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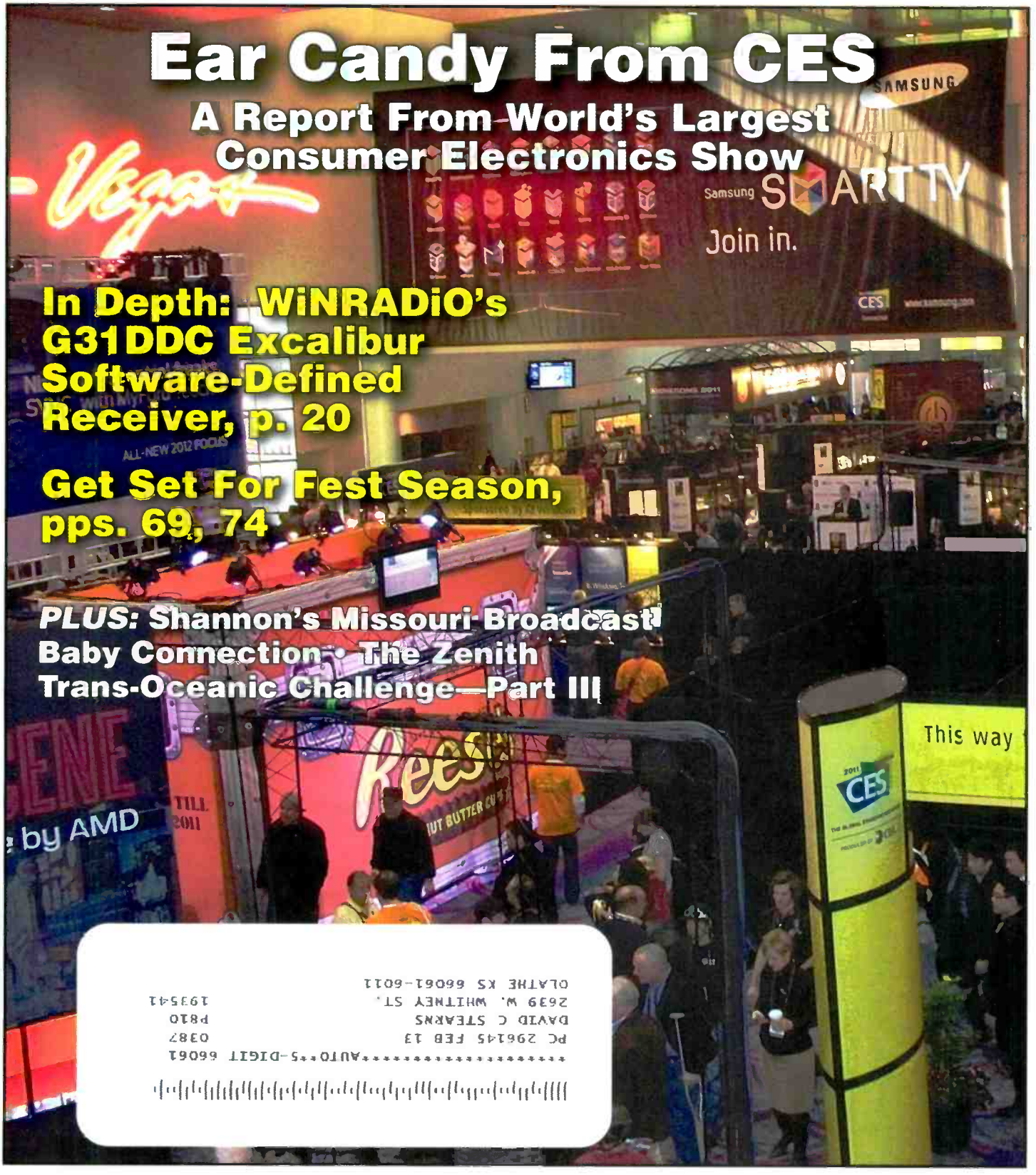
POPULAR COMMUNICATIONS

APRIL 2011

Shortwave Listening • Scanning • AM & FM • Radio History



NEW COMPACT HF TRANSCEIVER WITH IF DSP

A superb, compact HF/50 MHz radio with state-of-the-art IF DSP technology, configured to provide YAESU World-Class Performance in an easy to operate package.
New licensees, casual operators, DX chasers, contesters, portable/field enthusiasts, and emergency service providers- YAESU FT-450D...This Radio is for YOU!

Compact size: 9" X 3.3" X 8.8" and Light Weight: 7.9 lb

HF/50 MHz 100 W All Mode Transceiver

FT-450D

With Built-in Automatic Antenna Tuner

NEW **Illuminated Key buttons**

NEW **300 Hz/500 Hz/2.4 kHz CW IF Filters**

NEW **Foot stand**

NEW **Classically Designed Main Dial and Knobs**

NEW **Dynamic Microphone MH-31A8J Included**

■ **Large informative Front Panel Display, convenient Control knobs and Switches**
■ **The IF DSP guarantees quiet and enjoyable high performance HF/50 MHz operation**

Handy Front Panel Control of Important Features including:

- **CONTOUR Control Operation**
  The Contour filtering system provides a gentle shaping of the filter passband.
- **Manual NOTCH**
  Highly-effective system that can remove an interfering beat tone/signal.
- **Digital Noise Reduction (DNR)**
  Dramatically reduces random noise found on the HF and 50 MHz bands.
- **IF WIDTH**
  The DSP IF WIDTH tuning system provides selectable IF passband width to fight QRM.
  SSB - 1.8/2.4/3.0 kHz, CW - 300 Hz/500 Hz/2.4 kHz
- **Digital Microphone Equalizer**
  Custom set your rig to match your voice characteristics for maximum power and punch on the band.
- **Fast IF SHIFT Control**
  Vary the IF SHIFT higher or lower for effective interference reduction / elimination.

■ **The rugged FT-450D aluminum die-cast chassis, with its quiet, thermostatically controlled cooling fan provides a solid foundation for the power amplifier during long hours of field or home contesting use.**

MOS FET RD100HHF1

More features to support your HF operation

●10 kHz Roofing filter ●20 dB ATT/IPO ●Built-in TCXO for incredible ±1 ppm/hour (@+77°F, after warm-up) stability ●CAT System (D-sub9 pin): Computer programming and Cloning capability ●Large, Easy-to-See digital S-meter with peak hold function ●Speech Processor ●QUICK SPLIT to automatically Offset transmit frequency (+5 kHz default) ●TXW to monitor the transmit frequency when split frequency operation is engaged ●Clarifier ●Built-In Electronic Keyer ●CW Beacon (Up to 118 characters using the CW message keyer's 3 memory banks) ●CW Pitch Adjustment (from 400 to 800 Hz, in 100 Hz steps) ●CW Spotting (Zero-Beating) ●CW Training Feature ●CW Keying using the Up/Down keys on the microphone ●Two Voice Memories (SSB/AM/FM), store up to 10 seconds each ●20 second Digital Voice Recorder ●Dedicated Data Jack for FSK- RTTY operation ●Versatile Memory System, up to 500 memory channels that may be separated into as many as 13 Memory Groups ●CTCSS Operation (FM) ●My Band / My Mode functions, to recall your favorite operating set-ups ● Lock Function ●C.S. Switch to recall a favorite Menu Selection directly ●Dynamic Microphone included ●IMPORTANT FEATURES FOR THE VISUALLY IMPAIRED OPERATOR – Digital Voice Announcement of the Frequency, Mode or S-meter reading

For the latest Yaesu news, visit us on the Internet:
http://www.vertexstandard.com

Specifications subject to change without notice. Some accessories and/or options may be standard in certain areas. Frequency coverage may differ in some countries. Check with your local Yaesu Dealer for specific details.

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Universal Radio — Quality equipment since 1942.

YAESU FT-450D

The **Yaesu FT-450D** amateur transceiver operates 160 to 6 meters with 100 watts on all bands. The superb receiver covers 30 kHz to 54 MHz. Operating modes include USB, LSB, CW, AM and FM. A built-in TCXO provides outstanding stability. The Yaesu FT-450D expands on the success of the previous FT-450, providing features such as: built-in antenna tuning system, classically designed knobs, dedicated data jack for FSK-RTTY, CTCSS, user configurable functions, digital voice announcement of frequency, mode and S-meter, 500 regular memories and two voice memories, CW beacon function, 10 kHz roofing filter, key illumination, foot stand plus 500 and 300 Hz CW filters. If you are in the market for a good shortwave receiver, with the idea of going into amateur radio in the future, this may be your ticket.
The FT-450D comes with: MH-31A8J hand mic, mic clip and DC power cord. This radio requires 13.8 VDC at 22 amps.

YAESU VR-5000

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

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

YAESU VX-8DR/GR

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

- ✔ Smart Beaconing™ Function,
- ✔ Station List memories raised from 40 to 50.
- ✔ APRS® Msg mems raised from 20 to 30.
- ✔ New DIGI-PATH route indication function.
- ✔ Heads up compass display.
- ✔ Msg LED flashing rate is selectable.
- ✔ DIGI-PATH route settings raised to 7.

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

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

YAESU

FT-857D

FREE Yaesu orange mug with FT-857D/897D.

The **Yaesu FT-857D** is the world's smallest HF/VHF/UHF multimode amateur transceiver covering 160 m to 70 cm with 100 watts on HF. Now with 60 meters and DSP2 built-in.

FT-897D

The **Yaesu FT-897D** is a multi-mode high-power base/mobile transceiver covering 160 m to 70 cm including 60 meters. Now with TCXO.

FREE Yaesu canvas urban case with FT-817ND.

FT-817ND

The **Yaesu FT-817ND** is an improved, deluxe version of the hugely popular FT-817. It includes 60 meter coverage plus the new high capacity FNB-85 battery. This radio has an excellent shortwave receiver built-in and is a fully self-contained, battery-powered, low power amateur MF/HF/VHF/UHF QRP transceiver.

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POPULAR COMMUNICATIONS

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APRIL 2011
VOLUME 29, NUMBER 8

FEATURES

FEATURED COLUMNS

ON THE COVER

The Computer Electronics Show, held annually in Las Vegas in January, is the launchpad from which a dizzying array of gadgets—from trite to transformational—take off. It's both fascinating and overwhelming, but our own Gordon West, WB6NOA, braved the convention crush to bring you his report, "Ear Candy For The Masses—CES Unveils New Technology For Radios," starting on page 10. With the warmer weather signaling the hamfest season entering full swing, see also Gordo's column, starting on page 69, and Kirk Kleinschmidt, NTØZ's "Ham Discoveries," starting on page 74, for how to get the most out of these fun events. (Cover image: The 2011 Computer Electronics Show, courtesy CEA/International CES)

COLUMNS

DEPARTMENTS

Tap into secret Shortwave Signals

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

MFJ-462B **$199.95**

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

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

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

Eavesdrop on the World

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

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

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

Monitor Morse code from hams, military, commercial, aeronautical, diplomatic, maritime -- all over the world -- Australia, Russia, Japan, etc.

Monitor any station 24 hours a day by printing transmissions. Printer cable, **MFJ-5412, $11.95.**

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

High Performance Modem

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

Easy to use, tune and read

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

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

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

Copies most standard shifts and speeds. Has MFJ *AutoTrak*™ Morse code speed tracking.

Use 12 VDC or use 110 VAC with MFJ-1312D AC adapter, $15.95. 5¼Wx2½Hx5¼D inches.

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

MFJ-1800 **$29.95**

16-element, 15 dBi WiFi Yagi antenna greatly extends range of 802.11b/g, 2.4 GHz WiFi signals. 32 times stronger than isotopic radiator. Turns slow/no connection WiFi into fast, solid connection. Highly directional -- minimizes interference.

N-female connector. Tripod screw-mount. Wall and desk/shelf mounts. Use vertically/horizontally. 18Wx2¾Hx1¼D inches. 2.9 ounces.

MFJ-5606SR, $24.95. Cable connects MFJ-1800/WiFi antennas to computer. Reverse-SMA male to N-male, 6 ft. RG-174.

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

Super Active Antenna

"World Radio TV Handbook" says MFJ-1024 is a *"first-rate easy-to-operate active antenna ...quiet... excellent dynamic range... good gain... low noise... broad frequency coverage."* Mount it outdoors away from electrical noise for maximum signal, minimum noise. Covers 50 KHz-30 MHz. Receives strong, clear signals from all over the world. 20 dB attenuator, gain control, ON LED. Switch two receivers and auxilary or active antenna. 6x3x5 in. Remote has 54" whip, 50 feet coax. 3x2x4 inches. 12 VDC or 110 VAC with MFJ-1312, $15.95.

MFJ-1024 **$159.95**

Indoor Active Antenna

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

MFJ-1020C **$99.95**

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

Compact Active Antenna

Plug this *compact* MFJ all band active antenna into your receiver and you'll hear strong, clear signals from all over the world, 300 KHz to 200 MHz including low, medium, shortwave and VHF bands. Detachable 20" telescoping antenna. 9V battery or 110 VAC MFJ-1312B, $15.95. 3⅛x1¼x4 in.

MFJ-1022 **$69.95**

Eliminate power line noise!

MFJ-1026 **$199.95**

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

MFJ Antenna Matcher

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

MFJ-959C **$119.95**

High-Gain Preselector

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

MFJ-1045C **$89.95**

Dual Tunable Audio Filter

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

MFJ-752C **$119.95**

MFJ Shortwave Headphones

MFJ-392B **$24.95**

Perfect for shortwave radio listening for all modes -- SSB, FM, AM, data and CW. Superb padded headband and *ear cushioned* design makes listening extremely comfortable as you listen to stations all over the world! High-performance driver unit reproduces enhanced communication sound. Weighs 8 ounces, 9 ft. cord. Handles 450 mW. Frequency response is 100-24,000 Hz.

High-Q Passive Preselector

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

MFJ-956 **$69.95**

Super Passive Preselector

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

MFJ-1046 **$119.95**

MFJ Shortwave Speaker

MFJ-281 **$12.95**

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

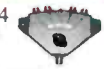
MFJ All Band Doublet

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

MFJ-1777 **$59.95**

MFJ Antenna Switches

MFJ-1704 **$79.95**



MFJ-1702C **$39.95**

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

Morse Code Reader

Place this pocket-sized MFJ Morse Code Reader near your receiver's speaker. Then watch CW turn into solid text messages on LCD. Eavesdrop on Morse Code QSOs from hams all over the world!

MFJ-461 **$89.95**

MFJ 24/12 Hour Station Clock

MFJ-108B, $21.95. Dual 24/12 hour clock. Read UTC/local time *at-a-glance*. High-contrast 5/8" LCD, brushed aluminum frame. Batteries included. 4½Wx1Dx2H inches.

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EDITORIAL
Tuning In

Twixt Truth And Twitter

by Edith Lennon, N2ZRW
editor@popular-communications.com

How many characters does it take to foment a revolution? One hundred and forty? It would be ridiculously easy to pin a stupid punch line onto that Twitter reference, but the images from the Egyptian uprising that came out of Tahrir Square won't let me. Instead, I'll submit that it takes thousands, if not millions, of people, not characters. And they are reached over decades, not moments. And to be reached wisely takes something the new social media is not designed for.

Facebook, Twitter, and smartphones have been knighted as near-instantaneous bringers of democracy, even as the world wrings its collective hands over the once-unthinkable events roiling North Africa and the Middle East, frightened of what the final form will take.

Far too many among the governing/punditry class are already attributing a new global order to the vaunted new media. And they will apportion credit or blame as their own goals dictate. The hand-wringers are not necessarily paranoid, either. Doubtless the IC chips in the devices held in the hands of multitudes enormously influence events, but not always effectively and not always for good. Sometimes Yeats' words ring true, and the best lack all conviction, while the worst are full of passionate intensity.

Technology can be used to ignite change and bring people together in a common cause, but it also can be used to repress and retaliate. Iran's "Green Revolution" was fueled by popular anger and propagated by cell phones and Internet postings. Those protests were thwarted—by force—as the authorities used the electronic trails left by activists to arrest thousands. And let's not forget how easy it is to shut down, or at least play havoc with, these interconnected tools.

While the world economy is barely treading water, much of the globe is in flames. How bitterly ironic that now, when we most need to offer a positive influence across borders and cultures, we're seeing our best tool falling further into disuse because of funding cuts.

Since it was formed in 1932, using the "quaint" technology of radio via shortwave and a worldwide system of relay stations, the BBC World Service has broadcast news, background, and culture in accordance with its mission to be "the world's best-known and most respected voice in international broadcasting." And it was. It collected accolades for journalistic excellence and "soft-policy" effectiveness far too numerous to even begin to list. I would, however, like to add one more of my own: While imperfect—as all things are—the BBCWS is actually a Global Public Service that has been more successful than any other entity or effort in promoting understanding and goodwill to the greatest number of people.

This year, in response to a 16-percent budget cut, the BBCWS announced that transmissions to China, Russia, Africa, the Balkans, Ukraine, Turkey, and the Caribbean would cease, concurrent with a reduction of 650 out of 2,000 jobs at the organization. (See also "InfoCentral" and "Our Readers Speak Out.")

While we watch the devolution of the BBCWS and lament the loss of a reasoned voice amid revolution let's take stock. Lose independent news media and risk losing the truth. Lose the truth and any element with passionate intensity can provide tinder for flames that can be fanned by 140 characters or less.

As the BBCWS itself tumbles, profits for social media providers soar. Facebook, Twitter, and whatever their heirs will be can inform, inspire, and incite, but they can't educate in any deep sense. When profit drives all decisions—perhaps at the expense of truth, compassion, and communication—we're left with a certain global order, one as likely to be besieged by ugly noise as to be enlightened by wisdom. What world do we want to live in? I want one informed by the BBCWS.

As we go to press, a campaign protesting the BBSWS cuts posted an online petition to be directed to those responsible for the decision. Found at www.savews.com, I don't know if it will still be live when this issue mails; however, other recommended actions include contacting the British Foreign Secretary at www.theyworkforyou.com/mp/william_hague/richmond_(yorks) and the BBC director general at mark.thompson@bbc.co.uk. And voice your opinions via Facebook or Twitter, as well. Maybe we can't roll back these cuts, but we can sure mobilize to try.

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- Select your state, your county and view a list of objects you can monitor. Select the boxes of the items you want to hear. It is very much like using a MP3 player - that is, if you could buy an MP3 player with all music already installed!

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The Weirder Side Of Wireless

by Staff

Now Ear This

Australian artist Stelarc wanted the world to hear him—*really* hear him. In fact, he found a surgeon willing to implant a cell-cultivated ear-like structure onto his forearm. Taking over the work from the good doctor are the artist's adult stems cells (you'd think the adult ones would know better), which are growing, well, an ear, complete with its own blood supply. Once the process is complete in Stelarc's terms, meaning that what is now "only a relief of an ear" develops a soft earlobe, lifts from the arm, and becomes 3D, he will insert a microphone with a wireless transmitter that will link to the Internet via WiFi hotspots. His goal is to allow people to hear what his arm is listening to at any hour of the day or night. Stelarc showed off his "Ear in Arm" project at the recent Kinetica Art Fair in London in a feature exhibition that explored "the evolution of the human body, brain, mind and consciousness in reference to our place in the universe, where we are at this time, and what it means to be human." Apparently, what it means to be human does warrant a little more exploration. Check out ear number three at www.bbc.co.uk/news/technology-12362228.

Space—The Final Frontier

We tend to think of space as infinite, but while may be true of our universe it hasn't been true for that the Internet, which came to an end, of sorts, on February 3, 2011. That was when CNN reported that "the Internet as we know it ran out of space." Stated more correctly, it ran out of unique IP addresses (don't worry, those photos from the family reunion posted on Facebook are still safe). The nonprofit group that assigns addresses to service providers, the Number Resource Organization, announced that the last free Internet address had been assigned. "This is an historic day in the history of the internet, and one we have been anticipating for quite some time," said Raul Echeberria, chairman of the NRO, according to the CNN report. This means that there are some 4.3 billion IP addresses out there, which can sound kind of infinite until you realize there are approximately 7 billion people on the planet, and many of them have two or three IP addresses. Luckily the American Registry for Internet Numbers, a regional nonprofit under the umbrella of NRO, has seen this problem looming for more than a decade and has a new pool of addresses waiting, one that won't be used up any time soon. It's so big in fact, that few people have even heard of the denomination. It contains 340 undecillion IP addresses. How big is that? Well, it's 340 trillion trillion unique addresses, or 340,000,000,000,000,000,000,000,000,000,000,000 (340 followed by 36 zeros if that's easier to wrap your head around). And I remember when 1 Meg of memory on a PC was a lot.

This Story Needs A Hook

File this one under life imitating fairy tales, or Peter Pan Phone Home. Gena, a 14-year-old croc at an aquarium in Kiev, Ukraine, was accustomed to the sweet taste of attention, but just as Rimma Golovko snapped a photo of the croc on her Nokia phone, the device slipped from her hands and into the tank. Gena gulped down the phone and Rimma ran to tell incredulous workers of the mishap. Initial disbelief turned to amazement when the reptile started ringing. Options for Gena include laxatives, surgery, or if all else fails a friends and family plan with Verizon.

iGrill? i Don't Think So!

Got an extra $100 but can't remember you own a BBQ? You'll want to know about iGrill, "the world's first wireless cooking thermometer for iPod touch, iPhone and iPad via a long-range Bluetooth and App-enabled connection" (yes, hard to believe there isn't already a whole heap of them). The iGrill was really smokin' at the recent Consumer Electronics Show in Vegas—in fact it won the 6th Annual 2011 Bluetooth SIG Best of CES Award. Said Michael Foley, executive director of the Bluetooth SIG, "Bluetooth wireless technology can connect anything and improve practically any consumer electronics experience—and in this case, Bluetooth technology is making sure you have a perfectly cooked steak, every time." iDevices (www.igrillinc.com), manufacturer of iGrill, says it's the first of a suite of Apple home and lifestyle-oriented products that the company will be developing in 2011, and that iGrill "does much more than simply redefine how we cook and grill, it's changing the way we socialize." Not until they make a uGrille, it doesn't.

News, Trends, And Short Takes

by D. Prabakaran

BBCWS Cuts Language Services, Radio Broadcasts

BBC World Service (BBCWS) will carry out a fundamental restructure to meet a 16 percent savings target required by the British Government's Spending Review of last October last year. The changes include five full language service closures; the end of radio programs in seven languages, focusing those services on online and new media content and distribution; and a phased reduction from most shortwave and mediumwave distribution of remaining radio services. In a January 26, 2011, statement, BBC Global News Director Peter Horrocks said, "This is a painful day for BBC World Service and the 180 million people around the world who rely on the BBC's global news services every week." Under its new operating proposals, 480 posts are expected to close over the next year. By the time BBCWS moves to television license-fee funding (in 2014/15), it is anticipated that the number of proposed closures will reach 650, though that could be offset by new posts created during this period. There will be complete closure of five language services—Albanian, Macedonian, Portuguese for Africa and Serbian languages—as well as the English for the Caribbean regional service. It is expected that audiences will fall by more than 30 million from the current weekly audience of 180 million as a result of the changes this year.

(Source: Media Network, BBC World Service Press Office)

RNW Bonaire Relay Station To Close

Radio Netherlands Worldwide has decided to close its Bonaire shortwave station in October 2012. RNW's Head of Program Distribution, Jan Willem Drexhage, said the closure was regrettable, but stressed it was a financial decision and didn't mean that RNW has imminent plans to drop shortwave, stating: "It is a beautiful station, with good equipment, and ideal for reaching North, Central and South America, but the number of hours we are broadcasting from the station has been steadily falling in recent years. We anticipate that by the end of 2012, the number of hours will be so small that it would be too costly to maintain the station. That doesn't mean we will stop shortwave immediately, as we will lease time on other stations in the region, for example Montsinery in French Guiana and Sackville in Canada. So the closure of Bonaire doesn't automatically mean that we are giving up shortwave."

(Source: Media Network)

Radio México Internacional To Add English/French

Shortwave broadcaster Radio México Internacional, which was re-launched in January 2011 after a 2004 closure, announced the addition of programs in English and French, as well as some dialects of South American Indians. Radio México Internacional had been closed due to deterioration of its transmitters and need for new technology. In 2009 IMER launched a special radio station to mark the 200th anniversary of the independence of México and it now using that technical base for the resumption of broadcasting.

(Source: ephekto.com)

Radio Slovakia International To Continue On Shortwave In 2011

A last-minute agreement between Radio Slovakia International and Radio Miami International (WRMI) will permit the international radio station of Slovakia to continue its shortwave transmissions in English and Spanish to the Caribbean and Latin America. Radio Slovakia International had announced that its shortwave broadcasts would end on December 31, 2010. However, WRMI will be broadcasting RSI's program in English at 0130–0200 UTC Tuesday-Saturday and RSI's Spanish program at 0330–0400 UTC seven days per week. Both of these transmissions will be on 9955 kHz with 50 kW of power from Miami using a beam of 160 degrees directed to the Caribbean and Latin America.

Radio Farda Active On New 1314 kHz Via Al Dhabbaya

The U.S.-operated Radio Farda, broadcasting to Iran in Farsi, commenced broadcasting from Al Dhabbaya in the United Arab Emirates on mediumwave 1314 kHz (1000 kW) as of January 2011. The station operates at 1400–2400 UTC.

Capitol Hill And FCC Actions Affecting Communications

by Richard Fisher, KI6SN

Massive Comcast-NBC Universal Deal OK'd By FCC

In a move that media watchers believe could dramatically change the entertainment industry, the Federal Communications Commission voted to clear the way for the United States' largest cable company to take over NBC Universal. Comcast Corp. will have a 51 percent stake in the company, owned by General Electric Co. and home to the NBC TV network. It's paying $13.8 billion in cash and assets, according to published reports.

The Justice Department and five state attorneys general announced in mid-January that they had reached a court settlement, paving the way for the companies to move forward with the deal. The agreement is "subject to conditions intended to preserve competition among video providers," according to a report on the Web-based news site *The Huffington Post*. "In addition, the five-member FCC...voted 4-1 to approve the transaction, subject to similar but broader conditions."

Comcast has more than 22 million cable TV subscribers and about 17 million Internet subscribers. Based in Philadelphia, it owns cable's *Golf Channel* and *E! Entertainment*. Comcast has a controlling interest in the NBA's Philadelphia 76ers and NHL Flyers professional sports teams, as well. NBC Universal owns the NBC and Telemundo networks; 26 TV stations; cable's *CNBC*, *Bravo*, and *Oxygen;* Universal Pictures movie studio; theme parks; and a share in Hulu.com, which distributes NBC and other TV programming on the Web.

Commissioner Michael Copps, a Democrat who voted against the deal, said it "confers too much power in one company's hands." He has long been a critic of media consolidation. In a statement, Sen. Al Franken (D-MN) said it "will ultimately mean higher cable and Internet bills, fewer independent voices in the media, and less freedom of choice for all American consumers." Christine Varney, head of the Justice Department's antitrust division, said the government's conditions prevent damping of "the nascent competition posed by online competitors," *The Huffington Post* reported. Most of the government conditions will remain in effect for seven years.

Colorado Congressman Seeks To Yank NPR Funding

Legislation introduced by Rep. Doug Lamborn (R-CO) calling for the end of federal funding for the Corporation for Public Broadcasting, is not sitting well with National Public Radio (NPR). According to a report on RadioInk.com., NPR called it "an intrusion into the programming decision-making of America's public radio station." The statement was made in an email to the congressional newspaper *The Hill*. Lamborn has said public broadcasting is a "luxury we cannot afford to subsidize" in challenging economic times. "His legislation will disrupt and weaken the free and universal public media system that serves 170 million Americans each month," NPR wrote, adding that the proposal is "misguided and would insert the federal government into news decisions at local stations," RadioInk reported.

Waste, Fraud, Abuse In Crosshairs Of New FCC IG

Making official a role he has performed on an interim basis since June 2009, David Hunt has been named Inspector General at the FCC.

"I am delighted that David will continue to serve in the important role of Inspector General to detect and prevent waste, fraud, and abuse," FCC Chairman Julius Chairman Genachowski said in a statement. "During the time he served as acting IG, David and his team have been instrumental in working with us to uncover millions of dollars of fraud in federally funded programs, and helping to obtain numerous indictments and criminal convictions nationwide." Hunt joined the Commission's Inspector General's office in 2006 as an Assistant IG for Investigations. Before that, he was a senior attorney in the Enforcement Bureau.

Preservation Of Communications

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

"Spend a few minutes today and make sure you have an idea what you want preserved: personal mementos, videos of the children, your QSL collection, love letters (emails!) between you and your wife..."

Do you record any of your communications? Pictures? Very likely. Video? Probably. Phone calls? Rarely. Emails? Some. How long do you keep communications? On what medium? How long will the storage medium last? What will happen to it when you are no longer around to tend to it?

All these questions about your personal communications we can extend to larger questions of communications generally. With the rapid advance of technology and the increasing diversity of communications options, the issue of preservation grows in importance. As individuals, the portion of our communications that is preserved may depend on many issues, not the least of which is whether the information is important to us, or to those close to us. At a societal level, what is preserved may depend on how carefully we plan, what priority we place on preservation and storage, and how we manage technological change.

When we preserve text, images, and sound, we are communicating with the future. We're sending a message through a time machine of sorts. It's only a one-way message, but potentially a very powerful one-way message. When we decide to protect or preserve pictures, video, or sound, we are placing value on that communication and that, in and of itself, is a message. The difficulty we have is in knowing what to preserve and what effort to invest in preserving it. Moreover, what is not important to us now might be important to someone in the future for reasons we don't foresee.

A perfect, but extreme, example of this is the stone tablets retrieved from ancient settlements detailing financial transactions. While the transactions themselves have lost their original importance, what they tell us about life in that era is invaluable historically. The author of such a tablet would not have foreseen this or known that his tablet, and not that of the vendor in the next stall, would be the one preserved.

We face the challenge of how to preserve the communications. It's highly likely that technology will make whatever medium we select obsolete at some point. If we choose print or paper, it will degrade, rot, and fade with time. Magnetic tape? Great choice two decades ago, but increasingly forgotten. CDs or DVDs? What's the probability that anyone will be able to access the disk and know the format 50 years on? (This assumes the disk itself doesn't degrade!) Hard drives? Prone to mechanical failure and changing formats and technology. Copies uploaded to the Internet? The host will go out of business or merge into another entity that will discontinue the service. It goes on and on.

So what do we do? If it seems a daunting question, imagine the position that most librarians and historians find themselves in.

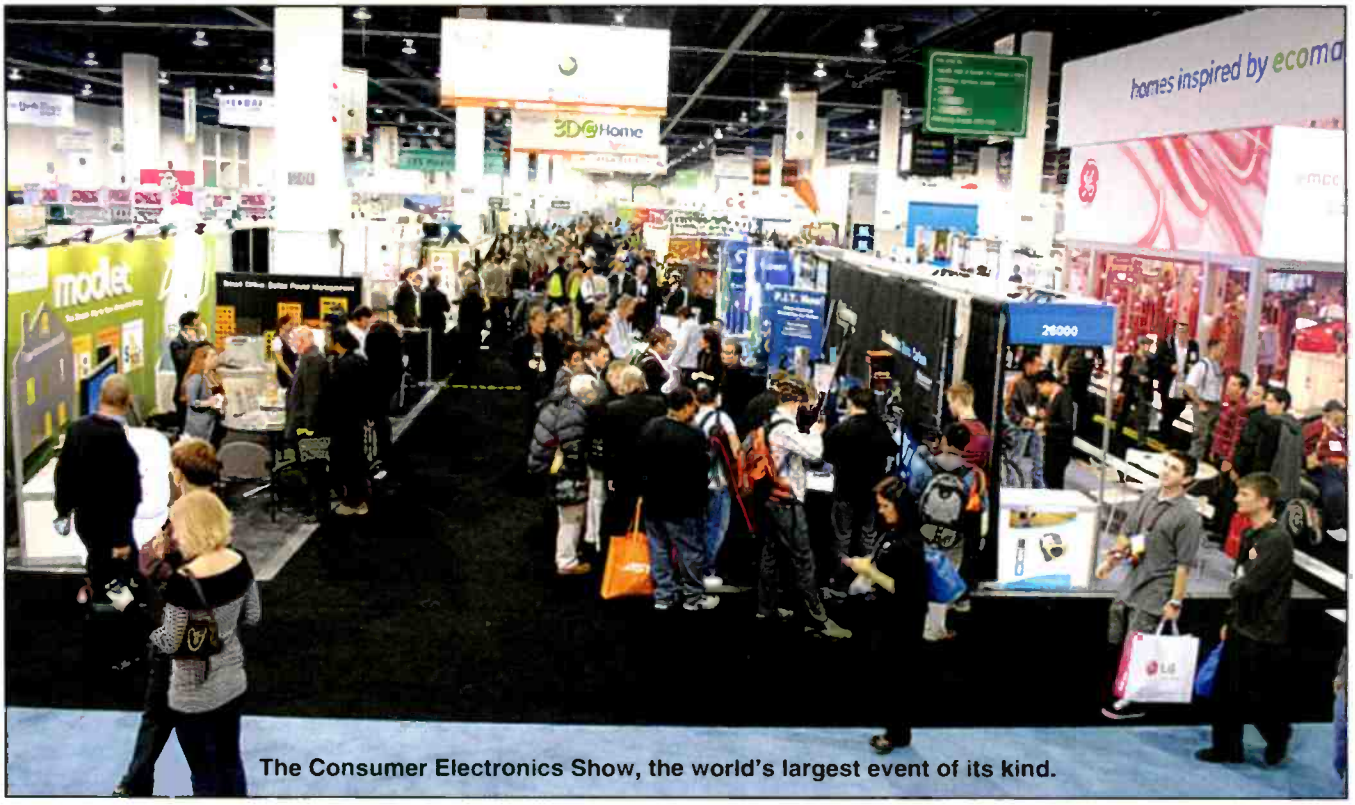
Looking toward the future, we can also ask how much and for how long? The volume of information is growing exponentially, and that implies that the information to be preserved (either for a few years or hundreds of years) is also exploding. While the density of storage and the capacity have grown along with the volume, it is, to borrow a phrase, "no small matter."

Technology, for all its difficulties, has provided us with possibilities for preservation that would not have existed in earlier eras. The vast amount of computer storage and imaging technology is making it possible to create electronic copies of rare books, to discover hidden material in medieval texts, and to distribute copies of works so far and wide that destruction of them is near impossible.

With all these questions, and not nearly enough answers, we need to devise our own personal strategy. On a hobby level, we have important communications to preserve. QSLs are one example. The Committee to Preserve Radio Verifications (http://pl703.pairlitesite.com/cprv.html) has an organized effort to aid in the QSL objective. The logbook might be something else you want to preserve. Lest you think it doesn't matter, that log might be a window into propagation at a particular time and place. If you do either of these electronically, you'll need to consider saving them in multiple places and formats (with access directions and passwords!) for those who come along later. On that theme, provide a way for a trusted family member or friend to access your important computer-based records (including email) in case you can't.

the information stored on your computers, etc. Do an inventory, update your will, write out instructions for those left to decide what to do when you're incapacitated or gone. They'll appreciate you for it.

What's your personal preservation plan? What should the hobby preserve and how? Share your feedback with me and I'll be back next month.



The Consumer Electronics Show, the world's largest event of its kind.

Ear Candy For The Masses—CES Unveils New Technology For Radios

Gordo, *Pop'Comm*'s Roving Reporter And Technical Guru Uncovers Cool Gadgets And Emerging Trends At This Electronics Extravaganza

by Gordon West, WB6NOA

The annual Las Vegas Consumer Electronics Show is the launchpad for new technology, world renowned for unveiling the upcoming year's (and beyond!) hottest products in consumer gizmos. And lucky for us, that includes radio electronics and related devices, too.

Hobbyists like me can't help but feel like kids in a candy shop, salivating over all the goodies at this event. Showcasing a robust and growing $186 billion industry, the recent CES, held January 6–9, drew 140,000 trade-only attendees (no general public) who jostled for space to check out an incredible 2,700 exhibits—you better believe it takes four days to see them all.

"And as usual, the show was brimming with exciting new technologies to support and grow the wireless hobbies we love."

While traditional radio exhibitors represented just a fraction of the consumer electronics companies at the show, there were some familiar names with exciting introductions. And as usual, the show was brimming with exciting new technologies to support and grow the wireless hobbies we love. Let's take a look at some of the highlights I found on the show floor. We've provided some prices or estimates where we could, but keep in mind

Gordon West, WB6NOA, writes *Pop'Comm*'s "Gordon West's Radio Ways" column. A prolific writer and teacher, he is a highly regarded leader in the radio hobby.

with many newly introduced products, that can still be fluid. Check directly with manufacturers or your favorite dealer.

Scanners

The GRE (www.GREAmerica.com) booth was buzzing with live scanner action, with nearly a dozen different types of scanners faithfully following the Las Vegas Convention Center bustle. GRE's newest and (in my opinion) greatest digital scanning receiver, the $499 PSR-800 EZ Scan, was drawing plenty of attention from scanner enthusiasts crowding in to check it out. You home in to your local radio activity by simply entering your state, county, and city. Then lock in or out the services you prefer. The RadioReference.com source database is pre-loaded onto the 2-GB micro SD card, with both U.S. and Canadian databases, plus you can easily update the frequency database or software via the Internet, any time, at no charge.

When it locks on to a service or agency, the bright LED on the top illuminates with a user-assigned color, say blue for police blue, red for fire, white for aircraft white—you get the idea. It will scan digital/analog, digital/analog trunking, project 25, EDACS, and LTR. A spectrum sweeper can also find nearby strong signals. And best of all, it's uncomplicated to get going with, straight out of the box. *(Look for a review of the PSR-800 in an upcoming issue of* Pop'Comm.*—ed.)*

GRE's still-popular PSR-500 handheld and PSR-600 mobile/base digital/analog scanners with trunking capability, including APCO Project 25, were crackling as well. These less expensive scanners (both selling in the $400 range, though dealers have their own specials), along with almost a dozen other models the company offers, give the scanner enthusiast a big selection to choose from, based on how intuitive or programming-intensive they want their receiver to be. What stood out most from the all-live booth display was the full, rich audio put out by each set. You could really hear them over the crowd!

GRE is also the North American distributor for Alinco's ham radio product line. They wanted *Pop'Comm* radio readers to know that they offer full support of Alinco products, including next-day turnaround on any old or new Alinco needing repair. The Alinco tri-band handheld DJ-G7 (dealer price about $325) is a ham favorite because it also offers 1.2 GHz as well as 2 meters and 70 cm. The wide coverage receiver in the B band also covers the FM music broadcast band.

But probably the most uncomplicated straight-out-of-the-box, full-featured programmable scanner on display was the Uniden HomePatrol-1 ($499; www.HomePatrol.com) with its color transreflective touchscreen. Simply tap in your

The GRE team, holding the company's new PSR-800 scanner.

GRE's new PSR-800 EZ Scan handheld scanner.

Uniden's Paul Opitz demos the HomePatrol-1 for author Gordo. (Photo courtesy Don Arnold, W6GPS)

20-440
ANTENNA LOOP AN200
Accessory Antenna Loop for use with Other External Antenna Capable Radios

20-265
SATELLIT 750
AM/FM/Shortwave Radio with Aircraft Band, SSB (Single-Side Band) and a Rotating AM Antenna

20-439
GLOBE TRAVELER G3
AM/FM/Shortwave Digital Radio with Aircraft Band, SSB (Single-Side Band), RDS (Radio Data System) and Synchronous Detector

GRUNDIG

Start your travels

20-010
MINI 400
Super Compact AM/FM
Shortwave Radio with
Digital Display

20-012
FIELD RADIO S450DLX
AM/FM/Shortwave Field Radio with
Liquid Crystal Display

20-438
TRAVELER II DIGITAL G8
AM/FM/Shortwave Radio with World
Time, Great for The Global Traveler

Available at amazon.com RadioShack. THE SOURCE universal radio inc. J&R

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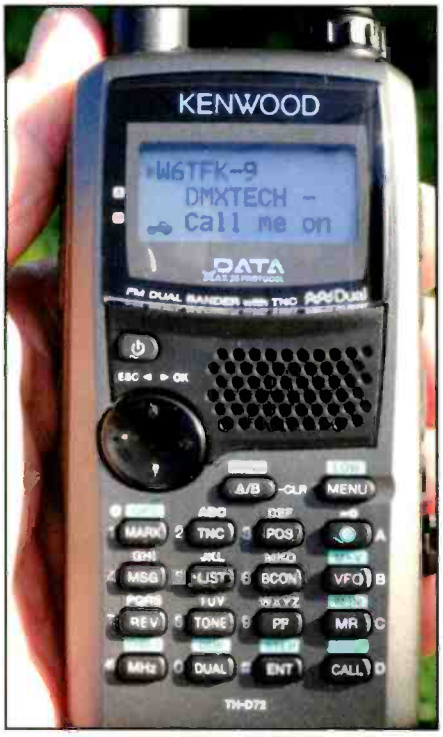
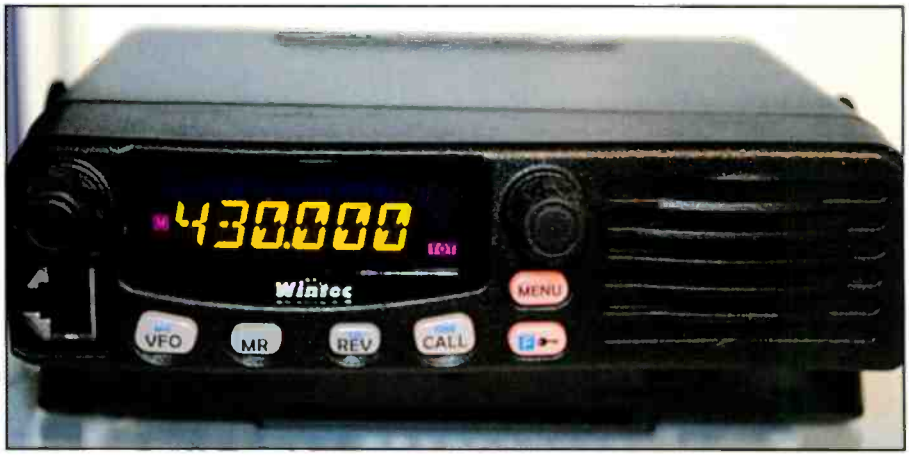
EMPOWERED BY NATURE



The Kenwood D-72A handheld, sniffing for noise at CES.



This Wintec Wireless radio, from China, looks familiar.

This Cobra CB with its great display was a showstopper.

zip code, and you are on the air! (Check out the review of this scanner in *Pop'Comm*'s October issue.)

Covering 25 MHz–54 MHz, 108 MHz–512 MHz, and 758 MHz–960 MHz (less cellular), the HomePatrol-1 is programmed with the *full* RadioReference.com database, with local input from over 100 "Radio Referencers," daily acquiring new "sneak" frequencies that go into every production load. The HomePatrol-1 plugs into your computer with a supplied USB interface cable, and you can download the PDF instruction manual and install the "Home Patrol Sentinel" software, giving you the ability to keep this scanner totally up to date with the latest software and frequency database.

Now here's the good news for you travelers: Feed it an NMEA 0183 GPS string at 4800 bps, and the Uniden HomePatrol-1, now recognizing its own geodetic location on Earth, selects the local activity and will continue to stay "local" no matter where you drive.

Our test unit, which we put through its paces at the top of the Las Vegas Hilton Hotel in the Uniden suite, was running on four 2800 mAh NiMH AA batteries. Even though we got a demo at a known-intermod location—the roof of the Hilton—the scanner faithfully did its analog and digital thing without howls and whistles, and without AC. But to keep that transreflective screen glowing, along with the powerful scanner receiver, it's a good idea to use it more as a mobile or base station and plug into AC or DC.

"We have been sold out since we first introduced HomePatrol-1 last October," said Paul Opitz, senior product manager at Uniden America, adding that he himself likes its instant replay, "a continuous feature that lets me capture exciting calls even though I missed the first minute or two of the big police chase." Opitz also showed a host of less expensive Uniden scanners, along with marine radios and FRS/GMRS products for the price-conscious radio hobbyist.

I hope we'll see a trend here. Uniden's transreflective touchscreen is a real innovation in our hobby radio market—very viewable in the daylight. Let's have more new products with color touchscreens! Plus, that GPS feature of automatic local auto-location scanning is really something to watch. When will we see a 2-meter/440-MHz ham set with the ARRL road atlas loaded inside a mobile or portable ham set with built-in GPS?

Location, Location, Location

Speaking of built-in ham radio GPS, Kenwood loaned me its new TH-D72 ($499; www.kenwoodusa.com) dual-band HT with built-in GPS and Automatic Position Reporting System to test on the way to CES. What a fabulous performer! We ran APRS/GPS handheld continuously from Southern California to Las Vegas and were amazed to see (on the screen) all the ham operators on their way to the show, too. The Kenwood TH-D72 will now share the spotlight, with the Yaesu's VX-8 ($449–$499), as one of two radios in the industry with built-in GPS engines.

Kenwood uses the SiRFstar III GPS receiver, the size of a postage stamp, with the patch antenna looking skyward between the volume and squelch knobs on the TH-D72. Wow, was this GPS receiver

sensitive! Any time we were within 100 feet of a building exit or window, we'd start seeing GPS satellite signal strengths on the radio's multi-purpose screen.

Did you know that pseudo-satellite signals may "illuminate" the inside of a massive shopping center—or CES convention center main hall—for in-building navigation and position finding. It's an emerging technology that lets you mark your locations and navigate back to them within inches, using any GPS equipment. And since no ham would be caught without his or her HT, whether the Yaesu VX-8 series or the new Kenwood TH-D72, you can try it, too. (Yes, you can turn off the Kenwood transceiver to minimize current draw as you're homing in on a specific spot.)

The Kenwood TH-D72 can also internally log up to 1,000 travels, by time or distance, to download on a computer, and overlay on Google Earth. It's another fun way to play with ham radio and GPS as you recall your adventures at the end of the day. For a demo of the TH-D72, point your Web browser to www.youtube.com/w6gps.

Got Spot? Regular readers of *Pop'Comm* will know that Spot is a GlobalStar transponder, a simple little device to radio home that you are OK, with your latitude and longitude. You can also squawk if you need help. Now, Spot Connect can send location-based messages via satellite to others, delivered as SMS text or email. You get 41 characters max for your Spot text messaging—but hey, it can work in those remote areas where you can't text by cell. You can also load your Spot adventures to update your social network on Facebook and Twitter. Spot Connect hardware sells for $170, and subscription service to Spot's satellite network (free app) starts around $100 per year. Visit www.findmeSpot.com for more.

More On The Amateur Front

Interesting handheld and mobile ham radios, selling for around $400 including programming cables, were on offer from a Taiwan-based company called Wintec Wireless (www.wintec.com/TW). I wasn't able to determine how these land mobile and ham radio sets were to enter our country, but Sales Manager Vicky Chen assured me that their design and production were excellent. At first glance, I thought it was a Kenwood ham set.

The recent "China Connection" of ham radio handheld and mobile units arrives with the traditional ham industry

The C.Crane radio lineup, with the "EP" in the center.

reservations. How will these new full-feature, similar-looking, made-in-China radios impact the overall ham radio industry economy? Well-known ham radio dealers hate to lose sales to this gear popping up everywhere, including at CES. And I am sure those same ham radio dealers are getting pressure from "the big four" not to take on "me too" radio products that are flooding the marketplace around normal ham store distribution. But consumer electronics industry experts caution it may be foolish in the long run not to acknowledge the excellent devices coming in from (as yet) unknown names from the Far East.

FRS/GMRS

Combo Family Radio Service/General Mobile Radio Service handheld radios drew me to the booths of Midland, Uniden, Maxon, and Cobra, plus others. I was amused to see some of the range claims—36 miles, 26 miles, 24 miles—ostensibly based on the number of features of each FRS/GMRS handheld. Many of these, like VOX headset, vibration alert, and CTCSS combinations, indeed increase the value of that equipment, but I still haven't figured out how "Features" equate to increased fixed antenna range!

One prominent brand of FRS/GMRS handheld was advertised with "over 40 channel" capabilities. Say what? Class D, CB, at 27 MHz, 40 channels OK. But FRS/GMRS?

"We have the most channels, and they are all FCC approved," claimed one sales rep. But when I used my small frequency counter right there on the CES floor I found that the expanded channel lineup was nothing more than the original 14+8 FRS/GMRS output channels re-used, with just a different sub-audible tone. Not even the instruction book I saw offered any clue as to these "added channels and frequencies," nor was any mention made of the precaution about using UHF channels near line A below Canada. As always, know the rules, know your gear. *Caveat Emptor*.

I was pleased to see that these new FRS/GMRS handheld radios are physically large, allowing for improved audio output when worn on the belt, and their larger battery will keep this gear going for days. Almost all the FRS/GMRS blister pack equipment included FRS plus GMRS (output) channels. When I asked about the required GMRS license for the higher output power, the answers were usually something like, "oh sure, but nobody does it, and I don't think the FCC cares..." Time will tell whether or not the Part 95 FCC Notice of Proposed Rulemaking will blend these two services as all-channel license free. I found *no* FRS/GMRS blister-pack radio set that could actually transmit on the 5-MHz higher GMRS license-required repeater input frequencies.

VHF/UHF

I spotted some blister packs with dual Cobra (www.cobra.com) 5-watt, 156-MHz VHF radios, retailing under $99, with expected 15-mile range calculations over flat terrain. Until the FCC opens up the marine VHF band for limited land use, marine VHF equipment for hikers and hunters is strictly off limits!

Need more range? Multi Use Radio Service (MURS) no-license equipment is available from Dakota Alert (www.DakotaAlert.com). Its handheld units and

motion sensors offer great VHF range: 151.820 MHz, 151.880 MHz, 151.940 MHz, 154.570 MHz, 154.600 MHz; FCC Rule (95.632).

"Our new MURS Alert offers the ability to monitor activity at remote locations, using passive infrared sensor technology to send an alert signal to the MURS transceivers," explained Jason Quam, vice president of Dakota Alert. "Our equipment allows a maximum of 2 watts of output power, and this means much greater range than other license-free radio services for security alerts," added Dakota Alert booth personnel. The company was also showing its M538-BS MURS base station with five channels and 38 CTCSS tones to provide quiet reception. This was the only display of five-channel MURS equipment I found at the show. Visit their website to check out their catalog on line, for pricing and dealers.

Maxon, manufacturer of hardy little mobile and portable transceivers, is back under the TecNet International roof (www.tecnetusa.com). Steve Koch, national sales manager, says Maxon portable and mobile radios are ready for shipping.

Nope, I didn't spot a single display of 900-MHz or 2.4-GHz spread spectrum walkie-talkies, though. Not even from China.

CB

There was a nice lineup of 27-MHz radios from Cobra, Uniden, and Midland. It's great to see these manufacturers continuing to deliver exciting new products.

The Cobra C29LX ($175) was a showstopper. Its four-color, full-function vacuum-tube florescent display is programmable and offers day and night illumination settings. (OK, maybe it's a transreflective or backlit LCD, but whatever the display is, it is certainly impressive!) This Cobra "29" is also well respected for its full power out and marvelous receiver.

Uniden backlights many of the CB transceivers ($50 to $150; www.uniden.com) they demonstrated in Las Vegas. They offer a good illuminated needle-movement S-meter for power out, SWR, modulation, and signal strength.

Midland's model #75-822 CB radio (about $95; www.midlandradio.com) is unique in that the battery pack slides off, a mobile adapter slides on, and you now have a portable radio that is a full-functioning mobile transceiver, with everything in the palm of your hand.

CB Distributing (www.CBDistributing.com) was also showing the Galaxy line of CB radios ($200–$500) as well as the Magnum line of 10-meter radios for those hams with a Technician Class license and higher (28.3–28.5 voice privileges). They sell only to dealers.

Broadcast

As always, at the C.Crane (www.ccrane.com) booth it's definitely a family affair. What a terrific group of people who love their wireless products, which were displayed in all their very impressive variety. There were new radios for the AM band offering super reception via sky wave or ground wave, portable shortwave and emergency radios, WiFi Internet receivers, active loop antennas, digital/analog FM transmitters, and lots of earphones.

One C.Crane radio, the CCRadio-EP ($70), was a big hit at the show, because it's so uncomplicated (the "EP" stands for easy performance). There's no clock to set, no station presets to program, no microprocessor search for frequency activity—you just turn on the AM and FM single-conversion receiver, and let the built-in twin-coil ferrite antenna pull in those distant stations that other PLL-type radios might skip over during search. It does offer base and treble adjustments for best music and voice reproduction and analog slide rule-type tuning to pull in the weak signals. The CCRadio-EP has a big Momma speaker, dial light, carrying handle, switch for AM/FM, and FM stereo through the headphone/earphone jack). It runs on four D batteries.

Eton has partnered with Grundig (www.etoncorp.com/grundig) for field radio sales and service, as well as that big Grundig satellite 750 radio and some neat solar-powered radios you can hook on to your climbing gear ($200–$700). Eton also helps to support the American Red Cross efforts, and its sparkling white booth looked "sano" enough to give a pint of blood!

Let's hope you never *need* to use one, because that might mean you're in prison, but I also checked out very cool see-through AM/FM radios over at the Sangean booth where reps were demonstrating the company's latest line of convict radios. These clear designs are the only radios approved for use behind bars.

Power Points And Show Sundries

Roaming the floor, I found little change in AA and AAA battery capacity, but did notice a welcome trend toward little or no added mercury, lead, or cadmium. LEI Electronics says it has set the standard for responsible disposable batteries with its line of ECO Alkalines, which are Earth-friendly and landfill safe. The common capacity for rechargeables seemed to be 2800 mAh ($3/4-pack AA; www.LEIProducts.com).

Solar panels continue to run about $100 for every amp of charging current at 12 volts. I did see some innovative solar panel deployment schemes, including solar panels you can wear, but no price breakthrough in the panel costs. Still, it's fun to see the new methods manufacturers can find to squeeze an amp hour out of a panel you wear on the back of your jacket, pants leg, or tote, such as a solar-powered backpack ($187; www.TravelerChoice.com).

Stopping by booths in the Auto area I was told by several electric and hybrid car manufacturers that they still have the 12-volt capability to run accessories, even those that draw up to 20 amps, like a ham set. (For the audio industry, 20 amps is *nothing*: many of their big base boom blasters draw up to 100 amps, plus!) But, I must tell you, if you're a ham or a shortwave listener on high frequency, I anticipate the electric drive motor will kill your reception.

You'll be happy to know that your AC plugs are now smart. For around $30, in addition to offering voltage, lightning, and ground fault overload protection, surge suppression, and lighted sockets, those multiple extension outlets can even keep track of how much power each individual socket is consuming. For under $100, there was an abundance of 12-volt switcher power supplies, most delivering 25 amps average/30 amps peak, plugged into 110 VAC.

Need a little voltage buffering? There were lots of booths with 1-farad (!) DC line capacitors!

I have to admit that I was mesmerized by the analog panel meters of every type, size, and shape (approx. $45) from Flash Star Industrial (www.flashstar.com.tw). With every meter illuminated, passersby paused along with me for a show-stopping gawk.

Davis Instruments, the weather station folks (www.davisnet.com), showed off its full line of products ($500 and up) for a variety of uses, including digital repeaters. These stations let you see weather measurements from your mountaintop equip-

ment 20 miles away. Many of the Davis weather crew are hams, so this wireless stuff is great fun for them.

Pricey but impressive, I enjoyed checking out the digital Dino-Lite digital microscopes ($500–$1,000) from BigC.com. Connected to your computer, they make any diode removal or any microprocessor chip lead a computer screen of detailed analysis. If you work on small circuits, you can see how these microscopes would make a world of difference.

Satellite stargazers would have loved all the digital TV spectrum analyzers from Satvision (www.satvisionusa.com). These handheld devices ($2,000+) search the sky for the best signal from satellites, helping you with dish alignment and sniffing out whether that nearby tree is costing you some dBs.

Wilson Electronics (www.WilsonElectronics.com), no longer involved in CB radio, is now doing great things in the 800/1900-MHz cellular range. If you need a boost in transmission or reception, take a look at what Wilson is offering in its impressive lineup of professional cellular range extension gear ($300 to $500).

Since I spent days walking carpeted floors, it seems appropriate to end this tour with you at the booth of Taperwire (www.taperwire.com). This California company offers ultra-thin, flat, and flexible adhesive multi-conductor wiring (approx. $1/foot) for your home theater system or your radio room stereo/scanner speakers. No, these flat under-carpet wires are not intended for running low amperage 12 volts, but I bet there are some radio enthusiasts who have made it happen—that's what we do!

The Grundig display at the Eton booth.

Sangean clear "convict radios" are the only design approved for prison use.

Here, There, And Everywhere, People Who Love Radio

One of the best things I brought back from this four-day adventure at the world's largest consumer electronics show was knowing how many ham radio operators and other hobbyists were there, as sales managers and even CEOs of their companies. It was like meeting old friends and fraternity brothers (and sorority sisters!). It was a huge event, but it still felt like home.

Thanks for joining me on this tour of the Las Vegas Consumer Electronics Show! I hope you enjoyed it. And, yes, my feet are still *very* tired.

For ALL your monitoring needs,

AR2300 "Black Box" Professional Grade Communications Receiver

First in a new generation of software-controlled black box receivers, the AR2300 covers 40kHz to 3.15 GHz* and monitors up to 3 channels simultaneously. Remote control functions. Internal SD audio recorder allows for unattended long term monitoring. Spectrum recording with optional AR-IQ software can be used for laboratory signal analysis. Using FFT, the unit scans large frequency segments quickly and accurately. Optional IP control port.

AR5001D Professional Grade Wide Coverage Communications Receiver

With amazing performance in terms of accuracy, sensitivity and speed, the AR5001D features ultra-wide frequency coverage from 40kHz to 3.15GHz* in 1 Hz steps with 1ppm accuracy and no interruptions. Large easy-to-read digital spectrum display and popular analog signal meter. The AR5001D makes it easy to monitor up to 3 channels simultaneously. Can also be controlled through a PC running Windows XP or higher. Great as a mobile or desktop receiver.

AR-Alpha with I/Q Control Software

Welcome to a new class of professional monitoring receivers. The AR-Alpha can perform unattended datalogging for extended periods and covers 10kHz to 3.3GHz* continuous, with no interruptions. It boasts a 6-inch color TFT monitor that displays spectrum bandwidth, a switchable time-lapse "waterfall" display or live video in NTSC or PAL. Five VFOs, 2000 alphanumeric memories that can be computer programmed as 40 banks of 50 channels, 40 search banks, a "select memory" bank of 100 frequencies and a priority channel. Also includes APCO-25 digital capability and can record up to 52 minutes of audio.

AR-One Communications Receiver

Enjoy total command of frequencies, modes and tuning steps with this versatile performer that allows you to control up to 99 units with a single PC. Covers 10 kHz to 3.3 GHz and delivers excellent sensitivity, ultra-stable reference frequency oscillator, high intercept, adjustable BFO and multi-IF signal output (10.7 MHz or 455kHz) plus 1000 memory channels and 10 VFOs.

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Specifications subject to change without notice or obligation.
**Government version, cellular blocked for US consumer version.*

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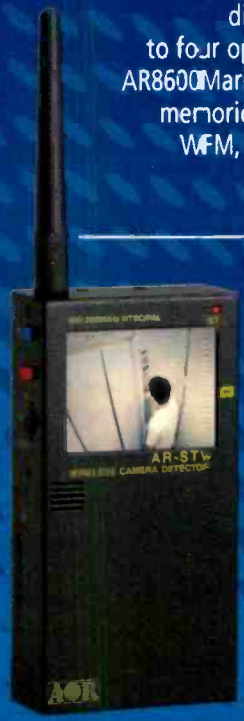
AR8200 Mark III
World Class Portable Receiver

With 1,000 alphanumeric memories and a TCXO that delivers solid frequency stability and performance not found in most desktop units, the AR8200 Mark III covers 500 kHz to 3GHz* and can be usec with optional internal slot cards that expand its capabilities. It features true carrier reinsertion in USB and LSB modes and includes a 3kHz SSB filter. The data port can be used for computer control, memory configuration and transfer, cloning or tape recording output. A special government version, AR82000Mark III IR, features user-selectable infra-red illumination of the display and operating keys.

AR8600 Mark II Wide-Range Desktop Receiver

With an optional P25 (APCO25) decoder module, improved front end and receive audio response, display illumination control, ultra-stable TCXO and up to four optional cards that can enhance certain functions, the AR8600Mark II covers 100kHz to 3GHz* with 1000 alphanumeric memories and free downloadable control software. Receives WFM, NFM, Super-narrow FM, Wide and Narrow AM, USB, LSB and CW.



AR-STV Handheld Video Receiver

See who is watching you on wireless video surveillance cameras. The AR-STV handheld receiver detects hidden NTSC or PAL analog video signals in real time. A valuable addition to any security operation, the AR-STV features a large 2.5 inch color LCD display and a USB connector that makes it easy to download stored images into a computer. With optional 4GB SD memory card, up to nearly 2000 images can be stored for later analysis.

SR2000A Spectrum Display Monitor

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

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

In Depth: WiNRADiO's G31DDC Excalibur

For A Killer Shack, Consider Adding This Cutting-Edge Software-Defined Receiver

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

Editor's Note: In January's "Broadcast Technology," columnist Bruce Conti whetted readers' appetites for even more juicy details about WiNRADiO's hot new SDR, the Excalibur. We promised an in-depth review at that time, and this month "RF Bits" columnist Dan Srebnick, K2DLS, delivers the goods.

In the film *Excalibur*, Arthur says, "This excellent knight, who fought with fairness and grace, was meant to win. I used Excalibur to change that verdict." The WiNRADiO G31DDC, commonly known as Excalibur, may well be the sword that you need to help you win that elusive DX.

Excalibur represents another development in the trend toward more capable software-defined receivers (SDRs). The SDR concept has been evolving ever since much of what was historically implemented with tuned circuits, filters, and hardware amplification was first moved into programmable digital signal processing (DSP) chipsets. For the past couple of years, the trend has been to implement functionality in software that a general-purpose central processor unit in your home computer or laptop can run.

I recently had an opportunity to spend a few weeks with Excalibur in my shack. Here's what I found when putting it through its paces.

Dan Srebnick, K2DLS, is *Pop'Comm*'s "RF Bits" columnist.

Figure 1. The Excalibur is attractive and modern in appearance. On the rear panel is the power connector, SMA antenna connector, and USB computer connection.

What You Get, What You Need

The Excalibur is housed in an attractive, sturdy package (**Figure 1**). It comes with a linear power supply with sufficient cord length on both sides of the brick. The linear supply is very much appreciated. Although larger in size than a switching supply, linear power supplies generate less noise and hash than the switching supplies in common use today. There is also a heavy-duty USB cable with ferrites at each end for interference suppression. Add a Windows XP/Vista/7 dual-core computer at the 2-GHz or higher recommended speed with a USB 2.0 port and you're ready to get started.

Getting Started

There's not much to connecting the radio to your computer. Plug in the power, the USB connector, and connect an antenna using the supplied BNC female to SMA male adapter. Power on the radio using the front facing push button, insert the CD, and install the software. I did not need

Figure 2. The installation process went without a hitch and the radio was quickly ready to use.

to refer to the supplied manual, and the installation went without incident on a Windows 7 dual-core laptop. The appropriate software driver was automatically found and installed, as shown in **Figure 2**.

The package contains a useful printed manual and the software contains online help. It is a tribute to the design of the software that I rarely consulted either. If you're a regular user of Windows software, you already know how to use the Excalibur's interface. The user interface is extremely attractive, and I think it shows a design evolution from earlier SDR software. There are so many features that the software authors make use of tabs for functions, such as filters, audio mixing and processing, and memories (**Figure 3**).

The Excalibur is three receivers in one. I frankly had enough fun with one receiver, but I can see where this could be an advantage. Much like a radio version of a digital video recorder with three tuners, you can listen to one program on RX1, and perhaps record two other programs (or spectrum) on RX2 and RX3. That's right: The Excalibur will record chunks of spectrum. Say you're not going to be awake on Sunday night into Monday morning when some broadcast stations go off the air for maintenance, opening up DX windows. No problem, you can just archive the entire AM broadcast band, the 49-meter band, the 80-meter ham band, or whatever you want—up to a 2-MHz bandwidth—to disk for later playback. The Excalibur has a simple-to-use scheduler that makes this easy.

Take another look at **Figure 3**. The window in the bottom of the display is a wideband spectrum analyzer, covering 0–30 or 50 MHz (a software option). Want to see where there is a concentration of strong signals and immediately tune nearby? You can do it with a simple click and then fine tune with the "tuning knob." Tuning is as easy as an arrow key press, entering a frequency directly, using the mouse pad to "turn" the tuning knob, or just by clicking on a signal of interest. I do admit that I had to look in the manual to learn how the tuning speed can be stepped by using the keyboard.

Integrated DRM

One of the first things I wanted to try with this interesting digital receiver was the direct DRM (Digital Radio Mondiale) support. In the past, I had used my Perseus, Virtual Audio Cable (VAC), and the Dream software to decode DRM. In fact, the same approach also worked on the Excalibur, but this DXer's sword also has an integrated DRM decoder. The trick is that a separate software license must be purchased for $50 (**Figure 4**) because of requirements of the DRM Consortium (www.drm.

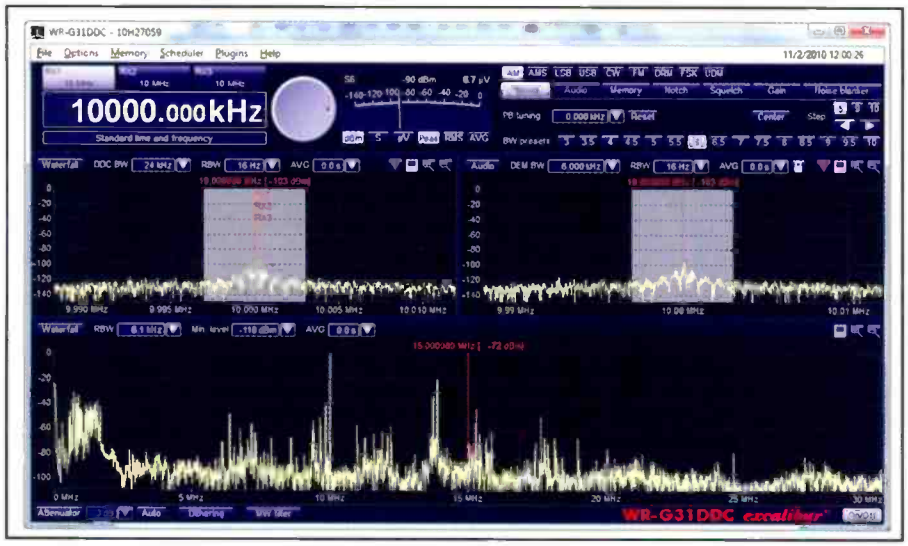


Figure 3. The Excalibur user interface is modern, clean, and worked at first load.

org). In my opinion, the DRM folks need to get over this approach to lower the cost of consumer adoption of DRM technology; however, in the interest of trying out this integrated approach, I installed the DRM license.

I tuned the radio to 9800 kHz at 1600 UTC for the Sackville DRM stream. The reception was at least as good as I get on my Sirius satellite radio in the car. If you're a fan of high-quality reception of international programming, I strongly recommend that you don't skimp on this capability. It brings to international shortwave the same enjoyment as an Internet radio, but retains the "thrill of DX."

Cruise Controls

After first setting up, I spent the next several days just doing some listening on the shortwave broadcast and ham bands. The synchronous detector works nicely in the AM mode. Engaging it improved the somewhat muffled AM audio and made for a long and pleasant listening session to CFRX Toronto on 6070 kHz during daylight hours.

The 20-meter ham band can be very crowded during daylight hours with decent propagation. With the rising solar flux, we've had a bit of that lately. The Excalibur's continuously variable bandwidth filters easily, helping to evade QRM above or below the desired signal simply by adjusting the upper and lower bounds of the filter on the fly. The radio did a good job of separating a weak signal and a strong signal, 2 kHz away from one another, on SSB 20 meters.

Remember the old days? A good communications receiver would have a 500-Hz CW filter, a 2.6-kHz SSB filter, and a 6-kHz AM filter—and that would be it. The Excalibur allows for the creation of any lower or higher limits desired. Is there a nasty heterodyne 2 kHz into the signal? Use the notch filter to pick the exact frequency and bandwidth to null. There's also an adjustable de-emphasis curve that I found to be effective at lowering background noise on some signals. These are extremely powerful capabilities.

The memory tab allows you to select between your own user-defined memories or the HFCC and EiBi databases. So, in addition to storing virtually unlimited numbers of frequencies of importance, the HFCC and EiBi memory tabs can help you identify a received broadcast signal.

Digital Down Conversion

A good quality hardware-only communications receiver of yore would have had a couple of intermediate frequency stages where signal filtering of the desired frequency would be performed. The Excalibur employs a technique called digital down conversion (DDC), where a chunk of spectrum—you decide how much—is moved down to a base band where further processing takes place. According to Wikipedia (www.wikipedia.com), the "the free encyclopedia that anyone can edit":

> In digital signal processing, a digital downconverter (DDC) converts a digitized real signal centered at an intermediate frequency (IF) to a basebanded complex signal centered at zero frequency. In addition to downconversion, DDC's typically decimate to a lower sampling rate, allowing follow-on signal processing by lower speed processors.

The DDC bandwidth on the Excalibur spans from 20 kHz to 2 MHz. This spectrum is viewed in the upper left window

Figure 4. DRM requires purchase of a license key from the DRM Consortium.

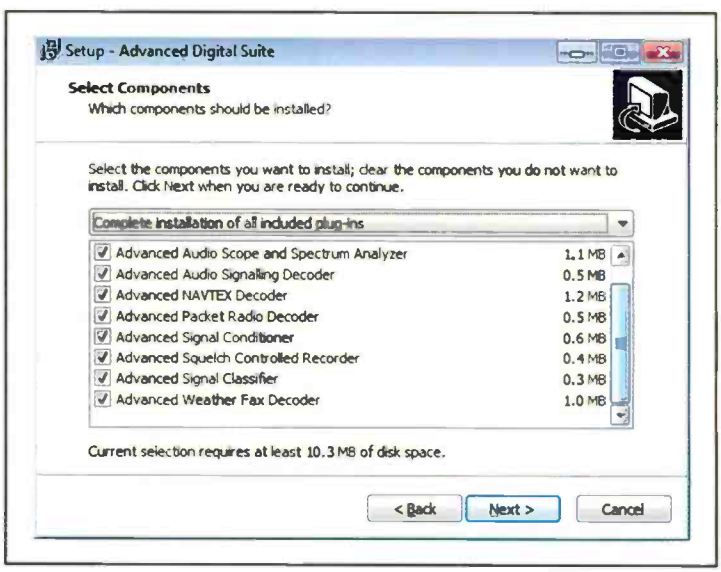


Figure 5. The Advanced Digital Suite has an amazing list of add-on components for specialty listening and decoding use.

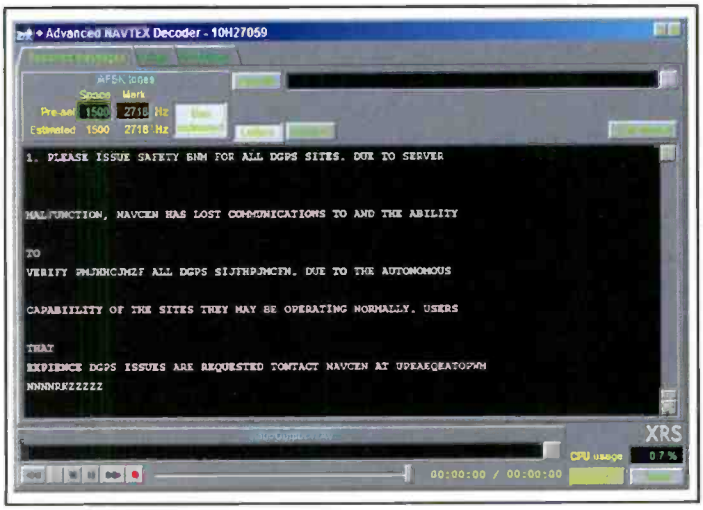


Figure 6. Digital decoding of messages is incredibly simple with the additional of ADS.

Figure 7. ADS decoding 300-baud HF packet on 30 meters.

of the software screen. The view can be either a spectrum-oriented one or a waterfall. Users of sound card-based digital decoder software will be familiar with the waterfall view, but I prefer the spectrum display at the default bandwidth of 24 kHz.

The upper right window focuses on your tuned signal of interest, and it can be used along with your mouse to graphically shape your bandwidth and filtering, although I prefer the software buttons for the bandwidth presets and filters. Take your signal and bend it, shape it, anyway you want it, as the song goes. If you don't like the defaults for AM, SSB, FM, or CW, well there's a completely User Defined tab. Selectivity is not an issue on this receiver, even with strong adjacent signals. It will be as selective as you want, with the constraint that reducing bandwidth will also reduce the audio frequency range of the received signal.

Meters

The graphical representation of the traditional S-meter is well done and intuitive, although there are choices here as well. View average, peak, or RMS. View strength in microvolts, dBm, or S units. Switch easily between scales using the various software buttons under the meter.

In my suburban location, with the typical electrical, computer, and other noise on some bands, I found the receiver to be as sensitive as it needed to be. With the wide dynamic range, I can only surmise that taking the receiver to an extremely quiet location would yield very rewarding results.

Advanced Features

The architecture of the WiNRADiO software has a feature called XRS, for Extensible Radio Specification. According to the XRS webpage (http://xrs.winradio.com):

> XRS (Extensible Radio Specification) is a standard-based platform for the control of radio devices (receivers or transmitters) by a computer.
>
> The XRS standard defines the interface between a radio control program (the "Server") and an add-on plug-in software module (the "Client"). The specification is flexible enough to allow for a wide range of radio devices to be enhanced by a wide range of plug-ins.

Plug-ins, you say? Ah, accessories. Software accessories. This sounded extremely interesting, and I set out to investigate. It turns out that there are many free widgets available for download on the XRS webpage. There are logging tools, SINPO notepads, calibration tools, occupancy analysis tools (i.e., is this frequency in use?), and more.

There's also an Advanced Digital Suite (ADS) available for $200. This is a truly amazing bag of software tricks that I spent some time with as well, and if you want to easily decode HF packet, Navtex, or ACARS, or try your hand at some advanced digital noise reduction

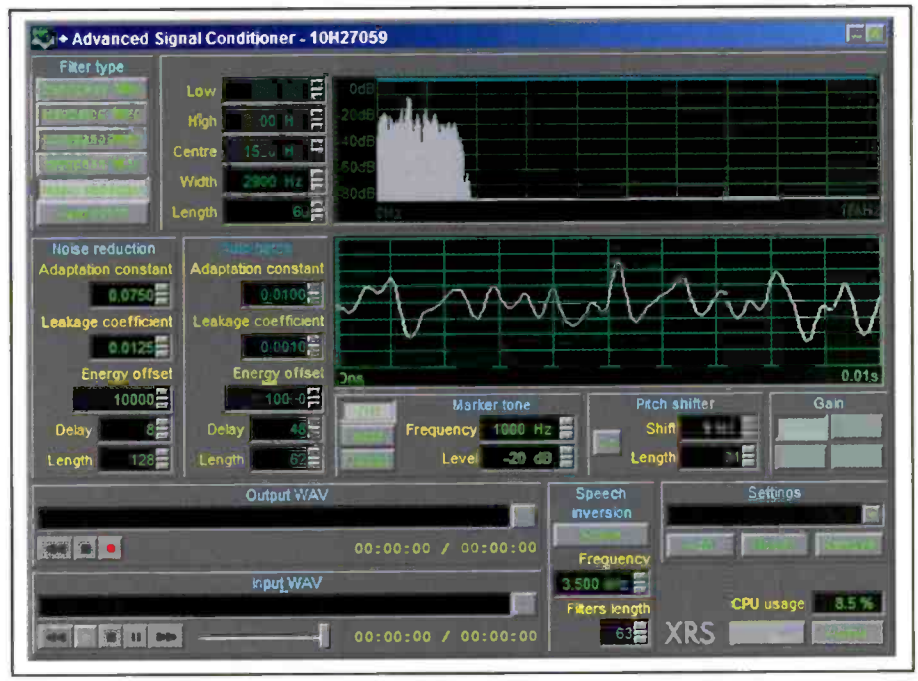


Figure 8. ADS' Advanced Signal Conditioner modules offer a complete audio toolkit to tailor the qualities of a received signal.

filters, you'll find ADS to be a great add-on to your basic WiNRADiO software (**Figure 5**).

I installed ADS, but on my first attempt the plug-ins could not be located. I ran the free G3 diagnostic tool, which attempted to repair the path to the plug-ins. I then received a compatibility error message. Tariq Hasnie, WiNRADiO general manager and the technical resource for my evaluation, did some checking and advised that the supplied ADS version 133 is not compatible with the Excalibur. Tariq suggested that I upgrade to v. 135 via the WiNRADiO website. After doing so, this worked as expected.

To understand the power of ADS, consider the following: I am experienced in tuning digital signals, but had never tuned in Navtex navigational and meteorological warnings before. I tuned the radio to 518 kHz in FSK mode. There was no signal to be heard or seen. I brought up the Navtex plug-in screen and left the room to

At A Glance
The WiNRADiO WR-G31DDC Excalibur

Major Specifications:

Receiver type	Direct-sampling, digitally down-converting software-defined receiver
Frequency range	9 kHz to 49.995 MHz
Tuning resolution	1 Hz
Mode	AM, AMS, LSB, USB, CW, FMN, FSK, UDM (user-defined mode) DRM mode optional
Image rejection	90 dB typ.
IP3	+31 dBm typ.
Attenuator	0 - 21 dB, adjustable in 3 dB steps
SFDR	107 dB typ.
Noise figure	14 dB
MDS	-130 dBm @ 10 MHz, 500 Hz BW
Phase noise	-145 dBc/Hz @ 10 kHz
RSSI accuracy	2 dB typ.
RSSI sensitivity	-140 dBm
Processing and recording bandwidth (DDC bandwidth)	20 kHz - 2 MHz (selectable in 21 steps)
Demodulation bandwidth (selectivity)	10 Hz - 62.5 kHz (continuously variable in 1 Hz steps)
Spectrum analyzers	Input spectrum/waterfall, 30 or 50 MHz wide, 1.5 kHz resolution bandwidth DDC spectrum/waterfall, max 2 MHz wide, 1 Hz resolution bandwidth Channel spectrum, max 62.5 kHz wide, 1 Hz resolution bandwidth Demodulated audio, 16 kHz wide, 1 Hz resolution bandwidth
ADC	16 bit, 100 MSPS
Sensitivity (typ. @ 10 MHz)	
AM	-101 dBm (2.00 µV) @ 10 dB S+N/N, 30% modulation
SSB	-116 dBm (0.35 µV) @ 10 dB S+N/N, 2.1 kHz BW
CW	-123 dBm (0.16 µV) @ 10 dB S+N/N, 500 Hz BW
FM	-112 dBm (0.56 µV) @ 12 dB SINAD, 3 kHz deviation, 12 kHz BW, audio filter 300-3000 Hz, deemphasis -6dB/oct
Tuning accuracy	0.5 ppm @ 25 °C
Tuning stability	2.5 ppm (0 to 50 °C)
MW filter	Cut-off frequency 1.8 MHz @ -3 dB; Attenuation 60 dB min @ 0.5 MHz
Antenna input	50 ohm (SMA connector)
Output	24-bit digitized I&Q signal over USB interface
Interface	USB 2.0 High speed
Power supply	11-13 V DC @ 500 mA typ.; 11-13 V DC @ 45 mA typ. (power save)
Operating temp.	0 to 50 °C

List Price:
$850

Contact:
www.winradio.com

take care of a few things. An hour later, I returned to the results shown in **Figure 6**. No fiddling, adjusting, fine-tuning or any other action whatsoever was necessary. The Excalibur and ADS just decoded the Navtex message. I was in awe.

So I next tried to decode some HF packet activity. The Advanced Packet Radio Decoder did a fine job of instantly decoding some 300-bps traffic on 10.145 MHz **(Figure 7)**. It set the speed at 300 bps and the tones estimator figured out everything else. This function automatically figures out where the high and low tones are in the audio bandwidth and makes decoding a snap. This was incredibly exciting to a listener who enjoys seeking out the offbeat signals to be found across the radio spectrum.

ADS also has an Advanced Signal Conditioner. This module includes a DSP noise reduction filter. I was listening to an S5 SSB signal playing music on 6925 kHz (pirate, of course), which had lots of background noise. By tinkering with the adaptation constant and the leakage coefficient **(Figure 8)**, I was able to create a much more pleasant listening experience. It did suffer a bit from the "hollow" sound of some DSP processing software, but the overall clarity was improved.

Additionally, WiNRADiO offers a Universal FSK Decoder, which I was eager to try. As of the date of my request, however, it had not yet been tested by the manufacturer for use with the G31DDC, and so was not available for evaluation for this article. A subsequent check of the website shows the G31DDC as one of the supported platform, so it seems as if this validation has now been done. *(Since this writing, WiNRADiO has confirmed that a Universal FSK Decoder updated for use with Excalibur is now available.—ed.)*

As an RTTY and PSK31 aficionado, I would be interested to see how this set of plug-ins performs and integrates. It's supposed to be capable of automatically identifying signal type and speed for many FSK methods.

Not As Good On The Longwaves

While the Excalibur did an outstanding job in most of the radio spectrum, it did not perform as well during a visit to the murky recesses below 500 kHz. This part of the spectrum is plagued with buzz and noise. The noise blanker was somewhat effective at removing buzz from longwave band; however, signal overload from the mediumwave broadcast band required 6 dB of attenuation to rectify the images from the broadcast band. Engaging the MW filter completely got rid of the overload and noise, but completely attenuated signals. So, at least for me, in my location, this radio would not be useful below 500 kHz for anything but the strongest signals.

Meet Radio's Future Armed With Excalibur

Overall, the Excalibur is a major achievement in radio technology at just under $850. Even if you decide you want to spend the extra $200 for the ADS features, this is still much less in today's dollars than you would have spent 10 years ago for a less capable Drake or Japan Radio Company receiver. Add fully integrated DRM for $50 and listen to the future of shortwave broadcasting.

Rounding that out are niceties like the display of the service name (e.g., broadcasting, fixed, amateur) under the displayed frequency, and the easy recording of either spectrum or a single audio signal, with audio playback of WAV files through Windows Media Player. A test recording of a 200-kHz spectrum centered on 6100 kHz used approximately 1.8 GB of disk space.

If you want a sensitive, selective, and feature-rich SDR with flexibility and extensibility, consider adding the WiNRADiO Excalibur to your shack. If you'd like to see the Excalibur in action, you'll find a demonstration video at www.winradio.com/home/g31ddcvideos.htm. Seeing is believing.

No News Is Good News, And Some News Is Better News

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

For once, there are no SWBC stations to report as just closed (or about to be), although several continue to operate under the threat of huge budget cuts, even visualizing an eventual end of service.

On the other hand there is some good news to report. Radio Zambia has returned to shortwave, reactivated in late December and operating on 5915 around 0300. At that hour co-channel CRI creates problems until 0400. Also back in use is 6162 (nominal 6165) scheduled from 0245–2205. Both channels employ 100-kW transmitters.

One international broadcaster is even announcing a large upgrade of its facilities. The Broadcasting Service of the Kingdom of Saudi Arabia is adding four DRM-ready 250-kW units. The new transmitters will be installed at the Al-Khurmra site, located near Jeddah. The target date for full operation is set for mid-year, somewhere around two to four months from now.

In another hopeful sign, Radio Damascus reminds us that it still intends to replace its tired transmitters. Assuming that's for real, we may eventually see 9330 and 12085 come to life again.

Radio Nederland has begun using the Kranji, Singapore, facility to relay its programming to areas of the Far East. Radio Australia has also begun using the site for broadcasts to China and Burma. And Radio Canada International is now using the IBB site at Tinang, Philippines. This relaying business gets more and more involved—one day broadcasters may get so confused they'll end up relaying themselves!

"Several lesser-known and not-often-heard stations have been reported lately, and thus at least have been confirmed active... Hunting them should keep you busy for a year or two!"

Several lesser-known and not-often-heard stations have been reported lately, and thus at least have been confirmed active. They include Bangladesh Betar (4750), Radio Centrafrique (7220), Radio Bana (Eritrea; now on 5060), Familia FM, Guinea (4900), Star Radio (Liberia; 3960), Radio Fly (PNG; 3915), SIBC (Solomon Islands; 5020), and Radio Vanuatu (3945). Hunting them should keep you busy for a year or two! (About half of those have yet to be logged here, so get cracking!)

The ninth in Radio Verdad's QSL series, issued just after it was reactivated. This fine Guatemalan station seems to appreciate DXers and likely would welcome your input. (Thanks Rich D'Angelo, PA)

Radio Verdad also sent this snazzy pennant to Rich D'Angelo.

Help Wanted

We believe the "Global Information Guide" offers more logs than any other monthly SW publication (**595*** shortwave broadcast station logs were processed this month!). Why not join the fun and add your name to the list of "GIG" reporters? Send your logs to "Global Information Guide," 213 Forest St., Lake Geneva, WI 53147. Or you can email them to gdex@wi.rr.com. Please note that attachment files do not always go through. See the column text for formatting tips, and please check over your submissions, making sure you've included frequency and UTC time.

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

A new station on the air is Gunaz Radio, which began shortwave broadcasts in late December, believed to be from a site somewhere in Russia. Broadcasts are from 1430 to 1930 on 7510. The station is part of Gunaz TV, based in Azerbaijan.

How much do you miss the bar graph presentation of the shortwave broadcast frequencies that used to appear as the "Blue Pages" in the annual *Passport to World Band Radio*? Ha! I thought so! Well, there is now reason to grin, for the publishers of *World Radio TV Handbook* have come to the rescue! They've issued a color bar graph presentation of the SWBC spectrum—in PDF format—to replace the highly valued "Blue Pages."

As of this writing, I've yet to see or use the new *WRTH* offering, called the *WRTH Bargraph Frequency Guide*, which will be in the form of a computer disk, rather than a printed product. *WRTH* produced such a guide in book form several years ago, covering the summer broadcast season, but sales were insufficient to justify continued production. I am greatly looking forward to the new frequency guide and urge you to order a copy. Check the *WRTH* website (www.wrth. com) for details, and look for an upcoming review on this new salve for sore shortwave eyes.

Reader Logs

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

A Guide To "GIG-Speak"

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

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

Summer at the ballpark would not be an opportune time for listening to this pirate! (Thanks Rich D'Angelo)

according to its home country and include your last name and state abbreviation after each. Also needed are spare QSLs or good copies you don't need returned, station schedules, brochures, pennants, station photos, and anything else you think would be of interest. And where is that picture of you at your listening post? The Forest Street mailbox remains empty in that department!

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

ALBANIA—Radio Tirana, 7530 at 2100 //9895, with anthem, W with ID, news and local folk music. (Coady, ON)

ALGERIA—Radio Algerienne, 9390 via Issoudun in AA at 1831, 4 time pips and possible AA news at top of hour. (Montgomery, PA)

ANGOLA—Radio Nacional, 4950 weak at 0212 with PP talk. (Coady, ON)

ANGUILLLA—Caribbean Beacon, 6090 at 0004 with religious talks. (MacKenzie, CA)

ARGENTINA—RAE/Radio Nacional, 6060 at 2359 with M covering a live sports event, possibly soccer. (MacKenzie, CA) 11710 at 0200 with IS, rotating SS & EE IDs and into EE pgm. (Coady, ON) 0321 with M/W in FF, pips at 0330, ID, news and romantic vocals. (D'Angelo, PA)

ASCENSION ISLAND—BBC South Atlantic Relay, 7445 at 0352 with comments on medical drugs from India. (MacKenzie, CA) 11810 with a sports round-up pgm at 2027. (Brossell, WI)

AUSTRALIA—Radio Australia, 6020 at 1149 with *Radio Australia Tonight* and 7240 at 1507 on Korea. (Yohnicki, ON) 6080 at 1435 on book binding in Italy. (Sellers, BC) 1105 via Singapore, 11695-Shepparton and 17845 via Palau in II at 0505. (Ng, Malaysia) 7240 at 1436 on endangered animals. (Strawman, IA) 9660-Brandon at 2350 with talk, ID and off at 2359, 15515 at 0347 with M/W and comments. Also 17715 at 0020 on how young people should dress and 17780 at 1855 with an interview. (MacKenzie, CA) 11660-Brandon heard at 2142 discussing Queensland's Sunshine Coast and 11800 at 1923 with *Asian Review* pgm. (D'Angelo, PA)

ABC Northern Territories Service: 2310-Alice Springs at 0910, building to a nice level by 1125. (Montgomery, PA) 1330 with fanfare and ABC News. (Sellers, BC) 2325-Tennant Creek at 1149 with DJ hosting records. Poor, and //2310; 2485 very poor. (D'Angelo, PA) 2310 at 1040 at good level, 2325 at 1040 weak and 2485 good at 1125. (Wilkner, FL) 2485-Katherine at 1510 with pops, TC and interview on the American political scene. (Sellers, BC)

AUSTRIA—Radio Austria International, 17855 with W in GG at 1335. (Ng, Malaysia)

BANGLADESH—Bangladesh Betar (t) 4750 heard at 1358 with sub-continental vocals but with M talk in what sounded like German, signal peaked around 1450 and then began to drop rapidly. (Sellers, BC)

BELARUS—Radio Belarus, 6155 at 2120 with M ancr with a nice ID and news by two M, f/by features. (Montgomery, D'Angelo, PA)

BOLIVIA—Radio Mosoj Chaski, Cochabamba, 3310 at 2240 with long talk in Quechua, ID at 2300. (D'Angelo, PA)

Radio Eco, Reyes, 4409.9 in SS at 0003. (Wilkner, FL) 2243 with rock, canned ID and freq. anmts. Mix of talks in SS and CP vocals. (D'Angelo, PA)

Radio Santa Ana, Santa Ana del Yacuma, 4451 at 2330. (Wilkner, FL) 2334 with SS talk, ID and rustic vocals. (D'Angelo, PA)

Radio San Miguel, Riberalta, 4700 at 1013 with two M in SS with news and soft instls. (D'Angelo, PA)

Radio Yuna, Yuna, 4717 at 0053 with M vocal, M ancr and ID. (D'Angelo, PA)

Radio Lipex, Uyuni, 4976 in SS at 0000. (Wilkner, FL) 2235 with rustic vocals, M in SS, several anmts and more music. (D'Angelo, PA)

Emisora Pio XII, Siglo Veinte, 5952.4 at 1030 only by using narrow filter. (Wilkner, FL)

Radio Santa Cruz, Santa Cruz, 6135 at 0945 with CP music and SS talk. (Alexander, PA)

BONAIRE—Radio Nederland Relay, 6165 in DD at 0012. (MacKenzie, CA)

BOTSWANA—VOA Relay, Mopeng Hill, 4930 at 0415, but bothered by CODAR. (Parker, PA) 9885 with news at 0335. And 15580 at 2004 with *Music from Africa* pgm. (Montgomery PA) 0424 with comments on African security. (MacKenzie, CA)

BRAZIL—(*All in PP—gld*) Radio Municipal, Sao Gabriel da Cachoeira, 3375 at 0000 with Brazilian music. (Wilkner, FL)

Radio Imaculada Conceicao, Campo Grande 4755 at 0015 with religious pgm. (Wilkner, FL) 0010 with talks in PP. (Brossell, WI)

Radio Clube do Para, Belem, 4885 at 0230 with highlife music and a M PP ancr. (Parker, PA)

Radio Brazil Central, Goiania, 4985 with M in PP at 0222. (Parker, PA)

Radio Educacao Rural, Tefe (t) 4925 at 1026 with tentative ID at 1030, 4 time pips and into music. Its clock was one minute off. (Montgomery, PA)

Radiodifusora Roraima, Boa Vista, 4878.2 with Brazilpops at 0349–0358 after choral anthem. (D'Angelo, PA)

Radio Nacional Amazonia, Brasilia, 11780 at 0030 in PP with vocals. (MacKenzie, CA) 0736. (Yohnicki, ON)

Radio Inconfidencia, 15190 at 2250 with PP talk, ID at 2300. Weak at 0045 recheck //6010. (Alexander, PA)

BULGARIA—Radio Bulgaria, 7400 in EE at 2225 with folk music from the Pyrenees town of Bosco. (Fraser, ME)

CANADA—Radio Canada International, 9755 at 0114 with *The Link* pgm. (Barton, AZ) 9880 at 0016 on whale hunting, 13650 in FF at 2157 and 17765 in PP at 2128. (MacKenzie, CA)

CBC Northern Quebec Service, 9625 at 1420 interviewing an Arctic photographer. (Sellers, ON)

CFRX, Toronto, 6070 monitored at 1413 with *The Jerry Agar Show*. (Sellers, BC) 2230 with *The Bill Carroll Talk Show* on reestablishing jobs in Canada. (Fraser, ME)

CKZN, Vancouver, 6160 at 1758 interviewing a native poet. (Sellers, BC)

CFVP, Calgary, 6030 at 1917 with "Classic Country AM-1010," ID, Calgary stockyard report and livestock markets. (Sellers, BC)

CHU, Ottawa, 7850 with time anmts at 2254. (MacKenzie, CA)

Bible Voice Network, 5950 via Germany at 0030. (Ng, Malaysia) 6225 via Kazakhstan opening EE to FE at 1405. (Sellers, BC) Radio Sadaye Zindagi/BVN, 11955 via Wertachtal at 1621 with W in Dari to Afghanistan. Off at 1629. (D'Angelo, PA)

CHAD—Radio Nationale Tchadienne, 6165 monitored at *0426

In Times Past...

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

Botswana—Radio Botswana, Gaberones, 4830 at 0352 on July 1, 1989. (Dexter, WI).

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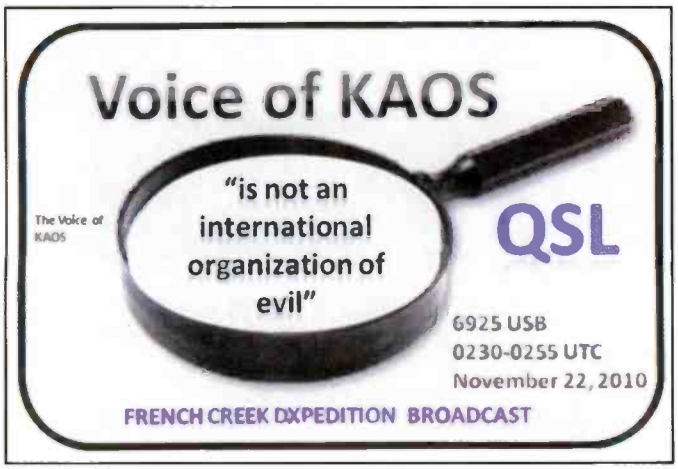
*Frequency specs may vary. Refer to owner's manual for exact frequency specs. [1]Optional CT-17 required. [2]Optional CS-RX7 required.



How many DXpeditions get their own special broadcasts? At least the FCDX group can say it did!

sign on with Balafon IS, anthem, opening FF anmts and local Afropops. (Alexander, PA)

CHILE—CVC, 17680 at 2010 in SS with IDs, promos and Christian pops. (Coady, ON)

CENTRAL AFRICAN REPUBLIC—Radio Centrafrique, 7220 in FF at 2122 with M DJ in FF hosting music. (Montgomery, PA)

CHINA—China Radio Intl, 5985 in Swahili at 1739, 6165 at 1752, 7255 in RR at 1813, 7365 in PP at 1924 and 7405 at 1853 on traditional Chinese medicine. (Sellers, BC) 7365-Shijiazhuang in CC at 1214, 7390-Hohhot in Mongolian at 1140, 7440-Nanning in CC at 1221, 11600-Baoji in (l) VV at 1213 and 13620-Xi'an in (l) Korean at 1231. (Brossell, WI) 5990 at 2347, 6140 via Canada at 0440, 9425 in CC at 2333, 9745 via Bonaire in CC at 1902, 9765 in Khmer at 2356, 11840 via Canada at 2308, 11900 in CC at 2156, 15230 in CC at 0352, 15670 in CC at 0022 and 17495 in Cantonese at 0035. (MacKenzie, CA) *9570 at 1200 in CC. (Yohnicki, ON) 9690 via Spain at 0325. (Coady, ON) 13680 in CC at 1510. (Barton, AZ) 15335 monitored at 0845 with CC-RR lesson. (Ng, Malaysia)

China National Radio/CPBS: 6125 in CC at 0006, 6165-Beijing in CC at 1236, 9830 in CC at 0005 and 11750 in CC at 2135. (MacKenzie, CA) Voice of Pujiang, Shanghai, 3280 in CC at 1539. (Sellers, BC) Qinghai PBS, 4220 in Tibetan at 2313 and Xinjiang PBS, 7260-Urumqi in CC at 1052. (D'Angelo, PA)

CUBA—Radio Havana Cuba, 5040 in EE at 0048, 9770 in SS at 0000, 9820 in SS at 2237, 11690 in SS at 1920, 11730 in SS at 2247 and 12040 in SS at 2238. (MacKenzie, CA) 15230 in SS at 1557. (Parker, PA)

Radio Rebelde, 5025 in SS at 0050. (MacKenzie, CA)

DIEGO GARCIA—AFN/AFRTS, 4319u at 2113 with news actualities. (Montgomery, PA) 2340 with ABC News, ID at 0000, AP Network news and Sporting News Radio. (D'Angelo, PA)

DJIBOUTI—Radio Djibouti, 4780 at *0300 sign on with NA, rustic local music, Koran, AA talk, more rustic music. (Alexander, PA) 0309, also from 2047–2101* close. (D'Angelo, PA) 0320. (Wilkner, FL) 2100 with anthem and off. (Montgomery, PA)

DOMINICAN REPUBLIC—Radio Amanecer, 6025 at 0310 with SS religious talk and Christian music. Off at 0320. (Alexander, PA)

ECUADOR—HCJB, 6050-Pinchincha at 0042 in (p) Quechua. A number of short jingles with flutes, 4 time pips on the hour when RHC signs on. (Montgomery, PA) 11920 via Santiago in PP at 2332. (MacKenzie, CA)

La Voz del Napo, Tena, 3280 with M/W aners in SS at 0113. (Montgomery, PA) 0115 with several "Radio Maria" IDs. (D'Angelo, PA) *0939 abrupt sign on with local music. (Alexander, PA) 1003 with hymns. (Wilkner, FL)

EGYPT—Radio Cairo, 9305 in AA at 0221. (Montgomery, PA) 2304 in AA. (MacKenzie, CA) 15060 in AA at 1100. (Ng, Malaysia) 15080 at 1458 with music and W in AA. (Parker PA)

ENGLAND—BBC, 3255 South Africa Relay in EE at 0321 with *The World Today*. (Montgomery, PA) 3915 at 2225 and 17790 at 0600. (Padazopulos, Greece) 7395 Thailand Relay with news at 2340. (Strawman, IA) 2346. (D'Angelo, PA) 7405 Thailand in (l) Mandarin at 2255 and 11860 via French Guiana at 1203. (Brossell, WI) 12095 Cyprus Relay at 2210. (MacKenzie, CA) 15420 South Africa at 1753 ending African news. (Coady, ON)

Far East Broadcasting Assn, 11985 via Ascension in (l) Hassinya at 2214. Off suddenly at 2215. (Mackenzie, CA)

EQUATORIAL GUINEA—Radio Africa, 15190 with EE preacher at 1727. (Sellers, BC)

ETHIOPIA—Radio Ethiopia, 9705 at 2050–2100* with HOA music, instl copies of U.S. pops, possible news in Amharic at 2057. Off with anthem at 2059. (Alexander, PA; D'Angelo, PA)

Radio Fana, 6110 at *0258 sign on with vernacular talk, some instl and HOA music, mixing with BBC from 0300–0330 but in the clear after that. (Alexander, PA)

Radio Oromiya, 6030 after Radio Marti jammer leaves. M with news in Oromo, ID, fanfare to news end at 0411. (D'Angelo, PA)

FRANCE—Radio France Intl, 7315 at 0421 with pgm of EE news and features, several IDs. (D'Angelo, PA) 1705 in FF at 1842. (Brossell, WI) 15300 in FF at 1610 and 15315 in Hausa at 1615. (Parker, PA) 15605 in EE heard at 1618. (Fraser, ME)

GABON—Africa Number One, 9580 at 2118 in EE with near continuous music. (Montgomery, PA)

GERMANY—Deutsche Welle, 3996 via Skelton in GG at 2150–200* and 9545 Sri Lanka Relay at 2118 ending sports summary, several IDs and W with a pgm of features. (D'Angelo, PA) 9545 with *Spectrum* pgm, 9720 Rwanda in Il with GG lesson at 2210, 15275 Rwanda in FF at 1200 and 21780 Sri Lanka Relay in GG at 1140. (Ng, Malaysia) 11865 Rwanda at 2136 with EE features. (Brossell, WI) 9720 Rwanda at 2244 in Il, 11605 Rwanda in AA at 1912, 11665 via Ascension in GG at 0025, 11725 Rwanda in GG at 1925, 11830 via Russia in CC at 2305, 11865 Portugal Relay in GG at 2314, 12025 Rwanda in GG at 2250 and 12070 Rwanda with *Hits in Germany* at 2115. (MacKenzie, CA)

GREECE—Voice of Greece, 15630 in Greek heard at 2045. (Brossell, WI)

GUAM—Adventist World Radio, 11965 in Indonesian at 2210 and 17635 in Burmese at 0047. (MacKenzie, CA)

TWR, 11840 with ID and talk in VV at 1100. (Ng, Malaysia)

GUATEMALA—Radio Verdad, Chiaquimula, 4052.5 in SS at 0351 with M preaching. (Parker, PA) 2325. (Wilkner, FL)

This Month's Winner

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

This month's prizewinner is **Mark Taylor**, who is busy right now, searching for new targets in his 2011 edition of the *World Radio TV Handbook*. The *WRTH* is the essential guide to shortwave radio. It's crammed with info on stations, schedules, languages, frequencies, and transmitter sites, not to mention always-fascinating articles and reviews of the latest equipment. If you haven't acted already, don't waste another minute. The *WRTH* is offered by most radio equipment dealers and on-line bookstores, plus your neighborhood walk-in store. If you contact the company directly, please tell them you heard about it in the "Global Information Guide" in *Pop'Comm*.

A WWCR QSL commemorating a special—and unfortunate—test on 3255. (Thanks Rich D'Angelo)

GUYANA—Voice of Guyana, 3290 at 0845 with Dave Brubeck selections on his (90th) birthday. (Fraser, ME) 0958 with M ancr with ID, time pips and into news. (Montgomery, PA)

HONDURAS—Radio Luz y Vida, San Luis, 3250 at 0030. (Wilkner, FL) 0354–0357* with M in SS talk, prior to closedown ID and anmts, f/by anthem. (D'Angelo, PA)

Radio Misiones Intl/HRMI, Comayaguela, 3340 at 0101 with M/W talk. Sounded like a radio play. No news at TOH. (Montgomery, PA) 0406–0502* with M and SS preaching, soft religious music. Vocal at 0456, W with ID, closedown anmt and off at 0502. (D'Angelo, PA) 1010 with muffled, distorted signal. (Wilkner, FL)

INDIA—All India Radio, 4760-Port Blair (Andaman & Nicobar Is.), 1130 with W in unid language, sub-continental music. (Wilkner, FL) 6280-Bengaluru, 2218 with W and classical music. Off at 2218. (Montgomery, PA) 1745 sign on in EE, 7550-Delhi with news at 1904. (Sellers, BC) 2205 with EE news, 9870-Bengaluru with Hindi vocals at 1432, and 9910-Khampur/Delhi with HH vocals at 2010. (Strawman, IA) 7550 at 2115. (Yohnicki, ON) 17740-Delhi in Thai at 1115. (Ng, Malaysia)

INDONESIA—Voice of Indonesia, 9525v at 1000 with opening EE anmts and into news. (Alexander, PA) 1145 with island vocals and anmts in VV. (Brossell, WI) 1246 in JJ and into EE at 1300. (D'Angelo, PA) 1326 into *Indonesian Wonder* pgm. (Sellers, NC) 1604 in AA. (Strawman, IA)

Radio Republik Indonesia, 4750-Makassar (Sulawesi), at 1152 with II vocals and W in II. (D'Angelo, PA)

RRI, 4920-Biak (Irian Jaya), (t) at 1150 with slow build up of signal, but definite SCI theme at 1158. (Montgomery, PA) 1158 closing with SCI theme. (D'Angelo, PA)

RRI-Jakarta (Jawa), 9680 in II with M/W on telephone. Closed at 1500. (Sellers, BC)

IRAN—Islamic Republic of Iran Broadcasting, 3965-Zehedan at 0219–0229* with Koran recitation, M in Urdu, piano to close. Also 6120-Kalamabad at 0145 with M/W alternating news items and EE talks. (D'Angelo, PA) 7320-Sirjan at 2026 with *Listener's Letters* pgm. Off at 2030. (Fraser, ME)

IRELAND—RTE Radio One, 6225 via South Africa at 2016–2030* with discussion on security forces. (D'Angelo, PA)

ITALY—Italian Radio Relay Service, 6090-via Rimavska Sobota (Slovakia) at 1924–2000* with the Tony Alamo religious program. ID at sign off "This is I, double R, S shortwave in Milano, signing off." (D'Angelo, PA)

JAPAN—NHK Radio Japan, 5955-Yamata in EE at 1410, 6075-Yamata in JJ at 2145, 6090 in KK at 1130 and 0505 in JJ at 2230. (Ng, Malaysia) 6090 with IS at 1126, into JJ at 1130, 6185 at 1131 with apparent news in RR and 9790 via Germany with *Lessons in Japanese* at 1211. (Brossell, WI) 6110 via Canada at 0518, 6195 via Bonaire in SS at 0504, 9695 in JJ at 2345, 11910 in JJ at 2322 and 13640 in JJ at 2201. (MacKenzie, CA)

Radio Nikkei, 9595 in JJ at 0438. (MacKenzie, CA)

JORDAN—Radio Jordan, 11810 in AA at 1845. (Brossell, WI) 15290 (p) at 1221 with non-stop ME vocals, off w/out anmts at 1228. (D'Angelo, PA)

KUWAIT—Radio Kuwait, 13720 with ME music at 1610 to TOH time pips and W ancr in AA. (Barton, AZ)

LIBYA—Libya Jamahiriya Broadcasting/Voice of Africa, 15215 in (l) Hausa at 1854 (Brossell, WI) 17800 at 1553 with W and EE news, ID and M with commentary, 21695 slightly better. 21695 at 1439 with ID and *The Great Africa*, with emphasis on Mauritius. (D'Angelo, PA) 1420 with *The Way to Freedom*. (Montgomery, PA)

MADAGASCAR—Radio Madagaskira, 5010 at *0255 with opening rap number, M ancr with opening ID, several anmts before starting music. (D'Angelo, PA)

MALAYSIA—RTM, 5030 (Sarawak) at 1407 with W in Malaysian, M DJ. 7295 with Traxx FM pgmg at 1503 in possible EE, but hard to understand. (Sellers, BC) 1137 in EE with M hosting pops ID and news at 1200. (D'Angelo, PA) 7270 at 0850 with Wai FM pmg. (Ng, Malaysia)

Voice of Malaysia, 6175 in EE with Beatles number at 0745. (Ng, Malaysia)

MALI—Radio Malienne, 5995 at 2352–0001* with 2 M in FF, group singing, ID and closedown anmts and orchestral NA. (D'Angelo, PA) 9635 at *0800 sign on with flute IS and opening FF anmts, vernacular talk. (Alexander, PA)

MAUARITANIA—Radio Mauritanie, 7245 at 0050–0058* with AA talk, local guitar and vocals, off at 0058. (Alexander, PA) 2310 with commentary in AA. (Strawman, IA)

MEXICO—Radio Educacion, 6185 in SS at 0015. (Mackenzie, CA)

MYANMAR—Myanmar Radio, 5985.5 (t) at 1440 with indigenous vocals. Poor, and under Voice of Russia from 1500. (Coady, ON)

MOLDOVA/PRIDNESTROVIE—Radio PMR 6240 with 2230 ID f/by news. (Coady, ON)

MONGOLIA—Mongolian Radio-2 (p) 7260 at 1108 rising over a Chinese station. In Mongolian with M/W talk, music pgm began at 1115, probably ID at 1129. Mixing with CPBS-Xinjiang. (D'Angelo, PA)

NETHERLANDS—Radio Nederland, 11615 via Meyerton at 1925 with M/W comments. (MacKenzie, CA) 7360 via Philippines at 1113 in DD on current affairs. Off with anthem at 1130. (Barton, AZ) 9720 via Philippines at 1000 with *Network Europe*. (Ng, Malaysia) 11655 at 2024 with *Network Europe*. (Fraser, ME)

Radio Dabanga, 7315 via France at *0429 with several IDs at open f/by news, features and remote reports in AA. QRM from RFI but fair to good after they left. (D'Angelo, PA)

NEW ZEALAND—Radio New Zealand Intl, 11725 at 0617. (Barton, AZ) 15120 at 0343 and 15720 at 0338. (MacKenzie, CA)

NIGER—La Voix du Sahel, 9705 at 2047–2115 with indigenous vocals, M/W in FF over instrumental music. ID at 2100 f/by instl music, later listener phone calls. (D'Angelo, PA) 2100–2110 audible with FF talk after Ethiopia signs off. (Alexander, PA)

NIGERIA—Voice of Nigeria, 7255 at 1955 with EE news, contact info at 1959 and into FF at 2000. (Alexander, PA) 2100 in (l) Fulani with time pips, local flutes and M with talk. (Coady, ON) 2224 to ID at 2230 and ID in Hausa, instls, anmts, more local vocals at 2235. (D'Angelo, PA) 15120 at 1505 in EE with aboriginal music. (Parker, PA) 1514 with domestic news in EE. (Sellers, BC). 1852 with Afropop. (Brossell, WI)

NORTH KOREA—Voice of Korea, 6285 at 1746 with operatic and patriotic-type songs and M/W in KK. Also 7210 in FF at 1803 (Sellers, ON) 9345 at 0840 in both KK and CC. (Ng, Malaysia) 11710 in KK at 1218 and 11865 in (l) JJ at 1223. (Brossell, WI) 13650 in CC at 0043 and 13760 in SS and EE at 0050. (MacKenzie, CA)

Pyongyang Broadcasting Station, 3320 at 1538 with KK songs, //3250. Also, 6400 in KK at 1353 with patriotic choir, marching band,

time pips and anmts at 1400. (Sellers, BC) 6250 at 1056 with W in KK and a somber vocal group, (p) ID at 1059 and M with news in KK. (D'Angelo, PA) 1242 with Korean victory songs. (Brossell, WI)

NORTHERN MARIANAS—Far East Broadcasting/KFBS, 12090 in VV at 2233. (Mackenzie, CA)

OMAN—Radio Sultanate of Oman, 15140 at 1430 with time pips, opening theme, EE news. (Alexander, PA) 1645 in AA with M telling a story. (Parker, PA)

OPPOSITION—Democratic Voice of Burma, 5905 via Wertachtal at *2327 with O/C to 2330 when opening instl music. W gave ID and anmts in Burmese. (D'Angelo, PA)

Radio Republica (to Cuba), 5954 via Costa Rica at 0930 on extended schedule, also noted in SS at 0340–0400*. (Alexander, PA)

Voice of the Democratic Alliance (to Eritrea) (p), 9560 via Ethiopia at 1503 with extended comments by M. Splatter from both sides. (Strawman, IA)

Voice of Peace and Democracy, 7235 (ex-7165) at 0357–0431 with HOA music IS and opening ID sequence. Weaker on //9650. (Alexander, PA)

Radio Free Sarawak (to Malaysia), 7590 via Dushanbe at *2229 with O/C, instl music, M in (p) Bahasa Malaysia. (D'Angelo, PA) (t) 2240 with two M in unid lang. (Montgomery, PA) 15680 at 1000 with talk in Ibo lang. (Ng, Malaysia)

Denge Mesopotamia (to Iran), 7540 via Ukraine at 2034–2100* with non-stop Kurdish music, 4+1 time pips at 2054, march anthem with group vocal, W with ID on Kurdish and closedown at 2058. (D'Angelo, PA) 1832–1844 with Kurdish songs. Also (p) 11530 with Kurdish music. Gone at 1501 recheck. (Sellers, BC) 7450 at *1500 sign on, Kurdish talk, time pips just after 1500. (Alexander, PA)

Radio Voice of Kurdistan (p) 3931v at 0307 with M in (p) Kurdish under heavy jamming and some ARO QRM. Poor and intermittent. (D'Angelo, PA)

Hamada Radio Intl (to Nigeria), 7350 via Wertachtal, at *0530 with tribal music opening, f/by M anncr with ID and talk in Hausa, another M with news and numerous items mentioning Nigeria and Africa. Also 17485 at *1329–1429* with ID, opening anmt in Hausa. (D'Angelo, PA) *1400 sign on with local music and ID anmts in Hausa. (Alexander, PA)

Shiokaze (to North Korea), 5985 via Japan at 1424 with ID, JJ talk. Off at 1430. (Sellers, BC)

Fusato no Kaze (to North Korea), 9780 via Taiwan in JJ at 1610. (Strawman, IA)

Free Radio North Korea, 7505 via (p) UAE at 1202 with M in KK. (D'Angelo, PA)

Radio Nacional de la RASD (to Morocco), 6927 heard at 2049 with long talks, (t) ID at 2051 and into music. (Montgomery, PA) (*SS or AA—gld*)

PAKISTAN—Radio Pakistan, 9340 at 1755 with Korean, M in Urdu, fanfare and time pips at 1800, news. (Sellers, BC)

PAPUA NEW GUINEA—Radio Manus, Lorengau (Admiralty Is.), 3315 with M in Tok Pisin at 1045. (Wilkner, FL)

Radio Milne Bay (New Guinea Terr.), 3365 at 1204 with W and news, island music hosted by W. (D'Angelo, PA)

Radio East New Britain (New Britain Is.), 3385 at 1209 with news in EE. Into a music pgm at 1215. (D'Angelo, PA)

Radio Central, Port Moresby (Papua Terr.), 3290 at 0953 in heavily accented EE with impassioned talk, possible religious music, into Tok Pisin. (Parker, PA)

PERU—Ondas del Huallaga, Huanuco, 3330 at 0005 good with SS and music. (Wilkner, FL)

Radio Huanta 2000, Huanta, 4747 at 1033 with M and SS talk, ID and TCs hosting a lively morning music pgm. (D'Angelo, PA)

Radio Tarma, Tarma, 4775v at 1049 with SS talk, group singing, ID and OA vocals. Heavy splash from CODAR. (D'Angelo, PA)

La Voz de la Selva, Iquitos, 4824.5 at 1103 with SS talk, IDs and TC and M in SS hosting a morning pgm. (D'Angelo, PA)

Radio Pacifico, Lima, 4975 at 0239 with romantic Latin vocals and M/SS host. (D'Angelo, PA)

Radio Cultural Amauta, Huanta, 4955 at 1024 with flute music. (Montgomery, PA) 1036 with M hosting OA vocals. (D'Angelo, PA)

An amphitheater graces this Radio Tirana QSL. (Thanks Paul Gager, Austria)

Radio Libertad, Junin, 5039.2 with M in SS at 1049. (Wilkner, FL)

La Voz de Huarinjas, Huancabamba, (t) 5040 in SS at 0030. (Wilkner, FL)

Radio Bolivar, Ciudad Bolivar, 5460.4 with OA music at 0020. (Wilkner, FL)

PHILIPPINES—Radio Veritas Asia, 9720 in Burmese at 2345 and 15530 in VV at 0135. (Ng, Malaysia) 9615 in (l) Mandarin at 1150. (Brossell, WI)

Far East Broadcasting, 9435 with IS alternating with II ID. Opened at 2330 with EE preacher and another M repeating in II. In the clear until CRI opened in JJ at 2300. (D'Angelo, PA)

PIRATES—WBNY Relay Service, 6900 at 0047 possible relay, with *Ragnar's Pirate Week* pgm and mention of "relay service" as part of a jingle. (Hassig, IL) 1251 with an interview about Europirates. (Zeller, OH)

Germ Radio, 6925u at *1350–1418* with rock oldies, numerous IDs sounding like "Joan Radio." Reports to germradio@gmail.com. (Zeller, OH)

MAC Shortwave, 3275.9 at 0055 with the *Paul Starr Christmas Special*. (Alexander, PA)

Wolverine Radio, 6925u at 0145–0230 and 0308–0355 with various rock groups. (Alexander, PA)

Captain Morgan Shortwave, 6925 at 0213–0250*with vintage music, IDs and Gmail address. (D'Angelo, PA) 0255–0315 with blues. (Alexander, PA)

Voice of KAOS, 6925u at 0240–0258* with a special broadcast for the French Creek DXpedition, several IDs. (D'Angelo, PA) "Get Smart" theme. voiceodfkaos@gmail.com for reports. (Zeller, OH)

Thinking Man Radio, 6925 at *0030–0055* another French Creek special with several IDs, Gmail address. (D'Angelo, PA)

WEAK, 6925u at 2320–2236 with old horror movie trailers. (Parker, PA)

Germany Calling, 6940 at 2304–0025 with recordings of German foreign broadcasts from WWII plus 1940s swing tunes doctored as propaganda messages. germanycalling@gmail.com. (Parker, PA)

Radio GaGa, 6925u at *1434–1448* but going on/off before and after with SSTV, then rock numbers. (Zeller, OH)

Turkey Breast Radio, 6925u at 1725 past 1735 with a Thanksgiving special, many oldies. turkeybreastradio@gmail.com. (Zeller, OH)

Hunk of Junk Radio, 6925u at *2200–2215* with rock, Budweiser coml. and President Roosevelt speech. hunkofjunkradio@gmail.com. (Zeller, OH)

Radio Free Speech, 6300//6900 at 2203–2212* with a happy holidays pgm. Gave the old Wellsville address. (Zeller, OH)

Radio Ronin, 6934 at 0102 heavy metal, but just for two or three minutes. (Hassig, IL)

Radio Casablanca, 6940 monitored at 1515–1550 with WWII-era music, historic recorded speeches, plus news and movie sound clips. (Alexander, PA)

ternational's flower QSLs. (Thanks

u monitored at 2234–2318* with mostly
s, magnetarradio@gmail.com for reports.

dio, 9650 via Austria at 1804 with *News*
) (p) at 1802 with M/W in EE. Also 11905
Os in Polish and EE and then into Ukrainian.
0 sign on. (Sellers, BC)
omania Intl, 15460 at 1230 on the number
rossell, WI)
ssia, 4975 via Tajikistan at 1517 with EE
pavlovsk-Kamchatsky at 1809 with a trav-
nd 7330-Moscow at 1845 with traditional
tradition. (Sellers, BC) 7220 via Moldova
time pips and M with news. Also,7250-
tourism there. (D'Angelo, PA) 7340-
at 1230 in (l) JJ. (Brossell, WI) 7335 via
)457, 12010 in RR at 0346 and 12030-
57. (MacKenzie, CA) 9880 in FF at 1820.
sk with *Moscow Mailbag* at 0710. (Ng,

ldom in RR at 1223 and 13665-Taldom in

0 at *1200 with RR news. The latter fre-
30. (Brossell, WI)
vandaise, 6055 monitored at 2025–2100*
, Afro-rap and Europops. Abrupt sign off.

America Relay, 4940 at 2006 with *African*
. (Coady, ON) 4960 at 0404. (Parker, PA)
Indian Ocean Relay 9410 at 1830 open
ID at 2048 during *Newshour*. (Coady, ON)
eport on World Cup. (D'Angelo, PA)
Far East Relay, 6135 with IS at 1428, sign
BC) 7370 at 2250 in (l) II. (Brossell, WI)
Kenzie, CA)
r Espana, 3350 Costa Rica Relay in SS at
at 0522, 9675 in SS at 0436 and 17850
MacKenzie, CA) 6125 in EE at 2200. (Ng
1749. (Brossell, WI)
annel Africa, 15235 at 1605 in FF. (Parker,
C)
345* with EE ID, instl music f/by W in (l)

S World Radio, 3955 at 2220 with an inter-
) 6095 at 1302 in KK, 9740 with news and
275 at 1819 on a sports personality. (Sellers,
d at 1045 and 9805 in II at 2250. (Ng,

Sri Lanka, 11905 at *1530 on with instl
nusic, EE and Hindi talk, mostly local pops.
ing about a pop song, frequent Sri Lanka

Pop'Comm April 2011 Reader Survey Questions

This month we'd like to ask about your attendance at hobby-related events. Please use the Reader Survey Card and circle all appropriate numbers. We'll pick one respondent at random for a free one-year subscription, or extension, to *Pop'Comm*, so don't forget your address. As always, we invite your specific comments and suggestions in the space provided. Thanks for participating.

Is there a hamfest/computer show in your area?
Yes . . . 1
No . . . 2
Not sure . . . 3

If there is one, do you plan on attending?
Yes . . . 4
No . . . 5
Not sure . . . 6

What's the farthest you've ever traveled to attend a hobby-related event?
0–25 miles . . . 7
26–50 miles . . . 8
51–100 miles . . . 9
101 miles-plus . . . 10

Are you aware that attending events helps support the hobby?
No, I wasn't aware . . . 11
You bet . . . 12
Next time I'm bringing a friend! . . . 13

We're out of room for October highlights, but the winner of the free sub or extension for answering that survey is **Thomas Bruner, of Oil City, Pennsylvania.** Congratulations, Thomas!

A Turkish ski resort on a Voice of Turkey QSL. (Thanks Paul Gager)

and Ceylon mentions. Brief change in language heard at 1555. (Montgomery, PA)

SUDAN—Radio Omdurman, 7200 at *0236 on with local tribal music, Koran at 0244. (Alexander, PA) 0412–0430* with M/W in AA. (D'Angelo, PA)

SWAZILAND—TWR, 4775 monitored at 0342 with group song, M in (l) Lomwe. Carrier cut at 0358 and into GG at 0400. (D'Angelo, PA) 9500 at 1804 with Christian pops. Also 9525 signing on at 1902 over Voice of Indonesia. (Sellers, BC)

SWEDEN—IBRA Radio, 12045 via Germany in AA heard at 1755 with ID as "Radio Ibraham."

SURINAME—Radio Apinte, 4990 at 0509 with slow, EZL music. (Parker, PA)

TAIWAN—Radio Taiwan Intl, 6145 in Mandarin at 1757 to 1800 close. (Sellers, BC) 6875 via Florida in Mandarin at 0430, 6890 via Florida in SS at 0423, 11805 in CC at 2255 and 11885 via Florida in SS at 2319. (MacKenzie, CA) 7325 in JJ at 1035 and 11605 in JJ at 0815. (Ng, Malaysia) 11710 in CC at 2315 and 11850 with a feature on HD radio. (Brossell, WI) 11850 with *Today in History* at 1708. (Fraser, ME)

THAILAND—Radio Thailand, 7570 at 1914 with W and news. (Sellers, BC) 1941–1959* with ID, promo anmts, sports, M/W closing. Also 9535 monitored at 2034–2049 with W and national news, ID, PSA and global news. (D'Angelo, PA) 1247 with news, commls, financial news. (Alexander, PA) 2040 with M ID and continuation of news. (Montgomery, PA)

TUNISIA—RT Tunisienne, 7345 with (p) news in AA heard at 2300. (Brossell, WI)

TURKEY—Voice of Turkey, 5960 at 2320 with *Hues and Colors of Anatolia*. (Coady, ON) 15200-Cakirlar in AA at 1652 with email address, IS, abrupt sign off. (Parker, PA) 15450 in TT at 1233. (Brossell, WI)

UGANDA—UBC Radio, 4976 with a group singing at 0303. (Brossell, WI) 7195 at 0409 with EE news, radio drama, EE and vernacular talk. (Alexander, PA)

UKRAINE—Radio Ukraine Intl, 7440 at 2300 with (p) news in Ukrainian. (Brossell, WI)

UNITED STATES—Voice of America, 7255 Thailand Relay in II at 1203–1229*. (D'Angelo, PA) 7480 Sri Lanka Relay with EE lesson at 1910, 9370 Sri Lanka with VOA/Deewa Radio in Pashto at 1814, VOA/Radio Ashna, 7560 Thailand Relay in Pashto at 1833 and 7495 VOA/Deewa Radio in Pashto at 1847. (Sellers, BC) 11860 Northern Marianas at 2305 with *Daybreak Asia* and 15670 Thailand in CC at 1005. (Ng, Malaysia) 9760 Thailand with (p) EE lessons at 1507. (Strawman, IA) 11805 Philippines Relay in II at 2257, 15385 Philippines Relay in CC at 0017, 15580-Greenville at 2140, 17645 in CC at 0012 and 21580 Northern Marianas in CC at 0032. (Mackenzie, CA) 15580-Bonaire at 1953 and into African music at 2002. (Montgomery, PA) 2015 with *Music Time in Africa*. (Coady, ON)

Radio Free Asia, 7385 via Taiwan in Mandarin at 1854. (Sellers, BC) 7495 Tinian in CC at 2130, 15700 at 1100 in (l) Burmese, closed at 0130 with an EE ID. (Ng, Malaysia) 9355 Northern Marianas in CC at 1822, 9385 Northern Marianas (NM) in CC at 1802, 11900 NM in CC/EE at 2158 and 11980 via Russia in CC at 0410. (MacKenzie, CA) 12025 NM in (l) Mandarin at 1520 and 13830 via Tajikistan in (l) Tibetan at 1226. (Brossell, WI)

Radio Free Europe/Radio Liberty, 5895 Thailand in RR at 2115. (Ng, Malaysia) 7270 Thailand with RR at 1500. (Strawman, IA) 7285 Lampertheim with M/W talk in (l) Tatar. Off at 0459. (D'Angelo, PA)

Radio Marti, 7365-Greenville in SS at 0359 and off at 0400, 9565-Greenville in SS at 2248 and 11920-Greenville in SS at 2252. (MacKenzie, CA)

Radio Farda, 7435 Kuwait in Farsi monitored at 1215. (Brossell, WI) 7520 Thailand in Farsi at 1845 and 7580 Sri Lanka in Farsi at 1902. (Sellers, BC) 7520 Sri Lanka in Farsi at 2203. (D'Angelo, PA) 9340 Sri Lanka in Farsi at 2125 and 21715 Sri Lanka in Farsi at 1135. (Ng, Malaysia) 15535 in Farsi at 0620. (Padazopuloss, Greece)

Radio Mashaal, 9360 Thailand in Pashto at 1102. (D'Angelo, PA)

Family Radio/WYFR, 7360 via French Guiana in PP at 2309, 7460 via Taiwan in (l) VV at 1224, 6005 via Russia in KK at 1228 and 11875 via Ascension in (l) Igbo at 1847. (Brossell, WI) 7395 via Madagascar at 1920, 7590 via Armenia in Polish at 1857. Off at 1900. Also 7600 via Armenia in Bulgarian at 1840. (Sellers, BC) 11615 via Ascension at 2000. (Coady, ON) 18930 in FF at 1845. (MacKenzie, CA)

Southern Sudan Interactive Radio Service, 17700 via Ascension heard at *1559 with local music, AA ID, anmts and contact info. (Alexander, PA)

AFN/AFRTS, 5446.5u-Key West, at 0215 on video games and how parents can control their use, mention of NPR. (Montgomery, PA) 7811u at 2252. (MacKenzie, CA)

Adventist World Radio, 11755 via Germany in FF heard at 2024. (Brossell, WI) 15495 via Germany in EE at 1215. (Ng, Malaysia)

WWCR, Tennessee, 3215 at 0313, 4840 at 0335, 5070 at 2316, 7465 in SS/EE at 2300 and 9350 at 2235. (MacKenzie, CA)

WWRB, Tennessee, 5050 at 0345. (MacKenzie, CA)

WHRI, South Carolina 7315 at 0412. (Mackenzie, CA)

KAJI, Texas, 5755 at 0350. (MacKenzie, CA)

KJES, New Mexico, 11715 at 1447. (Sellers, BC)

WINB, Pennsylvania, 9265 at 2258. Into SS at 2302. (Sellers, BC)

WBOH, North Carolina, 5920 at 2337. (MacKenzie, CA)

WTJC, North Carolina, 9370 at 2318. (MacKenzie, CA)

VATICAN—Vatican Radio, 9660 with an interview at 0315. (Coady, ON) 9755 ending listed PP at 1829 and off at 1830. (Sellers, BC) 9865 via Sackville in SS at 1130. (Barton, AZ) 15235 with a CC talk at 1230. (Ng, Malaysia)

VENEZUELA—Radio Nacional, 11670 via Cuba in SS at 2231. (MacKenzie, CA)

VIETNAM—Voice of Vietnam, 6175 via Canada in VV at 0510. (MacKenzie, CA) 7210 with W and VV talk at 0820. (Ng, Malaysia)

ZAMBIA—CVC-One Africa, 4965 with Christian music at 2120. (Ng, Malaysia) 9430 at 0358 with IDs, promo anmts, music, testimonials. (D'Angelo, PA) 9505 with Christian rock at 2015. (Barton, AZ) 2112. (Yohnicki, ON) 13590 at 1743. (Sellers, BC)

And, once again, order is restored! A plethora of thanks to the following who helped make it work this month: Harold Sellers, Vernon, BC; Brian Alexander, Mechanicsburg, PA; Stewart MacKenzie, Huntington Beach, CA; Rich D'Angelo, Wyomissing and FCDX, PA; Michael Yohnicki, London, ON; Peter Ng, Johor Bahru, Malaysia; Mark Coady, Peterborough, ON; William Hassig, Mt. Prospect, IL; Robert Wilkner, Pompano Beach, FL; George Zeller, Cleveland, OH; Jerry Strawman, Des Moines, IA; Robert Montgomery, Levittown and FCDX, PA; Robert Brossell, Pewaukee, WI; Robert Fraser, Belfast, ME; Fotios Padazopulos, Saharo, Greece; and Rick Barton, Phoenix, AZ.

Until next month, good listening!

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Modern Marconis Make Waves At WCC Museum

by Bruce A. Conti
contiba@gmail.com

The Chatham Marconi Maritime Center (CMMC) museum hosted a winter DXpedition at the historic WCC Marconi Wireless site in Chatham, Cape Cod, Massachusetts. Radio enthusiasts were given a tour of the museum, then set up antennas and receivers on the site for an evening of transatlantic AM broadcast DXing. If he were watching from above, radio pioneer Guglielmo Marconi must have been delighted; after all he was the one who sent the first ever transatlantic radio communication in the United States from a nearby Cape Cod site, and then established radio station WCC in Chatham. It became known as the world's greatest maritime wireless communications facility and is considered the birthplace of all the wireless devices we use today.

"WCC history also extends beyond the oceans, holding a role in aeronautics including communications with Charles Lindbergh, Amelia Earhart, and the last known communication with the Hindenburg *before its fiery demise."*

WCC Time Capsule

It was 110 years ago that Marconi completed the first transatlantic wireless communication, taking place between England and Signal Hill, Newfoundland. Then, in 1903, Marconi made the first wireless two-way communications between England and Wellfleet on Cape Cod, a U.S. mainland site selected specifically for its proximity to Europe. Marconi later envisioned a network of wireless communication stations for ships at sea, an idea which ultimately proved its worth in 1912 when over 700 people aboard the sinking

One of the remaining Marconi wireless towers overlooking Ryder's Cove in Chatham, Massachusetts.

Rob Leiden, K1UI, shows a map of the many rhombic antennas that used to populate the WCC site.

Titanic were saved after an S.O.S. transmitted from the ship's Marconi Room alerted rescuers.

In 1914 WCC Chatham replaced Wellfleet as part of the network of Marconi land-based wireless radio stations that would link North America, Europe, Japan, and voyagers across the Atlantic and Pacific Oceans. However WCC "Wireless Cape Cod" was to take on a much more significant place in history.

Initially WCC was primarily a monitoring station, but operators could transmit via remote control from another site in Marion, Massachusetts. The WCC rhombic antennas were said to have been designed by H.H. Beverage, developer of the Beverage wave guide antenna still popular among DXers today.

The WCC site was taken over by the U.S. Navy during both World Wars, most notably during World War II after the Enigma code was broken. Navy operators at WCC were able to receive and decode the enciphered signals from the German high command and otherwise nearly undetectable submerged U-boats, which combined with direction-finding gave Allied forces the ability to pinpoint their positions. WCC was sold to RCA and maintained as a maritime communications station under the name "Radiomarine Corporation of America." By the 1950s WCC was arguably the busiest wireless communications station in the western hemisphere, operating transmitters from longwave to the shortwave marine bands. WCC history also extends beyond the oceans, holding a role in aeronautics including communications with Charles Lindbergh, Amelia Earhart, and the last known communication with the *Hindenburg* before its fiery demise.

With the breakup of RCA in 1998, WCC became part of MCI. By 1993 WCC was no longer a manned station, now under remote control by sister station KPH in California. WCC operated at 436-kHz longwave, KPH at 426 kHz, and both monitored the international calling and distress frequency of 500 kHz. In 1994 the site was added to the National Register of Historic Places. WCC went off the air in 1997, a victim of downsizing and technological advancements. Although the town of Chatham purchased the property in 1999, the site remained dormant until the newly organized CMMC came to the rescue in 2002.

The Chatham Marconi Maritime Center

The CMMC now leases the Marconi site from the town, and will be opening a museum in the restored WCC operations building early this summer. Additionally the WCC Amateur Radio Association operates WA1WCC from a corner of the building. The museum was opened to the local community briefly last August for a sneak preview. The CMMC has since been working hard in preparation for the grand opening.

"We're making it more interactive, not just a display of antiques," said CMMC Vice President Frank Messina, KB1UZZ. "We're working with school systems to help educate the teachers bringing the kids here, to develop an interest in what happened here. We try to explain the whole concept of communication."

In addition to the many artifacts on display, there's a Morse code kiosk with a practice key, and a mini-theater for viewing a short film narrated by Walter Cronkite. The CMMC collaborates with schools to develop curriculum within the guidelines of the Massachusetts Science Technology Engineering Math (STEM) program. In addition, the WA1WCC club

The historic WCC operations building now serves as the Chatham Marconi Maritime Center museum.

Frank Messina, KB1UZZ, describes a diorama of the old WCC site to Steve Wood and Marc DeLorenzo.

offers amateur radio operator license courses. Many of the poles and towers that once supported the rhombic antennas are still standing. The CMMC and WA1WCC hope to get a rhombic back up and operating. "WCC, that was it," said CMMC board member Rob Leiden, K1UI. "It was the only signal that could be heard."

Transatlantic Broadcast Loggings

Rob Leiden and Frank Messina were kind enough to open the operations building to the CapeDX group for a museum tour followed by an evening of transatlantic AM broadcast DXing in January. CapeDX members Chris Black, N1CP, Mark Connelly, WA1ION, Marc DeLorenzo, Steve Wood, and I set up our modern receive stations, a Drake R8, Japan Radio NRD 535, an Excalibur, and two Perseus SDR receivers to capture the action across the AM broadcast band. Three terminated broadband loop antennas were erected for the event, aimed northeast, east, and southeast. A number of community CMMC members came to watch and learn more about the hobby.

Initially we became worried that the event would be a bust, due to interference from the CQX beacon on 279 kHz at nearby Chatham Airport. The CW signal from CQX was causing the entire noise floor to pulse with Morse code on our SDR spectrum analyzer displays. However as sunset approached the interference was overtaken by rising signal levels and we were soon rewarded for our efforts as a number of new finds were discovered. For Marc DeLorenzo, it was a first to hear Sudan on mediumwave. "Country number 104 heard from Cape Cod," reported Marc, "And a major thrill!" "It was a great experience being able to DX from this site," said Steve Wood. "I have never heard transatlantics that clear and loud from my home
from CMMC."
follow. All time

531 Chaîne 1
2258 excellent;
mental, alternati
promo/ID into tir
lel also excellent

531 RNE Spa
pips and theme
España, Informat

595 SNRT Ou
and woman in Ar

639 Cesky
Republic, at 2
woman; poor, ove

657 Rai Radi
national anthem
EMWG.

675 Libyan
Libya, at 2202 A
slop.

693 VOR Zel
at 2202 Russian
Spain.

702 RMC Inf
France, heard at
Radio Chine Inte

765 IRIB Sar
2156 music paralle
then Koran paralle
co-channel Switz

783 MDR
Germany, heard
entified stations;
"MDR Info..."

873 AFN Fra
parallel 1107 kH
vocal; to good pe
nel Spain.

909 BBC Rad
2200 to good peal
5 Live" into news.

917 Radio Gotel, Yola, Nigeria, at 2202 carrier with het from 918 kHz, heard a man in an unidentified African sounding language.

918 Radio Slovenija, Ljubljana-Domzale, Slovenia, at 2200 over a weak 917 Nigeria het; distinctive time marker into theme music with two Radio Slovenija IDs.

972 NDR Info, Hamburg, Germany, at 2200 bits of German news by woman; under a huge Libya signal.

1035 Radio Clube, Belmonte, Portugal, at 2300 a female version of B.J. Thomas 1969 hit "Raindrops Keep Falling on My Head," then "San Francisco" by Scott McKenzie from 1967, Star FM mention by man, Portuguese talk by woman, Star FM jingle, and "Harvest Moon" by Neil Young; fair to good.

1053 COPE Spain, at 2201 fast Spanish talk; atop UK and the growl of off-frequency signals at 1053.103 from Libya and an unidentified 1053.047 kHz.

1062 Rai Radiouno, Italy, at 2158 poor with synchro echo; talk in Italian, time marker into news on the hour.

1089 Radio Rossii, Tbilisskaya, Russia,

This Month In Broadcast History

75 Years Ago (1936)—An experimental license was granted for Australian radio station VK9MI to broadcast on 11720 kHz from aboard the MV *Kanimbla* passenger ship.

50 Years Ago (1961)—"Blue Moon" by the Space Finks topped the Channel 91 KEWB Foolish Forty Survey released on April Fools Day, "give or take a day or so." The real number one song listed on the backside was "Blue Moon" by the Marcels.

25 Years Ago (1986)—An FCC Public Notice addressed "significant uncertainty and controversy" regarding commercial underwriting of non-commercial broadcasters.

TEAR ALONG DOTTED LINE

TEAR ALONG DOTTED LINE

Modern Marconi broadcast DXers bring the historic WCC site back to life. Pictured from left to right: Chris Black, N1CP (standing), Marc DeLorenzo, Steve Wood, and Mark Connelly, WA1ION.

at 2258 good to fade; classical music, man and woman in Russian with Rossii mentions.

1089 TalkSport, United Kingdom, at 2202 now coming up over Russia, reverberated TalkSport ID, promo, scores, "Middlesborough suffered a defeat."

1134 Glas Hrvatske, Zadar, Croatia, at 2100 excellent with pop music fading into signature long pips on the hour, fanfare with Hrvatske Radio ID.

1179 SER Radio Valencia, Valencia, Spain, at 2153 fair with local ID (AM & FM) and apparent ad or promo in Spanish. Thanks to Henrik Klemetz for help via Real DX.

1215 Voice of Russia, Bolshakovo, Kaliningrad, at 2058 "This is the Voice of Russia World Service," frequencies and website, "Great Gate of Kiev" bells interval signal, then national anthem at 2100 UTC. Good signal, well over Absolute Radio, United Kingdom.

1296 SNBC Reiba, Sudan, at 2050 noted African music parallel 7200 kHz, trading places atop the frequency with co-channel Spain.

1314 Radio Farda, Al Dhabbaya, United Arab Emirates, at 2157 fanfare, Radio Farda ID, into news with a sound bite from Obama in English.

1323 Voice of Russia, Wachenbrunn, Germany, at 2100 French news/talk by man and woman, emphasis music.

1394.8 TransWorld Radio, Fllakë, Albania, at 2100 one cycle of TWR interval signal, then Polish program per EMWG.

1413 RNE5 Spain, at 2059 good with a nostalgic vocal, time marker, fanfare, "Radio Nacional de España, Informativos."

1422 Deutschlandfunk, Heusweiler, Germany, monitored at 2040 over presumed Algeria; woman in German parallel 6190 kHz.

1431 Radio 3/Radio Kultura, Kopani, Ukraine, at 2058 fair over co-channel Djibouti; ethnic vocal, announcement, time marker, and sign-off leaving Radio Sawa in clear.

1440 RTL Marnach, Luxembourg, at 2100 intro music based on variations of 6-note interval signal, French ID, "Ici Radio Chine International," over co-channel WRED and WVEI.

1476 Euskadi Irratia, San Sebastian, Spain, at 2100 possible Basque talk by woman; poor over growl from an unidentified off-frequency 1476.268 kHz signal.

1530 VOA São Tomé e Principe, at 2200 "This is the Voice of America, Washington D.C., signing off," and info on how to obtain more information about times and frequencies. Very good signal.

1548 Voice of Russia, Grigoriopol, Moldova, at 2102 VOR program in Serbian per EMWG.

1557 France Info, Fontbonne, France, at 2100 parallel 1206, 1242, and 1494 kHz with France Info fanfare music into news.

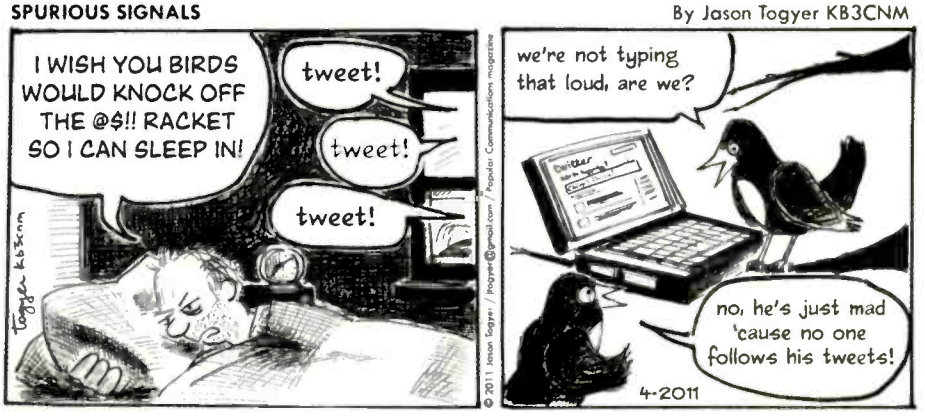
It was an awesome experience to be receiving transatlantic signals under the shadow of Marconi. Visit www.chathammarconi.org to learn more about CMMC. Consider supporting the museum and ongoing education programs by becoming a member.

Coming next month, we'll look at an experiment with a new configuration of terminated broadband loop, matching transformer winding for construction of a loop antenna, and your DX logs.

Until then, 73 and Good DX!

SPURIOUS SIGNALS

By Jason Togyer KB3CNM



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

This listing is designed to help you hear more shortwave broadcasting stations. The list covers a variety of stations, including international broadcasters beaming programs to North America, others to different parts of the world, as well as local and regional shortwave stations. Many of the transmissions listed here are not in English. Your ability to receive these stations will depend on time of day, time of year, your geographic location, highly variable propagation conditions, and the receiving equipment used.

AA, FF, SS, GG, etc. are abbreviations for languages (Arabic, French, Spanish, German). Times given are in UTC, which is five hours ahead of EST, i.e. 0000 UTC equals 7 p.m. EST, 6 p.m. CST, 4 p.m. PST.

UTC	Freq.	Station/Country	Notes
0000	17635	Adventist World Radio, Guam	Burmese
0000	6090	Caribbean Beacon, Anguilla	
0000	11665	Deutsche Welle, via Ascension Is.	GG
0000	11780	Radio Nacional Amazonia, Brazil	PP
0000	15720	Radio New Zealand International	
0000	6165	Radio Nederland, Bonaire Relay	DD
0000	13760	Voice of Korea, North Korea	EE/SS
0000	13650	Voice of Korea, North Korea	CC
0030	6050	HCJB, Ecuador	Quechua
0100	6025	Radio Amanecer, Dominican Rep.	SS
0100	11710	Radiodifusion Argentina al Exterior	
0100	7250	Voice of Russia	
0100	4755	Radio Imaculada Conceicao, Brazil	PP
0200	5446.5	AFN/AFRTS, Florida	usb
0200	3250	Radio Luz y Vida, Honduras	SS
0200	6120	Islamic Republic of Iran Broadcasting	
0200	4985	Radio Brazil Central	PP
0200	9305	Radio Cairo, Egypt	AA
0200	5040	Radio Havana Cuba	SS
0200	3340	Radio Misiones Intl, Honduras	SS
0200	5954	Radio Republica, via Costa Rica	SS
0200	4975	Radio Pacifico, Peru	SS
0200	7220	Voice of Russia, via Moldova	RR
0200	3320	Radio Sondergrense, South Africa	Afrikaans
0300	11860	BBC, Seychelles Relay	
0300	5025	Radio Rebelde, Cuba	SS
0300	5755	KAIJ, Texas	
0300	9705	La Voix du Sahel, Niger	FF
0300	4780	Radio Djibouti	FF
0300	6110	Radio Fana, Ethiopia	Amharic
0300	5010	Radio Madagasikara, Madagascar	Malagasy
0300	15120	Radio New Zealand International	
0300	4052.5	Radio Verdad, Guatemala	SS
0300	3350	REE, Spain, Costa Rica Relay	SS
0300	4976	UBC Radio, Uganda	
0300	12010	Voice of Russia	RR
0300	5050	WWRB, Tennessee	
0300	4790	Radio Vision, Peru	SS
0300	5045	Radio Cultura do Para, Brazil	PP
0300	3200	TWR, Swaziland	various
0300	3985	Voice of Croatia	
0330	7215	TWR, via South Africa	EE/Amharic
0400	9790	China Radio Intl, via Cuba	CC
0400	9430	CVC-One Africa, Zambia	
0400	5965	Radio Exterior Espana, Costa Rica	
0400	6185	Radio Educacion, Mexico	SS
0400	4950	Radio Nacional, Angola	PP
0400	7200	Radio Omdurman, Sudan	AA
0400	6890	Radio Taiwan Intl, via Florida	SS
0400	7315	Radio France International	
0400	4775	TWR, Swaziland	GG
0400	4930	Voice of America Relay, Botswana	
0400	7325	Voice of Russia, via French Guiana	SS
0400	6010	La Voz de su Concencia, Colombia	SS
0430	6165	RN Tchadienne, Chad	FF
0500	6195	Radio Japan, via Ascension	SS
0500	4960	Voice of America Relay, Sao Tome	
0500	6175	Voice of Vietnam, via Canada	VV/EE
0500	4770	Radio Nigeria	
0500	5005	Radio Nacional, Equatorial Guinea	SS
0600	4990	Radio Apinte, Suriname	DD
0600	11725	Radio New Zealand International	
0700	5755	WTTW, Tennessee	
0800	6160	CKZN, Canada	
0800	9635	Radio Mali	FF/vern
0800	3290	Voice of Guyana	
0800	6010	Radio Mil, Mexico	SS
0900	9595	Radio Nikkei, Japan	JJ
0900	3310	Radio Mosoj Chaski, Bolivia	SS
0900	3375	Radio Municipal, Brazil	PP
1000	4919	Radio Quito, Ecuador	SS, irregular
1000	4747	Radio Huanta 2000, Peru	SS
1000	2310	ABC No. Territories Service, Australia	
1000	6135	Radio Santa Cruz, Bolivia	SS
1000	3280	La Voz del Napo, Ecuador	SS
1100	4775	Radio Tarma, Peru	SS
1100	9770	KBS World Radio, South Korea	VV
1100	9615	Radio Veritas Asia, Philippines	CC
1100	11840	TWR, Guam	VV
1100	9865	Vatican Radio	SS
1200	7270	Wai FM, Malaysia	vern
1200	15495	Adventist World Radio, via Germany	
1200	9570	China Radio Intl, via Cuba	CC
1200	6020	Radio Australia	

UTC	Freq.	Station/Country	Notes
1200	9720	Radio Thailand	
1200	3365	Radio Milne Bay, Papua New Guinea	Tok Pisin
1200	15460	Radio Romania International	
1200	13665	Radio Rossii, Russia	RR
1200	11710	KCBS, North Korea	KK
1200	3290	Radio Central, Papua New Guinea	EE/Pisin
1200	13380	Radio Free Asia, via Tajikistan	Tibetan
1200	15290	Radio Jordan	AA
1200	3315	Radio Manus, Papua New Guinea	Tok Pisin
1200	4750	Radio Republik Indonesia	II
1200	15235	Vatican Radio	CC
1200	11860	BBC, via French Guiana	
1200	15450	Voice of Turkey	TT
1200	5050	Beibu Bay Radio, China	CC
1200	5765	AFN/AFRTS, Guam	usb
1200	3385	Radio East New Britain, PNG	Tok Pisin
1300	6070	CFRX, Canada	
1300	7240	Radio Australia	
1300	9525	Voice of Indonesia	
1330	17855	Radio Austria International	GG
1400	9625	CBC Northern Service, Canada	
1400	11715	KJES, New Mexico	
1400	15080	Radio Cairo, Egypt	AA
1400	21695	Radio Jamahiriya, Libya	
1400	17895	Broad. Svc. of Kingdom Saudi Arabia	AA
1500	17800	Radio Jamahiriya, Libya	
1500	7295	RTM, Malaysia	
1500	12025	Radio Free Asia, N. Marianas Relay	Mandarin
1500	7260	Voice of Russia	
1500	15120	Voice of Nigeria	
1500	15345	RTV Marocaine, Morocco	AA
1530	11905	Polish Radio, via Germany	various
1600	9740	BBC, Singapore Relay	
1600	15235	Channel Africa, South Africa	FF
1600	11760	Radio Havana Cuba	SS
1600	13720	Radio Kuwait	AA
1600	15300	Radio France International	FF
1600	17620	Radio Austria International	GG
1600	15605	Radio France International	
1600	15140	Radio Sultanate of Oman	AA
1600	15560	RDP International, Portugal	PP
1600	11680	Voice of Turkey	Dari
1700	15420	BBC, via South Africa	
1700	9830	Islamic Republic of Iran Broadcasting	Swahili
1700	11850	Radio Taiwan Intl, via France	
1700	11765	Radio Exterior Espana, Spain	AA
1700	9955	WRMI, Florida	
1700	15465	RDP International, Portugal	PP
1800	7275	KBS World Radio, South Korea	
1800	9650	Polish Radio, via Austria	
1800	15190	Radio Africa, Equatorial Guinea	
1800	17850	Radio Exterior de Espana, via C. Rica	SS
1800	11704	Radio France International	FF
1800	15215	Radio Jamahiriya, Libya	Hausa
1800	11810	Radio Jordan	
1800	7240	Voice of Russia	
1900	9745	China Radio Intl, via Bonaire	CC
1900	9390	Radio Algerienne, Algeria, via France	AA
1900	11615	Radio Nederland, via South Africa	
1900	9525	TWR, Swaziland	vern
2000	11755	Adventist World Radio, via Germany	FF
2000	9410	BBC, Seychelles Relay	
2000	11810	BBC, Ascension Is. Relay	
2000	17680	CVC-La Voz, Chile	SS
2000	7320	Islamic Republic of Iran Broadcasting	
2000	11655	Radio Nederland, Madagascar Relay	
2000	9535	Radio Thailand	
2000	15580	Voice of America Relay, Botswana	
2000	15580	Voice of America, via Bonaire	
2100	9580	Africa Number One, Gabon	FF
2100	7555	All India Radio	
2100	6280	All India Radio	
2100	11865	Deutche Welle, Rwanda Relay	
2100	11660	Radio Australia	
2100	6155	Radio Belarus	
2100	13650	Radio Canada International	FF
2100	7530	Radio Tirana, Albania	
2100	7220	Radio Cetrafrique, Central Af. Rep.	FF
2130	4965	CVC-One Africa, Zambia	
2130	9705	Radio Ethiopia	Amharic
2200	11965	Adventist World Radio, Guam	II
2200	7811u	AFN/AFRTS, Florida	
2200	9505	CVC-One Africa, Zambia	
2200	11730	Radio Havana Cuba	SS
2200	12090	Far East Broadcasting, Saipan	VV
2200	7400	Radio Bulgaria	
2200	7520	Radio Farda,USA, via Sri Lanka	Farsi
2200	11920	Radio Marti, USA	SS
2200	11670	Radio Nacional Venezuela, via Cuba	SS
2200	6297	Radio Nacional, RASD, Algeria	SS/AA
2200	6240	Radio PMR. Pridnestrovie/Moldova	various
2200	15630	Voice of Greece	Greek
2200	7315	WBCQ, Maine	
2200	9265	WINB, Pennsylvania	
2200	9720	Deutsche Welle, Rwanda Relay	GG
2300	9740	BBC, Singapore Relay	
2300	7285	BBC, Thailand Relay	
2300	9435	Far East Broadcasting, Philippines	II
2300	11910	Radio Japan	J
2300	7245	Radio Mauritanie, Mauritania	AA
2300	13680	Radio Nacional Venezuela, via Cuba	SS
2300	11920	HCJB, Ecuador, via Chile	SS
2300	6055	Radio Exterior Espana, Spain	SS
2300	15190	Radio Inconfidencia, Brazil	PP
2300	5995	Radio Mali	FF
2300	9565	Radio Marti, USA	SS
2300	11885	Radio Taiwan Intl, via Florida	SS
2300	7440	Radio Ukraine International	UU
2300	7345	RT Tunisienne, Tunisia	AA
2300	7255	Voice of Nigeria	EE/Hausa
2300	5960	Voice of Turkey	
2300	9330	WBCQ, Maine	
2300	5920	WBOH, North Carolina	
2300	9370	WTCJ, North Carolina	
2300	7465	WWCR, Tennessee	

Dear Editor:

[BBC journalist] Jeremy Paxman recently summed up his—and many other people's—view of the BBC World Service in *The Guardian*'s "My Hero" series:

"I don't suppose there are many heroes who wear a cardigan and cords. But that's how I imagine the BBC World Service, an ageing uncle who's seen it all...I have never, ever, anywhere in the world, heard anyone say a bad word about the World Service."

As the director of a new U.S. non-profit that distributes self-powered shortwave radios to the developing world, I was disappointed—admittedly, for nostalgic reasons—when the BBC World Service stopped broadcasting shortwave to North America in '01.

But to cut Portuguese broadcasts to *Africa*? It's not like folks living in Angola can simply pick up their smart phones, log into the BBCWS website and stream fresh audio. Hey, wake up and smell the problems of the developing world: These are people who absolutely rely on that dusty scrap of technology, the radio, and therefore on that British uncle for their view of the world, especially the western world. More specifically, these people rely on shortwave radio, a medium that (unlike the Internet) can deliver news content at the speed of light without regard for national borders, those ever-wavering outlines on a map, or for controlling dictatorships, or for median incomes of less than $1US per day, to address their profound hunger for sound information.

I don't pretend to have an answer to the economic problems resulting in the BBC World Service's crippling cuts. No doubt, it's pricey to run a reputable international broadcaster whose reach—up to this point—has been the most ubiquitous on the planet.

But I'd like to suggest measuring those costs in a slightly different way: cost per listener. And if Paxman's cited audience size is right—a nearly incomprehensible 241 million—we just might come up with the most economical information distribution (read: foreign aid) program in the known universe.

If I could speak on behalf of those who listen to the BBCWS in the dark of night—political or literal—I'd say a mouthful. And there are many such listeners; mains power skips right over vast regions, often war-scarred for generations, where Internet and phone are no more reliable for those who own a cast-off piece of technology or who can scrounge a battery or two. For these people, the night can be very long, indeed. Radio—*defined* by the BBCWS—is The Voice in the night. The Service has been that since the 1930s, gradually wearing down/evolving from the awkwardly imperial into the modest cardiganed hero of our day. It still represents to many people a connection to their larger world, a bit of perspective on it all; it is the calm voice in the long night, the clear voice amid swirling static. When those wires are cut, the night will be endless, the silence deafening.

When I lived in the UK for a few years about a decade ago, I often thought it amusing that the Brits seemed to be continually repairing structures and systems that might have been better scrapped and started fresh. "British Bathtub Laws," I dubbed the practice; rather than just buy new tubs, so used were you Brits to the comfortable contours of your old ones, you preferred to whack sputtering pipes with spanners. We Americans would have given up. In the end, I always marveled at how you kept those old tubs (structures, systems) working. Yet here's a case of behavior so inconceivably uncharacteristic that I have to wonder what's become of you. This is the BBC World Service we're talking about! Babies are flying right out with the bathwater.

Think, just for a second, of those babes: among them, our world's future leaders, the protagonists and/or antagonists of future histories. They still need heroes, however modest, however British.

Now, won't you try another way?

Thomas Witherspoon
Founder/Director, Ears To Our World

***Dear Thomas**:*

Some people no doubt consider it inevitable that shortwave voices will fade to silence in the night. I do not. And I intend to raise mine in a clamor to the contrary for as long as a voice is mine. See this month's "Tuning In."

—Editor

by Staff

New, Interesting, And Useful Communications Products

ICOM IC-7410 HF + 6-Meter Transceiver

ICOM America announced its new IC-7410 amateur radio transceiver, featuring advanced digital capabilities normally found in much higher-cost rigs. According to the manufacturer, the 7410 adds superior DSP speed and capability to a rig that's priced and designed for everyday use and represents a major upgrade in performance over its predecessor, the 746-PRO (MFLOPS speed of the 7410's DSP chip is up to 20 times faster than the older unit). This specialized HF rig employs the same high-grade DSP unit and double conversion super-heterodyne system used in the IC-7800/IC-7700/IC-7600 series. In addition, when used with the optional FL-430 and FL-431 filters, narrow mode signals are protected from adjacent in-band signals. The 3-kHz first IF filter is especially effective in the CW and SSB modes. Like the IC-7600, the 7410 offers +30dBm third-order intercept point (IP3) in 14 MHz. It comes with a standard type-B USB connector on its back panel, and modulation input, audio output, RTTY demodulator output and CIV command can be controlled via the USB cable. A conventional C-IV remote control jack is built in. Optional remote control software will soon be available. Already FCC approved, at press time the IC-7410 was still pending delivery to the U.S. market with recommended retail price yet to be determined.

The ICOM IC-7410 HF + 6-meter transceiver boasts superior DSP speed and capability and represents a major upgrade in performance over its predecessor, the 746PRO.

For more information on the ICOM IC-7410, visit www.icomamerica.com.

World Radio TV Handbook Offers Bargraph Schedules On CD

Welcome news for fans of the bygone *Passport to World Band Radio* comes from the publisher of the *World Radio TV Handbook*. *WRTH* is now offering broadcast schedules in a bargraph format on CD. New for the B10 season, international broadcasts on LW, MW and SW and domestic SW, are displayed in a color bargraph, similar in design to *PWBR*'s popular "blue pages." According to the *WRTH* website, "the Bargraph Frequency Guide has been carefully designed to give the maximum information in a clear and easy to read format." Information on the CD is organized in text columns that show the frequency of the broadcasts in kHz; the names of the stations making the broadcasts or the broadcasters responsible for them (domestic broadcasts are shown in italics to differentiate them from international broadcasts); the transmitter site code for international broadcasts and the country code for domestic transmissions; and the power of the transmitter in kW. Much more information is instantly visually conveyed, and you can also use the Find function in Adobe Acrobat to search for frequencies, stations, or sites. The disk also includes a list of abbreviations used in the bargraph along with decode tables for international transmitter sites and countries or geographical areas. You can use these pages to identify a broadcast heard on a specific frequency, or you can scan the color bars to find broadcasts in a chosen language at a particular UTC time.

The publisher plans to make the *WRTH* Bargraph Frequency Guide available for direct download later this year; as of press time it was only available on CD from the *WRTH* website (www.wrth.com) for £9.99 (approx. $16 U.S.).

On The "Beach"—Naval Base Ventura County Point Mugu

by Mark Meece, N8ICW
ohioscan@gmail.com

When we think of the countless scenic highways America has to offer, likely one of the first that come to mind is California's State Route 1. CA 1 offers some of the most breathtaking scenery of any highway in the continental United States, scenery that makes it better known in most parts as the Pacific Coast Highway.

If we were to start at the western terminus of Interstate 10 and join up with CA 1, heading north we'd weave along the beautiful coastline towns of Santa Monica, Malibu, and Santa Barbara. Further north still into Ventura County we find the small beach town of Port Hueneme and Point Mugu State Park, which borders CA 1. And this is where we find ourselves for this issue's column, specifically at Naval Base Ventura County Point Mugu.

Eleven years ago the United States Navy proposed realigning Naval Air Weapons Station (NAWS) Point Mugu and Naval Construction Battalion Center (CBC) Port Hueneme with Naval Outlying Field (OLF) San Nicholas Island and consolidated them into Naval Base Ventura County Point Mugu, which is shortened to NBVC Point Mugu. As a major naval facility, NBVC provides airfield, seaport, and base support services to fleet operating forces and shore activities.

"The name [Point Mugu] is believed to be derived from the Chumash Indian word muwu, *meaning 'beach,' as taken from the journals of pacific explorer Juan Rodriguez Cabrillo in 1542."*

Base History And Organization

Point Mugu is located near the city of Oxnard, about 50 miles northwest of Los Angeles. The name is believed to be derived from the Chumash Indian word *muwu*, meaning "beach," as taken from the journals of pacific explorer Juan Rodriguez Cabrillo in 1542.

An E-2 Hawkeye in flight.

Route sign for California State Route 1 (CA 1).

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FA-18 Super Hornet.

The site has been an integral facility within the United States Navy since the late 1940s when land adjacent to Point Mugu was used for a major missile development area and test facility. It was at this site that many of the Navy's missile systems were developed and tested throughout the 1950s and '60s. Missiles such as the AIM-7 Sparrow, AIM-54 Phoenix air-to-air, and Regulus surface-to-air systems were tested and refined in the area of Point Mugu. The test range itself stretches well off shore out to Navy-owned Saint Nicolas Island, the furthest point of land in the Channel Islands chain.

As a naval facility, Point Mugu has changed designation many times over the years. Today Point Mugu is a part of the Naval Air Warfare Center Weapons Division (NAWCWPNS), which serves is the Navy's complete research, development, test evaluation, and in-service engineering center for weapons systems associated with air warfare (with the exception of anti-submarine warfare systems). This includes missiles and missile subsystems, aircraft weapons integration, and assigned airborne

View of the California Central Coast.

View of Big Sur from the Pacific Coast Highway.

CA 1 cuts right along side Mugu Rock at Point Mugu, California.

electronic warfare systems. NAWCWPNS also maintains and operates the air, land, and sea Naval Western Test Range Complex (NWTRC).

The Navy's Weapons Division also includes China Lake, California, and the Ordnance Missile Test Station (NOMTS), White Sands, New Mexico. The Navy's E-2 wing was moved from NAS Miramar to NVBC precipitating the change in chain of command for the installation. Under the CINC Pacific Fleet/COMNAVAIRPAC organization all installations are now under regional commanders who report to the CINC.

The main base is located on 4,500 acres at Point Mugu, and the main base complex includes NAWS Point Mugu and Laguna Peak. NAWS Point Mugu at NBVC Ventura County (KNTD) operates three runways: 3/21, which is 11,102 x 200 feet; 9/27, which is 5500 x 200; and OLF Saint Nicolas Island (KNSI), which hosts runway 12/30 and is 10002 x 194 feet.

Former President Ronald Reagan made use of the airfield at Point Mugu during his presidency when he visited his ranch in Santa Barbara, and the airfield paid a stirring tribute to him one last time during his state funeral in 2004. To honor him, his body was flown from NAWS Point Mugu to Washington D.C. where he was to lie in state in the Capitol Rotunda. Two days later his

Shield for VAW-117 "Wallbangers" stationed at NBVC Point Mugu.

body was flown in presidential aircraft SAM 28000 back to NAWS Point Mugu.

Channel Islands Air National Guard Station operates on 206 acres on fee-based land adjacent to Point Mugu. The 146th Airlift Wing and its subordinate unit, the 115th Airlift Squadron, moved from Van Nuys Air National Guard Base to Channel Islands ANGS in 1990 and uses the runways at NAWS Point Mugu to provide global airlift missions flying the C-130J.

The Naval Carrier Airborne Early Warning (VAW) units fly the E-2C "Hawkeye." Made by Grumman, these are twin turboprop all-weather carrier-based tactical Airborne Early Warning aircraft. These aircraft have been in service since the 1960s, providing all-weather airborne early warning and command and control functions for the carrier battle group. Other mission types include surface surveillance coordination, strike and interceptor control, search and rescue guidance, and communications relay.

In our "Listening In" section we list the active naval flying units stationed at NAWS Point Mugu, along with the known frequencies used at the Naval Base Ventura County complex.

If You Visit...

As part of its community outreach and educational programs, NBVC offers tours of some base facilities, including the following:

Port Hueneme
- Fire Station
- Public Works Engineering Services

Point Mugu
- Air Traffic Control Tower & Radar Room
- Airborne Carrier Command and Control Squadrons (E2s)
- Explosive Ordnance Disposal Unit 3 Fire Station/Crash Crew
- Fire Station/Crash Crew
- Military Working Dogs
- VR-55 Minutemen
- Naval Satellite Operations Center
- Windshield tour

You may contact the NBVC Community Relations Office at 805-989-8095 to book tours.

Another great part of NBVC is the United States Navy SEEBEE Museum. As of this writing, the museum is closed while it relocates to a new facility, but it's expected to reopen in Fall 2011. For information on the USN SEEBEE Museum, check out its website at www.history.navy.mil/museums/seabee_museum.htm.

As mentioned earlier in the column, nearby you'll find Point Mugu State Park, which is a popular recreational destination and its 15,000 acres offers a great opportunity for viewing a wonderful variety of birds, marine mammals, and wildflowers. Mugu Lagoon provides one of the largest under-developed coastal wetlands in Southern California.

Other nearby points of interest include Santa Monica Mountains National Recreation Area and Channel Island National Park, and farther into the interior of Ventura County is the Los Padres National Forest.

This splendid area offers much to do and listen in to. So hop in the convertible, put the top down, load up your scanner, and enjoy the scenery!

Reader Logs

Are you catching some HF Military Intercepts from your neck of the woods? We enjoy receiving your input and your loggings—whether they're on HF, VHF, or UHF—for this column. We encourage you to write to us using the email address listed in the column header. When sending logs, please try to follow the format you see here and we will include them in a future issue.

Once again contributor Doug Bell of Ontario, Canada, provides us with his HF military intercepts, heard from his Sony ICF-2010 and ICOM R-75 using a 50-foot long wire.

5598 USB: 2351Z OMEGA 94 (K-707, KDC-10 Tanker) wkg New York Radio and receiving clearance to climb to fl 350.

5616 USB: 0110Z CONVOY 3104 (C-130T #164996/"Condors," VR-64, NAS Willow Grove, PA) wkg Gander Radio with a 050W position report.

0111Z CANFORCE 4168 (CC-150 #15003/8 WG, 437 SQN, CFB Trenton, Ontario) wkg Gander Radio with a APKQ SELCAL check.

0235Z REACH 112 (KC-10A #79-1948/60th AMW, Travis AFB, CA) wkg Gander Radio and receiving clearance to climb to fl 320.

0253Z REACH 3871 (KC-135R #63-8871/319th ARW, Grand Forks AFB, ND) wkg Gander Radio with a KQCE SELCAL check.

0426Z AVALON 41 (C-40C #05-0932/932nd AW, 73rd AS, Scott AFB, IL) wkg Gander Radio with a DSGK SELCAL check.

2300Z HAVOC 20 (B-52H/2nd BW, 96th BS Barksdale AFB, LA) wkg Gander Radio with a 030W position report in a fl block of 270–280.

6761 USB: 1835Z JEEP 21 (KC-135T #58-0062/127th ARW, 171st ARS, MI-ANG, Selfridge ANGB, MI) repeatedly calling "mainsail" with no response.

8864 USB: 1233Z REACH 251 (C-17A #96-0004/437th AW, Charleston AFB, SC) wkg Gander Radio with a 030W position report with fl 300.

1248Z CANFORCE 4154 (CC-150 #15001/8 WG, 437 SQN, CFB Trenton, Ontario) wkg Gander Radio with a full 040W position report.

1301Z REACH 745 (C-5B #86-0026/60th AMW, Travis AFB, CA) wkg Gander Radio with a position confirmation.

1301Z SPAR 29 (C-37A #01-0029/6th AMW, 310th AS, MacDill AFB, FL) wkg Gander Radio with a 030W position report. Flight performed a HSKQ SELCAL check.

8918 USB: 2007Z COAST GUARD 2002 (HC-130J #2002/CGAS Elizabeth City) wkg New York Radio and receiving clearance to climb to fl 190. Flight reported itself to be on a SAR Mission.

8983 USB: 2049Z COAST GUARD 1701 (HC-130H7 #1701/CGAS Barbers Point) wkg CAMSLANT-Chesapeake and reporting "operations normal" and a position of 22N.

8992 USB: 2359Z CONVOY 3153 (C-130T #164996/"Condors," VR-64, NAS Willow Grove, PA) wkg HF-GCS Station PUERTO RICO with a phone patch and weather passed for March AFB.

11175 USB: 1238Z REACH 421 (C-5A #70-0462/167th AW, 167th AS, WV-ANG, Shepherd Field, WV) repeatedly calling "mainsail" with no response.

1653Z TOPCAT 30 (RC-135W #62-4130/55th WG, 38th RS,

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Offutt AFB, NE) wkg HF-GCS Station OFFUTT with a phone patch and flight data passed.

1755Z NAVY LN 934 (P-3C #158934/ "Pelicans," VP-45, NAS Jacksonville, FL) wkg HF-GCS Station MCCLELLAN with an HF radio check.

2038Z MADFOX 01 (P-3C/"Madfoxes," VP-5, NAS Jacksonville, FL) wkg HF-GCS Station OFFUTT with an HF radio check.

2118Z REACH 5143 (C-17A #05-5143/452nd AMW, 729th AS, March AFB, CA) wkg HF-GCS Station OFFUTT with an HF radio check.

2135Z REACH 581 (C-130J #99-1432/143rd AW, 143rd AS, RI-ANG, Quonset State Airport, RI) wkg HF-GCS Station PUERTO RICO with a phone patch and flight data passed.

2153Z YANKY 67 (KC-130T #165442/VMGR-452, USMCR, Stewart ANBG, NY) wkg HF-GCS Station OFFUTT with a phone patch attempt.

2157Z FLITE 09 (EC-130E #73-1594/55th ECG, 41st ECS, Davis Monthan AFB, AZ) wkg HF-GCS Station ANDREWS with an HF radio check.

11232 USB: 1622Z PEACH 33 (E-8C #92-3290 JSTARS/116th ACW, Robins AFBN, GA) wkg TRENTON MILITARY with a phone patch to PEACHTREE and coded mission data passed.

13927 USB: 1643Z KING 982 (MC-130P #65-0932/347th RQW, 71st RQS, Moody AFB, GA) wkg MARS Operator AFA 7HS (Leawood, Kansas) with a phone patch and a personal message passed.

1937Z REACH 840 (C-130E #63-7884/19th AW, Little Rock AFB, AR) wkg MARS Operator AFA 5YD (Ohio) with a phone patch and a personal message passed.

2034Z RAMA 31 (B-1B/7th BW, Dyess AFB, TX) wkg MARS Operator AFA 4VP (Indiana) with a phone patch and a personal message passed.

2043Z RAZZ 16 (E-6B #164408/VQ-3, Tinker AFB, OK) wkg an unidentifiable MARS Operator with a phone patch and a personal greeting passed. Flight reported itself to be over northern California.

Listening In

UNIT	AIRCRAFT	NAME
VX-30	NP-3D	Bloodhounds
	UC-12B	
	DC-130A	
	SA227	
VAW-112	E-2C 2000NP	Golden Hawks
VAW-113	E-2C 2000	Black Eagles
VAW-116	E-2C 2000	Sun Kings
VAW-117	E-2C 2000NP	Wallbangers
VR-55	C-130T	Bicentennial Minutemen

NAVAL BASE VENTURA COUNTY (KNTD)
NAWS POINT MUGU
CBC PORT HUENEME
CHANNEL ISLANDS ANGS

AERONAUTICAL OPERATIONS

120.750	Clearance Delivery
121.600	Point Mugu Ground
124.850	Point Mugu Tower
125.550	ATIS
126.850	Navy Nicolas Tower
128.650	Point Mugu Approach/Departure
126.200	Point Mugu Tower
126.850	Radar
127.550	PLEAD Range Control
134.100	Radar
135.175	Point Mugu Tower
250.300	VAW-116 Operations
267.500	Base Operations
279.550	Clearance Delivery
290.375	Point Mugu Tower
293.900	VAW-116 Tactical
304.250	VX-30 Operations
305.600	146th AW Operations
306.600	PLEAD Range Control
307.275	Point Mugu Approach/Departure
308.400	Radar
319.300	146th FW Operations
335.500	Point Mugu Approach/Departure
340.200	Point Mugu Tower
344.500	VR-55 Operations
345.200	Radar
346.100	VAW-112 Operations
360.200	Point Mugu Ground
363.050	ATIS
379.300	Navy Nicolas Tower
386.350	Metro

SUPPORT OPERATIONS

140.025/149.075	Point Mugu Police Dispatch
140.250/148.975	Point Mugu Fire Dispatch
148.500	Channel Islands ANGS Disaster Net
149.225	Channel Islands ANGS Ramp Ops
150.525	Point Mugu Police Tactical

* Note PLEAD stands for Pacific Launch Evaluation And Development

Smart Scanning With A Smart Phone—Here, There, And Everywhere

by Mitch Gill, NA7US,
NA7US@yahoo.com

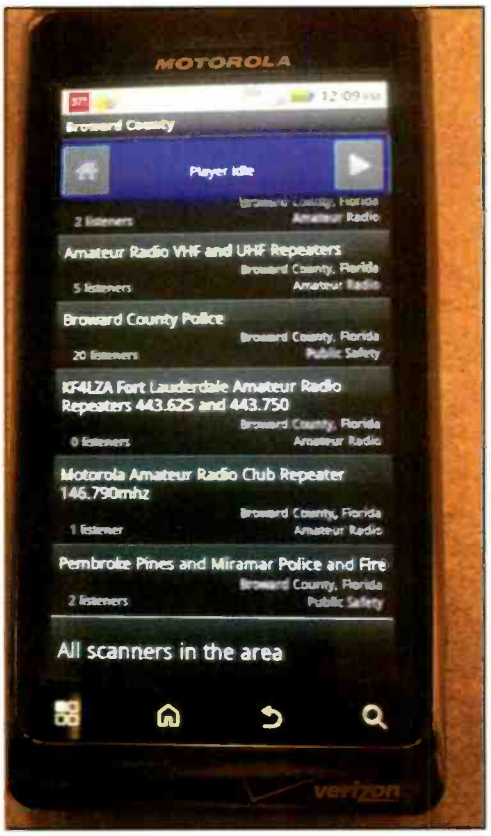
"Like me, I'm sure that many of you out there appreciate the touch and feel of an actual scanner. I've got to say, though, my phone has given me more capabilities than I ever thought possible."

Technology continues to move forward and I continue to try to catch up with it. I don't always succeed but I often come close. I recently moved from just making telephone calls and sending a few text messages on a standard phone to using a Smart Phone with the Android operating system. While I didn't get the phone for my job in emergency operations or for my amateur radio or scanning hobby, I'm pleasantly surprised by how much the phone has become a valuable part of both.

Like me, I'm sure that many of you out there appreciate the touch and feel of an actual scanner. I've got to say, though, my phone has given me more capabilities than I ever thought possible. With it, I can monitor scanners locally and even around the world. If an incident happens in another country I may have the ability to listen in. (With this in mind, see the "Monitoring The Rail And Bus System In Ireland" sidebar.)

I also have the capability of tethering my computer to the Internet through my phone. This also lets me use websites that have live scanners, allowing me to check anything from local news to river gauges during floods. I can monitor the shortwave

With the Radio Scanner application on my Smart Phone, I can browse different types of scanners in any nation or state that's listed.



As you can see, this location offers amateur radio repeaters as well as first responders to listen to. Some locations only have police or fire, but many also have air, railways, and taxis.

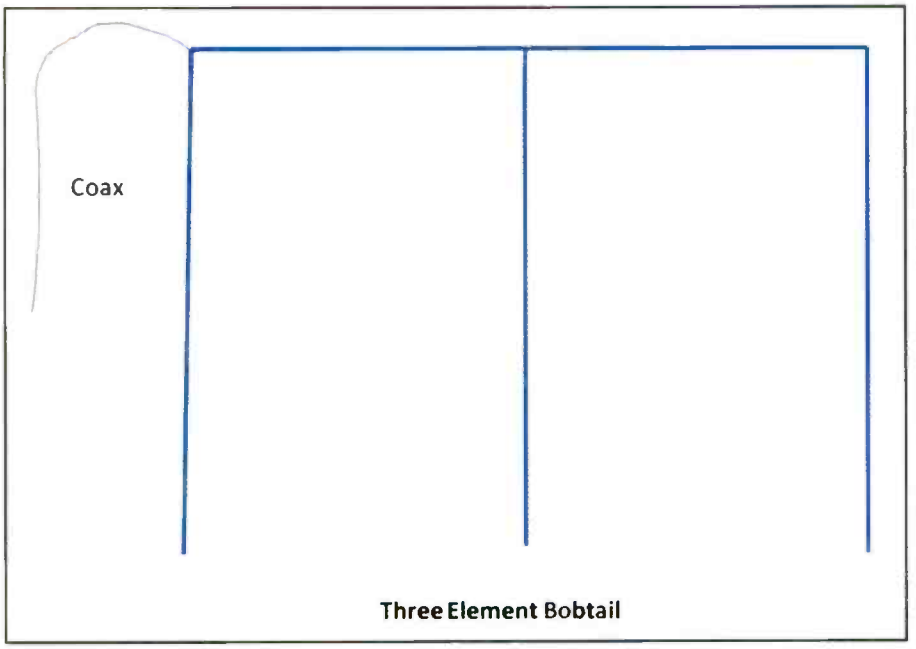
Monitoring The Rail And Bus System In Ireland

For Homeland Security, our main focus is those frequencies just outside of the amateur radio, police, fire, and even the HF bands, but monitoring scanners worldwide may give us interesting—even vital—information.

Since *Popular Communications* is an international magazine, and since our new tools make it even easier for anyone to monitoring almost anywhere, I thought that it would be a good idea to explore some of international scanning frequencies.

This issue we offer a sampling of some of the frequencies used by the rail and bus system of Ireland. Terrorism has left many scars on the country, and no doubt the authorities are vigilant in monitoring all frequencies they need to. If you find yourself in Ireland, you may be able to listen, too.

166.o000	170.8000	DUBLIN BUS	PHIBSB0R0	DUBLIN	NFM	
166.0250	170.8250	DUBLIN BUS	PHIBSB0R0	DUBLIN	NFM	
166.0500	170.8500	DUBLIN BUS	D0NNYBR00K	DUBLIN	NFM	
166.0750	170.8750	DUBLIN BUS	D0NNYBR00K	DUBLIN	NFM	
166.1000	170.9000	DUBLIN BUS	PHIBSB0R0	DUBLIN	NFM	
166.1250	170.9250	DUBLIN BUS	CL0NTARF	DUBLIN	NFM	
166.1500	170.9500	IRISH RAIL		DUBLIN	NFM	
166.1750	170.9750	IRISH RAIL		DUBLIN	NFM	
166.2000	171.0000	IRISH RAIL		DUBLIN	NFM	
166.2250	171.0250	DUBLIN BUS	RINGSEND	DUBLIN	NFM	MAINTAN
166.2500	171.0500	IRISH RAIL		DUBLIN	NFM	
166.2750	171.0750	DUBLIN BUS	C0NYNHAM	DUBLIN	NFM	
166.3000	171.1000	DUBLIN BUS		DUBLIN	NFM	INSPECT
166.3250	171.1250	DUBLIN BUS	C0NYNHAM	DUBLIN	NFM	
166.3500	171.1500	DUBLIN BUS	D0NNYBR00K	DUBLIN	NFM	
166.3750	171.1750	IRISH RAIL		DUBLIN	NFM	
166.4000	171.2000	DUBLIN BUS	SUMMERHILL	DUBLIN	NFM	
166.4250	171.2250	DUBLIN BUS	RINGSEND	DUBLIN	NFM	
166.4500	171.2500	DUBLIN BUS	SUMMERHILL	DUBLIN	NFM	
166.4750	171.2750	DUBLIN BUS	D0NNYBR00K	DUBLIN	NFM	
166.5000	171.3000	DUBLIN BUS		DUBLIN	NFM	
454.4750	468.4750	DUBLIN BUS		DUBLIN	NFM	
454.5000	468.5000	DUBLIN BUS		DUBLIN	NFM	
456.1750	461.6750	IRISH RAIL	H0WTH JUN	DUBLIN	NFM	DART
456.2000	461.7000	IRISH RAIL		DUBLIN	NFM	
456.2250	461.7250	IRISH RAIL	C0NNALLY	DUBLIN	NFM	DART
456.2500	461.7500	IRISH RAIL		DUBLIN	NFM	
456.2750	461.7750	IRISH RAIL	DUNL0ARIE	DUBLIN	NFM	DART
456.3000	461.8000	IRISH RAIL		DUBLIN	NFM	
456.3250	461.8250	IRISH RAIL		DUBLIN	NFM	
456.3750	461.8750	IRISH RAIL		DUBLIN	NFM	EMERGACY
456.4250	461.9250	IRISH RAIL	LEIXLIP	DUBLIN	NFM	
456.4500	456.9500	IRISH RAIL		DUBLIN	NFM	
453.1750	459.6750	IRISH RAIL		DUBLIN	NFM	FREIGHT
453.0250	459.5250	IRISH RAIL		DUBLIN	NFM	FREIGHT
459.6750	453.1750	CIE		DUBLIN	NFM	
166.1750		IRISH RAIL		DUBLIN	NFM	
456.1750		IRISH RAIL	H0WTH JUN	DUBLIN	NFM	DART
456.5500		IRISH RAIL	C0NTR0L	DUBLIN	NFM	DART
456.2250		IRISH RAIL	C0NNALLY	DUBLIN	NFM	
461.7250		IRISH RAIL		DUBLIN	NFM	
461.6750		IRISH RAIL		DUBLIN	NFM	
461.7750		IRISH RAIL		DUBLIN	NFM	
166.1500		IRISH RAIL		DUBLIN	NFM	
166.2500		IRISH RAIL		DUBLIN	NFM	
456.2750		IRISH RAIL	DUNL0ARIE	DUBLIN	NFM	



The Bobtail is a bidirectional, vertically polarized, phased-array antenna that offers gain. It's sometimes known as a curtain antenna or wire beam. This diagram shows a three-element Bobtail, but they may have five elements or more.

frequencies as well. Just one of many sites that provide SWL receivers on the Web can be found at www.ralabs.com/webradio/. It's very interesting stuff and definitely worth checking out.

Another capability I have is tying my scanner to my home computer and using Radio over IP (RoIP). This simply means that I can put my scanner on at home and listen to it via any computer anywhere in the world.

The scanning application I use for my phone is called Scanner Radio and was written for Android by Gordon Edwards (search for it at www.androlib.com). It pulls scanners from several websites, and though it doesn't scan all the frequencies I want, it has enough to make it interesting and they are adding to the list all the time. I highly recommend this application if you're using a smart phone with the Android operating system, but let me be very clear: This is just another tool to assist in monitoring and not something we want to rely on. We are all aware of what happens to our cell phone connections during storms, high winds, or other natural and manmade events.

What's A Bobtail?

If you're not getting the signals you want when you monitor your favorite bands, you may need a better antenna. I found a great one for shortwave and amateur radio made by John Kosmak, W3IK (john.w3ik@yahoo.com). John offers Bobtail antennas that are basically end-fed wire beams with gain. Throw one end up in a tree and the other end in another tree and you have a beam!

In the interest of full disclosure, I have known John for 33 years, but that is *not* why I'm recommending these antennas. John began selling them only in the last year after I kept telling him that he needed to offer them to others. While I was stationed in Iraq, John made me a three-element Bobtail that I used until the Iraqi government shut down all amateur radio operations. The Bobtail was superior to my inverted V. I could hear more and work more stations.

He's making another antenna for me—a 20-meter QRP Bobtail that will fit in my pocket. I'll be testing it out when it gets warmer and will let you know what I find.

Pop'Comm Salute

This issue I would like to salute the first responders to the Arizona shooting in January. A good friend of mine who lives in Tucson knows some of them and told me just how professional they were. I'm constantly amazed at just what such people can accomplish in such tragic circumstances,. So my hat is off to the police, fire fighters, EMTs, doctors, and nurses! As of this writing, Representative Gabrielle Giffords condition has been upgraded from serious to good. I pray that she has a fast and full recovery.

Till next time, keep listening!

The Zenith 8G005 Trans-Oceanic Challenge—Part III Troubleshooting And Alignment

by Peter J. Bertini
radioconnection@juno.com

"Did anyone come up with the answer to the question I posed last time?...Well, here it is...."

We've covered the electrical portion of my 8G005 Zenith Trans-Oceanic restoration. Let's continue with troubleshooting and the alignment procedures needed to return this fine old radio to good-as-new playing condition.

Troubleshooting Notes

These are densely assembled and complicated sets, and unfortunately, it's easy to make mistakes when changing components. I'd advise you to double-check every step during the restoration. If the radio was working to some degree before restoration started, it's a good idea to verify the playing condition as you progress. I'd even suggest replacing only what is known to be bad just to get the radio playing well enough to permit random testing before jumping into a radio rebuild full steam ahead. This avoids having to fix new problems added to the original ones in an attempt to rush the restoration.

Also, by way of a quick aside, if the radio is playing, but doesn't sound exactly right, it's not a bad idea to check for plate voltage on both of

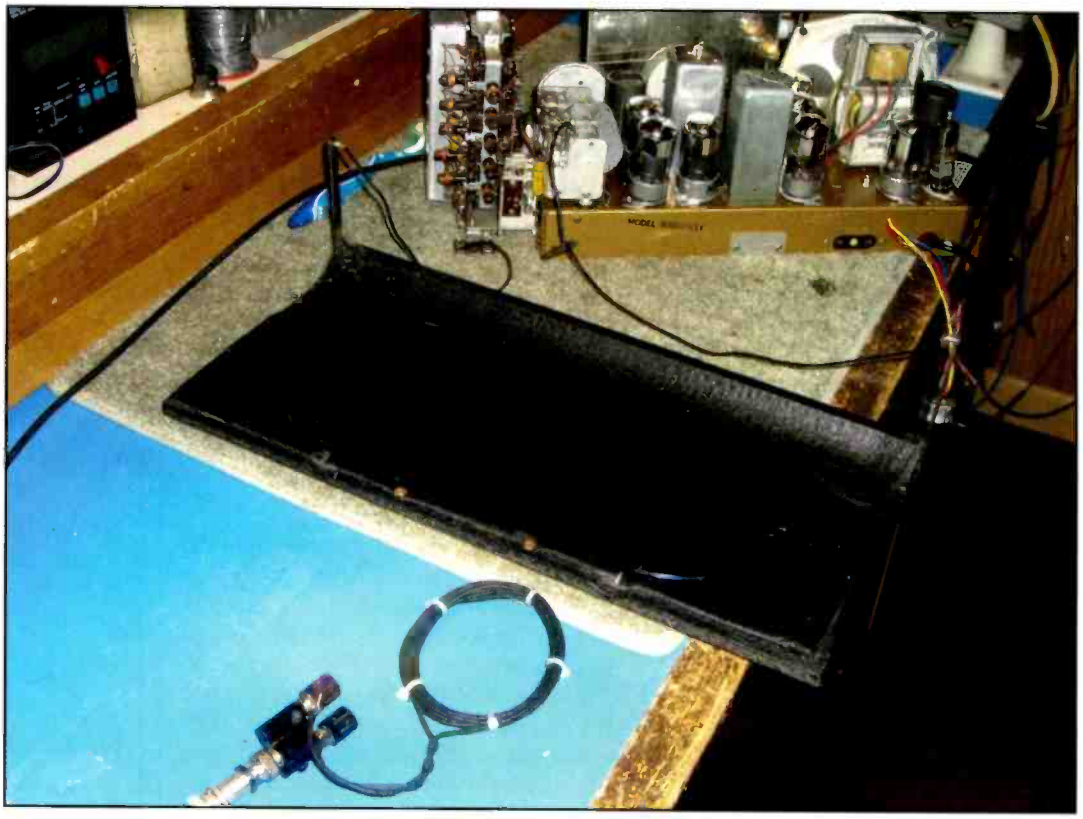
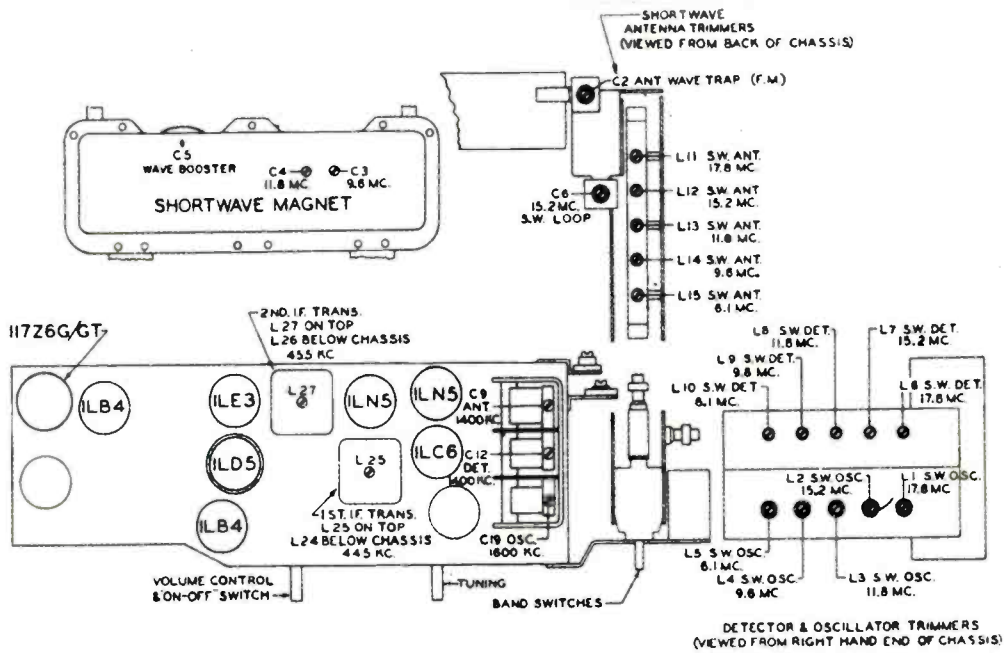


Photo A. Here's a view of the small loop used to inductively couple the signal generator output to the nearby Zenith Wavemagnet antenna. Since the cabinet is torn apart for repairs, you're viewing both the Wavemagnet and the cabinet lid to which it attaches. The Wavemagnet is a high Q tuned loop antenna and is the tuned RF stage for the radio. It should be kept clear of nearby metal objects or clutter.



ALIGNMENT PROCEDURE

OPERATION	CONNECT OSCILLATOR TO	DUMMY ANTENNA	INPUT SIG. FREQUENCY	BAND	SET DIAL AT	TRIMMERS	PURPOSE
1	Converter Grid (Pin 6-1LC6)	.1 mfd.	455 Kc.	BC	600 Kc.	L-24, 25, 26, 27	Align I.F.
2	One Turn Loop Coupled Loosely to Broadcast Wavemagnet		1600 Kc.	BC	1600 Kc.	C-19	Set Oscillator to Scale
3			1400 Kc.	BC	1400 Kc.	C-12	Alignment of Detector Sec.
4			1400 Kc.	BC	1400 Kc.	C-9	Alignment of B.C. Wavemagnet
5*	3 Feet of Wire Approx. 1 foot from Extended Waverod		6.1 Mc.	49 Met.	6.1 Mc.	L-5, L-10, L-15	Alignment of S.W. Antenna, Detector and Oscillator
6*			9.6 Mc.	31 Met.	9.6 Mc.	L-4, L-9, L-14	
7*			11.8 Mc.	25 Met.	11.8 Mc.	L-3, L-8, L-13	
8*			15.2 Mc.	19 Met.	15.2 Mc.	L-2, L-7, L-12	
9*			17.8 Mc.	16 Met.	17.8 Mc.	L-1, L-6, L-11	
10	One Turn Loop Coupled Loosely to Shortwave Magnet, Waverod Collapsed		15.2 Mc.	19 Met.	15.2 Mc.	C-5, C-6	Alignment of Shortwave Magnet
11			11.8 Mc.	25 Met.	11.8 Mc.	C-4	
12			9.6 Mc.	31 Met.	9.6 Mc.	C-3	
13	When Receiving Normal Transmission on the 49, 31, 25, 19 or 16 Meter Bands, If FM Interference Is Experienced Adjust Wave Trap Trimmer C-2 for Minimum Response of the Interfering Signal.						

*Note: Rock Tuning Condenser When Making Alignment Under Operations 5, 6, 7, 8 and 9.

Figure. This page was scanned from *Rider Volume IV* and provides the Zenith factory-suggested alignment procedures for the 8G005 Trans-Oceanic radio. The steps are called "operations"; operation numbers are referred to in the column text.

the audio output tubes in radios with push-pull output stages. One side of the audio transformer's primary winding can open. I've seen this enough to make it worth mentioning.

If you had a dead radio and have completed the steps we previously outlined, hopefully it's back to life to some extent. If not, check the filament voltages. The push-button band-switches are often intermittent from lack of use, and the radio may appear to be dead on all or most bands. Try exercising the switches to see if the problem clears up; if it doesn't, you need to clean the switch contacts.

My favorite contact cleaner is Caig's DeoxIT D5 (www.caig.com). A little contact cleaner goes a very long way; in fact, using a toothpick to carry small droplets of the cleaner to the switch contacts is a good approach. Most of us are guilty of overusing contact cleaners, myself included, but Phenolic insulators can absorb the chemical, which causes more problems than we're trying to cure. Make sure you don't saturate the switch assembly with a bath of cleaner.

While DeoxIT can be used for cleaning potentiometers, it's best to use something that will also provide lubrication for the

wiper and the resistive carbon track, lessening wear and extending life. Here again, another of Caig's products, FaderLube, is great for cleaning these components.

Still no luck? Stage-by-stage troubleshooting is the best way to proceed. There are two ways to troubleshoot: signal injection, working stage by stage from the audio section back to the antenna, or by signal tracing, where you follow the signal from the antenna to the loudspeaker until the problem stage is found. Both techniques were covered in earlier columns, but if anyone wants a refresher course, let me know via email.

Alignment

Before moving on, I want to stress that the Zenith Trans-Oceanics are AC/DC radios, and I *strongly* suggest using an isolation transformer when working on the radios and the chassis is exposed.

The **Figure** shows a scan of the alignment page for the Zenith 8G005 taken from *Rider Volume IV*. This is the alignment procedure for the earlier 8C40 chassis, but it will suffice for the later BC40 and 8C40T versions as well. I wasn't too happy with the clarity of the original document, and the alignment procedure was difficult to follow, but hopefully I can make things a bit clearer as we proceed.

IF Alignment

The first step is to align the IF transformers. This is Zenith's procedure "operation 1," as shown on the Figure. The alignment points are also given in the Figure. We will be adjusting both IF transformers; the adjustments are located on the tops of the transformers (L27 and L25), and on the transformer bottoms (L24 and L26) below chassis.

Inject a modulated 455-kHz signal from your generator to pin 6 of the converter tube, which will be either a 1LC6 or 1LA6 tube. You'll need a DC blocking capacitor between the generator output and the grid. Zenith calls for a 0.1-µF cap, but a 0.01-µF cap is more than adequate. Tune the radio dial to 600 kHz to avoid spurious responses. I suggest using a VTVM to see the AGC voltage changes as the IF transformers are tuned for maximum signal. The AGC (a negative-going voltage) can be found at the junction of R5 (2.2-megohm resistor) and C10 (0.05-µF capacitor). These are connected to the RF cold end of IF transformer T1, which is the black lead from the bottom of the T1 secondary grid winding.

Use just enough signal injection to begin AGC action. The AGC voltage will increase in a negative direction as these stages are tuned to 455 kHz. AGC voltages are low, typically under 1 volt for low-level signals. Reduce the signal generator level as needed, keeping the signal at the lowest level that provides a useable AGC voltage

Again, an isolation transformer is a *must*. Align the four IF adjustments in the order shown in operation 1 in the Figure. Repeat as needed, until no further improvement is noted.

Zenith's procedure measures the AC voltage on the speaker coil, and this results in an annoyingly high audio level. I've never had good luck using that method. The AC voltage on the audio output tube plate might be a better metering point, using an AC VTVM to monitor the level.

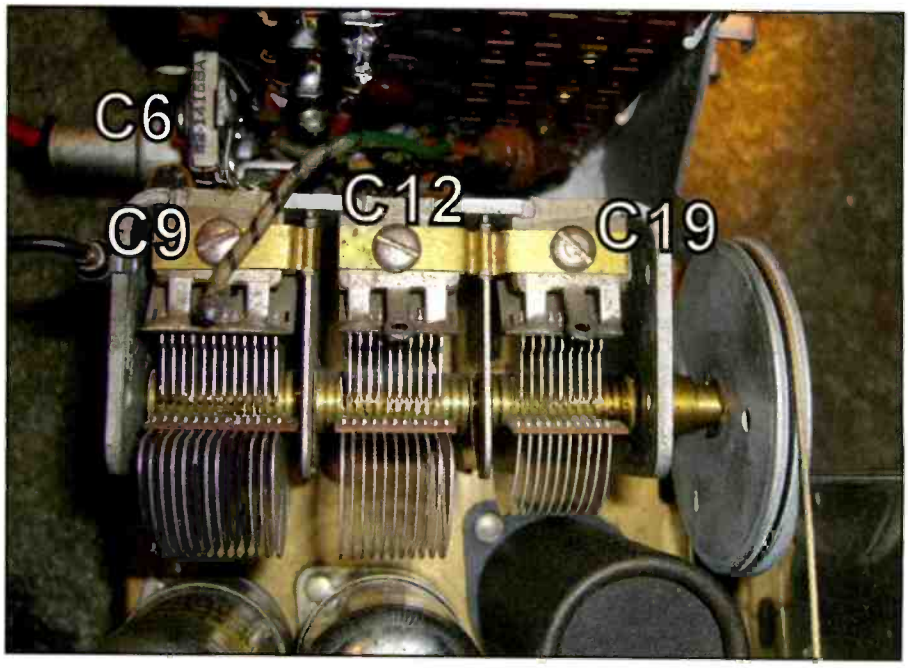


Photo B. The AM broadcast band alignment involves trimmer caps C9, C12, and C19. C9 is the local oscillator and is used to set the dial calibration at 1600 kHz. Capacitor C6 is used when aligning the shortwave Wavemagnet loop antenna.

Broadcast Band Alignment

BCB band reception uses the Zenith Wavemagnet antenna, which is normally attached to the inside of the front cabinet lid. The Wavemagnet connections are via the snaplock clips that hold the antenna in place. Hidden internal leads connect the Wavemagnet to the radio chassis. The front lid's hinges *are part of this wiring*, and these leads connect to the chassis via pin-type connectors. The antenna must be connected during BCB alignment. It should be kept physically clear of nearby metal objects. Refer to Zenith steps shown as "operation 2, 3 and 4" on the Figure. The Trans-Oceanic alignment procedures are pretty simple, and there are no involved tracking procedures required for any of the bands.

You now need to magnetically couple the signal generator signal to the Wavemagnet. This is done by winding a single-turn coil (one or two feet of wire) and connecting it across the coax cable from the signal generator's output jack. I used a smaller coil comprised of several turns wound from about six feet of hookup wire, although the exact dimensions are not critical (**Photo A** shows my bench setup). The trick, however, is to keep the loop as far from the Wavemagnet as possible while keeping it at the lowest possible level needed to do the alignment. I did these steps by ear, listening to the tone from the speaker, and the peaks were easily heard.

Next set the radio dial and modulated signal generator output to 1600 kHz. The BCB band trimmers are on the main tuning capacitor and are identified in **Photo B**. Adjusting oscillator trimmer cap C19 will bring the receiver dial into agreement with the 1600-kHz signal generator signal. Next, set both the radio and generator to 1400 kHz. You'll now align trimmers C12 and C9 for the loudest signal. Keep the signal as weak as possible, but still audible, by moving the loop or reducing the signal generator level. This makes the peaks much easier to discern. Repeat

the last two steps until no further improvement is noted. That completes the AM BCB alignment.

Shortwave Band Alignment

The following steps correspond to "operation 5, 6, 7, 8 and 9" per Zenith's alignment procedures. The whip antenna needs to be connected to the chassis and extended. **Photo C** shows the connection point for the whip; the connection points for the AM Wavemagnet leads are also shown. The shortwave loop antenna should not be connected at this time.

You need to couple the signal generator output so the whip antenna can pick up the signal. This is done by attaching a 1-foot piece of wire at the end of the signal generator's cable. All the shortwave bands are aligned at the center of their tuning ranges, and again, there is no back and forth tracking alignment between the band edges. It's a good bet that the coils will be very close to optimum as found, so proceed slowly during the alignment steps to avoid moving the fragile coil cores any more than is needed.

Forth-Nine Meters

As outlined in operation 5 of Zenith's alignment procedure, you'll start with the 49-meter band (6.00 to 6.27 MHz). Set the radio dial and signal generator both to 6.10 MHz. Rock the generator frequency, or the radio tuning, to determine how far off frequency the local oscillator is. The core in coil L5 is used to align the local oscillator frequency. It might be easier to slowly "walk" the alignment into calibration, rather than randomly adjusting the fragile tuning core more than is necessary to find the correct spot. Next, and using as weak a signal as possible, peak coils L10 and L15 for maximum signal while listening for an increase in level for the signal generator's 400- or 1000-Hz modulation tone on the loudspeaker. These coil locations are on the tuning tower and shown in **Photo D**.

Zenith advises rocking the receiver tuning several kHz while peaking the RF and converter stages. This is because the tuning may "pull" the local oscillator off frequency, giving a wrong indication for the tuning peak. This effect will become increasingly noticeable on 25, 19, and 16 meters.

Thirty-One Meters

Moving on, you'll align the 31-meter shortwave band (9.45–9.85 MHz). Both the radio and signal generator are set to

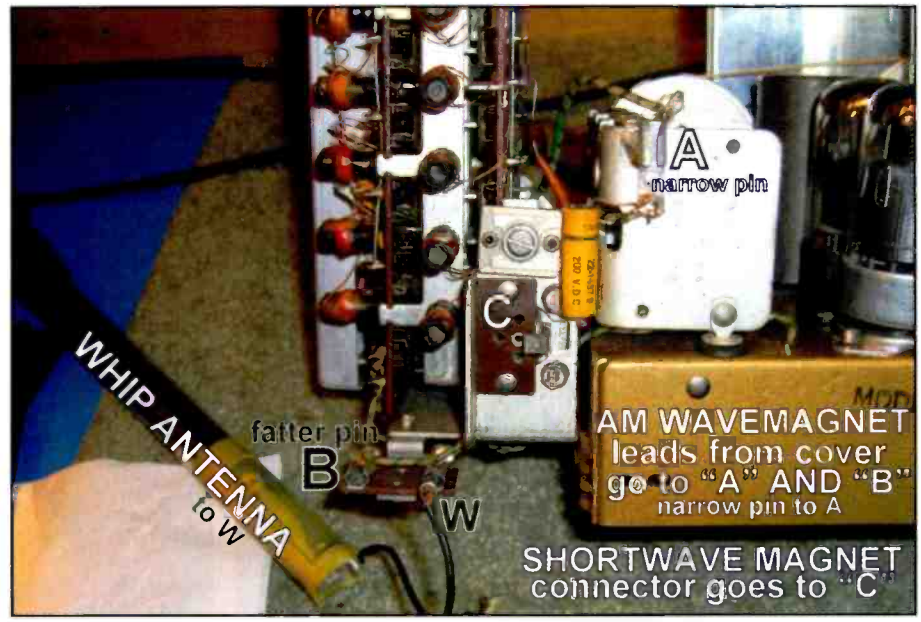


Photo C. There's quite a bit going on in this shot. The Trans-Oceanic's whip antenna can be seen at far left. The lead from this antenna connects to the pin jack designated as point W. The Wavemagnet leads attach to the pin jack connections marked A and B; A is on the back of the tuning capacitor frame, and B is next to the jack (W) used for the whip antenna. Note that the AM antenna uses a "fatter" pin diameter at point B; this avoids confusion as to which wire connects where. The shortwave loop antenna jack is marked C. The antenna plug from the shortwave loop is just visible at the bottom center of the photo. This antenna is used only for special circumstances.

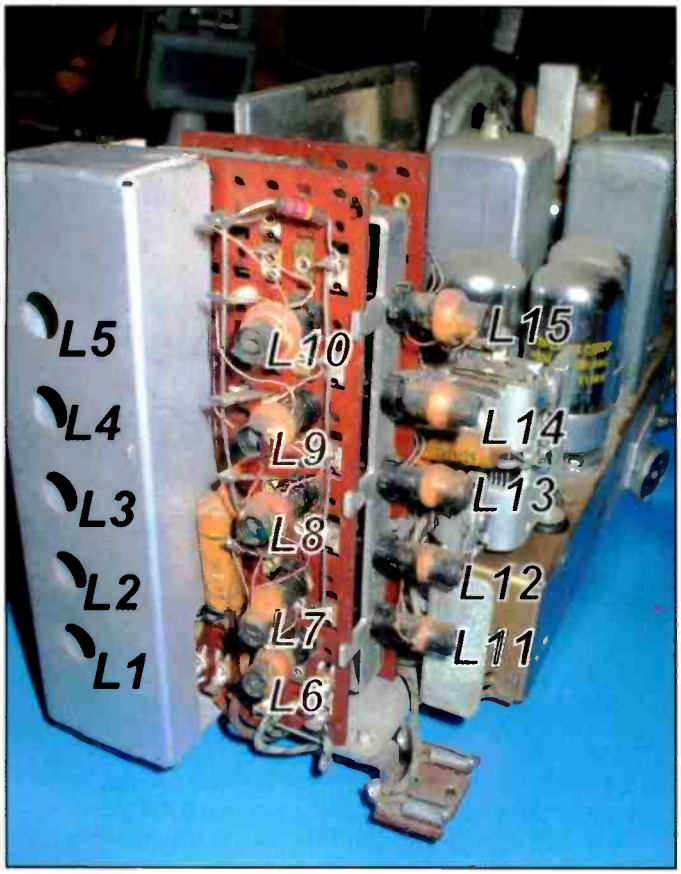


Photo D. The complex tuning-tower is the heart of the Zenith Trans-Oceanic. At the left, the shielded compartment houses the local oscillator band coils. The other coils are for the converter and RF stages. The coil numbers are annotated in the photo to help you identify their locations when doing the alignment.

Photo E. This special shortwave Wavemagnet loop antenna can enhance reception on the 19-, 25-, and 31-meter shortwave bands when the radio is used in areas that shield the whip antenna. It is normally stowed with other accessories on the inside of the rear cabinet cover.

9.60 MHz, as given in the instructions in Zenith's operation 6. Adjust coil L4 until the 9.60-MHz dial position receives the generator signal on 9.60 MHz. Coils L9 and L14 are peaked for the strongest signal. Keep the signal generator output at the lowest level that produces an audible signal. These coil locations are on the tuning tower (refer again to **Photo D**). Repeat the last two alignment steps until no further improvement is noted.

Twenty-Five Meters

As described in Zenith's directions in operation 7, you next align the 25-meter band (11.60–12.10 MHz) at 11.80 MHz by adjusting coils L3, L8, and L13. These coil locations are on the tuning tower (**Photo D**). L3 sets the local oscillator until the generator's 11.80-MHz signal is exactly at the 11.80-MHz dial marking. Coils L8 and L13 are alternatively peaked for maximum signal until no further improvement is noted. Oscillator pulling will become more of a problem on this band. You'll need to carefully rock the tuning when peaking the last two coils to ensure that the true peaks are being heard.

Nineteen Meters

Per Zenith operation 8, the 19-meter band (15.0–15.6 MHz) is next. The generator and receiver are both set to 15.20 MHz. The coils for these steps are L2, L7 and L12. L2 is the local oscillator setting; L7 and L12 are peaked for maximum signal. Tuning interaction with the local oscillator will be worse on this band. These coil locations are on the tuning tower (**Photo D**).

Sixteen Meters

Next up is 16 meters (17.50–18.30 MHz), the highest shortwave band covered by the 8G005 Trans-Oceanic. The dial and generator are set to 17.80 MHz. Coil L1 aligns the oscillator frequency; coils L6 and L11 are peaked for maximum signal. These coil locations are on the tuning tower (**Photo D**). Tuning interaction with the local oscillator is very noticeable on this band, so plan on spending bit of extra time rocking the tuning to get things spot on. *(Note that the FM interference trimmer C2 mentioned in the Figure is not present on the later chassis revisions.)*

Shortwave Wavemagnet Loop Antenna

Normally the whip antenna is used for shortwave reception, but Zenith also envisioned that these radios might be used in a shielded compartment, like a train or airplane. Zenith provides two clever solutions for such operation. First, the AM Wavemagnet may be removed from the lid and, using the ribbon wire stored on the back door lid, be attached to an outside window via the supplied suction cups. Second, Zenith provided a horseshoe-shaped loop antenna for use on the 19-, 25-, and 31-meter bands (see **Photo E**). A tuned loop performs poorly

Photo F. The "wave booster" control is used on 19 meters to peak a weak signal. C3 and C4 are alignment points.

on 16 meters, so this antenna doesn't cover that band. (A previous column incorrectly stated that this antenna only worked on the highest band.)

The shortwave loop antenna is normally stowed in the rear compartment on the back lid, along with the other accessories. The antenna cable is equipped with a special connector that mates with a jack on the rear apron of the radio. This antenna can also be mounted on a window using the accessory suction cups. Before starting its alignment, you should know that the loop antenna's bandswitch is often erratic after decades of nonuse and storage. I needed to carefully open the antenna compartment to spray clean the switch contacts.

Aligning The Shortwave Loop Antenna

When the shortwave loop antenna is connected, the cable connector body activates a mechanical push switch, which transfers the external loop antenna to the radio's RF stage.

The shortwave loop antenna alignment is described in Zenith's operations 10, 11, and 12. Although it is not annotated, trimmer C6 is visible in Photo C. This is the compression trimmer mounted just above the chassis jack (marked C) for the shortwave antenna cable jack. The plug on the antenna cable is barely visible at the bottom center in the photo. **Photo F** shows the locations for C5, C4, and C3.

Photo G. The shortwave loop antenna works on three bands. The small slide switch on the antenna manually selects the correct band coverage for the antenna—this extra step is not automatically done by the front-panel band selector pushbuttons.

The signal generator's homemade coupling loop is also used to inductively couple the signal generator output to the shortwave loop antenna. This is a tuned, high Q antenna, and it should be kept clear of surrounding objects to prevent loading. Per Zenith operation 10, we'll start on 19 meters, again using a frequency of 15.20 MHz for alignment. The shortwave antenna bandswitch must be set to 19 meters (see **Photo G**). Using the weakest signal that produces an audible output, adjust the Wavemagnet "wave booster" control (C5) and compression mica trimmer C6 (refer back to Photo B) for the loudest signal. Note that C6 is mounted near the antenna jack on the radio, not inside the antenna! You will again need to rock the tuning to find the true peaks.

Once 19 meters is aligned, you'll move on to the 25-meter band, following the steps shown in operation 11. Set the dial and generator to 11.80 MHz and the shortwave loop antenna switch for 25 meters. Trimmer capacitor C4 is adjusted for best reception while listening to the 11.80-MHz modulated signal. Rock the tuning as needed to verify the true peak.

The last procedure is for 31 meters and follows the steps shown in operation 12 The generator and radio are set to 9.60 MHz, and the shortwave loop antenna switch for 31 meters. Trimmer C3 is peaked for maximum signal on this band. Rock the tuning as needed to verify the true peak.

This completes the alignment procedure for the 8G005. In retrospect, the old "That Was Easy" slogan used by a popular office supply store comes to mind!

Gremlins

Gremlins crept into the February column! Alas, there were two photos labeled H. Photo H on page 82 is really Photo I, and the caption for Photo I is the caption associated with Photo H. Photo I is really Photo J, and is a view of the inside of the other rebuilt two-section electrolytic capacitor.

Our Teaser

Did anyone come up with the answer to the question I posed last time? I asked, "Can you explain why the designers included the 1000-ohm resistor R15 between the filament string and common return? All the tube filaments are 50mA, but the answer is close at hand if you think hard about C33 and its purpose in the circuit."

Well, here it is...Remember these are directly heated cathode-type tubes, where the filament is also the cathode. All of the DC current passing through the tube also passes through the filaments since they are in series in this radio. Each 1LB4 audio tube can add an extra 5 or 6 mA (plate and screen current) to the filaments—an extra 12 mA of current is appreciable when the tube filaments only draw 50 mA each to begin with! The resistor reduces the extra filament current, keeping the remaining tubes at the proper operating voltages. The bypass capacitor provides a low-impedance path for the audio voltage developed across the cathode to ground, preventing degeneration and improving stage gain. Note that the filament voltages are also providing the grid biasing by keeping the "cathodes" at a positive voltage, as referenced to the grids.

Clever!

Next month we'll do some finishing touchups on the cabinet, which will wrap up our Zenith 8G005 restoration challenge. Until then, keep those soldering irons warm, and those old tubes glowing! And smile; spring is finally here! This old Trans-Oceanic will be headed for the screened porch for some fun late night DXing and catching the Red Sox games!

What Are These Solar Flares?

by Tomas Hood,
NW7US, nw7us@arrl.net

Let's say you finally have a few spare moments and you decide to sit down at your operating station. You're in the mood to listen to your favorite shortwave radio international broadcaster. You dial in the right frequency and you hear the station loud and clear. As you settle back in your chair to enjoy the programming coming from far away, glad that the station is coming in so well, you hear a hiss, quickly getting louder, masking the station. Then the station gets very weak, until it disappears and you only hear the hiss. What happened?

You might think that the radio electronics went out, or maybe there's something wrong with your antenna. You check your antenna and radio, and you're sure that everything's in proper working order. There must be another reason that the signals are gone and nothing can be heard anywhere on the band.

"As you settle back in your chair to enjoy the programming coming from far away, glad that the station is coming in so well, you hear a hiss, quickly getting louder, masking the station...What happened?"

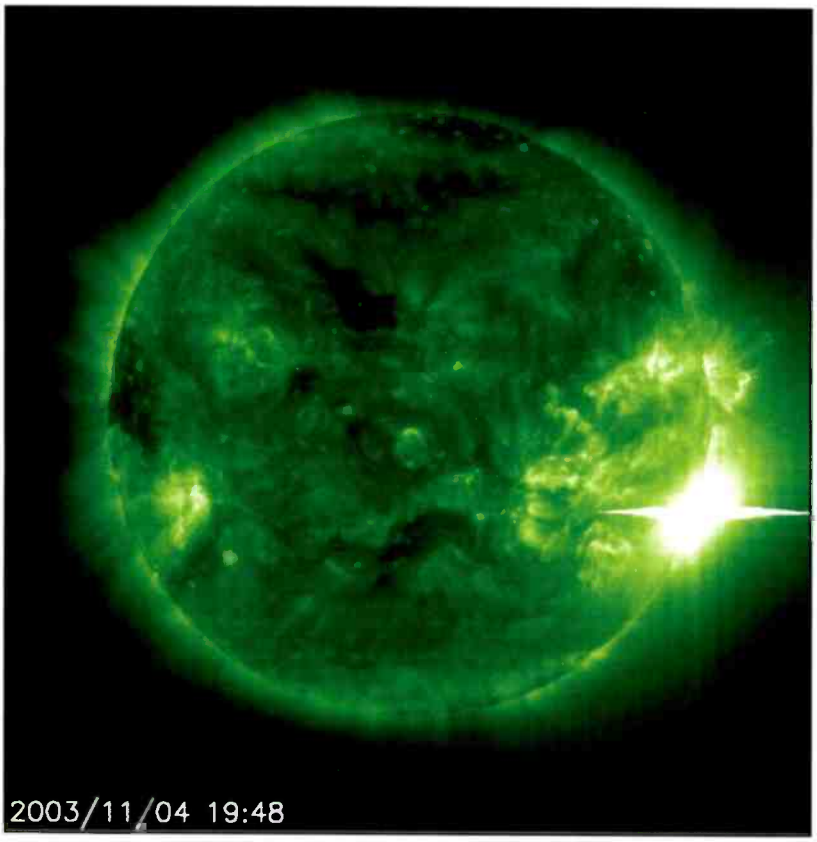


Figure 1. The sun unleashed a powerful flare on November 4, 2003, that could be the most powerful ever witnessed and probably as strong as anything detected since satellites were able to record these events starting in the mid-1970s. The other two strongest flares on record, in 1989 and 2001, were rated at X20, and scientists say this one was stronger. Because it saturated the x-ray detector aboard NOAA's GOES satellite that monitors the sun, however, it's not possible to tell exactly how large it was. The consensus by scientists put it somewhere around X28. (Source: NASA)

Well, if the radio signal is being propagated by way of the ionosphere, a number of conditions might occur that would effectively end a two-way radio communication.

Sudden Ionospheric Disturbances And Other Nuisances

Radio signals can be affected by a number of adverse conditions including a variety of ionospheric disturbances. Some of these disturbances are well understood and can even be predicted with reasonable accuracy. Others are harder to predict with any accuracy, and certainly cause a challenge to the radio communicator.

One of the most basic forms of ionospheric disturbances is driven by the solar flare. These x-ray flares produce enormous amounts of radiation. While most small solar flares do not impact the Earth's ionosphere with enough energy to cause widespread communications blockages, more intense flares with enough energy do cause periods where communications via the ionosphere is impossible. When such a flare occurs, and the ionosphere no longer propagates a radio signal, it creates a condition known as a shortwave fadeout (SWF).

When the extreme ultraviolet (EUV) and x-ray energy arrives on the sunlit side of Earth, it is absorbed in the ionosphere, down to the *D* region heights (70 to 90 km). This increase in energy causes the *D* region to become highly ionized, resulting in the absorption of radio frequencies. The lowest of the radio frequency spec-

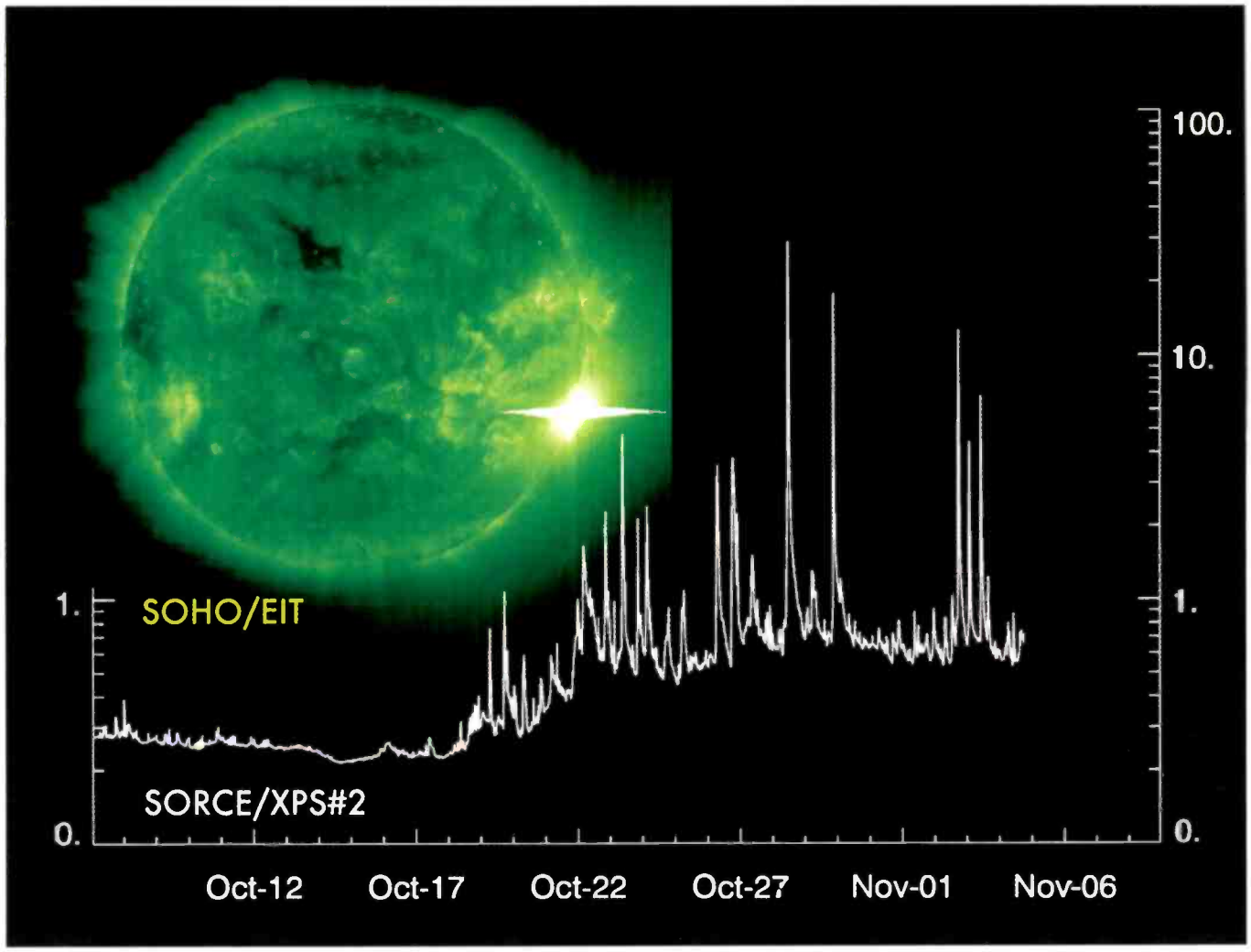


Figure 2. The SORCE mission monitors solar variability to determine its impact on the Earth's climate. The x-ray photometer aboard SORCE observed the record-breaking solar flares in the fall of 2003. The line graph shows the photometer's measured solar radiation flux in the 1–7 nanometer wavelength band (x-ray) measured in milliwatts per square meter. The ultraviolet (195 Angstrom) imagery from SOHO/EIT (green) illustrates where the flares (the bright white spots) are located on the solar disk. (Source: NASA/Goddard Space Flight Center Scientific Visualization Studio)

trum is most affected, and it is most noticeable on frequencies from longwave up through the very low spectrum of shortwave. The more intense the flare energy reaching the ionosphere, the higher the shortwave frequencies affected. The effect can be drastic and very obvious for large flares, hence the term sudden ionospheric disturbance (SID). Those familiar with high-frequency radio know this as a "radio blackout," when the bands grow quiet of all signals. They may last anywhere from a few minutes to over an hour, and are directly tied to the intensity of the flare, as well as how quickly the flare energy rises, peaks, and then fades.

Because solar flare energy travels at the speed of light, it takes about eight minutes for this radiation to reach the ionosphere. And, because this radiation comes from solar flares that are on the visible side of the sun, solar flare effects are limited to the day side of Earth. When the sun sets on the ionospheric *D* region, the source (x-ray and EUV) that caused the ionization disappears. For this reason, only radio signal paths that are illuminated by the sun are susceptible to shortwave fadeouts.

Radio signals are less susceptible to shortwave fadeouts on higher frequencies, because signal absorption is inversely proportional to the square of the radio frequency. Therefore, absorption on 160 meters (mediumwave) is much higher for a signal that passes through the *D* region than for a signal that has a frequency of 18 MHz (mid-shortwave).

If you want to monitor a worldwide map that graphically illustrates the minute-by-minute *D*-region absorption condition as a function of a solar flare (in real time), visit www.sel.noaa.gov/rt_plots/dregion.html. I've watched this map during large flares and confirmed the shortwave fadeout that was being displayed.

X-ray Flares

By far one of the most interesting and impressive types of activity that occur on the sun is the solar flare. Solar flares are good examples of some of the most energetic natural explosive events we've been able to witness. A solar flare occurs when

Optimum Working Frequencies (MHz) - For April 2011 - Flux = 100, Created by NW7US

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

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

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

magnetic field lines that have formed in complex structures, built up in the sun's interior, suddenly snap apart. Radiation is emitted across virtually the entire electromagnetic spectrum, from longwave radio frequencies, through the optical spectrum (the bright flash of a solar flare that is seen by the naked eye), to x-rays and gamma rays at the shortest wavelength end.

As the magnetic energy is being released, the sun heats and accelerates the plasma caught up by these magnetic fields, and releases these particles, and sometimes huge clouds of plasma, out into interplanetary space. The energy released during a flare can reach as high as 1/10 of the sun's total emitted energy every second, and is the equivalent of millions of 100-megaton hydrogen bombs exploding at the same time or 10 million times greater than the energy released from a volcanic explosion (whichever helps you visualize better!).

There are typically three stages to a solar flare. First is the precursor stage that releases the magnetic energy and when soft x-ray emission is detected. During the second stage (the impulsive state), protons and electrons are accelerated to incredibly high energies, and radio waves, hard x-rays, and gamma rays are emitted. Finally, a gradual build up and then decay of soft x-rays is detected in the third stage (the decay stage). The duration of these stages can be as short as a few seconds or as long as an hour.

Solar flares extend out through the layer of the sun called the corona. The corona is the outermost atmosphere of the sun, and is composed of highly rarefied gas with a temperature of a few million degrees Kelvin. A flare can average 10 to 20 million degrees Kelvin, but very intense flares can have temperatures as high as 100 million degrees Kelvin. The corona, visible through soft x-ray filters (**Figure 1**), is not uniformly bright, but is concentrated around the solar equator in loop-shaped features. These bright loops are located within the corona and connect areas of strong magnetic fields called active regions. These active regions are the breeding grounds where sunspots form and from whence solar flares erupt.

Flares are categorized by assigning a letter followed by a number, which tells us the specific intensity of the flare. X-ray flare intensity is measured in units of power per area or watts per meters squared (W m^{-2}). Each letter (A, B, C, M, or X) represents a certain numeric value and the numbers following the letter in the flare classification multiply that value. The numeric values of the letter classes are:

A = $1.0x10^{-8}$ (W m^{-2})
B = $1.0x10^{-7}$ (W m^{-2})
C = $1.0x10^{-6}$ (W m^{-2})
M = $1.0x10^{-5}$ (W m^{-2})
X = $1.0x10^{-4}$ (W m^{-2})

Each category for x-ray flares has nine subdivisions; for example, C1 to C9, M1 to M9, and X1 to X9. To determine the exact intensity of the flare, you multiply the number in the x-ray classification of that flare by the value of its class listed above. For instance, the historical flare of November 4, 2003, that was finally determined to be an X28 flare had an intensity of at least 28.0 times 10^{-4} W m^{-2} (**Figure 2**). That is big! The sensors became saturated at X17.4, and for the next 11 minutes, stayed pegged.

X-class flares can cause the absorption of radio signal energy well past 20 MHz. Minor solar flares (C-class) will not affect frequencies much beyond 5 MHz. The x-rays from these events penetrate into the lower ionosphere and cause the *D* region, which acts as a sponge that soaks up radio signals, to become more energized. The more ionized the *D* region, the higher the frequencies that are absorbed, and the stronger the absorption of the lower frequencies. Thus, radio signals from distant locations that travel through a flare-enhanced ionosphere are absorbed and become inaudible. These fadeouts last only minutes for minor flares, to maybe an hour or so for the largest of flares. Once the flare is exhausted, the x-ray radiation fades and the ionosphere recovers to its normal level of ionization.

Some flares, as they punch through the sun's corona, can cause a cloud of coronal plasma to explode away from the sun into interplanetary space. These clouds are called coronal mass ejections (CMEs). If a CME is directed toward the Earth, it can cause a lot of havoc. CMEs take anywhere from two to three days to arrive, unlike the eight-minute arrival of x-ray radiation from a flare. When they hit our magnetosphere, we could see the geomagnetic activity turn stormy, which will cause longer-term degradation of HF propagation, as well as trigger auroral conditions. Geomagnetic activity has the effect of lowering the ionization of the various ionospheric layers, which brings down the maximum usable frequency (MUF) over a given signal path. This lowering is much like what happens at night, when the ultraviolet radiation of the sun is blocked, and the ionosphere settles down. The stronger and longer the geomagnetic storm, the more depressed the ionospheric propagation becomes.

To find out a bit more about SIDs, see http://en.wikipedia.org/wiki/Sudden_ionospheric_disturbance, http://www.swpc.noaa.gov/info/Iono.pdf, and http://www.swpc.noaa.gov/info/Radio.pdf. Also, visit the Stanford site at http://solar-center.stanford.edu/SID where you can learn how to monitor SIDs using simple VLF (very low frequency) receiver monitors.

HF Propagation

As we move into spring in the Northern Hemisphere we experience great DX openings from around the world on HF. This is because the sun is mostly overhead over the equator, creating equal day and night periods in both hemispheres. The vernal equinox, which occurs at about 2321 UTC on March 20, 2010, marks the day when the hours of daylight and darkness are about equal around the world. This creates an ionosphere of similar characteristics throughout more of the world than is possible during other times when it is summer in one hemisphere and winter in the other, and there are extreme differences in the ionosphere.

This equalization of the ionosphere that takes place during the equinoctial periods (autumn and spring) is responsible for optimum DX conditions, and starts late in February and lasts through late April. The improvement in propagation is most noticeable on long circuits between the Northern and Southern Hemispheres. During this season conditions are optimum for long-path as well as short-path openings, and during gray line twilight periods associated with sunrise and sunset.

Expect fewer openings on the higher shortwave frequencies compared to the openings seen during the winter months. However, with the sunspot cycle still in a high stage (ranging from a smoothed sunspot number of 60 to just over 100), the frequencies from 15 to 11 meters should provide occasional openings through the end of April. If openings occur on these higher bands, expect good DX openings from most areas of the world during the hours of daylight. While normal seasonal changes in

propagation will result in fewer east-west openings, conditions towards southern and tropical areas are expected to hold up very well. Look for peak signal levels to most areas of the world during the late afternoon hours.

Expect 16 and 19 meters (15 MHz to 18 MHz) to be the best bands for daylight DX during April. These bands should be reasonably active with DX signals from just after sunrise to well beyond sunset. Signals should be strongest to most areas of the world during the afternoon hours, but look for good, solid openings towards the southern and tropical areas well into the early evening hours.

Thirty-one, 25, and 22 meters are expected to be 24-hour DX bands for most of the month. Strongest signals, with DX openings to just about every area of the world, should occur during a two-hour window after local sunrise and again during the late afternoon and through the evening hours to as late as midnight.

Shorter hours of darkness and increasing static levels in the Northern Hemisphere will result in somewhat poorer DX conditions on the mid to low shortwave bands as we move closer to summer. Nevertheless, strong, stable signals should be possible to many areas of the world on 31, 41, and 40 meters during the hours of darkness. Signals should peak from an easterly direction about an hour or two before midnight and from most other directions about an hour or so before local sunrise at the U.S. end of the path. Some fairly good DX should also be possible on 49, 60, and 75 meters during the hours of darkness. Propagation patterns on 75 meters should be similar to those observed on 41 meters, but openings will be weaker and noisier. There is a chance for some DX openings on 90 and 120 meters during the hours of darkness, but expect to encounter increasingly high static levels. Thunderstorm activity is expected to increase during April in the Northern Hemisphere, and this should add to the static levels on all HF bands, but especially on 41 through 120 meters.

Check both long- and short-path openings during the sunrise and sunset periods on all bands between 11 and 90 meters for all paths between the Northern and Southern Hemispheres.

For short-skip openings up to approximately 250 miles, check 75 meters during the day and 120 meters at night. For distances between 250 and 750 miles, 31 and 41 meters should be the best during the day, 41 and 75 meters from sundown to midnight, and 75 meters from midnight to sunrise. For openings between distances of 750 and 1,300 miles, try 22 meters during the day, with 31, 41, 49, 60, and 75 meters best during the hours of darkness. Between 1,300 and 2,300 miles check 15, 16, 19, and 22 meters during the day; 22, 25, 31, and 41 meters from sundown to midnight; and 41 and 49 meters from midnight to sunrise. Short-skip openings beyond 1,300 miles may also be possible on 11 and 13 meters during most of the afternoon hours.

A seasonal increase in sporadic-*E* (E_s) ionization usually begins right at the end of April and continues through the spring and summer months. Look for an increase in short-skip openings on both frequencies from 15 to 11 meters toward the end of April, as well as a possible occasional opening on 6 meters. While E_s openings may occur at any time of the day, they tend to peak between 8 a.m. and noon and again between 5 and 9 p.m. local time.

VHF Ionospheric Openings

Lyrids, a major meteor shower, should take place from April 16 through 25, with an expected peak on April 22. The unpredictability of the shower in any given year always makes the Lyrids worth watching, since we cannot say when the next unusual return may occur. If this year's event is average or better (if we get 30 to 60 good-sized meteors entering the atmosphere every hour), expect great meteor-scatter-type openings on the VHF bands.

Widespread auroral displays can occur during April, bringing with them unusual ionospheric short-skip openings on the VHF bands. Best times for these to occur are during periods of radio storminess on the HF bands. Look for days with high planetary K (K_p of 5 or higher) and A (A_p of 20 or higher) figures.

Current Sunspot Cycle 24 Progress

The Royal Observatory of Belgium reports that the monthly mean observed sunspot number for December 2010 is 14.5, quite a dip from November's 21.6. Remember, it's typical to see such swings between months during a sunspot cycle. The lowest daily sunspot value of zero (0) was recorded for December 18 through 21. The highest daily sunspot count was 31 on December 4. The 12-month running smoothed sunspot number centered on June 2010 is 16.4, up a point from May's 15.5. A smoothed sunspot count of 40, give or take about 9 points is expected for April 2011.

The Dominion Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-cm observed monthly mean solar flux of 84.3 for December 2010, up a few points from November's 82.5. The 12-month smoothed 10.7-cm flux centered on June 2010 is 79.9, about a point up from May's 79.0. The predicted smoothed 10.7-cm solar flux for April 2011 is 100, give or take about 9 points. If we do see this high of a flux in April, expect some openings on 10 and 12 meters, and a good amount of activity on 15 meters.

The observed monthly mean planetary A_p for December 2010 is 3, a bit quieter than November (5). The 12-month smoothed A_p index centered on June 2010 is 5.8, about the same as for May. Expect the overall geomagnetic activity to be varying greatly between quiet to minor storm level during April, as well as associated aurora; expect more geomagnetic activity as we continue into the new sunspot cycle. Visit the last minute forecast page at http://hfradio.org/last minute_ propagation.html for an up-to-the-minute propagation condition forecast that incorporates the geomagnetic conditions expected based on the 27-day rotation of the sun.

Connections...

Do you have a question that you'd like me to tackle in this column? Drop me a line and I'll be sure to cover it. I'd love to hear any feedback you might have on what I have written. You may email me, write me a letter, or catch me on the HF Amateur bands.

If you're on Facebook, check out www.facebook.com/spacewx.hfradio and www.facebook.com/NW7US. Speaking of Facebook, check out the *Popular Communications* magazine fan page at www.facebook.com/PopComm.

I also 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. Please come and participate in my online propagation discussion forum at http://forums.hfradio.org/.

Until next month,

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Hamfests: An Invitation To An Initiation

by Gordon West,
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Just about every weekend, ham radio operators hold a hamfest somewhere across the U.S. Consider this an invitation, and the hamfest itself an initiation, to a great way to support our hobby and service. Each hamfest may have its own theme, but certainly each hamfest underscores the importance of every single person adding something to our hobby.

"Once a week, we all meet at the local park and set up our radios, portable," says Don, N9ZGE, who spends each winter in Sun City, Arizona. "Many times regular operating events grow to enormous size," he adds, pointing out the recent hamfest sponsored by the Desert RATS that took place at a ranch (KD4QLT) in Palm Springs. They turned a motor home and barn into an exhibit area and drew over 30 exhibitors without even trying. They expect 500 attendees to come this year!

Every January on Long Island, New York, hams get together for a day of training at Ham Radio University. "With the snow falling, this one day learning event continues to grow with forums and exhibitors," says local ham Ken Neubeck, WB2AMU.

But in most of the country, hamfest season kicks into high gear in spring. Is there a gathering coming up near you soon? When I logged onto the American Radio Relay League's website (www.arrl.org) and clicked on the convention and hamfest calendar, I found over 233 weekend listings of ham gatherings!

"Well-run hamfests are more than new-equipment booth displays. They're golden opportunities to meet one-on-one with radio manufacturers, presenters, and most of all friends, both old and new."

Don't get overwhelmed, just type in your geographic location and up pops a hamfest near you! You can also find that information on the excellent www.ac6v.com site. And don't forget the listings in sister magazine *CQ*. The accompanying box, "Select Major U.S. Ham Shows For 2011/2012," offers some popular events; if you're in the area of any one of them, you owe it to yourself to check it out. Too far? Don't fret, there are *many* more throughout the country—just do a little easy research.

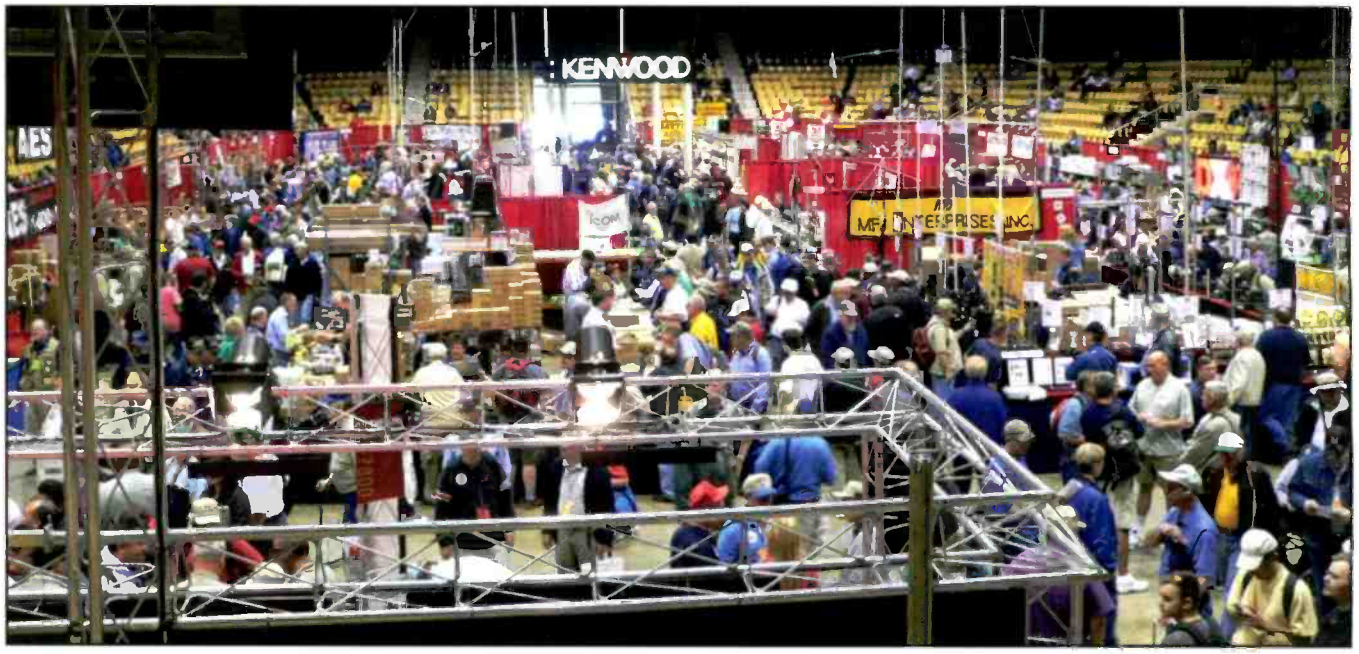
What You'll Find

Well-run hamfests are more than new-equipment booth displays. They're golden opportunities to meet one-on-one with radio manufacturers, presenters, and most of all friends, both old and new.

There's also a lot to do and see. Depending on the event, you may find,

- A flea market
- Hourly prizes for everyone who registers
- License exams on scene

A large hamfest, like the Dallas-area Ham-Com, is exciting, educational, and just plain fun. (Photo by Rich Moseson, W2VU)



The Dayton Hamvention is the mother of all U.S. shows. It has to be experienced to be believed!

- Forums providing specialty education
- Kids' corner offering simple kits free to take home
- Outdoor satellite demos
- T-hunts and geocache hunts on foot
- Workshops for ham instructors, schoolteachers, club officers, and other ham leaders
- YLRL (ladies only)
- Youth forum (kids only)
- Outside emergency communication vehicle and trailer displays
- Food on the barbecue!
- Inside fast-scan amateur television

And for those very patient non-ham ladies, there may be scheduled events like antique store visits, tours of local sites of interest, shopping excursions, hobby classes on site, or just a quiet reading area.

Non-hams will also find lots to pique their interest, like these beautifully restored antiques displayed at the Stone Mountain hamfest. (Photo courtesy Jeff Davis, via Wikimedia Commons)

Hamfests can run the gamut from welcoming, but rather sedate, one-day affairs to all-out wingdings. Years ago, SAROC, the big January hamfest in Las Vegas, was scheduled for the weekend before the mid-week opening of the Consumer Electronics Show (see cover story). It was held at the Sahara Hotel on the same weekend as another big convention. All I'll reveal was that there was quite a party atmosphere in the hospitality rooms, with hams outdoing themselves for entertainment.

But regardless of size or location, a few simple things will help you get the most out of your visit. For one, get a name badge before the hamfest, or make that your first priority when the show opens. Have it made large enough so fellow hams can spot you and your callsign from 10 feet away. You may be surprised at how many hams you've worked on the air that you can now meet in person—another hamfest "initiation."

You'll also want to bring in your own QSL cards to give out to friends you meet on the show floor. W4MPY is one of the best-known QSL card makers (www.w4mpy.com). Get them before the big hamfest day.

And, of course, one of the best things about hamfests is the great opportunity they provide to buy (and sell) used gear at great prices. You'll have a much better experience if you know what to look for—and look out for—before you arrive. For tips on how to best approach both buying and selling at a ham event, see this month's "Ham Discoveries" column, elsewhere in this issue.

The Big One—The Dayton Hamvention

Unquestionably, the largest U.S. hamfest is the Dayton Hamvention, held in May in Dayton, Ohio, and it's something every ham—and other serious hobbyist—should experience at least once. It is one polished machine. The sponsor, the Dayton Amateur Radio Association (DARA), invites everyone throughout the world to attend this year's show on May 20–22. It's right around the corner.

If you do plan on attending, try to get in on Wednesday night, May 18, to get a preview of the swap meet setup on Thursday, May 19. True flea market experts (what hams do best) know the value of "setup specials." It's strictly cash only now, and with little chitchat, so those busy exhibitors can set up in peace. You won't be allowed on the exhibitor floors until the Hamvention opens, but the swap meet the day before should not be missed. Be there!

Not In A Town Near You? Start Your Own!

The ARRL works closely with hamfest organizers to try to find a date that won't conflict with another ham event in the area. An ARRL-sanctioned hamfest must first pass approval of the local ARRL Division Director. A growing sanctioned hamfest may then rise to the next level—convention—and the local League Director will seek additional approval from the ARRL Executive Committee.

There are many benefits to having a hamfest sanctioned by the League, according to the League's Convention and Hamfest Program Manager, Gail Iannone. For instance, the event sponsor will receive an announcement of the hamfest/convention in the League's magazine, *QST*, as well as a posting on the ARRL website. The hamfest/convention chairman will receive donated prize certificates to be given away as door prizes and free handouts upon request. Mailing labels are provided at no cost if the hamfest/convention committee should decide to send out flyers announcing the event (also upon request). Wherever possible, ARRL HQ will honor an invitation from the ARRL-affiliated convention sponsor for a speaker from the staff. Given the ever-increasing cost of travel, however, this will not always be possible.

You don't need anyone's approval to start your own hamfest out there in that big empty barn. Choose a date at least six months in advance, double check that you're not in conflict with an established local hamfest in the area, and go for it.

"We call it grip and grin, an informal get together, on my hilltop property, that grew from 10 [attendees] to several hundred every year," says well-known Central California VHF/UHF enthusiast Larry, W6OMF, of his event. "We even have a ham fly in with his own helicopter!" And there's nothing commercial about this get-together with *plenty* of swapmeet stuff exchanging hands.

If your first-ever hamfest draws 50 people, you're off to a great start. If it doubles each year, begin planning for larger venues. "If the hamfest is absolutely noncommercial, city and county parks might be considered. If you plan to bring in commercial exhibitors, it's time to get with your local ARRL Division Director to discuss growth opportunities and the legal liabilities that unfortunately must be considered," explains Peter, KA9SMG.

Most ARRL-sanctioned hamfests strive for 1,000 attendees and up after a few years of running. ARRL-sanctioned conventions may try to draw 3,000 and up. Numbers are important to exhibitors. When they see extraordinary efforts to build a local hamfest, say from an initial 100 to nearly 1,000 attendees three years later, they may look at their brim-full hamfest calendar and try to squeeze in with a tabletop display. When the event

When it comes to flea markets, the early bird gets the bargains. Set your alarm clock! (Photo by Rich Moseson, W2VU)

Select Major U.S. Ham Shows For 2011/2012

May 20–22—Dayton Hamvention, Dayton, OH, DARA
June 3–5—SEA-PAC, Seaside, OR, Oregon Tualatin Valley ARC
June 4—Atlantic Division Convention, Rochester, NY, Rochester ARA
June 10–11—West Gulf Division Convention, Plano, TX, Ham-Com, Inc.
July 15–17—Amateur Radio Council of Arizona, Williams, AR, ARCA
August 20–21—Southeastern Division Convention, Huntsville Hamfest, Huntsville, AL, Huntsville Hamfest Association
August 28—WPA Section Convention, New Kensington, PA, Skyview Radio Society
October 14–16—Pacific Division Convention (Pacificon), Santa Clara, CA, Mt. Diablo ARC
January (TBA)—NLI Section Convention (Ham Radio University), Bethpage, NY, Great South Bay ARC
February (TBA)—Orlando HamCation, Orlando, FL, Orlando Amateur Radio Club
March (TBA)—Maryland State Convention, Timonium, MD, Baltimore ARC Charlotte Hamfest
March (TBA)—Charlotte Hamfest, Concord, NC, MARS

Hamfests Around The World

With all the hamfest activity buzzing throughout the U.S., you might wonder why anyone would ever look elsewhere for a "fest fix." Well, it's because there are terrific shows in some truly amazing places around the world! Just to whet the appetite of those who add wanderlust to their love of radio, I asked a couple of ham globetrotters for their input. Dick Ross, K2MGA (publisher of *Pop'Comm* and sister magazines *CQ*, *CQ VHF*, and *World Radio Online*), and Chip Margelli, K7JA (ad manager of all of same), travel the world on the ham convention circuit. Here are some of their worldwide favorites:

What could make the beautiful town of Friedrichshafen, Germany, even more beckoning? How about being the site of Europe's largest gathering of radio amateurs? Paradise! (Photo courtesy Corradox, via Wikimedia Commons)

If you have only one opportunity to visit an overseas hamfest, be sure it's the one in Friedrichshafen, Germany. This picturesque small city in southern Germany is on the shores of Lake Constance (the Bodensee to locals), which is bordered by Switzerland, Germany, and Austria. Ham Radio, as the show is dubbed, is a huge civilized June event with all displays indoors in brand new air-conditioned halls.

What do I mean by civilized? How about food and drink—real food that is—served at many cafeterias throughout, with clean seating and tables for all, and a higher-end restaurant on site if you and your group want to enjoy an excellent German menu, served by a professional staff. And for those yearning for al fresco dining, there's an old-fashioned open-air beer garden set between exhibit halls where you can munch on a wurst and down it with a good German beer *vom fass* ("from the cask").

Oh, the hamfest? It's just super, with a flea market that never seems to end. It's a great way to start or end a European vacation. Visit www.hamradio-friedrichshafen.de/ham-en/index.php for information in English.

One of the most startling and enjoyable hamfests I ever attended in Europe was a November show in Pescara, Italy, on the Adriatic coast, directly across the boot from Rome. It was a two-day show, and you could buy admission to the morning or afternoon sessions for Saturday or Sunday, or buy admission for them all.

After having attended over 600 hamfests in my career with CQ, I thought I had seen it all. But leave it to Italy to do things differently! I spent the morning wandering the aisles of the show, marveling at all the widgets and both new and used gear on display. What a blast. Promptly at noon, however, an announcement came over the PA system (I didn't understand what they were saying!). A moment later the lights blinked a few times and then went dim. A vendor friend of mine came over and began escorting me out. "A problem," I asked? "No, it's time for lunch!"

The morning session was over, and the entire show cleared out. Morning-only ticket holders headed home, full-day ticket holders went to the fastfood joints for lunch, and my vendor friend took me and several other vendors to a local restaurant with a view of the Adriatic, where we dined leisurely for almost two hours before finally strolling back to work! Only in Italy!

(My college Italian has failed me, and I can't decipher the sponsor's website to see if the show is still being held, but our readers are welcome to try! You'll find it at www.aripescara.org. In bocca al lupo!*—ed.)*

—K2MGA

If you want to combine a vacation trip to the U.K. with a visit to a ham convention, the RSGB Convention, typically held the second weekend in October, is a fantastic opportunity to meet with some of the most active amateurs in Europe. The seminar slate includes sessions on DX, contests, VHF and satellite operation, antenna design and construction, homebrew construction, digital modes, and much more. They also have all-day hands-on training sessions for those wishing to learn "the tricks of the trade," and the social get-togethers are exceptional. The Brits really know how to have fun on a weekend! Check it out at www.rsgb.org/rsgbconvention.

Another of my favorites is on the other side of the globe. Every year in the spring, radio amateurs in New Zealand flock to the Wellington area for "Radio Expo," a friendly and entertaining hamfest that offers on-the-air demonstrations, as well as a neat flea market and commercial vendor area. It's a great add-on to a tour of the North Island, and the hospitality is wonderful. See www.nzart.org.nz for more.

—K7JA

This battleship green rig is a Chinese military radio from the Vietnam War era. Such are the treasures one finds at a hamfest in Wellington, New Zealand!

tops 1,000, and shows every sign of growing, the company's professional display booth hits town.

"But when I see a yearly hamfest decline from 1,500 to 900, and then to 500, I'm apt to bail," says Richard, an avid ham and past club president, pulling a trailer full of every conceivable ham part you could ever require in our hobby. In terrific news, a representative from one of "the big four" ham radio manufacturers says he's happy to say pulling out from a declining hamfest occurs less often now.

It's a tough call. When one of the Biggies does not show up at their normal spot, local hams get jittery and might be inclined to buy from other manufacturers' goods on scene. Sometimes a commercial booth exhibitor no-show had to bail at the last minute, maybe a snowstorm, or a sudden company schedule conflict, which can happen all the way up to the very largest of ham radio conventions.

When big manufacturers pull out from a declining hamfest, the local dealers will likely pull back on that particular product line, and go with tables of products from the big manufacturers that *are* there.

If you're running a fest, you must *not* leave the booth vacant, as it will quickly fill with trash, resting persons, and worse yet, be a glaring disappointment to attendees who travel a long way expecting to see a full exhibit hall, not blank booths. Booth committees, take down the no-show's signage, bring in some chairs, and designate this "new" location as a QRX (stop) spot. Don't let the space get trashed! A neat venue is one people will want to return to.

And be creative in what you offer attendees. Several years ago, I attended a hamfest in the Smokey Mountains. The organizers put together a field trip to the Green Bank Radio Observatory—what a success! A field trip the day before the hamfest gathering is a great way for new hams to come up to speed on all the gear around them!

It takes a lot of effort to pull off a successful hamfest, but if the same club presents the hamfest or convention every year, it's usually a success, because the same folks are running the forums, parking, the exhibitors rest/lounge, and the prize setup—everything that goes into the event. They know what works and doesn't. Some hamfests rotate to different clubs and different locations within the state, with the sponsoring club "new to"—after a three- or four-year break, that is—minding the details.

Don't Sweat The Snags

So your fest venue is in a nice hotel, but there's only 100 parking for an expected crowd of 800. Or you're using an unsecured exhibit room, and found some expensive gear was "accidentally taken out with the trash." Or handheld operation in the elevator locks up between two floors. Don't panic: learn. Real hams take these foul-ups in stride. After all, setting up a convention is much like Field Day—half the challenge is just working over all the site problems! It will get better each year.

Help Radio Grow—Be An Active Participant

Get out there and attend all the events you're able to. It's a great way to connect with like-minded folks and an important way to support the hobby.

If you can't find any, start one. Join a hamfest committee. If you've been to a few swapmeets and hamfests, you probably have some great ideas on what the organizers could do to grow the event. You don't need to necessarily offer equipment sales. I do an event each January called "Quartzfest," held on Bureau of Land Management property. It's a full week of desert floor seminars with absolutely no commercial anything! On our way home, we spend a day at a brand new hamfest, sanctioned by the ARRL, in Palm Springs, which started just a couple of years ago—in a huge garage!

Be an active part of hamfest activity. All of us have a special ingredient that we can add to the radio mix. And whatever you do, keep thinking kids, kids, kids. If we want to continue our hobby of shortwave radio, scanners, CB radio and ham radio with all its new technology, we've got to include them. We invite you to initiate someone this year.

A necessary element in keeping our hobby vibrant is constantly bringing in enthusiastic newcomers. You can help.

Radio Club of America's School Instructor, Carole Perry, WB2MGP, and Gordo, WB6NOA, RCA Fellow, work with the W5YI instructor program, offering schoolteachers a program for starting ham classes in the school system. Qualified instructors receive a free training package, including class syllabus, textbook, and the Instructor's Guide. If you're teaching at a school and want to get ham radio into the classroom, give us some details about yourself and contact Gordo at WB6NOA@ARRL.net.

Smaller Hamfests: Social Networking (And A Great Chance To Buy And Sell!)

by Kirk Kleinschmidt, NTØZ
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Change, they say, is the only constant. And while that's true enough, it's not exactly comforting if you're on the short end of whatever's changing! Elephants and rhinos, for example, are endangered and faced with greatly shrinking habitat, poachers, and other "evolutionary forces." In much the same way, the American Middle Class is similarly stressed (though we hopefully won't be relegated to zoos!).

Flea market at Ham-Com, Plano, Texas. Whether you're attending a small local show or a making a pilgrimage to one of the bigger annual hamfests, the flea market is the place to find bargains or to sell your old gear. (Photo by Rich Moseson, W2VU)

Ham radio has seen its share of extinctions and endangerments. Spark is practically extinct, banned from the airwaves and encountered only occasionally in controlled demonstrations. Full-carrier AM, while not extinct *per se*, is endangered, if only on a practical level. And on the local, person-to-person front, local hamfests—while many of us weren't looking—are suffering extinction pressures of their own.

Since last fall I've been trying to find a hamfest within easy driving distance from Rochester, Minnesota, so I can show my newcomer buddies the majesty of hamfesting and tailgating, and offer up some tips on how to find nifty old radio stuff. Unfortunately, many of the local hamfests I used to enjoy only a few years ago seem to have pretty much evaporated.

Two small fall get-togethers in the Twin Cities seemed to show promise, but after a little digging I discovered that they were *too* small, with only about nine tailgaters and not too many more attendees. A good time if you live in the neighborhood, but not worth the 200-mile round trip. The Brainerd hamfest seems to be going strong and was a sure thing when I lived in Central Minnesota, but from Rochester it's an eight-hour round trip.

Two fests within range and of notable size seem to be in St. Cloud and Buffalo (near Minneapolis), and both are in late winter or early spring—hence the timing of this month's column, as well as the accompanying piece by Gordon West, WB6NOA. If you live in a part of the country where hamfests and swapmeets are still plentiful, your attendance will keep them that way. If, like me, you're in a somewhat hamfest-starved location, do your best to at least attend one here and there. If you don't you may one day find yourself out of luck entirely. Better still, get some friends together and consider starting your own (Gordo's got tips for you in his column).

Whether you call them hamfests, flea markets, or swapmeets, the end reasons to go are the same. If you're a newcomer, you may have never taken in one of these age-old radio get-togethers. If that's the case, you're in for a real treat. You'll

come away with new friends, new treasures, and a new perspective on the people and the stuff that make up our hobby. This month's column is about how to find hamfests in your area, and how to buy and sell gear at ham radio get-togethers.

The Whys And Wherefores

Hamfests of at least medium-size or better feature a spectrum of goodies to pique your interest. You'll find hundreds (or thousands) of fellow hams, bargain-priced radio, and electronics stuff and parts (including odd and hard-to-find components and assemblies), interesting forums and lectures, ham radio exams, and tasty—if not altogether unhealthy!—snacks. The precise mix depends a lot on the focus of the hamfest you're attending, its size, and its location.

Monster hamfests, such as the annual Dayton Hamvention and some of the larger ARRL Division Conventions covered in Gordo's piece, attract thousands of hobbyists. Small regional or local hamfests may draw only a hundred. At Dayton, you'll find dozens specialized forums. At a small gathering in the boonies you probably won't find any. Both extremes will be plenty enjoyable, though, so don't hold back.

Almost every hamfest has a swapfest or flea market where individuals and commercial dealers hawk their wares. Generally, big city flea markets feature more exotic hardware, but overall prices tend to be higher. Smaller hamfests may

Look what a buck can buy! If you're looking for odd stuff it can really pay to play the waiting game and stay until the very end of the hamfest. I bought this box of vacuum tubes for $2 because the seller didn't want to pack it up and truck it home. Later, I kept the half-dozen tubes I was interested in and sold the rest on eBay for $20. Not a bad ROI. There are hundreds of goodie boxes like this at hamfests everywhere. (NTØZ photo)

not offer as much high-tech stuff, but you'll usually find plenty of good, used gear and goodies. The increased prominence of eBay and other online sales outlets has taken its toll, but many hamfests are well-attended by sellers who don't want to ship (heavy) items or simply want to do their business face to face.

Where And When?

Information about upcoming hamfests is available locally, on the Internet, or from various magazines. Your local ham club members will probably know all about local and regional outings, which are typically annual, well-publicized events. Nationally, dozens of hamfests and events are listed in *QST* or at the ARRL's website at www.arrl.org/hamfests-and-conventions-calendar. Other listings can be found at our sister magazine *CQ*'s website at www.cq-amateur-radio.com/cq_hamfest_events.html as well as through QRZ at http://forums.qrz.com/index.php.

Hamfests are typically held at hotels, schools, parks, National Guard armories, fairgrounds, or civic centers. Organizers usually host events at identifiable and accessible locations (although sometimes you'll be surprised). Lesser-populated parts of the country—like mine!—tend to have fewer hamfest opportunities, while high-tech centers, such as Boston and Silicon Valley, have way more than their fair share.

Smarter Shopping

Although most individuals and commercial vendors selling gear at hamfests are on the level, smart shopping, common sense, and reasonable caution will help you avoid unwelcome surprises.

The best hamfest deals are usually made in the first and last hours of each event. Arriving early will allow you to snap up some of the best merchandise, especially if you're a seller at an event that keeps buyers at bay until the sellers are set up and ready to go. Until I was seller I didn't know that many of the best items are bought, sold, and traded *before* the actual event is underway and open to the public. If you wait too long, your favorite stuff may be all gone. On the other hand, if you play the waiting game and stick around until closing time, sellers are often quick to discount stuff that they don't want to pack up and take home.

If you're buying an expensive item, make sure you can at least plug the unit in and turn it on. Most sellers represent their merchandise accurately, but it never hurts to power up a potential acquisition. And make sure you get the seller's name, address, and phone number—just in case.

For some, going to a hamfest is a terminal shopping experience. If you're not careful you'll go home with plenty of ham trinkets and no rent money. Plan if possible. Resist if necessary!

Like any street market, reasonable haggling over the price of gear or components is expected. Don't be an idiot, but do get in there and have some fun. If you buy several items you might get a break on the price (I often offer this "volume discount" when selling). If you offer items along with your cash you might get

The assortment of "stuff" you can find at a hamfest is always fascinating. Even if you're not buying, you're sure to love looking. (Photo by Rich Moseson, W2VU)

a fabulous deal if the other person wants your item in the worst way. As my horse-trader father often says, "you never know until you ask."

Turn Your Old Stuff Into Something New

The only thing more fun than buying stuff at hamfests is selling stuff. If you have a lot of "excess inventory" clogging up your shack, or if your house has been nominated to appear on the TV show *Hoarders*, why not reserve a seller's table (or flop down your pickup's tailgate) and take advantage of "flea market fever" by selling your existing gear at a hamfest to finance all or part of your new setup? It's easy, and nowadays, extinction pressures and all, sellers are getting an extra bit of respect just for offering stuff for sale.

When selling, remember to brush your teeth and comb your hair. And tidy up your merchandise, too. Display it neatly and make index card signs for big-ticket items, listing the details and the price. Dress casually and presentably.

Don't price your used (and sometimes abused) gear as though it were gold plated! It's a hamfest folks, not a Bentley dealership. We want win-win scenarios all around. Be reasonable and be friendly—that's how to sell stuff at hamfests.

Many flea market attendees are tire kickers, but with a little coaxing, many a tire kicker has been "persuaded" to take home merchandise. This is my favorite part of the whole experience. People like to joke, laugh, and have fun (even hams!), so be sure to blurt something out when you catch someone eyeballing the stuff on your table. This breaks the ice and sets the stage for friendly chatter, which can lead to additional sales, but you will often have to initiate the process.

Be prepared when people ask you to sell your stuff for less than your asking price, ask for volume discounts, or offer trades. Try to be okay with adjusting your prices a bit, and if you're interested in what's being offered as a trade, that's just fine. It's all up to you, but by being flexible you'll be more successful. Don't wait for your customers to start haggling—it often works better if you start the wheeler-dealer ball rolling right away.

Buyers are concerned about getting ripped off, so strive to represent your gear honestly and offer reasonable terms. Some sellers offer a five-day money-back guarantee, especially for big-ticket items, holding onto a customer's payment to make sure he or she is happy with the deal. Why would you want an unhappy ham customer (friend), anyway?

Set up early so you'll be ready for purchases and trades from other sellers. I'm often racing to get set up before the doors open because I've been engaging with other sellers who are already set up and have transitioned into deal-making mode! Be prepared for weather changes if your event is outdoors. Bring a friend or helper so you're not tied to your table for the whole show. And bring lots of change and dollar bills. Accepting checks can be hazardous nowadays, so be careful.

Don't Miss Out!

Whether you're just emerging from winter's hibernating grasp or you live in an always-sunny climate, don't stay a recluse and miss out on all of the fun and socializing. Why spend all of your free time on Facebook when you can network and kibitz at hamfests face to face. See you in St. Cloud and Buffalo!

The Missouri Broadcast Baby Connection

by Shannon Huniwell
melodyfm@yahoo.com

"So, when the question became, Is there any way to turn this thing invisible?, someone at a brainstorming session quipped, *"Well, if it were educational, nobody would watch it—and nobody could buy advertising on it either."*

My college roommate, Jillian, never planned on having a 100,000-watt baby. In fact, she never thought she'd ever have any kids at all. Within a few moments of our first meeting—while we were girls waiting in the lobby of KCBW-FM and its AM sister at Sedalia, Missouri—Jillian revealed her plan to become a teacher and then someday a principal of an elementary school.

"I'll have more than enough children in my professional scholastic career," she announced in the most sophisticated tone a 10-year-old could muster, "so I won't have time for any of my own." Years later at the University, when we found ourselves deep in a late-night dorm room discussion about life after graduation, Jillian confided in me about a medical issue that her doctor predicted would preclude parenthood. "Doesn't matter anyway," she declared in her best attempt to sound stoic, "because a family would probably just distract me." And, for several decades thereafter, she successfully plunged headlong into the world of elementary education.

Imagine my surprise and Jillian's delight when, at 40, she was swept off her feet by a TV reporter covering an event at her school. Both credited love at first sight as the catalyst of their whirlwind wedding. Two months shy of their first anniversary, Jillian and Todd proved her old doctor and her long-held assumptions wrong. I really enjoyed visiting Jillian's happy crew but the baby didn't allow anyone much sleep. Whenever the tot woke up—especially in the wee hours—he hit his "high voltage" switch, which activated a mighty powerful vocal transmitter directionalized toward his mother and father. Of course, the amazingly boisterous infant's strong signal covered the guest room, too!

Beginnings In Radio

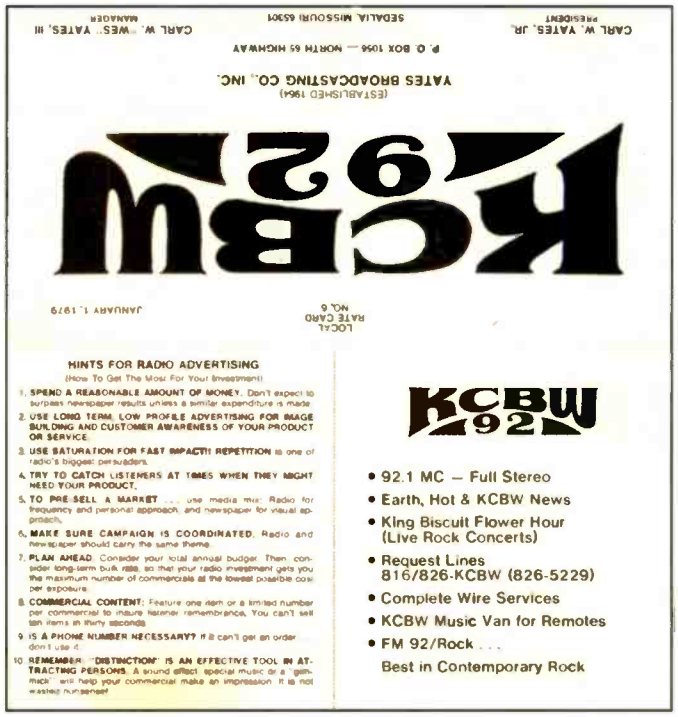
Flashback to the summer of 1979, when my Dad, Mom, and I were on one of our low-budget "theme" vacations that included several Midwestern state fairs. A few August days got devoted to taking in Missouri's big fair in Sedalia, about 100 Miles east of Kansas City.

On one of those warm mornings, my mother was more than willing to stay at our air-conditioned motel while Dad took me hunting for local radio stations. With the windows of our Ford station wagon rolled down, we felt a little breeze and, like some RF compass, we pointed ourselves toward any tower that might mark a spot for an impromptu studio/transmitter site tour. At the time Sedalia, population a touch over 20,000, was city of license to four broadcast properties: KDRO, the community's oldest station; KMOS-TV, a VHF outlet in the midst of change; and KSIS/KCBW-FM, sister facilities we were visiting when this story began.

Jillian's brother was a weekend DJ at KCBW-FM. The day we stopped by to ask for a look-see, my soon-to-be-friend happened to be waiting for him while he met with the program director about

Though this novelty postcard is a product of the 1920s, I recently used it to transmit a timely message to my old college roommate, who became a new mom just a few months ago. I found the card in an antique/collectibles shop and couldn't resist sending it to Jillian as a "thank you" for her hospitality during my recent visit to her little family. Her baby was a lot cuter than the one pictured...and had lungs about 50 kW stronger! Original recipients of this postcard were among the first generation of radio listeners. Broadcasting was probably as new to them as parenting was to new moms.

This newspaper photo likely dates to 1944 when Harry S. Truman was "just" a U.S. senator and Vice Presidential candidate. It was also a time when Sedalia, Missouri—the site of this speech—had only one broadcast station: KDRO. Officials at the 250-watt AM made sure their facility was well represented via two banner-equipped RCA ribbon microphones. It looks like their engineers might have influenced whoever was in charge of positioning the audio gear, as Kansas City's KCMO equipment got shoved to the podium's sidelines. In those pre-TV days, radio stations made a big deal about call letter visibility at photo opportunities that might land them a bit of free publicity in the morning papers. When we went to Sedalia for the 1979 edition of Missouri's State Fair, KDRO ran a Country & Western music format and offered news/features from CBS and the Missouri Network. Six hours per week on KDRO was devoted to "farm" programming. Revenue-wise, Sedalia's oldest radio station (with 1 kW-days/250 watts night on 1490 kHz) rang out the '70s with a high 60-second commercial rate of $6, about 35-cents cheaper than cross-town AM competitor KSIS.



My father picked up this rate card during our summer 1979 stop at KCBW-FM and sister KSIS in Sedalia. Since I was chatting with another girl in the lobby while Dad got the nickel tour of the studio/transmitter site, I don't remember much of anything about the little Midwestern operation. Note the transmission description at the top of the bulleted list: "Full Stereo." Through the early 1980s, a lot of FMs used this nonsensical phrase, as though there were such a thing as "half" or "3/4 stereo." The "Full Stereo" identity apparently was there to impress listeners and advertisers accustomed to monophonic AM. The "HINTS FOR RADIO ADVERTISING" section included on the front of this rate card consisted of 10 valid pointers for any business owner contemplating using the radio station to increase his/her sales.

doing some summer fill-in work there or on the KSIS-AM air. Jillian and I hit it off immediately and were both fascinated about each other's lives—hers spent in America's rural heartland and mine in suburban Connecticut, half a continent farther east than she'd ever been. Dad quickly recognized the pull of "girl talk" as a license to linger and encouraged me to chat with my new friend while he disappeared into KSIS/KCBW-FM's studio/transmitter area.

Apparently, the KSIS announcer on duty was weekend talent and very much enjoying a big-time Monday through Friday commission as summer fill-in for a vacationing full-timer. As a bit of a radio professional "wanna-be," he proved a wonderful tour guide, providing both informational and enthusiastic audience for Dad's broadcast tales gleaned from stations "back east."

The "Keep-On" Stations

An introductory factoid revealed by Dad's loquacious KSIS host related to the callsigns of Sedalia's two competing AMs. "Our letters K-S-I-S," he enunciated with a bit of a regional twang, "stand for keep shopping in Sedalia." This came with the explanation that KSIS' founder wanted potential local advertisers to know the station would be a big supporter of Sedalia's business community. "KDRO was Sedalia's first, or *numero uno*, station," the DJ begrudgingly conceded, "so they wanted an ID that'd tell listeners to keep dialing radio one." My father later learned that this reference was hogwash, but I'll save the correct answer for a few paragraphs down the line.

Until the deregulation beginning in the 1980s either ruined or improved (depending on whether you talk with dyed-in-the-wool broadcasters or money men) the radio industry, the FCC had a formula for the maximum number of stations viable for particular population levels. In other words, the Commission might have licensed one AM or AM/FM combo for a bucolic town of 5,000 people (with another thousand or so folks sprinkled around it), but would seldom authorize a direct competitor that would endanger the advertising support of the old or proposed outlets.

With about 20,000 residents, Sedalia represented a good bet for a couple of broadcasters. So, in February of 1954, the Commission sanctioned the debut of a 1000-watt sunrise/sunset facility on 1050 kHz in Sedalia to compete with the state fair town's previously established full-time AM, KDRO. The new outlet, dubbed KSIS, was licensed to the local Yates family. Though a daytimer, this station offered four times the power of KDRO. Even so, it could be frustrating for a daytime salesperson to beat his or her unlimited-hours competitor's argument that a station that shut down at dusk wasn't "all there." This led the Yates into the FM game in 1964.

"We're On At Night And You're Not! NAH-NAH, NAH-NAH-NAH!"

As strange as it might sound to younger radio buffs, most broadcasters (prior to about 1980) would much rather have had a small full-time AM on a jam-packed local channel than a day-

timer and companion frequency modulation license. Back then, especially in small markets, most AM sunrise/sunset and FM combos were essentially programmed as a single full-time station, with the FM simulcasting the AM (sometimes not even signing on until mid-morning) and then acting as a continuation of the AM after sundown.

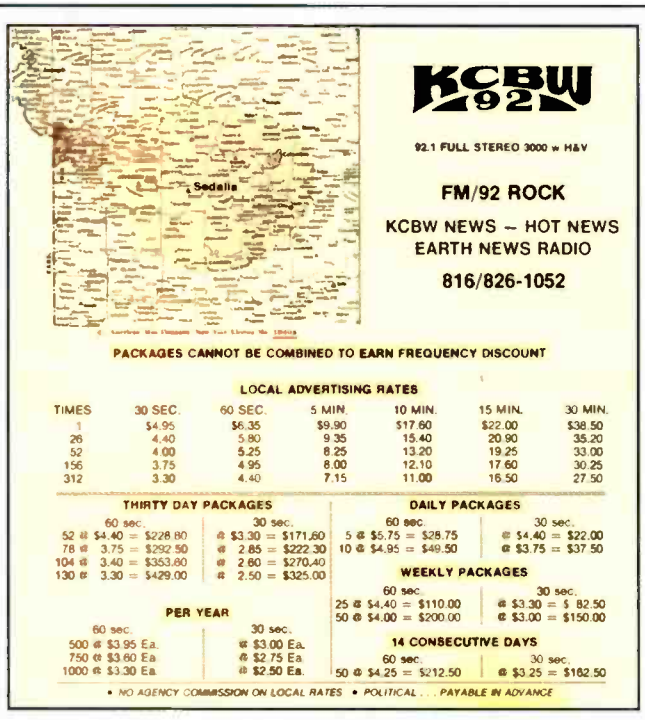
My father tells me of a western 5-kW daytimer (positioned nicely on the low end of the band) with a big signal FM simulcaster that, during its first half dozen years of operation, would routinely get outsold by the sales staff of a neighboring 1 kW-day/250 watts at night old Class IV local station up on 1400 kHz. Reportedly, the smaller station's longevity, call letter recognition, and constant reminders that it was *the* full-service radio station in the area was a tough nut for the arguably better-signaled AM/FM to crack.

KSIS-FM was granted a decent dial position at 92.1 MHz, the first commercial frequency on the FM dial, and soon decided to minimize simulcasting with its 2.65-kW via an antenna positioned 280 feet above average terrain. By 1969, the Sedalia stereo station had a *Broadcasting Yearbook* entry that listed it with programming "separate from [the] AM." Dad believes this might have been some sort of automated "good music," meaning instrumentals interspersed with innocuous vocals. Of course, when we tuned to 92.1 during our summer 1979 Missouri State Fair excursion, KSIS-FM had already been revamped as KCBW-FM and featured a contemporary rock format with the extra 350 watts that augmented its original output to that even-steven 3-kW noted on the official rate card my father got on the tour.

We have since lost our souvenir KSIS' rate card, but the *Broadcasting Yearbook* of 1979 shows an interesting dominance of KSIS ad rate over that of the FM: $6.35 top rate for a 60-second commercial, versus $5.75 to buy the same time on KCBW-FM. The roster also identifies KSIS as an M-O-R (middle-of-the-road) music-formatted facility with 12 hours of "farm" programming wedged into the week.

Though not indicated in the *Yearbook*, I do recall KSIS as being an ABC Information Network affiliate. Although Jillian and I hadn't been paying attention to the lobby speaker when the news come on—indicating that we'd been chatting for a whole hour—my Dad has an endearing know-it-all habit of hearing something ordinary and verbosely pointing it out as significant. He'd walked through KSIS' door the very second the ABC Info sounder came down the electronic pike, saying something like, "Shannon, this facility is a member of the American Broadcasting Company" and then naming their four distinct network feeds.

Dad also didn't miss the opportunity that another a girl sitting in the lobby represented. He figured that after being with him and Mom for something like 11 days, I'd probably appreciate conversing with somebody my own age. So it was really his instigation that led Jillian to become my future pen pal, college roommate, and longtime friend. The next day, my mother asked me all about her while Dad ventured into Sedalia's other AM, KDRO.



I wonder how many merchants perusing KCBW's rate card knew what 3000 w H&V signified. In the years before docket 80-90, when Class "A" FM frequencies (then with a 3000-watt power limit versus today's 6-kW ceiling) had specific "A" channels. KCBW operated with the maximum output, thus boasting about the 3000 watts. The H&V related to horizontal and vertical antenna polarization, suitable for both table radios and FM receivers in cars with vertical whips. (Broadcast FM signals were originally sent only on a horizontal plane.)

The Earth, Hot & KCBW News referenced are adspeak for the type of information acceptable to young audiences prone to tune to FM rock stations back when the FCC required every broadcaster to offer some form of news programming.

No local station worth its 1000-watt transmitter would ever think of publishing a rate card without a little coverage map squeezed into the document. KCBW-FM's is typical with a mildly highlighted oval representing the facility's footprint. Also common to many such "salesman's maps"—as opposed to the detailed predicted dBu signal strength contour maps submitted to the FCC for construction permit application purposes—the KCBW-FM imprint references neither city-grade (70-dBu) signal area nor scale of miles. The idea was to make the coverage seem as ubiquitous as possible. Finally, note that with KCBW, one could reach FM radios in that Central Missouri heartland for half-a-minute for as low as $2.50.

First One Or Number One?

Remember that "keep dialing radio one" slogan? Well, my father found out that it was likely a clever mnemonic device that had nothing at all to do with the station's founders' call letter selection.

Further back in time, area broadcasting brothers with the last name Drohlich had picked KDRO for obvious reasons. They put Sedalia's first broadcast station, KDRO, on the air in the mid-September 1939. The 250-watt full-timer originally occupied the once-local and crowded 1200-kilocycle position, but got bumped to 1490 during the early 1940s international frequency realignments.

FM Or Bigger AM, No....Video, Yes!

After bequeathing a piece of their moniker to KDRO, the Drohlichs didn't keep the station for very long. By the late 1940s, they'd sold it to Milton Hinlein, who not only kept his

In television's early days, station officials hated to hear the word "snowy," as it was often used by frustrated viewers when describing an iffy signal. For this promotional card, however, KRCG-TV executives didn't give the white stuff a second thought when authorizing an artist's rendition of their studio/transmitter building during a Jefferson City, Missouri, winter. KRCG-TV operated Sedalia's KMOS-TV as a satellite channel and had no interest in improving the small VHF's signal to full potential. The snow-filled dishes in Channel 13's yard hint that the drawing likely dates from the early '80s, a bit after KRCG-TV donated KMOS-TV to a college so the station would become "educational"—and uninteresting to advertisers.

In 1955, the World War II-era Sedalia Air Base was recast for Cold War use as Whiteman Air Force Base in honor of Lt. George Whiteman, a military flyer killed in the 1941 Pearl Harbor attack. By 1965, the installation was home to over a dozen Minuteman missile silos and, some 20 years later, the site of the first all-women Minuteman II missile crew. Though the facility always fared well even during the height of America's tension with communists, folks watching the 1983 made-for-TV movie *The Day After* watched the fictional aftermath of the entire Sedalia area being blown up by the Russians, those Evil Empire proprietors, in a take-out of America's strategic defenses across the Midwest.

ears on his station's output, but also fixed his eyes on an important listing being compiled by the FCC to determine where TV channels could be fit into the American airwaves. Hinlein's Washington watchers confirmed that the Commission's evolving *Table of Television Assignments* included an opening in Sedalia on Channel 6 at the coveted lower end of the even more desirable VHF band. This revelation occurred at about the same time that rumors surfaced regarding competitors' plans for what would be KSIS.

Hinlein could have hedged his bet on KDRO by finding it a better dial position and higher power, or by firing up an FM to keep the frequency warm until frequency modulation gained a useful audience. Instead, he invested in video gear and secured the construction permit for Sedalia's Channel 6. The 1956 *Television Yearbook/Radio Annual* shows the resulting KDRO-TV as being two years old and transmitting 16.2 kW of picture with about 8700 watts of sound. Its antenna was affixed to a tower just over 325 feet tall.

The black & white outlet's schedule ran approximately six hours per day during the Hinlein years, a time period which ended with KDRO-TV's 1959 sale to group owner Cook Paint & Varnish Co. Calls were then changed (and ABC affiliation added) to KMOS-TV (for MO, or Missouri's, Sedalia). Two years later, the modest facility was sold to Jefferson City-based KRCG-TV.

I'd sure like to see some of KDRO-TV's fare. Alas, transmitted long before VHS recorders and folks thinking to save samples of home-grown local TV, its signals have apparently been assigned to the historical mist. I imagine a charming "hokeyness" to at least some of the little independent's programming, and wonder if I'd be proved correct with archived evidence. Does anybody have any visual KDRO-TV mementos? Perhaps a screen shot of Sedalia's little television outlet's station identification slide or the like?

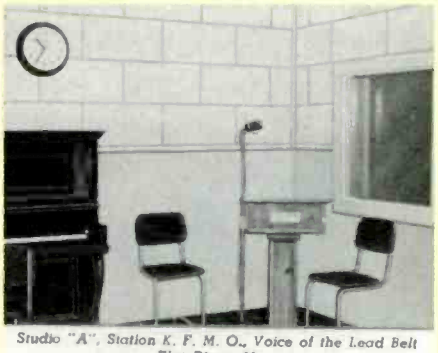
How To Make Your VHF TV Station Invisible

The New Bloomfield (Missouri) Area Historical Society website does a fine job succinctly chronicling the modest Channel 6's life with its "new mother," KRCG-TV in the Missouri capital, offering the following:

From the 1960s through 1978, KRCG [channel 13 in Jefferson City] owned KMOS-TV in Sedalia. KMOS was operated as a satellite of KRCG. In the 1970s, KMOS would break away from KRCG and air its own evening newscast. KRCG operated KMOS at a relatively low power level, and shied away from selling KMOS to another commercial operator. KRCG and KOMU-TV, the NBC affiliate in Columbia, were the only two VHF network affiliates in the market, and it was feared that if KMOS was sold, the station could potentially become a full-power ABC affiliate. KRCG shared a secondary ABC affiliation with KOMU until ABC affiliate KCBJ-TV (now KMIZ), Channel 17, signed-on in Columbia in 1971. [Seven years later] KRCG donated KMOS to Central Missouri State University (now the University of Central Missouri) in Warrensburg. At that time, KMOS was converted to a stand-alone PBS station. KRCG then signed on a Sedalia translator, K11OJ [so that non-cable subscribers in the Sedalia area could still get KRCG programming over the air].

One of Dad's radio buddies, Peter Hunn, was a Central Missouri grad student in 1979–80, and remembers the main

Years ago, someone sent me this pretty pose of KCMO-TV's self-supporting tower backed by a beautiful Kansas City sky. Because this month's story takes place in the Show Me State, I thought it was high time to use the postcard picture. My guess is the stick is KCMO-TV's antenna structure, described in the 1963 *Broadcasting Yearbook* thusly: "Height 1,042 feet above ground; 100kW visual, 60 kW aural on channel 5." It signal debuted during the last week of September 1953.



Studio "A", Station K. F. M. O., Voice of the Lead Belt Flat River, Mo.

Radio Control Room, K. F. M. O., Voice of the Lead Belt Flat River, Mo.

Here's another radio station promotional card sent by a thoughtful *Pop'Comm* reader. I just wish the lower image of that neat little Collins AM transmitter was in color. Meantime, we'll just have to imagine the cherry-red hue of those four tubes socketed at eye-level for engineering inspection purposes—and to light up the imaginations of young radio buffs who toured Flat River, Missouri's KFMO.

Check out that rack of modulation monitoring gear, the modest four-channel control board, turntable (one of a pair) and Associated Press teletype machine. The latter unit's robotic clicking and alarm bells no doubt inspired its share of fledgling newscasters. KFMO began operation in 1947. Arguably, the card's photos were taken during the then 250-watt (on 1240 kilocycles) AM's inaugural year. Also note that Western Electric salt shaker microphone and snazzy upright piano in the image of KFMO's live "Studio A."

reason for KRCG-TV's "gift." Hunn admits that the account offered by an engineer he ran into while doing some on-camera hosting in the school's new KMOS-TV studio might have been more fanciful gossip than fact, but it does jibe with the "full-power" competition fears mentioned by the New Bloomfield Historical Society's text.

"The guy told me that KRCG executives were racking their brains trying to figure out how to make KMOS-TV [Channel 13, CBS, in Jefferson City] go away," Hunn says. "With Sedalia just 60 rather flat miles away from Jefferson City, the 'kissing' signals of the two commonly owned VHF facilities didn't allow for any power increases in either one [under then existing FCC rules]." And KMOS-TV, as a KRCG satellite, had been kept intentionally throttled back tens of thousands of watts below its true potential. But what could the mother station do?

Even if it had taken KMOS-TV dark and surrendered the license, surely somebody would jump at the chance to apply for a construction permit to activate the VHF allocation as a full-power commercial television operation.

So, when the question became, *Is there any way to turn this thing invisible?*, someone at a brainstorming session quipped, "Well, if it were educational, nobody would watch it—and nobody could buy advertising on it either." And with that off-handed suggestion, the room went momentarily silent before a proverbial, *Eureka!* was declared.

Soon thereafter, KRCG got the FCC to reclassify the Sedalia "V" as a non-commercial allocation and then donated the license (with the Commission's blessing) to the State University at Warrensburg (about 50 miles southeast of Kansas City and some 35 west of Sedalia).

Though much more interested in radio than TV, between grad classes Hunn did volunteer time at the fledgling PBS convert station. "I wish I'd paid more attention to the history and had taken some pictures," he confesses, "but I do recall asking if there were any KDRO-TV artifacts saved by the University. That engineer showed me an old transmitter in storage. And I think there was a pile of vintage studio light fixtures with KDRO-TV stenciled on crinkle-finish metal shades."

During the brief treasure hunt, Hunn mused with the tech about how unusual it was for there to be a small town VHF-TV, and that if the Sedalia allocation had been a UHF spot, KDRO-TV would have likely been "unbuilt" or at least short-lived.

The chat session ended with the engineer's news about aggravated folks living in the vicinity of KMOS-TV's new tower. The University had quickly upgraded its video present by having an 800-foot stick installed for the Channel 6 antenna. Reportedly the structure's strobe lights were driving some people in the vicinity crazy. Also vastly changed was KMOS-TV's output—on the picture side—from approximately 16 kW to 100,000 watts! Eventually, the eyesore complaints subsided and the school received kudos for accomplishing something it had never planned to be able to do: transform a little baby of a VHF-TV outlet into a vibrant public television station.

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

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Birds Of A Feather

by Bill Price, N3AVY
chrodoc@gmail.com

"If I were doing a Top 10 list, I'd save 'Cheap' for the grand finale position of number 1. Money is to hams as power is to QRP."

I have a good friend who is a few years older than I am—a ham—who shares other interests with me. We recently both admitted that we held on to a youthful desire to shoot out someone's Christmas lights with an air rifle. It's more for the glee of hitting tiny, reactive targets than for being mean to a neighbor. I have another friend who bought a bunch of Christmas balls after the holidays were over, with the intention of shooting them. There seems to be a pattern here, except that the one who bought the Christmas balls was not a ham. A ham would never *buy* something to use for targets.

There are exceptions to all generalizations, of course, but I've noticed some personality traits that are common among hams. I've also been to gatherings of people with other interests, and while each group has its quirks, I think it's safe to say that hams have their own set, which is unique.

I'd love to hear from readers if I've missed any that you're aware of, but as a pretty keen observer of strange things, I think I've got a good start for a handbook of strange ham traits.

If I were doing a Top 10 list, I'd save "Cheap" for the grand finale position of number 1. Money is to hams as power is to QRP. To do it, buy it, build it, fix it, or operate it for less cost than anyone else has managed to before is without doubt one of the key bragging points—somewhat equal to having worked moonbounce with a rubber duck. Generic flea markets (as opposed to ham flea markets) see people browse, occasionally find a treasure, bicker a little, and generally pay what an item is worth.

Ham flea markets, on the other hand, have people camping out the night before the tables are set up and roaming with propane lanterns, offering to help sellers haul things from their cars to their tables, in the hopes of discovering that particular "find" which will be talked about by all who attend, until the next hamfest comes along. I remember helping Norm move a 700-pound AM transmitter, which he referred to as the "Eisenhower" because ones like it had been hauled along with Ike's command caravan during World War II (the one that made all the papers). I also remember *a lot* of hams staring at us as we lugged and wheeled and carted and shoved that beast into the back of his station wagon; it almost lifted its front wheels off the ground until we sat in the front seat.

Hams also can often be found working at an HPJIE*—usually to find a source for surplus parts, racks, bits of solder, obsolete components, or a place to build (or repair) ham stuff. Norm found his ideal position: working near me at "that place which shall not be named," which has enabled him to travel to most of the major ham radio dealers in the country, gain free airfare and admittance to all the major hamfests, and given him access to all the aluminum tubing he could eat.

While hams can be found working at their HPJIEs, they also seem attracted to positions where they can arrive groggy from getting little or no sleep after sending "just one more CQ," or where they can operate lunchtime mobile and come back inside long after everyone else, because something had opened up on 6 meters and they couldn't miss their shot at East Coconut Island, off Majorca.

All of this is doubled—or tripled—if the ham's boss is an active ham. All of a sudden, instead of being chided for groggy arrivals or long lunches, any good DX excuse makes it all OK with the boss—so long as our ham never "out-DXs" said boss. It's a lot like playing golf.

And while a lot of hams will be seen playing with guns, computers, or woodworking equipment, I have yet to see an *active* ham who is also an *active* golfer (or tennis player, or playing a chukker of polo—you'll have to look it up). Bowling, maybe, but none of those sports where a person has to spend his *radio* money on clubs, specialty clothing, or other equipment. Boating seems to be an exception (eh, Gordo?), because it's just another reason to buy additional radio gear.

Someday, I may find a ham who plays chromatic harmonica, shoots air rifles, and has pet rats. So far, two out of three is the best I've found—and that one's afraid of rats.

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