Lost in Space
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• Adventure: Gordo Takes Us 'Rental Car Mobile,' p. 17
• A Monitoring DXpedition to Prince Edward Island, p. 22

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Bonito RadioJet

The Bonito 1102S RadioJet shortwave receiver combines innovative design with the advantages of modern computer technology. It has a frequency range of 40 kHz to 30 MHz with an excellent sensitivity of .03 µV/m at a noise level of 137 dBm with an extreme resolution of 144 dB at a sampling of 24kHz. The noise floor is extremely low, because there are no active parts between the antenna and the ADC. Strictly speaking, this radio is not an SDR, although it is exclusively controlled by computer. So far, no SDR has defined, controlled, read or computed anything like the RadioJet. Bonito RadioJet is a short wave receiver with a built-in USB audio device and a 24kHz multichannel I/O jack, or to put it simply: The most obvious application of modern radio technology. The software has been designed in such a way that its size and its coloring can be custom-tailored to any screen. This can be achieved with the presets or user-defined. The center piece of this IF receiver is the supplied software. It makes all the different applications possible. An IF-Input Device is built into the RadioJet so that the radio is like an external USB-Audio recorder and an easy installation without a complicated driver is assured: simply plug and play. The supplied standard software features: Reception and recording of transmissions in USB, LSB, CW, AM, FM and DRM. All filters are completely variable and can have their waviness and notches drawn by hand with the equalizer. S-meter and spectrooscope have an extremely accurate dBm-scale and can be calibrated. This device derives its power from the USB connection. BNC antenna input. Made in Germany. 4.5 x 1.25 x 4 inches. This device requires a USB cable (not supplied).

Order #5789 $699.95

NetSDR

The RFspace NetSDR is a high performance networked software designed receiver with 1.6MHz bandwidth. The NetSDR uses a high performance 80 MHz, 16 bit ADC with both dithering and randomization for best performance. The output I/Q bandwidth is configurable via software. PC communications are handled over a 100 base-T port using 24 or 16 bit I/Q words. The NetSDR is a complete plug and play solution. As opposed to other SDRs in the market, there is no need for additional preamplifiers, preselectors or code development. The unit is compatible with the Moetronix SpectraVue and SDR-Radio software that will have you up and running in minutes. The software includes analog and digital mode demodulation and I/O capture of spectrum at up to a 1.6 MHz bandwidth. The SDR-Radio software allows the use of the NetSDR over the Internet. The full 1.6 MHz waterfall and demodulation audio can be transported via a 5 Kbps link. For those interested in writing their own applications, RFspace supplies a fully documented protocol for communicating with the hardware. There is no need to calculate the down converter DSP parameters. The NetSDR just needs the center frequency, attenuator and preselector filter settings, output sample rate and mode to begin streaming data. Other solutions require complicated USB interfacing that is platform specific. The NetSDR utilizes straight TCP/IP and Ethernet for all communications. This offers the highest possible performance due to the highly optimized Ethernet drivers on PC, Mac and Linux systems. The NetSDR packets are fully routable so that the receiver may be placed at remote locations. Multiple receivers can also be combined and their data transported over a higher data rate Ethernet pipe using simple switches and routers. In this application, each NetSDR can be set to a different IP port using 24 or 16 bit I/Q words. The NetSDR is a complete plug and play solution. As opposed to other SDRs in the market, there is no need for additional preamplifiers, preselectors or code development. The unit is compatible with the Moetronix SpectraVue and SDR-Radio software that will have you up and running in minutes. The software includes analog and digital mode demodulation and I/O capture of spectrum at up to a 1.6 MHz bandwidth. The SDR-Radio software allows the use of the NetSDR over the Internet. The full 1.6 MHz waterfall and demodulation audio can be transported via a 5 Kbps link. For those interested in writing their own applications, RFspace supplies a fully documented protocol for communicating with the hardware. There is no need to calculate the down converter DSP parameters. The NetSDR just needs the center frequency, attenuator and preselector filter settings, output sample rate and mode to begin streaming data. Other solutions require complicated USB interfacing that is platform specific. The NetSDR utilizes straight TCP/IP and Ethernet for all communications. This offers the highest possible performance due to the highly optimized Ethernet drivers on PC, Mac and Linux systems. The NetSDR packets are fully routable so that the receiver may be placed at remote locations. Multiple receivers can also be combined and their data transported over a higher data rate Ethernet pipe using simple switches and routers. In this application, each NetSDR can be set to a different IP address or port.

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ON THE COVER
Mike Coletta, KPCOUFO, of Pueblo, Colorado, has a most unusual monitoring passion: tracking orbiting objects via the U.S. Air Force Space Fence. Coletta was prominently featured in a segment of the Discovery Channel program America's Most Secret Structures. The gear and homemade antennas he uses are detailed in this edition's Pop Comm Monitor of the Month, as well as a profile of this avid scanner with such high expectations. Turn to page 56 (Cover design by Pop Comm Art Director, Liz Ryan. Photography courtesy of KPCOUFO).
Tap into secret Shortwave Signals

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EDITORIAL

Tuning In

Pop’Comm @ 30: Avast Ye Matey, Should Pirates Be Aboard?

It didn’t take long for Pop’Comm Founding Editor Tom Kneitel, K2AES (SK), to get things whipped up among the magazine’s readers when he scheduled regular, high profile coverage of clandestine and pirate radio in his new magazine.

Thirty years ago this month, in Tom’s Beaming In editorial, he wrote that a ton of mail had been arriving in response to the magazine’s Free Radio Focus column “...and our coverage of pirate and unlicensed radio in general.” Pop’Comm was barely six months old.

The mail, he wrote, was “running heavily pro and heavily con... Those who like the in-depth coverage say that it’s long overdue in a national publication,” he said. “Those who don’t like it claim that Pop’Comm is endorsing the practice” of illegal radio operation.

Tom went on to say that Pop’Comm’s position “is that pirate broadcasting is a fact of life; it’s nothing at all — dating back to the 1920s and continuing to the present.”

K2AES said that “these days” — which was February 1983 — pirates “are more in evidence than ever before. By ignoring (them) and pretending that (pirates) don’t exist, Pop’Comm will not make (them) go away.”

The magazine’s policy would be “to present all of the information we have available and leave it to the judgment of readers to select what they want and ignore those (stations) they don’t wish to know about or hear.”

Free Radio Focus was written in the early days by Al Muick, a veteran SWLer even 30 years ago. Apparently interest in the topic is just as alive and well today.

Late in 2012, Pop’Comm received an email from Fred Bennett, N2FJ, of Ogdensburg, New York, wondering about the magazine’s commitment to coverage of pirate and clandestine radio in 21st Century: “Is The Pirates Den no longer in existence, Pop’Comm? Just started getting back in SWL and I love to find pirate radio stations... Will (the column) be coming back?”

Fred is referring to a Pop’Comm fixture in the mid-1980s, Photo A.

Of course, Gerry Dexter, WPC9GLD, conscientiously includes a PIRATES listings in his unparallelly monthly Global Information Guide — including entries for such stations as Captain Morgan Shortwave, Radio Ronin Shortwave, TCS Relay, Rave On Radio, Radio Free Mars, Wolverine Radio, Radio Whatever, Black Bandit Radio, and many more.

Now, 30+ years after Pop’Comm’s launch we wonder: Would readers like to see a full-blown column devoted to pirate radio again appear regularly in Pop’Comm? LET’S HEAR FROM YOU: Register your vote — pro or con — through the online Pop’Comm Pirate Radio Survey at: <http://svy.mk/UPAHw5s>.

Is it time for Pop’Comm to take something old and make it new again? Please let us know.

— Richard Fisher, KPC6PC/KI6SN

*Editorial: Tune into Pop’Comm’s WRO Chat on Sunday, February 3, beginning at 8 p.m. Eastern time (0100 UTC Monday). As always, the hour-long session promises to be casual, friendly, and laid back. What better way to finish the weekend!*
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The Weirder Side of Wireless, and Beyond

In this second month of the year we come upon this time for icky sweetness. We're referring to Valentine's Day, February 14.

Have you realized how much Kissing is going on online?

- 96.7 KISS-FM - El Paso, Texas
  [http://bitter.com/TnDoW/]
- 96.3 KISS-FM - Argyle, Saskatchewan, Canada
  [http://websitet.com]
- 98.1 KISS-FM - “The Bay's Old School”
  [http://bitter.com/Rhivv]
- 102.1 KISS-FM - “The Kiss FM Channel”
  [http://bitter.com/BtkePl]
- 94.9 KISS-FM - “Hit Music Central”
  [http://bitter.com/1049]
- 101.5 KISS-FM - “The Bay's Old School”
  [http://bitter.com/1015]
- 94.9 KISS-FM - “Kiss FM - The United Kingdom”
  [http://bitter.com/949]

And, believe it or not, there's KISS AM Radio, as well, at [http://bitter.com/]

Ain't life grand? 'Nope, Valentine's Day!' 
(Source: KPC6PC)

Amateur Special Event Station Celebrates "Now 2 Days"

The "Now 2 Days" website is literally a once-in-a-lifetime event, according to the special event station N0D (Now Zero Days) that was noted “for three days — hence the name of the station,” officials said earlier. The station is broadcasting from a undisclosed location.

If Doomsday actually does happen, we regret that a QSL will not be possible,” the team warned ahead of the event. Of course, there was a happy ending and NOD QSLs were sent across the land.

Radio amateurs from around the world were invited to contact the station, which was transmitting from an "undisclosed location."

“DE BJOY WYQ)いつ does happen, we regret that a QSL will not be possible,” the team warned ahead of the event. Of course, there was a happy ending and NOD QSLs were sent across the land.

Unless it collapsed under its own doomsday apocalypse, the NOD website is at [http://www.nowzerodays.com]. (Source: Southgate ARC News)

No Mayhem On AM: Is Nobody Listening to the BBC?

In The Register online, Bill Ray reports that the BBC quietly switched off AM radio transmitters in October to see if anyone noticed -- and it seems not a lot of people did. (KISS: The Register story at [http://tinyurl.com/w8vleF]...)

Photo B. It blew our minds, but there is KISS AM Radio, isn't there. Check it out at [http://bitter.com]. YWQ is believing. (http://tinyurl.com/w8vleF)
U.S. Military Leaving ‘Radios in a Box’ in Afghanistan

As part of its handoff in Afghanistan, the U.S. military is giving broadcast training to local civilians and leaving behind RIABs — or radios in a box, Photo A. “With coalition resources dwindling, getting the message out — and ensuring it’s actually effective — is just one more challenge the Afghans must face as they confront the ongoing insurgency in Logar,” a report on National Public Radio noted.

“DJ and presenter Saifullah calls this station Unity Radio,” NPR said in its audio report. “It broadcasts daily from 6 a.m. to 10 p.m. to the surrounding provinces, and Saifullah says the station gets calls from listeners some 30 to 40 miles away.”

LAX Traveler Station Goes Silent, Opening 530 kHz for DX

If you are an AM broadcast band DXer and have not been able to hear the Travelers Information Station (TIS) on 530 kHz from Los Angeles International Airport, there’s good reason. It has been off the air.

There is no word as to why it went silent, but it does open up that frequency in the southwestern United States for DXing a 50-kilowatt religious station in Turks and Caicos Islands that operates on 530 kHz. Source: Amateur Radio Newsline

Tragedy: BBC Reveals What WWII Broadcasts Didn’t Say

Some 70 years after nearly a half-million Hungarian Jews were killed in a 1944 Nazi invasion, BBC News

 FEMA Director: Hand-Cranked or Battery Radios Are Vital

As Hurricane Sandy roared up the East Coast, Federal Emergency Management Agency Director Craig Fugos said in a CBS interview that “one of the things you want to do is think about anymore is having a hand-crank radio to get news from local broadcasters. "The internet and cell phones will be congested, said Fugot, so the one way to get those important messages out is what’s going on in the local community. His complete interview with FEMA Director Craig Fugot can be seen at <http://bit.ly/NT5Ej>. His comments begin at 17:42 into the interview. —KPC6PC

Source: CBS News

UK’s Switch to Digital Radio in Question Due to Lack of Listeners

The switch over to DAB digital radio in the United Kingdom is likely to be delayed because listening targets have not been met, according to a report in The Daily Telegraph.

“Digital sets were expected to account for half of all radio listening by 2012, but the figure stands at just 31.3 percent, the paper said. Ofcom, the independent regulator and competition authority for United Kingdom communication industries, confirmed that the 50 percent threshold — which the Government set...
NEWSWORTHY
Washington Beat

Capitol Hill And FCC Actions Affecting Communications

Compiled by Richard Fisher, KPC6PC

FCC Seeks Booty from Alleged Florida FM Pirates

Four Florida men have been issued forfeiture orders totaling $65,000 by the FCC for allegedly operating unauthorized FM stations, a posting on RBR.com reported. None of the men responded to the FCC’s Notice of Apparent Liability.

- Damian Anthony Ojouku Allen and Michael William Downer, both of Pompano Beach are alleged to have been operating a station on 101.1 MHz. Each man was hit with a $20,000 fine.
- McArthur Bussey of Fort Lauderdale was fined $15,000 for allegedly operating an unauthorized station on 89.1 MHz.
- Burt Byng was fined $10,000 for allegedly running a station on 107.1 MHz in Miami.

Source: RBR.com <http://www.RBR.com>

Proposals: OK VLF and Primary Status on 160 Meters for Amateurs

The FCC has issued a Notice of Proposed Rule Making (ET-Docket 12-338) which, among many other things, formally proposes a secondary allocation at 135.7-137.8 kHz for radio amateurs.

The 130-page notice, whose broad purpose is to implement the decisions of the 2007 World Radiocommunication Conference (WRC-07), also proposed granting primary status to amateur radio on the 1900-2000 kHz segment of the 160-meter band. That segment is currently shared with radio-location systems. The 1800-1900 kHz band segment is already allocated exclusively to the Amateur Service.

The only current U.S. users of the spectrum segment including the proposed 135.7-137.8 kHz band are power companies operating PLC (power line carrier) systems for monitoring electrical infrastructure.

Broadband over Power Lines (BPL) is a form of PLC, but the systems at these frequencies are used internally by the power companies. Ironically, if the amateur allocation is approved here, the FCC says it is likely that hams will have to coordinate with utilities and avoid causing interference to the PLC systems. Source: CQ Newsroom <http://www.CQNewsroom.blogspot.com>.

AM Station Dinged for Being Under Powered

A California AM station was issued an FCC Notice of Violation for transmitting below its authorized 820-watt output power.

The FCC cited Adelman Broadcasting for operating KLOA-AM in Ridgecrest at only 17 percent of its authorized power, or approximately 140 watts.

“In a Notice of Violation, the agency warned the document doesn’t preclude the Enforcement Bureau from taking further action, including proposing a fine,” a report on RadioWorld.com said.

“Goodtime Oldies” KLOA-AM is at 1240 kHz <http://www.1240kloa.com>.

“Under FCC rules, the antenna input power of an AM station must be maintained as near as is practicable to the authorized antenna input power and may not be less than 90 percent nor more than 105 percent of the authorized power.”

FCC agents were unable to see the station logs because “the engineer had them” and wasn’t available. “The commission has asked Adelman for more information, specifically about any remedial action taken,” the Internet report said. Source: RadioWorld.com <http://www.RadioWorld.com>.

Commission Plans Hearings in Wake of Sandy

The FCC is scheduling a series of field hearings to review communications in the wake of Hurricane Sandy. “This unprecedented storm has revealed new challenges that will require a national dialogue around ideas and actions to ensure the resilience of communications networks,” Commission Chairman Julius Genachowski said. “As our thoughts and sympathies remain with those who have suffered loss and damage as a result of Superstorm Sandy, I urge all stakeholders to engage constructively in the period ahead.”

Senator Chuck Schumer (D-NY) asked the FCC to work with telecommunications companies and first responders to maximize reliability and minimize costs.

Genachowski said the first hearings will be in the New York City area. They will focus on how to assure communications for first-responders, government emergency personnel, and consumers. One in four consumers in areas hit hard by Sandy lost service because of the storm. Source: Multiple published reports

Rules on Newspaper-Radio-TV Station Ownership Under Review

The FCC is calling for elimination of rules that bar common ownership of newspapers and radio stations in the same market. The proposal is part of a broader set of rule changes involving cross-ownership of media outlets. Chairman Julius Genachowski said before the Council on Foreign Relations in Washington.

According to Bloomberg News, “Genachowski’s proposals include allowing common ownership of a daily newspaper and a television station in the 20 biggest markets, according to two officials briefed on the plan.” Source: Bloomberg News
NEWSWORTHY
Horizons

By Rob de Santos
<commhorizons@gmail.com>
Twitter: @shuttleman58>

"It's a constant race between those who know and those who want to know. As computers and storage get faster and cheaper, it makes some codes easier to break."

Using Your Secret Decoder Ring

Depending on your age, you may remember the "secret decoder rings" promoted as part of radio and TV shows of the past such as "Little Orphan Annie" in the 1930s, "Captain Midnight" in the 1950s, and "Jonny Quest" in the 1960's. <http://bit.ly/Qvqew>.

These small toys used simple substitution ciphers (also known as Caesar ciphers) which were fun and in truth, not very secret. They were not meant to be secure, though, as it was all in fun. Let's continue from where we left off in January's Horizons: "When We Try Not to Communicate," page 10.

When we transmit private information and messages today, we are more concerned about security — and toy decoder rings really won't work for us. In most cases though, we still depend on whatever security is built into the product we are using, be it an ATM, our mobile phone, or ordering products through our home computer. What do these systems do then?

Many secure systems we use today involve some type of symmetric or public-key cryptography. Often, modern communications systems may use both symmetric and public key ciphers in a hybrid form. Keys may be thought of as a string of numbers needed for coding or decoding just as a key is needed to open a door.

To keep the explanations simple, you can understand symmetric keys to mean that both the sender and receiver know the key and once they establish it at the beginning both will use it to encode and decode messages. (NOTE: Thus, a method of exchanging or creating keys initially must also exist. The key creation step may involve your private password or pin code, too. — K8RKD)

These systems are efficient in terms of time and computer power but require highly reliable and secure record keeping and lots of storage. Most ATMs and other remote access systems use this system.

Public key systems require that the users have a public key which is available to anyone — or anything — who potentially wants to communicate with you to encode messages for you and a private key, known only to you for decoding. Most public key systems work because they depend on the mathematical difficulty of factoring numbers involving large prime numbers or solving other hard mathematical problems — for example, discrete logarithms and elliptic curves. Many Web browsers and other network communication use public key systems.

Is any system truly secure? Are there any unbreakable codes? In the sense that every coded message needs a way to decode it, and given enough time to try every possibility, you could say there are no unbreakable codes.

Practically though, there are many nearly unbreakable codes. Perhaps you recall from past columns that Shannon’s theories indicate we can reconstruct missing information from many messages based on what we know — content, language, and so on. Similarly, if we make the message appear random enough — in other words, no apparent patterns that might give away the content — then reconstruction gets very difficult to nearly impossible.

Secure systems also depend on other factors: the time it would take to decode the message (if it runs to a billion years, any snoop won’t bother), it takes more resources than are available (computer time, for example), the apparent randomness of the message, the uniqueness of the keys, physically secure systems, and more. A good secure system uses more than one of these.

Let's look at numbers stations for an example. Nothing apparently complicated here, just long strings of numbers. So why do they work? Evidence suggests it is because the keys are "one time pads" — for example, use the key once and never again. Both sender and receiver need to know which key is going be used on a given day and both must have access to the list of keys or "pads."

Let's say Evil Leader makes up a coding system and book of keys. He keeps one copy and gives one copy to Agent 99. Each message has some portion of it given over to designating which key to use for the rest of the message. When Agent 99 tunes his shortwave radio and writes down his list of numbers, he finds the matching key and decodes the remainder of the message.

If the pads are almost truly random, the book of keys never physically compromised, and the pads of equal or greater length than the messages, then Shannon’s work tells us the system is essentially unbreakable.

Communications security is a constant race between those who know and those who want to know. As computers and storage get faster and cheaper, it makes some codes easier to break. It also gives those who wish us ill more time to find the flaws in our coding schemes. We can be sure that newer, more effective encryption techniques will be found and that more and more of what we do will require encryption.

There are many excellent online resources that will give you more information on modern secure communications and cryptography for both the mathematically inclined and those not so inclined. Drop me a note and let me know your thoughts on the future of communications. — K8RKD
An Omnidirectional DTV Antenna — With Gain!

Here's a Turnstile-Bowtie-Gain Configuration You Can Build

By Philip Karras, KPC3FL/KE3FL

Where I live, we are able to receive over-the-air (OTA) television stations from two cities. Unfortunately, the directional headings are almost a perfect 180 degrees from one another.

Before HDTV, I was able to receive the major network stations from both cities. This antenna was unable to get the UHF stations, so I designed a simple single element full-wave loop style antenna I called the Turnstile-Bowtie antenna.

My article about it appeared in the January 2003 issue of Popular Communications. (REFERENCE: "Phil's Easy Way to Improve Your UHF TV Reception," page 6, KE3FL)

Today I find that it is even more difficult to get all the stations I used to get with the antennas I now have. (REFERENCE: "To A Neighbor's Rescue, Now She Can See Her DTV — A Primer on Digital Signal Reception," Part 1, August 2011, page 1; and "A Made-For-DTV Mystery — Continued..., Part 2," September 2011, page 21 — KE3FL)

I started collecting articles about UHF gain antennas to build since I noticed that my simple bowtie UHF antennas were still doing well but just not well enough.

I really liked the articles I found in Popular Communications by Richard Fisher, KPC6PC, and I published in Fall 2011. (REFERENCE: "Seeing Is Believing, A Simple DTV Antenna"

"I wanted it to receive DTV stations simultaneously from the two cities in my area. This meant that I had to change the design into my turnstile-bowtie omnidirectional antenna."


Let's Get Busy

While I wanted to build the antenna KPC6PC wrote about, I also wanted it to receive stations simultaneously from the two cities in my area. This meant that I had to change the design into a turnstile-bowtie omnidirectional design — but with the four sections of KPC6PC's gain antenna. I figured it would be easier to do this if I mounted the elements on a pipe or dowel rather than a flat piece of wood. However, a piece of wood 1.5 by 1.5 by 30 inches would also do. Either way, I call it the KPC3FL Turnstile-Bowtie-Gain DTV Antenna.

I used 3 feet of PVC with an outside diameter (OD) a bit more than 1 inch, but less than 1.5 inches. It is 1120 Sch 40 PR 480 PSI rated at 23 degrees C. I then cut it into 30-, 24-, and 6-inch lengths. I bought two end caps and two right angle couplers so I could use the 6-inch section to clamp to another antenna mast. The 2-foot section would keep the antenna 2 feet away from the mast. The 30-inch section was for the antenna, as specified in KPC6PC's article, but with the added sections to make it a turnstile design.

Parts List: Making It Happen

Here are the parts you'll need to build this antenna.

- (18) No. 6 half-inch screws
- (1) 5-foot piece of PVC 1120 Sch 40 PR 480 PSI rated at 23 degrees C

The KPC3FL Turnstile-Bowtie-Gain Antenna is designed for 360-degree DTV reception to help viewers who may have challenges receiving stations scattered in several directions. (Photography courtesy of KPC3FL)
Photo A. Only a handful of easily to find parts and tools are needed to make the KPC3FL omnidirectional DTV antenna.

Photo B. A pipe cutter is used to very lightly score the FVC pipe to create a guide for screw placement.

Photo C. "Adding the phasing wire is a bit more involved than with a single array antenna because the additional elements need to be correctly connected to the set of 'original' elements," writes KPC3FL.

- (16) 5-inch lengths of No. 6 heavy gauge wire
- 6+ feet of solid No. 24 wire (for phasing line connection between the screws)
- PVC pipe cutter
- Two right angle clamps
- 5-24 x A/S screws
- Approximately 6 feet of 3/8 inch spaced clamps (depending on the diameter of your pipe)

(16) Parts and tools needed to build the antenna are shown in Photo A. - KPC3FL

My elements were made from stiff wire that was cut into 16 pieces each 15-inches long. This length was selected after looking at a different design of 2-inch-long elements made off 16 different lengths instead of the 15-inch length given in the KPC6PC article.

If you choose to use the 15-inch length, and another length, this design needs a 90-degree bend at the bottom that will lose about an inch of overall element length. On the other hand, instead of the length of the screw is also not part of the antenna and the screw head was a No. 6 hex-head machine type drilling/cutting screw.

I don't believe that the element height is a plus or minus factor. It's critical for this antenna that the elements be some longer lengths since that will help a bit with the longer wavelengths. It may be better to design for the lowest frequency — longest wavelength — when designing a receiving antenna for multiple wavelengths.

In this case: Multiple TV channels are in the UHF broadcast band. Channel numbers 14 or above use the a channel of 644 MHz. The lowest channel is 140 MHz Channel 14, with a bandwidth of 470 to 476 MHz.

So, the wavelength would be about 2 feet — or each element of a half-wave dipole would be 6 inches. Anything longer than that might help get some of the higher VHF stations.

Building Preparations

After cutting the 16 sections of 15-inch scored tube, the locations is to the set of original elements as shown in Photo C. They are 4½ inches apart plus the 5/8 inch spacing between the elements for the feed line connections. These measurements were taken from the KPC6PC's August 2010. The center of each rod is put on top, then 2½ inches apart, and the next down 5 feet, etc. For ex-
erence, the illustration from the August 2011 DTV antenna article is online at Pop’Comm On the Web, <http://www.PopCommMagazine.blogspot.com> - KPC6PC>.

The screws at the first 3.5-inch locations are for the feed line, so only two screws were needed there. I used a pipe cutter to score the circle around the pipe so I could put the four screws at the correct location for each section.

This is to be a very light scoring. We do not want to compromise the strength of the pipe, so only put a very light mark to indicate where the screws go. Each screw should be 90 degrees from the first screw and all screws need to be in a straight line from top to bottom.

Using a pipe cutter is rather easy when one is cutting a pipe, but care must be taken not to move the cutter when scoring the PVC or the line won’t match up at its starting and ending points. Go slowly and it should work well enough to get the lines correctly marked.

Let’s Get Started

I used an electric drill to put the screws about half way into the PVC. This left enough space to add the phasing wire and the antenna elements. Do not screw them in all the way with the drill — no or later. Use a hand screwdriver, and do not over tighten. With PVC, it is surprisingly easy to strip the threads. So be very careful. Use fingers only on the screwdriver so you can feel when it gets a little tighter. Then stop. That’s all it takes. Eventually, everything will be coated and painted which will help keep the hardware tight.

If you’re worried about protecting the screws’ integrity to hold things in place, here are two options:

- Include a wood or plastic dowel inside the PVC, or,
- Pour some glue down the pipe — with the bottom stopped up, or not, depending on whether you want to fill the pipe or just coat the screws inside — to keep the pieces of hardware from working its way loose.

Adding the phasing wire, Photo C, is a bit more involved than with a single array antenna because the additional elements need to be correctly connected to the set of “original” elements. A flat page image, Figure 1, has been made to show which added elements go with which original set of elements.

You can copy the page; then roll the image of the antenna wiring configuration — as if it were wrapped around a piece of PVC — to see in three dimensions how the wiring is done. Once all the screws are in the PVC, start with the smaller phasing lines to wire up all the screws correctly — again, referring to Figure 1.

Now, prepare all the bowtie elements first by bending them at the mid-point. Then cut or scrape away the insulation or coating in the bend area about a half-inch out from the center of the bend, Photo D.

Removing Insulation Safely

The safest way to remove the insulation is to cut on the inside of the bend with the knife facing into the bend so the knife will be caught by the bend. Then do the other half of the bend. Never cut with the blade facing toward any part of your body! The coat hangers I found back in 2003 were easier to bend and had a coating that was almost identical to solid wire insulation, so cutting with a knife worked really well.

(Note: If you’re using coat hangers that have a lacquer-type coating, make sure that there is an electrical connection on all areas of your bend. A coarse grade of sandpaper will do the trick – KE3FL)

I plan on dipping the tips of my antenna elements into a can of liquid tape to re-coat them; then paint the entire antenna. In my area, an uncoated hanger wire outdoors will rust and fall apart in about five years. After I screw down the antenna ele-

Mounting the Phasing Wire and First 4 Elements

To make half of the antenna, add four elements and put them all on the opposite sides of the pipe so that when you bend them, the elements will all be on the same plane — as if it were only going to be a two-dimensional antenna, Photo E. For
Now, don’t add any of the elements at 90 degrees. Hand-tighten the screws. Then bend the elements to be in-line with the pipe and no longer tangential to it.

Once this set of elements is placed on the pipe, widen each element by spreading its tips so they are 3 inches apart.

The last part of this step is to align the first set of antenna elements. Hold the antenna vertically with one end resting on the floor and look from the top to the bottom. Align all elements into the same plane so when looking down at just the correct spot, you will see only the top of the upper-most element. All other elements should be perfectly aligned with the element at the top one so they are hidden beneath it.

**So Far, So Good?**

At this point, the antenna can be tested. Attach a 300-ohm twin-lead or 75-ohm TV coax feed line to the two feed-line screws, shown in BLUE in Figure 1.

For now, we’ll forego the feed-point impedance transformer used in most configurations of this antenna. *(NOTE: See the sidebar: “Is An Impedance Transformer Really Needed?” — KE3FL)*

Attach the feed line to your TV or DTV converter box and scan for signals to see what kind of reception you’re getting. At this point, the antenna should look very similar to the one featured in the August 2011 article — and should perform the same, assuming the wiring has been done correctly.

If the antenna is rotated you should be able to pick up different stations from your area. If you live in a city and are using this antenna to get all stations from all directions, you should receive some stations better than others when you rotate the antenna.

If your reception is not what it should be, check the wiring to be sure everything has been connected correctly.

**Affixing the Other Elements**

Once the antenna passes this preliminary test, add the second set of elements to the remaining screws in the same way you did the first set of elements.

Again, view the antenna from top to bottom and this time not only make sure the elements are properly aligned, but assure they are 90 degrees from the original elements, Photo F.

**Ready for Prime Time**

Construction of the antenna is now complete. Another test should be performed with your TV. If you can now see stations from all directions without rotating the antenna, that’s good. The antenna may get signals from some directions better than others when you rotate the antenna.

Photo E. “To make half of the antenna,” writes KPC3FL, “add four elements and put them all on the opposite sides of the pipe so that when you bend them, the elements will all be on the same plane — as if it were only going to be a two-dimensional antenna.”

Photo F. Element alignment is checked by sighting down the antenna from a vantage point above it.

Photo G. Some of KPC3FL’s testing was done with the antenna configured to stand on its own.
Photo H. "I placed the antenna on the kitchen table near the bay window that faces mostly north," KPC3FL said. "The elements were facing Baltimore, mostly through the house, and Washington D.C., through a smaller kitchen window on the mostly south-facing wall of the house."

Others if rotated. If so, "point" it for best reception of the stations at greatest distance, if possible.

I have not looked at this antenna using modeling software, so I have only my experience to count on. In my area, I point the flat side of one set of elements toward Washington D.C., and the flat of the other set toward Baltimore, Maryland. These are about 90 degrees from one another for me, but there are other stations this antenna picks up. For example, I get Channel 66 from Manassas, Virginia, which is closer to the 90 degrees from Baltimore than is Washington, D.C.

A Critique: How Does It Perform?

I ran three tests with this antenna and have not yet finished and installed it. The first test was with just the first set of elements toward Washington D.C., and the flat of the other set toward Baltimore, Maryland. There are about 90 degrees from one another for me, but there are other stations this antenna picks up. For example, I get Channel 66 from Manassas, Virginia, which is closer to the 90 degrees from Baltimore than is Washington, D.C.

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Is an Impedance Transformer Really Needed?

By Phil Karras, KE3FL/KPC3FL

in a number of tests I ran while trying to improve reception of Washington, D.C. stations, I installed about 50 feet of twin-lead from a simple, single-element, turnstile full-wave-loop bowtie antenna to the TV and then terminated it with a transformer.

During experimentation I discovered the transformer’s case could simply be popped open. I removed the transformer and easily soldered two wires from the 300-ohm twin-lead to the F connector, as can be seen in the photograph. There were two revelations:

- Two more stations were received without the transformer than with it.
- A few of the other stations, which were poor, were now good.

My conclusion is that the transformer is not needed and reception will probably be better without it — especially if the transformer is defective or not built as it should have been.

My granddaughter was nice enough to hold the empty transformer case for a picture, Photo J.

When transmitting, we need some way to ensure proper impedance matching of the rig to an antenna, or we suffer the consequences of burned out final transistors — or worse.

When receiving, though, a matching transformer is not always needed. You will only know if this is the case by trying it with and without a transformer.

I’ve tested this a number of times, both with my high-frequency radios and with TVs. When I find that the receiver does as well or better without the matching transformer, I work without it. This may be because the transformers I used were junk to begin with. As I come across these “defective” transformers I dispose of them and work without them.

Wanted: Your Data on Transformer Use

I would like more data concerning impedance-matching transformer vs. no transformer. Experiment with your DTV setup and see if it helps or hinders.

Since my tests are unique to my area, I have no idea if this will work better in all situations or not. My gut feeling is that it will, unless there’s something — perhaps a reflection — that might interfere without a transformer as opposed to using one. I’m very interested in your results.

At the moment, I have more questions than answers.

QUESTION: In the August 2011 Pop’Comm DTV antenna design and article, a short run of 300-ohm twin-lead with a 75-ohm transformer is connected to a 75-ohm antenna — a common configuration. Why connect 300-ohm twin-lead to a 75-ohm antenna and then convert it back using a 75-ohm transformer? Why suffer the signal loss through the transformer? Why don’t we just connect the coax to the antenna directly, as we do for almost all amateur radio antennas, and get rid of the conversion loss?

QUESTION: Years ago, we connected all TV antennas to the TV using 300-ohm twin-lead. Back then, the TV had a network inside to match the impedance of the feed line and antenna combination to whatever the TV needed. But all TV antennas were based on the dipole, including the ubiquitous log periodic antenna. The input impedance of a dipole correctly cut for the frequency of operation is about 73 ohms. To me, this doesn’t add up.

I will admit I do not know what the feed point impedance is of either the four element antenna the August 2011 Pop’Comm article was based on, or my turnstile version of it. But both are based on dipoles with wide elements to give them broader bandwidth. I also do not know what the feed point impedance is of the old standard TV log periodic antenna, but again it is based on a dipole.

QUESTION: All dipoles have approximately 73-ohm impedance, so connecting 75-ohm feed line directly to the antenna going back to a TV with 75-ohm input impedance would make far more sense than first connecting 300-ohm twin-lead to it and then converting that back to 75 ohms, right? So, why is it always done this way? I do mean always, because even the bowtie antennas you can buy have twin-lead connected to them — again, an approximate 73-ohm antenna with 300-ohm feed line. Why?

In any event, my method has always been to give it a try to see what happens. So I did, and it seems to work better than using a transformer. So, I removed the transformer and I will continue to do so until I see evidence to the contrary.

And While We’re at It . . .

Two more things:

First, if you find a bowtie antenna online or at a retail store, you will notice it is using 300-ohm twin-lead. Yet, the antenna is a wide-element dipole with an approximate 73-ohm impedance. So, why are they feeding it with 300-ohm twin-lead, even today? (NOTE: One possible answer is that the twin-lead, even in such a short piece, is much lower in cost to provide than is good quality coax — KE3FL.)

Second, when I first saw these antennas, I designed my version as a full-wave-loop, which has 300-ohm impedance. I did this because every antenna I saw was using 300-ohm twin-lead. So I naturally assumed the antenna must be a full-wave loop design since this design has 300-ohm impedance. I then simply attached it to the TVs of the day with 300-ohm inputs.

Today I have to attach the 300-ohm twin-lead to the back of an F-connector plate, but I do not use a transformer there either. If it is a feed-through female-version connector, I use a short piece of 75-ohm coax with a connector on one end and solder the twin-lead to the coax directly. This works fine.
Have Radio, Will Travel: From TSA to Rental Car, It’s Yes, Yes, Yes

By Gordon West, WPC6NOA/WB6NOA

In this era of super-high security, when it comes to traveling with radio gear — whether solely for listening or for transmitting — you may be thinking no, no, no.

Well, you may be surprised by how much you hear the opposite. For example:

- Yes, you can bring your high-frequency transceiver, including a sealed battery, on board commercial airlines, without worrying that Transportation Security Administration (TSA) agents will confiscate your gear, [http://www.TSA.gov](http://www.TSA.gov).

- Yes, you can bring aboard coax cable, antenna mounts, and your break-down mobile high-frequency whip and 2 meter/440 MHz magnetic mount antennas. The TSA still won’t mind.

- Yes, all rental cars still come with an accessory 12-volt socket — more than capable of powering a scanner or a dual band VHF/UHF mid-power mobile transceiver. And I’ll tell you here how to enable 15 to 20 amperes of HF mobile transmitting power.

**Staying Within TSA Rules**

After several trips with my high-frequency mobile station aboard planes, trains, and big boats, it’s just about full speed ahead on bringing your radio gear along with you, Photo A.

For example, the TSA does not forbid gelled or sealed 10- to 15-amp-hour batteries on board, but it wants them in carry-on bags, not in your checked luggage.

When the battery shows up on the conveyor belt during passenger screening, it may get some extra scrutiny. *(NOTE: I sure hope so! – WPC6NOA.)* It may undergo the sniff test, as well, plus require an explanation from the passenger on the purpose of the battery.

Just remember the battery goes with your carry-on bag. If you’re a licensed radio amateur, tape a copy of your ticket to the battery to further document its intended use. Make sure all leads are well protected against an accidental short!

**Battery Possibilities**

I travel with a 10.5-amp-hour sealed lead acid battery from Daysaver, [http://www.daysaver.com/](http://www.daysaver.com/), featuring twin-Anderson connectors, built-in overload circuit breaker, and the round accessory socket — *no cigarettes!* It is housed in a handy carrying case with strap, Photo B.

Meanwhile, HamSource [http://www.hamsource.com](http://www.hamsource.com) has a digital combination volt meter and amperemeter, Photo C, that when placed in series with the Anderson connector output along with the HamSource power supply/voltage isolator, is perfect for maintaining the 10.5-amp-hour sealed battery.

West Mountain Radio also has a new PWRcheck digital power meter [http://www.westmountainradio.com](http://www.westmountainradio.com).

**Rental Car Power Strategies**

You won’t need to drag along the 15-pound battery if you’re planning to use your rental car only for medium or low power VHF and UHF communications. Pull the current you need directly out of the car’s 12-volt socket and make sure you run your rig on medium or low power output. *(CAUTION: Never operate on high output power through a rental car’s 12-volt socket. – WPC6NOA.)*

Older rental vehicles with a power socket intended as a cigarette lighter could handle up to 20 amperes of current. Newer rentals, though, scale back their output to about 10 amps of available current at 12 volts DC.

“After carrying my mobile station aboard planes, trains, and big boats, rest assured: All systems can be GO for bringing your radio along.”

www.popular-communications.com
Photo B. The 10.5-amp-hour sealed lead-acid battery from Daysaver is used as a "buffer battery" between the rental car's power socket and WB6NOA's radio gear. It features twin-Anderson connectors, built-in overload circuit breaker, and the round accessory power socket. It is housed in a handy carrying case with strap.

Here is where your carry along sealed battery comes in. The gelled battery acts as a buffer between your high-frequency transceiver and the vehicle's electrical socket, Photo D.

Run full power output on 20 meters SSB or CW and the battery will soak up 20-ampere current peaks, and gradually pulls about 2 or 3 amperes from the rental car to replenish itself back to a full charge in the listen mode. (SEE: The sidebar headlined "In Review: The DaySaver Lightweight Lithium Iron Phosphate Battery" accompanying this article. – WPC6NOA.)

In Alaska, all I had was a 7-amp-hour burglar alarm buffer battery, and I was never accused of low-voltage FMing on high frequency. This much-lighter battery did the buffer job nicely.

### Antennas and the Rental Car

Commercial flying with high-frequency antennas offers the traveler a couple of options.

You can pack your break down high-frequency antenna into your checked luggage. Or, you can bring it on board the aircraft as long as it can be broken down into small enough pieces for your carry-on bag. I travel with a three-piece Outbacker antenna [http://www.outbackerantennas.com], Photos E and F, and RF Parts K400 trunk-lid antenna mount, [http://bit.ly/UfwW5s], Photo G — and about 15 feet of RG8X coax.

The Diamond K400 3/8-inch hatch mount antenna base easily slips over the trunk lid, and is tightened down by four Allen screws. (NOTE: I do not use the supplied metal tab that prevents the Allen screws from biting into the paint. Those four screws need to make good DC contact with the trunk lid. In my experience, the rental car agency has never objected to the four tiny spots made by the screws on the inside of the trunk lid. – WPC6NOA)

The Diamond mount swivels in all directions, so your antenna is standing straight and tall when you close the trunk cover. Rout the coax in through the door. Most rental car doors have a rubber seal and I have not pinched RG8X coax yet.

Tune the whip on the HF band you're on and you're on the air!

I also bring a short jumper coax and an MFJ Enterprises MFJ-907 RF Impedance Transformer as an antenna feed point matcher, Photo H. Depending on how you mount your antenna on the rental car,
you may need some impedance matching. The little MFJ switchable shunt capacitance/shunt inductance device works great.

There are many different styles of whip HF antennas that can break down to fit inside a carry-on bag or your checked luggage. Identify the whip with your FCC license, and TSA won’t mistake it for a ski pole or a cattle prod — both of which are on the TSA’s prohibited list.

Rules Regarding Tools

For ultra-portable applications, I have a vice grip that has an attached antenna mount. It was just under 7 inches in length. TSA’s rule on tools was met by just a few millimeters! Diagonal cutters, black tape, screwdrivers, and pliers under 7 inches in length are TSA approved for carry-on bags.

On the Road

Of course, use the utmost caution when operating or monitoring while mobile. No hobby — even amateur radio, VHF/UHF scanning or SWLing — is worth hurting yourself or others.

Ahead of any trip, do your homework on distracted driver and hands-free restrictions that apply to the state or country you’re visiting. (NOTE: U.S. laws vary from state to state and location to location. For a breakdown of rules specific to where you’re going, visit DISTRAXTION.gov at <http://1.usa.gov/U3R0A>, Photo I — WPC6NOA.)

Even your amateur radio ticket may not get you out of a distracted driver citation. Here’s a suggestion that’s sound on several levels: Operate rental car HF only when you are not in motion. The same holds true for VHF and UHF repeater operation. Getting caught doing 50 in a 35-mph zone is enough to ruin your day — and your vacation or business trip.

Critical Precautions

- Make absolutely sure your battery cannot short out no matter where you place it in the car.

Photo F. Once you’re on terra firma, it’s a snap to re-assemble the Outbacker antenna for some rental car amateur radio or monitoring fun.

Photo E. This Outbacker high-frequency antenna breaks down into three easy-to-carry pieces for toting on airline flights.
The Diamond K-400 antenna mount can slip over a rental car’s trunk lid with ease. When you plug into the rental car 12-volt socket accessory, make sure the male plug is not energized. You can accidentally pop a fuse if you misalign the plug-in technique.

Once it is plugged in and well seated, then hook it to your charged battery. Always unplug your portable battery at the end of your operating session. Sometimes a turned-off vehicle can slowly drain your portable battery pack.

**Photo H.** This MFJ Enterprises impedance matching bridge is used at WB6NOA/M on 40 and 20 meters to achieve a low SWR with no other tuner needed.

Let’s Go!

So, forget about having your gear confiscated — even that sealed battery. Instead, go to the TSA website and print its rules, just in case you need to prove a point. Having a copy of your state destination’s distracted driving laws would not be a bad idea, either.

Good DX on your next adventure with a rental car!

— WPC6NOA

For a state-to-state breakdown of distracted driving rules specific to where you’re going, visit DISTRACTION.gov, <http://1.usa.gov/UX3ROA>. (Internet screen grab)
In Review: The Daysaver Lightweight Lithium Iron Phosphate Battery

By Gordon West, WPC6NOA/WB6NOA

My mobile 12-volt buffer-battery of choice has been the Daysaver PS-98, a heavyweight, 5-pound, sealed lead-acid battery, rated at more than 10.5 ampere hours.

The company has a 7-amp-hour lead-acid battery, as well. Both batteries use absorbent glass mat/no-spill technology.

Power is provided via both a cigarette lighter socket, as well as a pair of Anderson power pole connectors. All connections are live and fuse protected.

The newest Daysaver battery uses Lithium Iron Phosphate technology, cutting the weight down to just about a pound for a 14-amp-hour capacity buffer battery system, capable of 2,000 charges, and environmentally friendly with no lead or cobalt.

"This new battery is as safe as an AA rated alkaline you might buy at a corner convenience store," according to Daysaver. "This new Lithium Iron Phosphate technology can be safely charged with voltage up to 14.5 volts, but as with any type of battery, never overcharge to the point you dramatically shorten battery life."

Daysaver attributes negative comments on "lithium" batteries to the pre-ignition possibility which can occur when Lithium ION batteries discharge too rapidly, and the cobalt cathode heats to the point of flame ignition. The company assures that the Lithium Iron Phosphate battery is encased in a nearly-indestructible carbon fiber case. Further, a rugged external leather case adds more shock protection.

According to Shorai Corporation in Sunnyvale, California — maker of Lithium Iron batteries in China — 12.9 volts "resting" is the level to start giving this battery a slow 1-ampere recharge. Also, pure resistive applications, such as an FM transmitter pulling 2 amp-hours, may pull the battery down to a recharge needed level twice as fast as the 14-amp-hour rating.

But on SSB with a 100-watt transmitter intermittently pulling 12 to 15 amperes, even a half hour of SSB operation showed the battery performing well, just on its own.

As a lightweight rental car buffer battery, with an additional 5-amp series fuse in the cigarette lighter connection, it makes it an ideal traveling companion — but a pricey one. Its $340 price tag includes the smart AC charger.


Photo J. The new Daysaver lightweight Lithium Iron Phosphate battery, seen in the foreground, is half the size of the lead-acid battery to the rear — and one-fifth the weight. Yet, the two batteries have the same capacity. (Courtesy of WPC6NOA)
“The position of the auroral dome over northern latitudes helps subdue higher-angle skywave from the U.S., opening the path for low angle signals farther south.”

It might seem rather counter-intuitive to travel north for better medium-wave signals from the south, but that’s what four AM broadcast DXers including myself had in mind for a DXpedition to Prince Edward Island, Canada.

The position of the auroral dome over northern latitudes helps to subdue higher angle skywave from the U.S., which opens the path for low angle signals farther south. The more easterly location of Prince Edward Island helps too, as it allowed for the setup of antennas to null the RF-congested U.S. northeast corridor while still aiming in a southerly direction.

Whether it was by design or dumb luck, the plan worked. Brent Taylor, an island resident and the chief organizer of the DXpedition, picks up the story from here:

“Bruce Conti, Niel Wolflish, Nick Hall-Patch and I joined up at a rented cottage in Howe Bay, Eglington, near Souris on the eastern end of the island,” said Brent VY2HF. “We were looking for southern water path exposure in the hope of...
snagging some South Americans, Photo A. Our DXpedition planning page appears at: <http://bit.ly/10c1IFk>, Photo B.

“Bruce used crossed phased variably-terminated bi-directional Delta loop antennas. The other three of us had a large corner fed loop with a variable termination and a FLG-100 amplifier, as well as a smaller ALA-100M in a Delta configuration, optimized for the Far East and Brazil, Photo C.

“All antennas delivered very well, Photo D. As a group, we logged more than 60 countries, on all five major continents, and we may find many more from our SDR recordings in the coming months. There may be more as I ‘DX’ the SDR .WAV files in airports on my travels, weekends, at work when it’s quiet — who knows. SDR capturing and recording has enabled me to DX anywhere any time,” Photo E.

“Being an apartment dweller in a big city with a whole slew of powerful local stations nearby, this location was ideal,” said Niel Wolfish, DXpeditioner from Toronto. “This was the first time I had ever been on a DXpedition where the non-DX related reading material never got touched. Any down time from the radio was easily spent reviewing recordings from the previous evening and morning. I may be reviewing recordings for the rest of the winter.”

“I’m still recovering from this very interesting DXpedition, and it wasn’t just the transoceanic signal lag,” said DXpeditioner Nick Hall-Patch after returning home to the Pacific coast. “Although I’ve occasionally heard trans-Atlantic stations from the Canadian West Coast, and listened from coastal Massachusetts while visiting there for work, nothing had quite prepared me for the onslaught of trans-Atlantic stations each evening at Howe Bay. There were times, when — sleep deprived as I was — I had the delusion that I was DXing from somewhere not too far from Spain, or [the] south coast of Ireland maybe. The first couple of days, Brent was amused to see me grinning from ear to ear while DXing, just flabbergasted at the overabundance before me.”

“The Howe Bay site was to be optimal for deep South Americans, and it was that, and the trans-Atlantic signals were the heart of the expedition for me, while the morning of hearing Asiatic stations was icing on the cake, Photo F. And this was all done without Beverage antennas.

“Both the corner-fed loop and the ALA-100 Figure-8 loop were set up to null pretty much the entire U.S. eastern seaboard, and were very effective at that, while allowing Europe, the Middle East, east Asia, South America, Africa, and Australia to come through. Well, Australia was just a couple of tempting carriers, but the potential is there.”

**DX Fishbarrel**

During the DXpedition, a live “DX fishbarrel” of signals being received was made available on the Internet. The DX Fishbarrel is a homebrewed software program developed by Nick Hall-Patch, Photo G, who describes its usefulness:

“It graphically displays signal strengths (or more accurately, signal to noise ratios) from each of the 9-kHz transoceanic channels from 153 to 1701 kHz about once every 20 seconds, using an RFSpace SDR-14 and a computer,” said Nick.

“In addition, it can send an averaged snapshot of this display to the web about once a minute, to warn others of an opening. A DXer or two on the West Coast enjoyed our trans-Atlantic DXing vicariously by monitoring the DX Fishbarrel on the web.

“The ‘fishbarrel’ refers to the expression ‘shooting fish in a barrel,’ as you can use the display to pounce on the DX when it appears rather than when you stumble upon it. However at Howe Bay, the overall constant strength of the trans-Atlantic signals meant that the display usually looked like a well-lit Christmas tree, so its greatest use was for our single morning of Asiatic signals which mostly faded up for a moment or two at best, and could easily be missed.
“It was also useful to find the first trans-Atlantic signals fading in before local sunset.”

**AM Broadcast DX Logs**

The only disappointment of the DXpedition, if any, was the relatively poor deep European and Middle Eastern path reception. Prime targets 1071 India, widely reported by European and Canadian Maritime DXers only a month earlier, and 1296 Afghanistan, were not heard. Ukraine signals were also missing in action. Otherwise, reception was beyond expectations by all accounts, as the following selected logs demonstrate, Photo H. All times are UTC.

**Trans-Atlantic DX**

531 Jil FM, F’kirina Wilaya d’Oum El Bouaghi, Algeria, at 0300 excellent; Middle Eastern vocal set to Michael Jackson sample, canned Jil FM ID and jingle. At 0559 good; marching band national anthem and news parallel 549 kHz. Listen to a short audio clip of 549 kHz at <http://bit.ly/WjXDmZ>.

567 BSKSA Radio Quran, Saudi Arabia, at 0015 fair; Koranic recitation, then talk parallel 999 kHz.

585 RNE1 Madrid, Spain, at 0200 good; time marker, “Las tres, las dos en Canarias,” into news, “Radio Nacional de España, informativos.”

612 SNRT Sebaa-Aioun, Morocco, at 0459 good; choral national anthem, brief announcement, and Koranic recitations.

639 Cesk_rozhlas, Liblice & Svinov, Czech Republic, at 2059 over/under co-channel Spain; oldies-style rock vocal, Cesk_rozhlas ID into news by woman parallel 954 kHz.

639 RNE1 La Coruña et al., Spain, at 0600 fair in 640 CBN Newfoundland splatter; “En Radio Nacional, El Día Menos Pensado con Manolo H. H.,” parallel 621 kHz.

675 Radio Maria, Lopik, Netherlands, at 2300 good; Radio Maria ID with what sounded like contact info, then another ID and church bells on the hour.

693 BBC Radio 5, Droitwich et al., United Kingdom, at 2100 good, synchro echo; Five Live Sports talk about Premier League, promo for interview with Tom Brady (of the New England Patriots) in the next hour.

702 RMC-Info, Le Col de La Madonne, France, at 2200 good; time marker, ID, and Radio Chine International in French.

711.11 SNRT Laayoune, Western Sahara, at 0100 a loud het against 711 France; nothing readable with this off-frequency signal at the same level as France but poorly modulated.

738 RNE1 Barcelona, Spain, at 0300 good; time marker, “Las cuatro, las tres en Canarias,” and “Radio Nacional de España, informativos.”

747 Radio 5 Nostalgia, Zeewolde, Netherlands, at 0002 fair; spoken and then choral ID into a French pop song. Thanks to Fredrik Douren, Paul Logan, and Max van Arnhem at RealDX for help with the ID.

765 IRIB Radio Iran, Chabahar, Iran, at 2300 fair in 1503 kHz; string music and vocal parallel 1503 kHz.

765 BSKSA Radio Quran, Saudi Arabia, at 0015 fair; Koranic recitations, then talk in Arabic parallel 999 kHz.

792 SER Sevilla, Spain, at 0159 good; promo, “Todo en la información, todas las noticias . . . en Cadena Ser punto com,” time marker, “Cadena Ser, servicios informativos.”

810 SER Radio Madrid, Madrid, Spain, at 0300 excellent; “Radio Madrid,” then “Todos...
DX World Guide
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Photo D. The DXpedition cottage at Howe Bay with antennas deployed.

... en Cadena Ser,” time marker, “Cadena Ser, servicios informativos” and Spain/Canaries time checks into news.

819 ERTU Batrah, Egypt, at 2100 fair; Big Ben chimes and anthem into news.

837 IRIB Radio Iran, Isfahan, Iran, at 2300 under co-channel Canaries/Spain; string music and vocal parallel 1503 kHz.


864 France Bleu, Villebon-sur-Yvette, France, at 2259 good; France Bleu 107.1 and “Radio 107.1” ID’s in French.

882 BSKSA Radio Quran, Dammam, Saudi Arabia, at 2055 poor, under co-channel BBC Radio Wales and COPE Spain; Koranic singing parallel 1512 kHz.

882 BBC Radio Wales, Washford, United Kingdom, at 2059 good with synchro echo; weather and traffic report, “On FM, AM, online, TV, and digital radio, this is BBC Radio Wales;” and 9 o’clock time check into news.


909 Radio Cluj, Jucu, Romania, at 0300 under co-channel BBC5; solemn vocal parallel 1593 kHz.

909 BBC Radio 5, United Kingdom, at 2200 excellent, synchro echo; “This is BBC Radio Five Live” and the news at 10, parallel 693 kHz.

917 Radio Gotel, Yola, Nigeria, at 0103 often a carrier here, but slight traces of talk, put a big het on 918 kHz.

918 Radio Inter, Ctra Humera, Spain, at 0300 good despite het from 917 Nigeria; “Descubre la Inter, más info,” into a Donna Summer disco song. At 0600 fair; time marker, “Son las siete en la mañana, las seis en Canarias,” into news with orchestra fanfare, “a Radio Inter.”

945 Gold, Bexhill, England, at 0050 “I Am a Rock” by Simon & Garfunkel and The Zombies “She’s Not There” heard under co-channel France. Songs matched webstream.

954 Cesk_rozhlas, Czech Republic, at 2100 fair; Cesk_rozhlas ID into news by woman. At 2219 mixing with co-channel Spain.

963 Radio 86, Pori, Finland, at 0300 good; open carrier leading up to the hour, then fanfare and Radio Kitaya ID.

963 Radio Tunisia Cultural, Tunis, Tunisia, at 2300 fair; choral national anthem.

972 NDR Info, Hamburg, Germany, at 0200 good; “ARD Infonacht, Nachrichten.” At 2300 good, over co-channel Spain; “NDR Info, Nachrichten.”

999 VOR Maiac, Moldova, at 2200 over/under co-channel Spain; time marker, “Golos Rossii, novosti” and news.

999 COPE Madrid, Spain, at 0200 good; distinctive time marker set to music, “Las tres, las dos en Canarias,” and news, “Ultima hora, Cadena Cope, estar informado.” 2159 “COPE Madrid” ID.

1008 Punto Radio, Las Palmas, Canary Islands, at 0300 fair; Punto Radio ID and “Abellán en Punto” program.

1008 GrootNieuwsRadio, Zeewolde, Netherlands, at 2100
over/under co-channel Canaries and Spain; TransWorld Radio contact info.

1026 SER Radio Jerez, Jerez de la Frontera, Spain, at 2159 good; “Radio Jerez, Cadena Ser...” with Cadena Ser jingle leading up to network time marker on the hour.

1035 Star FM, Belmonte, Portugal, at 0301 good; Marvin Gaye “Heard It Through the Grapevine,” Star FM ID and jingle.

1044 SNRT Sebha-Aioun, Morocco, at 0000 good, over co-channel SER Spain; choral national anthem.

1062 Rai Radiouno, Italy, at 2100 good, synchro echo; talk in Italian with classical music interludes through the hour. 2259 sign-off with orchestral anthem, then test tones with clock ticking between tones. Listen to a short audio clip at <http://bit.ly/UWvzL>.

1071 BS KS A Bisha, Saudi Arabia, at 0000 announcer with Middle Eastern music bed, signature musical intro to news, delayed but still unequivocal parallel with 1521 kHz.

1088 Radio Nacional, Mulenvos, Angola, at 2108 strong carrier but only faint audio in splatter from 1089 UK; the only listed station on this frequency.

1089 TalkSport, United Kingdom, at 2000 fair; “On DAB digital radio and 1089 and 1053 AM, TalkSport” into news, parallel 1053 kHz. 2358 over unidentified Koran; Weekend Sport Breakfast promo.

1116 SER Radio Pontevedra, Spain, at 0059 good; “Radio Pontevedra, onda media y FM.”

1134 Hrvatske Radio, Zadar, Croatia, at 1935 good; news/talk in Croatian, then sports commentary, parallel 3985 kHz.

1143 AFN Germany, at 0050 over/under co-channel Spain and bubble jammer; ’80s hits “Let’s Dance” by David Bowie, “White Horse” by Laid Back.

1161 Mid-Delta Radio, Tanta, Egypt, at 2200 fair; sign-off with instrumental anthem followed by a brief test tone.

1170 Radio Slovenija/Capodistria, Bellinzona, Switzerland, at 2140 fair to good; punk/alternative rock music, Iron Maiden “Strange World” then chamber orchestra instrumental leading up to break on the hour with Radio Capodistria ID.

1170 Radio Sawa, Al Dhabiya, United Arab Emirates, at 2200 over/under Slovenia; “Gangham Style” by PSY parallel 1431 kHz.

1215 TransWorld Radio, at 2200 under co-channel Absolute Radio with presumed VOR Kaliningrad; one cycle of TWR interval signal. No hit heard or signal observed on spectrum analyzer from off-frequency Albania. Without a TWR outlet listed on 1215 kHz, Mauno Ritola at RealDX suggests, “ICM/Luxembourg effect from TWR via Gavar carried by Kaliningrad.”

1251 Radio Libya, Tripoli, Libya, at 2200 fair; “Radio Libya” with upbeat Middle Eastern music bed.

1251 Radio 5 Nostalgia, Hulsberg, Netherlands, at 0159 fair; “Radio 5, Nostalgia” jingle and brief instrumental bumper up to time signal and dry read of news by a woman.

1296 COPE Valencia, Spain, at 2259 good; “valencia punto com” promo, “93.4 FM y onda media, Cope Valencia.”

1296 Radio XL, Langley Mill, United Kingdom, at 2100 good; “On 1296 AM, this is Radio XL. From the Sun News Center at 9...”

1323 VOR Wachenbrunn, Germany, at 1915 fair; French program. At 2100 good; “Golos Rossi, novosti.” At 0500 excellent; “The Voice of Russia is broadcasting 24/7 to the whole world on AM, and you can hear us in London on digital radio.”

1341 BBC Radio Ulster, Lisnagarvey, Northern Ireland, at 2200 fair; “On 92 and 95 FM, and 1341 medium wave, this is BBC Radio Ulster” into news.

1368 Challenger Radio, Villa Estense, Italy, at 2100 under co-channel Manx Radio; sign-off announcement in English, “This is IRRS...in Milano signing off,” and “Va, pensiero” choral music. Thanks to Günter Lorenz at RealDX for help with the ID.

1394.85 TWR Fleetwood, Albania, at 1917 good; “It’s possible TWR interval signal until start of programming at 1925 UTC. One of the first Atlantic signals of the afternoon to deliver audio, almost two hours before local sunset at the DXpedition site.

1395 Radio Seagull, Harlingen, Netherlands, at 0500 poor/fair; fading up with rock music, DJ, “on Radio Seagull,” and woman with news in English.

1404 France Bleu, Ajaccio, Corsica, at 2200 fair to good, over/under co-channel France Info; pop song, “France Bleu” choral jingle, and straight into news in French. After the news, a quick promo for the morning show “France Bleu Matin.”

1431 VOR Wilsdruff, Germany, at 2100 fair; “Golos Rossi, Voice of Russia,” time marker, “Golos Rossi, novosti.”

1440 RTL Marnach, Luxembourg, at 2200 good, over WRED; “This program is brought to you by Radio 86 in cooperation with RTL Luxembourg and China Radio International. For more information, please visit our home page, <http://www.radio86.com>.”

This Month in Broadcast History

75 Years Ago (1938): Paramount Pictures released W.C. Fields’ “The Big Broadcast of 1938” featuring Bob Hope and his signature song “Thanks for the Memories.”


50 Years Ago (1963): “Hey Paula” by Paul & Paula. Photo A, was number one on the 1360 WSAI Cincinnati Fabulous Forty music survey.

25 Years Ago (1988): The National Radio Club published a complete list of daytime-only AM radio stations given the go-ahead by the FCC to operate full time at low power, some with as little as 4 watts nighttime authorization. Some stations declined to begin 24-hour service because the assigned night power was too low.

— Bruce A. Conti, WPC1 CAT
This DXpedition was decidedly high-tech. All DXers were using laptop computers with software defined radio (SDR) receivers for monitoring the AM broadcast band.

1449 BSKSA Saudi Arabia, at 2100 under co-channel Libya; brief music, time marker and fanfare into news, clearly parallel 1521 kHz.

1458 Sunrise Radio, Brokmans Park, United Kingdom, at 0300 good; “This is Sunrise Radio, news on the hour every hour,” and Sunrise Radio jingles.

1467 TWR Roumoules, France, at 2300 excellent; one cycle of TWR interval signal, then signal was cut momentarily for antenna pattern change, returning with “Hour of Decision” in English.

1485 SER Spain, at 2049 noted “The Good, The Bad and The Ugly” whistling and “Taps” sound effects in the soccer game that is on all the other channels. When Real Madrid scored to go up 2-0 over Mallorca, they had “GOL GOL GOL” in Morse code playing over the announcer screaming.

1511.93 ERA Chania, Greece, at 2010 music parallel 1494 kHz. Measured 1511.933 kHz causing a low-level rumbling het against measured 1511.991 Saudi Arabia. At 2030 now 15-db better than Saudi Arabia.

1521 BSKSA Duba, Saudi Arabia, at 1914 fair; woman in Arabic parallel 9555 and 9870 kHz. No East Coast DXpedition is complete without this. A massive signal by 2000 UTC.

1530 VOA Pinhiera, São Tome, at 0259 good; signing on with Yankee Doodle interval signal and Daybreak Africa from the Voice of America. At 2200 excellent; “This is the Voice of America, Washington DC, signing off. For information regarding the times and frequencies of VOA programs, write to Program Schedules, Voice of America, Washington DC 20547, or you may get a schedule from the nearest American cultural center or United States Information Service in your country.”

1539 Radio Aap Ki Dunyan, Al Dabia, United Arab Emirates, at 2100 good, over co-channel SER Spain; VOA news in English.

1550 RASD Rabouni, Algeria, at 2135 excellent; rustic African vocal. Measured slightly off-frequency at 1550.027 kHz.

1566 TWR Parakou, Benin, at 2110 fair to poor, with male and female announcers in French, and definite religious talk, about the afterlife, etc. The only French-speaker on this frequency at this time and better on the African-favored antenna. Finally, ID in French with website and frequency at 2156, followed by brief woodwind interlude.

1584 SER Radio Gandía, Spain, at 2259 fair; promo: “Radio Gandía ... Gandía,” and local ID, “Radio Gandía. Cadena Ser.” then time marker and El Larguero program.

1593 România Actualitati, Ion Korvinn, Romania, at 0146 music...
9 kHz channel signal strength from Howe Bay, PEI, Canada; using RFSpace SDR-14

Photo G. The homebrew “DX Fishbarrel” tool developed by Nick Hall-Patch monitors transoceanic 9-kHz channels across the AM broadcast band.

by Billy Joel and Robbie Williams. ID and time pips at hourtop into newscast by man. Parallel to 1179 kHz.

1602 Radio Vitoria, Spain, at 2200 good over co-channel SER Spain; Radio Vitoria jingle, time marker, “Radio Euskadi, servicios informativos.”

Pan-American DX

530 Radio Rebelde, Guantánamo, Cuba, at 0900 fair; canned ID with organ theme, “Rebelde la Habana, emisora de la revolución,” and time check, Photo I.

550 YVKE Mundial, Caracas, Venezuela, at 0900 good; ve promo, “Radio Mundial, la radio del poder popular,” and llanera music.

560 Voice of Guyana, Georgetown, Guyana, at 0800 good; signing on, “Good morning everyone, this is the Voice of Guyana, the National Communications Network Incorporated beginning its transmission for today…” The National Communications Network Incorporated has its studios at Broadcasting House on Fifth Avenue, Georgetown. Voice of Guyana transmits on 360 kilohertz on the medium wave band, 102.5 megahertz on the FM band, and 3.29 megahertz. Listen to audio clip at <http://www.bamlog.com/guyana.mp3>.


600 WYEL Mayagüez, Puerto Rico, at 0300 over co-channel Radio Rebelde Cuba; wkaq580.com promo, multi-station ID, “WKAQ 580 AM San Juan, WUKQ 1420 AM Ponce, WYEL 600 AM Mayagüez.”

610 Radio Nacional, Uribe, Colombia, at 0600 three mentions of “Radio Nacional” with two-note “bip” sounders, and about 20 seconds later “Radio Nacional de Colombia.”

Photo H. This scene captures the beauty of the region where Howe Bay meets the ionosphere — a very nice combination for AM broadcast band DXing.

www.popular-communications.com
640 Radio Guadeloupe, Pointe-à-Pitre, Guadeloupe, at 0901 over/under co-channel Radio Progreso Cuba and CBN Newfoundland; telephone talk in French. Radio Guadeloupe jingle and “Le journal” news.

640 YVQO Puerto La Cruz, Venezuela, at 1000 good; “Unión Radio 1090” and “Deportes Unión Radio” promos.

670 YVLL Radio Rumbos, Caracas, Venezuela, at 0900 good; “Escuchas Radio Rumbos, la emisora de Venezuela,” and disclaimer into paid program.

700 LV3 Radio Córdoba, Argentina, at 0300 choral national anthem rising to good level through Latin American jumble of co-channel signals.

750 YVKS Caracas, Venezuela, at 1000 good; “Radio Caracas Radio, 750 AM.” At 2359 under CBGY; RCR deportes sports commentary.


780 ZBVI Tortola, British Virgin Islands, at 0200 over/under co-channel YVNN; sign-off announcement, hymn and national anthem.

780 YVNN Radio Coro, Venezuela, at 0158 fair; promo with patrimonio de la comunidad slogan. 0902 excellent; jingle, “Radio Coro 780,” and time check, “Cuatro, treinta dos minutos.”

800 PJB Radio Transmundial, Kralendijk, Bonaire, at 0159 – Good; Radio Transmundial contact info, “...aquí en Radio Transmundial, 800 AM, Bonaire, Antillas Holandesas,” then bilingual English/Spanish program. Listen to audio clip at <http://www.bamlog.com/bonaire.mp3>. At 0800 fair; Portuguese program with Transmundial info. At 0900 signal cut briefly for apparent antenna pattern change, returned loud and clear with beginning of Spanish program.

820 TBN Radio Paradise, Charleston, St. Kitts & Nevis, at 0159 good; TV audio with TBN lifetime charitable gift anniversary ad, “You’re watching TBN, part of the Trinity Broadcasting family of networks.”

860 VON Bath Village, St. Kitts & Nevis, at 0959 fair; instrumental national anthem, “With all the power from the tower, this is the powerhouse of the eastern Caribbean, VON radio from the Federation of St. Kitts and Nevis.”

870 LRA1 Radio Nacional, Buenos Aires, Argentina, at 0400 fair, in with co-channel Radio Reloj Cuba and others; “Emisor Nacional” and “informas,” then time check, “Hora uno, uno minutos en Buenos Aires,” into news stories with music beds between.

900 CBC St. Michael, Barbados, at 0900 over co-channel Radio Progreso Cuba; national anthem, then “CBC news at five” beginning with item about Barbados health minister.

900 ZYI533 O Liberal CBN, Belem, Brazil, at 2300 good despite lighting crashes; ID with website address, slogan, “Radio CBN, a radio que toca noticias.” Listen to audio clip at <http://www.bamlog.com/900brazil.mp3>. Feedback from Henrik Klemetz regarding the audio clip; “The ID is the last thing to be heard on the clip. Prior to that they appear to mention CNM and their email address.”

900 Radio Progreso, San Germán, Cuba, at 0900 good; canned ID with theme song, “Radio Progreso, cadena nacional, la onda de la alegría, transmitiendo desde la Habana, Cuba, premier territorio libre en América.”

910 Radio Cadena Agrmonte, Camagüey, Cuba, at 0300 under co-channel unidentified Venezuela baseball; ascending tones marking the hour, canned ID with theme music, “Desde la cuna de el mayor, transmite Radio Cadena Agrmonte, Camagüey, Cuba.”

920 Radio Nacional, Asunción, Paraguay, at 0118 a lengthy station ID and promo mentioning that they have news and Paraguayan music. ID is “Radio Nacional, La Radio Pública.” Co-channel interference from CKNX and others.


940.2 HJGB Radio Calima, Cali, Colombia, at 0900 het with party with 939.88 XEQ and 939.998 CIGX. At 1000 choral national anthem, NBC-like chimes and “Radio Calima 940 AM” promo/ID’s. Off-frequency at 940.2 kHz producing loud het against 940 WIPR.

970 WSTX Christianstad, U.S. Virgin Islands, at 0945 excellent, fading to fair, with “Abide with Me” choral hymn totally dominating, then Christian talk in Caribbean-accented English by a male. Checked WSTX web stream at <http://www.wstxam.com> and it was a match.

980 ZYH707 Radio Nacional, Brasilia, Brazil, at 2300 good while tuned to low side to avoid 981 Algeria interference; “Radio Nacional de Brasilia... Nacional Informa.”

1030 LS10 Radio del Plata, Buenos Aires, Argentina, at 0300 fair; talk in Spanish continuing through time pips on the hour, 0301 Radio del Plata mentioned by talk host. 0600 fair; again with talk through time marker on the hour.

1070 HCJG Radio Santa Fe, Bogotá, Colombia, at 0110 fair; “Radio Santa Fe... todos los deportes... Radio Santa Fe 1070 AM.” 0300 fair; promo/ID string, “Radio Santa Fe en Bogotá.”

1070 WMIA Arecibo, Puerto Rico, at 0000 fair; “...por escuchar WMIA Radio Arecibo, Arecibo, Puerto Rico.”

Photo I. The K-index became active enough during the DXpedition to enhance tropical reception without disrupting transoceanic signals.
1090 WGOOD St. Thomas, U.S. Virgin Islands, at 1000 fair; “WGOD St. Thomas, United States Virgin Islands, 98 FM, 1090 AM . . .” and SRN news.


1140 Radio Surco, Morón, Cuba, at 0300 under co-channel CBI; familiar canned ID with theme music, “Sintonise CMIP Radio Surco, capital de la locucion cubana.”


1150.16 OA7K Juliaca, Peru, at 0859 bet against 1150.0 LT9 Argentina, measured 1150.16 kHz. Henrik Klemetz suggests Peru, desde Ciego de Avila, capital de la locucion cubana.

1160 Caribbean Radio Lighthouse, St. John’s, Antigua, at 0000 over/under co-channel VSB3 Bermuda; “Caribbean Radio Lighthouse . . . 1160 AM,” and Prophecy for the Day program.

1160 VSB3 Hamilton, Bermuda, at 0900 good; BBC World Service promos, time marker and promo for author interview into news. At 1000 excellent: World Update from the BBC.


1190 WBMJ San Juan, Puerto Rico, at 0859 fair; “At the Rock Radio Network, we’re bringing you the World day and night, 1190 WBMJ San Juan, 1370 WTV V Vieques, and 1060 WCGB Juana Díaz.”

1210 WHOY Radio Hoy, Salinas, Puerto Rico, at 1000 fair; “WHOY Salinas, Puerto Rico, Radio Hoy, la señal activa.”

1220 ZYJ458 Radio Globo, Rio de Janeiro, Brazil, at 0200 good; “Radio Globo, noticias” in Portuguese. At 2159 good; talk in Portuguese with Radio Globo mentions, long jingle through the hour.

1280 VSB2 Hamilton, Bermuda, at 1000 good, over co-channel WCMN Puerto Rico; “BBN from WYFQ FM Wadesboro” and SRN news.

1290 YVLF Radio Puerto Cabello, Venezuela, at 1001 heard, “En corriente Santa Cruz, escucha de primer plano . . . Radio Puerto Cabello” and time check, “Las cinco treinta y uno minutos.”

1380 YVNG Ondas del Mar, Puerto Cabello, Venezuela, at 0959 good; “Ondas del Mar 1380” and time check with slogan, tropical music.

1400 Harbour Light Radio, Carriacou, Grenada, at 0100 fair; reading from the Bible, then time check, “The time is 9 o’clock,” into “Word to the World” which matches online program schedule at <http://www.harbourlightradio.org>.

1630 Radio Melody, San José, Argentina, at 0800 tropical music, announcement in Spanish, sounded like mention of Buenos Aires. Off-frequency at 1629.835 kHz, easily separated from 1629.997 signal which was likely another from Argentina. Per Henrik Klemetz at RealDX, “I am positive that this is Radio Melody relaying Cadena 3 (Córdoba) and you are hearing the off cue for their nightly program between midnight and 0500 local time.”

Trans-Pacific DX

774 JOUB Akita, Japan, at 0955 good audio with talk in Japanese.

945 CNR Jiahoe, China, at 1000 weak pips on the hour, and a woman reading news. Checked again and better audio at 1019 UTC.

972 HLCA Dangjin, South Korea, at 0953 apparent interview, then at 1000 caught time pips (three short and one long), then faded up with Korean version of “Blowing in the Wind” and a man in Korean.

1206 Yanbian RGD, Yanji, China, at 0952 pulsed up to readability. However, the strongest signal on the channel by 20dB was on 1205.961 kHz, and the nearest to that frequency on the offset list is this one, so a strong tentative.

1521 CRI/Radio Kitaya, Hutubi, China, at 0000 previous to the hour, oriental stringed music leading up to the chimes and fanfare on the hour, followed by a lady in Russian. Fair strength, usually under Saudi Arabia running the news. Thanks to Sylvain Naud for noting his reception of this in Quebec at this time.
1557 Family Radio, Kouhu, Taiwan, at 0953 too weak for language identification, then faded down, 0955 violin music faded up. Taiwan is the most common station on this channel on the West Coast, and the mwoffsets list has them at 1556.996 in July 2012. But I measured this at 1556.9990 kHz, so not really sure, but don’t know what else it might be. Later measurement on the Pacific coast of a station on 1557 playing liturgical organ music is indeed 1556.9990 kHz.

Contributors
- Bruce A. Conti, WPC1CAT: WiNRADiO Excalibur, MWDX-5 phasing unit, 30-meter base x 10-meter-tall variable termination Delta antennas northeast and southeast.
- Nick Hall-Patch: RFSpace NetSDR, plus SDR-14 for driving the DX Fishbarrel program, variable termination corner fed loop with FLG-100 amplifier, ALA-100M Delta.
- Brent Taylor, VY2HF: RFSpace SDR-IQ, variable termination corner fed loop with FLG-100 amplifier, ALA-100M Delta.
- Niel Wolfish: WiNRADiO Excalibur, variable termination corner fed loop with FLG-100 amplifier, ALA-100M Delta.

Epilogue
As Brent noted, this is only the beginning as we DXers continue to dig through SDR RF spectrum captures for additional signals.

SDR technology allows for recording or “capturing” of RF spectrum to computer files that can be replayed and demodulated at any time. Therefore, DX activity could easily continue for several months after the antennas and receivers are long gone from Howe Bay.

For example, a three-minute Excalibur SDR RF spectrum capture of the entire medium wave broadcast band, representing over 200 transoceanic and continental channels per capture, adds up to over 600 minutes or 10 hours of listening per capture. With 50 captures to review at a couple hours a day pace, it would take well over 250 days to listen to it all!
The DXpedition crew acknowledges the following resources for providing assistance and information to help with identification of radio stations:

- MW Offsets Database, compiled by Günter Lorenz [http://www.myradiobase.de/mediumwave/mwoffset.txt]
- NRC AM Radio Log, [http://www.nrclogxas.org]
- World Radio TV Handbook (WRTH), [http://www.wrth.com]
- RealDX Yahoo Group

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What is the best way to reach out to young people to make them aware of our expansive communications hobby and growing monitoring community? (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 February 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 Doug Neller, KPC9VF1, of Altamont, Illinois. In August 2012’s survey we asked a series of questions dealing with monitoring the amateur radio bands.

In one we asked: “If the Pop’Comm Monitoring Station program offered an award for confirming reception of amateur radio stations from, say, 10 states, would you be interested in going for it?” Doug’s reply was emphatic: “Of course! I am licensed radio amateur KC9VF1. My Pop’Comm Monitoring Station ID sign is KPC9VF1.”

By the way, KPC9VF1 took the August 2012 Reader Survey online. Way to go, Doug! – Richard Fisher, KPC6PC/K16SN

73 and Good DX!
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This authoritative book on shortwave propagation is your source for easy-to-understand information on sunspot activity, propagation predictions, unusual propagation effects and do-it-yourself forecasting tips.
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Scanning the Skies Via the ‘Centers’ of Attention

In our quest to better understand what we hear on our scanners when tuned into aviation communications, this month we finish off our series with the largest segment of the air traffic control system in the United States — the Air Route Traffic Control Center, Photo A.

For short, we refer to them as centers, and there are 20, Photo B:

- Albuquerque (ZAB)
- Atlanta (ZTL)
- Boston (ZBV)
- Chicago (ZAU)
- Cleveland (ZOB)
- Denver (ZDV)
- Fort Worth (ZFW)
- Houston (ZHU)
- Indianapolis (ZID)
- Jacksonville (ZIX)
- Kansas City (ZKC)
- Los Angeles (ZLA)
- Memphis (ZME)
- Miami (ZMA)
- Minneapolis (ZMP)
- New York (ZNY)
- Oakland (ZOA)
- Salt Lake City (ZLC)
- Seattle (ZSE)
- Washington (ZDC)

There are also centers in Anchorage (ZAN) and Honolulu (ZHN) with combined centers and approaches called CERAPs, in Guam (ZUA) and San Juan (ZSU).


So, What Does a ‘Center’ Do?

Basically a center covers the airspace — with certain exceptions — not covered by the towers or approach controls, up to and including 60,000 feet above sea level (FL 600, flight level six zero zero). Few aircraft can fly at that altitude. They’re primarily military and a few business jets. In addition the Virgin Galactic aircraft will well exceed FL 600. Obviously the chance of a midair collision at those altitudes is almost zero.

Aircraft flying under the watchful eyes of the centers may be flying under both visual (VFR) or instrument (IFR) flight rules up to 17,999 feet. All aircraft from FL 180 to FL 600 (18,000 to 60,000 feet above sea level) must fly under instrument flight rules. A flight plan will be filed by flight service, Direct User Access Terminal Service, ForeFlight, airline dispatches, military base operations, and so on. (SEE: Plane Sense, September 2012 Pop’Comm. – KPC4KGC)

These flight plans are transmitted to the appropriate control towers, approach controls, and to the centers, if necessary.

The majority of center work deals with en-route flights. Some centers may do some approach control work, Photo C. For example,
Photo B. In addition to the centers shown on this map, there are centers in Anchorage (ZAN) and Honolulu (ZHN), as well, with combined centers and approaches called CERAPs in Guam (ZUA) and San Juan (ZSU).

Photo C. Here’s a map of Seattle Center airspace (ZSE) with approach controls depicted.
Vero Beach (KVRB) Florida is under the control of Miami Center (KZMA), and Albany (KABY) Georgia under that of Jacksonville Center (KZJX).

These, however, are exceptions to the rule. The centers utilize the same standards of separation that the approach controls use, but since aircraft flying at the upper altitudes are, for the most part, somewhat similar in performance, controllers may not have to scramble as much to keep aircraft separated as for those flying at lower altitudes.

Finding Their Way

While many aircraft still fly on the Victor airways up to 17,000 feet <http://bit.ly/XZgLMk>, and the Jet airways at and above 18,000 feet, <http://bit.ly/10mncHR>, more and more pilots choose to utilize their GPS to fly point to point.

Until the advent of GPS, most aircraft utilized the VORs and VORTACs <http://bit.ly/TjmmD> to place pilots on specific routes depicted on en-route charts. (NOTE: These routes still exist and will for the foreseeable future. - KPC4KGC).


In recent years, as GPS becomes more and more prevalent and more accurate in civilian-use aircraft, separation is, believe it or not, eased. Until a few years ago aircraft flying under IFR would be able to have 1,000 feet of vertical separation. That is up to FL 230 (23,000 feet). Above that it was 2,000 feet — FL 250, FL 270, FL 290, and so on. That has been rescinded and it has allowed for more planes to be in the same general airspace.

Of course, there have to be exceptions. If there is a "heavy" aircraft flying in the mix, there must be 2,000 feet beneath them if an aircraft is flying within 10 to 20 miles behind them. Heavy jets include Boeing 707/720, 747, 757, 767, 777, 787, KC135/35R, Lockheed L1011, C5A/B, C117, Airbus 340, 360, and so on.

The FAA and ICAO (International Civil Aviation Organization) add aircraft as necessary. Basically a heavy bird is any airplane with a "certified maximum take-off weight of more than 255,000 pounds." Some aircraft, such as the 707, 757 and KC135, can fly lighter, but can weigh more than 255,000 pounds — thus the additional separation.

When flight progress strips print out at the towers, approaches, and centers, the type is always preceded with H/. For example, H/B748/Q. That's for vertical separation. In trail and lateral separation runs into a whole other area.

Assessing the Current Situation

The controllers must take into account all kinds of variables: type of aircraft, speed, distance from the radar antenna, position reference destination, known weather problems including convection and turbulence — both forecasted and reported. The bare minimum separation allowed, taking into account those last items, is what's called 1,000and 5. That's 1,000 feet vertically and 5 miles laterally or in trail.

When all the variables are thrown in, we can look at 2,000 feet vertical and up to 20 miles separation. This is also based on the other requirement that the controller must know the area like the back of his hand.

Their area knowledge may include dozens if not hundreds of airways, airway fixes, navigational aids, local terrain, airport locations, restricted and prohibited areas, presidential temporary flight restrictions, frequencies, and basic information of the adjacent sectors, Photo D.

As you can see, these people must choreograph a three-dimensional ballet.
Granted, the controllers working strictly in the upper airspace may not have to deal with much in the way of departing and arriving aircraft at terminal airports, but they must be looking not just at the immediate picture, but must be thinking 5, 10, 15 minutes or more ahead to see potential conflicts and the possibility of vectoring — or turning — aircraft to avoid loss of separation at best or actual collisions at worst.

Hoping for the Best, Preparing for the Worst

Controllers must also be able to handle emergencies in flight — from medical loss of cabin pressure, engine failure, and the possibility of bomb threats or hijacks. All controllers — flight service, tower, approach control, and center — must constantly get updated training for emergency procedures and seasonal variances.

Training for problems with snow and ice is normally performed before the winter storms hit, while hurricane and convective activity training is usually in the early spring. The list of training is endless. Included are the updates every eight weeks when the navigational structure is tweaked. As noted in November’s Plane Sense, the A/FD (Airport/Facility Directory) is updated every 56 days.


En-route maps are updated on the same schedule and all controllers must be familiar with their areas of responsibilities. So when you listen to any controller please take that into account. What you hear on your scanner is rarely the same that’s placed in the movies and on television.

September 11, 2001 gave us a snapshot of the remarkable skill of controllers at all levels. Across the United States they ensured all non-military aircraft were safely grounded — leaving the skies clear for the military to do its job, Photo E, <http://bit.ly/Te7V9O>.

I’ve been doing this job for more than 40 years and this is the only time during my tenure that this has happened. In fact, doing my research, I realize this had never occurred before. The handbooks for air traffic control: FAAO JO 7110.10 (for flight service) and FAAO JO 7110.65 (for tower, approach, and center) had no procedures for what was done then. And yet, without clear and published procedures, all civilian and commercial aircraft were landed safely.

Those books — which we call the “point ten” and “point sixty five” — are available online for your perusal. The handbook for tower, approach, and center can be found at: <http://1.usa.
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 monitoring. A comprehensive list of codes for facilities around the world can be found at <http://bit.ly/1MGUK8P>. 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 green books 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 $5.50. 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 F. The Uniden Bearcat 3300XLT is one of many scanners that will cover aviation frequencies spanning from 118.0 to 135.975 MHz. (Courtesy of heb@Wikimedia Commons)

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Good News for the VHF/UHF Enthusiast

The all-time favorite magazine for the VHF/UHF enthusiast, CQ VHF is better than ever and here to serve you!

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goV/1.RKhl婆V> while the flight service book is at: <http://1.usa.gov/1TVSrFS>. A third book is called the Airman’s Information Manual, or AIM. This regulation we use, but is geared more for the pilot’s use. This book can be seen at: <http://1.usa.gov/1S8kmnD>.

The job of the controller? “The safe, orderly, expeditious movement of air traffic.”

For Your Information

Q: What’s a propeller?
A: According to Wikipedia: “Aircraft propellers or airscrews convert rotary motion from piston engines or turboprops to provide propulsive force. They may be fixed or variable pitch.”

However, pilots look at them differently. Propellers are primarily a fan that keeps the pilot cool. Don’t believe me? Turn it off and watch the pilot sweat!

Scanning for Valentine’s Sweets?

Hope you all have a very happy Valentine’s Day this month — February 14, to be exact. Get your love something sweet — like a new scanner radio. That way you can share your communications obsession. It’s also less fattening and won’t ruin your teeth.

Wheels Down

That’s it for this month. Next time we’ll be focusing on Sectional and TAC Charts. Like the Airport/Facility Directory, they’re something to spend a bit more money on, but will bring the visual airspace into perspective. As always, keep your feet on the ground, and ears to the sky. – KPC4KGC
IN GEAR

Power Up

Dual-Band Antenna Tuner Hits the Market

MFJ Enterprises, Inc. is showing off its new MFJ-923 VHF/UHF Dual Band Antenna Tuner, which covers the complete 144- and 440-MHz frequency ranges.

The MFJ-923 has a built-in cross-needle SWR/Wattmeter that measures SWR, forward and reflected power in two ranges: 300 or 30 watts. The MFJ-923 meter is usable for both bands 144 and 440 MHz.

It is designed to match a wide range of impedance for both mobile and base operation and has single input and output SO-239 connectors for radio and antenna connection. It handles 200 watts.

“It’s the perfect match for today’s dual-band radios with a combined single output and dual-band antennas,” said MFJ.

The MFJ-923 has a wing nut post for ground, is housed in an all-black aluminum cabinet, and measures a compact 9.5 inches wide by 4.5 inches high by 2.25 inches deep.

MFJ-923 is protected by MFJ’s NoMatterWhat™ one-year limited warranty that will repair or replace (at our option) your MFJ antenna tuner no matter what for one complete year. (VISIT: MFJ Enterprises, Inc.’s website: <http://www.mfjenterprises.com>)

New 10-Band Mobile Antenna Has It Covered

Now you can operate 80, 40, 30, 20, 17, 15, 12, 10, 6, and 2 meters with just one antenna, according to MFJ Enterprises Inc., with its newest MFJ-1699S/T 10-band HF/VHF Mobile Antenna.

This mobile HF/VHF vertical antenna features low SWR and can handle 200 watts of power.

Changing bands entails changing the tap on the wander-lead to the next band you want to explore and adjusting the height of the top whip, maximum height is 65 inches, and start operating.

The PL-259 or 3/8-24 threaded connector makes it easy to mount on any type of lip, trunk, magnet, or pipe type mount. It is easily collapsible for quick storage — unscrew the top whip then unscrew from the mount and store.

You can choose either the MFJ-1699S with PL-259 connector or the MFJ-1699T with a 3/8-24 threaded connector.

MFJ says the MSRP of the MFJ-1699S/T is $69.95 and is protected by MFJ’s NoMatterWhat™ one-year limited warranty. MFJ will repair or replace (at our option) your MFJ antenna no matter what for one complete year. (VISIT: MFJ Enterprises, Inc.’s website: <http://www.mfjenterprises.com>)

Photo A. The front face of the MFJ-923 features an analog SWR/Wattmeter with cross needles. (Courtesy of MFJ Enterprises, Inc.)

Photo B. This new 10-band, mobile antenna extends to 65 inches. (Courtesy of MFJ Enterprises, Inc.)
**World Band Tuning Tips**

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.

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Communications Trivia and Other Pursuits

Q: Why do they call radio operators "Sparky"?
A: In organizations such as the Navy and merchant marine, tradition counts for a lot. As a result, for many jobs there are nicknames. The radio operator around the beginning of the 19th century was most likely using a spark gap transmitter, Photo A.

By design, an important part of the wireless circuit was a space one-half to three-quarters of an inch — the spark gap. When the key was depressed, a large spark jumped that space.

The key itself would throw a good-sized spark, as well. As you can imagine, great care needed to be exercised at the operating position. Danger was all around.

In addition to high voltage and sparks, if the radio operator left papers scattered around, sparks could ignite them — sending outgoing messages up in smoke, and sometimes the transmitting facility, as well.

Today, with modern equipment, Internet-linked computers and teleprinters, radio room fires are extremely rare aboard ship.

But the nickname Sparks or Sparky still hangs on among the sea-going fraternity.

Q: I understand that high level diplomatic traffic was sent over commercial wireless telegraph in the pre-World War II days. Is that true?
A: True, and all the major countries were always working on the codes and ciphers of the sending countries. The Germans sent a message telling their embassy in Paris that they were about to declare war on the French in 1914. The French Intelligence Service had broken the code and got the message first.

The coded telegram was so garbled when it got to the German embassy that the ambassador had to ask for several repeats before they got the correct message. Meanwhile the French were taking action to prepare for the coming announcement.

The message from Washington D.C. to Pearl Harbor notifying the military it would be attacked arrived after the attack had started, was not coded, and not sent Urgent.

No wonder the government set up its own communications system during the war and afterwards.

Q: What impact did Citizens Band radio have on the amateur radio community back in the '60s?
A: For many people, the coming of CB was the gateway into getting their amateur radio license. But at first it didn't seem that way. In the beginning, many prospective radio amateurs went into CB instead. Why?

- CB was usually cheaper.
- Why have to learn Morse code and do all that hard work to learn a license?

To get on the Citizens Band, all you had to do was buy a CB radio and send in the application form for a permit and you were on the air.

This led to a lot of price cutting and discounting among ham radio retailers — which hadn't happened for a long time.

It was true that a lot of the pre-CB era amateur radios were already set up for the 11-meter band. It had been taken away from the radio amateurs and given to the CBers. Rumors of the demise of amateur radio began to emerge.

In time, unlicensed CB operators turned it into a medium in which poor operating practice, on-air fights and obscenities were everywhere. Most people who wanted to talk civilly were more comfortable getting their amateur radio license. The trend ultimately reversed itself.
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The Hunt for a Good Deal: Buying Radio Gear When Money is Tight

With disposable income on the wane for many people in such a challenging economy, it's more important than ever for radio amateurs, SWLers, and scanner listeners to be smart shoppers when they're on the hunt for new gear.

Once you've made a decision about what to buy — that's a whole 'nother topic, and an important one — where and how to buy remain as the $64,000 question. (NOTE: Ah, if we only had that budget to play with! - NT0Z.)

To further complicate things, because ham gear is quite specialized and you can't buy it at Target or Wal-Mart, the reseller you choose and its after-sales support can be critically important.

Now that the Internet is ubiquitous and buyers from everywhere have access to nearly every global market, the purchasing landscape has changed dramatically.

Japan, for example, is a relatively small country that's well-stocked with radio amateurs and ham radio equipment stores. The United States, though, with a similar ham population but a much larger geographic area, has only a few actual, factual ham stores.

New York City's once-fabled Radio Row, Photo A, is long gone, as are most family-run stores around the country. Most local shops have long since dried up or have been consolidated into larger consortiums.

If you're very lucky, a local radio shop can provide new and used gear, service, support, and advice. You can chat with staffers, pick up insider equipment tips, and twiddle the knobs of the demonstration sets. Dealers know that local buyers often become repeat customers. And repeat customers aren't always concerned with finding the lowest prices — an important fact in any economy.

Now that my nearest ham store is 100 miles away, which is not too bad compared to most non-urban areas, my days in Connecticut almost seem like a dream! I lived only a mile or so from Lentini Communications. I see from the company's website, however, some things have changed. It moved from a small shop in downtown Newington, right down the street from ARRL Headquarters, to somewhere in Berlin, a few miles away and into a much larger facility. Thankfully, it's still there! (NOTE: If you visit, be sure to say "Berlin" with a sharp emphasis on the "Bur," with the "lin" added as almost an afterthought. Whatever you do, don't say it like the name of the German city with an emphasis on the "lin," or the locals will give you a stern look! - NT0Z.)

If you're out in the boonies, however, a round trip to the nearest radio store may take a day or more. No matter how good the service, "buying local" isn't always an option. Whatever your rea-
sons, whatever your situation, buying your next rig over the telephone, via the Internet, or at a hamfest may be your best, or only, option.

Investigate Thoroughly

After you've narrowed down your equipment choices, it's time to research potential dealers and sellers. Price, policies, and procedures may make a difference in your situation. Some dealers take trade-ins. Some offer generous return policies and some accept credit cards that others don't.

After you've compiled a list of dealers, from, say, magazine ads, the Internet, fellow hams, and so on, check company websites to initially investigate prices, trade-ins, service, shipping, et al. Most, or all policies are typically listed there in black and white. If you need clarification, feel free to ask specific questions on the phone, but try not to use the toll-free sales lines for inquiries that don't involve placing or following up on existing orders. Your long-distance calls are probably free nowadays, but inbound 800 numbers usually cost significant amounts of money.

Be sure to take notes during your inquiries. If you don't, you'll find it's easy to get things mixed up.

If the sales person seems rushed, rude, bored, or otherwise unfriendly, consider moving on — unless you made them that way! Some dealers welcome reasonable trades, while others are interested only in late model radios or don't accept trades at all. If you can fund your purchase in its entirety, consider selling your rig yourself. You'll almost certainly get more money for it.

Direct sales is a growing trend, and some manufacturers — for example, Elecraft, Ten-Tec, and others — sell factory-direct only, so be sure to check them out online. Ham stores may only have used gear from such manufacturers, if any at all.

Shipping charges should be fairly similar among dealers, with free shipping offered as an occasional marketing incentive. Some dealers "leverage" their low equipment prices with higher-than-necessary shipping charges — mostly, but not exclusively, eBay sellers. If a vendor's shipping charges seem out of line, be extra careful. It could be a sign that something else is "wrong."

The list of ham radio stores and manufacturers at <http://actv.com/stores.htm> is reasonably up to date. But, remember:

This kind of resource information is changing all of the time.

Craigslist, eBay, and Other Online Outlets

Dealers aside, private sellers on eBay, Craigslist, and other online sources are selling more radio gear than ever. Photo B. Buying from non-local individuals adds an extra element of risk when compared to buying from established dealers. So take steps to protect yourself.

Most online sales sites such as eBay offer information about a seller's history and reliability. On eBay this is called a feedback profile.

As you can imagine, the closer to "100 percent positive," the better. A user who sells stuff that isn't as described, takes forever to ship, or doesn't package stuff well, will have a feedback rating that's commensurate with his past performance.

The best sellers have a 100 percent positive feedback rating. Keeping that high rating is important for sellers because it helps buyers make purchasing decisions. I won't do business with a seller who has an eBay feedback score of less than 99.6 percent positive. That might seem like a needlessly high standard, but my experience since 1998 has shown that sellers with scores much lower than that tend to be problematic.

Most eBay purchases are handled via online payment processor PayPal <http://www.PayPal.com> which is owned by eBay. You can purchase items through PayPal via a major credit card without having a PayPal account, but if you make regular purchases on eBay and elsewhere, a PayPal account is probably in your future.

PayPal and eBay have made steady improvements aimed at protecting crooked buyers and crooked sellers from affecting the vast majority of eBay users who are on the straight and narrow.

PayPal and eBay fees — charged to sellers only — can total 10 to 15 percent of the transaction price, so not every seller accepts PayPal. Some old-timers prefer money orders or personal checks, which work just fine as long as everyone's on the up and up. If not, it's a lot more difficult to resolve "issues." Caveat emptor! Buyer beware.

Online classifieds may offer better "bargain potential" because there are fewer competing buyers. But they carry the greatest potential risk! Popular outlets include Craigslist <http://www.craigslist.com>, eHam.net <http://www.eham.net/classifieds>; and Swap.QTH.com, <http://www.swap.qth.com>. Each site has lots of buyers and sellers, and I suspect most transactions go through without a hitch. The fact that each site has sections where disgruntled buyers can report unscrupulous sellers to other users, however, is a clear indication that not every transaction complies with the Golden Rule.

Many non-eBay sellers accept PayPal, which lets buyers pay with credit cards. But some prefer postal money orders or certified checks. There is some protection against fraudulent sellers with the latter payment methods — but not much. Getting your money back may involve convincing far-away law enforcement authorities to help you. You'll probably have to travel there in person, hire local lawyers, and so on. The bad guys know this, and that's why they choose to rip people off in this manner.

Shopping Tips

Before signing on the dotted line, make sure you and the seller agree on the...
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Photo B. I had been trying to decide between an AADE L/C meter kit and an inexpensive eBay knock-off clone when I found this high-end Sencore LC53 L/C meter on Craigslist—an unexpected alternative. I bought the LC53 and a pile of '70s and '80s Sencore and B&K NTSC test-pattern generators and tube, transistor, and CRT testers, from a seller in a very small town—and for a very small price. The seller's father used to run a TV repair shop, and the stuff had been sitting idle in the eight years since his passing. New problem: The LC53, with original test leads, manuals, and accessories—like the one pictured—can fetch nearly $400 on eBay! That's the equivalent of four AADE meters, or 10 clones.

(Courtesy of NTOZ/KPC0ZZZ)

make, model, price, included parts and accessories, sales tax, shipping fees, warranties, and return policies.

If you're buying retail, don't be reluctant to ask the sales representative to repeat everything back to you or have a copy of the deal faxed or emailed to you before making your purchase. Doing so will minimize your risks and maximize your chances of getting exactly what you want at the agreed-upon price.

Make sure you understand exactly which cables, brackets, adapters and accessories are included before finalizing the deal. The profit margin on the radios themselves is one thing, but sales of accessories are what bolster the bottom line.

Prepare in advance by keeping an accurate paper trail of all correspondence, receipts, warranties, invoices, and so on. As soon as trouble rears its ugly head, put everything in writing, including statements made during phone conversations, and send a copy to the vendor.

When talking to sales representatives and technicians, be sure to write down names, times, and a summary of the conversation. This is a bit tedious, but it can save you a lot of money and heartache if a deal goes bad.

The generous return policies we used to enjoy have now in some cases dwindled to a week or two—or maybe nothing at all. Make sure you're happy with whatever policy your dealer has in place, because it's not reasonable to negotiate that detail "after the fact." Most factory-direct sellers offer 30-day return policies to incentivize "sight unseen" sales, but even they sometimes charge restocking fees or don't pay return shipping.

If you decide to take advantage of your dealer's return policy by returning your newly purchased rig within the specified period, you'll likely be charged a restocking fee since the equipment can't be resold as new. Restocking fees can range from 0
to 20 percent of the purchase price. Although there is no standard for restocking fees, be sure you’re happy with yours before you buy.

Most of us can handle only basic repairs, so be sure you know exactly who will perform warranty service and repairs should your new rig need service. Will the dealer’s in-house technicians perform the service or will the unit have to be sent to the factory? If your rig is dead on arrival, will you receive a new radio, a “factory refurbished unit,” or will you have to wait weeks while “major surgery” takes place?

According to FTC guidelines, items you buy online or via telephone must be shipped to you within 30 days of the date originally agreed upon. If the vendor can’t deliver — for whatever reason — you must be notified. Even if you agree to the delay, you reserve the right to cancel your order at any time, even after consenting to the delayed delivery schedule.

Always try to purchase ham gear with a credit card, whether direct or via PayPal. Don’t use checks and don’t use cash. Credit cards give you a significant advantage in dealing with fraud or wayward vendors. Most credit card issuers allow users 45-60 days to challenge a “deal gone bad.” To qualify for that support, keep meticulous records and receipts.

If you’re purchasing from private sellers, do your best to make sure they’re packing your stuff in accordance to UPS or U.S. Postal Service guidelines. The last batch of radio gear I bought on eBay arrived in a sturdy, well-sealed box. Unfortunately, the heavy, sharp-cornered items inside, which weren’t adequately protected, became battering rams, damaging or destroying most of the contents. Ouch! I was issued a prompt refund, but it was still a sad day to see previously nice vintage gear all mangled.

Buying ham gear online — especially from non-dealers — can get “exciting,” and accidents do happen, but if you prepare thoroughly, get stuff in writing and pay appropriately, you can find great gear at great prices and protect yourself in the process.

Navigating the Feeding Frenzies

From time to time, madness grips the retail and online retail landscape. I’m thinking of such events as Black Friday and Cyber Monday, when throngs of bargain shoppers battle for deals at big-box retailers nationwide — even before the Thanksgiving turkey has settled into their bellies. It’s 10 months away, but something to factor into your buying strategies.

(NOTE: In truth, “Black Friday” is now “Black Wednesday,” and “Cyber Monday” — the traditional “Black Friday” for online retailers — is now “Black November Through the First Week of January.” — NT0Z.)

Well, even though I’m a bargain-hunter from way back, I’m mostly thankful that, because the market for amateur radio, SWL, and scanning equipment makes up only a tiny percentage of global retail sales, much of the seasonal madness doesn’t affect us.

However, the amateur radio shack or monitoring station items that are fully involved in such shopping crazes are computers and computer goodies. And if you are so inclined you can brave the masses and make your deals.

If not, don’t worry: It’s always Black Friday at some high-volume resellers such as Newegg.com, Frys, Micro Center, and so on. Just watch for the email sales flyers and you’ll probably find what you want.

Stark Reality

Although women’s shoes and American-made pickup trucks sport huge mark-ups, there isn’t nearly as much wiggle room when it comes to radios. Accessories have a bit more pricing flexibility, but overall volume generally precludes massive price differences between resellers.
Pride, Persistence, and Propaganda

Remembering When the Foxhole Radio Went to War

Foxhole radios were a genuine GI invention. They were never authorized to be used. Their parts were scrounged, stolen, or "liberated" from sources best not disclosed. There was no "official design" or schematic published anywhere and their very existence was often kept secret. As crude as these little radios were, U.S. GI monitoring stations were among the most active anywhere during World War II.

Having a Foxhole radio put you in immediate contact with the enemies' political propaganda organization but nobody at any command level seemed to care. So naturally everyone seemed to have one.

Building, rebuilding, and improving them was a major topic of conversation among those in the know during the war, Photo A.

Foxhole radios came out of the shadows about the time American forces landed at Anzio, Italy, on January 22, 1944, Photo B, when the radios attracted enough attention to have their presence recorded.

Coming of Age During World War II

Early iterations of the Foxhole radio were used in World War I. But the generation that grew up between the two world wars had become quite adept at building crystal sets as kids. When these boys wound up as soldiers during World War II, it seemed natural to build simple radios again to provide themselves with news and entertainment on the field of battle. *(NOTE: British troops were actively discouraged from building any recognizable radio. It was feared by British brass that such a device found on a captured soldier would result in summary execution by the enemy. – KPC7RBS)*

One of the things that most veterans will admit is that the average GI is a natural scrounger. GIs, as a group, can overcome almost any problem or supply any need. It is basic to the nature of the creature.

The one technical problem that the ingenious soldiers couldn't handle was the absence of galena crystals in and around the battlefields of the war. Another thing not found in your average battlefield is electrical outlets to plug in regular table model radios.

Necessity and the Mother of Invention

Batteries for civilian radios were also hard to find. But crystal sets don't need power. Someone came up with a truly original solution to the lack of galena:

- Take a large safety pin and fold over the top catch 90 degrees.

Photo A. A soldier listens to a simple radio receiver by candle light during World War I in 1914. Crudely made Foxhole radios and crystal sets were often the only connection service members had with the outside world.

*Courtesy of Wikimedia Commons*
Photo B. Featured in a book titled "Fifth Army Anti-aircraft Artillery: Salerno to Florence," U.S. forces land on the beach at Anzio in January 1944. The book was prepared by the Anti-aircraft Artillery Section, Fifth Army. (Courtesy of Wikimedia Commons)

- Secure the head of the pin to the wooden base of the set.
- Take a short stub of pencil and expose the lead.
- Put the pencil stub on the pointed end of the safety pin.

The tip of the pencil lead was then placed on a blue razor blade, preferably one with rust on it. A blued hacksaw blade would work, as well, but rust makes the detector work best.

**Ingenuity Over Circumstances**

The rest of the Foxhole radio is standard crystal radio building which most of the guys who wanted radios were already familiar with. The exact details of the construction and the schematics were as varied as the men who built them and in which situations in which they found themselves, Photo C.

Headphones, for example, were often scrounged or traded for. Tank crews, famous for their scrounging abilities, were often good for a pair of headphones. Sometimes the wire from one side of the headphones was cannibalized and used for the radio. This left the other side for listening.

Originality and ingenuity were the order of the day. Foxhole radios became a source of pride. Improvisation was a must. But, in time, with rebuilding and refinement, they usually worked. The one standard part that everyone used was the ground. Almost everyone used a bayonet stuck into the soil with a ground wire attached just below the hilt.

The sets were hard to tune. They couldn’t pick up every station, like most crystal-style receivers - only the strongest ones. But it was a lot better than no radio at all and a triumph of ingenuity over circumstances.

**Propaganda and ‘Charlie and His Orchestra’**

Well, when GIs got their Foxhole radio working, what did they listen to? Simple: the enemy.

There was, of course, the U.S.-transmitted Armed Forces Radio Service, but it was not always the strongest signal. During the day it was Radio Roma for those on the Anzio beachheads. At night Radio Berlin was often the station coming through.

But here comes the real twist of the tale:

The Nazi’s, who controlled European broadcasting, thought jazz and swing music was “degenerative art” and unfit for “good German” ears. Hitler himself had declared it so. Jazz, in particular, reminded the Germans of the humiliation of African troops in the French Army assigned to oversee the armistice after World War I.

In 1933, when Hitler came to power,
the Nazi broadcast authority banned such music. It took them two more years to accomplish this goal.

There were two reasons:

- A lot of people flouted the government ban. There were actually a lot of jazz-loving Nazis.
- There is no real agreement on what constitutes jazz — even today. Even the Nazis couldn’t figure it out. You can’t ban what you can’t define.

Nevertheless, by 1935, we are told, all forms of jazz, swing and other forms of “hot music” were gone from the German airwaves. Well, not really.

The Nazi government was conducting widespread propaganda broadcasts to the whole world. Everybody, it was thought, needed to know about the gains of National Socialism and inevitable victory of Nazi arms.

Nazi Propaganda Minister Joseph Goebbels felt that the best way to get this message out was by radio. While the German people were listening to Wagner, ersatz folk songs, and oompah bands, the rest of the world wanted jazz and swing. Even Hitler realized that to reach this worldwide audience and woo them to the Nazi cause, there would have to be “appropriate music” to do so. This led to the formation of “Charlie and His Orchestra.”

Yes, Hitler had his own jazz band. Lutz Templin was selected to head up this propaganda orchestra. A saxophonist and violinist, Templin did not have a Party membership card or seem to have any strong political beliefs of any kind. He didn’t even have any strong feelings about what kind of music he played. He just did as he was told.

What he played wasn’t even real “hot” music. Most was patterned after Paul Whiteman’s symphonic jazz. At the microphone was Charlie Schwedler, the band’s vocalist and front man.

He was a smooth opportunist, as well, happy to lend his talents and personality to whatever message was required of him. The major emphasis was on the political message.

In 1940, “Political Cabaret” appeared on the airwaves being beamed to America from Germany. Later that year the program was changed to “Charlie and His Orchestra.” Propaganda music had been broadcast since the early days of the war after the fall of France and before the beginning of the Battle of Britain.

The music was simply popular or famous tunes with anti-Semitic or defeatist lyrics substituted for the actual words. The popular song The Sheik of Araby was announced as Mr. Churchill’s favorite song and propagandized as:

“I’m afraid of Germany,  
Her planes are beating me.  
At night, when I should sleep,  
Into the bunker I creep.  
Although I’m England’s leading man,  
I’m led to the cellar by ten.  
A leader in the cellar each night,  
That’s the only damn way I can fight.”


The music was always familiar but the words were always rewritten into Nazi propaganda. Lord Haw Haw, Photo E, and Axis Sally were also on the air and helped to fill out the format for Radio Berlin. These programs were never taken very seriously by the GIs. But like Japan’s Tokyo Rose, the broadcasts provided a bit of needed relief from the real war that was all too near.

Photo E. Silenced and under arrest, William Joyce, who to wartime radio listeners was Nazi propagandist Lord Haw-Haw, lies in an ambulance under armed guard before being taken from British Second Army Headquarters to a hospital. (Courtesy of Wikimedia Commons)
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MONITOR OF THE MONTH
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KPCØUFO, Pueblo, Colorado

Featured on Discovery Channel’s ‘America’s Most Secret: Structures’

Mike Coletta, KPCØUFO, has taken monitoring to a whole new level from his Colorado listening post. So much so that he caught the attention of the staff of “America’s Most Secret: Structures,” on cable TV’s Discovery Channel, <http://dsc.discovery.com>.

As an avid monitor of the U.S. Air Force’s Space Fence, tracking all manner of space debris and orbiting space objects, Coletta was prominently featured in a segment of the show last November. On YouTube, take a look at the gear at his listening post, as well as the array of homemade antennas KPCØUFO uses in his wide-ranging monitoring activities.

Coletta’s segment begins at the 37-minute, 15-second point of the Discovery Channel show, which can be viewed at <http://bit.ly/T7t031>, Photo A.

Meantime, please send us a photograph of your listening post and tell us about your monitoring experience. We’d be happy to feature you as a Pop’Comm Monitor of the Month. Write to Pop’Comm Monitor of the Month at: <PopCommMonitor@gmail.com>.

– Richard Fisher, KPC6PC

I first got interested in monitoring radio frequencies at age 13 when my parents bought me a one-channel walkie-talkie. The radio was a silver and black Sears brand which ran on one 9-volt battery and had CB channel 11 installed. I would listen to conversations day and night.

My dad then bought me a transistor radio that had police band coverage. It was one you had to manually tune, so I would have to turn the knob to listen to the different police stations in the area. I kept a log of where on the dial each department was found.

Crystal-controlled scanners hit the market and I put in a request via a Christmas list. My first was an eight-channel model. As years went by, more and better models came out. As I got older, and got

Photo A. Mike Coletta, KPCØUFO, was a major player in a recent episode of “America’s Most Secret: Structures” on cable’s The Discovery Channel. As an avid monitor of the U.S. Air Force’s Space Fence using simple radios and antennas, Coletta caught the eye of the program’s staff and appears at the 37-minute, 15-second point of the show. Watch the program on YouTube at <http://bit.ly/T7t031>, (Internet screen grab)
Photo B. An impressive collection of receivers and transceivers populate the listening post of KPCOUFO. From EmComm and railroad monitoring to SWLing and keeping an ear and eye to the USAF Space Fence, Mike Coletta loves the thrill of the chase — and he chases them all. (Photography courtesy of KPCOUFO)

Photo C. Scanners at KPCOUFO include: A Pro 34, Pro 46, Pro 91, and a Uniden Trunktracker IV, sitting atop a GE® Searcher — an old tunable four-channel scanner which included the commercial AM and FM bands, <http://bit.ly/UYVcp3>. An AOR AR 8200 hand-held receiver sits on the desk to the right of the Searcher.

Photo D. Mike Coletta’s amateur radios include a Kenwood TS 520S, ICOM 756 ProII (with general coverage receiver), Y aesu FT 817 (with general coverage receiver), and a Yaesu FT 2800. His amateur callsign is KGOUFO.
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.

John Green, KPC3JG, York, PA; Jess Spry, KPC9IF, Elkhart, IN; Robert Frost, KPC1HCG, Portland, OR; Jeff Argo, VEPC3ON, Aurora, Ontario, Canada; Robert Waldo, Jr., KPC1CT, Brookfield, CT; Billy Smart, KPC42RD, Martinsville, VA; Shane LacaZe, KPC5EMC, Splendora, TX; Charles Zimmer, KPC5EN, Eloy, AZ; Paul Wallace, VEPC3SR1, Langton, Ontario, Canada; Laurence Baker, KPC7QCC, San Angelo, TX; Stewart Wilson, VKPC3PR, Warrnambool, Victoria, Australia; Dan Cameron, KPC7NE, Whithall, MI; Nick Bagu, KPC7VWS, Albany, OR; Mark Copeland, KPC1RPV, Pasadena, TX; Ken Risley, KPC0KC, Ballwin, MO; Michael Adams, KPC1EN, Poquonock, CT; Richard Bradley, KPC1RB, Methuen, MA; Rick Barton, KPC7RAT, El Mirage, AZ; Martin Kennedy, KPC9RCC, Wheaton, IL; Pail Ferne, KPC9WO, Pickering, OH; Eric MacKenzie, VEPC1EJM, Dartmouth, Nova Scotia, Canada; Paul Judd, VAPC7XQ, Maple Ridge, British Columbia, Canada; Henry Piel, KPC1HWP, South Grafton, MA; Craig Hall, KPC7TKK, Kearney, AZ; Robert Aibee, KPC1RCA, Maynard, MA; Duane Donovan, KPC5UTM, Morganza, LA; Jessica Wilkes, KPC4RSB, Paducah, KY; Zachary Little, KPC8MB, Pike County, OH; Michael Herzog, OEPC7SWL, Tirol, Austria; Afonzo Keunecke Mendonca, PUPC5AKM, Balneario Camboriu, SC, Brazil; John Erwin, VEPC4WX, Winnipeg, Manitoba, Canada; Michael Psara, KPC0TVI, St. Louis, MO; Marvin Powell, Jr., KPC2GX, Ravena, NY; David Walden, Sr., KPC4DW, Knoxville, TN; Tony Mason, KPC8CD, Grosse Ile, MI.

WPC Prefixes

Also: John Fisher, WPC1JMF, North Chelmsford, MA; Charles Weeks, WPC4TXM, Johns Island, SC; Madison Brumbach, WPC5MCB, Jasper, AL; Richard Lawrence, WPC1QY, Tiverton, RI; Richard Michael, WPC4ROM, Hartville, OH; John Miller, WPC4KZB, Ochlocknee, GA; Ronald Thompson, WPC1RF, Hardwick, VT; John Baird, WPC1SWL, Corpus Christi, TX; Mark Wells, WPC4NYL, Birmingham, AL; Kenneth Hayes, WPC1KMH, Pittsfield, VT; Joe Richards, WPC8ROJ, Charleston, WV; Rob Leamy, WPC8OM, Granville, OH; Michael Haman, WPC7MJH, Heber City, UT; James Scott, WPC3CQ, Hartstown, PA; Ralph Lavallee, WPC1NH, Francistown, NH; Lonnie Risenhoover, WPC5LR, Sayre, OK; Evan Newlon, WPC5NM, Albuquerque, NM; Steven Christian, WPC8FWV, Northfield, OH; Kenneth Lyons, WPC2DGV, Lockport, NY; Terry Smith, WPC8EE, Saint Joseph, MI; Dennis McCarthy, WPC4DDM, Hollywood, FL; Lionel Fortier, Jr., WPC1TV, Saint George, SC; Matthew Delaney, WPC2NYS, Latham, NY; William Emmerling, WPC1XTJ, Hugo, CO; Gary Smith, WPC1HRP, Southington, CT; Richard Currin, WPC4LJM, Johnson City, TN; Lloyd Thompson, WPC4DR, Lake Mary, FL; Robin Spalding, WPC6GXS, Berkeley, CA; Henry Brown, WPC1EXZ, East Falmouth, MA; Ivan Nordstrand, Jr., WPC8IPN, Grand Rapids, MI; Al Scheide, WPC8AVK, Cincinnati, OH; Horace Cooper, Sr., WPC4UB, Lakeland, FL; Patrick Goodrich, WPC3PLG, Hagerstown, MD; Dave Williams, WPC7HF, Stafford, VA.

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>
a paper route, I tried to keep up with the cool new models that added better features. When programmable scanners hit the stores, what a difference it was. Each year brought a number of new scanner models with increased capability. It was hard to keep up with having the latest and greatest, as with every new catalog came numerous upgrades. But, I did my best at affording the newest and best.

Shortwave monitoring and AM broadcast band (BCB) DXing also captured my interest, so I owned many radios that would catch those far-away signals. Back then, long wire antennas were my favorite means of capturing radio waves, as they still are today.

Today I still enjoy monitoring for emergency services, railroad, air traffic control, shortwave, and AM BCB DXing. But, I’ve added a new venue to the mix: space debris and orbiting space objects. I monitor satellites and other objects passing through the Air Force Space Fence using a homebrew Yagi antenna and an AOR all-mode receiver. I also monitor meteors entering the atmosphere using a number of different receivers and antennas.

My current monitoring station, Photos B, C, and D is made up of:

- **Scanners:** Pro 34, Pro 46, Pro 91, Uniden Trunktracker IV, GE Searcher
- **Receivers:** AOR AR 8200 (all mode, wide coverage)
- **Amateur radios:** Kenwood TS 520S, ICOM 756 ProII (with general coverage receiver), Yaesu FT 817 (with general coverage receiver), Yaesu FT 2800
- **Miscellaneous radios:** GE Superadio, Sangean MS 101, Sangean SG 796
- **Receiver accessories:** Heathkit Active Antenna, Radio Shack DSP, Select A Tenna, Skytec (tuned speaker for Space Fence monitoring), Altec Lancing powered subwoofer (tuned speaker for meteor monitoring), computers and software for graphical capture of space fence objects, BW antenna tuner
- **Antennas:** 260-foot dipole (160-meter amateur, AM DXing, general coverage reception); 272-foot loop (80- through 6-meter amateur, and general coverage reception); three-band vertical dipole (20-, 15-, and 10-meter amateur, meteor monitoring); 15-element Yagi (aircraft monitoring), Photo E; Isopole vertical (2-meter amateur), multi-band scanner vertical; and a 12-element Yagi (USAF Space Fence reception), Photo F.

**Photo E.** Nestled in Mike Coletta’s monitoring station antenna farm is a vertically-polarized 15-element Yagi used for aviation monitoring.

**Photo F.** This snow-covered 12-element Yagi at KPCOUFO is used to track space debris and orbiting objects detected by the USAF Space Fence.
NASA's Solar Fleet Peers into Coronal Cavities

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

"By understanding these aspects of coronal cavities, scientists can better understand the space weather that can disrupt radio communications."

In a dazzling display of enormous explosive energy, a massive filament of plasma explodes away from the Sun, ejected into the interplanetary space, possibly directed toward the Earth.

Readers of this column have read about such explosions, and know that these are coronal mass ejections (CMEs), Figure 1. A filament is a giant column of solar material that is made of gas so hot that many of the electrons have been violently forced off of the atoms, transforming the gas into a form of magnetized matter known as "plasma."

With the latest spacecraft, we have a front-row seat to watch these plasma filaments as they leap off the sun's surface, jumping and twisting. (WATCH: One of these eruptions for yourself at <http://g.nw7us.us/R5YriO>.) - WPC7USA.

"Filaments are formed in magnetic loops that hold relatively cool, dense gas suspended above the surface of the Sun," explains David Hathaway, a solar physicist at the NASA Marshall Space Flight Center. "When you look down on top of them they appear dark because the gas inside is cool compared to the hot photosphere below. But when we see a filament in profile against the dark sky it looks like a giant glowing loop — these are called prominences and they can be spectacular."

Sometimes these prominences of solar plasma escape completely into space away from the Sun's gravity. Other times, these plasma clouds fall back down under their own weight.

Researchers have noticed that sometimes prominences are an inner structure of a larger formation, appearing from the side almost as the filament inside a large light bulb. When this occurs, there is a very bright structure around and above that bulb-like formation, known as a streamer. Inside this formation is an "empty" area we call a "coronal prominence cavity."

Of course, these amazing formations are not the only structures we observe in the Sun's atmosphere — the Corona. There are many kinds of structures created by the twisting magnetic fields that shape the million-degree solar plasma, but these prominences are of specific interest to us because they can be the origin of the billion-ton coronal mass ejections that impact radio communications when

Figure 1. This massive coronal mass ejection (CME) from April 16, 2012 is an example of the giant explosions in the Sun's atmosphere, the corona, that captures the exploration of scientists. These eruptions can travel toward Earth to disrupt human technologies in space, and specifically, degrade shortwave radio propagation (while sometimes triggering Aurora, to the joy of VHFers). To better understand the forces at work, a team of researchers used NASA data to study a precursor of CMEs called "coronal cavities." (Courtesy of NASA/Solar Dynamics Observatory)
the CMEs are directed toward Earth, and when reaching Earth cause geomagnetic disturbances and storms.

"We don’t really know what gets these CMEs going,” said Terry Kucera, a solar scientist at NASA’s Goddard Space Flight Center in Greenbelt, Maryland. “So we want to understand their structure before they even erupt, because then we might have a better clue about why it’s erupting and perhaps even get some advance warning on when they will erupt.” Advance notice of these events can help the radio communicator plan more effectively and execute a good working strategy for making reliable communications between stations.


The team next published its second paper that detailed their findings about the cavity’s density. This research about the density and temperature vary greatly throughout the cavity. On average, however, they range from 1.4 million to 1.7 million Celsius (2.5 to 3 million Fahrenheit), increasing with height.

Perfect Timing

The erupting prominence of August 9 was a perfect candidate for research because its cavity lay at just the perfect angle that maximized observations of the cavity itself, as opposed to the prominence at its base or the surrounding plasma.

All three of the research papers detail how the cavity was in the shape of a croissant, with a giant inner tube of looping magnetic fields resembling a giant slinky toy. The inner tube helped to define the cavity’s shape. The team explains that the cavity appears to be 30 percent less dense than the streamer surrounding it, and that the temperatures vary greatly throughout the cavity. On average, however, they range from 1.4 million to 1.7 million Celsius (2.5 to 3 million Fahrenheit), increasing with height.

Just how do you describe a cavity — a space that appears empty from our viewpoint — from 93 million miles away? “Our first objective was to completely pin down the morphology,” said Sarah Gibson, a solar scientist at the High Altitude Observatory at the National Center for Atmospheric Research (NCAR) in Boulder, Colorado, who was an author on all three cavity papers. “When you see such a crisp, clean shape like this, it’s not an accident. That shape is telling you something about the physics of the magnetic fields creating it, and understanding those magnetic fields can also help us understand what’s at the heart of CMEs.”

The team collected a lot of data, using all of the available instruments on a number of research spacecraft, giving them different and useful perspectives. By using such technology as aboard NASA’s Solar Terrestrial Relations Observatory (STEREO), ESA and NASA’s Solar and Heliospheric Observatory (SOHO), the JAXA/NASA mission Hinode, and NCAR’s Mauna Loa Solar Observatory, just to name some of the powerful tools at their command, they were able to examine the cavity’s entire trip across the face of the Sun along with the Sun’s rotation.

The entire event revealed a number of significant aspects that begged analysis. For example, why was the cavity visible on the left side of the Sun but couldn’t be seen as well on the right? This suggested a tunnel shape that could be viewed head-on from one perspective, but was misaligned for proper viewing from the other, a helpful discovery about the structure’s orientation.

The cavity itself looked like a tunnel in an arc shape, not unlike a hollow croissant. Huge magnetic fields loop through the tunnel in enormous circles, supporting the shape. The tunnel was narrower on the ends and tall in the middle, with the entire structure draped in a sheath of dense plasma.


The team next published its second paper that detailed their findings about the cavity’s density. This research about the density and temperature took some doing because our point of view of the Sun is quite limited. While we now have the STEREO Ahead and STEREO Behind spacecraft — (NOTE: We’ve explored these in a past edition of this column. — WPC7USA) — that allows us a 360-degree view of the Sun, we still don’t have enough instruments for intense, close-up scrutiny.

Case in point: because the Sun’s Corona is partially transparent, it is difficult to discern variations of density and temperature along one’s line of sight. All the radiation from a given perspective arrives at the observing instrument at the same time, with all the information from one area superimposed upon every other.

To overcome this limitation, the team came up with a variety of techniques to separate density from temperature data. By doing this, the team was able to determine that the cavity was 30 percent less dense than the surrounding streamer. This means that there is, in fact, quite a bit of material in the cavity. It sim-
### Optimum Working Frequencies (MHz) - For February 2013 - Flux = 137, Created by NW7US

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<th>UTC</th>
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Scientists have already begun to jump all over this new research. They are now comparing this one cavity from 2007, to other events. They are finding that most of these cavities have consistent characteristics. What is helpful is that there are newer spacecraft with advanced instrumentation that aid in further study of current events.

In 2010, NASA launched the Solar Dynamics Observatory (SDO), which we've explored in a past edition of this column. SDO's super-high-resolution instruments allow scientists to observe in finer detail the inner workings of the Sun's atmosphere. Eventually, leading to advance strategies on frequency choices, but officials can shut down the power grid before the storm hits, protecting the systems from overload.

This column will continue to bring you the latest news and research results from this fascinating and practical endeavor of science. 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

From the middle of February through March and early April, typical equinoctial propagation conditions can be expected on the HF frequencies. This usually means a noticeable improvement in conditions between the northern and southern hemispheres.

Look for improvements between the United States and South America, Africa, Australasia, Antarctica, and parts of Asia. Equinoctial propagation occurs during the Spring and Fall months when the Sun is most directly overhead at the equator, producing similar ionospheric characteristics over large areas of the world. It tends to maximize during sunrise and sunset periods and over both short and long path openings.

Sunspot Cycle 24 has been quite tame compared with recent cycles. Some are speculating that we've already seen the peak of this cycle — but time will tell. How alive can the higher frequencies be with long-distance propagation? It is always a surprise to the casual amateur radio operator and SWLer when they get on a band like 10 meters during the solar minimum, and discover that there is still some life on the band, beyond short-skip distances.

This can be especially true during periods when massive sunspots occur and raise the daily 10.7-cm flux levels enough to wake up the higher frequencies. However, the low solar activity of recent months just does not support world-wide DXing on the highest HF bands for any significant length of days. The lower HF bands can become real players, though, as veteran HF operators know.

During the daylight hours, optimum DX propagation conditions are expected on frequencies near 15 MHz, with the
forecast that these will be open to all areas of the world sometime during this period, though often with moderate to strong fading. Conditions on higher portions of the shortwave spectrum may be good, too, but usually for far shorter distances than during higher peak solar cycle years.

Conditions are expected to become optimal for an hour or two after sunrise and again during the late afternoon. For short-range regional paths, 41 meters should be usable during most of the daylight hours. With increasing hours of daylight during February, expect the HF bands to remain open for an hour or so longer into the early evening than during the winter months.

Daytime conditions on the amateur 10- and 12-meter bands will be less exciting. Openings will be possible for stations in low-latitudes using north-south paths, with no openings expected into Europe and the Far East.

During the early evening hours and to as late as midnight, seven bands should be available for amateur radio DX openings: 15, 17, 20, 30, 40, 80, and 160 meters.

Fifteen and 17 meters should hold up for openings toward Central and South America and the Caribbean, the Pacific area, Far East, and parts of Asia. Better openings into many areas of the world may be possible on 20 meters during this period, with the strongest signals from southerly and westerly directions.

Good DX conditions are also forecast for 30, 40, and 80 meters for openings toward the east and the south. Openings in the same direction, but with higher noise levels and weaker signals, should also be possible on 160 meters.

Between midnight and sunrise it should be a toss-up between 20, 30, and 40 meters for DX paths. These bands should open to many areas of the world with conditions favoring openings toward the south and the west. Expect similar conditions on 80 meters, but with weaker signals and higher noise levels. Be sure to check 1.8 MHz for some unusual DX openings toward the south and the west during this period. Conditions on the bands between 160 and 20 meters are expected to peak at local sunrise.

**VHF Conditions**

Trans-equatorial (TE) scatter propagation tends to increase during the equinoctial period and some 6-meter openings may be possible between 7 and 10 p.m. local time. The best bet for such openings is between the southern tier states and South America for paths approximately at right angles to the equator. An occasional TE opening may also be possible on 2 meters.

Unlike F2-layer or sporadic-E openings on 6 meters, TE openings are characterized by very weak signals with considerable flutter fading.

**Current Solar Cycle 24 Progress**

The Royal Observatory of Belgium reports that the monthly mean observed sunspot number for October 2012 is 53. The 12-month running smoothed sunspot number centered on April 2012 is 65. The lowest daily sunspot value during October 2012 was recorded on October 7 with a count of 28. The highest daily sunspot count for October was 83 on October 15. A smoothed sunspot count of 83 is expected for February 2013.

The Dominion Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-cm observed monthly mean solar flux of 123.3 for October 2012. The 12-month smoothed 10.7-cm flux centered on April 2012 is 125.8. The predicted smoothed 10.7-cm solar flux for February 2013 is about 137, give or take about eight points.

The observed monthly mean planetary A-Index (A_p) for October 2012 is 9. The 12-month smoothed A_p index centered on April 2012 is 8.

Expect the overall geomagnetic activity to be quiet to stormy during 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 updated update on space weather conditions and other radio propagation-related updates, follow <@hfradiospacewx>.

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>.

Speaking of Facebook: check out the Popular Communications fan page at <http://www.facebook.com/PopComm>. This is a great place for the magazine’s community to participate and share information, tips, DX spots, and photos of your antennas, radios, or your excursions into the field with your radio gear for that DX hunting trip.

**Until next month.**

73, Tomas, NW7US
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More Gloom and Doom From the SWL News Ticker

It's time now for "Doom and Gloom" — the bad news, brought to you by Reality, the cereal that leaves SWLers completely dejected.

Today's episode first takes us to the island of Cyprus where we find the British Broadcasting Corporation has announced plans to close its Middle East Relay Station at Limassol. The coming closure in April will also mean a large cutback in — of all things — the Arabic service as well as a serious reduction of English by six hours per day. The BBC assures us that Arabic will continue to be offered for listeners in Sudan. The Cyprus closing will mean, as well, the loss of 26 employee positions.

Our news sources are still trying to find information on what will happen to the Cyprus Broadcasting Corporation, which uses the BBC relay site for its weekend shortwave broadcasts.

More Dread on the Dial

As predicted some months ago, the Bonaire relay station operated by Radio Nederland and used by the station, as well as others, has aired its last program and the facility is scheduled to be torn down.

That means that international broadcasters such as Radio Japan have to seek other outlets for their programming. Meantime Radio Nederland continues in Spanish, limping along for all of 30 minutes a day via the WHRI transmitters in Cypress Creek, South Carolina.

In other news, the U.S.-based Sudan Radio Service has discontinued its use of shortwave (on 17745) transmitted through BBC-Wooferton.

World DX Club's 'Contact' Ends Publication

A sad note: The World DX Club, based in England, has discontinued publishing its popular club bulletin Contact. Publisher Arthur Ward has given up his huge, backbreaking monthly job.

The WDXC <http://www.worlddxcclub.org.uk>, however, will continue with its presence on the Web. We wish Mr. Ward well and are sorry to see the end of a great club bulletin.

The arrival of Contact was eagerly anticipated each month.

But On the Bright Side . . .

KBS World Radio (South Korea) will be getting two new high-power transmitters for its Kimje site, which will replace the former relays at Sackville in Canada.

HCJB Australia is welcoming a new and improved transmitting facility intended to expand its reception areas. The new site is just a couple of miles from the old one so it will likely not be differentiated from the initial Kununurra site. The site is supposed to expand and improve reception throughout the Asia and Pacific region.

The Voice of Nigeria is also planning to add three 250-kilowatt transmitters to its Abuja facility so that might improve what is already providing good signals from that country.

Bangladesh Betar has also added a new 250-kilowatt unit and Radio Japan is adding three 300-kilowatt senders at Yamata, which it hopes to have active by April.

Emerging Signals

A few new or just occasionally heard stations that have been appearing of late include:

Radio Oriental, Ecuador, active in Spanish on 4781 around 2330.

Radio Fana, Ethiopia, is on 6110 around 0300 in Tigrinya.

Wontok Radio Light in Papua New Guinea on 7325 around 0900.
Here’s another view of the Coady shack. He says the new room will give him more space, which inspires him to go after his ham license.

Voice of Zimbabwe has recently re-appeared on 4828 during our mid-evening hours.

It’s Your Turn

Remember, your shortwave broadcast station logs are always welcome. But please be sure to double or triple space between the items, list each logging according to its home country and include your last name and state abbreviation after each.

Also needed are spare QSLs or good copies you don’t need returned, station schedules, brochures, pennants, station photos, and anything else you think might be of interest. And how about sending a photograph of you at your listening post? It’s your turn to grace these pages!

Now, to the Logs

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.

ALGERIA — Radio Algerienne, 7295 via France at 0425 with W in AA. (D’Angelo, PA)
ANGOLA — Radio Nacional Angola, 4949.7 at 0226 with W hosting a brief pop pgm. ID and news in PP at 0300. (D’Angelo, PA)
ARGENTINA — Radio Argentina al Exterior, 15345 at 2200 with IS, time pips and SS talks. (Parker, PA)

Unidentified Feeder, 133635 LSB at 2130 with SS p-b-p futbol coverage. I followed it until 2258. And, noted again at 2310-2355 with SS talks, promos, and talk about futbol. Also at 2215-2225 and 2245-0010 with a similar format. (Alexander, PA)

ASCENSION ISLAND — BBC-South Atlantic Relay, English Bay, 5875 at 0441 on economic growth of communities in China and 6005 at 0500 with time pips and “Good morning from Johannesburg” with news on the world’s economy. Excellent after Cuba goes off at 0600. (Parker, PA) 6140 at 0324 with extensive reports on the U.S. election. Off in mid-sentence at 0359. (D’Angelo, PA)

AUSTRALIA — Radio Australia, 9660 at 0630 with an interview. (Barton, AZ) 9855 via UAE with an interview on horse racing at 2328. (Sellers, BC) 11945 with Sports Wrap at 0625, f/bj Album of the Week and news at 0700. (Miller, GA) 15415-Shepparton at 0413 discussing malaria and how to protect oneself from mosquitoes. (Parker, PA)

ABC Northern Territory Service: 4910-Tennant Creek at 0810 with CODAR QRM, but improving until 0830 sign off. (Wilkner, FL)


HCJB Global, 11750 at 0800 with a religious message and music. Off at 0830. (Miller, GA)

BANGLADESH — Bangladesh Betar, 15105 at *1228-1300* on with IS, six time pips and opening EE announcements, then EE talk and Sub-continental music. Five-second test tone at sign off, 15505 at *1513-1545* with sign on in Hindi. Weak at sign on then deteriorated to barely audible level by sign off. (Alexander, PA) 1412-1430 with a nice selection of local vocals during Urdu language hosted by a female announcer (D’Angelo, PA)

BOLIVIA — Radio Mosoj Chaski, Cochabamba, 3310 at 0850 with a female in (p) Quechua. (Wilkner, FL)
Radio Santa Ana, Santa Ana del Yacuma, 4451.1 in SS at 2330-0000. (Wilkner, FL)
Radio San Miguel, Riberalta, 4699.6 at 0855 with percussion at 0855, TC by M in SS at 0920. (Wilkner, FL)
Radio San Jose, San Jose de Chiquitos, 5580.2 with M in SS and music at 2320-2357. (Wilkner FL)

BOTSWANA — VOA Relay-Mopeng Hill, 4930 at 0336 with numerous African news items. (D’Angelo, PA) 0355 on racial profiling in college admissions. (Parker, PA)

BRAZIL — (all in PP – gld)
Radio Municipal, Sao Gabriel da Cachoeira, 3375.1 at 1000 with music. (Wilkner, FL)
Radio Caiari, Porto Velho, 4785 strong at 0920. (Wilkner, FL) (p) at 0948 with rapid fire talk and vocals. (D’Angelo, PA)
Radio Difusora, Londrina, 4815 at 0800 with M talk. (Wilkner, FL)
Radio Difusora Roraima, Boa Vista, 4785 with a nice ID and close-down announcements at 0355 f/b choral anthem. (D’Angelo, PA) 0357-0405 sign off with choir NA. (Parker, PA)

Help Wanted

We believe the Global Information Guide — month after month — offers more logs than any other monthly SW publication! (Nearly 300 shortwave broadcast station logs were processed this month!) Why not join the fun and add your name to the list of GIG reporters? Send your logs to 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 Clube do Para, Belem, 4885 at 0357 with male announcer. (Parker, PA)

Radio Novo Tempo, Campo Grande, 4895 with male announcer at 0800. (Wilkner, FL)

Radio Difusora, Macapa, 4915 at 0812. (Wilkner, FL)

Radio Aparecida, Aparecida, 5035 at 0850 with male/female chats. (Wilkner, FL) 2310-2330 with inspirational music and talk, //6135, 9630 and 11855. (Alexander, PA)

Voz Missionaria, Camboriu, 5940 at 0452 with male preacher. (Parker, PA) 9665 fading in and out and peaking by 0935. (Perry, IL) 0713-0740 with inspirational music, jingles and promos. (Alexander, PA)

Radio Inconfidencia, Belo Horizonte, 6009.9 at 2235 with talk and jingles. //15190. (Alexander, PA)

Radio Marumby, Curitiba and Radio Daqui, Goiania, 6080 colliding at 0313, both audible alternately. (Parker, PA)

Super Radio Dues e Amor, 6120 at 0525 with emotional religious talk, //6070, 9565, and 11765. (Alexander, PA) 0850-0905 with religious broadcast and an impassioned preacher. (Wilkner, FL)

CHAD — Radio Nationale Tchadienne, 6165 at 2010-2129* with FF talk, Afropops and hi-life. Weak at tune in but then improved by 2100. Some days runs to as late as 2249 or 2300. Also *0454-0600 with FF talk at sign on, African hi-life, local drums at 0529. Another time until 2221 with local drums and abruptly off at 2222. (Alexander, PA)

CANADA — CFRX, Toronto, 6070 at 0307 with talk on hockey and an ad for a Mazda dealer. (Parker, PA) 1300 with news, traffic, sports, and many, many ads. (Fraser, ME) 2324 with Here’s the Thing pgm, hosted by Alec Baldwin. (Sellers, BC)

CHINA — China Radio International, 7120 via Albania in SS at 2244. 7335-Shijiazhuang in SS at 2248, 9345 at 1141 in (L) Cantonese, 9760-Kashin in CC at 1213, 11640-Xi’an in (L) Mandarin at 1211, 15440 in (L) Mandarin at 1155. (Brossell, WI) 7285 via Albania at 2050 and 9570 via Cuba at 1348. (Fraser, ME) 9610-Kunming at 2355 with an interview. (Sellers, BC) 11975 via Mali at 2357 with IS and ID, then via (p) Kunming. (Parker, PA)

China Business Radio, 11610-Beijing in CC at 0405 with male/female talking. (Parker, PA)

China National Radio jammer, 9540 at 1142, apparently against Sound of Hope. (Brossell, WI) 13660 with CC talk at 2235. (Parker, PA)

COLOMBIA — Alcaraivar Radio, Puerto Lleras, 5910 in SS at 0442. (Parker, PA)

CONGO (Dem. Rep.) — Radio Okapi, 11690 via Meyerton at 0403 with male announcer in FF, several jingle IDs and brief music between talks. (D’Angelo, PA)

CROATIA — Croatian Radio, 7375 via Germany in EE at 2316 with ID and EE news. (Sellers, BC)

CUBA — Radio Havana Cuba, 6165 with DXers Unlimited pgm at 0340 and other EE features, then news at 0400. (D’Angelo, PA)

CYPRUS — BBC-Mediterranean Relay, 9760 at *2215-2245* with usual theme music and into GG talk. //9325 and 7220; all three were good. This is Friday, Saturday, Sunday only, although it's irregular. (Alexander, PA)

DJIBOUTI — Radio Djibouti, 4780*0259 with OC, orchestral NA, male announcer with FF opening ID and announcements, brief news and Koran recitations, f/b news. (D’Angelo, PA) *0300. (Alexander, PA)

ECUADOR — Radio El Buen Pastor, Saraguro, 4815 in SS around 1100-1115. (Wilkner, FL)

HCB/J, P chincha, 6050 with *0823 sign on, 0825 with flute and guitar, EC NA at 0827, W with opening in SS and QQ. (Perry, PA)

ENGLAND — BBC, 5790-Skelton in AA at 0437 and 12035-Middle East Relay Cyprus at 0308. (Parker, PA)

EQUATORIAL GUINEA — Radio Africa, 15190 at 1800 with US-produced EE religious pgm. Also noted to 0007 sign off and, irregularly, at 0552, as well as 0715-0730. (Alexander, PA) 1912 with usual EE religious pgms without any formal station IDs. (D’Angelo, PA)

ERITREA — Voice of the Broad Masses of Eritrea, 7185 at *0256 with IS at sign on, vernacular talk at 0301, HOA music at 0306, improving to a fair level by 0325. //9715. (Alexander, PA)

FRANCE — Radio France International, 15215 in RR at 1521. (Brossell, WI)

GABON — Africa Number One, 9580 at 2253 with M/W with pops, 2300 time pips and off, although the carrier remained on. (Sellers, BC)

GERMANY — Deutsche Welle, 9505-Rwanda Relay at *0400 with female announcer and EE news of our elections. //7285, 9420, and 9470, 15700 via Woofferton at 1238-1259* in FF (D’Angelo, PA) 9735-Rwanda Relay in (L) Hausa at 1845 and 11810 Rwanda in FF at 1850. (Brossell, WI) 11830 via Rwanda Relay at 2100 sign on with Middle East news. (Fraser, ME)

GREECE — Radiophonikos Stathmos Makedonias, 7450 at 2234 with male announcer in Greek hosting pgm of Greek music, female with ID and sign off at 2250. (D’Angelo, PA)

Voice of Greece, 15630 in Greek with talks and songs in Greek at 1932. (Brossell, WI) 2230. (Parker, PA)

GUAM — KTWR, 11580 at 1349 in KK per sked. (Alexander, PA)

Adventist World Radio, 15320 in EE at 2238 with female reading children’s story and ID for Voice of Hope-India. (Sellers, BC)

GUATEMALA — Radio Verdad, Chiquimula, 4055 at 0424 with

In Times Past

Here’s your “blast from the past” for this month:

Radio Record, Sao Paulo, Brazil, 9505 in PP at 2132 on May 12, 2008.

I’ll bet you recognize these two folks on the Radio Casablanca QSL received by Rich D’Angelo.

Trans World Radio’s Indian office QSL’d Rich D’Angelo with this nice looking card.
male announcer in SS over slow music. (Parker, PA) +0952 sign on with a six-note IS on an electronic keyboard, long choral anthem, opening multi-lingual announcement at 1001 and SS talk at 1004. (Alexander, PA)

INDIA — All India Radio, 9705 at 2257 with music and EF pgm. ID and news at 2300. (Alexander, PA) 9870-Bangaluru in Hindi at 1207, 15050 at 1205 in (I) Tamil, 15175 at 1515 in (I) Gujarati, 15410-Panjai (Goa) in (I) Thai at 1155, and 15795-Bangaluru in Mandarin at 1207. (Brossell, WI)9870 at 1540 with drums, strings and female vocal. [Barton, AZ] 11620-Bangaluru in (p) Urdu at 0411 with "Midnight Express" type music with female vocal. Weak but in the clear. (Parker, PA)

INDONESIA — Radio Republik Indonesia, 4750-Makassar (Sulawesi) at 0950 with music. (Wilkner, FL) Heard in the 1220-1258 with male hosting pgm of HH pops and vocals. Holding up until nearly 1300. (Perry, IL)

ISRAEL — Galei Zahal, 6885 at 2115 with HH talk, local pops, //15850. (Alexander, PA)

JAPAN — Radio Japan, 5960 via ex-Canada in JJ at 0454 and 11680 via Wertachtal in JJ at 0428 with jazz. (Parker, PA) 11695 via Uzbekistan at 1402 with female announcer and news in EE. (Sellers, BC) 15445 via Wertachtal with female in JJ hosting a pop pgm, including a Frank Sinatra number, ID, and closedown at 1859. (D’Angelo, PA)

KUWAIT — Radio Kuwait, 15540 at 1926 with local pops. (Brossell, WI)

MADAGASCAR — Radio Madagasikara, 5010, at 0200-0250+ with inspirational music and chorals, announcements, and African life at 0228. Reactivated. (Alexander, PA)

MALAYSIA — Sarawak FM, 11665 at 1342 in Bahasa Malay with pops and mentions of Malaysia and Sarawak. (Sellers, BC)

MALL — RTV Malienne, 5995 at 0750-0759* with vernacular talk, off with flute IS and FF ID announcements at 0758, 9635 at *0800 sign on with flute IS, followed by short announcement and into continuous local rustic tribal music and vernacular music at 0817. (Alexander, PA)

MEXICO — Radio Educacion, 6185 at 0455-0605* with local pops, ranchero style selections, and SS talk. NA at 0600 and off with local guitar at 0605. (Alexander, PA) 0548-0612* with SS radio play. Off w/out announcements or ID. Carrier was still there at 0632. (D’Angelo, PA)

MOROCCO — Radio Marocaine, 15350 with AA talks at 2012. (Brossell, WI)

MYANMAR — Thazin Radio, 7110 at 1100-1130 with local pops and brief announcements. (Alexander, PA) 1127 with talks in BB. (Brossell, WI) 1430 at 1430 beginning EE segment with a female greeting listeners. (Sellers, BC)

NEW ZEALAND — Radio New Zealand International, 6170 at 0830 with time check, news, and a song. Also 15720 at 0306 with regional news. (Miller, GA) 9655 on hunger strikes at 1148. (Brossell, WI)

NETHERLANDS — The Mighty KBC, 9500 via Bulgaria at *0000-0200* with pop/rock, plenty of IDs, and email as <themightykbc@gmail.com>. Again at 0131-0159* saying they’d be back again next week. (D’Angelo, PA)

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This robot, cannibalized from an RCA vacuum tube and part of an antenna, is on display at Taiwan’s National Radio Museum and is also featured on an RTI QSL. (Courtesy of John Miller)
NICARAGUA — Pescador Preacher, 8989u, 2330 with mentions of Cuba, Nicaragua, and Honduras. (Wilkner, FL) 2322 with male preaching in SS. (Sellers, BC)

NIGER — La Voix du Sahel (p), 9705.4 at 2250-2259* but very weak. I was only able to catch local chants and the usual test tone at 2259. (Alexander, PA)

NIGERIA — Voice of Nigeria, 9690 at *0757 sign on with IS, talk in (l) Hausa at 0800, 15120 at *0446 sign on with IS, EE ID sequence and NA at 0555, pgm preview and news at 0501. (Alexander, PA) 0605-0630 with EE news and IDs. (Brossell, WI)

NORTH KOREA — Voice of Korea, 13760-Kujang at 2245 with chorals. (Parker, PA)

Korean Central Broadcasting, 2850 at 1120 in KK under a voice ute. (Alexander, PA)

OPPOSITION — Democratic Voice of Burma, 7510 (nf, ex -11595) via Armenia at 2337-0030 with BB talk with many mentions of Myanmar and short breaks of music. (Alexander, PA)

Denge Mezopotamia (p) 11510 (to Iran via Bosnia-Herzegovina) at 1355 in (p) Kurdish with female and Islamic devotion. Time pips to TOH and news at 1400. (Sellers, BC) 11510, via Bulgaria at 1950 with indigenous vocals, Kurdish instrumentals, local string music, and Kurdish NA. (Alexander, PA) Via (p) Moldova at 0325 with tribal-sounding music and vernacular talk. (Parker, PA)

Radio Biafra London (to Nigeria), 11870 at 2045-2100* in vernacular and EE. Off with African music. This is on Thursdays and Saturdays only. Also 11830 at 1935-2000* a new time and frequency (ex 11870) with vernacular and EE talk. (Alexander, PA)

PALAU — World Harvest Radio with an EE sermon at 1208. (Brossell, WI)

PERU — Ondas del Huallaga, Huanuco, 3330 at 1007-1015 with male and female SS talk and music. (Wilkner, FL) Radio Huanta 2000, Huanta, 4747 at 0920 in SS. (Wilkner, FL) Radio Tarma, Tarma, 4775 at 0920-1000 with excellent Peruvian music. (Wilkner, FL) 1025 with OA folk music and SS announcements. (Alexander, PA)

Radio Vision, Chiclayo, 4790 at 0413 with a congregation singing hymns. (Parker, PA) 0730 with a distorted signal. (Wilkner, FL)

Radio Cultural Amauta, Huanta, 4955 with an abrupt 1022 opening with guitar music and female vocals. Outstanding folklorico selections. (Perry, IL)

Radio Libertad, Junin, 5039 at 1020-1040 with male and female SS and music. (Wilkner, FL)

Ondas del Suroriente, Quillabamba, 5120 at 2300 with inspirational chorals. (Wilkner, FL)

Radio Bethel, Arequipa, 5921 at 0800. Seems to be on early regularly of late. (Wilkner, FL)

Radio Tawantinsuyo, Cusco, 6174 at 2340-0000 with long SS talk. Using a narrow bandwidth helps. (Wilkner, FL)

PIRATES — Pirate Radio Boston, 6925 at 0148 with a rerun of the previous day’s broadcast, 0215 with the 20th anniversary pgm. Went into USB mode at 0335. Gave P.O. Box 1, Belfast, NY 14711 address plus <pirateradioboston@gmail.com>. (Hassig, IL) 2111-2210* with hosts “Charlie Loudenboomer” and “Mr. Excellence.” (D’Angelo, PA)

Undercover Radio, 6925 at 0230 with short broadcast by “Dr. Benway testing.” Also 0320 in both USB and AM. (Hassig, IL)

Wolverine Radio, 6925u at 0105 with bluesy style music related to stormy weather conditions. (Alexander, PA) 6940 at 0200 with Halloween flavored tunes. (Hassig, IL)

WMPR, 6925 at 2150-2200 with techno pops. (Alexander, PA) 2154 with male announcer and techno selections. (D’Angelo, PA) 2334-0021 with industrial dance things. (Hassig, IL)

XFM, 6960 at 0213 saying they were using C-QUAM stereo, DJ was “Redhat” who read emails. Also 6965 at 0222. Address was given as <xfmshortwave@gmail.com>. (Hassig, IL)

Northwoods Radio, 6950u at 2335 with some British comedy tunes and spoof songs. (Hassig, IL)

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!

Rich Parker wins this month’s reporting prize. Always steady with interesting and worthy logs, he’ll discover dozens of juicy targets in the 2013 World Radio TV Handbook that he’ll soon find on his radio desk. That new copy will show him when and where to tune for each of these tempting targets. I would never consider doing without my copies and neither should you. It’s like an atlas or a navigation system in your car. Get your copy now from your favorite radio hobby supplier, online book dealer, or big box book store.

A Turkish girl’s folk dance group adorns this QSL from the Voice of Turkey. (Courtesy of Paul Gager, Austria)

A 1952 model radio made in the then Czechoslovakia is featured on this Radio Slovakia International card received by Paul Gager, Austria.
Red Mercury Labs, 6925u ending pgm at 0313, then talking with two other operators. <redmercurylab@yahoo.com>. (Hassig, IL)

Radio Casablanca, 6940 at 0030 with a nice pgm of big band tunes and email as cedioscasablanca@gmail.com>. (Wood, TN)

Rave On Radio, 6925u at 2310 with an SSTV signal and Stevie Wonder tunes. (Alexander, PA)

Grizzly Bear FM, 6925 at 0240 with Delta blues tunes. (Hassig, IL)

Gay Boy Radio, 6925u at 0230 with gay porn talk, a VE7 callsign, and a phone number. (Hassig, IL)

Voice of Hell, 6925 at 0028 with spooky music but muffled audio. (Hassig, IL)

Radio Free Mars, 6925 with Latin-sounding DJ and dance versions of pop songs. (Hassig, IL)

PHILIPPINES—Far East Broadcasting Co., 9795 at 2304 in (l) Mon language with Christian songs. (Sellers, BC)

ROMANIA—Radio Romania International. 11695-Tiganesti with news at 0008. (Parker, PA) 11790 in Romanian at 1946 and 15310 also in Romanian at 1924. (Brossell, WI) 13800 at 2045 with a Book Review. (Fraser, ME)

RUSSIA—Voice of Russia, 7290 via Moldova at 0018 with a recipe and News in Brief at 0030. (Sellers, BC) 9430 via Armenia in SS at 0259. (Parker, PA)

SAUDI ARABIA—Broadcasting Service of the Kingdom, 15225 with an AA call-in pgm at 1525. (Brossell, WI)

SINGAPORE—BBC Far East Relay Station. 11890 at 1417 on an ultra orthodox neighborhood in Jerusalem. (Sellers, BC) 15285 on with an AA call-in pgm at 1525. (Brossell, WI)

SOMALILAND—Radio Hargeisa, 7120 noted several mornings in recitations praising God. (Sellers, BC) 13740 -Northern Marianas at 2240 in an Asian vernacular. (Parker, PA)

SURINAME—Radio Apinte, (t) 0850 with weak audio. (Wilkner, FL)

TANZANIA—Radio Tanzania Zanzibar, 11735 at 1515-1535 with quick fade in/out using a Sony portable at a neighbor’s pier. (Wilkner, FL) 1932-2006 with male announcer in Swahili, 5+1 time pips at 2000. (D’Angelo, PA) 2015-2048 with local pops, Middle Eastern-style music, Swahili talk. They’ve been signing off early lately, around 2040-2050, many canned IDs in both EE and Swahili. Off at 2121* this date (Alexander, PA) 2016 with talks in (l) Swahili. (Brossell, WI)

THAILAND—Radio Thailand, 9535 in (tr) *2000-2015 with opening announcements, into GG at 2001, 9720 at 1233 with EE news ID, and travel promos. (Alexander, PA) 9890 in (l) Malay at 1200 QRM for VOA-Greenville on 9885. (Brossell, WI) 13745 in (tr) *0014-0035 with the Morning News Hour, promoting Asian travel and an ad for Bangkok Airways. (Alexander, PA)

TUNISIA—RT Tunisienne, 7345 in AA at 2250 and 1200 in AA at 1947. (Brossell, WI)

UNITED STATES—Voice of America, 7560-Kuwait Relay with EE lesson given by male/female at 2312. (Sellers, NC) 7205-Philippines Relay in (l) Mandarin at 2242, 11825-Philippines also in (l) Mandarin at 1241, and 15380 via Wertachtal in (l) Dari at 1535 (Brossell, WI)

Radio Free Asia, 7505 via Tajikistan in (l) Tibetan at 2252, 11785-Northern Marianas Relay in CC at 1939, 12140-Northern Marianas in (l) Khmer at 1246, and 15670 via Tajikistan in (l) Tibetan at 1202. (Brossell, WI) 11605 via Taiwan at 0007 with news in (p) VV. (Sellers, BC) 13740-Northern Marianas at 2240 in an Asian vernacular. (Parker, PA)

Radio Free Europe, 5925-Lampertheim Relay in RR at 0447 (Parker, PA)

Family Radio, 9925 via Madagascar with Bible study at 1847 and 11855 at 1943 in (l) Yoruba. (Brossell, WI)

Adventist World Radio, 6065 via Wertachtal in (p) Tiginyva at 0305. (Parker, PA) 11605 via Wertachtal in AA at 2053-2059. (D’Angelo, PA)

KJES, New Mexico, 11715 at 1405 with female leading children in recitations praising God. (Sellers, BC)

VATICAN—Radio Vaticana, 15460 via Northern Marianas in CC at 2223. (Parker, PA)

VIETNAM—Voice of Vietnam, 9840 with female announcer and news in EE at 2333. (Sellers, BC)

ZAMBIA—CVC-One Africa, 9505 at 2100 on public transportation, email address, and religious music. Male DJ in English.

THAT'S A WRAP! Sound the klaxons and offer big high fives to the following folks who came through this time: Richard Parker, Pennsburg, PA; Brian Alexander, Mechanicsburg, PA; Rich D'Angelo, Wyomissing, PA; John Miller, Ochlocknee, GA; Harold Sellers, Vernon, BC; Robert Wilkner, Pompano Beach, FL; William Hassig, Mt. Pleasant, IL; Ralph Perry Wheaton, IL; Robert Fraser, Belfast, ME; and Rick Barton, El Mirage, AZ.
“Though they’d invested hours into the planning, Craig, Cindy, and Roger were shakily incredulous at what had just transpired. Dom was simply ecstatic.”

by Shannon Huniwell, WPC2HUN <melodyfm@yahoo.com>

“Though they’d invested hours into the planning, Craig, Cindy, and Roger were shakily incredulous at what had just transpired. Dom was simply ecstatic.”

“Well, you know,” my father slowly began, “except for that classic CBS broadcast where Martians landed in New Jersey, this is probably the greatest example of radio’s power of imagination!” Dad then claimed to have been in on the hoax, “just a little bit, sort of indirectly,” as he’d allegedly gotten advanced word of the radio show from his high school classmate whose uncle reportedly golfed with the brother-in-law of a studio engineer from WOR. My guess is that he actually heard the tale from a 5-tube AM set tuned to 710 kilohertz — like so many others who listened to the Big Apple-based station’s talents but quirky personality, Jean Shepherd.

Of course, my father insisted he didn’t have original inside information about the overnight WOR incident, but happened to be visiting the station when “Shep” allegedly recounted the hoax for a room full of fans and good natured members of the press. Somehow, Dad managed to jot down the radio host’s recollections on a yellow legal pad which, by another convoluted quirk of fate, he located after having supposedly filed it away in 1956. Feel free to picture me — red head shaking and green eyes rolling — as I transcribe into an iPad while my father reads drum his purportedly vintage pages:

“Look, since we’re all in this together, what do you say we make this a communal affair?” Jean Shepherd began musing into the VJO?

“You give me a title,” he playfully reminded.

“Suggest something good and we’ll write it just call it in. And I got millions of calls. They were coming in from all over. After all, we have 50,000-watts. We were getting calls from Alaska! Finally, at 4:30 in the morning I said, OK, it’s closed. I’m picking the title. And some unknown guy had called in this title, I, Libertine. I said, ‘Now that sounds like a book! I, comma, Libertine.’ It could mean almost anything!”

“Then I said, ‘Folks, we gotta have an author because most people just say, Have you read the latest Faulkner or Jacqueline Susann? They make it sound like a big deal. Alright, I’ll create an author’ and I sat for a minute and it just hit me — the name; And I says, ‘OK, the author’s name is Frederick Ewing . . . Frederick Rowland Ewing. He’s British. He was a Lieutenant Commander in World War II and is now a civil servant living in Rhodesia. He’s married to Marjorie, a horse woman from the North Country. He is primarily known for his pre-WWII broadcasts on the Third Program of the BBC regarding 18th Century eroticica. He’s a scholar and I, Libertine is the first volume in a trilogy on 18th Century court life. And, by the way, Mr. Ewing is quite surprised at the success his book is enjoying since it was written primarily for scholars.

“Here’s what we gotta do . . . Just go into your local bookstore and simply say, ‘I would like a copy of I, Libertine.’ If anyone asks you, it’s printed by Excelsior Press, which, by the way, is an imprint of Cambridge University Imprint. There
At the end of the seventh week, it was on a best-seller list! was banned by a very prominent church. And what do you think? papers' book supplements had a review of I, Libertine. Then it on it that said, SUPERB RESEARCH! He got a B+. The kid is Ewing - Eclectic Historian with footnotes and references from the kid says that he wrote a college term paper entitled, Frederick the country, and some airline pilots who were overnight WOR 72 POP’COMM FEBRUARY 2013

I got a letter from a kid - calls and letters came in from all over they finished reading it, but two of them didn't like it! Anyway, remember, this is a $6.95 book! [Three times the price of a typical paperback in 1956] They don't laugh at a $7

Remember, this was all out in the open. All of the Night People [Shepherd's loyal WOR audience] knew it was fake. [When the Day People finally caught on] there were headlines like, Disc Jockey Sells Non-Existent Book To Listeners. But that wasn't it at all. My listeners,” Shepherd concluded, “sold a non-existent book to the world. [The Day People] didn’t want to admit that the whole thing was actually a comment on the entire structure of the official critique layer of those 10 Best lists.” (LISTEN: Jean Shepard’s I, Libertine radio hoax <http://bit.ly/2DCs8V>)

Source Check, 1-2-3 . . . Check, Check

Two days after keying Dad’s Jean Shepherd saga into my tablet, I emailed the resulting file to Craig Keller. Readers remembering last month’s column about a sorry little college FM station about to be silenced by uncaring school officials, will know Keller as the underclassman who, during fall 1972, walked into what he cryptically calls W***.FM looking for a chance to get on the air. His casual request was met by Dominick Dotz, a serious college senior and sole survivor of the once robust volunteer DJ crew. The guy quickly approved Keller for service and then enlisted his help in composing a spectacular swan song worthy of every pulse of RF ever associated with the 10-watt educational outlet. According to Craig Keller, Dominick Dotz used the Jean Shepherd book hoax as an exemplar of the mayhem one could inexpensively accomplish via imaginative radio.

W***.FM had been on the air for just under three years when an administrative shake-up occurred at its licensee college. The coup left the formerly traditional Judeo-Christian institution in the controlling hands of several new trustees and their openly liberal president whom they quickly appointed before any effective resistance from the few remaining old guard could be organized.

That charismatically left-leaning leader was then given carte blanche to do whatever it took to make the school attractive to the growing legion of non-churchgoers, thus being in a better position to double the enrollment within half a decade.

Dominick Dotz witnessed this plan — slowly, at first, then undeniably evident — permeate the radio station. Though none of the early W***.FM staff would’ve considered themselves to be religious fanatics, most felt quite comfortable hosting the station’s standard programming. When Dominick Dotz returned to his beloved FM, following a semester-long hiatus necessitated by medical issues, however, only two or three “old faithfuls” were left to staff the studio. The others had either graduated by medical issues, however, only two or three “old faithfuls” were left to staff the studio. The others had either graduated or were scared-off by a pack of hippies and various n’er-do-wells who’d invaded the once orderly place. This gang

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Within a semester, even the highest-flying hippies realized that
his or her hard rock records were not making it past the studio speaker. Reportedly, the last one finally exited W***-FM with the pronouncement, “Man, this scene is a royal drag!”

**Peace de Resistance**

The hippies and their inadvertently influential lot may have fled W***-FM, but their increasing presence was unmistakable on the rest of the campus. The college population had indeed jumped; A noticeable reality as the erstwhile conservative school began imitating the region’s larger secular universities. Dominick Dotz was appalled to see piles of sand, overflowing with cigarette butts, on the front steps of every building. Other new policy included dormitory resident assistants having been advised to look the other way if noticing students drinking. Language uttered within earshot of others took on a decidedly foul routine. And drug use had risen from incredibly rare to commonplace throughout the dorms and surrounding woods. The straw that broke the camel’s back, though, happened in the small chapel off the Student Union’s main hallway.

Dominick Dotz had quietly gone there to pray for an ailing family member. Near its entrance posters were plastered announcing the nearby spiritual tour venues of some smiling heavyset kid dressed in an ornate Far Eastern costume. To Dotz, the sight of those plaquards and a handful of others offering free birth control, a march to save the planet, and one touting free sexual disease clinical services, gave the college’s flagship building all of the qualities of an inner-city bus station. *Experience Peace & Love From Guru Maharaji Gee Bashi*, the signs read. This was but a foretaste of what awaited him inside the chapel. There, a trio of students — each apparently a follower of the teen Guru — were mumbling a monotonous mantra while seating amidst a pile of purloined wildflowers deposited in the chapel’s aisle. On the front of the modest sanctuary’s pulpit was taped one of the Maharaji posters. On top of the altar, a brass globe filled with incense smokily smoldered.

Dominick Dotz returned to his room practically in tears. Only after seeking out an old W***-FM associate, a week later, did his melancholy begin lifting. Alex Girard had known Dominick Dotz since the then high school student Dom had visited the station when it was only an AM carrier current operation. It had been Alex whom — with a nudge from the college admissions director — wrote to Dom that an FM construction permit had been secured, and suggested he decide to attend the college and join its radio club. The two remained friends after Alex completed a degree in business and became regional manager for a small chain of area motels. The following September, Dominick Dotz inched the plan forward by hanging *Help Wanted* posters aimed at recruiting an accomplice. That’s where Craig Keller entered the W***-FM picture. Mentored by Dom throughout the fall semester, Craig was fully on board with the anticipated ruse when Dom finally got his diploma in a mid-December commencement ceremony. The station’s Winter 1973 broadcast schedule, completely scuttling their own ship so the enemy couldn’t capture it.

The following September, Dominick Dotz inched the plan forward by hanging *Help Wanted* posters aimed at recruiting an accomplice. That’s where Craig Keller entered the W***-FM picture. Mentored by Dom throughout the fall semester, Craig was fully on board with the anticipated ruse when Dom finally got his diploma in a mid-December commencement ceremony. The station’s Winter 1973 broadcast schedule, completely held by Craig Keller, ran from 5 to 10 p.m., covered by 120 minutes of easy-listening “dinner music” tapes, and then live from seven until sign off.

Craig possessed no grand illusions that he had many listeners. In fact, after the dining hall cleared out around 6:30 each
BANTAM BOOKS MAKES HOAX COME TRUE

New York and other papers expose intended literary hoax by wee-hours disc jockey JEAN SHEPHERD.

Non-existent novel I, LIBERTINE actually to be published in September.

August 1, 1956
THE WALL STREET JOURNAL

Ballantine Books Makes Hoax Come True

For a compete resume of the making of the fake book, see our feature article, page 74.

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Photo E. Snagged from a fascinating website highlighting the Armed Forces Vietnam Network, this is the photo that Craig Keller emailed me to represent the W***-FM studio, as he best recalled it. Because no W***-FM photos are known to exist, I'd asked our story’s supporting character to find some image capturing the seedy spirit of his alma mater’s doomed broadcast outlet. “Except for the fact that the pictured studio possesses legitimate, commercially-built equipment, such as a Gates Studioette board, CBS Volumax/Audiomax processors, and TapeCaster cart machines,” he mused, “the grimy sound-proof wall tiles, ratty control room chair, and home-brew plywood desk radiate the despair one might quickly feel whenever entering the W***-FM hovel. Suffice it to say that everything at W***-FM, including the Gates turntable — our sole piece of professional gear — was either broken or sticky.” Craig notes that the Armed Forces Radio Vietnam facility shown here actually appears to be nicer than the W***-FM rig. And this after the AFRV studio was the victim of several enemy rocket attacks!

strategies leading up to the early spring event featuring non-existent Minister Reverend Ralph Doyle’s Spiritual Spectacular. “For crying out loud!” Craig Keller emphasizes. “The darn thing was even slated for April 1st, April Fool’s Day 1973!” He and his gang were sure someone would catch on — especially since the plot got revealed every night for several months on the college’s station. But nobody except the planning team was even suspicious, or tuned to W***-FM.

Roger Humphries used his cassette recorder and a host of inescapably weird voice affectations to tape a series of talks from Minister Doyle that were subsequently aired from 5 to 7 p.m. over W***-FM. None of them made much theological sense, but apparently Roger’s odd dialects and his theme of “heavy peace” meant something to the surprising numbers of those in the college community who began dropping the surreptitious spiritualist’s name in class discussions and dorm room bull sessions.

Roger, whom seldom spoke in public, offered Minister Doyle as an example of the quintessential “teacher, preacher, creature of the whole earth.” This prompted a kid wearing a blue bandana to compliment the blind student on his “groovy insight” and suggested that Roger might be lucky enough to get cured if he were to seek him out the spiritual man during the upcoming event.

“Yes, yes, I can see it clearly now,” a young woman slowly began while looking at the professor in anticipated approval. “Teacher, preacher, creature of the whole peaceful earth. I’m feeling that those words are genuinely profound. I feel it goes to the very core of one’s being,” she nodded, her rose-tinted granny glasses catching the room’s fluorescent light.

Roger couldn’t wait to get back to his cassette machine and phony-up a new Minister Reverend Ralph Doyle speech employing his new triple-vague identifier at least three times. To add credence to the programs, Roger generated another character, one Guru Maharaji Mulligan, who, in a kooky brogue, agreed with all of Minister Doyle’s teachings and literally begged listeners to attend the April Spiritual Spectacular. “It’s worth every penny of the admission,” Roger as the

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Celtic-sounding Guru pounded on his desk in order to achieve a tacky dose of sloppy audio emphasis. “Peace people, I just can’t help believin’ that the free admission will be worth every last cent of your beautiful soul,” the Guru Mulligan mentioned. “But the wonderful news is: Minister Doyle’s message is free. F-R-E-E! Fellow heavy peace lovers, I have a feeling that you’ll agree that’s true peaceful easy value. Anyway, I hope to see you there on April first, rainbow or shine!”

True to her word, Cindy clandestinely hit every campus building with the clever posters she and Craig Keller designed. The couple then typed, addressed, and mailed a copious amount of old postcards festooned with messages from Minister Reverend Doyle to so-called student leaders, the mayor, village board members in the school’s town, the college’s trustees, and a final barrage of the yellowed publicity to the institution’s under-tolerant president. His brand of tolerance shifted into its highest crest when receiving information with which he was in complete agreement. Cheered-on by Dominick Dotz, the W***-FM hoax team bet their proverbial farm that the college’s chief limousine liberal administrator would prove to be a willing sheep for Minister Ralph Doyle’s sharply diverse shearing.

Rolling A Lucky Seven With Just Ten Watts

Scuttlebutt from various sources started building by mid-March. Roger got the word from a rent-a-cop tasked with helping him navigate a major crosswalk, that Campus Security was “making plans for some big shot preacher’s concert or some such happy noise.” Cindy reported overhearing a classmate who worked part-time in the college president’s office that the big shots would be honored to host the spiritual leader — to show how universally-inclusive the place had become — but were waiting to hear from Minister Doyle.

Craig relayed this signal to Dominick Dotz, who gave the go order for the group’s coup de grace. After careful scripting, wishes for good luck, and strict provisos from the team not to bust out laughing, Roger was sped away by Cindy in a borrowed 1961 Falcon Ranchero. The two were destined for one of Alex Girard’s motels on the outskirts of a major city some two hours distant. There, Roger, turned on his best Minister Doyle dialect, phoned the college’s executive suite, and held a plausibly pleasant conversation that ended with a promise to the president that the eminent theologian would consult his secretary and verify a date and time for the school to host his Spiritual Spectacular.

The institution’s head remarked how much he’d enjoyed the minister’s diverse philosophy on broadcasts he’d heard in the school cafeteria. “Oh, that’s very, very, wonderful that you choose to dine with the student body members who must look to you as a role model!” Roger as Minister Doyle pronounced sycophantically. To inject an added dose of realism to the stunt, Minister Reverend Doyle suggested that the college president should feel free to give him a call back, “in shall we say, about half an hour?” When the motel phone rang not long after that interval, Alex made sure that his most professional sounding front desk clerk candidly remarked on how “delightful a guest Minister Doyle has been.” before she patched the school CEO’s call into Roger’s hideout. The brief resulting communication sealed the deal. Cindy, using motel stationary pirated from one of Alex’s competitors, then composed a follow-up to the president.

“Please consider this letter as my bond indicating I shall be so very joyful to accept your invitation to offer my message of peace and universal inclusiveness at 7:00 p.m. on 1 April in your

Radding Memorial Gymnasium,” it stated. The conspirators decided that it should look as “normal as possible” and sans the heavy peace goofiness that might start looking fishy on paper.

Roger expressed concern that the team’s nightly, post 7 p.m. ramblings on W***-FM should no longer include any mention of the Minister Doyle caper. “We’re so dang close to possibly pulling this off,” he asserted. “I just don’t want us to blow it now.” But, the rest of the tiny crew was adamant that the only real way to honorably stage such a caper would be to do it with fair warning. The fact that this obvious “documentation” routinely flowed from a facility licensed to the very people who were apparently ignoring it represented the delicious icing on the Minister Doyle Spiritually Spectacular Seminar cake. So, Roger was persuaded to continue with his fake speech tapes run during W***-FM’s captive audience dinner hour.

The trio kept appearing on the station’s actual post 7 p.m. airwaves, musing about the preparations being made in the Radding Gymnasium. Cindy and Roger’s presence came only via phone line, as Dominick had cautioned Craig Keller not to let anyone be seen anywhere near the station. Even Craig would be a visual unknown to anyone later questioning who had been the guy on the air. as, from the start, Dom instructed him to “be very 007 about coming and going” with regard to the seedy basement studio’s HQ.

Five days in advance of April 1st, Craig Keller ran Roger’s
grand finale cassette. In it, Minister Doyle gave numerous pleas for “outstanding attendance” at the Spiritual Spectacular. Of course, this peacefully forceful invite was backed-up by similarly strong encouragement from Maharji Mulligan and even some candid student testimonials Roger managed to secretly snag from a couple of kids commenting on Minister Doyle in a Sociology course. The spiritual leader signed-off with the explanation that nobody would hear from him again “until [his] travels concluded on April 1.”

On the evening of that last broadcast, Craig Keller also completed clearing out any hint that he’d been in the studio or that it ever had anything to do with Minister Doyle. Dom had suggested this from day one of the plot. He also prompted Craig and Cindy to don gloves and retrieve dining hall glasses along with various and sundry notebooks, textbooks, and hats from the lost and found. These were deposited around the studio just in case the Minister Doyle affair became an “incident” that College Security was charged with formally investigating. Still in possession of that Falcon Ranchero, Cindy offered it as a getaway car. She drove her co-conspirators to a nearby McDonald’s where they carefully de-briefed over Cokes and 55-cent Big Macs. Dominick Dotz had arranged to rendezvous with them there. Though they’d invested hours into the planning, Craig, Cindy, and Roger were shaky incredulous at what had just transpired. Dom was simply ecstatic.

Within a week, the college president resigned “for personal reasons and to pursue other educational interests abroad.” They agreed to never again mention Minister Reverend Ralph Doyle or the actual callsign of W***-FM, belonging to a remarkable little “educational” station that got to teach lessons in human nature not long before it peacefully went the way of the FCC wind.

It should probably be disclosed that after nosing into Craig Keller’s account of W***-FM, my father began recalling having previously heard the ill-fated station’s story. “If that were true,” Craig admitted to me, “that would make it at least the second greatest example of radio’s power of imagination!”

And so ends another day of arcane broadcast history on Pop’ Comm.

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InfoCentral (from page 7)

as its trigger for a switchover — would not be reached by this time in 2013, as had been planned.”

John Mottram, head of radio for the Department of Culture, Media, and Sport, said the “government remained committed to shortening the FM signal,” and “an announcement about ‘the direction of travel’ would be made (this) year.”

According to the Telegraph, “a new advertising campaign has been devised by Digital Radio UK, the industry body, an in effort to convince the public of the merits of the new system. “A lot of people still don’t get it — they don’t understand what digital radio offers and why it’s important,” said Ford Ennals, its chief executive. (IN DEPTH: Read the full story at <http://bit.ly/ToyJnZ>.) Source: The Daily Telegraph

BCB DX Net in India Celebrates Anniversary

The weekly Broadcast Band DX Net (BCBDX Net) operating on the 40-meter amateur band in southern India recently celebrated its 24th anniversary.

The net was started on Sunday, November 27, 1988 by radio amateurs M. Shanmugasundaram, VU2FOT; Victor Goonetilleke, 4S7VK; and Jose Jacob, VU2JOS; along with some shortwave listeners.

The net meets Sunday mornings at 0830 IST (0300 UTC) on 7085 kHz LSB, covering southern India and Sri Lanka.

“The whole concept of this net started when these hams used to meet regularly on the band and exchanged DX news at various times...”

Rare color photographs of World War II-era America — breaking the mold of the monochromatic country we are so accustomed to seeing have been released by the U.S. Library of Congress, from archives of the Office of War Information and U.S. Farm Security Administration. This picture features a worker at Vega Aircraft Corporation in Burbank, California. Here, she checks electrical assemblies — some of which are, no doubt, wiring for aircraft communications equipment. The picture was taken by David Bransby in June 1942. To see a gallery of photographs from the collection, visit <http://huff.to/UU99U0>.

(Courtesy of the U.S. Library of Congress)
"Farmer Rik" was not happy with the poor audio fidelity and limited bandwidth of his HQ-100. Poor audio response and distortion can become very fatiguing.

The worst offender was Rik's Hammarlund HQ-100. He asked if it was possible to modify the receiver's audio stages to correct these issues.

Audio fidelity doesn't go hand in hand with selectivity, and selectivity was an advantage for hams operating in crowded bands. Higher-end communications receivers from the 1930s through the post-World War II era were designed for high-fidelity reception.

My two favorite AM band cruisers are shown in Photo B. The lower receiver is one of the two Hallicrafters SX-28 receivers I own. The upper receiver with the more modern design is my Hallicrafters SX-42. The SX-42 features continuous tuning through the FM band, with excellent fidelity! Both receivers used push-pull audio output stages capable of driving larger speaker systems to deliver room-filling volume!

Hammarlund Limitations

The HQ-100 and other Hammarlund receivers had a feature that tailored the audio response based on the volume setting. Hammarlund called it "Auto Response." As the volume is increased...

Photo A. Here is "Farmer Rik's" HQ-100 receiver. The Auto Response circuitry is being removed to improve the radio's audio response. (Photography courtesy of K1ZJH)

Photo B. Many later tube receivers used single ended audio stages. The most popular tube was a 6AQ5. These radios often have poor audio response and will only deliver about a watt of audio power. For a time during the '30s and '40s, high-end communications receivers often featured a pair of 6V6 tubes in push pull, and those sets could deliver several watts of clean audio for room filling volume using larger speakers. Two of my favorite boat anchor receivers are shown here. The lower receiver is an SX-28. The upper receiver is an SX-42. Both employ a pair of 6V6 audio tubes in push pull.
Figure 1. This scan, taken from the HQ-100 manual, shows the audio response curve at higher volume settings. This curve favors voice communications, but limits fidelity. Hammarlund marketing called this feature "Auto Response."

**Figure 2.** Adding an RCA jack to the rear apron allows access to the recovered detector audio for driving a powerful external audio amplifier for improved audio fidelity and increased volume.

The audio frequency response becomes more limited to enhance communications-type audio. This might offer some advantages to CW operators or for SSB reception, but it isn't desirable for AM! The response curve for the HQ-100 audio stages at various volume settings is shown in Figure 1.

This month I offer two techniques to solve these problems. First we'll look at a more universal approach that will work on any other sets.

### Using an External Audio Amplifier

I've modified several of Rik's receivers so he can use them with external Bogen amplifiers. One of his favorite amps is a Bogen DH-10. It uses two 6V6 tubes in push-pull, and the amp has tone controls for the bass and treble response.

The modification is very simple! An RCA jack added to the rear panel is wired to the high side of the volume control through a 0.047-μF coupling capacitor.

A short length of RG-174 coax or shielded audio cable is used to route the audio between the volume control and RCA jack. Ground the outside shield on one end only, this avoids ground loops. I used a pre-existing hole on the rear apron to mount the jack, Photo C.

The internal modification can be seen in Photo D. This is Rik's HQ-100. Figure 2 shows the modification. The receiver volume, or for that only controls the external speaker used with
An RCA jack was added to the rear apron on this receiver, allowing access to the recovered audio from the detector stage. This can be used with an external amplifier to provide bass and treble control. I try to find an existing hole that will accept the RCA jack to avoid drilling the chassis.

Photo C. An RCA jack was added to the rear apron on this receiver, allowing access to the recovered audio from the detector stage. This can be used with an external amplifier to provide bass and treble control. I try to find an existing hole that will accept the RCA jack to avoid drilling the chassis.

radio, and it should be kept at the lowest volume setting if an external amp and speaker combo is being used.

If you are not going to use a speaker on the HQ-100, I suggest adding an 8-ohm metal oxide 2-watt resistor across the speaker terminals to ensure that a load is on the transformer secondary winding.

The external audio amplifier controls the speaker volume. I use a small solid-state Bogen model GA-6A for testing in the shop, as shown in Photo E. A short audio cable with RCA connectors goes between the receiver and the microphone input on the Bogen amp. Unfortunately, the GA-6A lacks tone controls, so its usefulness is a bit limited other than for testing.

This modification should not be added to sets that don’t use power transformers. AC/DC radios — sets with that have a “hot” chassis — cannot be safely modified.

Eliminating the Auto Response Feature

I modified Rik’s HQ-100 to improve the audio response. A quick Internet search gave several good leads on how to go about doing this.

A modification by W9MDX was published on the AM Window website <http://bit.ly/10hbYV1>. Larry’s approach involved replacing the Sprague Couplate. That is Part Z1, as shown in Figure 3 — a portion of the HQ-100 schematic using discrete components.

A close up of the Couplate is shown in Photo F. By the way, Couplates are small networks of passive components — mostly resistors or ceramic capacitors — on a ceramic substrate that is sealed with a resin.

Couplates do fail, and I’ll usually replace them with discrete components during a restoration. The modified circuit is shown in Figure 4.

Only a handful of parts are needed for either modification. The modest handful of parts is seen in Photo G. Here’s a quick rundown for the step-by-step procedures needed to eliminate the Auto Response feature.

First, locate and remove the Sprague Couplate. Be careful not to damage any of the tube sockets when de-soldering and removing the leads.

Replacing the Couplate

The Couplate contains a very simple RC network that provides resistors for the 12AX7 plate, 6AQ5 grid, and the audio coupling capacitor.

The internal 500-K resistors — between pins 1 and 2, and between 3 and 4 for Z1 — are replaced with discrete 470-ohm, half-watt resistors. The internal 0.01-μF cap is replaced with a higher value 0.047-μF, 630-volt capacitor. This is between pin 6 of the 12AX7 and pin 1 on the 6AQ5. Notice, though, I added an additional 47-ohm resistor at this point.

The 47-ohm, half-watt resistor on the grid of the 6AQ5 (pin 1) is to prevent par-

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asitic oscillations in the 6AQ5 stage. Eliminating the two 250-
\( \mu F \) capacitors increases the treble response, while increasing the
coupler capacitor value increases the low frequency response.

**Eliminate The Auto Response Feedback**

Next, locate resistor R28. This connected between the low
eend of the volume control pot (R27) and ground. Add a jumper
across R28 so the low end of the control goes directly to chas-
sis ground. This eliminates the Auto Response feedback path.
Increasing the value of C38C from 25 \( \mu F \) to 100 \( \mu F \) will help
increase the bass response. Use a 50- to 100-volt rated elec-
trolytic capacitor for the C38C replacement.

C42 can be replaced with a 0.0022 \( @ 1-kV \) rated Mylar
capacitor. I suggest placing C42 directly across the primary
winding of the audio transformer. This is part T8 in the schemat-
ic. Some advocate eliminating this capacitor; but it can protect

**Photo E.** A small Bogen solid-state amplifier is mated to the
HQ-100 for testing.

**Photo F.** The square module with the numerous leads is the
Sprague Couplate. This contains the resistors and capacitors
that provide the RC coupling between the audio stages.
the primary tuning from transient voltages. This may affect the treble response.

**Adding Negative Feedback**

W9MDX added a feedback network between the plate and the cathode of the 12AX7 to improve the distortion levels. As shown in Figure 4, the negative feedback is provided by a 910-ohm, half-watt resistor in series with 0.047 uf, 630 Myl. capacitor placed between the plate and the cathode of the 12AX7 (pin 5) and the cathode of the 12AX7.

**What to Expect**

Many receiver designs do have a few inherent faults. Audio distortion at medium to high audio frequencies can occur when audio starts to appear on the AVC bus. Increasing the bypass cap values on the AVC bus can help to some degree, but AVC response time is affected.

AM broadcast stations use audio processing that results in more constant modulation levels that are allowed to exceed 100 percent. Unfortunately many AM detectors are poorly designed and these high modulation levels result in additional distortion. These modifications will make noticeable improvements, but there are always other limitations that can limit the results.

*(NOTE: Many receiver diode detectors are too heavily loaded, and modulation levels above 90 percent will show distortion. FCC regulations now allow commercial AM stations 110 percent positive modulation, and they all use heavy audio processing, so the problem is even more severe than it was back in the '30s and '40s. - K1ZIH)*

This completes the modifications. Once the set passes the bench tests, it's time to place the radio back in the cabinet and to enjoy the improved fidelity on your favorite AM or shortwave stations.

*Until next time, keep those soldering irons warm, and those old tubes glowing!* - K1ZIH

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All in All, Slightly Behind the Times

I remember hearing about computers back in the '80s. Someone said that if the automobile industry had kept up with the electronics industry, cars would cost $3 and get a thousand miles per gallon. I was pondering that idea as I sat in my rocker (which I'm off, now) surfing the net on my (company supplied) smart phone.

It could be a little smarter. My old (crank-style) cell phone was easy to use one handed. The smart phone is not. It's a good thing inasmuch as I can't answer or initiate calls while I'm driving. That will add some years to my life, I'm sure.

I could teach it to respond to verbal commands. However, until I become a better person, some of the verbal commands I utter while driving are both impossible and not something I'd want the phone to repeat at some inopportune moment.

But I have a Morse code caller ID! It cost me all of 99¢. And at 20 wpm, no one I hang around with can tell who's calling — not even the grand poobah of the entire company (who does have a ham license.)

At the same time, I've taken advantage of a bit of naval history, which dates back to Columbus's day — the ringing of the ship's bells. Only one person in the office knows how to interpret them. I like that.

There are Morse code applications which would let me tap the screen to send code, but the touch screen has a delay (depending on the speed of the processor and how many other things are running at the time) so it's really not conducive to sending.

Back to the original point: This thing, which fits among other things in my shirt pocket, is far more powerful than (and probably beyond even the dreams of the designers who built) the UNIVAC. If I remember the blurbs from back then, it filled a room, had thousands of chattering tubes and relays, needed some really powerful cooling, and was the equivalent of a simple handheld calculator which you can find in most dollar stores today.

Some things, though, never change. As a tradeoff for compact size and small weight, the phone has limited battery capacity: 1,650mAh. A bigger — some 9 percent bigger — battery is available. A wallop 1,800-mAh version can be had for about $42 plus shipping. I think I'll wait for that movie to show up on television. Oh, I forgot. I don't have a television. Never mind.

Another technology update we've taken advantage of here at the Price Manse (or Spider Gulch, as we like to call it) is the modern hip replacement. I recently took the long suffering Mrs. N3AVY in for a hip replacement, which took all of an hour. Less than three hours later, she was able to take a few steps on her new bit of titanium.

We're lucky that Cowfield County is near enough to some amazing orthopedic specialists. While I'm limping around with several bad knees, ankles, and maybe hips, she climbed a flight of stairs when she came home two days after surgery. Now that she's tested the waters, I'll be looking in to having something similar.

Friend Beezer is getting more demanding with his requests for me to get on the air. A recent email read merely, "GET ON THE AIR!" He's so subtle. I'm lucky, though, to have four friends who would like to get me up and running on the HF bands. Norm, Beezer, David G., and another nefarious friend would together put up an antenna for me if they were near enough.

For the past six or seven days, I've had a rat loose in my bedroom. She's a lovely little rat (an agouti of the genus and species rattus norvegicus) whose name is Dora. And for the past week, she has been an explorer. She escaped from her cage when I left the door open, and her sister, Sophia, waited patiently in her cage until that evening so that she could tell me Dora was missing.

They hide. They don't make a sound. They don't come when you call them. An old, out-of-shape person cannot catch them. It took me four days to discover her hiding place, and another three to lure her with a chewy granola bar (with chocolate chips) so I could finally take her back to her house.

Soon, I'll be able to afford a transmitter-coll ar for her. I figure they'll be in the dollar store next year.
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