

POPULAR COMMUNICATIONS

MARCH 2013

Shortwave Listening • Scanning • AM & FM • Radio History

Magnificently Mixed Messages

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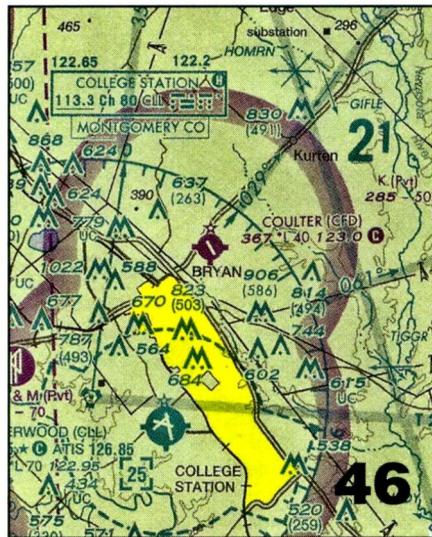
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ON THE COVER

A photograph of this beautiful collection of shortwave QSL cards — dating back decades — was sent to *Pop'Comm* by Mike Hayes, whose Popular Electronics Short-Wave Monitor station identification sign appears atop the pile — WPE6EWY. From his listening post in Downey, California, Mike amassed a treasure trove of colorful confirmations from stations around the world, including Radio South Africa, American Forces' Far East Network, Radio Japan, HCJB, Italia Radio, Deutsche Welle, and Radio Australia — just scratching the surface. (Cover design by *Pop'Comm* Art Director Liz Ryan. Photography courtesy of Mike Hayes)

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Tap into secret Shortwave Signals

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MFJ-462B
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your shortwave receiver's earphone jack.

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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.



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MFJ-1022
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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"Wx2 1/2"Hx5 1/4"D inches.

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

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

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

Eliminate power line noise!

MFJ-1026
\$199⁹⁵

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



MFJ Antenna Matcher

Matches your antenna to your receiver so you get maximum signal and minimum loss. MFJ-959C
\$119⁹⁵



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

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MFJ-1045C
\$89⁹⁵

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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-752D
\$119⁹⁵

MFJ Shortwave Headphones

MFJ-392B
\$24⁹⁵

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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

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MFJ-956
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MFJ-1046
\$119⁹⁵

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MFJ-281
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102 ft. all band doublet covers .5 to 60 MHz. Super strong custom fiberglass center insulator provides stress relief for ladder line (100 ft.). Authentic glazed ceramic end insulators and heavy duty 14 gauge 7-strand copper wire.



MFJ-1777
\$59⁹⁵

MFJ Antenna Switches

MFJ-1704
\$79⁹⁵

MFJ-1702C
\$39⁹⁵

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



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Place this MFJ-461
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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!



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EDITORIAL

Tuning In

by Richard Fisher, KPC6PC/K16SN
<editor@popular-communications.com>

Pop'Comm @ 30: What's Old is New — and Every Bit As Interesting, 30 Years Hence

As a relatively new member of the *Pop'Comm* team, it has been surprising to see just how many communications issues and themes are revisited in the lineage of a communications hobbyist magazine such as this.

In the course of writing *Pop'Comm @ 30* each month, it is clear that in lots of cases, no matter how much things change, in many ways they stay the same — only shinier and even more thought provoking.

For example, in looking through the March 1983 edition of *Pop'Comm*, we find Gerry L. Dexter, now WPC9GLD, giving readers advice on “DXing the Middle East Powder Keg.” *Sound familiar?*

The byline on a story headlined “Doomsday DXing” is that of *Pop'Comm* columnist Harry Helms, KR2H. Its secondary headline is “Listening During a National Military Emergency.” Now, overlay that coverage 30 years ago this month with the National Geographic Channel’s hot reality series *Doomsday Preppers* <<http://on.natgeo.com/UmvDyE>>, which “explores the lives of otherwise ordinary Americans who are preparing for the end of the world as we know it.”

As you’ve seen in recent editions of *Pop'Comm*, there has been a lot of interest in the World War II vintage foxhole radio. In March 1983, Anson MacFarland, KVA4EX, gives readers step-by-step instructions on how to build one — complete with rusty razor blade, simple tuning coil, pencil lead, and headphones.

In 1983, Paul Vogt, KNY2VM, gives tips on monitoring weather information via the VOL-MET network <<http://bit.ly/10U75Er>>. In an upcoming edition of *Pop'Comm*, we’ll be bringing readers everything they need to know about monitoring National Oceanic and Atmospheric Administration (NOAA) broadcasts — and why it’s so important to stay tuned.

While the subjects are just as relevant today as they were 30 years ago, technology has pushed the envelope far beyond anything *Pop'Comm* Founding Editor **Tom Kneitel**, WPE2AB/WPC4A, or his cadre of writers might have imagined in 1983. We are proud to carry on that legacy, and promise to be touching on topics beyond “the Tom Cat’s” wildest dreams.

By the Numbers: Pop'Comm Monitoring Station Program for 2012

Since the launch of the *Pop'Comm Monitoring Station* (PCMS) program on January 1, 2012, Director of Registration **Jason Feldman**, WPC2COD, has been dutifully processing the flood of applications for membership from listeners around the world. He is a titan of organization, indeed.

In a recap of the program’s first year, Feldman reports that PCMS membership swelled to 1,275 — beginning with CQ Communications Publisher **Dick Ross**, issued WPC2A on January 1 and closing with **Robert Hynd**, of Arcadia, Oklahoma, issued WPC5URL on December 31, 2012.

On New Year’s Day 2013, **Mark Williams**, of Portland, Oregon, burst out of the starting gate, being issued KPC7GH. And the rest, as they say, is history in the making. Who knows what numbers we’ll see by New Year’s Eve 2013!

We welcome monitors of every stripe into the PCMS program. Come join this growing community. For information, visit: *Pop'Comm Monitors On the Web* at <<http://www.PopCommMonitors.blogspot.com>>.

St. Paddy’s Day Pop'Comm-WRO Live Online Chat, March 17

We hope you can join in on the *Pop'Comm-WRO Live Online Chat* on Sunday, March 17 beginning at 8 p.m. Eastern time (0000 UTC). *It will be a St. Patrick’s Day party!* As always, the hour-long session promises to be casual, friendly, and laid back. So, put on something green and at chat time visit the *WorldRadio Online* blog at <<http://www.WorldRadioOnline.blogspot.com>>. Click on the *Cover It Live* box. You’ll be linked right into the chat. *Erin go Bragh*, and we hope to see you there!

— **Richard Fisher, KPC6PC/K16SN**

The Weirder Side of Wireless, and Beyond

Compiled by
Richard Fisher
KPC6PC

Ambient and Other Noise from the International Space Station

Mission Specialist Colonel Chris Hadfield, KC5RNJ, aboard the International Space Station, apparently has a real passion for we humans' sense of sound — so much so that he has shared with Earthlings ambient noise recorded on ISS during orbit. *Is it enough to drive a spaceman crazy?* You be the judge: <<http://bit.ly/VitM15>>.

As a bonus, Hadfield tossed in “*Jewel In the Night*,” a little ditty he performed while in orbit, believed to be the first original song written on, and recorded from the ISS, <<http://bit.ly/Vje1VA>>, **Photo A**. (Source: Various)

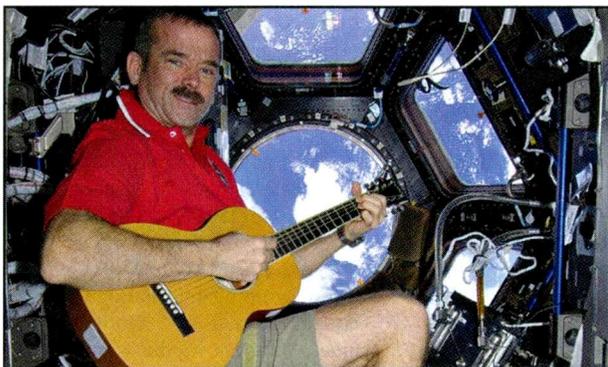


Photo A. Mission Specialist Colonel Chris Hadfield, KC5RNJ, tweeted this photograph from the International Space Station upon his performance of “*Jewel in the Night*,” believed to be the first original song written from, and recorded on the ISS, <<http://bit.ly/Vje1VA>>. (Courtesy of <[@CommanderHadfield](https://twitter.com/CommanderHadfield)>/Twitter)

‘73’ Takes Center Stage on ‘Big Bang Theory’

Communications hobbyists — especially amateur radio operators — know all about 73, shorthand for “best regards” and used liberally in voice, Morse code, digital, and all other species of wireless contacts.

The number’s fame stretches far beyond “aahs,” “dits,” and “dahs” though.

In Season 4, Episode 10 of the CBS television comedy hit “*The Big Bang Theory*,” <<http://bit.ly/Tx2hjW>>, **Photo B**, Dr. Sheldon Cooper says:



Photo B. Watch and listen as “*The Big Bang Theory*’s” Dr. Sheldon Cooper explains why 73 is the best number, <<http://bit.ly/Tx2hjW>>. Haven’t ham operators known that for decades? (Internet screen grab)

“*The best number is 73. Why? 73 is the 21st prime number. Its mirror (37) is the 12th and its mirror (21) is the product of multiplying 7 and 3. . . In binary, 73 is a palindrome, 1001001 which backwards is 1001001.*”

For more on the fascinating No. 73, visit: <<http://bit.ly/UIwRbe>>. For background on 73’s relevance to amateur radio, visit: <<http://bit.ly/Vj9Itv>>.

73 t-shirts? You bet: <<http://bit.ly/VuI5xo>>. (Source: Southgate ARC News)

Alleged Pirate Radio Signal Has Drivers Saying ‘Aaarrghhhh’

Pop’Comm reader Joe Squillace of Troy, New York, spotted an item from the *United Press International* wire that he thinks crosses the weird threshold for Unwired. *And he is absolutely right!*

Seems that the police department in Hollywood, Florida is on the hunt for a man “whose alleged pirate radio station jammed the signals from dozens of keyless entry systems for cars.”

Area residents were “baffled for months,” and were even more puzzled when their keyless entry worked just fine when used out of the area, according to a report in the *South Florida Sun-Sentinel*.

“Investigators said the culprit is believed to be a pirate radio station that had been broadcasting on 104.7 FM from the roof of the eight-story Regents Bank Building,” UPI reported, “just one block from police headquarters.”

“Police seized the man’s equipment and said a man who identified himself as ‘Jay’ called building maintenance workers shortly afterward to ask if they had taken his equipment,” UPI said. “The man could be arrested on felony charges bearing a fine of at least \$10,000 from the Federal Communications Commission.” (Source: Joe Squillace, UPI, <<http://bit.ly/VvVXK5>>)

Percussed: Literally Banging Out Morse

OK, while we’re on the subject of Morse and big bangs, consider Italian drummer Andrea Vadrucci who pounds out the Morse alphabet on his new set of skins. Known in Web parlance as Vadrum, Vadrucci writes: “The fastest way to learn a new language? Obviously, by playing it!”

Hearing and seeing is believing. Visit: <<http://bit.ly/Vw3FUJ>>, **Photo C**. (Source: Southgate ARC News)

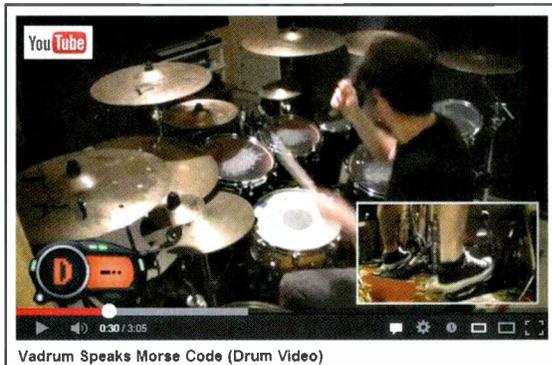


Photo C. Italian drummer Andrea Vadrucci got a new set of drums. One of the first “songs” he pounded out was a percussed alphabet — Morse code style. See and hear him at <<http://bit.ly/Vw3FUJ>>. (Internet screen grab)

Communications News, Trends and Short Takes

Compiled by
Richard Fisher, KPC6PC

'Shortwave Era is Over,' Says Radio Netherlands Worldwide

Radio Netherlands Worldwide, has announced that its "era of shortwave" is behind it and "at the age of 65, we will be reinventing ourselves."

The New Year's Day statement was made by RNW's new Editor-in-Chief William Valkenburg.

"Satellite and Internet are the communication channels of the future. The worldwide dissemination of information is no longer the exclusive domain of specialized broadcasters. Via Internet, anyone anywhere can reach out to the world with a good story."

Valkenburg said RNW "will have to forge a strong and unique identity if we are to win a place as a visible force in the new media landscape. Focus and specialization are key. Free access to information, freedom of expression, good governance, and civil and sexual rights are the pillars of the new RNW; universal themes we'll be tackling with an individualistic Dutch approach. We'll be focusing our work in areas where freedoms are limited and aiming to appeal to a younger generation that is increasingly tuned in to new media."

Target audiences will include China, Latin America, Africa, and the Arab world.

(*IN DEPTH: Read the full RNW statement at <<http://bit.ly/ZXbO8T>>. – KPC6PC*) (Source: RNW)

Barcode Inventor, Inspired By Morse Code, Dies at 91

Norman Joseph Woodland, who co-invented the barcode using Morse code as his inspiration, has died in New Jersey. He was at 91.

According to an obituary posted late in 2012 by the BBC, Woodland is said to have conceived the barcode while sitting in a chair surrounded by sand.

Having learned Morse code as a young Boy Scout, "Woodland began to draw with his fingers," the BBC reported. "Speaking of that moment, he told *Smithsonian* magazine in 1999: "I poked my four fingers into the sand and for whatever reason — I didn't know — I pulled my hand toward me and drew four lines."

At that he said, "Golly! Now I have four lines, and they could be wide lines and narrow lines instead of dots and dashes."

In 2011, both Woodland and co-founder Bernard Silver — Woodland's college classmate — were inducted into the U.S. National Inventors Hall of Fame. (Source: BBC, *New York Times*)

RGSB's Centenary Award 2013 Includes SWL Category

The Radio Society of Great Britain, RGSB, has opened a shortwave listener category in its year-long transmitting and reception activity celebrating the club's 100th anniversary.

The RGSB Centenary Award 2013 program has four categories:

- VHF/UHF Basic (three regions/bands)

- VHF/UHF Gold (six regions/bands)
- HF Basic (seven regions/bands)
- HF Gold (10 regions/bands)

"Each award requires you to receive the Gx100RSGB Special Event Stations (SES) in a given number of RSGB regions/bands," the club's website explains. There are 13 RSGB regions. No QSL confirmations are required for awards.

For complete details, visit the RSGB website at <<http://bit.ly/WnhTUu>>. (Source: RSGB)

Al Jazeera Buys Cable Channel Founded By Al Gore

International television news broadcaster Al Jazeera has acquired Current TV, the cable channel founded by former Vice President Al Gore and his business partners in 2005.

"The potential deal, first reported by the *New York Times* late January 2, was confirmed by Gore and co-founder Joel Hyatt," according to a report by *Advanced Television*.

"We are proud and pleased that Al Jazeera, the award-winning international news organization, has bought Current TV," Gore and Hyatt said in a statement. "Current Media was built based on a few key goals: To give voice to those who are not typically heard; to speak truth to power; to provide independent and diverse points of view; and to tell the stories that no one else is telling. Al Jazeera, like Current, believes that facts and truth lead to a better understanding of the world around us."

The deal — believed to be valued at \$500 million — "gives Al Jazeera a route into American households. Current has been available in about 60 million of the 100 million homes in the United States with cable or satellite service," *Advanced Television* reported. (*IN DEPTH: Read the complete Advanced Television story at <<http://bit.ly/WnjJET>>. – KPC6PC*) (Source: *Advanced Television* <<http://Advanced-Television.info>>)

AWR's DX Wavescan is 'Calling Africa' in 2013

All this year, "programming in the Adventist World Radio program, *DX Wavescan*, will be concentrated (in part) upon the radio broadcasting scene on the continent of Africa, including nearby islands and the Middle East," according to AWR's Adrian M. Peterson.

"Tentative planning for the scheduling of radio features includes a historic rundown of an African radio station, large or small, as the main opening topic every third week. As follow-on topics in the weekly half hour program, many additional African features will be presented, including interviews and on-the-spot recordings made by the program producer, Jeff White of Radio Miami International WRMI in Florida."

(*LISTEN: To audio streaming of AWR "DX Wavescan" broadcasts at <<http://bit.ly/W6F7xk>>. (Source: AWR)*)

Capitol Hill And FCC Actions Affecting Communications



Compiled by
Richard Fisher,
KPC6PC

Restrictions on In-Flight Internet May Be Eased

In an effort to “enhance competition in the mobile communications market and help speed aeronautic development,” the Federal Communications Commission is moving to ease restrictions on Internet use in commercial airlines, according to a report posted on *eWeek*®.

“In addition to promoting the economic growth and job-creating impacts of ubiquitous broadband, the action also continues the FCC’s efforts to update and streamline regulatory requirements across the agency,” the story said. “The latest report and order formalizes Earth Stations Aboard Aircraft (ESAA) — earth stations on aircraft communicating with Fixed-Satellite Service (FSS) geostationary-orbit (GSO) space stations.”

Two mobile applications in the FSS — Earth Stations on board Vessels (ESV) and Vehicle-Mounted Earth Stations (VMES) — provide satellite communications with vessels and land vehicles, the *eWeek* story reported. “ESAA is the third leg of mobile applications in the FSS. The satellite antenna will carry the signal to and from the aircraft, and mobile technologies such as Wi-Fi will provide communications within the aircraft’s hull.” (Source: *eWeek*®, <<http://bit.ly/Vv1Knu>>)

Here's How to Report a CALM Act Violation

With the institution of the Commercial Advertisement Loudness Mitigation (CALM) Act in late December, *The Washington Times* posted a story on its Communities website with advice on how to file an FCC complaint about loud TV commercials.

Writer Gayle Falkenthal recommends using the FCC’s online complaint form at <<http://www.fcc.gov/complaints>>, which she describes as “the easiest way.”

- Click on the *Complaint Type* button “Broadcast (TV and Radio), Cable, and Satellite Issues”
- Click on the Category button “Loud Commercials.”
- Fill out Form 2000G — Loud Commercial Complaint
- Click on “Complete the form” to submit your complaint to the FCC.

“The ‘Loud Commercial Complaint’ form asks the date and time you saw the commercial, the name of the program you were watching and which TV station or pay-TV provider transmitted the commercial,” writes Falkenthal. “It’s a lot of information, but it is necessary to help the FCC correctly identify the offending commercial from among the tens of thousands of commercials aired every day.”

You can contact the FCC, as well, via its Consumer Call Center at (888) 225-5322 (voice) or (888) 835-5322 for TTY, via fax, (866) 418-0232, or mail a letter to: Federal Communications Commission, Consumer and Governmental Affairs Bureau, Consumer Inquiries and Complaints Division, 445 12 Street, SW, Washington, DC 20554. (Source: *Washington Times Communities*, <<http://bit.ly/ZcEr0G>>)

ARRL Asks FCC to OK Amateur Radio Band at 472 kHz

Rather than waiting five years for the FCC to follow up on the actions of the 2012 World Radiocommunication Conference (WRC-12), as has been the case with WRC-07, the ARRL has filed a Petition for Rule Making requesting the establishment of a domestic amateur radio allocation at 472-479 kHz.

The NPRM calls for a power limit of 5 watts EIRP (effective isotropic radiated power), with only 1 watt to be permitted in certain locations. (Source: *CQ Newsroom* <<http://www.CQNewsroom.blogspot.com>>)

FCC Nudged to Reconsider 1976 ‘Contest Rule’

A proposal from Entercom Communications Corp. asks the FCC to relax “requirements that radio stations announce the “material” rules of a radio contest over U.S. airwaves <<http://bit.ly/134F9vT>>.”

According to a posting on RadioSurvivor.com, the Entercom <<http://www.Entercom.com>> petition argues that “in today’s fast-paced world, Americans expect to instantly access information at their fingertips by merely logging on to a website, conducting a Google search, or using an app on their smart phone. Relying on broadcast announcements for material contest information may have been an acceptable way to attempt to inform the public . . . when the Contest Rule was enacted in 1976, but it is certainly not the case today.”

The report noted the FCC’s “contest rule” says the “material terms” of a competition “must be explained ‘periodically by announcements broadcast on the station conducting the contest.’ This doesn’t mean that the station has to explain the rules in their entirety every time, but ‘disclosure of material terms in a reasonable number of announcements is sufficient.’” (Source: *RadioSurvivor.com* <<http://bit.ly/VjndQg>>)

Gone. Postal. Over IRCs!

At press time, the jury was still out, but if the U.S. Postal Service has its way, International Reply Coupons (IRCs) will no longer be sold in the U.S.

According to the *ARRL Letter*, the postal service published a notice of its plans in the Federal Register in late October, citing insufficient demand to continue providing the service. Comments were being accepted through November 23.

Even if IRCs are no longer offered for sale by the postal service, Universal Postal Union (UPU) regulations require that post offices honor and redeem IRCs that have been purchased in other countries.

IRCs are a form of prepaid postage, redeemable for a single unit of airmail postage in any UPU member country. Radio amateurs have long used them to provide return postage for QSL cards from DX countries.

Check the *CQ Newsroom* for updates. (Source: *CQ Newsroom* <<http://www.CQNewsroom.blogspot.com>>)

Get Ready: The Remarkable Wonders of Wi-Fi

By Rob de Santos
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Twitter: <@shuttleman58>

“With the speed increases in the “pipe,” it only makes sense to be able to get that data from the Wi-Fi modem out to the devices that use it even faster.”

The majority of readers of *Popular Communications* probably have a Wi-Fi system at home or work or both. These days, not only does your home computer or laptop use Wi-Fi but so do smartphones and dozens of other home devices including TVs, refrigerators, and home monitoring systems.

Typically, Wi-Fi routers are connected to the cable or satellite modem which provide the link to the Internet or communication system we use. Most readers probably have home systems that are capable of communicating at speeds from 10 to 300 Megabits per second (Mbps). Real speeds are likely a third to a half slower than that due to noise, shared connections, interference from your neighbor’s Wi-Fi, and so on.

What’s on the horizon? *Big boosts in speed.* As many of you know, your “land-line” Internet connection (cable, DSL, satellite) has been gradually climbing in speed. With the speed increases in that “pipe,” it only makes sense to be able to get that data from the Wi-Fi modem out to the devices that use it even faster.

Today’s standards go by the monikers of 802.11a, 802.11b, 802.11g, and the most common and fastest 802.11n. (The standards numbers are assigned by the IEEE, the international engineering association.)

Now, the first 802.11ac routers are starting to appear. Compared to “n,” the new devices provide speeds of up to 1,000 Mbps. So far, few devices support it but more are appearing weekly. Many more “ac” standard devices will be appearing this year once the IEEE finalizes the standard (*NOTE: that could happen by the time you read this—K8RKD*). New devices for the “ac” standard use frequencies in the 5-GHz range.

But wait, there’s more! Yes, even as the transition to 802.11ac is beginning, work is underway on an even faster generation of hardware. The new standards are known as 802.11ad (sometimes called Wi-Gig) and after that, 802.11ah. Driving the change is the need to support more and more devices and better utilize the speed of incoming landlines.

With the number of Wi-Fi devices in use expected to exceed the number of people on the planet within two years, and the need to use the limited bandwidth more effectively, the “ac” hardware will help — but it won’t be enough.

The “ad” standard provides for another seven-

fold jump in speed and lower overall power consumption (in “burst” mode, the power used is higher, but the systems drop into lower power usage between bursts resulting in lower overall power consumption).

However, “ad” standard devices won’t replace “ac” standard devices because they will use the 60-GHz frequency range and be effective over shorter distances — say one room only. Channel width is about 2 GHz allowing for much higher data rates. It will support more “device to device” communications resulting in less need to buy yet another cable to connect devices together. (*NOTE: I hear spouses cheering already! — K8RKD.*)

It will herald the day when you no longer have to run a cable to get your DVR to send signals to and from your TV and the day when your refrigerator talks to other household devices — perhaps your electrical or heating and cooling systems? Most likely, the first “ad” devices will begin to appear in 2014 to 2015.

The “ah” standard is still in the draft stages but takes us in the opposite direction by seeking longer ranges using lower frequencies — perhaps under 1 GHz. It’s too early to know what that means, but we can be sure it will further alter the landscape. It may be another three to five years before “ah” devices are common.

The challenge for hardware manufacturers will be the increasing numbers of transmitters and antennas in devices needed to support the wide range of systems, frequencies, and standards. The computing power needed is also growing as well as the firmware complexity.

Further, as every radio enthusiast knows, there is the problem of interference — both internal and external — for the designers to tackle.

As radio listeners, we are also concerned about interference. The “RF” background is going to grow and make our current situation worse unless more is done by designers and regulators to control “noise.” We will need to be vigilant in order to minimize the impact on our hobby uses of radio.

Get ready for an even bigger “wireless” world. I wonder what Marconi would have thought? Why not share your thoughts on the wireless revolution with me. You can reach me by many different ways including wirelessly. I look forward to hearing from you. — K8RKD.

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The Agony: A Slow Death for AM Radio?

A Robust Discussion About the U.S. Broadcast Band's Future: We're Reading You Loud and Clear!

Compiled by Richard Fisher, KPC6PC

Rob de Santos, K8RKD's, *Horizons* column in the November 2012 edition of *Pop'Comm*, **Photo A** — under the headline “*There's a Crisis Brewing in U.S. AM Radio*” — served as a clarion call for a rush of support from AM radio fans around the United States.

FCC commissioners and staff are now studying options for AM radio in the U.S., de Santos says. Proposals being considered include:

- Power increases
- Reductions in the number of stations on the band
- Use of more low-power AM and FM repeaters
- Making the entire broadcast band digital

“Ratings from market after market suggest that AM radio is dying . . . Without better ratings, more and more stations will go dark.”

“Clearly any power increase may cause interference issues,” he notes, “and the recent change in regulations for FM translators and LPFM affect choices for use of repeaters. Fewer than five percent of AM stations in the U.S. now broadcast in digital and use *HD Radio* technology from iBiquity — a.k.a. “IBOC” or in-band-on-channel.”

In addition, de Santos says, “the National Association of Broadcasters (NAB) is discussing options it might take to the

NEWSWORTHY

Horizons

There's a Crisis Brewing in U.S. AM Radio

By Rob de Santos
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Twitter: <@shuttleman58>

“When major owners of radio properties are saddled with debt, their least successful properties — mostly AM stations — would seem the most vulnerable.”

T*The Future of AM Radio.* More properly, it should be called medium wave, but in North America, most refer to it by the modulation method: AM. (*IN DEPTH: Learn about AM broadcasting, <<http://bit.ly/Qi4xLh>>. — K8RKD*)

You could say there is a crisis brewing and it may be the trends in the radio business itself that spell doom for AM radio. There are a number of signs that all point to a diminished future for AM radio.

The first started more than four decades ago. The emergence of FM radio in the U.S. in the late 1960s signaled a decline in listening on the AM band. That trend has continued right up to the present day. For a time it slowed with the emergence of talk radio and sports-oriented stations in the 1990s. Now that is fading as more and more talk and sport stations migrate to FM.

The percentage of all radio listening done on AM stations is now down below 20 percent and perhaps as low as 10 percent in the major mar-

or down while growth in advertising has been double digit for digital distribution. When the major owners of radio properties are saddled with significant debt, their least successful properties — mostly AM stations — would seem the most vulnerable.

With declining listenership, flat revenue, high debt, and the increasing loss of the formats that have sustained it in recent decades, the question to be asked: *What is the future of the band in the U.S.?*

In the near term, it's likely that more and more formats will migrate to FM, leaving AM to smaller niche formats or hyper-local stations in less-populous areas. The FCC and the broadcast industry will face major decisions soon on the future of the AM band.

HD radio and AM stereo have both been largely market failures in terms of revitalizing the band. There are just a few ideas are out there that would seem to offer any solutions

Photo A. The November 2012 edition of *Pop'Comm*, featured Rob de Santos' *Horizons* headlined “There's a Crisis Brewing in U.S. AM Radio,” prompting a rush of comment from AM radio listeners — and ex-listeners — from around the United States. (Courtesy of Popular Communications)

FCC, including expanding the FM band into the regions of TV Channels five and six — or 76-88 MHz.

“Of course, this would require relocating the approximately 23 remaining stations in that spectrum,” de Santos warns. “It remains to be seen if any of these proposals will move forward and any change is likely to take years to implement.”

Until then, here is a sample of the reaction to November 2012’s *Horizons*, and the robust conversation it has provoked.

Perspective from a Former AM Owner

Regarding Rob de Santos, K8RKD’s, *Horizons* column appearing in the November 2012 *Pop’Comm*, as a former AM station owner — WWFL, Clermont, Florida <<http://bit.ly/UM2f4N>> — when I was in my late 20s, I learned a number of lessons that may still be valid today.

AM radio works best when it is hyper-local. AM or FM didn’t make much difference in Clermont. Despite all the Orlando market signals, no other station covered city council meetings, Rotary, Kiwanis, Women’s Club, and so on. Most of our commercials were local, so listeners heard about local sales. Regular community bulletin board announcements featured local activities. Listeners could easily stop by our booth at local events during live broadcasts. And Clermont High School football was only broadcast on one radio station — WWFL AM 1340.

A radio station must run as a business, no matter on which dial it appears. Losing \$10,000 per month when I bought it and only on the air 18 hours daily, within months it was break even and 24 hours. There were no computers that I could afford at the time, so it was done with a relay automation system and satellite feeds. We used every possible satellite break for local programming as part of our hyper-local approach. Our staffing was me and one part-time college student. Technology made it work.

Finally, find the format that is popular but missing on the local dial. Arriving in town as a new owner, I surveyed consumers outside the local grocery and shopping center to find out what they listened to. Not surprisingly, it wasn’t WWFL with old noisy country records. Most surveyed were shopping with merchants that we needed to support us. So rather than select a format that I personally liked, I let target listeners tell me what they listened to in Orlando. I then selected something comparable, but with the local angle that was simply not found anywhere else.

When we are in the industry, it is too easy to get hung up on where you are on the dial or what power you have. Select a target population, a format that they would choose to listen to, and differentiate from other stations on the dial. Then AM or FM, **Photo B**, you can be successful.

— Ken Peach
Clermont, Florida

(Ken: Thanks for your nice message. I appreciate the feedback, particularly from someone who has been on the ground. There is no doubt that regardless of the band or the era, you can overcome many issues by generating a product that listeners enjoy hearing and using community ties to engage advertisers. Unfortunately, addressing that business failure is harder.

Since I write on the future horizons of communications, sometimes I must write more as forecaster and technologist and less from a practical point of view.

My guess is that whatever happens, the solution coming from both the FCC and National Association of Broadcasters will be more technological than practical business. Perhaps that’s nec-



Photo B. “Select a target population, a format that (the local community) would choose to listen to, and differentiate from other stations on the dial,” writes former AM station owner Ken Peach of Clermont, Florida. “Then AM or FM, you can be successful.” (Courtesy of Wikimedia Commons)

essary when issues such as signal strength, interference, and sound quality are being addressed. If the business model is not addressed, too, then whatever is done won’t work in the long term.

Many of the replies I have received have had a nostalgic tone to them. Readers long for the “hey-day” of AM radio. I just remind myself that while I miss that, too, there was a time when we didn’t have broadcast radio (pre-1920) and the forces of history and technology may someday render it obsolete. I hope that is a long way off. — Rob de Santos, K8RKD)

‘I Don’t Want to See the AM Spectrum Go Away’

I still listen to AM radio.

My wife and I have the local stations on — WTIC, WICC, and WDRC — almost all day. In addition, I am an AM BCB DXer. I started doing it when I was 10 years old and still love it!

Unfortunately, my three daughters don’t listen to the radio, AM or FM, at all. They either use iTunes or Pandora and they are much more into watching TV on the Internet! They are always teasing me about why I love amateur radio so much. They don’t understand the challenge of communicating with people across the globe because they do it on Skype all the time!

I don’t want to see the AM spectrum go away. I love the old band and get a lot of value, information, and entertainment from it.

— Gary Smith, WAITJB,
Southington, Connecticut

(Gary: Thanks for writing. Unfortunately, there are not enough people like you and your wife. Ratings from market after market suggest that AM radio is dying a slow death. Without better ratings to translate into advertising and revenue, more and more stations will go dark.

No one wants to see the band disappear, but changes must be made if that is to be avoided. Since I wrote November’s “Horizons,” both the radio industry and the FCC have undertaken studies to see what options might exist and the feasibility



Photo C. This tiny Claritone two-transistor AM radio was popular in the early 1970s — a demonstration of AM radio's longtime portability. (Courtesy of Wtshymanski via Wikimedia Commons)

ty of each option. Once the process is farther along, I will certainly revisit this topic in a future column. — K8RKD)

AM BCB Radio Has Distinct Advantages

I agree that something needs to be done if AM radio is going to continue to be viable in any capacity. However, AM radio has some advantages like no other service:

- The signals travel farther than any signals on VHF or UHF, especially at night.
- The receivers are very portable, and don't even require an external antenna, **Photo C.**
- Everybody has an AM radio
- It works when the Internet is down.
- No costly service is necessary, such as satellite or cable.
- Most small towns still have AM radio stations, at least in the U.S.
- Quite often, unusual signals can be picked up from long distances.

Of course the problems with AM are signal fading, static, and background noise, and it's not usually in stereo. If these problems could be overcome, AM could have a good future. Attempts have been made with AM stereo. Driving home on a Saturday night, my wife and I enjoyed listening to the Grand Ole Opry on WSB-AM 650 in stereo when it was available. But the station no longer broadcasts in AM stereo.

Digital signals on the AM band didn't work, as the range was very limited, and the receivers were very expensive. In order to save AM radio, an entirely different approach needs to be taken.

Why couldn't the mode remain the same on the transmit end, but through computer software, improve the signal on the receiving end? Surely, someone could come up with a program to remove the background noise, static, and fading, and not cost an arm and a leg. Eventually, it could be done with a small battery-powered box that would plug into the headphone jack. AM stereo is still used by a few stations, so high-quality stereo signals could come over the AM band — maybe with a little computer enhancement.

My wife and I still enjoy listening to the Grand Old Opry while we play cards in the kitchen. I don't have to watch the data usage or pay extra for Internet when we use the old AM radio, and the audio is pretty good on AM 650.

Don't you think that someone who reads *Pop'Comm* could come up with a computer program to process and enhance the audio output and start the ball rolling?

— Ben Johnson, NYØØ/KPCØBEN,
Mount Union, Iowa

(Ben: Thanks for your message. You are correct that AM does have some advantages that need to be appreciated. By themselves though, they won't bring back listeners.

Unfortunately, some issues with AM radio cannot be fixed by better technology. Increasingly, even AM stations in small markets are closing up shop and going dark or becoming purely automated repeats of an FM signal or out of town feed.

Better receivers won't be able to restore a signal where there isn't one still there. You can partly reconstruct missing information in a digital world, but not really in an analog signal. And if it's gone, it's gone. That takes us back to my columns on communications theory by Claude Shannon.



Photo D. "I listened to AM radio since December 1952 on the way home from the hospital maternity ward," writes Mike Migliaccio, N3HLM, of Sunbury, Pennsylvania. "Seems it kept me from crying that day." Chances are his parents were listening to Don McNeill's Breakfast Club, which ran from 1933 to 1968 on AM stations across the country. (Courtesy of Wikimedia Commons)

Technology already exists to do substantial audio improvement to the signal we get, but generally no manufacturer will spend the money to include it in low-end bedside and car AM radios. One manufacturer that certainly could afford to — Porsche — has, instead, opted to drop AM from the radios in its future models. Beyond all this, does it make sense to do these things or should a more radical solution be undertaken? The answers aren't obvious.

What will be needed are a business solution and a technological solution. — K8RKD)

Time to Retire AM Radio?

In *Pop'Comm*, I enjoy *Horizons* the most. Always an excellent column. I listened to AM radio since December 1952 on the way home from the hospital maternity ward. Seems it kept me from crying that day. **Photo D.**

I always liked AM's DX ability at night. Now IQ 106.9-Philadelphia put AM talk on FM and I appreciate the clarity of sound. God bless Edwin Howard Armstrong (who developed FM). WYSP-FM broadcasted the Philadelphia Eagles games on FM at 94.1 and the listening experience is amazing. Reception is still great 60 miles away. I prefer FM.

I listen to AM in the car since talk radio is still on AM here in the boonies of Central Pennsylvania. On the road I use it for traffic and news: 1010 WINS, 880 WCBS and 1060 KYW. Otherwise it is FM.

Note that I use my Alurtek Internet Radio here in the house and can get any station I generally want. DX worldwide. No antenna, no QRM, no QRN, with great sound quality. I have 15,000 choices. That's another aspect to consider.

Yes, it's time to retire AM and make FM the mode of choice. Sarnoff fought off FM, but he is long gone. Still I get everything I want and more with my Wi-Fi Internet radio.

— Mike Migliaccio, N3HLM,
Sunbury, Pennsylvania

(Mike: I appreciate your kind words and I am glad you enjoy the column. My listening has followed yours in many ways. My most prized possession as a young boy was a transistor radio that I used to listen to AM radio at night.

Now my listening in the car is to FM or Internet radio — with a smartphone — and at home to my Crane CCRadios and the thousands of Internet stations available. I still use my short-wave radio, but less and less. My guess is that you and I represent more and more people in the country.

Thanks again for the great feedback. — K8RKD)

Among AM Radio Fans, There's No Lack of Interest

I read November's *Horizons* and found it most interesting.

I do listen to AM radio all of the time. In fact most of my cars only have an AM radio.

I have lots of sets in my home. I have several old tube AM sets. I use several most of the time because they have good RF stages. **Photo E.**

I don't care much for talk stations. I like music and some news. I listen to stations not in my city because all (my city's stations) have is talk or all news all day long.

Here are some of the stations I listen to: KTNN in Window Rock, Arizona; KDUN in Reedsport, Oregon; KHWG in Fallon, Nevada; and KVIN, down near Merced, California.



Photo E. Here's a classic AM-only radio, circa 1955, by Toshiba. This model 6SC-19 featured the popular and renowned five-tube superheterodyne circuit. (Courtesy of Masaki Ikeda via Wikimedia Commons)

I enjoy different kinds of music and they do give the weather on these stations.

Once in a while I can get CB1 from Calgary, Canada. Sometimes, if I use a broadband RF preamp, I get a little stronger signal for some of the weaker stations that I listen to. Once in a while I will tune in the shortwave stations. The BBC is good for some news.

Just to let you know: I still like the old AM stations to listen to. In my past, I used to build and install AM and FM transmitters.

— Bob Hopkins, Jr.

(Bob: I am sure there are many others like you who still listen to AM radio and enjoy it. Unfortunately, the ratings from market to market across the country are trending toward one reality: Fewer and fewer AM listeners are out there.

Without more listeners, station revenue and profits will continue to decline and more and more stations will go dark. — K8RKD)

Remembering the Potential of AM Stereo

I read the commentary about the crisis in AM Radio with interest. I have written several engineering-oriented articles for *Radio World*. I had always been an advocate of AM stereo. When it came out, I thought it was the next big step to solidify AM listenership.

At the time, we had a Plymouth Voyager Minivan that came with an AM stereo receiver. We would travel to Northern New Jersey where I would compare the stereo signals of WPAT and WPAT-FM. My wife opted for the sound of AM Stereo over the FM signal. She thought the high frequencies on FM were "piercing" compared to a more subtle sound on AM. The AM stereo receiver employed a synchronous detector that also reduced noise — but did not eliminate it.

During those years, I kept waiting for the FCC to choose one AM stereo transmission system and commit to it as it did when it chose the FM system back around 1961. That never happened.

The ensuing years brought the noise issue from computers, phones, calculators, routers, and so on. A friend of mine has questioned why the FCC seemed not to enforce Part 15 of its regulations regarding RF emissions. *That is a good question.* I

might add: why didn't the NAB (National Association of Broadcasters) argue this point? The addition of HD radio destroyed AM's fidelity to the point where anything beyond talk radio, **Photo F**, isn't really worth listening to.

Back in the early 1980s I had some discussion with broadcast engineers about the then-growing electromagnetic interference from the then-budding calculator and computer market. There was some talk about increasing the transmitter power of AM stations to overcome the noise. The service area would be controlled by reducing the height of the towers creating a lot of skywave. It might work during the daytime, but at night chaos would reign.

As things stand with a national economy that may not improve, a lot of AM owners may find their tower site more valuable as real estate than radiating signals. Perhaps *Popular Communications* should start keeping an account of AM stations that *go dark*. All of this may lead to the time when AM HD is no longer transmitted in its hybrid mode, but becomes the only channel. That might change things.

About seven years ago I visited *iBiquity* when writing a story about HD radio. It did a lot of research on sky-wave signal co-channel interference — with a lot of that work done testing signals at night from WOR and WLW.

Its data gave WOR-HD a reliable signal similar to a Class B FM station transmitting from the tall buildings on Manhattan. I sensed that *iBiquity* was no longer looking at the extended ground wave of AM, thinking no one in Ocean City, Maryland would have interest in the WOR signal. *iBiquity* was convinced that it could turn the AM radio market into an HD medium within 10 years through car sales. I'm not sure how that worked out. Are HD radios standard equipment in cars today?



Photo F. "The addition of HD radio destroyed AM's fidelity to the point where anything beyond talk radio isn't really worth listening to," writes Ed Montgomery, of Annandale, Virginia. Here, Navy Vice Admiral David Venlet is interviewed on the *Don Wade and Roma Morning Show* at WLS 890 AM, Chicago. (Courtesy of Wikimedia Commons)

In the 1960s there was a demand for all-channel TV sets to give the UHF community some competition. In the '70s there was the demand for all radios to be AM/FM to give FM a competitive edge. FM won that battle.

Now the hope for AM may be in making its signal HD in a manner similar to how U.S. television switched from NTSC to ATSC over a period of years — first making NTSC receivers with an ATSC receiver added. Radio receiver manufacturers should be required to add HD detection for all new radios and then, maybe five years from now, go all digital.

This may require some engineering changes. *iBiquity* shared with me some information about AM stations with critical directional patterns: those stations may not be able to transmit the HD signal without pattern modifications.

I have HD radios in my car and at home. It is an interesting experience to drive through a directional null. The phasing issue creates a lot of noise that the average listener would not put up with — especially if they were stopped in the null at a traffic light or backup. This person would tune to another station.

Here in the Washington, D.C. area, I don't think anyone is currently broadcasting in HD on AM. The FM side has a few stations broadcasting additional channels, but there is no major emphasis to create an alternative format. WMAL-FM was broadcasting light jazz on HD-2, but recently turned that channel off.

— Ed Montgomery,
Annandale, Virginia

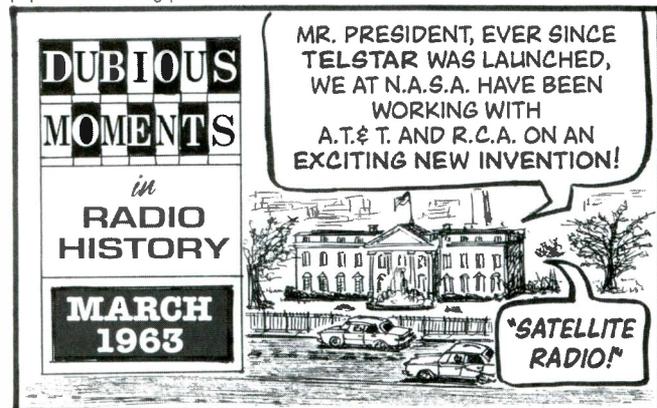
(Ed: I appreciate the insight of someone who has worked inside the industry. I've also wondered why so little enforcement is done on Part 15 noise issues. I sense that the FCC really doesn't consider it a priority unless it gets enough complaints on a particular device, by which time it is usually too late.

Testing of devices prior to sale appears to be very sloppy. The NAB worries more about LPFMs causing unnoticeable

SPURIOUS SIGNALS

By Jason Togyer KB3CNM

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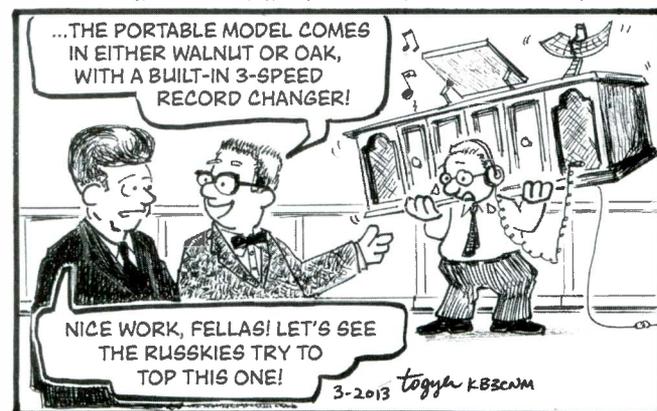




Photo G. "I have been listening to AM since I was a kid in the 1960s," writes Joe Cacciatore from Wappingers Falls, New York. "I grew up in Central New York and at night to get me to sleep I used to listen to WBBM out of Chicago." Another station he likely picked up was Chicago's WLS, which had quite a stable of disc jockeys, as shown in this 1972 publicity shot. (Courtesy of Wikimedia Commons)

interference on second-channel separation than the noise of all of the other devices in the car or home.

According to the iBiquity folks, more than half of the cars coming off the assembly line this year will have HD radio as a standard feature. Overall, though, it doesn't seem to be helping.

Part of the explanation is undoubtedly the reason you cite: very few stations have made effective programming use or promotion of it. While HD on FM is here to stay, I have written before that I don't see a long-term future for it on AM — at least as now licensed.

The IBOC system seems ill suited for dual-standard/HD use on AM. — K8RKD)

FCC Should Keep Its Hands Off AM Radio

I listen to AM every day, both in the car and at home. I listen to news radio WCBS 880 from New York City. I live 75 miles north, but WCBS comes in well.

The FM frequencies here are almost filled. I don't see how AM stations could ever be migrated to FM. And there are no all-news FM stations in my area that I am aware of.

I have been listening to AM since I was a kid in the 1960s. I grew up in Central New York and at night to get me to sleep I used to listen to WBBM out of Chicago, **Photo G.**

In the late 1960s I started BCB DXing, which I still do.

The government has no place to step in and ruin AM. Just because few people listen doesn't mean that *no one* listens. I think it serves a purpose today and the FCC should keep its hands off it.

— Joe Cacciatore,

Wappingers Falls, New York

(Joe: Thanks for writing. I don't think the argument is that no one listens. Rather it is that not enough are listening to keep the band financially viable. For most stations, regardless of band, commercial success depends on ratings since ratings translate into advertisers and revenue. For more and more AM stations, ratings are so small, they make their long-term survival problematic. The problems are both historical and technological as I noted in the column.

It is not a case of the band not serving a purpose, it is simply that the audience and market have changed and if the band

*is to continue being useful, something must be done. Remember that radio is not "static." It has been changing every decade since the 1920s, **Photo H.***

Also, I wouldn't characterize the situation as one where the FCC is intervening where there isn't a problem or to "ruin the band." Since I wrote the column, there are initiatives within the radio industry and the FCC to study the situation. Where those initiatives will lead isn't known at this early stage. I'm pretty confident that the radio station owners would much prefer to solve the situation themselves, but given the FCC's regulatory responsibilities, it is certain the Commission will have to be involved in any major change to the band.

As I noted in the column, one suggestion has been to extend the FM band. There is no doubt that in most urban areas there isn't room in the existing FM band for more stations, thus it would need to be extended.

Presumably, the logical way to do this is to add spectrum from the former analog TV band adjacent to the lower end of the current FM band — 76 to 88 MHz. Unlike your situation, a reader wrote me describing how empty the AM band is in his location in Maine. Unfortunately, his situation may be more typical across the U.S.

I'd like to think that the government would be able to stay out of this, but unless we want to totally deregulate broadcasting and abandon international treaties on spectrum use, this won't be completely possible.

I hope that FCC action can be minimized but in the end the station owners will want to save their investments, which for even small local AMs can run into the hundreds of thousands of dollars. — K8RKD)

Radio in Maine: The State of AM and FM Down East

Just got the November '12 issue of *Pop'Comm* and read Rob de Santos, K8RKD's, *Horizons* with interest. The AM band up here in Maine is mostly empty, at least in the Bangor market.

I should hear WZON 620 AM, but I don't. I hear WBZ 1030 in Boston, but it is faint and fades a lot during the day. The FM band up here isn't much better. There are a couple of religious stations from the Bangor area.

There's PBS radio, an alternative station down in the Bucksport area, country music stations everywhere, and an all-



Photo H. KHJ-AM went on the air in 1922 and has gone through many make-overs in its 90+ years of broadcasting. Today KHJ is known as “La Ranchera” running 5,000 watts to Los Angeles’ Spanish-speaking listeners at 930 AM. (Courtesy of Wikimedia Commons)

I guess I could set up a beverage antenna, but I don’t have the space to do it properly. I do occasionally listen to AM in the car, but that is getting really rare as there is nothing on my AM band that I can’t get on the FM band at usually much better quality.

For long-distance travel, I usually use satellite. It is much more pleasant and reliable to listen to. Sadly, what we lose is the local content as we drive along the interstate highway.

So, my conclusion is that we probably are seeing the end of an era. If the end comes, I am not sure what would be a good use for this spectrum. Its propagation characteristics provide a lot of challenges and the bandwidth really isn’t a lot. It will be very interesting to see what happens to it in the future

– Jon Moody,
San Francisco Bay area

(Jon: Your thoughts and feedback are appreciated. Your experience seems to be typical, though I have been surprised at the strong reaction from some readers who feel we should leave the band alone. It will be interesting to see where FCC and radio industry initiatives lead. – K8RKD)

A Distressing Trend to a ‘Regular and Constant’ AM Listener

Please excuse any misspellings. I am reading *Pop’Comm* in an audio format. I am blind and I am a perpetually lousy speller. God bless spell check.

I am 49 years old and have been listening to AM radio since the age of seven when I started listening in Brooklyn, New York.

Losing the AM band due to the factors that you discussed in your article, particularly due to the younger generation never listening to the band, is very distressing to me.

talk station, which was helpful during an ice storm we had up here in the early 1990s. There’s also a classic rock station. But that’s about it on FM.

There’s no Radio Disney or other station playing the stuff the kids hear on Disney Channel, Nick, or even MTV. If you want that stuff, you have to go online to find it. In the case of Radio Disney, you have to wait until night to see if you can raise a station carrying it out of Boston (1260 AM) or New York (1560 AM).

Ever since WCBS 880 AM moved to new quarters, they’ve not been as easy to hear as before — even with my Select-A-Tenna <<http://bit.ly/VHrk05>>. Even WINS 1010, which is mentioned in a lot of Rick Castle novels, such as *Frozen Heat*, is getting walked on by a station in Toronto, Canada.

I can get WFAN from New York City — again with a lot of fading.

Even at night, WBZ-Boston doesn’t come in like it should, being affected by fading and interference from another station. Bloomberg 1130 is the new nighttime superstation as it booms right in.

I use both a Sony Walkman AM/FM cassette unit and my big Sangean ATS 808CS to copy WCBS, WINS, WFAN, and Radio Disney from both Boston and New York City.

– Don Hallenbeck,
Pittsfield, Maine

(Don: I fear your experience is becoming more and more typical. Since I wrote November’s *Horizons*, there has been

movement both at the FCC and within the radio industry to study the issues with the AM band. It will be interesting to see what comes of this over the next year or two. – K8RKD)

One Listener’s View: AM’s Demise in the San Francisco Bay Area

What a great *Horizons* column in the November edition of *Pop’Comm*. For me in the San Francisco Bay area, the only radio station I listen to anymore is KCBS news radio. Since it added an FM transmitter on 106.9 MHz I have only listened to the AM station rarely.

Recently I got out an old AM/FM receiver, but due to all the local interference in my home I was unable to listen to the AM station. On the FM side, I can add an outside antenna and reception isn’t too bad. Even when adding a magnetic loop outside, there was still a lot of local interference on the AM band.

1570/WHTX

“News, Sports and America’s Best Music”

Photo I. WHTX (1570 AM) — branded The Fabulous 1570 WHTX — is an adult standards radio station in Warren, Ohio, operating with unlimited hours, with 500 watts during the daytime, and 116 watts in the evening hours. It’s the kind of catch BCB DXers love to put in their log. (Courtesy of Wikimedia Commons)

I realize that the younger generation can go online and hear many of the stations that are on the AM band with crystal-clear audio, but they lose the thrill of picking up a signal, say, 200 to 1,000 miles from their location with the fading signal denoting a distant station like WOAI or WBAP both in Texas and not common for me to hear in New York or in Richmond, Virginia where I lived for 13 years.

Also, the flavor and regional differences found while listening to these stations at night or before sunrise was an educational experience for me that opened my mind to the fact that there was more to North America than just the New York City area where I grew up.

I am a regular and constant listener to AM radio for news, talk, and sports. And at night, for all of the DX listening that I enjoy, **Photo 1**.

DXing on FM has only come my way twice and I was at sleep-away camp in northern Vermont and Massachusetts. While the results were impressive, that is the exception and not the rule.

Losing AM radio for me would be a huge loss and I hope that it never goes away. Thank you for bringing this to the attention of the readers of *Popular Communications*.

— Bruce Weiss,
Sandy Springs, Georgia
(metro Atlanta)

(Bruce: I appreciate your thoughts and those of the many others who have written similar notes to me. There is some reason for optimism since I wrote the article. Both the FCC and the radio industry have undertaken efforts to find ways to revive the AM band. It is too early to know where those initiatives will go and you can be sure I will come back to the topic at some time in the future when the situation is clearer.

The forces of history and technological change brought us AM radio in the 1920s and they are now leading us in a different direction. We will have to wait and see if it means the end of the AM band, or (more likely) major changes.

Thanks for reading (or listening!) to my column. Much appreciated. — K8RKD)

Strategic Moves Could Save AM Radio

I found November's *Horizons* very interesting. I was surprised at Rob de Santos' idea of expanding the FM band lower, as this would run into Channel 6,

and even Channel 5 if it were expanded more than a few megahertz.

Arguably, stations would not be placed in areas that could cause same- and co-channel interference.

I think that every time an AM station goes belly up, the FCC should not allow another owner to take over that frequency. This would gradually reduce the number of stations on each channel, thereby increasing the listening area of all remaining stations. In some cases this would allow the other stations to increase daytime power and change to a less-restrictive directional pattern.

In the case of some lower power AM stations — particularly Class IV graveyards — they would probably do better as LPFM stations.

— Gus Mancuso,
Cheverly, Maryland

(Gus: Thanks for writing. The expansion of the FM band isn't as difficult as it seems. Since the digital TV transition, most stations that used to be there moved to UHF even if the "virtual channel number" remained five or six.

While legal, there are very few digital signals on Channels 5 and 6 because of interference and other issues. The stations remaining there would need to be compensated and moved, but it is easier to do in the digital world. — K8RKD)

AM Is a Vital Port in the Radio Frequency Storm

Over a couple of beers in my front yard during a Superstorm Sandy power outage, I read with interest November's *Horizons* column.

Yes, the AM band is in crisis. Young

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



Photo J. This is the RCA model X-551 AM radio, circa 1952. It was typical of the post-World War II “All-American Five” tube configuration so popular at the time. (Courtesy of Wikimedia Commons)

people have no interest in it. They say it’s noisy and the programming is lousy.

My listening period during Sandy confirmed their observations. I was without power for three days here in Connecticut. I have a list of stations to tune to for information during such events — both local and regional.

While reading November’s *Horizons* where the light was good on my lawn, I used my general purpose portable Grundig G4 radio. I tried WINS-AM 1010 out of New York. There was a terrible whine on the signal. The whine is the same as when the electric power is on. The whine of the portable generator from my neighbor’s house — about 100 yards away — confirmed the source.

The problem is that there are too many inexpensive switching power supplies being used. Normally, the switching frequency is between 30 to 100 KHz. The small size of the transformers used and plastic cases allow the harmonics to be radiated, the noise from these types of devices cause major listening problems in the AM band. The RF emissions are regulated, but the regulations are not enforced.

Nighttime listening is not any better. The elimination of clear channels was a mistake. I find only the Canadian AM stations have good, clear signals. WICH-AM 1310, the one local station with music and news at night, is not pleasant listening due co-channel interference.

As a teenager, I can remember listening to the clear channels at night — WABC, WOR, WNBC, and WBZ — and really enjoying it. It is no longer possible.

Additionally, I have noticed the new radios with DSP radio chips have excellent performance on the FM band, but poor AM performance. It may be due to the small loop antennas used. But, my guess is the effort on the AM software did not have the same emphasis as the FM software.

I also notice it with car radios. The AM band is clearly secondary to the manufacturers. The whole AM stereo debacle was the start of the decline of the AM band from a technical view.

Sandy also showed the programming issue:

The amount of information provided. This applies to both FM and AM. During the storm, most stations (AM and FM) would provide the audio stream from a TV station on the hour for updates. This was a great help, especially since one can no longer listen to TV audio-only. *Thanks, Congress.*

However, a day after the storm, stations dropped the TV audio stream. At day two of the power outage, I was really interested in how the recovery efforts were going. In 2011’s Hurricane Irene, WTIC in Hartford was a good source of information with a local talk guy providing the updates. However, Hartford was barely affected by Sandy, so it was the normal political-social hot air. The talk format used by many AM stations really turns off the young people — or young at heart. Playing the music of only one time period does not help to bring in new listeners.

For me, the programming of the peak of AM popularity was a good mixture. Typically, it was music shows of three hours with the type of music changing and local news-weather at 9 a.m., noon, 3 p.m., and 6 p.m., local time.

Television really *did in* the radio news effort. Too often, the programming is from a place distant from the actual broadcast location.

I can remember flying to Washington D.C., listening to a Clear Channel station in Connecticut/Rhode Island, landing and picking up the rental car with a Washington station playing the exact thing. A station with only national advertising is a dead giveaway.

There is a good FM station, WEHM 96.9, on Long Island that has a good local music/news format that my wife and I enjoy. It provides a good variety of music (new and classic rock) with Bloomberg News. It provides a lot of information on local events and local ads. The ads are produced by the station and are good.

Here are my thoughts on changes for the best use of the AM band:

Get away from analog AM. It is too vulnerable to interference. I would go for QPSK <<http://bit.ly/1lyOyMv>> with code division multiple access (CDMA) <<http://bit.ly/Vk42gW>>, like what cell phones use. This would give good quality audio and provide rejection of adjacent/co-channel interference. This would require the channel separation to be larger (about 25 kHz). I would also split the band into two parts. The upper part (1400 to 1700 KHz) would be for non-commercial use — for example, FM education — with a power limitation of about 500 to 1,000 watts. The lower portion (550 to 1375, multiples of 25 KHz) would be high-power commercial uses. One quarter of the channels would be for high-power, 50-kilowatt regional stations. These “high power clear channels” would be sold by auction and any one owner or collection of owners could have only one channel.

The other channels would be 10-kilowatt stations. There would be ownership limitations stipulating that no single owner could have more than two stations with overlapping coverage. Fifty percent of the programming would have to be locally produced.

Would this plan work? Probably not, because it requires both new receiving and transmitting equipment and would greatly upset the “corporate apple cart.”

— Greg Majewski

(Greg: Your observations are pretty much on target and I like your ideas for the future. Unfortunately, the commercial interests of the owners probably preclude any radical solution. I’ve received a strong response to the column. Most are hoping we can just turn the clock back to 1950, Photo J. It is important to underscore to many readers — as you obviously realize — that there is a real problem with AM today. — K8RKD)

In Review: Ventenna's Portable Quick-Deploy HFp Antenna

By Gordon West, WB6NOA

“Ventenna’s new HFp antenna can cover any single ham band from 7 MHz through 6 meters, plus NTIA frequencies in between”

Did you ever wonder why mobile high-frequency 3 MHz to 30 MHz antennas *don't* put the loading coil at the base and run a tall flexible whip? The reason is because base loading on frequencies below 25 MHz encounter unacceptable maximum-current losses, where much of the signal turns into loading coil *heat*.

On high-frequency antenna installations, the loading coil is placed midway-or-higher up the antenna shaft, with the stainless steel whip completing the rest of the circuit. Because there is maximum *voltage* on a mobile or portable tip whip, you may spot a corona ball to minimize any high-voltage discharge from the tip whip.

Another way of loading a high-frequency antenna is *helical* loading, similar to what you see on those “ham whips” — each with a factory-tuned helical winding to achieve resonance on a specific band. The stainless steel tip whip allows for SWR adjustments.

Several years ago ham whips from Anixter Mark featured helical top-loading — one whip per band — and these worked out well at moderate power levels. Anything over 100 watts, and the red, plastic mast-tip cover might go into meltdown with the high voltage!

Now for Something New

An innovative HF, one-band-at-a-time, vertical antenna system is produced by Ventenna — the same folks who came up with the 2-meter antenna that disguises as the vent pipe on your house.

The Ventenna Quick Deploy HFp Antenna, **Photo A**, is designed for ground mounting, single-band operation, and comes with the associated wire ground plane. The Ventenna weighs just over 2 pounds and can cover any single ham band from 7 MHz through 6 meters, plus NTIA (National Telecommunications & Information Administration) frequencies in between, for those of us with the U.S. Coast Guard Auxiliary, Civil Air Patrol, SHARES, and Military Auxiliary Radio System.

This vertical antenna is configured for a specific ham band by the selection and orientation of the six elements included in the antenna kit.

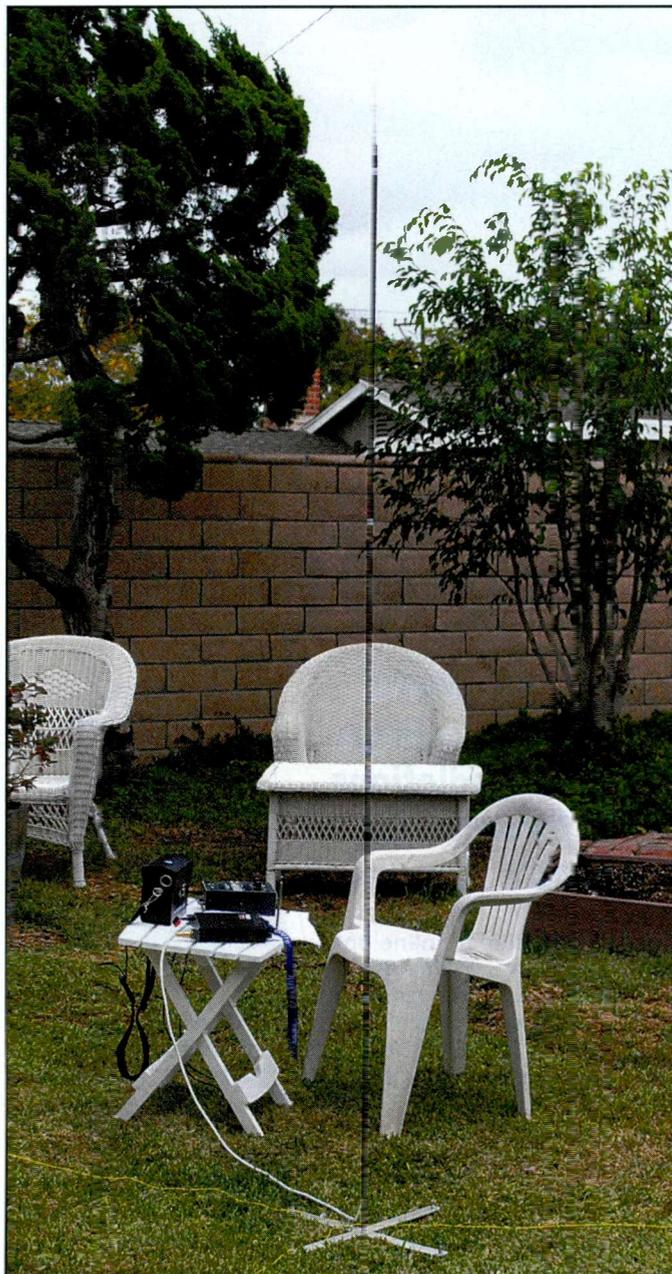


Photo A. The assembled Ventenna Quick Deploy HFp Antenna is lightweight, portable and — in WB6NOA's backyard — can't be seen from the street!
(Photography courtesy of WB6NOA)

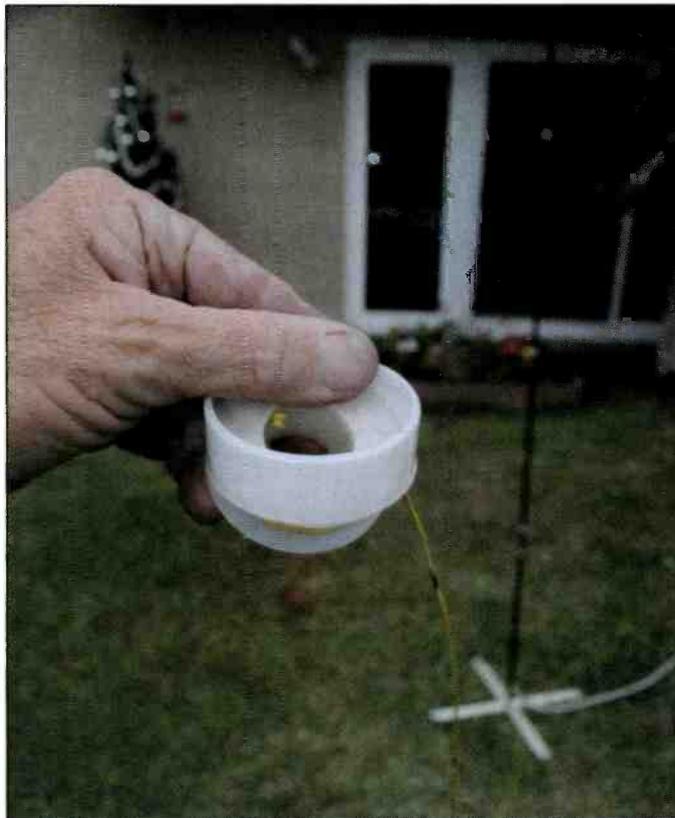


Photo B. Ventenna's HFp Antenna ground radials are pre-marked in black for each band.



Photo C. At WB6NOA, the SWR measured lower than 1.3:1 on the Ventenna Quick Deploy HFp Antenna-at resonance.

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Three of the elements are marked with a single stripe, but are not considered "loaded," even though you see a spiral wire wrap on each one.

An additional element is marked with two stripes, and contains a small helical load.

One element is marked with three stripes, and contains a larger load.

You pick which band and antenna configuration you want to operate. The two- and three-stripe elements require the stripes be either up or down to determine the operating frequency. *Clever!* The company gives you a laminated assembly matrix on how the elements screw together. For instance, 20-meter operation requires:

- Screwing on a one-stripe element
- then attaching a second one-stripe element
- next, adding the two-stripe element, with the two stripes facing down.
- Now, add the zero-stripe element
- followed by another one-stripe element,
- then the telescopic whip, extended to 3 feet.

Don't lose that laminated card that shows the placement of the elements! "The antenna is configured for different bands by the selection and orientation of the six elements that are included in the kit," said John Kernkamp, WB4YJT, Ventenna co-owner.

"Three of the elements are marked with a single stripe and contain no loading coil," he said. "One element is marked with two stripes and contains a small inductive load. One element is

marked with three stripes and contains a larger inductive load. And one element is about two-thirds the length of the others, and has no stripe. The elements are coupled together by means of threaded Inter-Element Connectors (IECs).”

Next, assemble the simple base stand, and prepare to unwind the supplied ground radials, which are conveniently marked with black indicators. **Photo B.** For the 20-meter band, we unwind the spool to the 6th mark. In other words, leave the rest of the wire on the spool at the end of the 6th mark.

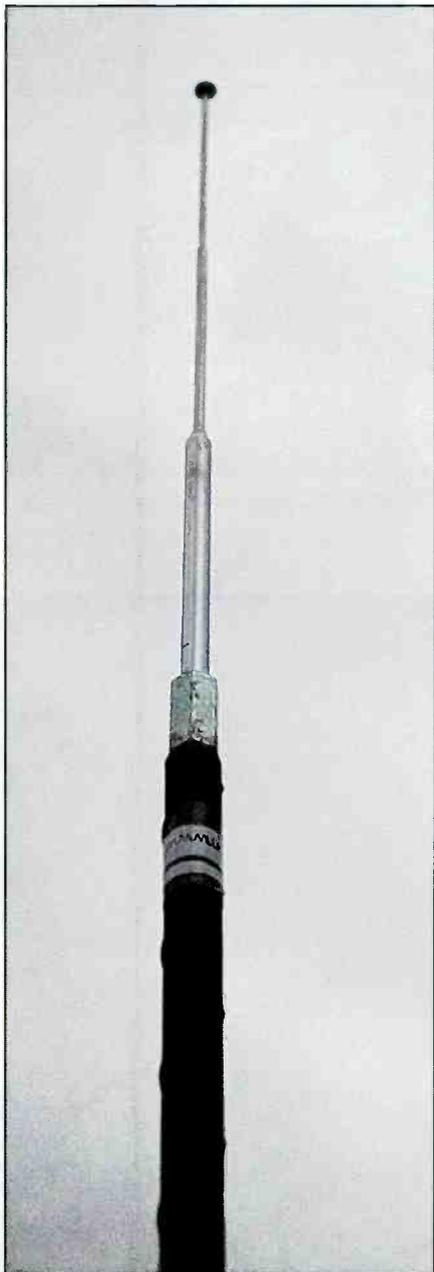


Photo D. The telescopic whip is extended to pre-specified lengths for each band, and can be fine-tuned for lowest SWR.

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Photo E. This is the test gear WB6NOA worked with — including the new DAYSAVER 12-Ah lightweight battery system. The base assembly was simple to set up and took just minutes.



Photo F. This is the one-quarter-by-20 connection for each individual element.

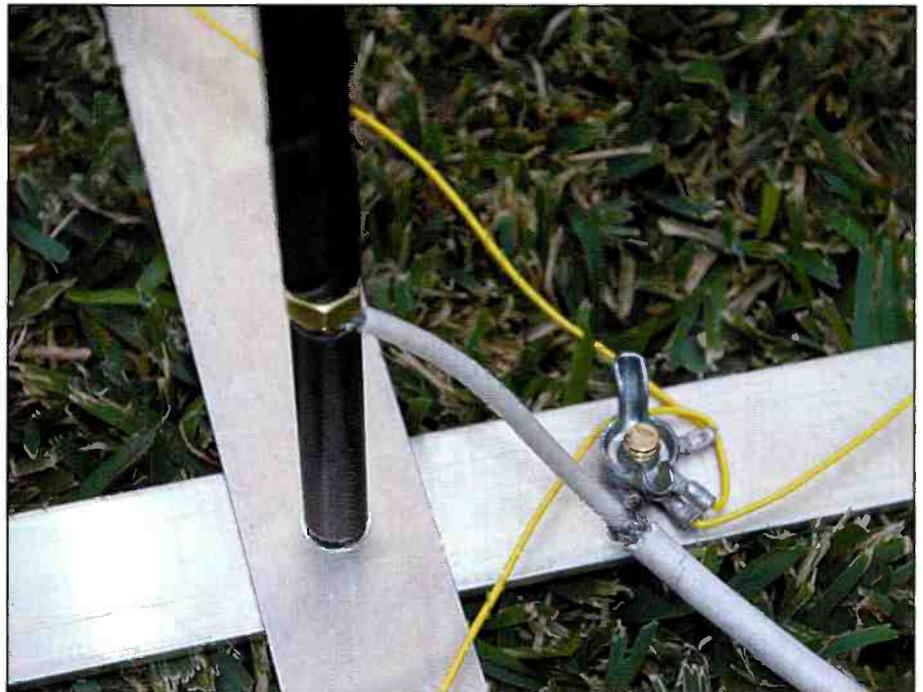


Photo G. Ventenna's lightweight HFp antenna comes with a pre-wired coaxial connection point, but in this temporary setup WB6NOA decided to test using his own low-loss coax instead.

We are told that the ground radials (three spools included) are not exactly one-quarter wavelength long, to make up for the capacitive effect of the wire lying on the ground. Try to place the radials at about a 120-degree angle from each other.

If you have an SWR analyzer, you can fine-tune the telescopic whip tip and ground radial system for minimum SWR, **Photos C and D**.

How Does the Ventenna HFp Play?

After we had this arrangement tuned up on 20 meters, we added the transceiver to the antenna system, and we were pleased that any station above S-6 could hear us coming back



Photo H. "Everything for the Ventenna HFp vertical, including the base cross arms, fits into this black bag for backpacking!" writes WB6NOA.

to their CQ, **Photo E**. When we tried 15 and 10 meters, the antenna system did even better, allowing stations to hear us that were barely moving *our* S meter.

Down on 40 meters, stations coming in at S-8 or greater could hear us, but stations just above the noise level couldn't easily hear our 100-watt responses, sometimes calling us QRP (low power operation), and below their *easy copy* level.

Best of all, this fun antenna comes with loads of additional hints on playing with the elements, and experimenting to achieve increased signal levels to the other stations we were working and hearing.

Ventenna Highlights

"But the place where this system really shines is if its set up in a location where something nearby is *de-tuning* it," said WB4YJT. "Many of the other portable antennas using the tapped-coil system don't have enough tuning range to get back to resonance when something nearby is de-tuning them, so you are forced to use a tuner to make the radio happy."

Kernkamp notes, though, "with the HFp, rearranging the elements to raise the frequency (by moving one of the loaded elements higher in the stack, or turning one over) allows you to get the antenna resonant in just about any situation — so you never need a tuner. And, of course, having the antenna resonant is the best possible condition."

On the Go and In the Know

What's really neat is this system's 2-pound portability, where you can stuff all of the antenna elements and hardware in a couple of your denim back pockets.

Kernkamp, who is the Ventenna HFp designer, was always available to discuss Ventenna trials at WB6NOA. "Many shortwave listeners bring in the optional 80-meter coil to pull in signals from 3.5 MHz through 7 MHz, ideal for nighttime shortwave DXing, as well as ham operation on 75/80 meters and 60 meters," he said.

Ventenna has an optional mobile mount adapter that takes the antenna's one-quarter-by-20 threads, **Photo F**, and adapts them to the more common three-eighths-by-24 threads, found on mobile antenna mounts. The company has base-plate magnetic feet, as well, that allow the operator to temporarily mount the antenna on the top of the vehicle, eliminating the need for the three spools of included ground radial wires.

"We also have some upgrade options that allow the antenna to be configured as a dipole," Kernkamp said, "along with a specialized mounting clamp that could allow the antenna to work quite nicely out of a metal-framed window."

In Summary . . .

As you can see by the accompanying photographs, the antenna played quite well in the backyard. So, if you have neighborhood antenna restrictions, you can still get on the air for HF ham operation, as well as HF shortwave listening, **Photos G and H**.

For more information and availability of the Ventenna Quick Deploy HFp portable vertical, visit <<http://www.Ventenna.com>>. To contact the company by phone, call (888) 624-7069, and let the staff help you get on the air with a backyard antenna that neighbors won't even know is up and playing!

Ham Radio Deluxe 6.0 — An Insider's Preview

By Dan Srebnick, K2DLS
<k2dls.rfbits at
gmail.com>

“HRD is a complex software system, consisting of three main components: Rig Control, Logbook, and DM780, the digital mode program”

Survey says — well, I made that part up — that most hams with a computer in the shack have tried Ham Radio Deluxe (HRD) at one time or another. If you aren't familiar with HRD, it is the kitchen sink of all amateur radio control, logbook, and digital mode programs.

It was originally created by Simon Brown, HB9DRV, a.k.a. GD4ELI, and for many years was available free of charge and supported by voluntary donations from enthusiastic users, your author included. While offered as free software, and while it is said to leverage some open source code, HRD itself was never “open sourced.”

New Owners, New Direction

A couple of years ago, Simon decided it was time to move on to another chapter in his life. As part of the change, he sold the HRD rights in October 2010, stating, “After many years writing the HRD software it's necessary to take a break and hand the whole project over to another team. The support effort required has become more than I can realistically manage — with many thousands of users, new radios, and other hardware appearing all the time and unexpected changes to the infrastructure used by HRD such as QRZ.com, I no longer have any time at all for other projects.”

So it was that HRD changed hands and is now under the stewardship of Rick Ruhl, W4PC; Randy Gawtry, KCØBH; and Mike Carper, WA9PIE. The last free version of HRD is 5.24.0.36, but the three new owners and their team have been hard at work enhancing this old favorite and the results can be seen in version 6.0 — which is no longer free. The move to a paid support model has been a source of controversy, but the longtime HRD fan will find a lot to like in the new software, which is sold through the website at <<http://www.hrdsoftwarellc.com>>.

New Development

Before the transition to the new team, not a lot had changed with HRD over the past couple of years. This is no longer the case.

I've been able to watch the software develop as part of the beta-tester program, and my observations are based upon the state of the software in late-December 2012 (Beta 2). The developers have found it challenging as they port Simon's code over to newer development tools and at the same time add new features. This is where the beta team comes in handy, helping the developers to identify bugs and vet the usability of new features. By the time you see this column, the first general release of 6.0 should be available to cus-

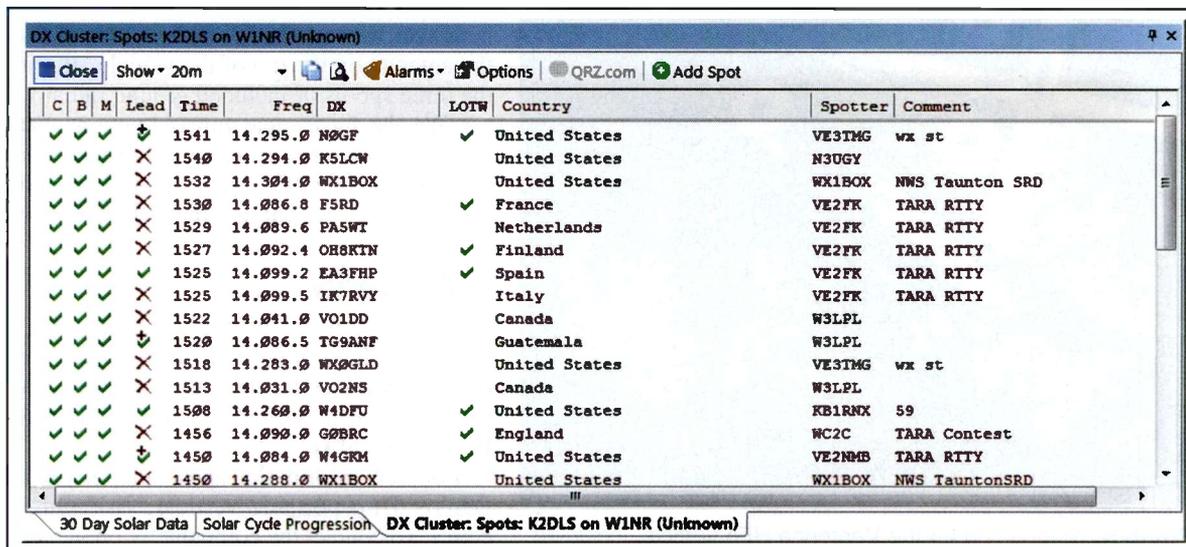


Photo A. Ham Radio Deluxe 6.0 features enhancements to the DX Cluster.

tomers. Keep in mind that my observations are based upon code that is still under development and could change at any time.

Chasing Software Bugs

One of the tasks of the developers has been to work with the Beta team to identify bugs. A list of known bugs was inherited along with Simon's code base. The Beta team has also identified existing bugs from 5.0. Simon's 5.0 release was always a beta release, even though it was fairly stable. But it had its issues. One bug that I helped to identify was that even though the Add Logbook Entry (ALE) form had long had a field to enter Antenna information, the antenna information was being stored in the wrong place. It was discovered that the database lacked a field to store the antenna data.

At the same time that bugs are being chased down, the development team has been adding new features to the software. This also requires some "shakeout" before the software can be publicly released.

The HRD Trilogy

HRD is a complex software system, consisting of three main components. Rig Control, also known as the HRD main program, provides software control of the most popular transceivers and a few receivers as well. The Logbook stores QSO information in either a local Access (mdb) database or in an external SQL database such as SQL Server or MySQL. I use MySQL on another computer on my home network. DM780 is the digital mode program and supports many digital modes and SSTV, but not the newer "JT" modes that require specialized software.

The DXers Trusty Companion

I have completely relied on the HRD suite for my HF operating for a number of years. I am mostly a DXer on HF. I also do a little bit of ragchewing, enjoy PSK31 and RTTY operation, am a moderate contesteer, and am a LOTW user. Any observations come from this operating perspective. HRD is so feature-rich that I may ignore features which you find compelling, like, or may not like. So YMMV — *your mileage may vary*.

The HF DXer will notice some subtle but significant changes to the DX Cluster module of the Logbook. It is very configurable to operator preference, so I'll

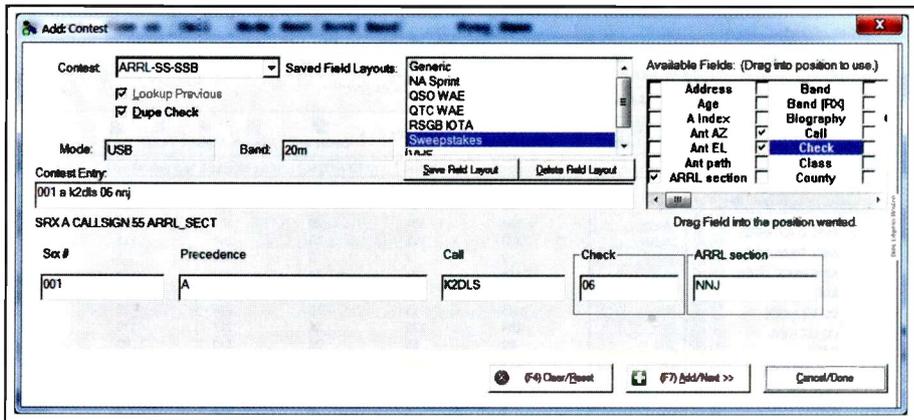


Photo B. The new HRD contest mode is designed for quick entry.

describe how I set up mine, **Photo A**. To the left of the time column, there are four headings for Country (C), Band (B), Mode (M), and Leaderboard. A check mark in one of those columns means that you've worked the Country, Band, Mode, or all three. A '+' overlaying the check mark in the Leaderboard column means you've worked that callsign for that C/B/M combination. The cluster now can advise whether a spotted station uses LOTW or eQSL, as well — very useful for award hunters. There are many other options for customization.

QSX

One very interesting, useful, and complex feature added to the DX Cluster is the QSX feature. It supports automatic tuning of the rig to work a DX station that is operating split. Imagine that DX9DX is transmitting on 14.145 MHz and listening on 14.190 MHz. The cluster spot might indicate "QSX 14.190.000" in the comment field. When the QSX feature is enabled, the radio will switch to split operation and VFO B will be set to transmit on the QSX frequency, in this case 14.190 MHz. This is a really hot feature and a lot of work has gone into this. However, it depends upon the QSX being posted in the 12.234.567 format — variations may result in the radio being tuned to an unexpected frequency.

Good Luck in the Contest, OM

There is now a minimalist contest mode, **Photo B**, for quick response and entry during fast-paced contest operation. There are layout templates for many of the popular contests. However, in order to optimize for speed, the usual QRZ.com (or

other callbook options) lookup is disabled and the record added to the database will not be as complete as an entry made from the ALE screen. Band and mode are populated, but not frequency. The rig and antenna data is also pulled from the default entry, rather than selectable from the contest entry screen. In many ways, this is what you'd end up with if you imported an ADIF from your favorite contest software, so it is a viable approach despite any limitations at this point. This feature was still under development.

Paper Chase

Award chasers are really going to like the new Awards Tracking feature. The ALE function has an awards tab and QSOs can be marked for submission or as having received credit for particular awards. The drilldown provides increasing levels of detail, from award, to country, to particular QSO. Also still under development, this is shaping up to be a great enhancement for those who are counting every country or looking to see what QSLs they need to send for a particular country/band/mode slot that will clinch the next DXCC award.

Here's how it works. In the Logbook is an Award Tracking button. Let's imagine you're looking at your DXCC stats. Up comes a grid, **Photo C**, that shows, for each band and mode, how many entities were worked, how many confirmed, how many QSLs needed, how many entities not yet acquired, and how many entities were submitted and not yet submitted towards the award.

From this screen, the operator can go down many levels of detail, to the QSOs that make up each total, and to individual QSOs for updating or status checks.

Another new Logbook feature is label

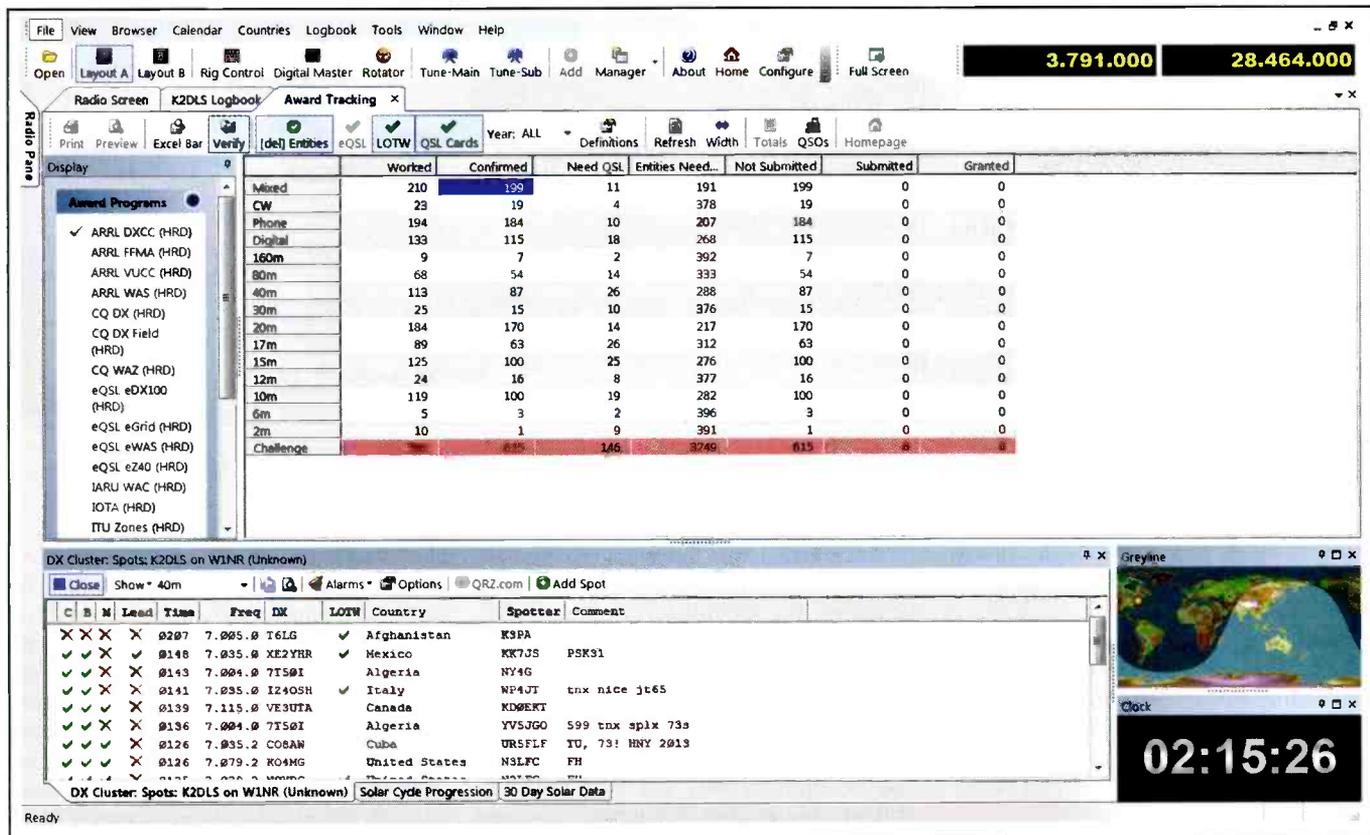


Photo C. Here is a full view of the HRD 6.0 Award Tracker in the Logbook window.

printing capability for your QSL cards. Layout is customizable and many types of Avery labels are supported. There's also an option for custom labels, **Photo D**.

My Station

A major change affecting both the Logbook and DM780 is how the operator's station information is maintained and populated. Instead of having to set up your callsign, rig, armation in each module, this data is now stored in the system registry. This is stored under Configure/My Station in the Logbook, which is where the default can be set. Both modules now have access to the same data, and different profiles are selectable from within a QSO through a single click.

Digital Enhancements

HRD 6.0 adds other features to this already capable package, **Photo E**. RTTY purists who resist working through sound cards will be getting real FSK capability in DM780, with three different options for keying the transceiver in FSK mode.

But don't forsake your sound card device yet. SuperSweeper (it used to be called the SuperBrowser) can now dis-

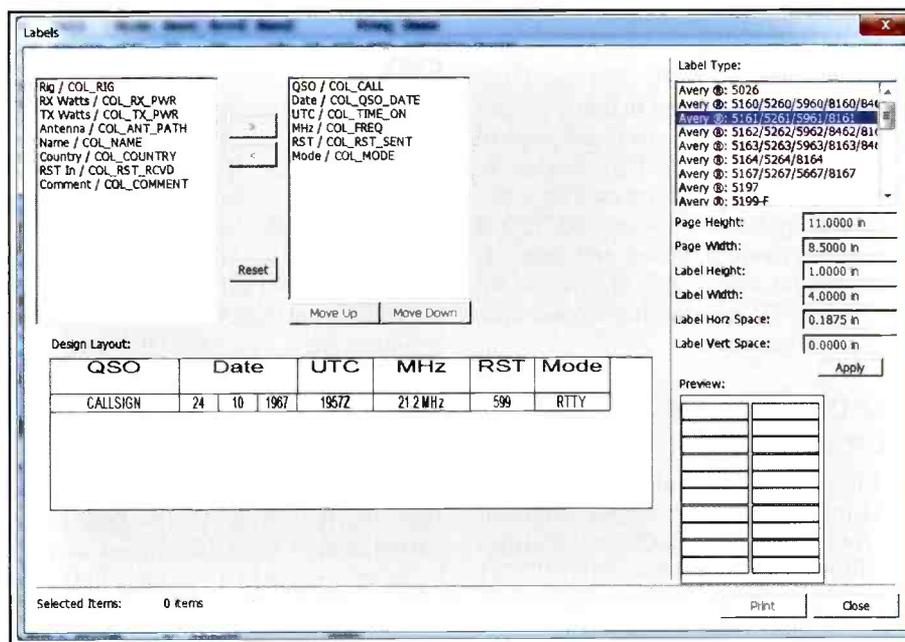


Photo D. HRD 6.0 features customizable label printing capability.

play a screen full of RTTY or CW contacts just as well as it displays PSK31. Try that in the next contest! Enhancements reach far beyond those to the Logbook, **Photo F**.

SuperSweeper, **Photo G**, uses the input from your rig's sound card device — such as a Signalink USB or a Rig Blaster — to sample several kHz of spectrum at a time. Imagine seeing the text of

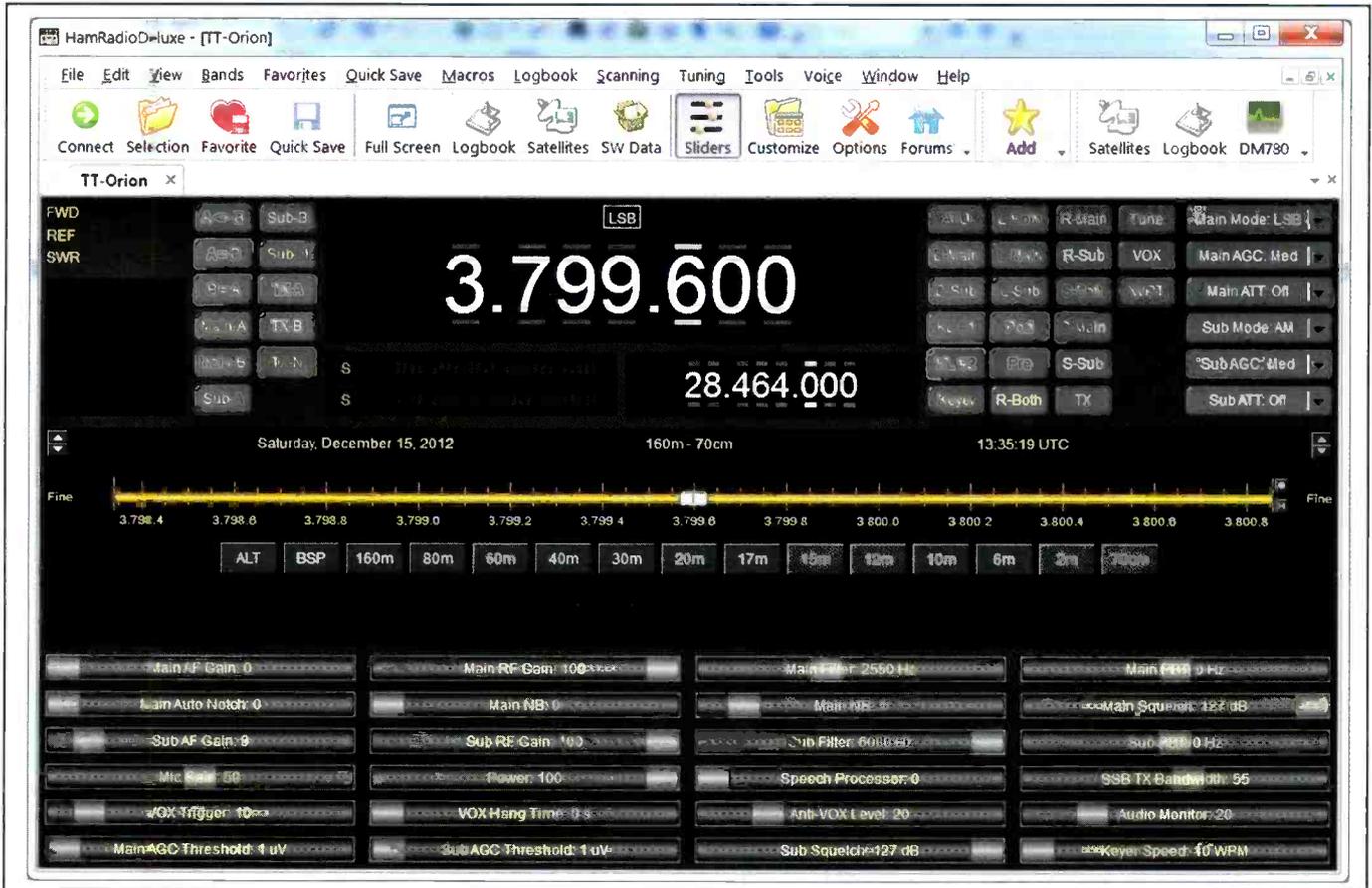


Photo E. From the Rig Control screen, HRD version 6.0, adds other features to this already capable package.

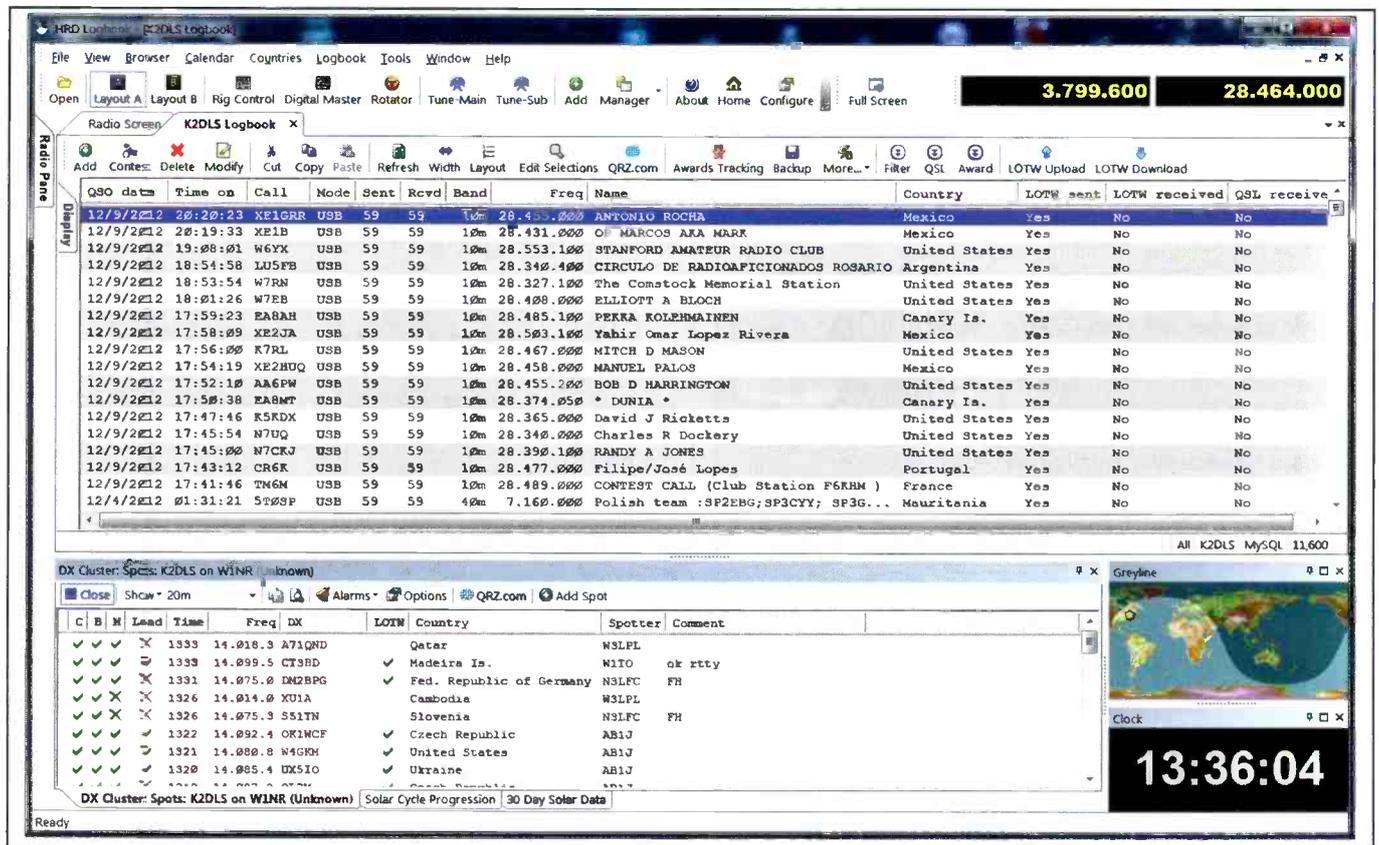


Photo F. Here's a screenshot from KPC2DLS capturing the HRD 6.0 Logbook.

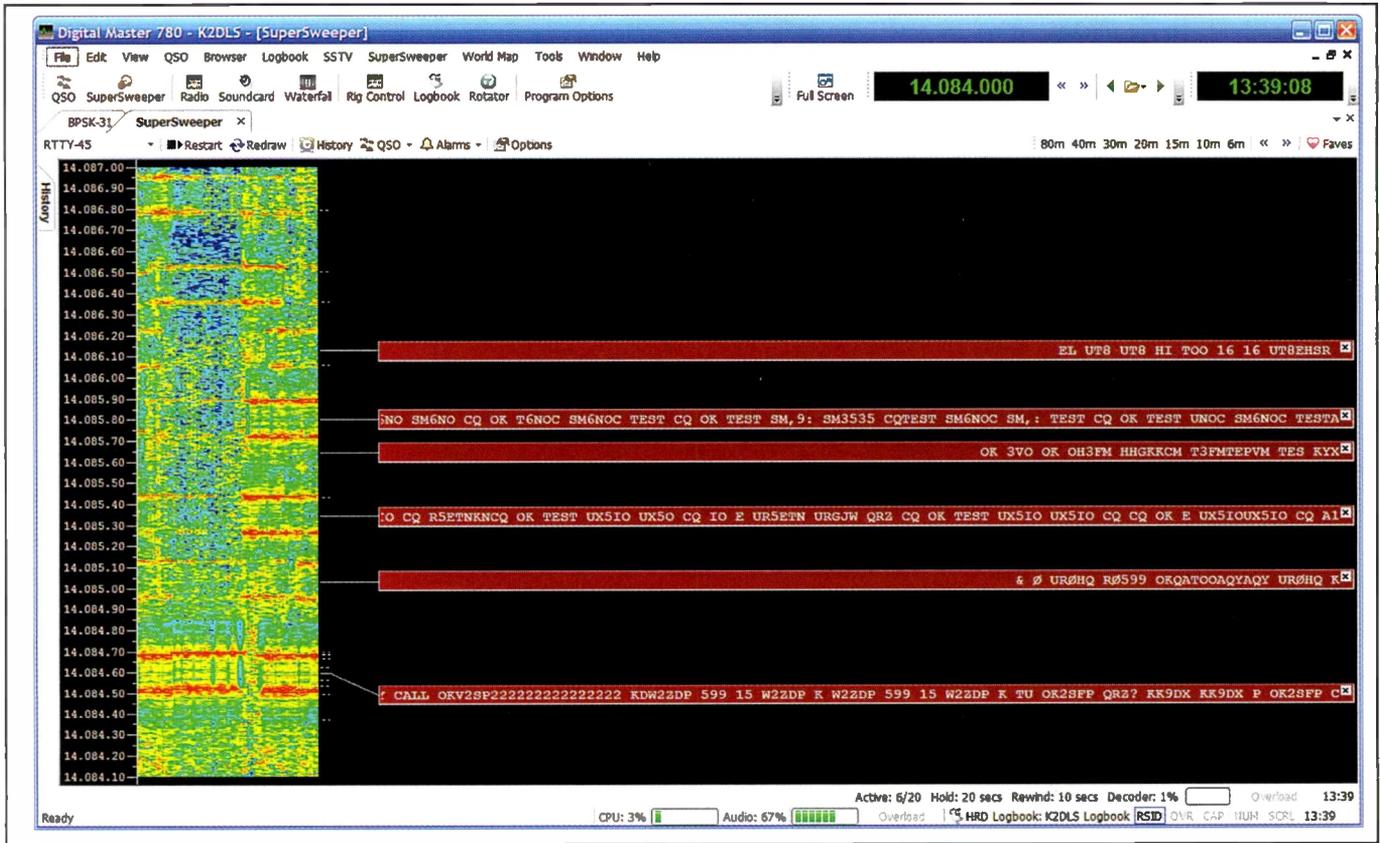


Photo G. Users of the HRD 6.0 DM780 RTTY SuperSweeper get this information-rich display.

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20 contacts all at once and then clicking on the station of interest to work.

What's Ahead?

HRD 6.0 was scheduled for general release at the Orlando Hamcation event in Florida in early February, so as you read this story it should be available for purchase.

A special announcement between the HRD team and QRZ.com was also scheduled for Hamcation, though at this point the subject is unknown.

The Verdict Is In

Is HRD 6.0 right for you? I have relied on HRD in the shack since version 4 and can't imagine what it would be like to operate without it. I appreciate the opportunity to contribute to the effort and — full disclosure — I purchased a license to support the project.

I'm looking forward to the official release with all of the enhancements mentioned here — and more. The software license is perpetual and it comes with full support and free upgrades for one year.

There is an online trouble ticket system that, in my experience, has resulted in very fast responses from a real ham who uses the software. Community support is also available via the online forums.

Cost is \$79.95 via the HRD website at <<http://www.hrd-softwarellc.com>>.

Let's Hear From You!

What software do you use in the shack? I'd like to know. Email me at <k2dls.rfbits@gmail.com>. — 73 de K2DLS/KPC2DLS

Delta DX Antenna Design and Deployment

by Bruce A. Conti,
WPC1CAT
<contiba@gmail.com>

“Distant AM broadcast signals usually arrive at rather low angles, making the Delta loop desirable for its good low-angle reception characteristics”

“I read your DX log and was impressed,” writes John Wilson from the Lone Star State. “I am located about 30 miles north of Dallas, presently using a sloper and loop for an antenna. I think I will change the sloper out as it is not doing as well as I thought it would.”

“I ran across some of your loop antennas,” Jerry Ervine, KC5YRE, writes from the Rio Grande Valley of Texas. “I want to try setting up a small loop for medium wave. Where do I find that info?”

“I follow with great interest your columns on AM broadcast DX antennas, especially the Delta loop antenna and its variations,” writes Pierre Marchand from Quebec.

The terminated broadband loop has generated plenty of interest as the antenna of choice for the modern AM broadcast DXer. The advantages of outstanding low-noise unidirectional loop performance and a relatively simple design have revolutionized the hobby, making the old-fashioned dipole, longwire, sloper, and multi-turn loop antennas almost obsolete. The most distant AM broadcast signals usually arrive at rather low angles which makes the Delta loop configuration of particular interest for its good low-angle reception characteristics.

Terminated Broadband Loop Antenna Basics

The Delta belongs to the family of terminated broadband loops that includes the Flag, Pennant, and SuperLoop antennas. A terminated broadband loop antenna produces a wide cardioid (heart-shaped) directional beam with a sharp backside null of 30 dB typical.

The design is simple and basically the same for of all these antennas, a single loop of wire in the vertical plane with a series/in-line “termination” resistor at the end of the loop in the null direction of the vertical plane, and an RF matching isolation transformer connecting the loop to a lead-in at the end of the loop facing the desired direction.

The RF-matching isolation transformer is the most critical component of a terminated broadband loop. The keyword here is *isolation*, an absolute requirement between the antenna and

lead-in to maintain the inherent low-noise performance of a loop.

The majority of commercially-available matching transformers designed for shortwave dipoles and amateur radio antennas will not work properly with a loop because of a common ground connection between the antenna and lead-in.

A loop antenna has a “floating ground” which means no direct connection to earth ground. The floating ground is what allows a loop to be installed just about anywhere including the attic, a balcony, patio, or rooftop. However it’s recommended that a loop antenna be installed outdoors as far away as possible — or at least 15 feet — from noise sources such as buildings and power lines for best results.

The Delta is perhaps the most popular configuration of the terminated broadband loop family because only one mast or elevated support is required, and now with the availability of active loop antenna components from Wellbrook Communications <<http://www.wellbrook.uk.com>>, installation is nearly fool-proof. The Wellbrook FLG100LN is designed specifically for a terminated Delta loop antenna, consisting of an RF matching isolation transformer combined with a wideband RF amplifier.

Frequency coverage is specified 100 kHz to 10 MHz. In general at higher frequencies these loops tend to behave more like a long wire, anyway. The active loop amplifier design is used for improved wideband response versus a passive loop. Note that the FLG100LN does not include the antenna wire, termination resistor, or 50-ohm coax lead-in. The FLG100LN including a North American power supply lists for just under \$260 exclusively from Wellbrook in the United Kingdom.

Delta Construction

The Delta antenna gets its name from the shape of the loop, like the Greek letter “Delta” — a triangle shape in the vertical plane with its base parallel to the ground and the peak pointing to the sky, **Photo A**. Although the recommended length of the base is at least 2.1 times the height of the peak, dimensions are very forgiving. Almost any triangle shape and size will work.

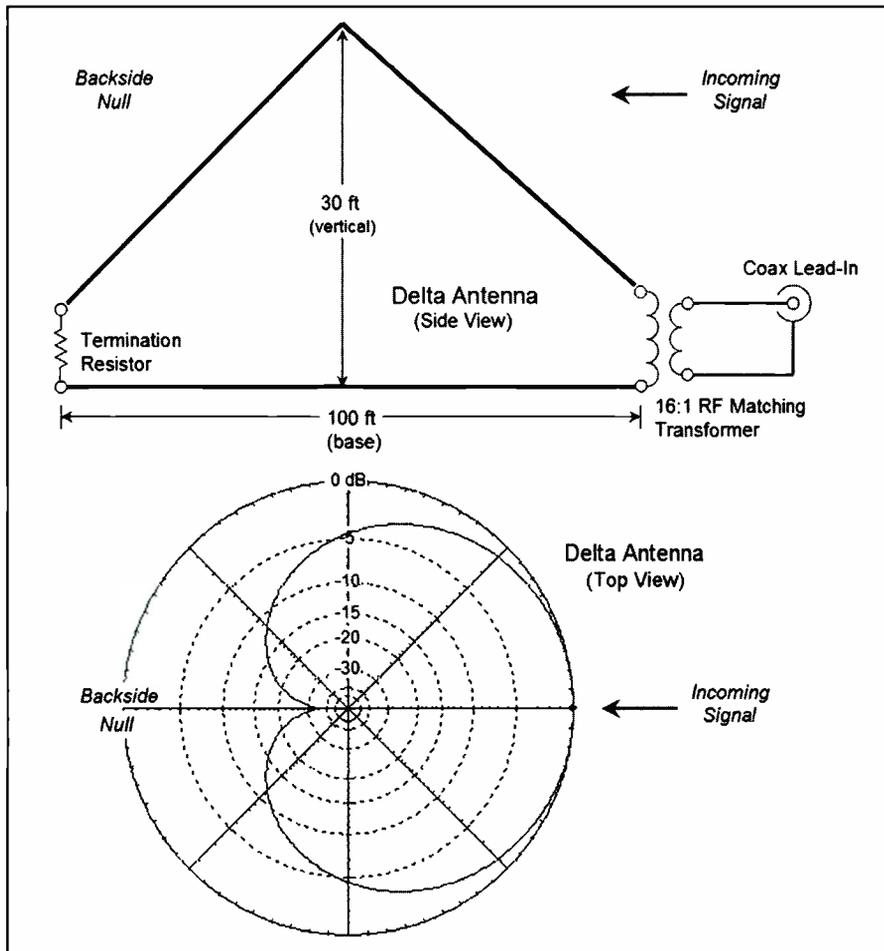


Photo A. "Although the recommended length of the base is at least 2.1 times the height of the peak," writes WPC1CAT, "dimensions are very forgiving. Almost any triangle shape and size will work." (Courtesy of WPC1CAT)

I've had success using Delta antennas that measured 30-feet tall with a 100-foot base (30 feet by 100 feet), 23 feet by 60 feet, and 23 feet by 10 feet. The base may rest on the ground or even be buried a couple inches to prevent people or animals from being tripped up by the wire. Of course insulated wire is used for the antenna.

The maximum signal and null directions of the Delta are first defined by the vertical plane of the triangular loop, parallel to the base of the triangle. Typically the Delta is aimed either for improved reception from a desired direction or for the purpose of reduced interference from a specific source.

For example a DXer located in New England may wish to reduce interference from radio stations in the congested Northeast corridor — Washington D.C., Philadelphia, and New York City — while a DXer on the west coast of North America could aim an antenna for improved transpacific reception.

A "termination" resistor is installed at

the corner of the triangle pointing in the null direction. Note that this is not a conventional termination resistor to earth ground. Remember, a loop antenna is floating without a direct connection to ground. The resistor is installed in series/in-line with the loop antenna wire. In other words, the triangular-shaped wire loop is cut at the null corner and the resistor is inserted at that point. The actual termination resistance varies from about 800 to 1,200 ohms, depending upon the size and shape of the loop. The maximum 1,200 ohms will guarantee a null and serve as a good starting point. Resistance can later be adjusted to maximize the null of a specific noise or interference source, or to provide the best overall front to back null performance. Below 800 ohms, the Delta becomes bidirectional, producing the familiar figure-eight pattern of a standard loop antenna.

An RF matching isolation transformer is installed at the corner in the desired direction of maximum signal, the oppo-

site corner from the termination resistor, to connect the antenna to the receiver via 50-ohm coax lead-in. The transformer does double duty as a balun converting the balanced loop antenna to an unbalanced signal, and matching the high impedance of the antenna to the low-impedance coax lead-in and receiver input.

The high-impedance transformer winding is connected to the antenna, and low impedance to the 50-ohm coax lead-in. A transformer with an impedance ratio somewhere in the range of 16:1 to 20:1 will get the job done. Again, remember that isolation between the high- and low-impedance windings of the transformer is critical. The transformer can be a passive design — just the transformer alone — or an active design that includes powered amplification electronics for improved wideband matching such as with the aforementioned Wellbrook FLG100LN.

Transformer Options

Finding an off-the-shelf passive RF matching isolation transformer with the emphasis on isolation is nearly impossible. There are many online entrepreneurs in the amateur radio community who will build custom transformers for a price.

Broadcast engineer Bruce Clark, K1FZ, has taken it a step further by developing a custom, hand-wound RF transformer product line that now includes a model specifically for loop antennas. The K1FZ model KB-5 Pennant Antenna Transformer <<http://bit.ly/VcnRIA>> features the ground independence necessary for connection to a Delta loop. Its list price is \$70 from Clark Electronics of Belfast, Maine.

Another option has been to purchase transformers as a component from Mini-Circuits <<http://www.minicircuits.com>>. Model number T16-6T is a 16:1 fully isolated RF transformer that comes in a 6-pin DIP (dual inline package) that looks like a plug-in integrated circuit.

This Mini-Circuits transformer can be simply hard-wired in a plastic chassis to binding posts for the antenna connections and a coax connector for the lead-in. Performance of this style of Mini-Circuits transformer is exceptional for passive loop antenna applications, specified for nearly DC-to-daylight bandwidth. However the transformer itself is so tiny that it's susceptible to lightning and static electricity damage. I've blown a few on my antennas. Thus the Mini-Circuits transformer may not be the best choice

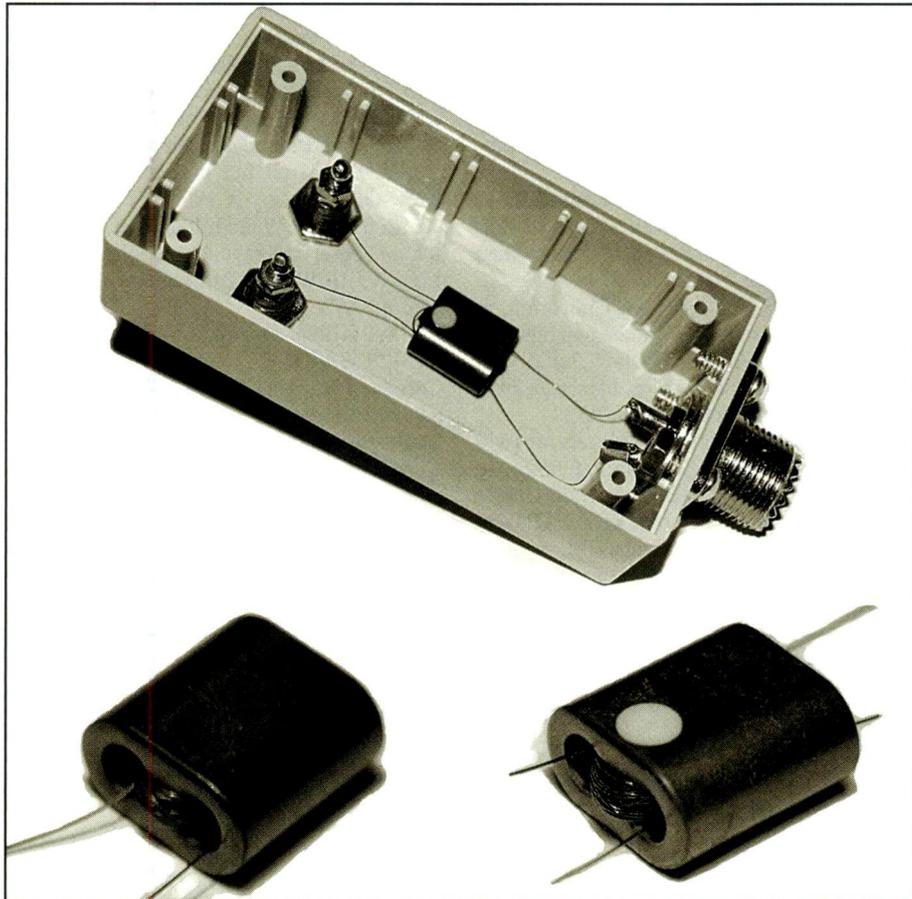


Photo B. Bruce A. Conti, WPC1CAT, believes “the best and most economical option is to wind your own” impedance-matching transformer for a loop antenna. “Winding a transformer along with final assembly in a chassis is really easy. Only a few simple parts and tools are required.” (Courtesy of WPC1CAT)

for large aperture loop antennas or where lightning storms are common.

DYIT: Do It Yourself Transformer

In my opinion, the best and most economical option is to wind your own transformer. Winding a transformer along with final assembly in a chassis is really easy. Only a few simple parts and tools are required:

- A Fair-Rite model 2873000202 binocular type-73 ferrite core
- Light gauge (30 AWG) solid hook-up wire or enamel-coated magnet wire
- Two chassis-mount binding posts
- Chassis-mount coax connector
- A plastic chassis
- Tools, including wire strippers, solder, soldering iron, hand drill, pliers, and a screwdriver.

Remember to protect your eyes with safety glasses while drilling and solder-

ing. The Fair-Rite ferrite core is the only specific component required, available from Newark Electronics <<http://www.newark.com>>. Everything else is generic and can be obtained at a local electronics shop or national online retailers including Newark.

Getting Started

Transformer winding might appear challenging at first, but once you get started you’ll realize that it’s not so hard after all.

The wire is threaded through one hole and then back through the other hole of the binocular core to complete one turn of a transformer winding. The number of turns is determined by the square root of the impedance ratio. For a 16-to-1 (16:1) impedance ratio, the transformer winding ratio is 4:1. (The square root of 16 is 4.)

To apply this ratio in simplest terms, for every four high-impedance turns you’ll need one low-impedance turn. Depending upon the gauge of wire used,

16 turns of wire for the high-impedance winding and four turns for the low impedance is a no-brainer.

Maintaining the same mathematical proportion of 4:1, 12 and three turns will work for a heavier gauge wire, while 20 and five turns of No. 30 magnet wire will easily fit on the core. Although more turns should improve coupling at lower frequencies, the difference for all practical purposes is negligible.

Use wires with different insulation colors or mark the transformer to designate the high from the low impedance.

The high-impedance transformer winding is connected to the antenna via binding posts, and the low impedance to the lead-in via a coax connector, **Photo B**. Once the transformer is wound, it’s a simple matter of drilling mounting holes in the plastic chassis to accommodate the connectors, and soldering the transformer wires to the connectors. Again, remember to protect your eyes with safety glasses while drilling and soldering.

Delta Antenna Raising

The triangular loop of wire that makes your antenna a Delta can be raised any number of ways. A wire draped over a tree branch is simple enough. Use a practice bow-and-arrow or a slingshot to shoot a trailing light-weight fishing line over a tree and then pull up a wire to achieve greater height. The “EZ Hang 2” slingshot package from Ham Radio Outlet <<http://www.hamradio.com>>, includes 300 feet of fishing line pre-installed and bright yellow cannonball weights for sure-fire shooting. It’s priced under \$100.

A temporary mast might be the solution for an antenna-restrictive community or remote DXpeditioning. A telescopic windsock pole such as the 32-ft Heavy Duty model from The Mast Store <<http://www.tmastco.com>> is perfect for support of a Delta wire. List price for the 32-foot pole is \$115 which includes shipment in the U.S. by FedEx Ground.

A painter’s extension pole from the hardware store is another good idea. The Mr. LongArm Pro-Lok model 2324 is a 23-foot extension pole that has proven to be worthy of the task. Pierre Marchand of Quebec has located a Mr. LongArm source for Canadian DXers that can save a bundle versus shipping from the U.S.

“Mr. LongArm suggested that I contact a supplier in Toronto to get the Model 2324 Extension Pole you use,” reports Pierre. “I received it via UPS Ground, delivered at home within 48 hours.”

Mr. Long Arm is available from Canada Cleaning Supplies Ltd. in Toronto <<http://www.squeegees.net>>. In the U.S. it's available from Home Depot <<http://www.homedepot.com>> for just under \$40.

A Delta loop can be hung on a rooftop mast, as well, along the eave of the roof, or even in the attic if no other option is available. As the saying goes, *where there's a will there's a way*. Use a portable AM radio to find the quietest location before proceeding with a house-mounted antenna. Most importantly, keep away from power lines, especially where the power mains enter the building, otherwise you might end up with a noise catcher.

Tripping the 'Ultralight' Fantastic

Klaus Spies received a nice QSL letter from WBBM Chicago for his "ultralight" reception while vacationing in the Wisconsin Dells region, **Photo C**.

"Recently I added an old-fashioned pocket radio from RadioShack®, a modern version of the shirt-pocket sized transistor type we all grew up with, to my bag o' radio stuff — for example, my scanner, ham radio portable, and so on," writes Klaus. "The distance from Chicago to the Dells is about 150 miles, not far for your typical AM broadcast-band transmission.

"The surprising part though, was that this pocket-sized receiver, with no modifications and only an internal antenna, received Chicagoland AM powerhouses 720 WGN and 780 WBBM. I tried at different times of day, even at night, and the signals were always there — sometimes with a bit of weak-signal hiss, other times solid.

"I guess it shows how much can get done with very little. Of course I sent reception reports to both stations. The only one to respond, though, was WBBM. If readers might be interested in seeing their QSL letter, I'm attaching a copy."

Broadcast Band DX Logs

Now, for this month's selected logs. (*NOTE: All times are UTC. – WPC1CAT.*)

560 WFRB Frostburg, Maryland, at 2200 over co-channel WFIL; "Left on the dial, right on the issues, Talk Radio 560 WFRB AM Frostburg." (Conti-NH)

760 WCPS Tarboro, North Carolina, at 2200 good: NCN local news, "AM 760 WCPS Tarboro-Rocky Mount," and R&B oldies. (Conti-NH)

930 WRVC Huntington, West Virginia, at 2200 in co-channel WBEN null: "This is

Huntington's news and information station, Super Talk 94.1 FM and AM 930 WRVC Huntington." (Conti-NH)

940 CJGX Yorkton, Saskatchewan, at 0300 fair, over co-channel WMAC, "serving Saskatchewan and Manitoba, GX94 now presents the news at nine." (Conti-NH)

1070 KNX Los Angeles, California, at 1733 fair-good, fluttery, well after local sunrise, heard short clip of President Obama, then "KNX news time." (Barton-AZ)

1110 KDIS Los Angeles, California, at 1630 "Radio Disney" and kiddie pop thump-thumpa music. Amazingly fair signal well after local daybreak here on bandscan over coffee at my campsite. (Barton-AZ)

1140 CHRB High River, Alberta, at 1540 very good with country music, references to "here in High River." Haven't heard CHRB for quite a while. No sign of KYDZ or KNWQ or any other co-channel usuals. (Barton-AZ)

1150 WDEL Wilmington, Delaware, at

1000 in co-channel WWDJ Boston null. WDEL.com promo, "on 1150 AM WDEL, 93-7 FM HD3, and WDEL.com." (Conti-NH)

1240 WDXY Sumter, South Carolina, at 0236 high school sports "on News/Talk 1240 WDXY," and an ad for Discount Furniture Outlet. Signal all but buried in the static. (New-GA)

1260 KTRP Weiser, Idaho, at 0500 high school sports coverage, cut in with ID, "AM 1260 KTRP Weiser," pronounced WEE-zer. (Barton-AZ)

1390 KENN Farmington, New Mexico, at 0300 "1390 KENN Farmington, your Four-Corners News/Talk station." Shaky, poor signal, but still audible and hanging in well after local sunrise. (Barton-AZ)

1500 WLQV Detroit, Michigan, at 1100 under co-channel WFED. Promo, "on Faith Talk 1500," and ID, "This is Faith Talk 1500 WLQV Detroit, a service of Salem Communications." (Conti-NH)

WBBM
NEWSRADIO
780AM · 105.9FM

Monday, October 22, 2012

Klaus Spies
8502 N. Oketo Ave
Niles, IL. 60714-2006

Dear Klaus:

Thank you for your reception report of October 8, 2012. We are always pleased to hear from our distant listeners.

WBBM was originally licensed in 1923 to 226 meters at 500 watts in Lincoln IL. Ralph Atlass, the owner then moved the station to the Chicago area in 1924, eventually changing to 770 Khz in 1927, and again to 780Khz in 1941. WBBM has had various formats from WBBM Air Theater, to the Showmanship Station, to Talk of Chicago, has been "All News" since 1968

WBBM-AM broadcasts from studios in down town Chicago, with transmitter facilities in suburban Itasca. We currently use a Harris 3DX50 transmitter as our main, and a Harris DX50 as our backup transmitter. These transmitters are coupled to either our guyed 680 foot main antenna or our 250 self supporting antenna. We broadcast in Ibiquty digital IBOC 24 hours a day.

If you have any other question or need information, please feel free to contact me.

Sincerely,



Greg Davis
WBBM-AM Chief Engineer
Greg.davis@cbsradio.com

WBBM-AM Radio 180 N. Stetson Suite 1100, Chicago IL. 60601 312-297-7800

Photo C. Klaus Spies received a nice QSL letter from WBBM Chicago for his "ultralight" reception with "an old-fashioned pocket radio from RadioShack®" while vacationing in the Wisconsin Dells region. (*Courtesy of Klaus Spies*)

1570 KPRO Riverside, California, at 1330 heard "Radio 1570" and "KPRO, inspirational radio" after a short area traffic report. (Barton-AZ)

1590 KERP El Paso, Texas, at 1300 heard a short station jingle followed by a solid KERP ID. (Barton-AZ)

1600 KIVA Albuquerque, New Mexico, at 0500 high school sports coverage, ID heard just after a score. Very good, alone on a usually crowded channel. (Barton-AZ)

1690 KDDZ Arvada, Colorado, at 0205 a long instrumental "trance music" tune, followed by an overplayed Taylor Swift hit. Very good and alone on the channel at local sunset. (Barton-AZ)

1700 KVNS Brownsville, Texas, at 1000 over co-channel WJCC Florida, "From the . . . dot com studios . . . KVNS Brownsville and the Rio Grande Valley, Fox Sports 1700." (Conti-NH)

Many Thanks . . .

Log reports courtesy of: Rick Barton using a barefoot RadioShack® DX-375 along with the Hammarlund HQ-120-X and Panasonic RF-2200 with slinky and random wire antennas; Bruce Conti on the WinRADiO Excalibur SDR with SuperLoop antennas aimed northeast and south; Bert New with the Sangean DT-400W; and Klaus Spies.

— 73 and Good DX! — WPC1CAT

This Month in Broadcast History

75 Years Ago (1938): In a radio broadcast, Austria Chancellor Kurt Schuschnigg announced his resignation and the take-over of the government by Nazi Germany. With Austrian radio now under German control, William Shirer — the only U.S. reporter on the scene — flew to London to broadcast his eyewitness account with Edward R. Murrow and CBS news in what was the first *World News Roundup* broadcast and the first news report by the legendary Murrow. *World News Roundup* is still aired on many CBS radio affiliates today, making it the longest running network news broadcast.

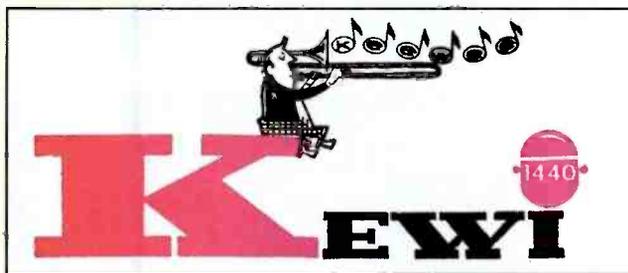


Photo A. The logo for 1440 KEWI.

50 Years Ago (1963): "From a Jack to a King" by Ned Miller trumped the *Topeka Top 40 Tunedex* on the station of the "Keewee Good Guys" 1440 KEWI.

25 Years Ago (1988): The FCC issued public notice of conversion from 1927 North American Datum (NAD27) latitude and longitude coordinates to the more accurate 1983 datum (NAD83) as implemented in the satellite Global Positioning System (GPS).

— WPC1CAT

Pop'Comm March 2013 Reader Survey

Your feedback is important to us at *Pop'Comm*. It helps guide us to make the magazine even more valuable to you each month.

Please take a few minutes to fill out this month's Reader Survey Card and circle the appropriate numbers corresponding to the questions below. We'll pick a respondent at random for a year's free subscription or an extension of an existing subscription as thanks for your participation — so don't forget to fill in your mailing address and other contact information.

We encourage your comments and suggestions in the space provided, as well. Thank you.

Last, but not least: You can now take this survey online. See details below.

In this month's *InfoCentral*, Radio Netherlands World-wide's new Editor-in-Chief says for RNW, "the shortwave era is behind us," pointing to the station's future in satellite and Internet communications. Does that concern you?

- Yes, a great deal 1
- Somewhat 2
- Not at all, Many stations are already in SWL retreat . . . 3

Do you envision the day when shortwave frequencies will be virtually uninhabited?

- For sure. It's only a matter of time 4
- Numbers will diminish, not vanish in my lifetime 5
- No. The need for wireless will never disappear 6

When was the last time you requested a QSL card from a shortwave station?

- Within the last 12 months 7
- Within the last five years 8
- Within the last 10 years 9
- I have never requested a QSL from a shortwave station 10

Have you noticed a difference in the landscape of the high-frequency SW bands?

- Yes. There are fewer stations from which to choose . . 11
- No. Despite the hoopla, they seem unchanged 12

What role do you see new technologies playing in SWL's survival? For example, Digital Radio Mondiale <<http://bit.ly/twRPD2>>.

- A major role. They're the wave of broadcasting's future 13
- A minor role. Old habits (AM reception) die hard . . . 14
- No role at all 15

If you see value of shortwave broadcasting, what specific action should each SWLer take to preserve its existence? (Use the comment line.)

Take This Reader Survey Online

You can now participate in this reader survey via the Internet. Simply go to *Pop'Comm On the Web*: <<http://www.popcomm-magazine.blogspot.com/>> and click the link to the *Pop'Comm March 2013 Reader Survey*. It's quick and easy.

The Envelope, Please . . .

For participating in the *Pop'Comm* Readership Survey, the winner of a free subscription or extension is **Avery M. Finn, KPCØAF, of Hopkins, Minnesota**. *A high five for Avery! And thanks for the kind words about Pop'Comm bringing back memories of your Heathkit DX-35 transmitter and S-40B receiver in the 1960s. Good times.* — KPC6PC

This Month's Feedback from Pop'Comm Readers

The Knight-Kit R-100 Series of Receivers, WLS, Cutting the Cable TV Cord, Foxhole Radios, and More

Pop'Comm appreciates and encourages comment and feedback from our readers. Via email, please write: <editor@popular-communications.com>. Our postal service address is: Editor, Popular Communications, CQ Communications, Inc., 25 Newbridge Rd., Hicksville, NY 11801-2953 USA. – Richard Fisher, KPC6PC/KI6SN

Begging to Differ: That's No Knight-Kit R-100!

Editor, Pop'Comm,

The December 2012 edition of *Pop'Comm* was a very enjoyable read. The continuation of the WLS coverage is very interesting, as it was the *big gun* station back in the '60s, '70s, and '80s here in the Midwest.

There are a couple of points I'd like to make regarding other parts of the edition.

First: There is an error in the identification of a piece of equipment in a photograph in the *Monitoring* column on page 44.

Back in 1961, my first commercially-made receiver as a ham was a Knight Kit R-100. The receiver in the photograph on the lower right is erroneously identified as a Knight Kit R-100A. It is actually the R-100 and companion S-8 optional speaker.

The R-100A used the same chassis and internals as the R-100, but a less-expensive-to-produce front panel and cabinet.

SWLers back in 1959 had the R-100, not the R-100A. The first year of availability of the R-100A was 1963. And, to make things even a bit more confusing, there were actually two versions of the R-100 with the primary difference of the paint schemes!

Second: I read with interest the letter to the editor in *Across the Spectrum* headlined "Cable TV? Who Needs It? Not Me!" on page 82.

Well, actually *everyone* needs cable or satellite TV, except those who may live in major metro areas such as Los Angeles, New York, Chicago, and other major cities.

Here in Champaign-Urbana, Illinois — with a metro population of about 160,000 people — the switch to DTV is actually a step backward as to the number of OTA (over the air) stations one can receive on a reliable basis.

During the NTSC (National Television System Committee) analog days, we could easily receive 10 to 15 stations, a few may have been a bit snowy, but certainly watchable.

Since the switch to DTV, we're down to six sta-

tions, perhaps eight if you're lucky. And that's if, and only if, you have a decent commercial log-periodic dipole array or multi-element UHF Yagi on at least a 30-foot tower. In fact, both the analog and DTV OTA scenarios are assuming at least a 30-foot tower. By the way, Champaign-Urbana is where the log periodic antenna was designed at the University of Illinois many years ago.

For the vast majority of those of us who live in "fly-over country," cable certainly is a necessity. *Horizons* columnist Rob de Santos, K8RKD's, disclaimer in his response to the writer is certainly applicable.

*– Don Allen, WPC9EJR/W9CW
Urbana, Illinois*

(Don: We appreciate your eagle eye on proper receiver identification and for your thoughts on the value of cable TV.

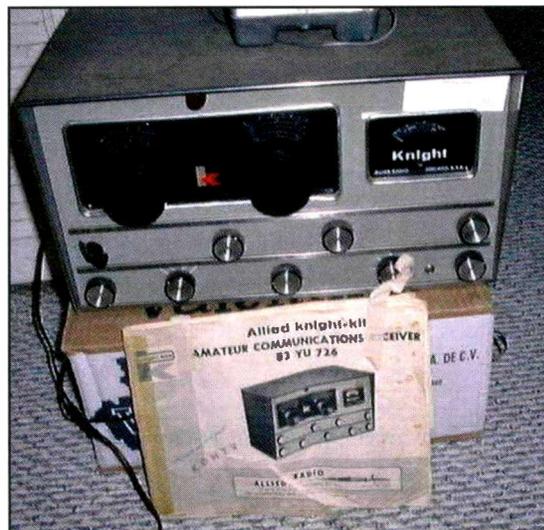


Photo A. According to Knight Kit aficionado Nick England, K4NYW, the first incarnation of what would become known as the R-100 series receiver was the Amateur Communications Receiver or YU-726.

(Photography courtesy of K4NYW)



Photo B. The second in the Knight Kit receiver series was the R-100, featuring an italic *K* and *Knight* logos, and was painted gray.



Photo C. The R-100A, third in the series, had a black and silver paint scheme to match the Knight Kit T-150 and T-150A transmitters.

To get to the bottom of the Knight Kit R-100 vs. R-100A issue, we reached out to Nick England, K4NYW, of Chapel Hill, North Carolina who knows a lot about the history of Knight Kit receivers.

"There are three models of the R-100," he writes, "all with the same circuitry. This is perhaps the earliest use, as well, of printed circuit boards in a communications receiver.

"The original was just known as the Amateur Communications Receiver or YU-726, **Photo A**. It has block *K* and Knight logos and was painted tan."

K4NYW notes "the second was called the R-100, **Photo B**, and had an italic *K* and Knight logos, and was painted gray. The third is the R-100A with a black and silver paint scheme to match the T-150 and T-150A, **Photos C and D**."

He adds that for the first two models, "the antenna trimmer control was located at the top center and had a burundy/brown knob. On the R-100A the trimmer control was relocated below the meter and had a black knob with silver insert."

We thank Nick for granting permission to use his photographs and for the great insight he provides on what was obviously a very popular receiver. — Richard Fisher, KPC6PC)

WLS Features Parts I and II Appreciated — and Amplified

Editor, *Pop'Comm*,

I really enjoyed Andrew Ooms' articles about historic Chicago radio station WLS. (NOTE: Parts I and II of "WLS Listeners, Please Stand By," appeared in the November and December issues of



Photo D. "On the R-100A, the trimmer control was relocated below the meter and had a black knob with silver insert," K4NYW notes. The receiver was no one-evening project, as the parts count and packaging in this mostly-unopened kit shows.

Pop'Comm, beginning on pages 16 and 20, respectively. — KPC6PC)

I am also a longtime fan of WLS. I grew up listening to the station in the 1960s and '70s during the Top 40 era when they really were *personality radio*. I lived in rural northern Illinois and WLS was my link to big city radio.

Besides the *Stand By* magazines that Mr. Ooms wrote about, WLS also published a magazine called *WLS Weekly* and an annual booklet called the *WLS Family Album*, **Photo E**. Those publications and

more can be found on my *WLS Tribute Page* at <<http://bit.ly/S0mtfQ>>.

— Patrick Griffith,
WPC9HVV/NØNNK,
Rockford, Illinois

(Patrick: Thanks for your kind note and for the link to your *WLS Tribute Page* on the Web at <<http://bit.ly/S0mtfQ>>. The station is, indeed, a major part of United States AM radio history, and is certainly worthy of remembrances — both related to on the air and off the air activities — that

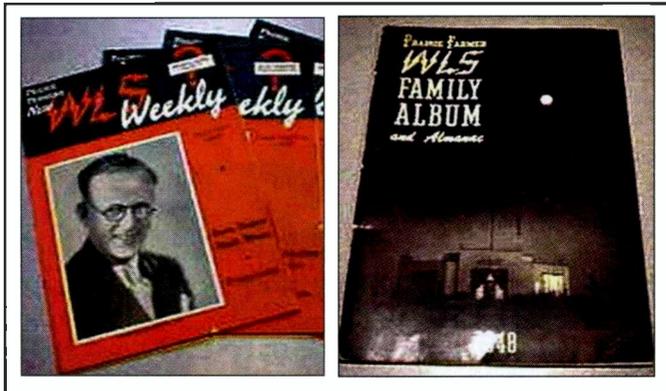


Photo E. In addition to the *Stand By* magazines that Andrew Ooms wrote about in November's and December's *Pop'Comm*, WLS also published "a magazine called *WLS Weekly* and an annual booklet called the *WLS Family Album*," writes Patrick Griffith, WPC9HVV/NØNNK, of Rockford, Illinois. (Courtesy of WPC9HVV)

people such as you and Andrew Ooms share with *Pop'Comm* readers. Your additional insight about WLS is sincerely appreciated. — Richard Fisher, KPC6PC)

Reminiscing: My Homemade Foxhole Radio

Editor, *Pop'Comm*,

As part of "The Lighter Side — Radio Fun" in November's *Pop'Comm*, page 44, you ask if anyone has had success in building a foxhole radio. I have.

When I was young, I got a book from the library and it told about the foxhole radio. Not only how to build one, but also how they came into being. According to this book — I have no idea of the book's name, now — the radio was made of items that the soldiers had with them. For example, a double-edge razor blade, pencil lead, safety pin, small gauge wire, and so on. It said the soldiers would use the rolls of barbed wire surrounding the foxhole as an antenna, and the hole made a good ground!

I made mine from these household items and remember that I wound the coil on an empty toilet paper roll, bent the safety pin and taped a pencil lead to it, mounted the razor blade on a flat board with the safety pin mounted near it, added some ear-phones and maybe another part or two — which I can't recall.

I do remember moving the pencil lead across the razor blade to tune the stations. It worked! I was proud and amazed. I never dreamed that a radio could be made out of these simple items.

— Gary Hickerson,
Arkoma, Oklahoma

(Gary: Congratulations on your success in building a true foxhole radio. Many crystal set builders are under the impression that a piece of galena or a 1N34 diode is the only way to provide a detector for one of the simplest of RF-powered receivers. Your observation about soldiers using barbed wire for an antenna, and the foxhole itself for ground will be a revelation to many readers. You, radio enthusiasts and many, many GIs are proof positive that blued razor blades are good for a lot more than getting a good shave. — Richard Fisher, KPC6PC/KI6SN)

Making Sense of Software Defined Radios

Editor, *Pop'Comm*,

I read Dan Srebnick, KPC2DLS,' article about the Alinco DX-R8T in the November issue of *Pop'Comm*. (NOTE: See

RF Bits under the headline "A Look @ WK4U's Alinco DX-R8T" on page 24. — KPC6PC).

In it, he mentions using it as a software defined radio. I am just beginning to understand the concept of software defined radio. I know they are attached to a computer, but how is that attachment made?

I understand I and Q outputs (representing "in phase" and "quadrature" outputs) of the receiver can be connected to the input of the sound card of a computer. But a sound card has a very limited bandwidth. If you want to display an RF spectrum on the computer screen of several megahertz, then it would seem that the I and Q connection to the sound card would not work because of the sound card's limited bandwidth. So, in most SDR radios, how is the connection between an SDR radio and the computer usually made to avoid this limitation?

— Carl Lewandowski, KB3YUV,
Pottstown, Pennsylvania

(Carl: You've got this right. The sound card connection through the audio-in jack is of limited bandwidth. My Perseus SDR uses USB for the connection and this is common with many receivers. The Flex line of SDR transceivers uses Firewire, which is supposed to be faster than USB, in order to support high bandwidth and limited latency — on transmit. Good luck in your pursuit of SDRs. — Dan Srebnick, KPC2DLS)

Before 'Cutting the Cord,' Consider Cable TV's Benefits

Editor, *Pop'Comm*,

I read with interest the correspondence from readers in December *Pop'Comm's Across the Spectrum* beginning on page 82. It was about "cutting the cord" — a euphemism for either unsubscribing or never having cable TV.

Although I respect their decisions, there is another side to not cutting the cord. I am not wealthy by any means. I'm just middle class, retired, and live with my wife, as my son has his own family just a mile away.

Years ago, when there was no cable in my area I, too, had an antenna and was happy with just the networks and a few other channels. But with the advent of cable, a whole new world opened up and the variety and educational benefits not only entertained but educated my family to become more worldly and cognizant of what goes on in the world.

Cable TV is ever increasing the number of channels and I now have hundreds to choose from for less than \$150 a month. That fee includes Internet access and digital phone.

Cable TV is the future of the globe and commercial over-the-air television programming will fade away like the cathode ray tubes of yesteryear.

One can either get on the digital bus or stay with the horse and buggy. I choose the former. It's up to you.

— Bob Phillips, W2VIB,
Lanoka Harbor, New Jersey

(Bob: Your points about the entertainment and educational value cable TV can bring to a household are well made and well taken. Time will tell whether OTA — over the air — digital television will survive. For those viewers who are financially stressed and can't afford cable or satellite service, let's hope "free TV" continues for at least a while. Meanwhile, there is no discounting the drumbeat of progress as technology further improves the delivery of images — regardless of the mode in which they arrive. Thank you for writing. — Richard Fisher, KPC6PC/KI6SN)

Special Event QSLs — Still Best Via Snail Mail!

by Kirk Kleinschmidt,
NTØZ, KPCØZZZ
<kirk@cloudnet.com>

“It’s the perfect way to give your mail carrier something other than junk mail to deliver!”

DBack in the dark days before Logbook of the World (LotW), eQSL, electronic documents that can be securely, digitally “signed,” online amateur radio directories, Google Maps and Street View, and the like, hams actually sent each other QSL cards — *in the mail, no less* — to commemorate their contacts.

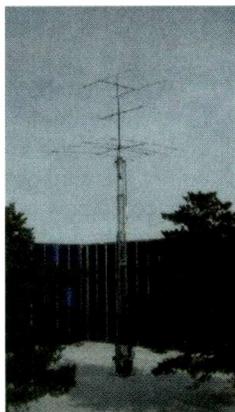
Although you almost never hear it nowadays, ops used to carefully transmit their mailing addresses to one another via phone and Morse code to facilitate the exchange. Most ops — especially beginners — couldn’t afford a phone book-sized Amateur Radio Callbook (certainly not annually), and CD-ROM directories, the precursor to today’s online databases, didn’t yet exist. Heck, just sending my longish name and address today would give me a hand cramp something fierce. And back in the late ‘70s, I did it with a J-38 straight key, which would now put me in the ICU!

In those days, QSL cards were printed on rugged stock, and we just popped them into the mail without envelopes and without SASEs. Postcard stamps were inexpensive and it wasn’t a big deal, even for a kid like me working an after-

school job for \$2 or \$3 an hour. In the late ‘80s and early ‘90s it somehow became “the standard of courtesy” to send SASEs with your QSL cards so the other ops didn’t have to foot the increasingly expensive postage, and so on. This practice, perhaps necessary and practical, especially for DX QSOs or those serviced by QSL managers or certain types of forwarding bureaus, took a lot of the romance and camaraderie out of the QSLing process. I’m extra surprised these days if I see a “naked” QSL card in my mailbox.

With the rise of the Internet and the subsequent shrinking of the planet, modern QSLing is becoming a graceless, mechanical, begrudging practice, and I feel the loss. But there’s at least one facet of amateur radio that still generally requires the sending of physical QSL cards and certificates through the mail. Plus, the practice is interesting, fun, often historically significant, and always educational! It’s a close cousin to qualifying for and collecting operating achievement awards, QSL cards and contest certificates, but participation in and success are much easier, and the practice often sparks the interest of hams, non-hams, and SWLs alike.

*NTØZ, thanks for working
WØIBM on 50-MHz SSB*



located at IBM, Rochester, Minnesota, USA

Photo A. “During the IBM’s centennial celebration in June of 2011,” said KPCØZZZ, “I’d heard that an HF Special Event station was in the works, but when I heard WØIBM on 6 meters, I jumped at the chance to join in the fun and get a unique piece of wallpaper for my shack.”
(Courtesy of KPCØZZZ/NTØZ)

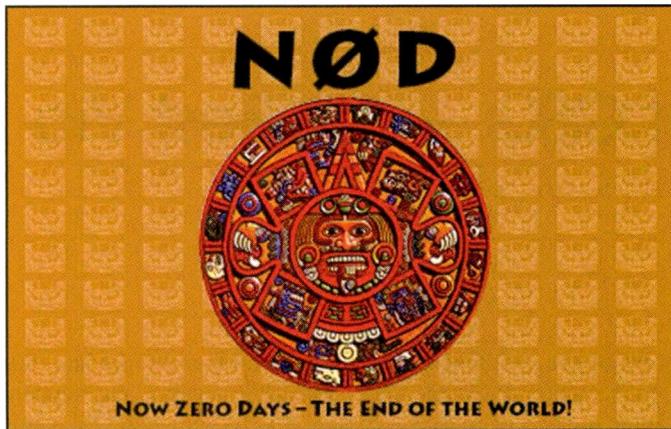


Photo B. Dubbed “the QSL card you’ll never receive,” this distinctive QSL card from NØD (now zero days) celebrated the end of the world — or at least the end of the Mayan calendar — which was set to take place on December 21, 2012. According to NØD organizers, “hams from around the crumbling globe are invited to contact NØD, which will be operating from a secret, undisclosed location. QSL with SASE to the address at <<http://www.qrz.com>>. If Doomsday actually does happen, we regret that a QSL will not be possible, so hold onto your SASE until at least December 22nd.” See more at <<http://www.nowzerodays.com>>. (Courtesy of KPCØZZ/NTØZ)

I’m referring to working Special Event stations and collecting the certificates and commemorative QSL cards that accompany them. Unlike contest and other achievement awards, no great feat of skill or endurance is usually required. You simply have to contact the Special Event operator on your favorite band and mode (or multiple bands, if you are so moved), and you qualify. A trophy for your collection or a nice piece of “wall-paper” will soon be forthcoming, **Photos A, B, C, and D.**

It’s the perfect way to give your mail carrier something other than junk mail to deliver. Plus, Old Timer mail carriers will remember the “QSL card days” and may even ask you about them.

Plenty of Opportunity

Special Events are on-air activities designed to generate interest in specific happenings. Clubs or groups try to contact as many people as they can in a given time period (usually the course of a weekend, but sometimes longer), and they produce special QSL cards and or suitable-for-framing certificates to issue to the operators they work — hopefully you!

Even for beginners, Special Event stations are almost always easy to work, and there are hundreds of them on the air each year. If you work at it you can actually cover your shack walls with the interesting and beautiful certificates you’ll receive.

Special Event stations take place year around, but the busiest months are often April and May, coming up soon. *Why?* It’s because many groups use them as warm-ups for ARRL Field Day in late June. The “events” that are commemorated can be large or small, global or local. They include town celebrations, special historical events, the opening of museums, radio club anniversaries, or even holidays, such as the operations from Christmas, Florida, in December. Some clubs use these opportunities to get on the air in a big way — not only to publicize these events to the ham community, but also to demonstrate

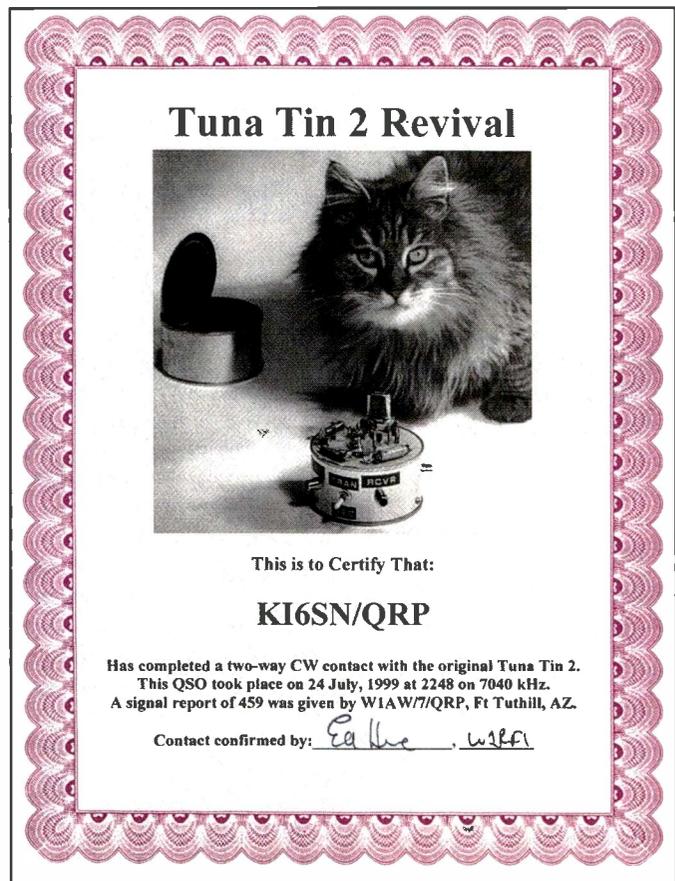


Photo C. In the summer of 1999, the ARRL’s Ed Hare, W1RFI, took the late Doug DeMaw, W1FB’s, famous Tuna Tin 2 transmitter <<http://bit.ly/10rQqrp>> “on the road” as a Special Event station to work QRP (low power) and other operators from around the country. This handsome certificate was issued for a 40-meter CW QSO from the Ft. Tuthill, Arizona Hamfest to Richard Fisher, KI6SN, who made contact with the TT2 from Riverside, California. (Courtesy of KPC6PC/KI6SN)

amateur radio to the public. If you’ve been bitten by the Special Event bug, just about any excuse will do when it comes to getting on the air.

Whatever their differences, all Special Events operations have something in common — awards, special certificates, or collectible QSL cards. You might receive a commemorative color QSL card or a giant-sized color certificate, or anything in between. Many are truly impressive, and they’re available just for making a single contact with the station(s) involved.

How to Get Started

How do you find Special Event stations, you might wonder? Thankfully, it’s rather easy. *CQ*, *WorldRadio Online*, and *QST* magazines devote space in each issue to publicizing the Special Event operations taking place each month. These generally appear as brief announcements listing the sponsoring club, the reason for the event, a frequency or two, and details on how to claim your certificate.

Perhaps the most comprehensive listing can be found on the Internet at <<http://bit.ly/TuaGDA>>. To get the latest update, scroll down to the “country” field, click the drop-down arrow and select USA (or whatever country you’re interested in). Other

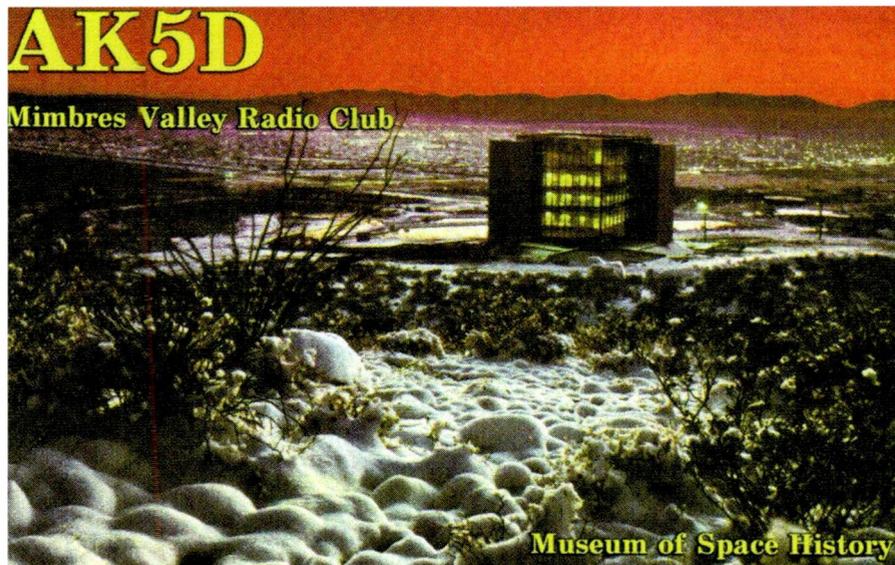


Photo D. The Mimbres Valley Radio Club operated Special Event station AK5D from the Museum of Space History in Alamogordo, New Mexico on December 11, 2010. "Known locally as 'The Golden Cube,'" the QSL notes, "(the museum) houses a unique space science facility which honors individuals from many nations for their contributions to space exploration." (Courtesy of KPC6PC/KI6SN)

Special Event stations and related discussions can be found at <<http://bit.ly/RW7QKq>>.

Once you have a list of dates and frequencies, you simply get on the air and begin the hunt.

Most operations will use only one or two transmitters, and antennas can range from dipoles, to verticals, to multi-antenna beams. Almost everyone operates on 80, 40, and 20 meters through voice and many will accommodate a Morse code contact if you ask for one.

If the sunspot cycle ever perks up, Special Event stations will migrate to 15 and 10 meters, but for the past eight years, or so, the lower bands have seen almost all of the action.

When beginning your search, remember that interference and band crowding can force the stations to move up or down in frequency. If the operation doesn't list any frequencies, careful tuning of the General class sub-bands should turn up what you're looking for. After all, why would an event designed to commemorate something special — and to work as many hams as possible — show up on the Amateur Extra class sub-bands?

Special Event operations that attract enough attention show up on DX spotting services such as <<http://www.dxsummit.fi>>. Click on "Band Spots" on the main menu and then choose the band you're interested in. Most of the stuff that shows up here is DX-related, but on a

weekend afternoon, Special Event spots regularly show up.

Getting Your Goodies

Although most Special Event stations are relatively easy to work, some popular events generate a lot of interest and even a pileup or two. When you work that special station, whether easy or difficult, be sure you carefully mark down all the QSO information in your station log, including any procedures required to claim your certificate.

Some stations will give you a contact number to help the operators track you down when it comes time for them to confirm your QSO. Some groups work 3,000+ hams in a weekend, and if your information is more than a little off, they may not find your contact and you'll wind up in the dreaded position of being "not in the log."

After you've worked one, what's next? If you first discovered the event in a magazine or an online listing, the information probably detailed whether you'll be receiving a special QSL card, a certificate, or both, and how to obtain them. Usually, you send in your QSL card with all of the information about the contact (the day, time, the callsign you worked, the band, and the signal report you gave) correctly and accurately filled in. If the op mentioned a contact number, make sure you display it prominently on the card. And make sure you've included a self-addressed, stamped envelope (SASE).

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If a group is offering certificates, it's best to send a 9- by 12-inch SASE. Most certificates are printed on 8-1/2- by 11-inch stock, and this will ensure that yours will not come back folded beyond recognition. Remember that larger envelopes often require extra postage (sponsoring organizations usually list required SASE postage).

Some groups specifically state that they want no QSL cards or log data at all. These ops will simply send your QSL card or certificate to the address listed in the FCC callsign database or the database at <<http://www.qrz.com>>. In that case it's important that the event ops copy your callsign correctly or you won't ever get your wallpaper. You also have to make sure your address is updated and current in the FCC database — something that you should keep current even if you're not a wallpaper collector.

That's All There Is to It

These basics will put lots of QSLs and certificates on your walls, and you can learn the fine points as you go. All you have to do is to get started. And if you're tired of getting only junk mail, working Special Event stations will square that away in short order!

BROADCASTING

World Band Tuning Tips

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

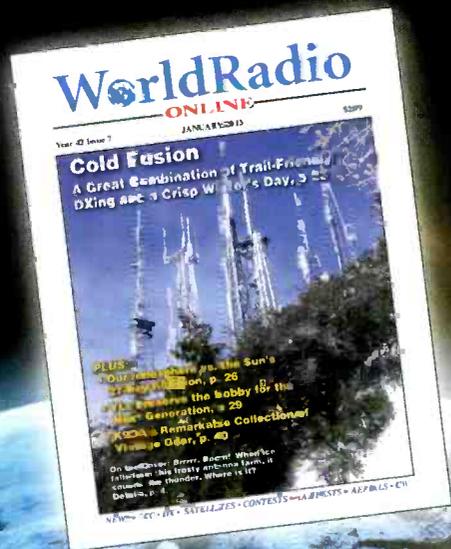
This listing is designed to help you hear more shortwave broadcasting stations. The list covers a variety of stations, including international broadcasters beaming programs to North America, others to different parts of the world, as well as local and regional shortwave stations. Many of the transmissions 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	4319u	Armed Forces Net., Diego Garcia		0400	7120	Radio Hargeisa, Somalia	Somali
0000	15275	Radio Thailand		0400	6010	La Voz Concencia, Colombia	SS
0000	9745	Radio Bahrain	AA	0400	7295	Radio Algerienne, via France	AA
0000	5954	Radio Republica, to Cuba	SS	0400	6165	Radio Nationale, Chad	FF
0100	6055	Radio Exterior de Espana, Spain	SS	0400	4790	Radio Vision, Peru	SS
0100	4875	Radio Difusora Roraima, Brazil	PP	0400	11980	Voice of Turkey	
0100	4410	Radio Eco, Bolivia	SS	0400	12025	VOA, Botswana Relay	
0100	4810	Radio Logos, Peru	SS	0400	5940	Voz Missionaria, Brazil	PP
0100	11965	Radio Romania International	FF	0400	7310	BBC, via South Africa	
0100	11905	Sri Lanka Broad. Corp.	vern.	0400	3320	Radio Sonder Grense, So. Africa	Afrikaans
0100	9610	Vatican Radio	SS	0400	11925	Radio Bandeirantes, Brazil	PP
0100	5110	WBCQ, Maine		0400	15610	Radio Cairo, Egypt	Swahili
0100	4717	Radio Yura, Bolivia	SS	0400	9830	Voice of Russia	
0100	19000	Radio Australia		0500	5910	Alcaravan Radio, Colombia	SS
0200	4985	Radio Brazil Central	PP	0500	6035	BBC, Ascension Is. Relay	Hausa
0200	6973	Galei Zahal, Israel	HH	0500	11945	Radio Australia	
0200	11780	Radio Nacional Amazonia, Brazil	PP	0500	15190	Radio Africa, Equatorial Guinea	
0200	5025	Radio Rebelde, Cuba	SS	0500	6155	Radio Austria International	GG
0200	4885	Radio Clube do Para, Brazil	PP	0500	9575	Radio Medi Un, Morocco	
0200	3350	R. Exterior Espana, Costa Rica	SS	0500	5975	Radio Japan, via England	
0200	6135	Radio Santa Cruz, Bolivia	SS	0500	7245	Radio Mauritanie, Mauritania	FF
0200	7475	Voice of Greece	GG	0500	14950	Salem Estereo, Colombia	SS
0200	5085	WTTW, Tennessee		0500	11905	Vatican Radio	Kurdish
0300	6090	Amhara State Radio, Ethiopia		0500	11905	Voice of America, via Vatican	Kurdish
0300	5925	Deutsche Welle, Rwanda Relay	Swahili	0500	11560	Maraya FM, Sudan, via Ukraine	
0300	4780	Radio Djibouti	FF	0500	5970	Radio Itatiatia, Brazil	PP
0300	6185	Radio Educacion, Mexico	SS	0500	9635	RFE/RL, via Lithuania	
0300	5970	Radio Panamericana, Bolivia	SS	0500	15515	Radio Kuwait	AA
0300	7200	Sudan Radio Corp.		0500	4055	Radio Verdad, Guatemala	SS
0300	4930	VOA, Botswana Relay		0500	5005	Radio Nacional, Equatorial Guinea	SS
0300	7180	V. of the Broad Masses, Eritrea	Tigrinya	0600	13590	CVC-Radio One, Zambia	
0300	6165	Voice of Turkey		0600	9535	Radio Algerienne, via France	AA
0300	9515	Voice of Turkey		0600	5995	Radio Malienne, Mali	FF
0300	5745	WTWW, Tennessee		0600	11725	Radio New Zealand International	
0300	4960	VOA, Sao Tome Relay		0700	7390	Radio Tirana, Albania	Albanian
0300	9315	Radio Cairo, Egypt		0700	11750	HCBJ Global, Australia	
0300	7410	BBC, Cyprus Relay	Farsi	0800	4990	Radio Apinte, Suriname	DD
0300	7460	Radio PMR, Moldova	Farsi	0800	6180	Radio Nacional Amazonia, Brazil	PP
0400	11945	BBC, Seychelles Relay		0800	9690	Voice of Nigeria	Hausa
0400	11690	Radio Okapi, Congo, via S. Africa		0800	12035	Radio Exterior Espana, Spain	SS

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0800	7355	KNLS, Alaska		1400	15505	Bangladesh Betar	Urdu
0900	2325	ABC Northern Territory, Australia		1400	21540	Radio Kuwait	AA
0900	5035	Radio Aparecida, Brazil	PP	1400	15140	Radio Sultanate of Oman	AA/EE
0900	3330	Ondas del Huallaga, Peru	SS	1400	12085	Far East Broadcast., Philippines	vern
0900	3375	Radio Municipal, Brazil	PP	1400	15300	Islamic Republic of Iran Broad.	Hindi
0900	5025	Radio Quillabamba, Peru	SS	1400	17615	Adventist World Radio, via Austria	
0900	4827	Radio Sicuani, Peru	SS	1500	7445	Radio Free Asia, N. Marianas Relay	CC
0900	4755	The Cross, Micronesia		1500	17625	Broad. Svc. of Kingdom, S. Arabia	AA
1000	3915	Radio Fly, Papua New Guinea	Tok Pisin	1500	13850	Kol Israel	Farsi
1000	3385	Radio E. New Britain, Papua NG	Tok Pisin	1500	9495	Trans World Radio, Austria	RR
1000	6480	MND Radio, South Korea	Burmese	1500	11650	Far East Broadcasting, Philippines	RR
1000	6155	Radio Fides, Bolivia	SS	1500	13850	Kol Israel	Farsi
1000	4775	Radio Tarma, Peru	SS	1500	7295	Trans World Radio, via Germany	
1000	4925	Radio Educacao Rural, Brazil	PP	1500	15630	Voice of Greece	Greek
1000	4747	Radio Huanta dos Mil, Peru	SS	1600	15500	Sudan Radio Service, via England	AA
1000	3310	Radio Mosoj Chaski, Bolivia	SS	1600	7455	Radio Free Asia, USA	KK
1000	6170	Radio New Zealand International		1600	9720	Radio Japan	CC
1000	9695	Radio Rio Mar, Brazil	PP	1600	11600	Radio Libye, Libya	AA
1000	4700	Radio San Miguel, Bolivia	SS	1600	11635	Voice of Russia, via Moldova	FF
1000	5040	Radio Libertad, Peru	SS	1600	11645	Radio Australia	
1100	9820	Far East Broadcasting, Philippines	vern.	1600	15235	Channel Africa, South Africa	FF
1100	5995	Radio Australia		1600	17810	Radio Cairo, Egypt	Swahili
1100	4750	Radio Republik Indonesia	II	1600	13740	HCJB Global, via Germany	RR/Sat
1100	4825	La Voz de la Seva, Peru	SS	1600	15485	Radio Taiwan Intl., via France	
1100	6130	Lao National Radio	Laotian	1600	9935	Radio Makedonias, Greece	Greek
1100	7200	Myanmar Radio	Burmese	1700	15190	Philippines Broadcasting Service	Tagalog
1100	5980	Radio Marti, USA to Cuba	SS	1900	11620	Radio Exterior Espana, Spain	SS
1100	4781	Radio Oriental, Ecuador	SS	1900	11670	All India Radio	
1100	3205	Radio Sanduan, Papua NG	Tok Pisin	1900	15825	WWCR, Tennessee	
1100	3235	R. West New Britain, Papua NG	Tok Pisin	2000	15450	Radio Kuwait	EE/AA
1100	5020	Solomon Islands Broad. Corp.		2000	9820	Radio 9 de Julho, Brazil	PP
1100	7110	Thazin Radio, Myanmar	Burmese	2000	11775	Radio Algerienne, via France	AA
1100	15210	Radio Romania International		2000	11870	Radio Biafra London, to Nigeria	
1100	15725	Radio Pakistan	vern	2000	11850	Radio Japan, via Madagascar	FF
1100	17510	Radio Romania International		2000	11725	Radio Tanzania, Zanzibar	Swahili
1100	11915	Family Radio, via Taiwan	II	2000	15120	Voice of Nigeria	
1100	15180	Voice of Korea, North Korea	FF	2000	15476	R. Nac. Arcangel, Antarctica	SS
1100	9615	KNLS, Alaska		2030	15220	Radio Romania International	
1100	9325	Radio Free Asia, via No. Marianas	Laotian	2100	11800	Deutsche Welle, Rwanda Relay	
1100	9680	KNLS, Alaska	RR	2100	6270	Radio Cairo, Egypt	
1100	9955	Family Radio, USA, via Palau		2100	9330	Radio Damascus, Syria	
1200	9805	Radio Marti, USA to Cuba	SS	2100	11830	Desutche Welle, Rwanda Relay	
1200	5930	Radio Rossii, Russia	RR	2100	9330	WBCQ, Maine	
1200	15450	Voice of Turkey		2100	7460	Radio Free Asia, Philippines Relay	KK
1200	9840	Voice of Vietnam	SS	2100	15345	RTV Marocaine, Morocco	AA
1200	11580	Trans World Radio, Guam	VV	2100	15190	Radio Inconfidencia, Brazil	PP
1200	11730	Radio Belarus	Byelorus	2200	6215	Family Radio, via Taiwan	CC
1300	15310	BBC, Oman Relay		2200	9480	Africa No. One, Gabon	FF
1300	15105	Bangladesh Betar		2200	15345	Radio Argentina al Exterior	SS
1300	15210	KSDA, Guam	Bengali	2200	13363	R. Rivadavia, Argentina	SS/usb
1300	9520	Radio Veritas Asia, Philippines		2215	9760	Cyprus Broadcasting Corp.	GG
1300	11710	Voice of Korea, North Korea		2300	6160	CKZN, Canada	
1300	9325	Voice of Korea, North Korea	KK	2300	9925	Croatian Radio, via Germany	Croatian
1300	9835	Sarawak FM, Malaysia	Malayan	2300	6010	Radio Inconfidencia, Brazil	PP
1300	12120	Far East Broadcast, Philippines	vern	2300	9885	Radio Romania International	SS
1300	15340	HCJB Global, Australia	Tamil	2300	9875	Radio Free Asia, via Lithuania	Tibetan
1300	17685	RTE, Ireland, via England		2330	7510	Democratic Voice of Burma	Burmese
1300	9795	Radio Thailand	JJ				

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IN GEAR

Power Up

By Jason Feldman, WPC2COD

AOR Introduces AR6000 40-kHz to 6-GHz Wide Range Receiver

AOR USA has updated its lineup of professional-grade receivers with the introduction of the AR6000. This new radio from AOR USA offers continuous tuning from 40 kilohertz to 6 GHz in a wide variety of modes and the added capability of an optional I/Q output that can capture up to 1 megahertz of bandwidth onto a storage device for later listening or signal analysis.

Designed for the monitoring or technical service professional, there are no interruptions in the AR6000's tuning range; as such, it is not available to general consumers in the USA due to cellular band restrictions.

The AR6000 has tuning accuracy of up to 1 Hz throughout its tuning range, which begins at the floor of the radio spectrum up through microwave frequencies that can be used for land-based or satellite communications. Given its broad spectrum, the AR6000 has two antenna ports, with the added capability of operating an optional remote antenna selector from the front panel of the receiver.

Standard modes include AM, FM, WFM, FM Stereo, USB, LSB and CW. An optional module can add the capability to receive APCO25 digital communications.

The unit has five independent VFOs and can store up to 2,000 memory channels. Each memory can retain frequency, mode, channel label data and other operating parameters. The memory channels and other functions can be software managed through a USB computer interface. Another optional feature includes the ability to operate the receiver remotely over the Internet. While not designed specifically as a scanning receiver, the AR6000 has that capability as well. Scanning speeds vary with the range the receiver must tune between memory channels, but 100 channels per second is a nominal estimate, according to AOR.

The AR6000 retains many of the popular design elements and operating features of the popular AR5000 and AR5001D models that preceded the new receiver. Those elements include a large tuning dial, direct frequency input keypad, front-panel power, volume and squelch controls, and a very prominent analog S-meter. The receiver is 8.67 inches wide, 3.82 inches high, and 12 inches deep and weighs 11 lbs. It requires 10.7 to 16 VDC at 2 amps; a power cube is provided, but its 12 VDC input is also suitable for use in mobile operating applications.

AOR said that the AR6000 is available through affiliated dealers and has a MSRP of \$7,599.00. (**VISIT:** For a spec sheet of the AR6000, visit AOR's website: <<http://www.AORUSA.com>>.)



Photo A. The front panel of the new AR6000 shows the large tuning knob, keypad entry, LED display, and the ever-popular analog S-meter. (Courtesy of AOR USA)

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Aviation Maps Help Scanners Chart a Course for Monitoring Excitement

By Bill Hoefler,
KPC4KGC/WPE4JZZ/
KG4KGC
<flacap388@gmail.com>

“When scanning aviation frequencies maps help immeasurably in monitoring. Which ones you choose depend on what type of flying interests you”

When I was growing up in the 1960s and '70s I was fascinated by foreign countries, maps, and globes. I didn't get to travel that much, though.

By my high school graduation in 1970 I'd only been to 13 states and the Bahamas. As of today, my tally is 43 states, four Canadian provinces, the Bahamas, Bermuda, and 10 countries in Europe — including the now-defunct German Democratic Republic (DDR) and occupied East and West Berlin.

I'd devour maps and wonder about these places. An uncle gave me a book on Alaska while I was in junior high. I looked at the maps and wondered what Alaska looked like from the Alcan. I also remember going to the 1964 New York World's Fair and standing on a huge map of New York in the Texaco pavilion. Anyone remember getting free maps from the local service stations?

Maps come in all styles for all different reasons — driving, hiking, biking, orienteering, politics, and so on.

They play a major role in aviation. Whether flying under visual or instrument conditions, pilots need to know where they are, where they are going, and how to get there.

But the question remains, why use maps when we have GPS (Global Positioning System) navigation? Let the GPS receiver do all the work.

Vulnerabilities of GPS

True, the GPS receiver is good, but only as good as its:

- Accuracy
- Reception of satellite signal
- Power source

As a flight service station specialist I've seen problems with GPS satellites and loss of information when power goes down. How many times have we seen in movies and TV programs people working at computers

and, through no fault of their own, there's a power loss? Did they back up their work automatically? Are there hard copies?

In Praise of Hard Copy

Fortunately *most* pilots — at least commercial pilots — will carry a rather hefty briefcase full of maps, approach plates, and A/FDs. (*IN DEPTH: For a refresher on Airport/Facility Directories (A/FDs) see “Plane Sense” in November 2012's Pop'Comm under the headline “Those Little Green Books That Make Sense of it All” on page 35. — KPC4KGC.*)

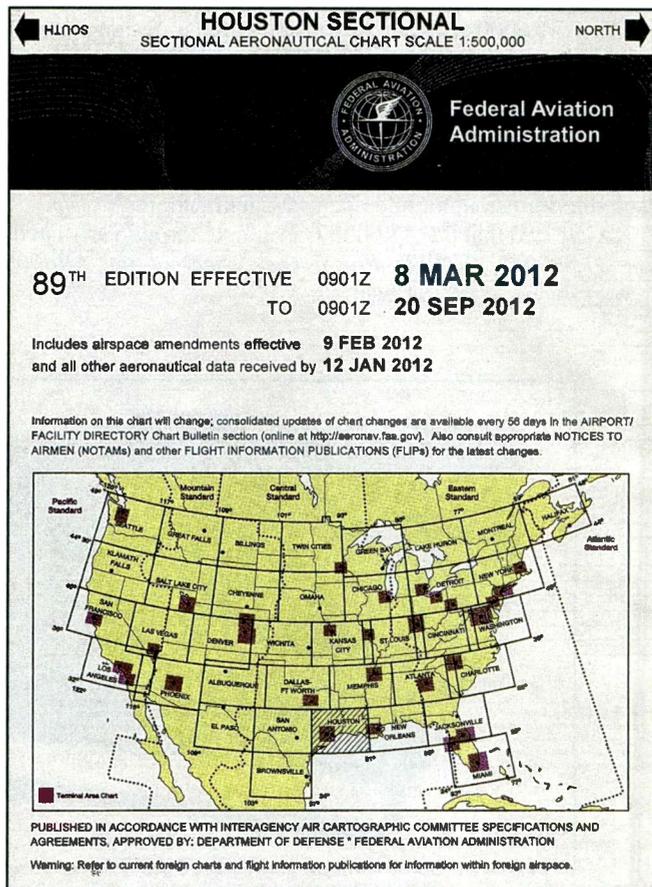


Photo A. This Houston Sectional chart is to a scale of 1:500,000. (Images courtesy of KPC4KGC)

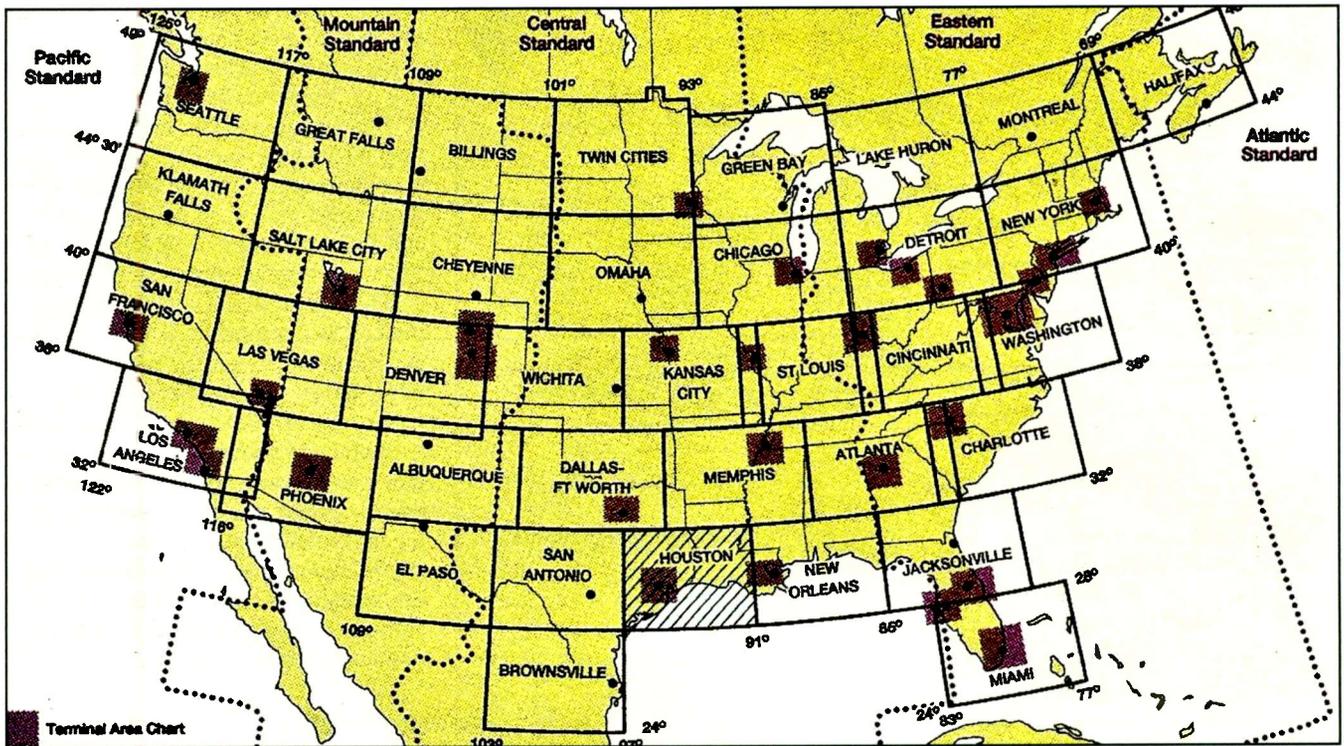


Photo B. Though these charts cover the lower 48 states, they include parts of Canada, Mexico, and the Bahamas, as well.

Why do they carry those documents? When their navigation or communication system fails there is a major need for paper backup. After 40+ years in air traffic, I've found there is a need to keep a backup notebook for certain procedures and backup communication procedures.

Maps: VFR vs. IFR

As we've explained in previous columns, there are two major types of flying: under Visual Flight Rules (VFR) and Instrument Flight Rules (IFR).

There are two *basic* styles of maps with variations of each. When scanning the aviation frequencies, a map or two, would help immeasurably in monitoring. Which map you choose is dependent on what type of flying you find most interesting.

For example, if you primarily listen to aircraft arriving and departing nearby airports you may want to use a sectional chart or its variations.

If you like listening to en-route aircraft, perhaps an IFR en-route LOW or HIGH altitude chart would be best. This month we focus on charts for VFR pilots — primarily Sectional Charts, **Photo A.**

Pros and Cons: Sectional Maps

Sectionals are 36 double-sided maps covering the lower 48 states, with additional charts for Alaska, Hawaii, and the Mariana and Samoan Islands. A distinct advantage is the maps are of the same scale. Say, you monitor in an area that requires two charts (Orlando and Tampa both require Jacksonville and Miami sectionals). You can tape two together to get the area you're looking for.

A distinct disadvantage is there are some cities that may require three sectional charts for the area in which you want to scan: Savannah and Las Vegas are examples.

Though these charts cover the lower 48 states, they cover parts of Canada, Mexico, and the Bahamas as well, **Photo B.**

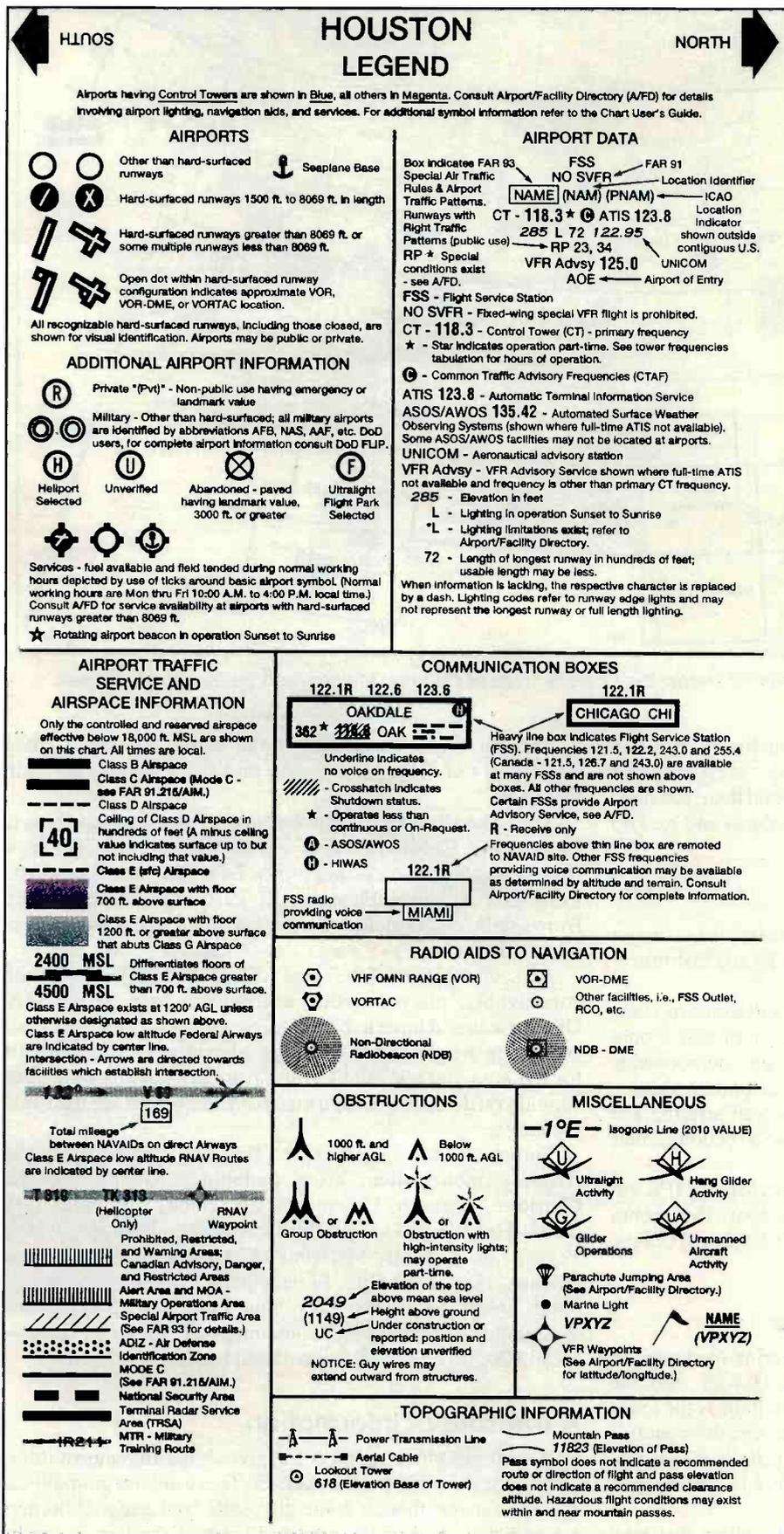
The Lake Huron and Montreal charts cover parts of Ontario and Quebec Canada, Halifax covers parts of Quebec, New Brunswick, Nova Scotia and Prince Edward Island. The charts from Los Angeles, Phoenix, El Paso, San Antonio, and Brownsville charts include northern Mexico, while Miami sees into the Bahamas.

All sectionals are of the same scale (1:500,000). You could, conceivably, piece together a complete map of the U.S. Of course you'd have to have a *huge* wall to do this — at least 24 feet in height. So I recommend you get the sectionals for the area you are monitoring. You may need two or three should you decide to make a map for your wall to see the flight plan area.

Fortunately for some there are Terminal Air Charts (TACs) covering metropolitan areas including: Atlanta, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Columbus OH, Dallas-Fort Worth, Denver, Detroit, Houston, Kansas City, Las Vegas, Los Angeles, Memphis, Miami, Minneapolis, New Orleans, New York City, Philadelphia, Phoenix, Pittsburgh, Saint Louis, Salt Lake City, San Francisco, Seattle, and Washington DC-Baltimore. These maps are in a larger scale — 1:250,000, so, obviously, more detail is added.

A Treasure of Information

A sectional chart, in full color, gives huge amounts of information for the pilot and the scanner. These are not geopolitical or terrain maps, though many city, state, and national borders are depicted. And while a general view of the terrain can be seen, these maps are useless for geocaching or hiking the Appalachian or Pacific Crest trails.



When you first start to unfold the map, the first things you should see are the title of the map (on the lower half) and the legend (on the upper half).

The lower portion shows a generic map of the U.S. and the locations of the sectionals areas. Above this area of the map is information on its edition number, and the date range in which it is valid. They are updated about every 28 weeks.

The legend in the upper portion gives the key to interpret what you're looking at — and for — on the map. The color keys, letters, and symbols indicate the type of airport: military, civilian, private, heliport, hard surfaced, soft or grass, with or without a control tower, closed or abandoned, land or sea. The lower right of the legend includes symbols indicating where there is extensive activity of gliders, ultralights, hang gliders, and parachuting. A new symbol shows places of unmanned aircraft activity.

Scanning and Monitoring Data

Most beneficial in the legend are the Communication Boxes, **Photo C**. Boxes show many, but not all, scanning frequencies used in that area.

A box with a thick border indicates communications for flight service. Unless indicated, four frequencies will always be available: 122.2 and 255.4 for routine communication and 121.5 and 243.0 for emergencies.

Above the box you may see additional frequencies. In the legend you'll see 122.1R, 122.6, 123.6. The latter frequencies are normal simplex, but the 122.1R states the use of the local VOR — in other words, the pilot transmits on 122.1 and should turn up the volume of the VOR. The pilot is running duplex.

Inside the box is the identifier for the frequencies — in the legend it is OAKDALE. The "H" in the reversed circle indicates the use of HIWAS or Hazardous Inflight Weather Advisory Service. Information broadcast over these frequencies is automatically updated as conditions warrant. When an alert comes out for AIRMETS, SIGMETs, CONVECTIVE SIGMETs, CENTER WEATHER ADVISORIES, TORNADO WATCHES or WARNINGS the inflight controller will broadcast the following statement: "Attention all aircraft. Hazardous weather advisory update for (a specific area, such as North Florida) is available on HIWAS or contact flight watch or flight service."

Photo C. "Most beneficial in the legend are the Communication Boxes," writes KPC4KGC, which show "many, but not all, scanning frequencies used in that area."

Pilots will tune into the appropriate HIWAS frequency or contact the appropriate flight service inflight controller to see if the weather is applicable for them. A three-digit number in magenta/purple are the LF (low frequency) frequencies.

Low Frequency Transmissions

Yes, the FAA still uses LF transmitters called Non Directional Beacons (NDB) for some navigation.

NDBs are primarily used as Outer Markers (OM) for position on Instrument Landing System (ILS) approaches, though some have been decommissioned as GPS can be used in its place.

The four-digit number (114.8, for example) is the VHF frequency for the primary navigational aid — the VOR. If the frequency is not underlined, that

means flight service has the ability to transmit over that VOR.

Underlining indicates there is no voice capability — the navaid never had that ability or it's down for maintenance. Of course these frequencies are above FM and below aviation voice — between 108.1 and 118.0 MHz. You may even see crosshatches over the frequency. That indicates the navaid is down, most likely for extensive maintenance. In such cases you may hear test tones or voices on the frequency but it's totally unusable for navigation. And, of course, after the three letter identifier (or two letter in the case of certain NDBs) you'll find the Morse Code ID. The code is always slow for pilot identification. It's close to 5 wpm or even slower.

If there's an "A" in a reversed circle there's an automated weather transmitter giving the local weather as there's no con-

CONTROL TOWER FREQUENCIES ON HOUSTON SECTIONAL CHART

Airports with control towers are indicated on the face of the chart by the letters CT followed by the primary VHF local control frequency (ies). Information for each tower is listed in the table below. Operational hours are local time. The primary VHF and UHF local control frequencies are listed. An asterisk (*) indicates the part-time lower frequency is remoted to a collocated full-time FSS for use as Airport Advisory Service (AAS) during hours the tower is closed. The primary VHF and UHF ground control frequencies are listed.

Automatic Terminal Information Service (ATIS) frequencies shown on the face of the chart are primary arrival VHF/UHF frequencies. All ATIS frequencies are listed in the table below. ATIS operational hours may differ from tower operational hours.

ASR and/or PAR indicate Radar Instrument Approach available.

MON-FRI indicates Monday through Friday.

CONTROL TOWER	OPERATES	TWR FREQ	GND CON	ATIS	ASR/PAR
ACADIANA RGNL	0600-2100	125.0 239.3	121.7		
ALEXANDRIA INTL	CONTINUOUS	127.35 269.2	121.9 372.0		
BATON ROUGE, R/AN	0500-2400	118.45 257.8	121.9	125.2	ASR
BROOKS RGNL	0600-2200	119.5	124.85	126.3	
CHENNAULT INTL	0600-2200	124.2 290.4	121.65 275.8	120.0	ASR
EASTERWOOD	0800-2100	118.5 284.7	128.7 284.7	126.85	
ELLINGTON	CONTINUOUS	126.05 253.5	121.6 275.8	135.575 269.9	
GEORGE BUSH INTL/CTL/HOUSTON	CONTINUOUS	120.725 290.2 (RWY 08L/26R) 125.35 290.2 (RWY 08R/26L) 127.3 288.25 (RWYS 15R/33L & 15L/33R) 135.15 290.2 (RWY 09/27)	118.575 (RWYS 15R/33L & 15L/33R) 121.7 (RWYS 08R/26L & 08L/26R & 09/27)	124.05	
HOBBY	CONTINUOUS	118.7 256.9	121.9	124.6	
HOOKS MEML	0700-2200	118.4 (W) 127.4 (E) 354.1	121.8 239.0	124.95	
HOUMA-TERREBONNE	0600-1900	125.3 346.3	121.8	120.25	
LAFAYETTE RGNL	0530-2230	118.5 257.8	121.8	134.05	ASR
LAKE CHARLES RGNL	0600-2200	120.7 257.8	121.8	118.75	ASR
LONE STAR EXECUTIVE	0700-2200	124.125	120.45	118.325	
POLK AAF	0700-2300 CLSD SUN & FED HOL	119.0 257.75	121.8 239.25	134.85 282.2	ASR/PAR
SCHOLES INTL AT GARDNER	0600-1800	120.575	118.625		
SUGAR LAND RGNL	0600-2200	118.65	121.4		
VICTORIA RGNL	0700-2200	126.075 257.95	120.525 239.25	119.025	

CLASS B, CLASS C, TRSA, AND SELECTED APPROACH CONTROL FREQUENCIES

FACILITY	FREQUENCIES	SERVICE AVAILABILITY
HOUSTON CLASS B	119.7 251.4 (N) 133.6 257.2 (E) 134.45 254.0 (S) 123.8 257.7 (W)	CONTINUOUS
BATON ROUGE CLASS C	120.3 278.3 (W) 126.5 278.3 (E) O/T 126.35 338.25 HOUSTON CNTR	0500-2400 O/T CLASS E
LAFAYETTE CLASS C	121.1 343.0 (020°-210°) 128.7 268.7 (211°-019°) O/T 126.35 338.25 HOUSTON CNTR	0530-2230 O/T CLASS E
LAKE CHARLES TRSA	119.35 353.75 (W) 119.8 282.3 (E) O/T 124.7 317.4 HOUSTON CNTR	0600-2200
POLK AAF	123.7 261.3	CONTINUOUS

O/T indicates Other Times

Photo D. Numerous control tower frequencies are listed in the Houston Section Chart coverage area.

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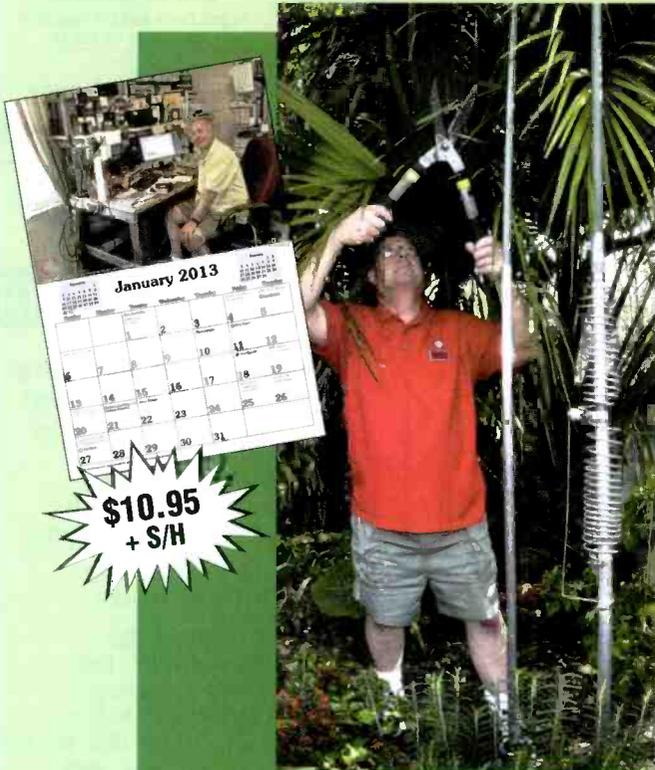
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tol tower there. The weather is sent in an automated voice, but not like the old NOAA weather computer voices.

Tower and Other Important Frequencies

Information in **Photo D** is normally found on the left panel of the southern section. This gives the tower frequencies of the air traffic control towers on that particular chart. Beneath that are frequencies of various approach controls and similar areas. Below that, **Photo E** shows altitudes and times of usage of various military areas: Prohibited, Restricted, Warning (always off shore), Alert, and Military Operating Areas (MOAs). Frequencies are found for the MOAs only.

The airspace around College Station (CLL) is shown in **Photo F**. There are three prominent airports: College Station (CLL), Texas A&M (83TX, though not identified other than

SPECIAL USE AIRSPACE ON HOUSTON SECTIONAL CHART

Unless otherwise noted altitude is MSL and in feet. Time is local.
TO on altitude means "to and including"
FL - Flight Level
NO A/G - No air to ground communications. Contact Flight Service for information.

† Other times by NOTAM
NOTAM - Use of this term in Restricted Area indicates FAA and DoD NOTAM systems. Use of this term in all other Special Use areas indicates the DoD NOTAM system.

U.S. P-PROHIBITED, R-RESTRICTED, W-WARNING, A-ALERT, MOA-MILITARY OPERATIONS AREA

NUMBER	ALTITUDE	TIME OF USE	CONTROLLING AGENCY/ CONTACT FACILITY	FREQUENCIES
R-3801 A	TO BUT NOT INCL 10,000	0800-2200 MON-FRI	FT POLK APP	
R-3801 B	10,000 TO BUT NOT INCL FL 180	0800-2200 MON-FRI	FT POLK APP	
R-3803 A	TO FL 180	CONTINUOUS	HOUSTON CNTR	
R-3804 A	TO FL 180	CONTINUOUS	HOUSTON CNTR	
R-3804 B	TO 3000	CONTINUOUS	HOUSTON CNTR	
W-54 A	TO FL 400	0700-2400†	HOUSTON CNTR	
W-54 B	TO BUT NOT INCL FL 240	0700-2400†	HOUSTON CNTR	
W-59 A	5000 TO FL 500	0900-2100†	HOUSTON CNTR	
W-59 S	5000 TO BUT NOT INCL FL 285	0900-2100†	HOUSTON CNTR	
W-92	TO FL 200	0700-2400	HOUSTON CNTR	
W-147 A	5000 TO BUT NOT INCL FL 230	0800-2200	HOUSTON CNTR	
W-147 C, D	TO FL 500	0800-2200	HOUSTON CNTR	
W-228 A	TO FL 450	CONTINUOUS	HOUSTON CNTR	
A-381	TO 2000	SR-55	NO A/G	
A-632 B	TO BUT NOT INCL FL 180	0700-2400	NO A/G	
A-632 E	6000 TO BUT NOT INCL 9000	SR-2400 MON-FRI 1400-2400 SUN†	NO A/G	
A-632 F	3000 AGL TO BUT NOT INCL FL 180	0700-2400 MON-SAT	NO A/G	

MOA NAME	ALTITUDE*	TIME OF USE†	CONTROLLING AGENCY/ CONTACT FACILITY	FREQUENCIES
CLABORNE A	100 AGL TO BUT NOT INCL 10,000	0730-2200 MON-FRI	FT POLK APP	
CLABORNE B	10,000	0730-2200 MON-FRI	FT POLK APP	
HACKETT	7000	0730-2200 MON-FRI	FT WORTH CNTR	126.32 346.25 128.2 269.1
JENA 1	100 AGL TO 5000	0800-2200 MON-FRI	HOUSTON CNTR	
KINGSVILLE 4, 5	9000	SR-2400 MON-FRI 1400-2400 SUN	HOUSTON CNTR	
MANCUPH 1A	8000	SR-55 MON-FRI	HOUSTON CNTR	
WARRIOR 1 HIGH	10,000	0700-2200 MON-FRI	HOUSTON CNTR	120.97 299.6
WARRIOR 1 LOW	100 AGL TO BUT 2 LOW, 3 LOW	0700-2200 MON-FRI	HOUSTON CNTR	120.97 299.6

*Altitudes indicate floor of MOA. All MOAs extend to but do not include FL 180 unless otherwise indicated in tabulation or on chart.
† - Other times by DoD NOTAM.

CAUTION: Severe turbulence may occur over rugged terrain. See AIM.

CONTOUR INTERVAL 500 feet
Intermediate contour 250 feet
Auxiliary contours 100 foot intervals

HIGHEST TERRAIN elevation is 773 feet
located at 31°55'N - 95°43'W

Spot elevation 4254
Approximate elevation x3200
Doubtful locations are indicated by omission of the point locator (dot or "x")

Photo E. This Special Use Airspace On Houston Section Chart shows altitudes and times of use of various military areas: Prohibited, Restricted, Warning (always off shore), Alert, and Military Operating Areas (MOAs). Frequencies are found for the MOAs only.

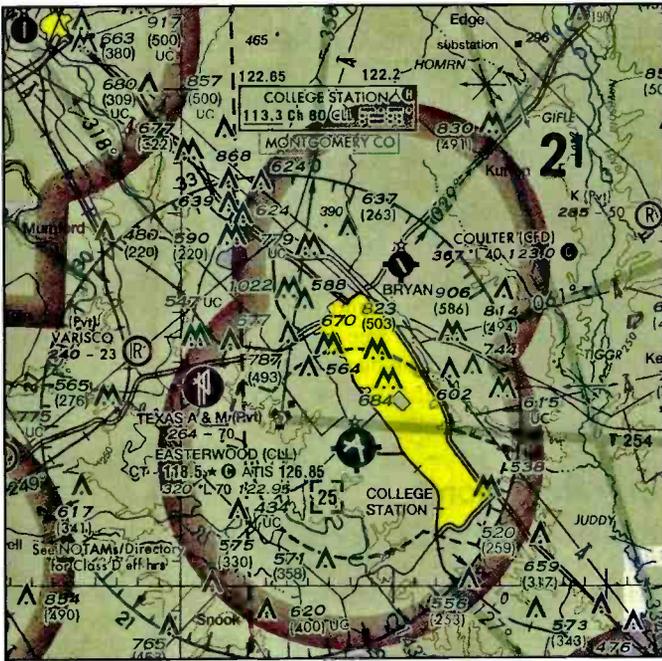


Photo F. In this map, the airspace around College Station (CLL) is shown. There are three prominent airports: College Station (CLL), Texas A&M (83TX, though not identified other than PVT for a private airport), and Coulter (CFD).

PVT for a private airport), and Coulter (CFD). Near the top of the illustration you'll see the block for the College Station VORTAC. Notice the 122.65 and 122.2 above the box for communicating with the Montgomery County RCO of De Ridder FSS.

The VOR frequency of 113.3 MHz is underlined indicating there are no voice transmissions over that VOR. The College Station Airport (a.k.a. Easterwood) has a control tower frequency of 118.5 MHz which is also the Common Traffic Advisory Frequency (CTAF) when the tower is closed.

The Automatic Terminal Information Service (ATIS) is 126.85 MHz, and the UNICOM advisory frequency is 122.95, which is the standard UNICOM frequency at towered airports. You can also see that the longest runways at both College Station and Texas A&M is "70" or 7,000 feet. Coulter has no tower and the UNICOM frequency is 123.0 with the longest runway of "40" or 4,000 feet. There is no published frequency for use at Texas A&M.

Photo G depicts the Baton Rouge (BTR) area. Its VORTAC (upper left side of illustration) shows the frequency of 116.5 MHz. (*NOTE: The first '1' was inadvertently cut off in duplication. – KPC4KGC*). The De Ridder FSS frequency is 122.2, but has no voice over the VOR.

The one-tower airport — Baton Rouge — shows an ATCT local control frequency of 118.45 MHz, an ATIS frequency of 125.2 MHz and the UNICOM as 122.95 — *sound familiar?* Its longest runway is only "75" or 7,500 feet. There are two potential problems for pilots in the area. The first is the series of black

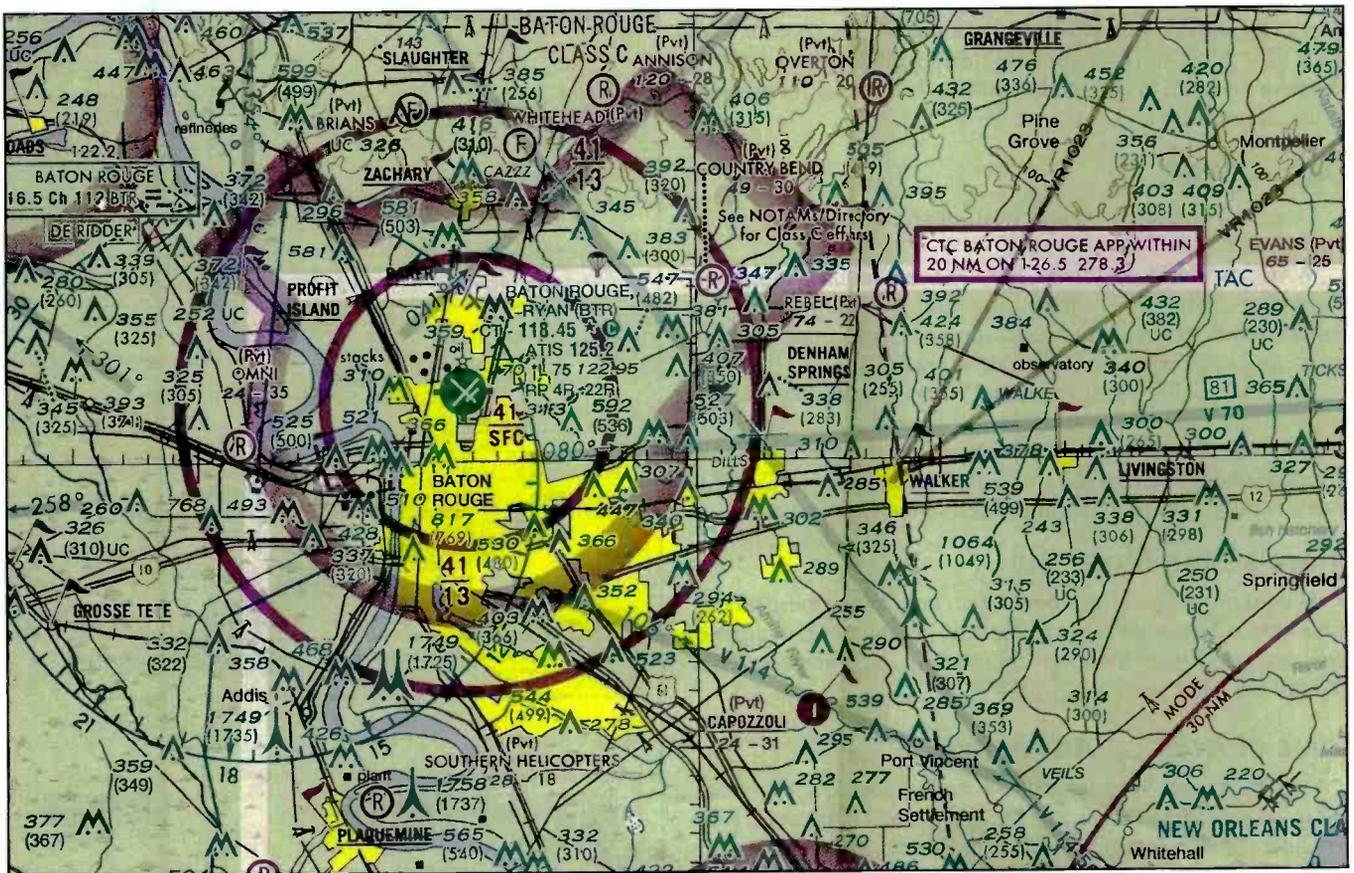


Photo G. This map depicts the Baton Rouge (BTR) area. Its VORTAC (upper left side of illustration) shows the frequency of 116.5 MHz. (*NOTE: The first '1' was inadvertently cut off in duplication. – KPC4KGC*). The De Ridder FSS frequency is 122.2, but has no voice over the VOR. The one-tower airport — Baton Rouge — shows an ATCT local control frequency of 118.45 MHz, an ATIS frequency of 125.2 MHz, and the UNICOM as 122.95.

dots just northwest of the airport are oil storage tanks. The pilot must be aware of them.

The second is about 7 miles northeast of BTR and about 4 miles west of the Country Bend (LS39) private airport. You see what looks like a parachute. That's a parachute jumping area. I tell pilots in my briefs to avoid those areas as nylon wrapped around the propeller blade tends to reduce efficiency of the airplane and does throw weight and balance off.

About 15 miles southeast of Baton Rouge is Capozzoli Airport (LA42). This is a private airport with a 3,100-foot runway. On the map you'll see that Capozzoli is underlined and has what looks like a pennant attached to it. You'll also see pennants over the towns of Denham Springs, Walker, and Livingston to the east of BTR with the town names underlined. These are visual reporting points a pilot will fly over while approaching BTR. An example of what a pilot would say if inbound from the east: "Cessna 12345 over Walker inbound to Baton Rouge." The controller would look in that area from the tower to help sequence the pilot into the traffic pattern.

Expanding Horizons

Yes, all 50 states are covered by sectional charts. **Photo H** shows the front of the Hawaiian Island/Mariana & Samoan Islands. Indeed, there are airports outside of Hawaii. Like the sectionals for the rest of the country, these are also in the same scale — 1:500,000. Unlike the lower 48 sectionals, those monitoring Hawaii just need one map. All of Hawaii is printed on one side.

Photo I shows a small map that gives the Hawaiian Island Reporting Service Flight Watch Station and Checkpoints. This is for VFR pilots and is designed to start search and rescue (SAR) should a pilot fail to call in his position. Numerous frequencies in use are noted.

TAC vs. WAC

I touched on both TAC and WAC charts earlier. Here's a bit more about them:

WAC, or World Aviation Charts, covers much larger areas than other charts. They are in the scale of 1:1,000,000. They contain much of the same information as a Sectional map, but are more compressed, so its harder to read.

The TAC, or Terminal Aviation Charts, is a smaller scale — 1:250,000 — so information is easier to read and more can be put on them. The Orlando/Tampa chart has the reverse side in just blue and white (not the full color as the SAC, TAC, WAC charts) that gives specific routes used in the Orlando area.

There's Even More, But . . .

I could probably write a booklet on how to use these charts, but I won't. These are some of the best graphic tools available. Pick one, or two, or three up, cut them up, tape them together and tell me what you hear.

Tales of Aviation Adventure

Over the years I've heard and seen many pilots do a lot of crazy things. For example, there was the Air Force Thunderbird pilot who accidentally went supersonic near Tucson, Arizona. I'll spare you the details, but, boom, there were lots of windows to be fixed.

I've learned that controllers, in an effort to keep pilots calm, must be psychologists:

A student pilot from a third-world county called me a few years ago. He had landed but failed to close his VFR flight plan.

The vast majority of unclosed flight plans are because the pilot didn't call — they may have had other items on their mind — an emergency, for example.

When we find the aircraft on the ground, we close the pilot's flight plan and go on our merry way. But this time the pilot called and he was scared stiff. It was evident in his voice.

He told me he'd failed to close his flight plan and was scared the "secret police" would carry him off. That was a wakeup call to me. I remember my exact words to him were: "Sir, I don't know where you're from, and frankly I don't want to know. You're in the land of the free and the home of the Devil Rays (I did have to put St. Petersburg in there). Our secret police don't throw you in jail for that. Not to worry." It made his day and certainly gave me another "war story."

Until Next Month

Keep listening and tell me what you're hearing. By the way, I'm planning an article in the next few months on just what you aviation scanners are sending me.

HAWAIIAN IS **MARIANA & SAMOAN IS**
SECTIONAL AERONAUTICAL CHART SCALE 1:500,000

Federal Aviation Administration

86TH EDITION EFFECTIVE 0901Z **3 MAY 2012**
TO 0901Z **18 OCT 2012**

Includes airspace amendments effective **5 APR 2012**
and all other aeronautical data received by **8 MAR 2012**

Information on this chart will change, consolidated updates of chart changes are available every 56 days in the PACIFIC CHART SUPPLEMENT Chart Bulletin section (online at <http://aeronav.faa.gov>). Also consult appropriate NOTICES TO AIRMEN (NOTAMS) and other FLIGHT INFORMATION PUBLICATIONS (FLIPs) for the latest changes.

PUBLISHED IN ACCORDANCE WITH INTERAGENCY AIR CARTOGRAPHIC COMMITTEE SPECIFICATIONS AND AGREEMENTS, APPROVED BY: DEPARTMENT OF DEFENSE • FEDERAL AVIATION ADMINISTRATION

Warning: Refer to current foreign charts and flight information publications for information within foreign airspace.

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Photo H. Unlike the lower 48 sectionals, those monitoring Hawaii just need one map. All of the state is printed on one side.

HAWAIIAN ISLAND REPORTING SERVICE FLIGHT WATCH STATION AND CHECKPOINTS CONTACT HONOLULU RADIO ON SUGGESTED FREQUENCIES

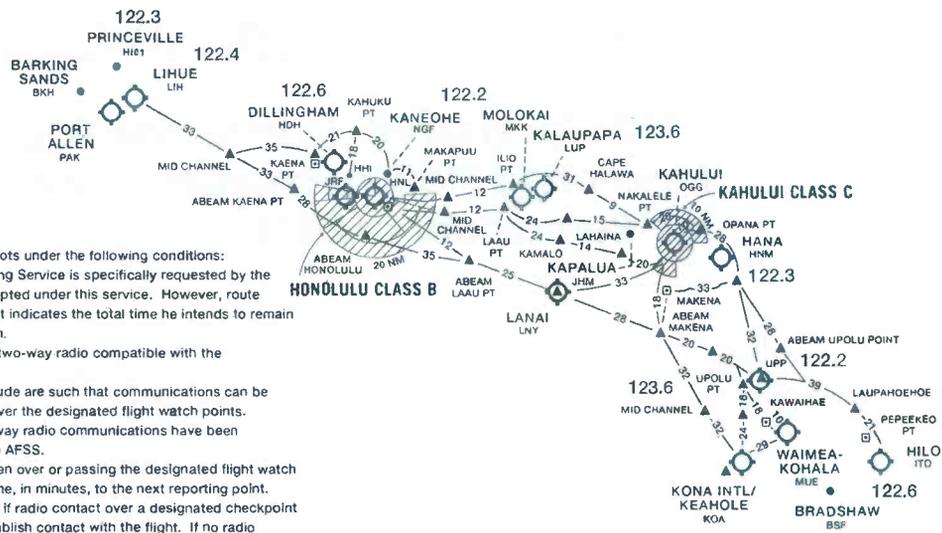
Legend

- ▲ CHECKPOINTS
- ◻ PUBLIC AIRPORTS (STATE)
- PRIVATE/MILITARY AIRPORTS
- ◻ LANDMARKS

Consult appropriate NOTAMS and Pacific Chart Supplement for additional data, conditions and current information.

Island Reporting Service is available to all civil pilots under the following conditions:

- (1.) A VFR flight plan is filed and Island Reporting Service is specifically requested by the pilot. Stopover flight plans will not be accepted under this service. However, route diversions are acceptable provided the pilot indicates the total time he intends to remain in a specified area enroute on his flight plan.
- (2.) The aircraft is equipped with a functioning two-way radio compatible with the communication outlets to be used.
- (3.) The flight route and proposed cruising altitude are such that communications can be established with the flight watch stations over the designated flight watch points.
- (4.) Island Reporting Service begins after two-way radio communications have been established between the pilot and Honolulu AFSS.
- (5.) The pilot makes enroute radio contacts when over or passing the designated flight watch points. Pilots also provide an estimated time, in minutes, to the next reporting point.
- (6.) After these arrangements have been made, if radio contact over a designated checkpoint is missed, FAA facilities will attempt to establish contact with the flight. If no radio contact is made within fifteen minutes and other stations have no information, the aircraft will be considered overdue and Search and Rescue will be alerted.
- (7.) In case of aircraft radio failure, the pilot should land at the nearest airport and notify the nearest FAA station by telephone.
- (8.) Island Reporting Service is optional with the pilot and does not relieve him of his basic responsibility for the safe conduct of the flight.
- (9.) Island Reporting Service is not available between Hilo and Kona via South Cape Hawaii, and along the north shore of Kauai.



NOTE:
NOT TO SCALE -
NOT INTENDED FOR NAVIGATION

Photo I. This small map gives the Hawaiian Island Reporting Service Flight Watch Station and Checkpoints. This is for VFR pilots and is designed to start search and rescue (SAR) should a pilot fail to call in his position.

Grab Your Scanner and Listen 'Up!'

While we're getting into *what* you'll likely be hearing, here's a little tutorial on *where* to listen.

To find aviation frequencies specific to your local airport you'll need a scanner that covers from 118.0 to 135.975 MHz.

If you'd rather listen online, you're in luck. There are many websites from which to choose. Here are a couple to get you going: <<http://www.liveatc.net>> and <<http://www.radioreference.com>>.

Often, you'll need to know the ARTCC (Air Route Traffic Control Center) code for the airport you're interested in monitoring. A comprehensive list of codes for facilities around the world can be found at <<http://bit.ly/MGUk8P>>. Use the IATA Code (International Air Transport Association) search function to find the ARTCC code for the airport you're seeking.

Here are some basic frequencies in MHz to keep handy:

- 121.5 – Emergency (Pilot voice communications and emergency locator beacons)
- 122.750 MHz – General aviation air-to-air communications
- 123.025 MHz – Helicopter air to air communications
- 123.450 MHz – Airlines air to air communications
- Scan 122.0-123.65 – Unicom (uncontrolled airports) and air to air communications
- Scan 128.825-132.000 – For call-ahead frequencies for airlines, corporate aviation, and general aviation for fuel, parking, and other requests

An excellent source for local scanning is the FAA publication *Airport/Facility Directory (A/FD)*. There are seven published by the FAA covering the lower 48 states, Puerto Rico, and the U.S. Virgin Islands. There are two orange books, as well: One for Alaska and another for Hawaii.

They are published every eight weeks and while each edition updates its frequencies, there's really no need to get each one as printed. Each one currently sells for \$5.30. You can get them at most airports that have pilot training. Larger airports, such as Atlanta Hartsfield, Denver International, John F. Kennedy International, and so on, don't carry them. – KPC4KGC



Photo J. General aviation air-to-air communications, such as the kind the pilot sitting in the cockpit of this Cessna 172 would carry out, takes place on 122.750 MHz. (Courtesy of Arnaud 25 via Wikimedia Commons)

Gaining Strength in Our Numbers

2012 Was a Good Start for the Pop'Comm Monitoring Station Program — With High Hopes for the Remainder of 2013

Compiled by
Richard Fisher, KPC6PC

“With your registrations, you’re sharing great reminiscences of first or early monitoring experiences, your listening interests, goals, and aspirations.”

As noted in this month’s *Tuning In* on page 4, 2012 was an excellent year for the start of the *Pop’Comm Monitoring Station* program. We count 1,275 listeners registering between January 1 and December 31. We’re eager to see the growth numbers continue through 2013. We’re already off to a good start.

With your registrations, you’re sharing wonderful reminiscences of first, or early monitoring experiences, your listening interests, and goals and aspirations as you join the PCMS community.

Here are more of your thoughts as you’ve come on board:

Danielle Kopp, WPC8DCE, Cincinnati, Ohio

I am very happy to have WPC8DCE as my *Pop’Comm Monitoring Station* ID sign, as I was issued WPE8DCE from *Popular Electronics* back on May 25, 1961, and logged quite a few countries and states before I had to give up SWLing because of family responsibilities.

Well, I am now 77 and the only responsibility I have now is to me.



Photo A. Danielle Kopp, WPC8DCE, Cincinnati, Ohio, got a Hallicrafters S-120 receiver as a surprise from her daughter. It’s in the process of being restored, “bringing it back from the grave in a garage,” she writes. (**WATCH and LISTEN:** *To a Hallicrafters S-120 receiver in action at http://bit.ly/TC9fD2. – KPC6PC*) (*Internet screen grab*)

My original equipment was a modified 1937 Zenith with a 40-foot antenna. Currently, I have an old Hallicrafters S-120, which I am in the process of rehabilitating. My daughter gave it to me as a surprise – *and it was!* (**WATCH and LISTEN:** *To a Hallicrafters S-120 receiver in action at http://bit.ly/TC9fD2. – KPC6PC*)

I am in the process of bringing it back from the grave in a garage. I’m sending it out for capacitor replacement and a complete retuning and realignment, but there is a six-month waiting list.

Meanwhile, I have been cruising the bands and other than time signals of WWV and CHU, I have logged Russia World Service, BBC World Service, China Radio International, Radio Havana Cuba, Deutsche Welle, and several other strong Chinese stations to name a few.

I was very happy to have been assigned my first choice of WPC8DCE. I can now order QSLs to be printed. I was going to order some using WPE8DCE, but decided to wait after I saw the article about the *Pop’Comm Monitoring Station* program. I am a new subscriber.

Kenn Hayes, WPC1KMH, Pittsfield, Vermont

My amateur radio callsign is W1KMH, so the choice of WPC1KMH is a natural! Thanks for starting the *Pop’Comm* program — reminiscent of the old WPE program of yesteryear. I wish I still had my old certificate!

I still have fond memories of dark winter nights on Long Island, hunching over my Lafayette HE-30, and later my upgrade to a Hammarlund HQ-200 — desperately trying to dig out broadcasts from *Outer Slobovia* or some other exotic locale above the receiver’s noise floor and the interfering atmospherics as mentioned in a column by Tom Kneitel.

Jim Donovan, WPC3MDE, Easton, Maryland

I have been monitoring CB, VHF, and short-wave signals since 1965 and enjoy every aspect

of radio. It never gets old and *I wish I could say that for myself.*

**Gordon Slater, VEPC1GMS,
Port Dover, Ontario,
Canada**

My request for a transistor radio in 1958 got me a homemade cat's whisker crystal radio. With a 100-foot antenna and a water pipe ground I heard stations from Hamilton, Toronto, Buffalo, New York, and Erie, Pennsylvania.

My dad and I went to Olsen Electronics in Buffalo. He shopped for hi-fi (high fidelity) stuff while I shopped for surplus parts for my crystal radio.

When I was finished with (the crystal set) I could get taxi calls and inverted speech transmissions from a Bell Telephone tower a few blocks away.

I lost my boat anchor Communications 500 receiver in a house fire eight years ago, and decided to replace it with a portable Grundig Traveller II PE.

I am now retired and starting up my interest in shortwave again. I purchased an Ultralight Design OC 10-band portable SW, MW FM receiver that is smaller than the Tecsun PL-380 featured in Bruce A. Conti, WPC1CAT's, *Broadcast Technology* in the July 2012 edition of *Pop'Comm*. It works great and I might try building the ferrite sleeve antenna to see what improvements I get, **Photo B**.

**Dave Fant, WPC5DF,
Mulberry, Arkansas**

I have been actively SWLing since the mid-1960s and have hundreds of QSLs.

I originally started with a GE portable AM/SW receiver and it worked fairly well. My next receiver was a Hallicrafters WR-600 and then a Realistic DX-150A.

I have moved on from those receivers but I still have them in working condition. My amateur radio callsign is W5SWL since I originally began as an SWL and continue to this day.

**Gordon Baker, VEPC3GB,
London, Ontario, Canada**

With some experienced help in 1949, at the age of 11, I built a Meissner, three-tube regenerative receiver complete with plug-in coils, three No. 47 tubes and a line cord with ballast resistor built in — a *hand warmer*. It now resides in the Hammond Manufacturing Radio Museum in Guelph, Ontario, <<http://bit.ly/YGrK9k>>, **Photo C**.

It was soon replaced by a Hallicrafters

S-40B, which I still own. The SWL experience evolved into a 44-year career in commercial electronic communications and an advanced amateur Radio certificate, VE3GB.

I was a subscriber to *Popular*

Electronics from day one until it was discontinued.

The *Popular Communications* experience certainly helps an "old timer" to understand and appreciate the ever-widening communications methods.



Photo B. A Tecsun PL-380 receiver is inductively coupled to a ferrite sleeve antenna for greatly improved reception using an ultralight radio. (Courtesy of Gary DeBock)



Photo C. Gordon Baker, VEPC3GB, London, Ontario, Canada, built a classic Meissner three-tube regenerative receiver when he was 11. "It now resides in the Hammond Manufacturing Radio Museum in Guelph, Ontario, <<http://bit.ly/YGrK9k>>," he writes. (*Internet screen grab*)0000

Tom Delano, WPC1CC, Duxbury, Massachusetts

I had a *Popular Electronics* WPE Short-Wave Monitor identification sign about 45 years ago when I was an SWL with my Heathkit GR-64, **Photo D**. Thanks for starting this program.

John Erwin, VEPC4WX, Winnipeg, Manitoba, Canada

I've been interested in weather (WX) and radio for most of my life. In fact, I'm one of those "storm chasers" who likes to go out and try to get some neat pictures of extreme weather situations.

I am also an amateur radio operator VE4WX/VE4JBE — however, I spend a significant amount of my time monitoring utility and shortwave stations instead of "rag chewing."

I've been a fan of *Popular Communications* for many years and pick up a copy whenever I see it in the magazine stand.

The *Pop'Comm Monitoring Station* ID program is a great program to keep the hobby vital and interesting for all of us. Thank you!

Wallace Talbert, KPC1WBT, Irvine, California

I used to be a shortwave listener back in the early 1990s on my Sony ICF-SW7600. I've recently gotten back into the hobby on my new Grundig Satellit 750.

Fenton Sawyer, WPC4BCZ, Dothan, Alabama

My *Popular Electronics Short-Wave Monitor* identification sign was issued August 1, 1960, WPE1BCZ — more than 50 years ago. Thankfully, I was issued the same letters in the *Pop'Comm Monitoring Station* program — except I'm in the W4 area instead of the W1 area since I have relocated and retired in the south.

Michael Psara, KPCØTVI, St. Louis, Missouri

Since my teenage years I have been listening to shortwave stations. My interests in radio communications led me to a 23-year career in military communications.

After my military career, I started a new career in television and I'm now working at KTVI, the Fox station in St. Louis. I also hold the amateur callsign KØTVI.

I am happy to have gotten a

Pop'Comm Monitoring Station ID sign similar to my amateur radio call.

Gary Washington, KPCØATJ, Kansas City, Kansas

My interest in radio began when my father gave me a crystal radio kit when I was in third grade. He helped me assemble it, and I used it for a science project in the school science fair.

I received a pair of low-power, 27-MHz walkie-talkies that year as a Christmas present. My friends and I had hours of fun communicating back and forth over short distances. Occasionally I would hear traffic from some of the local Citizens Band (CB) operators and even talked to a few of them. In high school, I had some friends who were interested in CB radio, and it wasn't long before I had a base station at home. My callsign was KFI3044. You had to have a CB license in those days.

We talked for hours at night and I really enjoyed it. My freshman year in college I had an instructor who shared his interest in amateur radio and eventually convinced me to pursue a Novice class license.

While preparing for the Novice exam, I bought a general coverage receiver from RadioShack® to listen to Morse code and phone transmissions in the amateur bands. I ran a long-wire antenna from my bedroom window into a tree in the back-

yard and soon found myself spending a lot of time in the shortwave bands listening to international broadcasts.

I eventually acquired my ham license. My callsign is KAØYCK, but after all these years, I am still a fan of shortwave listening.

Tony Mazurek, KPC8CDC, Grosse Ile, Michigan

I have been a shortwave fan for 60 years, including being a licensed radio amateur since 1976. My first call was WN8TPH, then WB8TPH and finally, an Amateur Extra Class, W8CDC.

The CDC station identification sign is in memory of an old friend who held W8CDC from 1926 till his death in about 1990. I have his original license signed by Herbert Hoover, then Secretary of Commerce.

I also have a CB license, KAGU4007 and a Restricted Radiotelephone Operators Permit for aircraft and boating. I just love radios.

My first experience with SWLing was when I hooked the antenna of an ancient Motorola console radio to my mother's 80-foot-long, metal clothesline in the attic of our house on the west side of Detroit. I was *crazy happy* to hear stations from Cleveland and Chicago. I don't remember what the calls were, but I was only about seven years old when I did that and didn't have any idea what I was doing.



Photo D. Tom Delano, WPC1CC, Duxbury, Massachusetts, "had a *Popular Electronics* WPE Short-Wave Monitor identification sign about 45 years ago when I was an SWL with my Heathkit GR-64. Watch and listen to the GR-64 in action at <<http://bit.ly/Xb7rpb>>. (Internet screen grab)

The old Motorola also had shortwave frequencies and I would sit for hours and listen to the lake freighters going up and down the Detroit River. I learned Morse code as a Boy Scout but never got an amateur radio license until I was 31 years old.

I had some kind of certificate when I was a kid — probably from *Popular Electronics* — but don't remember much else, except that it was acquired after exchanging letters through the post. There was no email back then.

I like *Popular Communications* and still spend more time listening to the radio than I doing transmitting — everything from foreign broadcast to VHF.

By the way, I like the KPC *Pop'Comm Monitoring Station* ID instead of WPC because I always thought station identifications that started with K sounded *cool*.

Steven Molnar, WPC8AFX, N. Ridgeville, Ohio

When *Popular Electronics* had its *Short-Wave Monitor* program I was issued the station ID sign WPE8AFX.

I enjoy broadcast band (BCB) DXing along with SWLing. I got started in my early teen years while listening to my parents' two-band (AM/SW) Zenith table radio that had the 6- to 18-MHz shortwave band, if I remember correctly.

Until I erected a somewhat decent outdoor antenna, I held my finger on the antenna terminals on the back of the receiver. It was great fun pulling in the distant stations.

Shortly afterward, I was motivated to save my allowance and job money and bought a Heathkit AR-3 communications type

receiver. My interest in amateur radio increased while monitoring the 20-meter AM ham operators, and I joined the ham radio hobby.

Electronics became my lifelong interest and I worked in broadcast engineering and avionics. DXing has kept me awake many a night, especially during the winter months. While stationed in Hawaii, I had great fun DXing the U.S. West Coast broadcast band stations on my old Ford car radio.

Johnnie Brashear, KPC4JLB, Viper, Kentucky

When I was 14 years old I became interested in shortwave listening thanks to an old RCA AM radio/phonograph in my bedroom which had shortwave bands on it.

I became a Novice amateur radio operator in 1973 with the callsign WN4BFU. The radio bug still has me some 50 years later, now holding an Extra Class amateur radio license KY4JLB.

John Cadick, WPC5JC, Garland, Texas

I have been a shortwave listener since the late 1950s. My first radio was a Hallicrafters S-38C. I still have it.

I got my ham radio license in 1971 and advanced to Amateur Extra Class in 1973. In 1978, when the FCC allowed Extras to request their preferred callsign, I asked for N5JC and got it. I am happy my monitoring identification sign matches my amateur radio callsign.

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MONITOR OF THE MONTH

Listening, Around the World

KPC1HWP, South Grafton, Massachusetts: 'Absolutely Amazed By Radio' Since Elementary School

Now a part-time graduate student at Harvard, Henry Piel, KPC1HWP, was captured by the fascination of radio with a home-built crystal set he made while in elementary school.

Today, as a newly revived shortwave listener, VHF/UHF scanner buff, and amateur radio operator with the callsign KQ1V, he's reveling in all that monitoring offers.

As you'll see, Henry has amassed quite a collection of equipment — covering HF through UHF — and often has his fingers on the dials. Whether he's at home in South Grafton or on the road in his car, radio activity is the name of Henry's game. And he loves every minute of it.

You can be featured as a Pop'Comm Monitor of the Month. Please send us a photograph of your listening post and tell us about your monitoring experience. We'd be happy to feature you in our pages. Write to Pop'Comm Monitor of the Month at: <PopCommMonitor@gmail.com>.

— Richard Fisher, KPC6PC

By Henry Piel,
KPC1HWP

"I particularly enjoy sending and receiving QSL cards for anything I monitor. I maintain an 'old school' paper logbook, and shy away from QSLing via the Internet."

I made my first crystal radio receiver in second grade, and from that point on I was absolutely amazed by radio. I had bought several radio kits from RadioShack®, in my elementary school years, including a CB receiver in fourth grade.

Meanwhile, when collecting antique radios I started doing small repairs and building up a collection of vacuum tubes. I've always enjoyed



Photo A. When Henry Piel, KPC1HWP, of South Grafton, Massachusetts, is not studying for an advanced degree at Harvard, he's working the radio dials of at his listening post — ranging from HF to UHF. He has quite an impressive collection of wireless gear. For details, refer to the text. (Courtesy of KPC1HWP)

scanning and shortwave listening, but my interest in ham radio was sparked by SSB CB radio in the early 1980s.

I went on to serve my country in the U.S. Navy assigned as a Radioman with Commander, Middle East Force and then as ship's company onboard the USS Iwo Jima (LPH-2) achieving the rank of Radioman, Second Class Petty Officer. I also served two years in the Navy Reserve with an Ashore Mobile Contingency Communications unit (NR AMCC 4/6) out of Manchester, New Hampshire.

After my active duty Navy service, I was employed as a Federal

Civil Service employee at Naval Air Station South Weymouth in the capacity of COMSEC Custodian until the base was listed for closure. I was fortunate to matriculate to Harvard University where I earned my Bachelor's degree in The History of Science with a minor in Psychology. I am back at Harvard as a part-time graduate student working towards a Master's in History.

I've been a licensed amateur radio operator since June of 2005, and an ARRL Volunteer Examiner since April of 2010. I thoroughly enjoy rag chewing on HF phone and the local 33-cm repeaters.

New Members: Pop'Comm Monitoring Station Program

Here are the newest station monitors granted a station identification sign, authorized to receive a Certificate of Registration and welcomed to the Pop'Comm Monitoring Station Program.



KPC and DX Prefixes

They are listed by name, station identification sign, and monitoring station location: Johnnie Brashear, **KPC4JLB**, Viper, KY; Alan Lloyd, **KPCØADL**, Bayfield, CO; Gordon Baker, **VEPC3GB**, London, Ontario, Canada; Gordon Slater, **VEPC1GMS**, Port Dover, Ontario, Canada; George Shaver, **KPC4VA**, Port St. Lucie, FL; David Wray, **KPC4HJQ**, Gaffney, SC; Chuck Kubick, **KPC6CK**, San Francisco, CA; Christine Fisher, **KPC6MUG**, Riverside, CA; John Erickson, **KPCØUSN**, Minneapolis, MN; Megan Fisher, **KPC6MLF**, Newport Beach, CA; Wallace Talbert, **KPC1WBT**, Irvine, CA; Mark Williams, **KPC7GH**, Portland, OR.

WPC Prefixes

Also: Jim Buscher, **WPC4CNO**, Falls Church, VA; Jeffrey Kelley, **WPC4JRK**, Sylvania, GA; Jesse Wadsworth, **WPC5ORE**, Roswell, NM; Avery Finn, **WPCØAMF**,

Hopkins, MN; Robert Bennett, **WPC4DUI**, Boca Raton, FL; James Trame, **WPC4FJT**, Knoxville, TN; Robert Brossell, **WPC9GSO**, Pewaukee, WI; James Smith, **WPC4JCS**, Cordova, NC; Frederick Kincaid, **WPC8VPX**, Spring Lake, MI; Jack Amelar, **WPC8GR**, Lowell, MI; Charlie Clark, **WPC8CRC**, Galion, OH; J. Harley Davidson, **WPC4JHD**, Ashville, AL; William Via, **WPC3MD**, Dundalk, MD; Robert Citronberg, **WPC4CJC**, Alpharetta, GA; Edward Delp, **WPC9EJD**, West Lafayette, IN; Jim Andrew, **WPC5RKO**, Houston, TX; David Paton, **WPC9NQA**, Rockford, IL; Allan Kuong, **WPC1SCS**, Harvard, MA; Scott Higgins, **WPC3VNE**, Beaver Cove, ME; John Ciccolella, **WPC3SWL**, Milford, PA; Brian Arsenault, **WPC1FTY**, Leicester, MA; Carl Butala, **WPC3FIH**, Mountaintop, PA; Joe Glath, Jr., **WPC3FBM**, Tarentum, PA; Goldie Tango, **WPC5SSR**, Covington, LA; Anthony Tango, **WPC5SSQ**, Covington, LA; Brian Dick, **WPC3LNA**, Hadley, PA; Leonard Gordon, **WPC7CLO**, Cheyenne, WY; Andy Coffey, **WPC4AAC**, Mechanicsville, VA; Hank Kobler, **WPC4HEK**, Deland, FL; Thomas Leahy, **WPC6IVJ**, Freeland, WA; Mount Pleasant Area High School Radio Club, **WPC3MPA**, Mount Pleasant, PA; Kevin Childers, **WPC5HPM**, Ashland, MS; Jim Pettitt, Jr., **WPC5CIA**, Brenham, TX; Robert Cariello, **WPC2RSC**, Marlboro, NJ; Henry Wrobel, **WPC1NFN**, Fort Wayne, IN; Eugene Dangelo, **WPC3XKS**, Greensburg, PA; Jim Watson, **WPC8MSP**, Milford, OH; and Philip Covington, **WPC8VB**, Powell, OH.

For complete information on the Pop'Comm Monitoring Station Program and to join, visit Pop'Comm Monitors On the Web: <<http://popcommmonitors.blogspot.com/>>.

– Jason Feldman, WPC2COD
Director, PCMS Registration
<PopCommMonitor@gmail.com>

Recently I've gotten back into SWLing and have been assigned KPC1HWP as part of the *Pop'Comm Monitoring Station* program.

The radio shelf in the shack was custom made by a local carpenter using specifications around the amplifier. The finish matches the Pottery Barn office set, and my YL is happy she has the desk back!

Top Shelf

Referring to **Photo A**, on the top shelf, left side, is an **ICOM IC-208H** which is used for 2-meter/70-cm repeaters, but also is loaded up with public safety, USCG VHF Marine, Aviation (Worcester, Bradley, Logan), and railroad frequencies (Grafton-Upton, Amtrak, CSX).

The middle radio is a **Motrola MCS2000** for 33 cm. I use this mostly as the 70-cm repeaters took a substantial hit due to the Pave Paws program. The rig on the right is a **Bearcat Uniden BCT7** scanner I use to monitor Grafton Police and Fire on the repeater and direct input — *you really do hear a lot of activity on the input frequencies!*

Second Shelf

On the second shelf is my **ICOM IC-746PRO**, which I use for amateur operation and SWLing. I use an **MFJ-969D VersaTunerIII** to match the antenna to the

rig. The antenna is a G5RV, grounded/polyphased at the base. I attribute grounding it at the base for my success TX/RXing. I also have a CushCraft MA6VA for 6- through 20-meter transmitting, but plan on putting an end-fed, long wire for receiving/transmitting up shortly.

Third Shelf

I have my **Ameritron AL-811H amplifier**, on the third shelf. I tend to run the amplifier on 40 and 80 meters these days. Also on the third shelf you can see the power supplies for the two transceivers above.

Other Gear and Activities

I have various HTs: Yeasu VX-3R; Motorola MT-1000 (seen in the photograph); a Kenwood TK-290 for 2-meter ham operation, VHF Marine, public safety, and railroad listening; a Kenwood TK-380 for 70-cm amateur operation as well as 200 public safety channels in geographical banks to monitor.

I also own a Kenwood TK-481 for 33 cm (900 MHz) that is popular in Massachusetts as a replacement for the Pave Paws that crippled the 70-cm band.

I do monitor in my car, as I have another ICOM IC-208H with the same code plug. So I can always “read the mail” any time of day, anywhere I am in my com-

mute. I also have a Kenwood TK-981 for 33-cm operation in the car. As you can see, I am very active on 33 cm.

An Avid Listener

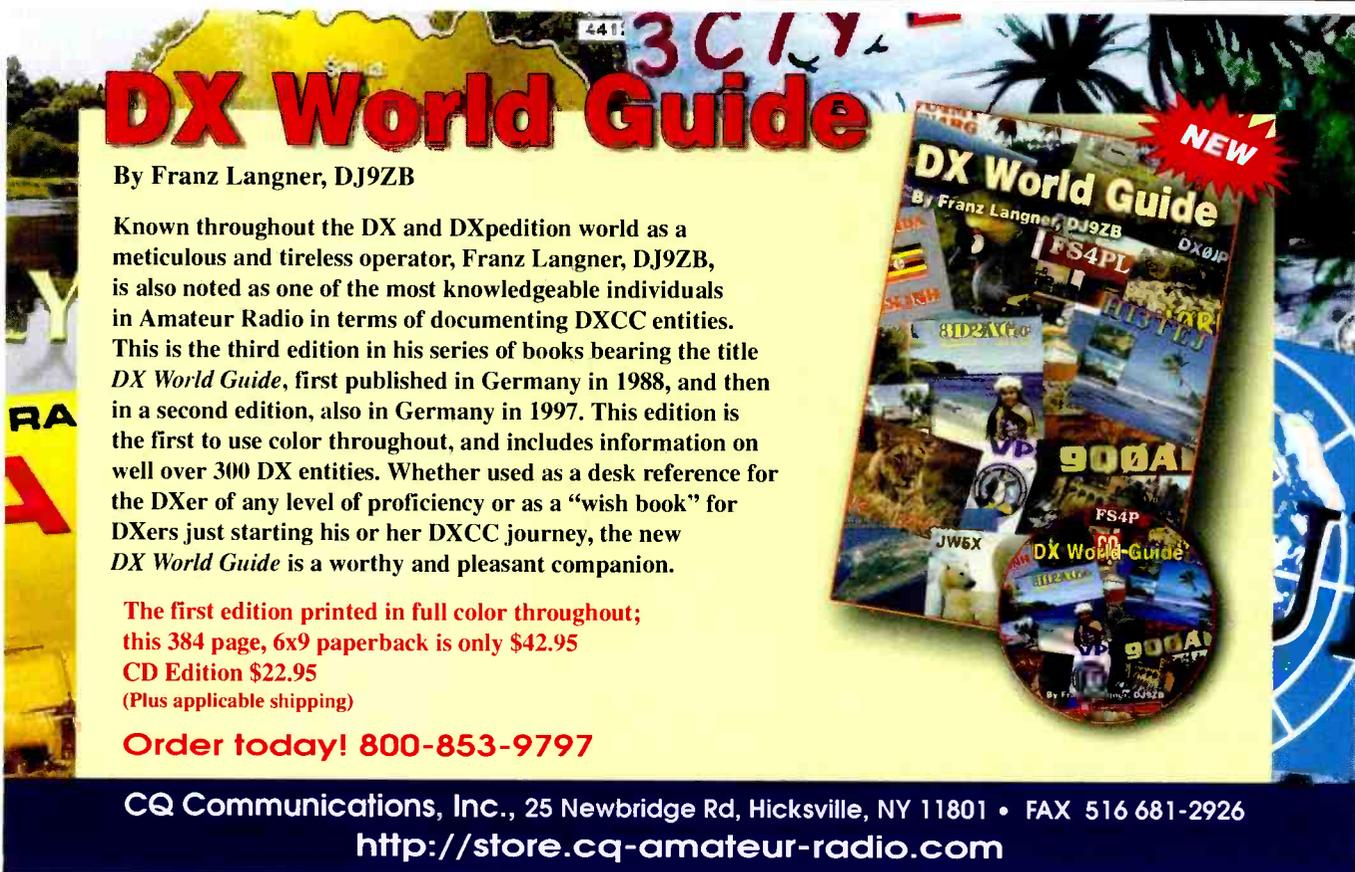
I attempt CW, but I am no expert. My biggest regret in life was passing on the offer to go to International Morse Code Operators (IMCO) “C” school after Navy Radioman “A” school. Had I gone, I would have been a ham much earlier in life.

I have a Sangean general service AM/FM/SSB receiver I use during power outages.

I enjoy listening more than I do calling CQ, so I usually spin the dial in the ham portions and if nothing is going on I move to the low end of the band and spin the VFO my way up and stopping on what sounds interesting. I transmit on the ham bands usually a couple of hours a weekend, but I always have a radio on and monitoring when I am home.

I particularly enjoy sending and receiving QSL cards, for anything I monitor. I do maintain an “old school” paper logbook, and shy away from e-QSL, or logging via the Internet.

I love the hobby, and have been receiving and playing with radios since I was in elementary school. It's just a wonderful way to meet new people, learn new things, and try new things.



DX World Guide
By Franz Langner, DJ9ZB

Known throughout the DX and DXpedition world as a meticulous and tireless operator, Franz Langner, DJ9ZB, is also noted as one of the most knowledgeable individuals in Amateur Radio in terms of documenting DXCC entities. This is the third edition in his series of books bearing the title *DX World Guide*, first published in Germany in 1988, and then in a second edition, also in Germany in 1997. This edition is the first to use color throughout, and includes information on well over 300 DX entities. Whether used as a desk reference for the DXer of any level of proficiency or as a “wish book” for DXers just starting his or her DXCC journey, the new *DX World Guide* is a worthy and pleasant companion.

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What's Going On? Has Solar Cycle 24 Already Peaked?

by Tomas Hood, NW7US,
WPC7USA
<nw7us@arrl.net>

“Ultimately, will the current cycle be dismally weak, or is there any hope for a sudden increase in activity?”

Solar Cycle 24 continues to show a plateau in sunspot activity. As a result, many people are speculating that the cycle may have already peaked. Others postulate that the peak may occur during early or mid-2013. Ultimately, will the current cycle be dismally weak, or is there any hope for a sudden increase in activity?

One forecast made by Mausumi Dikpati of the National Center for Atmospheric Research (NCAR) was for a strong cycle. Researcher Dikpati proclaimed that Sunspot Cycle 24 “will be 30 percent to 50 percent stronger than the previous one.” This does not seem to be the case, as we continue to hope for any sign that the Sun will “step it up” a lot more than it has. Scientists are hard at work trying to understand what is occurring, and Dikpati’s research is still lending a lot of answers to the current situation.

The key to the mystery is the possible existence of a “conveyor belt” on the Sun. Dikpati believes that the data reveals that the Sun has a conveyor belt consisting of electrically-conducting gas. Some scientists postulate that we have something similar here on Earth, known as the Global Ocean Conveyor Belt <<http://1.usa.gov/Vmy0Vz>>. It is a network of currents that carry water and heat from ocean to ocean. (*NOTE: There are now dissenting opinions on such a simplified model of ocean currents. – WPC7USA.*)

According to Dikpati, the Sun’s conveyor belt is a current that flows in a loop from the Sun’s equator to the poles and back again. Just as the Global Ocean Conveyor Belt controls weather on Earth, this solar conveyor belt controls weather on the Sun. Specifically, it controls the sunspot cycle.

Solar physicist David Hathaway of the National Space Science & Technology Center (NSSTC) explains: “First, remember what sunspots are: tangled knots of magnetism generated by the Sun’s inner dynamo. A typical sunspot exists for just a few weeks. Then it decays, leaving behind a ‘corpse’ of weak magnetic fields.”

Hathaway explained how “the top of the Sun’s conveyor belt skims the surface of the Sun, sweeping up the magnetic fields of old, dead sunspots. The ‘corpses’ are dragged down at the poles to a depth of 200,000 kilometers (124,275 miles) where the Sun’s magnetic dynamo can

amplify them. Once the corpses — magnetic knots — are reincarnated (amplified), they become buoyant and float back to the surface.” And that’s how we get new sunspots.

All this happens with massive slowness. “It takes about 40 years for the belt to complete one loop,” said Hathaway. The speed varies “anywhere from a 50-year pace (slow) to a 30-year pace (fast).”

When the belt is turning “fast,” it means that lots of magnetic fields are being swept up, and that a future sunspot cycle is going to be intense. This is a basis for forecasting. With more analysis and new observation with better instruments, scientists are discovering that there are previously unknown trends in these currents and flows. It seems that we’re witnessing a weakening flow inside the Sun, such that this cycle and the next may well be modest at best.

What we’re now observing is that the Sun’s inner currents have slowed to a record-low crawl. According to research by NASA solar physicist David Hathaway, “It’s off the bottom of the charts . . . This has important repercussions for future solar activity.”

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

According to initial theory and observation, the speed of the belt foretells the intensity of sunspot activity roughly 20 years in the future. A slow belt means that solar activity will be lower, while a fast belt means stronger activity is ahead. What is not fully understood is why this cycle is currently taking on the form of a very gradual and modest rise in activity.

Speculation now suggests that the recent sunspot activity will grow slightly stronger within the year, and we’ll see a climb in the monthly averages, but then a steady-yet-slow decline.

What seems to be true so far is that radio communicators on shortwave and medium-wave frequencies are discovering that they can still “traverse the world” by radio, even with low sunspot activity. This is a result of more efficient modes

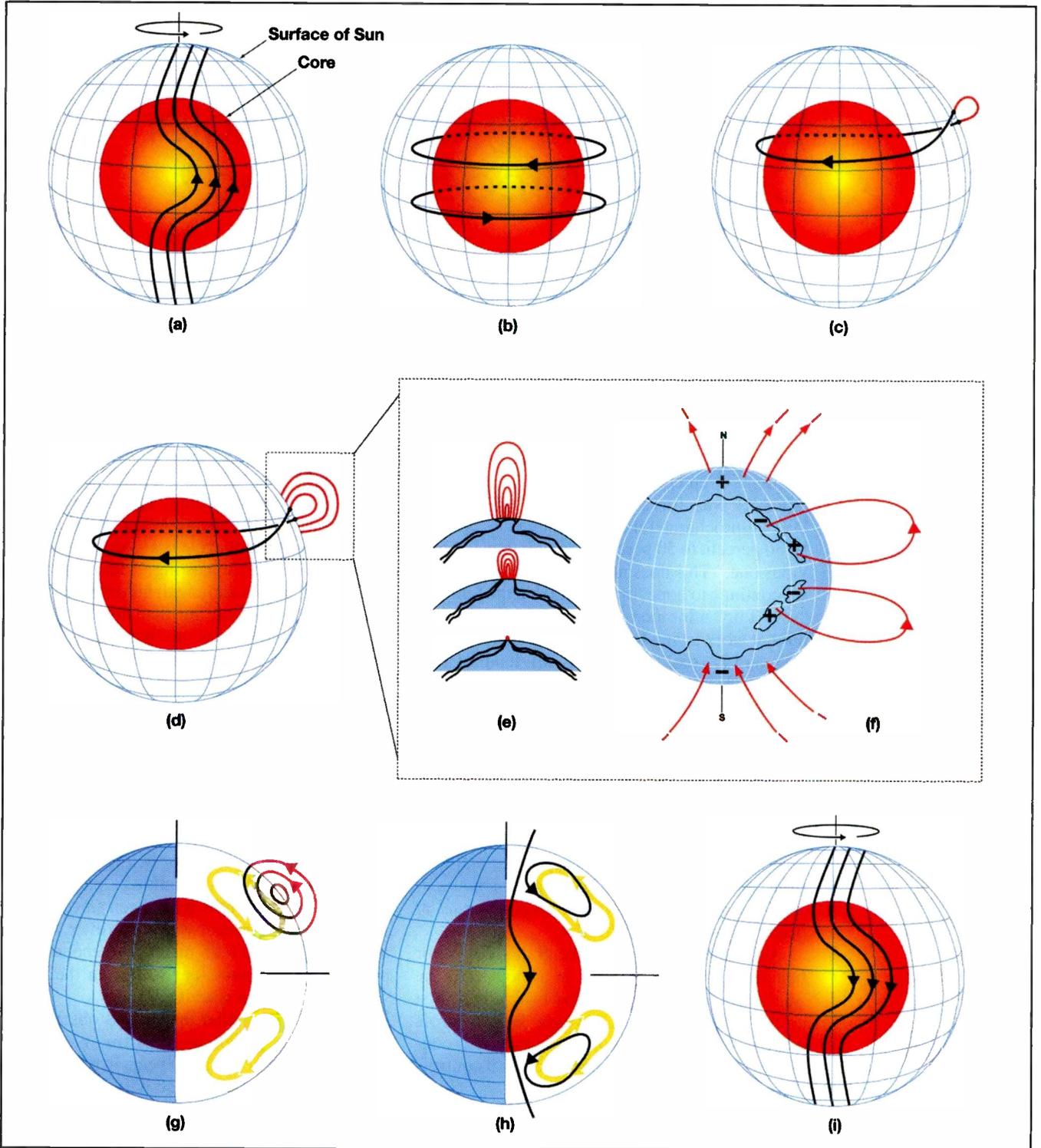


Figure 1. Here is a depiction of the physical process in the flux-transport dynamo that simulates and predicts solar cycles. The red inner sphere represents the Sun's radiative core and the blue mesh represents the solar surface. In between is the solar convection zone where the dynamo resides. (a) Shearing of the poloidal field by the Sun's differential rotation near the bottom of the convection zone. The Sun rotates faster at the solar equator than at the poles. (b) Toroidal field produced due to this shearing by the differential rotation. (c) When the toroidal field is strong enough, buoyant loops rise to the surface, twisting as they rise due to rotational influence. Sunspots are formed from these loops. (d,e,f) Additional flux emerges (e) and spreads (f) in latitude and longitude from decaying spots. Sunspots are indicated by a black + in (f) outlined regions. (g) Meridional flow (yellow circulation with arrows) carries surface magnetic flux toward the poles, causing the polar fields to reverse. (h) Some of this flux is then transported downward to the bottom and toward the equator. These poloidal fields have the opposite sign to those at the beginning of the sequence, in frame (a). (i) This reversed poloidal flux is then sheared again near the bottom by the differential rotation to produce the new toroidal field opposite in sign to that shown in (b).
(Courtesy of Mausumi Dikpati, High Altitude Observatory Division, NCAR, Boulder, Colorado)

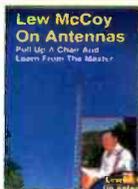
Optimum Working Frequencies (MHz) - For March 2013 - Flux = 137, Created by NW7US

UTC	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
TO/FROM US WEST COAST																								
CARIBBEAN	26	25	23	20	18	17	15	15	14	13	13	12	12	14	20	23	25	26	27	28	28	28	28	27
NORTHERN SOUTH AMERICA	36	35	33	30	27	24	22	21	20	18	18	17	16	16	23	26	29	31	32	33	34	35	36	36
CENTRAL SOUTH AMERICA	35	32	29	27	25	23	21	20	19	18	17	16	16	17	26	29	31	33	34	34	35	35	35	35
SOUTHERN SOUTH AMERICA	37	35	34	31	28	26	24	22	20	19	18	17	16	19	26	30	33	35	36	37	38	38	37	37
WESTERN EUROPE	12	11	11	11	10	10	10	11	11	11	10	10	10	17	19	21	22	22	22	21	20	19	16	12
EASTERN EUROPE	11	11	12	14	16	12	12	11	11	11	10	10	10	14	18	19	19	18	18	18	17	16	15	14
EASTERN NORTH AMERICA	29	27	24	19	17	16	15	15	14	14	13	13	13	19	24	27	29	30	31	31	31	31	31	30
CENTRAL NORTH AMERICA	16	16	15	13	10	9	9	8	8	8	7	7	7	7	12	14	15	16	17	17	17	17	17	17
WESTERN NORTH AMERICA	9	8	8	7	6	5	5	4	4	4	4	4	3	3	3	6	7	8	8	9	9	9	9	9
SOUTHERN NORTH AMERICA	28	26	25	22	19	18	16	15	14	14	13	13	12	12	18	22	25	26	27	28	29	29	28	28
HAWAII	25	24	24	23	22	20	18	16	15	14	13	12	12	11	11	10	12	17	20	21	23	24	24	25
NORTHERN AFRICA	12	12	11	11	11	10	10	11	11	11	10	10	10	17	20	21	22	23	23	21	19	15	14	13
CENTRAL AFRICA	17	16	15	14	13	12	12	11	11	11	10	10	10	17	19	21	22	23	23	23	21	19	18	18
SOUTH AFRICA	24	22	20	16	15	14	14	13	13	12	12	12	12	21	24	26	28	29	29	29	29	28	28	26
MIDDLE EAST	11	11	10	10	12	12	12	11	11	11	10	10	10	15	18	20	21	21	18	13	12	12	11	11
JAPAN	24	24	24	23	22	20	18	13	12	12	11	11	11	10	10	10	11	10	10	10	17	20	22	23
CENTRAL ASIA	24	24	24	23	22	20	18	13	12	12	11	11	11	10	10	10	16	15	15	14	14	13	20	24
INDIA	15	15	16	16	16	16	12	12	11	11	10	10	10	10	10	10	10	10	10	11	13	14	14	15
THAILAND	21	24	23	22	21	20	17	13	12	12	11	11	11	10	10	16	19	17	16	15	15	14	16	16
AUSTRALIA	30	32	33	35	33	31	26	24	22	21	19	18	17	17	16	16	19	19	18	17	18	22	26	28
CHINA	22	23	23	22	21	20	17	13	12	12	11	11	11	10	10	10	11	11	11	10	10	10	17	20
SOUTH PACIFIC	36	37	37	36	34	31	28	26	24	22	21	19	18	17	17	16	18	17	17	23	27	30	33	35
TO/FROM US MIDWEST																								
CARIBBEAN	30	28	26	24	22	20	19	17	16	15	15	14	14	20	24	27	29	30	31	32	32	32	32	31
NORTHERN SOUTH AMERICA	33	32	30	27	25	23	21	20	18	17	16	16	15	19	22	25	27	29	30	31	32	33	33	33
CENTRAL SOUTH AMERICA	35	32	29	27	24	23	21	20	19	18	17	17	17	24	28	30	31	33	34	34	35	35	35	35
SOUTHERN SOUTH AMERICA	36	35	33	30	27	25	23	22	20	19	18	17	17	19	25	29	32	34	36	37	37	38	38	37
WESTERN EUROPE	12	11	11	11	10	10	10	11	10	10	10	13	18	20	22	23	23	23	22	21	20	19	17	12
EASTERN EUROPE	11	11	11	10	10	12	11	11	11	10	10	10	17	19	21	21	21	20	19	18	17	15	12	12
EASTERN NORTH AMERICA	20	19	16	14	13	12	11	11	10	10	10	9	10	16	19	20	21	22	22	23	23	23	22	21
CENTRAL NORTH AMERICA	10	9	8	7	6	5	5	5	5	4	4	4	4	6	8	9	9	10	10	10	10	10	10	10
WESTERN NORTH AMERICA	17	16	15	13	10	10	9	9	8	8	8	7	7	7	11	14	15	16	17	17	17	17	17	17
SOUTHERN NORTH AMERICA	19	18	17	15	14	12	12	11	10	10	9	9	10	14	17	18	19	20	20	20	20	20	20	20
HAWAII	29	28	27	25	22	19	18	17	15	15	14	13	13	12	12	13	15	20	23	25	27	28	29	29
NORTHERN AFRICA	16	15	13	12	12	11	11	11	10	10	10	14	19	21	23	24	24	25	25	25	25	20	18	17
CENTRAL AFRICA	18	17	13	12	12	11	11	11	10	10	10	14	19	21	22	23	24	25	25	25	24	22	21	19
SOUTH AFRICA	24	22	21	19	18	17	17	17	17	16	16	15	25	30	33	35	36	37	36	34	31	28	26	26
MIDDLE EAST	11	11	11	10	10	11	11	11	11	10	10	12	18	20	22	23	23	22	20	15	13	13	12	12
JAPAN	24	23	22	21	18	13	12	12	11	11	11	10	10	10	11	11	11	10	10	10	17	20	22	23
CENTRAL ASIA	23	23	22	20	18	13	12	12	11	11	11	10	10	10	15	17	16	15	15	14	14	13	20	24
INDIA	10	10	11	11	11	11	11	11	11	10	10	10	11	11	11	10	10	10	10	10	10	9	9	9
THAILAND	21	22	21	20	17	13	12	12	11	11	11	10	10	10	17	20	20	18	17	16	15	15	14	14
AUSTRALIA	31	33	34	32	29	25	23	21	20	19	18	17	16	16	15	21	20	19	18	17	19	23	26	29
CHINA	21	22	21	19	17	13	12	12	11	11	11	10	10	10	12	12	11	11	11	10	10	10	16	20
SOUTH PACIFIC	37	37	36	34	31	28	26	24	22	20	19	18	17	17	16	19	18	17	20	25	29	32	34	36
TO/FROM US EAST COAST																								
CARIBBEAN	24	23	21	19	17	16	15	14	13	12	12	11	14	18	20	22	23	25	25	26	26	26	26	25
NORTHERN SOUTH AMERICA	29	28	26	24	22	20	18	17	16	15	14	14	15	18	21	23	25	26	27	28	29	29	29	29
CENTRAL SOUTH AMERICA	34	31	28	26	24	22	20	19	18	17	17	17	22	25	28	30	31	32	33	34	35	35	35	35
SOUTHERN SOUTH AMERICA	36	35	32	29	27	24	23	21	20	19	18	17	19	24	28	30	32	34	36	36	37	37	37	37
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SOUTHERN NORTH AMERICA	23	22	20	18	17	15	14	13	13	12	11	11	11	16	20	22	23	24	25	25	26	25	25	24
HAWAII	30	28	26	21	20	18	17	16	15	15	14	14	13	15	15	14	16	22	25	27	29	30	31	31
NORTHERN AFRICA	18	17	16	15	14	14	13	13	13	13	19	24	27	29	30	31	31	31	30	28	26	22	20	19
CENTRAL AFRICA	19	18	16	15	14	14	13	13	13	19	24	27	29	30	31	31	31	31	30	29	26	24	22	20
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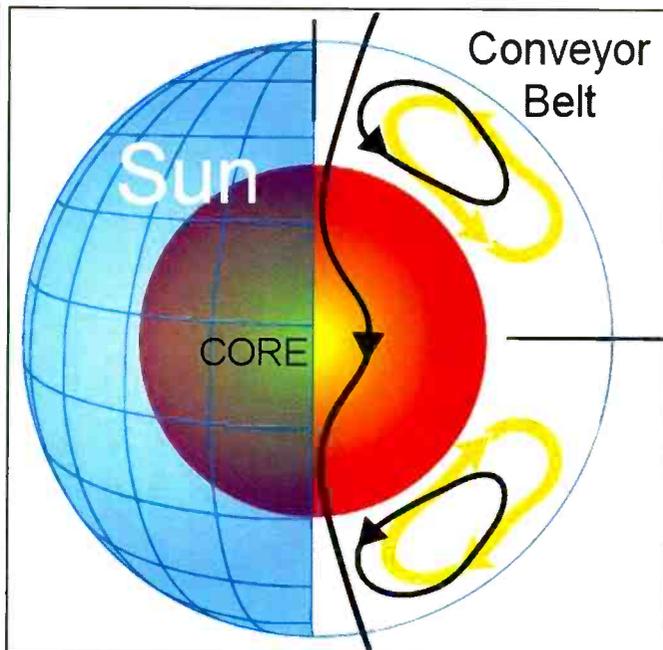


Figure 2. This is a simplified model of the Sun's "Conveyor Belt." The top of the conveyor belt skims the surface of the Sun, sweeping up the magnetic fields of old, dead sunspots. The "corpses" are dragged down at the poles to a depth of 200,000 kilometers where the Sun's magnetic dynamo can amplify them. Once the corpses (magnetic knots) are reincarnated (amplified), they become buoyant and float back to the surface. (Courtesy of NASA)

of radio transmissions, more sensitive equipment, and an increase in operator skills.

Armed with this arsenal of technology, skill, and determination, DXers enjoy long-distance radio communications on much of the high-frequency spectrum, despite the current cycle's energy.

This column will continue to report on the progress of Sunspot Cycle 24, and explore the latest news and research on the Sun-Earth connection and the propagation of our radio signals. After all, we all want to communicate more effectively — getting that rare DX, or ensuring a stable emergency communications circuit out of a disaster area.

High Frequency Propagation

March is a great month for DXing. Spring and autumn may be considered the optimal months for DX propagation. As the Vernal Equinox approaches, the gray line begins to run straight North and South and the Sun is most nearly overhead at the equator, making night and day of almost equal length in all parts of the world.

On March 21 and September 22 of each year, the sun is directly over the equator and the length of night and day is much the same everywhere. This creates an ionosphere of similar characteristics throughout more of the world than is possible during other times when it is summer in one hemisphere and winter in the other, and there are extreme differences in the ionosphere.

This "ionospheric equalization," which takes place during the equinoctial periods, is responsible for optimum DX conditions. The effects of the Spring Equinox start late in February and last through late April.

This improvement is most noticeable on long circuits between the northern and southern hemispheres — for example, from the United States to Australia, to South America, to southern Africa, to southern Asia, to Antarctica, and so on.

During these seasons conditions are also best for long-path as well as short-

path openings, and during gray line twilight periods associated with sunrise and sunset.

During March, the best DX band is in the high frequencies of shortwave during the daylight hours from sunrise to sunset, with mid-HF band remaining stable.

Due to the low-to-moderate solar

activity in this cycle thus far, very few high HF and low VHF openings will occur compared to the past cycle.

The high bands will close down more quickly than the lower bands, but look for DX openings on higher bands during morning and then late afternoon, into Asia and Europe, and especially in north to south paths. These paths will gradually grow weaker as we move through April.

We will find frequencies between 11 and 19 MHz staying open long into the evenings. You will see more early closures if you live closer to the North Pole. Prime time evening hours in the United States are sunrise hours across Russia, Africa, and both the Near and Far East. Expect a lot of short- and long-path DX into these areas of the world.

From sundown to midnight, look for great DX openings, with some good openings on 5 to 10 MHz, toward the west and south. Of course, even tropical bands are active during this time period for some good DX possibilities.

Between midnight and sunrise, the best DX bands should be those from about 4 through 10 MHz, with some openings to many areas of the world also possible up into 13 MHz. Medium-wave openings may also occur over great distances.

VHF Conditions

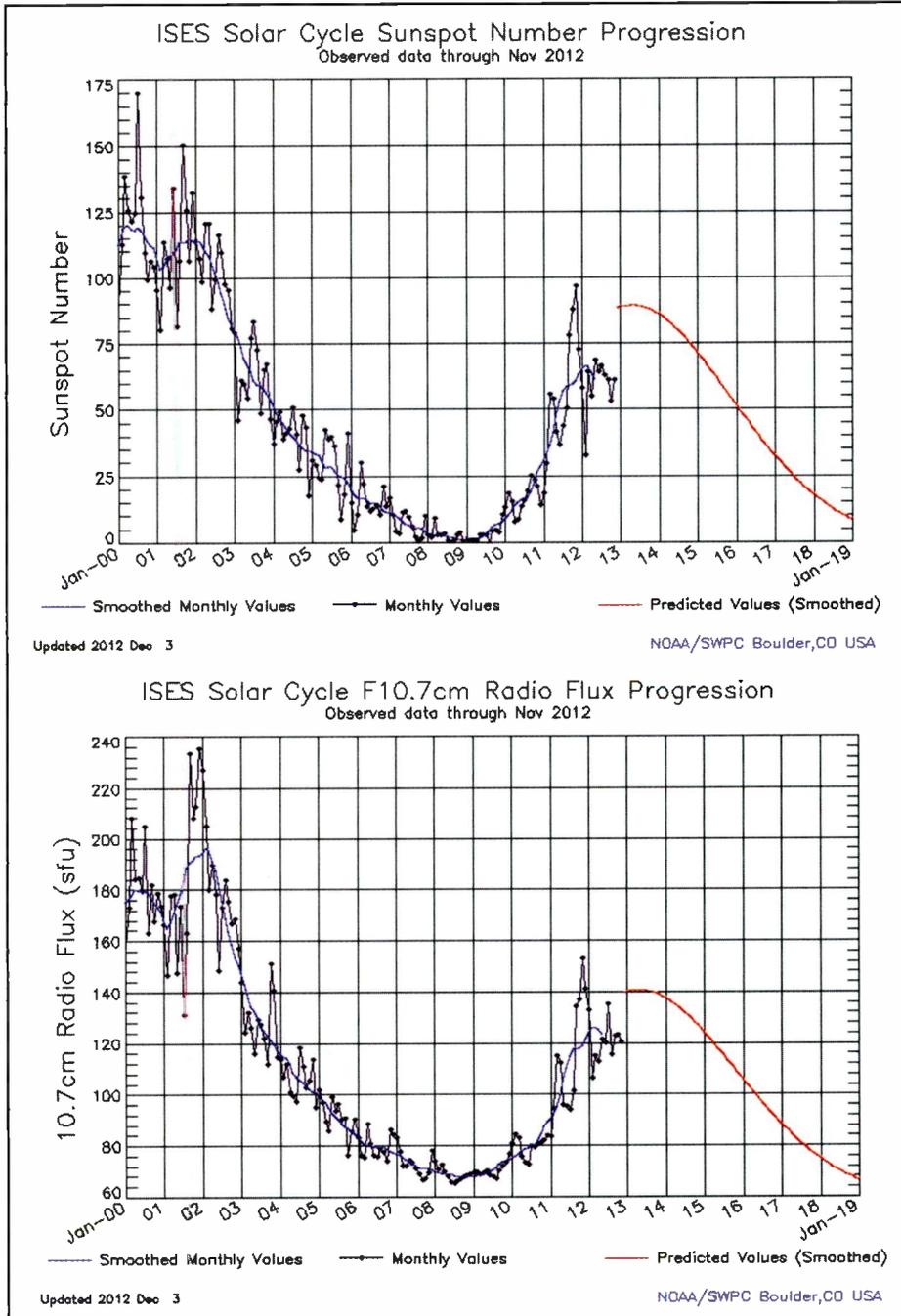
Conditions should be optimal during March for trans-equatorial scatter propagation between the southern tier states and countries deep in South America. The best time for TE openings should be between 8 and 11 p.m. local time. Otherwise, VHF propagation beyond a few hundred miles will be sparse.

Current Solar Cycle 24 Progress

The Royal Observatory of Belgium, the world's official keeper of sunspot records, reports a monthly mean sunspot number of 61.4 for November 2012. This is up from the 53.3 reported for October, but about the same as for September 2012.

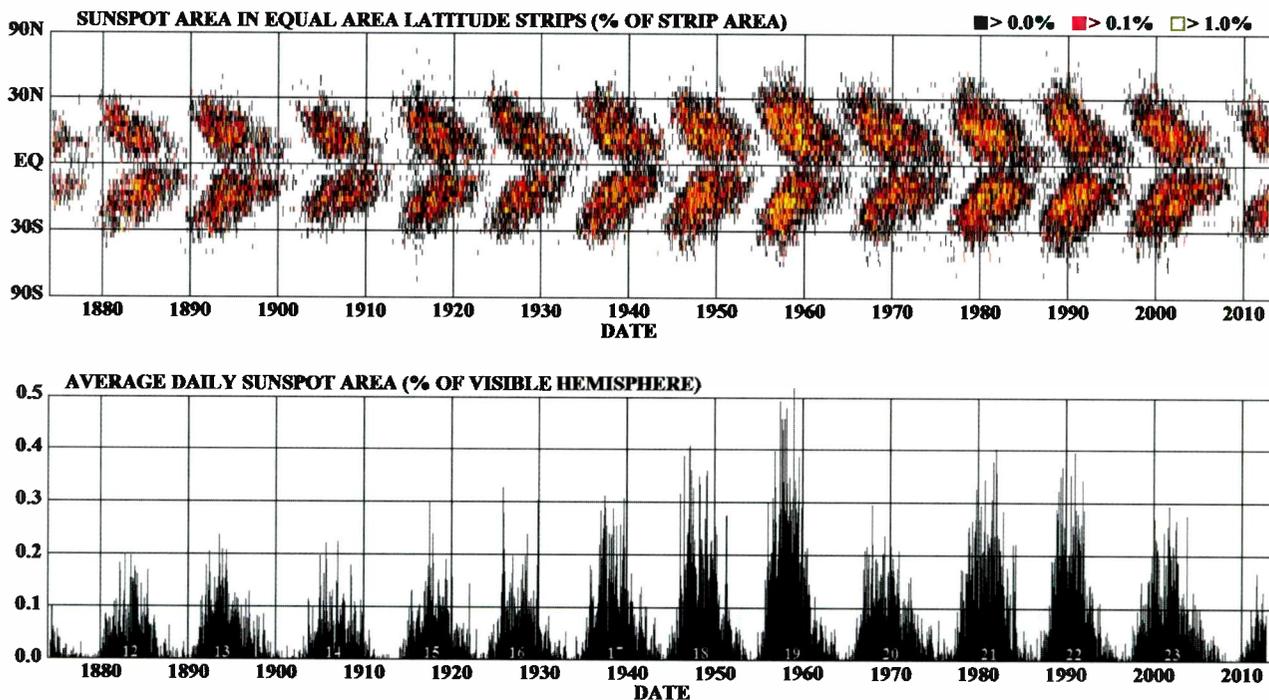
The low for the month was 31 on November 3. The high of 98 occurred on November 17. The mean value for November results in a 12-month running smoothed sunspot number of 61.7 centered on May 2012, just slightly down from the 64.6 of April.

Following the curve of the 13-month running smoothed values, a smoothed



Figures 3a and 3b. Sunspot Cycle 24 progression charts show the continued plateau in both the monthly observed sunspot counts and the 10.7-cm flux monthly figures. Some people speculate that the sharp peak in late 2011 was the actual solar cycle maximum. However, scientists speculate that the cycle will actually peak sometime, this year. This cycle will show a very slow and steady rise, then a very gradual decline, unlike recent cycles.
(Courtesy of Space Weather Prediction Center (SWPC)/NOAA)

DAILY SUNSPOT AREA AVERAGED OVER INDIVIDUAL SOLAR ROTATIONS



<http://solarscience.msfc.nasa.gov/>

HATHAWAY/NASA/MSFC 2012/12

Figure 4. The Butterfly Diagram as of late 2012. Detailed observations of sunspots have been obtained by the Royal Greenwich Observatory since 1874. These observations include information on the sizes and positions of sunspots as well as their numbers. These data show that sunspots do not appear at random over the surface of the sun but are concentrated in two latitude bands on either side of the equator. This Butterfly Diagram, updated monthly, shows the positions of the spots for each rotation of the sun since May 1874. We see that in the course of each cycle, these bands first form at mid-latitudes, widen, and then move toward the equator as each cycle progresses. We can see that the current Solar Cycle 24 is following this pattern. What scientists are observing, though, is that this cycle has a deeper flow that is slower than past cycles, and may be the cause of the meager activity since late 2011. (Courtesy of David Hathaway, NASA, Marshall Space Flight Center)

sunspot level of 83 is expected for March 2013, plus-or-minus 12 points.

Canada's Dominion Radio Astrophysical Observatory at Penticton, British Columbia, reports a 10.7-cm observed monthly mean solar flux of 120.9 for November, slightly down from October's 123.3. The 12-month smoothed 10.7-cm flux centered on May 2012 is 123.8, down from April's 125.8. A smoothed 10.7-cm solar flux of about 137 is predicted for March 2013.

The observed monthly mean planetary A Index (A_p) for November 2012 is 6, continuing a downward trend since the monthly A_p of 13 recorded for July. The 12-month smoothed A_p index centered on May 2012 is 8.2.

Geomagnetic activity will be much the same as we have had during January and February. Refer to the Last Minute Forecast published in *CQ* magazine or on the author's website <<http://sunspotwatch.com>> for the outlook on what days that this might occur.

I'd Like to Hear From You

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.

On Twitter, please follow @NW7US (and if you wish to have

an hourly automated update on space weather conditions and other radio propagation-related updates, follow <@hfradio-spacewx>).

I invite you to visit my online propagation resource at <<http://sunspotwatch.com>>, where you can get the latest space data, forecasts, and more, all in an organized manner. If you are on Facebook, check out <<http://www.facebook.com/spacewx.hfradio>> and <<http://www.facebook.com/NW7US>>.

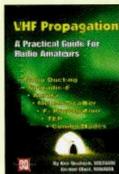
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Until next month,

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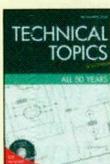


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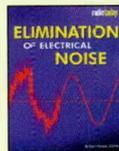
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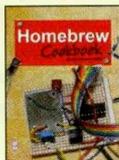
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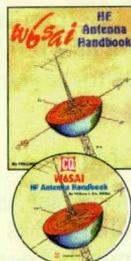
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WPC9GLD
<gdex@wi.rr.com>

“A few months ago, it appeared Radio Exterior Espana might be going down for the count. But, not so fast. Monitoring hope springs eternal.”

The shortwave broadcast world dodged a bullet recently. For a few days back in late November and early December word was going around that **Radio Exterior de Espana (REE)** was about to get down for the count.

At the time, almost two dozen frequencies were cited for closure, but it seems service to Europe and the Western Hemisphere were not affected after all, although relays from the REE site in Costa Rica and some from China Radio International’s facilities may have been slightly reduced.

It’s still too early to know for certain. And – AND – considering the growing problems with Spain’s economy, it wouldn’t be very surprising if REE were to indeed crash and burn.

Meanwhile . . .

Radio Nacional Arcangel/LRA36, (15346) at Base Esperanza, Argentine Antarctica, is supposedly back on the air. It has always been a tough target, using only 1 kilowatt of power output and normally heard around 2000 UTC and later (usually to around 2100 UTC close). That’s providing they stick to the same schedule they’ve had in the past.

Around the Dial

In other news, as they say, the fairly new **Radio Hargeisa** in Somaliland has been noted airing some English, seemingly beginning around 1330 UTC . . . **Radio Madgasikara** (5010) was inactive for a while recently, but is back in active status



Radio Hargeisa in Somaliland QSL'd Bob Brossell recently. This nice photo card indicates operations on 6390, 6860, 7530 — none of which seem active.

again and is being heard around 0200 UTC and later in Malagasy . . . the **CBC** on 9625 is officially dead and buried — so there is no more Northern Service from Canada . . . **Lao National Radio** is being heard again on 6130 around 1200 to 1300 UTC . . . **Polish Radio** is now being relayed by Kostinbrod, (Bulgaria) on 6000 at 1630 to 1900 UTC, though there is zero-to-no chance of hearing it at those hours outside of Europe . . . **WTTW** (Tennessee) has dropped 5755 in favor of 5745.

Your Observations Are Encouraged

Remember that 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 one.

Also needed are spare QSLs or good copies you don’t need returned, station schedules, brochures, pennants, station photos, and anything else you think would be of interest. And how about sending a photo of you at your listening post? It’s high time you graced these pages!

Reception Reports

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

ALBANIA — Radio Tirana, 7465-Shijak in EE heard at 2100 with IS. ID, frequencies and into news. (Fraser, ME)

ALGERIA — Radio Algerienne, 5865 via France at 0403 tune in with a marching band and choral music, Islamic devotional and M in AA, 7495 in with AA anmts at 2258, song, time pips at TOH and off at 2300. (Sellers BC) 7295 via France at 0425 with W in AA talk hosting pgm of various vocal selections. (D’Angelo, PA)

ANGOLA — Radio Nacional, Luanda, 4949.7 with W in PP hosting a pgm of pops. ID and news at 0300. (D’Angelo, PA)

ANGUILLA — University Network, 11775 at 1250 with Melissa Scott preaching. (Maxant, WV)

ARGENTINA — Radiodifusora Argentina al Exterior, 11711 with W reading domestic news at 0233. (Sellers, BC) 15345 in FF at 2250. (Brossell, WI)



Radio Exterior de Espana gave us a scare recently. It stumbled, but has righted itself and continues.

ASCENSION ISLAND—BBC-South Atlantic Relay, 6140 at 0324 with extensive reports on the U.S. election and coverage of Hurricane Sandy. Off in mid-sentence at 0359*. (D'Angelo, PA) 9915 with financial news at 2242 and 11810 on the racial makeup of America at 2018. (Brossell, WI) 15400 at 2025 at tune in with musical bells and 17885 at 1934 in Hausa, mentioning Obama. (Parker, PA)

AUSTRALIA—Radio Australia, 5995-Brandon at 0804 with W and news, ID at 0810 and features hosted by M. (D'Angelo, PA) 9580 at 1445 with C/W vocals, 11880 at 1545 on a royal commissioner in Australia, 11945 on how Indonesian security prevented an attack on US consulates. (Maxant, WV) 12080-Brandon at 2037. (Parker, PA) 15515 with world news at 2100. (Brossell, WI)

ABC Northern Territory Service, 2485-Katherine with country songs at 1025. (Brossell, WI)

HCJB Australia, 15340 at 1540 with a religious pgm for Africa. (Maxant, WV)

AUSTRIA—Adventist World Radio, Moosbrunn, 17605 with M in Afar and interesting indigenous music to 1458* close. (Taylor, WI)

BAHRAIN—Radio Bahrain, 9445 at 0040 with local pop ballads and Middle Eastern-style selections. Weak, but readable with adjacent channel splatter but barely audible at 0130 re-check. (Alexander, PA)

BANGLADESH—Bangladesh Betar, 15105 at *1232-1300* abrupt sign on with EE pgm already in progress. Off with a 6-second test tone. Weak modulation, but strong at opening. Noted other days at *1227 and 1228-1230*. Also 15505 at *1357 and *1513, 1412-1430* with a nice selection of local vocals hosted by W in Urdu. (Alexander, PA)

BOLIVIA—Radio San Miguel, Riberalta, 4700 with various SS vocals at 0930. (Wilkner, FL)

Radio Yura, Yura, 4717 in SS at 0007 with lively Andean music and lots of pan flute, best by 0015. (Sellers, BC) 0930 with vocals, also 2310-0000. (Wilkner, FL)

Radio Lipez, (t), Uyuni, 4795.9 at 0956 with unmistakable CP folkloric music but just too weak to pull out an ID. Signal was lost by 1015. (Perry, IL) 0930-1015 in SS at 2300-2310. (Wilkner, FL)

Radio San Jose, San Jose, 5580.2 heard at 2320-2330 in SS. (Wilkner, FL)

Radio Pio Doce, Siglo Veinte, 5952.4 at 1001, appearing to have just signed on with M in SS and echo finishing the opening anmt and musical ads, then morning show starts with W in Aymara and CP folkloric music. (Perry, IL) 2345-0000 in SS without QRM. (Wilkner, FL)

Radio Panamericana, La Paz, 6105 not heard until 1036 when weak signal finally noted with flute and guitar, Bolivian folk music in progress – probably running to a *1030 sign on, rather than the reported/listed *1000. A later reception found them already on by 1030. (Perry, IL) Also 2310-0020 with M/W in SS. (Wilkner, FL)

Radio Santa Cruz, Santa Cruz, 6124.8 at 0934 at best level ever for me. M with promo and ad, ID and into peppy CP folkloric music with M DJ in SS alternating in presumed Aymara. (Perry, IL)

Pirate Radio Boston 20th Anniversary Program **QSL**

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WE CONFIRM RECEPTION ON 6955 KHZ USB AT 00:41 UTC ON OCTOBER 28, 2012




*7351
Charlie Loudenboomer*

BEST WISHES FROM CHARLIE LOUDENBOOMER AND MISTER X !!

Pirate Radio Boston QSL'd Henry Piel, KPC1HWP, of Massachusetts.

Radio Fides, La Paz, 6155 at 0959 tune in with morning news pgm in progress, precise time checks, ads, and occasional Bolivian folk music bursts, then W with more news. Later, I can now confirm they are now honoring their scheduled 0945 sign on time, though they appear to not warm up the transmitter in advance of their broadcast day! (Perry, IL) 1040-1050 with two M in SS. (Wilkner, FL)

BOTSWANA—VOA Relay, Mopeng Hill, 4930 at *0259 with Yankee Doodle IS, ID and news by M. (D'Angelo, PA) 0306 and 15580 at 1950 on the Alaskan gold rush. (Parker, PA) 15185 in FF at 2055. (Brossell, WI)

BRAZIL—(all in PP - gld)
Radio Municipal, Sao Gabriel, 3375.1 at 1000 with M DJ. (Wilkner, FL)

Radio Cultural, Araraquara, 3365 at 0105 with ballads, M anc. (Parker, PA)

Radio Caiari, Porto Velho (p), 4785 at 0948 with W rapid-fire talk and vocals. But was beginning to decline. (D'Angelo, PA)

Radio Difusora Roraima, Boa Vista, 4878v at 0150 with Brazilpops, ID, pgm and frequency anmts at 0200-0202. (Sellers, BC) After 0300 with talks and anmts. ID and closedown anmts at 0355, f/by NA. (D'Angelo, PA) 0350-0359* with anmts, IDs, Brazilpops. Slightly variable and distorted. (Alexander, PA)

Radio Clube do Para, Belem, 4885 at 0354-0436 featuring a lively discussion pgm with some laughter and noise in the background. (D'Angelo, PA) 0309 with M talking. (Parker, PA)

Help Wanted

We believe the Global Information Guide — month after month — offers more logs than any other monthly SW publication! (Just under 400 shortwave broadcast station logs were processed this month!) Why not join the GIG crew fun and add your name to the list of reporters? Send your logs to Gerry Dexter, Global Information Guide, 213 Forest St., Lake Geneva, WI 53147 or email them to <gdex@wi.rr.com>. See the column text for formatting suggestions.

**Not all logs submitted are used. There are usually a few which are obviously inaccurate, unclear or lack a time or frequency. Also discounted are unidentified, duplicate items (same broadcaster, same frequency, same site) and questionable logs. - WPC9GLD*

Radio Difusora, Macapa, 4915 at 0300, inspirational talk with short breaks of instl music and ballads. (Alexander, PA)

Radio Brazil Central, Goiania, 4985 at 2316 with pop vocals, M with talks and IDs. (D'Angelo, PA) 2330-2355 but weaker most mornings at 1000. (Wilkner, FL)

Radio Itatiaia, Belo Horizonte, 5970 at 2214-2240 with fast-talking M ancr, several different people, nice ID and frequency anmt. (Taylor, WI) 0117 with M talking. (Parker, PA)

Radio 9 de Julho 9819.4 at 0041 with M and phone caller. (Parker, PA)

Observatorio Nacional, Rio de Janeiro, 10000 at 0250 with a tone and time anmts every 10 seconds. (Sellers, BC)

Radio Inconfidencia, Belo Horizonte, 6009.9 at 2215-2230 with anmts, jingles and talk. (Alexander, PA) 11925 at 2338 with fast-paced talk and several guys talking sports, several ads and TOH ID. (D'Angelo, PA)

Super Radio Deus e Amor, 11765 at 2120 with M/W ancres and various anmts. (Parker, PA)

Radio Nacional Amazonia, Brasilia, 11780 at 0210 with long stream of names that might have been birthday anmts. (Wood, TN) 2013 with talks and songs. (Brossell, WI)

CANADA—CFRX, Toronto, 6070 at 0108. (Parker, PA) 1235 on life insurance and Hurricane Sandy coverage. (Maxant, WV)

CFVP, Calgary, 6030 with promo for "Classic Country." (Sellers, BC)

CHU time station, 7850 at 1500 with EE/FF time anmts, 14670 likewise at 1455. (Maxant, WV)

CHAD—Radio Chad, 6165 at 0504 with tribal vocals and M in FF with long talk on the economy. (D'Angelo, PA) 2220-2253* with FF talk and Euro/Afropops to abrupt sign off. (Alexander, PA)

CHINA—China Radio International, 13740 via Cuba on Chinese housewives. (Maxant, WV) China National Radio, 6100-Beijing in RR at 1255, 9600-Kunming with world news, 9685-Urumqi in RR at 1242, 11640-Xi'an in Mandarin, and 11935-Shijiazhuang in RR at 1208. (Brossell, WI) 9420-Uyghur with M talking at 1453. (Parker, PA) 11710-Beijing at 2304-2335 with M/W in CC. (D'Angelo, PA)

Firedrake jammer, 15800 with the usual stuff at 0255. Very weak and was not audible after 0300. (Sellers, BC)

COLOMBIA—Alcaravan Radio, Puerto Lleras, 5910 at 0356 with Colombian vocals and M SS host. (D'Angelo, PA) 0159 with SS ID at TOH and news by W. (Wood, TN)

La Voz de su Conciencia, 6010 at 1000 with SS talks and variety of music. Good level and just minutely variable. (Alexander, PA) 1040-1100 with ballads, M with talk, possible ID. (Wilkner, FL)

CONGO (D.R.)—Radio Okapi, 11690 via Meyerton at 0403 with M in FF talk, jingle IDs and brief music bits within talk. (D'Angelo,

PA) 0414 with FF anmts, singing "Radio Okapi" IDs, ID, into news in by W in Lingala. (Sellers, BC)

CUBA—Radio Havana Cuba, 6165 (nf) at 0340 with Arnie Coro's DX pgm and news at 0400. (D'Angelo, PA)

Radio Rebelde, 5025 with the usual big signal at 1030, but far below that was an unid with a M (sometimes a group) talking excitedly, sometimes rhythmically, with bits of Andean "yippling" during huayno refrains. Seems impossible but could it have been Radio Quillabamba? On a later date could still hear another pgm in there weakly when Rebelde is in talk mode. My suspicion now is that this is some kind of artifact of the Cuban station itself. (Perry, IL)

DJIBOUTI—Radio Djibouti, 4780 at *0259 with OC, f/by orch NA, M with opening ID and brief news. (D'Angelo, PA) *0300 sign on with NA and AA talk, local flute music at 0301, Koran at 0302 and indigenous tribal music at 0327. (Alexander, PA)

ECUADOR—Radio Oriental, Tena, 4781.7 heard well lately at *1053 with their trademark 5-second electrical burst of gurgling transmitter sound, which was then turned off. Abruptly back on at 1057 with canned ads already in progress. The usual morning news show began at 1102. (Perry, IL)

Radio El Buen Pastor, Saraguro, 4815 beginning to fade in by 1050 with usual bassy-voiced M in both SS and local language local ad block began at TOH. Peaked at 1103 when an HC passillo began. (Perry, IL)

HCJB, 6050, Pichincha at 0334 in EE with M/W and a story spoken slowly. A Google search found this to be a FEBA Radio/Words of Hope produced pgm. Back to usual SS pgm at 0344. (Sellers, BC) 0940 with M speaking in the Cofan language. (Taylor, WI)

EGYPT—Radio Cairo, 9720 at 0244 with W and "Radio Cairo presents *Listener Mail*" (but they didn't read any!), then an AA song. The modulation was deficient, as usual. (Sellers, BC)

ENGLAND—BBC, 5885 via South Africa at 2318 with news reports on Congo and France, //5875 Thailand Relay, 5980-Oman Relay at 2232 with BBC news and ID, 6135 via Kimjae, poor at 2301 beginning world news, 7490-Thailand Relay at 2238 with *World Business Report*, and 11955-Singapore Relay with news at 2310. (Sellers, BC) 17640 at 1525 on past Olympic games. (Maxant WV)

EQUATORIAL GUINEA—Radio Africa, Bata, 15190 heard at 1520 with EE religious pgm. (Brossell, WI) 1805 with U.S.-produced EE religious pgm. "Radio Africa" ID at 1827 along with email address and contact info. Then Another ID at 1927 with "myway.com" (@? - gld) Email address and an address in Nigeria. (Alexander, PA) 1912 with canned EE religious pgm w/out any IDs or anmts. (D'Angelo, PA)

FRANCE—Radio France International with M in FF at 0157 and 21690 via French Guiana in FF at 1930. (Parker, PA)

GERMANY—Deutsche Welle, 5905-Rwanda Relay at *0400 with ID, W with news. Fair with other Rwanda relays 7285 (good), 9429 (fair), and 9470 (poor); 15700 via Woorferton at 1238-1259 in FF with frequent IDs and a music selection until off at 1259. (D'Angelo, PA) 9800-Rwanda Relay at 0407 with African-accented M doing news. (Sellers, BC) 11800 at 2021 on Africa's economic problems. (Brossell, WI) 15275 Rwanda at 1920 reporting the troubles in South Sudan. (Fraser, ME)

GREECE—Radio Makedonias, 7450 at 2234-2250* with M in Greek hosting pgm of Greek music, W with ID and sign off routine at 2249, f/by orch NA. (D'Angelo, PA) 15630 at 1957 with talks and songs in Greek. (Brossell, WI)

GUAM—KTWR, 15200 at 1510 with website and email address. (Maxant, WV)

Adventist World Radio/KSDA, 15320 at 2230 sign on with M/W ID and program lineup, then a hymn. (Sellers, BC)

GUATEMALA—Radio Verdad, Chiquimula, 4055 at 0521 with EE pgm of secular Christmas music, ID and calls for reports. (Wood,



The mighty KBC — headquartered in the Netherlands, but currently coming from Bulgaria — replied to Rich D'Angelo.

In Times Past

Here's another radio ghost: La Perla del Acre, Cobija, Bolivia, 4600 in SS at 0140 on August 18, 1989

TN) 1105 in SS with an organ number. (Taylor, WI)

INDIA—All India Radio, 4820-Kolkata (p) in (I) Hindi at 1251, 9870-Banglaruru in (I) Hindi at 1157, and 9910 in (I) Hindi at 2304. (Brossell, WI) 4920-Chennai at 0030 with M speech in Tamil, news in EE at 0035, 5010-Thiruvananthapuram at 0039 with EE news, into Indian music and talk in Hindi, 7550-Delhi at 2227 with song and closing anmts; sked from 2045-2230. (Sellers, BC) 7550 at 2200 on Obama's Myanmar visit. (Maxant, WV) 1040 in EE with Indian pops and closing anmts at 1945, 9315 in Hindi at 2109, 9445 in EE on Golden Peacock Award for business excellence. (Sellers, BC) 9445 at 2154-2230* with Indian music and news in EE at 2200, commentary at 2210, pgm previews for the next day f/by ID and close down anmts. (D'Angelo PA)

INDONESIA—Voice of Indonesia, 9526 at 1931 with possible EE and apparent news headlines. (Sellers, BC)

IRAN—Islamic Republic of Iran Broadcasting (t) 3965-Zahedan at 0205 with M talk, but too weak to tell the language. (Sellers, BC) 6040 at 1945 with an interview on civil rights violations in Gaza. (Fraser, ME) 6165 at 2044-2127 with W in (I) Albanian, ID at 2115 and into a new pgm segment, ID and sign off anmts at 2126. (D'Angelo, PA) 7300-Sirjan in Armenian at 0328. (Taylor, WI) 15240 in (I) Hebrew at 1207. (Brossell, WI)

JAPAN—Radio Japan, 7395 via Mada-

gascar in Swahili at 0337 with M/W alternating talk and contemporary selections. Off at 0400. (Taylor, WI) 9625 via Canada at 1010 discussing their new website. (Maxant, WV) 15445 with W in JJ hosting pops, ID and news at TOH, ID and closedown at 1859. (D'Angelo, PA) 11655 in JJ at 2214. (Taylor, WI) 15190 via French Guiana at 1220 with a cooking pgm. (Fraser, ME)

KUWAIT—Radio Kuwait, 6170 at 0055-0059* on the first day of the American Revolution and an abrupt s/off. (Parker, PA) 15540 at 1820 with rock and EE anc. (Maxant, WV) 17550 at 2014 in AA to NA. (Brossell, WI)

MADAGASCAR—Radio Madagasikara, 5010 at 0224 with carrier plus USB with light inspirational music, IS and choral NA at 0229, lite music at 0231, opening music and Malagasy talk. (Alexander, PA)

MALI—RTV Malienne, 5995 at *0555 sign on with guitar IS, NA at 0557, then short flute IS, FF ID anmts at 0558, vernacular talk and African hilife music, also 2340-0001* off with NA, 9635 at *0800 with flute IS at sign on and opening FF anmts. (Alexander, PA)

MEXICO—Radio Educacion, Mexico City, 6185 at 0002 with choral anthem, SS ID, anmts, and into Mexican folk music. (Sellers, BC) 0548-0612* with SS radio play. Off without any anmts or an ID, but the carrier was still on at 0621. (D'Angelo, PA) 0525-0606* with local rancho and SS radio drama, then a small segment of the NA at 0604 and abrupt

sign off but transmitter remained on until 0613, another time with classical music until abrupt sign off at 0605*. (Alexander, PA) 0049 in SS with ID and talks. (Parker, PA)

MOLDOVA—Radio PMR, 7290 at 2212 ending EE news with sked, contact info and closing ID, into Moldovan pop until 2230 when they switch into GG. (Sellers, BC) *2230-2259* with music, time pips and opening GG language and M with news in GG. (D'Angelo, PA)

MOROCCO—Radio Marocaine, 15350 with AA talks at 1955. (Brossell, WI)

NETHERLANDS—The Mighty KBC, 9450 at 0048 ending a song, email and web addresses, more '60s pops. (Taylor, WI) 9500 via Bulgaria at *0000-0200* with ID, Rolling Stones number, plenty of IDs, ads for KBC Imports. Email address was given as <themightykbc@gmail.com>. Closing anmt and email again at 0158. Also 9450 at 0104-0200* with the usual collection of pop tunes and M DJ in EE. (D'Angelo, PA)

NEW ZEALAND—Radio New Zealand International, 7440 at 1100 on an earthquake off the coast of British Colombia, 15720 at 0435 on the effects of religion on the election. (Maxant, WV)

NIGER—La Voix du Sahel, 9705 at 2245-2300* with FF talk and indigenous vocals, NA at 2258, one second tone at 2300 and then off. (D'Angelo, PA) Heard as early as 2125. Also noted with 13-second test tone at 2303 sign off. (Alexander, PA)

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NIGERIA—Voice of Nigeria, 7255 at *2104 abrupt sign on local Nigerian music, *Nigerian Popular Music* pgm at 2134, and into listed Hausa at 2201, 15120 at 0817-0901* with EE pgm, IDs and time checks, local drums, and *Winds of Progress* pgm. Brief EE news at 0900 then off. (Alexander, PA) 0525 on human rights. (Maxant, WV)

NORTH KOREA—Voice of Korea, 9345 in KK at 1224. (Brossell, WI) 11710 at 1005 on Cuba and Kim leading the country. (Maxant, WV)

KCBS, 2850 at 1130 with KK conversations. (Wilkner, FL)

OMAN—13600 Radio Sultanate of Oman has reportedly moved here for the 0300-0400 EE pgm. Noted something here, very weak at 0300 with talk and music, 15560 at 1420-1445 with a variety of western, local pops and instls. Chimes or gongs at 1430 and news in EE at 1432 and commentary. (Alexander, PA)

OPPOSITION—Denge Mezopotamia (to Iran), 11510 via Moldova at 1445-1510 with indigenous vocals, Kurdish music, vernacular talk, Koran at 2256, NA at 2259. Poor and weak with adjacent channel splatter. Also 1545-1600* with Kurdish music and talk, indigenous vocals. (Alexander, PA)

Sound of Hope (Taiwan to China), 7310 in Mandarin with M/W ancrs over music and 13680 with M and lengthy talk in Mandarin at 1428 and apparent Firedrake jamming. (Taylor, WI)

Radio Dabanga (to Sudan), 15535 via Madagascar with an AA phone-in at 1617. (Brossell, WI)

Radio Dialogue (to Zimbabwe), 12105 at 1600-1700* barely audible at tune in but gradually improved to a good level by 1630 with discussion on fighting inside the country and some Afro-pops. Off with "You are listening to Channel ZIM." (Alexander, PA)

PALAU—World Harvest Radio, 9930 with an EE sermon at 1235. (Brossell, WI)

PERU—Ondas del Huallaga, Huanaco, 3329.5 with M chat in SS over music at 1040. (Wilkner, FL)

Radio Huanta (p), Huanta, 4747 at 0051 with weak audio that soon faded. (Sellers, BC)

Radio Logos, Chazuto (Tarapoto), 4810 at 0311 with a choir doing hymns and into several Andean songs from 0316. (Sellers, BC) Noted at 1040 which has been back for about a week now and good under chirping, blipping UTE. OA pops and folk huaynos at 1046. (Perry, IL) 1100 with later than normal s/on, 1020 with a variety of flauta Andina and SS religious commentary. (Wilkner, FL)

La Voz de la Selva, Iquitos, 4824.4 at 2345 with M in SS over music. Heard every morning around 1040 but not every evening. (Wilkner, FL)

Radio Cultura Amauta, Huanta, 4955 with SS talks at 1020. (Brossell, WI)



Here's an attractive Radio Prague QSL, though the station is long gone.

Ondas del Suroriente, Quillabamba, 5120 at 2300 with partial ID, various numbers and mentions of Peru. (Wilkner, FL)

Radio Bolivar, Bolivar, 5460 in SS at 0000-0045 with music. (Wilkner, FL)

Radio Tawantinsuyo, Cusco, (t) in SS at 1026 with OA instls and heavy QRM from the Asian on 6175. (Perry, IL) 1030-1100 with usual M chat. Noted often after 1000 and 2300. (Wilkner, FL)

PHILIPPINES—Radio Veritas Asia, Palauig, 9720 at 2342 in Burmese with M preacher frequently repeating phrases in EE. 2350 had apparent news, f/by anmts, ID "This is Radio Veritas Asia, broadcasting from Quezon City, Philippines." Gave the sked for their next best, then off. (Sellers, BC)

Far East Broadcasting Corp., 9400-Iba at 1226 in (l) Mandarin. (Brossell, WI) 1350 with M talking in CC. (Parker, PA)

PIRATES—Radio Mushroom, 6925u at 0030 with rock and pop. <radiomushroom@gmail.com>. (Hassig, IL)

Pirate Radio Boston, 6925 at 2111-2210* with "Charlie Loudenboomer" and "Mr. Excellence" and their 20th anniversary pgm. (D'Angelo, PA) 0144 but only for 2 minutes and 0224 (poorer) with their 20th anniversary pgm. (Hassig, IL)

WMPR, 6925 with techno pops at 2055-2115 with more techno pop things. ID as "WMPR — truth, love, and understanding." (Alexander, PA) 2154 with M giving call letters and W giving the frequency. (D'Angelo, PA)

Wolverine Radio, 6925u at 0228 with sign on, big band, and jazz music, then pop/rock and bluegrass. Also 0305 with '60s oldies. (Hassig, IL)

Rave on Radio, 6925u at 2300-2345 with Neil Yong songs and IDs. (Alexander, PA) 2330 with various pop/rock things. Email as <raveonradio@gmail.com>. (Hassig, IL)

XFM, 6925 at 0520-0535 with lite pops, requests. Email to <xfmshortwave@gmail.com>. (Alexander, PA) 0545 with heavy metal. (Hassig, IL)

ROMANIA—Radio Romania International, 6145-Galbeni at 0104 talking about the BBC. (Parker, PA) 11940 in GG at 1943. (Brossell, WI)

RUSSIA—Voice of Russia, 7250 via Armenia at 2220 on Israel-Gaza. (Fraser, ME) 7260 via Moldova at *2230 opening RR bcst with ID, M ancr and news. (D'Angelo, PA) 9395 via Armenia in SS at 0303 with news, //7310-Moscow, 11830-Petropavlovsk-Kamchatsky at 2246 with EE ID and *Russia Sports Daily*. (Sellers, BC) 11465 with "Ici Moscou" ID at 1930. (Brossell, WI)

SAO TOME—VOA Relay, Pinheira, 17530 at 1405 with news. (Parker, PA)

SAUDI ARABIA—Broadcasting Service of the Kingdom, 11915 with their Holy Koran Service at 2043-2101 with Islamic recitations. (Sellers, BC)

SINGAPORE—BBC-Far East Relay, 15285 at 1139 on the correlation between crime and mental health. (Brossell, WI)

SOMALIA—Radio Hargeisa, 7120 at 0330 in Somali with carrier on and into marching band music, M ancr and Islamic devotional. (Sellers, BC) *0332 on with instl NA, Koran at 0333, talk in Somali at 0338, short break and into HOA music. (Alexander, PA)

SOUTH AFRICA—Radio Sonder Grense, 3320 at 0100 in Afrikaans with slow romantic music f/by a discussion. (Parker, PA)

Adventist World Radio, 11755 in Yoroba at 2036. (Sellers, BC) 15480 in AA with talks at 2023. (Parker, PA)

SPAIN—Radio Exterior de Espana, 17850-Costa Rica Relay in SS at 1938 and 21610 in SS at 1452. (Parker, PA) 15385 in SS at 1613. (Brossell, WI)

SURINAME—Radio Apinte (p) at 0315 with light pops and occasional M ancr. But was too weak to determine the language. (D'Angelo, PA)

TAJIKISTAN—TR-1 Radio Tajikistan, 4765 at 0056 in (p) Tajik with a song, M/W anmts, instl music, 0100 with W and a very clear "In jo Dushanbe" ID. (Sellers, BC)

TAIWAN—Radio Taiwan International, 9665 in (l) Mandarin at 1240. (Brossell, WI)



Tue, Sep 25, 2012 11:32 am

Re: Reporte de Recepção: Rádio Difusora Roraima 22 de Setembro de 2012 das 03.35 e 04.11 hs UTC ou seja, em 22 de Setembro de 2012 das 12:39 AM e 1:11 AM hs vossa hora local na frequência de 4,877.5 kHz.

Frequently heard from Brazil these days, Radio Roraima answered Rich D'Angelo with this e-verie.

TANZANIA—Radio Tanzania Zanzibar, 11735, poor at 1815 with M/W talks. (Maxant, WV) 1932-2006 with M in Swahili hosting pgm of local music, 5 + 1 time pips at 2000 f/by ID and news by W. Also noted at 2047-2108* with M in Swahili and pgm of local vocals. (D'Angelo, PA) 2007 in Swahili. (Brossell, WI) 2009 in Swahili with music and songs to 2028, ZBC ID at 2059, string of "Spice FM" IDs including EE slogans. Off suddenly at 2100. (Sellers, BC)

THAILAND—Radio Thailand, 9535 at 2036-2048 with M/W ancrs with EE news, ID and promo anmts. Into Thai pgm at 2040. (D'Angelo, PA)

TURKEY—Voice of Turkey, 5960 at 2215 at 2215 with pgm *The Balkan Agenda*. QRM from Radio France International. (Fraser, ME) 2316 with EE press review. (Sellers, BC) 9655 at 0425 with a story on a former sultan. (Maxant, WV)

UNITED STATES—Voice of America, 5820-Philippine Relay at 2323 with Special English lesson, 7365-Philippine Relay at 2222 with an author interview, 7460 at 2303 with VOA News in Special English, and 7560-Kuwait Relay with EE lesson at 0006. (Sellers, BC) 6045-Thailand in (I) Mandarin at 1254, 9490 in (I) Korean at 1228, 9845-Philippines Relay in Mandarin at 1155, 11785-Thailand Relay, //11990-Northern Marianas, and 15250 via Tajikistan in Mandarin at 1137. (Brossell, WI)

Radio Free Europe/Radio Liberty, 9360 in RR at 1300. (Parker, PA) 1308 in RR at 1308. (Brossell, WI)

Radio Free Asia, 9905 via Pallau in (I) Mandarin at 2107. (Brossell, WI) 11775-Northern Marianas Relay in Cantonese heard at 2229. (Taylor, WI)

Radio Farda, 7520-Sri Lanka Relay at 2242 with talk in Farsi and Persian folk music, //7580, also Sri Lanka, was poor. (Sellers, BC)

Armed Forces Network, 5765u heard at 1020 with news items. (Wilkner, FL)

Family Radio, 11535 at 1201 in Mandarin. Also, 15195 via Ascension with a Bible study pgm at 2055. (Brossell, WI)

Adventist World Radio, 11605 via Germany at 2053-2059*, W with AA talk. Carrier was cut suddenly. (D'Angelo, PA) 11755 in FF at 2010. (Brossell, WI)

WRMI, Florida, 9955 heard at 1450 interviewing a M on Cuba. (Maxant, WV)

WJHR, Florida, 15550 at 1415 with M preacher. (Maxant, WV) 2020 with M reading Scripture. (Parker, PA)

WBCQ, Maine, 15420 at 1535 with Brother Stair. (Maxant, WV)

WEWN, Alabama 11510 at 1330 on the Apostle Paul, 15610 at 1240. (Maxant, WV)

Overcomer Ministry, 13820 via Germany at 1442 with Brother Stair. (Taylor, WI)

WWCR, Tennessee, 9980 heard at 1245 with Brother Stair. (Maxant, WV)

KJES, New Mexico with M in SS leading children in Bible recitations. (Sellers, BC)

WINB, Pennsylvania at 0329 with ID. (Parker, PA)

VATICAN—Vatican Radio, 6075 at 0803-0805* in AA. The carrier was cut at 0805. (D'Angelo, PA) 7410 via Uzbekistan in EE at 0145 with church info and news, 11625 via Madagascar at 0301 with M and church news, audio was in and out. (Sellers, BC) 2008 with schedule for EE but heard Latin liturgy and a hymn. Recheck at 2015 and it was in EE. (Sellers, BC) 15570 in (I) Swahili heard at 1621. (Brossell, WI)

VIETNAM—Voice of Vietnam, 9640 via England at *0230 sign on, M/W with news, 9840 with 2330 sign on with music, ID, pgm lineup, and news. Also 12020 in EE with M/W doing news, //9840 was poor. (Sellers, BC)

ZAMBIA—CVC-One Africa, 13590 at 1825 with interview on the opening of a new electronics plant there. (Maxant, WV)

Salutes and high fives to the following good guys who did the right thing by contributing this time: Brian Alexander, Mechanicsburg, PA; Rich D'Angelo, Wyomissing, PA; Harold Sellers, Vernon, BC; Charles Maxant, Hinton, WV; William Hassig, Mt. Pleasant, IL; Joe Wood, Greenback, TN; Ralph Perry, Wheaton, IL; Mark Taylor, Madison, Wisconsin; Robert Fraser, Belfast, ME; Richard Parker, Pennsylvania, PA; and Robert Wilkner, Pampano Beach, FL. Thanks to each of you! And, until next month, good listening!

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 prize winner is **Brian Alexander**, whose valuable log reports are seen regularly in the column. Brian adds a copy of the 2013 edition of the *World Radio TV Handbook* to his shortwave reference library. I've been getting the WRTH since shortly after it was introduced (in the late 1940s) and — heaven forbid — I would never be without a current edition. It's available from your favorite radio dealer, big box book store or neighborhood bookstore or online book supplier. Get one! You won't be sorry!

KSRF and the T-Bird Girl

by Shannon Huniwell,
WPC2HUN
<melodyfm@yahoo.com>

"In fact, a couple of times [the movie company's transportation manager] had to jump start the [rented T-Bird] before he brought it back to the owners because actress Suzanne Somers had a habit of leaving the radio playing between shots and running the battery down."

At least a decade before movie-goers spotted *American Graffiti's* Suzanne Somers blasting legendary Mexican station XERB through the open windows of her '56 Thunderbird, another Southern California girl was discovering the power of radio in her sportingly iconic little Ford.

The signatures on statuesque Aurora Yardley's registered nursing degree had barely cured when she landed an R.N. job at some equally new elementary school in Southern California's San Fernando Valley. Her rapid entry into respectable employment was completely unplanned. Aurora, driving home from the teaching hospital's graduation exercises, still with the contagious tune of *Pomp & Circumstances* (*LISTEN: To Pomp and Circumstance:* <<http://bit.ly/oTNH4>>) in her mind and a newly-official nurse's hat on her head, came to an unceremonious halt alongside the entrance of a nearly-completed elementary school's driveway.

The automatic transmission on the 1947 *DeSoto* four-door, six-popper apparently decided to shift into retirement just as the very fellow tapped to be the fledgling elementary building's principal was attempting to exit that driveway and get to a meeting at the school district office. That commitment quickly forgotten, he and a couple of construction workers pushed Aurora's wreck into a parking space and then she accepted his offer for a lift.

"I couldn't help but notice that you're a nurse," he stammered about three minutes into their ride.

"Actually," Aurora clarified, "I'm a very new one."

"Well, that's good," the guy reasoned, "because I'm actually a brand new principal of that very new school back there, and I'm looking for a new nurse for all the nice little kids who'll be there come September."

She said nothing at first, simply savoring the serendipity of it all.

"Pay's just over \$4,800," he smiled. "Oh, and you get your summers off."

So, it was as simple as that. Within a week of that lucky late May 1961 event, Aurora found a cute apartment in Sherman Oaks. Though she hadn't yet begun to receive any salary, some flashy used car lot in Inglewood offered a \$50 trade-in for the dubious DeSoto and sufficient credit for her to drive away in a red 1956 Thunderbird with manual three-speed tranny and electric overdrive. Aurora laughs that the first several miles of the trip were rather tenuous, as she was a stick-shift novice and still getting used to a big V-8 that actually ran on all of its cylinders. She'd been smitten by these sexy autos ever since seeing a sparkling 1955 debut model in the Ford showroom. She'd gone to the dealership with her late Dad, who wistfully pointed out the Thunderbird's finer points, while reminding him-

Photo A. Aurora Yardley notes that, circa 1962, when this story took place, she probably looked more like the woman in Ford's 1955 Thunderbird brochure image — albeit a few inches taller — than the casually attired straight-haired flower child girl one might connect to '60s youthful L.A. feminism. Also dissimilar to the promotional graphic, the T-Bird's automatic transmission. Aurora's red '56 edition came equipped with three manual speeds forward augmented by an overdrive. One more detail not seen here . . . the little after-market FM radio fastened to the sheet metal just under the heater controls.



Photo B. What's this photo's connection to KSRF(FM)? Strictly tangential, but I can point out that the driver, Frank Sinatra, is backing out of his driveway in a T-Bird. And, his voice was no doubt featured in songs aired over K-Surf's early "good music" and middle-of-the-road format days. It is believed "Old Blue Eyes" had a couple of these sporty Fords. His recording company, Capitol Records, purchased one for his use while in Florida. An invoice billed to the musical firm that he helped make famous, indicates Capitol bought a 1955 Thunderbird for Sinatra and had it delivered — in early October '55 — to his Sunshine State address at the Fountain Beach Hotel. See the AM radio's antenna on the passenger side fender? The one like it on Aurora Yardley's bird was fitted with two, 6-inch-long metal rods, making the aerial look like a Greek Orthodox cross, but more agreeable to *K-Surf's* pre-1963, horizontal-only transmitter antenna polarization.



self that he was tasked with finding a station wagon. Though her '56 was far from mint, it was affordable and represented a palpable personal achievement. *The tall nurse with the T-Bird*, as Aurora was colloquially branded, created quite an impression when school opened. It all seemed rather heady at first, as she quietly reveled in the moniker.

But, after a year of enduring the female staff gossiping about her, politely rejecting the male teachers who were drooling all over her, and cleaning up the kids vomiting on her, Aurora decided to accept a four-day per week nursing position at an upscale doctor's office in Santa Monica. Reportedly, the physician played golf, religiously, every Friday. Aurora often used portions of her long weekends to cruise a favorite stretch of the Pacific Coast Highway in her Thunderbird.

Before we go too far without any apparent radio connection, I should mention that the sporty vehicle's former owner had installed an FM receiver under the Ford's dashboard. Aurora admits that it was actually a precocious second grader who'd discovered her car's after-market frequency modulation feature. "The little stinker turned green and *you-know-whated* in the school hallway not long before dismissal time . . . and then conked out on my examination table," Aurora recalls. "His mother couldn't fetch him because, she was sick herself and had two other young children in the house with similar stomach bugs. In the good old days, it wasn't uncommon for a teacher or nurse to ferry a stranded kid home.

Halfway there, the kid's recuperation went into high gear, resulting in him asking rapid-fire questions about every button and dial within reach. My response of "I don't know, Honey," got met with his poking and turning the controls on what suddenly came to life as an FM radio, filling the Ford's small hardtop with surprisingly robust music — from porthole to porthole.

A Fishbowl Station

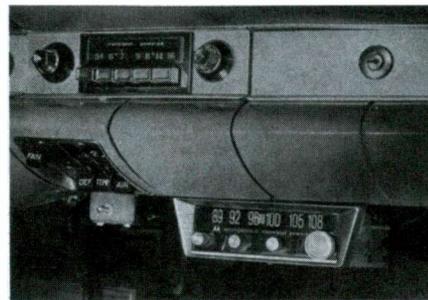
That same precocious kid played a role in Aurora's falling in love with the FM dial *and* finding a mate. Plus, in a roundabout way, the curious youngster also helped set the stage for a coincidental link to this column's favorite contributor, Jan Lowry. It may sound like one of those *Six Degrees of Kevin Bacon* relational exercises, but here goes the meandering scenario.

During her last week as a school nurse, Aurora was assigned to chaperone a class field trip to Pacific Ocean Park, a nearly 30-acre, nautically-focused amusement park in Santa Monica.

Though her students screamed with glee when seeing the establishment's rides, marine-life shows, and corporate-sponsored exhibits, Aurora took special interest in an FM radio station that she couldn't help but notice headquartered in a fishbowl-like setting there. A science teacher, always attempting to dazzle Aurora with his knowledge, was also on that school excursion. When some of the children spotted a tower against the skyline also highlighted by the park's roller coaster, they wondered aloud if it was part of some scary spaceship ride.

New FM Auto Radio

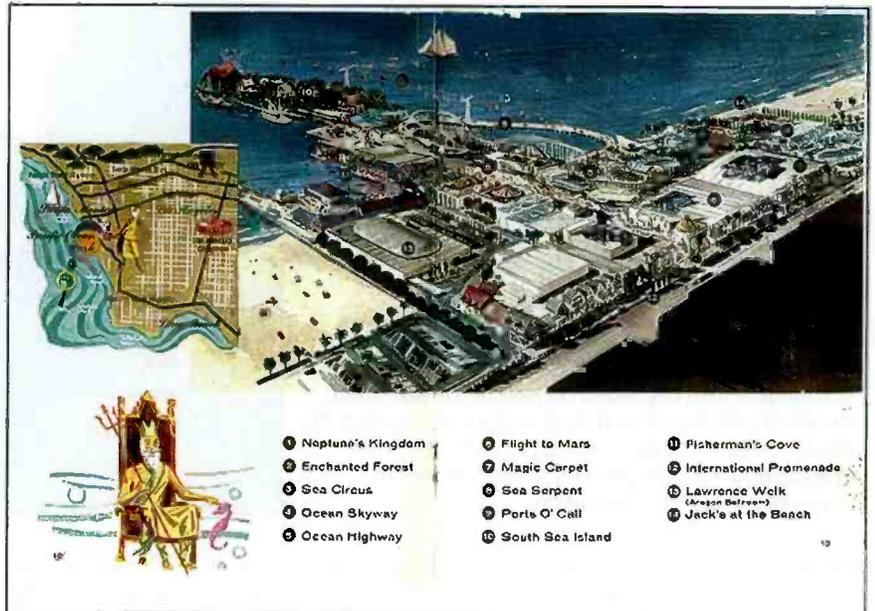
OUR recent survey "FM Radios for Your Car" (December 1959) contained several reports from leading auto radio makers which stated flatly they had no plans for marketing an FM auto radio. Motorola was one of them. In spite of their former stand—or perhaps because of our article—Motorola is now mass producing the FM-900, a mobile radio that tunes 88-108 mc. This



under-the-dash-installation unit can operate independently of the car's AM set. Three transistors power the hybrid circuit, which contains seven additional tubes. FM-900 shares the AM set's antenna and can be used with any 12-volt, negatively grounded ignition system. No need to sell the FM set when you sell your car. It may be moved from auto to auto, or auto to boat. Other features are AGC, AFC and \$125 price. ●

Photo C. Perhaps the original owner of Aurora Yardley's car caught this brief piece in the June 1960 issue of *Electronics Illustrated*. No matter where he or she noticed the FM radio it heralded, however, on the then incredibly uncommon Motorola frequency modulation sets specifically meant for automotive use. The article began by reporting that its late 1960 survey of electronics manufacturers showed that they "had *no plans* for marketing an FM auto radio." Maybe Motorola rethought the situation and deduced that, if it had a quick change of heart, it'd have absolutely no competition in the mobile FM field. Whatever the reason, the company's model FM-900 proved seminal with discriminating drivers wanting a high-fidelity listening option on the highways. How about that price tag? \$125, or a bit more than 10 percent of the even \$1,000 that Aurora paid for her used Ford two-seater. By the way, that FM-900 with three transistors and seven tubes was powered by 12 volts. Aurora's '56 *bird* was among the first Fords using a 12-volt system.

Photo D. King Neptune sits in the lower left-hand corner of this Pacific Ocean Park (POP) postcard. The Santa Monica, California-based amusement park was built on a giant pier at water's edge. Neptune's Kingdom, the curved-roof building near the upper right, was home to the similarly nautically-themed *K-Surf* FM station's fish-tank-esque studios. Its nearby tower, though not depicted on the card, would be clearly visible to anyone enjoying the recreational amenities there. Opened in 1958 by CBS and partners, POP eventually suffered serious access problems when urban renewal projects caused several key access roads to be detoured for construction in 1965. The park went dark and closed a couple of years later. KSRF stayed behind amidst defunct rides and shuttered concession stands until saying goodbye to the derelict attraction in late 1969.



“While that’s an interesting deduction, students,” Mr. Wizard pontificated, “I believe you’ll find that the structure in question is, in fact, a broadcasting tower. And, I’d speculate based upon the protrusions barely visible from this distance near its top,” he squinted and pointed, “it is the transmitting tower of a frequency modulation or FM radio facility.”

None of the kids were inclined to take the lesson any further, instead taking off through the parking lot and toward the park’s

entrance booth, beyond where amusements and concessionaires slinging junk food lay in ambush. Other than momentarily thinking of her Ford’s rather rare FM set, Aurora wouldn’t have considered the teacher’s specific antenna pronouncement any further either, had not several of the over-stimulated grade-schoolers required a timeout from chili dogs, cotton candy, and various intensities of spinning inertia. She sought shelter for her wozy patients in the nearest building displaying restroom



Photo E. One of several incredibly rare candid studio shots snapped by a young Jan Lowry during a weekend DJ stint at KSRF(FM) Santa Monica. This is obviously the “fish bowl” described by our story’s Aurora Yardley. Note the rear-lighted *K-Surf* logo featuring a sea horse “S.” That circular “POP” sign refers to the station's Pacific Ocean Park home, as opposed to a *pop* music format. Those wall-mounted reel-to-reel decks are wired into the automation system (in racks) standing at right. Imagine being a cub tape-jockey responsible for running from deck to deck with small reels containing individual big band songs during the station’s *Saturday Night Dance Party*. One would have to be light on his or her feet!

Photo F. After taking me to visit some small radio station, my Dad would often remark about the studio gear being “horribly shopworn.” Though a bit fuzzy, this early 1960s photo is a time capsule owing to that assessment. Such appearances are typically the natural consequences of hands that have come in contact with coffee, cigarettes, leaky pens, spilled soda, poorly wrapped sandwiches, sticky tape cartridges, as well as various and sundry things gummy or sticky. Then there’s the frayed carpeting, scuffed table tops, and dog-eared pages in the copy book. Finally, broken or missing switches, and well meaning staff members’ art work (such as the *Surf-O-Matic* automation start/stop device’s nickname) inscribed with magic markers on a piece of home-brew gear.



signs. This happened to lead to a waiting room area sporting floor-to-ceiling plate glass windows looking into a radio studio stocked with electronic gear like wall-mounted tape recorders.

“If I stare at that reel going around and around in there, Miss Yardley, I’ll feel sick again,” announced one little girl in Aurora’s mobile hospital troupe.

She suggested that the youngster simply sit, with her back to the scene, on a sofa at the foot of the radio station’s “stage.” Aurora was curious as to why an FM outlet was part of an amusement center. From the soothingly gentle music that flowed from her car’s “lower” (under the dashboard) radio, she couldn’t imagine a connection between FM programming and the milieu of screaming people in frantic Tilt-a-Whirls.

The CBS Connection To A Non-Network Radio Property

Probably due to enviously eyeing the surprising success ABC-TV enjoyed helping fund Disneyland, thus capitalizing on the burgeoning Mickey Mouse franchise, the Columbia Broadcasting System co-founded Pacific Ocean Park in 1958.

Almost immediately dubbed P-O-P, CBS’ enterprise gave Uncle Walt’s brainchild some serious Golden State venue competition. In fact, for a few years anyway, the two Southern California attractions often traded the number one and two spots in terms of daily attendance.

Pacific Ocean Park was in its heyday when, in summer 1960, the Federal Communications Commission received a request from the Monica Broadcasting Company, permittee of new KSTM-FM at Santa Monica, that the unbuilt station be allowed to construct its main studio within the amusement park instead of at the originally proposed co-habitation with the permittee’s *Santa Monica Evening Outlook* newspaper.

The FM’s stick, yielding an antenna height of minus 165 feet above average terrain (when factoring-in the Santa Monica Mountains), had already been authorized for a P-O-P venue. The studio relocation got FCC approval at about the same time that Santa Monica Broadcasting decided to rebrand its soon to debut station with the mnemonically oceanic name *K-Surf* or *KSRF(FM)* in official FCC parlance. Four days following its



Photo G. Jan’s alternate view of the *K-Surf* control headquarters highlighting the colorfully protruding pods in which are nestled the FM’s Ampex-brand reel-to-reel machines and KSRF logo. Anyone who has set up a radio studio knows that unless the back of the studio desk is against a wall, it is very difficult to prevent the room from looking like a nest of discordant wiring.

first moment on the air, the fledgling Class “A” FM received some decent promotional press in the December 26, 1960 issue of *Broadcasting-Telecasting*.

“In a building as gay and glittering as the amusement park in which it is located,” the magazine observed, “KSRF(FM) began operations last week in Pacific Ocean Park, Santa Monica, California. The station broadcasts Monday through Friday from 7 a.m. to 1 a.m.; Saturday 8 a.m. to 3 a.m.; and Sunday 9 a.m. to midnight, with 1 kilowatt on 103.1 megacycles, the last FM channel available in Los Angeles County.”

The scarce frequency had been abandoned in March 1958 when Long Beach's KNOB(FM) left local channel 103.1 megacycles in favor of Class "B" 97.9 megacycles where higher transmitter power/height opportunities would be available. A young Jan Lowry happened to see the aforementioned *Broadcasting-Telecasting* article and thought it might be fun to work in an amusement park-based station. He looked up the FM's phone number and eventually worked up the nerve to call for a possible audition. "As luck would have it," Jan remembers, his query occurred at the very point when "the three [KSRF debut staff who] had operated the station alone for its first two weeks, were nearing exhaustion." Though many of the long hours on-air were *technically* handled by a Schafer-brand automation system, dividing the new FM's lengthy schedule and business by just three was proving as untenable as was the answering service hired to take transmitter readings during late nights and weekends.

The station's initial sea trials — seeming to the crew as a bit ironic when the taped "sounds of the surf breaking and seagull cries in the distance" fired off at inopportune times — provided a nervous Jan Lowry with a perfectly timed job search. "As I walked into the studio, located in the lounge of Pacific Ocean Park's 'Neptune Kingdom,' the then 20 year old describes, "George Baron [upper AM dial big daytimer KDAY Santa Monica's former general manager and now one of the KSRF trio] sat me down before the console, gave me an *Evening Outlook* newspaper folded at the classified section, and pointed to the copy book in front of me which was opened to a one-minute commercial for a local auto dealer. When the [music from the] automation stopped, I read the *Hanson Chevrolet* commercial cold, looked over to the newspaper for the 'buy of the day' (circled in red pencil), then returned to the copy in the book for the pitch's close."

When the seagulls went into their automated station ID, Mr. Baron looked at Jan for a moment and then knighted him as KSRF's new weekend announcer. Suddenly finding himself to be an official *K-Surf* (as the station's name was pronounced in public) employee, Jan drove home with details of his productive visit mixed with excerpts of a page of KSRF promotional material fresh in his mind.

"Music is presented on KSRF via high-fidelity tapes providing the world's

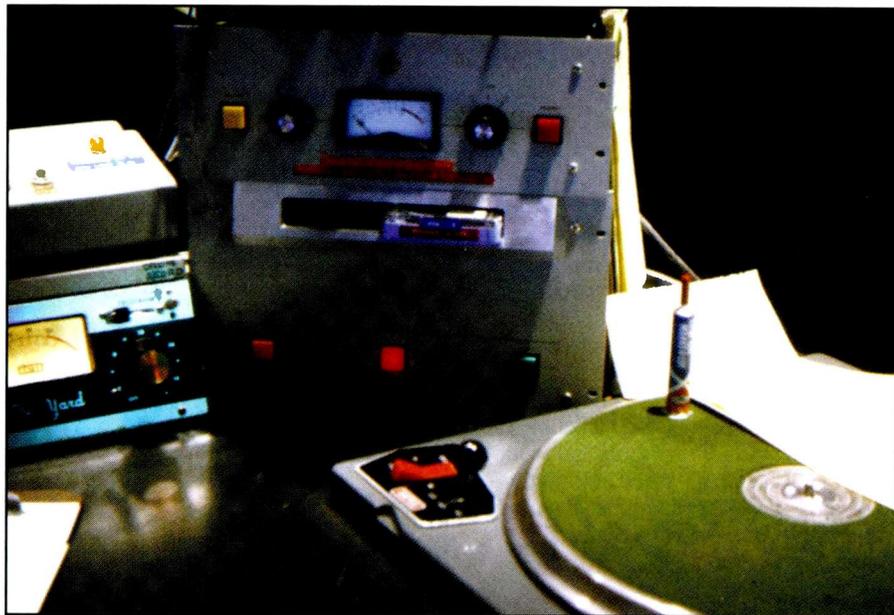


Photo H. Jan Lowry's long-ago snap captured KSRF's versatile Gates-brand monophonic YARD board, so called for its many channels and cross-switching options — as in a busy railroad depot's switching yard. This faithful piece of equipment served master control until "Tuesday, November 19, 1968," recalls Jan, "when KSRF(FM) went total multiplex stereo and inaugurated a new automation system. The first stereo broadcast was heard at 6 p.m. with the station's staff huddled around stereo speakers in the K-Surf general office area, attentively listening to the sounds of the surf' in magnificent stereo!" Also identifiable in this image is a Gates CB-77 turntable and Collins tape "cart" machine with record amplifier loosely resting on top. Check out the liberal use of plastic strip *Label-Maker* tape on the cart and cart machine. A common radio studio sight back in the day.

most beautiful music, with four minutes per hour devoted to sponsors' messages. Rhapsody and rhythm as peaceful as the ocean waves . . . for youngster, adult, young at heart . . . played via the highest high-fidelity engineering equipment in radio. Each half hour was available to a sponsor who received a 30-second opening announcement, 60-second middle commercial, and a 10-second closing mention."

Jan also reviewed instructions from his new boss regarding the *Saturday Night Dance Party* slated for Saturday evenings through 3 a.m. Sunday. To accommodate the program's "big band and Lester Lanin-type society orchestra music and several sponsors," tapes were shuffled like discs!"

Jan smiles that the following Saturday, upon entering — through the vacant guard shack — the not yet opened for the day amusement park, his trek to *K-Surf* took him within close proximity of the seal tank near the curved ramp to the modest FM's studio in the lounge of Neptune's Kingdom. Before ever hearing the signature sounds of KSRF's recorded

seagull mascots, Jan got serenaded by "the awakening seals who would usually give [him] a moment of audio attention as [he] slowed to view them."

Historical *K-Surf* Driftwood Washed Ashore By The Radio Waves Of Time

Every station has a row of bullet points with which one could quickly chronicle its milestones. Ownership changes play heavily into a radio property's life. After the Santa Monica FM's 1960 founding, it experienced a 1962 sale to a company with a major stockholder who also owned part of Pacific Ocean Park. Though the dollar was worth more in those days, we can still say, "unbelievable" to the purchase price of just \$49,000 and change for a fully operational, rim-shot Los Angeles FM. Keep that figure in mind when noting the little station's subsequent sales: 1964 for \$135,000 to George Baron (KSRF's original general manager) and his minority partner who'd sold his shares in the 1962 sale and wanted back in.

After some three and a half decades at *K-Surf*, Mr. Baron decided to retire in late 1986, selling the facility for \$5.25 million. Just five years later, KSRF was again sold, this time along with another suburban L.A. station that shared *K-Surf*'s 103.1-MHz frequency. The 1991 transaction called for \$17,670,000 cash at closing, pocket change when compared to the pair's acquisition to what would become a Clear Channel Communications, Inc., subsidiary at a cost of \$55,527,500. As if that weren't the limit, in 2000, Clear Channel sold the two little FM's to a Spanish language broadcaster for an even \$85,000,000.

KSRF(FM) ran for over a quarter of a century on its own blend of middle-of-the-road album music until management opted for a more scientifically-researched contemporary M-O-R format from syndicator, *Drake-Chenault Enterprises* in 1977. This lasted for about five years when *K-Surf* morphed into an easy con-

temporary music outlet, followed quickly by a tweaking to "Mellow Hits."

That was adjusted, in 1987, by the new owners who wanted the signal to send a full-bore "Adult Contemporary Hit Mix." Yet another licensee switched KSRF (FM), now identified as *The New 103 FM*, *The Beast of the Beach*, and then *New Rock MARS-FM* in spring 1991.

By fall 1992, all of the shifting stripped KSRF's gears to the point where ownership junked the Santa Monica FM's calls and recast the property KBJZ(FM) in order to handle a jazz format. L.A. radio buffs trying to keep station identities straight were in danger of getting the blues when KBJZ(FM) swapped names with its Newport Beach co-channel sister, KAJZ(FM).

This confusion was amplified in June 1994 as our Santa Monica subject became KACD(FM) and disseminated sinking sands of various formats from "New Age/Contemporary Jazz" to "Hot Adult

Contemporary" hits, and then — for 1996 — something called "alternative hybrid techno-rock dance music." The latter came with a station slogan, "We're Grove Radio."

Jan did his best to crystallize Grove Radio's focus by reporting, "it featured a kind of European-style house music, sort of a 1990s disco." That trendy flash-in-the-pan concept pulsed along until the October 1998 "stunting" (or running anything — from Christmas music in the summer to sounds of hammers and power saws — to startle people into noticing something new) settled into "Adult Alternative Rock" with a catchphrase, "World Class Rock on Channel 103.1." In any event, with all those discordant changes, the 2000 swing to Spanish language/contemporary Latin hit music under the banner of "Super Estrella" was likely no less understandable for most Southern California radio observers.

Over the years, KSRF(FM), KBJZ (FM), and its present call, KACD-FM have been housed in several Santa Monica locations and now a Los Angeles address. Its power output has ranged from approximately 500 watts to the present 3-kilowatt authorization. The changes were made after the Pacific Ocean Park property got redeveloped, as well as when ownership heard the signal degrading as high-rise construction in Santa Monica started eating the RF. And latter Santa Monica FM licensees simply eyed edging the transmitter into the L.A. city limits where it is now.

What I find most fascinating about the original KSRF(FM) is the fact that the FCC authorized both a Santa Monica allocation on 103.1 megahertz and another just 42 miles — as the *K-Surf* sea gull flies — down the California coast at Newport Beach. For decades, the Commission was pretty picky about co-channel Class "A" FM allocations being at least 65 miles distant, even in mountainous areas where a lot of signal-dampening heights naturally mitigated interference. My guess is that FCC officials, circa 1960, were so focused on getting FM service up to speed in consumers' minds that, in some cases, they let entrepreneurs give their FM dreams "the old college try."

During his dozen years on in the *K-Surf* studio, Jan says he and his colleagues "did not acknowledge any listenership any farther out from Santa Monica than Marina Del Rey, Inglewood, and West Los Angeles (all well under 10 miles from the little FM's stick).

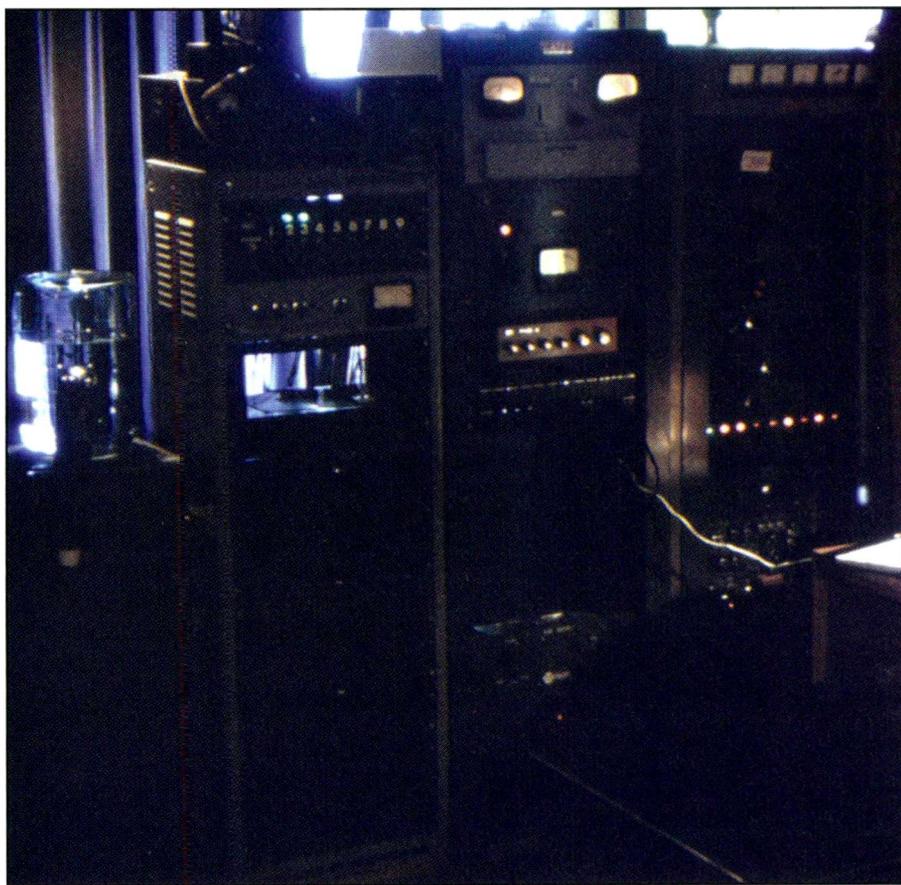


Photo 1. Jan is the first to admit that this picture is not the work of a professional photographer. No matter, as it is undoubtedly one of the only surviving glimpses of the first edition of KSRF's Pacific Ocean Park-based transmission room. At the right of the row of gear is a Gates 1,000-watt transmitter. A Hewlett-Packard modulation monitor occupies the top of the middle rack, while a piece of very analog switching equipment resides in the left-hand rack next to a true engineering department perk: The water cooler.

“Manager, George Baron, was fond of saying, ‘we’re a SANTA MONICA station!’ Never once did I get a listener phone call from the ‘overlapping signal’ area with the 103.1 at Newport Beach.”

When the FCC granted KSRF(FM) a 1980 construction permit to raise its antenna height to 575-feet above average terrain with an effective radiated power of 562 watts, the owners of the Newport Beach facility (then KOCM(FM)) filed objections with Washington, “claiming that KSRF(FM)’s new site would cause interference to the Newport Beach station.” For several years, the two small L.A.-area 103.1 FM’s battled in court. The dispute was finally settled because the Newport Beach licensee decided to sell his station rather than risk a possible widening of the “overlapping signal” zone.

Aurora Yardley asked me about this “capture” phenomenon and remembered “some other station popping into *K-Surf* with her ever turning the dial” as she drove down the coastal Route 1 highway to visit friends who lived on the ocean in Huntington Beach. “I shared a good laugh with my hosts,” the erstwhile T-Bird driver/early automotive FM listener says, “when I greeted them with my experience of hearing Herb Alpert & the Tijuana Brass’s whimsical *Tijuana Taxi* compete with some heartfelt Frank Sinatra ballad. Just as Sinatra got to the part of his song where he started pouring heartache into his rich vocal delivery, Herb Alpert’s band sounded their tune’s concluding ‘beep!’ on a bulbous squeeze horn.”

Aurora also remembers that kind of mixed-up thing happening at odd times in a few different places somewhere between the two stations’ transmitters. Arguably, that interesting co-channel, short-spacing situation played into the hefty price tag affixed to KSRF(FM) when the new owner of KOCM(FM) figured if you can’t beat ‘em, join ‘em and bought the Santa Monica signal in order to simulcast it with the Newport Beach 103.1 outlet.

Jan vividly recalls this “plan to [join the pair of small co-channel FM’s] to provide 70 percent coverage of the Los Angeles radio market — from Malibu Beach to San Clemente.”

While many other co-owned, nearby stations air the same programming, thus extending their format’s footprint in a given media market, being able to do this with co-channel facilities allowing listeners to drive from one signal boundary to the other, is almost unheard of.

Ever Heard Of A KSRF Listener Like This?

Jan doesn’t remember anyone matching my description of Aurora Yardley ever visiting *K-Surf*’s Neptune’s Lounge-based fishbowl studio or even watching the operation through the glass. There was, though, a scintilla of something about a tall girl with a classic T-Bird. Maybe one of the other KSRF announcers mentioned her. Perhaps she was one of the regulars who requested a particular song.

“I did used to call *K-Surf* every couple of days for a while in the early ‘60s asking for whatever favorite tune I was in the mood to hear again,” Aurora says. “And, the DJ there, a guy whose name I can’t remember, would ask, ‘is this the tall chick with the little red T-Bird?’”

“At least once, he mentioned me that way on the air. I’d made the first request in person when I was at P-O-P with a friend. I think she told the announcer that if he waited to play the record in a half an hour or so, we’d be listening to it in a little red Thunderbird. He seemed intrigued about my choice of car and even more surprised that it had an FM radio. And it was a great



Photo J. To whom or at what in the *K-Surf* fishbowl studio is a youthful Jan Lowry pointing? Well, truth be told, *nobody and nothing*. Our column’s official broadcast historian remembers this being an after-hours staged shot in which he used a tripod and timer to coax his camera to grab an action candid of a bona fide Los Angeles-area radio personality in action. By “after hours,” Jan means that the picture was taken after the last of the day’s Pacific Ocean Park goers drifted out of the attraction’s Neptune’s Kingdom lounge where KSRF(FM) was on conspicuous display. That *Electro-Voice* (probably a model 654) stick microphone seems to be pointing out the fact that those who served as *K-Surf* personalities must be respectfully dressed in a white shirt and tie. I am especially grateful to Jan for digitizing a box of his vintage 35-mm slides and graciously sharing with *Pop’ Comm* readers a slice of West Coast radio history that otherwise would never have been seen.

sounding radio! Probably because of the acoustics or something when I had the hardtop in place.

“Often,” Aurora admitted, “I’d sit in the car and couldn’t resist catching just one more *K-Surf* song after I’d already gotten to my destination.”

This was a special pet peeve of Aurora’s husband, a then new obstetrician associate of the Santa Monica doctor for whom she worked. Reportedly due to Aurora’s habit of extended listening in their driveway and/or shopping center parking lot, he went through more jumper cables than exam gloves. In the early 1970s, when her red Ford was just a memory — having been traded-in on a Mercedes 250C, a more archetypal doctor’s wife’s ride — the couple went to see *American Graffiti*. Of course, she loved the parts where Suzanne Somers’ character sped around the movie’s mythical California town in a ‘56 Thunderbird. They later heard that the car had been rented from a Golden State couple by producer, George Lucas, for the picture’s filming at a mere \$25 per night. Turns out that the iconic car’s owners, like Aurora, had bought their T-Bird, second-hand, in the early ‘60s for approximately \$1,000. What really sparked some laughter for she and her husband, however, was a recent discovery about the movie’s most famous vehicle noted on Kip Pulman’s *American Graffiti* fansite: <<http://bit.ly/UbcIqF>>.

There, the Thunderbird’s owners recalled that “they were never overly concerned about the welfare of their car and that [Lucas Films] took very good care of it. In fact, a couple of times [the movie company’s transportation manager] had to jump start the [rented T-Bird] before he brought it back to the owners because actress Suzanne Somers had a habit of leaving the radio playing between shots and running the battery down.”

And so ends another niche of broadcasting’s past on *Pop’ Comm* . . .

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A Little Cow, a Big Dog, and a Skunk

by Bill Price, N3AVY
<chrodoc@gmail.com>

“Last month, I caught my first cow . . . Told the landlord he didn’t have to send over the professionals. You just have to know how to talk to ’em.”

I just missed my chance to meet a cane corso. It’s not a sugary drink — it’s a great big dog! He’s from Italy and related to the mastiff, which weighs in just under an elephant or a brontosaurus. It’s a long story, but that’s what I’m known for anyway.

Sometimes on weekends Mrs. N3AVY and I drive rescue dogs toward their new homes. Each driver takes a turn driving 50 to 100 miles, usually on an interstate highway, and hands off the dog to the next driver.

I was only booked in as a “backup” driver for a couple of legs along the journey and a regular driver took my place. Just as well, because the new N3AVY SUV can be heard slurping gas from a hundred yards away.

All that aside, if you like dogs and can’t have one, try driving rescue dogs on the weekends. It’s a lot of fun and very rewarding.

By the time you read this, friend Beezer will have probably sent me a 10-meter mobile mag mount antenna, which will go well on top of the house — with its completely metal roof. It’s his way of getting me on the air painlessly. I figure I can lob the thing up there the way soldiers lob grenades, and wherever it lands, it’ll have a good ground plane, even if it might radiate on a funny angle. And it’ll be a lot easier in the March winds than trying to string wire.

I promise to publish a schedule if I actually get on the air. Might even get some cards printed for y’all.

Even though I didn’t get to meet Mugsy — the giant dog from Georgia — I did meet another reader friend, introduced by yet another reader friend, both of whom came close to sharing some of the highlights of my lifetime of HPJIEs.*

Recently a fellow Coast Guard vet got in touch with me, and now all these new-found friends have found me, too. Some of these guys have worked in the same places and with the same people I’ve known along the way. If you know a resistor from a whatchacallit — and know not to misplace your modifiers — you might want to think about submitting an article — or an idea for one — to our fearless editor.

Maybe you, too, can become rich and famous and meet new friends without even putting up an antenna.

Friend Norm is still snowed in at his northern headquarters with his spaniel-friend Bandit, and they both seem to be having fun based on the picture he enclosed with his recent letter. Norm still uses ink. He may be the last holdout, though he does pop up on the email pages, too.

I think he stays up in the frozen north throughout the winter months and then migrates to Florida for the summer. He’s always amazed at how much traffic is headed in the other direction.

Mrs. N3AVY has now had both hips replaced. I’m still waiting for a brain to become available. Our doc has given us both handicapped parking tags for our rear-view mirrors. She has a little trouble walking. Mine was issued because if I’m not parked right in front of the store, I can’t find the car.

Last month, I caught my first cow single-handedly and got him back onto the right side of the fence. OK, so it wasn’t a huge cow — just a little guy. But I got him all by myself. Called the landlord back and told him he didn’t have to send the professionals over to help. You just have to know how to talk to these cows.

I don’t think the words matter, though. It’s the tone you use. Waving your arms around and chasing them helps, too. I think I’ll get a pair of chaps and a big hat.

Right around my cowboy adventure, I surprised the skunk who lives under our house and eats our cats’ food. I opened the back door a little too fast — forgetting to rattle the knob like I usually do — to let him know I’m coming out. He sprayed, but just on the patio.

While he was scurrying away (skunks always scurry) he gave me a look that said, “You’re lucky, this time, fatso.”

I’m mounting a wireless doorbell for Mr. LePew. The button will be on the inside of the back door. The doorbell will be outside by his dining area. I just hope it doesn’t startle him.

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