of Serbia	
0930	5980	Radio Senado, Brazil	PP	1930	11860	Radio Jamahiriya, Libya	Hausa
1000	5040	Radio Libertad, Peru	SS	2000	12080	VOA, Botswana Relay	FF
1000	4717	Radio Yura, Bolivia	SS	2000	7580	Radio Cairo, Egypt	
1100	6180	Radio Havana Cuba	SS	2000	17675	Radio New Zealand International	
1200	15400	HCJB Global		2000	17850	Radio Exterior Espana, Spain, Costa Rica Relay	SS
1200	4750	Radio Republik Indonesia	II	2000	11845	Adventist World Radio, via South Africa	FF
1200	3925	Radio Nikkei, Japan	JJ	2000	17705	Radio Nacional, Venezuela, via Cuba	SS
1200	3912	Voice of the People, South Korea (to North Korea)	KK	2000	6240	Family Radio, via Moldova	FF
1200	5940	Radio Rossii	RR	2100	17605	Radio Nederland, Bonaire Relay	DD
1200	3314	NBC, Papua New Guinea	Tok Pisin	2100	15190	Radio Africa, Equatorial Guinea	
1200	9650	KBS World Radio, South Korea, via Canada		2100	17630	Radio France International, French Guiana Relay	SS
1200	5020	Solomon Islands Broadcasting Corp.		2100	9430	Voice of Greece	GG
1200	9840	Voice of Vietnam		2100	6180	All India Radio	
1200	3905	Radio New Ireland, Papua New Guinea	Tok Pisin	2100	9745	Voice of Russia, via Moldova	FF
1200	3945	Radio Vanuatu		2100	9460	Radio Slovakia International, Slovak Republic	SS
1300	2310	ABC Northern Territories Service, Australia		2100	9330	Radio Damascus, Syria	
1300	7355	KNLS, Alaska	CC	2100	13820	Radio Marti, USA	SS
1300	6095	BBC, South Africa Relay	CC	2100	9370	WTJC, North Carolina	
1300	7535	BBC, Thailand Relay	Mandarin	2100	9575	Radio Medi Un, Morocco	FF
1300	9525	Voice of Indonesia		2200	9580	Africa No. One, Gabon	FF
1300	6170	Radio New Zealand International		2200	15320	Adventist World Radio, Guam	VV
1300	9335	Voice of Korea, North Korea		2200	9895	Radio Nederland, via Rwanda	AA
1300	9610	Radio Romania International	Romanian	2200	6927	Radio National de la RASD, Algeria (to Morocco)	SS/AA
1300	9800	Voice of Russia	RR	2200	9435	FEBC, Philippines	II/EE
1300	11655	Polish Radio, via Germany		2200	7345	Radio Tunisienne, Tunisia	AA
1300	12035	Voice of Turkey		2200	9955	WHRI, Palau	CC
1300	9345	TWR, Guam	unid	2230	9760	Cyprus Broadcasting Corporation	Greek, wknds
1300	15350	Voice of Turkey	TT	2300	15345	Radio Argentina al Exterior	SS
1300	9760	Voice of America, Philippine Relay		2300	5990	Radio Havana Cuba	
1300	7235	VOA, Northern Marianas Relay	Korean	2300	9415	Radio Prague, Czech Republic	SS
1300	5835	VOA, Sri Lanka Relay	Pashto	2300	11990	Radio Canada International	SS
1300	12133	AFRTS, Florida	usb	2300	15640	Deutsche Welle, Germany, via USA	GG
1400	9940	Voice of Islamic Republic of Iran	Dari	2300	17605	Radio Japan, via Bonaire	JJ
1400	17725	Radio Jamahiriya/Voice of Africa, Libya		2300	11910	Radio Japan	
1400	9625	Channel Africa, South Africa		2300	11665	Radio Japan	JJ
1400	15670	Miraya FM, Sudan, via Slovakia	EE/AA	2300	6055	Radio Exterior Espana, Spain	SS
1400	9955	WRMI, Florida	SS	2300	15250	Radio Nacional Venezuela, via Cuba	SS
1400	6890	KNLS, Alaska		2300	9390	Radio Cairo, Egypt	AA
1500	6070	CFRX, Canada					

Trivia And Toons

by R.B. Sturtevant, AD7IL

Q. Everyone has heard the old slogan “Loose Lips Sink Ships.” Can you give us an example of an occasion when this actually happened?

A. The most famous one I can think of doesn't involve ships, but you'll get the idea. During an inspection tour of the Southwest Pacific, Japanese Admiral Yamamoto's movements were planned in great detail, as befitting his rank and position. The coded messages were picked up by the Allies, who had broken the codes. As you can imagine, the Americans had a special place in their hearts for the man who had planned Pearl Harbor, and their intelligence pinpointed a stop on the Admiral's itinerary that could be reached by P38 fighter aircraft. The P38s were sent out and shot down both of the bombers and most of the fighters traveling in Yamamoto's party. Yamamoto died in the crash.

The British had strongly opposed this idea because they feared that it would show the Japanese that their codes had been compromised, which it did. Furthermore, elated American fliers coming back from the mission talked openly over the radio about what they had done. Japanese intercept operators picked up all of this traffic, and the Japanese Navy changed their codes immediately. It took the Allies four months to break into the new Japanese codes. During those four months Allied Intelligence was severely handicapped.

Q. I've just recently heard of a language called Esperanto. Where is it spoken and does it ever get on the radio?

A. Esperanto is a made-up language developed by Dr. Ludwig L. Zamenhof, a Polish physician who, in 1887, wanted to develop a “second language” that was easier to learn than other languages and could serve as an aid in communications for the whole world. Like many ideas that try to improve the world, Esperanto did spark a bit of a movement that caught on for a while, particularly in central Europe with its polyglot of languages and painful memories of World War I.

In 1924, when broadcasting started in Czechoslovakia, the signals from Prague could be heard across the border, and special programs, consisting of lectures in Esperanto, were developed for the foreign audience who did not speak Czech. The lectures informed the world about pre-war events in Czechoslovakia and about the nation in general. Over 2,000 letters came in from listeners of these lectures.

The Esperanto programs made it onto short-wave—briefly—in 1938. But that year, the Munich Accords had a significant effect on the schedule of Czech radio, because the Nazis in the newly annexed Sudetenland claimed that Esperanto was a Jewish communist plot against European culture. Esperanto was dropped from the radio, suppressed by both the Nazis and Stalin's Soviet Union.

The Esperanto movement did maintain some loyal adherents, however, and has made it back onto the air. Broadcasts in Dr. Zamenhof's language can today be heard coming not only from Czechoslovakia, but also China, Italy, Cuba, Poland, Australia, Canada, Sweden, Japan, Austria, and Estonia.



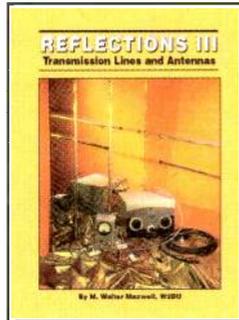
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CQ Introduces *Reflections III* by Walt Maxwell, W2DU?

CQ Communications announced the publication of *Reflections III: Transmission Lines and Antennas*, an expanded, revised, and updated edition of this authoritative reference work by renowned amateur radio operator M. Walter Maxwell, W2DU. "This is not a 'how to' book," explains the author, saying that rather, "its theme is 'how it works.' It is about the care and feeding of antennas, with special emphasis on dispelling some of the prevalent myths and misconceptions surrounding the mismatched antenna and its feed line in routine operations."

Developed from a series of seven articles entitled "Another Look at Reflections" that were published in *QST* magazine in the 1970s, highlights of the third edition include further discussions of the conjugate match, the origin of the W2DU ferrite-bead balun, a simple introduction to the Smith Chart, and some personal history of the author's work in designing antennas for very early earth-orbiting satellites. A new chapter also "exposes and corrects some new myths and misconceptions that have crept into recent literature," according to the author.

Suggested retail price for the 424-page *Reflections III: Transmission Lines and Antennas* is \$39.99. To order on line, follow the links at www.cq-amateur-radio.com to the CQ store, or contact CQ Communications, 25 Newbridge Rd., Hicksville, NY 11801; Phone: 516-681-2922; Fax: 516-681-2926.



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Radio Sweden Says So Long To Shortwave

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

“The current A-10 broadcast season will be the last active period for Radio Sweden.”

Denmark, Norway, and Finland long ago silenced their official shortwave stations. Now, Sweden is traveling the same road, thus completing this group of Nordic Nots (maybe you’d prefer to change the “o” in “nots” to a “u”?). The current A-10 broadcast season will be the last active period for Radio Sweden. But, hey, not to worry! Radio Sweden will still be available on the Web. If your reaction to Web-based radio is anything like mine, you’d as soon listen to the radio on a computer as you would turn your toaster into an HDTV, a la *The Red Green Show*, the wacky Canadian send up of home improvement shows. We can bemoan the situation all we like, but I don’t see anything positive in this unhappy picture.

Turning to news from warmer climes, how about our *amigos* at Radio Havana Cuba, who have begun using 5040 for a new national service promoting tourism. I suppose, technically, RHC may have a right to operate in this area. I’m not so sure about the likes of WWCW, WWRB and their ilk. By the way, in case you hadn’t noticed, WWCW has vacated 4775, but it’s still making a claim on 60 meters; it’s now using 4840 (complete with splash!).

With the Darwin site down, Radio Australia has expanded its use of transmission sites for the current broadcast season. Dhabbaya (UAE) and Kranji (Singapore), along with Palau and

Taiwan, will be used at various times and for various languages. In addition to English, Radio Australia broadcasts in Burmese, Indonesian, and Mandarin.

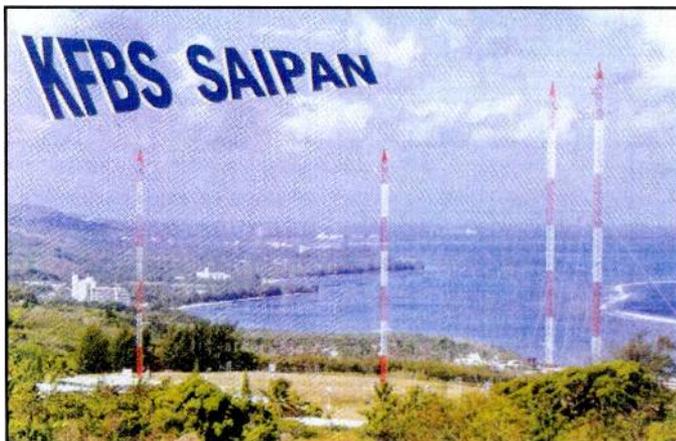
There are hints that some of the IBB relay stations are slated to be turned over to independent companies, though the government would retain ownership. The intent is to privatize the day-to-day work, while keeping control—something similar to what some other government broadcasters have done.

Technical problems have left Zambia’s government broadcaster having to operate at a bare minimum. It is now apparently off 5915, at least until repairs can be made. CVC’s One Africa station is now using the channel.

Radio Rossii has also met with hard times. Late word is that some of its transmitters have been silenced due to lack of operating funds. Radio Rossii relays now reported to be off the air are 5930-Murmansk, 6085-Krasnoyarsk, 6160-Arkhangelsk, and 6195-Ulan Ude.

For reasons unknown Radio Tanzania-Zanzibar (11735), which has been a near-regular over the past year or so, has been off the air since early December. Hopefully this, too, is just a technical problem that will eventually be repaired.

And, finally, the reconstituted *Happy Station* program, which premiered with much ballyhoo some months ago, has cancelled its shortwave broadcasts and now is heard strictly via the Web.



Far Eastern Broadcasting’s towers on Saipan, Northern Marianas. (Thanks Peter Ng, Malaysia)

Reader Logs

Remember, your shortwave broadcast station logs are always welcome. But *please* be sure to double or triple space 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 where’s that picture of you in your shack? I’m sure I remember your promising to send a shot of you at your listening post!

Here are this month’s logs. All times are in UTC. Double capital letters are language abbreviations.

Help Wanted

We believe the "Global Information Guide" offers more logs than any other monthly SW publication (*540 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.*

viations (SS = Spanish, RR = Russian, AA = Arabic, etc.). If no language is mentioned English (EE) is assumed.

ALASKA—KNLS, 7355 in CC at 1312. (Brossell, WI)

ALGERIA—RT Algerienne, 5865 via Issoudun with Koran at 0445. (Barton, AZ) 0507 in AA. (Yohnicki, ON)

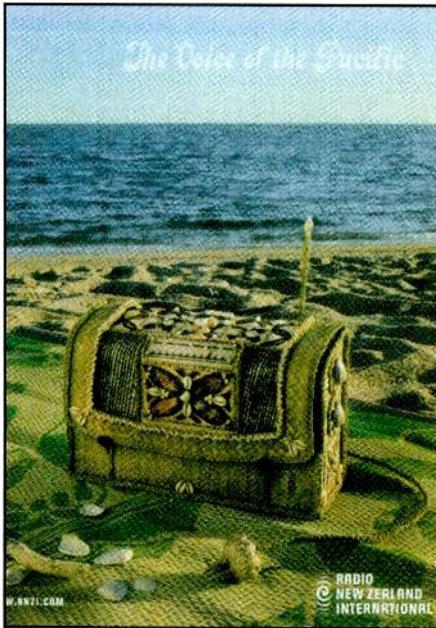
ANGUILLA—World University Network, 6090 at 0315 with Melissa Scott. (Maxant, WV)

ARGENTINA—Radio Nacional, 6060 with live sports in SS at 0020 but weak under RHC. Also, 11710 with EE features at 0211 and 15345 in SS with local music at 2245.

A Guide To "GIG-Speak"

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

(l)	listed	KK	Korean
(p)	presumed	Lang	language
(t)	tentative	LSB	lower sideband
*	sign on/off time	LV	La Voz; La Voix
//	parallel frequency	M	man
AA	Arabic	NBC	National Broadcasting Corporation (Papua New Guinea)
ABC	Australian Broadcasting Commission	nf	new frequency
AFN	Armed Forces Network	ORTB	Office de Radiodiffusion et Television du Benin
AFRTS	Armed Forces Radio TV Service	PBS	People's Broadcasting Station
AIR	All India Radio	PP	Portuguese
am	amplitude modulation	PSA	public service announcement
ancr	announcer	QQ	Quechua
anmt(s)	announcement(s)	RAE	Radiodifusion Argentina al Exterior
AWR	Adventist World Radio	RCI	Radio Canada International
BBCWS	BBC World Service	Rdf	Radiodifusora, Radiodiffusion
BSKSA	Broadcasting Service of the Kingdom of Saudi Arabia	REE	Radio Exterior de Espana
CBC	Canadian Broadcasting Corp.	RFA	Radio Free Asia
CC	Chinese	RFE/RL	Radio Free Europe/Radio Liberty
CNR	China National Radio	RFI	Radio France International
co-chan	co-channel (same) frequency	RHC	Radio Havana Cuba
comml	commercial	RNZI	Radio New Zealand International
CPBS	China People's Broadcasting Station	RR	Russian
CRI	China Radio International	RRI	Radio Republik Indonesia; Radio Romania International
DD	Dutch	RTBF	RTV Belge de la Communaute Francaise
DJ	disc jockey	s/off	sign off
DW	Deutsche Welle/Voice of Germany	s/on	sign on
EE	English	SIBS	Solomon Is. Broadcasting Corp.
f/by	followed by	sked	schedule(d)
FEBA	Far East Broadcasting Association	SLBC	Sri Lanka Broadcasting Corp.
FEBC	Far East Broadcasting Company	SS	Spanish
FF	French	TC	time check
GBC	Ghana Broadcasting Corp.	TOH	top of the hour
GG	German	TT	Turkish; Thai
HH	Hebrew; Hungarian	TWR	Trans World Radio
HOA	Horn of Africa	unid	unidentified
ID	identification	USB	upper sideband
II	Italian; Indonesian	UTC	Coordinated Universal Time (= GMT)
Intl	International	UTE, Ute	utility station
IRIB	Islamic Republic of Iran Broadcasting	v	variable
IRRS	Italian Radio Relay Service	vern	vernacular (local language)
IS	interval signal	VOA	Voice of America
JJ	Japanese	VOIRI	Voice of Islamic Republic of Iran
KBS	Korean Broadcasting System	VOR	Voice of Russia
		W	woman
		ZBC	Zambian Broadcasting Corp.



This unusual portable "radio" must have washed up on a New Zealand beach. (Peter Ng, Malaysia)

(Alexander, PA) 11710 in SS at 0017. (MacKenzie, CA) 0320 in FF with *campos* and pips on the half hour. (Parker, PA) 1845 in SS. (Maxant, WV) 2325 in SS with time pips to 2330 and a few tangos. (Strawman, IA)

Unidentified domestic broadcast feeder, 15820u in SS with U.S. pop/rock at 2220. (Alexander, PA)

ASCENSION—BBC South Atlantic Relay, English Bay, 7255 at 0408, 9915 at 2245, and 12095 at 2213. (MacKenzie, CA) 11810 at 1925 with *World Week*. (Brossell, WI) 12095 at 1600. (Paradis, ME) 2223. (D'Angelo, PA)

AUSTRALIA—Radio Australia, 6020 at 1335, 7240 at 1440 with ham QRM and 9475 in Tok Pisin at 1340. (Maxant, WV) 11880 at 2051. (Yohnicki, ON) 15230-Shepparton at 2247, 15415-Shepparton at 0318, 15515-Shepparton at 0315, 15560-Shepparton at 2250, 17750-Shepparton at 0334 and 17795-Shepparton at 0028. (MacKenzie, CA) 15515-Shepparton at 0400. (Barton, AZ) 17715-Shepparton at 0054. (Parker, PA)

ABC Northern Territories Service: Alice Springs, 2310 at 1300. (Brossell, WI) Tennant Creek, 2325 at 1123. (Wilkner, FL) 1234. (Strawman, IA)

HCJB Global, Kununurra, 15400 with Pacific area news at 1215. (Maxant, WV)

VMW, 6230 with marine weather forecasts at 1350. (Strawman, IA)

BELGIUM—RTBF Intl, 9970 in FF at 1628. (Brossell, WI)

BOLIVIA—Radio Lipez, Uyuni, with W DJ in SS in high noise level heard at 1031. (Wilkner, FL)

Radio San Jose, SJ de Chiquitos in SS with flutes at 0117. (Paszkwicz, WI)

BONAIRE—Radio Nederland Relay, 15280 in JJ at 2227, 15315 in SS at 2316,

17605 in DD at 2110 and 21525 at 2025. (MacKenzie, CA)

BOTSWANA—VOA Botswana Relay, Mopeng Hill, 4930 at 2040 with *African Beat*. (Ng, Malaysia) 0415, //9885 and 9440 in Swahili ending at 0330. Also, 11710 at 0527 in Hausa to sign off at 0531. (Parker, PA) 12080 in FF at 2012. (Brossell, WI)

BRAZIL (All in PP)—Radio Cultura Ondas Tropicais, Manaus, 4845 heard at 0103 with impassioned talk and lots of reverb. (Parker, PA)

Radio Clube do Para, Belem, 4885 with lively music pgm at 0311. (Barton, AZ) 0417 with M talk, CODAR. (Yohnicki, ON) 0453 with music similar to U.S. disco. (Wood, TN)

Radio Difusora Macapa, Macapa, 4915 with music at 0450. (Yohnicki, ON) 2353 with a "Name That Tune"-type pgm, CODAR QRM. (Parker, PA)

Radio Brazil Central, Goiania, 4985 with hilife and pops at 0035. (Parker, PA) 0602 with PP songs. (Brossell, WI) 11815 at 0436 with talks and Brazilian pops with ID jingles between each number. (D'Angelo, PA) 0620 with M and slow ballads, //4985. (Parker, PA) 2330 with *futbol* broadcast and reverb. (Strawman, IA)

Radio Cultura do Para, Belem, 5045 with soft rock heard at 0027. (Parker, PA) 0405 with vocals. (Maxant, WV) 0458 with EZL and MOR Brazil-pops. (Wood, TN) 0610 with domestic ballads. (Brossell, WI)

Radio Educacao Rural, Tefe, 4925 heard at 0055 with lively songs and CODAR QRM. (Ronda, OK)

Radio Voz Missionaria, Florinapolis, 5940 at 0515 with religious talk and music. Poor in noise. //11750 at 0525 with religious talk. (Alexander, PA)

Radio Nacional Amazonia, Brasilia, 6185 at 2337 with two M covering a sports event. (MacKenzie, CA)

Observatorio Nacional, Brasilia, 10000 at 0414 with IDs every 10 seconds. No trace of WWV. (Parker, PA)

Super Radio Deus e Amor, Curitiba, 11765 at 0355 with emotional preacher, ID anmts at 0402 and local religious music. (Alexander, PA) 0607 with impassioned preacher. (Parker, PA)

BULGARIA—Radio Bulgaria, 5900-Plovdiv at 0051 with classical Bulgarian music. (Parker, PA) 6110 at 0445 with Bulgarian folk things, went off suddenly at 0448. Also, 11700 in BB with local music at 1435. (Barton, AZ)

CANADA—Radio Canada Intl, 5995 with news in AA at 0605 and 7215 in FF at 0452. (Padazopoulos, Greece) 9755 in SS at 0254 and 11990 in SS at 2324, //9650. (MacKenzie, CA)

CBC Northern Service, 9625 at 1610 on arts and science. (Maxant, WV)

CFRX, Toronto, 6070 at 1510 with relay of news/talk 1010. (Maxant, WV)

CHU time station, Ottawa, 3330 at 0405 and 7850 at 1145. (Maxant, WV)

CHAD—Radio National Tchadienne, 6165 at 0427-0430; just a three-minute win-

dow for this as Radio Nederland signs on at 0430. Chad sometimes holds its own at 0500 and later. (Alexander, PA)

CHILE—CVC-La Voz, 17680 in SS at 2258. (MacKenzie, CA)

CHINA—China Radio Intl, 5915-Huhhot in RR at 1320 with seeming news in RR and music "bumpers." 9585-Kashi in (I) Hungarian at 2029 and 9745-Urumqi in (I) Esperanto to 2027*. (Strawman, IA) 5960 via Canada at 0538, 5990 in RR at 0054 to 0058 close, 6190 via Canada at 0438, 9425 in Cantonese at 2307, 11650 at 0006, 11770 in (I) VV at 0032, 11790 in EE at 0035, 11820 in Cantonese at 0045, 11845 in CC at 0052, 11980 in CC at 0338, 11945 in Amoy at 0113, 15160 in CC at 0325 and 17495 in Cantonese at 0045. (MacKenzie, CA) 6125-Shijiazhuang in CC at 1300, 7215-Xi'an in RR at 1313 and 9685-Urumqi in RR at 1218. (Brossell, WI) 9710-Kashi in SS at 0234. (Parker, PA) 0110. Also, 17740-Xi'an with CC/VV lesson at 0550. (Ng, Malaysia)

China National Radio/CPBS: 4460-Beijing in Mandarin at 1157. (Strawman, IA) Voice of the Strait, 4940-Fuzhou in Mandarin at 1207 and Guangxi Beibu Bay Radio, 5050-Nanning in VV at 1217. (Ronda, OK) Xinjiang PBS, 4980-Urumqi in CC at 0035. (Paszkwicz, WI) CPBS 11750 in CC at 0027 and 11960 in CC at 0410. (MacKenzie, CA) Xizang PBS, 7255-Lhasa (Tibet) in TT at 1316. (Brossell, WI) China Business Radio, 9820 in Mandarin at 2310. (D'Angelo, PA) CNR-8, 9890-Lingshi in Uighur at 0123. (Parker, PA)

Firedrake music jammer, 15265 at 2320. (MacKenzie, CA) 17645 at 0045 against VOA-Tinang. (Parker, PA)

COLOMBIA—Marfil Estereo, Puerto Lleras, 5910 in SS with usual ballads in SS at 0045. (Alexander, PA)

La Voz de tu Concencia, Puerto Lleras, 6010 with domestic music, ID, promos, religious talk at 0445. (Alexander, PA)

La Voz del Guaviare, SJ Guavaire, 6046 at 0245 with local music, SS anmts. Off with NA at 0259. Back on the air by 1040. (Alexander, PA)

CROATIA—Hrvatski Radio, 3985-Deanovic in Croatian at 0315. (Parker, PA) 7375 via Germany ancg their schedules on shortwave at 0310. (Maxant, WV)

CUBA—Radio Havana Cuba, 6180 in SS at 1140. (Maxant, WV) 11730 (unlisted) at 1900. (Barton, AZ) 13760 in SS at 0330 and 13790 in SS at 2324. (MacKenzie, CA) 13790 in SS at 0303. (Parker, PA)

CYPRUS—Cyprus Broadcasting Corp., 9760 at 2236 with M/W in Greek and closing with Greek music at 2245. (D'Angelo, PA) (*weekends only—gld*)

CZECH REPUBLIC—Radio Prague, 7345 at 0430 and 9955 over WRMI at 1505. (Maxant, WV) 7355-Litomysl at 0107 on a new Prague archbishop. (Fraser, ME) 9415 in SS at 2310. (MacKenzie, CA)

DJIBOUTI—Radio Djibouti, Arta, 4780 heard at *0300 with NA, Koran, AA



The transmitter and power supply at WRMI, Miami. (Thanks Charles Maxant, WV)



Swiss Radio International confirmed reception on 11725 for Doug Brown in Ontario back in 1980!

talk and HOA music. (Alexander, PA) 0403 with indigenous music. (Parker, PA)

ECUADOR—HCJB-Global, 12040 in GG heard at 2320. (MacKenzie, CA) (*site?—gld*)

EGYPT—Radio Cairo, 6270 at 0305 on *What Is Islam*. (Maxant, WV) 6290 with Koran at 0415. Also, 7580 with W and news. (Yohnicki, ON) 6290 in AA at 2015. (Brossell, WI)

ENGLAND—BBC, 3255 South Africa Relay at 0355 with (p) news at 0400. (Barton, AZ) 0426. (Ronda, OK) 5875 Thailand Relay in Burmese at 0002, 7390 Cyprus Relay in AA at 0457-0500* and 9915 Cyprus Relay in AA at 0600. (Parker, PA) 6095 via South Korea in (p) CC at 1300, 7535 Thailand Relay in (I) Mandarin at 1322 and 12095 Oman Relay in (I) Kyrgyz at 1330. (Brossell, WI) 6195 Singapore Relay at 1148. (Strawman, IA) 12095-Rampisham at 1634. (Fraser, ME)

EQUATORIAL GUINEA—Radio Nacional. Bata, 5005 at *0509 signing on with NA. Also noted to 2256 closing. (Alexander, PA)

Radio Africa, Bata, 15190 at 2110 with emotional preacher over modulated audio. (Alexander, PA)

ETHIOPIA—Radio Ethiopia, 7110 at *0300 sign on with IS, anmts, talk in Amharic and HOA music. Also noted at 2026 in Amharic with anthem at 2059 and off. (Alexander, PA)

Radio Fana, 6890 at 2050 with HOA music, //6110. (Alexander, PA)

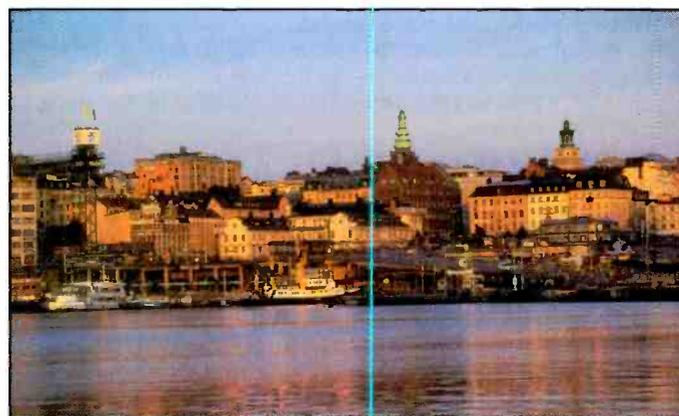
Voice of the Tigray Revolution, 5980 at *0256 sign on with IS, vernacular talk at 0300. HOA music. In the clear until WYFR came on at 0300. (Alexander, PA)

FRANCE—Radio France Intl, 7315 with news at 0600 and 9790 at 0505. (Padazopulos, Greece) 7315 with sports news at 0410, 9805 at 0425 and 17610 in FF at 1140. (Maxant, WV) 11605 via South Africa in FF at 0523. (Parker, PA) 15160 in FF at 0543. (MacKenzie, CA) 15605 with news at 1600. (Paradis, ME)

FRENCH GUIANA—RFI Relay, 17630 in SS at 2105. (MacKenzie, CA)

GABON—Africa No. One, 9580 at 2115 in FF with hilife. (Brossell, WI) 2243 with W and two M in FF discussion. Closedown at 2259. (D'Angelo, PA)

GERMANY—Deutsche Welle 5905 Portugal Relay in EE at 0430, 9755 Rwanda Relay at 0515 and 15640 via Cypress Creek in GG at 2310. (MacKenzie, CA) 5915 via Rampisham opening at 0500 and into ID, and news in RR. (Barton, AZ) 6075 in GG at 0445, 9965 via Russia in SS at 0611 and 12025 in RR at 0613. (Padazopulos, Greece) 9560 Sri Lanka Relay in GG at 1617, 11605 Sri Lanka in AA at 1920, 11690 via South Africa with pop hits at 1915, 11725 Rwanda Relay in GG at 1911, 12095 Sri Lanka in (I) Dari at 1345 and 12080 Portugal Relay in RR at 1633. (Brossell, WI) 6180 at 0420 and 9755 at 0505.



Stockholm has said "no" to shortwave broadcasting. Someone must have overdone it on the Kraftskivoer (crayfish).

(Maxant, WV) 9560 Sri Lanka Relay at 1653. (Strawman, IA) 11690 Rwanda at 2155 with pops. (Gay, KY)

GREECE—Voice of Greece, 7475 in Greek at 0505, 9420 at 0330 and 15650 at 1335. (Maxant, WV) 7475 in Greek at 0503 and 9420 at 2320. (MacKenzie, CA)

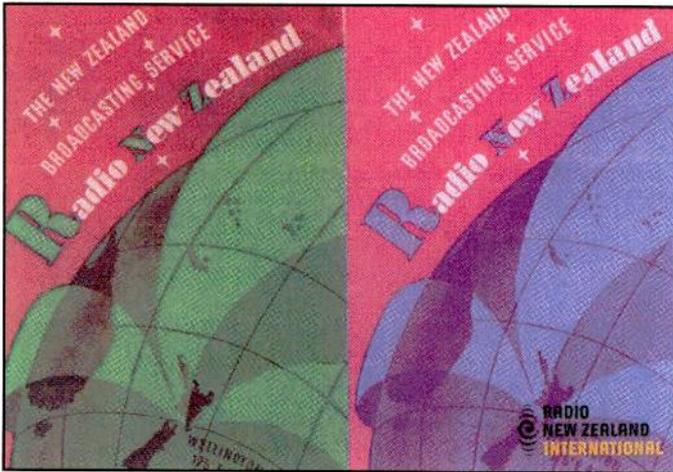
RS Makedonias, 7450 in Greek at 0505. (Yohnicki, ON)

GUAM—Adventist World Radio/ AWR, 15320 in EE/VV at 2257, AWR ID at 2258. (MacKenzie, CA)

INDIA—All India Radio, 4835-Gangtok (Sikkim), poor at 1140 with W in Hindi. (Ronda, OK) 4920-Chennai at 1305 in Hindi talk and music. (Strawman, IA) 5010-Thiruvananthapuram at 0036, though nearly buried in static. (Parker, PA) 1305 with talks in (p) Hindi. (Brossell, WI) 6180-Bangaluru at 2105 on India's investment in Saudi Arabia, 9445 at 1550 with vocals from Indian movies. (Maxant, WV) 2110 in General Overseas Service with pgm previews and Hindu vocals. (D'Angelo, PA) 9870-Bangaluru at 0133 in HH. (Parker, PA) 0144 with Hindi songs. (Ronda, OK)

INDONESIA—Radio Republik Indonesia, 3995-Kendari (Sulawesi), at 1215 with long II talk, pops and jazz. (Strawman, IA) 1255 with songs in II. (Ronda, OK) 4750-Makassar (Sulawesi), with M in II at 1130. (Ronda, OK) 1235 in II with II pops. (Strawman, IA)

Voice of Indonesia, 9525v at 1317 with EE news, local music, pgm on local attractions and foods. (Alexander, PA) 1310 with EE news by W, important events in Indonesian history, ID at 1325 and list of frequencies—all of which were incorrect. Also, 9680 at 1350 with gamelan and shrieking vocal. (Strawman, IA)



Radio New Zealand International marked its 60th anniversary by issuing reproductions of two older QSL cards combined as one. (Thanks Rich D'Angelo)

IRAN—VOIRI, 3945-Kalamabad at 0324 in Kurdish with anc and slow classical music. (Parker, PA) 7305 in (I) Pashto at 1306. (Brossell, WI) 9895-Zahedan in AA at 0239—my first log of this site. Also, 9940-Kalamabad in Dari at 1435. (Ronda, OK) 15440 in Pashto at 0805. (Ng, Malaysia)

IRELAND—RTE Radio One, 6225 via Meyerton monitored at 2005 with EE sports news. (Ng, Malaysia) (*Sundays only—gld*)

Reflections Europe, (t) 6295 at 2205 with EE religious talk and music. Very weak with QRM. (Alexander, PA)

ITALY—IRRS, 6170 via Rimavska Sobota in EE at 1942 with pops. ID at 1945. (Fraser, ME)

JAPAN—NHK World Radio Japan, 5960 via Canada in JJ at 0442, 6145 via Canada at 0002, 6195 via Bonaire in SS at 0520, 11665 in JJ at 2326, 13640 in JJ at 2153, 13650 in Thai at 2313, 11705 via Bonaire in JJ at 2302 and 17810 in JJ at 0238. (MacKenzie, CA) 5980 in RR at 0440 and 9770 at 0502. (Padazopulos, Greece) 11750 via Wertachtal in FF at 0552. (Parker, PA) 11910 with eclectic selections and 17605 in JJ at 2345. (Barton, AZ) 17810-Yamata with CC/JJ lessons. (Ng, Malaysia)

Radio Nikkei, 3925 in JJ at 1239. (Strawman, IA) 9760 in JJ at 0425. (MacKenzie, CA)

LIBYA—Radio Jamahiriya/Voice of Africa, 11860 at 1931 in (I) Hausa. (Brossell, WI) 17725-Sabrata in EE at 1455 with Afro-pops. (Fraser, ME) 21695 at 1335 in Swahili. (Ng, Malaysia) At 1530 with ID, *On Problems of Democracy*. (Paradis, ME)

MADAGASCAR—Radio Madagasikara, 5010 at 0254 on suddenly with choral music, ID sequence, music and occ. W talk. (Ronda, OK) *0247 with local music, choral, IS and choral anthem at 0258, then talk in (p) Malagasy. (Alexander, PA) 0318 with indigenous music. (Strawman, IA)

Radio Mada, 15660 via Moldova at *1530 with talk in (p) Malagasy. Sat/Sun only. (Alexander, PA)

MAURITANIA—Radio Mauritanie, 4845 at 0049 with traditional African chorals. (Ronda, OK) 0100 to abrupt off 0103*. (Parker, PA) 0100 with ME-type music. (Barton, AZ) 0102 with AA vocals, accompanied by plucked string instrument. (Strawman, IA) 0600 with Koran. (Brossell, WI)

In Times Past...

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

MEXICO—Radio Huayacocotla/ XEJNOC, in the Mexican town of the same name, 2390 kHz, with a local broadcasts in SS at 0131 on February 17, 1966. (Dexter, IA)

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 or other prize. 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!

The prize winner this month is **Rich D'Angelo of Wyomissing, Pennsylvania**, who'll soon be sipping his morning tea from a Universal Radio mug. Universal is the place for everything you need for your radio hobby, no matter what form it takes. If you don't have a copy of the company's big "wish book" you can request one free by sending an email to dx@universal-radio.com, calling (614) 866-4267 or dropping a post card to 6830 Americana Parkway, Reynoldsburg, OH 43068. Please mention *Pop'Comm* and the "Global Information Guide" when you contact them.

MEXICO—Radio Transcontinental de America/XERTA, Mexico City, 4800 at 0445 with soft vocals and SS anc. (D'Angelo, PA) 1145 with SS music. (Maxant, WV)

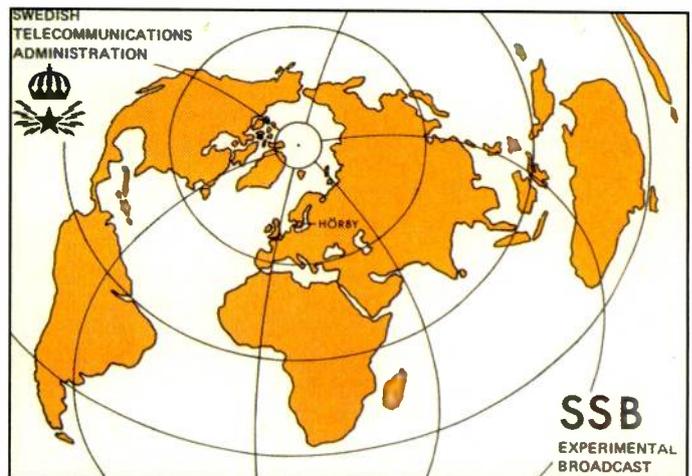
Radio Educacion/XEPPM, Mexico City, 6185 in SS at 1135. (Maxant, WV) 1046 with piano concert. (Strawman, IA)

NETHERLANDS—Radio Nederland, 9895 in AA at 2220 and 15540 in DD at 2222. (MacKenzie, CA) (*sites?—gld*) 11655 via Madagascar on global warming at 1917. (Brossell, WI) *Radio Books* pgm at 1940. (Fraser, ME) 12045 via Bonaire at 1850. (Maxant, WV) 12080 via South Africa with *Network Europe* at 1945. (Brossell, WI)

NEW ZEALAND—Radio New Zealand Intl, Rangitaiki, 6170 at 1304. (Brossell, WI) 1325. (Ronda, OK) 9765 at 0945 with an interview. Also 11725 at 0510 on the Wellington city council. (Maxant, WV) 0535 with cricket news. (Parker, PA) 0537. Also, 15720 at 0306 on children using drugs and 17675 at 2059 with *Morning Pacific News*. (MacKenzie, CA)

NIGERIA—Voice of Nigeria, 15120 heard at 1855 on their president. (Maxant, WV) 1900 with news and Afro-pops. (Paradis, ME)

NORTH KOREA—KCBS, 2850 with full chorus and orchestra at 1237 and 4450 at 1155 with operatic vocals. (Strawman, IA) 1215 with KK chorals. (Ronda, OK)



Swedish Telecom even went so far as to conduct SSB tests for Radio Sweden back in 1978.



In 1988 Radio Sweden commemorated 50 years on the air by issuing this QSL.

Voice of Korea, 9335-Pujang in EE at 1319. (Brossell, WI) 1344. (Ronda, OK) 1310 on Kim Jung, 9395 at 1315 on their Ministry of Transportation and ID. Also 11710 at 1515 on clothing production. KJES splatter and 11735 on Japanese fisherman, just above the noise floor. (Maxant, WV) 9345 with KK talk at 1005. (Ng, Malaysia) 11735 in SS at 0018 and 13650 in CC at 0024. (MacKenzie, CA) 15100-Kujang in FF at 0105. (Parker, PA)

OPPOSITION—EOTC/Holy Synod (to Ethiopia), 15195 via Russia monitored at 1620 with M in AA. Mondays only. (Ronda, OK)

Denge Mezopotamia (to Kurdistan area), 7540 at 1940–2100* in (p) Kurdish. Time pips at close, followed by anthem. (Alexander, PA)

Voice of Tibet (to China), 15430 via Dhabbaya in TT at 1335 and soon jammed. (Paszkievicz, WI)

Voice of the People (to North Korea), 3912 at 1202 in KK, but very weak. (Strawman, IA)

Radio Dabanga (to Sudan), 13800 via Madagascar at 1715 with African vocals, ID, news item. (Paszkievicz)

National Radio of the Saharan Democratic Republic (to Morocco), 6297.1 at 2140 with talk, local vocals. (D'Angelo, PA)

Voice of Burma, 7440 via Germany with BB talk by W monitored at 0010. (Ng, Malaysia)

Fursato no Kaze (to North Korea), 9950 via Palau at *1420 sign on with JJ talk. (Ronda, OK)

OMAN—Radio Sultanate of Oman, 15140 in AA at 1635. (Strawman, IA)

PAPUA NEW GUINEA—Radio East New Britain (New Britain), 3385 with pops at 1220. (Strawman, IA)

Radio Manus (Admiralty Is.), 3315 at 1250, poor with vocals. (Brossell, WI)

Radio Buka (North Solomons), 3325 at 1225 with choral anthem at 1229, W anmts and pops at 1230. (Strawman, IA)

PERU—Radio Madre de Dios, Puerto Maldonado, 4950 at 1040 with partial ID, into domestic music. (Wilkner, FL)

Radio Cultural Amuata, Huanta, 4955 monitored at 1045 with long talk by M. (Wilkner, FL)

Radio Libertad, Junin, 5039.2 at 1050 with OA music, partial ID. (Wilkner, FL)

PHILIPPINES—FEBC Intl, 9430 at 1325 with talks in CC. (Brossell, WI) 9435 at 2240 with M preaching in EE and II translations. (MacKenzie, CA)

POLAND—Polish Radio, 9650 heard at 1855 on libraries in Poland. (*site?—gld*) 11675 via Germany on Poland helping with EU's oil and gas problems. (Maxant, WV)

PIRATES—The Crystal Ship, 5385 at 0040 with alternative rock, email address, said was 100 watts. (Alexander, PA) 2258 with Soviet NA, rock, some novelty tunes, numerous IDs. (Zeller, OH) 2333 with political speeches from the '60s, '60s songs, address given as tessshortwavegmail.com. (Hassig, IL) 6876 at 2010 with '70s selections, comedy bits, with hosts Juliana Montana and the Poet. Left at 2340 saying they'd return at 0000 on 5835. (Balint, OH) 2210 including fake ads. (Alexander, PA) 2220. (Hassig, IL) 2315 with oldies disco. (Zeller, OH) 2322. (D'Angelo, PA)

Outhouse Radio, 6925u at 1602, 2227 and 0120 with rock, several IDs, a tasteless comedy routine, mention of some reports. (Zeller, OH) 2025 with rock, ID. (Alexander, PA) 2225. (Hassig, IL) 2302. (D'Angelo, PA) 0315. (Parker, PA)

Radio Gaga, 6925u heard at *0057 and 1214 with rock and segment of phone calls. SSTV for a minute at 0120* close. (Zeller, OH) 0110, 1940 and 2305 with rock. (Alexander, PA) 6930u at 2222. (Hassig, IL)

Radio Ronin Shortwave, 6925u at 2252 with '70s rock. radioroninshortwave@gmail.com for reports. (Hassig, IL) 0000 with ID via FRN. (Balint, OH) 2255 with rock. (Alexander, PA)

WHYP, 6925 at 1445, 1503 and 2000 with rock, punk and pgm on how to set up a pirate radio station. (Alexander, PA)

Pirate Radio Boston, 6925 monitored at 1445 and as their "reactivation program" after several years off the air. "Charlie Loudenboomer" playing obscure rock. Gave the Stoneham address and pirateradioboston@gmail.com for reports. (Zeller, OH) 1534 and 2010 with alternative rock and contact info. (Alexander, PA)

MAC, 6935 at *1529 with the old Radio Prague IS, lengthy pgm with Paul Staar playing rock oldies, f/by the UltraMan Show. (Zeller, OH) 1635 with UltraMan show. macshortwave@yahoo.com. (Alexander, PA)

WBNY/Radio Bunny 6900 at 2200 live from the SWL Fest, repeating "Radio Bunny" several times. (Balint, OH) 6925u relaying an old pgm on how to DX. (Zeller, OH)

Captain Morgan, 6925u at *0110 with rock, audio from the *Outer Limits* TV show mixed in at times. (Zeller, OH) 2250 with blues. *Twilight Zone* theme. (Alexander, PA)

Up Against the Wall Radio, 6925u with blues, claxon horn. (Hassig, IL)

Thinking Man Radio, 6925u with heavy metal, thinkingmanradio@gmail.com. (Hassig, IL)

Coyote Radio, 6950 at 0120 with oldies from the '30–40s era, "cyotradio" IDs. Off with CW monitored at 0247. (Alexander, PA)

WMPR, 6955.7 at 2157 with electronic dance things, computer voice ID. (Alexander, PA)

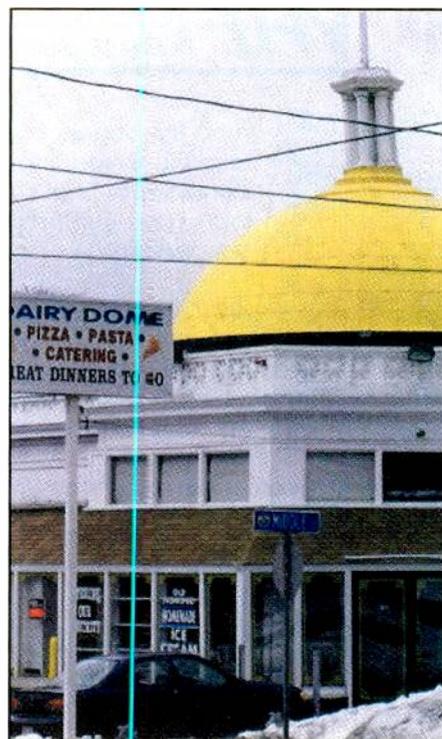
Wolverine Radio and WEAK, 6925u heard taking turns with rock oldies. Wolverine was strong, WEAK was...weak. (Gay, KY)

Barnyard Radio, 6925u at 1950 with punk things. Weak but readable. (Alexander, PA)

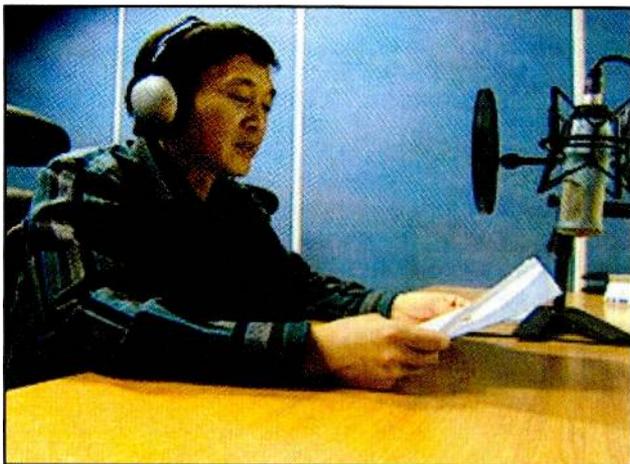
Voice of Next Thursday, 6928.5 at *0009 with long stream-of-consciousness talk and some folk tunes mixed in. Said was relayed by WBNY. (Zeller, OH)

Cupid Radio (Euro), 15060 monitored at 1605 widely varying strength, hosted by Radnar Daneskjold. Said they were running 400–500 watts, dedications and mentioned *Pirates Week* pgm. (Balint, OH)

Laser Hot Hits, 6925u at 0227, a North American relay of this Euro-pirate. Pgm of rock oldies, long segments on Radio Caroline North and some Radio Caroline IDs. At 0316 Outhouse Radio gave a relay anmt for this best. (Zeller, OH)



Pirate Radio Boston featured a local eatery on its QSL, a more professional look than most pirate stations present. (Thanks Rich D'Angelo)



Kim Seong Min, who founded Free North Korea Radio, broadcasts from studios in Seoul. (Thanks Rich D'Angelo)

FRS-Holland (Euro), 7600 at *0852 with opening anmts at 0858, pops at 0902 and acknowledging listener reports. (Alexander, PA)

Radio Amica (Euro), 7610 at 2220 with Italian ID anmts and pops. (Alexander, PA)

PORTUGAL—RDP Intl, 9855 in PP at 0250. (MacKenzie, CA) 11655-Sao Gabriel at 0210 in PP with slow pops. (Parker, PA)

ROMANIA—Radio Romania Intl, 6055 at 0500, 6130 at 0449 and 7310 with cooking pgm at 0454. (Padazopoulos, Greece) 7310 at 0402. (MacKenzie, CA) 9610 at 1314 in (I) Romanian. (Brossell, WI) 15105 at 1210 on their Social Democratic Party. (Maxant, WV)

RUSSIA—Voice of Russia, 6240-Grigoriopol ending news at 0411. (Yohnicki, ON) 6240 at 0420, 7250 in RR at 0415, 7335 in RR at 0510, 9480-Petrovavlovsk at 0523, 9880-Armavir in RR at 0245,

12040-Vladivostok at 0402 and 13735 at 0328. (MacKenzie, CA) 7205 at 1445 and 7250 over Iran at 0225. (Maxant, WV) 7290-Samara in SS at 0057 and 9800-Irkutsk in RR at 1345. (Strawman, IA) 9965 in SS at 0245. (Parker, PA) 9745-Kishinev in FF at 2105 and 12040-Moscow in PP at 2109. (Brossell, WI) 11985 via Armenia at 2058, closing at 2100. (Paszkwicz, WI)

Radio Rossii, 5940-Magadan in RR at 1235. (Ronda, OK)

NVK Radio Sakha, 7200-Irkutsk in RR at 1235. (Strawman, IA)

SAUDI ARABIA—Broadcasting Service of the Kingdom, 15435 monitored at *1500 and into Koran recitations by M. //15225 was weaker. (Barton, AZ) 17615 in Korean at 0945. (Ng, Malaysia) 17885 with news at 0755. (Padazopoulos, Greece)

SAO TOME—VOA Relay, Pinheira, 4960 at 0419 with *On the Line* pgm. (Wood, TN) 0443 on Iran enriching uranium. (Parker, PA) 0449. (D'Angelo, PA) 7340 at 0319 in Swahili. (Ronda, OK)

SERBIA—International Radio of Serbia, 6100-Bijeljina, sign on at 1930 and into news by M. (Fraser, ME)

SIERRA LEONE—Cotton Tree News, 11875 via Rampisham from *0730 with abrupt sign on, EE news and interviews, "CTN" IDs. Off abruptly at 0800. (Alexander, PA)

SLOVAKIA—Radio Slovakia Intl, 9460 in SS heard at 2113. (Brossell, WI)

SOLOMON ISLANDS—Solomon Islands Broadcasting Corp., 5020 with BBC news relay at 1336. (Brossell, WI) (*This all-night service has ended.—gld*)

SOUTH AFRICA—Channel Africa, 6120 at 0350, later into the *Rise and Shine* pgm. Also 9625 at 1435. (Maxant, WV) 15235 in FF at 1626. (Brossell, WI)

Radio Sondergrense, 3320-Meyerton, monitored at 0420 in Afrikaans and into light classical music. (Ronda, OK) 0408 in Afrikaans and 7285 at 0500. (Yohnicki, ON)

SOUTH KOREA—KBS World Radio, 9650 via Canada on an earthquake. (Maxant, WV)

SPAIN—Radio Exterior de Espana, 3350 Costa Rica Relay in SS at 0355, 6055 in FF at 2344, 6120 Costa Rica in SS at 0440, 9640 in SS at 2213, 9675 Costa Rica in SS at 0427 and 17850 Costa Rica in SS at 2053. (MacKenzie, CA) 7275 at 1018 and 9535 in SS at 0606. (Padazopoulos, Greece) 9640 with IS at 1859. (Barton, AZ) 12030 in AA at 1935. (Brossell, WI)

SUDAN—Radio Omdurman, 7200 at 0226 with Koran and AA talk, vocals, chirping birds and local music. (Alexander, PA)

Miraya 101 FM, 7385 via Slovakia, at 0315 with local music, AA talks, "Miraya" jingles, EE news at 0402. Also, 15670 via Slovakia at 1500 with AA talk, local music, EE news at 1631 and back to AA at 1640. (Alexander, PA) 1612 with songs and talk in AA. (Ronda, OK)

SURINAME—Radio Apinte, Paramaribo, 4990 at 0306 with wide variety of pops in EE and DD, ID in DD at 0342. (Ronda, OK) 0427, with highlife, old U.S., pops. (Parker, PA) 0429. (Wood, TN) 0446 with EZL pops, ads, and some talk in DD. (D'Angelo, PA)

SWAZILAND—Trans World Radio, Manzini, 4775 in GG heard at 0409. (Parker, PA) 0415 on GG with preaching and choir. (D'Angelo, PA)

SWEDEN—Radio Sweden (about to drink the hemlock), 9400 on parliament at 1450. (Maxant, WV)

SYRIA—Radio Damascus, 9330 at 2120 with EE talk, domestic music, //12085 both were strong but had weak modulation. (Alexander, PA) 2216 with long talk by W. //12085. (D'Angelo, PA) 12085 at 2120 with AA vocals with decent modulation, but the carrier suffered from a het or a hum. (Strawman, IA)

TAIWAN—Radio Taiwan Intl, 5950, via WYFR in SS at 0413 and 11885 in CC at 2300. (MacKenzie, CA) 0515. (Maxant, WV) 2300 with ID and SS to Central and South America. (Barton, AZ)

TAJIKISTAN—Tajik Radio One, 4765-Yangiyul at 0212 in (p) Tajik with W talk and short bits of Tajik-style music. (Parker, PA)

THAILAND—Radio Thailand, 9680, at 0004 with W and EE. (Strawman, IA) 0010. (MacKenzie, CA) 12095 on suddenly at *0029 with M on Buddhism, ID for *Radio Thailand News*, ad for Thai Airways and into W anc and business news. (D'Angelo, PA) Sports news at 0048. (Alexander, PA) 0045 with EE ID. (Maxant, WV)

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TURKEY—Voice of Turkey, 6020 at 0434 in EE. (Padazopoulos, Greece) 6040 via Canada at 0447. (MacKenzie, CA) 6050-Emirler at 1935. (Fraser, ME) 9610 at 2145 with *Review of the Turkish Press*. Also, 15140 in CC at 1240. (Ng, Malaysia) 12035 at 1335. (Maxant, WV) 15350 in TT at 1345. (Paszkiwicz, WI)

TUNISIA—RT Tunisienne, 7275 in AA heard at 0510. (Maxant, WV) 2240 in AA. (Brossell, WI)

UGANDA—UBC Radio, 4976 at 0421 with EZL vocals, EE discussion, ID at 0440, local music and more talks. (D'Angelo, PA)

UKRAINE—Radio Ukraine Intl, 5830-Kharkov at 0012 with W in GG. (Parker, PA)

UNITED STATES—Voice of America, 4975 via Tajikistan in (I) Pashto at 1315, 5835 Sri Lanka Relay in (I) Pashto at 1350, 7235 Northern Marianas Relay in (I) Korean at 1307, 7575 Philippines Relay with *Jazz America* at 1328, 12020 Sri Lanka Relay at 1935. (Brossell, WI) 9490 Philippines at 2248, 11710-Greenville at 0528 and 15205 Philippines in II at 2256. (MacKenzie, CA) 9580 Philippines opening EE at 2300. (D'Angelo, PA) 9760 Philippines at 1310, 9825 Philippines in Mandarin at 1140. (Strawman, IA) 9965 with news at 0608. (Padazopoulos, Greece)

VOA/Radio Deewa, 11575 Sri Lanka in Pashto heard at 0154. (Parker, PA)

Affia Darfur, 5915 via Vatican monitored at *0300 in (I) Farsi, //7275. (Alexander, PA)

Radio Free Asia, 11605 via Taiwan in VV at 0004, 11980 Northern Marianas in CC at 0408, 13745 in CC at 2150, 15665 Northern Marianas in CC at 0312, 17615 Saipan in CC at 0345, 17730 via Mongolia in CC at 0300 and 21580 Northern Marianas. (MacKenzie, CA) 11945 Tinian in Mandarin at 2140. (Strawman, IA)

Radio Farda, 5860 Sri Lanka in Farsi at 0110. (Parker, PA) 5925 in Farsi at 0540. (Padazopoulos, Greece)

Radio Liberty, 11805 Biblis Relay in RR at 1630. (Brossell, WI)

Radio Marti, 7405 in SS at 2329, 13820-Greenville in SS at 2148. (MacKenzie, CA)

AFN/AFRTS, 7811u Key West at 0453. (MacKenzie, CA) 1320 on congressional vote. Also 12133.5u at 1325 with an earthquake story. (Maxant, WV)

TWR, 9345-Guam in (I) Santhali at 1353. (MacKenzie, CA) 11640 via South Africa at 0620. (Maxant, WV)

Adventist World Radio, 11845 via South Africa in FF at 2006. (Brossell, WI)

WTJC, Newport, NC, 9370 at 1448. (Alexander, PA)

WWCR, Nashville, 3215 at 0352. (MacKenzie, CA) 4840 at 1545. (Barton, AZ) 0418. Ex-4775. (D'Angelo, PA)

Sudan Radio Service, 17745 (via *Portugal—gld*) in AA heard at 1500. (Paradis, ME)

KJES, Vado, NM, 11715 at 1440. (Maxant, WV)

WRMI, Miami, 9955 in SS at 1450. (Maxant, WV)

WHRI, 9955-Palau, in CC at 2235. (MacKenzie, CA)

WRNO, New Orleans, 7505 at 0440. (MacKenzie, CA)

WWRB, Manchester, TN, 3185 at 0345 and 9385 with Brother Stair at 2150. (MacKenzie, CA)

Southern Sudan Interactive Radio, 17700 via Ascension at 1500-1700. (Alexander, PA)

Family Radio/WYFR, 6240 via Moldova at 2020 in FF. (Brossell, WI) 2045. (Yohnicki, ON) 9310 via Alma Ata in Tagalog at 1237. (Ronda, OK) 15210 with *Open Forum* at 1500. (Paradis, ME) 17810 via UAE in Tagalog heard at 1335. (Ng, Malaysia)

WVWH, Hawaii, 5000 at 0422. (Yohnicki, ON)

WTWW, Lebanon, TN, 5080 from 0056. (D'Angelo, PA) 5755 at 2010. (Griman, PA)

VATICAN—Vatican Radio, 6185 at 0450. (Padazopoulos, Greece) 7360 at 0615 and 11625 at 0645. (Maxant, WV) 7585 in Tamil at 1510. (Ng, Malaysia) 9660 in FF at 0431. (MacKenzie, CA)

VENEZUELA—Radio Nacional, 15250 via Cuba in SS at 2306 and 17705 via Cuba in SS at 2057. (MacKenzie, CA)

VIETNAM—Voice of Vietnam, 6175 via Canada in VV at 0526. (MacKenzie, CA) 9840 at 1242 with economic news. The audio was pulled at 1258 f/by WHRI crash start. (Strawman, IA)

ZAMBIA—CVC-One Africa, 4965 with British-accented preacher at 0040. (Parker, PA) 0336 with Bible reading and sermon. (Brossell, WI) 5915 with sudden opening at 0359, snippets of listener mail, religious vocals at 0400 and IDs for "One Africa." (D'Angelo, PA) 9430 with two M in conversation. (MacKenzie, CA)

And, once again, order is restored! A thousand thanks to all who got into the game this time: Peter Ng, Johore Bahru, Malaysia; George Zeller, Cleveland, OH; Ray Paradis, Pittsfield, ME; Robert Fraser, Belfast, ME; Robert Brossell, Pewaukee, WI; William Hassig, Mt. Prospect, IL; Charles Maxant, Hinton, WV; Chris Gay, Lexington, KY; Rick Barton, Phoenix, AZ; Brian Alexander, Mechanicsburg, PA; Rich D'Angelo, Wyomissing, PA; Robert Wilkner, Pompano Beach, FL; Michael Yohnicki, London, ON; Dave Balint, Mentor, OH; Stewart MacKenzie, Huntington Beach, CA; Jerry Strawman, Des Moines, IA; Joe Wood, Greenback, TN; Sheryl Paszkiewicz, Manitowoc, WI; Jim Ronda, Tulsa, OK; Fotos Padazopoulos, Athens, Greece; and Rich Parker, Pennsburg, PA. Thanks to each of you.

Until next month, good listening!

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Two Approaches To Logging

by Dan Srebnick, K2DLS
k2dls.rfbits at gmail.com

“DXtreme Software also offers an equally capable logging program for SWLs, scanner listeners, BCB listeners, UTE or pirate hunters. It’s called DXtreme Reception Log, Advanced Edition v 6.0.”

I’ve drifted in and out of shortwave listening a few times during my 50-plus years in this life. When I was a young child, my father used to listen to shortwave for news and opinions from afar. When I started listening as a teenager, I used to send reception reports to stations for those attractive QSL cards. I would also send reports to the DX shows like HCJB’s *DX Partyline* and Trans World Radio’s *DX Special*, but I was not so good at keeping a logbook. By my early 20’s, I found myself wishing that I had kept better records of my youthful DXing experiences, and I started keeping a paper logbook.

Around the turn of the last millennium, I got back into doing some serious DXing. I was glad that I could locate my old paper logging sheets from the late 1970s and early 1980s. I started keeping a more detailed notebook of what I was hearing, but I wanted to organize the data and be able to produce a nice report. I then decided that I would computerize my logbook and, while I was at it, enter all my old paper logs into a database as well.

For data entry and reporting, I first used Microsoft Access, later switching to Open Office’s Database. The back-end database was stored in the free MySQL database. If you want to play with a free database based upon open standards, which is also interoperable with lots of other software, you’ll like MySQL. The learning curve is not trivial, however, and it helps if you know a little about Structured Query Language (SQL). SQL is the language used by computer programmers to write queries against databases and is part of the core competencies of the information technology specialty known as Database

Administration. But you don’t have to be a database administrator or software developer to dabble in some basic SQL.

SQL 101

Let’s say that your logbook is in a table called “Loggings” that is contained within your “Radio” database. You could list all the records in your database through the following expression:

```
Select * from Radio.Loggings;
```

Perhaps you want to find all the stations that you ever heard on 11,730 kHz. You could write a query similar to:

```
Select * from Radio.Loggings where  
Frequency = 11730;
```

There are lots of online resources for learning about SQL. Start with a Google search for “learning SQL” (maybe it is not coincidental that SQL and QSL contain the same letters of the alphabet). If you want to download and install MySQL, visit the mysql.com website for further information. If you are running Linux, installation could be as simple as “yum install mysql.”

If you want to setup a simple logging database using MySQL, refer to the “SQL Table” that I used to create my database.

Once the database is set up, use the link tables function of Access or Open Office Base to establish a connection. You’ll probably need to install a MySQL client program, in addition to the database server process, and then you can enter and edit data and use the report writer to produce a slick paper logbook. But if all this sounds like too much, there are commercial-off-the-shelf (COTS) programs for keeping your SWL logbook.

Last September, we took a look at one such commercial offering. DXtreme Station Log, Multimedia Edition by DXtreme Software and found it to be a structured and capable logging program tailored for amateur radio operators. We recently learned that there is an upgrade scheduled for release in early 2011, which includes some minor improvements and better support for Windows 7 and Vista. DXtreme Software also offers an equally capable logging program for SWLs, scanner listeners, BCB listeners, UTE or pirate hunters. It’s called DXtreme Reception Log, Advanced Edition v 6.0. We’ve been working with this program for a couple of months and there’s a lot to like. We’ll

SQL Table

```
CREATE TABLE `dxlog` (  
  `DateTime` datetime NOT NULL DEFAULT '0000-00-00 00:00:00',  
  `Freq` double(6,1) DEFAULT NULL,  
  `Station` varchar(100) DEFAULT NULL,  
  `Lang` varchar(20) DEFAULT NULL,  
  `SINPO` varchar(5) DEFAULT NULL,  
  `Program` varchar(100) DEFAULT NULL,  
  `Remarks` tinytext,  
  `Sent` date DEFAULT NULL,  
  `Recvd` date DEFAULT NULL,  
  PRIMARY KEY (`DateTime`)  
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

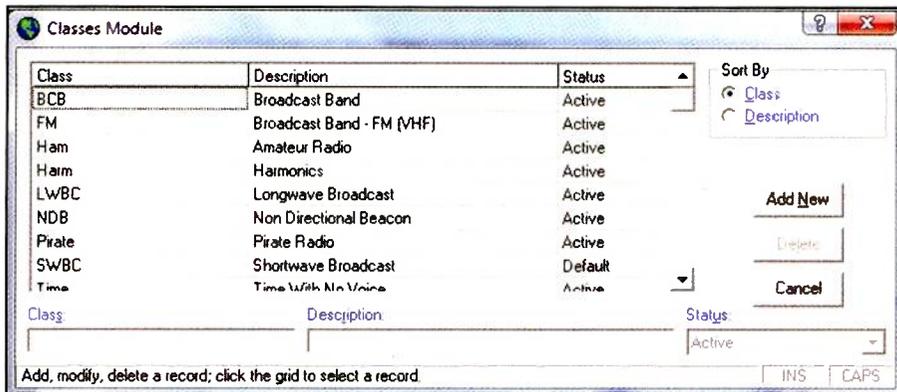


Figure 1. This module shows how the station "Classes" are set up. There are similar modules where you list your rigs/receivers, antennas, and operating modes.

refer to this program as DXRL as we step through some of the features.

DXRL First Steps

As with its ham cousin, the first thing to do after installing DXRL is to setup the "Modules." The modules are actually lookup tables used by the program to help structure data, such as your rigs and receivers, antennas, listening modes, and station classes. The "Classes" module is an interesting one, because you can use it to track types of stations, such as broadcast, mediumwave, pirate, ham, etc. Take a look at the "Classes" mode table shown in **Figure 1**. It's very important that you go through all of these modules and customize them to your equipment and operating preferences before you begin to use the logbook.

If you recall my September review of DXtreme Station Log, I wanted to output the data from Ham Radio Deluxe (HRD) into DXtreme and run some reports. So it was with DXRL. I set out to export my data from my MySQL logbook into this new program. I quickly found that this function was not supported. I queried Bob Raymond, NE11, the owner of DXtreme Software. He promptly responded that, "Reception Log does not support the importing of logs from other databases," that no one else had ever asked for this feature (which surprised him), but that it was a good idea deserving consideration. We exchanged a few more emails around requirements and a little over a week later, I was testing a new Import module. This module has now been officially added to the software release and it says a lot about Bob and DXtreme's responsiveness to the

needs of the user community. I was suitably impressed.

The Import/Export Business

DXRL can now import a CSV file of logging data. MySQL supports a command to produce such a file, so this is a good match. Rather than quote and comma-delimited, the CSV file is expected to be comma-delimited only and to contain no quotes. Some of the data extracted from my logbook did have embedded quotes, which tripped me up. I had to do some manual cleanup to satisfy the import requirements and avoid parsing errors. The import program is very exacting and will only properly process a clean file of the expected format. There is a very detailed help file included that explains this process, and if you have the necessary knowledge to produce the CSV file from another logbook, you'll have no trouble following the import process.

Now that my historical data was imported, I wanted to produce a sequential report showing all my documented SWDX efforts. This was fairly straightforward. I used the "Stations by Class" report, and the result is shown in **Figure 2**. In order to produce this report, I used the report screen to request that All Classes be shown and to sort the report by date. Then, under Fields, I selected those column headings that I wanted on the printed report (**Figure 3**). The report is generated using Internet Explorer, but the program is also configurable to use Firefox, or most any other browser. You can then print the report, if desired.

Date	Time	Class	Description	Freq	Mode	Band	Other
01-11-1979	0000	Australia	Radio Australia	15240	AM	80	13225 No No
01-11-1979	0630	Poland	Radio Warsaw	7270	AM	80	43543 No No
01-11-1979	0645	Canada	Radio Canada International	6140	AM	80	32223 No No
01-11-1979	0700	Korea Direct People's Rep	Korean Central Broadcasting Station	9420	AM	80	22425 Yes No
01-11-1979	1000	Venezuela	Ecos del Torbes	6190	AM	SP	34444 No No
01-22-1979	0000	China People's Rep	Radio Peking	15060	AM	80	44523 No No
01-22-1979	0550	Israel (Palestine)	Israel Broadcasting Auth	11655	AM	80	55434 No No
01-22-1979	0515	Portugal	Radio Portugal	11925	AM	80	54554 No No
01-26-1979	0635	Albania	Radio Tirana	9100	AM	80	33533 No No
01-26-1979	0700	Luxembourg	Radio Luxembourg	6090	AM	GM	44544 No No
01-26-1979	0750	Switzerland	Swiss Radio International	6145	AM	80	43543 No No
01-28-1979	2045	United States of America	WYFR	17845	AM	80	45544 Yes Yes
01-28-1979	2250	Oman (Gulf Coast)	Oman Broadcasting Corp	4915	AM	80	43333 No No
01-28-1979	2305	Togo (French Togoland)	Radio Togo	5047	AM	PE	43333 No No
01-29-1979	0045	Spain	Spanish Foreign Radio	9630	AM	80	54554 No No
01-29-1979	0200	Canada	Radio Canada International	11845	AM	80	55555 No No
01-29-1979	0400	Colombia	Radio Colombia	4945	AM	SP	33233 No No
01-29-1979	0600	Colombia	Radio Super	4875	AM	SP	33333 No No
01-29-1979	0605	Norway	Radio Norway	15175	AM	80	34523 No No
01-29-1979	0850	Philippines	PEBC	11785	AM	80	43333 Yes Yes

Figure 2. This is a sequential report of my shortwave DX loggings going all the way back to 1979.

Interesting Capabilities

DXRL has the ability to download historical data about propagation conditions, including the solar flux, A and K indices. Click on Edit, Global Update of Solar Flux and A- and K- Indexes and the indices since January 1, 1997, are downloaded. Corresponding log entries are updated, giving you the opportunity to check out the propagation metrics on some of your better DX catches.

It contains a very nice schedule checker, in case you want to see what is on now or at a given time. However, the checker must be updated through a manual download of a CSV file from the EiBi website. This ought to be automated. **Figure 4** provides a glimpse of the schedule checker.

There are also export utilities, including the ability to export your log data into email for reporting purposes. Some of the

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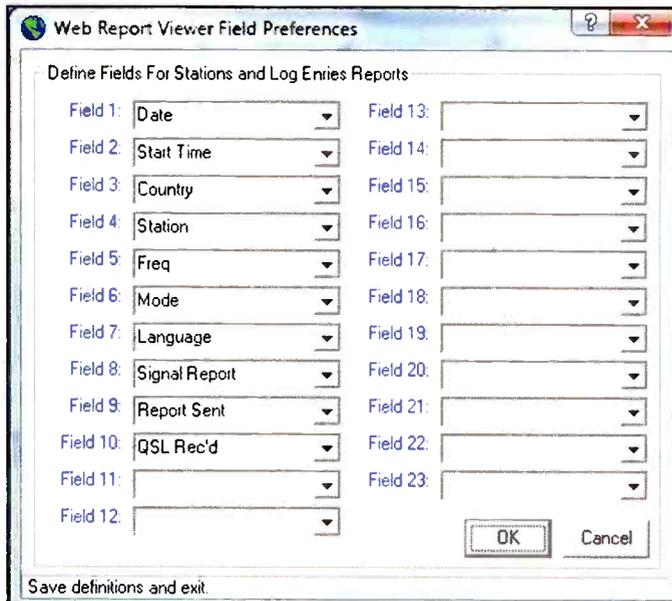


Figure 3. You can customize your reports with any desired fields.

supported export formats include NASWA, Cumbre, and a QSL request format. After a recent weekend afternoon listening session, I attempted to export all my activities for that day into a report to email to NASWA. However, I found that each logging must be individually exported into an aggregated text file. A more useful approach would be to allow a number of records to be flagged, perhaps based upon specific search criteria, and then exported into a single file to be emailed.

The program integrates with the Windows Sound Recorder and allows you to attach a WAV file of a station to the log record. This works really well with my software-defined receiver,

because all the patch cables to my sound card are virtual. For Windows 7 and Vista, there are instructions in the online Information Center that need to be heeded around how to make this feature work properly. It involves copying a sound recorder executable from a working copy of Windows XP into the appropriate directory. QSL images can also be scanned and added to a log record, rounding out the multimedia experience offered by this logging program.

Searching Your Log

The search feature is very powerful, allowing for searches by Station, Date,

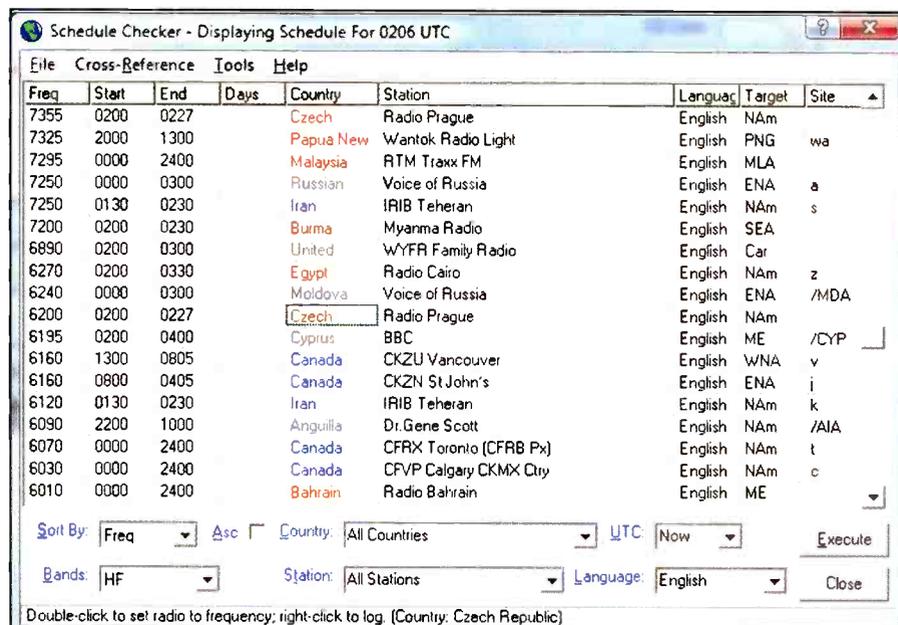


Figure 4. The schedule checker can help you identify DX or plan your listening activities.

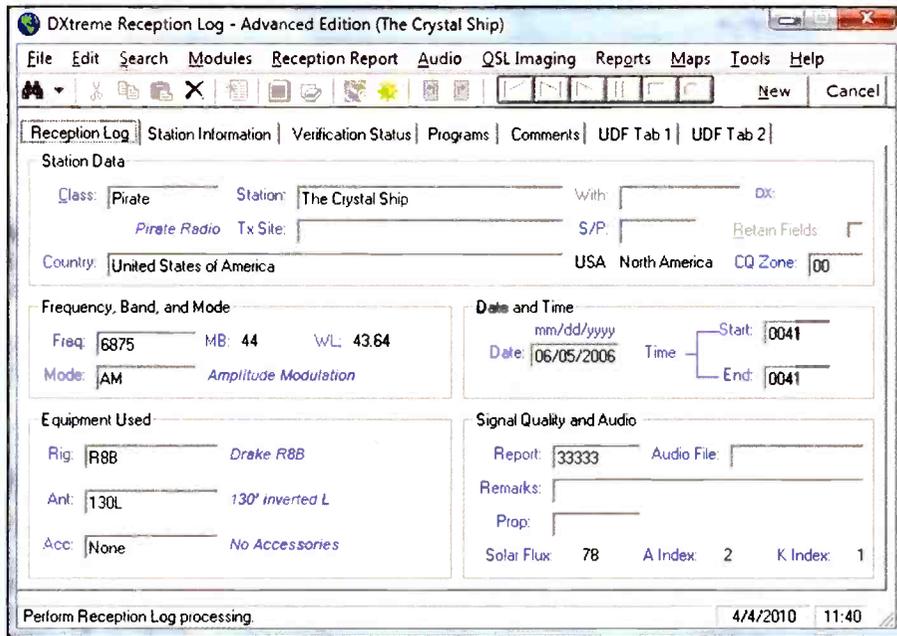


Figure 5. A past station logging, as located through the search function. This is also the screen used for data entry of new loggings, just click on New for a blank form.

Country, Continent, State, Band, Frequency, or any number of user defined fields. **Figure 5** shows the results of a station search for "The Crystal Ship," a popular shortwave pirate that I enjoy listening to. The station search works off a dropdown list of all previously received stations, so it's very important to enter the name of a station consistently if you're going to run this type of search. In my case, I found that one entry listed the station by the name "TCS Shortwave" and it did not appear in my search results. The date search lacks the ability to specify a range of dates, rather than just a single date.

Logging The New Ones

Logging entries directly into DXRL was quite painless. If you're a Ham Radio Deluxe or Omni-Rig user, DXRL will pick up the tuned frequency automatically from the HRD value. Start time is reflected by the time that the New button is clicked. The Programs tab allows for detailed logging of reception details, with time ranges for different programming segments; however the times on the Programs tab do not automatically feed the overall listening time on the Reception Log tab. Nor does the End time on the Reception Log time update when the log entry is saved. One or both of these abilities would make logging a bit more effortless. If the end time of a program detail is later than the overall end

time of the main log entry, the user receives a warning.

The program contains example script templates to auto generate a reception report, complete with program details. The templates are fairly easy to under-

stand, and there are samples in English, French, Spanish, and Portuguese. Different types of letters can be easily generated, such as an SWBC report or an SWL report on a ham QSO. HTML can also be generated for a more visually appealing email.

DXtreme Reception Log: Get With The Program

DXtreme Reception Log is a capable program and I don't think I'll be going back to my quick and dirty MySQL database anytime soon. It's easy to use, the help system is well documented, and I cannot say enough about Bob Raymond's responsiveness acting on my desire for an import utility. As with any software, some features could be improved upon as noted above. DXtreme Reception Log is available at www.dxtreme.com for \$79.95 (for the electronic download version), which includes lifetime support via email. Upgrade pricing is also available.

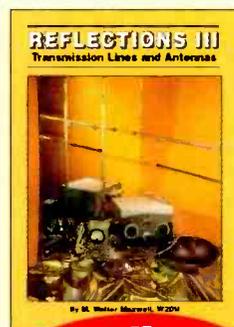
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Space Weather And You

by Tomas Hood,
NW7US, nw7us@arrl.net

“On February 11, 2010, NASA launched...the Solar Dynamics Observatory (SDO). SDO is the first satellite under the Living with a Star (LWS) program at NASA, and is the most advanced spacecraft ever designed to study the sun.”

Why is space weather important to the radio hobbyist? While it’s fascinating to look at solar images of spectacular events, like coronal mass ejections (CMEs) or solar prominences, does this close scrutiny of our local star have any real value to those of us who use magical boxes of electronics to communicate world-wide?

Those who follow this column know that radio communication is directly affected by our variable sun. Sunspots, CMEs, the Earth’s geomagnetic field, the ionosphere, and even terrestrial weather all affect how our radio signals get from transmitter to radio receiver.

For example, powerful “explosions” erupting near sunspot regions can cause sudden ionospheric disturbances (SID), or “radio blackouts”

(**Figure 1**). Traveling at the speed of light, the powerful burst of X-rays, extreme ultraviolet (EUV) energy, and other radiation take about eight minutes to reach Earth. When this radiation penetrates the ionosphere, it energizes each layer. That’s good at the highest ionospheric layer, the *F* region. However, at the same time, the lowest layer that affects ionospheric radio signal propagation, the *D* region, also becomes highly energized. The energy from the flare can cause the *D* region to become so ionized that all signals in the shortwave spectrum are absorbed, countering the positive ionizing of the *F* region and resulting in a completely quiet spectrum void of any signals.

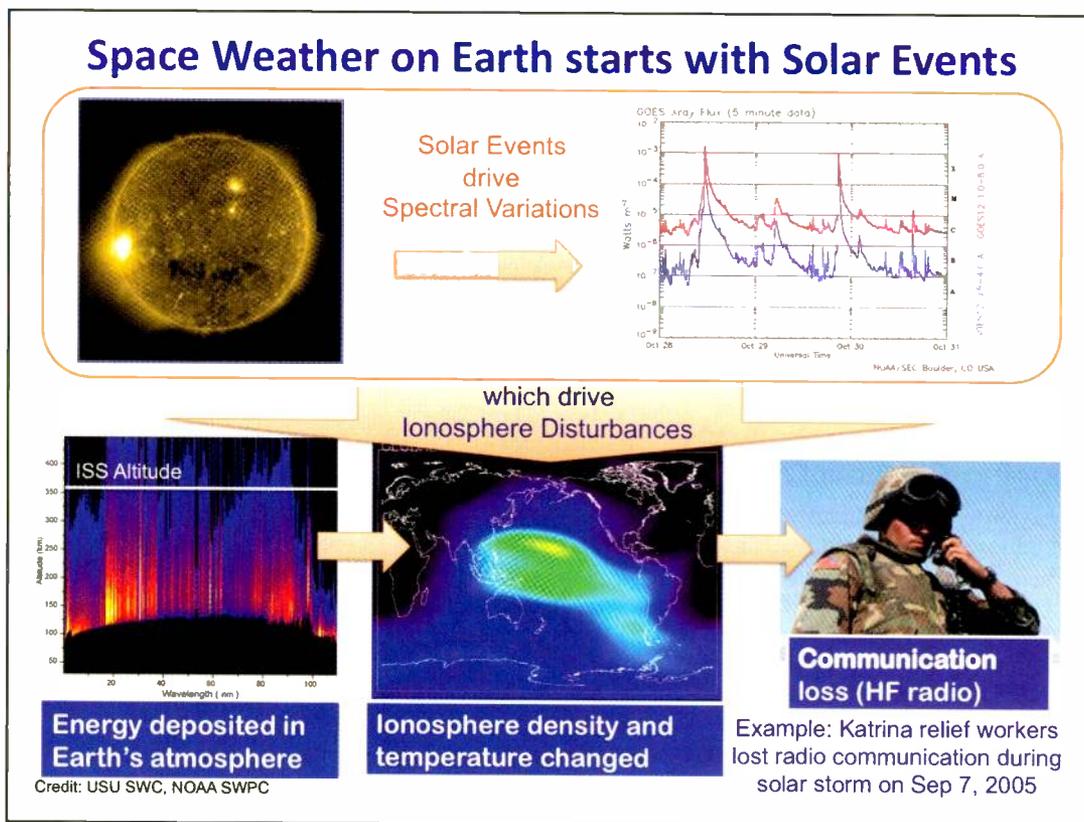


Figure 1. An overview of space weather on Earth. A solar flare can increase the solar extreme ultraviolet (EUV) radiation by a factor of two or more in just a minute. Just eight minutes after a solar flare event, Earth’s atmosphere receives the full blast of the flare radiation. The EUV radiation is energetic enough to break apart molecules and atoms to create our ionosphere. When our ionosphere is disturbed by a solar storm, we can have disruptions in our communication and GPS navigation systems. One example of this phenomenon was the loss of radio communication for the Katrina relief workers during a solar storm a few days after Hurricane Katrina struck New Orleans. (Source: Utah State University Space Weather Center and NOAA Space Weather Prediction Center)



Figure 2. The Atlas V rocket with the Solar Dynamics Observatory aboard lifts off from Cape Canaveral Air Force Station in Florida. (Source: United Launch Alliance/Pat Corkery)

Such radio blackouts have often caused the radio operator to wonder if the antenna came down or the coax was cut!

All of this occurs on the sunlit side of the Earth, because only the illuminated region of the ionosphere is exposed to the flare's energy.

Another space weather event is the CME, which may sometimes accompany a solar flare. When a flare erupts, it can release a huge cloud of solar plasma from the sun's corona. The CME, if directed Earthward, crashes into our magnetosphere anywhere from two days to four days after it is ejected by the flare. This in turn can cause long periods (days) of ionospheric depression, making shortwave communications more difficult than during normal conditions.

It therefore stands to reason that by knowing about current space weather conditions, or even knowing what the space weather is going to be like in the future (whether we're talking about minutes, hours, or days), you can plan more effective radio communications. For those who rely on shortwave radio waves to accomplish their mission, whether that's military, emergency relief, international broadcasts, amateur radio—whatever the case may be—being able to work with or around the effects of space weather is key to successful communications.

This is why governments and private companies spend incredible amounts of time and resources to watch the sun, to explore the solar-terrestrial connection between the sun and

Earth, and to monitor the effects of space weather on the geomagnetic field, the ionosphere, and so on.

The New Eye On The Sun

On February 11, 2010, NASA launched a United Launch Alliance Atlas V-401 rocket with a new spacecraft tasked with observing the sun and solar dynamics, or space weather (Figure 2). This spacecraft is called the Solar Dynamics Observatory (SDO). SDO is the first satellite under the Living with a Star (LWS) program at NASA, and is the most advanced spacecraft ever designed to study the sun (Figure 3). During its five-year mission, it will examine the sun's magnetic field and also provide a better understanding of the role the sun plays in Earth's atmospheric chemistry and climate. Since launch, engineers have been conducting testing and verification of the spacecraft's components. Now fully operational, SDO will provide images with clarity that's 10 times better than high-definition television and will return more comprehensive science data faster than any other solar observing spacecraft (Figure 4).

The spacecraft is designed to fly for five years, but other spacecraft often keep working long past their initial mission life. The Solar and Heliospheric Observatory (SOHO) spacecraft, for example, which was built to fly for five years, celebrates its 15-year anniversary in 2010!

SDO is unlike any other satellite. It will be collecting huge amounts of data every day. In fact SDO will produce enough data to fill a single CD every 36 seconds! Many satellites share a ground system (place on the ground where they send data and photographs) and have recording systems to save the data collected until they can talk to their ground station. Because SDO has no recording system and will be collecting so much data, the SDO mission has to build its very own ground station. For this to be possible, SDO has to be placed in a geosynchronous orbit (GEO). This means that it will rotate at the same speed as the Earth and will always be directly above and in constant communication with its ground station in New Mexico.

Already, SDO is returning early, stunning images of our nearest star (Figure 5). Some of the images from the spacecraft show never-before-seen detail of material streaming outward and away from sunspots. Others show extreme close-ups of activity on the sun's surface. The spacecraft also has made the first high-resolution measurements of solar flares in a broad range of extreme ultraviolet wavelengths.

"These initial images show a dynamic sun that I had never seen in more than 40 years of solar research," says Richard Fisher, director of the Heliophysics Division at NASA Headquarters in Washington. "SDO will change our understanding of the sun and its processes, which affect our lives and society. This mission will have a huge impact on science, similar to the impact of the Hubble Space Telescope on modern astrophysics."

SDO will help scientists continue to explore how the sun's magnetic field is generated, structured, and converted into violent solar events, such as turbulent solar wind, solar flares, and CMEs. Even more exciting is that SDO will provide critical data that will improve the ability to predict these space weather events. NASA's Goddard Space Flight Center in Greenbelt, Maryland, built, operates, and manages the SDO spacecraft for the agency's Science Mission Directorate in Washington.

"I'm so proud of our brilliant workforce at Goddard, which is rewriting science textbooks once again," said Sen. Barbara Mikulski (D-Md.), chairwoman of the Commerce, Justice and

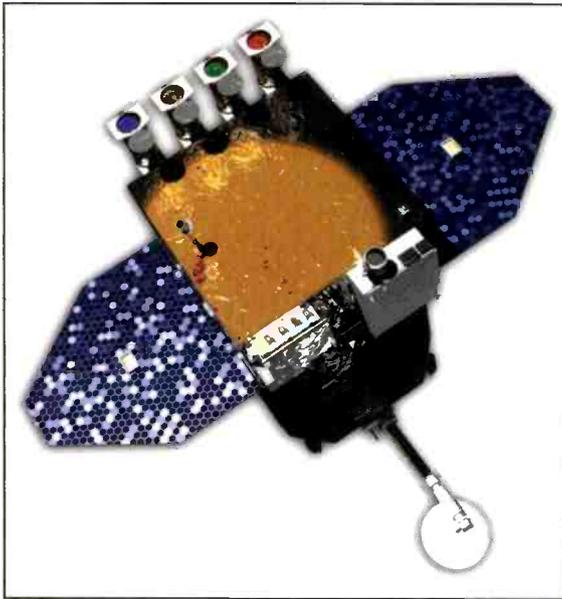


Figure 3. The Solar Dynamics Observatory spacecraft. The SDO satellite is the most advanced spacecraft yet deployed to study space weather and our nearest star. (Source: NASA)

Science Appropriations Subcommittee that funds NASA. “This time Goddard is shedding new light on our closest star, the sun, discovering new information about powerful solar flares that affect us here on Earth by damaging communication satellites and temporarily knocking out power grids. Better data means more accurate solar storm warnings.”

SDO will send 1.5 terabytes of data back to Earth each day, which is equivalent to a daily download of half a million songs onto an MP3 player. The observatory carries three state-of-the-art instruments for conducting solar research.

The Helioseismic and Magnetic Imager (HMI) maps solar magnetic fields and looks beneath the sun’s opaque surface (Figure 6). The experiment will decipher the physics of the sun’s activity, taking pictures in several very narrow bands of

visible light. Scientists will be able to make ultrasound images of the sun and study active regions in a way similar to watching sand shift in a desert dune.

The Atmospheric Imaging Assembly (AIA) is a group of four telescopes designed to photograph the sun’s surface and atmosphere (Figure 7). The instrument covers 10 different wavelength bands, or colors, selected to reveal key aspects of solar activity. These types of images will show details never seen before by scientists.

The Extreme Ultraviolet Variability Experiment (EVE) measures fluctuations in the sun’s radiant emissions (Figure 8). These emissions have a direct and powerful effect on Earth’s upper atmosphere—heating it, puffing it up, and breaking apart atoms and molecules. Researchers don’t know how fast the sun

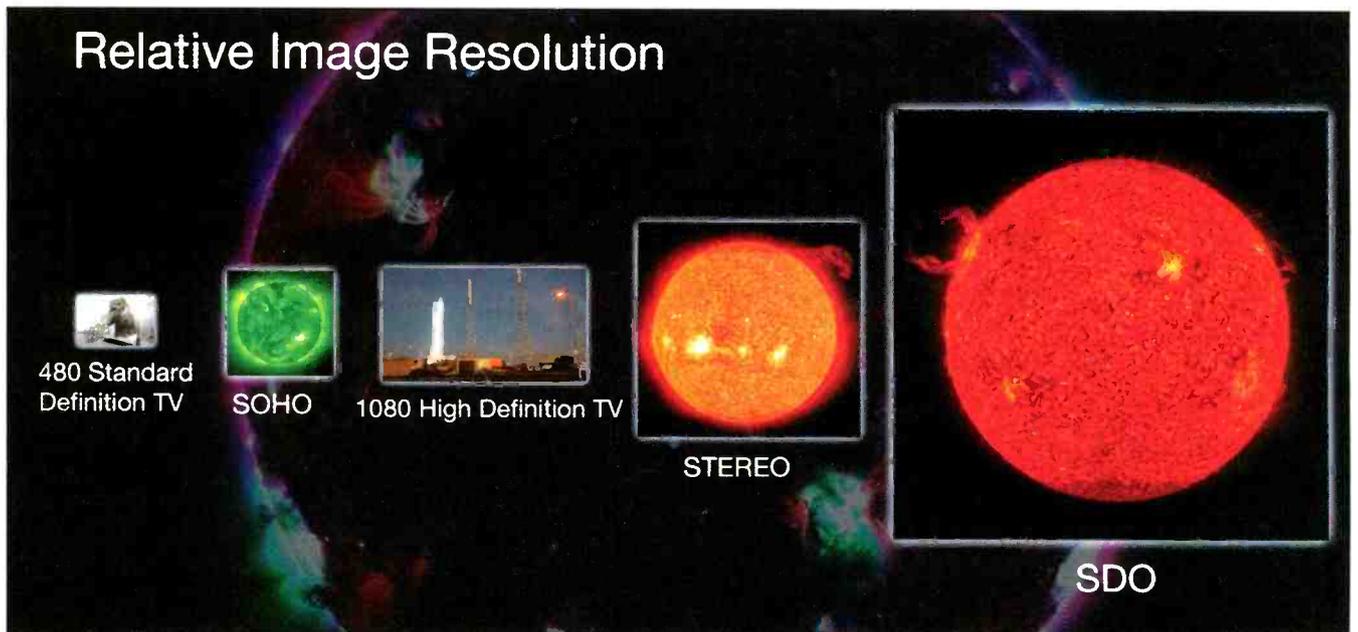


Figure 4. This image compares the relative size of the Solar Dynamics Observatory’s imagery to that of other missions. (Source: NASA)

Optimum Working Frequencies (MHz) - For July 2010 - Flux = 89, Created by NW7US

UTC TO/FROM US WEST COAST	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CARIBBEAN	23	23	22	22	20	19	17	16	14	13	13	12	12	14	16	18	19	20	21	21	22	22	22	23
NORTHERN SOUTH AMERICA	30	29	29	27	25	23	21	19	18	17	16	15	15	17	20	22	24	25	27	28	29	29	30	30
CENTRAL SOUTH AMERICA	28	26	24	22	20	18	17	16	15	15	14	17	17	19	21	23	25	27	28	29	30	30	31	30
SOUTHERN SOUTH AMERICA	24	18	16	15	15	14	14	13	13	13	12	12	12	16	18	21	23	25	26	27	28	29	29	27
WESTERN EUROPE	13	12	11	11	10	10	14	13	12	11	11	13	16	18	19	20	20	21	21	20	20	19	18	16
EASTERN EUROPE	10	9	9	9	12	16	14	13	12	11	10	10	14	16	18	19	20	19	19	18	17	15	11	10
EASTERN NORTH AMERICA	27	26	26	25	25	24	22	20	18	17	16	15	16	18	20	22	23	24	25	25	26	26	27	27
CENTRAL NORTH AMERICA	15	15	15	14	14	14	13	12	11	10	9	9	9	10	11	12	12	13	14	14	14	15	15	15
WESTERN NORTH AMERICA	8	8	8	8	8	7	7	7	6	6	5	5	4	4	5	6	6	7	7	7	7	8	8	8
SOUTHERN NORTH AMERICA	24	24	24	23	23	22	21	19	17	16	15	14	13	14	16	18	19	20	21	22	23	23	23	24
HAWAII	19	20	20	20	20	20	20	19	18	16	15	14	13	12	11	11	12	14	15	16	17	18	19	19
NORTHERN AFRICA	17	16	15	13	13	13	14	14	13	12	11	14	16	18	19	20	21	21	21	22	21	21	20	19
CENTRAL AFRICA	18	17	16	15	14	15	14	13	12	12	11	13	16	18	19	20	20	21	21	22	22	22	22	20
SOUTH AFRICA	16	15	14	14	13	13	14	19	17	16	16	16	19	20	22	23	24	24	25	23	21	19	18	17
MIDDLE EAST	15	13	13	14	16	16	14	13	12	11	11	10	15	17	18	19	20	21	21	20	20	19	17	16
JAPAN	20	21	21	21	21	21	20	19	19	18	16	15	14	14	15	14	13	13	15	16	18	19	20	20
CENTRAL ASIA	21	22	21	21	21	21	20	19	19	17	16	15	13	13	14	16	17	17	16	15	14	15	17	19
INDIA	18	19	19	19	19	18	16	14	12	11	11	10	10	10	10	9	9	9	9	11	14	16	17	18
THAILAND	17	19	21	21	21	20	20	19	18	16	15	13	12	12	14	16	18	18	17	16	15	14	14	15
AUSTRALIA	30	31	31	31	31	30	29	27	24	22	20	19	18	16	16	15	14	14	13	16	22	26	28	28
CHINA	19	20	21	21	21	20	19	18	17	15	14	13	12	11	14	16	16	15	14	14	15	16	18	19
SOUTH PACIFIC	30	30	31	30	29	27	24	18	16	15	14	14	13	13	13	13	12	12	12	21	25	28	29	29

UTC TO/FROM US MIDWEST	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CARIBBEAN	26	26	25	25	23	21	19	17	16	15	14	14	15	17	19	20	22	23	24	24	25	25	26	26
NORTHERN SOUTH AMERICA	27	27	26	24	22	20	19	17	16	15	14	14	14	17	19	21	22	24	25	25	26	27	27	27
CENTRAL SOUTH AMERICA	28	26	24	22	20	18	17	16	15	15	14	16	17	20	22	24	26	27	28	29	29	30	30	30
SOUTHERN SOUTH AMERICA	23	18	16	16	15	14	14	13	13	13	12	12	13	18	20	23	24	26	27	28	29	29	29	27
WESTERN EUROPE	16	14	13	12	11	11	14	13	12	13	15	17	18	19	20	20	21	21	21	21	20	20	19	18
EASTERN EUROPE	10	10	9	9	9	14	14	13	12	11	14	16	18	19	20	20	21	20	19	18	17	14	11	11
EASTERN NORTH AMERICA	19	19	19	18	18	16	15	13	12	11	11	11	12	14	15	16	17	17	18	18	19	19	19	19
CENTRAL NORTH AMERICA	9	9	9	8	8	8	7	7	6	6	5	5	5	6	7	7	8	8	8	8	9	9	9	9
WESTERN NORTH AMERICA	15	15	15	15	14	14	13	12	11	10	9	9	9	9	11	12	12	13	14	14	15	15	15	15
SOUTHERN NORTH AMERICA	17	17	17	16	16	15	14	12	11	11	10	9	9	10	12	13	14	14	15	16	16	16	17	17
HAWAII	23	23	24	24	24	23	23	21	19	17	16	15	14	13	13	13	14	16	18	19	20	21	22	22
NORTHERN AFRICA	21	20	18	17	15	15	16	14	14	14	15	17	18	19	20	20	21	21	21	21	22	22	21	21
CENTRAL AFRICA	18	17	16	15	14	14	16	15	15	16	17	18	19	20	20	21	21	21	21	21	21	21	21	20
SOUTH AFRICA	15	15	14	14	13	13	13	20	19	18	17	19	21	24	25	27	28	29	26	23	20	19	17	16
MIDDLE EAST	15	14	13	13	14	16	14	13	12	12	15	17	18	19	20	21	21	21	21	21	20	19	18	16
JAPAN	20	21	21	21	20	20	19	18	16	15	14	13	14	16	17	15	14	13	13	15	17	18	19	20
CENTRAL ASIA	21	21	21	21	20	19	18	17	15	14	13	12	13	16	17	18	19	17	16	15	15	15	17	19
INDIA	13	15	16	17	17	16	14	13	12	11	10	14	16	18	17	16	15	13	10	10	9	9	9	9
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CHINA	19	20	20	20	19	18	17	15	14	13	12	11	14	16	18	18	16	15	14	14	15	16	18	18
SOUTH PACIFIC	30	30	30	29	28	26	23	16	15	15	14	14	13	13	13	12	12	12	12	22	26	28	29	30

UTC TO/FROM US EAST COAST	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CARIBBEAN	21	20	20	19	17	16	14	13	12	12	11	11	13	14	16	17	18	19	19	20	20	20	21	21
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SOUTHERN SOUTH AMERICA	22	18	16	16	15	14	14	13	13	13	12	12	18	20	22	24	26	27	28	29	29	30	28	26
WESTERN EUROPE	17	16	15	13	12	12	13	13	13	14	15	17	18	18	19	20	20	20	20	20	19	19	18	18
EASTERN EUROPE	12	11	11	10	10	14	15	15	15	16	17	18	19	19	20	20	20	20	20	19	18	16	13	13
EASTERN NORTH AMERICA	9	9	9	9	8	7	6	6	5	5	5	5	6	7	7	8	8	8	9	9	9	9	9	9
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WESTERN NORTH AMERICA	27	26	26	25	24	22	20	18	17	16	15	16	18	20	22	23	24	25	26	26	26	27	27	27
SOUTHERN NORTH AMERICA	21	21	20	20	19	17	16	14	13	12	11	11	12	14	15	16	17	18	19	20	20	20	21	21
HAWAII	25	25	26	26	25	24	22	20	18	17	16	15	15	15	14	14	15	18	19	21	22	23	24	24
NORTHERN AFRICA	21	20	18	17	15	14	14	16	15	16	18	20	22	23	24	25	25	26	26	26	26	26	25	24
CENTRAL AFRICA	18	17	16	15	14	14	15	16	15	16	18	20	21	23	24	25	25	26	26	26	25	24	22	20
SOUTH AFRICA	15	15	14	14	13	13	13	18	17	16	17	20	22	24	25	27	28	29	26	22	20	18	17	16
MIDDLE EAST	19	17	16	15	15	14	13	13	14	16	17	19	19	20	21	21	22	22	22	22	22	22	22	20
JAPAN	20	21	20	20	19	18	17	15	14	14	14	16	17	18	17	16	14	14	14	16	17	18	19	20
CENTRAL ASIA	21	21	20	19	18	17	15	14	13	13	15	16	18	19	20	20	20	18	17	16	15	15	17	19
INDIA	9	9	9	9	14	15	14	13	13	14	16	18	19	20	20	19	19	18	18	17	15	12	10	10
THAILAND	16	18	19	18	17	15	14	13	12	13	16	17	18	19	20	21	21	20	18	17	16	15	14	14
AUSTRALIA	30	31	31	30	30	27	25	23	21	19	18	17	17	16	15	15	14	13	13	13	18	24	27	29
CHINA	19	20	20	19																				

can vary at many of these wavelengths, so they expect to make discoveries about flare events.

“These amazing images, which show our dynamic sun in a new level of detail, are only the beginning of SDO’s contribution to our understanding of the sun,”

said SDO Project Scientist Dean Pesnell of Goddard.

In April, NASA released an incredible movie that shows a massive solar prominence erupting on March 30, 2010 (Figure 9). You can view it at <http://tinyurl.com/nasasdprom>. “We’ve

seen solar prominences before—but never quite like this,” says Alan Title of Lockheed Martin, principal investigator of the AIA. “Some of my colleagues say they’ve learned new things about prominences just by watching this one movie.”

The successful launch and deployment of SDO is great news for radio hobbyists, on many levels. “SDO is our ‘Hubble for the sun,’” says Program scientist Lika Guhathakurta of NASA headquarters. “It promises to transform solar physics in the same way the Hubble Space Telescope has transformed astronomy and cosmology.”

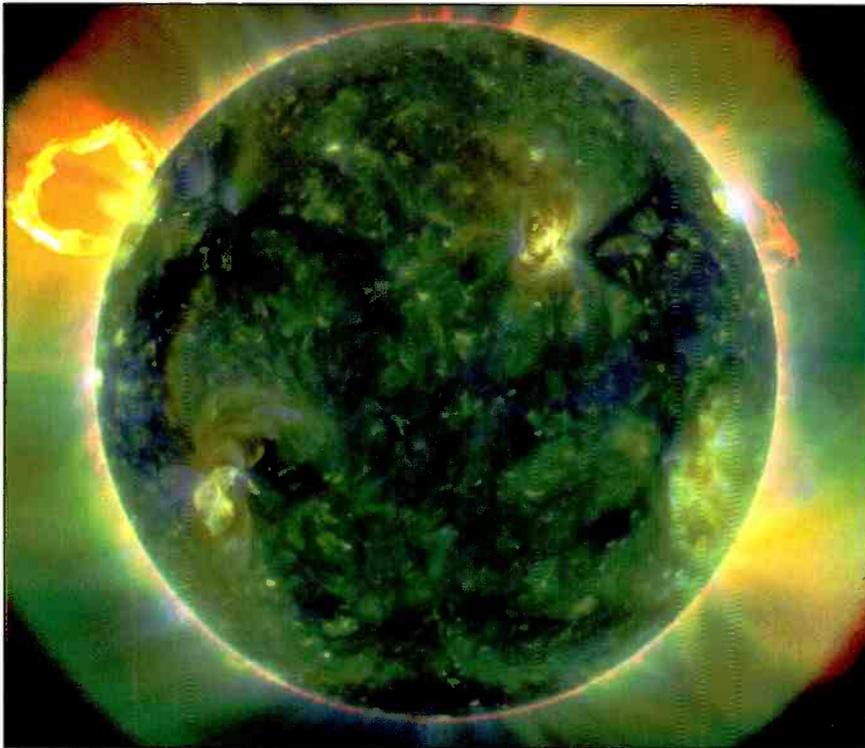
“No solar telescope has ever come close to the combined spatial, temporal and spectral resolution of SDO,” adds Title. “This is possible because of the combination of 4096 x 4096-pixel CCDs with huge dynamic range and a geosynchronous orbit which allows SDO to observe the sun and communicate with the ground around the clock.”

Armed with such rich views of the sun, as well as the wealth of new space weather data, the radio communicator will be equipped to better plan communications, and to understand current conditions. Using tools like PropLab Pro (http://hfradio.org/swp_proplab/) and ACE-HF Pro (<http://hfradio.org/ace-hf/>), and using sites like this author’s <http://propagation.hfradio.org>, communicators can take advantage of favorable space weather, and work around space weather that degrades ionospheric propagation.

Consider this: During the last 15 years, during Sunspot Cycle 23, amazing progress has been made in the area of solar and terrestrial science. Imagine what we’ll discover and see during this new Sunspot Cycle 24! This column will continue to explore the new and help you understand how to leverage this new information in your radio communications activities.

HF Propagation

Solar activity is expected to be at about the same level as we observed in 2009 at this time of year. This results in low maximum usable frequencies. Even so, expect fair openings into most areas of the world throughout the day on 22, 19, and 16 meters. Through the summer, you can expect propagation between north and south regions during the daylight hours. Nineteen and 16 meters will be the strong daytime bands, with 19 remaining a popular band throughout the year. Reception of stations located in tropical or equator-



A full-disk multiwavelength extreme ultraviolet image of the sun taken by the Solar Dynamics Observatory on March 30, 2010. False colors trace different gas temperatures. Reds are relatively cool (about 60,000° Kelvin, or 107,540° F); blues and greens are hotter (greater than 1 million° Kelvin, or 1,799,540° F). (Source: NASA/Goddard/SDO AIA Team)



Figure 6. The Solar Dynamics Observatory Helioseismic and Magnetic Imager (HMI) instrument arrives at Goddard. HMI will extend the capabilities of the SOHO/MDI instrument with continual full-disk coverage at higher spatial resolution. (Source: NASA)

ial areas may be possible well into the hours of darkness. For distances between 800 to several thousand miles, expect exceptionally strong signals. Multi-hop signals will be observed.

Twenty-five and 22 meters will remain open from just before sunrise to a few hours past sunset. From late afternoon to well into darkness, expect these bands to offer worldwide coverage.

Thirty-one meters is a year-round power band with outstanding domestic and international paths around the clock. During periods of low geomagnetic activity this summer, this band may offer long-distance DX all through the night.

Forty-one and 49 meters offer domestic propagation during daylight hours and somewhat during the night. The tropical bands (60, 75, 90, and 120 meters) are not

noticeably affected by the solar flux, but are degraded during geomagnetic storminess. Through the summer, expect these bands to be more challenging, though less this year than last.

Overall, daytime bands will open just before sunlight and last a few hours after dark. Look higher in frequency during the day, as these frequencies will be less affected by any solar storms occurring, and more broadcasters have transmissions in these upper bands.

VHF Conditions

The summertime sporadic-*E* (*E*) season for the Northern Hemisphere will be quite active through July. Usually these *E* openings are single-hop events with paths up to 1,500 miles, but July's *E* events, like June's, are often double-hop. Look for HF openings on the higher frequencies, as well as on low-VHF, throughout the day. Don't forget to check during the night hours, too.

Current Solar Cycle Progress

The Dominion Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-cm observed monthly mean solar flux of 83.3 for March 2010, down from February's 84.7, but still higher than January's 81.1. This shows a consistent climb since August 2009. The 12-month smoothed 10.7-cm flux centered on September 2009 is 73.3, also indicating a steady rise. The predicted smoothed 10.7-cm solar flux for July 2010 is about 89, give or take about 8 points.

The Royal Observatory of Belgium reports that the mean monthly observed sunspot number for March 2010 is 15.4, lower than the previous month, yet still higher than January's 13.1. The lowest daily sunspot value during March 2010 was zero (0), occurring on March 6, 9, and 10. The highest daily sunspot count for March was 25 on March 4. The 12-month running smoothed sunspot number centered on September 2010 is 6.1. A smoothed sunspot count of 31 is expected for July 2010, give or take about 8 points.

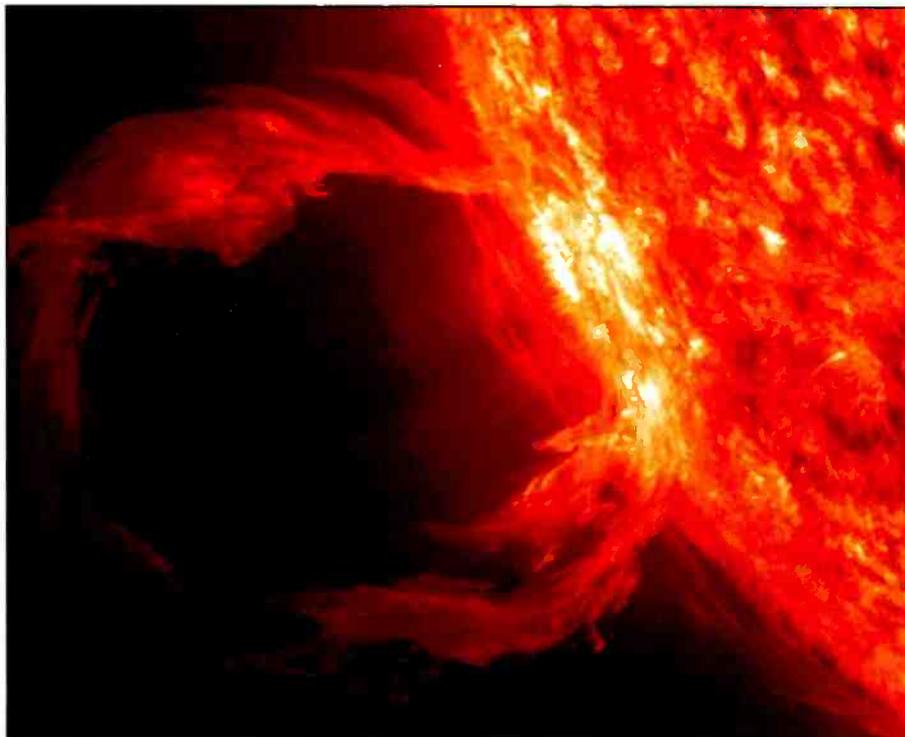
The observed monthly mean planetary A-Index (*A*) for March 2010 is four (4). The official index for February was adjusted up from 4 to 5. The 12-month smoothed *A* index centered on September 2009 is 3.8. Expect the overall geomagnetic activity to be unsettled to stormy during July. At the time of writing, the forecast holds that July will be an active month, with occasional strong geomagnetic



Figure 7. The four Atmospheric Imaging Assembly (AIA) telescopes installed on the Instrument Module in the Space Checkout Area cleanroom at Goddard Space Center. AIA will image the solar atmosphere in multiple wavelengths to link changes in the surface to interior changes. Data will include images of the sun in 10 wavelengths every 10 seconds. (Source: NASA)



Figure 8. The Extreme Ultraviolet Variability Experiment (EVE) instrument in the clean tent. The EVE experiment measures the solar extreme-ultraviolet (EUV) irradiance with unprecedented spectral resolution, temporal cadence, and precision. It will help scientists understand variations on the timescales that influence Earth's climate and near-Earth space. (Source: NASA)



storms due to recurring coronal holes, flares, 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 are on Facebook, check out <http://tinyurl.com/fbswx> and <http://tinyurl.com/fb-nw7us>. And don't forget to stop by *Pop'Comm's* Facebook page and friend us there.

Do you have a question that you'd like me to tackle in this column? Drop me an email or send me a letter (nw7us@hfradio.org; P.O. Box 9, Stevensville, Montana 59870) and I'll be sure to cover it. I'd love to hear any feedback you might have on what I have written. See you on the air!

Until next month, 73 de NW7US, Tomas Hood

Figure 9. A stunning high-definition image of a solar prominence eruption on March 30, 2010. Seasoned solar observers were amazed by the breathtaking images captured by the Solar Dynamics Observatory. In the full movie captured of the erupting prominence (see text), the twisting motion of the material is the most noticeable feature. (Source: NASA/SDO/AIA)

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THE PRACTICAL SIDE

Gordon West's Radio Ways

With These Tiny Locator Tags 1 Milliwatt = 1 Mile

by Gordon West,
WB6NOA
WB6NOA@arrl.net

"In addition to T-hunting, the tags are ideal for tagging expensive ham gear during Field Day or other outings, tracking helium balloon APRS packages, tracking kids while camping... The applications are practically limitless."

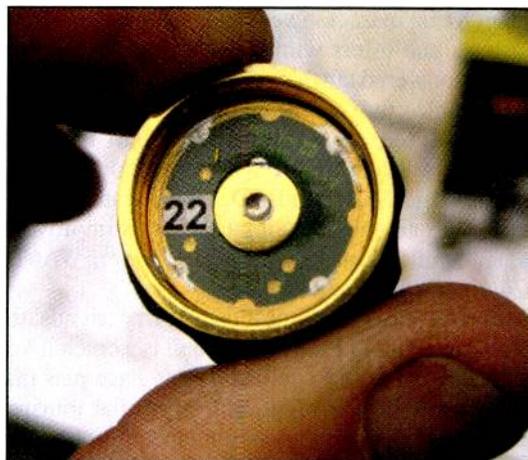
Summertime is a fun time for a foxhunt. Best of all, **this** great radio pastime doesn't have to involve the kind of high-power 2-meter challenge that runs you all around the county—there's big excitement in on-foot homing in on a tiny milliwatt pinger.

What are milliwatt pingers, you ask? They're simple little transmitters with a huge array of practical uses. They can be embedded in stacks of \$100 dollar bills down at the bank. They can be pinned to clothing and used as medical tags for memory-impaired seniors. They can be attached to collars to help keep track of gallivanting pets. And, of course, they can be put to great hobby use as a "fox" in transmitter hunting, or T-hunting.

The transmitters for these applications typically operate around at 218 MHz and can put out up to 10 milliwatts for a 10-day run time. No mere toys, they must meet FCC "intentional radiator" rules, as follows:

- Part 15, ultra-short range, like a cordless phone or garage door opener;
- Part 95, public safety law enforcement, as well as healthcare monitoring, subpart (g), low power radio service;
- Part 97, amateur radio service, for both high-power as well as "flea-power" T-hunt transmitters.

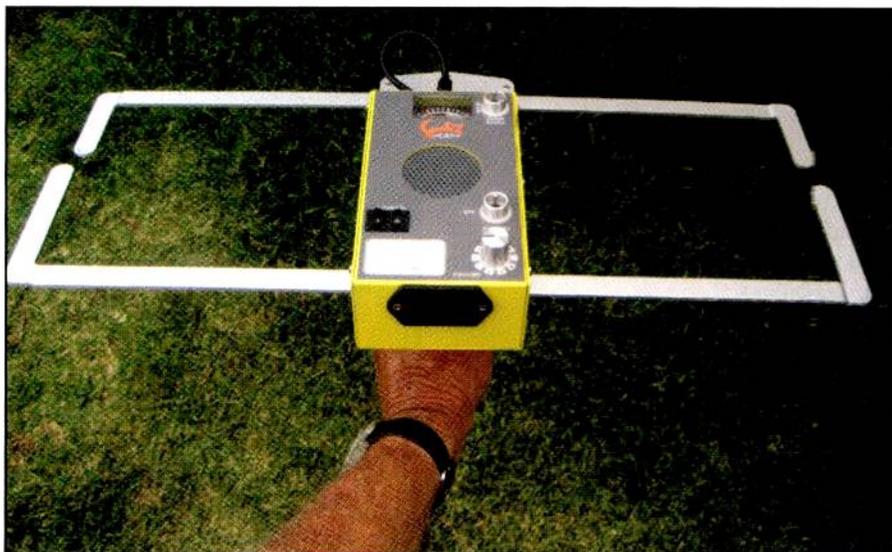
According to the Commission in FCC Part 95.1009, "Permissible communications (b) may allow low power locator tags in the healthcare/



The inside of the 1-milliwatt tag, battery removed.

convalescent hospital industry." And Part 95.1009 (c) would allow for police tracking of a signal for homing or interrogation, "including the tracking of persons or stolen goods, under authority or agreement with a law enforcement agency (federal, state, or local) having jurisdiction in the area where the transmitters are placed."

The low-power radio service (LPRS) allows these transmitters, up to 100 milliwatts effective radiated power output, to be initiated by healthcare or law enforcement purposes. At 100 milliwatts, the battery system won't play for more than



This fold-up Moxon antenna and receiver zeros in on a T-hunt tag.

about a week. But the higher power levels allow for tracking over a far greater distance than the ultra-low-power ham tags.

All these medium-, low-, and ultra-low-power tags come from well-known tone equipment provider, Communications Specialists, in Orange, California. The company may custom-fabricate a specific type of tag for a specific use within the FCC rules. It will also offer special ultra-low-power tags to the ham community, pre-programming a ham's FCC callsign on the signal.

From Fauna To Fido And Beyond

Communications Specialists, Inc. has been involved for many years in tracking endangered wildlife with various types of tags, and offers wildlife officials many options, including a solar-powered tag that remains turned off until it senses either (selectable) movement or no movement (sleeping or dead). "What started out as a short-range Part 15 asset tracking system now takes these tiny transmitters up to the 222-MHz ham band, with a Morse code ID, 1-milliwatt of power output, six-inch-long antenna, leading to a 15 dB improvement for many other applications" says Spence Porter, WA6TPR, owner of Communications Specialists.

For our favorite domesticated furry friends, the benefits are obvious. Finding Fido and Furball is a cinch if you've attached a locator tag to their collars. If you have pets that are allowed to stay outside overnight, this tiny collar transmitter will help track them down if they don't show up for breakfast.

Porter has also discovered that there are myriad ways to apply his devices to fun human pursuits. "As an avid ham, I always enjoy hearing how our ham tags are put to use for enjoying radio and other hobbies," says Porter. "For instance, they're very popular with radio amateurs who engage in T-hunt activities."

In addition to T-hunting, the tags are ideal for tagging expensive ham gear during Field Day or other outings, tracking helium balloon APRS packages, tracking kids while camping or the kayak club's progress down stream, and tracking loaned equipment on a Scout outing. The applications are practically limitless.

Transmitter Specs

The tags simply emit a once-per-second 20-ms pulse, with no tie-in to the global positioning system. This makes them perfect for proximity locating. Here are some of the relevant tag transmitter specifications:

- Size: Diameter of a quarter; thickness of five stacked quarters
- Battery CR 2032 Lithium coin cell
- Less than 1 milliwatt ERP out
- 20-millisecond pulse
- 50 pulses per minute
- Frequency interstitial to 222 repeater frequencies
- Two parts per million crystal oscillator
- Antenna: embedded metallic thread within a fabric collar
- Urban (city) range: 1-3 blocks
- Range in a forest: 1/2 mile
- Range in open terrain: 3/4 mile
- Line-of-sight range: 1 mile or more
- Channels: Any one of 20, interstitial, from 222.150 MHz through 223.350 MHz

For those hams operating on the 222-MHz repeaters, your FM transceiver won't hear these pulse and CW ID tags. Weak signal operators, receiving CW or SSB, won't find any of these

tags within the weak signal portion of the band; they would be about the only ones to have the capability to pick up the pulses.

On The Receiving End

So what does it take to receive and track down this tiny milliwatt signal?

"It takes a portable ultra-narrow-bandwidth CW receiver, on the 222-MHz band, to hear these signals," says Porter, displaying his various types of battery operated "sniffers." The company's PR-100 portable CW receiver offers multi-channel dip switch selection, and you order the receiver band to correspond



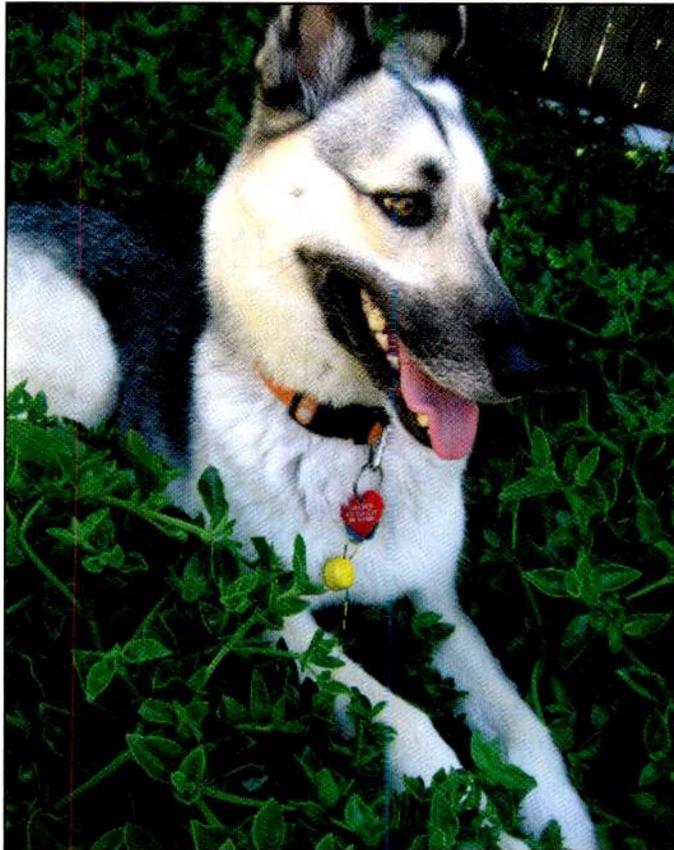
Dip switches on the receiver allow for multiple tag use



From the air, we detected a 5-milliwatt medical tag three miles away, and ended up hovering over a lost elderly rest home patient until help arrived from the ground.



This tag, with the red dot, has the antenna embedded in the collar and its signal can be received up to a couple of blocks away in the neighborhood.



The dog tag, hanging with a longer antenna, can be received up to five blocks away.

with the tags you're tracking, whether for police, medical, wildlife, or ham radio use.

The PR-100 works on a common 9-volt battery, includes a built-in speaker, headphone jack, dip switch channel selection, signal strength meter, attenuator, and a BNC antenna jack. This receiver is so sensitive it can hear a gardener's leaf blower half a block away. Check this out:

- Sensitivity: .05 microvolts
- Selectivity: 70 dB down @ 4 kHz, 80 dB down @ 10 kHz
- IF Filtering: 10.7-MHz, 8-pole crystal filter, 455-kHz 8-pole Ceramic
- Front End: Dual MosFet, with six helical resonators, high side (eliminates de-sense from digital TV signals)
- Antenna jack: BNC
- Frequency coverage: 222 MHz–224.990 MHz, 10-kHz steps
- Fine tuning: ± 500 Hz from channel center
- MDS sensitivity: minus 150 dBm
- Attenuator: 3-step, 0 dB, 30 dB, 60 dB
- Headphone jack: 3.5-mm mono
- Size: 6 x 3.5 x 2.7 inches
- Weight: 19 oz
- Included antenna: fold up Moxon directional 5 dB gain
- Additional included antenna: 0 dB omni-directional 222-MHz rubber duck
- Channel selector: 3-position push wheel switch
- Battery test switch: on/off
- Channel 60 – 09: 222.250 MHz – 223.290 MHz

Location, Location, Location

Using the locator system is incredibly easy. The tiny transmitter tags come in several varieties, including some you might clip on a belt loop, others with a tiny wire antenna, and pet tags that feature an embedded metallic thread antenna and a fluorescent snap away collar. The tags are \$49 each, and most hams will bring in a couple of them on different channels, and this way you can increase your T-hunt activities by 3 dB.

The included Moxon antenna is for use out in the field. If you have a Scout troop, with each member with his or her own individual channel tag, the Moxon antenna lets you sweep the area to get a good idea as to the direction of the little transmit-

ter. The Moxon works well over the water, too, for locating kayakers and similar uses.

As you begin to close in on the 1-milliwatt tag, it's time to switch over to the rubber duck to hone your skills on proximity tracking. Let's say you were flying your brand new RC helicopter, when it spun out of control and maybe landed on a neighbor's roof or in someone's backyard. The Moxon will give you the general direction to get you into the area. Now, go with the rubber duck. First, walk up and down the neighborhood and see where the signal peaks. Now try one side of the street or the other; it will definitely get louder as you get 40 feet closer. Don't take baby steps, but rather, take 20 big steps in one direction, and see if the signal gets stronger. If it doesn't, you're walking the wrong way.

You must make exaggerated movements in order to determine an increase in signal strength. When you click in 30 dB of attenuation, you are generally within 100 feet of the transmitter. When you switch in 60 dB of attenuation, you are likely within 20 feet of the transmitter. As you get closer and closer to the tag, put your hand over the rubber duck to add more attenuation. Ultimately, you'll find that little tag.

More Than Just Fun, Peace Of Mind

The receiver and a couple of tags are under \$350, and worth every penny of the investment when you discover Furball accidentally locked up in your neighbor's shed, or locate an elderly loved one who wandered two blocks away.

To learn more, contact Communications Specialists at 426 West Taft Avenue, Orange, CA 92865; Phone: 800-854-0547; Web: www.Com-Spec.com.

DIY Radio In The Age Of The Hacker

by Kirk Kleinschmidt, NT0Z
kirk@cloudnet.com

“[Elecraft’s] K3 all-band HF kit transceiver offers RF performance that’s better than commercial radios costing several thousand dollars more (and even then, most still can’t top the K3, only equal it).”

For some of us, the urge to build our own gear—radios, computers, hang gliders, whatever—stems from economic necessity. This is probably the original Do-It-Yourself motivator. For others the DIY drive involves the thrill and satisfaction of creating a customized, one-of-a-kind item in an era when pretty much *everything* around us is store-bought (and now made overseas). Some want a particular group of components or set of features that simply don’t exist (or exist anymore) in a retail product. Still others want to “learn by doing,” which is probably the best way to really learn something “in your bones.”

What drives my homebrewing, whether it’s radio gear, computers, or a new laminate floor (my sore knees remind me that the new floor is still a work in progress!) is a little bit of everything. I like to build my computers so I can get

just the right combination of parts. And if you know where to shop you can acquire the parts for a real humdinger PC for the price of a garden-variety unit from Dell or HP. When it comes to radios, whether we’re talking complete DIY or kit-built, the price isn’t a primary driver. Many kits are plenty cost-effective, but economies of scale and overseas manufacturing have made commercially made rigs more affordable than ever. Building a high-performance radio is more about the education and the achievement than about saving money. And when you factor time into the mix, there’s no cost savings at all. Thankfully, that’s why we call it a hobby. Contrary to popular belief, not *everything’s* about the money!

Whatever your reasons, thanks to an Internet overflowing with info and how-to videos, afford-



Elecraft’s all-mode K3 transceiver covers 160 through 6 meters with all of the usual bells and whistles—and then some! Amazingly, you can spend thousands of dollars more and not find a radio that matches the RF performance of the K3. That’s not bad for *any* radio, but it’s spectacular considering that the K3 is a *kit radio* you can build yourself!

Unlike the company’s K2 transceiver, which you build component by component, board by board, the K3 is modular. You build the radio and all selected options (there are a lot) by assembling pre-built (and pre-tested) modules inside the radio’s standard chassis. It’s a lot like building a computer from “scratch.” You don’t build the motherboard chip by chip, but you choose the right motherboard, CPU, cooler, RAM, etc., and you build exactly the PC you want for the task at hand.

Start with the base model K3—with its killer performance—and add accessories and features as you go (right away or over time). At \$1,450 for the 10-watt basic kit, the K3 isn’t a casual purchase, but with performance that bests more than one \$10,000 transceiver, it’s still a stellar value. Check it out at www.elecraft.com.

able tools and parts, and today's emerging "hacker ethos," hams are building, tweaking, modding, and customizing everything from A to Z.

If you're just getting started in radio DIY, building a high-performance transceiver from scratch probably isn't the best way to get your feet wet. Building *anything* beyond a simple dipole antenna from scratch probably isn't the best, either. To ensure a positive learning experience with a satisfying result (which will

likely result in additional kits and more satisfying results!), consider building a kit radio or radio accessory.

Klassic Kits

Most radio beginners haven't been radio active long enough to remember the demise of the first wave of great ham radio and electronics "kit companies," such as Johnson, Knight, and Heathkit. Although the ham radio kit industry has since recov-

ered—and zoomed forward into the 21st Century—the passing of these bedrock companies marked the end of an era.

Heathkit, the most successful "old world" kit-maker, reigned supreme in the '50s through the '70s, survived and tried to innovate in the '80s, and managed to hold on in one shape or another until its passing in the early '90s.

A generation or two ago, before the Internet, the age of miniaturization, and toll-free phone numbers, commercial gear was crazy-expensive, which forced many hams to build their own receivers, transmitters, tuners, and so on. Being from a more DIY era, these resourceful hams built stuff from scratch, as some still do today, but many more created kit-built electronic masterpieces made possible by the aforementioned companies.

From the mid-'60s through the early '80s (which saw the rise of the Japanese equipment makers that dominate the market to this day), Heathkit was synonymous with ham radio. Just about everyone who couldn't afford a Collins or Drake setup was using a Heathkit station lovingly built from a kit of parts using Heathkit's fabulous step-by-step assembly manuals.



My ham radio activities are decidedly QRP, but when it comes to computers my tastes are *QRO all the way* with a healthy dose of the Hacker Ethos!

Pictured here is the new NTØZ shack/office computer just after it passed 48 hours of hardcore torture testing. Under the gigantic CPU cooler lurks an Intel i7-930 quad-core processor overclocked to 3.8 GHz (2.8 GHz stock). The teeny motherboard is an ASUS Rampage II GENE micro-ATX board stuffed with 12 GB of Mushkin Ridgeback DDR3-1600 RAM. Power is provided by an 850-W Silverstone modular supply (no unused power cables to stuff into a corner of the case's interior). Much like personalizing the Elecraft K3 kit radio shown elsewhere in this column, I carefully chose the parts to make a one-of-a-kind, physically small, yet ferocious PC that will handle any computing chores I can throw at it for the next several years (or four or five chores at once!).

My office desk and my ham radio desk sit adjacent to one another, and this PC will sit in the no-man's land in-between. With a monitor, keyboard, and mouse on each desk I can use a "reverse KVM switch" to instantly switch the computer mini-tower between either desktop. I can write, surf or play a computer game at my main desk, then slide my chair over to the radio desk, push the button on the reverse KVM switch, and I'm running Ham Radio Deluxe or DXLab. If I run a virtual machine controller, such as Virtualbox, I can do both at once. That's the theory, anyway. I'll let you know how it goes!

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Even in the Heathkit era there were other ham radio kit companies, but nobody else produced major kits that featured complete stations, receivers, transmitters, transceivers, etc. With Heathkit finally gone, kit builders had to make do with accessory kits and smaller projects (or buy used Heathkit gear!).

Modern Kits Aren't Your Father's Heathkits

Hams today are a spoiled bunch. We enjoy ham radio superstores, instant Internet access (to research radio gear), toll-free telephone numbers (to order them) and compact transceivers that cover every conceivable band (and then some). And all for a fraction of what things cost in the good old days (towers and rotators are the exceptions).

Our rigs have every modern convenience. Digital displays track our operating frequencies to the nearest hertz, powerful DSP chips filter and massage our receiver audio, and a multitude of gadgets and handy "RF tweaking" controls are right at our fingertips.

For many hams, however, despite the compelling performance of modern radios, the satisfaction that comes from building and using radio gear they've built themselves is a powerful motivator. When you make a contact with a transceiver

you've assembled from raw parts, you'll know what I'm talking about!

And modern kits, unlike many from years past, aren't "B-squad" radios and accessories that offer fewer features and reduced performance when compared to the finest store-bought gear. Top-quality radio kits ranging from simple station accessories to powerful multiband transceivers are now the norm.

More than a hundred companies offer an amazing assortment of high-quality products, many of which are aimed at low-power ops (QRPer). Kit-building and QRP are truly inseparable, but you don't have to be a QRPer to enjoy building kit radios and accessories.

Companies such as Elecraft, a cornerstone among modern kit companies and often viewed as Heathkit's spiritual successor, set the bar *very high*. This California-based kit radio company's K3 all-band HF kit transceiver offers RF performance that's better than commercial radios costing several thousand dollars more (and even then, most still can't top the K3, only equal it). Plus you can add every conceivable accessory and doodad to the base-model K3—and when it's all said and done, you "built it yourself." The company's other products are on par with the best of the best. Check them out at www.elecraft.com.

If you've always wanted to build your own station hardware, now is a fantastic time to get started. Check out <http://ac6v.com/kits.htm> for links to dozens of ham radio kit sites on the Web. You can see dozens of radio kit demo videos at www.youtube.com, including a time-lapse video of someone assembling an Elecraft K3 in "7 minutes!"

Some of my favorite kit companies include Hendrick's QRP Kits (www.qrp-kits.com); Ramsey Electronics (www.ramsey-electronics.com); Kanga US (www.kangaus.com); Small Wonder Labs (www.smallwonderlabs.com); and Ten-Tec, the USA's last "big" ham radio maker and kit provider (<http://radio.ten-tec.com/kits>).

Tools Of The Trade

Most kits can be built using a soldering iron, wire cutter/stripper, pliers, a screwdriver or two, and some solder. If you don't have a well-stocked toolkit, chances are good that one of your ham buddies does. So don't be shy—building kits isn't as difficult as it might seem. Even teeny surface-mount parts can be assembled with a magnifying glass and a little patience. Be sure to study the assembly guide and go through assembly steps one at a time and you'll have few problems, if any.

Regardless of your kit and its manufacturer, the first step in building any kit is to lay everything out on a clean, uncluttered surface and check each part against the parts list. Make sure nothing's missing and be sure the part values are correct! One trick used by veteran kit builders is to write each part's value on a small piece of masking tape (remember to stick the tape to each part!). Spending a little extra time at this early stage can save headaches later.

If you don't have a lot of experience with a soldering iron, be sure to learn how to solder *before* tackling that first kit (or start off with an entry-level kit that teaches you how to solder as you go). Cold solder joints and a general lack of soldering skills are the two biggest trouble spots for modern kit builders.

Join The Proud Tradition

Using a radio or accessory that you built yourself is a thrill in and of itself, but it also ties you to a long line of DIY hams who, over the decades, with just a simple soldering iron in hand and an unwavering gaze, *created* radio from the ground up. You can, too.

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Hosts Of Hoosier Flights

by Tom Swisher, WA8PYR
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Let's take a little journey. A journey to the land of milk and honey, corn and cows, and the Indianapolis Motor Speedway. Buckle up—we're off to Indiana.

Of course, we're interested in what takes place above the roadways. For aviation buffs wending their way on a summer road trip, this prairie state on Lake Michigan is conveniently located between Ohio, the birthplace of powered flight, and Illinois, home to one of the world's busiest airports (Chicago's O'Hare). But Indiana, in its own right, has plenty to interest those of us who scan the skies.

Circling The Circle City

The first stop in our journey through the nation's 19th state is Indiana's most populous city, Indianapolis, which is served by the Indianapolis International Airport (IND), located seven miles southwest of downtown Indianapolis off Interstate 70. Opened in 1931, it was named Weir Cook Municipal Airport in 1944, in honor of Colonel Harvey Weir Cook, a local man killed while piloting a P-39 fighter over New Caledonia.



The new midfield terminal at Indianapolis. (Wikimedia image)

The airport was granted international status in 1975, at which time it was renamed Indianapolis International Airport. The facility is owned today by the Indianapolis Airport Authority.

Until 2008, the main passenger terminal for the airport was located at the east end of the field. Built in 1957 and expanded several times over the years, the terminal was replaced in 2009 by the midfield-located Col. H. Weir Cook Terminal, which revived the former name of the airfield. While the older terminal still sees some use as office space for the Airport Authority, most of the building will probably be demolished in the future.

A major component of the airport's long-range master plan (an earlier part of the plan resulted in the new air traffic control tower and TRACON opened in 2006), the new terminal is located between the two main runways at IND. The first major passenger terminal designed and built since the terrorist attacks of 2001, it incorporates many of the security improvements recommended since that day. It can operate up to 46 gates (two of which can be used for domestic or international arrivals) and has room for further expansion. The new terminal is used by at least 10 airlines, including Air Canada, American, Continental, Delta, Southwest, United, and US Airways.

Indianapolis operates three runways, two of which are parallel: 5L/23R, the longest at 11,200 feet; 5R/23L, which is 10,000 feet long; and 14/32, the shortest at 7,605 feet. The airport's long-range master plan also calls for a fourth runway to parallel the two main runways.

Here's where to listen:

IND Frequencies

Unicom: 122.95

Ground: 121.9, 121.8

Tower: 120.9/257.8

Approach: 124.65 (west), 127.15 (east), 119.3, 317.8

Departure: 119.05 (west), 124.95 (east), 317.8

Clearance Delivery: 128.75/257.8

Pre-taxi clearance: 128.75

ATIS: 134.25

The Indianapolis area is also served by two relief airports, which help keep pressure off Indianapolis International by handling much of



Part of the interior of the new terminal at Indianapolis. (Wikimedia image)

the general aviation traffic, which otherwise might go to IND.

The first of these is Indianapolis Metropolitan Airport (UMP), located eight miles northeast of downtown Indianapolis, near the town of Fishers. Like IND, it is owned by the Indianapolis Airport Authority.

Indianapolis Metropolitan has one 3,850-foot runway (15/33) and handles a mixture of traffic, mostly single-engine general aviation with some jet and military traffic mixed in. The number of aircraft movements averages 158 per day. To listen in on the airport communications here, tune the following:

UND Frequencies

CTAF/Unicom: 123.0

Clearance Delivery: 121.625

IND approach/departure: 127.15

The other relief airport serving Indianapolis is Indianapolis Executive Airport (TYQ). Located 14 miles from downtown Indianapolis near the town of Zionsville, the airport is owned by the Hamilton County Airport Authority. The airport has one 5,501-foot runway (18/36) that handles an average of 95 aircraft movements per day, with over 90 percent of these being general aviation. Listen in on the following:

TYQ Frequencies

CTAF/Unicom: 123.05

AWOS: 120.725

Approach/departure: 124.65 (when 05/23

active at IND) or 127.15 (when 14/32 active at IND)

Visiting The Fighting Irish

Leaving the Indianapolis area and moving to the north, we come to South

Bend. Home of the University of Notre Dame (and the Fighting Irish, thereof), South Bend is served by South Bend Regional Airport (SBN). Three miles northwest of South Bend and operated by the St. Joseph County Airport Authority, it's the busiest in the state after



The remodeled terminal at South Bend. (Wikimedia image)

Indianapolis International. Known in the past as Bendix Field, St. Joseph County Airport, and Michiana Regional Transportation Center, the airport was renamed South Bend Regional Airport due to the unfamiliar nature of the name Michiana to many travelers.

Opened in 1933 by aviation pioneer Vincent Bendix, the field was originally named Bendix Municipal Airport. Purchased from Bendix by the City of South Bend in 1936, ownership was shortly thereafter transferred to St. Joseph County and the facility renamed Bendix Field-St. Joseph County Airport. Later renamed Michiana Regional Transportation Center to better reflect its status as a multimodal transportation hub, the facility acquired its current name in the late 1990s.

In its capacity as the Michiana Regional Transportation Center, the facility hosts interstate bus service by Greyhound and other carriers, as well as rail service to Chicago by the South Shore Line, in addition to its passenger and cargo air traffic. It's one of only a handful like it in the country, and you can still fly into South Bend and catch a bus to Detroit, or a train to Chicago.

The South Bend terminal has 11 gates in two concourses, of which four use ground-level boarding bridges. A project in progress will expand one of these concourses to a total of 10 gates, one of which will be a ground boarding gate. Some of the airlines serving South Bend are Allegiant, Continental, Delta, and United. You can view the aircraft of these airlines from a feature of the airport that is also rare as airports go: an aircraft viewing area located in the terminal, which not only encourages visitors to watch airplanes, but also features air traffic control radio transmissions rebroadcast by the airport itself.

South Bend operates three runways, two of them parallel: 9L/27R (4,300 feet), 9R/27L (8,414 feet), and 18/36 (7,100

feet). The facility handles over 40,000 aircraft movements per year, or an average of about 111 per day. Check out those movements here:

SBN Frequencies

CTAF: 118.9

Unicom: 122.95

ATIS: 118.15

Ground: 121.7

Tower: 118.9/257.8

Clearance Delivery: 121.9

Approach/Departure: 118.55 (northeast), 132.05 (southwest), 124.1, 257.8

Off To Fort Wayne

Moving to the east we come to Fort Wayne, served by Fort Wayne International Airport (FWA), which is a joint civil-military airport seven miles southwest of that city.

Opened by the U.S. Army in 1941 as Baer Army Air Field, the airport was used to train troop carrier units. After the war, the airport was purchased by the city for the princely sum of \$1 and renamed Fort Wayne Municipal Airport. It's been steadily expanding since 1985, with many facility upgrades, including an expanded terminal, runway improvements, a new air cargo facility, and a new air traffic control tower.

Since its sale to the city, the airport has always maintained some sort of military presence, and since 1954, it's been the home base of the 122nd Fighter Wing of the Indiana Air National Guard. Flying F-16 fighters and known by their nickname of "Blacksnakes," the 122nd serves as a vital part of the continental air defense forces of the U.S. Air Force Air Combat Command.



Upper showroom (1935-onwards) of the Studebaker National Museum in South Bend, Indiana. (Photo by Derek Jensen, via Wiki Commons)

Road Trip

By the way, if you're also keen on interesting terrestrial craft, you'll be pleased to learn that South Bend is home to the Studebaker National Museum. The museum features a large array of wagons and automobiles from the long production history of the Studebaker company. Started by Studebaker as a collection of company products, these treasures of Americana were donated to the city of South Bend in the 1960s. The collection is today housed downtown, right next to the Northern Indiana Center for History. Stop in.

Owned and operated by Fort Wayne/Allen County Airport Authority, the airport has one terminal with eight gates, four of which use ground-level boarding stairs. Service is provided to larger hubs at Atlanta, Chicago, Cincinnati, Dallas-Fort Worth, and Detroit by Allegiant, American, Delta and United. Fort Wayne has three runways ranging in length from 12,000 to

8,001 feet: 5/23 (12,000), 9/27 (4,001 feet), and 14/32 (8,001 feet). The main runway is large enough to accommodate the Space Shuttle as well as all cargo and tanker aircraft in the USAF inventory. If you're in the area, here's what to tune:

FWA Frequencies
Unicom: 122.95
ATIS: 121.25/349.0

Ground: 121.9/348.6
Tower: 119.1/272.725
Clearance Delivery: 124.75
Approach/Departure: 127.2/284.6
(SW/NW), 132.15/260.6 (SE/NE),
135.325
Command Post: 138.4
ANG ("MACE") Control: 289.3

For our last leg, we'll fly diagonally across the state to Evansville, and the Evansville Regional Airport (EVV). Located three miles north of that city, this airport serves as a regional feeder airport to larger hubs, such as Atlanta, Chicago, Cincinnati, Dallas/Fort Worth, and Detroit.

Opened in 1928 along U.S. Route 41 north of Evansville, the original airfield included a weather office and small terminal in addition to hangars and runways. The original terminal was replaced by a new facility in 1950, with that facility itself replaced 1988 with a new building operating 10 gates, used by American and Delta.

During World War II, Evansville was the home of a Republic Aviation manufacturing facility, which eventually built over 6,000 P-47 Thunderbolt fighters. The P-47 was one of the most famous aircraft of World War II and was particularly effective in a ground support capacity. With over 15,000 built, it was also one of the most numerous aircraft of the war, and served various countries well into the 1960s.

Like the other major airports in the state, Evansville operates three runways: 4/22 (8,021 feet long), 9/27 (3,500 feet long), and 18/36 (6,286 feet long). Give a listen here:

EVV Frequencies
CTAF: 118.7
Unicom: 122.95
ATIS: 120.2
Ground: 121.9
Tower: 118.7/257.8
Clearance Delivery: 126.6
Approach/Departure: 126.4/226.4
(south), 127.35/267.9 (north)
Indy ARTCC: 128.3/284.65
(approach/departure when EVV tower closed)

Until Next Time

I hope you enjoyed our journey to Indiana, the "Crossroads of America." And if you journey there yourself, don't forget to pack that scanner. Until next time, stay tuned!

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The Girl On The Radio

by Shannon Huniwell
melodyfm@yahoo.com

How about this *old, broken transistor radio?* The pointed question was asked of *Pop'Comm* reader Paul Milener by his increasingly impatient wife. She was clearly on a mission, and at her behest they were going through some boxes in their basement. Paul's spouse insisted that he cooperate with her Saturday quest to "de-clutter" by deciding on at least 10 things that could be thrown away or given to the local Salvation Army store. He took the little plastic receiver and cradled it in his palm. In his other hand was a tattered notebook.

"The look on your face tells me that you're not going to get rid of that radio," she said a bit suspiciously.

"Well, the poor thing isn't really big enough to make a dent in your cleaning spree, anyway," Paul replied. "And it's just that I bought it after I went off to college. It's kind of like an old friend that saw me through my lonely years."

"Before you met me?" his wife asked, suddenly softening.

"Of course, Honey," he said, winking. "Those long dark days before you came into my life."



Until the 1980s, when most stations had at least one woman on their regular air staff, females in radio were often relegated to secretarial positions or—as this Montana 1000-watter's car window sticker indicates—as cute images in promotional material.

"He'd hardly processed the transformation from silence to sound when the song faded and a young woman's voice practically 'kissed the room.'"

"Ah," she broke into a sophisticated smile. "You're sweet. How about we take five and I put on the kettle for some tea?"

As he listened to her pink Reeboks ascending the basement stairs, Paul gently removed the radio's back cover. He swabbed out the offending battery residue, installed a fresh 9-volt, buffed the red plastic case, and shined its grillwork. Mentally crossing his fingers, Paul thumbed the on/off/volume control. The vintage shirt-pocket transistor burped some static, then hissed at the sideband of some nearby signal. Paul fine-tuned it onto the main channel of a 5-kW oldies station, coincidentally in the middle of airing "Doctor My Eyes" by Jackson Browne. The 1972 hit dropped Paul into a dusty lawn chair that his wife had destined for the curb, and time-tunneled him back to his spartan dormitory room at a small liberal arts college. Then the music flashed images of Nancy Nicholsen in his mind's eye. They appeared so quickly and vividly that he tried dimming them by picturing his spouse's imminent return, but to no avail.

"Will You Take \$5 For This Radio And A Couple Of Those Batteries?"

To say his post-secondary educational life seemed dry and boring would be an understatement. Paul had arrived on campus just prior to Labor Day 1971 with high hopes of developing a passion for scholastics and meeting a soul mate, not necessarily in that order. By the following winter, however, he'd pretty much abandoned such dreams. The schoolwork was tedious and no girl there expressed the slightest interest in being with him, or even caught his eye as he scanned the cafeteria, where he says the food was about as appetizing as the pasty stuff astronauts consumed in space.



In England, people on the radio are called “presenters.” Here’s Annie Nightingale, the longest-running presenter on BBC-1, the state-operated contemporary music radio channel. Nightingale was in her late 20s when she became “the girl on the radio” for young Brits in 1970 (about the time this photo was snapped). She still announces for the BBC today.



pretty nighttime voice that somehow spoke directly to me.”

Mesmerized, Paul hung on her every word. “She didn’t really say a whole lot,” he recalls, “mostly announcing song titles, the time, and an occasional public service message for campus events.” This led him to surmise that the voice belonged to someone volunteering for the college’s carrier current radio station. He’d seen its dirty broom closet of a studio while touring the school as a prospective student the previous spring. At the time the guide made excuses for the facility’s jumble of wires and disheveled record library fashioned from milk crates cluttering the speckled tan linoleum floor. “I guess they’re working on it,” the kid shrugged. “I hate to admit it, but nobody listens to the station anyway. Too many announcer mistakes and way too much bubblegum music.”

But the station had hooked Paul, or more precisely, its Thursday 10 to midnight host grabbed his attention. Shortly before 12 o’clock, she gave her name—Nancy NicholSEN—and ended with Jackson Browne’s “Doctor My Eyes.” Under the song’s introduction, the girl on the radio apologized for an annoying run of scratchiness. “It sounds like a careless someone might have stepped on poor Jackson’s album,” she said with a smile in her voice. After the record faded, an empty carrier lulled Paul to sleep.

Throughout the next week, he thought about Nancy and wondered with a genuine concentration if any of the co-eds he routinely passed on campus were she. With her on his mind, Paul sold a couple of *Star Trek* paperbacks to computer major he sat next to in Ancient History class and used the proceeds to buy a clean 45-rpm copy of *Doctor My Eyes*. On the way back down Main Street, he popped

into the little appliance shop to let the owner know that the Motorola was working well. “I had a feeling,” the old lady nodded, “it’d been waiting here all these years just for you.”

Sure enough, around 10 p.m. the next Thursday, the open carrier sprang to life with the words, “Good evening my friends. My name is Nancy NicholSEN and I’m here to play some records for you tonight. Thanks for letting me be a little part of your life.”

Paul figured she must have scripted that intro, though it sounded sincerely ad-libbed and naturally classy. *No college girl I’ve heard ever talks like that*, he thought. By 10:30, he’d gathered sufficient courage to enact his plan to see who owned the pretty voice. He walked across campus to the Jenkins Science Hall and engaged the brass push bar that allowed the building’s entranceway to swing clear. Quietly, he went up the three flights of stairs leading to the floor where he remembered the radio station was located. The hallway was dark, except for a shaft of light streaming from the studio’s open door. He could hear music in the background and estimated that only about a dozen steps stood between his imagination and whomever Nancy NicholSEN would turn out to be. Paul drew a breath, tried looking cool, and found himself standing just inside the studio. He’d been spot-on in his vision of her, but still couldn’t believe his eyes.

“Nancy?” he attempted. “Hi, I’m Paul, one of your loyal listeners.” Taking the 45-rpm single out of a thin paperback, he gestured politely and presented it to her. I brought you a little something that’ll help poor old Jackson Browne.”

She looked a bit confused, but beautifully confused. “Oh, the scratchy record last week?” she realized. “You mean you

When New York City-based WNEW-FM moved away from simulcasting its older AM sister in 1966, WNEW-FM officials auditioned some 800 women in the hopes of finding four who could make the station’s proposed all-girl, middle-of-the-road music format successful. After hiring fast-talking comedic actress Peggy Cass for mornings, WNEW-FM programmers shifted 180-degrees and selected Ceil Loman to DJ later in the day. Loman adopted the name Alison Steele and used her “sultry, smokey voice”—as *The New York Times* described it—to make a positive impression on the small, but loyal audience that the novel programming thrust generated.

WNEW-FM’s female team was disbanded less than two years after it debuted, but station brass asked Steele to stay on and become part of a switch to progressive rock. Using the nickname “the Night Bird,” Alison Steele (who admitted to not having known much at all about album oriented rock) soon established herself as a major icon in the “progressive” radio genre.

Her mature, mellow delivery exuded a cool sophistication and tasteful sex appeal that, during WNEW-FM’s early 1970s heyday, easily pulled 80,000 listeners each night. Her audience, as *The Times* noted, was composed primarily of men between 18 and 34 years old, and knew she had a French Poodle in the studio to keep her company. In 1971, the paper also identified her as “the only full-time woman disc jockey in the [New York] City,” a fact that would certainly come as a shock to the thousands of female college students now majoring in broadcasting.

actually heard that and remembered it? That's truly remarkable," the young woman admitted with an incredulous shake of her head, "They told me that none of the dorm transmitters were working. I was just practicing and making an air-check on my cassette recorder."

The rest of the night flew by as they talked while Nancy insisted that he program most of the evening's records. "It helps me get to know who you are," she told him.

"Fact was," Paul recognizes, "She had me do most of the revealing and then jotted down my address in a blue spiral notebook. When I think back, all she let slip was that she was still trying to find herself and that she had an older sister someplace in Colorado." After Jackson Browne made his rounds, Paul offered to walk her to her dorm. They'd silently passed the Student Center when she remarked the night air was cold. He thought of moving closer, but chickened out. "Anyway, my arm kind of bumped into hers and we ended up rather tentatively hand-in-hand for about a hundred yards," he says, "when she remarked that I had at least a 15-minute hike back to my building and insisted that she'd be fine walking the rest of the way—to wherever she was going—alone. Spring break was slated for the following week, but I promised her I'd stop by the studio the Thursday after next."

"Maybe," the girl on the radio said, and squeezed Paul's hand. "Maybe," she whispered again and disappeared into a tree-lined pathway.

The Emergence Of Women In The Ether

In an industry spearheaded by men, one woman deserves the credit for being broadcasting's first true air personality. Five years before America's entrance into World War I, Sybil Herrold's voice served as the audio icon of a pioneering radio station in California's San Francisco Bay area. At the time, she was married to electronic communication innovator Charles "Doc" Herrold, who rigged up a wireless transmitting station in 1909. This outlet was officially the RF arm of his Herrold College of Wireless, located in San Jose, where Morse code served not only as the school's primary subject, but also as the sole language of Herrold's station.

By 1912, though, Herrold devised an interesting method to upgrade his facility's fare from dots and dashes to the human voice by way of a voltage-gob-

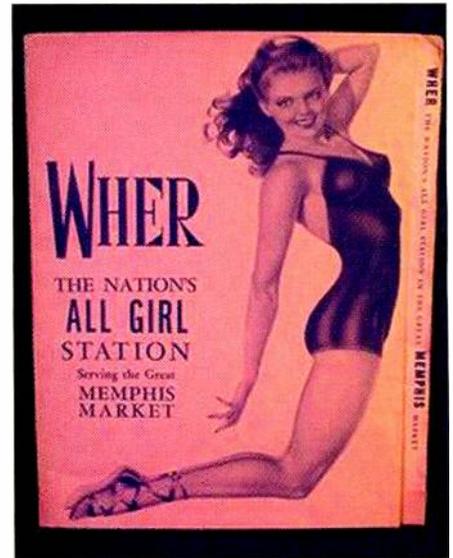
bling, spark-tossing unit dubbed the "arc-fone." He powered the crude but novel transmitter by pirating current from the overhead trolley wires strung just outside the college's windows. Suffice it to say that the Herrolds and their radio ventures could generate several *Pop'Comm* columns. For this installment, however, we'll mention Sybil's most notable achievement, as host of *The Little Hams Program*.

During this earliest of radio shows—transmitted each Wednesday at 9 p.m. and often covered in the local newspaper—she featured music, played requests, announced song titles, gave the time, talked about things happening around town, promoted the Wireless College, and read listeners' letters. Sybil borrowed phonograph records from a local music shop, an establishment that enthusiastically participated after discovering that the tunes she spun on the air soon became sales hits in the store. To encourage listenership, Sybil solicited small items from the music shop and other local merchants and gave them away in contests she'd run on her show.

While extremely basic and geared toward experimenters tuned to crystal sets, Sybil Herrold's *The Little Ham Program* established a precedent for every personality-driven radio DJ who followed. When, in 1917, the U.S. government mobilized forces to fight the Great War, it also silenced the Herrolds' voice activity in favor of having their College concentrate on cranking out "wireless" operators fluent with the Morse code key. This coincided with Sybil's relationship with Doc Herrold having also "signed-off."

One of the most interesting radio history websites to sign-on to the Internet is Barry Mishkind's www.olderadio.com. He highlights Sybil's broadcast milestones and also offers up several other ladies as deserving members of radio's Hall of Fame.

Among those notables is Marie Zimmerman, "the first woman to own and operate a [licensed broadcast] radio station." For a year, starting in the summer of 1922, she was queen of the Vinton, Iowa, airwaves via her WIAE. Mishkind also identifies Bertha Brainard as the Big Apple's first female announcer for her 1921 nightly theater chat show on WJZ (now WABC). One might argue that Vaughn DeLeath, who began warbling over Lee DeForest's New York-area temporary "demonstration" stations in early 1920, could score some "firsts"



With a pin-up model on a pink background, the cover of the WHER promotional folder looked more like a lingerie ad than a promo touting a small, daytime-only radio station. That's because the "Nation's All Girl Station" took advantage of feminine themes to generate listenership and interest advertisers. In fact, anyone peeking into the 1000-watt Memphis AM's engineering shack—almost exclusively a male bastion in other broadcast facilities—would spot a neatly organized row of ladies undergarments whimsically pinned to a clothesline there.

kudos, as she continued an on-air career at several other Gotham outlets, including a stint as WMCA's morning personality. Another pioneering lady was Boston radio announcer Eunice Randall. After making a hobby out of concocting her own "wireless" gear, circa 1915, she could be heard announcing on Boston's WGI at about the same time that Sybil Herrold left the airwaves.

Elvis' Inadvertent Legacy To Ladies

The story goes that Sam Phillips put an all-girl radio station on the air with funds netted from the sale to RCA of Elvis Presley's record contract. For years, Phillips had dreamed of entering broadcast ownership in his adopted hometown of Memphis, Tennessee. Charles Ganzert's 2003 *Journal of Radio Studies* article about Phillips' radio pursuit notes that "Sam Phillips had worked at a number of [southern] stations before working full-time [beginning in the late 1940s] with his recording business." As most

every early-era rock and roll buff knows, this enterprise was called Memphis Recording Service and its associated label, Sun Records, for which musicians like Johnny Cash and Elvis Presley sang. Phillips' wife Becky was also a radio and recording veteran who shared her husband's enthusiasm for having a product on the air. The part about amassing the requisite money for a station through cashing in Sun's Elvis contract is somewhat apocryphal, as that contractual conveyance to RCA didn't occur until *after* Phillips' station had already debuted.

Ganzert's account suggests that Phillips used the Elvis proceeds to buy out one of several silent partners in the radio station venture. Among the remaining investors was Kemmons Wilson, "a contractor who started the Holiday Inn [motel chain] in 1951 and was known as a guy who would take chances." In fact, when the FCC awarded Phillips and his associates (consolidated as Tri State Broadcasting Service) a construction permit for 1430 kilocycles, 1000 watts, the new AM's headquarters were built in a Holiday Inn. The daytime-only station in that significant lodging on Memphis' South Third Street received the call letters, WHER, a moniker that Sam and Becky Phillips hoped would help them promulgate a unique format targeted to at least 50 percent of WHER's potential audience: Greater Memphis' female population.

To emphasize the point, the new station's studios ("modestly small," according to Ganzert's *Journal of Radio Studies* piece) were "painted in pastel colors with lots of mirrors. Each of the [station's] rooms had a label. The studio was called 'The Dolls Den.' The control room was 'The Playroom,' and engineering was decorated with a clothesline and women's undergarments." Technically savvy visitors to "The Dolls Den," would recognize a microphone, a couple of tape recorders (plus, by the late 1950s, a pair of cart machines), an audio control board, and three turntables.

The Phillips' and their partners agreed that in order for WHER to truly stand out in the Memphis media market, it should be staffed predominantly by female air personalities who catered to women—then typically at home near a radio during the daytime hours of WHER's operation—via an easy-listening blend of album cuts and short-form informational vignettes especially for the "sophisticated housewife" crowd.

When WHER's "disc jockeyettes," or "femjays" as some Memphis papers pegged them, hit the air in October 1955, women announcers were a rarity, especially outside the provinces of major broadcast operations, consequently the female voices were incredibly novel. Phillips guessed that the sweet-voiced women he and his wife hired to host their airwaves would gain the positive attention of gentlemen as well as ladies. The day WHER opened, branding itself over the air as "a thousand beautiful watts," the couple began hearing the buzz that convinced them they'd been right, but sponsor acceptance appeared frightening slow. Ganzert, however, recounts how the Phillips' advertising sales efforts dramatically improved:

Their first big break came about four months after going on the air when the Big Star grocery chain purchased a full schedule of spots. Not long thereafter, Hull-Dobbs, then the world's largest Ford dealership, decided to use the station's staff to promote its Sadie Hawkins Day. The [WHER] ladies appeared on the showroom floor wearing Daisy Mae outfits, and at the end of the pro-

motion, the [car dealership] company discovered they had sold 77 cars, the biggest day in their 35-year history.

My dad came across a cassette aircheck of WHER dated June 30, 1962. It sounds like it was pulled right off the radio (as opposed to recorded direct from the studio air monitor), just outside the AM's city-grade signal. When morning "femjay" Suzanne Bradley pauses at sentence end, one can hear a touch of interference in the background, not uncommon for a 1000-watt upper band facility detected maybe 20 to 25 miles away from its transmitter. With the exception of a Ray Charles Singers up-tempo rendition of "Someone's in the Kitchen with Dinah," most of the records are on speaking terms with the lush instrumentals and ballads typical of "beautiful music" formats.

Many of the commercials and public service announcements were delivered live. While Bradley possessed a pleasant professional voice, she sounded a bit detached. When speaking the commercial copy, one pictures her reading it, as opposed to "interpreting" it, and she does



The WHER Memphis announcing staff circa 1955. To hear one female broadcaster on a radio station back then would have been notable—nine women employed by a single AM was indeed unusual!

it a bit too fast. Had she slowed herself with a hint of a smile in her delivery, the gentleness that existed just below the surface of her wording would have been more apparent.

I listened to the aircheck while composing this portion of the column, and I can report that even with Bradley's voice looking slightly past me, WHER's presence was relaxing and refreshing—remarkable for a piece of ethereal audio from a nearly forgotten morning nearly 50 years ago.

For about a decade, WHER's charms worked wonderfully. By 1965, however, when the station relocated to an office building with a studio window visible from the main lobby, hearing female voices on radio was no longer unique to the *beautiful thousand-watter*. The station began de-emphasizing the "all-girl" image, and moved from the easy-listening/Big Band genre to a more contemporary musical sound aimed at the ever-evolving 20- to 40-something tastes. And in early 1972, WHER's daily talk show, delicately covering female sexual topics, was put to bed after advertisers stayed away from what they considered too controversial for sensitive ears.

During the spring of 1972, WHER became WVEE on which adult contemporary hits were the reconstituted station's stars, and announcers, whether female or male, became relatively incidental.

But Didn't All-Girl Radio Meet With Some Success In St. Louis?

It's no wonder if radio history buffs muse about women being central to a Missouri FM named KSHE, but the suburban St. Louis frequency modulation outlet can only be tangentially connected to WHER's legacy. Midwestern radio engineer, Ed Ceries, established KSHE-FM in a unique venue, however. Along with his wife, Leona, the former KSD/KSD-TV technician built KSHE-FM in the basement of their Crestwood, Missouri, house.

With its studio just a few steps from Mrs. Ceries' washer and dryer, the 25.5-kW (on 94.7 MHz) stereo facility was founded in February 1961 as a quality classical station that the couple classily christened "The Lady of FM" and for which they'd secured the callsign KSHE. Except for Leona Ceries' pulling a bit of announcing duty in between the spin and rinse cycles, however, she represented the



From the looks of that stogie, it's doubtful that KSHE's pig mascot is supposed to be a sow. It's also unlikely that the St. Louis-area FM's icon is listening to classical music—the fare of this station's original format and the reason why KSHE was once considered to be a "fine lady" of the Midwestern FM scene.

only other feminine aspect of the St. Louis radio station's early years.

Because, as reported in the St. Louis Post Dispatch, "advertisers stayed away in droves [due to] finding it hard to believe that FM is here to stay," she and her spouse took on some business partners in 1962 and sold their entire operation (*sans* laundry equipment) to Century Broadcasting two years later. Century (which nurtured the station until selling to Emmis Broadcasting in 1984) kept the female calls but moved the studios into a little building sporting a former tenant's drive-thru window and switched the format to progressive rock in 1967. That portal proved prescient in that it gave the DJs fabricating KSHE's then-unusual "underground" or counter-culture format valuable feedback from their listeners. Many in the pioneer progressive station's audience were college students—a demographic lots of advertisers were anxious to influence.

What About That College Girl On The Radio?

Getting back to our opening story...

Paul Milener couldn't wait for Spring Break to end. During that week and up until the next Thursday evening, he gathered a thousand thoughts he'd share with Nancy NicholSEN in the college radio station. But the dead air on his little Motorola

never revived. At ten past 10, he ran from his dorm to the studio, and was out of breath as he stood in the dark hallway, finding the door locked. Paul sank to the floor and waited until nearly 11:15. Nothing.

Over the next couple of weeks he frequently stopped by, still finding the door locked. Finally, one day in early April, he found a guy rummaging around in the station. "Can you tell me anything about Nancy NicholSEN?" Paul asked.

"Who?" the fellow shot back.

"Nancy NicholSEN, the girl who does the Thursday night program. I'm looking for her."

"There's nobody doing radio shows here," the kid said in an annoyed fashion. "This equipment is shot and unless the administration comes through with some funding, we'll be off the air for good. I mean just take a look at this dump!"

That's when Paul caught sight of the blue notebook left on one of the milk crates and asked to see it. "Knock yourself out," the station nerd responded as he tossed it Paul's way. Only a few lines had been used. There was Nancy's program opener greeting, Paul's address, and near the top of the page, she had written several names, all in alliteration: Allison Avery (crossed out), Beth Baker (crossed out), Michelle McDonald (crossed out), and Nancy NicholSEN, which was circled and starred. It hit him hard. "That hadn't even been her name," he sighed.

Paul graduated three years later without having ever run into anybody who knew anything about that girl on the radio. The pint-sized Motorola and a quarter page of handwriting were all that could confirm his memory of her. Now the notebook was at the bottom of a box that Paul's wife had labeled, "DONATE." He had placed it there as those pink sneakers blithely descended the basement stairs.

"Sweetheart, here's your tea and a couple of your favorite peanut butter cookies."

"Thanks, Nancy NicholSEN," Paul said with a smile.

"Who in the world is Nancy NicholSEN?" she looked at him quizzically.

"In my world," Paul began, touching her button nose with the little Motorola before he tossed that also into the "DONATE" box, "in my world, Honey, you are."

And so ends another day of broadcast history on Pop'Comm...

readers' market

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Technology Marches On (Without Bill)

by Bill Price, N3AVY
chrodoc@gmail.com

“I don’t think I’ll ever again be lulled into believing that an ‘ultimate’ medium exists.”

Well, it really *is* a dark and stormy night. I just put the kitchen trashcan under the leak in the ceiling, and it’s raining so hard that I can hardly hear the cat caterwauling. She’s in that “delicate condition,” which causes her to moan pitifully and throw herself repeatedly at my feet. Only female ever to do that.

My buddy Beezer emailed me today—he’s hoping to get a job with a musical instrument rental company, which is good. I’m hoping he can get me a deal on a new instrument. Mrs. N3AVY said to one of her friends that I play the buffoon. I think that’s something like a bass oboe.

Beezer (you may remember that he lives in Florida where he uses antenna wire to clandestinely saw the fronds off his neighbor’s papaya trees) has now joined forces with Norm, even though they don’t live anywhere near each other. Today, Beezer (who also worked at that antenna company which shall not be named) told me that he’s planning on coming to Cowfield County in the next few months, and when he gets here he’ll help me put up an antenna. Heaven help me. It’s taken me 17 years to convince Norm that I really don’t want to get a ham station assembled and operational, and now Beezer is taking over the challenge.

I think I’ll work CW when it becomes available over the Internet, like Web-based telephone service. That would be a good use for the Internet.

I’m constantly amazed by the rapid advances in technology. Not so long after I bought a nice spotting scope so I could squint and see where my air gun pellets were hitting the target, my favorite dealer of imported junk offered a TV camera that I could have set up near my target and watched what I was doing on a monitor while shooting. The scope cost almost \$300; the TV camera was \$39.

A hundred or so years ago, I really longed for a 2-meter mobile rig with all the DTMF features so I could join a local repeater club and wait my turn during evening drive time so that I could place a call to Mrs. N3AVY and let her know I was on my way home. (I wonder how all the non-hams ever let *their* wives know...)

Even though I don’t own a cell phone, my employer (that HPJIE* thing) provides me with one, and since my hours vary, I really do find it necessary to let Mrs. N3AVY know when I’m en route to Cowfield County. At least now I don’t have to worry about using ham radio for com-

mercial purposes if I decide to order the proverbial pizza on the way home.

I was selling TV transmitters when VCRs became commercially viable, and like most everyone else, I had to have one. We were lucky enough to choose the VHS format, and have way too many tapes that we don’t want to just throw away, but don’t want to watch either. No gadget will *ever* simplify your life. As a matter of fact, I also have a stack of vinyl LPs which I can no longer play, but can’t bear to throw away either. I’m a slave to changing technology.

While I resisted a lot of technological change as long as I could (I didn’t get a color TV until 1980), I admit to wanting computers as soon as they became available. I actually considered buying a 1-megabyte hard drive for my Sinclair Z-80. I’m grateful to this day that I couldn’t afford it.

We do have good radios, both broadcast and general coverage shortwave, but we live just a bit too far from the major market to enjoy HD radio. I’ve steadfastly refused to pay for cable or satellite TV, but Mrs. N3AVY is happy that I’m about to put up something on the order of a 64-bay bowtie array (maybe Beezer will help me with *that*) so we can get some HDTV. I still think there was nothing wrong with NTSC.

We do enjoy some good movies and TV series on DVD, but my DVD player in the bedroom is for old-time radio shows in MP3 format. I now have five full DVD-ROM discs of Jean Shepherd’s radio shows from 1953 through the eighties. Excelsior.

I remember getting a really nice reel-to-reel tape recorder and recording a lot of my favorite music on 7-inch reels of tape. Then cassettes came along—the be-all and end-all of audio formats—and I did it again. I don’t think I’ll ever again be lulled into believing that an “ultimate” medium exists. I now store my cassettes with my LPs and my VHS tapes, but now I’ve made room for my CDs and DVDs, too. I know they’ll end up there soon enough.

I only recently threw out my old program library from my TI-99. Ah, audio-cassette-based software. How I was amazed at the floppy disc. I am easily amazed, and I guess that’s a good thing for the electronics industry.

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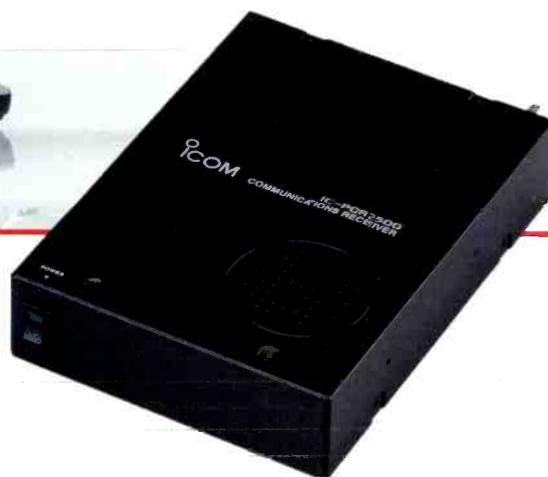
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