



45635

APRIL 2008

POPULAR COMMUNICATIONS

Antenna Towers Now Within *Your* Reach

*Pop'Comm
Welcomes A New
Military Monitoring
Columnist!*

- **Vatican Radio In Tow For A Papal Visit, pg. 18**
- **A British Museum Showcases Warfare Comms, pg. 23**



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PLUS: A New Sunspot Cycle Is Born • Primary Fever Grips Media • Nearly 800 SW Broadcast Logs

THE PROFESSIONAL STANDARD

The compact desk-top VR-5000 is Yaesu's most versatile Communications Receiver ever! With ultra-wide frequency coverage and a host of operating features, you'll be on top of the monitoring action with the VR-5000!

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- **DUAL RECEIVE**
- **DIGITAL SIGNAL PROCESSING / BANDPASS FILTER, NOISE REDUCTION, NOTCH FILTER, NARROW CW PEAK FILTER (Optional DSP-1 requires)**
- **REAL-TIME SPECTRUM SCOPE**
- **WORLD CLOCK WITH UTC/LOCAL SETTINGS**
- **PRESET SHORTWAVE BROADCAST STATION MEMORY BANK**
- **EXTENSIVE SCANNING CAPABILITY/SMART SEARCH™**

● AND MUCH, MUCH MORE... ●

- "RF Tune" Front-end Preselector (1.89-1000 MHz) ● 20 dB Attenuator for strong signal environments ● IF Noise Blanker ● DVS-4 Digital Voice Recorder (option) with two memories of up to 8 seconds each ● 10.7 MHz IF Output Jack ● Field Strength Meter ● Audio Tone Control ● All-Mode Squelch Control for silent monitoring ● Password-protected Panel and Dial "Lock" feature ● Display Dimmer/Contrast Control ● Clone Capability for copying memory information from one VR-5000 to another ● Personal Computer Interface Port ● Two Antenna Ports ● Audio Wave Meter provides display of incoming signal's wave characteristics

COMMUNICATIONS RECEIVER VR-5000

0.1~2599.99998MHz*
LSB/USB/CW/AM-N/AM/
WAM/FM-N/WFV
*Cellular blocked

Enjoy the wide world of communications monitoring with the act on-packed VR-5000, available from your Yaesu Dealer today!



Wideband Receiver VR-120D

- Wideband Coverage: 0.1-1299.995* MHz AM/FM/Wide-FM
- Rugged outdoor-ready case construction
- Ultra-long battery life
- BNC-type antenna connector
- Straightforward 4-button operation
- Versatile 640-channel memory system



All-Mode Wideband Receiver VR-500

- Frequency coverage : 0.1-1299.99995 MHz**
- Modes : NFM, WFM, AM, USB, LSB, CW
- Multiple Power Source Capability
- Polycarbonate Case
- Real-Time 60-ch* Band Scope *Range 6 MHz / Step 100kHz
- Full Illumination For Display And Keypad
- Convenient "Preset" Operating Mode
- Front-end 20 dB Attenuator

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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ICOM® R75



Universal Radio is pleased to offer the **Icom R75-12** receiver. With full coverage from 30 kHz to 60 MHz; all longwave, medium wave and shortwave frequencies are supported plus extended coverage to include the 6 meter amateur band. Some innovative features of the R75 include: FM Mode Detection (but not the FM broadcast band), Twin Passband Tuning, Two Level Preamp, 99 Alphanumeric Memories, four Scan Modes, Noise Blanker, Selectable AGC (FAST/SLOW/OFF), Clock-Timer, Squelch, Attenuator and backlit LCD display. Tuning may be selected at 1 Hz or 10 Hz steps plus there is a 1 MHz quick tuning step plus tuning Lock. The front-firing speaker provides solid, clear audio. The back panel has a Record Output jack and Tape Recorder Activation jack. The supplied 2.1 kHz SSB filter is suitable for utility, amateur, or broadcast SSB. However, two optional CW/SSB filter positions are available (one per I.F.). The formerly optional **UT-106 DSP board** is now included and factory installed! A great value.

Order #0012 **Call for price.**

ICOM® PCR1500 R1500



The **Icom PCR1500** wideband computer receiver connects externally to your PC via a USB cable. This provides compatibility with many computer models, even laptops. Incredible coverage is yours with reception from 10 kHz to 3300 MHz (less cellular gaps). Modes of reception include AM, FM-Wide, FM-Narrow, SSB and CW. (CW and SSB up to 1300 MHz only). The PCR1500 comes with an AC adapter, whip antenna, USB cable and Windows™ CD. #1501 **\$479.95**

The **Icom R1500** is similar to the above, but also includes a controller head for additional operation independent of a PC. #1500 **\$579.95**

ICOM® PCR2500 R2500



The **Icom PCR2500** wideband computer receiver uses a similar form-factor to the PCR1500, but has several enhancements, including two powerful features: **dual watch** (the radio can receive two signals simultaneously) and **diversity reception** (two antennas can be connected at the same time and employed to provide stable reception). The optional UT-118 Digital Unit provides D-STAR® digital voice reception and the optional UT-121 supports APCO25 digital voice decoding. The R2500 is shown above. #2501 **\$709.95**

The **Icom R2500** is similar to the PCR2500, but includes a controller head for additional operation independent of a PC. #2500 **\$879.95**

FREE

ICOM Bonito CS 4.5 Software included!

A \$69.00 value included **FREE** with your R1500/R2500, PCR1500/2500 purchase for a limited time.

Special Note: Prices shown for the R1500/PCR1500 and R2500/PCR2500 reflect the \$20 Icom limited time mail-in rebate.

R5



The **R5** covers 150 kHz to 1309.995 MHz (less cellular gaps) in: AM, FM Narrow and FM wide. 1200 memories store: frequency, mode, step size, duplex direction and offset, CTCSS tone, tone squelch and skip settings. Other features include: attenuator, LCD lamp, AM ferrite bar antenna, auto power off, CTCSS decode, weather function and battery save. A great value at under \$200.00. **Call or visit website for price.**

R20



The **Icom R20** covers an incredible 150 kHz to 3304.999 MHz (less cellular) with 1250 alphanumeric memories, bandscope and SSB/CW. It has: two VFOs, dual watch, voice scan control, NB, large two line LCD and CTCSS/DTCS/DTMF. A built-in **IC audio recorder** can record up to 4 hours of reception! With charger, Li-ion battery, belt clip and strap. **Call for price.**

R8500

The **Icom R8500** is a full coverage wide band communications receiver that tunes from 100 kHz to 1999.99 MHz in AM, LSB, USB, CW, FM-N and FM-W modes. Available to government customers only. #0663 **\$1699.95**



The **Icom R9500** clearly raises the bar for professional receivers. Covering 5 kHz to 3335 MHz, this instrument represents the state-of-the-art in receiver technology! Visit the Universal website for complete details.

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Reynoldsburg, Ohio
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Universal Radio is also pleased to carry the complete ICOM amateur radio equipment line. The **IC-7800** shown.

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- Special offers are subject to change.
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radio inc.**

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On The Cover

Putting "steel in the sky" is just a dream for many, if not most, hobbyists—but it doesn't have to be that way. Our cover story, "Antenna Support Structures For The Common Man—How To Build A Tower With Only \$500" by Ken J. Meyer, K9KJM, starting on page 12, shows that with the right combination of time, money, and skill, the sky's the limit. (Cover by the author)

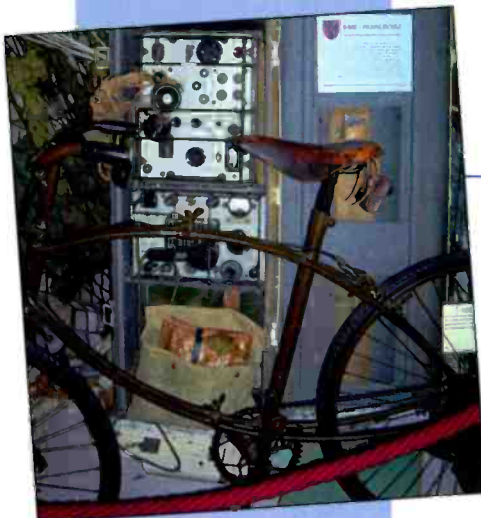
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12



18



23

Tap into secret Shortwave Signals

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

MFJ-462B
\$199⁹⁵

Plug this self-contained MFJ Multi-Reader™ 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 unmediated late breaking news in English -- China News in Taiwan, Tanjug Press in Serbia, Iraqi News in Iraq -- all on RTTY.

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

Super Active Antenna

"World Radio TV Handbook" says MFJ-1024 is a "first-rate easy-to-operate active antenna...quiet...excellent dynamic range...good gain...low noise...broad frequency coverage." Mount it outdoors away from electrical noise for maximum signal, minimum noise. Covers 50 KHz-30 MHz.

Receives strong, clear signals from all over the world. 20 dB attenuator, gain control, ON LED. Switch two receivers and auxiliary or active antenna. 6x3x5 in. Remote has 54" whip, 50 feet coax. 3x2x4 inches. 12 VDC or 110 VAC with MFJ-1312, \$15.95.

MFJ-1024 **\$159⁹⁵**

Indoor Active Antenna

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

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

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. 3/8x1/4x4 in.



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

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

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

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

High Performance Modem

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

Easy to use, tune and read

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

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

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

Copies most standard shifts and speeds. Has

MFJ AutoTrak™ Morse code speed tracking.

Use 12 VDC or use 110 VAC with MFJ-1312D AC adapter, \$15.95. 5/8x2 1/2xHx5/8x1/4 inches.

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



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

N-female connector. Tripod screw-mount. Wall and desk/shelf mounts. Use vertically/horizontally. 18Wx2 1/4xHx1 1/4D inches. 2.9 ounces.

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

Reverse-SMA male to N-male. 6 ft. RG-174. MFJ-5606TR, \$24.95. Same as MFJ-5606SR but Reverse-TNC male to N-male.



Eliminate power line noise!



MFJ-1026
\$199⁹⁵

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

MFJ Antenna Matcher

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

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

High-Gain Preselector

High-gain, high-Q receiver preselector covers 1.8-54 MHz.

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

Dual Tunable Audio Filter

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

MFJ Shortwave Headphones



MFJ-392B
\$24⁹⁵

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

High-Q Passive Preselector

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

MFJ-956 **\$69⁹⁵**

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 **\$119⁹⁵**

MFJ-1046

MFJ-1046

MFJ-1046

MFJ Shortwave Speaker

This MFJ ClearTone™ restores the broadcast quality sound of shortwave listening.

Makes copying easier, enhances speech, improves intelligibility, reduces noise, static, hum. 3 in. speaker handles 8 Watts. 8 Ohm impedance. 6 foot cord.

MFJ-281 **\$12⁹⁵**

MFJ 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 **\$59⁹⁵**

MFJ-1777

MFJ Antenna Switches

MFJ-1704 **\$74⁹⁵**

MFJ-1702C **\$34⁹⁵**

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-461 **\$89⁹⁵**

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

MFJ-461

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. 4 1/2x1Dx2H inches.

MFJ-108B

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O Brave New World!

Spring is a time of renewal and possibilities—which for us means new technologies and gadgets. Both were center stage at the Consumer Electronics Show (CES) in Las Vegas, January 7–10. In the interest of full disclosure, I did not attend, but was riveted to the Web posts to a scary degree. I had to share.

The “SuperSession” presentations that enlightened and entertained at the show ran the gamut from useful to goofy, from “here tomorrow” to “not for a few more decades” (aka tomorrow + 1). One such session, on “Disruptive Technology,” was conducted by Dr. Levy Gerzberg, founder and CEO of Zoran Corporation. The good doctor revealed how implanted pacemakers will soon have GPS functionality, so in the event of a cardiac emergency, medical personnel can be directed to the victim’s exact location. That application I’d deem useful, though I shudder at the further implications of the word “disruptive”—I hope that’s just bad marketing.

The Taser International booth laid forth the company’s C2 (for consumer) line. Useful? Well, how many times has this happened to you? You’re sitting on a park bench listening to tunes on your iPod when a ne’er-do-well makes a grab for it. You don’t have time to open your backpack and grab your Taser, so goodbye iPod. But worry no more! The C2 Taser combines a 2-gig music database with 50,000 volts of persuasion. That one I deem goofy (at least unnecessary—my Taser’s always handy).

The consumers of electronics at CES also learned that wireless HD technology promises a tenfold speed increase over current wireless devices, according to Jeffrey Gilbert, chief technology officer of SiBEAM, Inc. This breakthrough is to be realized using millimeter waves at a frequency of about 60 gigahertz. While the method will use a lot of spectrum, it should result in extremely high data transfer rates—around 4 gigabits per second—with very low interference. Now data transfers, such as medical records, can be inadvertently sent to insurance

companies at previously unheard of speeds. Government monitoring of personal communications will also be greatly facilitated.

We didn’t need CES to tell us that technology products have a common requirement: energy. For mobile wireless, lithium ion batteries are still a preferred power source—but are we close to reaching the theoretical limit of batteries? Sure, there are “mundane” alternatives that might hold some promise, like fuel cells or perhaps ultracapacitors that provide quick, massive bursts of instant energy. But I think in “tomorrow + 1” we can do a little better than that. Could *body fat* be converted to electrical energy? Ross Dueber, president and CEO of ZPower, thinks so. In fact, as he puts it: “Before I go to sleep I will plug myself into the wall and wake up hungry.”

Truly, a tomorrow to look forward to.

A Warm Welcome To Our Newest Columnist

But back to today. *Pop-Comm* is absolutely delighted to be bringing onboard with this issue a brand new “Military Radio Monitoring” columnist: Mark Meece, N8ICW. His name is no doubt well known to many of you through his writings, his involvement in the Cincinnati/Dayton Area Monitoring Exchange (MONIX) and the Association of North American Radio Clubs (ANARC), and, frankly, his long history of mentoring so many people in the hobby. We’re honored that he’s sharing that enthusiasm with readers of these pages. His email address can be found at the top of his column, which begins on page 57—why not drop him a note to ask a question or just to say hello? Let him know what interests you in MilCom.

But, don’t worry, our previous columnist, Tom Swisher, hasn’t gone any further than the “Plane Sense” column. Tom takes off with that one next issue.



Popular Communications invites your comments, questions, criticisms, compliments, article submissions—in a word, your thoughts. Write to me at editor@popular-communications.com.

POPULAR COMMUNICATIONS

EDITORIAL STAFF

Edith Lennon, N2ZRW, Editor

(E-mail: editor@popular-communications.com)

Tom Kneitel, W4XAA, Senior Editor

Richard S. Moseson, W2VU, Editorial Director

(E-mail: w2vu@popular-communications.com)

CONTRIBUTING EDITORS

Rich Arland, W3OSS, Homeland Security

Peter J. Bertini, K1ZJH, Restoration/Electronics

Kent Britain, WA5VJB, Antennas And Accessories

Bruce A. Conti, AM/FM Broadcasts

Gerry L. Dexter, Shortwave Broadcast

Richard Fisher KI6SN, Capitol Hill News

Tomas Hood, NW7US, Propagation

Shannon Huniwell, Classic Radio

John Kasupski, KC2HMZ, Utility Communications

Kirk Kleinschmidt, NT0Z, Amateur Radio

Ron McCracken, WPZX-486/KG4CVL, REACT

Mark Meece, N8ICW, Military Monitoring

D. Prabakaran, News

Bill Price, N3AVY, Humor/Communications

Ken Reiss, Technical/Scanning

Bob Sturtevant, AD7IL, Puzzles and Trivia

Tom Swisher, WA8PYR, Plane Sense

Jason Togyer, KB3CNM, Cartoons

Gordon West, WB6NOA, Radio Resources

BUSINESS STAFF

Richard A. Ross, K2MGA, Publisher

Arnold Sposato, N2IQO, Advertising Manager

Emily Leary, Sales Coordinator

Sal Del Grosso, Accounting Manager

Doris Watts, Accounting Department

Melissa Gilligan, Operations Manager

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Ann Marie Auer, Customer Service

PRODUCTION STAFF

Elizabeth Ryan, Art Director

Barbara McGowan, Associate Art Director

Dorothy Kehrwieder, Production Director

Emily Leary, Production Manager/Webmaster

Hal Keith, Technical Illustrator

Larry Mulvehill, WB2ZPI, Photographer

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25 Newbridge Road
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Capitol Hill And FCC Actions Affecting Communications

APCO Summit Focuses On Technology In Public Safety Communications

Just one key issue was on the agenda for the Association of Public-Safety Communications Officials (APCO) International Winter Summit: technology in public safety communications.

Held in late January in Orlando, Florida, the fifth annual event was conducted over three days, taking attendees "on a three-day journey through the technological challenges and opportunities faced by public safety communications executives," APCO said. Sessions included:

- Is 700 MHz Broadband in Your Future?
- Leveraging Broadband to Improve Public Safety and Emergency Crisis Response
- Lessons learned from the Minneapolis Bridge Collapse
- What Communications Centers Can Learn from Corporate America
- Funding Interoperable Communications

In a report on the organization's website, APCO said attendees took part "in practical sessions dealing with today's hot topics—from the regulatory impacts of radio and rebanding, to understanding VoIP and wireless connectivity issues, to strengthening networks and standardizing data exchange."

"Your peers are a wealth of knowledge, and most are struggling with many of the same concerns you face day to day," APCO said prior to the summit's start. The summit, with its focus exclusively on technology, is "the only executive-level event tailored to foster technical information sharing with others in the public safety communications field," APCO said.

"Whether you're a technical administrator in a public safety communications agency, a city manager, an elected official, or a government CIO," APCO said, the 2008 Winter Summit was "the only place to find a complete education on what's happening with technology in public safety communications."

\$250,000 Allocated For Digital Communications Network In Oregon

Oregon Governor Ted Kulongoski's Strategic Reserve Fund has allocated to the State of Oregon's Office of Emergency Management (OEM) \$250,000 "to further develop and enhance a statewide amateur radio digital communications network," according to a statement from an official of the American Radio Relay League.

"This network, the Oregon ARES Digital Network (OADN), already uses a combination of different radio equipment and spectrum segments, computers and the Internet to provide a robust backup communications system in times of disaster," said ARRL Oregon Section Manager Bonnie Altus, AB7ZQ. "With its enhancements, all Oregon counties will be able to communicate with the state OEM."

"In December [2007], this system proved its usefulness in the storms and floods by utilizing Winlink stations in Lincoln and Clatsop counties to communicate with OEM," said Altus. "Early in that activation, the OEM's Amateur Radio Unit found they were not able to keep up with maintaining a complete log of communications when using voice communications, but Winlink activities maintained an automatic log for them." The main purpose of the OADN is to provide back-up digital communications between Oregon Emergency Management and county Emergency Operations Centers and other state agencies in Salem, if normal communications systems fail in an emergency, Altus said.

According to the League's publication, the *ARRL Letter*, "after a visit to one of the severely affected towns, Gov. Kulongoski said, 'I'm going to tell you who the heroes were from the very beginning of this...the ham radio operators. These people just came in and actually provided a tremendous communication link to us.'"

"Oregon's OEM said the radio operators were tireless in their efforts to keep the systems connected. When even state police had difficulty reaching some of their own troops, ham radio worked, setting up networks so emergency officials could communicate and relaying lists of supplies needed in stricken areas."

The ARRL said that ARES/RACES groups in each county would be responsible for installation, maintenance, and operation of the network through an Intergovernmental Agreement between the individual county Emergency Managers and Oregon's Office of Emergency Management.

FCC Issues Warning To Former Radio Amateur, Alleging Interference

The Federal Communications Commission has issued a Warning Notice to David O. Castle, ex-WA9KJ, of Evansville, Indiana, for alleged deliberate interference to a repeater on the 2-meter band. Riley Hollingsworth, Special Counsel in the FCC's Enforcement Bureau, issued the warning in January.

The complaint says that "monitoring information before the Commission indicates that [Castle has] been operating portable radio transmitting equipment on 2 meters in order to interfere with a local linked repeater system on 146.835/146.250, and that [he has] provided a portable unit for others to use in the same manner." The Commission wrote Castle that "you have no authority to operate amateur radio transmitting equipment on any frequency."

Castle's alleged actions are "a violation of Section 301 of the Communications Act of 1934, as amended, 47 U.S.C. Section 301, and carries criminal penalties including monetary forfeiture [fine] and prison. Monetary forfeitures normally range from \$7,500 to \$10,000," the Commission said.

According to published reports, Castle's application to renew his amateur radio license was "denied with prejudice" by an Administrative Law Judge in August 2007.

EMCOMM Software For Windows Available For Beta Test

A suite of software programs designed for point-to-point, error-free emergency messaging up to or more than 100 miles is available for Windows users.

"The NarrowBand Emergency Messaging System (NBEMS) development team announced...that a Windows NBEMS software suite for beta testing is now available," the *ARRL Letter* reported earlier this year.

"According to developers Skip Teller, KH6TY and Dave Freese, WIHKJ, the NBEMS system is designed primarily for use on VHF and up, or on HF with Near Vertical Incidence Skywave (NVIS) antennas.

"The system uses the computer soundcard as the modem," the *Letter* said. "Other than a simple interface connection between the computer and transceiver, no additional hardware is needed. Composing and sending emergency messages on NBEMS is no more difficult than sending e-mail via the Internet. All forwarding is done by stations manned by live operators on both ends who can confirm that a frequency is clear locally, or negotiate a frequency change to avoid causing interference."

Additionally, the NBEMS software can be used for routine communications on PSK31, PSK63, RTTY, or MFSK16, and "is capable of sending flawless, high resolution, passport photo-sized color images in less than 10 minutes over any path that can sustain PSK250 without excessive repeats," the *Letter* said.

To download the NBEMS suite for beta testing, visit the NBEMS website at <http://w1hkj.com/NBEMS/>. Comments and bug reports can be sent via e-mail to kh6ty@comcast.net. ■

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



Close Call Radio Frequency Capture - Bearcat exclusive technology locks onto nearby radio transmissions, even if you haven't programmed anything into your scanner. Useful for intelligence agencies for use at events where you don't have advance notice or knowledge of the radio communications systems and assets you need to intercept. The BCD396T scanner is designed to track Motorola Type I, Type II, Hybrid, SMARTNET, PRIVACY PLUS, LTR and EDACS® analog trunking systems on any band. Now, follow UHF High Band, UHF 800/900 MHz trunked public safety and public service systems just as if conventional two-way communications were used. **Dynamically Allocated Channel Memory** - The BCD396T scanner's memory is organized so that it more closely matches how radio systems actually work. Organize channels any way you want, using Uniden's exclusive dynamic memory management system. 3,000 channels are typical but **over 6,000 channels are possible** depending on the scanner features used. You can also easily determine how much memory you have used and how much memory you have left. **Preprogrammed Systems** - The BCD396T is preprogrammed with over 400 channels covering police, fire and ambulance operations in the 25 most populated counties in the United States, plus the most popular digital systems. **3 AA NiMH or Alkaline battery operation and Charger** - 3 AA battery operation - The BCD396T includes 3 premium 2,300 mAh Nickel Metal Hydride AA batteries to give you the most economical power option available. You may also operate the BCD396T using 3 AA alkaline batteries. **Unique Data Skip** - Allows your scanner to skip unwanted data transmissions and reduces unwanted birds. **Memory Backup** - If the battery completely discharges or if power is disconnected, the frequencies programmed in the BCD396T scanner are retained in memory. **Manual Channel Access** - Go directly to any channel. **LCD Back Light** - A blue LCD light remains on when the back light key is pressed. **Autolight** - Automatically turns the blue LCD backlight on when your scanner stops on a transmission. **Battery Save** - In manual mode, the BCD396T automatically reduces its power requirements to extend the battery's charge. **Attenuator** - Reduces the signal strength to help prevent signal overload. The BCD396T also works as a conventional scanner to continuously monitor many radio conversations even though the message is switching frequencies. The BCD396T comes with AC adapter, 3 AA nickel metal hydride batteries, belt clip, flexible rubber antenna, wrist strap, SMA/BNC adapter, RS232C cable, Trunk Tracker frequency guide, owner's manual and one year limited Uniden warranty. Not compatible with AGEIS, ASTRO or ESAS systems. Order on-line at www.usascan.com or call 1-800-USA-SCAN.

Close Call Radio Frequency Capture - Bearcat exclusive technology locks onto nearby radio transmissions, even if you haven't programmed anything into your scanner. Useful for intelligence agencies for use at events where you don't have advance notice or knowledge of the radio communications systems and assets you need to intercept. The BCD396T scanner is designed to track Motorola Type I, Type II, Hybrid, SMARTNET, PRIVACY PLUS, LTR and EDACS® analog trunking systems on any band. Now, follow UHF High Band, UHF 800/900 MHz trunked public safety and public service systems just as if conventional two-way communications were used. **Dynamically Allocated Channel Memory** - The BCD396T scanner's memory is organized so that it more closely matches how radio systems actually work. Organize channels any way you want, using Uniden's exclusive dynamic memory management system. 3,000 channels are typical but **over 6,000 channels are possible** depending on the scanner features used. You can also easily determine how much memory you have used and how much memory you have left. **Preprogrammed Systems** - The BCD396T is preprogrammed with over 400 channels covering police, fire and ambulance operations in the 25 most populated counties in the United States, plus the most popular digital systems. **3 AA NiMH or Alkaline battery operation and Charger** - 3 AA battery operation - The BCD396T includes 3 premium 2,300 mAh Nickel Metal Hydride AA batteries to give you the most economical power option available. You may also operate the BCD396T using 3 AA alkaline batteries. **Unique Data Skip** - Allows your scanner to skip unwanted data transmissions and reduces unwanted birds. **Memory Backup** - If the battery completely discharges or if power is disconnected, the frequencies programmed in the BCD396T scanner are retained in memory. **Manual Channel Access** - Go directly to any channel. **LCD Back Light** - A blue LCD light remains on when the back light key is pressed. **Autolight** - Automatically turns the blue LCD backlight on when your scanner stops on a transmission. **Battery Save** - In manual mode, the BCD396T automatically reduces its power requirements to extend the battery's charge. **Attenuator** - Reduces the signal strength to help prevent signal overload. The BCD396T also works as a conventional scanner to continuously monitor many radio conversations even though the message is switching frequencies. The BCD396T comes with AC adapter, 3 AA nickel metal hydride batteries, belt clip, flexible rubber antenna, wrist strap, SMA/BNC adapter, RS232C cable, Trunk Tracker frequency guide, owner's manual and one year limited Uniden warranty. Not compatible with AGEIS, ASTRO or ESAS systems. Order on-line at www.usascan.com or call 1-800-USA-SCAN.

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The handheld BC246T TrunkTracker scanner has so many features, we recommend you visit our web site at www.usascan.com and download the free owner's manual. Popular features include **Close Call Radio Frequency Capture** - Bearcat exclusive technology locks onto nearby radio transmissions, even if you haven't programmed anything into your scanner. **Dynamically Allocated Channel Memory** - Organize channels any way you want, using Uniden's exclusive dynamic memory management system. 1,600 channels are typical but **over 2,500 channels are possible** depending on the scanner features used. You can also easily determine how much memory is used. **Preprogrammed Service Search (10)** - Makes it easy to find interesting frequencies used by public safety, news media TV broadcast audio, Amateur (ham) radio, CB radio, Family Radio Service, special low power, railroad, aircraft, marine, racing and weather frequencies. **Quick Keys** - allow you to select systems and groups by pressing a single key. **Text Tagging** - Name each system, group, channel, talk group



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News, Trends, And Short Takes

Did A Radio Operator Nearly Ignite A War Between The U.S. And Iran?

According to numerous published sources, including the *U.S. Navy Times*, a local radio operator—perhaps a prankster known as the “Filipino Monkey”—may have nearly triggered a shoot-out between the United States and Iran on January 6 in the Strait of Hormuz at the entrance to the Persian Gulf.

The U.S. military complained that its warships had been harassed by Iranian vessels at least three times since December in the Strait of Hormuz, the only way into the Gulf by sea. An audio-video tape released by the U.S. military showed that in the latest incident, on January 6, five Iranian speedboats dodged around and between a heavily armed cruiser, a destroyer, and a frigate for about half an hour as they steamed together through the Strait into the Gulf. One of the American warships trained a machine gun on an Iranian boat that came within 200 meters of the U.S. vessel. But the Iranians turned away before the commander gave the order to fire.

At the height of tense confrontation, a male voice speaking in heavily accented English on an open frequency was heard to say: “I am coming to you. You will explode after ... minutes.” Initially, the Pentagon attributed this voice to one of the Iranians on the five speedboats. Now it says the source of the threatening commentary cannot be pinpointed.

The *U.S. Navy Times* suggested that the radio transmission may have come from a local heckler known as the “Filipino Monkey” who might have listened in on ship-to-ship traffic and then intervened. U.S. military personnel have reported many similar threatening or insulting radio transmissions in the past, but say they don’t know whether they come from Iran or somewhere else in the Gulf.

According to the *U.S. Navy Times*, Rick Hoffman, a retired Navy captain who spent many years at sea in the Gulf, had plenty of experience with the infamous radio operator. “For 25 years there’s been this mythical guy out there who, hour after hour, shouts obscenities and threats. He could be tied up pierside somewhere or he could be on the bridge of a merchant ship,” Hoffman was quoted as saying in the *Times* piece. “He used to go all night long. The guy is crazy. But who knows how many Filipino Monkeys there are? Could it have been a spurious transmission? Absolutely.”

Iran has played down the incident, accusing Washington of deliberately stoking tensions while President George Bush was in the Middle East trying to rally a regional Arab coalition against Iran. Teheran says the boats were merely trying to identify the U.S. vessels. But the U.S. Navy has been keenly aware of the danger of speed boat attacks since al-Qaeda operatives packed a small boat with high explosives and rammed the destroyer *USS Cole* while it was docked in Yemen in October 2000, killing 17 U.S. sailors, wounding 40 and causing around \$250 million in damage to one of the navy’s most sophisticated warships.

Radio Pakistan External Service Drops Eight Languages, Retains Seven

Pakistan Broadcasting Corporation (PBC) has decided to retain and reinforce its external service broadcasts in Hindi, Gujrati, Bangla, Pushto, Dari, Persian and Chinese languages. The PBC says that contents of the programs of these services will be improved in line with its international broadcast partners with more emphasis on news, current affairs and entertainment. There will also be a readjustment of its broadcast transmitters and the services will be relayed through powerful transmitters to improve the broadcast signals.

The decision to revamp the external services of Radio Pakistan was made last year. The Radio Pakistan External Service schedule webpage indicates that PBC will drop English, Turkish, Turkmen, Arabic, Tamil, Sinhali, Nepali, and Russian. The staff that will become surplus due to the revamping is to be absorbed in other services of Radio Pakistan.

Delphi and WorldSpace Announce Development Agreements For European Satellite Radio Receivers

Delphi Corp and WorldSpace Satellite Radio have announced that the two companies have an agreement in which Delphi will design the first WorldSpace satellite radio mobile receiver for the European aftermarket based on a WorldSpace-developed reference design. In addition, the two companies announced that WorldSpace has selected Delphi to be a lead designer for its European OEM receiver and reception system applications that will also be based on WorldSpace’s reference designs. Delphi made the announcement at the 2008 International Consumer Electronics Show.

Designed by Delphi for European aftermarket applications, the WorldSpace aftermarket receiver will receive the signal from the WorldSpace satellite, which covers the European continent. The satellite digital radio (SDR) standard that was approved by the technical committee of the European Telecommunications Standards Institute (ETSI) in November 2006 is the core of the technology that WorldSpace is implementing in its satellite radio communication networks in Europe. It combines terrestrial repeaters and satellites and permits the most efficient use of the spectrum allocated for satellite radio (12.5 MHz from 1479.5 to 1492).

The aftermarket receiver is expected to be launched in parallel with the start of WorldSpace’s mobile service beginning in Italy in 2009. According to the company, WorldSpace expects to begin broadcasting 40 to 50 channels of commercial-free music, news, talk, entertainment and sports programming 24 hours a day, using the most advanced digital audio technology currently available (MPEG-4 accPLUS v.2).

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Antenna Support Structures For The Common Man—How To Build A Tower With Only \$500

Proven Tips For Putting Steel In The Sky Without Spending A Small Fortune

by Ken J. Meyer, K9KJM

Almost everyone who's been in the radio business or hobby for any length of time knows that a radio station is only as good as its antenna system. And for that system to be much good, the antennas usually need to be mounted high above the surrounding area. That eventually leads radio communication enthusiasts to say to themselves "I sure wish I had that in my backyard" whenever they pass some tall commercial-type radio tower.

As much as we'd like to have a big tower in our backyards (or even a tripod and mast on the roof), there are a number of potential roadblocks that must be overcome to get the tallest and best antenna support structure, or "tower," possible. Lack of funds can definitely be a big roadblock. But it doesn't have to be that way; you just need to make the most of something called a "Resource Triangle."

Geometry Is Your Friend

Years ago I heard how any project can be accomplished with the right combination of elements—to your Resource Triangle, that is, with the three points being TIME, MONEY, and SKILL. That triangle can be adjusted any which way. If you have lots of time and skill, you can succeed at most any project with very little money. Or, if you have lots of time, but very little skill and money, the project still can be accomplished; it will just take much longer. You get the idea. The exception of course is money. If you have boatloads of money, you can get by without a lot of either skill or time; you can just hire it all out!

Think small...An example of an old TV tower recycled to a 50-foot Rohn 25 tower holding up 11-meter CB antennas.

Kenneth J. Meyer, K9KJM, has been a life-long communications enthusiast. In addition to his Extra class ham license, Ken also has an FCC GMRS license, operates an FCC licensed VHF commercial radio system, and provides technical support to various radio communications systems. He currently has seven towers in his backyard.

As mentioned, the expense connected with a tower is an obstacle for many; it certainly has been for me! So over the years I found many ways to use time and skill to accomplish a goal like getting a decent tower without breaking the bank.

If You Can Build A Backyard Swing Set, You Can Probably Do This, Too

To build your own tower, you must first determine if the law is on your side. There are a few key questions to ask yourself: Do you own the property in question, or rent? If a renter, you need to check with

the landlord. If you're a homeowner, is there a (dreaded!) homeowner association private agreement with restrictions on your property? Then there's the FAA. Are you near an airport or under a flight path?

You also need to check with the local zoning or planning department. Most rural areas have almost no regulations for non-commercial towers, but some cities and villages do have restrictive ordinances that need to be addressed. Note that even if there is some type of local ordinance restricting your plans, if you're a ham you have PRB-1 (a federal law you can read more about at [http://wireless.fcc.gov/services/index.htm?job=prb-](http://wireless.fcc.gov/services/index.htm?job=prb-1&id=amateur&page=1)

[1&id=amateur&page=1](http://wireless.fcc.gov/services/index.htm?job=prb-1&id=amateur&page=1)) working in your favor. The threat of a federal lawsuit usually will work magic in getting the local zoning board to see things your way, or at least in being willing to compromise on the height of the tower allowed.

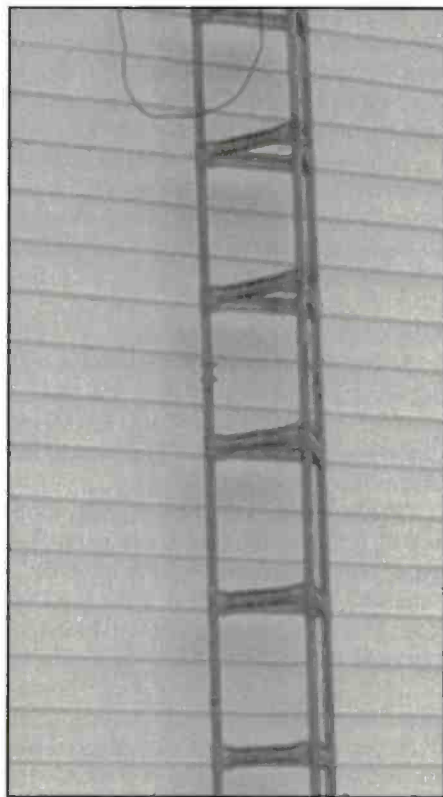
All these rules and regulations may have some people saying, "The heck with it, I don't need a tower that bad," or you may be tempted to think, "My little 30-foot mast will go unnoticed." To the first I say it's much easier than you may think; to the second I say: builder beware. You don't want to go through all the trouble and even moderate expense of building a nice antenna support only to have someone show up with a legal order to make you take it down!

Now The Fun Stuff

After you've determined that you can indeed legally put some steel in the sky, it's time to do the really fun part: planning just what you can do on your specific property. If you own or rent a small city lot, a 200-foot tower may be a little far fetched. If your lot is only 100 feet wide, maybe a 50-foot tower would be more appropriate. Regulations will affect



Or think tall...A PiRod 200-foot commercial tower recycled to ham radio use when the cable company went to fiber optics. This photo also shows some satellite dish antennas.



A Rohn 6 type tower—and the only one tower pictured that's not on the author's property! This kind of tower is suitable for light-duty use only.

this decision, too, since many rules state that the “fall zone” of any tower lie within your own property lines.

Your homework also included researching various types of towers, manufacturers, and materials, and learning about antenna support structures in general. Fortunately, research doesn't cost anything, and—especially if you have access to the Internet—is fun and easy.

A Few Words On Towers In General

Here's a little tower history to give you a foundation (pun intended!):

Only about 30 or so years ago, television reception was a real challenge in broadcast fringe areas, which prompted the purchase and installation of “TV towers” for better TV viewing—and to get those “blacked out” football games. Now that cable TV and direct-to-home satellite dish antennas have become the norm, many of those old TV towers are going unused. The good news is that they're a perfect source for very low-cost antenna support structures for radio enthusiasts! All you have to do is to go door-to-door asking the owner if he or she would like to get rid of that old TV tower. In many cases, the answer is YES! And the price is usually right: either free or close to it. A small

“Wanted” ad in a local newspaper may also bring in many leads, especially if you can indicate that the old tower would be used for REACT, ARES, or other public service-type operation.

But before you go knocking on doors, you need to know what you're looking for. Most of the early TV towers were what I call a “Rohn 6-type.” This refers to a tower with fairly small-diameter tube legs (only about 3/4 inch), horizontal braces between the legs, and no diagonal braces at all. There were a number of companies making them, and several different versions, that were popular in the 1950s. Unless there are some special circumstances, I would *avoid* this type of tower.

Instead seek out something with a somewhat larger diameter leg (about 1-1/4 inches outside diameter) and that has diagonal solid steel braces making a “Z” pattern up the tower. I refer to this design as “Rohn 25G-type,” though other manufacturers made similar models. A Rohn 25G tower will free-stand to a height of 50 feet with a reasonable wind load of antennas, and it can be installed with guy wires (at 80-percent of the tower height for maximum strength) to a height of over 150 feet. Yes, you would need to collect a number of TV size towers to come up with a really tall tower like that, but it can be done!

Be aware that Rohn also made a model very similar to the 25G, known as the “20.” The Rohn 20 can also be a useful tower,

Tools Of The Tower Trade, And How To Use Them

You've gotten a good overview of the steps involved, now here's what you need to help you take them:

Bolt Action

As you're disassembling your discovery, the easiest way to remove the tower leg bolts is with a plain carpenter's claw hammer. Remove the nuts with wrenches, use the hammer to tap the bolt as far as it will go, then use the claw part of the hammer to just pull the bolt out like an old nail.

A word about the bolts: Rohn 25 bolts are galvanized grade 5 fine thread 5/16 and 1/4 inch. *If* you can save any of them, good, but you'll still have to buy some new ones, so **ONLY** use grade 5 steel bolts! Do **NOT** use stainless, or grade 8. Stay with what the factory used!

Clean Up Your Act

Use a wire brush to get any loose scale or rust off the tower sections. In most cases they will need a little touch up. The product to use is “Instant Cold Galvanize” in either spray (much easier) or brush-on form. This is sold in many hardware, auto, and home supply stores.

To make your “new” tower really look new, a very light coating of bright aluminum spray paint (I just use 99-cent-a-can type) will really make it look nice. Or, if you want more of a “stealth” installation, just leave the Cold Galvanize alone. It dries to a nice dull grey that will blend in with the sky and really needs no topcoat.

Guy Wire Guide

If you decided to put up a guyed tower, the correct guy wire to use would be either 3/16 or 1/4-inch EHS (Extra High Strength) galvanized steel type. A low-cost source of 1/4-inch can be your friendly local cable TV construction crew. Most cable companies use 1/4-inch EHS. (Power and telephone companies use 3/8-inch and larger, which is pretty heavy for a small

tower.) If you're lucky enough to find any cable TV overhead construction work in your area, your odds of getting some of that cable (and the “pre-forms” or “grips” for each end) are pretty good!

You'll need some way to put proper tension on the guy wires. For those really short of money, some of the two- or three-bolt cable clamps used by the cable company as anchor rods could be pressed into service, along with some extra cable clamps for extra security. The best way is to install turnbuckles at each anchor rod. The minimum size would be 3/8-inch high-quality galvanized steel type; 1/2- or 5/8-inch would be better.

There are various types of tension gauges available, but on a small tower the “feel” of the guy wire by an experienced person works about as well as anything. If you're doing your first tower, it's a good idea to hire a tower professional to stop by after your job is done to inspect the whole thing, and have him or her pay special attention to guy wire tension. Most tower specifications call for the tension to be 10 percent of the cable strength, so a 6000-pound cable should be tensioned to 600 pounds. I usually tension smaller towers on the light side to keep down-pressure to a minimum.

If you're unable to obtain guy wire supplies from the local cable company line crew, Texas Towers (<http://texas Towers.com/online.htm>) has almost everything you could want for a tower installation, including “Phillystran,” a non-conducting, very high-strength material that can be used for guy wires. While Phillystran is fairly expensive, it's *the* way to eliminate the steel guy wires up near the top of the tower if you want to side-mount lots of antennas, or if you want to use the tower itself as an HF antenna.

By the time you calculate all the insulators, pre-forms or cable clamps, and extra labor to install insulators the old-fashioned way, Phillystran turns out to be a pretty good deal. It's also an option that can be easily utilized at a later date if needed.



*A Word of Caution: Pictured here is a Rohn 25G tower, about 12 inches wide. Should you be able to find a similar, or even larger, tower you are very lucky indeed! Rohn also made a slightly larger model, the 35G (also called a Motorola contract tower), which is very rare, as well as a model 45G, a heavy-duty tower. **But be careful:** Rohn also made a lighter-duty model, the "20." The 20 and 25G can be distinguished because the 20 has about 18.5 inches between horizontal "steps" and only seven horizontal bars; the model 25G has eight horizontal braces, and about 15.5 inches between braces. The 25G is rated to a height of about 150 feet when properly guyed; the 20 is only good for very small antennas and a height of about 40 feet! Don't confuse the models!*

but is not nearly as strong as the 25G. See the boxed photo and caption of the Rohn 25G tower for details on how to tell them apart.

Prior Planning Prevents...

Make sure you've carefully planned out just how you'll be getting that old tower *safely* down and *safely* home. If you have no problem with heights, you might be able to do it yourself (with a helper and a good-quality safety belt!), but if you have no experience climbing you'll definitely need someone who can help you take the tower down.

Hopefully, you've already joined up with people with similar interests from your area, but if not, this is a great time to do so. Join a ham radio club or the local REACT team. Find a friendly tower worker, utility lineman, steel worker, or someone else you could team up with. Be open to looking and asking, and sooner or later it will all come together.

Whatever you do, don't rush it or take any needless chances doing work you're not comfortable with. Tower work can be dangerous! NEVER work on a tower without proper safety equipment, including safety belt or harness, hard hats, and so on.

Step By Step

So now you've found your tower, maybe a typical 25-year-old Rohn 25G, freestanding model, complete with a rotor at the top and an old television antenna dangling in the wind. Most of these smaller towers have not had proper maintenance, so the leg bolts, especially those near ground level, will be worn, leaving the tower somewhat wobbly. But that's why you got it for free, or close to it!

The way to make those old "loose" joint towers safe is to borrow (or buy) some cable "come alongs" to jack each tower leg tight together again, especially that first, lowest tower leg joint, which is normally the loosest. Once you have done that, you (or your qualified helper) should be able to climb up. If the tower really seems loose, attach some type of temporary guy ropes to help steady it. It's then a simple matter to take the old antenna and mast down and to unbolt the upper tower section.

Borrow or build an erection fixture, or gin pole (a simple piece of pipe with a rope pulley at the top), so the weight of the tower section can be mostly handled by the helper on the ground; experienced tower workers are able to "manhandle" Rohn 25 sections without a gin pole. Factory-made gin poles have fancy clamps to easily attach to the tower legs, but you can use other types of attachments, as long they're sturdy and can handle the weight. Again, don't take any chances with this stuff. Hint: I did it myself years ago—*NOT* a good idea!

Take it from me, if you're uncomfortable with any of it, don't do it. You might have to dig out a little more money to hire a friendly cable TV guy to stop by with his bucket truck to take the sections down, but it's worth it in the end.

Once all the tower sections are on the ground, you'll have the base left sticking out of the ground in most cases; the installers usually just dug a one-cubic foot hole and filled it with concrete around the first tower section. Just take a hacksaw and cut the legs off as close to the ground as possible. Now you can transport your goodies home. Many of these towers will easily fit in the back of a small pickup truck, but you may need to make more than one trip.

With everything now home, it's helpful to use a pair of saw horses to get the tower sections up at a suitable working height. Sight down each section to make sure it's nice and straight. Look over the bolt holes to see if any are elongated from too-loose bolts. If some holes are badly elongated, I'd recommend using those for a guyed tower only, although some people have drilled out the holes to the next larger size (3/8 and 5/16 inch) with success. If the bolts have "crushed" the legs somewhat where they bolt together, you can take a short section of pipe that just slides inside the leg and "tap" around with a hammer to get them round again.

Location, Location, Location; Foundation, Foundation

The location of a tower in relation to your "radio room" is always a compromise. For VHF and UHF it's nice to keep it as close as possible to reduce coax feedline loss. Then again, for



Here's a 65-foot recycled Rohn 25G tower supporting VHF and UHF ham antennas.



An old farm water pump windmill tower recycled into holding up the ends of ham wire antennas.

HF use, and for lightning protection, it's good to have it a reasonable distance from your radio equipment. When you lay out where your tower will go, keep in mind that someday you just might want to make it even higher. Plan ahead for possible guy wire anchor points so you'll have that option in the future, even if right now you're not going to be using guy wires. And don't forget that fall zone, either.

When you're sure where you want the tower, start digging. Rohn specifies a concrete base measuring 4 feet by 4 feet and 4 feet deep. Hand digging is the best way to get it done. If you don't want to, or can't, dig it you then hire some local teenagers. Just remember that the neater the hole, the better. The concrete you'll be putting into the hole needs to be poured against UNDISTURBED soil only! NO below-grade forms! If you want the concrete to show above grade, you can use a 2X4 form to make the top few inches look neat.

Next, put some gravel in the hole where the tower legs will go, then wrap some tape around the bolt holes of the tower section you'll be putting in the hole, or use the section you hack-sawed off that

has no bolt holes. Put some gravel around the tower legs in the hole to provide drainage so any moisture in the tower legs has a place to escape and won't build up.

If you're going to start out with a guyed tower, also dig the anchor holes at this time, at a distance 80-percent of tower height out from the base for maximum strength. For example, a 100-foot-tall tower should have the anchors 80 feet away from the base of the tower. Actual distance is measured to where the guy anchor rod enters the ground, so the hole and concrete will be a few feet further away from the tower. If you know anyone who works for the local power, phone, or cable companies, galvanized steel anchor rods can usually be recycled from them.

A typical anchor hole for a 100-foot tower would be 3 feet by 3 feet, with 1.5 feet of concrete, buried 4 feet down. Actual dimensions will depend on what your local soils are like. Follow the specs written by Rohn; you can find them at www.radiancorp.com/ROHNNET/rohnnnet2004/html2004/index.html. You'll need a full cubic yard (at least) of concrete for your tower base, and about another yard for your

anchor holes if you'll be guying this tower. The ONLY way to get the concrete is to have the big truck come over! Do NOT consider the little sacks of premixed cement and gravel for your tower! Years ago you could save a few bucks by buying the cement, sand, and gravel to mix your own concrete. Those days are long gone. Now the easy, simple, cheap way is to just be ready when the truck comes to pour.

Contact the local Redi-mix concrete people and tell them what you're doing; many concrete jobs have those big trucks heading back to the plant with several yards of concrete left over from some other job. That's the concrete to get! Tell the dispatcher what hours of the day and days of the week you can be available to pour. If you have to order your own, you might be hit with a "small load" extra charge. Try to avoid that! Some areas also have rental places where you rent a small mixer full of concrete—that's another "TO AVOID." You need over one cubic yard of solid concrete that will be *strong*. Don't take any chances with the concrete! You want a good strong mixture, with 4000PSI the ideal, but get at least a 3000PSI mix.

Make sure you have some fairly sturdy temporary guy wires or ropes holding the lower two sections of the tower plumb, and check to make sure it stays that way as the concrete is pouring. Then sit back and wait—at least two weeks—before starting to assemble the tower. Concrete reaches well over 80 percent of its ultimate strength in 28 days.

To assemble, just reverse the procedure you used with the gin pole in taking the tower down. With at least two people, it will go fast, and in an hour or two it will be up and finished! Don't forget to take a few pictures as it goes up!

The Best Part...

If you really scrounge and get many of the supplies as described in this article, you may be able to build that 50- to 100-foot tall tower for \$500 dollars or less! And the same principles apply if you're going for a simple pipe mast or a tripod on your roof. Search around for an old TV antenna setup and "recycle" it before shelling out the big dollars for a brand new installation.

Yes, it can be done—I've done it myself many times and so have others! But even if you can't do it for that low of a price-tag, by following some of these ideas you should be able to build a good tower/antenna support for much less than full retail. The sky's in reach! ■

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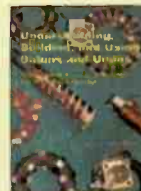
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Radio Vaticana

The Pope's Radio Station

With The Upcoming Papal Visit, Vatican Radio Should Be A Stop On SWLs' Itinerary

by Gerry Dexter

English – Español – Français

A statue of the angel Gabriel watches over Vatican Radio's Santa Maria di Galeria transmission site.

The Pope is going to visit the United States! And where the Pope goes there goes Vatican Radio, fully equipped, ready and standing by to report on his every public word and appearance.

The Papal visit, set for April 15 through 20, is scheduled to include stops in Boston, New York, and Washington, D.C., so most of us won't have an opportunity to see him in person, even from a distance. But, this being America, you're guaranteed that our media certainly won't ignore the event and that some outlets will pay more attention than others. Certainly Vatican Radio will report on the Pontiff's activities using its worldwide reach and will record every word, eventually destined for their extensive archives.

It's a safe bet you'll be able to hear reports direct on Vatican Radio's English language service on shortwave as the visit proceeds, and likely his pronouncements as well. News of the visit will be included on all of the Radio's extensive language offerings—38 in all—as well as seven others they can call up if needed for special occasions or events. In all, that works out to an estimated 56 hours over the week or so of the visit that could

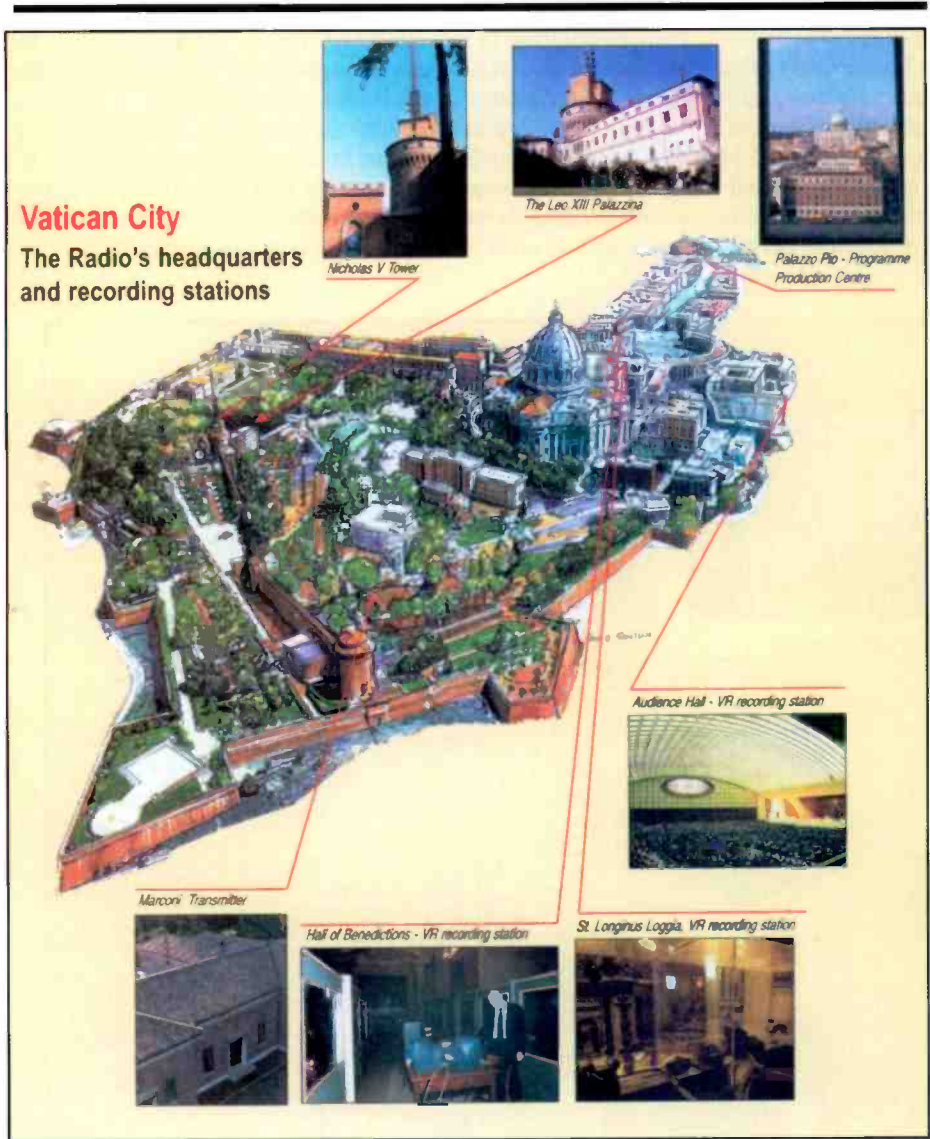
be devoted to the Pope's activities. Obviously, though, other Church-related news might be touched upon, too.

Vatican Radio Then And Now

Simply based on the potential program hours available it's obvious that Vatican Radio is anything but a rinky-dink operation. The station was the idea of Pope Pius XI who was concerned over the millions of Catholics and their local churches who were living under authoritarian regimes, which made it difficult for the Vatican to reach them. Pius XI wanted to be able to communicate with them directly, without having to deal with a dictatorial government. So, shortly after the treaty creating the Vatican was signed in 1929, the Pope took the initial step toward having a radio station within the Vatican itself. He gave the job of putting it together to a fellow named Guglielmo Marconi (yes, that guy!). Pius XI officially inaugurated the station on February 12, 1931. A few years later, by the beginning of World War II, Vatican Radio was broadcasting in nine languages.

By the time the Cold War began and Communist regimes dominated Eastern Europe, Vatican Radio responded with a significant expansion. Under Pope Pius XII a large new transmission complex was built at Santa Maria di Galeria, comprising

Gerry Dexter is *Pop'Comm's* "Global Information Guide" columnist.



Vatican City
The Radio's headquarters and recording stations

The 110-acre Vatican City-State is filled with churches, offices, and Vatican Radio facilities.

28 huge directional antennas and five others which couldn't be rotated). Feeding them were four 500-kW behemoths, as well as five 100-kW transmitters. (There were also seven mediumwave and five FM transmitters there for local broadcasting). This facility, still in regular use today, also allowed Vatican Radio to expand its broadcasts into Africa, Asia, and Latin America.

Santa Maria di Galeria is not situated on the original Vatican grounds but is just a bit to the north and west. The site is still considered part of the Vatican, just as an embassy is considered a part of the nation it represents. Purists who want to hear the "real" Vatican can try the only shortwave frequency in use from this site, 4005, which is active from 0340 to about 0745, mostly using European languages. The power is just 10 kW. The Vatican currently uses relays at Novosibirsk (7300,

12070), Khabarovsk (9600, 13785), Atamanovka (6140), Russia, Tashkent, Uzbekistan (9310), Wertachtal, Germany (5885), and Sackville, Canada (9600), but the frequencies mentioned here are not exclusive to the sites mentioned.

Over the ensuing decades broadcast languages expanded, so did staff size, which grew to 370. In 1970 the station's headquarters were moved into the Plazzo Pio (Pio Palace) where most of the day-to-day studio work currently takes place. As technology continued to progress Vatican Radio added satellite broadcasts, DRM and Internet feeds. There are nine studios, where programs are produced for live broadcast or recorded for later release. All the studios are equipped for digital production. The building also houses the station's office and an auditorium used for press conferences, seminars, and such. Also housed in the Plazzo

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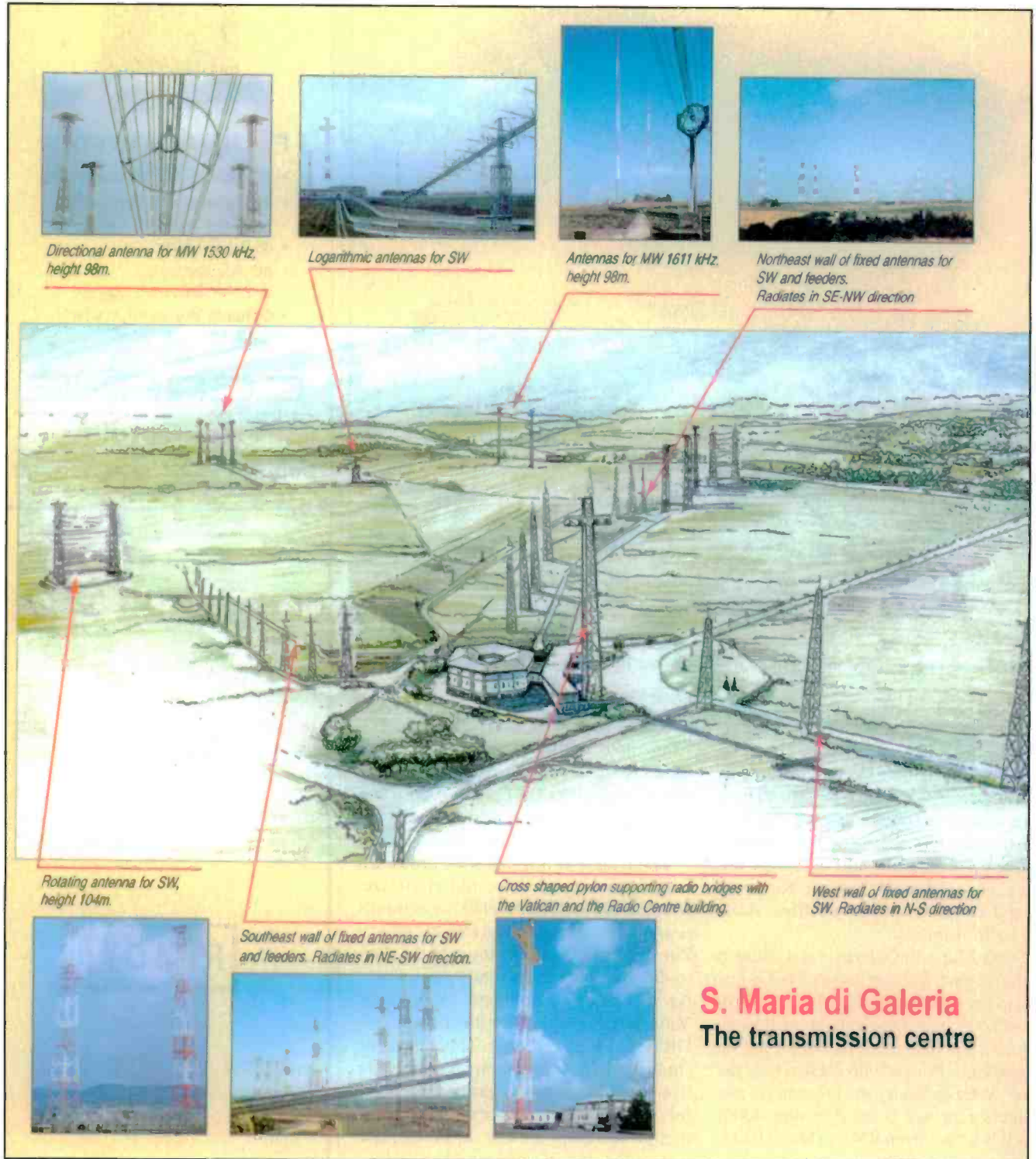


Pio is a library, with archives containing important past broadcasts, and a chapel. This palace also holds the Promotions Office where those excellent Vatican Radio QSL cards are designed!

The tower atop the Leo XIII Palazzina in the Vatican Gardens, where the station has its technical control center, supports FM Yagi broadcast antennas and also antennas used for the point-to-point feeds of program material to the Santa Maria di Galeria complex. Some live concerts and other live musical perfor-

mances originate in two additional studios in this building (the station has several facilities throughout the Vatican). The main transmission control center is also in this building.

Also in the Vatican Gardens area is the Palazzina Marconi, which was home to the original broadcast station and still holds the two mediumwave transmitters and one 10-kW unit for shortwave (see above). Also here is the station's technical museum, which is open to the public. It contains nearly 200 pieces



A sketch of Vatican Radio's main transmitter site and the huge antennas.



Guglielmo Marconi (center) and Pope Pius XI dedicate the new Vatican Radio in 1931.



One of the rotating towers at Vatican Radio's Galeria site.

of historic equipment, ranging from telegraphy to transmitters.

Broadcasts

As mentioned, Vatican Radio's programs go out in 38 languages. There are 35 language "sections," each of which may contain two or more tongues. The Internet notwithstanding, Vatican Radio is still a big gun on shortwave with an extensive schedule to all areas of the world. In addition its programs are aired on well over 1,000 domestic stations—Catholic and not, commercial and non-commercial—all over the world. Brazil has the most local stations airing material from Vatican Radio.

Newscasts go out several times per day in the major languages, tailored to the target area. Needless to say, Vatican Radio tends to focus on cultural, political and social issues of special concern to the



One of the modern studios in the Palazzo Pio.

Church. The station's printed material claims that there are "encouraging signs" of (increased) interest in its programs in Asia and even in Muslim countries.

There are six English news bulletins on the air each day. That includes the separate English language services for Africa and South Asia. There are also daily musical programs of classical and popular music as well as music-related features and interviews. Vatican Radio makes it a point to record live concert performances for later broadcast. As you'd expect, church services are allotted a good share of airtime. The Mass in Latin airs daily at 0630, beamed to both Africa and Asia.

Hearing Heavenly Voices

Once the Pope arrives in America you may want to monitor English broadcasts from the Vatican. The accompanying table shows Vatican Radio's English language broadcasts, but please note that this listing is based upon the B-07 frequency schedule currently in effect. The A-08 season will be underway by the time of the Pope's visit so these frequencies will

have changed to one degree or another. You should check the Vatican Radio website (radiovaticana.org) or the EiBi "by-time" listing at www.susi-und-stroelch.de/eibi for changes.

And be sure to QSL the broadcasts. Vatican Radio is an excellent verifier of

reception reports. As usual, make them as complete and detailed as you can. The address is 00120 Citta del Vaticano, Vatican City State. Carol Ganbardella is the secretary for the English Service. Listen in. Report. Let them know you appreciate their efforts! ■

Vatican Radio English Broadcasts

(B-07 Broadcasting Season)

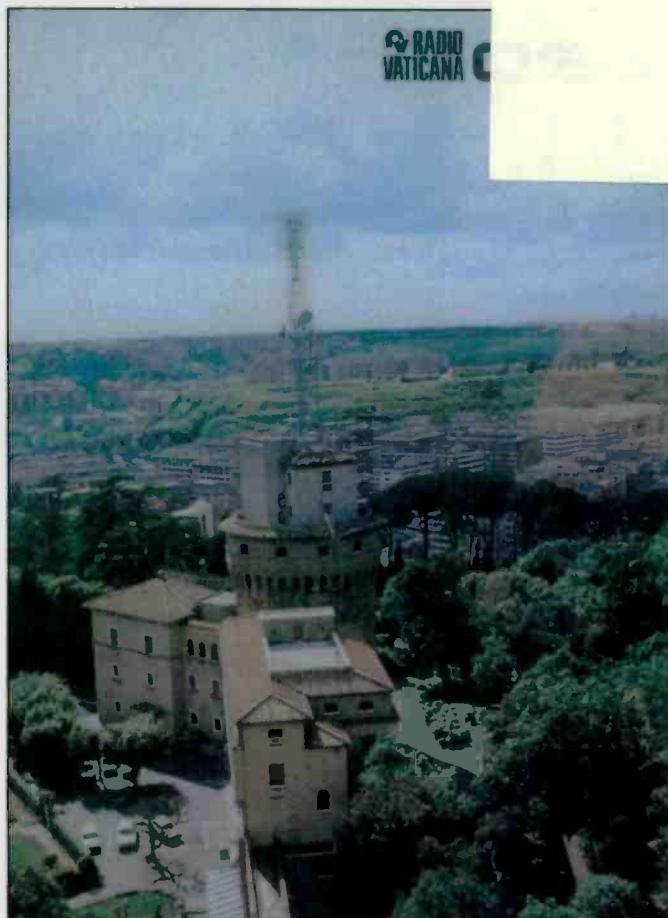
Time	Freq	Freq	Freq	Target	Notes
z0040	5915	7335		Asia	partial EE
z0200	5915	7335		Asia	partial EE
z0250	6100	7305		America	



The National Map

4.724 11.125
 6.739 13.200
 8.992 15.014

<http://nationalmap.usgs.gov>



The 10 KW Vatican shortwave transmitter is in the Leo XIII Palazina in the Vatican Gardens



More antennas at Santa Maria di Galeria.

A Stroll Through Military Comms History

England's Royal Signals Museum Highlights Developments In Warfare

by Roy Stevenson

A Saracen Armored Command vehicle and an AFV439 Armored Communications vehicle guard the parking lot outside the Royal Signals Museum, located at Blandford Camp in Dorset, England. The large, gray, metal-walled repository of history opened in 1997 to showcase the history of the Royal Corps of Signals. It also provides a crash course on the science and technology of military communications from the Crimean War to the Gulf War.

Providing marvelous insight into a relatively little-known area of military operations, the museum tells about the men and women who operated signaling equipment and their contribution to England's history in the past 150 years. There's also a great selection of books, souvenirs, and gifts about military signals and radios in the bookstore by the front entrance.

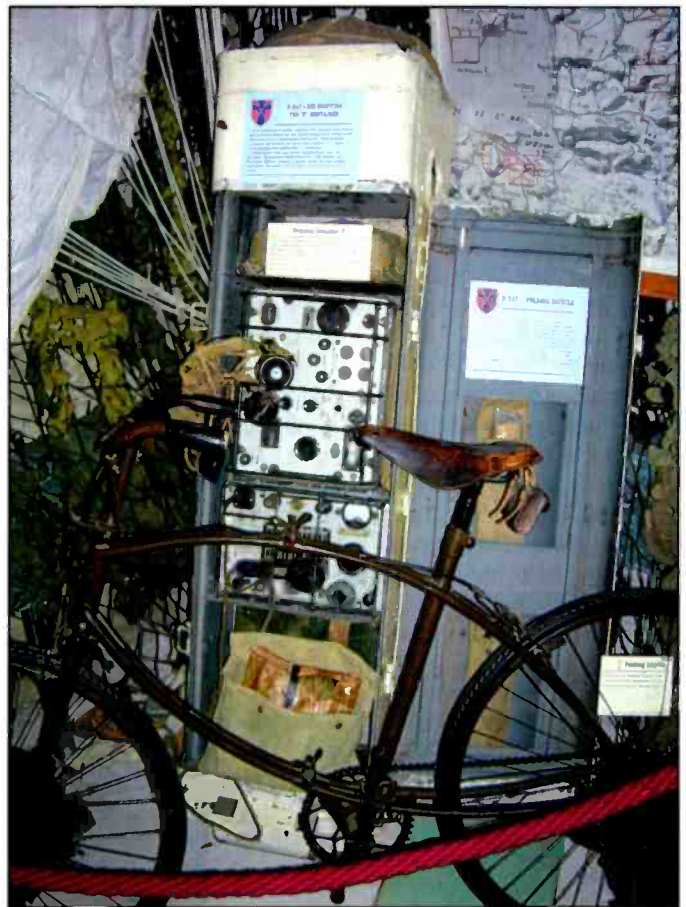
There are enough radios and communications equipment displayed here to qualify it as nirvana for radio and signals enthusiasts. In addition, some unsung but fascinating aspects of military communications are represented in its exhibits, such as Women at War, Behind Enemy Lines, D-Day, Special Forces, Animals at War, Dispatch Riders, Military Signaling Vehicles, and Antique Signaling Equipment.

The Evolution Of Communications

The first exhibits, a combination of reader boards and display cases, tell the general history of military communications. Runners provided the first form of long-distance signaling, followed by men on horseback. Another primitive but effective mode of signaling used chains of soldiers on hilltops shouting messages to each other, a method the Persian King Darius used in the 5th century B.C. Drums and trumpets were also used. The Greeks had a torch telegraph system, and the Romans used colored smoke to communicate.

Fire signals, lights in towers, and beacons were all early forms of alert. They warned of impending invasion and were even put to use during Napoleon's threatened naval invasion of England in 1795. The Duke of Wellington organized regular mounted messengers, an approach that evolved into the motorbike dispatch riders in the 20th Century. You'll see a beautifully restored Triumph motorcycle and several other motorbikes with models of signals riders in uniform.

Roy Stevenson is a freelance writer based in Seattle, Washington. He writes on military history among other topics. He can be reached for comment at roy_stevenson@hotmail.com.



A D-Day invasion equipment display. A small folding bicycle used by Royal Signals soldiers, and a rare air-dropped radio set.

The History of the Heliograph exhibit tells how reflected sunlight was used to flash messages as long ago as the Greek and Persian Wars, when the combatants used polished shields as mirrors. Depending on the size of the mirror used, messages could be sent over distances as great as 80-plus miles. Flags or banners were used later. Heliographs communicated messages during World War II as late as 1941.

Technology Enters The Picture

The History of the Royal Corps of Signals theme rooms trace the Corps' evolution from men literally shouting to each other to modern radio transmissions. In 1870 the War office formed a Telegraph Battalion from the Royal Engineers, which served from 1884 into the late 19th Century, and brightly pol-

ished period brass and wood telegraphs are displayed.

You'll see many other antique pieces of communications equipment here. Two years after Alexander Graham Bell invented the telephone, in 1876, the U.S. Army began using telephones, several early examples of which are exhibited, including the C Mark 1 Ericsson portable military telephone (which weighs 18 pounds), the C Mark 2, D Mark 1, and D Mark 3 models. There's also a Fullerphone, invented in 1916, which had anti-eavesdropping capability and was used up until the 1950s.

The Admiralty Shutter Telegraph System on display proved that even simple systems could be highly effective. Its three chains of huts with signaling frames and shutters were set up five to 10 miles apart, running from London to Deal, Sheerness, and Portsmouth in the south in 1795. Its purpose was to alert the Admiralty in London in the event of an invasion by Napoleon's Navy. This communications system was so fast that messages took only 15 minutes to pass the 238-mile chain from Plymouth to London; if the message were pre-arranged, it took only three minutes.

A large number of World War I and II displays show how the Royal Signals Corps expanded, developed, and used improved communications equipment as the wars progressed. As the telephone became the prime means of communication in World War I, the Royal Engineer Signal Service burgeoned from 6,000 to 70,000 by 1917. During World War II it mushroomed to 8,518 officers and 142,472 soldiers, with 4,362 killed in action.

Wireless Emerges

The museum also illustrates how military inventions enter civilian life after a war ends. For instance, because telephone wires were constantly cut by artillery fire, military communications took a great revolutionary step forward in World War II with the transition to wireless radio. Wireless radio became common in civilian communications after the war, thus shaping today's communications.

As the Royal Signals reorganized and retrained in World War II, their equipment became more compact, lightweight, and easier to operate as they geared up for a more mobile type of warfare. By now indispensable to all of the allied services, they worked with the Royal Navy as

Beach Signals Units or trained as parachutists to provide communications for commandos or Special Operations Executive (SOE) agents.

The World War II Wireless Sets display shows how military wireless rigs had to operate a number of interference-free channels, offer good range, be robust yet portable, as well as easy to operate and simple to maintain. The 1943 Wireless Station No. 10 is one example of such then-state-of-the-art equipment. It used radar techniques to beam eight telephone channels over a duplex radio path between land links and was used after the D-Day landings. Housed in a four-wheel two-ton trailer, an example of which is on exhibit, its innovative techniques made it the technological wonder of its time, a forerunner of modern day radio relay equipment and the radiotelephone.

The Airborne Forces Equipment display tells of the reliance of paratroopers and glider-borne soldiers on wireless sets. There's an airborne wireless radio on display, as well as a small motorcycle that was also used for communications between the airborne force groups.

Clandestine Radio

The Deception exhibit shows how special signals units simulated radio traffic of whole army groups to deceive the Germans. Vans traveling around south-

eastern England emitted vast volumes of fake wireless traffic, simulating troop movements. The illusion convinced the Germans that the U.S. 3rd Army was mobilized, waiting to embark for the Pas de Calais area, when it was actually 150 miles away in Cheshire. Code-named Operation Fortitude, it was so effective that the Germans held several of their divisions back around Pas de Calais for several weeks after D-Day.

The Royal Signals was also involved in every phase of Operation Overlord—the Battle of Normandy—and every aspect of the D-Day landings. Among their tasks was creating signals communications for the combined headquarters and for the assembly of troops for embarkation, creating fake radio traffic to deceive the enemy as to landing sites, preparing cross-channel communications links, and providing beach signals for the landings. They also allocated radio frequencies to ensure there was no unintentional jamming and they reestablished telephone and telegraph lines once they had been captured and repaired.

As the Allies moved through Northwest Europe, Royal Signals laid hundreds of miles of telephone and telegraph cables. Communications to the United Kingdom were made via a cable laid under the Channel and connected to signal stations at Bayeux and Cherbourg in France.



German Enigma machine. This highly advanced encryption device took the Bletchley Park code breakers over a year to break, helped largely by a captured Enigma machine early in the war.



Modern day mannequin Royal Signals soldiers with air dropped communications system. The soldiers are depicted wearing jungle and desert uniforms and parachute packs.

The Y Service Units comprised another clandestine intercept group serving in England that was staffed by Royal Signals men and women. They listened to enemy radio messages, copied them down, and sent them to the huge Bletchley Park decoding center, which they knew only as "the big place."

The Enigma Codes and Code Breaking gallery relates the history of wartime codes and code breaking centered at Bletchley, highlighting the German code encryption machine, The Enigma. There's an authentic Enigma machine on display.

An exhibit about the General HQ "Phantom" Liaison unit tells how its purpose was to keep allied air forces and artillery aware of where the front lines of Belgian and British troops were on the ground. Using armored cars, motorcycles, and radio sets, this group performed ground reconnaissance to locate the enemy forces. After the evacuation of allied forces from Europe, the Phantom unit of 48 officers and 479 soldiers was tasked with observing possible seaborne landing areas in Southern England. They were to give an early warning of the anticipated German invasion in late summer 1940. Some No. 11 wireless sets they used are on display.

Other Points Of Interest

An attention-grabbing memorabilia exhibit displays sports trophies, ashtrays, cigarette cases, napkin rings, chess sets, pocketknives, and water flasks, all made from shell casings.

History Of The Royal Signals Corps

The precursor to the Royal Signals Corps was formed in 1869 as the Signal Wing of the Royal Engineers, followed a year later by C Telegraph Troop, to provide telegraph communications for the British field army. Captain Montague Lambert was the first Commander of the Telegraph Troop. In 1908 the Royal Engineer Signal Service was formed. The modern Royal Signals was born on June 28, 1920, when Winston Churchill signed a royal warrant decreeing the formation of a "Corps of Signals." Six weeks later the King conferred the title "Royal Corps of Signals."

The function of Royal Signals has always been to provide communications for the army, and its methods have changed and evolved with each new development of modern communications. Today there are three signals brigades in the regular British Army, comprising over one dozen Royal Signals regiments attached to the regular army and over one dozen regiments attached to the Territorial (reserve) Army. Its soldiers have been deployed to every theater where British Military forces have seen action, most recently including Bosnia, Croatia, Yugoslavia, Cambodia, Rwanda, Angola, and the Persian Gulf.

Appropriately enshrined in the Royal Signals Museum is The Royal Signals Gallantry Awards Honors Board that lists all Royal Signals soldiers who received medals for their bravery.



A medals display in the Royal Signals Museum. There are several large glass cases of these. The Corps have had their share of highly decorated soldiers.



The Royal Signals Museum in Blandford Camp, Dorset, England. Military communications vehicles share the parking lot with visitors.

In World War I, 22,000 pigeons flew in service, from 150 mobile lofts, with 400 loftsmen to tend them.

A Far East Prisoners of War display tells of the more than 100,000 Allied Prisoners of War who were held by the Japanese and forced to work in extremely harsh conditions. A homemade receiver set used by the POWs to listen to allied radio news sits in a glass case.

There are also displays on conflicts and wars since World War II, including Malaya, Korea, Northern Ireland, the Falklands War, the Gulf War, and Kosovo, Macedonia, and Bosnia. Several modern signals vehicles stand on display to illustrate the evolution and increasing sophistication of the mobile headquarters used in today's comms.

A Trip To Nirvana...

If you ever get the chance, a visit to this fascinating time capsule is well worth it. Even if you can't get across the pond, you can at least armchair travel there by checking out www.army.mod.uk/royal-signalsmuseum. For radio and history fans, it's a stirring place indeed.

Royal Signals Museum, Blandford Camp, Dorset, DT11 8RH, England. ■

Glass cases also display Italian occupation money, Nazi badges, a fan signed by POWs, cigarette packets, diaries, code pads, books, watches, first aid kits, egg cups, and more.

There's even a Pigeons at War display that pays homage to the plucky little bird used in military communications. They carried military messages as early as 1815 for Wellington at the Battle of Waterloo.

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Focus On The Missouri State Highway Patrol

Reader Mike Kudelka from St. Louis writes in that he used to hear the Missouri State Highway Patrol (Troop C from Kirkwood) on 42.12, but “for a long time now this frequency does not seem to be active. Do you know if they changed to a different band?”

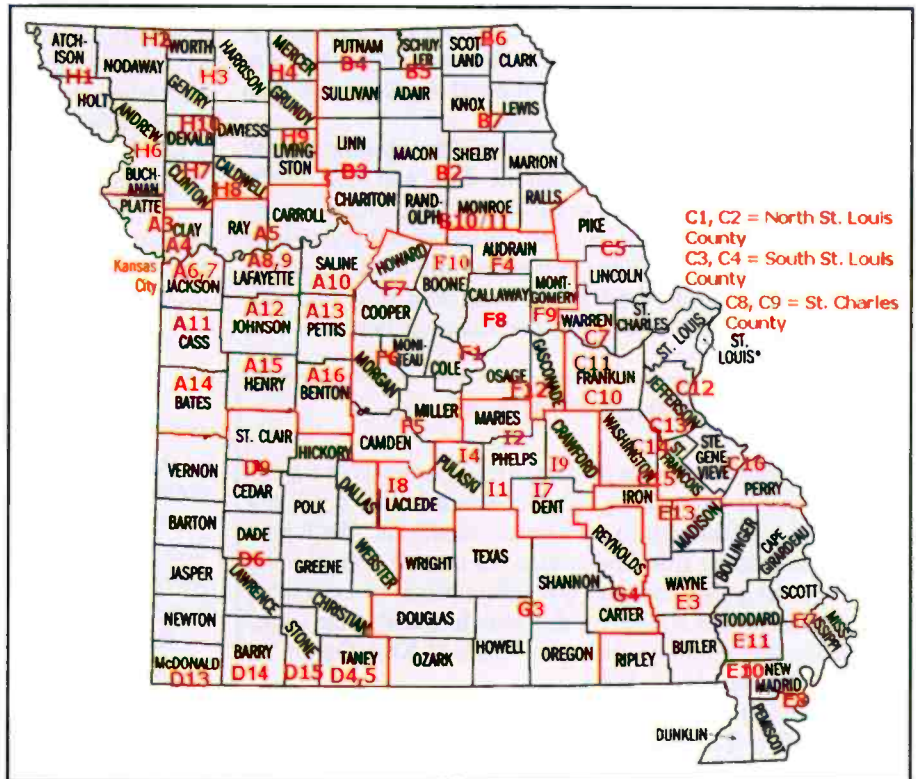
Well, Mike, I wasn’t aware of anything, but it looks like something might be in the works. I also used to have them plugged in, although it wasn’t an agency I listened to often. After your note, however, I did monitor for a while but haven’t heard a lot, either. So I went digging, and while I didn’t find much of an answer I did find some interesting things out about the Highway Patrol I thought I’d share. Most of this information is available on their website, with the exception of frequency information which I got from RadioReference.com.

Organization Of The State Highway Patrol

During the 1920s several efforts were made to establish a statewide police agency of some kind, but most failed due to opposition from one or more factions. County sheriffs believed it would undermine their authority or make them unnecessary, while many civilian groups feared that it would be centered around the Prohibition Act or used against labor union organizations in some kind of strike-busting maneuver.

However, while the county sheriffs were still somewhat concerned, labor groups did not oppose the creation of an organization focused on motor vehicle oversight and enforcement. In September of 1931, the Missouri State Highway Patrol, rather than a Missouri State Police was born.

The first officers were trained at the St. Louis Police Academy. Missouri municipalities are organized in rather a strange way as the city of St. Louis existed as a major metropolitan area before the state really took form. Because of this, the city of St. Louis reports directly to the state legislature in Jefferson City for many things, including the police department. St. Louis City police officers are deputized for the entire state. St. Louis County



The Missouri Highway Patrol is divided into nine Troops or divisions, each of which is divided into zones for patrol and dispatch convenience. This map shows the Troops outlined in Red, and the Red letters indicate the zone. So C-11 would be Troop C, Zone 11. Counties are labeled in black for convenience.

is a completely separate entity and the two sometimes don’t get along very well (like that’s different from any other city/county relationship!). St. Louis already had a running police academy before the Highway Patrol was established, so that’s where the officers were trained.

The motor vehicle fleet for the patrol consisted of 36 Model A Ford Roadsters at a cost of \$413.18 each. The vehicles were equipped with “twin Klaxon horns, a spotlight, a fire extinguisher, a first aid kit, and an electric ‘Patrol’” sign behind the right side of the windshield. All vehicles had license plates with the words “State Patrol” in bold letters but there were no decals on the sides. None of the vehicles had sirens and there were no heaters in the cars.” (The above quotes are from *Celebrating Tradition: A Journey Through Patrol History*, 2005, available on the State Highway Patrol website a www.mshp.dps.missouri.gov/MSHPWeb/AboutThePatrol/History/History.html.)

www.mshp.dps.missouri.gov/MSHPWeb/AboutThePatrol/History/History.html.)

News, Sports, Weather, And Police Calls?

From the early days, it was obvious that there had to be some way to communicate with the cars. Like many police agencies during the time, the Patrol turned to station WOS, an AM broadcast outlet located in the Missouri Capitol building and operated by the Department of Agriculture. The officers would tune in at certain times for Patrol “bulletins.” Of course, anyone listening to the radio heard them as well, so by necessity the bulletins were short and cryptic. Officers could find a phone and call in (although that wasn’t an easy thing to do out in the rural areas...no cell towers out there in 1931!).

In 1936 station KIUK went on the air at a frequency of 1674 (just above the broadcast band) and became a 24-hour police radio station. But it was still one-way communications.

Two-way radio didn't really take off until World War II. Early tests were with AM transmitters, but the power required and the frequencies in use made efficient antennas nearly impossible so it was not very useful. FM was also making a debut and, in late 1941, the Patrol began to equip all cars with FM transmitters operating on 39.78 MHz. By 1946 a full conversion to FM was underway and a move to 42 MHz followed in accordance with new FCC rules for the VHF (low) band.

It hasn't changed all that much since. The equipment used was modernized and the amount of data and text traffic increased, especially in recent years, as national police networks and databases came online. But for car-to-car and car-to-base communications, those old frequencies are still used. There was a frequent problem on the VHF-lo band with skip, and tone squelch (CTCSS) was able to help that situation, but not relieve

it completely. Well, it hadn't changed much until its seeming disappearance, that is.

Statewide Radio In Missouri?

One of the plans proposed to help upgrade the communications system as well as provide additional capabilities involves a shared system between the State Patrol and Ameren (the utility company in the area). Operating mostly on 700 MHz but with some areas left on VHF because of terrain, the \$245 million proposal has not become official that I'm aware of, but it is posted on the Patrol's website. In addition, several 700-MHz frequencies have been licensed.

As for an explanation for the apparent hightailing of the Highway Patrol, unfortunately, except for the slight hint at 700 MHz, there really isn't an answer I could find as to what's happened to Troop C in the St. Louis area.

RadioReference.com For Answers, Write In With Questions

As I've often mentioned in this column, a great scanning reference is RadioReference.com, which provides a very comprehensive frequency database site. While much of the information is available to anyone for free, they do offer some premium services for a membership fee. It's worth exploring, if you haven't already, just to learn what's available.

RadioReference.com provides quite a bit of information on the Missouri Department of Public Safety, which includes the Patrol, as well as the Water Patrol, Drug Enforcement, and a few other agencies. Have a look at the accompanying frequency table to see how they appear.

I'm grateful to Mike Kudelka for sending in his question. If any other readers have any of their own mysteries, questions, or anything else to share, I'd like to hear from you.

Until next month, good listening!

Frequency Of The Month

Each month we ask our readers to let us know what they're hearing on our "Frequency Of The Month." Give it a listen and report your findings to me here at "ScanTech." We'll pick a name at random from the entries we receive and give the lucky winner a free one-year gift subscription, or extension, to *Pop'Comm*. Our winner for this month, and also the inspiration for this column's topic, is **Michael Kudelka** of St. Louis. Congratulations, Mike.

Our frequency this month, in honor of the Missouri State Highway Patrol, will be **42.00**. Have a listen and let me know what you hear. Send your report to me at radioken@earthlink.net, or via snail mail to Ken Reiss, 9051 Watson Rd. St. Louis, MO 63126. Make sure to mark the subject of the email or the envelope with the frequency.

Table. Statewide Common Frequencies

RadioReference.com lists the following statewide frequencies culled from the FCC databases and user reports. Note the long list of 700-MHz frequencies listed for statewide use in the APCO 25 digital mode.

Statewide 700 MHz Itinerant/Interoperability frequencies are for "Temporary Bases/Repeaters" probably to be used for future on-scene operations.

WPTZ785 is statewide license for 700 MHz.

Frequency	License	Tone	Alpha Tag	Description	Mode
154.935	KA5824	203.5 PL	Tac-3	Tactical 3 - SERT/Speed Enforcement (Air-to-Ground)	FM
154.665	KA5824	203.5 PL	Tac-4	Tactical 4 - SERT/Speed Enforcement (Air-to-Ground)	FM
155.37	KA5824		F-5	Statewide Point-to-Point	FM
155.73	KA5824		F-6	Statewide Sheriff's Net	FM
154.905	KA5824	100.0 PL	F-8	Mobile Extenders/Vehicular Repeaters	FM
154.695	KLS456	100.0 PL	F-9	SERT Tactical Repeater	FM
154.695	KA5824	100.0 PL	F-10	SERT Talk-around	FM
148.6		CSQ	F-11	Mobile Extenders/Vehicular Repeaters [No license]	FM
42.00	KA5824	186.2 PL		Air-to-Car	FM
42.02	KA5824	186.2 PL		Car-to-Car	FM
44.86	KA5824	186.2 PL		DDCC Low Band	FM
45.06	KA5824			unidentified	FM
154.92	KA5824	100.0 PL		Detectives/Rural Investigators (100.0 PL heard St. Louis with "beep")	FM
155.445	KA5824	CSQ		Car-to-Car ?? (heard St. Louis area 8/07)	FM
465.4375	KA5824			Mobile Extenders (according to license)	FM

Nationwide Itinerant/Interoperability Frequencies licensed by Missouri.

764.05625	WQDT268	Nationwide Itinerant/Interoperability (2 watt)	APCO-25
764.06875	WQDT268	Nationwide Itinerant/Interoperability (2 watt)	APCO-25
775.99375	WQDT268	Nationwide Itinerant/Interoperability (2 watt)	APCO-25
794.05625	WQDT268	Nationwide Itinerant/Interoperability (2 watt)	APCO-25
794.06875	WQDT268	Nationwide Itinerant/Interoperability (2 watt)	APCO-25
805.99375	WQDT268	Nationwide Itinerant/Interoperability (2 watt)	APCO-25

Statewide 700 MHz – Something more than itinerant?

764.14375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
764.24375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
764.39375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
764.49375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
764.64375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
764.74375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
764.89375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
764.99375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
765.14375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
765.24375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
765.39375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
765.49375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
765.64375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
765.74375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
765.89375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
765.99375	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
774.00625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
774.10625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
774.25625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
774.35625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
774.50625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
774.60625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
774.75625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
774.85625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
775.00625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
775.10625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
775.25625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
775.35625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
775.50625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
775.60625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
775.75625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25
775.85625	WQFL229	Statewide 700 MHz Itinerant/Interoperability	APCO-25

Troops:

Each of the Troops is listed below along with their use of the 42 MHz frequencies. The use is scattered throughout the state in an effort to minimize interference from Troop to Troop.

Troop A (Lee's Summit)

Frequency	License	Tone	Alpha Tag	Description
42.86	KAA202	186.2 PL	10	Troop A Rural Dispatch (203.5 PL on mobiles) (was 42.38 B 186.2 PL)
42.38	KA5824	186.2 PL	11	Troop A Rural Car-to-Car
42.02	KA5824	203.5 PL	12	Troop A Rural Cars RX
42.94	KAA202	186.2 PL	13	Troop A Metro Dispatch (203.5 PL on mobiles) (was 42.06 186.2)
42.94	KA5824	186.2 PL	14	Troop A Metro Car-to-Car (was 42.06 186.2)
42.24	KA5824	203.5 PL	15	Troop A Metro Cars RX
42.92	KAA202	203.5 PL	16	Troop A New (reported not in use 9/12/07)
42.92	KA5824	203.5 PL	17	Troop A New Car-to-Car (reported not in use 9/12/07)
42.26	KA5824	203.5 PL	18	Troop A New Cars RX
42.00	KA5824	186.2 PL	19	Statewide Car-to-Car
456.225	KAD90			Troop A - Mobile Relay (Polo - Ray County) [Deleted from license 2007]
456.75	KAD90			Troop A - not used (Polo - Ray County)
456.75	KCX777	162.2 PL		Troop A - Mobile Relay (Urich - Henry County)
460.1875	KB38390	162.2 PL		Troop A - Metro - Repeats Mobiles from TX/RX site to Troop Headquarters (KA5824)
460.2	KAD90			Troop A - Mobile Relay (Polo - Ray County) [replacing 456.75 - 2007]
460.475	KB38390	162.2 PL		Troop A - Mobile Relay (Hughesville - Pettis County)
465.0625	KB43890	162.2 PL		Troop A - Metro - Platte City (remote receive, repeats Mobiles)

Troop A (Lee's Summit)

Frequency	License	Tone	Alpha Tag	Description
465.1875	KB38390	CSQ		Troop A - Metro - Base link to transmit site
154.665		100.0 PL		Troop A Headquarters (Low Power Repeater)
154.935		100.0 PL		Troop A Headquarters (Low Power Repeater)

Troop B (Macon)

Frequency	License	Tone	Alpha Tag	Description
42.82	KAA201	186.2 PL	20	Troop B: Dispatch
42.82	KA5824	186.2 PL	21	Troop B: Car-to-Car
42.22	KA5824	186.2 PL	22	Troop B: Cars RX
42.00	KA5824	186.2 PL	29	Statewide Car-to-Car
456.175	KNFJ230			Troop B: Mobile Relay (Brookfield - Linn County)
456.275	KAD92			Troop B: Mobile Relay (Greencastle - Sullivan County)
456.475	KAA83			Troop B: Mobile Relay (Deer Ridge - Lewis County)
456.625	456.625			Troop B: Mobile Relay (Monroe City - Ralls County)

Troop C (St. Louis)

Frequency	License	Tone	Alpha Tag	Description
42.14	KAA203	186.2 PL	30	Troop C: Rural Dispatch (@ Kirkwood)
42.14	KA5824	186.2 PL	31	Troop C: Rural Car-to-Car
42.26	KA5824	186.2 PL	32	Troop C: Rural Cars RX
42.10	KAA203	186.2 PL	33	Troop C: Metro Dispatch (@ Kirkwood, High Ridge)
42.10	KA5824	186.2 PL	34	Troop C: Metro Car-to-Car
42.78	KA5824	186.2 PL	35	Troop C: Metro Cars RX
42.12	KAA203	186.2 PL	36	Troop C: South Dispatch (@ Lawrencetown, Kirkwood, High Ridge)
42.12	KA5824	186.2 PL	37	Troop C: South Car-to-Car
42.02	KA5824	186.2 PL	38	Troop C: South Cars RX
42.00	KA5824	186.2 PL	39	Statewide Car-to-Car / Air-to-Car Speed Checks, etc. (*)
456.175	KAC44			Troop C: Mobile Relay (Knob Lick - St. Francois County)
456.275	KAA75			Troop C: Mobile Relay (Eolia - Pike County)
456.575	KNIE482			Troop C: Mobile Relay (Warrenton - Warren County)
456.625	WNLK662	151.4 PL		Troop C: Mobile Relay (Potosi - Washington County)
460.0125	KB65030			Troop C: Mobile Extenders ? (2-2wt) (for KAA203)
465.0875	KB65030			Troop C: Mobile Extenders ? (2-2wt) (for KAA203)
465.1375	KB65030			Troop C: Mobile Extenders ? (2-2wt) (for KAA203)
465.3375	KB65030			Troop C: Mobile Extenders ? (2-2wt) (for KAA203)

Troop D (Springfield)

Frequency	License	Tone	Alpha Tag	Description
42.06	KAA243	203.5 PL	40	Troop D Local Dispatch
42.06	KA5824	203.5 PL	41	Troop D Local Car-to-Car
42.22	KA5824	203.5 PL	42	Troop D Local Cars RX
42.10	KAA243	203.5 PL	43	Troop D South Dispatch
42.10	KA5824	203.5 PL	44	Troop D South Car-to-Car
42.32	KA5824	203.5 PL	45	Troop D South Cars RX
42.12	KAA243	203.5 PL	46	Troop D West Dispatch
42.12	KA5824	203.5 PL	47	Troop D West Car-to-Car
42.78	KA5824	203.5 PL	48	Troop D West Cars RX
42.00	KA5824	186.2 PL	49	Statewide Car-to-Car / Air-to-Car Speed Checks, etc.
154.905	KA5824	203.5 PL	F-7	Troop D - SERT
456.175	KAA90	136.5 PL		Troop D - Mobile Relay (Jerico Springs - Cedar County)
456.275	WGT588	136.5 PL		Troop D - Mobile Relay (Branson - Taney County)
456.475	KAC86	103.5 PL		Troop D - Mobile Relay (Ridgely - Barry County)
456.425	KNID905	136.5 PL		Troop D or F - Mobile Relay (Macks Creek - Camden County)
456.475	KNID905	103.5 PL		Troop D or F - Mobile Relay (Ridgely - Platte County, Macks Creek - Camden County)

Troop E (Poplar Bluff)

Frequency	License	Tone	Alpha Tag	Description
456.275	WGT388			Troop E - Mobile Relay (Bakerville - Pemiscot County)
456.475	WGJ854			Troop E - Mobile Relay (Benton - Scott County)
456.525	WPMH595			Troop E - Mobile Relay (Knob Lick - St. Francois County)
460.25				Troop E - Mobile Relay (Doniphan - Ripley County) [No License?]

Troop E (Poplar Bluff)

Frequency	License	Tone	Alpha Tag	Description
42.92	KAA270	173.8 PL	50	Troop E North Dispatch
42.92	KA5824	173.8 PL	51	Troop E North Car-to-Car
42.22	KA5824	173.8 PL	52	Troop E North Cars RX
42.94	KAA270	173.8 PL	53	Troop E South Dispatch
42.94	KA5824	173.8 PL	54	Troop E South Car-to-Car
42.32	KA5824	173.8 PL	55	Troop E South Cars
42.00	KA5824	186.2 PL	59	Statewide Car-to-Car
154.665	KA5824		Tac-2	Troop E: Tactical 2
154.935	KA5824		Tac-1	Troop E: Tactical 1

Troop F (Jefferson City)

Frequency	License	Tone	Alpha Tag	Description
456.425	KNID905			Troop D or F - Mobile Relay (Macks Creek - Camden County)
456.475	KNID905			Troop D or F - Mobile Relay (Macks Creek - Camden County)
456.525	WGL539	103.5 PL		Troop F - Mobile Relay (Rochport - Boone County)
460.35	WQ266			Troop F - Mobile Relay (Drakee - Gasconade County)
42.64	KAF613	186.2 PL	60	Troop F Dispatch
42.64	KAB302	186.2 PL	61	Troop F Car-to-Car
42.32	KAB302	186.2 PL	62	Troop F Cars RX
42.00	KA5824	186.2 PL	69	Statewide Car-to-Car

Troop G (Willow Springs)

Frequency	License	Tone	Alpha Tag	Description
456.175	KNID903			Troop G - Mobile Relay (Romance - Ozark County)
456.225	WNLC300			Troop G - Mobile Relay (Fairview - Texas County)
456.525	WGT590			Troop G - Mobile Relay (New Ellington - Reynolds County)
456.575	WNFR320			Troop G - Mobile Relay (Alton - Orgeon County)
460.25	WNFR320			Troop G - Mobile Relay (Alton - Orgeon County)
42.38	KAA522	173.8 PL	70	Troop G Dispatch
42.38	KAA522	173.8 PL	71	Troop G Car-to-Car
42.26	KAA522	173.8 PL	72	Troop G Cars RX
42.00	KA5824	186.2 PL	79	Statewide Car-to-Car

Troop H (St. Joseph)

Frequency	License	Tone	Alpha Tag	Description
42.40	KAA204	173.8 PL	80	Troop H Dispatch (was 42.58 B)
42.40	KA5824	173.8 PL	81	Troop H Car-to-Car (was 42.80)
42.78	KA5824	173.8 PL	82	Troop H Cars RX
42.00		186.2 PL	89	Statewide Car-to-Car
456.275	KAA91	173.8 PL		Troop H - Mobile Relay (Quitman - Nodaway County)
456.475	KAB57			Troop H - Mobile Relay (Martinsville - Harrison County) [changed to 460.3375 - 2007]
460.3375				Troop H - Mobile Relay (Martinsville - Harrison County) [replacing 456.475 - 2007]

Troop I (Rolla)

Unit Numbers (some)
Pulaski County: 593, 808, 812
Laclede County: 123, 452, 962

Frequency	License	Tone	Alpha Tag	Description
456.275	KNID904	167.9 PL		Troop I: Mobile Relay (Leasburg - Crawford County)
456.625	KAA84	167.9 PL		Troop I: Mobile Relay (Phillipsburg - Laclede County)
465.35	KAC45	167.9 PL		Troop I: Mobile Relay (Salem - Dent County)
42.58	KAA958	186.2 PL	90	Troop I: Dispatch - Base-to-Cars
42.24	KAA958	186.2 PL	90	Troop I: Dispatch - Cars-to-Base
42.58	KAA958	186.2 PL	91	Troop I: Car-to-Car
42.24	KAA958	186.2 PL	92	Troop I: Cars RX
42.00		186.2 PL	99	Statewide Car-to-Car
42.06	KAA958			Troop I: Dispatch (Back-up)
42.12	KAA958			Troop I: Dispatch (Back-up)
42.38	KAA958			Troop I: Dispatch (Back-up)

OUR READERS SPEAK OUT

Each month, we select representative reader letters for "Our Readers Speak Out" column. We reserve the right to condense lengthy letters for space reasons and to edit to conform to style. All letters submitted must be signed and show a return mailing address or valid e-mail address. Upon request, we will withhold a sender's name if the letter is used in "Our Readers Speak Out." Address letters to: Edith Lennon, Editor, Popular Communications, 25 Newbridge Road, Hicksville, NY 11801-2909, or send email via the Internet to editor@popular-communications.com.

A Correction

Dear Editor and Mr. Swisher:

I just finished reading most of the December 2007 issue of *Pop'Comm*, and wanted to congratulate you on an excellent article entitled "A New Jersey Triad"[by Tom Swisher]. It was easily one of the most readable pieces I've seen, with good practical information and some great history sprinkled throughout.

As a pilot, I noticed a minor error in the sidebar for NAS Lakehurst Frequencies. The frequencies listed for ATIS are in fact the aviation emergency frequencies (121.5 civilian, and 243.0 military). These are not the Automated Terminal Information System frequencies. I believe the correct frequencies are 110.6 and 270.1 for the McGuire ATIS. You can find the information on McGuire's frequencies and more about the aviation procedures at www.mcguire.af.mil/shared/media/document/AFD-071004-083.pdf.

Colin Haig VE3MSC
Milton, ON, Canada

Thank you, Colin, for both the feedback and the new information.—Editor

The Battle Of The FHSS Radios

Dear Editor:

Your December "Tech Showcase" article touting the communications privacy offered by Motorola's DTR-410 digital 900-MHz FHSS transceiver seems a bit gratuitous. With only six channels that anyone else with another DTR-410 can easily overhear (especially in scan mode) these radios seem to offer no more privacy than a CB radio—which scanners generally can't receive, either.

Conversely, the TriSquare TSX300 transceiver (also 900-MHz FHSS) described in your November cover story costs one-fifth as much and has 10 billion channels—probably more than enough to keep eavesdroppers guessing.

Am I missing something, or is this choice a no-brainer? In any case, thanks for publishing the latest information on

this interesting new wave of personal two-way radio technology.

B. Welle
Via email

Jazzed On January

Dear Editor

I really enjoyed Kent Britain's "Active Antennas For Better SW Reception" in your January 2008 issue. Apartment and condo dwellers (aka "cliff dwellers") like myself often have so few shortwave antenna choices, and these magic boxes have often made all the difference for me in various locations where I couldn't string an antenna outside.

These active antennas/preselectors seem to be very common at hamfests where they can often be had for under \$20. I was lucky enough to find a Heathkit HD-1424 at a hamfest for \$10 (after some haggling) and have been extremely happy using it with my Sony ICF-2010. Although this classic is decades old, it's a good performer and a great value.

Even with the preamp switched off and using it in preselector mode, I've been able to hear far more international broadcasts this way compared to using the radio's built-in whip antenna. Which makes me wonder why shortwave portable radios no longer include a simple antenna trimmer adjustment like the classic ICF-2001 had.

Anyway, thanks for the enjoyable article, and thanks for publishing a truly enjoyable magazine.

Harry Caul
Brooklyn, NY, USA

Dear Editor

What a terrific cover story your January issue had: "Bhutan Broadcasting Service—Voices From The Roof Of The World." Steven Herman's coverage of the history and current developments at this unique shortwave station was excellent, including the great pictures. It's encouraging to read about a country with such devotion to the shortwave broadcast medium. Thanks for publishing this story and all your other excellent radio articles. Keep up the good work.

William K. Smith
Cumberland, MD

Pop'Comm April 2008 Reader Survey Questions

This month we'd like to ask you about your household. Please use the Reader Survey Card and circle all appropriate numbers. Thanks for participating.

What is your age?

Less than 20 years old	1
21–30 years old	2
31–40 years old	3
41–50 years old	4
51–60 years old	5
61–70 years old	6
Over 70 years old	7

What is the highest level of education you have completed?

Some high school	8
High school grad/GED	9
Vocational/technical training	10
Some college	11
Collage grade (2-year degree)	12
Collage grade (4-year degree)	13
Post-graduate study	14
Post-graduate degree	15

Which of the following best describes your occupation? (Please circle only one number.)

Administrative support/clerical	16
Executive/owner/partner	17
Farming/forestry/fishing	18
Manager/administrator	19
Operator/fabricator	20
Precision production/craftsman	21
Media	22
Professional	23
Protective services (fire, police)	24
Sales/marketing	25
Service worker	26
Technical (engineer, lab tech)	27
Military	28

Which of the following best describes where you live?

Rural area	29
Small town	30
Suburb	31
City	32

Considering all sources, what is your household's before-tax income?

Under \$20k	33
\$20k–\$30k	34
\$30k–\$40k	35
\$40k–\$50k	36
\$50k–\$60k	37
\$60k–\$70k	38
\$70k–\$80k	39
\$80k–\$90k	40
\$90k–\$100k	41
Over \$100k	42

Democracy In Action— Broadcast Media Mayhem For The Primaries

The primary season is over and the 2008 U.S. Presidential Campaign is well underway as candidates look toward nomination in the national party conventions. For political junkies it's pure nirvana with all the local broadcast television and 24-hour cable news network coverage of campaign events. "Broadcast Technology" just couldn't help but get caught up in the excitement, taking a look behind the scenes of the media coverage.

Reporting From The Field

It was Primary Day in New Hampshire and the media were on the move with the candidates as they made last minute stops at polling places across the state. A rather large media contingent gathered at a local elementary school hours before the scheduled early morning arrivals of Senator John McCain and former Governor Mitt Romney. An air of anticipation grew as candidates were running more than a half-hour late.

During that time, some reporters were busy interviewing voters and capturing stock video of the swelling crowd, while others talked shop among themselves. "It's a little give and take," said WMTW 8 cameraman Arthur Villator in reference to the all the media, "Everyone gets a chance." Not this time though. The cheers of campaign supporters began to build in the distance and the throng of media was immediately off and running.

Mitt Romney was the first to arrive, greeted by an intense media swarm, a sudden mass media feeding frenzy. Reporters and videographers assertively jostled for position as the candidate worked his way through the crowd. Within a few minutes it was all over and the media rushed off to the next venue. Some reporters were lucky enough to get in on an almost too-good-to-be-true "made for TV" photo-op of the candidate meeting a young fan. Others had to be satisfied with voice-overs from the sidelines.

This was an informal political rally, announced in advance by campaign coordinators as a "natural sound" visibility event, meaning that common audio/video hookups would not be provided. Each media outlet had to be prepared with its own portable cameras and microphones.

Big Event Coverage

Satellite news trucks from across the nation were tightly packed in the parking lot at Senator Barack Obama's headquarters for Primary Night festivities. Space for the event had to be reserved in advance through campaign coordinators to guarantee access. "Tonight we're operating from seven locations with a mix of fiber and satellite to the studios," said New England Cable News (NECN) engineer Barry Gadbois. "Here it took three to four hours to set up with over 2,000 feet of cable to run. We arrived here at 10 this morning and we were on the air for the 4:00 news."



Bob Murdock, of WFXT Fox 25 Boston, Rodney Grace, of WCVB Newscenter 5 Boston, and Arthur Villator, of WMTW 8 Maine, awaiting the arrival of the candidates on an informal campaign swing. (All photos by the author except where indicated)



Gordon Peterson, anchorman for WJLA ABC 7 News, Washington D.C., prepares to interview a voter.



An unsuspecting child becomes an instant celebrity in a photo-op with Mitt Romney.



Gail Huff reporting on the scene for Newscenter 5 with Rodney Grace behind the camera.

For WMUR 9 engineer Ryan Hill, who also arrived on-site at 10:00 a.m., Primary Night coverage marked the end of a marathon 75-hour extended workweek. "So far, so good," said Hill as the Obama event electrical contractor finally started sending an audio test signal, a Steely Dan classic hit, through common mixer and multi-box connections. For a large-scale event like this, individual news organizations tie into a shared main audio/video source, the broadcast media "mult-box," a single-input/multiple-output distribution box provided by an independent contractor hired through the event sponsor. At the same time, each news team has its own mic/camera equipment and talent in position to file reports. WMUR 9 was the local television station covering the event. "Normally we'd use a microwave link to the studio," said Hill, "but we're down in a hole at this location and the microwave signal couldn't get over the trees, so we had to use a satellite link."

As an aside, we briefly discussed broadcasting careers. Hill got his start through the Connecticut School of Broadcasting. He interned as a freelance photographer/editor at WFSB-TV in Hartford before landing an engineering position at WMUR. "You can go to school for it, but nobody's going to hire someone [for engineering] without experience, until you've been around. You've got to start somewhere. Textbooks aren't going to give you the hands-on experience," said Ryan about how he entered the broadcasting engineering field.

Kucinich: A Voice Not Heard

Democratic presidential primary contender Congressman Dennis Kucinich has been quite vocal about the corporate control over broadcast media in the United States especially after being denied participation in nationally broadcast debates by the major television networks. The Kucinich campaign went as far as to file an emergency complaint with the FCC, claiming that, by excluding Kucinich from one major primary debate, ABC violated its obligation to operate in the public interest. Kucinich is a firm believer that the airwaves belong to the public.

"I am working for serious media reform," wrote Kucinich in a campaign policy statement. The statement continued,

Media conglomerates are currently among the most powerful lobbyists against media reform...We need to create a greater diversity of viewpoints in the media by breaking up the major media conglomerates, encouraging competition and quality as well as diversity. We

should place new caps on media ownership and ban the granting of exceptions to those caps. We should limit the number of media outlets one corporation can own in a given medium, such as radio, print, or television. We should strictly prohibit cross-ownership and vertical integration.

The Kucinich policy stands in direct contrast to current trends toward expanding the deregulation of media. FCC deregulation has dramatically increased the maximum limits of broadcast ownership in recent years. Under current rules, local ownership of up to three TV stations in a single market is allowed, and one entity may own as many as eight radio stations in a market based on a sliding scale of market size. Furthermore, any number of television stations across the country can be under the same ownership as long as it doesn't cover more than 39 percent of the national TV audience or violate local limits. Deregulation has also removed what was previously a flat ban on newspaper and broadcast cross-ownership.

As required by the Telecommunications Act of 1996 the FCC must periodically review ownership rules, but it also leaves the door open to further deregulation by specifying the repeal or modification of any regulation deemed no longer in the public interest. Currently the FCC conducts a review of ownership rules every four years, the last review completed in 2006. Follow-up public hearings about media ownership issues were held in "geographically diverse locations," the last one being in Seattle, November 2007. Although the official comment period for the 2006 review closed early in 2007, the FCC continues to accept input about ownership rules.

Broadcast Loggings

From the campaign trail to the DX airwaves, here we go with this month's selected logs. All times are UTC.

530 Radio Visión Cristiana, Turks & Caicos, at 0235 a religious program in Spanish, multiple IDs; easy to read, with fair to good signals. Over an unidentified station with what seemed like Chinese, probably CIAO Ontario. (McNeil-MA)

603 RNE5 Monte Viejo and La Corchuela, Spain, at 2256 a good signal; alternating man/woman with news. Double top of the hour pips indicating reception of both stations on the same network, one slightly delayed. (Conti-NH)

631.28 YVKA Radio Nacional de Venezuela, Caracas, monitored at 0430 fair with national anthem followed by news of Latin



WGME 13 Maine, Comcast CN8, and CBS 2 Chicago remote broadcast trucks flank the crop of satellite dishes at Obama headquarters.



Barry Gadbois is the engineer behind the controls inside the NECN satellite truck.

America by two alternating male announcers in Spanish. (DeLorenzo-MA)

640 Radio Progreso, Cuba, at 0415 with great Cuban music, ID on the half-hour as Radio Progreso, La Habana. A regular here most nights. (McNeil-MA)

747 Radio 5, Flevoland, Netherlands, heard at 0026 fair with a discussion in Dutch followed by the Jimi Hendrix version of Bob Dylan's "All Along the Watchtower." (DeLorenzo-MA)

750 YVKS Caracas, Venezuela, at 0232 talking about a baseball player who knew the best tips on how to cook a ham sandwich. An odd comment regarding a baseball game nevertheless. "Este jugador de Los Leones sabe cual es la mejor manera de cocinar el jamón..." An excellent signal with CMHV Cuba and

WSB Atlanta barely noticeable under this 100 kW Caraqueño. (Chiochiu-QC)

770 WYRV Cedar Bluff, Virginia, at 2249 contemporary gospel music and an announcer thanking the listeners for all that they do. A decent signal mixed with WVNN Athens, Alabama, and WLWL Rockingham, North Carolina. (New-GA)

770 HJJX Bogotá, Colombia, at 0445 good over nulled WABC with festive Latin American music and ID, "RCN Radio de Colombia... RCN Radio punto com." (DeLorenzo-MA)

770 Radio Rebelde, Las Mercedes, Cuba, at 2300 heard the distinctive Rebelde sounder through WABC New York. (Conti-NH)

780 YVNM Radio Coro, Venezuela, at 0258. fading up with a traditional deeply

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melancholic cumbia tropical groove, just some slight WABC and CJAD sideband splatter. (Chiochiu-QC)

820 WCPT Chicago, Illinois, at 2304 CNN news, a Randi Rhodes Show promo, and mentions of Progressive Talk Radio. A decent signal in the mix of signals. (New-GA)

882 COPE synchros, Canary Islands and Spain, at 2304 good with news in Spanish; a steady signal with little fading. 880 WCBS splatter minimized with SuperLoop antenna. (DeLorenzo-MA)

940 XEQ Iztapalapa, México City, at 0050 over presumed WIDG in CINW null; a cheesy instrumental, "Besame" slogan jingle, and romántica. (Conti-NH)

980 WAZS Summerville, South Carolina, at 0526 oldies and mentions of Charleston, "The new Rocket 980." Initially a good signal only to fade to just above the mix. (New-GA)

980 KSVC Richfield, Utah, at 2130 numerous local spots during break from the Dr. Laura Show, local references to Delta and Sevier Valley. Heard during check to see if KFWB Los Angeles was still on. (Barton-AZ)

1010 WJXL Jacksonville, Florida, at 0440 sports news and scores. A good signal trading places with CFRB Toronto. "Jacksonville's Sports Radio, 1010 XL." (New-GA)

1030 WQSE White Bluff, Tennessee, at 1100 southern gospel music and ID, on a weak

but steady signal mixed with WBZ Boston. (New-GA)

1130 KFAN Minneapolis, Minnesota, at 0600 with sports play by play, clear ID, "...on AM 1130 KFAN." Heard on GMC Sonoma dashboard radio, stock vertical antenna, while DXing on the road. (Barton-AZ)

1179 Radio Sweden International, Sölvesborg, Sweden, at 2300 fair with news by a man and woman in English, interval signal and ID. (DeLorenzo-MA)

1200 WAMB Nashville, Tennessee, at 2338 big band music with a good signal in the null of WOAI San Antonio, Texas. (New-GA)

1206 France Info, Bordeaux, France, at 2242 good with news in French. In the clear with no interference from 1210 WPHT-HD. (DeLorenzo-MA)

1214.65 Radio Tirana, Fllakë, Albania, at 2210 presumed to be the off-frequency station in an East European language battling 1215 *Virgin Radio* and creating a loud het. (DeLorenzo-MA)

1215 Virgin Radio synchros, United Kingdom, heard at 2200 fair over the Albania het; Eurythmics "Sweet Dreams," ads, Virgin Radio jingle and DJ talk. (Conti-NH)

1370 WGIV Pineville, North Carolina, at 2300 gospel music, ID, and the "Girlfriend!"

Get a Life!" show. A good signal only to fade away as the show started. (New-GA)

Thanks to Rick Barton, Bogdan Chiochiu, Marc DeLorenzo, Taylor McNeil, and Bert New.

Miscellany

Loggings contributor Bert New is DXing with the Sony SRF-59. This little Walkman-like pocket radio is taking the broadcast DX community by storm! Despite its small size and analog tuning, the SRF-59 has proven to be a very DX-capable receiver.

Speaking of storms, according to SpaceWeather.com, Solar Cycle 24 is underway based on an observed change in the polarity of sunspots. Predictions are mixed regarding the expected 2011–2012 peak intensity of this cycle, but for now solar activity continues to be quiet, meaning there's plenty more DX to be had before the sun begins to disturb reception.

Until next time, 73 and good DX! ■

Note: There is no FCC callsign list this month.—bc

Cash, Camera, Action!

Readers who are involved in broadcasting will find this quite interesting, and I ask others to indulge me briefly here for a particular interest of mine: the image capture of the events.

JVC, Panasonic, and Sony are among the most popular manufacturers of professional portable cameras used in field reporting. A fully configured system including batteries, lens, memory, microphone, and tripod represents a significant investment, with \$10k typical for an entry-level package and over \$90k for top-of-the-line portable documentary and film gear. As a result there's a healthy market for used broadcast camera equipment.

Panasonic is a recognized leader in the development of digital news-gathering equipment for the broadcast industry. Since the company first introduced its DVPRO digital audio/video format in 1995, it's been adopted by over 750 television stations across the United States according to a company press release. An open architecture has allowed for continued development of a wide range of third-party products supporting everything from field acquisition to live studio broadcasting.

Sampling the Panasonic product line, the HVX200 1080i/720p handheld HD camcorder is considered groundbreaking technology for providing affordable production-quality results, now with tapeless digital memory card capability, all for just under \$6k or about \$1k per pound. At the opposite end of the spectrum, the Panasonic HVX900 is a professional shoulder-mount field production HD camcorder, starting at around \$25k.



The Panasonic HDX900 1080i/720p professional shoulder-mount field production camcorder. (Manufacturer's photo)

CQ HF Operator's Survival Guide



\$2
+ \$2 S/H

A practical, hands-on getting-started guide for newcomers to hi-frequency (shortwave) Amateur Radio. Among other topics, this book discusses the characteristics of each HF ham band and explains which is best and when, basic HF operating practices, choosing your first HF transceiver, antenna basics and various HF modes and operating activities. There's also an HF band chart!

CQ Magazine

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www.cq-amateur-radio.com

Meteor-Scatter: Heavenly Propagation! No Sunspots Required!

As a beginning ham I thought that VHF signals traveled along line-of-sight paths and faded out after about 30 miles. For casual 2-meter FM operation, especially through repeaters, that's mostly true. But because there were no repeaters in my neck of the woods, and because I wanted to work stations in faraway places, I ignored 6 and 2 meters and focused on HF operation, which was much more accessible. Besides, I could easily talk face to face with the three local hams who *might* have used a repeater if one were available! And I held a Novice class ticket, which didn't even allow for operation above 10 meters.

In the late '70s and early '80s, VHF weak-signal operation was still somewhat esoteric. I still remember looking on in awe at the construction articles published in the ham magazines. The project chassis contained a maze of shielded compartments interconnected with feed-through capacitors, and the whole mess was tuned and tweaked by practitioners of that occult art. And the "HF rigs" of that era didn't include a bunch of bands above 30 MHz like they do today.

The barriers of the day were unfortunate, because once you cross the "30-mile barrier" there are many exciting ways to propagate VHF signals over hundreds or even thousands of miles. Articles in *CQ*, *QST* and dozens of websites now describe *E*- and *F*-layer skip, tropospheric and transequatorial ducting, moonbounce, auroral propagation, and many other fascinating propagation modes. (That part of our hobby, even today, has a Wild West flavor, and hams and scientists alike are still discovering new propagation modes and are adding nuanced details to what we already know.)

Meteor-scatter communications—bouncing radio signals off of the ionized trails produced by meteors burning through the atmosphere—takes a little patience and a bit of study, but requires only an ordinary station (and perhaps a computer with a sound card). I'm not an expert, but I've made a few scatter QSOs in my day. And because I can only introduce the subject in this column, I'll point you toward more complete information. No worries!

Radio Fun With Meteors And Comets

Meteor showers are produced when the Earth plows through the orbiting debris streams left by passing comets. The debris, mostly dust and other small particles, burns up as it speeds through the atmosphere. (These high-speed particles can also punch holes through space station and satellite solar panels, "sandblast" the exteriors of stuff in orbit, and even chip the windshield of the space shuttle—but we'll save those for another day.)

Although the Earth constantly sweeps up "random debris" as it orbits the sun, meteor showers are recurring events. The Earth encounters certain debris streams at about the same time each year. **Table 1** lists the major showers.

And whether produced by random meteors or the more predictable meteors that are part of a recurring shower, nighttime

Table 1. Major Annual Meteor Showers

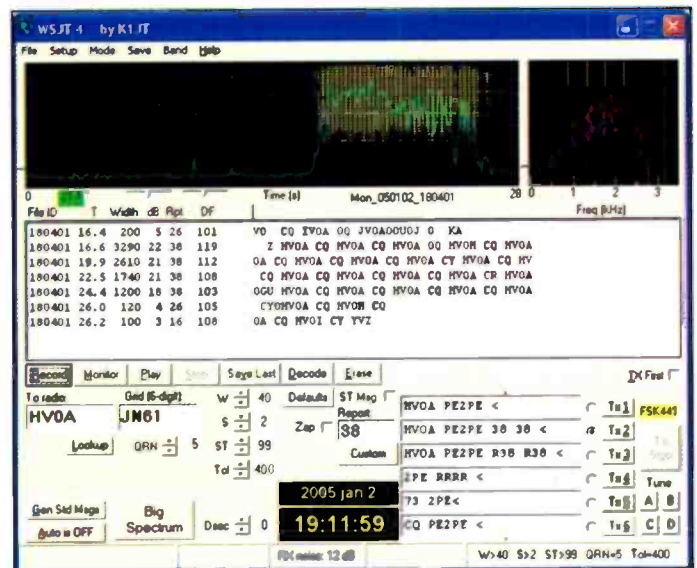
Shower	Peak Dates	Zenith Hourly Meteor Rates
Quadrantids	Jan 3	120
Aquarids	May 6	60
Arteids	Jun 7	54
Perseids	Aug 12	90
Orionids	Oct 21	20
Geminids	Dec 14	120

Note: These are only the biggies. The info for dozens of smaller showers can be found at http://en.wikipedia.org/wiki/List_of_meteor_showers.

observers see falling stars streak across the sky. Radio signals "see" the trails left by meteors as long reflective tunnels of ionized particles. Basically, earthbound stations that can mutually "see" the ionized trails can communicate with each other by bouncing (scattering) radio signals off them. The ionized particles are temporary radio reflectors that can be put to good use!

Details

Because of the physics and geometry involved, meteor-scatter QSOs take place mostly on 10, 6, and 2 meters between stations 500 to 2,300 km apart. Faster, larger meteors produce more intense, longer-lasting trails and better propagation paths. For two stations to communicate via meteor-scatter, a meteor(s)



An FSK441 QSO using WSJT (Version 4) as posted on the website of Freek Enick, PE2PE, of The Netherlands. HV0A has a nice signal.

must pass through the ionosphere in a useful direction and at mutually visible elevations (45 degrees or less is best).

Typical meteor trails reflect radio waves from a few seconds to a few minutes, depending on the frequency, the size and speed of the meteor, and several other factors. At 28 and 50 MHz, meteor trails can reflect signals for 30 seconds to several minutes. At 2 meters, the same meteor burst reflects signals for only a fraction of a second to a minute.

Meteor-scatter signals suddenly appear out of a dead band, persist for a short time, and then disappear! The effect is eerie! During meteor showers, when several overlapping ionized trails may be scattering radio waves simultaneously, communications may be possible for several minutes to several hours.

It's easy to see why meteor-scatter ops get so excited about working the big showers. A November shower, officially called the Leonids (meteor showers are

named for the constellations in which they appear; Leo, in this case), has produced once-in-a-lifetime radio propagation in years past. Every 33 years or so, when the shower's parent comet Tempel-Tuttle sweeps near the sun, the Leonid meteor shower can become a raging meteor storm.

During a typical (good) meteor shower, 60 to 80 meteors blaze across the sky each hour. During the last Leonids storm in 1966, scientists saw peak hourly rates of 150,000 meteors per hour—pileup central! Observers witnessed apocalyptic light shows in the sky. In some locations people were awakened in the middle of the night by "bright daylight" streaming in through their curtains! In past centuries, more than one Leonids meteor storm prompted people to think that the end of the world was upon them. Unfortunately, the expected 1998-1999 Leonid meteor storm didn't materialize. Some scientists speculate that Tempel-Tuttle has run out of debris and is on its last legs. I guess we'll know for sure in 2030 when the comet swings around again!

SSB Meteor-Scatter QSOs

Although 2 meters is a meteor-scatter workhorse band, the best bands for beginners are 10 and 6 meters. Station requirements are modest and openings last longer and are more consistent.

Traditional meteor-scatter contacts (mostly SSB, and mostly during major showers) are made with dipole, vertical, and even mobile antennas, especially on 10 and 6 meters, but directional antennas work best. On 10 and 6 meters, 50 to 100 watts and a three-element Yagi produce solid results. On 2 meters, where the action is a bit more frantic, 150 watts and a 10-element beam should do nicely.

There are no special procedures for 10-meter meteor-scatter QSOs. Meteor trails usually last long enough to allow normal, brief contacts. Limit your transmissions to a few seconds. During meteor showers, try calling "CQ scatter" just above (and or below) 28.5 MHz. Aim your antenna in the direction you hope to make contacts.

On 6 meters, SSB activity usually starts at 50.130 MHz and moves up. Contacts are fast, so stay awake! On 2 meters and above, most meteor-scatter work is accomplished via schedules, where each station transmits and receives in coordinated time intervals. Most activity centers around the 144.2-MHz national calling frequency.

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Table 2. Resources

In addition to the operating procedures outlined in *The ARRL Operating Manual for Radio Amateurs*, see the list of Web links below.

AB7Y MS Links	www.qsl.net/dk3xt/ms.htm >
W8WN MS Resources	www.qsl.net/w8wn/hscw/hscw.html?B1=W8WN
WSJT Primer	www.ykc.com/wa5ufh/Help/WSJTPrimer.htm#MS%20Modes
WSJT6 User Manual	http://physics.princeton.edu/pulsar/K1JT/WSJT_User_600.pdf
WSJT Articles	www.arrl.org/tis/info/pdf/0112036.pdf ; www.arrl.org/tis/info/pdf/0206081.pdf

During peak shower periods on 6 and 2 meters, call CQ for a few seconds, then listen for a few seconds. Contacts are complete when call signs and one other piece of information (grid locator or state) is exchanged and acknowledged by "rogers." Repeats are often required. Keep your transmissions short and stay with a station until a full exchange of information is made.

FSK441

Once a mainstay, SSB meteor-scatter contacts are mostly made only during major showers. The new kid on the block is a digital mode tailored for meteor-scatter and moonbounce work called FSK441. FSK441 is a digital sound card mode that's part of a comprehensive weak-signal data communications suite called WSJT, written by Nobel prize winner Joe Taylor, K1JT. It performs its magic much like PSK31, which is much more familiar. FSK 441 sends and receives data in super-fast bursts that take advantage of the frequent sub-second "pings" produced by the many common, but tiny (weak) meteors entering Earth's atmosphere.

Operators using this mode need to synchronize their station clocks accurately, as the process involves one station transmitting while the other receives, etc. So, using FSK441 isn't as easy as using PSK31 on HF, for example, but its vastly superior performance compared to good old SSB has made it the technique of choice for VHF "ping jockeys" everywhere. With its relatively low power requirements and amazing signal-to-noise performance, FSK441 (and its cousins) has ushered in a new era of long-distance VHF comms. Remember, regardless of weather, sunspot or ionospheric conditions, there is a steady stream of tiny meteors bombarding the atmosphere each day that are too small to sustain voice contacts, but are more than usable via FSK441.

Tidbits

The period from sunrise to about 9 a.m. local time is prime time for meteors. There are plenty of contacts to be made year-round (especially via FSK441), although June, July, and August have the most meteor activity.

Because it's sometimes impossible to discern meteor-scatter propagation from tropo or E-skip openings, there aren't many (any?) specific meteor-scatter awards per se. That said, scatter QSOs work just fine for other awards or certificates, including WAS (Worked All States) and VUCC (VHF/UHF Century Club).

The June VHF QSO Party overlaps the Arctids meteor shower, which unfortunately is often a poor performer. Meteor-scatter propagation usually gives the best boost to the annual ARRL 10-Meter Contest, which intersects the December Geminids shower. Even when 10 meters seems totally dead, morning scatter contacts put at least a few stations in just about everyone's log.

There's a lot more information available for hams who want to get started with meteor-scatter comms. I encourage you to follow up with this fascinating, sunspot-independent, aspect of ham radio. See **Table 2** for some suggested resources to get you up and running.

Contacts You Can Count On

To the old adage, "The only sure things are death and taxes," you can now add the consistency and accessibility of meteor-scatter VHF communication. Station requirements are reasonable, and the gear you'll accumulate will be useful for other VHF/UHF work. Who needs sunspots when we have heavenly propagation?

Your QSL cards, letters and questions are always welcome. Send them to Editor, *Popular Communications*, 25 Newbridge Rd., Hicksville, NY 11801; Web: Editor@popular-communications.com. Let's hear from you! ■

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

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

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0000	11975	VOIRI, Iran	CC	0400	7390	Channel Africa, South Africa	
0000	6165	Radio Nederland, Bonaire Relay		0400	7220	Voice of America, Morocco Relay	RR
0000	4845	Radio Mauritanie, Mauritania	AA	0400	4976	Radio Uganda	
0000	6240	Radio PMR, Pridnestrovie (Moldova)		0400	4965	The Voice - Africa, Zambia	
0000	11935	Radio Romania International	SS	0430	9635	Radio Okapi, Congo, via South Africa	
0030	5830	Radio Ukraine International		0430	5945	Deutsche Welle, Germany, via England	
0100	4985	Radio Brazil Central	PP	0430	3975	Kossuth Radio, Hungary	HH
0100	3985	Croatian Radio		0430	7535	Kol Israel	HH
0100	6045	XEXQ Radio Universidad, Mexico	SS	0430	6020	Voice of Turkey	
0100	3310	Radio Mosoj Chaski, Bolivia	SS	0430	6155	Voice of Russia	
0130	4800	Radio Buenas Nuevas, Guatemala	SS	0500	4905v	RN Tchadienne, Chad	FF
0130	15720	Radio New Zealand International		0500	5005	Radio Nacional, Equatorial Guinea	SS
0130	4835	Radio Maranon, Peru	SS	0500	4777	RN Gabonaise, Gabon	FF
0130	4747	Radio Huanta 2000, Peru	SS	0500	7255	Voice of Nigeria	
0200	9665	Radio Marumby, Brazil	PP	0500	4770	Radio Nigeria	
0200	5025	Radio Rebelde, Cuba	SS	0500	9705	La Voix du Sahel, Niger	FF
0200	4780	Radio Cultural Coatan, Guatemala	SS	0500	7811u	AFN/AFRTS, Florida	
0200	3279	La Voz del Napo, Ecuador	SS	0530	9575	Radio Medi Un, Morocco	EE/FF
0200	4815	Radio El Buen Pastor, Ecuador	SS	0600	5030	Radio Burkina, Burkina Faso	FF
0200	4824.5	La Voz de la Selva, Peru	SS	0600	9600	XEYU/Radio UNAM, Mexico	SS
0200	6185	Radio Republica (clandestine to Cuba)	SS	0600	4760	ELWA, Liberia	
0230	3249	Radio Luz y Vida, Honduras	SS	0600	6080	Voice of America, Sao Tome Relay	
0230	6040	Vatican Radio		0730	9525	Cotton Tree Network, Sierra Leone, via S. Africa	
0300	5035	Radio Aparecida, Brazil	PP	0830	11750	HCJB-Australia	
0300	4052.5	Radio Verdad, Guatemala	SS	0830	9800	Trans World Radio, Monaco	
0300	3255	BBC, via South Africa		0900	9645	Radio Bandeirantes, Brazil	PP
0300	7110	Radio Ethiopia	Amharic	0900	9595	Radio Nikkei, Japan	JJ
0300	6010	Radio Sweden, via Canada		0930	4990	Radio Apinte, Suriname	DD
0300	3240	Trans World Radio, Swaziland	vern	1000	6020	Radio Australia	
0300	3220	Radio Sondergrense, South Africa	Afrikaans	1000	11710	Voice of Korea, North Korea	
0300	4790	Radio Vision, Peru	SS	1030	4700	Radio San Miguel, Bolivia	SS
0300	5755	KAJI, Texas		1030	11935	Trans World Radio/KTWR, Guam	Uighur
0300	5915	Radio Zambia		1030	6020	Voice of Vietnam	
0330	6110	Radio Fana, Ethiopia	Amharic	1100	7355	KNLS, Alaska	
0330	5010	RTV Malagasy, Madagascar	vern	1100	6160	CKZN, Canada	
0400	7425	Radio Tirana, Albania		1100	4909v	Radio Chaskis, Ecuador	SS
0400	4950	Radio Nacional, Angola	PP	1100	6050	RT Malaysia	Malay
0400	4915	Radio Difusora Macapa, Brazil	PP	1100	3345	Radio Northern, Papua New Guinea	Pdgin
0400	6025	Radio Amanecer, Dominican Republic	SS	1130	5040	Radio Myanmar (Burma)	BB
0400	4780	Radio Djibouti	FF	1130	6130	Lao National Radio, Laos	vern
0400	7100	Voice of the Broad Masses of Eritrea	Tigrinya	1130	6150	Radio Singapore International	Malsy
0400	5950	Voice of the Tigre Revolution, Ethiopia	vern	1130	3905	Radio New Ireland, Papua New Guinea	Pidgin
0400	6185	Radio Educacion, Mexico	SS	1199	9615	Radio Veritas Asia, Philippines	Mandarin
0400	4775	Trans World Radio, Swaziland	GG				

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
1200	9810	China National Radio		1630	15410	Radio Farda, USA, via England	Farsi
1200	7280	Voice of the Strait, China	CC	1700	13590	CVC-Australia, via Zambia	
1200	15190	Radio Africa, Equatorial Guinea		1700	11775	Caribbean Beacon, Anguilla	
1200	4605	Radio Republik Indonesia	II	1700	11930	Radio Marti, USA	SS
1200	11510	Radio Liberty, USA, via Sri Lanka	unid	1700	11610	Radio Voice of the People, via South Africa	EE/vern
1200	6120	Radio Japan, via Canada		1700	18980	WYFR, Florida	
1200	9650	KBS World Radio, South Korea, via Canada		1700	11625	Vatican Radio	
1200	3335	Radio East Sepik, Papua New Guinea	Pidgin	1730	11960	RTV Malienne, Mali	FF
1200	9935	T8BZ, Palau		1800	9400	Radio Bulgaria	FF
1200	11740	Vatican Radio		1800	15475	Africa Number One, Gabon	FF
1230	15160	Radio France International, via South Africa	FF	1830	11820	BSKSA, Saudi Arabia	AA
1230	15505	Radio Kuwait	AA	1900	9580	Africa Number One, Gabon	FF
1230	15330	Far East Broadcasting Co., Philippines	unid	1900	15120	Voice of Nigeria	
1300	9580	Radio Australia		1930	12080	Voice of America, Botswana Relay	
1300	6110	BBC Relay, Thailand		1930	9630	BBC, Seychelles Relay	
1300	5910	Radio Nederland, via Russia	DD	1930	11620	All India Radio	
1300	9335	Voice of Korea, North Korea		1930	9420	Voice of Greece	Greek
1300	9990	Radio Free Afghanistan, USA, via Sri Lanka	Pashto	1930	9830	Radio Jordan	AA
1300	7160	Radio Thailand	various	1930	12005	RT Tunisienne, Tunisia	AA
1300	12075	Radio Sweden	RR	1930	9870	BSKSA, Saudi Arabia	AA
1300	9450	Polish Radio External Service, via Germany		2000	15345	Radio Nacional/RAE, Argentina	SS
1300	6350	AFN/AFRTS, Hawaii		2000	11955	Adventist World Radio via Austria	unid
1300	9390	Voice of America, Sri Lanka Relay	Pashto	2000	6100	International Radio of Serbia	
1330	6890	KNLS, Alaska	Mandarin	2000	9970	RTBF, Belgium	FF
1330	9790	VOIRI, Iran	Urdu	2000	9710	Radio Canada International, via England	AA
1330	11530	Denge Mesopotamia, via Moldova	Kurdish	2000	13630	China Radio International, via Mali	
1330	5950	Radio New Zealand International		2000	17680	CVC-La Voz, Chile	SS
1400	15150	VOIRI, Iran	AA	2000	13790	Deutsche Welle, Rwanda Relay	AA
1400	15675	Southern Sudan Interactive Radio, USA, via S. Africa		2000	17850	Radio Exterior de Espana, via Costa Rica	SS
1430	15700	Radio Bulgaria		2000	15590	KTBN, Utah	
1430	9625	CBC Northern Quebec Service, Canada		2000	9770	Adventist World Radio, via Austria	unid
1430	13580	Radio Prague, Czech Republic	FF	2030	15476	Radio Nacional Arcangel, Antarctica	SS
1430	6135	BBC, Singapore Relay	VV	2030	11760	Radio Havana Cuba	
1430	15265	Radio Solh, via England	Pashto	2030	9790	Radio France International	FF
1430	15140	Radio Sultanate of Oman		2030	11900	Radio Kuwait	
1500	9870	All India Radio		2030	11735	Radio Tanzania-Zanzibar	Swahili
1500	15435	BSKSA, Saudi Arabia	AA	2030	6055	Radio Rwanda	FF
1500	11715	KJES, New Mexico		2100	9445	All India Radio	
1500	9645	Vatican Radio	GG	2100	7240	International Radio of Serbia	GG/FF
1530	17830	BBC Relay, Ascension		2130	9900	Radio Varna, Bulgaria	BB
1530	13640	Radio Tirana, Albania		2200	11670	Radio Nacional, Venezuela, via Cuba	SS
1530	9515	Radio Canada International		2200	9780	Republic of Yemen Radio	AA
1530	15345	RTV Marocaine, Morocco	AA	2230	7360	Radio Station Belarus	
1530	17725	Radio Jamahiriya/V of Africa, Libya	various	2230	6180	Radio Nacional da Amazonia, Brazil	PP
1530	17770	Channel Africa, South Africa		2230	9760	Cyprus Broadcasting Corp.	Greek, wknds
1600	9710	Radio Australia		2230	6290	Egyptian Radio/Radio Cairo	AA
1600	13675	Radio Austria Intl, via Canada		2230	7450	RS Makedonias, Greece	Greek
1600	17735	China International Radio, via Canada	CC	2230	7115	Radio Japan/NHK, via UAE	
1600	9905	KWHR, Hawaii		2230	13650	Radio Japan/NHK	CC
1600	17640	BBC, via South Africa	Swahili	2300	12020	HCJB, Ecuador	PP
1600	11615	Radio France International		2300	7415	WBCQ, Maine	
1600	11690	Radio Jordan		2330	9695	China Radio International	JJ
1600	11765	Sound of Hope, Taiwan	CC	2330	5910	Marfil Estereo, Colombia	SS
1600	15560	RDP International, Portugal	PP	2330	11865	Deutsche Welle, Germany, via Portugal	GG
1630	12050	Egyptian Radio/Radio Cairo	AA	2330	5995	RTV Malienne, Mali	FF
				2330	9805	KBS World Radio, South Korea	CC
				2330	7200	Radio Rossii, Russia	RR

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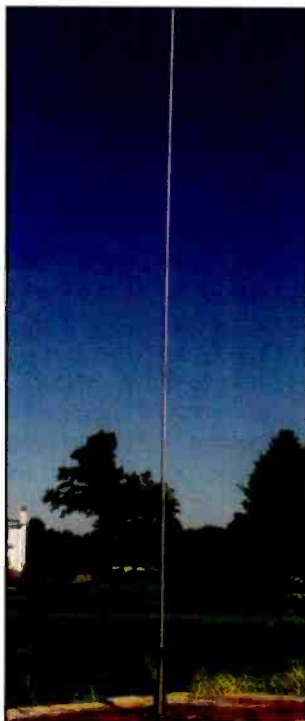
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Thunderbolt HF Antennas From DX Engineering

DX Engineering is expanding its Thunderbolt Antenna series. These high-performance vertical antenna systems are tunable to operate over a variety of HF bands with an SWR of 1.5:1 or less. Reaching up to 43 feet in height, they use 6063 corrosion-resistant aluminum tubing along with stainless-steel hardware for durability. Some models feature a top hat, allowing the antenna to be shorter without giving up efficiency or radiating performance.

DX Engineering's expanding line of Thunderbolt Antennas will soon offer high-performance vertical systems for even more HF bands. →



For best performance, your installation should include a good ground radial system, such as DX Engineering's radial plate and bulk radial wire kits, to facilitate connecting ground-radial wires (32 are recommended). Most models offer a tilt-base to allow easier raising and lowering of the antenna. All Thunderbolt Antenna systems are priced at under \$500.

For more information, contact DX Engineering, P.O. Box 1491, Akron, OH 44309-1491; Phone: 800-777-0703; Web: www.dxengineering.com.

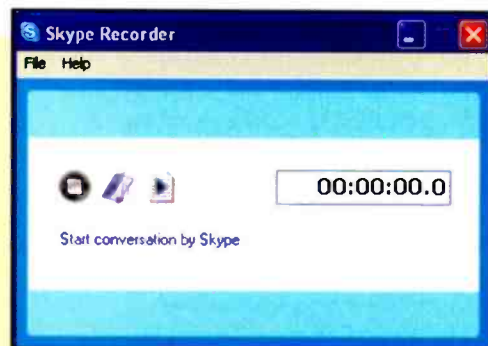
Record Skype Conversations With Skype Recorder 1.4

Skype Recorder from ExtraLabs Software is an easy-to-use tool for recording Skype audio conversations. Skype Recorder can record Skype calls automatically. The software has a number of additional handy features, such as an automatic record encoding into MP3/WMA/OGG/WAV format, support for all Skype versions, single or dual audio track recording, hidden mode work, a built-in audio player, a built-in FTP-client and easy interface.

Creating a new recording is simple: all you need is to run Skype Recorder. The software will automatically start recording as soon as you start talking on Skype. When the conversation is over, Skype Recorder will encode the recording to the specified format and save the ready file on your hard drive. The built-in audio player lets you listen to the recording and delete, move, or upload the file.

Skype Recorder is compatible with all operating systems of the Windows family (95, 98, Me, 2000, XP, NT, Vista) and supports all Skype versions. The license price of \$13.95 includes free lifelong updates. For more information, visit www.extralabs.net/skype-recorder.htm. The full-featured version of Skype Recorder 1.4, with a free 30-day trial period, is available at www.extralabs.net/SkypeRecorderSetup.exe

Note: In many areas of the country both parties must be aware a recording is being made for it to be legal. Be sure to consult your local laws.



Skype Recorder from ExtraLabs Software automatically records Skype audio conversations—but check your local laws before using it.

K8LV FLP1 Pre-amp

The K8LV Fish Lake Beverage Pre-amp, model FLP1, can help you improve your "ears" on the low bands. This high-performance receive antenna pre-amplifier is designed for 160 and 80 meters. It can be used not only for Beverage antennas, but also for a wide variety of receiving antenna designs.



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The FLP1 pre-amp uses a state-of-the-art MMIC for active amplification, preceded by high-Q bandpass filters. The MMIC is based upon GaAs technology and can produce 20 dB of gain while maintaining a low level of intermodulation. The FLP1 comes pre-assembled using SMT components and two-sided PC board with ground plane. The final package is mounted in a custom metal enclosure that fully shields the electronics and provides a simple mounting flange for attaching to a flat surface. Each band is provided with a trimmer capacitor that allows peaking the input filter to anywhere within the band. It is factory set at the specified frequencies and normally will not require any further attention. Its power supply line contains extensive RF and DC filtering to minimize problems with RFI from multiple transmitter stations, as well as reverse battery polarity protection.

For more information and to inquire about pricing visit <<http://booksandtubes.com/K8LV.htm>>.

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NewSoft America offers a video wireless projector adapter, the WMS 200,

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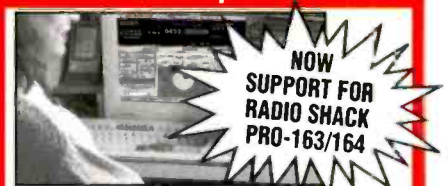
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Africa “Re-arises,” And Lots Of Other Places Are Making More Noise, Too

Although fresh new broadcasters aren't involved, Africa has nonetheless seen some unusual (read “positive”) activity of late. First, Libya brought its transmitting site at Sabrata back into service and discontinued its use of France's Issoudun site, which had been doing fill-in service while Sabrata underwent an upgrade. And lately Algeria seems to be making increased use of some of the VT-Merlin sites (Woolerton and Rampisham), having added 5915 and more recently 7175 and 7295. And CVC-The Voice-Africa has begun to use the “international” bands, starting with 13590 and 13650 via Zambia (although the programming source appears to be from CVC-Australia). This may be the first step in their previously announced plans to provide Africa-wide coverage. Then came word that Chad's Radio Nationale had returned to its familiar and long-used 4904.5 where it's being heard nearly everywhere in the United States. More positive news that Africa is on a short-wave uptick these days!

Radio Serbia International has taken another step forward, as mentioned earlier, with the recently reactivated Bijeljina site. For North America the station is active on 7115 from 0030 to 0230 and to Europe on 7240 from 1130 to 2230 with 6100 added from 1900. Half hours in English are broadcast at 0100, 0200, 1400, 1930 and 2200.

The Mexican Radio Transcontinental/XERTA, Mexico City, has moved from its previous 4810, where it was usually buried in a pile of noise. It's now using 4800, leaving a question as to the status of Radio Buenas Nuevas in Guatemala, which also uses this frequency but hasn't been heard recently—not even as a QRM creator.

Ontario's CFRX, absent for many months on 6070 will, indeed, make a comeback, according to Steve Canney, QSL Manager for the station and mediumwave CFRB, which it relays. A new solid-state transmitter should be on the scene—or even operational by now. So



China Radio International has added a very snappy, modern look to its correspondence. (Thanks Rich D'Angelo)

keep an ear open on 6070 and welcome them back!

A new station in Peru is Radio Manantial, now operating on 4990.8 from Chilca in Huancayo Province. It's only running 1 kW and is in a “messy” area of the band so don't expect an easy time if you enter the hunt for this Catholic-affiliated station. The address for reports is care of I.E.P.J., Templo la Hermosa, Jr. Santa Cecilia No. 107, Chilca, Huancayo, Peru.

Reader Logs

Remember, your shortwave broadcast station logs are always welcome. But *PLEASE* be sure to double or triple space between the items, list each logging separately according to its home country, and include your last name and state abbreviation after each. Also needed are spare QSLs or good color copies you don't need returned, station schedules, brochures, pennants, station photos, and anything else you think would be of interest. And how about sending a photo of you at your listening post? It's your turn to grace these pages!

Here are this month's logs. All times are UTC. Double capital letters are language abbreviations (SS = Spanish, RR = Russian, AA = Arabic, etc.). If no lan-

guage is mentioned English (EE) is assumed. Lots of logs this time so let's kick it off!

ALASKA—KNLS, 6150 at 1405 with 80s pop and some hash from a Firedrake jammer. (Barton, AZ) 6890 in Mandarin at 1332. (Schieffelbein, MO) 6915 at 0804. (Patterson, Philippines) 7355 in CC at 1100. (Ng, Malaysia)

ALBANIA—Radio Tirana, 6110 with press review at 0130 to 0142*. (Paradis, ME) 0440. (Maxant, WV) 7430 at 2110 on a new nuclear power project. //9915. (Fraser, ME) 7425-Shijak at 0438 with news. ID. (Parker, PA) 0448 in presumed Albanian to 0456*. (Wood, TN) 13640-Shijak with choir at 1554. (Charlton, ON)

ANGOLA—Radio Nacional, 4950 at 0139 in PP. old pop song. PP ID at 0200 and into news. (Alexander, PA)

ARGENTINA—Radio Argentina with University Network, 6090 with Dr.Scott at 0344. (Wood, TN) 0435. (Maxant, WV) 11775 at 1725. (Charlton, ON)

ANTARCTICA—Radio Nacional Arcangel, 15476 at 2054 with bits of audio peeping out of the noise. (Strawman, IA)

ARGENTINA—Radio Argentina al Exterior, 11710.7 at *1000 with long SS sign on routine before going into JJ. (D'Angelo, PA) 15345.4 with SS at 2007. (Charlton, ON) GG service at 2102. (Strawman, IA)

ASCENSION—BBC Atlantic Relay, 6005 at 0328 and 17830 at 1549. (Wood, TN)

Help Wanted

The "Global Information Guide" consistently presents more shortwave broadcast loggings than any other monthly SW publication! (An incredible 787 shortwave broadcast loggings were processed this month!*) Why not join your fellow SWLs, let us know what you're hearing, and also become eligible for our monthly shortwave book prize! Send your logs to Gerry Dexter, "Global Information Guide," 213 Forest St., Lake Geneva, WI 53147. Or e-mail them to gdex@genevaonline.com (please see the column text for basic formatting tips.) Come join the party—we look forward to hearing from you!

**Not all logs get used; there are usually a few which are obviously inaccurate, unclear, or lack a time or frequency.*

7160 at 0420. (MacKenzie, CA) 7185 in an African language at 0417. (Brossell, WI) 12095 at 1600. (Paradis, ME) 15400 at 1930. (Charlton, ON) 17830 at 1612 and 21470 at 1605. (Ronda, OK)

AUSTRALIA—Radio Australia, 6020 at 1005, 9580 at 0805 and 9590 at 1115. (Maxant, WV) 7240-Shepparton at 1428 and 17785 at 2221. (Ronda, OK) 9475-Shepparton at 1100, 9500-Shepparton at 2100 and 15290 in Indonesian at 0600. (Ng, Malaysia) 9580 at 1704 and 9660-Brandon at 1240. (Strawman, IA) 9580-Shepparton at 1913 and 11880-

A Guide To "GIG-Speak"

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

*	— (before or after a time) time the station came on or left the air	LSB	— lower sideband
(l)	— (after a frequency) lower sideband	LV	— La Voz, La Voix (the voice)
(p)	— presumed	MW	— mediumwave (AM band)
(t)	— tentative	NBC	— National Broadcasting Corporation (Papua New Guinea)
(u)	— (after a frequency) upper sideband	OA	— Peru/ Peruvian
v	— variable time or frequency	OC or O/C	— open carrier
//	— in parallel	PBS	— People's Broadcasting Station
AA	— Arabic	PP	— Portuguese
ABC	— Australian Broadcasting Corporation	PSA	— public service announcement
AFN	— Armed Forces Network	QQ	— Quechua
AFRTS	— Armed Forces Radio TV Service	QRM	— man-made interference
AIR	— All India Radio	QRN	— noise (static)
Alt	— alternate	QSL	— verification
AM	— amplitude modulation, AM band	RCI	— Radio Canada International
Anmt(s)	— announcement(s)	Rdf.	— Radiodifusora, Radiodiffusion
Anncr	— announcer	REE	— Radio Exterior de Espana
AWR	— Adventist World RadioBC broadcast(er)	RFA	— Radio Free Asia
BSKSA	— Broadcasting Service of Kingdom of Saudi Arabia	RFE/RL	— Radio Free Europe/Radio liberty
CA	— Central America	RNZI	— Radio New Zealand International
CC	— Chinese	RR	— Russian
Co-chan	— co-channel (same frequency)	RR1	— Radio Republik Indonesia
comm1(s)	— commercial(s)	RTBF	— RTV Belge de la Communate Française
CP	— Bolivia, Bolivian	Relay	— transmitter site owned/operated by the broadcaster or privately operated for that broadcaster
CRI	— China Radio International	relay	— transmitter site rented or time exchanged.
DD	— Dutch	SA	— South America
DJ	— disc jockey	SEA	— Southeast Asia
DS	— domestic service	SCI	— Song of the Coconut Islands (transition melody used by Indonesian stations)
DW	— Deutsche Welle/Voice of Germany	s/off	— sign off
EE	— English	s/on	— sign on
ECNA	— East Coast of North America	SIBC	— Solomon Is. Broadcasting corp.
f/by	— followed by	sked	— schedule
FEBA	— Far East Broadcasting Association	SLBC	— Sri Lanka Broadcasting Corporation
FEBC	— Far East Broadcasting Company	SS	— Spanish
FF	— French	SSB	— single sideband
freq.	— frequency	SWL	— shortwave listener
GBC	— Ghana Broadcasting Corp	TC	— time check
GG	— German	TOH	— top of the hour
GMT	— Greenwich Mean Time (UTC)	TT	— Turkish
HH	— Hebrew, Hungarian, Hindi	TWR	— Trans World Radio
HOA	— Horn of Africa	Unid	— unidentified
ID	— station identification	USB	— upper sideband
I1	— Italian, Indonesian	UTC	— Coordinated Universal Time (as GMT)
Int/Intl	— international	UTE, ute	— utility station
Irr.	— irregular use	Vern	— vernacular (local) language
IRRS	— Italian Radio Relay Service	via	— same as "relay"
IS	— interval signal	VOA	— Voice of America
JJ	— Japanese	VOIRI	— Voice of Islamic Republic of Iran
KK	— Korean	WCNA	— West Coast of North America
		ZBC	— Zimbabwe Broadcasting Corporation

Shepparton at 2024. (Charlton, ON) 9590 at 1500. (Paradis, ME) 9710 heard at 1615. (Barton, AZ)

ABC Northern Territories Service, 2310 VL8A-Alice Springs at 1116 with news at 1130. (D'Angelo-FCDX-PA) 2485 VL8K-Katherine at 1238 with country singers. (Wood, TN) VL8T-Tennant Creek, 4910 at 1120 with sports coverage. (Brossell, WI) 1320 with country pgm. (Schieffelbein, MO) 2033. (Patterson, Philippines)

HCJB-Australia, 11750 at 0830. (Ng, Malaysia)

CVC-Australia 9500 via Tashkent in Hindi at 1340 and 15170 in Mandarin at 2204. (Ronda, OK) 15385 with EE lesson in Indonesian. (Ng, Malaysia) 13590 via Zambia with EE pgms. CVC ID at 1852 and "The Edge." (Ronda, OK) 2000 with ID, news. (MacKenzie, CA) 1700 to past 1800 with various EE pgms and "CVC Network News" at 1800. Also 13650 via Zambia at 1600-1657* with various EE shows and features, news headlines and address in Australia. (Alexander, PA)

AUSTRIA—Adventist World Radio, 6045 via Moosbrunn in FF at 0441 to 0445*. Also 0406 in AA to 0438*. (D'Angelo, PA) 11955 in an African language at 2010. (Brossell, WI) 13675 at 1605. (Maxant, WV)

BANGLADESH—Bangladesh Betar, 4750 with EE news and commentary at 1530. (Ng, Malaysia)

BELARUS—Radio Belarus, Minsk, 6090 at 2225 with chorals, EE talk, domestic pops. Poor under Anguilla. //7360 was weak but stronger on //7390. (Alexander, PA)

BELGIUM—RTBF, 9970-Wavre in FF at 2028. (Charlton, ON)

BONAIRE—Radio Nederland Relay, 6165 at 0059. (Parker, PA) 15315 at 2004, 15525 at 1914 and 17810 at 2015. (Charlton, ON) 15525 at 2022. (MacKenzie, CA)

BOSNIA—International Radio of Serbia, 6100-Bijeljina at 1948 ending EE with sports scores, ID with contract info. Opened in SS monitored at 2000. (D'Angelo/FCDX, PA)

BOTSWANA—VOA Botswana Relay, Moepeng Hill, 4930 with African news at 0411. (Brossell, WI) 12080 at 1959. (Charlton, ON) 2045. (Ronda, OK) 13710 at 2008. (MacKenzie, CA)

BOLIVIA—Radio Mosoj Chaski, Cochabamba, 3310 at 0130 with woman in SS hosting rustic vocals. (D'Angelo/FCDX, PA)

Radio Eco, Reyes, 4409.8 heard at 2243 in SS with rustic vocals. (D'Angelo/FCDX, PA)

Radio San Miguel, Riberalta, 4699.3 in SS at 1034 in SS with talk, TC and ID at 1039. (D'Angelo/FCDX, PA) 2250 in SS with man anncr. (Parker, PA) 2345 in with audio briefly. (Strawman, IA)

Radio Yura, Yura, 4716.6 at 0115 in SS at 0120. (Parker, PA) Local music to 0139 close. (Alexander, PA)

Radio Mallku, Uyuni, 4796 heard at 0935 with domestic folk music. (Alexander, PA)

BRAZIL—(All in PP—glf) Radio Marumby, Florianopolis, 9665 at 0920 with

ГОЛОС РОССИИ www.vor.ru		VOICE OF RUSSIA letters@vor.ru
QSL Verification Card		
Dear Mr Brossell,		
This verifies your report on the reception of the Voice of Russia's broadcast in Russian		
Date	October 21, 2007	
Time	1215 UTC	
Freq	9640 kHz - via Novosibirsk	
We invite you to continue listening. Please feel free to write again with comments or questions about our programming.		
		

Bob Brossell got this QSL from the Voice of Russia, complete with site indication.

talk, local folk music. Much weaker on //11750. (Alexander, PA)

Radio Guaiba, Puerto Alegre, 6000 at 2245 with talk, fair on //11784.6. (Alexander, PA)

Radii Imaculada Conceicao 4755, Campo Grande, with two men talking at 0208. (Ronda, OK) 0501 with M/W PP anncrs, jingle. (Parker, PA)

Radio Bandeirantes, Sao Paulo, 9645.2 at 0415 with talk, music, ID, more talk. (D'Angelo/FCDX, PA) 0915, //11925.2. (Alexander, PA)

Radio Nacional Amazonia, Brasilia, 6180 at 2240 with vocals and host. (Ronda, OK)

Radio Cultura, Araraquara, 3365.1 at 0248 with Brazilian pops hosted by a man. (D'Angelo/FCDX, PA)

Radio Brazil Central, Goiania, 4985 at 0020 with various songs. (Parker, PA) 0046 with various pops on through to 0250. (Wood, TN) 0310. (Ronda, OK)

Radio Aparecida, Aparecida, 5035 with M/W at 0542. (Parker, PA) Religious talks at 2324. (D'Angelo/FCDX, PA) 9630 at 1922 and 11855 at 2040. (Charlton, ON)

Radio Guaruja Paulista, Guaruja Paulista, 5045 with pops and male host at 2236. (D'Angelo/FCDX, PA)

Radio Novas de Paz, Curitiba, 6080 at 0850 with local music, religious talk and music at 0900. (Alexander, PA)

Radio Difusora, Londrina, 4815 at 1059 with anncr and religious pgm. (*Credit missing—glf*)

Radio Difusora Amazonas, Manaus, 4805 at 0033 with M/W anncrs. (Parker, PA) 0220 with songs and occasional anncr. (Ronda, OK) 0332 with man anncr. Gone at 0355 re-check. (D'Angelo, PA)

Radio Capixaba, Vitoria, 4935 with M anncr, W vocal at 0607. (Parker, PA)

Radio Novo Tempo, Campo Grande, 4895 with M talk, ID jingle, religious song at 0115. (Parker, PA)

Radio Educacao Rural, Tefe, 4925 at 0132 with slow selections. (Parker, PA)

Radio Difusora, Macapa, 4915 at 0425 with LA pop oldies. (Parker, PA)

Radio Difusora, Taubate, Taubate, 4925 with M anncr and music at 0010. (Parker, PA)

Radio Cultura Ondas Tropicais, Manaus, 4845.2 at 0130-0200* with possible soccer coverage, ID and info at 0151, anthem and off. (Parker, PA)

BULGARIA—Radio Bulgaria, 5900-Plovdiv in unid language at 0256. (Patterson, Philippines) 7200 in RR at 0412. (MacKenzie, CA) 9400 in FF at 1817. (Charlton, ON) 15700 with Bulgarian choral music heard at 1454. (Ronda, OK)

Radio Varna, 9900 in BB with U.S. oldies at 2154. (Brossell, WI)

BURKINA FASO—Radio Burkina, 5030 at 0558 with anthem, opening FF anmts, talk, FF ballads, Afropops also at 2315 to 0002*. (Alexander, PA) 2242 with hi-life overpowering China's CNR-1. (Strawman, IA) 2246 with Afropops and talk in FF. (Ronda, OK) 0000 close. (D'Angelo, PA)

CANADA—Radio Canada Intl., 7195 via South Korea in Mandarin at 2255. (Ronda, OK) 9515-Sackville with mailbag at 1537, 9610-Sackville with airport complaints at 1445, 9710 via Skelton in AA at 2014, 11865-Sackville in FF at 2042. (Charlton, ON) 9635 via Xi'an with news at 1500. (Schieffelbein, MO) 2115 in SS. (Mackenzie, CA)

CBC Northern Quebec Service, 9625-Sackville in Inuit at 1724. (Charlton, ON) 2330. (Maxant, WV)

CKZN, St. John's 6160 at 1105 with weather for the Maritimes. (Maxant, WV)

CKZU, Vancouver 6160 at 1256, mixing with VOA-Tinang in CC. (Strawman, IA)

CHU, Ottawa, 7335 with time ancmts at 0925. (Maxant, WV)

CHAD—Radio National Tchadienne, N'Djamena, 4905v at 2049 with lots of Afropops, woman anncr in FF. Very good. (Strawman, IA) 2103 but poor at tune in. (Ronda, OK) 2120 with FF talk, African hi-life, anthem at 2228. (Alexander, PA) 2226 to 2300* with FF man anncr. Off with presumed NA. Nearly armchair copy. (Wood, TN)

CHILE—CVC-La Voz, 17680-Santiago in SS at 1912. (Charlton, ON)

CHINA—China Radio Intl, 7110 in JJ at 2235, 7170 in CC at 2350, 9415 in VV at 2353, 9425 in Cantonese at 0002, 9435 in JJ at 2353, 9460 in Cantonese at 2345, 9470 in Mongolian

at 0010, 9590 in SS at 2315, 9695 in JJ at 2308, 9765 in Cambodian at 2330, 9785 in Cambodian at 2348, 9790 via Cuba at 0338, 9860 in Hakka at 0006, 11770 in VV at 0013, 11975 via Mali in CC at 2357, 13580 in CC at 0002 and 13650 in PP at 2355. (MacKenzie, CA) 6020 via Albania with "China Beat" pgm at 0130 and 15230 via Sackville at 1430. (Paradis, ME) 7110-Hohhot in RR at 2312, 7140-Shijiazhuang in RR at 1233, 7250-Urumqi in SS at 2348, 9415-Beijing in VV at 2335. (Ronda, OK) 13675 via Cuba in CC at 1540. (Maxant, WV) 7190-Xi'an in JJ at 1512. (Barton, AZ) 7285 via Albania at 2039. (D'Angelo, PA) 9550 with CC/VV lesson at 1350, 13600 with ID in Tamil at 0350 and 0355 close. Also 13780 in Nepali with language lesson at 0315, 15135 in Malay at 1015 and 17670 at 0900. (Ng, Malaysia) 11875-Urumqi in RR at 1639. (Brossell, WI) 17710-Beijing at 0400. (Patterson, Philippines) 9570 via Albania at 0114, 13630 via Mali at 2025, 13740 via Cuba at 1550 and 17735 via Sackville in CC at 1622. (Charlton, ON)

CPBS/CNR 5030-Beijing in Mandarin at 1355, 5995-Beijing in listed Mongolian at 2248 and 9420-Lingshi in Mandarin at 1339. (Ronda, OK) 7345-Beijing in CC at 1208. Also on 9845 at that time, but seemingly not in parallel. (Brossell, WI) 9675 in CC at 2304, 11710 in CC at 2212, 11750 in CC at 2353 and 13610 in CC at 2352. (MacKenzie, CA) 9810 China Business Radio at 1145. Covered by Thailand at 1230. (Alexander, PA)

Xizang PBS (Tibet), 4905 at 2220 with dramatic vocals. (D'Angelo/FCDX, PA) 6110 in Tibetan at 2350 in Asian/ME-like music. Wiped out by Albania heard at 2355. (Schiefelbein, MO)

Urumqi PBS, 4500 at 0010 in Mongolian with Chinese classical music. (Parker, PA) 5060 at 2355 with long talk in Mandarin. (Schiefelbein, MO) 7155 in Mandarin at 1141. (Ronda, OK)

Nei Menggu PBS, Hohhot, 9520 in Mandarin heard at 2332 but soon faded out. (Ronda, OK)

Gannan PBS, Hezhou, 3990 with CC talk at 1101. (Ng, Malaysia)

Qinghai PBS, Xining, 4220 at 2330 in listed Amdo/Tibetan. Poor but in the clear. (Parker, PA) 2335 with seeming phone calls and local music. (Schiefelbein, MO)

Yunnan PBS, Kunming, 6937 in CC with ID at 1120. (Ng, Malaysia)

Sichuan PBS, Chengdu, 7225 at 1256 in Mandarin with CC pop, ID, more songs. (Schiefelbein, MO)

Guangxi PBS, Nanning, 9820 with female vocal at 2320, //5050. Fair until blasted by Cuba monitored at 2230. (D'Angelo/FCDX, PA)

Voice of the Strait, Fuzhou, 4900 (Amoy Channel) poor in Amoy at 1251. (Ronda, OK) 7280 in CC at 1205. (Brossell, WI) 1225. (Ronda, OK)

Voice of Jinling, Nanjing, 5860 1205 in Mandarin with Western EZL and old pops. (Schiefelbein, MO)



Here's the foreign service staff of Radio Tirana. (Thanks Rich D'Angelo)

BPM time station, 5000 at 2320 audible under WWV/H with CW during WWV's silent period at 2329. (Schiefelbein, MO)

Firedrake Jammer, 7140 at 2237. (MacKenzie, CA) 7160 at 2249 and 6170 at 2223. (Parker, PA) 6145 attacking Radio Taiwan at 1600. (Barton, AZ) 9605 on BBC in JJ at 1312. (Brossell, WI) 9905 against RFA-Palau at 1615, also 9930 against KWHR and 11540 on RFA via Kuwait at 1623. (Brossell, WI)

COLOMBIA—Marfil Estereo, Puerto Lleras, 5910 at 0514 with LA vocals. (D'Angelo, PA) 0605. (MacKenzie, CA) 2357 with romantic ballads. (Ronda, OK)

CONGO—Radio Okapi, 9635 via South Africa at 0440 with ID and talk in FF. (Ronda, OK)

CROATIA—Hrvatski Radio/V of Croatia, 3985 at 0118 with EE features. ARO QRM. (D'Angelo, FCDX, PA) 0302 with ID, schedule and web info. (Parker, PA)

CUBA—Radio Havana Cuba, 6180 at 0440. (Maxant, WV) 9550 on oil production in LA at 0516. (Wood, TN) 11760 at 2035 and 15570 in SS at 1728. (Charlton, ON)

Radio Rebelde, 5025 in SS at 0557. (MacKenzie, CA) 0819 with SS phone-ins. (Maxant, WV)

CYPRUS—Cyprus Broadcasting Corp., 9760-Limassol at 2215 sign on with Greek music and talk, local folk music, radio drama, guitar. Off at 2244. //7210 was fair mixing with CRI and //6180 was weak under Brazil. Active on Fri., Sat., Sun. only. (Alexander, PA)

CZECH REPUBLIC—Radio Prague, 13580 at 1400. (Fraser, ME) 1441 in FF. (Charlton, ON) 15710 with news at 1000. (Ng, Malaysia)

DJIBOUTI—RT Djibouti, 4780 at 0315 with man in vernacular. (Parker, PA) 0343 in AA at near armchair quality. (Wood, TN) 2040 with HoA music, anthem and off at 2102. (Alexander, PA)

DOMINICAN REPUBLIC—Radio Amanecer, Santo Domingo, 6025 at 0307 with

sermons and songs including some familiar tunes in SS. (Schiefelbein, MO) 0425 with non-stop SS songs. (Ronda, OK) 2150 with SS religious music, 2200 ID and "La Voz de Espereanza" pgm at 2201. (Alexander, PA)

ECUADOR—HCJB, 6050 at 0331 reading listener mail in slow speed EE. Back to SS at 0340. (Wood, TN) 11690 in SS at 1355. (Barton, AZ) 12000 in SS at 2325, 12020 in PP at 2322 and 12040 in High German monitored at 2320. (MacKenzie, CA)

Radio Chaskis, Otavalo, 4909.2 at 1047 with man in SS, perhaps ending sign on and into some rustic tunes. (D'Angelo/FCDX, PA) Fair to poor at 1131. (Ronda, OK)

La Voz del Napo/Radio Maria, Tena, 3279.8 with long religious discussion in SS monitored at 0320. (Ronda, OK) 0605. (Parker, PA)

Radio El Buen Pastor, Saragura, 4815 at 0205 with SS and domestic music, SS annts, religious talk. Abrupt sign off at 0300. (Alexander, PA)

EGYPT—Egyptian Radio/Radio Cairo, 6290 in AA at 2248. (Ronda, OK) 12050 with Koran at 1644. (Brossell, WI)

ENGLAND—BBC, 3255 via South Africa at 0320. (Parker, PA) 5875 Cyprus Relay in Pashto to Afghanistan at 0105. (Parker, PA) 6005 at 0445. (Maxant, WV) 6065 Thailand Relay in Burmese at 0006 and 11955 Oman Relay at 0118. (Ng, Malaysia) 6110 Thailand Relay in Indonesian at 1313, 6135 Singapore Relay in VV at 1437, 7340 Thailand Relay at 2325 and 9410 Cyprus Relay at 1407. (Ng, Malaysia) 7245 Cyprus Relay in RR at 0407, 7340 at 2337, 9660 via

In Times Past...

Here's another nostalgia nugget from Times Past:

Radio Comercial, YSV, Santa Ana, El Salvador, 9576 in SS at 1324 on January 8 1975. (Dexter, WI)

Brandon (Australia) at 2205 and 17640 via Meyerton at 1605. (Ronda, OK) 7165 in unid Asian language at 0210 and 9740 Singapore Relay at 1207. (Brossell, WI) 7430 via Dushanbe at 1356. (Strawman, IA) 11755 via Meyerton heard at 1852. (Charlton, ON)

FEBA, 9550 via Rwanda at 1943. (Charlton, ON)

EQUATORIAL GUINEA—Radio Nacional, Bata, 5005 at 2245 with Afropops, SS talk. Off with anthem at 2256. (Alexander, PA) 0525 with up tempo tribal music, SS anncr. (Parker, PA) 0532 with vocals and M anncr in SS. (D'Angelo, PA)

Radio Africa, Bata, 15190 at 1145 as it was beginning to fade in. Never better than weak. Closed at 1329 with "Radio Africa Network" ID and mention of that and Pan American Broadcasting email and postal addresses. (Alexander, PA)

ERITREA—Voice of the Broad Masses, Asmara, 7100 at 0355 sign on. (Alexander, PA) 0431 with "Program 1" service with HoA music, woman in Tigrigna. M/W anncrs, music and news. Also 7175 "Program 2" at 0355 sign on with M/W t/by news in Tigrigna. (D'Angelo/FCDX, PA)

ETHIOPIA—Radio Ethiopia, Gedja, 7110 at 0423 with M/W in Amharic. (Ronda, OK) 9704.2 (t) at 1443 with a het beating against VOA in Cantonese. Could just make out weak music and possible comments by a woman. (Schiefelbein, MO) 2005 with local pops, talks in Amharic. Off with anthem at 2100. (Alexander, PA)

Radio Fana, Addis Ababa, 6100 at 0258 sign on with IS, opening anmts at 0300 with ID, HoA music. Only a threshold signal on //7210. (Alexander, PA) 0335 in Amharic with HoA vocals, ID heard at 0359. (D'Angelo/FCDX, PA)

FRANCE—Radio France Intl, 5925 in FF at 0632, 7325 in CC at 1030 and 13695 in FF at 2005. (Ng, Malaysia) 9790 in FF at 2026. (Charlton ON) 11615 at 1615 with African news items. (Fraser, ME) 1630. (Paradis, ME) 1644. Also 13695 in FF at 2004 and 15300 in FF at 1631. (Charlton, ON) 11995 in FF at 1705. (Brossell, WI) 15180 via Meyerton in FF at 1245. (Patterson, Philippines)

FRENCH GUIANA—RFO Guyane, 15795drn at 1405. This is a 150-kW test but it's unclear how long this will last. (Schiefelbein, MO)

GABON—RTV Gabonaise, 4777 heard at 0456 with O/C, orchestral anthem, ID by W and anmts in FF. (D'Angelo, PA) *0457. (Alexander, PA) 0505. (Strawman, IA) 0510 in FF. (Maxant, WV) 0511. (Parker, PA) 0541 in FF with CODAR QRM. (Parker, PA) 0549. (MacKenzie, CA)

Africa Number One, 9580 at 0529 with news in FF, also 15475 in FF at 1609. (Wood, TN) 1935. (Fraser, ME) 2051 and 15475 in FF at 1638. (Ronda, OK)

GERMANY—Deutsche Welle, 5905 in GG at 1130 and 5945 at 0445. (Maxant, WV) 9735 via Wooferton in FF at 1945, 11690 via Wooferton in AA at 1855, 11725 Rwanda



Zamira Keleci, director of Radio Tirana (left) and Drita Cico, head of the monitoring department.

Relay in GG at 1850, 11925 Sri Lanka Relay in GG at 1940, 12035 via Wooferton in FF at 1707, 12070 via Wooferton GG at 1926, 13790 Rwanda Relay in AA at 2005 and 15620 Portugal Relay in RR at 1545. (Charlton, ON) 9755 Rwanda Relay at 0506. (D'Angelo, PA) 11725 Rwanda Relay in GG at 1809. (Strawman, IA) 11865 Portugal Relay in GG at 2330. (Brossell, WI) 15410 Rwanda Relay in FF at 1218 and 21840 Sri Lanka Relay at 0932. (Patterson, Philippines) 11690 Rwanda Relay at 2210, 13790 Rwanda Relay in AA at 2012. (MacKenzie, CA) 17710 Sri Lanka Relay at 0930. (Ng, Malaysia)

GREECE—Voice of Greece, 9420 in Greek at 1948. (Charlton, ON)

RS Makedonias, 7450 with Greek vocals at 2218. (Ronda, OK)

GUAM—Adventist World Radio, 11935 in CC at 1030 and into Uigur. (Ng, Malaysia) 12120 in Mandarin at 2313. (MacKenzie, CA)

GUATEMALA—Radio Buenas Nuevas, San Sebastian, 4800 at 0125 in SS or local dialect with M/W talks. (Parker, PA)

Radio Cultural Coatan, San Sebastian, 4780 at 0035 with SS preaching and CODAR QRM. (Wood, TN) 0202 in SS with M anncr, vocal. Strong signal, louder than Ethel Merman trapped in a burning building. (Parker, PA)

Radio Verdad, Chimquimula, 4052.5 in SS heard at 0133 with M over flute. (Parker, PA) 0534 to 0600* with EE service, prayers and inspirational talks. (Wood, TN)

HONDURAS—Radio Luz y Vida, 3249v with SS preaching heard at 0243. (Wood, TN)

HUNGARY—Kossuth Radio, 3975 in HH at 0425 with news. (Parker, PA)

INDIA—All India Radio, 4840-Mumbai in Hindi at 1254, 6165-Delhi in presumed Sindhi at 1330, 7410-Delhi in listed Dari at

1411 (Tnx: Jerry Strawman), 9425-Bangaluru in EE at 2235, 9820 in Sinhala at 1348 and 9870-Bangaluru in Hindi at 1312. (Ronda, OK) 4840-Mumbai at 2355 open and into Hindi vocals, 4860-Delhi at 0202 in Hindi, 5010-Thiruvananthapuram in listed Tamil with Hindi vocals at 0052, 5040-Jeypore in Hindi at 0117 and 9870-Bangaluru with Vividh Bharati service at 1404. (D'Angelo/FCDX, PA) 4800-Hyderabad in unid local language at 0110, 4840 at 0030 and 11620-Bangaluru in EE at 2215. (Parker, PA) 4940-Guwahati with traditional songs at 1150, 9690-Bangaluru at 1340, 9705-Panaji (Goa) at 0001, 13635-Aligarh in Thai at 1115 and 17510 at 0901 in Indonesian. (Ng, Malaysia) 6165-Delji/Khampur in Sindi to Pakistan at 1319, 7410-Delhi in Dari at 1413 and 9870-Bangaluru in Hindi at 1330. (Strawman, IA) 9445-Bangaluru in EE at 1825 and 11620-Aligarh in EE at 1927. (Charlton, ON) 9870-Bangaluru at 1545, 11585 in an Asian language at 1240 and 11620 with Indian ballads at 1937. (Brossell, WI)

Radio Kashmir, Jammu, 4827.9 at 0313 with local festive music and excited W anncr in vernacular. (Parker, PA)

INDONESIA—Radio Republik Indonesia, 3325-Palangkaraya at 1055 with Muslim prayers. (Ng, Malaysia) 3987-Manokwari (p) very weak in II at 1332, 4605-Serui with pops through TOH at 1400 and 4790-FakFak in II at 1345. (Strawman, IA) 3995-Kendari (p) at 2136 in II talk and vocal. Also 4750-Makassar at 2135 with M/W in II, woman hosting vocals. Into Jakarta news at 2200. (D'Angelo/FCDX, PA) 4605-Serui in II with light pops at 1409 and 4750-Makassar in II at 1346. (Ronda, OK) 9680-Cimanggis in unid language at 2310. (MacKenzie, CA)

Voice of Indonesia, 11785 in FF at 1952. (MacKenzie, CA)

IRAN—Voice of the Islamic Republic of Iran, 3945-Kalamabad, at 0335 with M in vernacular and Koran. (Parker, PA) 6010 opening with anthem at 1930. Better on //7320 but just threshold level on 11695. (Alexander, PA)

ISRAEL—Kol Israel, 7545 in HH at 0353. (MacKenzie, CA) 0430 to North America. (Parker, PA) 0430. (Wood, TN) 2240 in HH. (Ronda, OK)

JAPAN—Radio Japan/NHK, 6120 at 1210. (Maxant, WV) (*This is via Canada—gld*) 7115 via Dhabbaya (UAE) in JJ at 2217. (Strawman, IA) 2235 in JJ. (Ronda, OK) 2240. (Schiefelbein, MO) 9825 to 1440 close. Not listed. (Alexander, PA) 11665 in JJ at 2203, 11910 in JJ at 2245 and 13650 in Burmese at 2310. (Strawman, IA) 11815 at 0910. (Ng, Malaysia) 13630 via Rampisham in JJ at 1450. (Charlton, ON) 13650 in CC at 2250. (Barton, AZ) 15590-Yamata at 0909. (Patterson, Philippines)

Radio Nikkei, 3925 in JJ at 0937. (Alexander, PA) 6055 in JJ at 1325. (Strawman, IA) 9595 in JJ at 1115. (Ronda, OK) 0549 in JJ. (Patterson, Philippines) 9760 in JJ monitored at 0345. (MacKenzie, CA) 0600. (MacKenzie, CA)

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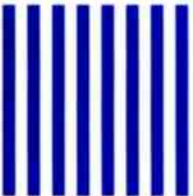
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T8BZ Palau

Thank-you for your interest in our broadcast and we invite you to tune in again.

Ben Chan, T88BC, Engineering Manager
 High Adventure Ministries, Palau, T8BZ
 P.O. Box 66, Koror, 96940, Republic of Palau

CONFIRMATION

"The earth will be filled with the knowledge of the Lord's glory." (Hab. 2.14)

T8BZ, Palau Island, is part of the large, California-based High Adventure network (Thanks Rich D'Angelo)

JORDAN—Radio Jordan, 9830 in AA at 1945 and 11690 in EE at 1540. (Charlton, ON) 1510 with Western pops. (Fraser, ME) 1600 with local FM pops relay. (Paradis, ME) 1625. (Brossell, WI)

KUWAIT—Radio Kuwait, 9855 in AA at 1920. (Brossell, WI) 1947 in AA. (Charlton, ON) 11990 in AA at 1925. (Maxant, WV) 2044 with EE pop vocals and regional news. (Ronda, OK) 15110 in EE at 0635. Also 17885 with Filipino service at 1157 and AA pgm at 1200. (Ng, Malaysia) 15505 in AA at 1226. (Patterson, Philippines)

LAOS—Lao National Radio, 6130 at 1125 with nice local vocals and woman host. Then their familiar seven gongs heard at 1200. (Alexander, PA)

LATVIA—"Latvia Today," 9290-Ulbroka, 1146 with light instl music, features on local history. Radio SWH address for reports. (Alexander, PA) 1400 IDing as a pgm of Radio SWH. (Schiefelbein, MO)

LIBERIA—ELWA, 4760 at 0630 with music, ID at 0657, religious talk. (Alexander, PA) 2137 with EZL religious vocals. (D'Angelo/FCDX, PA) 2202 with preacher and gospel songs to 2303. (Schiefelbein, MO)

LIBYA—Radio Jamahiriyah/Voice of Africa, 17725-Sabrata at 1435 in EE on solving the "problem of democracy." (Fraser, ME) 1454 in EE but with heavy QRM. (Charlton, ON) 1553 with news and African music. (D'Angelo, PA)

MADAGASCAR—RTV Malagasy, *0248 with lively group vocals and choral anthem, opening ID at 0301 and mix of brief music bits and M/W talk. (D'Angelo/FCDX, PA) 0330 with local religious music and vernacular talk. (Alexander, PA)

MALAYSIA—RT Malaysia, 6050-Sibu relaying the Asyik FM pgm in Malay at 1103. (Ng, Malaysia)

MALI—RTV Malienne, 5995 at 2315 with Afropops. FF talks and off with anthem at 0001. (Alexander, PA) 11960 at 1740 with man anner and local vocals. Closed at 1800. (D'Angelo, PA)

MAURITANIA—RTV Mauritanie, 4845 with Koran at 0050. (Parker, PA) With presumed news in AA at 2302. (Ronda, OK)

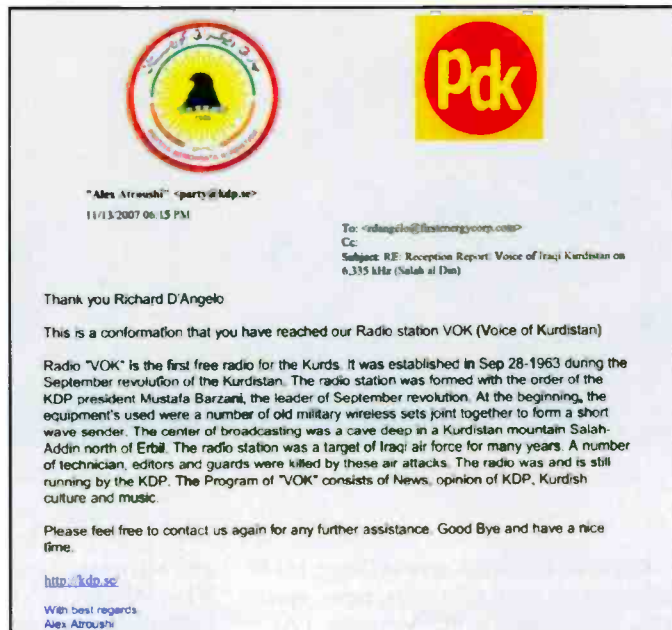
Radio Medi Un, 9575 at 0524 with EE news and FF ID. (Wood, TN)

MEXICO—XEYU/Radio Universidad, Mexico City, 9600v at 0539 with pgm of classical music and Italian opera, ID at TOH and into classical guitar. (Wood, TN) 1353 with classical piano. (Ronda, OK) 2256 with opera selections and SS talk. (Alexander, PA) 2347 with classical music, W SS anner. (D'Angelo, PA)

Radio Educacion, Mexico City, 6185 at 0001 sign on with SS ID and frequency info. (Ronda, OK) 0622 in SS with vocals. (MacKenzie, CA) 0720. (Maxant, WV) 2245. (Barton, AZ)

XEXQ, Radio Universidad, San Luis Potosi, 6045 (t) at 0045 with classical music until lost in noise around 2345, then in again at 0045 with classical music and SS anmts. (Alexander, PA) 1434 poor-fair with classical orchestra. (Ronda, OK) 1442 with classical music. Very poor signal. (Strawman, IA)

MONACO—Trans World Radio, 9800 at 0758 with IS, ID as "TWR-UK" and into EE gospel pgm. (Schiefelbein, MO) 0809 with O/C, IS at 0812 and EE pgm open at 0815. (D'Angelo, PA)



The Voice of Kurdistan's reply to Rich D'Angelo includes some station history.

MOROCCO—RT Marocaine, 15345 in AA at 1530. (Paradis, ME) 1822 in AA. (Charlton, ON)

MYANMAR—5040.6 at 1126 with haunting vocal/flute selections hosted by a woman and Burmese talks. (D'Angelo/FCDX, PA)

NETHERLANDS—Radio Nederland, 3955 in DD at 0615. (Parker, PA) 5910 via Petropavlovsk in DD at 1320. (Strawman, IA) 6120 via Singapore in Indonesian at 2310, //7380. 9895. Also 9345 via Uzbekistan heard at 1403. (Schiefelbein, MO) 7305 via Moldova in DD at 0617, 11655 via Madagascar Relay at 2020. (MacKenzie, CA) 7120 heard at 2015. (D'Angelo/FCDX, PA) 7380 Madagascar Relay in Indonesian at 2320 and 9345 via Russia at 1520. (Ng, Malaysia) 11655 Madagascar Relay in DD at 2326, 11805 Madagascar Relay at 2052, 11805 via South Africa at 1950. (Charlton, ON)

NEW ZEALAND—Radio New Zealand Intl, 5950 with ID and news at 1400. (Ronda, OK) 6095 monitored at 1240. (Brossell, WI) 15720 at 0148. (Patterson, Philippines)

NIGER—La Voix du Sahel (p) 9705 very poor in seeming extended commentary to 2149 when lost in the noise. (Strawman, IA)

NIGERIA—Voice of Nigeria, 7255-Ikorodu, in Hausa at 2221. (Ronda, OK) 9690-Ikorodu at 0757 sign on. (Alexander, PA) 0815. (Maxant, WV) 2322, also 15120 at 1924. (Charlton, ON) 15120-Ikorodu monitored at 0025. (Parker, PA) 1835. (Charlton, ON) 1900. (Paradis, ME)

7275-Abuja, weak with news after Tunisia leaves at 0630. (Alexander, PA)

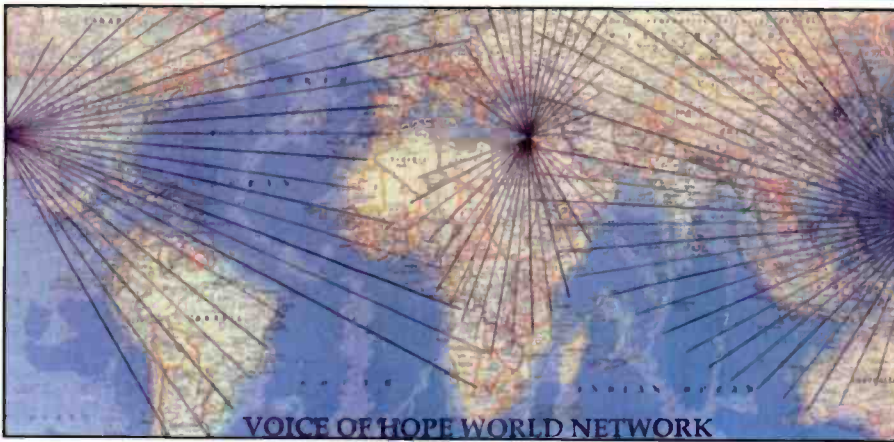
Radio Nigeria, Kaduna, 4770 at 0445 in vernacular. (Parker, PA)

NORTHERN MARIANAS—KFBS, Saipan, 15580 in Indonesian at 1017. (Ng, Malaysia)

NORTH KOREA—Voice of Korea, 6285 with classical music and FF anmts at 1150. (Ronda, OK) 6303 (t) at 1125 but very weak in possible KK to past 1200. Drifting up from 6285. Also 9335 at 1308 with EE news (Alexander, PA) 7180 in Mandarin at 2255. (Ronda, OK) 9335 at 0108. (Patterson, Philippines). 9650 in JJ at 2342. (MacKenzie, CA) 11710 at 1015. (Maxant, WV) 1615 in FF with ID at 1630. (Brossell, WI) 12015-Kujang in RR at 1717. (Charlton, ON) 15180 in SS at 0208. (Ng, Malaysia)

Korean Central Broadcasting Station (KCBS), 2850 at 1227 with classical group vocals hosted by man in KK. (D'Angelo/FCDX, PA) 1304 with possible news. (Strawman, IA)

Pyeongyang Broadcasting Station in KK at 1217. (D'Angelo/FCDX, PA)



High Adventure Ministries' QSL shows its transmitter sites. (Thanks Rich D'Angelo)

OMAN—Radio Sultanate of Oman, 15140 monitored at 1410 with pops, news, sports news, achievements pgm. (Alexander, PA)

OPPOSITION—Suab Xaa Moo Zoo (to Laos) 11655 via Northern Marianas in Hmong with talks at 2337. (D'Angelo/FCDX, PA)

Shiokaze (to North Korea) 5985 monitored at 1408 but in Mandarin. (Schieffelbein, MO) Radio Liberty. 11530 in an Asian language at 1208. (Brossell, WI) 15530 in Turkmen at 0221. (Ng, Malaysia)

Echo of Hope (to North Korea), 3985 in KK at 1226. (Ronda, OK) 6348 in KK with heavy jamming. (Strawman, IA)

Radio Voice of the People (to Zimbabwe), 11610 at 1700 opening with vernacular talk, EE talks. Thick accents made it difficult to understand. (Alexander, PA) 1726 with news in local language and EE heard at 1750. (D'Angelo, PA)

Voice of Iraqi Kurdistan, 6335 heard at 0402 in Kurdish over music. (D'Angelo/FCDX, PA)

Radio Free Afghanistan, 9990 via Sri Lanka in Pashto at 1326. (Ng, Malaysia) 19010 via Kuwait in Pashto at 0650. (Patterson, Philippines)

Radio Free Asia, 11605 via Taiwan in VV at 2337. 11775 via Northern Marianas in Cantonese at 2228 and 11850 in Khmer at 2233. (MacKenzie, CA) 11750 via Sri Lanka at 1625 in an Asian language. (Brossell, WI) 11945 at 1830 but quickly covered by the Firedrake jammer. (Paradis, ME) 21695 via UAE in Tibetan at 0637. (Patterson, Philippines)

Ming Hui Radio (p) (to China) 6030 via Taiwan in Mandarin at 1302. Firedrake jamming. (Strawman, IA)

Radio Farda (to Iran) 5860 in Farsi at 0057. (Parker, PA) 15410 via Wooferton at 1450. "Far-DAH" is they way they pronounce it. (Strawman, IA) 1635 in Farsi. (Charlton, ON) 17675 via Sri Lanka in Farsi at 0726. 21715 via Sri Lanka in Farsi heard at 1135. (Patterson, Philippines)

Denge Mesopotamia (to Iraq) 7540 with non-stop Kurdish music at 1845. (D'Angelo/FCDX, PA) 11530 via Moldova

with ME music monitored at 1317. (Brossell, WI) 1345 after WYFR left. (Strawman, IA) 1355 with phone conversation in Kurdish. (Ronda, OK)

Radio Marti, (to Cuba) 6030 with SS news at 0715. (Maxant, WV) 11930-Greenville in SS at 1700. (Charlton, ON)

Radio Solh (to Afghanistan) 15265 via Rampisham in Pashto at 1240 with lively music. (Ronda, OK)

Southern Sudan Interactive Radio Instruction, 15675 via Meyerton at *1400 with EE lesson. Tues-Thurs-Sat only and not //15390 which, was airing a different EE lesson. (Alexander, PA)

PAKISTAN—Radio Pakistan, 4790-Rawalpindi presumed in listed Urdu at 0317 with talk by man. No trace of Radio Vision. (Parker, PA) 15100-Islamabad in Urdu at 0832. (Patterson, Philippines)

PALAU—15725, T8BZ/Gospel Radio in EE with religious talk at 1000. (Ng, Malaysia)

PAPUA NEW GUINEA—Radio East Sepik, Wewak (New Guinea) 3335 at 1215 with EE anncr hosting island music. (D'Angelo, /FCDX, PA) 1309 with pops and semi-classical running past listed 1300* and then suddenly went off at 1309. (Strawman, IA)

Radio Northern, Popondetta (New Guinea) 3345 at 1103 with mix of EE and Pidgin and mainly island music. ID and close-

down anmts at 1157 and off at 1206. (D'Angelo/FCDX, PA)

Radii New Ireland, Kavieng, (New Ireland) 3905 monitored at 1137 with island vocals and some country. (D'Angelo/FCDX, PA)

PERU—La Reina de la Selva, Bolivar, 5486.7 at 1044 with man in SS, ID, TC monitored at 1045, rustic vocal. (D'Angelo/FCDX, PA)

Radio del Pacifico, 4974.8 at 0018 with SS preacher. (D'Angelo/FCDX, PA)

La Voz de la Selva, Iquitos, 4824v at 0217 with W in SS and slow religious music. (Parker, PA) 2357 with talks and songs in SS. (Brossell, WI)

Radio Vision, Chiclayo, 4790.2 at 0321 with a loud preacher. (Parker, PA)

Radio Frecuencia, San Ignacio, 5700 with M/W in SS and brief music bits at 0047. (Parker, PA)

Radio Huanta 2000, Ayacucho, 4746v at 2253 with excited SS talker. (Parker, PA) 2345 at threshold level and quickly faded. (Strawman, IA) 1045 with OA vocal, excited SS anncr. (Ronda, OK)

Frecuencia VH, Celendin, 4486v at 0256 with SS anncr. Off heard at 0307. (Parker, PA)

Radio Maranon, Jaen, 4835 at 0145 with boisterous SS anncr, lively vocal and a traditional flute number. (Parker, PA)

PHILIPPINES—Radio Veritas Asia, 9505 in II with EE comments. ID and off at 2329. Also 9645 in Kachin with EE ID at 2330. (Mackenzie CA) 9615 in Mandarin at 1110. (Ronda, OK) 15530 in VV at 0220. (Ng, Malaysia)

Far East Broadcasting Co., 9430-Bocaué at 1120 with Mandarin/EE lesson. (Ronda, OK) 9435 in Indonesian at 2310. (Strawman, IA) 9930 in an Asian language with religious songs at 1238. (Brossell, WI) 15325 at 1000 with "Leading the Way" pgm. (Ng, Malaysia) 15330-Bocaué in unid language at 1257. (Patterson, Philippines)

Radio Pilipinas, 12025 with EE news at 0200. (Ng, Malaysia) 0233. (Patterson, Philippines)

PIRATES—WBNY, 6925u monitored at 2203 with Commander Bunny and speech about "monkey rights." (D'Angelo/FCDX, PA) 2203 and a repeat bcst at *1744 on the

This Month's Winner

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

Our book winner this month is **Joe Wood** in Greenback, Tennessee. Joe received a copy of the 2008 edition of the venerable *World Radio TV Handbook* courtesy of Billboard Publications. Just in case you need the reminder, this book is essential to have at the ready whenever you turn your receiver on. This year's big edition is available at all large bookstores as well as at your favorite radio hobby supplier.

Commander Bunny and Kracker presidential ticket and instructions for monkeys in the audience. (Zeller, OH)

The Crystal Ship, 6700 at 1532 with classic pop and rock. (Schiefelbein, MO) 0110 and 1725 with anti-war songs and various pops. (Alexander, PA)

Northwoods Radio, 6925u at 1552 and 1741. What had been IDing as WEMR suddenly began IDing as Northwoods Radio, "broadcasting from the Great Lakes" and giving email as "northwoodsradio@yahoo.com." (Zeller, OH)

WTCR 3276u at 0149 with oldies jazz "Twentieth Century Radio" slogan. Also 3420u at 0403 with rock and 6850.9u at 1840 with the "Ultra Man Show" playing rock hosted by a young-sounding DJ. (Alexander, PA) 6925u at 0100, 0144 and 0220 with some big band tunes, some old pops. (Hassig, IL) 0120 with their usual slogan, but not the classic rock they usually air. (Zeller, OH)

Wolverine Radio, (t) 6925u 0251 with rock from the 1980s. (Wood, TN) 2114 with cuts from Bill Cosby comedy albums. (D'Angelo, PA)

WAIR, 6925 at 1703 and 1944 with new age folk songs. Used the slogan "All India Radio." (Zeller, OH)

WKNR Relay, 6925 at 1633 with new age or Celtic folk. Gave the now defunct Elkhorn address. (Zeller, OH)

Undercover Radio/Laser Hot Hits, 3420 at 0237 with Dr. Benway noting the LHH relay and mentioning the Merlin mail drop, then some dance club things, ads for t-shirts and a radio-related magazine. (Wood, TN)

Random Radio, 6925u at 0057 opening in EE, GG and some other language. Jazz music but no address announced. Also noted at 0206. (Zeller, OH)

Grasscutter/Sunshine Radio, 6925 joint broadcast at 1659 with Beatles, etc. and IDs by both Grasscutter and Sunshine. grasscut-terradio@yahoo.com for reports. (Zeller, OH)

Channel Z Radio, 6925u from 2123 sign on with their third anniversary broadcast. Rock items, said to be in the old free-form format some FM stations used to run. Blue Ridge Summit address for reports. (Zeller, OH)

Captain Morgan, 6925u heard at 2230 with X-rated comedy over what sounded like canned laughter, X-rated spoofs of 70s tunes. (Hassig, IL)

WEMR, 6925u at 1725 with clear IDs, slow rock. (Zeller, OH)

Radio Appalachia, 6925 at 0033 with old C/W songs, Three Stooges saying hello and Moe saying, "Quiet numbskulls, I'm broadcastin'." (Hassig, IL)

Weekend Music Radio (Scotland) 6400 at 0507 with 70s pops, IDs. Poor to fair. (Alexander, PA)

POLAND—Polish Radio External Service, 9450 via Wertachtal at 1301 with woman and news from Poland, ID at 1315 and off at 1359. (D'Angelo, PA) 11940 via French Guiana in GG at 2044. (Charlton, ON)

PORTUGAL—RDP Intl., 15560 in PP at 1915. (Charlton, ON)

PRIDNESTROVIE (Moldova)—Radio PMR, 6240 monitored at 2300 sign on with EE opening. PMR ID and news about Moldova-Russia politics, into FF at 2315, GG at 2330 and EE again at 0000. Also 7370 at 1500, M-F only. (Alexander, PA) 6240 from 2255 open with carrier and tones to 2300 when into EE. Also 7370 from carrier on at 1856, clock ticking, instl music and EE opening. (D'Angelo, PA)

ROMANIA—Radio Romania Intl., 11935 in SS at 0020, //11960. (MacKenzie, CA) 11940 in GG at 2043. (Chandler, ON)

RUSSIA—Voice of Russia, 6155 with Jazz pgm at 0348. (Wood, TN) 0450 on Russian composers. (Maxant, WV) 6170-Khabarovsk-Komsomosk in RR at 1305, 7155-Khabarovsk with military chorus at 1353. PWBR has the former site: the Aoki list shows the latter. Also 9800-Irkutsk in RR at 1332. (Ronda, OK) 6240 at 0425. (MacKenzie, CA) 7295-Novosibirsk in Mandarin at 1329 and 9800-Irkutsk in RR at 1335. (Strawman, IA) 11985 in unid language at 1647. (Charlton, ON) 12030-Moscow in AA at 1701, 12035-St. Petersburg in AA at 1643 and 12055-Chita in an Asian language at 1224. (Brossell, WI) 13580 with Russian By Radio at 0632. 15520 in RR at 0201, 17695 at 0445 with "Message From Moscow." (Ng, Malaysia) and 17805-Irkutsk at 0800. (Patterson, Philippines)

Radio Rossii, 6075-Petropavlovsk, 1303 in RR. (Strawman, IA) In unid Asian language at 1315. (Barton, AZ) 7200-Yakutsk in RR at 1255. (Brossell, WI) 2342. (Ronda, OK)

RWANDA—Radio Rwanda 6055, 2040 to 2101 close in FF and vernacular with domestic music. (Alexander, PA) 2043 with pop vocal, FF anncr, phone-ins. Closed at 2100. (D'Angelo/FCDX, PA)

SAO TOME—VOA Relay, Pinheira, 4960 at 0358 with IS and into news. (Wood, TN) 0400 sign on and news. (Ronda, OK) 0411. (Brossell, WI) 0425 in FF. (Parker, PA) 0432 with news. (D'Angelo, PA) 6080 at 0626 and 13735 in FF at 1936. (MacKenzie, CA) 9860 in Tingara at 1910. (Patterson, Philippines)

SAUDI ARABIA—BSKSA, 9870 in AA at 1951 and 11735 in AA at 1958. (Charlton, ON) 9870 in AA at 1928 and 15205 in AA at 1714. (Brossell, WI) 11820 in AA at 1835 and 11915 in AA at 1949. (Charlton, ON) 15250 answering mail in EE at 1105. (Ng, Malaysia) 15435 with Holy Koran at 1500. (Paradis, ME) 17785 in FF at 0810. (Patterson, Philippines)

SERBIA—Intl. Radio of Serbia, 7240-Bijeljina at 2110 in GG. Into FF at 2130. (D'Angelo/FCDX, PA)

SEYCHELLES—BBC Relay, 21470 at 1000. (Ng, Malaysia)

SIERRA LEONE—Cotton Tree News, 9525 via Ascension heard at 0730 to 0800* with ID and previews over drums, headlines in EE, several IDs. (D'Angelo, PA)

SINGAPORE—Media Corp. Radio, 6150 at 0920. (Maxant, WV)

Radio Singapore Intl., 6120 in Malay at 1105. (Barton, AZ) 1140 in Malay. (Ng, Malaysia) 7170 in listed Tamil at 1308. (Ronda, OK) 7235 in unid language at 1229. (Brossell, WI)

SOUTH AFRICA—Channel Africa, 3345 at 0340 with discussion. (Parker, PA) 0415 with US pops. (Parker, PA) 5960 at 0315 and 17770 at 1510. (Maxant, WV) 7390 in FF at 0447 and 17770 at 1550 with financial pgm to 1600*. (Wood, TN) 7390 at 0357. Into FF at 0400. (MacKenzie, CA) 15235 at 1728 and 17770 at 1549. (Charlton, ON)

Radio Sondergrense, 3320 in Afrikaans at 0329. (Parker, PA) 0332. (Strawman, IA)

SOUTH KOREA—KBS World Radio, 9650 via Sackville at 1810 on airline service. (Maxant, WV) 9770 with EE open and into CC at 1130. Also 9805 in CC at 2310. (Ng, Malaysia) 2324 in CC. (MacKenzie, CA)

SPAIN—Radio Exterior de Espana, 3350 Costa Rica relay in SS at 0402. (D'Angelo, PA) 0542 in SS. Also 5965 Costa Rica Relay in SS at 0610 and 11620 in SS at 2155. (MacKenzie, CA) 11620 in SS at 2031, 12035 in AA at 2047 and 17595 in SS at 1435, all from the Nobeljas site. 17850 Costa Rica Relay in SS at 2018. (Charlton, ON) 21610 in SS at 1545. (Wood, TN)

Onda Cero Radio (p), 4396.3u at 0305. An AFRTS-type broadcast for Spanish troops abroad, all SS with various programming items. (Parker, PA)

SURINAME—Radio Apinte, 4990 at 1014 with man in DD with vocals, ID at 1019. (D'Angelo, PA)

SWAZILAND—Trans World Radio, 3240 at 0305 in listed Shona. (Strawman, IA) 0325 with religious talk in listed Nda. (Ronda, OK) 4775 in African language at 0343 and 9745 at 1900. (Brossell, WI) 4775 in GG at 0358. (Wood, TN) 6135 at 2006 with IS, ID and off at 2007. (D'Angelo/FCDX, PA)

SWEDEN—Radio Sweden Intl, 6010 via Sackville at 0305 on the Swedish monarchy. (Maxant, WV) 7120 via Madagascar at 2150. Off at 2159. (Ronda, OK) 12075 in RR at 1320. (Brossell, WI)

TAIWAN—Radio Taiwan Intl, 5950 via Florida in CC at 2332 and 11665 via Florida in FF at 2037. Also 11850 via France at 1714. (Charlton, ON) 9355 via WYFR at 2235. (Fraser, ME) 11605 in JJ at 0800. (Ng, Malaysia) 11850 via France with news at 1700. (Paradis, ME)

Sound of Hope, 11765 in CC at 1636. (Brossell, WI)

TAJIKISTAN—Tajik Radio, Yangiyul, 4635 in Tajik at 0301 with news, ID jingle, flute music bridges. (Parker, PA)

TANZANIA—Radio Tanzania-Zanzibar, 11735 at 1758 with Swahili talk, local pops and more Swahili. The scheduled EE news-cast wasn't heard. (Alexander, PA) 1800-1817 carrying EE news from local Spice FM. (D'Angelo, PA) 1900 in Swahili.

(Charlton, ON) 2018 with AA music. (Ronda, OK)

THAILAND—Radio Thailand, 6040 in Lao with news at 1132. (Ng, Malaysia) 7160 with JJ service at 1303. Also RT World Service, 9535 at 2037 with EE to Europe. (D'Angelo, FCDX, PA) 15275 Udon Thani in EE at 0206. (Patterson, Philippines)

TUNISIA—RT Tunisienne, 9720 in AA at 0438, closing at 0500. (Wood, TN) 1955 in AA. Also 12005 in AA heard at 1945. (Charlton, ON)

TURKEY—Voice of Turkey, 6020-Emirler at 0405. (Wood, TN) 0430 with listener mail. (Maxant, WV) 6055 at 1930 with ID, frequency info, news. (Paradis, ME) 1848. (D'Angelo, PA) 9785 at 1915. (Brossell, WI) 12035 at 1345. (Fraser, ME) 15160-Emirler in Azen at 0840. (Patterson, Philippines)

UGANDA—Radio Uganda, 4976 at 0215 in EE and vernacular, phone-ins over rap/pop background, several different canned IDs and jingles. (Parker, PA) 0306 with woman hosting pops. (D'Angelo, PA) 0345 with variety of Afropops, EE news at 0404. (Alexander, PA) 0416 with a discussion. Also noted at 2233. (Ronda, OK) 2204 with headlines. (Strawman, IA)

UKRAINE—Radio Ukraine Intl, 5830 at 0045 with woman anncr in GG. (*missing credit—gld*)

UNITED STATES—Voice of America, 6140 Philippines Relay at 1205. 9845 Marianas Relay in CC at 1235 and 9735 via Rwanda at 1918. (Charlton, ON) 7190 Sri Lanka Relay with Radio Deewa service in Pashto at 1317, 7120 Philippines Relay at *2200. (Ronda, OK) 7205 Thailand Relay at 2326. 7220 Morocco Relay, in RR at 0408, 9390 VOA/Radio Deewa in Pashto at 1329,

9875 Marianas Relay in CC at 2300. 11725 Philippines Relay at 2215 also 9490 at 2133. (MacKenzie, CA) 9705 Marianas Relay in Cantonese at 1402, 15130 Morocco Relay in RR at 1420. (Patterson, Philippines)

Adventist World Radio, 9655 via South Africa at 2012 and 9770 via Austria in Dyula at 2020. (Charlton, ON) 11845 via South Africa in FF at 2011. (MacKenzie, CA) 12120 in CC at *1200. Also 15260 via Guam at 1130. (Ng, Malaysia)

WYFR, Okeechobee, 3955 via England in GG at 0502. (Parker, PA) 5970 via Wertachtal in AA at 2106. (Patterson, Philippines) 6045 via Germany at 0500. (D'Angelo, PA) 6915-Florida, new frequency at 0705. (Alexander, PA) 9615 in unid language at 1210. 11610 via Germany in FF at 1940 and 12100 via Armavir in listed Urdu at 1650. (Brossell, WI) 15260 via South Africa in PP at 1615. (Ronda, OK) 18890-Okeechobee at 1700. (Fraser, ME)

University Network, 7375 via Costa Rica with Mrs. Scott preaching at 0442. (Wood, TN) 9725 via Costa Rica at 2016 with the late Dr. Scott. (Charlton, ON)

WBCQ, Monticello, 7415 at 1905. (Maxant, WV) 2300 with Bluegrass State of Mind. (Wood, TN)

AFN/AFRTS, (Parker, PA) 1010 with news. (Maxant, WV) 6350u Pearl Harbor with phone-ins at 1150. (Ronda, OK) 1152 about PDAs. (Brossell, WI) 1311 with news discussion. (Strawman, IA) 7811u Key West with sports talk show. (Wood, TN)

WHRI, 7315, Cypress Creek, with Bible discussion at 0940. (Maxant, WV) 11765 at 2220. (MacKenzie, CA)

VATICAN—Radio Vaticana, 6040 at 0255. (Maxant, WV) 9645 in GG at 1510, 9755 in SS at 1947 and 11625 in Amharic at

1647. (Charlton, ON) 9900 in CC at 1244 and 11740 with ID and into Italian at 1200. (Brossell, WI) 11625 at 1733. (Charlton, ON) 12070 via Novosibirsk in Hindi at 0240. (Patterson, Philippines)

VIETNAM—Voice of Vietnam, 6020-Da Lai with ethnic songs at 1053. 9875-Me Tri with local songs at 1053. 9840 at 2325 and 9875 in VV at 0746. (Ng, Malaysia) 7210-Son Tay in VV at 0050. (Patterson, Philippines) 9840-Son Tay in EE 2340. (D'Angelo/FCDX, PA)

VENEZUELA—Radio Nacional, 11670 via Cuba in SS at 2206 and 17705 via Cuba at 2030. (MacKenzie, CA) 15250 via Cuba heard at 2303 in EE/SS summarizing upcoming broadcast. (Schiefelbein, MO) 17705 in SS at 2014. (Charlton, ON)

YVTO, Caracas, 5000 (t) with audible tones and weak, possibly SS voice anmts at 0505. (Schiefelbein, MO) with time checks and "Observatorio Naval Cagigal" ID at 0525. (Parker, PA)

YEMEN—Republic of Yemen Radio, 9780v in AA at 2125 under VOA via Sao Tome. (Schiefelbein, MO)

ZAMBIA—Radio Christian Voice, 4965-Lusaka, 0154 with hymns. (Brossell, WI) 0213 with M/W anncrs and inspirational music. (Parker, PA) 0316 with various religious items. Closed at 0359 to switch to 49mb. (D'Angelo/FCDX, PA) 0402 with ID as "Welcome to the Voice—Africa" and up-tempo Christian music. (Wood, TN)

Radio Zambia, 5915 0254 sign on with man anncr, some EE and some vernacular, ID, opening anmts, some program previews, and local music. (D'Angelo, PA) 0313 in EE/vernacular. (Wood, TN)

ZIMBABWE—Zimbabwe Broadcasting Corp., 3396 at 0115 in vernacular and local and Afropops. Also 4828 in presumed EE at 0116. (Parker, PA) 0329 with Afropops, //3396 poor. (Ronda, OK)

And, once again, order is restored! A mountain of thank you's to the following who did good this time: Ray Paradis, Pittsfield, ME; William Hassig, Mt. Prospect, IL; Brian Alexander, Mechanicsburg, PA; Jim Ronda, Tulsa, OK; Peter Ng, Malaysia; Jerry Strawman, Des Moines, IA; Stewart MacKenzie, Huntington Beach, CA; Robert Brossell, Pewaukee, WI; Richard Parker, Pennsburg, PA; Charles Maxant, Barboursville, WV; T.C. Paterson, Cebu, Philippines; George Zeller, Cleveland, OH; Rick Barton, Phoenix, AZ; Joe Wood, Greenback, TN; Robert Charlton, Windsor, ON; Robert Fraser, Belfast, ME; Richard D'Angelo, Wyomissing, PA; and French Creek DXpedition (FCDX), PA—and welcome Mark Schiefelbein, Springfield, MO. Thanks to each of you!

Until next month—good listening! ■

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AMEX

Andrews Air Force Base— A Veteran Scannist (And New Columnist!) On Listening To The Home Of Air Force One

This month, Pop'Comm is delighted to welcome aboard our new "Military Radio Monitoring" columnist. His name is no doubt already familiar to many of you, especially if you read "Masters of Scanning" by Ed Muro, K2EPM, in our October 2007 issue. But I'll let Mark speak for himself.—Editor

First off as a new writer in the fold here at *Popular Communications* an introduction is in order. My name is Mark Meece, and I'm a licensed amateur radio operator currently holding a General class ticket as N8ICW. I've been licensed since 1986 and live in the southwestern corner of Ohio between Cincinnati and Dayton (home of the annual Dayton Hamvention).

I've been involved with the scanning hobby since 1979, especially in the area of military communications since the purchase of a RadioShack PRO-2004 scanner in 1987. I've been writing about MilCom activity in one form or another for nearly 20 years, but enough about me, let's get started!

National Capital Region

The area around Washington, D.C., known as the National Capital Region, is rife with military aeronautical operations.

Military air communications in this vicinity are the main focus of Andrews Air Force Base, located about 10 miles southeast of D.C. in Camp Springs, Maryland.

All emergency response and contingency capabilities to ensure national security for this region are the mission of Andrews' 316th Wing. This includes all rotary-wing aircraft and encompasses equipping, maintaining, organizing, and training to keep combat forces ready to deploy for both air and space expeditionary forces. The 316th, as the host wing for Andrews AFB, is also responsible for providing security forces and other services for the management of the airfields. The wing also is charged with providing support for the President, Vice President, and other U.S. leaders.

There are more than 50 organizations and other federal agencies based at Andrews.

Andrews Air Force Base

Land for Andrews AFB was purchased in 1942 by order of President Franklin Delano Roosevelt to then-Secretary of War Henry L. Stimson and construction began later that year. The 463rd Base Headquarters and Air Base Squadron, from Westover Field in Massachusetts was the first permanent unit to take residence, on April 19, 1943. Just a few weeks later on May 2, 1943, Camp Springs Army Air Field became opera-



Air Force One, a VC-25A, comes in for a landing. A C-130H "Hercules" is in the foreground. (All photos courtesy of U.S. DefenseLink)



Two KC-135 "Supertankers" hook up for mid-air refueling.

Units And Aircraft

UNIT	AIRCRAFT
89th AW	C-32, C-37, C-40
316th W	UH-1N
113th W (DCANG)	F-16 C/D, C-40C
459th ARW (AFRC)	KC-135R

tional. On that day the first aircraft arrived: a Republic P-47 Thunderbolt. Over the next month the field would see the arrival of 75 more P-47s. The first mission pledged to the base was for training fighter pilots for duty overseas. In 1945 the field was renamed Andrews Field in honor of Lt. Gen. Frank M. Andrews, one of the pioneers of the Air Force. In an ironic twist of fate Lt. Gen. Andrews was killed in plane crash on May 3, 1943, the day after the base first became operational. Not long after that, in 1947, military aeronautical operations became a separate service as the United States Air Force and the facility was renamed Andrews AFB.

Andrews AFB may be best known for its transportation of senior government officials and military leaders, a function dubbed Special Air Missions (SAM). In 1962 during the administration of John F. Kennedy, the presidential aircraft, a C-118, was permanently moved from Washington National Airport (now Reagan National Airport) to Andrews. From that time on it has been officially

Andrews AFB (KADW) Aeronautical Operations

Tower	118.400, 349.000
DCA Helo Tower	120.750
Ground	121.800, 275.800
Potomac Approach	119.300, 270.275, 335.500
Potomac Departure	125.650, 348.725
Clearance Delivery	127.550, 285.475, 393.100
ATIS	113.100, 251.050
Dispatcher	139.300, 372.200
Meteo	344.600
113th FW/121st FS	139.900, 351.800 (COMMAND POST)
459th ARW Command Post	143.800, 351.200 (TIGERS OPS), 378.100 LIBERATOR
HMX-1 Operations	276.400, 320.400 (COM3), 265.800 (Common), 273.950
Navy Command Post	122.850, 386.800
USMC Squadron Common	280.200
USMC Air Tactical	243.600 252.525, 262.600, 310.350
1st Helo Sqdn "Mussel" Ops	141.700, 225.600, 292.200, 297.500
89th AW Operations/Tactical	136.750, 378.100, 381.600, 141.550, 142.750 (VENUS CONTROL)
Safety of Flight	266.500
113th FW/121st FS	32.650 (V11 Air Tactical), 32.850 (V17), 393.000 (P2), 34.300 (V10), 281.400 (P7 ARTCC), 41.300 (V14 Kiowa Range, PA), 122.900 (V13 Dare Range, NC), 125.125 (V9 TAC), 281.900 (P9 PAX), 127.275 (V5 TAC), 389.000, 138.025 (V16), 249.800 (P11), 138.450, 286.200 (P12), 139.150 (V6), 139.450 (V8), 139.625 (V12 Warren Grove Range), 139.750, 349.100 P13, 139.900 (V1 SOF), 143.150 (V7), 143.600 (V10)
113th FW/201st AS	314.250 (BOXER Ops)
Ground Controlled Approach	119.300, 128.350, 257.200, 286.600, 301.500, 316.700, 335.500, 360.800, 379.200
Washington ARTCC	277.400, 323.000

Notes:

The ICAO identifier for Andrews AFB is KADW; the base occupies 6853 acres and contains two runways, 1L/36R and 1R/36L.

The Marine Corps provides the president and vice president helicopter service with their executive flight squadron designated "HMX-1." The U.S. Secret Service refers to it as "Nighthawk," but most taxpaying citizens know them better as "Marine 1" and "Marine 2." The helos are based in Quantico, Virginia.

Listening To Andrews Air Force Base

SYSTEM: Andrews AFB
TYPE: Motorola UHF Type II Astro 3600
SYSID: 6b01
DIGITAL TYPE: APCO-25
BASE: 406.000
OFFSET: 25 kHz

FREQUENCIES:

406.3500
 406.9500
 407.1500
 407.4250
 407.9500
 408.0250
 408.2000
 408.7500
 408.9500
 409.3500+
 409.7250+

TALKGROUPS:

16 Base Announcement
 48 Base Command Net
 80 Public Affairs
 112 Protocol Net
 144 Disaster Preparations Net
 176 Presidential Pilots Net
 208 Command Post
 240 AJDIC Command Net
 272 AJDIC Field Operations
 304 VIP Billeting Net
 336 Airlift Squadrons Ops 1
 368 Airlift Squadrons Ops 2
 400 Airfield Environmental Ops
 432 Emergency Net
 464 Coordination Announcement
 496 Patch to NP CALL
 528 Patch to NP TAC 1
 560 Special Emergency Response
 592 Patch to Prince Georges County FD
 624 Patch to Prince Georges County FD
 656 Patch to NSIADC Response
 688 Patch to Naval Command Net
 720 Coordination Command Net
 752 Coordination Ops 1
 784 Coordination Ops 2
 816 Coordination Ops 3
 848 Coordination Ops 4
 880 Fire Mutual Aid 1
 912 Fire Mutual Aid 2
 944 Group 3 Announcement
 976 Group 4 Announcement
 1008 89th AW Common
 1040 89th Public Affairs
 1072 89th AW Base Operations
 1104 89th AW Airfield Command
 1136 1st Helo Squadron Ops 1
 1168 1st Helo Squadron Ops 2
 1616 Refueling Operations
 1648 General Dynamics Operations

1680 Boeing Operations
 1712 General Electric Operations
 1744 Raytheon Operations
 1776 Airfield Operations 1
 1808 Airfield Operations 2
 1840 STORM Announcement Net
 1872 STORM Command Net
 1904 STORM Operations
 1936 STORM EMS
 1968 STORM Staging
 2000 STORM Sector 1
 2032 STORM Sector 2
 2064 STORM Sector 3
 2096 STORM Sector 4
 2128 STORM Sector 5
 2160 STORM Sector 6
 2196 STORM Rehab Net
 2224 STORM Spare 1
 2256 STORM Spare 2
 2288 STORM Spare 3
 2352 Airfield Help Desk
 2416 SAM Catering Service
 2480 89th AW Command Net
 2544 Patch to Prince Georges Trauma Center
 3184 Group 6 Announcement
 3216 Security - Law Enforcement Ops
 3248 Security Operations
 3280 Civil Engineers 1
 3312 Civil Engineering - Building Ops
 3344 Civil Engineering - Electrical
 3376 Cargo Ramp Control
 3408 Environmental Inspectors
 3440 Telecom
 3472 Logistics Net
 3504 Officers Club
 3536 NCO Club
 3568 Golf Course
 3664 Fire Group Announcement
 3696 Fire Dispatch
 3728 Fire Command
 3760 Fire Incident 1 Ops
 3792 Fire TAC 1
 3824 Fire Incident 2 Ops
 3856 Fire TAC 2
 3888 Fire Incident 3 Ops
 3920 Fire TAC 3
 3952 Fire Incident 4 Ops
 3984 Fire TAC 4
 4016 Fire Call
 4048 EMS Coordination 1
 4080 EMS Coordination 2
 4112 EMS Coordination 3
 4816 AirEvac Announcement
 4848 AirEvac Command Net
 4880 AirEvac Base EMS
 4912 AirEvac Medical Control
 4944 AirEvac Holding Center
 4976 AirEvac Field Operations
 5008 AirEvac Hospital Patch 1
 5040 AirEvac Hospital Patch 2
 5072 AirEvac Hospital Patch 3
 5104 AirEvac Hospital Patch 4

5136	AirEvac MASH Supply	7664	59th Spare
5168	AirEvac Support Operations	8016	Group 13 Announcement
5200	AirEvac Logistics	8048	201st ALS Flightline Ops
5232	AirEvac MASH Tactical	8080	201st ALS Squadron Ops
5264	SAM Group Announcement	8112	201st ALS Logistics
5296	SAM Command Net	8144	231st Flightline Ops
5328	SAM Support 1	8176	231st Squadron Ops
5360	SAM Support 2	8208	231st Squadron Spare
5392	SAM Support 3	8240	459th AW Command
5424	SAM Support 4	8272	459th AW Operations
5456	SAM Support 5	8304	459th Commo Operations
5488	SAM Executive Escort 1	8336	99th ALS Operations
5520	SAM Executive Escort 2	8368	201st ALS Operations
5552	SAM Executive Escort 3	8400	113th FW Delta Command Post
5584	SAM Executive Escort 4	8432	113th FW Watergate Command Post
5616	SAM Transportation 1	8464	113th FW Hotel Command Post
5648	SAM Transportation 2	8816	Group 14 Announcement
5680	SAM Shuttle Bus	8848	231st Squadron Security Ops
5712	89th AW Group Announcement	8912	231st Squadron
5744	89th AW Command	8944	231st Squadron Operations
5776	89th AW Operations 1	9392	113th FW Announcement
5808	89th AW Operations 2	9424	113th FW POL Operations
5840	89th AW Operations 3	9456	113th FW Transportation
5872	89th AW Logistics 1	9488	113th FW Civil Engineers
5904	89th AW Logistics 2	9520	113th FW Security
5936	89th AW Logistics 3	9552	113th FW Commo Ops
5968	789th AS Command	9584	113th FW Disaster Net
6000	789th AS Operations 1	9616	113th FW Aircraft Maintenance
6032	789th AS Operations 2	9648	113th FW Spare
6064	789th AS Operations 3	9680	113th FW Spare
6096	789th AS Logistics 1	9712	113th FW Spare
6128	789th AS Logistics 2	9744	113th FW Spare
6160	789th AS Logistics 3	9776	113th FW Spare
6292	Group 11 Announcement	9808	113th FW Spare
6224	Executive Flight Support 1	9840	113th FW Spare
6256	Executive Flight Support 2	10032	Group 16 Announcement
6288	Executive Flight Support 3	10064	113th FW Munitions
6320	Navy Operations 1	10224	VR-1 Maintenance
6352	Navy Operations 2	11280	Ground Control 1 - Civil Engineering
6384	Navy Flightline	11312	Ground Control 2 - Flight Ops
6416	459th Commo Squadron Maintenance	11344	Communications Support
6448	89th Commo Squadron Maintenance	11376	Army PAT Maintenance (JCS Flight)
6480	789th Commo Squadron Maintenance	11408	89th Computer Maintenance
6512	ANG Readiness Center	11440	89th Center Building Ops
6544	113th FW Support 1	11472	Security - WAF
6576	113th FW Support 2	11504	Security - Special Ops
6608	113th FW Logistics 1	11536	Security - EPU
6640	113th FW Logistics 2	11568	Security - PSO
7216	59th Announcement Group	11600	Security - Law Enforcement TAC 1
7248	59th Command Net	11632	Security - Law Enforcement TAC 2
7280	59th Operations 1	11664	Security
7312	59th Operations 2	11696	ADITC Control Ops
7344	59th Operations 3		
7376	59th Logistics 1		
7408	59th Logistics 2		
7440	59th Logistics 3		
7472	59th Support 1		
7504	59th Support 2		
7536	59th Support 3		
7568	59th Flightline Operations		
7600	59th Commo Support		
7632	59th Special Operations		

Notes:

+ These frequencies are used for system phone patches. With Andrews being "The Gateway to the Capital" the base sees a lot of dignitaries and military VIPs arriving and departing. The phone patch traffic greatly increases when big events, such as the presidential inauguration, are taking place.

* STORM stands for Specialized Tactical Operations Response Management (Hazmat Team).

FAILSAFE ASSIGNMENTS:

In the event of a systems failure, the following frequency assignments are automatically made so base operations may continue:

406.3500	Command Post
406.9500	Fire Department 1
407.1500	Fire Department 2
407.4250	89th AW Ramp Control
408.0250	Security 1
408.2000	Security 2
408.7500	Security 3
408.9500	Airfield Operations
409.3500	Input to 413.375
409.7250	Security - Law Enforcement
413.0000	Security - Support
413.0250	Fire/EMS
413.2000	Ready Line Operations
413.2750	Ground Control
413.3000	Ground Control
413.3500	Transit Operations
413.3750	Security - Law Enforcement Repeater
415.1500	Ramp Control
415.8250	Transportation 1
415.9500	Transportation 2
416.2500	Transportation Command
416.3500	Transportation Executive
417.1500	Transportation Control

SYSTEM: Andrews AFB
TYPE: P-25
SYSID: 17A

FREQUENCIES:

385.2125, 385.3125*, 385.9000, 385.9125, 386.0375, 386.2000, 386.3375, 386.5000, 386.6375, 386.8000

* = Control Data Channel

TALKGROUPS:

153	Police 6B
157	Gate
203	Announcement
259	Civil Engineers
323	IT Techs
405	MEDEVAC
457	Flightline
501	Show Control
511	Event EMS
517	Event Security
519	Event Security



A UH-1N "Twin Huey" from the 316th Wing in flight over the Jefferson Memorial.

Combat Air Patrol Frequencies And Units

138.0500	177th FW NJ ANG V18
138.2000	CAP
143.8250	CAP
225.0000	HUNTRESS
228.9000	HUNTRESS Common
251.8000	HUNTRESS
254.2000	HUNTRESS
255.8000	HUNTRESS
260.9000	BLUE 13 (Refueling)
262.9000	HUNTRESS
277.6000	HUNTRESS
282.3500	AWACS
290.4000	CAP 1
293.6000	BLUE 20
303.0000	CAP Refueling
307.2500	CAP Control
309.5000	CAP Primary
320.6000	BLUE 24
324.0000	BLUE 25
327.9000	BLUE 27
342.1000	HUNTRESS
357.1000	1st FW/71st FS
364.2000	Air Intercept Command and Control (AICC)

known as the "Home of Air Force One." The current Air Force One aircraft is a Boeing VC-25A.

Tenant Units At Andrews

In addition to the 316th Wing, other notable tenant units call Andrews home. They include the Air Force Reserves' 459th Air Refueling Wing (ARW), which was converted over from an airlift wing in 2003. Also attached are the D.C. Air National Guard's 113th Wing and its subordinate units, the 121st Fighter

Squadron and the 201st Airlift Squadron. The 89th Airlift Wing at Andrews provides global SAMs as issued by the White House, Air Force Chief of Staff, and Air Mobility Command. It is also the headquarters of the Air Force's Office of Special Investigation (OSI).

Andrews also provides a home for the Naval Air Facility (NAF) located on the eastern side of the base, better known as Washington Naval Air Station. It's also the home for the Air National Guard Readiness and Support Center. See the

sidebars "Units And Aircraft" and "Andrews AFB (KADW) Aeronautical Operations" for specifics on who, what, and where for listening to the base.

Communications

Andrews AFB still has a trunked radio system in place, which is tied in with Bolling AFB about 6.5 miles from Andrews in southeastern Washington, D.C., along the Potomac River. Nearly all the ground support operations have migrated to the trunked system.



An F-16C "Fighting Falcon" on take off.

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There's also a new 380 MHz P-25 trunked radio system in use at Andrews. Information on the system is extremely sketchy at the moment. It's not known whether the older Motorola Type II system is being phased out in favor of this system or how much activity this system may have. It's mainly been heard during the Joint Services Open House held annually in May.

See "Listening To Andrews AFB" for information on the systems, frequencies, and talkgroups involved.

Combat Air Patrol

Since the events of September 11, 2001, national assets in the D.C. are under the constant protection of Combat Air Patrols (CAP). This function is provided by various fighter wings from nearby bases, most notably the 1st FW, based at Langley AFB, Virginia, and the New Jersey Air National Guard's 177th FW "Jersey Devils," based out of Atlantic City, New Jersey. The D.C. Area CAP is controlled by the North American Air Defense's (NORAD) Eastern Air Defense Sector. It's known as "HUNTRESS" and is based at Griffiss AFB in Rome, New York. See "Combat Air Patrol Frequencies And Units" for more what to listen to.

So Much To See—And Hear

Spring is a great time to make a trip to Washington, D.C.—the days are getting warmer and, if you can be spontaneous, you might even catch the 2008 National Cherry Blossom Festival, scheduled for March 29 to April 13 and sure to please the family. But our nation's capital is wonderful vacation destination any time of year, with its variety of monuments, museums and historical places. There's so much of interest that it's hard to take it all in, so it may take several visits. If you do plan on visiting some time, make sure you remember to pack your scanner and plan accordingly. ■

Radio Fun And Going Back In Time

Q. What was Room 40 in relationship to cryptanalysis in World War I?

A. In early August 1914 the British intercepted message traffic from the German battleship *Gö ben*. The message was not decoded in time to discover that *the Gö ben* planned to shell several Russian ports on the Black Sea. After the damage had been done Parliament demanded that the Navy increase their capability in Radio Interception and Decoding. One thing the Navy did was establish Room 40, a code-breaking program set up in Room 40 of the Admiralty building.

Another way the British kept track of the Germans used the German Navy's internal procedures. Every day every German vessel was required to contact Naval Headquarters in Wilhelmshaven. This encoded traffic was also picked up by a British Coast Guard Station in Norfolk. Unfortunately Room 40 was not able to crack the Naval codes right away.

Then, on August 26, 1914, just 25 days after Germany and Russia declared war on each other, the German light cruiser *Magdeburg* ran aground in the northern Baltic. Two Russian cruisers came upon the helpless *Magdeburg*, fired on and captured it. Among the treasures found aboard the stricken vessel were three copies of the German Naval codes. One of the code books was forwarded to Room 40 in London. The codebook and the radio intercepts gave the British a definite advantage on locating German shipping. Within the next few months a quarter of the German merchant marine had been sunk.

Q. Was there any opposition to the CB service when the FCC started to develop it?

A. Yes there was. Nobody likes to lose any part of a frequency assignment and affected entities will always put up a fight. One serious call for delay of the development of CB also came from people who felt that criminals might use the service to commit crimes coordinated by CB. During the '60s a great many arrests were made by law enforcement officers who had learned to monitor the 11-meter band. Their success rate was primarily because there is no intelligence test required to become a criminal.

Q. What is a Q ship and how did it get its name?

A. During both World Wars the German Navy sent out Commerce Raiders, surface craft that were actually heavily armed vessels of attack. Disguised as harmless merchant ships, they would fly neutral flags as they came up along side enemy transports or warships. They would be ordered to stop engines and be boarded for inspections. After lulling the enemy to a false sense of security with peaceful compliance they would open fire from close range, often sinking their adversary. The radio call for a ship encountering one of these killers was QQQ. The radio call for sighting a U-boat was SSS. Either call could be followed shortly by SOS.

Q. During the Vietnam War did we use deceptive radio practices like the British did against the Germans in World War II?

A. SOG (Studies and Observations Group) ran a "black propaganda" unit out of #7 Hong Tap Street in Saigon. They put out radio programs that were supposed to be coming from Radio Hanoi. CIA technicians also built transistor radios that appeared perfectly normal but would not pick up Radio Hanoi. Instead they picked up a false station in South Vietnam that sounded like Radio Hanoi.

Many former VC sympathizers would turn themselves in to the Americans after becoming tired of hearing about privileged students who were the sons and daughters of high Communist officials being selected for advanced training in Poland, North Korea, Red China, or the Soviet Union.

Many Army of North Vietnam troops went home when General Giap personally ordered them home by radio. They were told that major flooding near Hanoi had left displaced citizens homeless and starving, and they were being ordered north to assist in disaster relief. They naturally wanted to be with their families and give aid.

They hadn't been listening to Radio Hanoi, however, they had been listening to Radio SOG. Some of these CIA-built radios even had transponders in them so the American's could find their unhappy owners.

And Now A Question For Our Readers

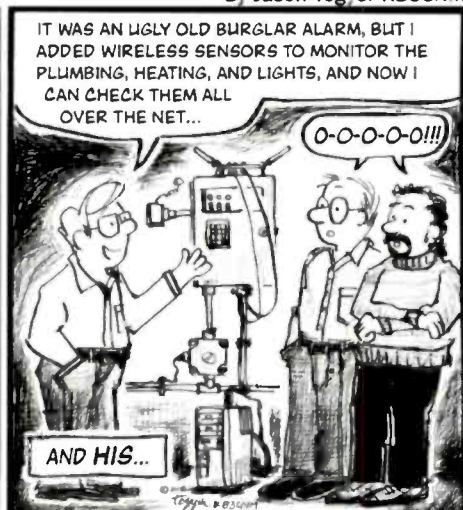
Now here's one for *you!* I've heard this story but cannot conclusively verify it. Can anyone help in that?

During the latter part of World War II the Russians had a radio unit operating behind their lines, perhaps Radio Moscow itself. The Russians would tune in to Radio Berlin and synchronize their signal to Berlin's using an oscilloscope. Then every time the German announcer stopped to take a breath his German speaking Russian counterpart would put in his two kopeks worth. "The German Army in Russia is winning tremendous victories! *In their icy graves!!*" "The Fuehrer made a visit to our front line fighting troops today and found our soldiers in good spirits. *Because they were being moved out of the front lines of freezing Russia to defend France!!*" Or something like that.

Can anyone verify this? Can it even be done effectively with World War II era equipment? I'd really like to know.

SPURIOUS SIGNALS

By Jason Togyer KB3CNM



A New Cycle Is Born

It's official: the first sunspot of the new solar cycle, the 24th solar cycle that we're keeping record of, has been observed. This exciting moment occurred on January 4, 2008. When observers took a close look at the day's images of the sun, they noticed that a small sunspot had developed with a much-anticipated feature—a reversed magnetic polarity. Such a reversal marks the start of the new solar cycle.

Earlier in December, solar scientists and amateur radio operators held their breath when a magnetically reversed, highly active region appeared in the sun's eastern limb. Because of its reversed polarity, scientists became hopeful that the region would develop into an actual sunspot. If it had, then scientists would have declared the official start of Cycle 24. Instead, it faded quickly away, and the wait was again on...until January's new sunspot, that is.

While sunspots have a complex magnetic structure, they typically have at least one very clearly defined set of magnetic poles, north and south. At the start of a new solar cycle, the polarities of the new cycle's sunspots are reversed from the polarities observed in sunspots belonging to the previous cycle. When the first sunspot arrives with a reversed magnet-

ic structure, scientists declare the start of the new cycle. This occurred on January 4, 2008.

Flyby

A little over a week later, on January 14, the European-built Ulysses space probe arrived over the sun's northern polar cap. This occurred almost a year after last visiting the south solar pole. This pass completes the third rapid south-to-north transit to date. "This important milestone for the joint ESA-NASA mission also coincides with the start of a new cycle of solar activity," explained Richard Marsden, ESA's Ulysses mission manager. "It's been calm on the space weather front recently and so we are looking forward to some solar fireworks over the coming months as the number of sunspots increases."

"This is a wonderful opportunity to examine the sun's north pole at the onset of a new solar cycle," said Arik Posner, NASA Ulysses program scientist. "We've never done this before."

Launched on October 6, 1990, the Ulysses space probe began its journey aboard the Space Shuttle *Discovery* STS-41. It's now in a 6.2 year heliocentric orbit inclined at 80° to the ecliptic

The Ap Index And Understanding Propagation Terminology

The Ap index, or Planetary A index, is a 24-hour averaging of the Planetary K index. The Planetary K index is an averaging of worldwide readings of Earth's geomagnetic field. High indices (Kp > 5 or Ap > 20) mean stormy conditions with an active geomagnetic field. The more active, the more unstable propagation is, with possible periods of total propagation fade-out. Especially around the higher latitudes and at the polar regions, where the geomagnetic field is weak, propagation may disappear completely. Extreme high indices may result in aurora propagation, with strongly degraded long-distance propagation at all latitudes. Low indices result in relatively good propagation, especially noticeable around the higher latitudes, when trans-polar paths may open up. Maximum K-index is 9, and the A-index can exceed well over 100 during very severe storm conditions, with no maximum.

Classification of A indices is as follows:

A0–A7 = quiet	A30–A49 = minor storm
A8–A15 = unsettled	A50–A99 = major storm
A16–A29 = active	A100–A400 = severe storm

Solar Flux Index (SFI): This flux number is obtained from the amount of radiation on the 10.7-cm band (2800 MHz). It is closely related to the amount of ultraviolet radiation, which is needed to create the ionosphere. Solar Flux readings are more descriptive of daily conditions than the Sunspot Number. The higher the Solar Flux (and, therefore, the higher the Sunspot Number), the stronger the ionosphere becomes, supporting refraction of higher frequencies.

Ionosphere: A collection of ionized particles and electrons in the uppermost portion of the Earth's atmosphere, which is formed by the interaction of the solar wind with the very thin air particles that have escaped Earth's gravity. These ions are responsible for the reflection or bending of radio waves occurring between certain critical frequencies, with these critical frequencies varying with the degree of

ionization. As a result, radio waves having frequencies higher than the Lowest Usable Frequency (LUF) but lower than the Maximum Usable Frequency (MUF) are propagated over long distances.

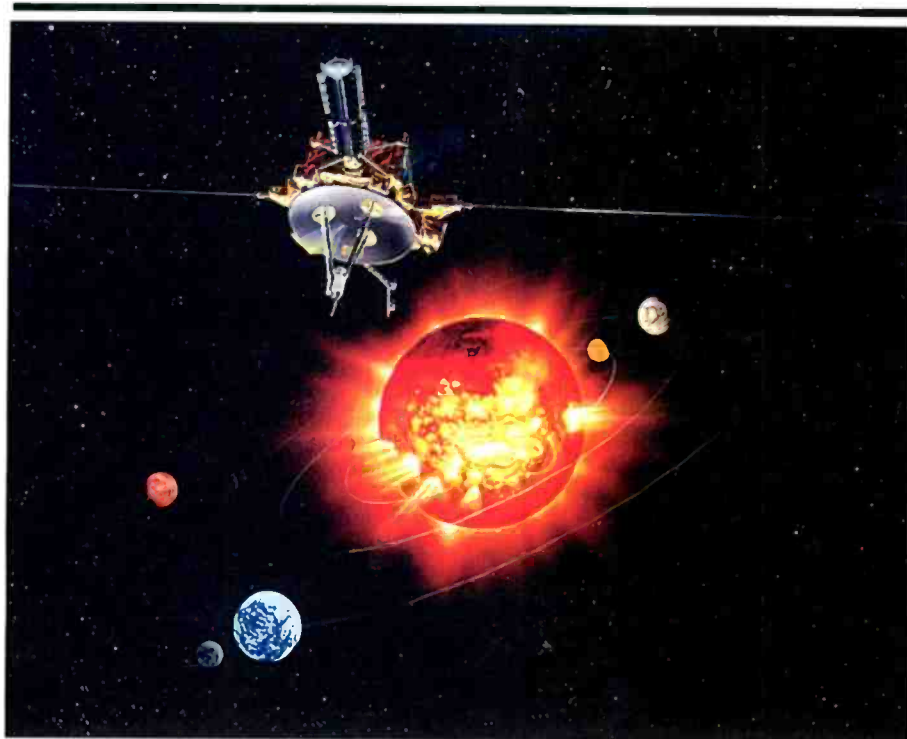
Smoothed Sunspot Number (SSN): Sunspots are magnetic regions on the sun with magnetic field strengths thousands of times stronger than the Earth's magnetic field. Sunspots appear as dark spots on the surface of the sun. Temperatures in the dark centers of sunspots drop to about 3700° K (compared to 5700° K for the surrounding photosphere). This difference in temperatures makes the spots appear darker than elsewhere. Sunspots typically last for several days, although very large ones may last for several weeks. They are seen to rotate around the sun, since they are on the surface, and the sun rotates fully every 27.5 days.

Sunspots usually occur in a group, with two sets of spots. One set will have positive, or north, magnetic field while the other set will have negative, or south, magnetic field. The field is strongest in the darker parts of the sunspots (called the "umbra"). The field is weaker and more horizontal in the lighter part (the "penumbra").

Galileo made the first European observations of sunspots in 1610. The Chinese and many other early civilizations have records of sunspots. Daily observations were started at the Zurich Observatory in 1749; continuous observations were begun in 1849.

The Sunspot Number is calculated by first counting the number of sunspot groups and then the number of individual sunspots. The Sunspot Number is then given by the sum of the number of individual sunspots and 10 times the number of groups. Since most sunspot groups have, on average, about 10 spots, this formula for counting sunspots gives reliable numbers even when the observing conditions are less than ideal and small spots are hard to see. Monthly averages (updated monthly) of the Sunspot Numbers show that the number of sunspots visible on the sun wax and wane with an approximate 11-year cycle.

For more information, see <http://prop.hfradio.org>.



An artist's concept of the Ulysses spacecraft. Its first north polar pass occurred on June 19, 1995. (Courtesy NASA/JPL-Caltech)

plane. The Ulysses mission is to conduct the first-ever survey of the sun's environment in space from the sun's equator to the sun's poles. It's to accomplish this over a wide range of solar activity conditions. Some of the notable results so far include the first detailed measurements of the solar wind (see previous issues of this column for discussions of the solar wind) from the sun's polar regions at solar minimum and solar maximum, the discovery that the magnetic flux leaving the sun is the same at all latitudes, the discovery of energetic particle "reservoirs" surrounding the sun, the discovery of interstellar dust in the solar system, and the first direct measurements of interstellar helium atoms in the solar system. Quite a list of successes!

The three previous polar flybys, the first in 1994–1995, the second in 2000–2001, and the third in 2007, revealed something interesting and mysterious. This flyby, however, could well be the most interesting flyby to date.

"Just as Earth's poles are crucial to studies of terrestrial climate change, the sun's poles may be crucial to studies of the solar cycle," explained Ed Smith, Ulysses project scientist at NASA's Jet Propulsion Laboratory.

Many researchers believe the sun's poles are central to the ebb and flow of

the solar cycle. It's now known that the decaying magnetic fields of a dying sunspot are carried toward the poles by vast currents of plasma. This makes the poles a "resting place" for old sunspots. These old magnetic fields sink beneath the polar surface 200,000 km deep, all the way down to the sun's inner magnetic dynamo. There, dynamo action amplifies the fields for use in future solar cycles.

What currently has scientists focused on this current flyby is that they observed a 8-percent difference in polar temperatures. In the previous solar cycle, the magnetic north pole was about 80,000 degrees cooler than the south. No one yet knows why. Is this temperature difference between the poles typical?

These questions might be answered because this flyby comes less than a year after a similar south pole flyby in February 2007. Mission scientists will be able to compare temperature measurements, north versus south, with hardly any gap between them.

Ulysses also discovered the sun's high-speed polar wind. "At the sun's poles, the magnetic field opens up and allows solar atmosphere to stream out at a million miles per hour," said Smith. This new discovery also revealed some odd behavior, and Ulysses has allowed scientists to monitor this polar wind activity

over the course of a solar cycle in a way no other probes have yet permitted.

Posner explained: "Eleven years ago, during a similar 'sea change' between solar cycles, the polar wind spilled down almost all the way to the sun's equator. But this time it is not. The polar wind is bottled up, confined to latitudes above 45 degrees."

Is this a detail of little importance or a major anomaly, signaling new things to come? This is yet another question that scientists hope to answer with this new flyby. "We'll be monitoring the magnetic field above the north pole to see what it's like during the change of solar cycles," said Posner. We'll follow the story here in the "Propagation Corner."

With the new sunspot polarity observed on January 4, what's in store for the rest of 2008, then? Solar cycles take anywhere from two to five years to reach the point of maximum solar activity. The current consensus among most solar scientists places Cycle 24's maximum sometime between 2011 and 2013. That means we have at least a year or two before we see major solar activity of any kind. However, that doesn't mean that 2008 will be a disappointment.

HF Propagation

As we move into spring in the Northern Hemisphere we experience better 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 at the end of March 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, which 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.

Optimum Working Frequencies (MHz) - For April2008- Flux = 65, 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	21	20	20	19	17	16	14	13	12	11	11	10	10	12	15	16	18	19	19	20	20	21	21	21
NORTHERN SOUTH AMERICA	26	26	26	23	21	20	18	17	16	15	14	13	13	14	18	20	21	23	24	25	25	26	26	26
CENTRAL SOUTH AMERICA	26	24	22	20	18	17	16	15	14	13	13	14	13	16	19	22	24	25	27	27	28	27	27	27
SOUTHERN SOUTH AMERICA	25	22	20	18	17	16	15	14	13	13	12	12	13	13	16	19	21	23	25	26	27	27	28	27
WESTERN EUROPE	13	11	9	9	12	13	10	9	9	8	10	13	15	16	17	17	18	18	17	17	17	16	15	15
EASTERN EUROPE	9	8	8	8	12	13	14	12	9	9	12	14	15	15	16	17	17	16	16	15	14	13	9	9
EASTERN NORTH AMERICA	23	23	22	20	18	17	15	14	13	12	12	11	13	16	19	21	22	23	23	24	24	24	24	24
CENTRAL NORTH AMERICA	13	13	12	12	11	10	9	8	8	7	7	6	6	8	10	11	12	12	13	13	13	13	13	13
WESTERN NORTH AMERICA	7	7	7	6	6	6	5	4	4	4	3	3	3	3	4	5	6	6	7	7	7	7	7	7
SOUTHERN NORTH AMERICA	22	21	21	20	19	17	16	15	13	12	11	10	11	14	16	18	19	20	21	21	22	22	22	22
HAWAII	18	19	19	18	18	18	17	15	14	13	12	11	10	10	9	9	10	13	14	15	16	17	18	18
NORTHERN AFRICA	12	11	11	10	10	9	10	9	9	9	8	13	15	16	17	18	18	19	19	18	17	16	15	13
CENTRAL AFRICA	15	14	13	12	12	12	10	9	9	8	9	13	15	16	17	18	18	18	19	19	19	19	18	16
SOUTH AFRICA	17	16	15	14	13	13	13	13	12	11	11	10	16	18	20	21	22	22	23	23	23	21	20	18
MIDDLE EAST	10	10	9	10	13	15	13	11	9	9	11	14	15	16	16	17	17	18	17	15	13	12	11	11
JAPAN	19	19	19	19	18	17	16	15	12	11	10	10	9	9	8	10	10	9	9	12	15	16	17	18
CENTRAL ASIA	19	19	19	18	18	17	16	15	12	11	10	10	9	9	8	13	15	14	13	12	12	13	16	18
INDIA	15	15	15	16	16	15	15	14	12	10	8	12	11	9	8	8	8	8	8	10	12	13	14	15
THAILAND	16	18	19	18	18	17	16	15	12	10	10	9	9	8	12	14	16	16	14	13	13	12	11	13
AUSTRALIA	25	26	27	28	28	27	26	24	22	20	18	17	16	15	14	13	15	14	13	13	14	18	21	23
CHINA	18	18	18	18	18	17	16	15	12	10	9	9	8	8	12	11	10	10	9	9	9	13	15	17
SOUTH PACIFIC	28	28	28	28	28	27	25	22	20	18	17	16	15	14	13	13	12	12	12	19	23	25	27	28

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	23	23	22	21	19	17	16	15	14	13	12	11	12	15	17	19	20	21	22	23	23	24	24	24
NORTHERN SOUTH AMERICA	24	24	23	21	19	18	16	15	14	13	13	12	12	14	17	18	20	21	22	23	23	24	24	24
CENTRAL SOUTH AMERICA	26	24	22	20	18	17	16	15	14	13	13	13	15	18	21	22	24	25	26	27	27	27	27	27
SOUTHERN SOUTH AMERICA	25	22	20	19	17	16	15	14	13	13	12	12	13	16	18	21	22	24	25	26	27	27	28	27
WESTERN EUROPE	13	9	9	8	8	10	9	9	9	8	13	15	16	17	18	18	18	18	18	17	16	16	14	
EASTERN EUROPE	9	9	8	8	10	10	9	9	8	8	13	15	16	17	18	18	17	17	16	15	14	13	10	
EASTERN NORTH AMERICA	17	16	16	14	13	12	11	10	10	9	8	8	10	12	14	15	16	17	17	17	18	18	17	17
CENTRAL NORTH AMERICA	8	8	7	7	6	6	5	5	4	4	4	4	4	5	6	7	7	7	8	8	8	8	8	8
WESTERN NORTH AMERICA	13	13	13	12	11	10	9	9	8	7	7	7	6	8	10	11	12	12	13	13	14	14	14	14
SOUTHERN NORTH AMERICA	15	15	15	14	13	12	11	10	9	9	8	8	7	9	11	12	13	14	14	15	15	15	16	15
HAWAII	22	22	22	21	20	19	18	16	15	14	13	12	11	11	11	10	12	15	16	18	19	20	21	21
NORTHERN AFRICA	16	15	14	13	12	11	10	10	9	9	12	15	16	17	18	19	19	19	20	20	19	19	19	17
CENTRAL AFRICA	15	14	13	12	11	11	10	10	9	9	12	15	16	17	18	19	19	19	20	20	19	19	18	17
SOUTH AFRICA	17	15	15	14	13	13	13	16	15	14	13	16	19	22	24	26	27	28	27	25	23	21	19	18
MIDDLE EAST	11	10	9	9	11	10	9	9	9	8	13	15	16	17	18	18	19	18	18	16	14	13	12	11
JAPAN	19	19	18	17	16	15	13	11	10	10	9	9	8	12	11	10	10	9	9	12	15	16	18	18
CENTRAL ASIA	19	18	18	17	16	15	12	11	10	9	9	9	9	14	15	16	15	14	13	12	12	12	16	18
INDIA	10	12	13	14	14	13	9	9	9	8	11	14	15	14	14	13	12	10	9	8	8	8	8	8
THAILAND	16	18	17	17	16	15	12	10	9	9	8	13	15	16	17	17	16	15	14	13	12	11	11	13
AUSTRALIA	26	27	28	27	26	25	23	21	19	18	16	15	14	14	15	15	15	14	13	13	15	19	22	24
CHINA	18	18	17	17	16	14	12	10	9	9	8	8	13	14	12	11	10	10	9	9	9	13	15	17
SOUTH PACIFIC	28	28	28	27	27	25	23	20	18	17	16	15	14	13	13	12	12	12	15	21	24	26	27	28

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	19	18	17	16	14	13	12	11	11	10	9	9	11	13	15	16	17	17	18	19	19	19	19	19
NORTHERN SOUTH AMERICA	21	21	20	18	16	15	14	13	12	11	11	10	12	14	16	17	18	19	20	21	21	21	21	22
CENTRAL SOUTH AMERICA	25	23	21	19	18	17	15	14	14	13	13	14	17	19	21	23	24	25	26	26	27	27	27	26
SOUTHERN SOUTH AMERICA	24	22	20	18	17	16	15	14	13	13	12	12	15	18	20	22	23	24	25	26	27	27	27	26
WESTERN EUROPE	11	10	9	9	8	8	9	9	8	11	14	15	16	17	18	18	18	18	17	17	16	15	13	
EASTERN EUROPE	11	9	8	10	10	10	9	9	9	12	15	16	17	18	18	18	17	17	17	16	15	15	13	
EASTERN NORTH AMERICA	8	8	7	7	6	5	5	5	4	4	4	4	5	6	7	7	8	8	8	8	8	8	8	8
CENTRAL NORTH AMERICA	18	17	16	15	14	13	12	11	10	9	9	11	13	15	16	17	18	18	18	18	18	18	18	18
WESTERN NORTH AMERICA	24	23	22	20	19	17	16	14	13	13	12	11	13	16	19	21	22	23	24	24	24	24	24	24
SOUTHERN NORTH AMERICA	19	18	18	17	15	14	13	12	11	10	10	9	10	12	14	16	17	17	18	19	19	19	19	19
HAWAII	23	23	23	21	20	18	17	15	14	13	12	12	11	13	12	11	13	16	18	19	21	22	22	23
NORTHERN AFRICA	17	15	14	13	13	12	11	12	11	12	16	19	20	22	23	23	24	24	24	23	23	22	20	19
CENTRAL AFRICA	16	15	14	13	12	11	13	12	11	12	16	19	20	22	23	23	24	24	23	23	22	20	19	17
SOUTH AFRICA	17	15	15	14	13	13	13	15	14	14	18	20	22	24	25	26	27	27	25	23	21	19	18	15
MIDDLE EAST	14	13	12	12	11	11	10	9	9	11	14	16	17	18	19	19	20	20	20	19	18	16	15	13
JAPAN	18	17	16	15	12	11	10	10	9	9	9	13	12	11	11	10	9	9	9	12	15	16	17	18
CENTRAL ASIA	18	17	16	14	11	11	10	9	9	9	10	14	16	17	18	16	15	14	13	12	12	11	15	18
INDIA	8	8	8	8	10	10	9	9	9	11	14	16	16	16	16	16	15	15	14	12	10	9	8	8
THAILAND	15	16	15	12	11	10	9	9	9	9	14	15	17	17	18	19	18	17	15	14	13	12	11	11
AUSTRALIA	26	27	27	26	24	22	20	18	17	16	15	14	13	17	16	15	14	13	13	12	16	20	23	25
CHINA	17	17	15	13	11	10	10	9	9	8	13	15	16	15	13	11	10	10	9	9	9	12	15	16
SOUTH PACIFIC	28	28	27	26	24	21	20	17	16	15	14	13</												

April is one of the hottest months for DX. The seasonal change plays out on HF with activity moving up from 41 meters and down from 11 meters. Propagation on the higher HF frequencies (19 through 11 meters) begins to suffer late in April and into the summer months due to lower Maximum Usable Frequencies (MUFs) in the Northern Hemisphere. MUFs peak very late in the day during summer. Summertime MUFs are lower due to solar heating, which causes the ionosphere to expand. An expanded ionosphere produces lower ion density, which results in lower MUFs.

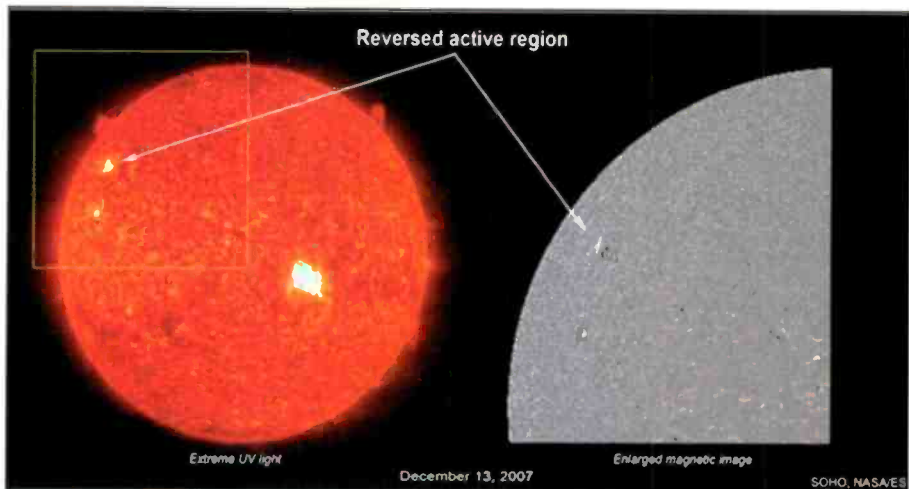
Short-path propagation between countries in the Northern Hemisphere will drop out entirely. Higher-frequency propagation peaks in the fall. April and May are fall months in the Southern Hemisphere, making long-path DX possible. Short-path propagation from South America, South Pacific, and other areas south of the equator will be strong and reliable when open. However, these do not happen every day on the higher frequencies.

From April to June, excellent propagation occurs on both daytime and nighttime paths. The strongest propagation occurs on paths that span areas of both day and night, following the MUF. During April, peaking in May and still in June, 16 meters may offer 24-hour DX to all parts of the world, with both short- and long-path openings occurring, sometimes at the same time! If you hear a lot of echo on a signal, you might be beamed in the wrong direction. Try the opposite azimuth. Thirty-one through 19 meters are more stable as nighttime bands, with propagation following the gray line and nighttime paths.

Low-band propagation is still hot on 41 meters, with Europe in the evening and Asia in the mornings. Occasional DX openings will occur on 90 and 75 meters around sunrise.

VHF Ionospheric Openings

On VHF, many different types of propagation modes can appear once or twice this month. Combination propagation modes may be possible on VHF this month, making for some exciting openings. An increase in Trans-equatorial (TE) propagation is typical this month. Sporadic-E (Es) will become more common as we move into late spring and summer. There are times when Es, TE, and F₂-layer propagation modes will link, providing strong DX openings on VHF



These two images of the sun show the January 4, 2008, sunspot that signaled the start of the new solar cycle. While the statistical end of Solar Cycle 23 has not yet been determined, this sunspot's magnetic polarity was reversed (see text for explanation), a sign that Solar Cycle 24 has begun. (Credit: SOHO/NASA)

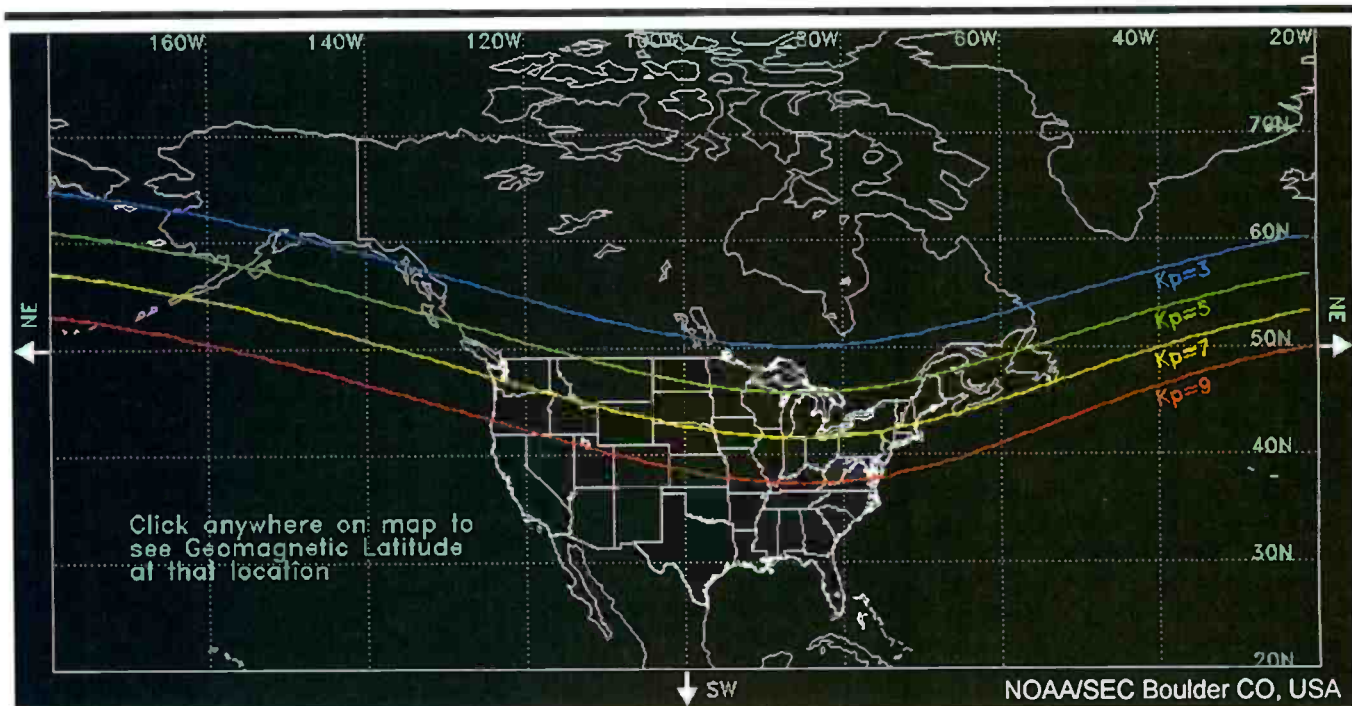
between North America and New Zealand, Australia, or other areas. The best time to catch a TE opening across the geomagnetic equator is between 8 and 11 p.m. local daylight time. These TE openings will be north-south paths that cross the geomagnetic equator at an approximate right angle.

Widespread auroral displays can occur during April, bringing with them unusual ionospheric short-skip openings on the VHF bands. The best times for these to occur are during periods of space weather storminess.

Aurora is a direct result of solar plasma interacting with gasses in the upper atmosphere. It's common to see aurora during active to severe geomagnetic storms. The magnetosphere is filled with electrons and protons that are normally trapped by lines of magnetic force that

prevent them from escaping to space or descending to the planet below. The influence of solar wind that's been enhanced by coronal holes can break loose some of those trapped particles, causing them to rain down on the atmosphere. Gasses in the atmosphere start to glow under the impact of these particles. Different gasses give out various colors. Think of a neon sign and how the plasma inside the glass tube, when excited, glows with a bright color.

These precipitating particles mostly follow the magnetic field lines that run from Earth's magnetic poles and are concentrated in circular regions around the magnetic poles called "auroral ovals." These bands expand away from the poles during magnetic storms. The stronger the storm, the greater these ovals will expand; sometimes they grow so large that people



A plot showing the magnetic latitudes in North America. The plot maps the magnetic latitudes where aurora may occur when the Kp index is as indicated on the latitude lines. (Credit: NASA/SEC)

at middle latitudes, like California, can see these “Northern Lights.”

When you see the solar wind speed increase to over 500 kilometers per second, and the B_z remains mostly negative—when the Interplanetary Magnetic Flux (IMF) is oriented mostly southward—expect an increase in geomagnetic activity, as revealed by the planetary K index (K_p).

When the K_p rises above 4, look for aurora-mode propagation. The higher the K_p index, and the longer the geomagnetic storminess lasts, the more likely we’ll have strong aurora openings. You don’t have to see them to hear their influence on propagation. Listen for stations from over the poles that sound raspy or fluttery. Look for VHF DX. Sometimes it will enhance a path at certain frequencies; other times it will degrade the signals. Sometimes signals will fade quickly, and then come back with great strength. The reason for this is that the radio signal is being refracted off of the more highly ionized areas that are lit up. These ionized areas ebb and flow, so the ability to refract changes, sometimes quickly. I’ve observed the effect of aurora and associated geomagnetic storminess even on lower HF frequencies.

Radio Aurora

If there are enough solar particles flowing down the Earth’s magnetic field

lines and colliding with atmospheric atoms and molecules, ionization occurs. This ionization may be sufficient to reflect VHF and lower UHF radio waves, generally between 25 and 500 MHz. This usually occurs in conjunction with visual aurora, but the mechanism is a bit different and it’s possible to have one (visual or radio) without the other.

Using “radio aurora,” the chances of contacting stations over greater distances than would ordinarily be possible on the VHF frequencies is increased. Like its visual counterpart, radio aurora is very unpredictable. The thrill of the chase draws many VHF weak signal DXers to working auroral DX.

VHF auroral echoes, or reflections, are most effective when the angle of incidence of the signal from the transmitter, with the geomagnetic field line, equals the angle of reflection from the field line to the receiver. Radio aurora is observed almost exclusively in a sector centered on magnetic north. The strength of signals reflected from the aurora is dependent on the wavelength when equivalent power levels are employed. Six-meter reflections can be expected to be much stronger than 2-meter reflections for the same transmitter output power. The polarization of the reflected signals is nearly the same as that of the transmitted signal.

The K index is a good indicator of the expansion of the auroral oval, and the possible intensity of the aurora. When the K

index is higher than 5, most readers in the northern states and in Canada can expect favorable aurora conditions. If the K index reaches 8 or 9, it’s highly possible for radio aurora to be worked by stations as far south as California and Florida. Your magnetic latitude can be found using the map at www.sec.noaa.gov/Aurora/globeNW.html.

Because we’re at the beginning of the new solar cycle (Cycle 24 has begun, even if the statistical beginning is not yet determined mathematically at the time I write this), we’re not going to see major solar flares with resultant Coronal Mass Ejections, and so we won’t see many days where space weather will cause geomagnetic storms. However, these storms are also caused by high-speed solar wind that streams out of coronal holes, and coronal jets (see last month’s column) and by the plasma that escapes the sun to ride the solar wind until the plasma hits the Earth’s magnetosphere. I expect a possible minor to moderate geomagnetic storm once or twice this month.

Meteor showers provide opportunity for observing VHF/UHF meteor scatter propagation DX. Most meteor showers are at their best after midnight. After midnight, you’re on the leading edge of the Earth and you’re meeting the meteors head on. Before midnight, you’re on the trailing edge of the Earth and the meteors have to catch up to you. As a result not only are more meteors seen in the pre-dawn hours,

but their impact speeds encountering the Earth's atmosphere are much higher and the meteors are generally faster and brighter. This causes greater ionization, which is what you use to refract a radio signal. Look for TV and FM broadcast "pings" (short bursts of reception) during these events. If you're an amateur radio operator, look for 6- and 2-meter openings off the ionized meteor trails.

The Lyrids, a major meteor shower, should take place from mid to late April. The unpredictability of the shower in any given year always makes the Lyrids worth watching, since we can't say when the next unusual return may occur. If this year's event is average or better (30 to 60 good-sized meteors entering the atmosphere every hour), meteor scatter openings could occur on the VHF bands.

I have a wealth of links at <http://prop.hfradio.org/> that provide up-to-the-minute aurora information and data. Also, check out *CQ VHF* magazine for details regarding VHF propagation through the Spring and Summer.

Current Cycle 23 Progress

The Royal Observatory of Belgium reports that the monthly mean observed sunspot number for December 2007 is 10.1, a very large jump up from November's 1.7 and October's 0.9. The lowest daily sunspot value of zero (0) was recorded December 19 to 31. The highest daily sunspot count was 30 on December 13. The 12-month running smoothed sunspot number centered on June 2007 is 7.7. The forecast for April 2008 calls for a smoothed sunspot count of 3 to 4, reflecting a gradual start to Cycle 24. These observed sunspot averages from

October through December add weight to the declaration of the start of Solar Cycle 24.

The Dominion Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-cm observed monthly mean solar flux of 78.6 for December 2007. The 12-month smoothed 10.7-cm flux centered on June 2007 is 73.2. The predicted smoothed 10.7-cm solar flux for April 2008 is between 60 and 70.

The observed monthly mean planetary A-Index (Ap) for December 2007 is 4, which is typical for the end of autumn and the beginning of winter. The 12-month smoothed Ap index centered on June 2007 is 7.8. Expect the overall geomagnetic activity to vary greatly between quiet to minor storm levels during April.

I'd Like To Hear From You

You can join in with others in discussing space weather, propagation, and LF, MW, shortwave or VHF listening, at <http://hfradio.org/forums/>. Be sure to check out the latest conditions, as well as the educational resources about propagation, which I have put together for you at <http://prop.hfradio.org/>. I also provide a WAP/WML resource for wireless devices. If you want the latest propagation information like the solar flux, A_p reading, and so forth using a cell phone or other WAP device, check out <http://wap.hfradio.org/>, the wireless version of my propagation site.

Please don't hesitate to write to let me know about any interesting propagation you've noticed. Do you have questions about propagation? I look forward to hearing from you.

Happy signal hunting!



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Radio History In Triplicate... But In No particular Order



My folks have always been strong believers in the Biblical axiom, *As you sow, so shall you reap.* Rather than emphasize the punitive side of this truth, however, Mom and Dad simply urged me to test its power via the United States Postal Service.

Every month or so, my father would happen to have been to the post office while they were coincidentally “running a sale on postcards.” Anyway, that’s what he’d tell me as he handed over a small stack of plain postal cards and then he’d dramatically wonder to whom I’d send them and what the effort might net me in return.

Current research shows that almost nobody writes away for anything anymore, but this story’s block-lettered barrage

occurred during the late 1970s, the sunset of a more cordial business era when many companies welcomed hand-written requests for information on their goods and services.

My windfalls typically consisted of promotional literature, radio and TV station coverage maps, an occasional QSL card, or some trinket from a generous firm that probably never suspected they were responding to a 10-year-old girl. At least three-quarters of the stuff resulted from tiny ads Dad had noticed in the likes of *Popular Mechanics* or *Radio-TV Experimenter*, circled and then conspicuously left on my desk. Somewhere in my parents’ attic, I bet there’s still a shoebox full of little pencils, wooden nickels, cheap plastic drill-size indicators, key chains, and crudely stamped mini wrenches—the latter a seemingly never-ending response to one pre-stamped/return-reply magazine tear-out card for a now-defunct Midwestern technical school.

Admittedly, I’m long out of practice when it comes to my childhood regimen of sending off postcards in anticipation of having interesting mail awaiting me almost every afternoon. Maybe it’s our 21st Century’s instant gratification, email/Internet/text messaging and cell call-oriented culture that has made “sending a postcard for details” as anachronistic as seeking out a public payphone to contact a friend. I’ve got say, though, receiving an envelope—especially a big one—with a fascinating return address can still be one of life’s little pleasures.

These days, my biggest postal bonuses relate to *Broadcast Pro-File*. A card I recently sent off to *Pro-File*’s Jan Lowry serves as an example. It was addressed to 28243 Royal Rd., Castaic, California 91384-3028 (the same place anyone can request their free catalog detailing the firm’s bargain-priced radio station histories and vintage photos), and simply asked, “Jan, any ideas for my upcoming columns?” On a non-descript Monday, and just when a serendipitous pick-me-up was needed, I noticed one of *Pro-File*’s crisp white and black 10 x 13-

inch envelopes gently curled in my rural mailbox. Inside, were text chronicles and some unique pictures of three stations I had never considered, though one in particular fit my favorite historical category: a short-lived commercial FM facility. Just as my postcard forays had done nearly 30 years ago, the reward of the correspondence to Jan was traveling to faraway places in both distance and time.

Down To Dixie, Back To The Forties

On top of the *Pro-File* pile were five paragraphs detailing one WFMY. *Pop’Comm* readers in the Greensboro, North Carolina, area will probably recognize that callsign, but this brief exposé wasn’t so much about the market’s thriving WFMY-TV Channel 2 as it was about that television outlet’s long-deceased FM sister.

Like many other pre-World War II-era newspapermen who understood that broadcast advertising cut into print ad revenues, by the late 1930s, E.B. Jeffress of the *Greensboro Record* and *Greensboro Daily News* developed an “if you can’t beat ’em, join ’em” attitude about radio. Jeffress followed many of his newspaper maven contemporaries into the rush of FM enthusiasm when the FM band was opened for full-fledged commercial applications circa 1940. America’s entry into the War put broadcast applications on hold for much of the conflict’s duration, but with the unconditional Axis surrender to Washington, the FCC was again in the new station business. And the Commission was particularly pleased to okay new FM requests.

The Commission granted an FM construction permit to Jeffress’ *Greensboro News Company* a few days before Thanksgiving 1946. In addition to being glad for any culinary bounty that November, the publisher could be thankful for this authorization at 98.1 on the FM dial with 23 kW from an antenna at 450 feet. Call letters WFMY (FM)—the parentheses an FCC code for the “FM” suffix being silent in any spoken or official station identification—were quickly requested and assigned.

Apparently, the project then went on hold for about a year. It’s quite possible that the permittee’s counsel heard that a change in CP was in the works. In fact, a mid-1947 FM frequency revamp caused the Commission to reassign the yet-unmade WFMY (FM) to 97.3 megacycles. By the end of 1947, though, construction was going great guns on a \$175,000 adjunct to the 212 North Davie Street newspaper building that would co-house the print organization’s radio project. A part of these funds was earmarked for an impressive 450-foot self-supporting tower that heralded the FM outfit to anyone gazing at the Greensboro skyline.

Another FMer (WGBG-FM) beat WFMY (FM) to the local airways by a year, but WFMY, complete with two nicely equipped studios and a robust staff of 11, received a “first child” welcome



An obscure piece of real estate from an even more obscure radio station. You're looking at the remaining front wall of the WFMY (FM) studio building at 210 North Davie Street Greensboro, North Carolina. Jan Lowry snapped this nuance shot in September 2004.

in the picturesque pages of its sibling newspapers when it debuted on March 14, 1948.

Oh, Such A Lonely Boy!

Some of you might be old enough to remember Andrew Gold's 1977 Top-40 radio hit *Lonely Boy* about a kid who felt marginalized by his baby sister. Imagine yourself as a proud WFMY (FM), faithfully serving your parents day and night with music, news, and weather... and then they're increasingly and delightfully distracted by a new child who's only up for a few hours daily but gets copious amounts of attention from admirers' ears and eyes. Our lonely FM boy's favored sis came in the form of a CP for WFMY-TV, little more than two months after the radio station went on the air.

The Greensboro News Company's television permit allowed for construction on the video dial's most coveted place: Channel 2. The building of the TV facility took top priority, clearing the way for its late-summer 1949 fanfare-bedecked introduction. To quicken the process, parts of the FM floor space (and antenna stick) were commandeered for things video. This is where the radio picture gets blurry.

Scant records show the following: WFMY (FM) received the go-ahead for a 3000-watt power increase (to 26 kW) in the fall of 1948, another jump (on FCC paper, anyway) in 1949 to 33 kW, a vol-

untary reduction back down to 23 kW by 1950 (or this could signal a Commission correction that indicates no such actualization of the increase grant had taken place), and a bump up to 34,000 watts ERP during 1951.

Jan unearthed the obscure facts that WFMY (FM) was then being identified as "the *eyes* and ears of the Piedmont" (undoubtedly a nod to the favored TV side) and, through 1952, carried lots of programming from "the Dixie Network, based at WRAL-FM Raleigh, North Carolina." This affiliation probably meant that at least several original WFMY (FM) staff members were let go, as the station offered less locally produced fare.

On April 19, 1953, officials at the Greensboro News Company unceremoniously pulled the plug on their FM station. In a short letter to the FCC, the management simply declared that, "after five years of [frequency modulation] operation it would now concentrate on its TV outlet." Less than a week later, someone at the Commission quickly cancelled the WFMY (FM) license and matter-of-factly deleted the silent callsign, the main portion of which became, by default, the television sister's complete possession.

Some Radio History Whirling Around Beantown

The next goody in Jan's mailer focused upon what was long known as WORL, a Boston daytimer having had a pair of

visually similar call letter combinations and a trio of hometowns. Roger Babson founded this AM as WBSO in 1926 at Wellesley Hills, Massachusetts. Using his acumen in economics and statistics, he ran the Babson Statistical Organization, wrote books, delivered lectures, and probably figured that radio represented a statistically economical way to reach a populous and diverse cross section of New England's ears.

His December 1926 U.S. Commerce Commission broadcast authorization specified 100 watts at 780 kilocycles from a studio/transmitter set up in a Prescott Street at Babson Park (Wellesley Hills) headquarters. Babson must have suspected that his radio request was a shoe-in, as he probably made a head start on his project, managing to shoehorn WBSO's start-to-finish construction and debut into the final few weeks of 1926. A jump to a 1/4 kW was granted WBSO in 1928.

By early 1930, the suburban Boston facility got a dial reassignment, going to 920 k.c., plus a licensee corporate name change to Babson Broadcasting Service. This coincided with a city-of-license modification to Needham, the present site of many Boston TV and FM sticks. By the sunset of 1930, Babson's Great Plain Avenue site there featured dual towers (between which a wire antenna array was likely strung) radiating 500 watts of daytime RF. During the early 1930s, Babson modified his station's corporate moniker to Broadcast Service Organization (to better convey an alignment with its related WBSO callsign).

In the middle of the '30s, as the Great Depression slogged through its deepest trough and while he sought to generate some decent economics via WBSO, Babson hired one George A. Crockwell to serve as the station's general manager. Reportedly, Crockwell had previously confided in Babson that he'd like to buy WBSO for cash money. The two took another step towards such a transaction on December 3, 1935, when a sales agreement between Broadcast Service Organization and Crockwell Broadcasting Company was initiated. Consummation occurred in January 1936, as did a call change to WORL. Jan discovered that Crockwell really wanted the name WKDX, but the FCC had already assigned those letters elsewhere, so WORL was picked because it had a nice ring to the phonetic sound of its pronunciation.

Also new in '36 were studios in the Boston-based Myles Standish Hotel and

WORL
ORIGINATORS OF THE FAMOUS 920 CLUB
does it AGAIN!
 WITH A NEW MILLION DOLLAR PROGRAM IDEA!

YOU CAN'T MISS "THE
 ... ON THIS! MILLION DOLLAR BALLROOM"

million dollar talent and music to produce millions of sales for YOU in America's richest market!

INQUIRE NOW ABOUT OUR GUARANTEED
 13-26-52 WEEK CONTRACT PLAN

WORL BOSTON'S BEST BUY!
 BOSTON 16, MASS.

FORJEO & CO. • NATIONAL REPRESENTATIVES



Once the proud entrance to the KCHJ studios and live music shows like "Barn Dance," this portal and its signage was abandoned in 1965, 14 years prior to Jan Lowry capturing its lonely picture.

WORL dubbed itself Boston's Best (advertising) Buy in this 1948 publicity sheet aimed at ad agencies that purchased airtime for their clients' commercials. Note that the success of WORL's cornerstone "920 Club" DJ/record program is mentioned along with a big plug for its new "Million Dollar Ballroom," a similar personality hosted record spinning scenario. Nowhere in the spread, though, is there even a hint that WORL is a daytime-only operation. And it's odd that the "920 Club" was even mentioned, as the station's frequency had long before been changed to 950 kHz and with it the name of WORL's biggest ratings maker became the "950 Club."

man with no other radio interests to navigate this significant change request.

"News of the hour, on the hour, every hour," became WORL's cry throughout the '30s, as it operated from 7 a.m. to local sunset. In early 1939, Bulova added the DJ banter and popular records programming pioneered at co-owned WNEW New York that was attracting a vibrant listenership in the Big Apple. The WORL version, dubbed "920 Club" (for its 920 dial position), debuted at the end of January 1939 and ran well past the Bulova years as the station's biggest ad revenue draw. To be more accurate, the popular DJ show was soon recast as the "950 Club" to coincide with the 1941 North American frequency shift that knocked WORL 30 kilocycles up the band.

In the meantime, Bulova's technical people had installed a new 1-kW transmitter at the Needham site where they began using a Truscon-brand 308-foot vertical radiating antenna. This March 1940 modification predated, by three years, another big change: a studio move to larger quarters on the 9th floor of the Union Savings Bank Building located at 216 Tremont Street in Boston.

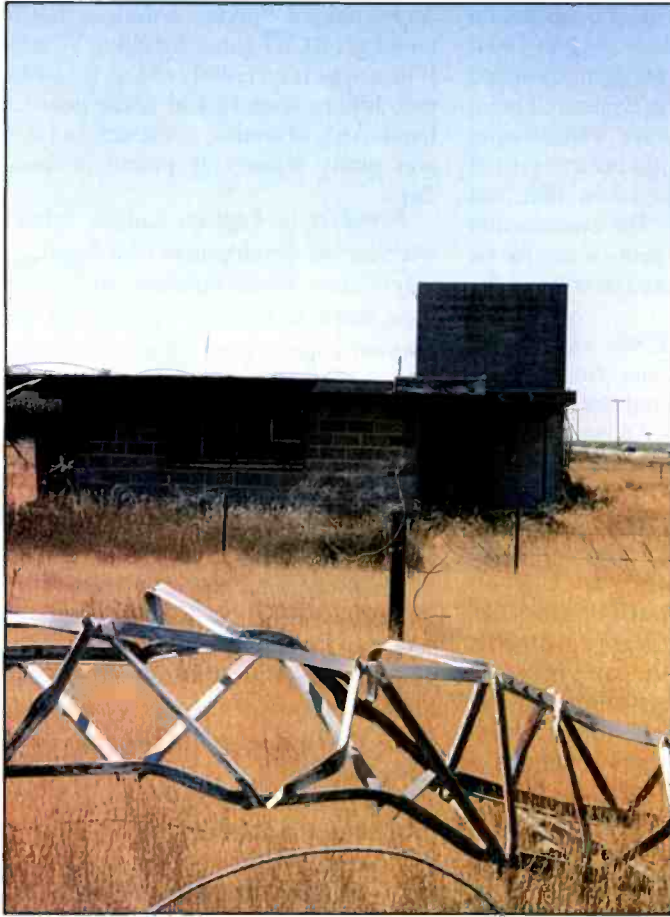
In the midst of the activity designed to make WORL truly competitive (though still a daytime-only operation), Bulova sold a minority share of the station to his radioman and broadcasting company president, Harold LaFount. By 1944, the FCC was

a congruent city-of-license ID switch to Boston. Now, at least from a station ID standpoint, WORL was on a par with the big boys of Boston broadcasting.

Watch Out For Trouble Ahead!

Broadcast Pro-File notes that Crockwell's reign was suspiciously short for those days, decades before broadcast property buy and sell frenzies became commonplace. About 12 months into his ownership, Crockwell quietly sold WORL. Jan says, "watchmaker Arde Bulova, owner of Boston's WCOP, purchased WORL. Harold LaFount, former U.S. Radio Inspector and head of Mr. Bulova's radio group, then became president of licensee Broadcasting Service Organization, Inc."

The timing and Crockwell's gerrymandering to move WORL to Boston is curious. One can only speculate that perhaps Bulova, already the licensee of a hub city station, needed a front



A hauntingly beautiful image from the Broadcast Pro-File collection, it provides a ghost town glimpse of the downed, twisted tower remains in the foreground of an equally derelict KCHJ building off County Line Road near Delano, California. Jan D. Lowry took the classic radio station picture on September 13, 1979, nearly a decade and a half after the last RF flew from this original KCHJ site.

looking intently into broadcast property transactions and ownership patterns for signs of duopoly, or one firm controlling too many radio voices in a given media market.

Then the “duopoly” definition was no more than one commonly owned AM, one FM, and one TV outlet per area. Interestingly, in order to comply with the Commission’s new policy in Boston, Bulova sold fulltime WCOP Boston in lieu of having to shed daytimer WORL. No matter, FCC examiners scrutinizing Bulova’s Massachusetts holdings saw something they didn’t like at WORL. Jan Lowry describes the 1945 controversy as “allegations over unauthorized transfer of control of licensee Broadcast Service Organization cited as the reason for review of WORL’s authorization to continue broadcasting.”

The FCC has always been very picky about its licensees being completely candid with all details related to who is actually calling the shots at a particular station. It may be that Bulova had granted LaFount more ownership clout than was disclosed in WORL’s FCC application filings. In any event, Bulova’s attorneys could not satisfactorily answer the charges, resulting in an April 1947 Commission decision denying the renewal of WORL’s license.

Two years later, and with appeals exhausted, Bulova was forced to give up his Boston facility. At sunset on the last day

of May 1949, WORL’s temporary authorization, under which it had operated while fighting for license renewal, expired. Folks tuned to that day’s “950 Club” heard the program’s last record fade and an announcer indicate that the station had been “losing money.” With this euphemistic admission, the transmitter was silenced. The first version of Boston’s WORL officially became history sometime in June when the FCC deleted the callsign.

But Not For Long...

Pop’Comm AM buffs who know New England radio might wonder why the previous piece of history wasn’t titled “Rolling Around Beantown” instead of “Whirling.” That’s because, for years, the Boston 950 occupant had been called WROL, not WORL. The seeming letter confusion has a logical explanation contained in the following nutshell.

In 1950, the Commission granted Pilgrim Broadcasting, a company formed to seek Boston’s 950 spot, permission to reactivate the shamefully silenced WORL frequency. Because Bulova’s programming and calls had been well received by hub city audiences, understandably Pilgrim debuted its new 950 outlet with the same identity and much of the former content of the previous WORL. Arguably, there were more than a few Bostonians who were happy to hear the “950 Club” again.

By the mid-1960s, Pilgrim decided to capitalize on the Beautiful Music programming trend that targeted affluent adults. The aging “950 Club” gave way to quarter-hour segments of lush instrumentals and ballads bordered by rich-voiced announcers who tastefully presented time, temperature, and intelligent advertising. To better banner this fare, WORL was re-dubbed WRYT or “Right Radio,” perhaps as a contrast to the “wrong” kind that catered to teens via screaming DJs, Rolling Stones records, whizzing jingles, and Clearasil commercials. This focus worked reasonably well until the early 1970s when FM penetration and classy stereo stations like General Electric’s WJIB-FM Boston siphoned off much of WRYT’s “good music” base.

After the station was sold to inspirationally oriented Carter Broadcasting in 1977, WRYT’s new ownership wanted to return it to its nominal roots. But a check of FCC listings indicated that an Orlando, Florida, area station had grabbed the WORL calls during 950’s WRYT years. Carter decided that WROL was close enough to WORL—especially after a lengthy phonetic hiatus for Boston radio listeners—and successfully sought the similar sounding ID. A religious focus constituted much of Carter’s programming, a format still held by the station’s current licensee, Salem Communications.

WROL’s Recipe For Success

No mention of Boston’s 950 AM would be complete without acknowledging the personality responsible for its most loyal audience members. From the late 1960s until October 1999, Gus Saunders spent a good portion of his 56-year Beantown broadcasting career entertaining “housewives” (and, no doubt, men who enjoyed preparing food) in his electronic Boston Kitchen, a.k.a. “The Yankee Kitchen.”

Saunders’ show, originally on WNAC and its full New England affiliate coverage Yankee Network, was Number 1 in women listeners and had a sponsor waiting list when 50,000-watt WNAC morphed into Top-40 WRKO and dumped

Saunders in 1967. After a short stint at WCOP, he was recruited by Pilgrim's WORL to set up the daily cooking program there. His rich voice, friendly "can-do" demeanor, and obvious knowledge of things culinary equaled good ratings, no matter what his station venue.

When combing through my files for anything related to WORL, WRYT, or WROL, I noticed a 2003 letter from a "Shannon" reader who mentioned how his mom had two radios, side by side, on top of the refrigerator in their cozy Stoneham, Massachusetts Cape Cod-style home. "One was a solid-state, wood-grain plastic Sylvania clock radio," the writer recalled, "and the other one was a chubby, kind of '50s coral color, tube-type." He said that the latter set had no tuning dial because his father had pulled it off and chucked it out the kitchen window! The reader continued:

As teenagers, my sister and I would always change the station to rockers WRKO or WMEX and then my technically challenged mother would have problems retuning to 950 so she could hear Gus Saunders' program. Dad got so tired of the almost daily ritual of finding that spot for mom that he eventually bought a radio—the old coral one—at a garage sale, set it at 950 AM, yanked the dial, and parked the set next to our main kitchen radio.

Whenever Gus Saunders' cooking show came on, all mom had to do was negotiate the on/off/volume control. We kept clear of what my parents referred to as the "recipe radio" and used the Sylvania for our required diet of Top-40 tunes. We weren't alone either. Both my sister and I had friends whose moms let little come between them and Gus Saunders when the "Yankee Kitchen" hit the airwaves.

The truly amazing thing about this cooking program is that it built a respectable portion of its host's Boston media icon status on a daytime-only AM outlet. Even during the 1990s, when more than a few large Boston area FMs (not to mention a 50-kW AM or two there) struggled for any kind of consistently positive reputation, 70-something Gus Saunders on little WROL 950 AM made a remarkable splash.

Drenched By Waves, From Short To Medium

During World War II, Japanese military officials as well as one Charles Herman Johnes were fixated on the community of Delano, California. The Japanese Navy wanted to bomb the town and Johnes (pronounced "Jones")

dreamed of running a local radio station there. Here's why: From 1942 to 1944, the U.S. Government commissioned Columbia Broadcasting System to build a super-power shortwave transmission facility at Delano. Johnes became part of the CBS team employed in that San Joaquin Valley locale. The construction resulted in the facility being ready for air as America hyper-focused on winning the War in the Pacific.

Delano-based KCBR shortwave became an ideal venue from which American broadcasts could be beamed to Hawaii, the Phillipines, Okinawa, and on to Tokyo. Warlords in that capitol city planned to blow up KCBR and silence that electronic blanket over their region, but their reconnaissance argued that getting Japanese bombers past U.S. air defenses would be virtually impossible. Meanwhile, the giant shortwave outlet contributed mightily to the improving morale of the Allied war effort and later continued as a Voice of America relay operation until its closure last fall due to the waning publicity value of international shortwave.

"During its peak transmission hours," a Wikipedia contributor noted, the Delano relay was "off limits to the public because of Radio Frequency Interference [radiation] issues." With a 250,000-watt transmitter into a vast antenna array good for 36 dBi gain, nearly 50 megawatts of effective isotropic radiated power bathed the site. That could light up a lot of fluorescent bulbs around the neighborhood!

No doubt CBS engineer Charles Johnes was impressed with his employer's gigantic station; however, he got to thinking about a broadcast operation easier to get one's hands around. Maybe a nice little daytimer with a mom & pop ownership approach...something to serve the good people of rural Delano and neighboring folks in the farm country about 140 miles north of Los Angeles. These musings followed him through the War's duration and into the late '40s when he actualized them with an FCC application.

Just ahead of Labor Day 1949, Johnes received word that the Commission had granted his request for a new AM at Delano. The okay was for 1 kW on 1010 kilocycles. A few weeks later, Washington assigned the Construction Permit working call letters that included his initials: KCHJ. Jan Lowry's research shows that permittee Johnes, also 50 percent owner of a small Delano business, Radio-

Sound Sales & Service, estimated that he could get KCHJ going for about \$7,800. If that sounds incredibly cheap, it may be that Johnes already had some gear on hand. And, of course, construction labor was pretty reasonably priced in those days.

However he kept on budget, Johnes oversaw the development of a "modern, single story block building on County Line Road at Melcher Avenue, on the northern edge of Kern County, bordering Tulare County." *Broadcast Pro-File* states. "A self-supported vertical radiating antenna tower was erected along side the new studio/transmitter building." It could be that a bit of Johnes' cost-cutting came in the form of time. Instead of rushing his project, he did what he could when he could, eventually getting KCHJ airborne on December 1, 1951—two years and three months after his original CP arrived. In the interim, he'd quit his day job with the mammoth shortwave outfit down the road.

Once Johnes had KCHJ up and running, he devoted some of his engineering skills to seeking a major upgrade for the daytimer. In 1954, this resulted in the FCC allowing him to boost day power to 5 kW and add a 1000 watts of night service via the erection of a second tower. Again, KCHJ's ownership took its time in making the improvements, but the additional (guyed) stick, phasor cabinetry, transmission line, and bigger transmitter were systematically readied for the now full-time facility's debut on April 9, 1957.

What Did KCHJ Play?

Though I wasn't around during the Delano station's golden age, nor have even heard any airchecks of its fare, I bet its towers piped out some good old airwaves hospitality. Jan's findings peg the KCHJ output of the 1950s and 1960s as "a variety program format, including a live local "Breakfast Club," "Melody Rancho," "Starlight Memories," "Club 1010," the "Party Line" telephone talk show, an all Elvis Presley hour, and a female DJ show (the latter exclusive feminine hosting being rather rare in those days, especially at a small-market station). Religious programming was broadcast on Sundays until 10:30 a.m. and something dubbed "Freeway 99" was heard thereafter. A Spanish language program aired daily in the early morning hours."

From the show titles alone, one can almost hear the recorded theme songs followed by a KCHJ announcer welcoming folks "out there in radio-land." Two KCHJ offerings, "Stardust Time" and "Barn Dance," were hosted by station owner Charles Herman Johnes' alter ego, Gabe Herman. No doubt he had lots of fun on his 1010 airwaves, especially as master of ceremonies, Gabe Herman, chatting with the live musicians who filled the KCHJ "Barn Dance" studio.

Speaking of space from which to broadcast, the KCHJ family, including Mr. Johnes as President, Mrs. Johnes as General Manager, and their son as Chief Engineer, was fast running out of it. In 1959, they'd received FCC permission to occupy new studio and transmitter digs. "Increasingly cramped" conditions were cited as reasons for the desired relocation. Another five years elapsed, however, before moving day arrived. Sales offices were opened in downtown Delano in early 1964, and occupancy of a new Delano studio/transmitter venue followed. Jan notes that this combo facility came in the form of a freshly built "60-foot by 120-foot cinderblock building located at Avenue 16 and Road 112."

A most interesting footnote about this site switch, *Pro-File* states, is the fact that "the old [KCHJ] quarters were abandoned but left standing to the elements and vandals and the property is now open farmland."

End Of A KCHJ Era

Johnes had realized his dream of establishing a robust local radio station and shepherded his early 1940s notion (while working at shortwave KCBR) from a *what if?* to a CP, and then through power increases, full-time status, and the studio/transmitter site upgrade. In 1968, with all that accomplished and undoubtedly more radio ideas in mind, he was killed in a car accident. The Gabe Herman persona died, too.

Johnes' family continued operating KCHJ for the next quarter century. Milestones from that period on were primarily format-related. For example, the station's air product was listed as "middle-of-the-road/country music" circa 1971, automated (as opposed to "live") musical fare (primarily MOR, and Country) was slipped into the schedule from 1975 to 1983, and specialized programming like Farm Information, Filipino, and increasing amounts of

Spanish offerings were broadcast. By 1986, oldies were featured among KCHJ's tunes, but dropped three years later in favor of a bigger association with C&W and the station's new identity: Country 101.


This sound changed radically on May 12, 1991 when KCHJ flipped to contemporary Spanish-language music for all of its schedule except five hours of Filipino per week. The year 1991 also marked a KCHJ studio move that took it 35 miles south to Bakersfield, California, in order to co-locate with KWAC, another Spanish-formatted AM there. The Johnes family parted with KCHJ in 1994. The owner of KWAC gave them \$400,000 for the (still officially licensed to) Delano AM. Five years later, it was resold, with a group of sister stations, for over \$6 million bucks, and, in 2006, moved into a brand new, modern office and studio

building at 5100 Commerce Drive in Bakersfield.

The info Jan sent me concludes that KCHJ is now known as "El Gallito," and operates 24 hours a day with a Spanish Ranchera and Norteno music format. Its two-tower antenna array, though, is the same one Charles Herman Johnes built northwest of Delano and not too far from the old KCBR shortwave locale where he likely first envisioned mailing off FCC forms asking permission to start a nice little community-minded AM radio station.


For Johnes and the other station founders in this month's historical vignettes, receiving the FCC's traditional postcard announcement form stating, "Your application has been granted," must have certainly been a thrill.

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



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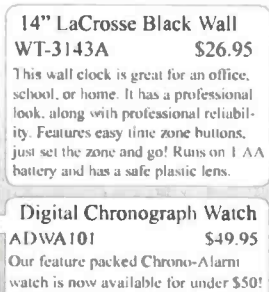
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Clearing The Air About CODAR

For experienced SWLs who have tried listening to a shortwave utility or broadcast station in the presence of a CODAR signal, this month's column title will undoubtedly draw an ironic snort. "Clear the air, indeed," you may well exclaim. "Those CODAR stations do anything but!"

It's true that CODAR signals seem to have a way of interfering with our efforts to log many of our listening targets. Many SWLs have lamented QRM from CODAR systems on the HF bands, myself included. However, many SWLs are in the dark about what CODAR is and what purpose it serves, other than to sometimes thwart our efforts to successfully log other stations on the HF bands.

The CODAR acronym stands for Coastal Ocean Dynamics Applications Radar and refers to an HF radar system that remotely measures surface currents on the oceans. Its purpose is to permit researchers to produce a complete map of ocean currents, without having to actually go out on a boat and deploy an expensive system of current meters.

There are several of these systems currently in operation around the world. A couple of the most well known in the United States are the one that Rutgers University has deployed along the New Jersey coast, and another installed around Monterey Bay, California, and managed by the U.S. Navy. Others that I know of are deployed in Maine, Massachusetts, North Carolina, and Alaska, to name a few. In fact, there's an entire radar "backbone" consisting of numerous existing and planned CODAR installations along the East Coast of the United States and Canada.

But the use of CODAR is not confined to North America. For instance, the Japanese Coast Guard operates CODAR systems at the entrances to Tokyo and Sagami Bays, and a CODAR system located on mainland China is known as a notorious source of interference on 12 meters.

These systems all utilize the same basic technology involving a transmitted radio wave to calculate the basic speed and direction of oceanic surface currents. A typical CODAR system might transmit radio signals in 4- to 18-minute intervals

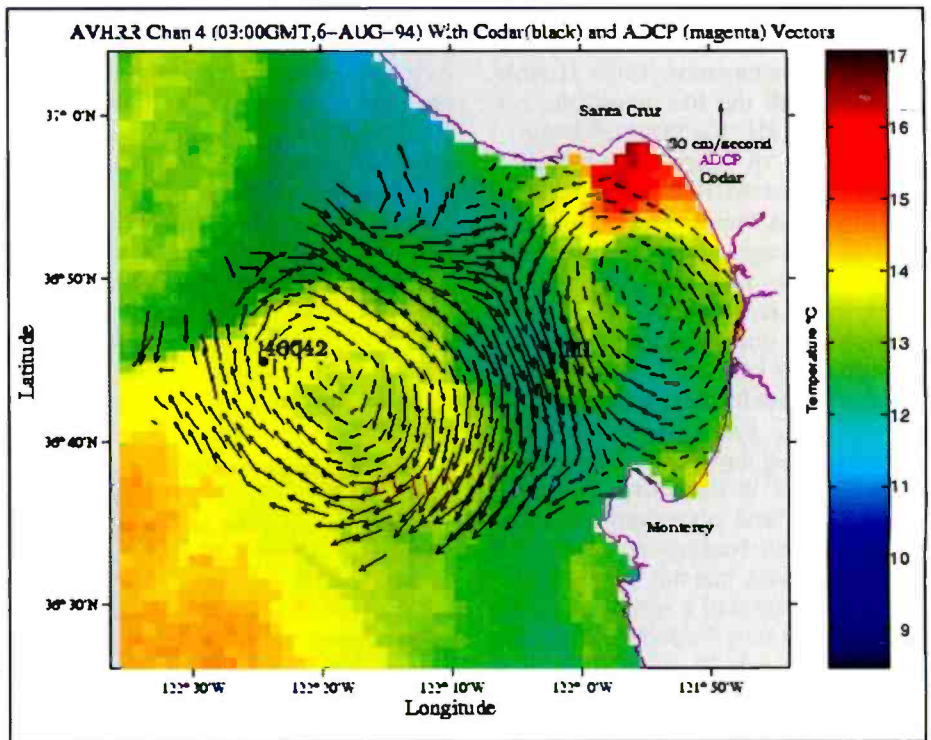


Figure. Sample map of oceanic currents using a CODAR system. (Courtesy of U.S. Navy)

at frequencies from 3 to 50 MHz, employing multiple receivers at different locations to listen for return signals. When a transmitted signal encounters a wave on the ocean that's half the wavelength of the radio signal and is moving directly toward or away from the receiving antenna, a return signal is produced. Researchers can then determine distance from the time delay of the return signal in relation to when it was transmitted, and they can determine the speed of the wave by measuring the Doppler shift of the return signal.

A radio direction finding (RDF) algorithm is also used, allowing researchers to calculate the bearing of the wave. By using two or more transmitters at different locations to examine the same area of ocean, researchers can then combine the different viewing angles into a two-dimensional map of the upper surface currents, such as the one shown in the accompanying Figure, from the Monterey Bay system managed by the Naval Postgraduate School.

The resulting data is used not only by the researchers, but produces observations significant to determining the settlement of marine animal populations, and thus is of value to commercial fishermen and charters. The data on surface currents is also of considerable aid to oil spill response teams, or others wishing to track pollutants on the ocean surface. In addition, the U.S. Coast Guard's search and rescue (SAR) operations make use of the data for finding and recovering vessels or other objects lost at sea. The National Weather Service, Army Corps of Engineers, and even the general public are also users of the data the CODAR systems collect.

The range of these systems varies according to many factors, including external noise, wave height and speed, the location of the radios with respect to the water and nearby obstructions, and of course, the frequency of the transmitted signal. CODAR signals in the 40-44 MHz range, for example, have a range of 10-20 km. In the 24-27 MHz region this

increases to 30–50 km, and in the 12–14 MHz slice of the RF spectrum the range is about 50–70 km. The CODARs most frequently cited as examples when SWLs ask one another about them are those in the 4–6 MHz region, where the range jumps dramatically, from 160–220 km during the daytime (the range is reduced significantly at night due to the higher noise level at night). The 4–6 MHz region generally also yields the best resolution (3–12 km, as opposed to as little as 300 meters at 27 MHz and higher) on these radars.

It should be noted that in the preceding paragraph, the reference to “range” refers to the effective range of the system for gathering data, not to the distance it’s possible to hear the transmitted signals using the HF receiver in your shack! These are HF radio signals, subject to the same effects of propagation as any other HF radio signals. Thus, obviously, since these signals are being transmitted over water, which is electrically conductive, they can be heard far beyond the distances at which the signals retain any value to the researchers who transmit them, even though the RF power radiated by the transmitter may be as low as 40 watts.

Photo A shows the antennas used at a typical site, with the transmitting antenna at left and the receiving antenna on the right in the photo.

Aside from the tendency of these signals to hinder efforts to log utility, broadcast, and amateur stations on nearby frequencies, the primary annoyance associated with CODAR stations for us listeners is that they are not required to identify their transmissions. Therefore, we cannot log them, and, as one SWL remarked recently on Usenet, “It would not be so bad if these things would ID at the top of the hour so at least propagation could be tracked.” Alas, though, since the location of a particular signal cannot be positively identified by the average SWL, we cannot even use them to study propagation. We can only chalk them up as QRM for our purposes. But now we know that, like so many other things that cause our radios to go “Beep!” in the night, there’s at least a good and practical reason for their presence.

The CODAR stations initially deployed in the 1980s have been improved upon and replaced by newer systems bearing a name that’s a registered trademark of the company that designs the systems, CODAR Ocean Sensors in Mountain View, California, so it’s obvi-



Photo A. Antenna array from the CODAR site at Long Marine Laboratory in Santa Cruz, California. See text. (Photo courtesy of U.S. Navy)

ous why the systems are still referred to as CODAR systems.

Military Applications And The Littoral Sensor Grid

Besides the scientific uses for the data collected by CODAR systems, there are also military applications for surface cur-

rent data related to SAR, navigation, sub-surface operations, ship detection, amphibious operations, and anti-submarine warfare (ASW). While other environmental assessment requirements pertaining to naval operations (such as surface temperature and winds, sea state, sea ice, and beach conditions) are detectable by satellites, satellites cannot detect surface currents. This can only be



Photo B. Naval assets, such as this Littoral Surface Craft, may soon get a high-tech assist from a grid of coastal sensor buoys able to share data with other assets. (U.S. Navy photo)

done using HF radar. For this reason, militaries make extensive use of airborne and vessel-mounted sensors when engaged in ASW activities.

It's known that Canadian forces have experimented with using their shipborne Raytheon ship detection HF radar systems to extract surface current information. This is theoretically feasible; however, while only one radar site is needed for ship detection, at least two are required for surface current detection. This would seem to make it unlikely from a cost standpoint that anyone would want to regularly use systems like the Raytheon ship detection radars for this purpose. Not only does CODAR cost a fraction of what the Raytheon system does, but also the distance between sites required for surface current data generation (no more than 40 to 60 percent of the system's range) is substantially less than that needed for two adjacent sites optimized for ship detection. Therefore, the

additional sites needed to fill in the gaps for surface current detection would be wasted from a ship detection standpoint.

This is particularly true since ship detection systems such as Raytheon's cannot "see" littoral waters, and in fact do not operate within the first few tens of miles from shore. CODAR systems can be, and are, operated in this zone, and this zone is an essential area from a military standpoint, particularly with respect to amphibious operations and mine countermeasures.

It is at least partially for this reason that the U.S. Navy recently contracted with the commercial firm Mobilisa, a wireless technology provider with headquarters in Port Townsend, Washington, to develop a prototype for a system of wireless sensor buoys that are able to share data and network buoy-to-buoy, buoy-to-shore, and buoy-to-at-sea platforms. This would not only be able to share data with military vessels, such as the new Littoral Surface

Craft shown in **Photo B**, but could also send data to other government agencies, as well as universities and schools and to environmental groups. Called the Littoral Sensor Grid, this network of high-tech buoys would supplement or replace the magnetometers and acoustic sensors currently used in littoral waters, and thus extend the protection zone around U.S. harbors and seaways.

In any case, you can now add another acronym to your vocabulary: in addition to LAN (Local Area Network) and WAN (Wide Area Network), you will now need to contend with a new buzzword, FAN (Floating Area Network). My initial research on these buoys indicates that they will apparently do the bulk of their communicating on VHF and above. Thus, we don't expect many signals on HF as a result of their eventual deployment. That is, unless and until some fishing boat or other vessel operating in shallow coastal waters hits one

Glossary Of Utility Terms And Acronyms

AFB—Air Force Base

ALE—Automatic Link Establishment, a link control system that includes automatic scanning, selective calling, sounding, and channel selection, without human intervention using processor control.

AM—Amplitude Modulation

ANDVT—Advanced Narrowband Digital Voice Terminal, a secure voice mode used by the military.

ATC—Air Traffic Control

CAMSLANT—Communications Area Master Station Atlantic, the U.S. Coast Guard's primary HF radio station for the Atlantic region, located at Portsmouth, Virginia.

CAMSPAC—Communications Area Master Station Pacific, the U.S. Coast Guard's primary HF radio station for the Pacific region, located at Pt. Reyes, California.

COMMSTA—Communications Station, for example: COMMSTA Kodiak, a communications station of the U.S. Coast Guard, located at Kodiak, Alaska.

CGAS—Coast Guard Air Station

Cut Numbers—The use of letters in place of numbers when sending a long string of numbers, for brevity's sake. This is often done by "numbers" stations, such as sending one long dash instead of five normal dashes to indicate a zero, or the letter N instead of the number nine, etc.

CW—Continuous Wave (Morse code)

DE—The Morse code operating prosign DE, meaning "from," as in DENMN, meaning from station NMN

D-Layer Absorption—A phenomenon where the sun's rays ionize the D layer of the atmosphere causing it to absorb, rather than propagate (reflect/bounce), radio signals at certain frequencies.

Duplex—A means of radio communication where a station can both transmit and receive at the same time.

EAM—Emergency Action Message, coded instructions commonly sent by U.S. military stations. Despite the name, they usually aren't emergency traffic at all.

EHF—Extremely High Frequency (30-300 GHz)

FAX—Facsimile, a transmission mode used to send maps, charts, and other non-textual material.

FEMA—Federal Emergency Management Agency, a part of the Department of Homeland Security.

FM—Frequency Modulation

Ham Station—A licensed station operating in the Amateur Radio Service under the control of an operator who is licensed to operate the station.

HF—High Frequency (3-30 MHz)

LINK-11—Also called TADIL-A for TActical Digtal Link, a secure digital data mode used by the military. Utilizes a 16-tone data modem to allow assets to share digital information, such as radar data.

M/V—Merchant Vessel

NAS—Naval Air Station

Propagation—The means by which radio signals get from one place to another; some forms are quite simple (such as line of sight) while others are much more complex (such as EME, or earth-moon-earth).

QRM—Man-made interference to radio signals

QRN—Natural interference to radio signals, such as the static crashes often heard due to thunderstorms

QSO—A contact between two or more stations

QSY—Change frequency.

QTH—Location

RTTY—Radio TeleTYpe

SELCAL—SElective CALling, a method for activating a radio or data terminal at one station without disturbing other stations that are monitoring the same frequency.

Simplex—A means of radio communication where a station may transmit or receive at any given time, but not do both at the same time.

SITOR—Simplex Teletype Over Radio, a transmission mode used to transmit text messages over radio. There are two SITOR modes: SITOR-A (also called AMTOR) uses Automatic Repeat Request (ARQ); SITOR-B uses Forward Error Correction (FEC).

SWL—Shortwave Listener, a person who enjoys listening to shortwave radio stations.

UHF—Ultra-High Frequency (300-3000 MHz)

USAF—United States Air Force

USB—Upper Sideband

USCG—United State Coast Guard

USMC—United States Marine Corps

USN—United States Navy

UTC—Coordinated Universal Time, formerly known as Greenwich Mean Time, and also commonly referred to as ZULU time and abbreviated as in 1200Z.

UTE—Utility Station

Utility Station—Stations transmitting material that is not intended for reception by the general public and is not originating from an amateur (ham) station.

VHF—Very High Frequency (30-300 MHz)

VOLMET—Station that transmits aeronautical weather information. Comes from a French term that literally means, "flying weather."

(i.e., when a ship hits the FAN), at which point we may be able to monitor Coast Guard and/or Navy communications pertaining to the resulting SAR mission.

HF Beacon Society Seeking Listener Reports

Those who read last month's column will recall that we looked at the High Frequency Beacon Society and the homebrew, low-power beacon stations that its members use to study propagation. Since that column was written, I've been contacted by a representative of the society with the news that they would like listeners to their beacons to send a short report now and then to help them collect data on how shortwave propagation affects the signals from their beacon stations.

As a reminder, or in case you missed last month's issue (shame on you!), you can check the society's website for complete information, including a list of currently operating beacons and their frequencies:

www.highfrequencybeaconsociety.bravehost.com/index.html

Once there, you can find the list of beacons that are currently in operation by clicking the button marked "Beacons" (and, of course, "surf" the other pages on the website as well). The society asks that reception reports be e-mailed to this address:

hiferbeacon@yahoo.com

Since last month's column, the 100-milliwatt "W" beacon in Colorado, operating on 8188.7 kHz, has been upgraded to operate 24/7 with the addition of battery power. Previously it used solar power and thus operated only when it was in daylight. The transmitter for this beacon was shown in a photo that accompanied last month's column.

Now On With The Logs!

On a monthly basis, *Pop'Comm* readers supply their fellow hobbyists with a treasure chest of loggings, for which we are eternally grateful. This month is no exception, and our thanks go out to the following UTE monitors who submitted the logs that follow, namely: Al Stern, Satellite Beach, FL (ALS); Steven Jones, Lexington, KY (SJ/KY); Glenn Valenta, Lakewood, CO (GV/CO); Mark Cleary, Charleston, SC (MC/SC); Lupo Alberto, Italy (LA/IT); William Hassig, Mount Prospect, IL (WH/IL); and John Kasupski, Tonawanda, NY (JK/NY).

1755.0: Palma Radio, Spain, with nav weather warning in Spanish, in USB at 2040Z. (LA/IT)

2183.7: Unid. station idling for over 4 hours, similar transmission heard last month on long-standing distress & emergency voice frequency 2182.0 kHz, this time it was standard 1.7 kHz offset for voice versus digital transmissions, in SITOR-B from 0030Z to past 0430Z. (SJ/KY)

2458.5: AQP2/4, Marine Karachi Pakistan, with series of Vs, shifting the frequency as RTTY with negative keying 1000 Hz down, in CW at 1748Z. (LA/IT)

2474.0: PBB, Marine Den Helder Holland, with test transmission in 75/850 RTTY at 1630Z. (LA/IT)

2609.0: FOU, Marine Toulon France, with "voyez vous le brick" in 150/850 RTTY at 1635Z. (LA/IT)

2789.0: FUE, Marine Brest France, with "all de fue" testing in 75/850 RTTY at 1645Z. (LA/IT)

2872.0: Gander Radio working various aircraft; Shanwick Radio's SELCAL transmissions also audible, in USB at 0652Z. (GV/CO)

2872.0: Shanwick Radio wkg "Al Italia 78C" for posrep in USB at 0354Z; Shanwick wkg "VPBHM" for posrep in USB at 0505Z. (ALS)

2872.0: Gander Radio wkg "Malasian 91," a Boeing 777 en route from Newark to Arlanda A/P, Stockholm, Sweden (ESSA) for routing, in USB at 0649Z; Gander wkg Air India 141 for routing in USB at 0717Z; Gander wkg Air Europa 440 for routing in USB at 0718Z. (ALS)

2872.0: Gander Radio wkg Aeroflot 316 for posrep and SELCAL check in USB at 0504Z; Gander wkg "New Zealand 2"; QSY's to 4675, in USB at 0538Z; Gander wkg "KLM 644" for posrep in USB at 0645Z; Gander wkg "Iceair 642" for SELCAL check in USB at 0458Z. (ALS)

2872.0: Gander Radio wkg "El Al 107" for posrep in USB at 0733Z; Gander wkg "Speedbird 298" for posrep in USB at 0736Z; Gander wkg "El Al 103" for posrep in USB at 0739Z; Gander wkg "El Al 008" for posrep in USB at 0751Z; Gander wkg "Lufthansa 433" for amended clearance, nav fix GIPER, due to tfc, in USB at 0751Z. (ALS)

2899.0: Gander Radio working Air Canada 872 for flight following and SELCAL test in USB at 0435Z. (JK/NY)

2899.0: Gander Radio wkg "US Air 740" for posrep in USB at 0640Z; Gander wkg "American 885" for posrep in USB at 0508Z; Gander wkg "Delta 36" for SELCAL check in USB at 0509Z; Gander wkg a Northwest flight and passing info from Northwest Dispatch regarding report of turbulence near position 53 N 20 W, in USB at 0711Z. (ALS)

2899.0: Gander Radio wkg "Continental 100" for posrep in USB at 0647Z; Gander wkg "American 60" for posrep in USB at 0434Z; Gander wkg "Condor 189" for clearance, routing in USB at 0726Z; Shanwick Radio wkg "N680GG" (Cessna 680) for posrep and SELCAL check in USB at 0642Z. Shanwick wkg REACH 371 for posrep (53N 20W) in USB at 0644Z. (ALS)

2899.0: Shanwick Radio wkg "Navy PR 04" (EP-3E, Whidbey NAS) for posrep (54N 20W) in USB at 0651Z; Shanwick wkg "Continental 54" for SELCAL check in USB at 0708Z; Shanwick wkg Northwest 50 for posrep (52N 30W) in USB at 0735Z; Shanwick wkg "Continental 22" for SELCAL check, also passes SigMet, in USB at 0534Z. (ALS)

2899.0: Shanwick Radio wkg "Air Canada 872" for posrep and SELCAL check in USB at 0307Z; Shanwick wkg "American 70" for posrep and SELCAL check in USB at 0316Z; Shanwick wkg "Delta 60" to rqst they tell "Delta 46" to ctct Shanwick on this freq., in USB at 0318Z. (ALS)

2899.0: Shanwick Radio wkg "Iberia" flight in USB at 0815Z; Gander Radio wkg UPS flight for posrep in USB at 0853Z; Gander wkg Northwest 60 for posrep and fuel status report in USB at 0903Z; Gander wkg REACH 9028 for SELCAL check in USB at 0906Z. (ALS)

2962.0: Santa Maria Radio wkg "Iberia 6740" for posrep and SELCAL check in USB at 0626Z; Santa Maria wkg "N707GW" and handed off to Shanwick on 3016.0, in USB at 0632Z. (ALS)

2971.0: Shanwick Radio wkg "Lufthansa 487" for SELCAL check in USB at 0746Z; Shanwick wkg "Continental 46" for SELCAL check in USB at 0751Z; Shanwick wkg "Speedbird 284" for posrep and SELCAL check in USB at 0754Z; Shanwick wkg "Singapore 21" for posrep in USB at 0800Z; Shanwick wkg "American 54" for SELCAL check in USB at 0510Z. (ALS)

3016.0: Santa Maria Radio wkg "American 54" re fuel status and SELCAL check in USB at 0517Z; Shanwick Radio wkg "Virgin 6" for SELCAL check in USB at 0742Z; Shanwick wkg "N480QS" for posrep and SELCAL check in USB at 0710Z; Shanwick wkg "North American 134" for routing clearance in USB at 0527Z; Shanwick wkg "Speedbird 2156" for routing in USB at 0635Z. (ALS)

3310.0: Odessa Radio, Ukraine, with clear ID and nav warning in Ukrainian, in USB at 1627Z. (LA/IT)

3319.0: Link-11 data transmission at 1246Z. (MC/SC)

3455.0: NY Radio working Jet Blue 707 and clearing same for climb to FL350, in USB and SELCAL at 0314Z. (JK/NY)

3455.0: New York Radio wkg "Speedbird 208" for posrep in USB at 0430Z; New York wkg "United 873" for clearance to higher altitude in USB at 0437Z; New York wkg "Continental 31" for routing in USB at 0445Z; New York wkg "Air Mexico 022" for SELCAL check in USB at 0608Z; New York wkg "Giant 806" for SELCAL check in USB at 0639Z. (ALS)

3455.0: New York Radio wkg "Ethyl 90" (Mil tanker actf, at FL 360) for posrep and routing (CHAMP at 0701Z, then OWENS) in USB at 0642Z; New York wkg "Ethyl 91" (Mil tanker actf) for posrep, routing (CHAMP at 0659Z, then OWENS) in USB heard at 0643Z. (ALS)

3455.0: New York Radio wkg "Continental 486" for posrep (at waypoint ODEAL) in USB at 0403Z; NY wkg "United 861" estimating position LAMER, hands off to 6586.0 for SELCAL check, in USB at 0435Z. (ALS)

3476.0: Gander Radio wkg "El Al 001" for posrep in USB at 0733Z; Gander wkg "Condor 082" for SELCAL check in USB at 0753Z. (ALS)

3810.0: HD2IOA, Equador, time signal, in LSB at 0543Z. (GV/CO)

4026.0: Unid. fishermen talking about bad boats and putting one in the shipyard, in USB at 0419Z. (GV/CO)

4068.0: NOVEMBER WHISKEY (USS Nassau ESG Air Defense Commander) with net roll call for JULIET, OSCAR, PAPA, and SIERRA, in USB at 0458Z. (MC/SC)

4068.0: US Navy net, NW wkg G, O, P, S and talking about tracks, P passed info on GREYHOUND (C-2A COD) when members of net spotted his track; Global Hawk (RQ-4A UAV) mentioned, in USB at 1930Z. (ALS)

4077.4: Beacon MO (Oklahoma) in CW at 0541Z. (GV/CO)

4089.2: Dasher beacon (actually at 4089.17), hrd thru QRM from RTTY stn downband, in CW at 0447Z. (GV/CO)

4093.4: Beacon PA (Arkansas) in CW at 0548Z. (GV/CO)

4111.6: Dasher beacon (Florida) in CW at 0641Z. (GV/CO)

4140.0: Unid. station in Tadiran scrambled voice before clear SS signoff, in USB at 0647Z. (GV/CO)

4149.0: WPE (Crowley Maritime, Jacksonville, FL) wkg WBN 3016 (Tug *DEFENDER*) for ops report from 19-17N, 64-42W, in USB at 0603Z; WPE wkg WCX 9104 (Tug *MONITOR*) for ops report from 23-33N, 68-45W, in USB at 0605Z; WPE wkg WBN 7618 (Tug *EXPLORER*) for ops report from 18-51N, 66-37W, in USB heard at 0608Z. (ALS)

4149.0: WPE (Crowley Maritime, Jacksonville) wkg WBN 5049 (Tug *PIONEER*) for ops report from 28-32N, 80-09W, in USB at 0610Z; WPE wkg WBN 6510 (Tug *SENTINEL*) for ops report from 24-25N, 81-29.2W, in USB at 0619Z. (ALS)

4149.0: WBN3014, *PATRIARCH*, U.S.-registered tug in simplex QSO w/WPE, Crowley Maritime in Jacksonville, FL, included detailed route info, current position 50 miles west of Grand Turk Island, ETA for San Juan, Puerto Rico, in USB heard at 0604Z. (SJ/KY)

4149.0: WVN7618, tugboat *EXPLORER*, formatted report to WPE, Jacksonville in USB at 0611Z; Tugboat *GAUNTLET* doing count for radio check in USB at 0613Z. (GV/CO)

4149.0: Tug *SENTRY*, WBN3013, wkg WPE Jacksonville in USB at 2321Z. (MC/SC)

4196.0: Two Unid. stns in QSO using computerized keying, in CW at 0653Z. (GV/CO)

4207.5: FOQX, *ARTOIS*, 298,330-ton French Antarctic Territories-registered very large crude carrier w/routine TEST exchange to SVO, Olympia R., Athens, Greece, SVO acknowledged and requested simplex voice contact on 4125.0 kHz, in GMDSS DSC at 0539Z. (SJ/KY)

4214.0: IDR2, Marine Roma Italy, with c/s IDR/GJ series and command list summary in 75/850 RTTY at 1540Z. (LA/IT)

4215.0: *PETROBRAS* 07, Brazilian offshore oil storage/processing rig in the Campos Basin w/irregular idle frequency marker and occasional weak traffic, in CW+SITOR-A at 0655Z. Second station heard here another night w/weak traffic on top of the Brazilian, in SITOR-A at 0020Z. (SJ/KY)

4218.6: LZW, Varna Radio Bulgaria, with only CW c/s (No SITOR transmissions) in CW at 1640Z. (LA/IT)

4369.0: WLO Mobile with offshore forecast, simulcast on 4396.0, in USB heard at 0600Z. (MC/SC)

4583.0: DDK2, Meteo Offenbach Germany, with northern baltics sea weather in 50/425 RTTY at 1515Z. (LA/IT)

4675.0: Gander Radio wkg a SPEEDBIRD flight for SELCAL check in USB at 0814Z; Gander wkg a Zoom Airlines flight for SELCAL check in USB at 0828Z. (ALS)

4739.0: 711 (P-3C) ops normal report to FIDDLE in USB at 0731Z. (MC/SC)

4772.0: Link-11 data transmission at 0715Z. (MC/SC)

4965.0: Unid. OM/EE repeating "testing" for several minutes then out, in USB at 0601Z. (GV/CO)

5505.0: Shanwick VOLMET reciting WX reports for var European cities in USB at 0422Z. (ALS)

5526.0: Piarco Radio wkg airliner for SELCAL check; passes 6649 as primary, 5526 as secondary, in USB at 0542Z. (ALS)

5550.0: New York Radio wkg "United 861"; QSY flight to 3455.0, in USB at 0426Z; NY wkg "United 846" in USB heard at 0520Z. (ALS)

5574.0: San Francisco Radio wkg var airliners in USB at 0551Z. (ALS)

5598.0: New York Radio wkg "Martinair 074" for SELCAL check in USB at 0604Z; New York wkg "Air Mexico 022" for routing; told to get SELCAL check on 3455.0, in USB at 0605Z; New York wkg "Air Europa 440" for posrep in USB at 0449Z. (ALS)

5598.0: New York Radio wkg "Speedbird 208" for clearance, routing in USB at 0451Z; New York wkg "Virgin 66" for clearance in USB at 0724Z; Santa Maria Radio wkg various airliners for routing, in USB at 0727Z. (ALS)

5616.0: Gander Radio wkg "Reach 285" for posrep (49N, 40W, FL330), handed off to Shanwick's 4675.0, in USB at 0522Z; Gander wkg "Reach 600" for routing change in USB

at 0531Z; "Gander" wkg "Martinair 068" for posrep and SELCAL check in USB heard at 0340Z. (ALS)

5649.0: "Gander Radio" wkg "Razor 91" for posrep in USB at 0549Z; Gander wkg "Martinair 636" for posrep in USB heard at 0550Z. (ALS)

5696.0: RESCUE 1703 passing final posrep as on-approach and securing guard with COMMSTA KODIAK, in USB heard at 0459Z. (GV/CO)

5701.0: Unid. maritime stns in casual QSO in southern-accented EE, in USB heard at 0315Z. (GV/CO)

5711.0: CAPE RADIO with test counts in USB at 1751Z. (MC/SC)

5732.0: CG 1708 (HC-130, CGAS Clearwater) p/p via SERVICE CENTER to CGAS Clearwater, in USB at 1449Z. (MC/SC)

6131.0: Link-11 data transmission at 1236Z. (MC/SC)

6265.5: C6FZ7, *ENCHANTMENT OF THE SEAS*, 7,200-ton Bahamas-registered passenger/cruise ship w/unlisted MMSI 311733000, abbreviated ID "ENCH" plus HELP and TEST commands, in SITOR-A at 0346Z; WYYY, *SEABULK AMERICA*, 46,312-ton U.S.-registered chemical tanker w/5-digit SELCAL 11240 and callsign in SITOR-A at 1300Z. (SJ/KY)

6535.0: Dakar OAC wkg various A/C in USB and SELCAL at 0405Z. (GV/CO)

6586.0: New York Radio wkg "Continental 30" for posrep in USB at 0843Z; New York wkg "Martinair 068" for clearance and routing in USB at 0846Z; New York wkg "United 0860" (over GRANT, FL340); rqsts FL360; pilot informs New York that it is "United 0860" and not "United 860" in USB at 0850Z; New York wkg "Delta 120" for posrep in USB at 0902Z. (ALS)

6586.0: New York Radio wkg SPAR 47 (MacDill AFB VIP flight) for posrep in USB at 1045Z; NY wkg "Continental 31" for routing in USB at 0558Z; NY wkg "Air Canada 073" for posrep/SELCAL check in USB at 0759Z; NY wkg "Jet Blue 739" for posrep in USB at 0804Z; NY wkg "Continental 747" for posrep, handed off to Miami Ctr VHF freq., in USB at 0801Z. (ALS)

6586.0: New York Radio wkg "Blue Panorama 1734" for SELCAL check in USB at 0804Z; NY wkg "Air Mexico 001"; e/r Madrid; primary 5598.0, in USB at 0653Z; NY wkg "Martinair 646" for posrep in USB at 0654Z; NY wkg "United 861" for routing in USB at 0715Z. (ALS)

6586.0: New York Radio wkg "Jet Blue 727" for routing; handed off to San Juan Ctr on VHF 134.3, in USB at 0719Z; NY wkg "Condor 233" for posrep; handed off to NY Ctr on VHF 128.5, in USB at 0402Z; NY wkg "Delta 121" for posrep in USB at 0408Z. (ALS)

6604.0: Gander VOLMET w/WX for Toronto, Ottawa, etc. in USB at 0720Z; New York VOLMET with terminal aerodrome forecasts for Chicago, Milwaukee, etc. in USB at 0730Z. (ALS)

6626.0: New York Radio wkg "North American 134" for posrep. SELCAL check in USB at 0621Z. NY wkg "Iberia 6464" for posrep (18 N. 58 W) and SELCAL check, in USB at 0623Z. (ALS)

6628.0: New York Radio wkg SPEED-BIRD 2156 for altitude change in USB at 0445Z. (GV/CO)

6628.0: New York Radio wkg "Martinair" flight for routing in USB at 0457Z; NY wkg "Iberia 6348" for posrep in USB at 0658Z; Santa Maria Radio wkg "Virgin 30" for posrep and SELCAL check in USB at 0656Z. (ALS)

6640.0: AVIANCA 314, p/p here via NY Radio for company traffic after initial contact on 6628.0, in USB at 0455Z. (GV/CO)

6640.0: New York Radio wkg "North American 134" (B-767 en route from Murtala Muhammed, DNMM, to JFK IAP, NY). ETA to JFK 1039Z, in USB at 0604Z; Gander Radio wkg "El Al 103" for SELCAL check in USB at 0631Z; Gander wkg "Speedbird 204" for posrep (54 N. 50 W) in USB at 0633Z; Shanwick Radio wkg unk acft (comms weak) in USB at 0638Z. (ALS)

6640.0: Gander Radio wkg "Alitalia 9110" for SELCAL check in USB at 0640Z; New York LDOC wkg acft for phone patch re: hotel arrangements, in USB at 0411Z. (ALS)

6746.4: P2B (USN TSC PAX River) clg CIA (USN SPAWAR Charleston) in ALE USB at 1325Z. (MC/SC)

6754.0: Trenton Military (Canforce) VOLMET, WX for var locations, in USB at 0358Z. (ALS)

6942.0: Link-11 data transmission at 1246Z. (MC/SC)

7527.0: 08C posrep to PANTHER from benchmark F5 in USB at 1558Z. (MC/SC)

7811.0: AFRN relay of NPR "All Things Considered," 7 sec. ahead of WBEZ 91.5 FM Chicago (which has permanent 7-sec. delay), audio in & out, discussed aniv of death of James Brown, high winds & pwr fail in CA, lawsuit about religious display on govt property in WI, soldiers' xmas in Iraq, in USB at 2257Z. (WH/IL)

7965.0: P2B (USN, PAX River) clg CIA (USN SPAWAR MOCC, Charleston) in ALE USB at 1432Z. (MC/SC)

7986.0: Unid. stn with hand-sent VVVs in CW at 0316Z. (GV/CO)

8113.0: VMW, Wiluna Meteo, Western Australia w/live male voice WX forecast and callign ID at signoff, in USB heard at 2144Z. (SJ/KY)

8156.0: CORAL HARBOUR BASE (Royal Bahamas SDF) wkg unheard station in USB at 1239Z. (MC/SC)

8183.0: Three unid. males in casual simplex QSO in Arabic, in USB heard at 0300Z. (SJ/KY)

8303.0: LOR, Argentine Navy, Puerto Belgrano, Argentina w/WX bulletins in Spanish including long lists of coordinates and warning about a Pacific anticyclone (high pressure area), in ITA2 RTTY, 75 baud/170 Hz at 0045Z. (SJ/KY)

8378.0: SWB1, *AEGEAN NAVIGATOR*, newbuilt 159,040-ton Greece-registered oil products tanker w/MMSI and abbreviated ID "AENA" to IAR, Rome R., Italy on paired frequency 8418.0 kHz, online info put vessel's position 3 days earlier just off the coast of Morocco and en route to Corpus Christi, TX, in SITOR-A at 0030Z. (SJ/KY)

8379.0: WCBP, *LIBERTY STAR*, 64,059-ton U.S.-registered bulk carrier w/weak partial AMVER/PR, MMSI and abbreviated ID "LSTR," en route to Haifa, Israel, in SITOR-A at 1725Z. HBFS, *GENERAL GUISSAN*, 73,035-ton Switzerland-registered bulk carrier w/test message requesting acknowledgement to WLO, Shipcom R., Mobile, AL, in SITOR-A at 2015Z. (SJ/KY)

8386.0: 9VCM8, *IKARUGA*, 24,382-ton Singapore-registered container ship w/AMVER/FR for arrival at Long Beach Pilot Station, CA, in SITOR-A at 0110Z. VRWB7, *OOCL JAPAN*, 67,752-ton Hong Kong-registered container ship w/MMSI and abbreviated ID "OJPN," attempted to send an AMVER/FR but lost contact, in SITOR-A at 0932Z. (SJ/KY)

8388.0: 3FZN8, *PACIFIC REEFER*, 12,625-ton Panama-registered refrigerated cargo ship w/partial AMVER/SP for departure from Cristobal, Panama after canal transit, also INMARSAT-C ID, en route to Philadelphia, PA, in SITOR-A at 1120Z. (SJ/KY)

8391.0: Unid. vessel w/SELCAL QVXY (2017) for XSQ, Guangzhou R., China, good signal here but no contact, in SITOR-A at 0256Z. (SJ/KY)

8392.0: Unid. PEMEX vessel in lengthy QSO in Spanish w/weaker station on paired 8432.0 kHz regarding problems contacting Paymaster in Manzanillo about departing crew member, attempt to hire a local Marmiton (Cook's Assistant) before departure from Lazaro Cardenas, Mexico en route to Buenos Aires, Argentina, if the helper's papers are in order, in SITOR-A monitored at 0005Z. (SJ/KY)

8426.0: UIW, Kaliningrad R., Russia w/weak idle frequency marker "DE UIW KLD" in CW+SITOR-A at 1105Z. (SJ/KY)

8431.5: UAT, Moscow R., Russia w/weak idle frequency marker "DE UAT" in CW+SITOR-A at 1116Z. (SJ/KY)

8602.0: CWA, Cerrito Radio, Uruguay, in CW at 0104Z. (GV/CO)

8728.0: Fairly strong open carrier w/fading and without modulation on maritime coast station SSB channel 804, heard previously around 2300Z, this time heard at 0500Z and beyond. (SJ/KY)

8899.0: Gander Radio, weak comms in USB at 0535Z. (ALS)

8912.0: CG 1711 (HC-130, CGAS Elizabeth City) airborne for District 1 patrol requests guard from CAMSLANT in USB at 1541Z. (MC/SC)

8971.0: REDTALON 71B (P-3C) ops normal report to FIDDLE in USB heard at 1504Z. (MC/SC)

8983.0: USCG "CAMSLANT Chesapeake" wkg RESCUE 2128 in USB at 2021Z; CAMSLANT wkg CG 6577 (HH-65C), departing home station Anagua w/5 POB; CAMSLANT assumes guard in USB at 2023Z. (ALS)

8983.0: CAMSLANT wkg CG 2140 (HU-25, CGAS Cape Cod) with request from USCGC TAHOMA for any TOI reports, in USB at 1907Z. (MC/SC)

8992.0: ANDREWS HF-GCS, hrd here and on // 6739.0 and 4724.0, 20-char EAM transmitted twice in succession, preamble given once as EWWBCQ and once as EYWBCQ each time, in USB at 0630Z. (JK/NY)

10024.0: Cenamer Radio wrkg various A/C in SS, in USB at 0012Z. (GV/CO)

10200.0: ANDVT followed by SHARK 08 (USCGC TAHOMA) clg FALCON 40 (HU-25) in USB at 1916Z. (MC/SC)

10780.0: PEACH 33 (E-8 JSTARS) p/p via CAPE RADIO to PEACHTREE for tanker status, in USB at 1640Z. (MC/SC)

10993.6: SECTOR KEY WEST wkg DOLPHIN 58 (HH-65C) for ops report in USB at 2048Z. (MC/SC)

11220.0: HF-GCS Station ANDREWS wkg REACH 873 for p/p to RAF Mildenhall AMC, ANDREWS has acft LC, acft has Lajes LC, but has Andrews weak, so Andrews will relay msg., in USB at 2013Z. (ALS)

11175.0: HF-GCS Station ANDREWS wkg TALON 16 (MC-130H, Hurlbert Field) for p/p to NE-ANG 155ARG Husker Control; passes requests for TALON 16 and TALON 17, in USB at 2250Z; ANDREWS wkg YANKEE 87 (C-130) for p/p to Elmendorf AFB; has landing gear problems; must return to Calif; will call when on the ground in approx 3 hours; in USB at 1840Z. (ALS)

11175.0: HF-GCS Station ANDREWS wkg REACH 873 before QSY to 11220.0, in USB at 2008Z; ANDREWS wkg MARLIN 80 for p/p to NAS Whidbey Island Duty Office, will be early arrival; between 1500 and 1530 local; IDs as acft 000, in USB at 2117Z; ANDREWS calling SITTING BULL, no joy, in USB at 1640Z. (ALS)

11175.0: HF-GCS Station ANDREWS wkg AKELA 05 (Kirtland AFB MC-130P) for p/p to COYOTE OPS (Kirtland AFB), passes msg for the Shadow formation re parts of range unusable due to low clouds, in USB at 1757Z; ANDREWS PELICAN 711 (NAS Jacksonville P-3C) for p/p to FIDDLE (NAS Jax TSC), advises on station 1831, ops normal, in USB at 1827Z. (ALS)

11175.0: HF-GCS Station LAJES wkg REACH 981 for p/p to Lajes Command Post; reports inbound, ETA 2200Z, rqsts 25K pounds fuel, in USB at 1931Z; LAJES wkg ETHYL 49 for p/p to McGuire AFB CP, early return due to cancellation of receivers; rqsts waiver to land during BASH (bird strike) window, in USB at 2102Z. (ALS)

11175.0: HF-GCS Station LAJES wkg AX 990 (C-130T, Andrews AFB VR-53) for p/p to Ft. Campbell; ETA 2145z; rqsts 20,000

pounds fuel and Customs on arrival. in USB at 1845Z; LAJES wkg LT 622 (P-3C, NAS Jacksonville VP-62): changes callsign to Marlin 80, attempts p/p to NAS Whidbey Island Duty Office. number busy, will try later; in USB at 2109Z. (ALS)

11175.0: HF-GCS Station OFFUTT wkg BIRDSEYE for p/p to Seymour Johnson Base Ops; rqst WX at KGSB for 0045Z, in USB at 2224Z; OFFUTT wkg SHADOW 58 (Kirtland MC-130); acft weak/barely readable to OFFUTT but loud/clear here, in USB at 2215Z. (ALS)

11175.0: HF-GCS Station OFFUTT providing radio check for REACH 69 while Spanish fishermen on 11175.5 splash all over the HF-GCS comms, in USB at 2318Z; OFFUTT wkg OTIS 81 (VMGR-252 KC-130J) for p/p to Cherry Point Ops, IDs to Ops as Acft 738, in USB at 2030Z. (ALS)

11175.0: HF-GCS Station PUERTO RICO wkg REACH 396 in USB at 0748Z; PUERTO RICO wkg SAM 401 (Andrews AFB) for radio check, in USB at 0805Z; HF-GCS Station CROUGHTON wkg ESSAY 71, passes WX condx, in USB at 1745Z. (ALS)

11175.0: Air Transport 530 (USAF contractor flight, weekly milkrun to downrange Eastern Test Range sites Antigua and Ascension) calling "MacDill" several times with no joy (needs new flight handbook; MacDill's Global station has been closed for many years) in USB at 1812Z. (ALS)

11175.0: REACH 9168 (McChord AFB 62AW C-17A 99-0168) calls MAINSAIL (any HF-GCS Station), no joy, in USB monitored at 0427Z. (ALS)

11232.0: SENTRY 60 (E-3 AWACS) p/p via TRENTON MILITARY to Tinker AFB Meteo for WX at Tinker and Langley, in USB at 1825Z. (MC/SC)

11282.0: San Francisco ARINC working unheard A/C for status and QSY to lower frequency, in USB at 0103Z. (GV/CO)

11309.0: New York Radio wkg "Avianca 011" for posrep, SELCAL check in USB at 2030Z; NY wkg "Air Europa 033" for clearance to higher altitude, in USB at 2037Z. (ALS)

11387.0: Unid. VOLMET station, synth YL voice, ended statement without ID, suspect AXQ421 Australia, in USB at 0018Z. (GV/CO)

12458.5: Two very weak stations in QSO, fast handsent w/keystroke numbers, in CW at 1518Z. (SJ/KY)

12479.0: 3EHX4, STAR PRIMA, 13,189-ton Panama-registered refrigerated cargo ship w/partial AMVER report, MMSI and abbreviated ID "PRIM," in SITOR-A at 1515Z. VRDA4, SAGA NAVIGATOR, 46,500-ton Hong Kong-registered newbuilt general cargo ship w/AMVER/PR and INMARSAT ID, 1,200 miles ENE of Jacksonville, FL and en route to Rotterdam, Netherlands, arrive in 9 days, in SITOR-A at 1600Z. 3FPW3, BUJIN, 17,189-ton Panama-registered vehicles carrier w/5-digit SELCAL 42173, abbreviated ID "BUJN" and msg "M V BUJIN WE WUD LIKE TO TEST," in SITOR-A at 2045Z. (SJ/KY)

12482.0: 3ELF5, TAMPA BAY, newbuilt 17,979-ton Panama-registered bulk carrier w/AMVER/PR, MMSI, abbreviated ID "TABA" and INMARSAT-C ID 1,200 miles east of Jacksonville, FL en route to Dunkirk, France, arrive in 9 days, in SITOR-A at 1558Z. (SJ/KY)

12490.0: P3BN8, HANJIIN KAOHSIUNG, 43,925-ton Cyprus-registered container ship w/AMVER/PR, MMSI and abbreviated ID "HAKS," 500 miles southeast of Halifax, Nova Scotia and en route to New York City, in SITOR-A at 1620Z. A81W3, REGINA OLDENDORFF, 37,000-ton Liberia-registered bulk carrier w/garbled AMVER/PR in SITOR-A at 1622Z. HPOA, IRENE OLDENDORFF, 32,729-ton Panama-registered bulk carrier w/MMSI and abbreviated ID "IROD" in SITOR-A at 1746Z. ONBZ, CARLI BAY, 20,613-ton Belgium-registered LPG tanker w/MMSI and callsign, in SITOR-A at 2125Z. (SJ/KY)

12749.85: CWA, Cerrito R., Uruguay w/WX in Spanish, parallel to slightly better 8602.0 kHz, in machine-sent CW at 0045Z. (SJ/KY)

12993.0: KSM (Maritime Radio Historical Society coast station, California) with VVVs and calling CQ in CW at 2302Z. (GV/CO)

13125.0: Unid. Russian YL with duplex PP, suspect via Varna Radio, in USB at 2249Z. (GV/CO)

11330.0: New York Radio wkg var acft for routing, SELCAL checks in USB monitored at 1950Z. (ALS)

13354.0: San Francisco Radio wkg var acft for routing, SELCAL checks in USB at 2003Z. (ALS)

13907.0: UnID (probable DHS assets) in Parkhill-encrypted speech monitored at 2039Z. (MC/SC)

13927.0: USAF MARS Operator AFA6PF (Los Angeles) wkg EVAC 809 for p/p to "Brooks AFB Hospital," is 45 min out, arriving with two litters; needs ambulances to meet a/c, in USB at 1953Z; AFA6PF wkg ELVIS 46 (C-5A, TN-ANG, Memphis, west of Huntington KY), for p/p back to home squadron, in USB at 1647Z. (ALS)

13927.0: USAF MARS Station AFA2CU (Virginia) wkg EVAC 33116 (MS-ANG C-17A #03-3116, over Thunder Bay) for M&W phone patches to CA and VA in USB at 2050Z; USAFMARS Operator AFA1YV wkg HORSE 47 (Little Rock C-130) for p/p to Little Rock Base Ops, ETA 2245Z, in USB at 2010Z. (ALS)

13927.0: USAF MARS Operator AFA1YV (Binghamton NY) wkg TEAL 61 (Keesler AFB WC-130, just south of St Petersburg, FL) for p/p to Keesler AFB CP, passes ETA of 2140Z and requests Sgt. West be notified to meet the flight, in USB at 2021Z. (ALS)

13927.0: USAF MARS Operator AGA2PA (Patrick AFB MARS Ofc) wkg RAMA 22 (Dyess AFB B-1B, south of Bangor ME) for phone patch to Dyess AFB Bat Ops, reports AAR complete, successful; ETA Dyess 2255Z; passes maintenance code 3 for hydraulics, in USB at 1902Z. (ALS)

13927.0: USAF MARS Operator AFA3HS (Kansas City) wkg RAM 01 (self-ID as KC-10) for M&W phone patches, then p/p to Tyndall AFB, reports inbd Tyndall with 9 crew, 61 pax; will be over FL in two hours, in USB at 2025Z; USAF MARS Operator AFA1EN (Shelbyville IN) wkg AWACS acft SENTRY 61 for phone patch in USB at 2046. (08Jan2008) (ALS)

14364.0: Link-11 data transmission at 1625Z. (MC/SC)

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Gimme That Old-Time Radio

Hello loyal readers. I have just pried myself away from WAMU-FM's "Big Broadcast" with Ed Walker. Each Sunday night he brings us three hours of old-time radio shows, ranging from "Dragnet" to "The Great Gildersleve" and anything in between. For my money, it's the best entertainment out there, and if you don't live within the listening area, they're on the Internet.

If I haven't mentioned it before, I have no television. I do own a video monitor and a DVD player, but no tuner. No cable. No antenna. No TV as you know it. There are a few TV shows that I miss, and yeah, if I could get a few channels from a cable or satellite provider, I might do it, but they all want to sell me their idea of the "package" that I want, and I'm just not having any of what they consider a "bargain."

My earliest broadcast recollections *do* include television, but the *good* recollections all involve *radio*. "Communications" (whether popular or not) includes television, but you'll notice that most of the subject matter in this magazine is about *radio*, in one form or another—not the one-eyed timewaster.

It's hard to find good nostalgia today, and for me, the old-time radio broadcasts are about as good as it gets. I'm old enough to remember hearing them the first time around, and it only takes a moment for me to remember the smell of tubes warming up, whether it was in the little bakelite clock radio in my bedroom, or some monstrosity I would drag home from the dump for a little experimentation and near-death experiences as I learned not to touch the chassis and the laundry tub at the same time.

The first radio station whose callsign I remember is WIBG, 990 kc, in Philadelphia. I discovered rock 'n' roll just about the time it came into existence, and listened to Joe Niagara and Hy Lit every night until the sandman took me away. Our Cub Scout den built crystal radios with the help of one of the den's fathers, who was a ham. Mine worked great and lasted a long time—and I remember that it had *real* headphones, almost identical to the ones I later wore in Coast Guard radio school and on several Coast Guard ships.

And I don't just thank the Coast Guard for introducing me to maritime radio and Morse code—because one of my duties while in port was to stand a gangway watch—often late at night in New York City, where I was introduced to *talk* radio. It was nothing like today's talk-radio—not by a long shot. It was Bob Grant, and Jean Shepherd, and Barry Farber, and for a time, even Geoffrey Holder (some of you geezers might remember his voice from the "Uncola" commercials, but surely anyone who ever heard his voice will remember it).

I enjoyed those New York radio stations so much that I used to trade day-watches (we couldn't listen to radio during a day watch) for the nighttime gangway watches. The other watchstanders thought I was completely crazy (and I was, but that's a separate issue) but one of the bad things about being on a ship is that they're all metal and you can't listen to a radio except out on deck.

When the topics were boring, we had an endless supply of helium (for weather balloons) which we could inhale and talk like chipmunks all night, though I don't know how healthy that was—I guess I could blame *that* for my present deranged condition. To this day, I'll never know how the captain recognized *my* voice when I answered the telephone with a lungful of helium, but he did, and I remember saying "Yes, sir—no sir—no, I won't do it again," while sounding like Alvin the Chipmunk.

And before all the music moved to FM, and most cars did *not* have air conditioning, I remember how it seemed that all car radios within about 75 miles of New York City were tuned to 770 WABC ("BONG!"), and as you drove in slow traffic with your windows down, or sat at an intersection, every car around you echoed that same station playing the day's Top-40 hits with Cousin Brucie Morrow and Dan Ingraham. Nothing like that exists today. There is no single radio station that's enjoyed by some 90-plus percent of any age group as those famous metropolitan rock stations were in the '50s and '60s. A person could argue whether Fords were better or faster than Chevies all day and all night, but there was only one top rock 'n' roll radio station in every major market and all the Fords and all the Chevies had their radios tuned to it.

I am a geezer. A dinosaur. Within another year or two, my opinion won't even matter to pollsters because I'll be out of all the influential generations, but I'm betting that there are a bunch of you who also remember the Golden Days of Radio, whether you think of them as the days of the radio dramas that are returning to the airwaves or the days of the all-powerful "king of the market" rock 'n' roll stations that ruled their markets with about 99 percent of 18 to 24 year-old listeners.

I think it's safe to say that those of us who enjoy radio communications as a hobby are the same ones who enjoy the broadcast nostalgia more than your average listener, too. One of my most treasured recordings is a CD with about 50 hours of Jean Shepherd's radio tales in MP3 format, made by a great friend who's now a silent key—one who was chosen as Pennsylvania's *Broadcaster of the Year* just a few years back.

When I was about eight years old, I began to sleep with a radio on. Back then, it was WIBG. Fifty-plus years later it's Washington's WETA-FM so that the classics can help me get a restful sleep. And driving without a radio is just not an option. The car radio might as well be *welded* onto WMAL (D.C.'s AM 630) with some of the best local talk mornings and nights with syndicated stuff in-between.

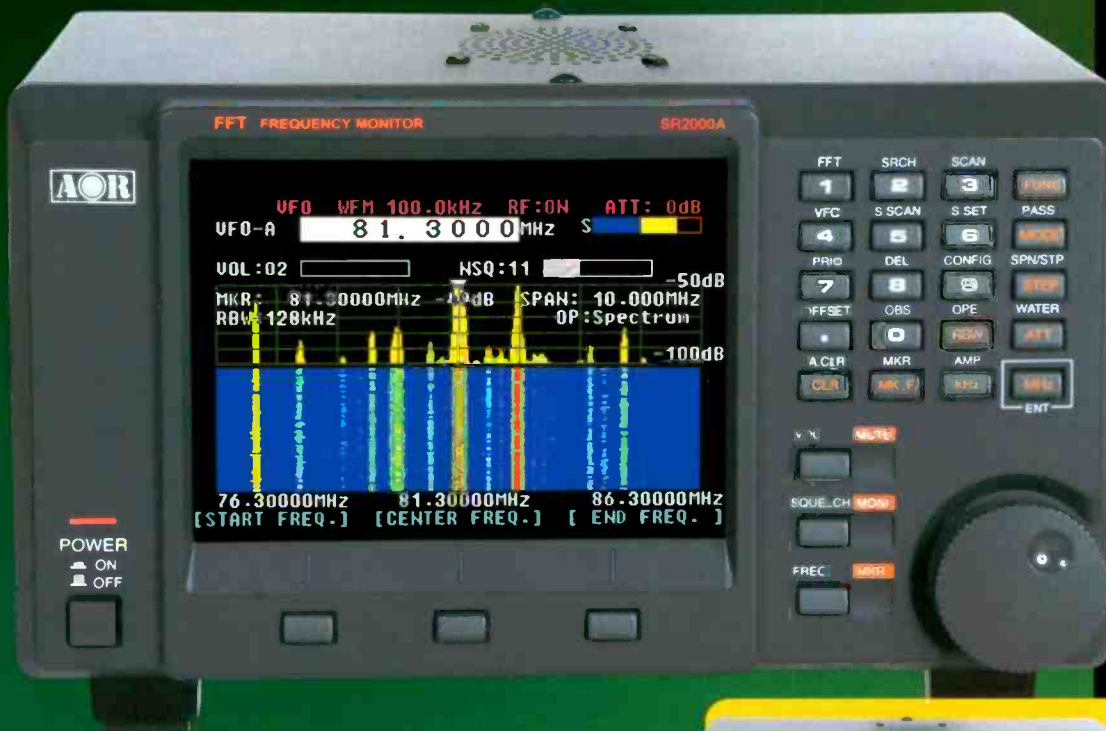
On one hand, I hope you're not all as crazy as I am; but on the other hand, I hope you, too, enjoy this kind of nostalgia. Whatever it is that you like about radio, whether it's CB, ham, scanning, SWL, DXing, or nostalgic broadcasts, drop me an e-mail. In addition to telling me some of *your* "Loose Connection" tales, tell me what kind of radio broadcasts *you* enjoy (or wish you could find). ■

(You can reach Bill at chrodac@earthlink.net on the days when he's on work-release from the Cowfield County Home for the Silly.—Editor)

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