

POPULAR COMMUNICATIONS


JANUARY 2011

Shortwave Listening • Scanning • AM & FM • Radio History

Great Winter Radio Escapes



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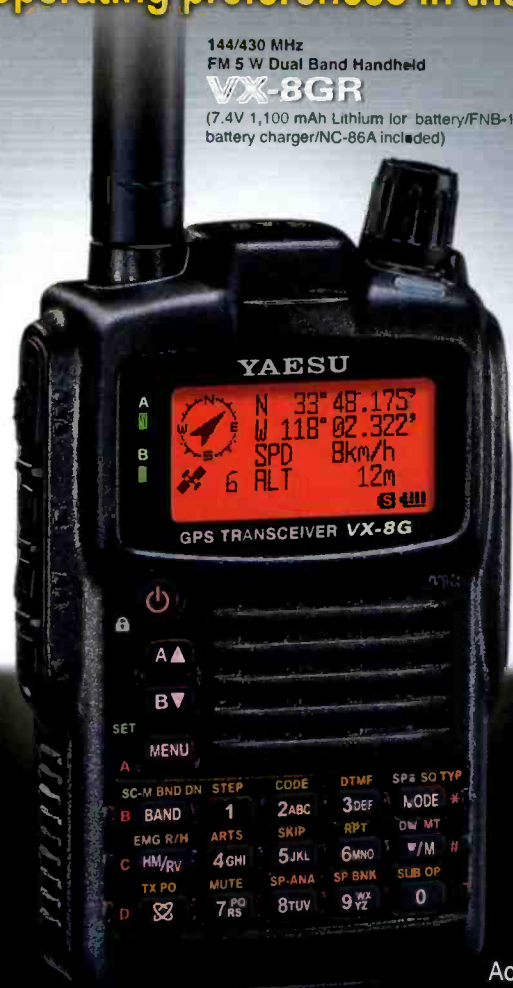
Plus: Second-Generation SDR • Local Kiddie Shows Of Yesteryear • Restoring The Zenith 8G005 Trans-Oceanic

A TECHNOLOGY BREAKTHROUGH

New Advanced VX-8 Series GPS/APRS® Handheld Transceivers
Choose the Yaesu that meets your APRS® operating preferences in the field



Actual Size



Actual Size

VX-8DR NEW

All-in-one Prestigious Tri-band Transceiver
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GRUNDIG

Satellit 750

✓ Receive a **FREE Grundig G6** with your Satellit 750 purchase. A \$99.95 value!

G6



The Grundig Satellit 750 is an exciting portable that brings you the world of long wave, AM and shortwave reception as well as FM and the VHF aeronautical band. Your complete shortwave coverage includes the S.S.B. mode allowing the reception of ham radio operators, maritime and shortwave aeronautical stations. Tune your favorite stations by the conventional tuning knob, quick keypad entry or via the 1000 memories. Enjoy the fidelity you have come to expect from Grundig enhanced by separate bass and treble controls. Other features include: backlit LCD, wide/narrow selectivity, signal strength meter, rotatable AM ferrite antenna, earphone jack, external antenna jack, line output jack plus a 24 hour clock with dual alarm and sleep feature. 14.65 x 7.24 x 5.75".

Grundig Satellit 750

Order #0750

List Price \$400.00

\$299.95

The Grundig G6 Buzz Aldrin Edition provides great listening options. Tune in to longwave, AM, FM, the VHF aircraft band or continuous coverage shortwave. This advanced dual conversion circuit features Single Side Band reception. This radio has keypad entry, manual tuning knob, 700 alphanumeric memories, backlit display with signal strength indicator, clock-timer, and mega-bass switch. There are jacks for earphones and external antenna. Operates from two regular or NiCad AA cells (not supplied). With AC adapter and earbuds 5 x 3 x 1.2" 9 oz. The Grundig G6 will be included **FREE** with your Satellit 750 purchase through 01/31/11. This radio may also be purchased separately for \$99.95.

G3

✓ Receive a **FREE Grundig M400** with your Grundig G3 purchase. A \$29.95 value!

M400



The Grundig G3 Globe Traveler is an innovative portable radio covering long wave, AM, FM (stereo to earphone jack), continuous shortwave plus the VHF aircraft band. It features dual conversion AM/SW circuitry for exceptional sensitivity and image rejection. It offers S.S.B. - Single sideband reception. It has a large 700 channel alpha memory system with memory scan and auto tuning storage. Unlike other portables in its class, the *Globe Traveler* offers Synchronous Detection. This special feature addresses the issue of selective fading and adjacent channel interference on shortwave. Other enhancements include: Wide/Narrow selectivity, auto search, RDS, signal indicator, Local/DX switch, direct frequency entry and 24 hour clock with four alarm timers. It has an external antenna jack and a Line In/Out jack. Requires four AA cells (not supplied). If four NiMH AAs are inserted, they may be recharged inside the radio. Supplied with manual, protective pouch and AC adapter/charger. 6.62 x 4.13 x 1.1". 13 oz.

G3 Globe Traveler Order #4033

\$149.95

The Grundig M400 is an ultra compact portable radio that covers the AM, FM and shortwave in two bands: 5.9-10 and 11.65-18 MHz. The frequency display is to the nearest 1 kHz on AM and to 5 kHz on shortwave. There is a built-in clock-alarm. The left side of the radio has the tuning knob, an earphone jack and a lock button to prevents accidental frequency changes. An amazingly thin radio - under 1/2 inch! This radio operates from two AAA cells (not supplied). Supplied with a soft case that permits the radio to be played even while inserted. 2.75 x 4.33 x 0.472" 3.2 ounces. The Grundig M400 will be included **FREE** with your G3 purchase through 01/31/11. This radio may also be purchased separately for \$29.95

ICOM IC-RX7

Buy the Icom IC-RX7 at our special sale price of \$199.95 and get:

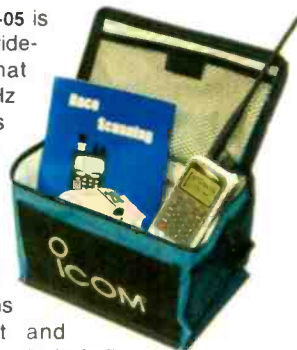
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List \$364.00

Order #5007

\$199.95



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Radios & High-Tech Gear

Tap into secret Shortwave Signals

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



MFJ-462B
\$199⁹⁵

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

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

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

Eavesdrop on the World

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

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

Super Active Antenna

"World Radio TV Handbook" says MFJ-1024 is a

"first-rate easy-to-operate active antenna... quiet... excellent dynamic range... good gain... low noise... broad frequency coverage." Mount it outdoors away from electrical noise for maximum signal, minimum noise. Covers 50 KHz-30 MHz. Receives strong, clear signals from all over the world. 20 dB attenuator, gain control, ON LED. Switch two receivers and auxiliary or active antenna. 6x3x5 in. Remote has 54" whip, 50 feet coax. 3x2x4 inches. 12 VDC or 110 VAC with MFJ-1312, \$15.95.



MFJ-1024
\$159⁹⁵

Indoor Active Antenna

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

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



MFJ-1020C
\$99⁹⁵

Compact Active Antenna

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



MFJ-1022
\$69⁹⁵

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

Monitor Morse code from hams, military, commercial, aeronautical, diplomatic, maritime -- all over the world -- Australia, Russia, Japan, etc. Monitor any station 24 hours a day by printing transmissions. Printer cable, MFJ-5412, \$11.95.

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

High Performance Modem

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

Easy to use, tune and read

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

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

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

Copies most standard shifts and speeds. Has

MFJ AutoTrak™ Morse code speed tracking.

Use 12 VDC or use 110 VAC with MFJ-1312D AC adapter, \$15.95. 5 1/4 x 2 3/4 x 1 1/4 inches.

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



16-element, 15 dBi WiFi Yagi antenna greatly extends range of 802.11b/g, 2.4 GHz WiFi signals. 32 times stronger than isotropic radiator. Turns slow/no connection WiFi into fast, solid connection. Highly directional -- minimizes interference. N-female connector. Tripod screw-mount. Wall and desk/shelf mounts. Use vertically/horizontally. 18Wx2 3/4 x 1 1/4 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



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.

MFJ-392B
\$24⁹⁵

Eliminate power line noise!

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

MFJ Antenna Matcher

Matches your antenna to your receiver so you get maximum signal and minimum loss. MFJ-959C Preamp with gain control boosts weak stations 10 times. 20 dB attenuator prevents overload. Select 2 antennas and 2 receivers. 1.6-30 MHz. 9x2x6 in. Use 9-18 VDC or 110 VAC with MFJ-1312, \$15.95.

High-Gain Preselector

High-gain, high-Q receiver preselector covers 1.8-54 MHz. Boost weak signals 10 times with low noise dual gate MOSFET. Reject out-of-band signals and images with high-Q tuned circuits. Push buttons let you select 2 antennas and 2 receivers. Dual coax and phono connectors. Use 9-18 VDC or 110 VAC with MFJ-1312, \$15.95.

Dual Tunable Audio Filter

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



MFJ-1026
\$199⁹⁵



MFJ-959C
\$119⁹⁵



MFJ-1045C
\$89⁹⁵



MFJ-752C
\$119⁹⁵

High-Q Passive Preselector

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

Super Passive Preselector

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

MFJ Shortwave Speaker

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



MFJ-281
\$12⁹⁵



MFJ-956
\$69⁹⁵



MFJ-1046
\$119⁹⁵

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-177
\$59⁹⁵

MFJ Antenna Switches

MFJ-1704 \$79⁹⁵ MFJ-1702C \$39⁹⁵



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

Morse Code Reader

Place this MFJ-461 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

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EDITORIAL

Tuning In

A Radio Design Challenge For Our Readers—Can You Help?

by Edith Lennon, N2ZRW

editor@popular-communications.com

It's hard to believe the new year is already here, but it's true. New gadgets will soon be unveiled at the Consumer Electronics Show, and a new Congress will soon enact new laws. One thing that's not new, as "the news" continues to underscore, is the singularly relevant place broadcast radio still holds. Let the naysayers guffaw loudly over their new GeniusPhone with Cross-Cosmos Connectivity™ as they consign these radios to the tech dustbin, but there are countless people throughout the world who would gratefully snatch them right back up—many of them at great personal risk. I refer the naysayers to the item on Zimbabwean police confiscations in this month's "InfoCentral" for one example of its relevance.

Here's another. If you're a regular reader of this magazine, you already know about the non-profit humanitarian organization Ears to Our World and the great work it's doing putting world-band radios into the hands of people who most need them (see the *Pop'Comm* December 2009 cover story and the April 2010 "Tuning In"). If you don't know, please visit earstoorworld.org to find out. ETOW founder and executive director Thomas Witherspoon is now asking the radio hobbyist/maker community for its help in distributing even more radios to reach a greater number of listeners. The requested contribution? Our creativity. The following is in Thomas' words:

ETOW is currently in search of a modular "kit"-style radio that we could give school children in the areas where we work. Specifically, we seek a very low-cost, solar-powered FM or shortwave radio with replaceable modular components, designed with children in mind.

Our ideal radio would have the following features:

- A price tag of less than \$10 U.S.
- Operation off of one AA battery (this is probably the most common battery available where we work).
- Modular, snap/tie together design which would make for easy assembly and field service. The components must be solderless as there is no electricity available where we work.
- Reception of FM and/or SW bands. MW would have less utility as many of the broad-

casters in the third world are on SW or FM—government stations are typically the only MW ones.

- Small, bright LED lamp.
- Small, functional speaker or earphones.

What's more, if the parts could be as common as possible, this would be ideal. Meaning transistors, resistors, components, etc. could be common enough that they could potentially be salvaged from discarded electronics. That way, radio parts could be available locally and possibly give old electronics a chance to be "pre-cycled."

This is a terribly ambitious idea, but I'm convinced someone out there has the know-how and ingenuity to make this radio kit a reality.

So how about it? Our readers are smart, innovative, and judging from everyone I've personally encountered, eager to lend a hand whenever possible. Please put on your thinking caps and see what creative ideas you come up with. This will take synergy, so don't be shy—toss out your suggestions, however "loopy" they may seem at first blush. Bounce them off fellow readers on our Facebook page or tweak them with like-minded acquaintances, then send them on to Thomas at ETOW at radio@earstoorworld.org. If any one (or several) of you come up with workable approaches, we'll run the three best ideas, as determined by Thomas, in the magazine and give those creative geniuses a free one-year comp subscription or extension to *Pop'Comm*.

Who knows...we just may come up with something really new in broadcast radio.

Save Time—And Typing!—Visit Pop'Comm's Website

I've not promoted it actively yet, because it's still a bit of a work in progress itself, but *Pop'Comm's* website now provides direct "Quick Links" to many of the URLs and email addresses referenced in the current issue of the magazine. Visit us at www.popular-communications.com to take advantage of this handy new feature.

And I'd like to take advantage of this moment to thank all our readers for their support and to wish you and yours a happy and healthy 2011.

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The Weirder Side Of Wireless

by Staff

Elementary School Parents Decry "Wi-Fry"

The CBC reported that a majority of members in a parents group in Meaford, Ontario, Canada, is calling for the shutdown of the local elementary school's Wi-Fi network due to health concerns, despite the lack of scientific evidence that wireless Internet signals pose any health hazard. They want all computers at the school, even laptops, to use wired Internet connections. The parents group has 210 members, and 88 percent of those asked said they want the Wi-Fi shut off, some claiming that it is causing symptoms such as headaches and lack of concentration which seem to disappear on weekends. They cited studies by the Royal Society of Canada and LEX Scientific, an environmental consulting firm that voiced concerns over long-term exposure to Wi-Fi signals. The Canadian Health Ministry, however, had released a statement saying, "Based on scientific evidence, Health Canada has determined that exposure to low-level RF energy, such as that from Wi-Fi equipment, is not dangerous to the public." None of the concerned "Wi-Fry" parents have Wi-Fi at home, according to one Parent Council member. So one wonders if they've banned mobile phones and microwave ovens at home—or realize that that makes just as much sense.

School District Settles Webcam Spying Lawsuit

Computerworld reported that the school district in suburban Philadelphia that was accused of spying on its students using cameras embedded in school-issued laptops agreed to pay \$610,000 to settle a parents' lawsuit over the practice. Lower Merion School District agreed to pay \$185,000 to two high school students who sued the district for snooping on them. The other \$425,000 will go to attorneys' fees (surprise!). Great controversy surrounded explosive revelations of the school district's use of a secretly installed surveillance software supposedly intended to track stolen, lost, or missing school-issued laptops issued to about 1,800 high school students, but students who filed lawsuits never reported their laptops lost or stolen. One student's laptop secretly took thousands of webcam images, some showing him partially undressed in his bedroom. The surveillance was uncovered when that student was accused by a school official of using drugs at home, which turned out to be "Mike & Ike" candies. An investigation conducted for the school district concluded that its school-issued laptops were used to take more than 30,000 covert photographs,

using surveillance software remotely activated by school officials. The FBI and the local district attorney said they would not file criminal charges against the school district because there was no evidence of "criminal intent" in its actions.

Sacred And Profane Radio

It's easier listening for fans of two local Florida stations since two men were arrested for allegedly interfering with the stations' programming so they could play music from their group's album on the air. According to published reports, Broward County, Florida Sheriff's Office deputies arrested the pirate radio operators for broadcasting its "hardcore rap" programming via "Trap Radio," on 89.5 MHz, which lies between Boynton Beach's WRNB-FM 89.3 MHz, a Christian format station, and Miami's WKCP-FM 89.7 MHz, which broadcasts Classical music. Listeners of both licensed stations reportedly had their programming interrupted by profane lyrics—although that may have just been sloppy tuning.

Local authorities took Maurice Roland and Mikhail Rhodd into custody after the signals were found to be emanating from an antenna on the roof of a house where Rhodd was staying. A search of the premises yielded an FM transmitter, two microphones, a mixer, and a laptop computer filled with music files. Florida law allows local police to arrest people for "unauthorized transmissions or interference with a public or commercial radio station." Some radio pirates and others have questioned that law's validity, as the FCC and federal courts have jurisdiction over the radio spectrum.

Prize Buzz

California's *Orange County Register* reported that a "Cannabis Contest"—with prizes—was being promoted on Riverside's KCAA-AM 1050 kHz. DJ Jim "Poorman" Trenton was heard announcing his "Poorman's Radio Invasion" cannabis contest under the name, "Rate That Bud." Participants were told they had to have a valid California medical marijuana card, which is not difficult to obtain in the state, to win. Californians recently voted down Proposition 19 by a narrow margin, which would have legalized small-scale cultivation and use of marijuana. Rumored plans by noted shortwave broadcaster Captain Ganja to move to the Golden State are now on hold, but he continues broadcasting his pot-themed programming on various shortwave frequencies including WBCQ 7415 kHz.

News, Trends, And Short Takes

by D. Prabakaran

North American Pirate Radio Hall Of Fame Opens

A Hall of Fame dedicated to pirate radio of North America was launched, appropriately, on Halloween 2010. Sponsored by the A*C*E, publisher of the most prominent pirate radio newsletter of the 1980s and '90s and the first BBS about pirate radio, the Hall of Fame's mission is, "Collecting, through donation, pirate radio artifacts, audio recordings, literature, photographs, QSLs, memorabilia and related materials which focus on the history of pirate radio over time, its operators, stations and individuals elected to the Hall of Fame." Its website features information about North American pirate radio greats, QSLs, audio clips, and stories by well-known pirate radio writers. Its board of directors, which includes topic luminaries George Zeller, Andy Yoder, Greg Majewski, Bill Finn, James Brownyard, JTA, Ragnar Daneskjold, and Larry Will, nominates and votes on inductees. In a news release, Chairman of the Board Pat Murphy said, "It has always bothered me that when you type in 'Hall of Fame' in Google, all you get are European stations. Nothing for North America." That is no longer the case. The North American Shortwave Pirate Radio Hall of Fame can be found at www.pirateradiohalloffame.com.

BBC Launches HD Sound For Radio

The BBC announced plans to launch an extra-high-quality audio stream for live online listening, called HD Sound. From December, BBC Radio 3 will be available in HD Sound through its website, and special events on other networks will also be offered in extra high quality, starting with the Electric Proms on BBC Radio 2. HD Sound uses improved encoding and higher bit rates and offers a wider dynamic range: perceptibility of improved sound quality will depend on the equipment used. Initially, the stream will only be available for live programs (not on demand) and through pages on radio networks' websites and special event sites; the goal is to integrate HD Sound into iPlayer and Radioplayer as the technology develops.

(Source: BBC Press Office)

New BBC/DW DRM Channel For South Asia

BBC World Service and Deutsche Welle (DW) are launching a new Digital Radio Mondiale (DRM) digital radio channel for South Asia. The channel will carry a four-hour daily broadcast that includes international programs in English and Hindi from BBC World Service and Deutsche Welle. It will offer audiences DRM digital radio's near-FM quality audio, text messages, Journaline and an Electronic Program Guide (EPG). The joint initiative between BBC World Service and Deutsche Welle uses two transmitters in the region and will cover much of South Asia. The signal covers the majority of the Indian sub-continent and

may reach as far as Pakistan, Bangladesh, Nepal, and other neighboring countries. The transmission, which was to start on October, 31, 2010, will be broadcast from 1400–1800 UTC each day. Listeners will find the program stream on 13590 and 5845 kHz (SW) and additionally on 1548 kHz (MW) between 1700–1800 UTC. (Source: BBC & DRM Consortium)

Egyptian Fundamentalists Plan Islamic Satellite

After the recent closure of several religious channels by the authorities, Egyptian Islamists have announced a plan to launch an Islamic satellite to guarantee broadcasting freedom and avoid similar clamp-downs. The decision by Egypt's main satellite operator NileSat to shut down 12 private channels, mostly religious, on grounds of violating broadcasting licenses triggered expansive protests by fundamentalist groups and discussions about allocating a satellite for those channels, the London-based *Asharq Alawsat* newspaper reported. Egyptian Islamist lawyer Montasser al-Zayat, who is known for defending members of Islamist groups, has launched an initiative to raise funds for a new satellite that "will be specialized" in broadcasting religious channels. "Launching an Islamist satellite is inevitable in light of the changes taking place in the Egyptian media," said Zayat. He added that the new satellite would not be Islamic in the sense that all its channels will only broadcast sermons and host preachers, but it will be a venue for freedom of expression in general.

(Source: *Asharq Alawsat*)

Zimbabwe Police Raid Villages, Confiscate Shortwave Radios

Police in the Zimbabwean province of Mashonaland East launched a blitz confiscating shortwave radio sets distributed to villagers by non-governmental organizations campaigning for the freeing of the airwaves. The police were reported to be raiding homesteads in search of the "offending" radio sets, in what civil society organizations viewed as part of the ruling Zanu (PF) party's strategy to stop rural Zimbabweans from accessing media sources other than the state-controlled Zimbabwe Broadcasting Corporation (ZBC). Due to ZBC's partisan reporting in favor of President Robert Mugabe and Zanu (PF), NGOs have been doling out free shortwave radios to enable villagers to tune into foreign-based radio stations that beam into the country, such as Radio VOP, SW Radio Africa, and the Washington-based Studio Seven run by the Voice of America. An official with the human rights NGO ZimRights told Radio VOP that police officers in the company of members of the dreaded Central Intelligence Organization (CIO) were moving through the Murehwa District threatening villagers in possession of the NGO-donated sets before confiscating them.

(Source: Radio VOP)

Capitol Hill And FCC Actions Affecting Communications

by Richard Fisher, KI6SN

High School FM Station Brings School Committee \$7,000 Fine

A western Massachusetts public school committee has been fined \$7,000 for “‘willfully and repeatedly’ violating FCC regulations regarding the license renewal for Taconic High School’s radio station,” according to a story in the *Berkshire Eagle* newspaper in Pittsfield. “Since the committee is the licensee for WTBR-FM (89.7), it has 30 days from the day the ruling was received to pay the penalty,” according to an FCC document, the paper said. The Commission said that the license renewal application for WTBR was due December 1, 2005, four months before the license expired on April 1, 2006. The renewal request wasn’t actually submitted until 17 days later on April 18, 2006, and the station illegally remained on the air during that time period. The FCC alleges the school committee “violated the Communications Act of 1934, ‘by engaging in unauthorized operation of the station after its authorization had expired.’” The Commission has declined a request from the school committee to “reduce or cancel the fine based on the school committee’s claim that the board lacks an operating budget and can’t afford to pay the \$7,000,” the *Eagle* reported. WTBR-FM has been on the air since the early 1970s, according to the station’s website.

Ground Rules Set For Sirius XM To Lease Spectrum

Satisfying conditions of a 2008 merger, the FCC has laid out rules for Sirius XM to lease part of its spectrum to minority broadcasters, according to published reports. The company has offered to lease four percent of its channels to minority broadcasters—six Sirius channels and six XM channels—according to the radio industry news website FMQB. “This action represents an important step that will promote access for new entrants and more diverse programming in the satellite digital audio radio service,” the Commission said. “The Commission takes action...to foster the availability of diverse programming to satellite radio subscribers and to promote access to the satellite radio platform for independent programmers and new entrants, including small businesses, women, and minorities,” FCC Chairman Julius Genachowski said. “This Order ensures that Sirius XM will reserve channels for programmers truly independent of Sirius XM, who will be new voices on the satellite radio platform, providing original programming of a type not

already available, or service to historically underserved audiences.”

FCC’s Wireless Accuracy Action Applauded By APCO

An FCC order expected to “lead to far more accurate information regarding the location of emergencies, thus speeding the deployment of first responders and saving lives,” is being applauded by the Association of Public-Safety Communications Officials International. APCO strongly supported the Commission’s action regarding “new location accuracy rules for enhanced 9-1-1 (E9-1-1) announced (in October). Specifically, the FCC’s decision requires wireless carriers to comply with location accuracy rules at the county level.” The organization pointed out that “the majority of 9-1-1 calls today are from wireless phones. While public safety answering points (PSAPs) receive information from carriers regarding the location of those callers, the accuracy of that information is insufficient in many cases to pinpoint the emergency, which slows emergency response times.”

Arkansas CB Shop Issued Notice Of Unlicensed Operation

In response to a complaint, “a strong signal” on 27.1850 MHz (CB Channel 19) was identified by FCC investigators in September as coming from the Channel 5 CB Shop in West Memphis, Arkansas, prompting the Commission to issue a Notice of Unlicensed Operation. “Agents also heard the Ch. 5 CB Shop advertise goods and services over CB channel 19 in violation of Section 95.413(a)(5) of the Commission’s Rules,” documents revealed. Citing specific FCC rules and regulations, the Commission in its NOUO said, “you must use an FCC certificated CB transmitter at your CB station...your CB station transmitter power output must not exceed four watts (carrier power). Use of a transmitter which is not FCC certificated or which has carrier power in excess of that authorized ‘voids your authority to operate your station.’” The investigators’ inspection “revealed that a modified amateur 10 meter transmitter—specifically a model Galaxy DX 2517 export radio—was in use at your station. The transmitter output power measured 80 watts. These violations voided your authority to operate your CB station.” The NOUO warned “that operation of radio transmitting equipment without a valid radio station authorization constitutes [a violation] and could subject you to severe penalties.”

The Theory Of Communication

by Rob de Santos
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“Striking the balance between the quantity of information and its reliability is one of the challenges we face. As consumers of information, we must determine how good is good enough?”

The underlying theory of communication, as understood by mathematicians and scientists today, is often credited to Claude Shannon (1916–2001), a researcher at Bell Labs in the late 1940s. Among his contributions was a seminal paper, “A Mathematical Theory of Communication” (cm.belllabs.com/cm/ms/what/shannonday/shannon1948.pdf), that provided a mathematical basis for information theory. Many of the ideas that inspired modern communications trace their origin to Shannon’s paper.

In trying to determine emerging trends in communications, it sometimes pays to understand what we know about communications currently. The design of the modern telephone system and the Internet were influenced by Shannon’s research. Achieving reliable and efficient encryption, error correction, information (text, video, music, etc.) delivery using the least bandwidth, and more all depend on the underlying information theory.

Radio listeners (in particular DXers), strive to “dig out” that faint signal and understand enough of the content to make a positive ID and get that QSL. The redundancy of linguistic communication, as described by Shannon in his 1948 paper, makes that possible. We don’t need to hear every word or get every letter of the callsign to fill in the rest and make that identification. Shannon’s paper describes how the predictability of the content enables us to “fill in” what might be lost to noise or interference. For example, hearing the word “Texas” and the letters “BAP” might prompt us to think that we’re listening to WBAP from Dallas. Similarly, we’re able to fill in a missing word or two if a speaker is using a mobile phone from an area of marginal cellular coverage.

In an increasingly digital age, we’ve already become accustomed to what happens when signal strength is too low and a picture turns to black or a telephone call is dropped by the cellular system. As long as we have a minimal signal, we’re usually unaware of how the digital system performs its own “fill-in” or error correction. We depend on that error correction when our computer system accesses the Web or we make a transaction at the ATM. Even if the correction can’t be made, we want to know that there is an error so we can take appropriate action.

Shannon also told us about the “communications channel capacity” in his famous paper. This is closely related to bandwidth in the sense that

there is a limit to how much information you can reliably transmit. (The measure of the channel carrying capacity is “entropy,” and is related mathematically to that term as used in physics.) If the information you have exceeds the channel capacity then you will have unavoidable errors. However, if the information transmitted is less than capacity, you can find a way to encode or include redundancy and reliable transmission is achieved. In other words, find the right protocol and transmission method so it fits the available capacity and you can get the message through to the recipient despite noise and interference.

As communications hobbyists, we’re knee deep in all this theory, even if we don’t know it. As we devise new methods to communicate, we’ll be using Shannon’s ideas to make it all work for us. The battle for the communications spectrum is on, and as the world becomes more and more “wireless” we’ll need to fit more and more communication in less and less spectrum. As we’ve seen, the trade-off is the more information and less redundancy we have, the more fragile the message.

Many modern digital systems sacrifice significant portions of the channel capacity in order to build in redundancy, encryption, and other features. Striking the balance between the quantity of information and its reliability is one of the challenges we face. As consumers of information, we must determine how good is good enough? If it’s our bank account, we probably want perfection or immediate detection of an error so we can correct it. If it’s just a song we’re listening to, maybe we can live with slightly less quality to get greater transmission speed.

As a society, we need to decide what we’re willing to trade for the use of more communications devices. Many of us have a mobile phone, 2-meter handheld, WiFi-enabled laptop, iPad, Bluetooth earpiece, etc. Not only must bandwidth be reallocated by regulatory agencies around the world for these and other devices, but more efficient use of the spectrum will be essential, too. The work of Claude Shannon will provide the guide to how we get there from here.

Do you have a vision of how we make the trade-offs of quality and reliability in communication? What trade-offs would you make? Let me know your thoughts via a reliable communications method of your choice.

A Shortwave Journey To Brazil

When Winter's Doldrums Get You Down, Seek Out The Sounds Of Summer From This Vibrant South American Land

by Gerry Dexter



Panorama of Rio de Janeiro, Brazil. (Image by Mariordo, via Wiki Commons)

We have the big and beautiful country of Brazil to thank for giving us the samba, the composer and musician Antonio Carlos Jobim, soccer superstar Pelé, Carmen Miranda (and guitarist Laurindo Almeida who “trouped” up with her), Carnival—maybe the world’s biggest party—Ipanema (as well as “the Girl from”), not to mention the endless Amazon. And, if you’re into shortwave DXing, there are a gazillion Brazilians to try for. In fact, Brazil is one of the largest, most complex, challenging, and intriguing DX countries on the face of the planet!

Tuning in the Brazilians is not as easy as it once was, however. In ancient days Brazilians were regular late afternoon visitors on 31, 25, 19, and even 16 meters. Today those visits are, at best, infrequent, shaky—even tentative, although we do go through occasional periods when these stations make more frequent appearances. The trick lies in knowing when to expect them! As for 90 and 60 meters, there are a few regular visitors, but most of those on the accompanying list offer only a forlorn hope.

The list offered here rates each station as to its “hearability” (Column H), with a “y,” meaning yes, you should hear this easily on your first dozen or so attempts; an “m,” meaning maybe, with success lying somewhere between two dozen and two thousand tries; or an “x,” meaning you have an equal chance of hav-

ing the Playmate of the Month ring your doorbell and hand you your long-awaited Tristan da Cunha QSL!

It is a given that the propagation gods are not in a jovial mood these days, and haven’t been for some time. But even with the poor or uncertain reception we put up with, a DXer can still make progress in many other geographical areas. In most cases you can be 90 to 95 percent sure of what you’re hearing, even if you don’t get a clear ID. The frequency, the hour, fade in/out times, the language, the schedule can all be factors in calling a “yes” or a “no.”

Brazilians, however, are a somewhat different animal. ANATEL, Brazil’s national communications agency, sometimes authorizes two—or even three—stations to operate on the same frequency. When you’re faced with a situation like that, dealing with partial reception, a language that is difficult to understand, and you’re working with way less than a 5 by 9 signal, well, you’re in a pickle.

The Brazilians you are most likely to hear (those indicated with a “y” in the “H” column on our list) are noted below with their postal address, email and website (if any), along with an applicable note or two. With moderate effort most of us should be able to add these over a reasonable period of time.

A lot of buying and selling and/or other changes have taken place in Brazilian radio in recent years, and some of the old standby stations have been sold or have changed their formats. A number of stations have been sold to religious organizations

Gerry Dexter is *Pop’Comm’s* “Global Information Guide” columnist.

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Noite dos tambores silenciosos ("Night of the Silent Drums"), Recife Carnival, Pernambuco, Brazil. (Image courtesy Agência Brasil, by Antônio Cruz/ABr, via Wiki Commons)

or have switched to that format. Some frequencies have been abandoned and several stations seem to be active only in "list" mode. So keep in mind that no station list is complete or stays very accurate for very long. In short, Brazilian shortwave, like everything else, is in a permanent state of flux.

Some station websites offer streaming audio, which can be a great DX aid, either to compare what you're hearing on the radio with what's coming through the computer. Or, just the opportunity to listen to Portuguese as it's spoken in Brazil should help you pick out words when compiling a reception report. The Web can also be a tool to help you handle the language difficulty. The site at www.brazil-help.com/pronounce.htm explains how to pronounce Portuguese as it is spoken in Brazil. Another site, www.brazilian-portuguese.net/brazilian-pronunciation.htm, allows you to click on a letter or letter combination to hear the correct pronunciation, although the audio level seems low, even with the computer's audio cranked up.

The awards program of the North American Shortwave Association offers a "Senior Brazilian DXer" certificate, which is worth going after to display on your shack wall. Details are in the country list section of the NASWA website (www.naswa.net).

Best Bets For Brazil

So here's our list of "best bets" to get you started on your Brazilian log and prepare you for the, um, fun that awaits when you start on the "m" and "x" categories. And with Carnival



Towers and antennas in Sao Paulo, Brazil. (Image by Rosana Maria Machado Marques, via Wiki Commons)



Londrina, home to at least two active stations on 60 meters.

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festivities coming up in early March, this will give you time to hone your skills to listen in on the sounds of the "world's biggest party!"

Radio Alvorada, Rua Dom Bosco 145, Jardim, Don Bosco 86060-340, Londrina, Parana. Operates on 4865 kHz and runs 24 hours per day. Email: alvorada@radioalvorada.am.br; Web: www.radioalvorada.am.br.

Radio Alvorada, Rua Governador Leopoldo Neves 516, 69151-460, Parintins, Amazonas. Uses 4965, scheduled from 0800-0100. Email: radioalvoerada@uol.com.br. Same name, different station. It has no website.

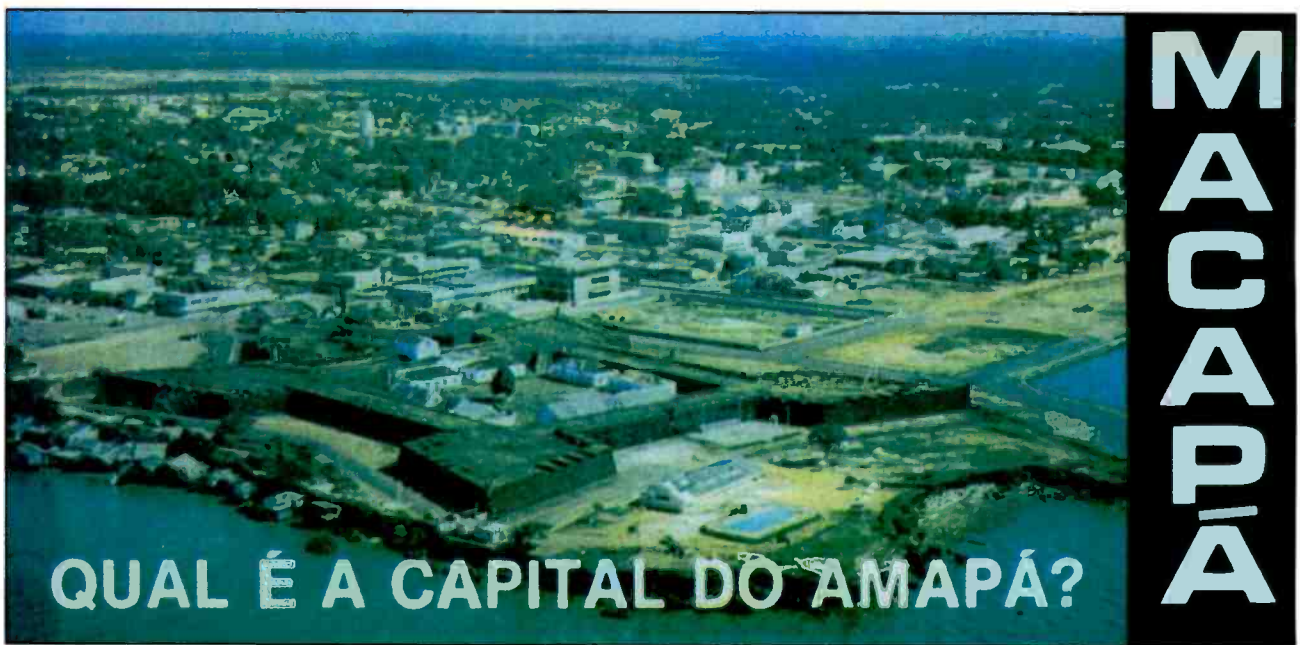
Radio Anhanguera, BR-157 Km1103, zona Rural 77804-970, Araguaína, Tocantins. It uses 4905 from 0800-0500. No email or website.

Radio Aparecida, C.P. 02, 12570-000, Aparecida, Sao Paulo. cassianomac@yahoo.com. It's on 5035 from 0800-0300, and also uses 6135, 9630, and 11855 (the latter listed, but may be inactive). Website: www.radioaparecida.com.br

Radio Bandierantes, Rua Radiantes 13. Barrio Morumbi, 05699-900. Sao Paulo, Sao Paulo. Uses 6090 (hope that the Scotts are silent), 9645, and 11925 for 24 hours. Email: ahuer-tas@band.com.br; Web: www.radiobandeirantes.com.br.

Radio Boa Vontade. Av. Sao Paulo 722-3* andar, Barrio Sao Geraldo 90230-160, Puerto Alegre, Rio Grande do Sul. Uses 9550 and 11895 from 0600-1100. Email: rbv1300@yahoo.com.br; no website.

Radio Brazil Central, C.P. 330, 74001-970, Goiania, Goias. It's on 4985 from and 11815 from 2200-0200. 4985 is one of the more easily heard Brazilians on 60 meters. Email:



Macapa, home to Radio Difusora, is regularly heard on 4915.

Building


We thank you for your note about reception, dated 07.07.88. We confirm the correctness of your details. We would like to continue receiving such news as it's of tremendous value to us.

Agradecemos o seu repórter de recepção datado de _____. Confirmamos a exatidão dos seus detalhes. Gostaríamos de continuar recebendo suas notícias que nos são de grande valia.


COME AND SEE THE FABULOUS AMAZONAS
VISITE E VEJA O FABULOSO AMAZONAS

Radio Rio Mar, Manaus, is rarely heard on its 9695 these days.

MHZ	STATION	LOCATION	SCHEDULE	KW	H
2380	Radio Educadora	Limeira	2000-1030	0.25	x
2420	Radio Sao Carlos	Sao Carlos		0.5	m
2460	Super Radio Alvarada	Rio Branco		1	m
2470	Radio Cacique	Sorocaba		0.25	x
2491	Radio Oito de Setembro	Descalvado		1.5	m
3235	Radio Clube	Marilla	24h	1	x
3255	Radio Educadora 6 de Agosto	Xapuri	0930-0250	1	m
3325	Radio Mundial	Guarulhos	24h	2.5	x
2265	Radio Cultura Araquara	Araquara			m
3375	Radio Clube	Dourados	0800-0400	5	x
3375	Radio Educadora	Guajara Mirim	09--13; 21-01	5	m
3385	Radio Guaruja AM	Guaruja		1	x
3315	Radio Difusora	Brasileia		1.5	x
4754	Radio Difusora Maranhao	Sao Luis	0700-0300	5	m
4755	Radio Imaculada Conceicao	Campo Grande		10	m
4765	Radio Integracao	Cruzeiro do Sul		10	m
4775	Radio Congohas	Congohas	0800-0100	1	m
4775	Radio Portal da Amazonia	Cuiaba		1	x
4785	Radio Brazil	Campinas	0900-0200	1	m
4795	Radio Difusora	Aquiduana	0900-0400	1	
4805	Radio Difusora do Amazonas	Manaus	0930-1330; 20-01	5	m
4805	Radio Itatiaia	Belo Horizonte		500	m
4815	Radio Difusora	Londrina	05-03	10	m
4825	Radio Cancao Nova	Cachoeira Paulista	24h	10	m
4825	Radio Educadora	Braganca	0730-0000	5	m
4845	Radio Meteorologia Paulista	Ibatinga		1	x
4845	Radio Cultura	Manaus	09-02	10	m
4855	Radio Por um Melhor	Gov. Valadares		1	m
4865	Radio Verdes Florestas	Cruzeiro do Sul	1030-14; 23-03	5	m
4865	Radio Missoes da Amazonia	Obidos	06-22	5	m
4865	Radio Alvorada	Londrina	24h	5	y
4875	Radio Roraima	Boa Vista	08-04	10	m
4885	Radio Difusora Acreana	Rio Branco	09-04	10	y
4885	Radio Clube do Para	Belem	24h	2	y
4895	Radio Novo Tempo	Campo Grande	24h	5	m
4905	Radio Novo Relogio	Rio de Janeiro	0730-02	5	m
4905	Radio Anhanguera	Araguaina	08-05	1	y
4915	Radio Difusora Macapa	Macapa	24h	10	y
4925	Radio Educacao Rural	Tefe	10-15; 20-02	5	y
4935	Radio Capixaba	Vitoria	24h	1	y
4935	Radio Difusora Jatai	Jatai		2.5	x
4945	Emissora Rural	Petrolina	08-04	1	x
4955	Radio Clube	Rondonopolis	07-03	2.5	x
4965	Radio Alvorada	Parintins	08-01	5	y
4985	Radio Brazil Central	Goiania	22-02	10	y
5015	Radio Pioneira	Teresina	24h	1	m
5015	Radio Copacabana	Rio de Janeiro		1	x
5035	Radio Aparecida	Aparecida	08-03	10	y
5045	Radio Cultura do Para	Belem	24h	10	y
5055	Radio Difusora	Caceres	0830-04	1	x
5055	Radio Jornal a Critica	Manaus			m
5955	Radio Gazeta	Sao Paulo	09-03	10	m
5965	Radio Trans Mundial	Santa Maria	09-03	7.5	m
5970	Radio Itatiaia	Belo Horizonte	08-19	10	y
5990	Radio Senado	Brasilia	0830-21	25	y
6000	Radio Guiaba	Porto Alegre	07-03	10	x
6010	Radio Inconfidencia	Belo Horizonte	09-06	5	y
6020	Radio Gaucha	Puerto Alegre	09-04	10	m
6050	Radio Guarani	Belo Horizonte	08-03	10	m
6060	Super Radio Deus e Amor	Curitiba	24h	10	m
6070	Radio Capital	Rio de Janeiro	24h	7.5	x
6080	Radio Daqui	Goiania	08-03	5	x



Rádio Caiari - Porto Velho - Rondônia - Brasil



Prezado Senhor, Richard A. D'Angelo

Agradecemos o seu relato de recepção. Confirmamos a exatidão dos seus detalhes de nossa emissão no dia 23 de fevereiro de 1996, das 22:56 às 23:25 horas de Porto Velho, na frequência de 4785 KHZ com 10 KW de potência.

Angela Lima
 SOC. DE CULTURA RÁDIO CAIARI LTDA
 Angela Lima
 Gerente Operacional

Sociedade de Cultura Rádio Caiari Ltda.



B2
RÁDIO CLUBE
PARANAENSE AM 1.430

Old timers will remember Radio Clube Paranaense, which now operates only domestically.

Radio Caiari (4785) is still listed, but classified as inactive.

MHZ	STATION	LOCATION	SCHEDULE	KW	H
6080	Radio Marumby	Curitiba	24h	10	m
6090	Radio Bandeirantes	Sao Paulo	24h	10	y
6105	Radio Filadelfia	Foz de Iguacu	09-03	5	m
6105	Radio Cancao Nova	Cachoeira Paulista	24h	5	y
6135	Radio Aparecida	Aparecida	08-03	25	m
6150	Radio Record	Sao Paulo	09-03	7/5	m
6160	Radio Rio Mar	Manaus	10-21	10	x
6170	Radio Cultura	Sao Paulo	0930-04	7.5	x
6185	Radio Nacional Amazonia	Brasilia	07-03	250	y
9505	Radio Record	Sao Paulo	09-00	7.5	m
9515	Radio Marumby	Curitiba	08-21	10	m
9530	Radio Trans Mundial	Santa Maria	17-03	10	y
9550	Radio Boa Vontade	Puerto Alegre	06-01	10	y
9565	Super Radio Deus e Amor	Curitiba	24h	20	y
9585	Radio CBC	Curitiba	07-02	20	x
9600	Radio MEC	Rio de Janeiro		7.5	x
9630	"Radio Aparecida, "	Aparecida	07-02	10	y
9645	Radio Bandeirantes	Sao Paulo	08-03	7.5	y
9675	Radio Cancao Nova	Cachoeira Paulista	24h	10	y
9685	Radio Gazeta	Sao Paulo	09-03	7.5	m
9695	Radio Rio Mar	Manaus	10-21	7.5	m
9820	Radio 9 de Julho	Sao Paulo	08-01	10	y
10000	Observatorio Nacional	Rio de Janeiro	24	1	m
11725	Radio Marumby	Curitiba	09-21	10	m
11735	RadioTrans Mundial	Santa Maria	08-02	50	m
11750	Voz Missionaria	Camboriu	24h	1	m
11765	Super Radio Deus e Amur	Curitiba	09-03	20	m
11780	Radio Nacional Amazonia	Brasilia	0650-03	250	y
11785	Radio Guaiba	Puerto Alegre	08-04	10	m
11805	Radio Global	Rio de Janeiro	09-03	7.5	x
11815	Radio Brazil Central	Goiania	24h	7.5	m
11855	Radio Aparecida	Aparecida	08-03	1	m
11895	Radio Boa Vantage	Puerto Alegre	07-02	10	m
11915	Radio Gaucha	Puerto Alegre	09-03	10	m
11925	Radio Bandeirantes	Sao Paulo	24h	10	y
11935	Radio Clube Paranaense	Cueritiba		7.5	m
15135	Radio Record	Sao Paulo		7.5	m
15190	Radio Inconfidencia	Belo horizonte		5	y
15325	Radio Gazeta	Sao Paulo		1	m
17815	Radio Cultural	Sao Paulo	08-00	10	m

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YAESU FTM-350AR



The Yaesu FTM-350AR dual band mobile transceiver provides a full 50 watts of reliable power on both 2 meters and 440. It has two separate receivers with dual speakers on the rear of the control head. On the left receiver enjoy the AM, FM and stereo FM broadcast bands with extended receive: 0.5-1.7, 76-108, 108-250, 300-1000 MHz (less cellular). The right receiver covers 108-250, 300-1000 MHz (less cellular). There is a total of 1000 channel memories plus 9 DTMF memories. The radio even has stereo line inputs. This radio is APRS® compatible with optional FGPS-1 GPS unit. The front panel is easily remoteable with supplied cable. This latest "A" version adds: GPS standard format NMEA ready, way point data out, new MMB-98 vacuum bracket, APRS® will operate in the background, on single band, additional voice alert function, reallocated keys for easier operation, ability to program direct APRS® onto programmable key on the DTMF microphone.

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The Yaesu VR-5000 provides sophisticated wideband reception. Coverage is from 100 kHz to 2600 MHz (2.6 GHz) less cellular, in AM, FM-N, FM-W, LSB, USB and CW. This radio features a real-time bandscope that can display: 0.1, 0.2, 0.3, 0.5, 1.0, 2.0, 2.5, 5.0 or 10.0 MHz of spectrum and you get 2000 alphanumeric memories grouped into 100 banks. Optional aids such as a DSP unit and digital voice recorder are available. Jacks on the back panel include: mute, 13.8 VDC input, external speaker, 10.7 MHz IF output, antenna input A (SO-239 50 ohm) & B (Hi Z 450 ohm), CAT interface jack (4800/9600/57600 bps). The VR-5000 comes with the PA28B 117 VAC adapter and a DC power cord. This radio is only 7.1 x 2.75 x 8 inches 4.2 Lbs.

Please visit www.universal-radio.com for specifications, color photos, accessories and price.

YAESU VX-8DR/GR



The Yaesu VX-8DR HT provides 5 watts FM on 50/144/430 MHz plus 1.5 watts on 222 MHz. It supports Blue Tooth hands-free operation with the optional BU-1 and BH-1A or BH-2A accessories. There is also an optional GPS unit and antenna with loads of features. This radio supports APRS® 1200/9600 bps data communication (B band only) and is WiRES compatible. In fact, this latest "D" version adds these APRS enhancements:

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- ✓ APRS® Msg mems raised from 20 to 30.
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- ✓ Heads up compass display.
- ✓ Msg LED flashing rate is selectable.
- ✓ DIGI-PATH route settings raised to 7.

The VX-8DR is submersible to IPX57 specs. A 7.4 V 1100 mAh Li-Ion battery is included. It supports simultaneous independent 2-signal dual receive function with both V+V or U+U. It has weather alert and a barometric sensor is included. The dot matrix LCD provides memory tags (to 16 characters). You even get a high-resolution spectrum analyzer with ±60 channels indication with wave monitoring of received/modulated signal! DCS and CTCSS encode/decode are standard. 2.36 x 3.74 x 0.92".

The Yaesu VX-8GR HT provides 5 watts FM on 144/430 MHz. Receive is 108-999 MHz in NFM/FM modes. Unlike the VX-8DR, this radio is not BlueTooth capable, does not have the SU-1 built in and is not submersible. It is however APRS capable (B band only) and even has a GPS built-in. Details at www.RFFun.com

YAESU

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Ban Jelacic Square of the city of Zagreb, Croatia. (Image by MislavK, via Wikipedia)

The Voice Of Croatia— Echoing From The Land Of 1,000 Islands

Whether Via Shortwave, Satellite, Or Streaming, This Dynamic Broadcaster From A Fascinating Region Beckons Listeners

by Eric Bryan

The Voice of Croatia, using a transmitter site in Germany, puts one of the most reliable European shortwave signals into North America, at least in the Northwest where I am. It's also one of the few international broadcasters that has English program announcers with American accents who use a dynamic, energetic announcing style that's perfect for shortwave: the strong modulation helps the signal cut through when it's challenged by noise or poor propagation conditions. In fact, many shortwave broadcasters' transmissions would benefit greatly by abandoning the low-key mumbling diction and adopting VOC's lively, driving approach; they would certainly get their information and points of view across much more clearly, making it easier for us shortwave listeners.

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

And though VOC is listenable for much of the local evening here, with lots of Croatian pop music to hear interspersed with news at the hours and half-hours, its English program is almost an endangered species—blink and you'll miss it. At the time of this writing, your best shot for VOC in English with *Croatia Today* is at 2315–2330 and 0300–0315 UTC on 7375 kHz.

The Voice Of Croatia

Croatian Radio's international voice, VOC, started broadcasting on shortwave upon Croatia's declaration of independence in 1991 (see sidebar), another one of those many Central and Eastern European shortwave stations to inaugurate broadcasting, or to have a newly liberated voice, after the fall of Communism throughout the region.

At first intended solely for Croat expatriates, in 2000 VOC expanded its programming and added news in English and

“...VOC, started broadcasting on shortwave upon Croatia’s declaration of independence in 1991...another one of those many Central and Eastern European shortwave stations to inaugurate broadcasting, or to have a newly liberated voice, after the fall of Communism throughout the region.”

Spanish. The aim was to reach an international audience with information about Croatia.

In 2003, VOC started 24-hour service on mediumwave (for Europe), shortwave, and satellite. The Voice of Croatia focuses on economic, social, and cultural issues in Croatia, Croatian traditions, and sports. It carries programs from three national and eight regional stations of Croatian Radio.

The Voice of Croatia points out that its English, Spanish, and German departments feature journalists who are native speakers of these languages.

A Sample Broadcast

The Voice of Croatia’s regular program, *Croatia Today*, always starts with Croatian and regional news. News coverage of a recent sample broadcast included Women’s World Cup skiing near Zagreb, Croatia’s capital; Slovenia’s border dispute with Croatia and its veto of Croatia’s EU accession talks; controversy over three Croat generals on trial at The Hague over actions in 2005 during Operation Storm; the effect on Croatia

of Russia’s natural gas cutoff to Ukraine; dispute between Bosnia and Croatia over a proposed bridge that would connect Croatia’s southern coastal strip with Croatia’s mainland (a section of Bosnia separates this strip of Croatia from the rest of the country); Serb orthodox Christians in Croatia following the Julian calendar, celebrating Christmas on January 7; World Handball Championships to be held in Croatia; weather for Croatia and the region, including the northern Adriatic.

This was followed by station ID; schedule of English broadcasts given in local Croatian time; satellite broadcast info; shortwave broadcast info, with 7375 kHz given for North and South America; and the Croatian Radio website address. This was followed by mellow, melodic pop music to total about a 15-minute program.

Though the above is an example of the average *Croatia Today* broadcast, continued listening reveals program variations. The newscast on the following day, after featuring the usual Croatian and regional news, veered into international news. This covered Israel’s ongoing attacks on Gaza; speculation on the Obama stimulus plan; the new U.S. embassy in Baghdad; the January 1 handover of Green Zone authority to Iraq; and a French warship protecting a Croatian vessel under threat from pirate boats in the Gulf of Aden, with French capture of 18 pirates.

The program variation continued with a cultural segment. I monitored a short feature on a tradition in the town of Rab, located on one of Croatia’s islands, also called Rab. Visitors to Rab, I discovered in the interesting segment, will find that bunches of lavender, olive oil, figs, and almonds are common goods for sale. But Rab is known especially for its heritage of rope weav-



Historic town center of Rab, Croatia, on the island of the same name. (Image by Herbert Ortnier, via Wikipedia)

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AR8600 Mark II Wide-Range Desktop Receiver

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AR-STV Handheld Video Receiver

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SR2000A Spectrum Display Monitor

Ultra sensitive, incredibly fast, yet easy to use, the SR2000A lets you SEE received signals in FULL color. Using the power of FFT, it covers 25 MHz to 3GHz* and features a color monitor that displays spectrum bandwidth, a switchable time-lapse "waterfall" display or live video in NTSC or PAL. High quality internal speaker delivers crisp, clean audio signals. Scans 10 MHz in as little as 0.2 seconds. Instantly detects, captures and displays transmitted signals. PC control through RS232C serial port or USB interface. With 12 VDC input, it's perfect for base, mobile or field use.

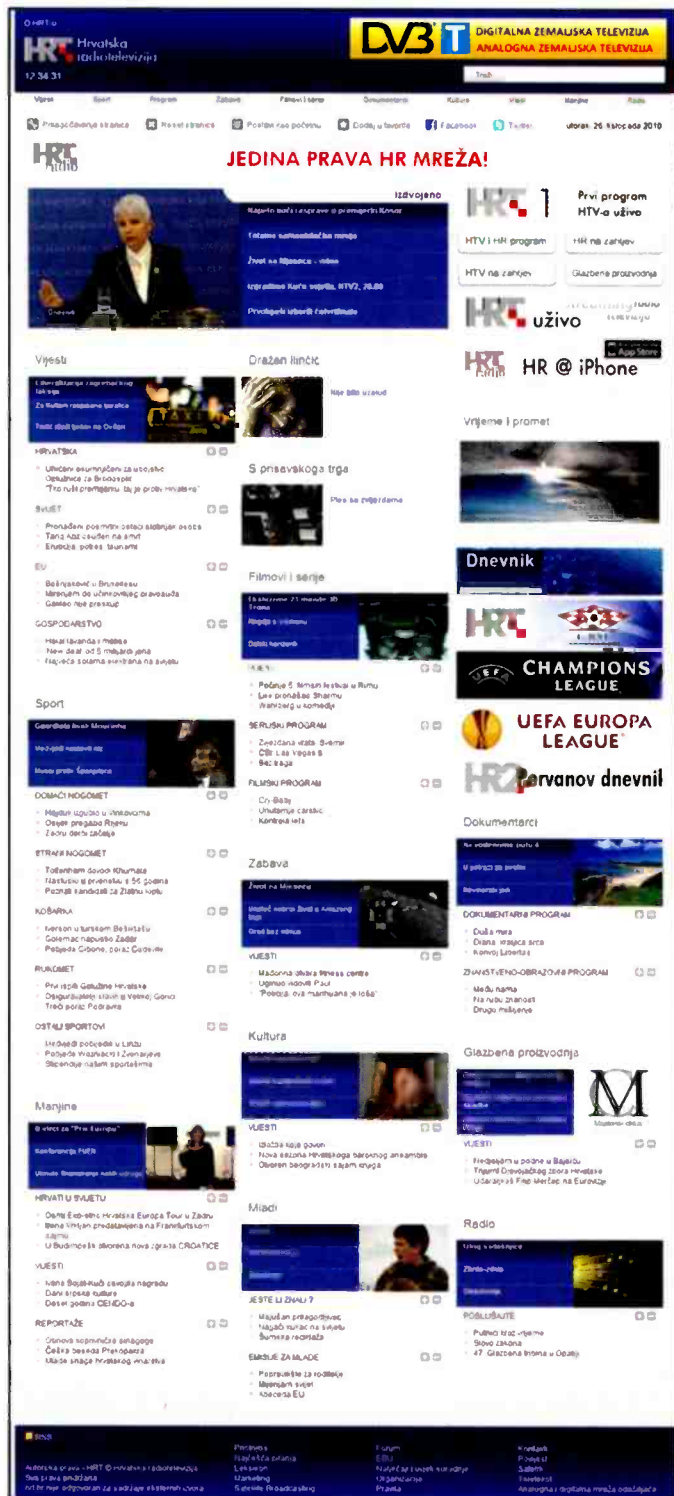


Whatever the monitoring need, AOR products deliver exceptional performance for use by federal, state and local law enforcement agencies, the military, emergency managers, diplomatic service, news-gathering operations, and home monitoring enthusiasts.

ing, an ancient family craft on the island. The rope, which is hand-woven, is fashioned into bow guards for boats, protectors for glass wine containers, baskets, plant pots, and fishing gear, all handmade.

Croatian Radio Online

If trying to pull the broadcasts in via your antenna isn't working for you, you can opt to listen over the Internet. Croatian



Croatian Radio and TV homepage.

Radio's website address is www.hrt.hr/, though here you'll find English even scarcer than it is on the station's shortwave broadcasts. There were formerly links to news in English, which gave you both morning and evening daily bulletins in text format, but some recent changes to the website have eliminated this handy feature.

Live Streaming

For VOC live streaming, point your browser to www.hrt.hr/index.php?id=hrt-uzivo and click the "GLAS HRVATSKE" link near the middle of the page. Here you'll find VOC's English available at the same times as on shortwave; for example, at 2315 and 0300 UTC. (Note, though, that the streaming and shortwave broadcasts were not in sync at time of writing.) To get there from the homepage, scroll down the menu on the right of the screen and click the "streaming radio" link. The direct URL for streaming is www.hrt.hr/streamf/HRstreamGH.

To listen to VOC and Croatian Radio on your iPhone or iPod Touch, you can download an application at itunes.apple.com/ca/app/hr-streams/id378314277?mt=8.

Listenlive.eu

The above works well for streaming VOC, and the audio is crisp and clear. But for an easier method with many more links available at your fingertips, point your browser to www.listenlive.eu/. This is a website in English featuring over 4,000 European live radio streams (see "One-Stop Online Shopping For Traditional Music Fare," *Pop Comm* July 2010 for more on Listenlive.eu). From this homepage, click "Croatia" in the country menu, and you'll land on a page with numerous stations/streams from Croatia. You can go directly there via www.listenlive.eu/croatia.html.

Most of the streams have links for the Real Player or Windows Media Player, and most helpfully, there's a Format/Comments column which describes in English the programming carried by each stream/station. (Also, there are download links for the various players at the bottom of this page.) The Voice of Croatia is listed in the top third of the page.

As with the Voice of Greece's shortwave broadcasts to North America, much of VOC's programming during our local evenings is pop music. Surprisingly, some of even the apparently Croatian pop songs are sung in English. On this listenlive.eu page, you'll find streams for classical music, top 40, pop, dance, urban, foreign music, and, of course, Croatian music. Those searching for Croatian folk music will find it on the HRT, Radio Martin, and Narodni Radio streams. The Radio Mreznica stream apparently carries folk and foreign (world?) music, but it was inactive at the time of writing.

VOC On Satellite

The Voice of Croatia can be heard in North America via Ku-Band satellite as follows:

- Satellite: AMERICAM-4 (AMC-4) at 101° west
- Transponder: 21 - Ku-Band
- Modulation: QPSK
- Frequency: 12,120 MHz
- Polarization: Vertical
- Symbol Rate: 30,000
- FEC: 3/4

More information on VOC by satellite is available at www.hrt-america.com/ or www.croatiantv-america.com/.

Islands, Dalmatians, And Marco Polo?

It seems incongruous to those of us who may think of Croatia and the region mainly as a snowy, war-torn part of the former Yugoslavia, but there is another side to this country. Croatia has 1,185 islands, islets, and reefs in the Adriatic, which enjoy a Mediterranean climate with an average of 2,600 hours of sunlight a year. The islands boast pale sand- pebble beaches surrounded by clear water, and are mostly green with woods of cypress, laurel, myrtle, pine, and oak.

There are fields of lavender, ancient olive groves, and vineyards, plus figs, tangerines, lemons, and mimosa thrive in the Adriatic sun. The islands are home to three national parks. Only 66 of the isles are inhabited.

Rab, of handmade rope fame, has an area of approximately 35 square miles and features one of the last oak forests in the Mediterranean, blanketing Rab's southwestern side. The island also has the distinction of having a tradition of naturism—or nudism—fueled by an episode of skinny dipping by the visiting King Edward VIII and Mrs. Wallis Simpson.

Krk, one of the two largest Croatian-Adriatic islands, with an area of 158 square miles, is linked to the mainland by one of the world's longest concrete



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The screenshot shows the HRT website interface. At the top, there's a navigation menu with categories like 'Vijesti', 'Sport', 'Program', 'Zabava', etc. Below that is a 'Dnevnik' (Daily News) section with a live program schedule. The schedule includes: 21:10 'Država, seto, grad', 22:25 'Žvjet zdravlja, emisija pod pokroviteljstvom', 22:27 'PF', 22:35 'Dnevnik 3', and 23:00 'Sport'. There are also buttons for 'HTV i HR program', 'HR na zahtjev', 'HTV na zahtjev', and 'Glazbena proizvodnja'. A 'UEFA CHAMPIONS LEAGUE' banner is visible. At the bottom, there are links for 'PRVI PROGRAM', 'DRUGI PROGRAM', 'TREĆI PROGRAM', and 'GLAS HRVATSKE'.

Croatian Radio and TV streaming page.

The advertisement features the text 'Since 1942' in a large font, the website 'www.RFfun.com' in a stylized font, and the logo for 'universal radio inc.' which includes a radio dial graphic.

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bridges. The bridge has two arches and runs to 4,298 feet, though the span is broken by a 315-foot stretch that runs across St. Mark islet, between Krk and the mainland.

And Cres, the other large Croatian island, with an area the same as that of

Krk, has one of the deepest freshwater lakes in Eastern Europe: Lake Vrana, with a depth of 230 feet. There is a legend that a castle lies at the bottom of the lake. The story goes that two sisters lived in a valley here. The rich one, who lived in the castle, refused to help her poor

peasant sister with food and money. As punishment, God flooded the castle during a thunderstorm. The lake formed from the storm, swallowing the castle.

Another island, Korcula (with an area of 107 square miles), is connected to a controversial historical claim: 13th

A Geopolitical Snapshot

Croatia, along with Bosnia and Herzegovina, Slovenia, Albania, Macedonia, Bulgaria, Greece, Serbia and Montenegro, Romania, and European Turkey, is part of the Balkan Peninsula, the big chunk of land between the Adriatic and Black Seas.

Croatia became an independent kingdom in the early 10th Century. After a Hungarian invasion, Croatia and Hungary conjoined under the Hungarian king in 1102. Though Croatia remained semiautonomous, until 1918 the kings of Hungary were also rulers of Croatia.

The city state of Venice gained control of the region after 1420, and when the Hungarian King Louis II was killed and his army annihilated by the Turks in 1526, most of Hungary and Croatia fell under Ottoman rule. Upon the death of King Louis II, the succession of the Hungarian crown went to the Austrian Habsburgs who ejected the Turks by 1699.

Parts of Croatia remained under Venetian control until 1797, when Napoleon eliminated the Venetian Republic. Though Croatia was technically part of Hungary, large sections of the area continued under Austrian authority until the late 19th Century. The Habsburgs welcomed Serbs and Vlachs to settle there.

A Hungarian revolt in 1848 was quelled by the Croats and Austrians. The Croats hoped that Austria would grant Croatia independence from Hungary as a thank you. But in 1867, the Austro-Hungarian compromise again relegated Croatia to Hungary. A unified, independent Croatia became the foremost dream and condition of many political groups in Croatia leading up to World War I.

The vanquished Austro-Hungarian Empire was dissolved in 1918, and an autonomous kingdom of Croats, Slovenes, and Serbs, which included Croatia, was established. But this new kingdom turned out to be a state controlled by a centralized, mostly Serbian government.

In 1928 Croatian leader Stjepan Radic was assassinated by a Montenegrin politician. Serbian King Aleksandar I rechristened the kingdom Yugoslavia and declared a royal dictatorship. Aleksandar was in turn killed by Croatian and Macedonian assassins in 1934. In 1939 an accord between Radic's successor and the royal government created a self-ruling Croatia, which encompassed portions of Bosnia and Herzegovina.

In 1941, Yugoslavia was invaded and occupied by Axis forces. Croatia, ruled by Fascist Croats, became a German-Italian puppet state. Suffering under the Fascist regime, many Croats and Serbs joined a resistance group called the Partisans.

After the war, Croatia, with Bosnia and Herzegovina, Macedonia, Montenegro, Slovenia, and Serbia, became part of the re-formed Yugoslavia.

Following the fall of the Berlin Wall and Communism throughout Eastern Europe in 1989, the Yugoslav government



Map of Croatia. (Source: the Cartographic Section of the United Nations)

likewise collapsed. Elections in 1990 gave the Croatian Democratic Union a majority in parliament. In 1991, Croatian Serbs proclaimed their split from Croatia and union with Serbia. Later that year, Croatia and Slovenia seceded from Yugoslavia. Civil war erupted, with the Yugoslav army and the Serbs exterminating and expelling the Croats. After a UN-negotiated cease-fire in December, 1991, almost one-third of Croatia fell under Serb authority. In 1995 Croatian forces struck, reoccupying UN-administered areas, causing most Croatian Serbs to evacuate to Bosnia and Serbia.

In the war in Bosnia (1992–1995), Croatia backed the Bosnian Croats and Muslims opposing the Serbs, and later supported the Bosnian Croats against the Bosnian Muslims. The American-dictated Muslim-Croat Federation of Bosnia and Herzegovina ended the Croat-Muslim combat.

In December 1995, the Croatian, Bosnian, and Serbian leaders signed the Dayton Peace Accord. By 1998, all the UN administered lands were reintegrated into Croatia.

Modern Croatia is surrounded primarily by Slovenia, Hungary, Serbia, and Bosnia and Herzegovina, with a western coastline on the Adriatic Sea.

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Madagascar Moves Forward, Monrovia Moves Around, Plus Other Shortwave Tidbits

by Gerry L. Dexter
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"It seems that the newish Liberian station, Star Radio from Monrovia, can't make up its mind on a frequency."

The KNLS/New Life station, Madagascar World Voice, continues a-buildin' and appears to be nearing readiness for the final stage—the installation of the three 100-kW transmitters—once money has been raised for the final \$100,000 payment. The three antennas are up and ready at the site in the town of Mahajunga. The project has taken several years from its inception to get to this point, and I wouldn't care to hazard a guess as to when we'll begin to hear the first sounds from Madagascar World Voice.

Radio Nacional Angola was being heard by many fairly regularly on 4950 in the evening hours during September. The changing seasons have probably erased it by now. If so, it might be a good idea to check for this one come next September. The same holds true for the Argentine Antarctica station, LRA36, during the North American afternoons on 15476.

It seems that the newish Liberian station, Star Radio from Monrovia, can't make up its mind on a frequency. It began briefly on 4025 but later started appearing on 3955, 3960, and even as low as 3900. Every few days one of those frequencies (including 4025) appeared to be called upon. I don't know what's going on there, but it would be

best to check all the options mentioned above.

Speaking of a frequency in the lowest part of 4 MHz, I'm pleased to note the return of the Guatemalan Radio Verdad, which had to shut down due technical problems. The main transmitter is still awaiting the ministrations of an engineer, so Radio Verdad is on the air with a mere 50 watts while repairs continue. The current schedule runs from 1100 to 0605, but is now on 4055, slightly higher than its former 4052.5. The station is anxious for reports to Apartado 5, Chiquimula, Guatemala.

HJCB Global, having ceased all transmitting from its Pifo site, has moved most of its transmitters to its German division. HCJB is, however, still broadcasting from Ecuador on 6055 with a 10-kW transmitter from a site at Pinchincha. Apparently there are plans to install a second 10-kW unit at another, still undecided Ecuadoran site sometime later in the year.

In another slap in the face to shortwave listeners and DXers, WWCR has begun tests on 3255 kHz. You can let them know how you feel about these tropical band intrusions by emailing them at 3255@wwcr.com. Pfui!

VT Communications, which operates many of the BBC's relay sites, has been acquired by a company called Babcock, and that name will be used on frequency registrations and subsequent log lists. So if you use a list that includes that information, "VTC" will become "BAB" beginning with the A-11 transmission season.

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 c'mon, c'mon! Where *is* that photo of you at your listening post? It's your turn to grace these pages!

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



"GIG" log reporter Rich D'Angelo concentrates on getting an ID out of his Ten-Tec 340 receiver at one of the French Creek (PA) DXpeditions. Rich is executive director of the North American Shortwave Association.

Help Wanted

We believe the "Global Information Guide" offers more logs than any other monthly SW publication (some 460* 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, and please check over your submissions, making sure you've included frequency and UTC time.

**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 with Bible stories at 1211. (Sellers, ON)

ALBANIA—Radio Tirana, 7425 with local vocals at 0320. (Maxant, WV)

ALGERIA—Radio Algerienne, 7275 via Issoudun in AA at 0510. (Bryant, KY)

ANGOLA—Radio Nacional, 4949.8 at 0254 with music to time signal at 0300, W with ID, then M with news in PP. (D'Angelo, PA)

ANGUILLA—World University Network, 11775 with Melissa Scott preaching at 1210. (Maxant, WV)

ARGENTINA—Radio Nacional/RAE, 11710 in SS at 0042. (Brossell, WI) 0200 with multiple IDs in various languages before opening in English with IDs, pgm previews, a tango f/by W with news. (D'Angelo, PA) 15345 at 2310 with SS ballads and talk, stronger on //6060. (Alexander, PA) 2320 in SS. (MacKenzie, CA)

Pop'Comm January 2011 Reader Survey

It's been a while since we provided response summaries for our surveys, and because we're tight on space this month, we're going to devote it mainly to July's survey, which asked what technology you primarily use. And instead of asking you specific questions this time, we'd like you to use the Reader Survey Card's comment line to tell us which new technologies you want to try *next*. 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 technology is next for you?

Use comment line

July 2010 Survey Highlights

Our July survey asked you what devices/technology you use on a regular basis. The responses proved that while we love our shortwave and scanner receivers, the device we use most is AM/FM radio, which garnered the most votes with fully 87% of our readers listening to AM/FM radio on a regular basis. Shortwave radio (78%) barely edged out scanner usage (72%), followed by computer/Internet (65%) and ham radio (55%). CB radio led the next tier (38%) just ahead of FRS/GMRS band radio (35%). Internet radio, marine/aviation band radio and the good ol' telephone were tied at 26%. The also-rans of the remaining categories polled in the single digits, with Twitter bringing up the rear with 5%—even less than the catch-all category of Other (7%). Not looking good for Twitter.

The winner of a free subscription or extension to *Pop'Comm* for sending in a response that month is **Fred Pickett Jr. of Annandale, Virginia**. Congratulations, Fred!

ASCENSION ISLAND—BBC South Atlantic Relay, 7255 at 0325 with *The World Today*. (Parker, PA) 11810 at 1911 on African political parties. (Brossell, WI)

AUSTRALIA—Radio Australia, 6020. //9580 at 1105. (Coady, ON) 9580 at 1750, 11880 at 1705, 15240 at 0012, 15560 at 2333 and 21725 at 0432. (MacKenzie, CA) 15230 at 2341, 15240 at 0110, 17750 at 2335 and 17795 at 2332. (Sellers, BC) 9475 in CC at 1318. (Bryant, KY) 11695 at 1225 and 17750 at 0305. (Maxant, WV) 11945 at 1220. (Brossell, WI) 15160 monitored at 0500 sign on. (Yohnicki, ON) 15240 at 0003. (Parker, PA)

ABC Northern Territories Service: 2325-Tennant Creek with news and interviews at 0910. (Yohnicki, ON) ABC news and sports at 1132. (Sellers, BC)

HCJB-Australia, Kununurra, 15400 in CC at 1352. (Bryant, KY) 15525 in CC at 2330. (Parker, PA)

Radio Symban, 2368.5 with music at 1110 until fadeout at 1115. (Wilkner, FL) 1122 with Greek music. (Sellers, BC)

AUSTRIA—Radio Austria Intl, 6155 in GG with classical music at 0548 and severe splash from Cuba on 6150. (Bryant, KY) 9820 on suddenly in GG heard at 0330 with ID and W with news. (Sellers, BC)

BAHRAIN—Radio Bahrain, 9745 monitored by using reduced carrier USB and audible at 2357 after Romania closes. Seeming ME music and pop ballads, AA talk. Fair to good, though it had deteriorated by 0045. (Alexander, PA) (*nice!—gld*)

BELARUS—Belarus Radio 1, Hrodna, 6040 at 0318 with M/W in Belorussian with news features, seemingly mixing with a Brazilian station. 5+1 time pips at 0400, ID and M with news. W hosting music at 0404. Poor overall, but slightly improved after 0400 and apparent sign off by the Brazilian. (D'Angelo, PA)

BOLIVIA—Radio Mosoj Chaski, Cochabamba, 3310 at 1020 with domestic music, SS time check. UTE QRM. (Wilkner, FL)

Radio San Miguel, Riberalta, 4700 with SS and slow ballads at 1035. (Wilkner, FL)

Radio Lipez, Uyuni, 4796 with orchestral music monitored at 1000. (Wilkner, FL)

Radio Santa Cruz, 6135 heard at 0105–0118 close with local flutes, SS ID anmts and off with more flute music. (Alexander, PA)

BONAIRE—Radio Nederland Relay, 6165 at 0153 with M and rock, pops. Closed at :57 past the hour. (Parker, PA) 0330 in SS/EE. (Waterbury, AZ) 1122 in SS. (Brossell, WI)

BOTSWANA—VOA Relay, 4930 at 0400. (Padazopoulos, Greece) 12080 at 0538. (MacKenzie, CA) 15580 at 1945. (Bryant, KY)

BRAZIL (All in PP)—Radio Municipal, Sao Gabriel da Cachoeira, 3375 with lively local vocals at 0925. (Wilkner, FL)

Radio Imaculada Conceicao, Campo Grande, 4755 at 0034 with long talk by W with brief music bridges. (Parker, PA)

Radio Clube do Para, Belem, 4885 at 0514 with reggae, competing with an unid co-channel station. (Parker, PA)

Radio Difusora, Macapa, 4915 at 0130 with talk by M. (Parker, PA)

Radio Brazil Central, Goiania, 4985 at 0123 with boisterous M anc in possible sporting event. (Parker, PA) 0302 with M hosting pgm of romantic music. (D'Angelo, PA) 11815 at 0415 with M and upbeat music. (Parker, PA)

Radio Itatiaia, Belo Horizonte, 5970 with M talks, W vocals. Blasted away by RHC at 2358. (D'Angelo, PA)

Radio Senado, Brasilia, 5990 *0857 coming on with local pops. ID anmts heard at 0900 f/by local pop ballads. (Alexander, PA)

Radio Novas de Paz, Curitiba (t) 6080 at 0134 with long M talk, probably religious. (Parker, PA)

Radio Nove de Julho, Sao Paulo, 9820 at 0457 with religious pops. M/W talks, ID, "Amazing Grace" in PP. (Parker, PA)

Radio Nacional Amazonia, Brasilia, 11780 at 0047 with W and long EE folk ballad. (Sellers, BC) 0455–0458* with M talk and abruptly off in mid-sentence. (Parker, PA) 1000 with an ID f/by a church service. (Ng, Malaysia)

Super Radio Deus e Amor, Rio de Janeiro, 11805 heard at 0010 with religious talk. Stronger on //9587 and 11765. (Alexander, PA)

Radio Bandeirantes, Sao Paulo, 11925 at 0428 with M talk, time pips on the half hour. (Parker, PA)



Northwoods Radio QSLed D'Angelo's reception with this scenic card from the Northwoods region of Wisconsin.

BULGARIA—Radio Bulgaria, 6000 with news in Greek at 0500 and 11700 with news in BB at 1102. (Padazopoulos, Greece) 9600 in GG at 0536. (Bryant, KY) 9700 in Bulgarian at 0034. (MacKenzie, CA) 9700 at 0230 with history feature, music and DX pgm. (Waterbury, AZ)

CANADA—Radio Canada Intl, 7230 via Vatican in CC at 1707. (MacKenzie, CA) 11990 in SS at 2225 and 15455 in SS at 2327. (MacKenzie, CA) 1730–1800. (Burneau, ON) CFRX, Toronto, 6070 at 0143 through co-channel QRM with discussion and occ. phone calls. (Sellers, BC) 1210 with an interview. (Maxant, WV)

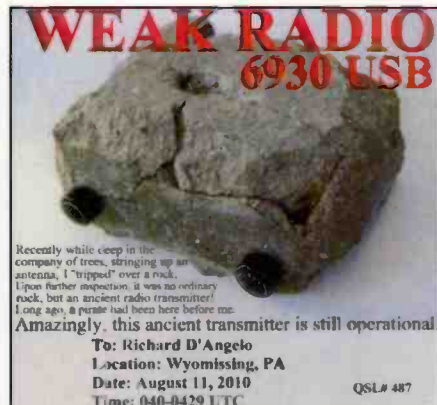
CKZU, Vancouver, 6160 at 2329 with a CBC pgm on computers. (Sellers, BC)

CFVP, Calgary, 6030 at 2325 with country songs and "AM 1060" ID. (Sellers, BC)

CHU time station, 3330 monitored at 0310. (Maxant, WV) 7850 at 0531. (Yohnicki, ON)

CHAD—Radio Nationale Tchadienne, 6165 heard in FF to 2230 or 2300 sign off, and again around 0430 sign on. (Alexander, PA) *0428 with familiar balafon IS and orchestral NA, M in FF, "Ici N'Djamena," opening anmts f/by Afro pops. (D'Angelo, PA)

CHILE—CVC-La Voz, 11655 in SS heard at 2327 with Christian pops. (MacKenzie, CA) 17680 in SS at 1800 with M and apparent news and canned ID. (Coady, ON)



WEAK Radio's clever pirate QSL, received by Rich D'Angelo.

CHINA—China Radio Intl, 6195 via Canada in EE at 0550, 9515 via Albania in AA at 0533, 9730-Beijing at 1307, 9855-Beijing in CC at 1249, 9785-Kunming in (I) Lao at 1257, 13610-Kashi at 1337 and 15205-Kashi in FF at

A Guide To "GIG-Speak"

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

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



Here's the super shack of Doug Gomez, KC6RCM. Above his Ten-Tec RX340 receiver positioned in the center are (left to right) a Ten-Tec amplifier, transceiver, and power supply/speaker combination.

1346. (Bryant, KY) 7210 via Albania in SS at 2210, 7390-Hohhot in (I) Mongolian at 1144, 11620-Xi'an in (I) JJ at 1147, 11640-Xi'an in CC at 1223, 11690-Xi'an with an interview at 1215, 13610-Nanning in CC at 1220 and 13790-Urumqi with an interview at 1222. (Brossell, WI) 9560 via Canada in SS at 0346, 9570 via Albania in CC at 0349, 9765 in Khmer at 0038, 11790 at 2332, 11900 at 1707, 13580 in CC at 1650 and 15635 in CC at 0510. (MacKenzie, CA) 9790 at 0302, 11595 at 1200 sign on, 11665 with news at 1202, 13610 with commentary at 1206 and 13790 with commentary at 1215. (Padazopoulos, Greece) 13760 at 1646. (Sellers, BC)

CPBS/China National Radio: CNR-1, 4800-Golmud in CC heard at 2248. (Padazopoulos, Greece) PBS-Xinjiang, 7275-Beijing in Uighur at 2310. (Ng, Malaysia) 7345-Beijing in CC at 1110. (Brossell, WI) 11690 in CC at 0544. (MacKenzie, CA) CNR-1-Lingshi, 13700 in CC at 2340. (Parker, PA)

Firedrake music jammer, 13680 at 0840. (Ng, Malaysia)

COLOMBIA—Marfil Estereo, Puerto Lleras, 5910 with M in SS and a long sermon, ID at 0356. (D'Angelo, PA)

La Voz de su Concencia, Puerto Lleras, 6010 at 0745 with SS religious talk and EE translations. (Alexander, PA)

La Voz del Guaviare, SJ del Guaviare, 6035 at 0110 with SS anmts and local pops. (Alexander, PA)

CROATIA—Voice of Croatia/Hrvatski Radio, Deanovic, 3985 at 0244 with talks in SS. (Parker, PA) //9925 via Germany with IDs in EE at 0200, then in Croatian and into *Croatia Today*. (Coady, ON; Alexander, PA) 9925 via Germany in Croatian at 2317 with M/W conversation. (MacKenzie, CA)

CUBA—Radio Havana Cuba, 6000 at 2345; 6060 and 6110 at 0434. (Padazopoulos, Greece) 11760 at 1653, 12030 at 2229, 13760 at 0334, 15380 at 0020 and 17705 at 2344, all in SS. (MacKenzie, CA)

Radio Rebelde, 5025 in SS at 2343. (Padazopoulos, Greece)

CZECH REPUBLIC—Radio Prague, 7345 at 0100 with rotating IS and station info before opening with news. (Coady, ON) 9790 on Czech literature at 0019. (Sellers, BC) 11600 opening in EE at 1200. (Padazopoulos, Greece)

DJIBOUTI—Radio Djibouti, 4780 with M in AA talk at 2120. (Ng, Malaysia)

DOMINICAN REPUBLIC—Radio Amanecer, Santo Domingo, 6025 monitored at 1015 with SS religious talk and ID. (Alexander, PA)

ECUADOR—HCJB, 6055-Pinchincha, at 1128 in SS. (Sellers, BC) 11920 in PP at 2328. (MacKenzie, CA) (*site?—glf*)

Radio el Buen Pastor, Saraguro, 4815 in SS heard at 2340, but troubled by a UTE. (Wilkner, FL)

EGYPT—Radio Cairo, 6270 with ME music at 0203 f/by Holy Koran. (Sellers, BC) 0325 with Egyptian music. (Maxant, WV) 9305 at 0322 in AA with comments, M singing. (MacKenzie, CA)

ENGLAND—BBC, 6005 with sports at 0423, 9410 at 0319, 9565 closing in Farsi at 0328, 11760 with news at 1202, 15400 and 17840

with commentary at 0830 and 21740 with an interview at 1154. (Padazopoulos, Greece) 12095 via Cyprus at 2240. (MacKenzie, CA) 15310 Thailand Relay with *The World Today* at 0705. (Ng, Malaysia)

EQUATORIAL GUINEA—Radio Nacional, Malabo, 6250 with Afro-pop and SS anmts at 0543. (Alexander, PA)

ERITREA—Voice of the Broad Masses, 7220 monitored at *0355 sign on with IS. talk at 0359, local pops. Fair, but covered by a noise jammer at 0359. (Alexander, PA)

ETHIOPIA—Radio Oromiya, 6030 at *0321 with familiar xylophone IS, f/by W in (p) Oromo with ID, anmts. News by M at 0400. (D'Angelo, PA) *0322 and into HOA music after sign on. Radio Marti and its jammer are off the air on UTC Mondays. (Alexander, PA)

Amharic State Radio, 6090 monitored at *0256 sign on with IS, talk in unid language, local flutes. Co-channel Anguilla was off the air. (Alexander, PA)

Radio Africa, 15190 at 1953 with an EE sermon. (Bryant, KY)

FRANCE—Radio France Intl, 7220 with news in FF at 0427 and 9765 with news in EE at 0600. (Padazopoulos, Greece) 9790 in FF at 0512. (Parker, PA) 7340 in FF at 0515 and 15300 in FF to 2000 close. (Bryant, KY) 15160 in FF at 0517. (MacKenzie, CA) 15300 in FF at 1719. (D'Angelo, PA) 17605 with news in EE at 1611. (Sellers, BC) 17620 in FF at 1239. (Brossell, WI)

GERMANY—Deutsche Welle, 5915 via England in RR at 0518 and 9480 Rwanda Relay in GG at 0527. (Bryant, KY) 6075 in GG at 0011 and 12045 with news in EE at 0413. (Padazopoulos, Greece) 11795 Rwanda with a sports report at 1908 and 15275 Rwanda in GG at 1919. (Brossell, WI) 9775 in GG at 2303, 11830 in CC at 2348 and 11865 Portugal Relay in GG at 2350. (MacKenzie, CA)

Deutschlandfunk, Berlin, 6190 at 0043 with continuous classical music until lost to Radio Nederland sign on at 0058. (D'Angelo, PA)

GREECE—Voice of Greece, 7475 and 9420 in Greek at 0432. Also at 1152, //15630. (Padazopoulos, Greece) 9420 in Greek at 0340. (MacKenzie, CA) 0523. (Bryant, KY) 15630 in Greek at 1850. (Brossell, WI)

RS Makedonias, 9935 in Greek at 1154. (Padazopoulos, Greece)

GUAM—Adventist World Radio, 9880 in Korean monitored at 1245. (Bryant, KY) 11850 in Javinese at 2219 and 17880 in CC at 0505. (MacKenzie, CA) 12010 with EE ID at 1000 and into CC. (Ng, Malaysia)

KTWR, 9910 in CC to 1230 sign off. (Bryant, KY)

GUINEA—Familia FM, Conakry, 4900 at 2256 with W in FF hosting music. clear ID noted at 2343, hi-life vocals to 0001 closedown ID and anmts. (D'Angelo, PA)

GUYANA—Voice of Guyana, 3290 at 0236 with M hosting 1970s vocals. (D'Angelo, PA) 0820 with Hindi vocals, Koran at 0836, US pops. Also heard earlier with BBC pgms. (Alexander, PA) 0900 with DJ and '70s pop vocals, time pips on the hour. (Bryant, KY)

HAWAII—WWVH, 2500 with W time anmts monitored at 1138. (Sellers, BC)

HONDURAS—Radio Luz y Vida, Sao Luis, 3250 noted in SS fading up at 1017. (Wilkner, FL)

INDIA—All India Radio, 13695 and 15075 at 0403 with Hindi songs. (Padazopoulos, Greece) 15050 in Sinhala at 1340. (Bryant, KY)

INDONESIA—Voice of Indonesia, 9525 at 1204 with talks in II. (Brossell, WI) 1321 in EE with ID and into *Outstanding Events* pgm. (Bryant, KY)

IRAN—Islamic Republic of Iran Broadcasting, 13710 in (I) Azeri with W and vocals at 0526. (MacKenzie, CA) 15085 in Farsi at 1210. (Padazopoulos, Greece) 15240 in (I) Hebrew at 1203. (Brossell, WI)

ISRAEL—Galei Zahal, 6973 at 2320 with US and Europops, HH music. 15785 was not noted. (Alexander, PA)

JAPAN—Radio Japan, 6120 at 0220 with vocals and 9625 with pgm *Tokyo Today* at 1225. (Maxant, WV) 9790 with EE news at 1100. (Padazopoulos, Greece) 9835 in JJ at 1752, 11715 in RR at 0553, 15265 in JJ at 2317 and 17810 in JJ at 0450. (MacKenzie, CA) 17810-Yamata with *World Interactive* pgm heard at 0510. (Ng, Malaysia)

Radio Nikkei, 3925 in JJ at 1015. (Brossell, WI)

JORDAN—Radio Jordan, 11960-Al Karanah at 0435 with AA anc and AA music. (Parker, PA)

WORLD RADIO TV HANDBOOK

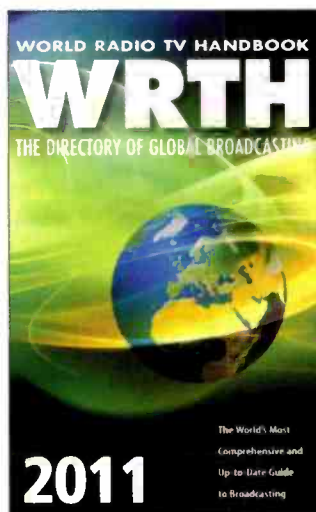
WRTH 2011

We are very pleased to announce the publication of the 2011 edition of *World Radio TV Handbook*, the bestselling directory of global broadcasting on LW, MW, SW & FM

The Features section has an account of the history of Radio St Helena, reviews of the latest equipment, an intriguing look back at some classic 80s & 90s receivers, and much more, including our regular *Digital Update*.

The remaining pages are, as usual, full of information on:

- National and International broadcasts and broadcasters by country with frequencies, powers, languages, contacts, and more, including Clandestine and other target broadcasters
- MW frequency listings by region. International and domestic SW frequency listings, as well as DRM listings
- International SW broadcasts in English, French, German, Portuguese & Spanish.
- Reference section with Transmitter locations, DX clubs, Internet Resources, and much more



Available December 2010

SOME COMMENTS ON WRTH 2010

The 2010 *World Radio TV Handbook* continues to set the radio hobby standard. It remains the best, most authoritative and comprehensive radio reference book in the world

– Gayle Van Horn W4GVH, *Monitoring Times*

Essential, could not do without it! – Glenn Hauser, *DX Listening Digest*

WRTH gives you more info about a broadcast than any other radio reference book with which I'm familiar. This is one of the reasons it has become a staple reference for serious radio listeners

– Thomas Witherspoon, *SWLing.com*

WRTH's claim to be the World's most comprehensive and up-to-date guide to broadcasting is indeed more than justified. At Radio Netherlands Worldwide, we couldn't be without it. If you like listening to radio broadcasts from abroad, neither can you

– *Radio Netherlands Media Network review*

I have just received my 2010 edition of the famous *WRTH* and it's packed with 672 pages of invaluable information. There is no other publication in the world that rivals *WRTH*. It is indeed the ultimate volume for anyone with an interest in radio – Mike Terry, UK

The *WRTH* 2010 is, as usual, indispensable and accurate. More necessary now than ever before – Gil Torbeck, Germany

Coming soon: WRTH Bargraph Frequency Guide

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Available January
from www.wrth.com





Peter Ng in Malaysia received a China Radio International QSL honoring one of China's minority groups.

KUWAIT—Radio Kuwait (I) 7130 at 0515. Maybe Kuwait testing here as they were doing early last year. Talk in unid language. some ME choral things, abruptly off at 0534. (Alexander, PA) 15540 ending EE pgm about Islam at 1814, into rap/rock/pop. (Sellers, BC) 1851 with pops. (Brossell, WI)

LIBYA—Radio Jamahiriya/Voice of Africa, 21695 at 1435 with music. ID and talk about their constitution. Deep fades, //17725 was also poor. (D'Angelo, PA)

MADAGASCAR—Radio Madagasikara, 5010 at 0242 with contemporary Christian music. IS at 0257, NA. Malagasy talk at 0301, local guitar and a radio drama. (Alexander, PA)

MAURITANIA—Radio Mauritanie, 4845 at 0113 in vernacular with M and long phone conversation. Still good with Koran at 0525 re-check. (Parker, PA) 2201 in AA with Koran. (Coady, ON)

MEXICO—Radio Mil, Mexico City, 6010 with techno rock at 0936, W with SS IDs. (Wilkner, FL)

MOLDOVA—Radio PMR, 9665 at 0013 with sked in EE and into FF. (Parker, PA) 0045 with IS, EE ID and news in EE. (Sellers, BC) 0050 with news in EE. (Coady, ON)

MOROCCO—RTV Marocaine, 15345 with Koran at 1918. (Brossell, WI) 2005 in AA. (Bryant, KY)

NEW ZEALAND—Radio New Zealand Intl, 6170 at 0655 on unrest in the Solomons, 9655 at 1215 with QRM from KBS World Radio and 11725 at 0645 on the Philippines terrorist gun market. (Maxant, WV) 9655 at 1100 with IS, time signal and news. (Coady, ON) 9655 at 1155 with various songs. (Brossell, WI) 11725 at 0548 with domestic news and 13730 at 0005 on falling tobacco sales. (MacKenzie, CA) 0127 carrying BBC Pacific Service. (Sellers, BC)



Another CRI card, this one honoring the Manchu minority, was received by Bruce Cech in Tennessee.

NIGERIA—Voice of Nigeria, 7255 heard at 2215 with talks in (I) Hausa. (Brossell, WI)

Radio Nigeria, Abuja, 7275 reactivated and audible under Tunisia at 0601 tune in and in the clear after Tunisia leaves at 0627. (Alexander, PA)

Radio Nigeria, Kaduna, 6090 at *0257 with test tone, drums IS. choral anthem and Koran recitations. Co-channel Anguilla was off the air. (Alexander, PA)

NORTH KOREA—Voice of Korea, 9345 in CC at 2100 sign on. (Ng, Malaysia) 13650 in CC at 0000 sign on. (MacKenzie, CA) 15180 with news in EE at 0108. (Sellers, ON)

KCBS-9335 in KK at 1725. Also 11710 in JJ at 1736. (MacKenzie, CA) 11735 at 1218 with an impassioned talk in KK. Also 15180 to Europe in KK at 1228. (Brossell, WI)

NORTHERN MARIANAS—Far East Broadcasting/KFBS, 15180 with talks in RR monitored at 1158. (Brossell, WI) 2238 in VV. (MacKenzie, CA)

OPPOSITION—Radio Voice of the People (to Zimbabwe), 9875 at 0423 with vernacular talk, short break of African music, into EE at 0442 with local items and contact info. (Alexander, PA)

Radio Dabanga (to Sudan), 12720 via Germany, at 1644 with M or men singing, ID, music and anmts in AA. (Sellers, BC)

Radio Y'Abadanga (to Uganda), 15410 via France at *1700 with African choral music, talk in (I) Swahili, many mentions of Uganda. (Alexander, PA)

Voice of Peace and Democracy (to Eritrea), 7165 via Ethiopia at *0356 with HOA music. Talk in (I) Tigrinya, local music, //9599.6. Almost completely covered by a noise jammer at 0410. M-W-F only. (Alexander, PA)

National Radio of Saharan Democratic Republic (to Morocco), 6297 at 2251 with

vocals, time signal at 2300 f/by ID and news in AA. Followed until 0020 but gone at 0034 re-check. (D'Angelo, PA) 6248 at 0601 with sign on and NA, Koran at 0602, AA talk at 0612, ME type music. Off their usual 6297. (Alexander, PA)

Radio Payam-e- Dooste (to Iran), 7460 via Moldova monitored at 0140-0315* with ME style music, talk in Farsi, some instl and classical religious music. (Alexander, PA)

PALAU—T8WH, 9930 at 1216 with World Harvest Radio pmg. (Maxant, WV) 1230 in JJ. (Bryant, KY)

PERU—Radio Bolivar, Cd. Bolivar, 5460.3 in SS at 2340. (Wilkner, FL)

Radio La Hora, Cusco 4857 with weak SS audio heard at 1130. (Wilkner, FL)

Radio Manantial, Huancayo, 4897 weak in SS heard at 2340. (Wilkner, FL)

Radio Libertad, Junin, 5040v at 0950 with M in SS, music. (Yohnicki, ON) 1105. (Wilkner, FL)

PHILIPPINES—Far East Broadcasting Co., 9400 in CC at 1312 and 9920 in (I) Koho at 1240. (Bryant, KY) 9435 with II sign on at 2300. (Ng, Malaysia)

Radio Veritas Asia, 15435 monitored at 1450 with talk in (I) Urdu. (Brossell, WI)

PIRATES—Vanishing Hot Dog Radio, 6925u at 2317 and 2344 with rock and novelty tunes. M/W talk about wieners. (Zeller, OH)

WBNY, 6925u at *2120 with orchestra and classical music, ID, rock and talk. (Zeller, OH)

Radio Mushroom, 6925 at *2350 with numerous IDs, mention of 185 watts. QSLs from radiomushroom@gmail.com. (D'Angelo, PA) *0000 possibly from same transmitter as vanishing Hot Dog Radio. Rock by various groups. Said station is powered by a nuclear reactor. (Zeller, OH)

WEAK Radio, 6925u at 0239 with old time guitar playing singer and frequent IDs. (D'Angelo, PA)

Wolverine Radio, 6925u heard at 0118 with '80s-'90s rock. (Hassig, IL) 0202 with rock from as early as the '50s, numerous IDs. Digital SSTV image at close. (Zeller, OH)

The Crooked Man, 6925u at 0040 with multiple IDs, talk about the Hindenburg disaster, Beatles songs. (D'Angelo, PA)

Outhouse Radio, 6925u heard at 0138 with a variety of rock/pop, *Twilight Zone* theme, outhouseradio@gmail.com for reports. (Hassig, IL)

Radio Gaga, 6925u at 0012 with rock and difficult copy M talk. SSTV at 0032 close. (Zeller, OH)

Captain Morgan, 6924.7 at 0040 with largely obscure rock. ID with email near close as captainmorganshortwave@gmail.com. (Zeller, OH)

In Times Past...

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

PAKISTAN—Azad Kashmir Radio, Muzzifarahad, 4730 at 1233 on December 30, 1977. (Dexter, WI)

Uncle Bob Radio, 6925u heard at 0052 with Uncle Bob hosting *Uncle Bob Story Hour* with much drunken talk mentioning guns. (D'Angelo, PA)

KIPM, 6925u at 0240 with Hollow Earth gave defunct Box 69, Elkhorn address, then faded as it went into another segment. Possible relay? (Hassig, IL)

Barnyard Radio, 6925u at 0000 and 0254 with variety of rock, heavy metal, rap and comedy bits. (Hassig, IL)

The Crystal Ship, 6875.9 at 0058 with strong signal but under modulated so barely copied. Seemed mostly rock. (Zeller, OH)

WCCR, 6925u at 0325 with calypso and rock. Off at 0340 with website as www.nyms.net. (Johnson, IA)

KBOX Radio, 6925u at 0011 with DJ and songs. kboxradio@gmail.com. (D'Angelo, PA)

Black Bandit Radio (Netherlands), 6375 at 0010 and 2330 with pop ballads, local oldies, said they were playing "local music from Amsterdam." Another occasion was continuous country and some US pop oldies. (Alexander, PA)

Radio Amica (Euro), 7610 at 2345 with Euro-pops, II ID. (Alexander, PA)

Reflections Europe (Ireland), 12255 with EE religious talk, Christian music. Gone at 2226 recheck and just a threshold signal on //6925. (Alexander, PA)

POLAND—Polish Radio, 9970 via Austria with a news feature at 1815. (Coady, ON)

PORTUGAL—RDP Intl, 12020 with PP news at 1205. (Padazopulos, Greece) 15295 in PP at 2142. (Brossell, WI)

ROMANIA—Radio Romania Intl, 6140 in Romanian at 0420 with *Morning Edition*, 7350 at 0430 with news in Romanian and 9765 in German at 1152. (Padazopulos, Greece) 7385 at 0007, //9580. (Sellers, BC) 9645 with comments at 0355 and suddenly off at 0357. (MacKenzie, CA) 15210 with local music at 1135. (Maxant, WV) 15430 with a piano recital at 1148. (Brossell, WI) 17760 with *Radio Newsreel* heard at 0530. (Ng, Malaysia)

RUSSIA—Voice of Russia, 5900 at 0015 with a commentary and 9665, 9735 with news in SS. (Padazopulos, Greece) 7440, via Ukraine at 0310 on the instruments that make up a full orchestra. (Maxant, WV) 9665, via Moldova at 0022 and 13775-Vladivostok at 0515. (MacKenzie, CA) 9665, via Moldova at 1213. (Yohnicki, ON) 13855 with test tones, Moscow Bells IS, sign on ID and news at 1700. (Sellers, BC) 12010-Samara in GG at 1810. 12065-Chita on world terrorism at 1115. 15415-Petropavlovdk-Kamchatka with news at 0305. 15510-Samara in (I) Pashto/Dari at 1227. (Brossell, WI)

Radio Rossii, 12070 in RR at 0540. (Mackenzie, A)

SAO TOME—Voice of America Relay, Pinheira, 12015 on malaria in Africa at 1812. (Brossell, WI)

SAUDI ARABIA—Broadcasting Service of the Kingdom, 15170

in AA with the Koran at 0330. (MacKenzie, CA) 15435 in AA at 1733 and muezzin with the call to prayer. (Sellers, BC)

SERBIA—International Radio of Serbia, 9675 via Bosnia at *0038 with IS. W opening English segment, news and press review. (D'Angelo, PA) 0034 with W and Serbian news. (Sellers, BC)

SEYCHELLES—BBC Relay, Mahe, 11785 at 0405 in (I) Swahili. (Parker, PA)

SINGAPORE—BBC Relay, 9740 with news at 1302 and 15285 in CC at 1349. (Bryant, KY)

SLOVAKIA—Radio Slovakia International, 5930 with *Slovakia Today* at 0101. (Coady, ON)

SOUTH AFRICA—Radio Sondergrense, 7285 monitored at *0459 sign on in Afrikaans. Weak and noisy. (Alexander, PA)

TWR-Africa, 7215 via Meyerton at 0330 in (I) Sidamo with Atropops and talk. (Parker, PA)

SOUTH KOREA—KBS World Radio, 9650 via Canada at 1220 on joint military exercises with the US. (Maxant, WV) 9805 at 2205 in II. (Ng, Malaysia)

SOLOMON ISLANDS—SIBC, 5020 at 1158 with M in Tok Pisin, Christian devotionals. W with closing ID and NA. (Sellers, BC)

SPAIN—Radio Exterior de Espana, 3350 Costa Rica Relay in SS at 0208. (Sellers, BC) 6055, 9535, 9620 with news in SS at 0008; 6055, 9535, 9620 with SS interviews at 0434, 11910 with news at 1204, 13720, 15585 and 17595 at 1208; 21540 and 21610 in SS at 1157. (Padazopulos, Greece) 9630 in SS at 0300. (Waterbury, AZ) 0537.



The 1949 "Record S-49U" radio made in Romania, featured on a Radio Romania International QSL, courtesy of Paul Gager, Austria.



Here's another Radio Romania International QSL, this one showing a German-made Blaupunkt SW641 from 1941. You don't need to refer to a station log—they're shown right on the dial! (Thanks Paul Gager, Austria)

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!

This month's prizewinner is **Brian Alexander**, who receives a 2011 edition of the *World Radio TV Handbook*, thanks to the good folks who publish it. The *WRTH* is jam-packed with frequencies, schedules, addresses, equipment reviews, propagation notes—everything you need to know when it comes to DXing and listening to shortwave radio. Get your copy of the 2011 *WRTH* from any radio hobby dealer, online, or a "real" bookstore.



A couple of Albanian charmers are featured on this Radio Tirana QSL from Paul Gager. The poor guy can't make up his mind!

(Bryant, KY) 9535 in SS at 0310. 11680 in SS at 2336, 11680 in SS at 2330, 11815 Costa Rica in SS at 1710. (MacKenzie, CA)

SRI LANKA—SLBC, 11905 at 0030 in Hindi with anmts. local vocals. (Alexander, PA) 15475 in EE at 0030 with Christian religious pgm. (Sellers, BC)

SUDAN—SRTC/Radio Omdurman, 7200 heard at *0239 with Koran, local tribal music, AA talk. Mixing with a weak Iran until the latter closed at 0330. (Alexander, PA)

Miriya FM, 9740 via IRRS via Rimavska Sobota in AA at 0526 with M/W talks. (Parker, PA)

SYRIA—Radio Damascus, 12085 at

1902 with talks in FF, but poor modulation. (Brossell, WI)

SWAZILAND—TWR, 9500 in EE weak at 0530. (Bryant, KY)

TAIWAN—Radio Taiwan Intl, 5950 via Florida at 0330 on differences between Taiwan and the mainland. (Maxant, WV) 9735 in JJ at 1305. (Bryant, KY) 13840 via France with *In the Kitchen* pgm at 1652. (Sellers, BC)

THAILAND—Radio Thailand, 9575 in CC monitored at 1323; into Thai after IS at 1330. (Bryant, KY) 9830 at 1230 sign off. (Maxant, WV) 15275 sign on with EE service heard at 0000 with opening ID, news. Change of antenna pattern at bottom of the hour usually ends reception. (D'Angelo, PA) 0003 with news. (Sellers, BC)

TURKEY—Voice of Turkey, 9770 at 0056 with repeating piano IS, 0100 time pips and sign on in SS. (Sellers, BC) 9785 with EE news at 1830. (Brossell, WI) 9830 at 2205 with press review. (Coady, ON) 15450 with piano IS at 0230 and news. (Maxant, WV)

TUNISIA—Radio Tunisienne, 7275 at 0500 with AA music. (Yohnicki, ON; Bryant, KY) 11980-Emiler at 0441 with W and slow Turkish songs. (Parker, PA) 12005 in AA at 1920. (Brossell, WI)

UNITED STATES—Voice of America, 6060 Philippines Relay with VV talk at 2240. (Ng, Malaysia) 9780 Sri Lanka relay at 0110. (D'Angelo, PA) 9720 Northern Marianas Relay in JJ at 1309, 9760 Philippines to close at 1300, 9845 Saipan (NM) in CC at 1251, 13580 via Madagascar in (I) Somali at 1333. (Bryant, KY) 9760 Philippines at 1206, 11785 Thailand Relay in CC at 1219, 12010 Philippines in (I) II at 1225, 15255 Philippines in Mandarin at 1230 and 17550 via Bonaire in FF at 1855. (Brossell, WI) 9885-Greenville in SS at 2311 and 11805 Philippines in II at 2305. (MacKenzie, CA) 12080 via Madagascar at 0447 poor in EE. (Parker, PA) 9880 in RR at 0600. (Waterbury, AZ) 13570 via Madagascar heard at 1640 and 15145 Philippines in Special English at 2343. (Sellers, BC)

Radio Free Asia, 9355 Saipan in CC at 1735, 11605 Saipan in VV at 2332, 11765 Northern Marianas in CC at 1640, 15430 NM in CC at 2345, 17880 NM in CC at 0443. (MacKenzie, CA) 9355 NM in (I) Laotian at 1148 and 13870 via Tajikistan in (I) Tibetan at 1226. (Brossell, WI) 9385 NM in KK at 2130. (Ng, Malaysia)

Radio Free Europe/Radio Liberty, 9760 Lampertheim Relay in RR at 0522. (Parker, PA) Radio Liberty, 15560 Thailand Relay in Tajik at 0320. (Ng, Malaysia)

Radio Farda, 13810 in Farsi at 0408. (Padazopoulos, Greece)

AFN/AFRTS, 5446.5-Key West on politics at 0322. (Yohnicki, ON)

WYFR/Family Radio, 7360 via French Guiana at 0000 with hymns. Listed for PP. Also 15160 via Germany at 1632 with soft instrumentals, M in (I) Oromo. (Sellers, BC) 7730 in SS at 0319. (Yohnicki, ON) 9455 at

0317 in FF. (Padazopoulos, Greece) 15130 in SS at 2310. (MacKenzie, CA) 11640 via Tajikistan in CC at 1205, 11725 via Petropavlovsk-Kamchatka in CC/EE at 1215, 11855 via Ascension in (I) Yoruba at 1915. (Brossell, WI) 15255 via Rampisham in (I) Somali heard at 1716. (D'Angelo, PA)

WWCR, Tennessee, 3215 at 0217. (Sellers, BC) 4840 at 0330. (Waterbury, AZ) 9980 at 1756 and 12160 at 1705. (MacKenzie, CA)

WWRB, Tennessee, 3145 at 0221 and 3185 at 0218. (Sellers, BC)

Adventist World Radio, 9845 via Wertachtal from 0400 with multi-language opening and into AA. (D'Angelo, PA) 15205 via Wertachtal in Ibo at 1957. (Bryant, KY)

WBCQ, Maine, 7415 monitored at 0315. (Maxant, WV) 9330 heard at 0338. (MacKenzie, CA)

WTJC, North Carolina, 9370 at 0321. (Padazopoulos, Greece)

Sudan Radio Service, 17745 via Portugal monitored at 1500 with *Let's Talk* pgm. radio drama and discussion about Sudan problems. Into AA at 1530. (Alexander, PA)

VATICAN CITY—Vatican Radio, 7205 at 0310. (MacKenzie, CA) 0313. (Parker, PA) 7225 in Finnish at 0514 and 9645 in Latin at 0540. (Bryant, KY) 6185 at 0426 and 9660 at 0316 (Padazopoulos, Greece) 9600 in CC at 2215. (Ng, Malaysia) 9830 in SS at 1205. (Maxant, WV) 13765 opening in EE at 1730 and 15595 in EE at 1622. (Sellers, BC)

VIETNAM—Voice of Vietnam, 6175 via Canada with listener mail at 0345. (Parker, PA) 7285 in Laotian at 2320 and 11720 in VV at 2150. (Ng, Malaysia) 9550 in CC at 1325 and 9840 in EE at 1254. (Bryant, KY)

VENEZUELA—Radio Nacional Venezuela, 15250 via Cuba in EE/SS at 2315. (MacKenzie, CA)

ZAMBIA—CVC-One Africa, 4965 with interview at 0208 and into instl music. (Coady, ON) 0303 with talks. (Parker, PA) 9430 in EE at 0521 with religious pops. (Bryant, WV) 0545. (Yohnicki, ON)

And, once again, order is restored! Sincere thanks to everyone who checked in this time: Mike Bryant, Louisville, KY; Fotios Padazopoulos, Athens, Greece; Stewart MacKenzie, Huntington Beach, CA; Rich D'Angelo, Wyomissing, PA; Earl Burneau, Ottawa, ON; Brian Alexander, Mechanicsburg, PA; Charles Maxant, Hinton, WV; Ben Johnson, Mt. Union, IA; Peter Ng, Johor Bahru, Malaysia; Michael Yohnicki, London, ON; Rich Parker, Pennsburg, PA; George Zeller, Cleveland, OH; William Hassig, Mt. Prospect, IL; Robert Wilkner, Pompano Beach, FL; Harold Sellers, Vernon, BC; Robert Brossell, Pewaukee, WI; Gardner Waterbury, Peoria, AZ; and Mark Coady, Peterborough, ON. Thanks to each of you!

Until next month—good listening!

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BROADCASTING

World Band Tuning Tips

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

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	15240	Radio Australia		0300	6090	Radio Nigeria	Hausa
0000	9790	"Radio Prague, Czech Republic		0300	5010	Radio Madagasikara, Madagascar	Malagasy
0000	6135	Radio Santa Cruz, Bolivia	SS	0300	9455	Family Radio, Florida	
0000	13730	Radio New Zealand International		0300	5950	Radio Taiwan International, via Florida	
0000	13650	Voice of Korea	KK	0300	7200	Sudan Radio TV	AA
0000	9665	Radio PMR, Moldova	EE/FF/GG	0300	9370	WTJC, North Carolina	
0000	15745	Sri Lanka Broadcasting Corp.		0300	7215	TWR, South Africa	Sidamo
0000	7360	Family Radio, via French Guiana	PP	0300	5446	AFN/AFRTS, Florida	
0000	9675	International Radio of Serbia		0300	9630	Radio Exterior de Espana, Spain	SS
0000	11815	REE, Spain, Costa Rica Relay	SS	0300	15170	BSKSA, Saudi Arabia	AA
0000	9535	Radio Exterior Espana (REE), Spain	SS	0300	9330	WBCQ, Maine	
0030	9820	Austrian Radio International	GG	0300	7440	Voice of Russia, via Ukraine	
0100	11710	Radio Argentina al Exterior	SS	0300	4965	CVC-One Africa, Zambia	
0100	11780	Radio Nacional Amazonia, Brazil	PP	0300	7305	Vatican Radio	
0100	6035	La Voz Guaviare, Colombia	SS	0300	6175	Voice of Vietnam, via Canada	
0100	4915	Radio Difusora Macapa, Brazil	PP	0300	9660	Vatican Radio	
0100	4985	Radio Brazil Central	PP	0300	4828	Voice of Zimbabwe	
0100	4815	Radio Buen Pastor, Ecuador	SS	0330	6030	Radio Oromiya, Ethiopia	Oromo
0100	4845	Radio Mauritanie, Mauritania	AA	0400	4780	Radio Djibouti	AA
0100	9770	Voice of Turkey		0400	15075	All India Radio	Hindi
0200	5025	Radio Rebelde, Cuba	SS	0400	6075	Deutsche Welle, Germany	GG
0200	3985	Voice of Croatia		0400	7220	Radio France International	FF
0200	6160	CKZN, Canada		0400	7475	Voice of Greece	Greek
0200	6973	Galei Zahal, Israel	HH	0400	11960	Radio Jordan	AA
0200	6120	Radio Japan		0400	9845	Adventist World Radio, via Germany	AA
0200	3185	WWRB, Tennessee		0400	11785	BBC, Seychelles Relay	Swahili
0230	15450	Voice of Turkey		0400	13810	Radio Farda, Sri Lanka Relay	Farsi
0300	4950	Radio Nacional, Angola	PP	0400	6140	Radio Romania International	RR
0300	6025	Radio Amanecer, Dominican Republic	SS	0400	7350	Radio Romania International	Romanian
0300	9560	China Radio International, via Canada	SS	0400	6185	Vatican Radio	
0300	7425	Radio Tirana, Albania		0430	6165	Radio Nationale, Chad	FF
0300	4930	VOA, Botswana Relay		0500	4885	Radio Clube do Para, Brazil	PP
0300	9720	China Radio International		0500	6000	Radio Bulgaria	Greek
0300	6010	La Voz de su Concencia, Colombia	SS	0500	12080	VOA, Botswana Relay	
0300	5910	Marfil Estereo, Colombia	SS	0500	7275	RT Algerienne, Algeria	AA
0300	13760	Radio Havana Cuba	SS	0500	9515	China Radio International	AA
0300	13710	Islamic Republic of Iran Broadcasting	Azeri	0500	9600	Radio Bulgaria	GG
0300	3290	Voice of Guyana		0500	9480	Deutsche Welle, Rwanda Relay	GG
0300	9410	BBC, England		0500	5915	Deutsche Welle, Germany, via UK	RR
0300	6270	Radio Cairo, Egypt		0500	9790	Radio France International	FF
0300	9305	Radio Cairo, Egypt	AA	0500	6250	Radio Nacional, Equatorial Guinea	SS
0300	6090	Amhara Sate Radio, Ethiopia	Amharic	0500	9420	Voice of Greece	Greek

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0500	7255	Voice of Nigeria		1300	15400	HCJB, Australia	CC
0500	7275	RT Tunisienne, Tunisia	AA	1300	9525	Voice of Indonesia	
0500	9630	REE, Spain, Costa Rica Relay	SS	1300	15050	All India Radio	Sinhala
0500	7285	Radio Sondergrense, South Africa	Afrikaans	1300	9400	Far East Broadcasting, Philippines	CC
0500	9760	RFE/RL, USA, Germany Relay	RR	1300	9575	Radio Thailand	
0500	9500	TWR, Swaziland		1300	9740	BBC, Singapore Relay	
0500	12070	Radio Rossii, Russia	RR	1400	15435	Radio Veritas Asia, Philippines	Urdu
0500	9430	CVC-One Africa, Zambia		1400	21695	Radio Jamahiriya/V. of Africa, Libya	
0530	6155	Radio Austria International	GG	1600	13570	Voice of America, via Madagascar	
0600	9765	Radio France International		1600	13855	Voice of Russia	
0600	7275	Radio Nigeria		1700	11760	Radio Havana Cuba	SS
0600	4990	Radio Apinte, Suriname	DD	1700	15435	BSKSA, Saudi Arabia	AA
0700	6155	Radio New Zealand International		1700	11815	REE, Spain, Costa Rica Relay	SS
1000	3310	Radio Mosoj Chaski, Bolivia	SS	1700	12160	WWCR, Tennessee	
1000	3250	Radio Luz y Vida, Honduras	SS	1800	17680	CVC-La Voz, Chile	SS
1000	12010	Adventist World Radio, Guam	CC	1800	15630	Voice of Greece	Greek
1000	3985	Radio Nikkei, Japan	JJ	1800	15540	Radio Kuwait	
1000	6010	Radio Mil, Mexico	SS	1800	9770	Polish Radio, via Austria	
1000	4717	Radio Yura, Bolivia	SS	1800	15540	Radio Kuwait	
1000	4790	Radio Vision, Peru	SS	1800	9785	Voice of Turkey	
1100	6020	Radio Australia		1800	12015	VOA, Sri Lanka Relay	
1100	6165	Radio Nederland, Bonaire Relay	SS	1800	17550	VOA, via Bonaire	FF
1100	2368.5	Radio Symban, Australia		1800	12010	Voice of Russia	GG
1100	6050	HCJB, Ecuador	SS	1900	11810	BBC Relay, Ascension Island	
1100	11580	Far East Broadcasting, Saipan	RR	1900	11795	Deutsche Welle, via England	
1100	9760	Radio Japan		1900	15275	Deutsche Welle, Rwanda Relay	GG
1100	5040	Radio Libertad, Peru	SS	1900	15300	Radio France International	FF
1100	4857	Radio La Hora, Peru	SS	1900	15190	Radio Africa, Equatorial Guinea	
1100	5020	Solomon Islands Broadcasting Corp.		1900	15345	RT Marocaine, Morocco	AA
1200	11675	Polish Radio, via Austria		1900	12005	RT Tunisienne, Tunisia	AA
1200	11775	University Network, Anguilla		1900	12085	Radio Damascus, Syria	FF
1200	9580	Radio Australia		1900	15580	VOA, Botswana Relay	
1200	7355	KNLS, Alaska		1900	15205	Adventist World Radio, via Germany	Ibo
1200	9700	Radio Bulgaria	BB	2100	15295	RDP International, Portugal	PP
1200	6070	CFRX, Canada		2200	15370	Radio Havana Cuba	SS
1200	13610	China National Radio	CC	2200	11850	AWR, Guam	JJ
1200	15240	Islamic Republic of Iran Broadcasting	Hebrew	2200	12095	BBC, Cyprus Relay	
1200	15090	Islamic Republic of Iran Broadcasting		2200	6917	Radio Nacional RASD, Algeria	AA/SS
1200	9880	AWR, Guam	KK	2200	9830	Voice of Turkey	
1200	9935	Radio Makedonias, Greece	Greek	2300	17795	Radio Australia	
1200	17620	Radio France International	FF	2300	15560	Radio Australia	
1200	15400	BBC, England		2300	15345	Radio Argentina al Exterior	SS
1200	9910	TWR, Guam	CC	2300	11665	CVC-La Voz, Chile	SS
1200	9625	Radio Japan		2300	9725	Voice of Croatia, via Germany	Croatian
1200	9655	Radio New Zealand International		2300	6000	Radio Havana Cuba	SS
1200	11735	Korea Central Broadcasting, N. Korea	KK	2300	15455	Radio Canada International	SS
1200	9920	Far East Broadcasting, Philippines	Koho	2300	11830	Deutsche Welle, via Russia	CC
1200	12020	RDP International, Portugal	PP	2300	11920	HCJB, Ecuador	PP
1200	9930	World Harvest Radio, Palau		2300	5460	Radio Bolivar, Peru	SS
1200	15180	Korea Central Broadcasting, N. Korea	KK	2300	12090	Far East Broadcasting, Saipan	VV
1200	9890	Radio Thailand		2300	15265	Radio Japan, via Bonaire	JJ
1200	9650	KBS World Radio, via Canada		2300	9885	VOA, USA	SS
1200	11785	VOA, Thailand Relay	CC	2300	11605	Radio Free Asia, Saipan (NM) Relay	VV
1200	15255	VOA, Philippines Relay	Mandarin	2300	15430	Radio Free Asia, Tinian (NM) Relay	CC
1200	9760	VOA, Philippines Relay		2300	15130	WYFR, Florida	SS
1200	12010	VOA, Philippines Relay	Indonesian	2300	9665	Voice of Russia, via Moldova	
1200	13830	Radio Free Asia, via Tajikistan	Tibetan	2300	15250	Radio Nacional Venezuela, via Cuba	SS
1200	15510	Voice of Russia	Pashto/Dari				

Second Generation Software-Defined Radio

by Bruce A. Conti
contiba@gmail.com

First generation software-defined radio (SDR) receivers broke new ground in communications equipment, replacing the knobs, pushbuttons, and switches of conventional analog radios with a mouse-driven computer screen interface.

Early SDR receivers like the RFSpace SDR IQ provided professional-grade spectrum analyzer features at a relatively low cost, and allowed for the monitoring and recording of several signals in a swath of RF bandwidth. Just imagine having the ability to record 10 radio stations simultaneously, then being able to listen to each station at a later time. Plus you could actually see the signals on a spectrum analyzer display. Revolutionary!

Unfortunately, the first entries in the field of SDR receivers didn't operate much like radios, and were instead controlled by software through various levels of mouse clicks, drop-down windows, and pop-up screens—not very comfortable to operate. Second generation SDR receivers like the Microtelecom Perseus took advantage of improved processing power to provide a computer screen interface that emulated the look and feel of an analog knobs-and-buttons radio, while also increasing RF bandwidth to the point where nearly the entire AM broadcast band could be recorded in one shot for later dissection. Last year

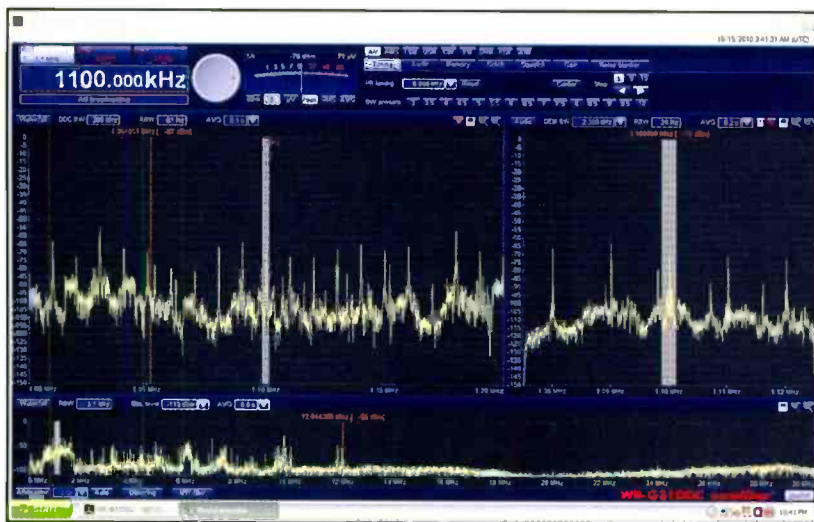
“The overall layout of the computer monitor interface is well designed with a tuning knob and plenty of dedicated pushbuttons providing easy access to all functions...The Excalibur gets an A+ for ergonomics.”

WiNRADiO introduced the WR-G31DDC Excalibur SDR receiver, raising the bar to an even higher level of functionality and performance. This month I take a closer look at this exciting new SDR. *Pop'Comm* will also feature an in-depth review of the receiver in an upcoming issue.

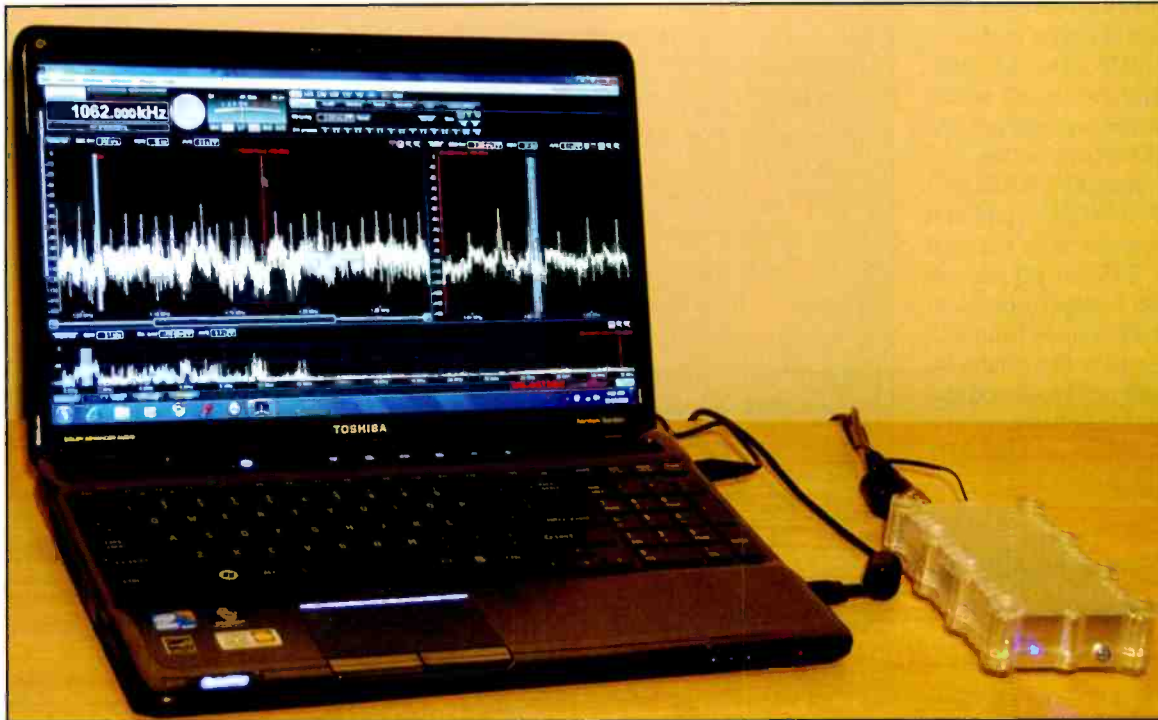
Initial Impressions

It only took a few minutes to install the software and get the Excalibur SDR receiver up and running. The instruction manual is a very thorough 107 pages. The quick start example in the instructions shows how to receive an AM broadcast signal, but beyond that it definitely requires some study time to learn how to use all the features. After an hour or so of fumbling with the various controls and following the instruction manual, I was able to tune in a few transatlantic signals. I was immediately impressed with the filtering and audio performance. I was able to get clear audio from 909 BBC5 despite having 900 WGHM just three miles east of me. This was better than I'd ever received on the RFSpace SDR IQ.

CPU overhead looked like it could be an issue. I was running the Excalibur on a laptop computer with a 1.67-GHz dual processor. WiNRADiO recommends a 2.0-GHz dual CPU, though the instructions indicate that a slower CPU can be used at the expense of selectivity and bandwidth. Indeed the slower CPU was operating at 30-percent capacity, and the SDR hiccupped a few times while operating only one of three available receivers set at low selectivity and low RF bandwidth. Recording and running all three receivers simultaneously at more aggressive settings would likely max out the 1.67-GHz CPU, but I wasn't ready to go there yet.



The Excalibur control screen features RF (left), demodulation (right), and 30–50 MHz panoramic (bottom) spectrum analyzer displays.



Measuring only 6 x 4 x 1.5 inches, the Excalibur is dwarfed by a 15-inch laptop computer.

The overall layout of the computer monitor interface is well designed with a tuning knob and plenty of dedicated push-buttons providing easy access to all functions, which included passband tuning, recording, gain controls, databases, spectrum markers, DRM mode, multiple receiver operation, panoramic display, sampling display, demodulator display. There was certainly enough to keep me entertained for several nights. The Excalibur gets an A+ for ergonomics.

Discovering Excalibur

An SDR receiver like the Excalibur certainly isn't for the faint of heart. Though initial start-up is essentially plug and play, it's easy to get lost in the depth of controls, especially without any prior spectrum analyzer or computer software experience. When working with a highly technical piece of equipment, some things are best learned through discovery by trial and error, so you must be prepared to invest some time and effort in experimenting with a wide range of parameters.

As I learned how to maximize the Excalibur setup for AM broadcast DX purposes, I found that the 1.67-GHz CPU of an older Windows XP laptop was having difficulty with the load, running at 60-percent capacity. So I switched to a more powerful laptop: a 2.4-GHz Intel CPU, 2-GB RAM, and 500-GB hard drive, with a Windows 7 operating system. Now it's performing

like a champ. At 1-MHz RF bandwidth with maximum selectivity, the CPU is still running below 20 percent.

Excalibur recording of RF spectrum is a memory hog. A four-minute recording at 200-kHz RF bandwidth results in a file size just under 500 MB, while a 400-kHz RF bandwidth capture will reach 1-GB file size within four minutes. By comparison, an RFSpace SDR IQ four-minute recording at its maximum 190-kHz RF bandwidth is only 180 MB.

A high-capacity internal hard drive is necessary when storing such large RF capture files. Operation of the Excalibur to record or playback captures via an external USB drive is not recommended. Sharing USB transfer speed between the Excalibur and another USB-driven device will reduce overall performance. Though files most certainly can be moved to external memory for archival purposes, files should be uploaded to the internal hard drive for playback.

Recording RF spectrum is easy with dedicated record, playback, pause, and stop buttons, but unlike other SDR receivers, Excalibur playback doesn't indicate the actual time/date of the capture, only a generic timespan starting at 0:00. By comparison, the RFSpace SDR IQ playback time is referenced to the time and date when recorded, and displayed during playback, i.e., 2358 12/03/10. Excalibur automated RF recordings are auto-stamped according to the center frequency, not by time/date.

So the timestamp/filename must be entered manually in order to be meaningful. The reason for the frequency stamp becomes obvious in playback mode, because manually entering a numeric frequency as opposed to tuning around during playback will result in an offset, so the center frequency must be documented for future reference.

While on the topic of timing, surprisingly the Excalibur clock doesn't have a 24-hour clock option. UTC or the time zone of your choice is displayed in AM/PM format only, derived from your computer clock. How could something as basic as a 24-hour clock be overlooked?

The spectrum analyzer displays are a fixed -150 to 0 dB; there's no option to change the scale to a smaller range, let's say -140 to -40 dB for closer inspection of signals barely above the noise floor. But there is a convenient zoom feature. When at a wide RF bandwidth, you can zoom in on a smaller frequency range for closer observation and frequency measurement.

Though a DRM mode is included, purchase of a license from the DRM consortium is required to activate this mode.

The instruction manual provides an extensive list of available user definable keyboard shortcuts for most functions. This could be useful for blind or visually impaired operators, as well as third-party software development.

Audio, filtering, passband, and gain controls can be described in one word: impressive. The AM Synchronous mode,

though slow to obtain lock, performs really well, dare I say comparable to that of the legendary Sony ICF-2010. I experimented on some common signals where strong local interference was present. No problem hearing 684 Spain versus 680 WRKO, 855 Spain versus 850 WEEI, and 909 BBC5 versus 900 WGHM, and that was on the old computer with reduced selectivity and the CPU at 60-percent capacity. On the faster laptop, no problem separating 621 Canary Islands from 620 kHz U.S. radio stations, both visually on the spectrum analyzer and in demodulation. As I typed this, I was listening to a wonderful signal from Iran on 1503 kHz with very little chatter from 1500 WFED and 1510 WWZN.

Discovering Demo Mode

Initially it appeared that the Excalibur software couldn't be operated without the receiver connected to the laptop. If this were true, then it would've been a serious deficiency for many SDR users.

Perseus SDR user Mark Connelly, WA1ION, recently shared the following with an online group:

More often than not, I review recordings on laptops in rooms other than where the receiver is set up. I do want to be around the

This Month In Broadcast History

75 Years Ago (1936)—The Green Hornet radio drama debuted on WXYZ Detroit. Westinghouse began negotiations to buy radio stations WGL and WOWO in Fort Wayne, Indiana. Westinghouse owned pioneer radio stations KDKA Pittsburgh, KYW Philadelphia, WBZ Boston, and WBZA Springfield, Massachusetts.

50 Years Ago (1961)—"Sing Along with Mitch" premiered on NBC television where viewers would follow the bouncing ball to sing popular songs with Mitch Miller. "Wonderland by Night" by Bert Kaempfert continued its reign on popular radio, number one on the "Accent Record Survey" of 1170 KSTT Davenport, Iowa.

25 Years Ago (1986)—Many school children witnessed the *Challenger* space shuttle accident live on NASA TV. The launch was broadcast to public schools nationwide, highlighting the Teacher in Space program with teacher astronaut Christa McAuliffe aboard.

rest of my family most of the time, after all, and if a TV show is dull or my wife is taking a cat-nap on the couch, on go the headphones. Better to be around in case someone needs to talk to me, rather than isolated in a different part of the house. During lunch at the office, I'll do some DX capture reviewing there too. Maybe I want to go over my or others' DX captures in a hotel room on a business trip. Needing to have the receiver hooked up and a

wallwart plugged in would be a total nuisance. How would non-Excalibur owners collaborate on listening to DXpedition files the way people can download Perseus and SDR IQ files? You don't need to own a Perseus or SDR IQ to listen to those.

"Apparently you can download the software and run it in a demo mode of some kind," responded Jerry Berg via the Boston Area DXers (BADX) email reflector. "See <http://winradio.groupy.com/message/2246>."

While checking out that link, I stumbled upon how to run the Excalibur software in demo mode without the receiver attached to the laptop. If the software is started without the receiver attached, it indicates the option of running in "Demo Mode." However it gives no clue that playback of saved capture files is an option in demo mode. It only indicates in a pop-up message, "In the demo mode, a simulated 15 MHz signal, amplitude modulated with a 1 kHz tone, is provided." Once the software is running in demo mode with the simulated 15 MHz signal, select a capture file for playback by the same method as if the SDR is connected. Simple, but not obvious, yet the instruction manual provides absolutely no clues about operating the software in demo mode! So much for the thorough instruction manual.

Potential Service Hazards

Eric Cotrell, also writing on BADX, has this to say,

I have a WinRADiO WR-G305e HF/VHF/UHF receiver which looks exactly the same as the Excalibur. They likely use the

TERRORISM FORCES

US TO MAKE A

CHOICE. WE CAN BE

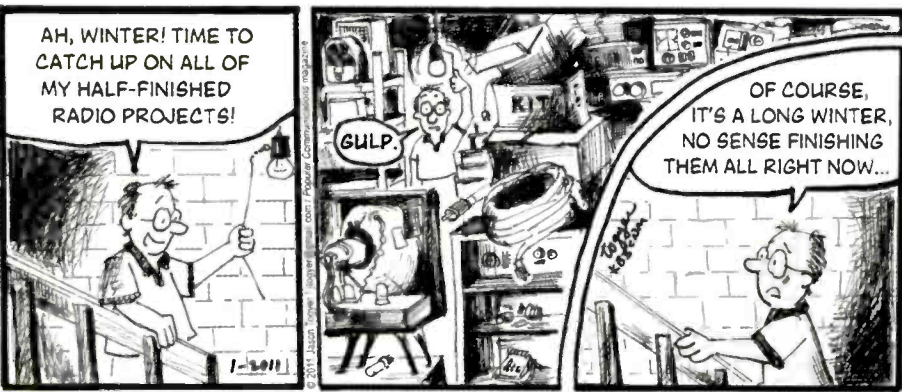
AFRAID. OR

WE CAN BE READY.

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Here's a close-up view of the Excalibur rear panel connections for 12-VDC power, USB, and antenna.

same construction of shielded modules on a main motherboard. The radio has an audio IF and software on the computer does the decoding. It does great on HF but poor on VHF/UHF due to a nasty power on drift. They use the microprocessor crystal as the reference for the synthesizer. There are some glitches and missing features that reduce the functionality of the receiver on VHF/UHF. It is a great HF and DRM receiver but a poor VHF/UHF receiver.

Eric continues:

The SMA connector center pin broke on my WinRADiO and I sent it in for repair. I got the impression that some service procedures were not completely thought out. The exchange unit that came back did not have all the options of the old one, so they ended up fixing my unit and sending it back. Be warned that the customer has to tell the U.S. service depot what options are in the radio as they do not seem to have access to radio build information. Another problem with the exchange unit was a different serial number. I have a P25 decoder that is keyed to the receiver serial number. So if the software for the Excalibur is keyed to the radio, then you may have to talk to the company for a new key if you get an exchange.

Yes, the Excalibur also uses the same wimpy SMA connector for the antenna input, rather than a heftier standard BNC, though an SMA to BNC adaptor is included. This is a potential weakness. Particular care is well-advised when connecting and disconnecting antennas.

Final Analysis

Overall the WinRADiO Excalibur is an exceptional SDR receiver, the best of any communications gear I've ever had

the pleasure to experience, and I have yet to try all functions. But don't take my word for it. The following is typical of those who have taken the leap of faith with this ground-breaking second generation SDR:

My new Excalibur is one fine radio, the best I have ever used," raves Neil Bell, KJ6FBA, via the MWDX Yahoo Group. "This Excalibur is a real winner, expensive, but worth it. The sensitivity is great, you can use squelch if desired, set AGC however you like, set the RF gain you desire, and it has three VFOs that can be selected with a mouse click. I especially like the continuously variable demodulator bandwidth, passband tuning, the choice of AM, Sync, LSB, USB, CW, FSK, FM, and DRM modes. Being able to record three separate audio channels simultaneously to help in identifying stations on the hour is great! Being able to see RF activity across a full 30 MHz with your choice of a waterfall or spectrum display is very nice. In the window called "DDC Window" you can monitor a variable bandwidth of 20 kHz to 2 MHz, and with a mouse click select whichever signal you want to hear. On top of all of that you can record any RF spectrum up to 2 MHz wide for as long as you like and select frequencies to listen to later on, demodulating them as you prefer. Amazing technology.

The Microtelecom Perseus SDR receiver might currently be the most popular, but the WinRADiO WR-G31DDC Excalibur is certainly generating excitement in the DX community. Now that the word is out, check it out at www.winradio.com.

Until next time, 73 and Good DX!

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Scanning South Florida—Part I

by Ken Reiss
radioken@earthlink.net

In the December 2009 “ScanTech” column, we looked at the state of Florida as a whole, and offered a few notes on the Miami area. Since then, and especially lately, I’ve had numerous requests for more info on the Miami area. So, back by popular demand is a “ScanTech” frequency extravaganza, this time focusing southern Florida. Because it’s such a popular destination for so many folks around this time of year, and because we have so much material, we’ll cover it in two parts. So, if you don’t see what you’re looking for this month, be patient and check next month as



A Miami Beach patrol car on the prowl. (Courtesy Jorge Brazil, via flickr.com)



An Enforcer helicopter lands on the deck of a Coast Guard Cutter near Miami after a drug bust. (USCG photo by PA2 Jeff Hall)



Port of Miami. (Courtesy Marc Averette, via Wiki Commons)



Avalon Hotel along Ocean Drive in South Beach, Miami. (Courtesy ABIJXY, via Wiki Commons)

well. If you live near or will be traveling to parts farther north in the state, you can refer back to that December 2009 column where you'll find detailed state info (which, by the way, would also apply to the south Florida area).

Sounds From The South Of The Sunshine State

The southeast portion of Florida has three counties that are pretty much one continuous expanse of highly populated city. At the southern end is the Miami-Dade County area; Broward County, which includes Fort Lauderdale; and the

Palm Beach County area. Of course, the region is rightly famous for its tourist attractions, its cruise ship industry, and its outdoor sports, as well as being a Mecca for spring breakers, retirees, and drug traffickers alike. Let's just say, there's a lot to listen to!

We'll begin with the largest swath, Miami-Dade, and pick in February with Broward and Fort Lauderdale. So grab your scanner, try out some of the frequencies listed in the following tables, and be sure to let us know about your most interesting catches!

Until next month, good listening!

Frequency Of The Month

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

Our frequency this month is **851.850**. Check it out and see what you hear, or don't. Let me know and we'll enter your name into the monthly drawing. Send your entries, as well as suggestions and questions, to radioken@earthlink.net or via more traditional methods to Ken Reiss, 9051 Watson Rd. #309, St. Louis, MO 63126. Please note frequency of the month entries with the frequency on the envelope or subject line for correct routing. And don't forget that address!

The most recent winner of our drawing is **Larry Buttrey of Pentwater, Mississippi**. Congratulations, Larry!

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A Sampling Of Miami-Dade Area Frequencies

Miami-Dade County

Miami-Dade County has four separate systems for county-wide communications; EDACS is the protocol in use. The first system (1) is for county services and fire communications, and there are six transmitter sites throughout the county for this system. The second (2) is for public safety and also has six sites. The third (3) is used for the Miccusukee Indian Police, located about 25 miles west in the Everglades. The fourth (4) site is a remote trailer that is used for special events and moved where needed. (Some info on the above was included in the December 2009 column, but this is updated and expanded.)

Site Name	01	02	03	04	05	06	07
1 LG and Fire	01 866.11250	02 866.36250	03 866.61250	04 866.86250	05 867.13750	06 867.38750	07 867.66250
	08 867.91250	09 868.26250	10 868.51250	11 866.13750	12 866.38750	13 866.63750	14 866.88750
	15 867.28750	16 867.53750	17 868.11250	18 868.36250	19 868.61250	20 868.86250	
2 Public Safety	01 866.03750	02 866.28750	03 866.76250	04 867.06250	05 867.41250	06 867.78750	07 868.13750
	08 868.38750	09 868.63750	10 868.88750	11 866.06250	12 866.31250	13 866.56250	14 866.81250
	15 867.11250	16 867.36250	17 867.56250	18 867.81250	19 868.16250	20 868.41250	
3 Remote Everglades	01 866.73750	02 867.23750	03 867.68750	04 868.23750	05 868.73750		
4 Remote Trailer	01 866.13750	02 866.38750	03 866.63750	04 866.06250	05 866.31250		

DEC	Description	Frequency	DEC	Description	Frequency
	Countywide Talkgroups	45		Disaster Net	296
		46		Disaster Net	297
		47		Disaster Net	298
					299
				Miami-Dade Cnty Public Schools Talkgroups	300
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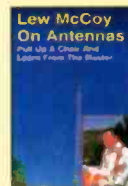
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381	HOSPITAL NET		Isles, Surfside	652	PD
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386	HOSPITAL NET	572	PD CAR - DORAL	660	Call Erickson Radio Shop
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388	HOSPITAL NET	574	PD CAR - COUNTYWIDE		Information Office
389	HOSPITAL NET	575	Police Car Digital	662	PD- South Miami
390	HOSPITAL NET	577	PD HQ - HQ TAC	663	South Miami Local South Miami
391	HOSPITAL NET	578	PD HQ - HQ CAR		Car-Car
392	HOSPITAL NET	579	PD HQ - SRT 1	664	PD- North Miami
393	HOSPITAL NET	580	PD HQ - SRT 2	665	Doral Special Events(Surv)
394	HOSPITAL NET	581	PD HQ - NARC 1	666	PD
395	HOSPITAL NET	582	PD HQ - NARC 2	668	PD Dispatch - Miami Gardens
396	EMS-To-Metro. Hosp. of Miami	583	PD HQ - TNT 1	676	PD
397	HOSPITAL NET	584	PD HQ - TASK FORCE 1	679	PD Marine Unit-Unit
398	HOSPITAL NET	585	PD HQ - TASK FORCE 2	680	PD
399	HOSPITAL NET	586	PD HQ - TASK FORCE 3	689	Task Force 4
		587	PD HQ - CIB 1	691	Task Force 6
	Police Talkgroups	588	PD HQ - CIB 2	692	Task Force 7
		589	PD HQ - COURT SERVICES	693	Task Force 8
DEC	Description		BUREAU	694	Task Force 9
512	All Call		PD HQ - COURT SERVICES	695	Task Force 10
529	PD Dispatch - NORTHWEST	590	BUREAU	696	Task Force 11
	(Mia Lks. Opa Locka. Uninc NW)	591	Sexual Crimes Bureau 1	697	Task Force 12
		592	Sexual Crimes Bureau 2	698	Task Force 13 (Port of Miami)
530	PD DISPATCH - NORTHSIDE	593	PD HQ - PCB 1	699	Task Force 14
531	PD DISPATCH - MIDWEST	594	PD HQ - PCB 2	700	Task Force 15
	(Delta Units)	595	Economic Crime Bureau 1	705	PD MISC - PUBLIC SAFETY 1
532	PD DISPATCH - CUTLER	596	Economic Crime Bureau 2	706	PD MISC - PUBLIC SAFETY 2
	RIDGE	597	PD HQ - AUTO 1	707	PD MISC - PUBLIC SAFETY 3
533	PD DISPATCH - KENDALL	598	PD HQ - AUTO 2	708	Public Safety 4(1D)
534	PD DISPATCH - INTRA-	599	PD HQ - SRT CAR 1	709	Public Safety 5 (2D)
	COASTAL	600	PD SRT Tac	724	Miccosukee Car 1A
535	PD Dispatch - NORTHEAST	601	PD SRT Car 2	725	Miccosukee Car 2A
536	PD DISPATCH - HAMMOCKS	602	PD Cargo 1	738	SRT F1 Tac 1
537	PD DISPATCH - MUNICIPAL	603	PD Cargo 2	739	SRT F2 Tac 2
	WEST (Doral and Hialeah	604	PD Environmental	740	SRT F3 Digital
	Gardens)	605	PD	741	SRT F4 Car A
538	PD DISPATCH - HQ	606	PD S.T.O.P.	742	PD
539	PD DISPATCH - INFO NORTH	607	Robbery Intervention Detail	743	PD
540	PD DISPATCH - INFO SOUTH	609	PD MISC - TRAINING 1		
541	PD	610	PD MISC - TRAINING 2		
542	PD	614	Narcotics Surveillance		Transit Talkgroups
545	PD TACTICAL - NORTHWEST	615	PD	DEC	Description
546	PD TACTICAL - NORTHSIDE	616	Narcotics Surveillance	1024	Transit All Call
547	PD TACTICAL - MIDWEST	617	PD	1040	Bus Transit All Call
548	PD TACTICAL - CUTLER	618	PD Opa Locka	1041	TRANSIT SYSTEM
	RIDGE	622	Professional Compliance Bureau	1042	TRANSIT SYSTEM
549	PD TACTICAL - KENDALL	625	PD HQ - SPECIAL EVENTS 1	1043	TRANSIT SYSTEM
550	PD TACTICAL - INTRA-	626	PD HQ - SPECIAL EVENTS 2	1044	TRANSIT SYSTEM
	COASTAL	627	PD HQ - SPECIAL EVENTS 3	1045	TRANSIT SYSTEM
551	PD TACTICAL - MUNICIPAL	628	PD HQ - SPECIAL EVENTS 4	1046	TRANSIT SYSTEM
552	PD TACTICAL - HAMMOCKS	630	PD	1047	TRANSIT SYSTEM
553	PD TACTICAL - MUNICIPAL	636	PD	1056	Bus Operations All Call
	WEST	641	PD TACTICAL - COUNTY-	1057	TRANSIT SYSTEM
554	PD TACTICAL - AIRPORT		WIDE TAC 1	1058	TRANSIT SYSTEM
555	PD HQ - CANINE	642	PD TACTICAL - COUNTY-	1059	TRANSIT SYSTEM
556	PD		WIDE TAC 2	1060	TRANSIT SYSTEM
559	PD	643	PD TACTICAL - COUNTY-	1061	TRANSIT SYSTEM
561	PD CAR - NORTHWEST		WIDE TAC 3	1062	TRANSIT SYSTEM
562	PD CAR - NORTHSIDE	644	PD TACTICAL - COUNTY-	1063	TRANSIT SYSTEM
563	PD CAR - MIDWEST		WIDE TAC 4	1064	TRANSIT SYSTEM
564	PD CAR - CUTLER RIDGE	645	PD TACTICAL - COUNTY-	1065	TRANSIT SYSTEM
565	PD CAR - KENDALL		WIDE TAC 5	1066	TRANSIT SYSTEM

1067	TRANSIT SYSTEM	1089	TRANSIT SYSTEM	Miccosukee Indian Reservation Talkgroups	
1068	TRANSIT SYSTEM	1090	TRANSIT SYSTEM		
1072	Rail All Call	1091	TRANSIT SYSTEM	DEC	Description
1073	TRANSIT SYSTEM	1092	TRANSIT SYSTEM	401	Miccosukee Fire 1
1074	TRANSIT SYSTEM	1104	Tactical All Call	402	Miccosukee Fire 2
1075	TRANSIT SYSTEM	1105	TRANSIT SYSTEM	403	Miccosukee Fire 3
1076	TRANSIT SYSTEM	1106	TRANSIT SYSTEM	721	Miccosukee Police 1
1077	TRANSIT SYSTEM	1107	TRANSIT SYSTEM	722	Miccosukee Police 2
1078	TRANSIT SYSTEM	1108	TRANSIT SYSTEM	723	Miccosukee Police 3
1080	TRANSIT SYSTEM	1120	TRANSIT SYSTEM	1769	Miccosukee Common 1
1081	TRANSIT SYSTEM	1121	TRANSIT SYSTEM	1770	Miccosukee Common 2
1082	TRANSIT SYSTEM	1122	TRANSIT SYSTEM	1771	Miccosukee Common 3
1083	TRANSIT SYSTEM	1123	TRANSIT SYSTEM	1772	Miccosukee Common 4
1088	Mover All Call	1124	TRANSIT SYSTEM	1773	Miccosukee Common 5

Miami Beach

The city of Miami Beach also has a trunked system using the more standard Type II Motorola and APCO-25 protocols. In 2006, problems with the digital system forced them to return to analog communications. It appears that there are no plans to switch back at this time.

Freqs

851.6375 856.7875 856.9125 857.9125 858.7875 858.9125 859.78750c 859.91250c 860.78750c 860.91250c

Police Talkgroups	32560	Event 13	33680	CH-C FIRE TAC-1
DEC Description	32592	Event 14	33712	CH-D FIRE TAC-2
32016 Ch 1	32624	Event 15	33744	CH-E FIRE INFO
32048 Ch 2	32656	K-9	33776	CH-F FIRE EMS PATCH
32080 Ch 3	32688	Property	33808	CH-G FIRE EMS PATCH
32112 Ch 4	32720	Auto	33840	CH-H FIRE EMS PATCH
32144 Ch 5	32752	WST	33872	CH-I FIRE
32176 Ch 6	32784	Motor	33904	CH-J FIRE
32208 Ch 7	32816	Marine	33936	CH-K FIRE
32240 Ch 8	32976	Parking Enforcement TAC	33968	CH-L FIRE
32272 TAC 10		Channel	34000	CH-M FIRE DISPATCH 2
32304 Ch 10	33008	Parking Enforcement Supervisors		MARSHALL OR CODE
32336 Ch 11	37280	SWAT		ENFORCEMENT
32368 Ch 12		Fire / Rescue Talkgroups	34032	CH-N FIRE
32400 Ch 13		DEC Description	34064	CH-O FIRE
32432 Ch 14	33368	EMS	34096	FD Drills
32464 Event 1	33616	CH-A FIRE DISPATCH MAIN	34128	BEACH PATROL 1
32496 Event 2	33648	CH-B FIRE	34160	BEACH PATROL 2
32528 Event 3			34192	BEACH PATROL 3

Miami

The city of Miami is also on a trunked system, which is a Motorola Type II analog system.

Freqs

854.96250c 855.21250c 855.46250c 855.71250c 856.2125 856.4625 856.7125 856.9625
857.4625 857.7125 857.9625 858.2125 858.7125 858.9625 859.2125 859.4625
859.7125 859.9625 860.2125 860.4625 860.7125

Fire-Rescue Talkgroups	63536	Tactical	64144	Public Works
DEC Description	63568	Phone Patch	64176	Recreation
63120 Dispatch	63792	Fire Prevention 2	64208	Street Sweepers
63152 Car-to-Car	63824	Decontamination	64240	Parks Maintenance
63184 Rescue Dispatch	63856	Key Biscayne	64272	Parks
63216 Permits	63888	Tactical Rescue Team Operations (TRT Ops)	64304	Building & Zoning
63248 JMH Medcom	63920	Indigent Care (CIT)	64336	Solid Waste - Garbage
63280 FCIO	63984	Fire College Training 1	64368	Motor Pool
63312 Prevention 1	64016	Fire College Training 2	64400	LG
63344 Fireground	64048	Special Events 1	64432	Solid Waste - Trash
63376 Hazmat	64080	Special Events 2	64464	LG
63408 Tactical		Local Government Talkgroups	64496	LG
63440 Tactical		DEC Description	64528	Code Enforcement
63472 Tactical	64112	Motor Pool	64560	Maintenance
63504 Tactical			64720	PARKING ENFORCEMENT
			65328	Communications

Miami Police Department Talkgroups	62480	Tactical 11	62928	Criminal Investigation Section (CIS)	
DEC	Description	62512	Information	62960	Canine
62128	North Dispatch	62544	Special Events	62992	Task Force 1 (TF 1-4 used for narcotics, surveillance and stings only)
62160	North Tactical	62576	Mobile Phone	63024	Task Force 2
62192	Central Dispatch	62608	Training	63056	Task Force 3
62224	Central Tactical	62640	Motors	63088	Task Force 4
62256	West Dispatch	62672	Marine and Mounted Patrol	65360	Joint Operations Calling
62288	West Tactical	62704	Special Operations 1	65392	Joint Operations Tac 1
62320	South Dispatch	62768	Special Operations 2	65424	Joint Operations Tac 2
62352	South Tactical	62800	Special Operations 3	65456	MPD JOPSTAC2
62384	Dispatch 9	62832	Special Operations 4	65488	Joint Operations Tac 4
62416	Tactical 9	62864	Special Operations 5		
62448	Traffic	62896	Command		

Miami-Dade County Conventional

There are some conventional frequencies still in use in the area as well. Here's a selection to get you started.

Miami-Dade Fire Rescue	463.1625	192.8 PL	EMS-to-South Shore Hospital and Med. Ctr.
West and South Dispatch simulcast most of the time.	463.1625	141.3 PL	EMS-to-Hialeah Hospital
	463.175	167.9 PL	Statewide

Frequency	Tone	Description
453.35	226 DPL	North - Dispatch
453.525	223 DPL	North - Tactical
460.45	243 DPL	North - Admin
460.5	244 DPL	Central - Dispatch
453.325	245 DPL	Central - Tactical
460.4	251 DPL	Central - Admin
453.1	205 DPL	West - Dispatch
453.8	261 DPL	Tactical
453.15	174 DPL	South - Dispatch
453.425	263 DPL	Tactical
453.2	263 DPL	Tactical
453.7	243 DPL	Tactical (used at Dolphin Stadium)
453.5	265 DPL	Airport Fire Rescue Division
460.3375	743 DPL	Airport
453.6	CSQ	Admin [encryption enabled]
453.45	261 DPL	West - Admin?
460.3125	331 DPL	Tactical

Miami-Dade, County of

Frequency	Tone	Description
155.37	103.5 PL	Police/Marine Patrol - Intercity patched to 800
156.015	103.5 PL	High Intensity Drug Trafficking Areas (HIDTA) Net
156.03	103.5 PL	High Intensity Drug Trafficking Areas (HIDTA) Net
155.91	103.5 PL	High Intensity Drug Trafficking Areas (HIDTA) Net
155.115	103.5 PL	High Intensity Drug Trafficking Areas (HIDTA) Tactical
155.925	103.5 PL	High Intensity Drug Trafficking Areas (HIDTA) Tactical
153.44	123.0 PL	Water and Sewer Department
153.5	123.0 PL	Water and Sewer Department
153.56	123.0 PL	Water and Sewer Department

Miami-Dade MEDCOM

Frequency	Tone	Description
463.025	210.7 PL	County Medical Control Med-2
463.075	210.7 PL	County Medical Control Med-4
463.125	210.7 PL	County Medical Control Med-6
463	173.8 PL	EMS-to-Jackson South Community Hospital
463	186.2 PL	EMS-to-Kendall Regional Medical Center
463.0125	151.4 PL	EMS-to-Homestead Hospital
463.0125	156.7 PL	EMS-to-Palm Springs General Hospital
463.0125	107.2 PL	EMS-to-Aventura Hospital and Medical Ctr.
463.0125	131.8 PL	EMS-to-Veterans Hospital
463.0375	136.5 PL	EMS-to-Mount Sinai Medical Center and Miami Heart Institute
463.0375	192.8 PL	EMS-to-Palmetto General Hospital
463.0375	131.8 PL	EMS-to-Healthsouth Doctors Hospital
463.05	114.8 PL	EMS-to-Cedars Medical Center
463.05	203.5 PL	EMS-to-Larkin Community Hospital
463.0625	127.3 PL	EMS-to-Mount Sinai Medical Center
463.0625	167.9 PL	EMS-to-Baptist Hospital of Miami
463.0875	162.2 PL	EMS-to-Jackson Memorial Hospital
463.1	103.5 PL	EMS-to-Mercy Hospital
463.1125	146.2 PL	EMS-to-North Shore Medical Center
463.1125	107.2 PL	EMS-to-Pan American Hospital
463.1375	123.0 PL	EMS-to-Coral Gables Hospital
463.1375	114.8 PL	EMS-to-Parkway Regional Medical Center
463.15	110.9 PL	EMS-to-Miami Childrens Hospital
463.1625	123.0 PL	EMS-to-South Miami Hospital

Miami-Dade County Public Schools

Frequency	Tone	Description
452.425	127.3 PL	Ponce De Leon Middle (Coral Gables)
452.475		Robert Morgan Educational Center
452.825	162.2 PL	Coral Reef Senior High
453.65	91.5 PL	Miami Beach Senior High School
463.7	107.2 PL	Campbell Drive Middle School
469.5125	179.9 PL	Reagan-Doral Senior High
471.8375	192.8 PL	Reagan-Doral Senior High

Cutler Bay, Town of

Frequency	Tone	Description
453.7625		Public Works

Florida International University (Miami)

Frequency	Tone	Description
470.9125	107.2 PL	Police - Dispatch
473.625	162.2 PL	Police - Car
464.6875		Orientation Office (Miami)

Golden Beach Town of

Frequency	Tone	Description
453.825	411 DPL	Public Works/ Beach Patrol

Hialeah Gardens, City of

Frequency	Tone	Description
153.965	311 DPL	Public Works

Hialeah, City of

Frequency	Tone	Description
453.55	156.7 PL	Housing Authority
470.8875	173.8 PL	Fire - Paging
854.3375	265 DPL	Water Dept.

Homestead, City of

Homestead PD will be going APCO-25 soon.

Frequency	Tone	Description
155.7	165 DPL	Police Dispatch
155.01	205 DPL	Police Records
154.815	134 DPL	Police Tactical West
156.21	226 DPL	Police Tactical Central
155.655	245 DPL	Police Tactical East
151.07	143 DPL	Police Tactical Racetrack (Homestead Speedway Events)
155.685	251 DPL	Police Point-to-Point
155.895	131 DPL	Police Point-to-Point
155.625	131.8 PL	Police Point-to-Point
154.085	125 DPL	Police Point-to-Point
155.37	CSQ	Police - Intercity
162.55	CSQ	Police - NOAA Weather (Rx Only)
155.985	114 DPL	Police - Interagency
155.7	165 DPL	Police Direct Talkaround
153.965	243 DPL	Public Works
153.995	107.2 PL	Water & Sewer/Streets
154.965	263 DPL	Utilities
154.89	331 DPL	Utilities - Electric/Power Road Crews

Medley, Town of

Frequency	Tone	Description
155.415		Public Works

Miami Beach, City of

Frequency	Tone	Description
460.375	192.8 PL	Public Safety - Hurricane/ Special Events

Miami Gardens, City of

Industrial Communications and Electronics #213A
Motorola Type II

Miami Shores, Village of

Frequency	Tone	Description
852.1875		Police
453.275	77.0 PL	Public Works

Miami Springs, City of

Frequency	Tone	Description
851.0125		Police Car-to-Car/Tactical

North Miami Beach, City of

Frequency	Tone	Description
156.15	114.8 PL	Emergency Operations Center-1 (Volunteer Patrols, Crossing Guards)
155.025	103.5 PL	Emergency Operations Center-2
451.125	127.3 PL	Water Department
453.4	146.2 PL	Public Works

The uniform patch of the Miami Dade County police. (Courtesy conner395, via flickr.com)



North Miami, City of

Frequency	Tone	Description
153.41	179.9 PL	Utilities
453.2375	114.8 PL	Local Government-1
453.5375	071 DPL	Local Government-2
465.1125	CSQ	Local Government

Pinecrest, Village of

Frequency	Tone	Description
453.3	94.8 PL	Police
453.65	94.8 PL	Police
453.05	94.8 PL	Services

Sunny Isles Beach, City of

Frequency	Tone	Description
453.3125	152 DPL	Public Works
453.8125	156.7 PL	Public Works
460.375	152 DPL	Beach Patrol/ Public Works

Sweetwater, City of

Frequency	Tone	Description
151.955	74.4 PL	Sweetwater Parks and Recreation
155.37	CSQ	Police - Intercity

University of Miami (Coral Gables)

Frequency	Tone	Description
461.05	162.2 PL	Police
461.325	162.2 PL	Security
452.1	174 DPL	Services
463.275	103.5 PL	Administration
463.275	413 DPL	Maintenance

Severe Weather

Frequency	Tone	Description
146.925	94.8 PL	(RACES) Emergency Operations Center Net for Miami-Dade (Dual mode Repeater)
146.925	293 NAC	(RACES) Emergency Operations Center Net for Miami-Dade (Dual mode Repeater)
444.875	131.8 PL	Affiliated with Miami-Dade OEM (88.5 PL input)
147.345	94.8 PL	Affiliated with Miami-Dade OEM

The Crashing WiFi Router Mystery...Or, The Network.dns.disablePrefetch Solution ("Huh?")

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

Most workday mornings I have a "nice cuppa tea," as Eddie Startz of the Radio Nederland Happy Station used to say. I often sit down at the computer in a corner of the kitchen to read my email or check Facebook (Figure 1) as I drink my cuppa. A couple of months ago, I noticed that our cable broadband connection seemed to go down every morning and that it suspiciously happened whenever I sat at the computer to have a cup of tea. A very strange brew indeed.

My first response was to recycle the power to the Linksys WRT54G v1.1 router. This is the router that connects to my cable modem and is down in the basement. The WRT54G (Figure 2) is one of the best selling wireless routers of all time and has been in production for a number of years. Sometimes the power recycle would work, but sometimes the router would hang on reboot and would not obtain an external IP address from the cable modem. I then discovered that recycling

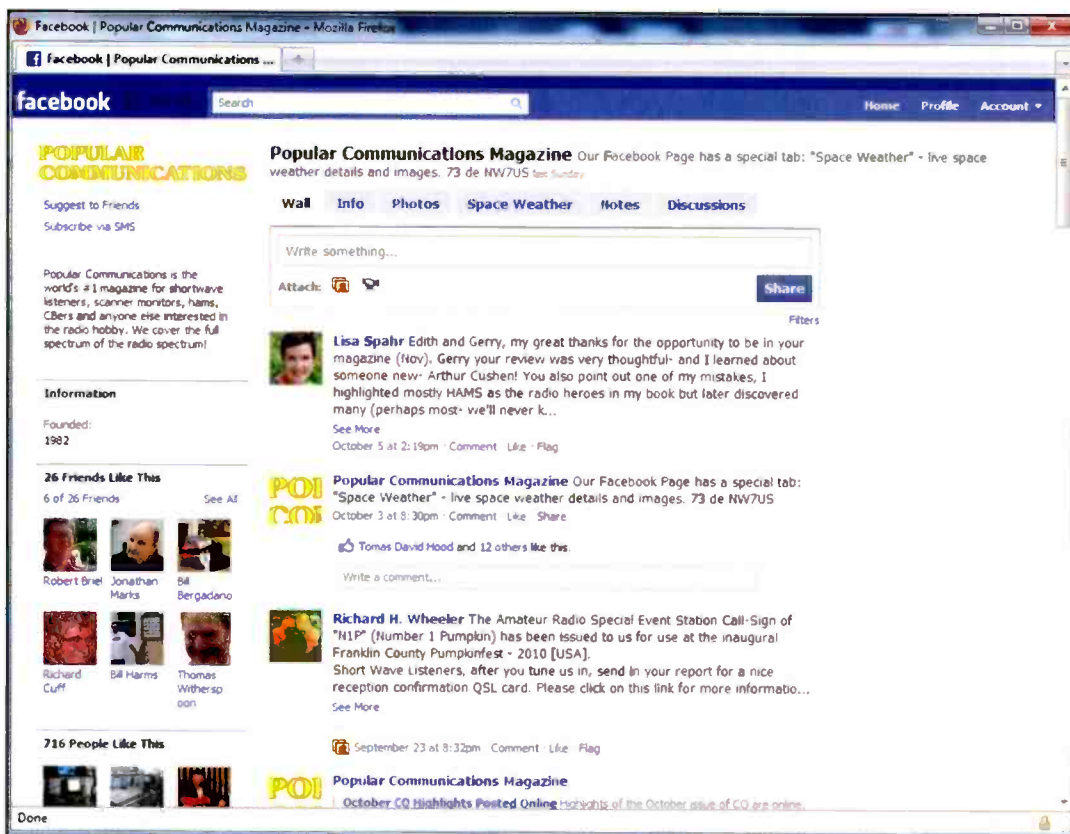


Figure 1. Who isn't on Facebook these days? *Popular Communications* even has our own Facebook page for our readers.



Figure 2. If this rectangular box looks familiar, it's because the Linksys WRT54G wireless router line is so popular and flexible.

the power on the cable modem always cured the problem and that the Internet came back up.

Then I began to notice that the problem also occurred when I was in the shack upstairs. The computer in the shack is a Windows 7 laptop. I run a free X-Windows program called Xming, which allows me to remotely run programs on a Linux box, and I had a remote copy of Firefox running in the X Window. The computer downstairs is a dual-boot Fedora Core (FC) 12 Linux/Windows 7 box and is usually booted into Linux during my morning cuppa. The Firefox config is shared between all the Linux machines on my home network.

"After all that work, I was ready... Within two minutes, the darn Internet had crashed. Again. I was mystified."

This allows me to access the same Web bookmarks both upstairs and downstairs.

After several weeks of this nonsense—and a couple of daily runs down to the basement to recycle the cable modem—my frustration grew. I set out to identify the problem and to find a solution. I discovered that my router was rebooting around the time that I experienced the Internet outages. The Internet would crawl to a halt and browser sessions would hang. Sometimes the reboot would be successful and everything would start working again. Sometimes I'd have to cycle the power on the cable modem to get the router to reacquire an IP address from the cable modem.

Not Your Grandfather's WiFi Router

The Linksys router in the basement was running a Linux-based operating system called Alchemy from Sveasoft. Some of the Linksys routers allow firmware updates. These updates add features to the factory-provided firmware. Sveasoft was once a leader in developing such enhanced firmware for the Linksys routers and was originally open source, but it took a turn in a proprietary direc-

tion, causing a major debate about whether it violated the GNU Public License that much open source software is released under.

I wasn't sure whether I had a hardware or software problem, so I decided to replace both the router and the router firmware with something more recent. I bought a newer Linksys WRT54GL (the L stands for Linux and means that the stock firmware can be replaced). I upgraded the stock firmware with something called DD-WRT, another firmware replacement project that offers plenty of documentation on the Internet. The firmware upgrade went quickly and I took time to go through all of the many configuration pages to set up things like WPA2 security, MAC address authorization, and the stateful packet inspection firewall (SPI) that a security conscious user should be concerned about. I also run a DHCP server for my home network on the router and assign static IP addresses based upon connecting MAC address, so I also had to set up that table.

After all that work, I was ready. I plugged in the new router, went upstairs to the kitchen, and with a cuppa, began to surf. Within two minutes, the darn Internet had crashed. Again. I was mystified.

Google Is Your Friend

We can debate whether Google is evil or not. We can also debate whether Google is a threat to our privacy, but there should be little debate on the premise that Google is still the best search engine for sifting through an abundance of technical information on the Internet. All you have to do is perform the right search, though that is an art in itself. After many false starts I found the most concise search term:

"Firefox Crashes Linksys Router"

The first in the list of search results returned was at:

<http://www.listware.net/201005/support-firefox/106890-firefox-crashes-router.html>

I read down the page of a message thread from a Firefox support list and found that others were having a problem, too. Folks were deleting their Firefox profiles, reinstalling their browsers, and so

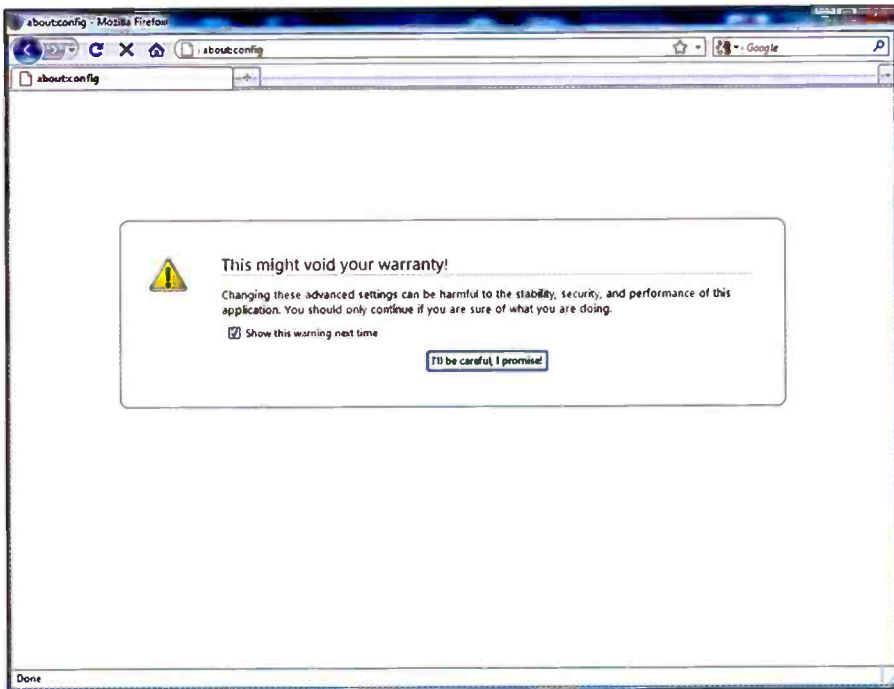


Figure 3. about:config lets you tinker with the guts of your Firefox browser.

Glossary

SSID—Service Set Identifier, essentially the name of your wireless network.

MAC—Media Access Control; the MAC address identifies a unique physical device. The prefix of a MAC address can often reveal the hardware manufacturer's identity.

WPA2—WiFi Protected Access 2, a security protocol for encryption of network data

was I. All to no avail. However, about two screens into the thread, this post caught my eye:

by Bill_Mlon 2010-05-28T11:16:57+00:00.

On Thu, 27 May 2010 20:54:36 -0500, Jay Garcia

Jay, a quick hunch...

about:config

network.dns.disablePrefetch

Does not normally exist. Create it, boolean, and set it TRUE.

<http://kb.mozillazine.org/Network.dns.disablePrefetch>

Does the problem go away? The hunch is a lot of DNS queries is borking the router.

Bill

I went into the about:config screens of Firefox and created the variable called Network.dns.disablePrefetch and set it to true. Several days later, my router had still not crashed, and I applied this fix to all copies of Firefox running on my home network.

So What Happened?

Version 3.5 of Firefox introduced something called DNS Prefetching. DNS is the system that converts names such as www.popular-communications.com to numbers such as 209.240.73.54. It stands for Domain Name System and is the single most important Internet application layer service. Without DNS, nothing else works.

DNS Prefetching works to speed up Web browsing by performing lookups on sites that you are likely to try to visit next. They may be referenced on the current page that is loading and could include images and other content. I use a content-rich page as my Firefox homepage—Google news. There are many links to news stories, graphics, and video content. Perhaps so many that my puny router could not handle all these queries at once and gave up.

It's not clear whether the root cause of the problem is the behavior of Firefox or a bug in the Linksys software. The problem occurred in both the Sveasoft and the DD-WRT software, but they share a common code base. But if you're having a stability problem with your router and you run Firefox, try this simple fix:

In the address bar enter about:config

Read and click the I'll be careful warning (**Figure 3**)

Right click on some whitespace on the screen and select

New → Boolean

In the Enter the preference name box, type network.dns.disablePrefetch and set it to TRUE.

Suffice it to say that any software change can have unintended consequences and that proper testing is very important. If you run into a problem in your own environment, you should

consider all the changes that may have been recently made and through the scientific method, rule out possible causes. Of course, this gets harder and harder as we hold more computing power in our palms with our Androids and iOS devices than used to fill a glass-enclosed room with raised floor and engineers in white coats.

WiFi Security Basics

While we're on the subject of WiFi routers, you may not have given much thought to how best to prevent your neighbors from poking around the computer where you store your personal financial information or how to prevent them from using your open wireless connection to stream copyrighted bit torrents of theatrical films without your knowledge. The latter is bound to eventually get you served with a copyright infringement letter of warning from the movie police—seriously—so let's consider some things that you can do to lock down your home wireless network.

SSID Broadcast—Don't broadcast an SSID from your wireless router unless you have a device on your network that absolutely requires it. This does make it a bit harder to put a new device on your network as the SSID has to be manually configured on that device, but it will make it harder for a war driver in front of your house to find your access point.

MAC Security—You set up most wireless routers to only allow specific physical devices, represented by a MAC address to connect. A MAC address typically looks like AA:BB:CC:11:22:33 and is sometimes even printed on the case of the device. On a Windows device, you can find the MAC address by typing ipconfig/all from a command prompt. The downside is that every time you add a new device to your wireless network, the MAC address needs to be determined and added to the MAC address permit list on your router.

WPA2—WPA2 uses strong encryption to protect all your data as it goes over the radio between your WiFi device and the wireless access point. This protects your passwords, email, and personal data from prying eyes, and because of the encryption, may even be more secure than unencrypted communications over a hardwired Ethernet link. A secure passphrase is configured on the wireless access point and also on each connecting device.

Read more about WiFi security on the Web. The WiFi Alliance has an informative website worth reading. Take a look at the security info at www.wi-fi.org/security.php. Or try a Google or Yahoo search for WiFi security. There's plenty of material out there.

Are you doing anything interesting with your home wireless network? Send me an email at k2dls.rfbits@gmail.com. Until next time, 73 de K2DLS.

RF Bits Links

You can find more information about some of the software mentioned in this month's column below.

Fedora Project	www.fedoraproject.org
Sveasoft	www.sveasoft.com
DD-WRT	www.dd-wrt.com
Xming X Server	www.straightrunning.com/XmingNotes/
Firefox	www.mozilla.com

Solar Storms Can Change Directions, Surprising Forecasters

by Tomas Hood,
NW7US, nw7us@arll.net

Last month, we took a look at the “other side” of the sun as provided by the NASA STEREO (Solar Terrestrial Relations Observatory) mission. One of the amazing results of having two spacecraft watching the sun from positions ahead of and behind the Earth in the same orbit as the Earth is the three-dimensional (3D) perspective on a coronal mass ejection (CME).

We’ve discussed CMEs in past editions of this column, but let’s offer a brief recap now. A CME is a huge “cloud” of solar plasma that breaks away from the sun, ejected out into interplanetary space by events like a filament burst or an X-ray flare erupting above a sunspot region. These huge clouds ride the solar wind that is always blowing out away from the sun. When a CME passes the Earth, it can trigger aurora and geomagnetic storms, degrading shortwave radio communications. These solar storms can also affect satellite communications, possibly even damaging satellite hardware.

“For us radio communicators, knowing when a CME will arrive helps us plan our radio operations.”

With the aid of the 3D STEREO data, space scientists have discovered that these solar storms don’t always travel in a straight line. But once a CME starts heading in our direction, it can accelerate rapidly, gathering steam for a harder hit on Earth’s magnetic field. These researchers now have the ability to analyze the 3D structure of these huge plasma clouds (Figure 1).

A team of space researchers released a paper on September 21, 2010, in which they discuss an innovative computing technique called “multi-scale image processing.” One of the team members, Peter Gallagher of Trinity College in Dublin, Ireland, said, “This really surprised us. Solar coronal mass ejections (CMEs) can start out going one way—and then turn in a different direction.”

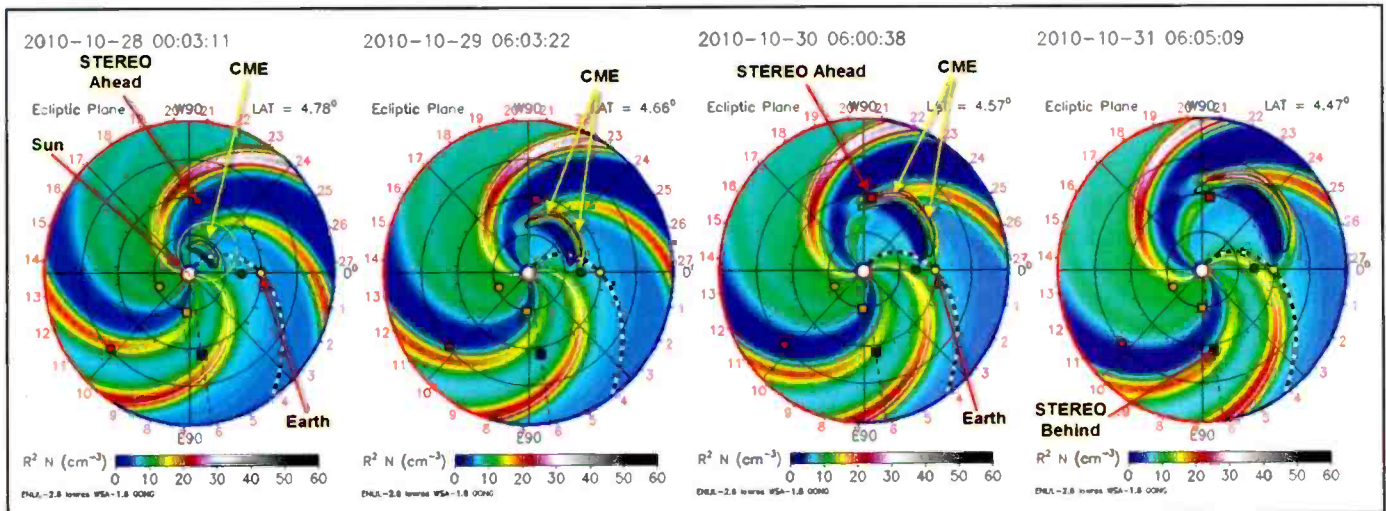


Figure 1. A series of snapshots of the special modeling analysis tool that allows scientists to predict the passage of an interplanetary coronal mass ejection (CME). These snapshots are from the perspective of STEREO-A (the “Ahead” spacecraft). Starting in the left-most frame, we see a plasma “cloud,” the CME, leaving the sun on October 28. As we move left to right from frame to frame, we can see how the CME just glances the Earth. Such a glancing blow typically causes only minor geomagnetic disturbances, but if a CME were to fully “hit” the Earth, it would cause major geomagnetic storms, and trigger aurora. (Source: NASA)

The result was so strange, at first they thought they'd done something wrong. After double- and triple-checking the work on dozens of eruptions, however, the team knew it was onto something.

"Our 3D visualizations clearly show that solar storms can be deflected from high solar latitudes and end up hitting planets they might otherwise have missed," says lead author Jason Byrne, a graduate student at the Trinity Center for High Performance Computing.

Gallagher explains their computing technique: "Multiscale processing" means taking an image and sorting the things in it according to size. Suppose you're interested in race cars. If you have a photo that contains a bowl of fruit, a person, and a dragster, you could use multiscale processing to single out the race car and study its characteristics."

In medical research, multiscale processing has been used to identify individual nuclei in crowded pictures of cells. In astronomy, it comes in handy for picking galaxies out of a busy star field. Gallagher and colleagues are the first to refine and use it in the realm of solar physics.

"We applied the multiscale technique to coronagraph data from NASA's twin STEREO spacecraft," Gallagher continues. "Our computer was able to look at starry images cluttered with streamers and bright knots of solar wind and zero in on the CMEs."

As we explored in last month's column, STEREO-A and STEREO-B are widely separated and can see CMEs from different points of view (Figure 2 shows one perspective). This allowed the team to create fully stereoscopic models of the storm clouds and track them as they billowed away from the sun.

One of the first things they noticed was how CMEs trying to go "up"—out of the plane of the solar system and away from the planets—are turned back down again. Gallagher confesses that they had to "crack the books" and spend some time at the white board to fully understand the phenomenon. In the end, the explanation was simple: The sun's global magnetic field, which is shaped like a bar magnet (Figure 3), guides the wayward CMEs back toward the sun's equator. When the clouds reach low latitudes, they get caught up in the solar wind and head out toward the planets—"like a cork bobbing along a river," says Gallagher.

Once a CME is embedded in the solar wind (we've also discussed solar wind in

previous editions of this column), it can experience significant acceleration. "This is a result of aerodynamic drag," says Byrne. "If the wind is blowing fast enough, it drags the CME along with it—something we actually observed in the STEREO data."

Past studies from other missions had revealed tantalizing hints of this CME-redirected and acceleration process, but STEREO is the first to see it unfold from nearly beginning to end.

"The ability to reconstruct the path of a solar storm through space could be of great benefit to forecasters of space weather at Earth," notes Alex Young, STEREO Senior Scientist at the Goddard Space Flight Center. "Knowing when a CME will arrive is crucial for predicting the onset of geomagnetic storms."

For us radio communicators, knowing when a CME will arrive helps us plan our radio operations. If a CME is headed directly toward us, we can anticipate a

geomagnetic storm. For shortwave radio communications, this means we should plan on using lower frequencies. If we are VHF weak-signal operators, we can expect possible aurora-mode propagation opportunities after the CME triggers these geomagnetic storms.

Combined with the Solar Dynamics Observatory views of the sun, STEREO allows us to more fully understand and observe space weather, and also gain an understanding of how space weather affects radio communications. This is exciting, as we are just now seeing the increase in solar activity with the slow climb in monthly sunspot numbers. Sunspot Cycle 24 is going to be an incredible "season" for us radio communicators!

HF Propagation

We are in the heart of the winter season, with very short daylight hours.

Average	daily	Maximum	Usable
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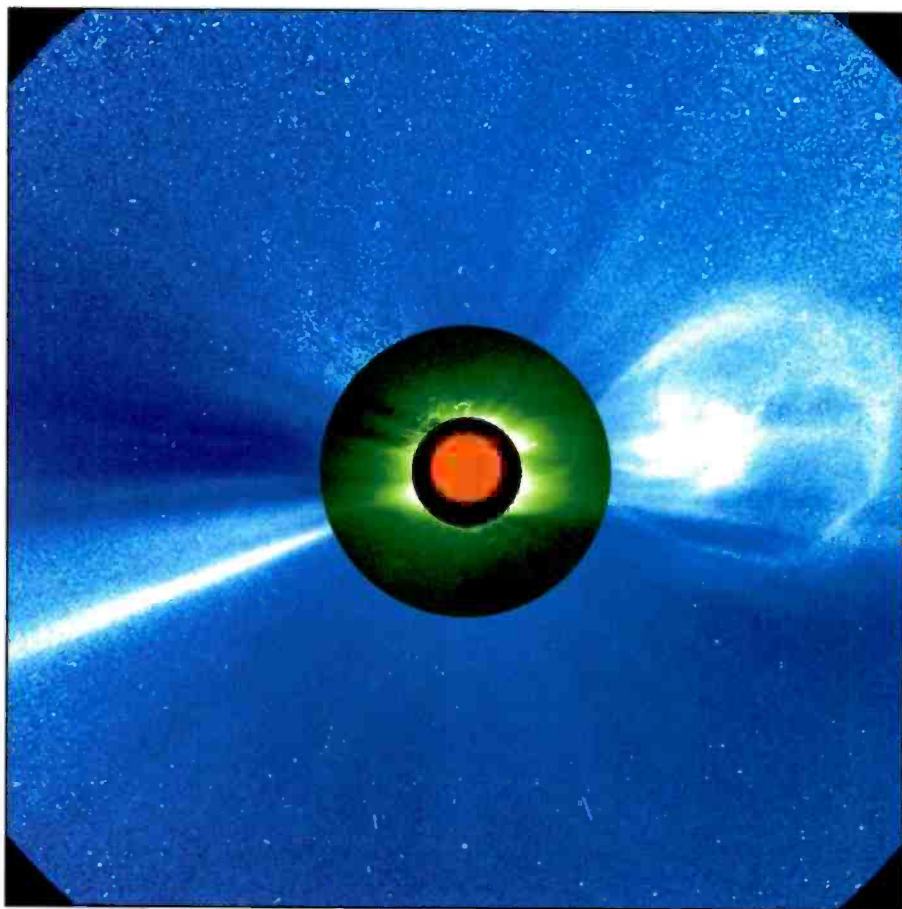


Figure 2. A coronal mass ejection (CME) observed by STEREO on December 12, 2008. The CME is the white "cloud" of plasma ejected away from the sun's corona. If it is directed toward us, a CME takes anywhere from two to four days to arrive at Earth. Using STEREO Ahead and Behind (see last month's column for details of the two spacecraft), scientists can now analyze these plasma clouds and how they move through interplanetary space. (Source: NASA/STEREO)

Frequencies (MUFs) are at their seasonal lowest, but so are noise levels. During the winter months the MUFs are generally higher during the daylight hours than during the summer daylight hours. This provides short but strong openings on higher shortwave bands during the winter day. Then, at night, the MUF dips down much lower than what would be seen during the summer nights. Summertime MUFs are generally higher during the night hours than during the winter nights, in part because the ionosphere stays energized through the short nights. Winter nights are longer, so recombination of the ionosphere (which results in a lowering of the MUF) is more complete.

This also means that the *D* region of the ionosphere is less ionized during the winter, allowing mediumwave and shortwave frequencies to propagate through the *D* region and off the *E* and *F* regions. Additionally, the seasonal decrease in weather-related noise makes it easier to hear the weaker DX signals on lower fre-

quencies. With thunderstorms few and far between, storm-related static and noise is greatly reduced.

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

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

to increase later in the evening toward midnight. Look for Africa and South Pacific (Australia, Papua New Guinea, and so on) on 90 through 60 meters throughout the night. On 41, 49, and 60 meters, long-path DX is possible along the gray line.

Seventy-five through 120 meters continue to remain stable, with very low noise levels. Some high noise may occur during regional snowstorms, but on average you can expect great nighttime DX conditions with the longer hours of darkness. Look for Europe and Africa around sunset until the middle of the night, and then Asia, the Pacific, and the South Pacific as morning approaches.

Signals below 120 meters are also greatly improved, unless we experience those intense CME events, where conditions will become degraded. Mediumwave DX is really hot during this season.

A Look At Mediumwave DXing—The Winter Season

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

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

For mediumwave, the most obvious factor for good DX is the time of day. The *D* region of the ionosphere almost always absorbs mediumwave radio signals during the daylight hours. As a result, nearly all mediumwave signals received during midday hours will arrive by ground wave propagation, rather than by sky waves refracted off the ionosphere. Ground wave propagation makes reception of signals over a few hundred miles away unusual in daylight. At night, however, the ionosphere refracts these mediumwave signals, making it possible for radio stations to be heard at much greater

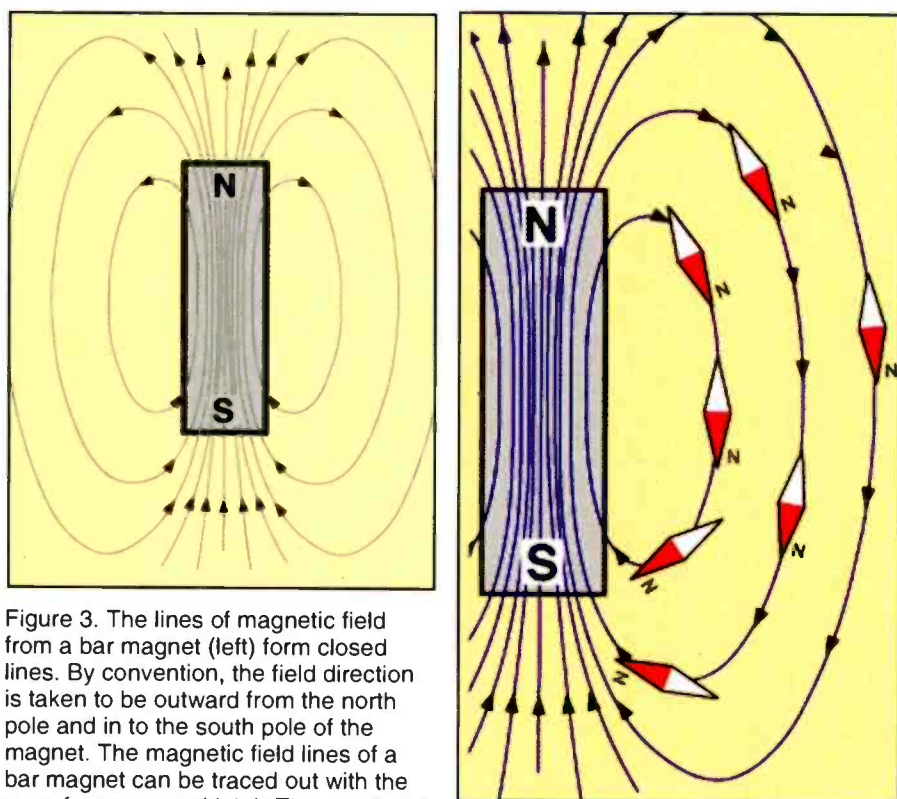


Figure 3. The lines of magnetic field from a bar magnet (left) form closed lines. By convention, the field direction is taken to be outward from the north pole and in to the south pole of the magnet. The magnetic field lines of a bar magnet can be traced out with the use of a compass (right). The needle of a compass is itself a permanent magnet and the north indicator of the compass is a magnetic north pole. The north pole of a magnet will tend to line up with the magnetic field, so a suspended compass needle will rotate until it lines up with the magnetic field. Unlike magnetic poles attract, so the north indicator of the compass will point toward the south pole of a magnet. In response to the Earth's magnetic field, the compass will point toward the geographic North Pole of the Earth because it is in fact a magnetic south pole. The magnetic field lines of the Earth enter the Earth near the geographic North Pole. (Source: Georgia State University)

distances, sometimes as far away as Australia, Europe, and Asia.

The ground wave, as its name implies, travels along a path close to the Earth's surface. The distance a ground wave is able to travel depends upon the transmitter power, frequency, antenna pattern, and the Earth's conductivity along the path of the signal. Lower frequencies travel greater distances, all other factors remaining the same. A signal on the low-end of the AM broadcast band, say, 540 kHz, will travel twice as far as a signal broadcast on, say, 1600 kHz, if all other parameters remain the same for both stations. If the land between the transmitting antenna and the receiving antenna is rocky, a ground wave signal might only travel 150 to 300 miles. On the other hand, if the signal is moving over salt water, the ground wave signal could make it some 1,000 miles away. While most ground wave signals are stable and strong, some fading and changes in reception can occur. Sometimes, this fading is due to signal cancellation due to weak sky wave reception at the same point where the ground wave component is received.

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

The ionosphere is, therefore, directly responsible for mediumwave DX signals. After sunset, when the *D* region is no longer under the direct radiation from the sun and nearly disappears, mediumwave signals make it up to the *E* and *F* regions, to be refracted back to Earth, much like a flashlight beam might be reflected off a mirror. The distance of the sky wave skip is any-

where from 10 to 500 or so miles. Mediumwave DX signals may travel farther, if the ground is highly conductive, providing a reflection of the signal back up into the ionosphere. Multiple hop sky wave signals can enable a broadcast signal at night to span thousands of miles. It's typical to hear European and Asian stations over the salt water of the oceans.

There is a region between about 10 miles out to about 500 miles where both

the ground wave and the sky wave signals can be heard. This typically causes a cancellation of the radio waves when the two signals arrive out of phase. The listener will experience deep fades, slow at times, or fast. Sometimes it's strong enough to cause severe distortion of the signal. Out beyond 500 miles, past the influence of ground wave signals, sky wave signals also experience some fading and variations due to changes in the ionosphere.

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

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

Because of the seasonal decrease in geomagnetic activity during December and January, and because of the longer hours of darkness in the Northern Hemisphere, you will find a rich selection of mediumwave AM signals from as far away as

Europe, South America, Asia, and even the South Pacific. Let me know your experiences.

VHF And Above

Sporadic-E (E_s) activity can appear three to four days during January on the low VHF frequencies for stations in the Northern Hemisphere. The average opening may last an hour or two with distances of up to 1,000 km. A particularly good time to monitor for E_s activity is during the ARRL VHF Sweepstakes contest, which begins at 1900 UTC January 22 and ends at 0359 UTC January 24, 2011. A surprise one- or two-hour opening has been known to occur during the contest period in the past and this has led to increased multiplier counts for contest efforts. This contest is on 50 MHz and higher amateur radio bands.

The Quadrantids meteor shower is the major meteor shower for January and it can appear any time during the first week of the month. It can sometimes be quite intense, so it may be a good idea to set up some 2- and 6-meter schedules. Morning meteor openings may be the best bet during this month.

Current Solar Cycle 24 Progress

The Royal Observatory of Belgium reports that the monthly mean observed sunspot number for September 2010 is 25.2 (compare that to one year ago, when it was 4.2), higher than August's 19.6, and the highest monthly recorded so far in 2010 and since the start of Cycle 24. The lowest daily sunspot value of zero (0) was recorded for September 8 and 9. The highest daily sunspot count was 40 on September 2 and 4. The 12-month running smoothed sunspot number centered on March 2010 is 12.3. A smoothed sunspot count of 45, give or take about 9 points is expected for January 2011.

The Dominion Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-cm observed monthly mean solar flux of 81.1 for September 2010. The 12-month smoothed 10.7-cm flux centered on March 2010 is 77.5. The predicted smoothed 10.7-cm solar flux for January 2011 is 100, give or take about 9 points.

The observed monthly mean planetary A-Index (A_p) for September 2010 is 5, which is still very quiet. The 12-month smoothed A_p index centered on March 2010 is 5.3. Expect the overall geomagnetic activity to vary greatly between quiet to active during most days in January. Refer to the Last Minute Forecast published in CQ magazine or on the author's website (prop.hfradio.org) for the outlook on what days that this might occur.

I'd Like To Hear From You

As always, I welcome your thoughts, questions, and experiences regarding this fascinating science of propagation. You may email me, write me a letter, or catch me on the HF Amateur bands. Please come and participate in my online propagation discussion forum at hfradio.org/forums/. If you are on Facebook, check out tinyurl.com/fbswx and tinyurl.com/fb-nw7us. Speaking of Facebook, check out the Popular Communications fan page at <http://tinyurl.com/fb-popcomm>.

Until next month, 73 de NW7US

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Think You Need An Amplifier? Think Again!

by Kirk Kleinschmidt, NTOZ
kirk@cloudnet.com

If you've ever looked under the hood of a big, beautiful linear amplifier, you've no doubt been struck by the brawny symmetry of the oversized parts, the circular perfection of the huge toroidal power transformer, or the sheer size of the vacuum tube(s). Nearly every visible part is bigger than it oughtta be, and just looking at the massive hardware can raise the hair on the back of your neck, as if you were gazing upon something truly forbidden! And when you realize that the amp weighs more than all of the rest of your station gear combined, that naughty feeling only intensifies.

Like an ancient artifact buried far below Stonehenge, the linear amplifier is a Thing of Power. From the beefy kerchunk that sounds when you toggle the main switch, to the mysterious thrumming sound that emanates from the power supply, to the dimming lights as the Beast draws heavily from the 240-VAC line in perfect time with your speech or keying, the amplifier's focused wizardry is yours to command!

“Let's boost our signal and see how the decibels stack up against the pocketbook.”

Oh, beginning ham, just think of the on-air glory that could be yours if you could only possess such an item!

We've all had that fantasy at one time or another, but the facts—and the outside forces that shape today's amateur radio—point toward a much different reality. It's not necessarily a bad reality, but it's different nonetheless.

This topic came to the forefront recently when I was reviewing the latest crop of HF transceivers with two beginning hams. The guys noticed that the vast majority of HF transceivers are in the 100-watt class, but that a couple of high-end models put out 200 or even 400 watts.

I explained that the high-output rigs were mostly designed to drive external amplifiers that require more than 100 watts to reach full output power (almost exclusively used by contesters and DXers who have already optimized their antennas), and that the extra power isn't very useful for the average ham. In fact, I argued, for most hams, station amplifiers aren't terribly useful at all, and are probably more trouble than they're worth.

So, if you think you need a linear amplifier to make your radio dreams a reality, think again. Your 100-watt barefoot signal almost certainly provides more than enough power. If you need a bigger signal, you almost certainly need a better antenna, a better feed line, or improved operating skills. Save the heavy iron for later, when it just might do you some good.

Don't Be A Lid

Amateur radio is a radio service, with rules, regulations, and goals that transcend hobby operation. One of the most important rules compels us to use the minimum transmitter power required to communicate (FCC Section 97.313(a): “At all times, an amateur station must use the minimum transmitter power necessary to carry out the desired communications”). That doesn't rule out



Ten-Tec's Model 715 RF Speech Processor is a high-performance, true RF-type speech processor designed to operate with most modern HF transceivers. RF speech processing is more effective than the clipping or compression systems found in typical HF transceivers and can increase your average SSB power output by up to 6 dB (it has no effect on CW and should not be used on digital modes such as PSK31). At \$249 it offers the SSB performance boost of an entry-level amplifier for about a third of the price. Check it out at www.tentec.com.

the use of amplifiers, but it should limit their regular use. The “minimum necessary power” rule—which is broken thousands of times each day—protects us all. It promotes responsible, considerate operation.

By the way, the rule is not rescinded during contests, when trying to work rare DX or because you happen to have an amplifier. The only time we’re free to pull out all the stops is during communication emergencies. When someone’s life is in danger, the more power the merrier.

Even if deed restrictions are driving to you the brink of madness, remember that hams who are also decent human beings are also concerned about neighbors, family members, and other hams. Just because we can transmit a 1500-watt signal or erect a 199-foot-high tower doesn’t mean we should. A little Golden Rule here goes a long way.

The Cold Equations

If you have a typical 100-watt rig that feeds a coax-fed dipole through an antenna tuner, because of the tuner your rig can put out full power regardless of actual antenna/feed line SWRs on the various bands you work.

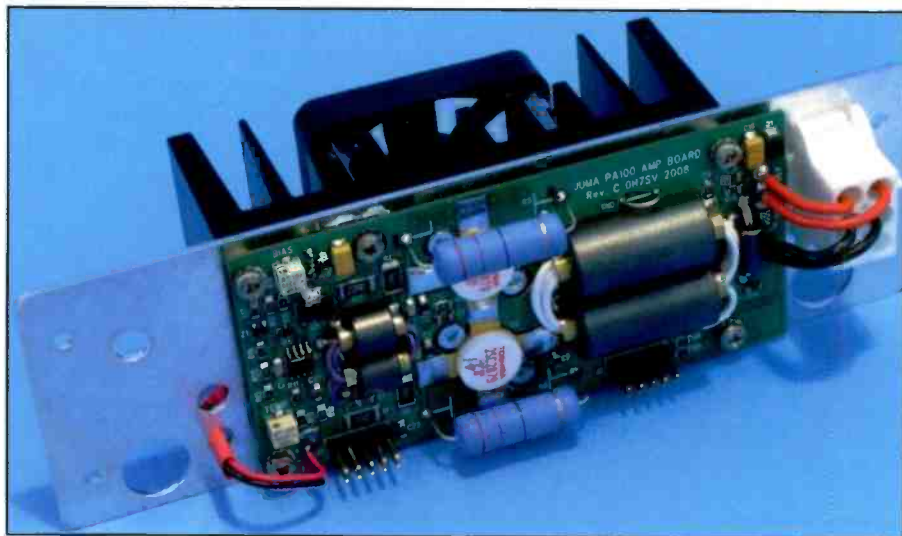
This setup works pretty well, right? Countless thousands of hams can’t be wrong! Well, maybe. But maybe not. You might have noticed that working stations on some bands doesn’t seem as easy as it should, especially DX stations. You might even be thinking about solving your problem by cranking up the power. By boosting your transmit power, you reason, those stations with once-marginal copy will respond with ease.

That image may sell amplifiers, but it’s almost certainly a fantasy. You will get a lot more signal for a lot less money if you upgrade your antenna system before (or instead of) buying an amplifier.

Let’s boost our signal and see how the decibels stack up against the pocketbook.

If your amplifier budget is modest, a small solid-state or single-tube amplifier will boost your 100-watt signal to about 500 watts. You’d think that’s enough to be noticeable, but is it? Here come the cold equations: Every time you double your power output, stations that are receiving your signal hear a 3-dB increase in strength. That’s less than half an S-unit. To nudge the needle a full S-unit you need to *quadruple* your power output (a 6-dB increase).

The progression looks like this: 100 watts doubled to 200 watts equals a 3-dB



Although we typically associate “linear amplifier” with large, high-power units, the term actually describes any amplifier (at any power level) that is suitable for use on SSB and AM, where the use of “non-linear” amplifiers that work just fine for CW and FM aren’t practical. The little beauty shown here (front panel and amplifier module), the JUMA PA100, puts out 100 watts when driven by 3 to 10 watts on 160 through 10 meters. The perfect companion to any home-brew or commercial QRP transceiver, the PA100 is a top-quality kit from Finnish maker JUMA. Check out the company’s complete line at www.nikkemedia.fi/juma.

increase. Next, 200 watts doubled to 400 watts equals a 6-dB increase. Then, 400 watts doubled to 800 watts equals a 9-dB increase (exceeding the output power of our entry-level amplifier). Finally, 100 watts times 10 equals 1000 watts, a 10-dB increase in power output.

Our 500-watt output amplifier gives us only a bit more than a 1 S-unit boost on the other end. That’s not much—especially when an amplifier in this class can cost as much as \$1,100!

Want more power? Using our calculations from before, boosting your signal to

1 kW output provides a 10-dB shot in the arm. That’s just less than 2 S-units on the other end: S3 to S5, S7 to S9, etc.

That’s noticeable, but hardly enough to make much of a difference when using the same antenna system. And, by the way, you’re now shelling out \$1,200 or more. If you go for a legal-limit amplifier, your 1500-watt signal will be about 12 dB stronger than your barefoot transceiver. Because of the “price of power,” 1500 watts is still only two S-units stronger! With a price tag of at least \$2,000, a legal-limit amplifier is hardly a casual purchase.

The decibel scale works in the other direction, too, as evidenced by the results of QRPers everywhere. If a 1000-watt signal is S9, a 100-watt signal will be about S7 and a 10-watt signal about S5. Not a bad deal!

The Smart Move

To keep the peace with your neighbors and minimize the drain on your pocket-book (and even your house wiring, as big amps require lots of AC power and potentially costly service upgrades), consider improving your antenna system before investing in an amplifier. This is a *much better* idea.

One almost universal way to get out more signal is to get your antenna(s) farther up in the air (your present antenna or a new one). Build a taller mast, find a taller tree, or put up a tower.

If your present antenna just isn't cutting it, put up a contest-winning and DX-catching secret weapon: a full-wave horizontal loop for 40 or 80 meters (up as high as possible, of course). Feed it with coax and use a tuner on bands *above* the fundamental frequency. That's a budget-conscious way to snag an extra 2 to 10 dB, depending on frequency.

Replace the coax feeding your dipole with 450-ohm ladder line. With a coax feed, even though your antenna tuner may be presenting a happy impedance to your transmitter, feed line losses due to high SWR may slash your signal by 6, 10, or 20 dB, depending on the band and the size of your dipole! By using 450-ohm open-wire line you'll likely reclaim most of that lost power. Now that's a 6- to 20-dB shot in the arm that anyone can afford.

For about the price of an entry-level amplifier you can build or buy a multi-band beam antenna and a decent rotator (I recommend building a hex beam. See www.dxzone.com/catalog/Antennas/HexBeam). This dynamic duo, mounted at least 40 feet above the ground, will offer a 5- to 7-dB directional improvement to your signal. Remember: Amplifiers only boost your transmitted signal and do *nothing* to improve reception.

By rotating a directional antenna you can boost desired signals while attenuating unwanted signals. For example, if I'm working a European ham from my Minnesota QTH, a potentially interfering signal from an op in Florida, located in the side null of my directional antenna, may drop 25 dB or more. The difference, more than 30 dB of signal enhancement, could never be achieved by an amplifier alone.

On SSB, learn to correctly use your rig's speech processor (good) or consider buying Ten-Tec's Model 715 RF speech processor (best). That's another 3- to 6-dB improvement, this time in the modulation department.

Use Morse code or weak-signal digital modes such as PSK31 instead of SSB. They offer vastly better signal-to-noise performance and open up new avenues of exploration.

Learn about propagation. Knowing when a path to your desired destination might be open can make all the difference. You could have a megawatt amplifier and not be successful if the ionosphere isn't cooperating.

When To Buy An Amplifier

Ironically, the best use of an amplifier is probably in a situation where it's least likely to be possible—in your car! On 20 meters and up, a typical mobile antenna is pretty close to being full size and, therefore, pretty efficient. But even the best-performing mobile antennas struggle to reach 10-percent efficiency on 80 meters. Apply a 100-watt signal and less than 10 watts is actually radiated into space. Ouch!

If you could stuff a 1-kW amplifier into your car's trunk (powering it with a locomotive-size, 150-amp alternator and dedicated storage battery), you'd radiate about 100 watts with the same antenna, putting you on par with a typical home-station op running barefoot. Of course, most mobile antennas aren't rated for a kW of RF, so you'd have to address that, too, along with any potential RF exposure issues.

More than a few mobile ops have run kW amps over the years (the most successful installs tend to be in diesel semi tractors, which have plenty of excess alternator power), and some have even installed high-power, solid-state amps on motorcycles (but it's not really practical).

For conventional shacks, amplifiers can be useful *after* you've tweaked your antenna farm. Add a 10-dB amplifier to a 7-dB beam antenna and you've got a whopping 17-dB improvement in signal strength. That will get you noticed, especially when the minimum necessary power required to communicate requires maximum power. Just remember to use your amplifier only when it's necessary. You've already taken an oath with the FCC to do just that!

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Who Killed The Local Kiddie Video Star?

by Shannon Huniwell
melodyfm@yahoo.com

As soon as the public television host started asking for donations while promoting her station's quality programming, I recognized a fundraising marathon and leapt for the remote. It wasn't that I lacked curiosity about the PBS affiliate's imminent offering. I just didn't want to give cause for

"The most famous chapter in WOR history concerns Uncle Don. The story goes that as he finished his program for the kiddies, he muttered to himself, There, I guess that will hold the little so-and-sos...until tomorrow!"

—New York World Telegram,
March 2, 1935



While looked upon as perfectly innocent back in the day, the depiction on the cover of this 1930s *Uncle Don's* adventure book—showing the pseudo-relative man-handling a couple of nephews to lead them off to parts unknown—could seem mighty creepy to contemporary kids, parents, and law enforcement alike. But neither child here appears to be buying into the radio legend that their favorite uncle cussed out his fans over 50,000-watt WOR.

my Dad to get on his "educational versus commercial" TV soapbox.

He, Mom, and I were just settling into a nice motel along the route of our five-state trek to visit my brother and his family, when I made my play. But it was too late. Dad had already picked up on the clichéd irony of a public television fundraiser trumpeting the superiority of non-commercialism by airing an evening of program content originally made popular on commercial TV.

This time it wasn't selected Lawrence Welk shows from ABC's vault or classic episodes of some other old "big three" network show interspersed with an interview with one of the program's surviving cast members. Rather, the highlighted fare that Sunday night consisted of black & white videotape clips showing a 1950s–1960s era local kiddies' TV show fondly remembered by many baby-boomers—and potential donors—in the PBS station's media market.

Happily for Mom and me, my father's critical commentary petered out about six minutes into the fundraising special. By then, he'd said his peace and quickly became as captivated by the low-budget retrospect as we were. That's not to say Dad morphed into a completely passive audience member, though. During the host's appeals, he muted the audio and embarked on a brief history (serialized, thanks to his pauses when the show came back on) of how from the late 1940s through the early 1970s commercial television stations created memorable homegrown video for children in even the smallest TV-coverage area.



A publicity still from one of the many local incarnations of Bozo The Clown. This modest set, populated by rather sedate-looking kids, belonged to Alabama's WBRC-TV. It wasn't uncommon for local television kiddie programs to have paltry prop budgets of \$25 to \$50 per week.

"Plus," he repeatedly pointed out, "they accomplished this on a shoestring, without a nickel of taxpayers' money and without having to regularly lay guilt trips on viewers like you."

Story-Telling Ladies And Radio Uncles

My father's chronology of local TV kids' shows began, naturally, with radio. He pointed out that some of the audio medium's earliest programming was aimed at making children consumers of the new technology. Dad offered the example of pioneer radio host Sybil Herrold's pre-World War I broadcasts over her husband's primitive Arc-Phone station in San Jose, California, saying it "probably included snippets of stories for the kiddies."

In all honesty, he could only guess at that one, however, because there's no surviving air-check to prove she read children's books on the air. Besides, although its name made it sound like a broadcast for tots, her weekly *Little Hams* program was reportedly more of a DJ show aimed at wireless experimenters—not cute toddlers weighed down by the bulky earphone "cans" of the era. Dad simply thought it likely that Mrs. Herrold, who sometimes brought her preschool-age son to the studio, would have included one or two of the lad's favorite tales on the program while letting him chatter into the station's contraction of a mic, just for effect.

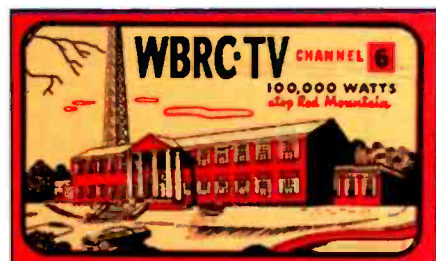
Written records do place children's radio programming within three or four years after the Great War. They note that sometime in late 1921 or early 1922, the Philadelphia-based Gimbel's Department Store radio station, WIP, debuted a regularly scheduled story segment for the

Delaware Valley's younger set. This was hosted by staff announcer, Chris Graham, who was given the callsign-inspired handle, Uncle Wip. For more than a decade, he transmitted stories and messages of moral value, and likely wove into his programs the "values" also to be found in the great prices in Gimbel's toy department, making Uncle Wip a crackshot salesman in addition to beloved radio relative (but that's my own guess). My Dad remembers hearing that Graham became such a fixture in Philly's juvenile culture that, when he was fatally stricken with tonsillitis—a disease associated with children—in the early 1930s, WIP officials cut their transmitter's high voltage to offer a moment of silence in memoriam. They then hired a succession of new announcers to play the Uncle Wip role well into the 1940s.

Arguably, the quintessential avuncular audio broadcaster entertained kids over a New York City station's multi-state footprint. He was WOR's Uncle Don Carney (real name, Howard Rice), who from 1928 to 1947 transmitted adventure tales, piano ditties, and sage advice like "don't play in the street" to an estimated peak audience of five million youngsters, mothers, and fathers. The last two demographics likely thought Carney's fare rather trite and corny, but they were thankful for the peace and quiet the radio distraction provided for their otherwise whining or bickering children. Loving parents could really make their little ones' day by mailing Carney "secret messages" revealing where and on what day they'd hide some trinket for their good children. He'd relay the details over the airwaves, making those moms and dads—and Uncle Don—extra popular with the young recipients. Of course, many of their



Advertising WBRC-TV's 100-kW coverage on matchbooks like this one was a metaphor for the Alabama VHF signal's ability to light up television sets far beyond its Birmingham city of license.



From the Storer Broadcasting Company era of WBRC-TV ownership, this image of Channel 6's southern mansion-type studio/transmitter facility—"atop Red Mountain"—is the scene youngsters and their proud parents would encounter as they headed inside to meet a southern Bozo.

gifts had been advertised on Carney's show.

He Said What?

Carney continued with WOR for about a year after the station cancelled the daily Uncle Don programming, serving as an occasional children's record-spinning disc jockey. His career path next took him to a weekly kids' show from 1948 to 1954 on Miami's WKAT. Carney, however, couldn't shake the accusation that he was insincere about his miniature minions.

Just imagine him opening his broadcast with his famous theme song lyrics,



Salty Brine of WPRO radio and television was either heard or seen by Rhode Islanders (and folks in southeastern Massachusetts plus snippets of Long Island, New York) from 1944 into the 1990s. Here he's dressed in sailor garb touting his daily kiddie show featuring Popeye cartoons and Salty's real-life collie, Jeff, who could bark on cue. The poor pooch passed away—some say while Salty's program was in progress—causing scores of grade schoolers to be too depressed to attend class the next morning. That TV set with newsman served as an extra promo for WPRO-TV's nightly newscast, which station officials hoped would match Salty's ratings. Salty's Shack cruised from 1955 to 1968.

"Hello nephews, nieces too; Mothers and daddies, how are you? This is Uncle Don all set to go... With a meeting on the ray-dee-oh!" Later, more joy was sent out through the ether via an equally cordial closing song. Now imagine the scenario if, just a few seconds after the end of his umpteenth edition of this mercenary mirth-making, an exhausted Uncle Don didn't realize his microphone was still hot! Alton Cook, radio columnist for the old *New York World Telegram*, continues this train of thought in a March 2, 1935, piece:

The most famous chapter in WOR history concerns Uncle Don. The story goes that as he finished his program for the kiddies, he muttered to himself, *There, I guess that will hold the little so-and-sos* [or as the account went when told in less polite company, *the little bastards*] until tomorrow! Unfortunately the microphone had not been disconnected and the remark went out over the air.

A Chicago TV personality, Mary Hartline (shown here in musical cowgirl attire) co-starred in *Super Circus* with ringmaster Claude Kirchner. The kid show's Thanksgiving 1948 Windy City debut caught the attention of ABC executives who signed Hartline and Kirchner to a national contract. Kirchner leant his talents to other shows, helping New York TV's *Terrytoon Circus* and voicing Marx toy commercials, while Hartline's feminine qualities no-doubt focused a lot of grownup's eyes on *Super Circus*.



Cook granted that this account had been repeated again and again since about 1930, but declared emphatically that, "the whole thing is untrue." Cook attributed Carney's bad press to an unidentified "Baltimore columnist, [who] made it up one dull afternoon and used Uncle Don's name because [Carney's] programs were not on a Baltimore station." To date, nobody has found printed proof of this Maryland journalist's reckless remark, though Cook's revelation does demonstrate how far back the bad press seed was planted. In fact, a few lines of a 1930 *Variety* show biz publication stated that it was the City of Brotherly Love's Uncle Wip who'd missed the significance of his studio's ON THE AIR light and inadvertently let his true feelings out after thinking he'd used up every second of his allotted program time. This, too, appears to be "creative" reporting.

My father thinks that a segment on those once-popular "blooper" records by blooper reel impresario Kermit Schaefer was the biggest spoon stirring the pot on Uncle Don's ownership of that "curse the kids" legend. One of Schaefer's albums included an explanation of what Uncle Don supposedly did, along with enough convincing-sounding audio to close the book on the case. Dad says he vividly recalls being at a friend's house in the mid-1950s and being asked if he wanted to hear one of the kid's parents' "adult" records. After making sure his folks were otherwise engaged, the boy played some of the most verboten blooper cuts, including Carney uttering the "B word"—only it wasn't really Carney at all, but a reenactment (mumbled by some announcer who sounded especially like Uncle Don to those who hadn't heard him on WOR

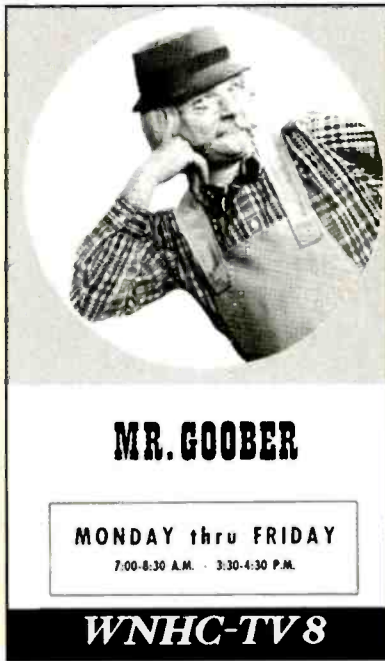
in years) of an action that arguably never took place.

The real Uncle Don died in 1954, never able to fully debunk his sign-off albatross. Logical Carney observers reflect on the fact that no newspaper in WOR's coverage ever printed a story outlining the exact day and wording of his *faux pas*, or detailed WOR's likely disciplinary response, had the event actually occurred. With the newspaper business' insatiable hunger for heated headlines, such an account should be evident in more than one roll of microfilmed archives, had Uncle Don Carney uttered anything close to the aforementioned and hackneyed blooper. No matter, even WOR's contemporary website mentions the incident and officially muses that station brass really can't say whether or not their old Uncle Don's innocence is certain.

Transferred To TV

Back on the road toward my brother and sister-in-law's house, we stopped at a mall so Dad could see about getting a volume covering the epoch of local kids television shows. He'd seen an online review of Tim Hollis' *Hi There Boys And Girls*, and the bookstore happened to have a copy. That book offered a treasure trove of interesting details that Mom and I were treated to for miles on that trip, many of which I want to share with you now.

By the late 1940s, Uncle Don and his colleagues had been entertaining (and teaching) children via hundreds of American radio stations, large and small, for nearly 30 years. Needing to fill air-time and attract a wide range of advertis-



I'm from Connecticut, so here's one I remember...sort of, anyway. When asked a dumb question, one of my junior high teachers always responded, "Who do you think I am, Mr. Goober?" Turns out he got the name from watching a mid-1960s kids' TV host on New Haven's Channel 8. The station's booth announcer, Mike Warren, was tapped to come up with some cheap-o way to present cartoons. To oblige on a pauper's budget, Warren messed up his hair-do, found an old pork pie hat and some glasses, and then had somebody in the Channel 8 art department make a 35-mm slide of the persona Warren dubbed, Mr. Goober. He then directed the station control board operator to air the slide between reels of cartoons. As soon as the still image appeared, Warren would key the mic, shift into his old geezer voice, and intro cartoons or plug advertisers' wares. Talk about low-cost programming! Though primitively presented, Mr. Goober quickly became a fixture in the Channel 8 footprint, prompting station officials to offer Warren a studio-based edition of his show. How deluxe was the live-action Mr. Goober's set? Just a some boards slung over sawhorses, as Mr. Goober was supposed to be Channel 8's humble custodian. A few years before his 1972 finale, Warren's character could be seen manning a country store facade, almost too fancy a venue for the memorable duffer.

ers. these outlets embraced the friendly relative and/or goofy character host concept first introduced by a handful of seminal broadcasters, and then adapted their personas onto homegrown hosts somehow relevant to their local area and sponsors. No government grants were written to fund the development of the lion's share of this children's programming. Like the stations themselves, each program sprang up out of a perceived need and the entrepreneurial response to fill it.

This phenomenon continued into the circa-1948 explosion of media markets with television service. Program directors of these new video outlets quickly sought ways to get the whole family crazy about TV. Some of the initial forays to capture the youngest audiences simply included running a half-hour's worth of virtually obsolete silent cartoons (with a frenetic music track), originally the province of 1920s Saturday movie matinee prefaces.

Jeff Lenburg's *The Encyclopedia of Animated Cartoons*, pegs the date for relief from these antiques as 1950, which is when animator, Jay Ward, offered his Crusader Rabbit to fledgling TV stations. "The series was test marketed in 1949," Lenburg says. "Ward [who is better known for his subsequent *Rocky and Bullwinkle*] produced the program expressly for television, animating the series out of his makeshift studio in San Francisco and sending his sketches to Hollywood film producer Jerry Fairbanks to film, edit, and add soundtracks to complete each story for broadcast." Ward packaged the work in several cliffhanger

story segments all adding up to a half-hour when a local introduction, commercials, and a closing were added.

Key to his success in the emerging television arena was the remarkably cheap price—as compared to big budget Warner Brothers theatrical animation—for which each episode could be fashioned. "One complete 19-1/2 minute story cost approximately \$2,500 to produce," Lenburg quotes Bill Scott, a primary Ward associate. Back in those days, it was still conventional wisdom "that no one could produce [an affordable] cartoon series for television." Another Ward team member said the trick to the economy was that they'd plan a story so they "could reuse some of the animation with a different background."

It didn't take long for diminutive viewers to appreciate the entertainment value of Ward's made-for-TV products and for TV bigwigs to recognize ways to generate dollars by mating these cartoons—and the onslaught of quick-to-follow animated competitors—with a lovable host/commercial spokesperson, bargain basement stage set, and maybe a dozen or so precocious grade schoolers as on-camera fodder. The particular leadership of these shows ranged from nominal singers/banjo players in cowboy garb, to ancient sea captains with prop closet hats, to cops wielding billy clubs, to a shapely 20-something women dressed as a cat.

I wish I could at least footnote one such video offering for every state and territory in the U.S., but my *Pop'Comm* word count only allows bite-sized photo cap-

tion versions of several randomly selected local kiddie shows. *But first*, as any good TV host might tease, let's have a word about a pair of hometown children's programs that possessed an element of syndication throughout the U.S.

TV Teachers And Red-Headed Clowns

Perhaps the term franchise is a more accurate description than syndication of the TV programming created by musical stage show producer Bert Claster. After arriving home from presenting the likes of Frank Sinatra to Baltimore area concert-goers, Claster might fire up his family's new television set and sample the market's late 1940s/early 1950s fare. Hollis reports that "Claster was appalled at the lack of attention being directed toward those highly impressionable preschool-age kiddies. He put together a program, got it scheduled on WBAL-TV in Baltimore and *Romper Room* opened its doors in February 1953."

The program featured a pretty teacher—always addressed as "Miss" plus first name, even if the teacher was married. In fact it was Claster's wife who served as the first *Romper Room* teacher and pretty much ran the show throughout its approximate 20-year run. Show staples included the pledge of allegiance, a prayer, snack time, jack-in-the-box, Magic Mirror (a mirror-less frame through which Miss *Whoever* claimed she could see the kids at home), and bumble bee mascots dubbed *Do Bee* and *Don't*



A set of bleachers, some fidgety kids, and a girl (Bunny Orsak) poured into an kitten Halloween costume was all Houston's KTRK-TV needed to create a children's TV show and a mnemonic (call letters-inspired) station mascot named Kitirik.



In 1954, five-foot Bunny Orsak popped into Houston's new KTRK-TV 13 to try out for an opening as a *Romper Room* teacher. Instead of hiring her for that conservative schoolmarm assignment, however, KTRK execs figured she'd attract the over-18 crowd as an alluring cat-suited station mascot who did station breaks. That job quickly expanded to hosting children's shows and occasional remotes/personal appearances like this 1957 holiday season benefit broadcast. Orsak remained at KTRK until the spring of 1970 when she was coldly given a termination notice moments before having to do a last show. Some kids on the set later told their parents that they "saw the kitty crying."

Bee. The more positive of these instructive insects helped the teacher educate children to *do be* a nice person. Conversely, his evil twin convinced tykes to *don't be* someone who punches their siblings in the stomach or otherwise engages in nefarious behavior.

Shortly after the Maryland debut, *Romper Room* was recognized by other television executives as a hit they might lucratively transport in their respective cities of license. Claster granted their requests for local rights to the show. "Unlike any local program since," however, Hollis indicates, "every element of any TV station's *Romper Room* was under the complete control of the Clasters. There were regulations as to what the teacher could look like, what age [she] could be, what sort of clothes and hair they were to wear—whether on camera or in their everyday lives!" These teachers often appeared at the local toy store where *Romper Room* merchandise was officially authorized, so the Clasters wanted to ensure that the young women would make a favorable impression on the adults who ended up paying for the stuff.

By the mid-1960s, the program's marketing power became so evident that toy-maker Hasbro bought *Romper Room* from the show's founders. Hollis says Hasbro "greatly expanded the [*Romper Room*] toy line and heartily pushed its products on the show, building most of the activities around the toys." Later, we'll see how this change served to unwittingly shoot the iconic program in the foot.

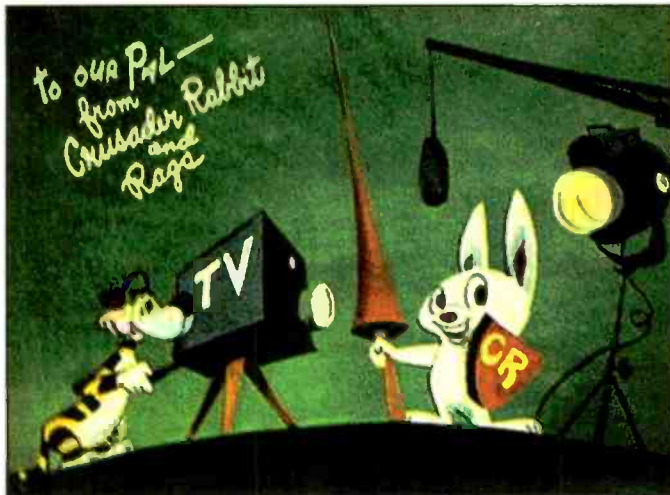
While a Top 10 list of locally hosted

TV programs would no doubt position *Romper Room* as the exemplar, a creation of Hollywood-based Capitol records ranks as number two. Immediately after World War II, the label's Alan Livingston searched for a way to add the post-war period's explosion of new youngsters to his company's customer base. Hollis cites Livingston as hitting upon something the Capitol exec branded a "record-reader." This package contained a colorful picture book with illustrations printed on the right-hand pages and dialog in the form of a script on the left-hand pages. The accompanying 78-rpm records were dramatizations of the dialogue so children could literally read the words and look at the pictures while the story unfolded before their ears.

For a subject, Livingston (and personnel from Capitol's art department) created a red-haired clown character named



From 1964, here's the Johnstown, Pennsylvania, version of *Romper Room*. Forget the *Do-Bee* and *Don't-Bee* images—check out those then-state-of-the-art RCA TK-41 color cameras!



A color graphic of Jay Ward's Crusader Rabbit and sidekick, Rags. Those who remember the pioneering made-for-TV animated series probably picture it best in black & white.

Bozo character and [KTTV-TV Bozo show] format to local TV stations all over the country. Each station produced its own version of Bozo The Clown, using local talent to play the role, but were required to purchase the suit and animated cartoons from Harmon's company."

Hollis says that Harmon felt the Boston Bozo, Frank Avruch, did such a great job with the role that he employed him to video tape 180 installments of *Bozo's Big Top* so the episodes could be syndicated. "Yet," Hollis, reports, "there were still some holdout stations that stubbornly refused any Bozo rendition that was not their own." Among them were new (circa 1970) major market UHF-TV outlets needing an instantly recognizable chunk of cornerstone programming, as well as some big independents (like WGN-TV Chicago) that presented their Bozos to every nook and cranny of America via cable or satellite "superstation" transmission.

Bozo. First appearing in 1946, the Bozo record-reader books sold well and then morphed into a Los Angeles TV show on KTTV-TV three years later. The symbiotic relationship of the television edition of Bozo serving to hawk Bozo books, records, and other merchandise, which then went full circle and promoted the TV show, had a fiscally healthy Capitol run into the mid-1950s, but later started taking some seltzer and pie right in the kisser. By then, Bozo had to compete with

ABC's *Mickey Mouse Club*, *Howdy Doody* on NBC, and an increasingly bulky slate of sophisticated competitors.

Capitol dumped the book/record combo and sold the rights for Bozo to entertainment promoter, Larry Harmon. According to Hollis, Harmon made the buy "with the intention of producing a series of animated [Bozo] cartoons." This 1957 action led to a library of animated products that required an outlet. "In 1958 and 1959, Harmon began leasing the

Hey, Where'd Old Captain What's-His-Name Go?

A check of early 1970s TV listings reveals that local (as opposed to network-

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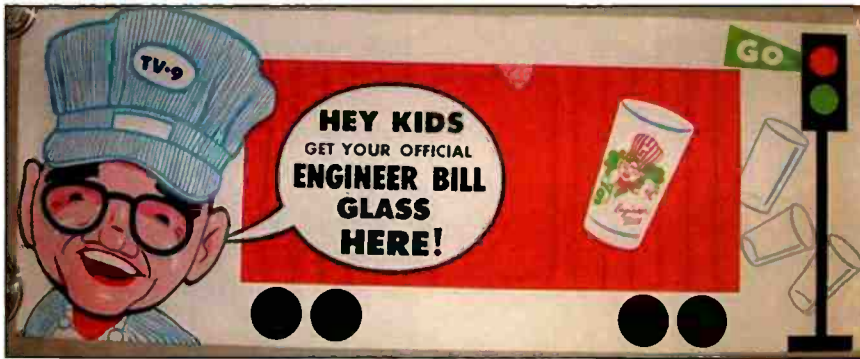
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KHJ-TV's Engineer Bill used his own model trains to decorate his *Cartoon Express* studio set. Sometime between rolling film reels of animated fare and rolling those electric trains down the toy tracks, Bill Stulla cued Channel 9 broadcast engineers to air a green light and then a red light, and continue the alternation at random. During this blinking, Bill and the handful of youngsters in the Los Angeles studio, would start and stop drinking milk in correlation with the illuminated colors. Interestingly, this was in the early-mid 1960s when lots of kids still watched on black & white sets.

produced) kids' television programming had already begun evaporating from the airwaves. One reason could be that, after a couple of decades of helming such a show, the host gets tired...and old...and unceremoniously gets put out to pasture. So does the show's premise, sponsorship value, and perceived trustworthiness of the "educational" advice (and commercial plugs) offered by the host. Admittedly, the media savvy of circa-1950 youngsters was pretty primitive compared to their counterparts some 20 years later.

As early as 1967, local stations began loosing their sea legs when it came to confidently treading on the changing social landscape. For example, Hollis identifies the growing pre-school enrollments and school districts' introduction of mandatory Kindergarten as factors siphoning off audience from *Romper Room*. The following year marked the founding of local kiddie TV's most formidable adversary: the Boston-based Action for Children's Television, or ACT.

The common practice of lacing a quarter hour of commercials into 59 minutes or so of a children's show was getting noticed by an aggressive crop of "activists," like the ACT members, who noted that kids aren't smart enough to distinguish a commercial from a cartoon. The suburban Boston women who spearheaded ACT, took aim at Beantown's version of *Romper Room* and its spots for show-owner Hasbro's line of *Romper Room* merchandise. Her group's hard-hitting complaints soon resulted in local

WHDH-TV slicing the show's commercial content and, consequently, its income. Eventually, the show fizzled out. When, in 1970, ACT petitioned federal regulators to eliminate all advertising during kids' TV programming, prescient broadcasters saw the handwriting on the wall and began canceling their offerings for the wee folk.

ACT said it wasn't trying to censor broadcasters, just agitating for legislation that would prevent television programmers from letting their program hosts talk about children's products during children's TV shows. ACT held up Public Television's tax- and grant-funded *Sesame Street* as the model for what every TV station should air for kids. Of course, little explanation was offered of the economics regarding how some commercial UHF in, say, Harrisburg, Pennsylvania, might pay for producing such a show without commercials. This quandary deepened with the FCC's ACT-inspired 1973 rule banning children's program hosts or show-related cartoon characters from delivering commercials during or adjacent to the program in which the host or cartoon character appears.

Having accomplished the *de facto* mortal wounding of homegrown children's TV shows, the group re-focused on the kid-oriented content of the networks. It also took a swing at commercials for children's vitamins, which ACT's grassroots membership feared youngsters might overdose on. Because vitamin makers' sponsorship helped make network-based children's TV profitable, the

resulting law limiting broadcast promotion of kiddie vitamins further reduced broadcasting's enthusiasm for programming to children.

When ACT helped inspire lawmakers to pass the Children's Television Act of 1990, its major requirement was not so much that broadcasters change existing children's shows—as most had been dropped as unprofitable and cumbersome—instead it specified that TV licensees must carry at least several hours of "quality" kids' programming per week. Satisfied with its cultural re-education of television executives, ACT ceased operation in 1992.

Almost 20 years previous to ACT's victory lap and subsequent demise, 40 of America's shrinking family of children's TV show hosts tried to put on a happy face at a Florida convention held in their honor. Hollis chronicled the 1973 event by citing the comments of Skipper Chuck (Zink) from Miami's Channel 6. "It's like a plague going across the country," Zink bemoaned. "There are fewer and fewer local TV shows and that's too bad because there are more children now than ever."

The Skipper then tossed a rubber harpoon at ACT's tactics, complaining that "they rave about *Sesame Street*, but nobody mentions that *Sesame Street* is fantastically well funded. Give me a million dollars and I'd show you what kind of shows I could do."

My father was still regaling us with Hollis' account of the kiddie TV hosts' swan song as we walked into my brother's home. Shawn and his wife, who regularly donate to their PBS outlet, bristled a bit at Dad's grand finale on the children's television topic, during which he boisterously agreed with the kiddie host's assessment of outfits like ACT.

Shawn quickly broke the tension, however, pointedly asking, "Pop, remember that old TV kids' show back in New York where Officer Joe Bolton showed *Three Stooges* films?" When my father answered in the affirmative, Shawn said, with his fingers playfully extended inches away from Dad's widening eyes, "Pop, I oughtta have you pick two of these and then poke you right in the peepers! But, all these years later, I can still hear Officer Joe warning, 'Don't try anything you see on the Stooges at home!'"

And so ends another day of broadcast history at *Pop'Comm*...

Restoring The Royalty Of Radios: The Zenith 8G005 Trans-Oceanic Challenge—Part I

by Peter J. Bertini
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Zenith's Trans-Oceanic portable radios were arguably among the company's most recognizable and successful offerings. The Trans-Oceanic portables were produced from 1942 until 1984—a production run spanning over four decades.

The history behind the Zenith Trans-Oceanic is intertwined with the earlier adventures of Commander Eugene McDonald, then president of Zenith Radio Corporation. Commander McDonald, an early explorer and a shrewd marketing maven in his own right, provided radio communications for the MacMillen arctic expeditions of the early 1920s.

Though the Zenith Trans-Oceanic could be used as a home receiver operating on AC power,

“...hobbyists are fortunate that today large quantities of Trans-Oceanics are still in existence... But, while finding one is relatively easy, the task of successfully restoring one can be a challenge.”

its main appeal was portability. While a few early advertisements featured happy couples enjoying the company of a Zenith Trans-Oceanic at home, Commander McDonald also capitalized on the mystique of the Trans-Oceanic and of his own legacy as an early adventurer. More often than not, the ads featured the radios as the accoutrements of worldly, seasoned explorers in diversely exotic locales. They appeared on beaches right out of Robert Louis Stevenson's *Treasure Island*, in Egyptian deserts, on the backs of camels in Pakistan, and one ad featured a Zenith Royal 1000 that was destined to be used on a Himalayan expedition in search of yeti in 1960s. Indeed, one could imagine finding one on a vessel charting unknown oceans, or on safari in darkest Africa with adventurers huddled around the campfire listening to the BBC on shortwave for news from home. Land or sea, no adventurous soul would leave home without one.

If you're interested in learning more about the history and story behind these great radios, I suggest hunting down a copy of the Bryant and Cones book, *The Zenith Trans-Oceanic: The Royalty of Radios*¹. It's fascinating reading.

Back To Reality...

The first Trans-Oceanic, the model 7G605, was introduced in 1942. Production was soon halted, however, when radio factories were required to fully support the war effort of World War II. It wasn't until 1946 when the first post-war model, the 8G005, emerged. The 8G005 technology was already obsolete by the '50s, and the



Photo A. Our next few columns will spotlight the restoration of this gorgeous Zenith model 8G005TZ1 Trans-Oceanic portable radio. I've owned this radio for many years and have always wanted to hear it play again. Now that it is, I can share what it took to get her going.



Photo B. Here's a peek inside of the Zenith 8G005Z1 Trans-Oceanic. The rear cover opens to reveal the chassis compartment. You want to look for the smaller seven-pin rectifier tube at the far left; this 117Z3 rectifier replaced the loktal-based tube rectifier used in the first version of the 8C40 chassis. Later sets, as this one, used either the 8C40Z1 or 8C40Z2 Zenith chassis. If you look closely, you can see where Zenith used a filler plate to permit mounting the smaller diameter seven-pin socket in what was original a mounting hole sized for a larger loktal socket—undoubtedly a cost saving measure to use up the old chassis stock.



Photo C. For this photo the rear cabinet door is opened to show the radio chassis, battery compartment below, and the various antenna accessories that are stored attached to the rear cover. Look at all those tubes! This is an eight-tube chassis—the highest tube count of all the Zenith Trans-Oceanics! Missing accessories, or damage to the stag fabric, will greatly diminish the value of the set.

G500 Transoceanic, featuring a more modern tube line up, was introduced in 1950. The model H-500 came a year later, in May 1951. Finally, the last of the tube Trans-Oceanic series, the model 600, appeared in 1954. The 600 series of Trans-Oceanics also marked Zenith's transition from the early airplane-style dials, which were used through the model H500, to a more modern slide-rule dial.

In 1958, Zenith introduced the Royal 1000 Trans-Oceanic. It was fully transistorized, and marked the end of the Trans-Oceanic vacuum tube era. The last of the solid-state Trans-Oceanic radios were marketed into the 1980s. Several variations of these model lines also existed, and the Bryant and Cones book is a good resource for detailed information on that as well.

A Wealth Of Radios For Restoration

Thanks to the suitcase cabinet, designed to protect the radio while in transit, many of these sets were safely stored away, still ensconced in their cocoon-like environment, apparently forgotten on top shelves in closets or in attics. Another reason there may be so many surviving radios is the high prices their owners paid for them. But whatever the reason, hobbyists are fortunate that today large quantities of Trans-Oceanics are still in existence, are often in fairly good shape, and can be had for very

modest prices. But, while finding one is relatively easy, the task of successfully restoring one can be a challenge.

Photo A shows my Zenith Trans-Oceanic, a model 8G005TZ1 dating back to 1948, in its as-found condition. I've owned this set for at least 15 years, but the current value of a clean, undamaged, and complete model 8G005 would probably fall in the \$50 to \$100 price range. Condition is everything, and prices vary by location. If you're looking for one, be aware that these sets are prone to developing a white mold on the black stag material that covers the wood cabinet. This is easy treated, however, and I'll cover the topic when the cabinet restoration is discussed.

8G005 Trans-Oceanic Variations

Three versions of the 8G005 Trans-Oceanic were produced over a three-year period. The first was the 8G005, made between 1946 and 1947, which used a Zenith 8C40 chassis. In 1948, the model number was changed to 8G005TZ1 and incorporated a newer version 8C40TZ1 chassis. The final 8G005TZ2 model, using an 8C40TZ2 chassis, was offered in 1949.

Initially, the 8G005 Trans-Oceanics used a loktal rectifier tube, while the later Z-suffix models used a more modern 7-pin all-glass 117Z3 rectifier tube, as can be seen in **Photo B**.



Photo D. Before removing the chassis, these three antenna leads should be unplugged and moved clear. Two are for the AM loop antenna mounted on the top cover, and the third is for the shortwave whip antenna mounted at the far right. Be very careful not to damage the delicate coils on the band-switching coil tower assembly.

Looking closely, you can see how the seven-pin socket is mounted on a filler plate to fit over the loktal tube socket chassis-mounting hole.

I have a few Zenith 600 model Trans-Oceanics that are also awaiting restoration, but I'm drawn to the earlier 8G005Z1 for several reasons. First, the 8G005, with eight tubes (mostly or all loktal-style), has the largest tube count and is the most complex of all the Zenith Trans-Oceanic models. This was also the only model that used a push-pull audio output stage. Secondly, the TZ1 and I share the same birth year: 1948! Its under chassis is extremely tightly packed, and this model is, without a doubt, a most difficult restoration challenge for even experienced restorers. I also like the 8G005 styling, with its handsome brass escutcheon and airplane dial.

The G500, which replaced the 8G005 series in 1949, is even more ornate, but has a lower tube count and less complicated circuitry. The G500 also marked the full transition from the use of obsolete loktal tubes to the modern 7-pin all-glass miniature tubes. Oddly, while the newer seven-pin 1L6 converter tube is now in very short supply and extremely expensive, all of the loktal tubes, including the 1LA6 converter tube, used in the

earlier models remain inexpensive and readily available.


But enough of background. We have a lot of material to cover, and this restoration will undoubtedly span for two or three columns, so let's dig in and get started.

Restoration

Photo C offers a peek inside the 8G005. For this photo the rear cabinet cover is opened to reveal the chassis, battery compartment, and antenna accessories. Remember that these sets were intended to be travel companions, so the lower section holds the A and AB battery packs (this model requires two A battery supplies; more on this later).

Antenna accessories are shown stowed on the inside of the rear cover. These were supplied for when the set was used in shielded compartments, such as on trains, metal aircraft, or cabins in ocean-going vessels. The odd horse-shoe shaped antenna is used only for the highest shortwave band. When the radio is otherwise shielded, this antenna can be used in lieu of the set's extended whip antenna. Simply attach it to an outside window for best reception. Likewise, the AM BCB loop antenna, which normally mounts on the top cover, can be also be

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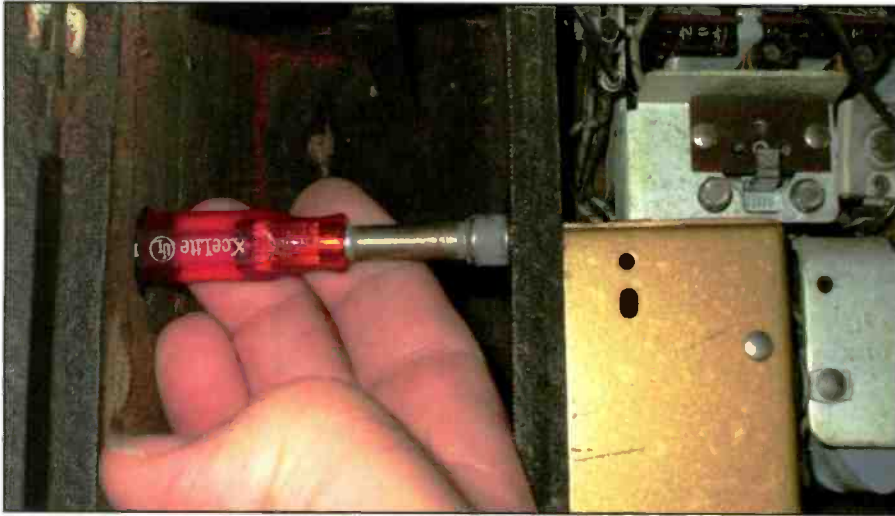


Photo E. Two chassis screws secure the chassis to the top shelf above the battery compartment. The two access holes in the bottom of the cabinet are directly below the two socket screw heads, permitting easy removal with a nut driver.

removed and mounted on an outside window for improved reception. The red ribbon cable and suction cups are stored accessories for that antenna. The AM loop antenna, when mounted on the top lid, is connected by hidden wiring within the cabinet to connections on the rear of the radio chassis.

Removing The Chassis

Begin by removing the radio chassis from the cabinet. Disconnect the three antenna leads that are attached to the chassis (Photo D). Two of these leads supply connections to the AM BCB loop

antenna on the top lid, and the third is the lead from the whip antenna. Note that two leads attach to a phenolic socket at the bottom of the coil tower assembly, while the third is attached to the frame of the tuning capacitor. Next, remove the two knobs and store them in safe place. Two long sheet metal screws, with flat washers, mount the chassis in place. These can be reached with a long shafted nut driver, via the two access holes on the bottom of the cabinet (Photo E).

Once the chassis is free, carefully jockey it free of the cabinet (refer again to Photo D). You'll have to clear the whip antenna assembly when pulling the chas-

sis. Be very careful to avoid damaging the speaker cone, the fine wires, or coils on the coil tower assembly.

Preserving The Under Chassis Appearance

As I mentioned, the 8G005 has a very crowded chassis, with tight component spacing and little room to work. Photo E shows the original, untouched chassis before restoration started. Jumping ahead, Photo F shows the restored chassis.

At first glance, it may appear that little was done to restore the electronic components in this radio, which is an illusion I like to achieve in historically interesting sets that cross my bench. Since this radio used Zenith-branded wax capacitors, I thought it would be best to try to rebuild them rather than simply discard and replace, so all the wax and electrolytic capacitors in this radio were rebuilt to maintain the chassis appearance. This is a personal call, and I admit it added greatly to the restoration time and complexity of the work involved. Smaller, modern caps would have opened the chassis, allowing more room to work and making mistakes less likely.

Continuing my chassis fixes, I replaced all the rubber-coated wiring. Again, this is a personal call. Many restorers will leave rubber wiring that shows signs of decay, provided they feel it is not at risk of being disturbed and further damaged. My take is to replace it when I can and when it's easy to do so. No shortcuts!



Photo F. The Zenith 8G005 is one of the most complex of all the Zenith tube Trans-Oceanic models. It is the only tube model featuring a push-pull audio section. As can be seen under chassis, the components are densely packed. This is not a good set for beginners or intermediate hobbyists to attempt restoring.



Photo G. I'm jumping ahead a bit in our story line, but I wanted to show how I feel a restoration should be done for sets of this caliber. I took extra steps and time to preserve the under chassis appearance, in part because this set used Zenith brand-name marked parts. Again, this is a personal choice. Some restorers don't worry about what can't be seen under chassis; others will feel I didn't go far enough.

Since most of the chassis wiring is buried under one or two layers of parts, replacing the wiring later is not a good option.

I used colored cloth wiring (available from Radio Daze²) instead of trying to find wires with plastic insulation that matched the look of the rubber-coated wiring. If you do use plastic, dragging the insulation through steel wool will reduce the sheen and make it look more like the texture of the original rubber insulation. Look closely at the rear chassis photo again, and note the bad deterioration of the rubber wiring on the original battery cables. I've seen so-called "restored" radios left in this deplorable condition. More photos of this area will be included in our remaining Trans-Oceanic restoration follow up columns.

As with any restoration effort, all the carbon resistors must be measured to ensure they are still in tolerance. I replaced out-of-tolerance resistors as needed. I was surprised to find that the vast majority of the resistors were still well within their marked tolerance, which saved me a bit of work. Several of the earlier "postage-stamp" mica capacitors were defective, and I replaced them with better quality dipped silver mica capacitors—a necessity that fortunately had minimal impact on the chassis appearance. (I'll talk about this more later when I discuss some of the troubleshooting problems encountered when the radio was powered up. As we'll find out, even these so called old "domino" or "postage stamp" micas are now nearing the ends of their lifespans.)

Keeping Track Of Removed Parts

This chassis restoration was an extremely challenging task, and my decision to rebuild the old capacitors greatly complicated the undertaking. Again, this was due to the tightly spaced components and that accessing the decaying rubber insulated wiring usually meant a layer or two of parts had to be removed first.

Because this increased the chances for making mistakes, I continually took close-up digital photos of the chassis as

worked progressed. The photos provided a quick backup reference to show where parts and leads were connected. Another trick I use to keep track of what goes where is to employ colored alligator jumper leads. These are cheap, imported sets and are carried by many electronic distributors. Whenever a part is cut free, I add a jumper across the cut leads as an aid in finding where the part's leads were attached.

Rebuilding The Wax Capacitors

I rebuilt the original wax capacitors using axial lead Mylar capacitors. The first step is to remove the old wax capacitor body from the cardboard shell; the original shell is the only part of the old capacitor that will be reused. While **Photo H** shows my hot air heat gun being used to heat one of the electrolytic capacitors, it was also used to heat the individual wax paper capacitors to soften the wax so the old capacitor innards could be easily extracted from the capacitor cardboard shell (**Photo I**).

Keep turning and moving the body of the wax paper capacitor over the hot air flow to ensure that the part is being heated evenly. An old hairdryer will suffice if a commercial hot air gun is not available. I use a pair of old gloves to handle the hot wax and parts. Here's another tip: While the wax is still soft, wipe the excess wax and dirt off the surface of the cardboard shell with a rag; this extra step greatly improves their appearance.

These wax capacitors were used for coupling and bypassing, and their exact values are not critical. Don't be afraid to use the nearest modern value to replace the now-obsolete capacitor values. For example, while .05 μF was a very popular value 60 years ago, you would likely use a modern .047 μF to replace it. Ditto for the old .02- μF value, where a .022 μF would be substituted today.

Use the exact voltage rating, or preferably a higher voltage value. I generally use 630-volt caps as they meet almost all of my needs and avoid stocking the same value capacitor in differ-

ent voltage ranges. AC line bypass caps must be replaced with modern UL rated components!

Refilling The Old Capacitor

As mentioned earlier, modern axial-lead Mylar capacitors are ideal for rebuilding these old wax capacitors. The

newer caps are much smaller in diameter, and will easily fit into the old cardboard shell. Often the replacement capacitor body is too small and fits too loosely in the cardboard capacitor tube. If the fit is too sloppy, the diameter of capacitor body can be built up with a few wraps of plastic electrical tape to assist in keeping it centered.

If you're very picky, colored hot glue sticks are available in colors that closely mimic the tints of the original capacitor wax. **Photo J** shows hot glue being injected into the rebuilt capacitor as a substitute for the wax that was used originally. Some restorers go one step further, and reuse the old wax for filling the cardboard shells. You can also partially fill the void with hot glue and add a final 1/8-inch pour of wax. There are many ways to rebuild these parts, and every restorer develops his own techniques with experience and time.

More To Come

Whew, I am running out of room so I'd better wrap it up for this time. Our next column will continue with the tricks used to rebuild the two electrolytic FP mounting-style capacitors on 8G005 chassis. Until then, keep those soldering irons warm, and those old tubes glowing!

References

1. *The Zenith Trans-Oceanic: The Royalty of Radios*, by John H. Bryant, AIA and Harold N. Cones, Ph.D., published by Schiffer Publishing Ltd., 77 Lower Valley Rd. Atglen, PA 19310. ISBN 0-88740-708-0.

2, Radio Daze, LLC, 1338 Pittsford Mendon Road, Mendon, New York 14506; Phone: (585) 624-1099; Web: www.radiodaze.com.



Photo H. Although this photo shows a hot air gun being used to heat one of the set's two electrolytic capacitors, the procedure is similar for heating a removed waxed paper capacitor. There are safety-related concerns that must be observed when heating electrolytic caps that will be discussed in a later column.



Photo I. By gently and evenly heating all sides of the tubular wax capacitor's outer cardboard shell, the wax used to seal the capacitor will soften and permit removing the innards (photo center), leaving the hollow shell (photo top) to be rebuilt with a modern axial lead Mylar capacitor (bottom) hidden inside.



Photo J. This shows a hot glue gun being used to fill the voids around the replacement Mylar cap, which will be hidden inside the old Zenith brand-name cardboard shell. Use a capacitor with a modern equivalent of close value and with a voltage rating that is equal to or higher than the original.

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Dinosaur Sea Stories

by Bill Price, N3AVY
chrodoc@gmail.com

“Once in a while I’ll see a car with an amateur radio license plate and send a quick “HI” with my horn.”

I remember my days at Coast Guard Radioman “A” school. To this day, I don’t remember what the “A” stood for. I don’t believe there was a Radioman “B” school.

Besides being located on some of the priciest real estate in Groton, Connecticut, on the Long Island Sound, the Radioman school had code keys and oscillators at all the instructors’ desks, including the desk of the school’s Commanding Officer, all wired together. A CW intercom.

I remembered this just now because I was listening to some 20-wpm CW on my computer at work. I know everyone else listens to music, and I like music just fine, too, but I’d rather listen to some good clean CW. As a matter of fact, I’d even enjoy listening to some not-so-good, not-so-clean CW, and you can throw in some static bursts for authenticity.

A long time ago, I even had a CW transceiver in my car for a while. The speed-key kept “ditting” when I hit a bump, and I never did get an electronic keyer, so that wasn’t a long-lived effort—and it’s a good thing. NO ONE should work CW from a moving car.

I’ve never had the use of a CW intercom, with the exception of barracks room-to-barracks room in Radioman school. The lovely and long-suffering Mrs. N3AVY politely refuses to learn the code. Pity. The “big boss” here at work knows the code, but he thinks we should be doing work and using email for efficiency—besides, he’s much slower than I am.

Some of you might remember reading about my using motorcycle horns to communicate in CW with a fellow CG Radioman while we were exploring Puerto Rico back in the ‘60s. It was good, using R and L to indicate which way to turn, and other operational signs to stop, or wait, or slow down, or speed up. The problem with the system came when I sent an L, which sounds a whole lot like an R—especially in a noisy city such as San Juan—and my buddy turned the wrong way up a one-way street and sent me an SOS! It really was funny, but not to him. We went back to using hand signals.

Once in a while I’ll see a car with an amateur radio license plate and send a quick “HI” with my horn. Sometimes I get a response; sometimes another member of the family is driving the car and they stare at me. I’ve found that it takes a lot of explaining to a law-enforcement officer just

why you are banging away on your horn in an otherwise calm (and quiet) neighborhood. Another good idea gone sour.

I think what I miss most is the 500 KC “international calling and distress frequency” and the working frequencies nearby at 466 (for the Coast Guard) and 468 (or sometimes 512) for the merchant ships. (Kilocycles were used before Hertz were invented, for you young people.) With a several hundred mile-range, ships (and shore stations) could call other ships or shore stations and just send the word “up,” and unless a merchant sent “5AU” (a shortcut for sending 512) everyone went to their respective working frequencies, checked to see that the frequency was not in use, and sent their messages. It was all very neat and proper, and to my way of thinking, very efficient.

Enough time has passed that I can readily admit that ships would often call one another and chat. We would chat about home, the ship, hobbies, or whatever was on our minds at the moment. Of course, these forays were kept brief, as the frequencies were often needed for genuine traffic, but it was easy to make friends with shipboard operators who would pass several times while we sat on Ocean Stations Bravo, Charlie, Delta, or Echo.

I think if I had my druthers, the ham bands would also have designated calling frequencies on each band. With the proliferation of cheap long-distance rates and the Internet, it seems silly to have to arrange a schedule to chat with someone on the ham bands so that you can find one another. I think it’s another reason that my antenna remains coiled neatly in the corner and that nice rig that Norm gave me sits quietly beside it.

All my ham friends email me. Many try to get me to string up an antenna. I do have one for my general coverage receiver.

Is it OK to say that I have absolutely no interest in packet, teletype, AMTOR, and a dozen other modes of radio communication? Is it OK to say that I don’t even care for AM, let alone SSB? I wasn’t smart enough to stay in the Coast Guard and play with CW, which is what I really enjoyed, and I never knew how much I’d miss that until I got my first crystal transmitter and my first novice license and found out that all that mattered were rig, antenna, and the weather.

Now even the Coast Guard has shut down all its CW facilities. I can’t go home again.

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