

# POPULAR COMMUNICATIONS

JULY 2013

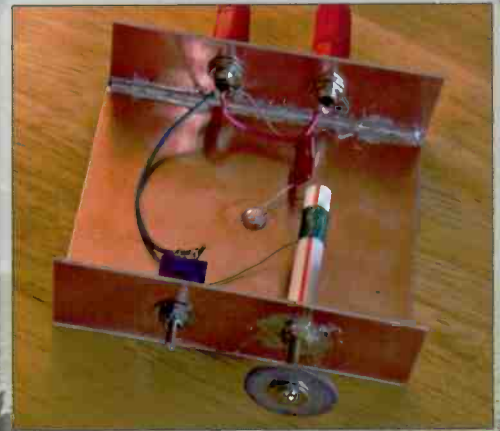
TV History • SWLing • Homebrew • CB • VHF Scanning • Pirates

## Ready to Rumble!

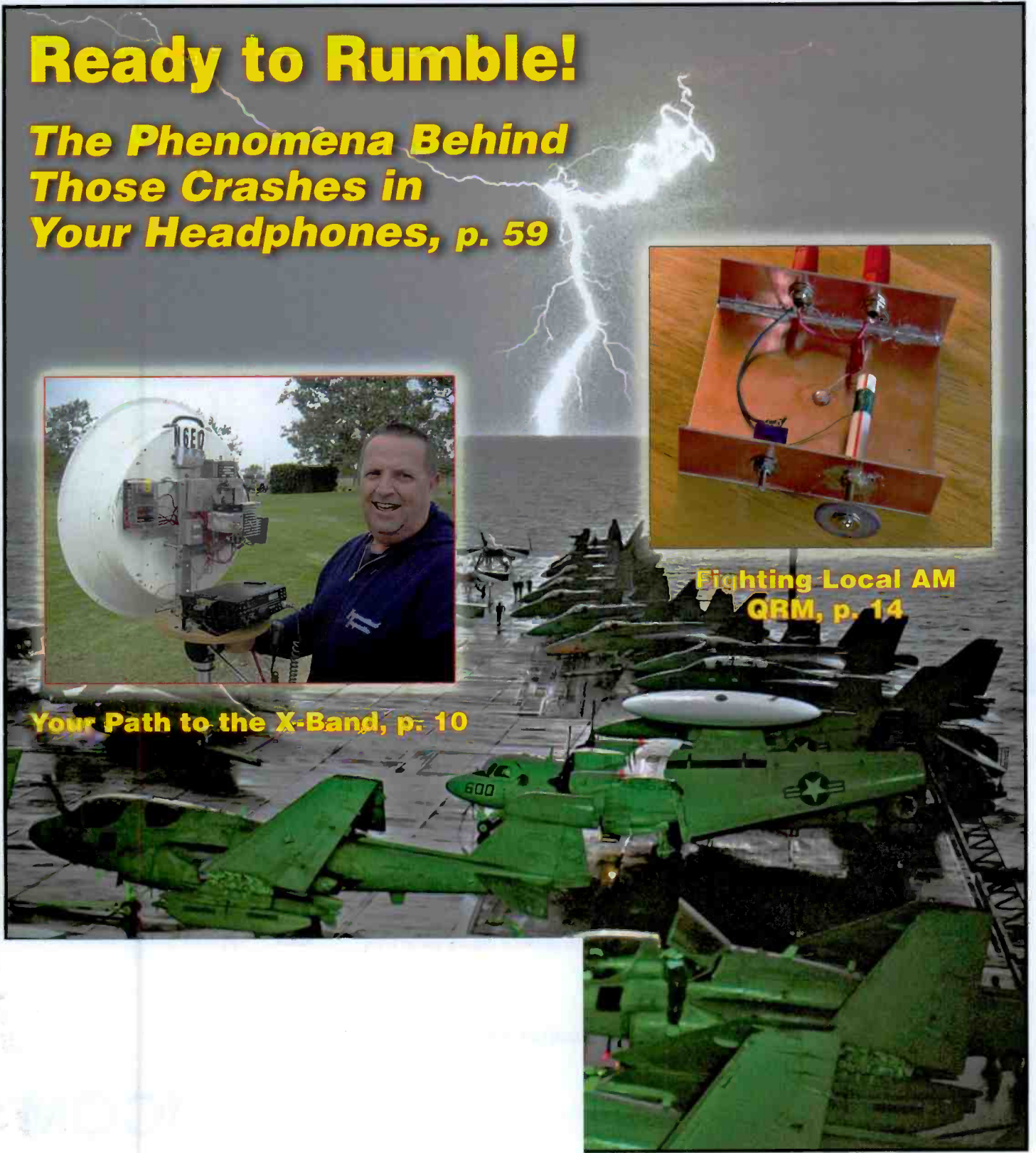
*The Phenomena Behind Those Crashes in Your Headphones, p. 59*



*Your Path to the X-Band, p. 10*



*Fighting Local AM QRM, p. 14*



# Icom has the receivers for the experts...

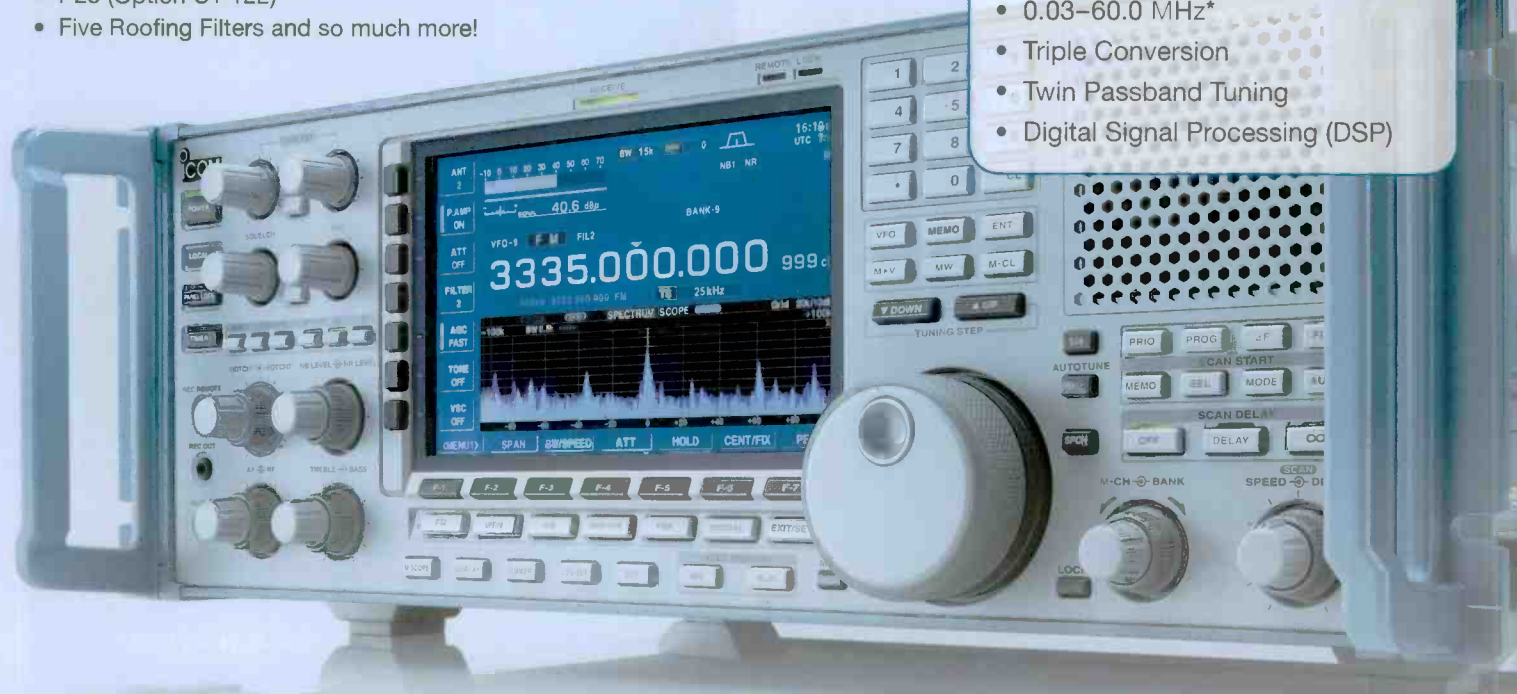
Official Amateur Radio Transceiver Supplier



BOY SCOUTS OF AMERICA®

## IC-R9500 The Ultimate Wide Band Receiver

- 0.005–3335.000MHz\*
- USB, LSB, CW, FSK, FM, WFM, AM
- 1020 Alphanumeric Memory Channels
- P25 (Option UT-122)
- Five Roofing Filters and so much more!



For those just getting started...



## IC-R75 Wide Band Receiver

- 0.03–60.0 MHz\*
- Triple Conversion
- Twin Passband Tuning
- Digital Signal Processing (DSP)

## AND for those on the go!

### IC-R20 Advanced Ops



- RX: 0.150–3304.999MHz\*
- AM, FM, WFM, SSB, CW
- 1250 Alphanumeric Memory Channels
- Dualwatch Receive
- 4-hour Digital Recorder

### IC-RX7 Track Ready



- RX: 0.150–1300.0MHz\*
- AM, FM, WFM
- 1825 Alphanumeric Memory Channels
- 100 Ch/Second High Speed Scan
- Computer Programmable<sup>2</sup>
- Water Resistance Equivalent to IPX4

### IC-R6 Pocket Compact



- RX: .100–1309.995MHz\*
- AM, FM, WFM
- 1300 Alphanumeric Memory Channels
- 100 Ch/Second High Speed Scan
- Computer Controllable<sup>1</sup>

### Information & Downloads

RECEIVERS | AMATEUR TOOL KIT | COMIC BOOKS | VIDEOS | [WWW.ICOMAMERICA.COM](http://WWW.ICOMAMERICA.COM)

Electronic advertisements feature active links for each radio.

\*Frequency specs may vary. Refer to owner's manual for exact frequency specs. <sup>1</sup>Optional CT-17 required. <sup>2</sup>Optional CS-RX7 required.  
©2013 Icom America Inc. The Icom logo is a registered trademark of Icom Inc. All specifications are subject to change without notice or obligation. 30813



**Study with the best!**  
**License Study Materials by**

# Gordon West, WB6NOA & the W5YI Group



## TECHNICIAN CLASS



**Technician Class book** for the 2010-2014 entry level exam! Gordo reorganizes the Q&A into logical topic groups for easy learning! Key words are highlighted in his explanations to help you understand the material for test success. Web addresses for more than 125 helpful, educational sites.

Includes *On The Air CD*

demonstrating Tech privileges. **GWTM-10 \$20.95**

### Tech Book & Software Package

Gordo's book with W5YI software allows you to study at your computer and take practice exams. Explanations from Gordo's book are on the software – answer a question wrong and his explanation appears to reinforce your learning. Includes free Part 97 Rule Book. **NCS-10 \$29.95**

### Tech Audio Course on CD

*Welcome to Gordo's classroom!* Technician audio theory course recorded by Gordo talks you through the Element 2 question pool. Follows the order of his *Technician Class* book, and is full of the sounds of ham radio operating excitement! An excellent study aid if you spend a lot of time in your car or pick-up! On 4 audio CDs. **GWTW-10 \$29.95**

## GROL + RADAR



Get your FCC commercial radio licenses and add valuable credentials to your resume!

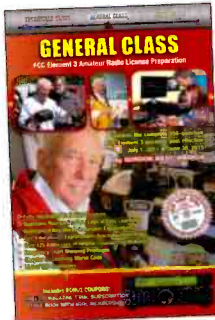
**GROL+RADAR** includes the new FCC Element 1 question pool for the Marine Radio Operator Permit (MROP), the Element 3 pool for the General Radiotelephone Operator License (GROL), and the Element

8 pool for the RADAR Endorsement. Many employers require these licenses for jobs in marine, aero, safety, and municipal positions. Gordo and his team have written clear explanations for all the Q&A to make studying for these exams educational and fun. If you're an Extra Class ham, many of the technical/math questions will look familiar to you. Fully-illustrated to aid your learning. Book includes a searchable CD-ROM with all FCC Rules for Parts 2, 13, 23, 73, 80 and 87. **GROL-09 \$49.95**

### GROL+RADAR book & software package

Enhance your learning experience using our practice exam software along with the **GROL+RADAR** book. Software includes answer explanations from the book – when you select a wrong answer, the explanation from the book appears to reinforce your learning. **GRSP-09 \$79.95**

## GENERAL CLASS



**General Class book** Upgrade to the HF bands with Gordo & W5YI! Gordo's manual for 2011-2015 reorganizes all the questions into logical topic groups for easier learning. His explanations include highlighted key words to help you remember the material for test success. Companion CD is full of great operating tips!

**GWGM-11 \$24.95**

### General Book & Software Package

Study at your computer and take practice exams. Software includes explanations from Gordo's book, scores your results and highlights areas that need further study. Includes free Part 97 Rule Book. **GUS-11 \$34.95**

### General Audio Course on CD

General Theory Course recorded by Gordo is full of the sounds that bring ham radio to life! He talks you through the Element 3 theory to help you understand the material and get you ready for your upcoming exam. On 4 audio CDs. **GWGW-11 \$29.95**

### Ham Operator Software has All Exams



*Want to study at your computer without tying up your internet connection?* This value pack includes the Tech, General and Extra class exams (Elements 2, 3, and 4) along with a free Part 97 Rule Book. Software includes Gordo's answer explanations from his books! Everything you need to go all the way to the top!

Software only **HOS-12 \$29.95**  
 Software with all 3 West Books **HOSB-12 \$89.95**

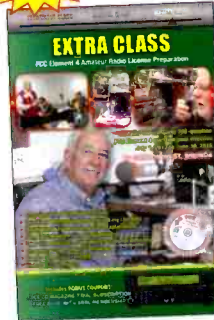
### Learn Morse Code for HF Fun!

**In-depth CD audio courses recorded by Gordo:**  
 0-5 wpm on 8 audio CDs **GW05 \$39.95**  
 0-5 wpm CW refresher course on 2 audio CDs **GWCT \$14.95**  
 5-13 wpm on 8 audio CDs **GW13 \$39.95**  
 10-28 wpm on 8 audio CDs **GW20 \$39.95**  
**GW13 & 20 Special Order Only!**

### Learn all about electronics with our Basic books

**Basic Electronics** **BELC \$19.95**  
**Basic Digital Electronics** **BDIG \$19.95**  
**Basic Communications Electronics** **BCOM \$19.95**

## NEW! EXTRA CLASS



**Extra Class book** Go to the top with Gordo! 2012-2016 book includes all Element 4 Q&A reorganized into logical topic groups. Gordo's fun, educational explanations with highlighted keywords, and great memory tricks for those tough theory questions! Wait 'til you meet "Eli the Ice Man!"

**GWEM-12 \$24.95**

### Extra Book & Software Package

Study at your computer and take practice exams as the W5YI software scores your results and highlights areas that need further study. Includes explanations from Gordo's book. Free Part 97 Rule Book. **ECS-12 \$39.95**

### Extra Audio Course on CD

Extra Class Theory Course recorded by Gordo talks you through the difficult Element 4 theory to help you understand the material and get you ready for your upgrade to the top. On 6 audio CDs. **GWEW-12 \$39.95**

### Getting Started in Electronics



by Forrest M. Mims  
 A great introduction for anyone who wants to learn the fundamentals of electronics. Includes 100 projects you can build, and great experiments that demonstrate how electricity works! **GSTD \$19.95**

### Engineer's Mini Notebooks



These Mims classics teach you hands-on electronics! Study and build 100s of practical circuits and fun projects. Each volume contains several of his famous Mini Notebooks. Terrific ideas for science fair projects and a great way to learn about electronics! Useful reference guides for your workbench!

**Vol. 1: Timer, Op Amp, & Optoelectronic Circuits & Projects** **MINI-1 \$12.95**  
**Vol. 2: Science & Communications Circuits & Projects** **MINI-2 \$12.95**  
**Vol. 3: Electronic Sensor Circuits & Projects** **MINI-3 \$12.95**  
**Vol. 4: Electronic Formulas, Symbols & Circuits** **MINI-4 \$12.95/**

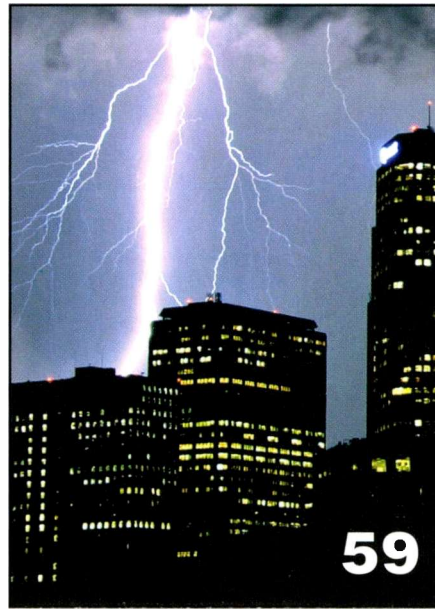
**Order today from W5YI: 800-669-9594 or on-line: www.w5yi.org**

The W5YI Group P.O. Box 200065 Arlington, TX 76006-0065

Mention this ad for a free gift.

# POPULAR COMMUNICATIONS CONTENTS

JULY 2013  
VOLUME 31, NUMBER 11



## FEATURES

- 10 Journey into X Band for Amazing Communications @ 10,368.100 MHz!**  
*by Gordon West, WPC6NOA/WB6NOA*
- 14 On an AM Broadcast Band Trapping Expedition**  
Build This Simple Circuit to Cut Down on Interference from Local Stations  
*by Richard Fisher, K16SN*

## FEATURED COLUMNS

- 19 CB and More**  
Flashing Back to the Classic CB 'Coffee Break' of the '70s  
*by Cory GB Sickles, WPC2CB/WA3UVV*
- 32 Broadcast Technology**  
Solar Cycle 24 Disappoints AM Broadcast Band DXers . . . Again  
*by Bruce A. Conti, WPC1CAT*
- 59 The Propagation Corner**  
*Snap, Crackle, Pop . . . It's All About the Noise, Part II*  
*by Tomas Hood, WPC7USA/NW7US*
- 72 Shannon's Broadcast Classics**  
The Pioneering Thrill of One or Two Channels of Black & White Television or . . . Getting Early TV Where It Didn't Want To Go  
*by Shannon Huniwell, WPC2HUN*



## ON THE COVER

You can bet the radio operators aboard the U.S.S. Abraham Lincoln got an earful of static when this lightning bolt flashed on the horizon. Propagation expert Tomas Hood, WPC7USA, this month explains the science behind the interference — even when lightning isn't visible. ALSO: Gordon West, WPC6NOA, shines light on an exciting part of the radio spectrum for both hams and scanner listeners: Welcome to X-band! Meanwhile, Richard Fisher, KPC6PC, shows how you can build a simple wave trap to knock out receiver interference from local AM broadcast stations. (Photography courtesy of the U.S. Navy, WPC6NOA, and KPC6PC)

## COLUMNS

- 8 Horizons**  
The Changing Picture of How We Watch Television  
*by Rob de Santos, K8RKD*
- 22 COPS**  
Up Close With Pirate Radio Historian Andrew Yoder  
*by Steven Handler, WPC9JXX*
- 39 Power Up**  
New, Interesting and Useful Communications Products  
*by Jason Feldman, WPC2COD*
- 40 World Band Tuning Tips**  
World News, Commentary, Music, Sports, And Drama At Your Fingertips
- 42 Plane Sense**  
Q&As: From the Air Mail Pouch, What's on the Reader's Mind  
*by Bill Hoefer, KPC4KGC/KG4KGC*
- 49 Ham Discoveries**  
Speak Now: The Finer Points of Transmit Audio  
*by Kirk Kleinschmidt, KPCØZZZ/NTØZ*
- 53 Monitoring**  
Off and Tuning: WPC3DNC Shares Recent QSLs from Around the World  
*by Richard Fisher, KPC6PC*
- 56 Monitor of the Month**  
WPC7COF, Sierra Vista, Arizona  
*by Richard Fisher, KPC6PC*
- 65 Global Information Guide**  
In Sri Lanka, Ekala's Lone Mission May Be to Relay VOA and Other U.S.-Run Broadcasters  
*by Gerry L. Dexter, WPC9GLD*
- 80 The Loose Connection**  
With Apologies to Admiral Stockdale: Who Am I? Why Am I Here?  
*by Urban Bates, YJPC1UB*

## DEPARTMENTS

- 4 Tuning In**  
An Editorial
- 5 Newsworthy**  
Unwired, InfoCentral. And Washington Beat
- 30 Across the Spectrum**
- 31 Reader Survey**
- 71 Spurious Signals**
- 78 Trivia**

web: [www.popular-communications.com](http://www.popular-communications.com)

# Tap into secret Shortwave Signals

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



MFJ-462B  
**\$199<sup>95</sup>**  
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 *unedited* 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  
**\$159<sup>95</sup>**

## Indoor Active Antenna

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



MFJ-1020C  
**\$99<sup>95</sup>**

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 1/8x1 1/4x4 in.



MFJ-1022  
**\$69<sup>95</sup>**

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

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

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

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

## High Performance Modem

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

## Easy to use, tune and read

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

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

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

Copies most standard shifts and speeds. Has

MFJ AutoTrak™ Morse code speed tracking. Use 12 VDC or use 110 VAC with MFJ-1312D AC adapter, \$15.95. 5 1/4"Wx2 1/2"Hx5 1/4"D inches.

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



MFJ-1800  
**\$29<sup>95</sup>** 16-element, 15 dBi WiFi Yagi antenna greatly extends range of 802.11b/g, 2.4 GHz WiFi signals. 32 times stronger than isotropic radiator. Turns slow/no connection WiFi into fast, solid connection. Highly directional -- minimizes interference. N-female connector. Tripod screw-mount. Wall and desk/shelf mounts. Use vertically/horizontally. 18Wx2 3/4"Hx1 1/4"D 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  
**\$199<sup>95</sup>** 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  
**\$119<sup>95</sup>** 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.



MFJ-1045C  
**\$89<sup>95</sup>**

## 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-752D  
**\$119<sup>95</sup>**

## MFJ Shortwave Headphones

MFJ-392B  
**\$24<sup>95</sup>** Perfect for shortwave radio listening for all modes -- SSB, FM, AM, data and CW. Superb padded headband and ear cushioned design makes listening extremely comfortable as you listen to stations all over the world! High-performance driver unit reproduces enhanced communication sound. Weighs 8 ounces, 9 ft. cord. Handles 450 mW. Frequency response is 100-24,000 Hz.



## High-Q Passive Preselector

High-Q passive LC preselector boosts your favorite stations while rejecting images, intermod and phantom signals. 1.5-30 MHz. Preselector bypass and receiver grounded positions. Tiny 2x3x4 in. MFJ-956  
**\$69<sup>95</sup>**



## 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 loss. Air variable capacitor with vernier. 1.6-33 MHz. MFJ-1046  
**\$119<sup>95</sup>**



## 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  
**\$12<sup>95</sup>**



## MFJ All Band Doublet

102 ft. all band doublet covers .5 to 60 MHz. Super strong custom fiberglass center insulator provides stress relief for ladder line (100 ft.). Authentic glazed ceramic end insulators and heavy duty 14 gauge 7-strand copper wire. MFJ-1777  
**\$59<sup>95</sup>**



## MFJ Antenna Switches

MFJ-1704  
**\$79<sup>95</sup>** MFJ-1702C  
**\$39<sup>95</sup>** MFJ-1704 heavy duty antenna switch lets you select 4 antennas or ground them for static and lightning protection. Unused antennas automatically grounded. Replaceable lightning surge protection. Good to 500 MHz. 60 dB isolation at 30 MHz. MFJ-1702C for 2 antennas.



## Morse Code Reader

Place this MFJ-461  
**\$89<sup>95</sup>** pocket-sized MFJ Morse Code Reader near your receiver's speaker. Then watch CW turn into solid text messages on LCD. Eavesdrop on Morse Code QSOs from hams all over the world!



## MFJ 24/12 Hour Station Clock

MFJ-108B, \$21.95. Dual 24/12 hour clock. Read UTC/local time at-a-glance. High-contrast 5/8" LCD, brushed aluminum frame. Batteries included. 4 1/2"Wx1Dx2H inches.



## Dealer/Catalog/Manuals

Visit: <http://www.mfjenterprises.com> or call toll-free 800-647-1800

• 1 Year No Matter What™ warranty • 30 day money back guarantee (less s/h) on orders direct from MFJ

**MFJ ENTERPRISES, INC.**  
300 Industrial Pk Rd, Starkville, MS 39759 PH: (662) 323-5869  
Tech Help: (662) 323-0549

FAX: (662) 323-6551 8-4:30 CST, Mon.-Fri. Add shipping. Prices and specifications subject to change. (c) 2012 MFJ Enterprises, Inc.

# POPULAR COMMUNICATIONS

## EDITORIAL STAFF

**Richard Fisher, KI6SN**, Editor  
(E-mail: editor@popular-communications.com)  
**Jason Feldman, WPC2COD**, Associate Editor  
(E-mail: jason@popular-communications.com)  
**Richard S. Moseson, W2VU**, Editorial Director  
(E-mail: w2vu@popular-communications.com)

## CONTRIBUTING EDITORS

**Ryan Archer, KPC6KPH**, Classic Electronics  
**Bruce A. Conti**, AM/FM Broadcasts  
**Rob de Santos**, Trends In Technology  
**Gerry L. Dexter**, Shortwave Broadcast  
**Steven Handler, WPC9JXK**, Pirate Radio  
**Bill Hoefler, KPC4KGC**, Aviation  
**Tomas Hood, NW7US**, Propagation  
**Shannon Huniwell**, Classic Radio  
**Kirk Kleinschmidt, NTØZ**, Amateur Radio  
**Bill Price, N3AVY**, Humor/Communications  
**Ken Reiss**, Technical/Scanning  
**Bob Sturtevant, AD7IL**, Puzzles And Trivia  
**Jason Togger, KB3CNM**, Cartoons  
**Gordon West, WB6NOA**, General Radio Comm.

## BUSINESS STAFF

**Richard A. Ross, K2MGA**, Publisher  
**Charlie Payne**, Advertising Director  
**Emily Leary**, Sales Coordinator  
**Sal Del Grosso**, Accounting Manager  
**Doris Watts**, Accounting Department

## CIRCULATION STAFF

**Melissa Gilligan**, Operations Manager  
**Cheryl DiLorenzo**, Customer Service Manager  
**Ann Marie Auer**, Customer Service

## PRODUCTION STAFF

**Elizabeth Ryan**, Art Director  
**Barbara McGowan**, Associate Art Director  
**Dorothy Kehrweider**, Production Director  
**Emily Leary**, Production Manager/Webmaster  
**Hal Keith**, Technical Illustrator  
**Larry Mulvehill, WB2ZPI**, Photographer  
**Rod Somera**, Webmaster



A publication of  
**CQ Communications, Inc.**  
 25 Newbridge Road  
 Hicksville, NY 11801-2953 USA

Popular Communications (ISSN-0733-3315), Vol. 31, No. 11 published monthly by CQ Communications, Inc., 25 Newbridge Road, Hicksville, NY 11801. Telephone (516) 681-2922. FAX (516) 681-2926. Web Site: <http://www.popular-communications.com/>  
 Periodicals Postage Paid at Hicksville, NY and at additional mailing offices. Subscription prices (payable in U.S. dollars): Domestic—one year \$34.95, two years \$62.95, three years \$91.95. Canada/Mexico—one year \$44.95, two years \$82.95, three years \$121.95. Foreign Air Post—one year \$54.95, two years \$102.95, three years \$151.95.

U.S. Government Agencies: Subscriptions to Popular Communications are available to agencies of the United States government, including military services, only on a cash with order basis. Requests for quotations, bids, contracts, etc. will be refused and will not be returned or processed.

Entire contents copyright © 2013 by CQ Communications, Inc. Popular Communications assumes no responsibility for unsolicited manuscripts, photographs, or drawings. Allow six weeks for change of address or delivery of first issue.

Printed in U.S.A.

Postmaster: Please send change of address to: Popular Communications, 25 Newbridge Rd., Hicksville, NY 11801

## EDITORIAL

### Tuning In

by Richard Fisher, KPC6PC/KI6SN  
 <editor@popular-communications.com>

# Pop'Comm @ 30: Antenna Challenges, Circa 1983

If there is any doubt in your mind that antenna restrictions have been a long-time headache for apartment-dwelling SWLers, look no further than the July 1983 edition of *Pop'Comm* — 30 years ago this month.

Randy Felton, KMS5GR, suggested cooped-up listeners try his “Itty-Bitty Vertical DX Antenna.” Along with an 8-foot vertical, all you needed was a small tuner, **Figure 1**, between the outdoor pole and your receiver. Two standard 365-picofarad broadcast-radio-style variable capacitors, a 20-turn tapped coil on a 1-inch diameter form and a five-pole rotary switch are at the heart of this circuit. “The tuner resonates the vertical on increasingly higher frequencies as the (five-pole) switch is rotated clockwise,” Felton wrote. “Try different positions and rotate C<sub>1</sub> and C<sub>2</sub> for the highest S-meter reading on a given signal. If your receiver has no S-meter, tune for loudest sound.” All the parts look as though they’d be easy to find.

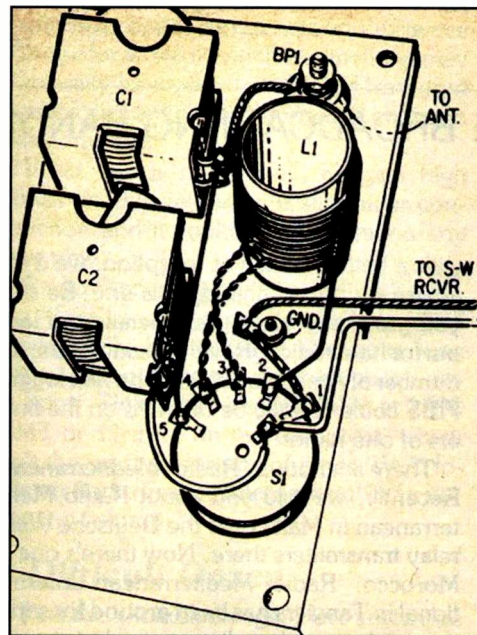


Figure 1.

If there’s enough interest, we’ll reprise KMS5GR’s “itty-bitty” vertical and tuner project in an upcoming *Pop'Comm*. Meantime, start scrounging around for a 1-inch-diameter coil form and we’ll meet you soon at the workbench!

## Results: March's Pop'Comm Reader Survey

Here are March’s questions and responses tabulated from reader mail-in cards and our online survey:

**In March’s InfoCentral, Radio Netherlands Worldwide’s new Editor-in-Chief says for RNW, “the shortwave era is behind us,” pointing to the station’s future in satellite and Internet communications. Does that concern you?**

Yes, a great deal	56%
Somewhat	27
Not at all. Many stations are already in SWL retreat	17

**Do you envision the day when shortwave frequencies will be virtually uninhabited on the HF bands?**

For sure. It’s only a matter of time	12
Numbers will diminish, not vanish in my lifetime	59
No. The need for wireless will never disappear	29

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

Within the last 12 months	24
Within the last five years	8
Within the last 10 years	29
I have never requested a QSL from a shortwave station	36

(Continued on page 81)

# The Weirder Side of Wireless, and Beyond

Compiled by  
Richard Fisher,  
KPC6PC

## Only in Florida, Part I: *OMG, Dihydrogen Monoxide!*

In the Sunshine State, sometimes you get the gator. Sometimes the gator gets you.

WWGR 101.9 *Gator Country* morning-show hosts Val St. John and Scott Fish found themselves up to their microphones in hot water after telling listeners *dihydrogen monoxide* was coming out of water taps across Fort Myers.

They neglected, however, to mention two points:

- Dihydrogen monoxide is *water*.
- This was an April Fool's Day prank

*Whahoppin'?* Listeners freaked out. So much so that Lee County utility honchos had to issue an *everybody stay calm; nothing to be concerned about* order.

"Audio evidence of exactly how St. John and Fish executed this bad joke remains scarce, as they were pulled off the air around 8:30 a.m., about three and half hours into their *Val and Scott in the Morning* show," *The Atlantic Wire* reported.

The station's signal covers a wide region of south-west Florida.

On April 3, St. John and Fish were back on the air "and officials with the local health department tell *The Atlantic Wire* that felony charges are not expected." (*IN DEPTH: Read the full story at <http://bit.ly/127lSj>. Source: TheAtlanticWire.com*)

## Only in Florida, Part II: An Antenna As Lovely As a Tree

*Palm Beach Post* reporter Barbara Marshall came up with this great lede for a strange story about a Jupiter

radio station: *While there are several ways to grow a radio station's audience, not many include fertilizer.*

(*FOR THE RECORD: That's Jupiter, Florida, not the Fifth Rock from the Sun. – KPC6PC*)

Marshall goes on: *But then, few radio stations use a 70-foot Washingtonian palm tree planted in back of its studio as an antenna pole.*

"We try to take good care of that tree," Tom Boyhan, owner of low-power WJTW 100.3 FM, told the Post. "Our first one got hit by lightning."

Turns out, the palm is Boyhan's "workaround of a Town of Jupiter rule prohibiting antennas more than 50 feet tall near residential areas."

Photographer Bruce R. Bennett got a fabulous picture of the lash-up, posted on the paper's website, **Photo A.**

Two thumbs-up for the Post's Barbara Marshall and Bruce R. Bennett, and WJTW. (*READ: "How Do You Find Jupiter's Little Radio Station? Look for the Antenna in the Tree," at <http://bit.ly/10z3R3r>. – KPC6PC*) *Source: Palm Beach Post*

## Yesterday and Today: Those Seven Filthy Worlds

*Just Reminiscing:* Thirty-five years ago — July 3, 1978 to be precise — the United States Supreme Court ruled 5-4 that the Federal Communications Commission was within its rights to issue a reprimand to WBAI-FM in New York City for its broadcast of George Carlin's comedy skit, *Filthy Words*. (*WATCH: CNN's look back at the controversy upon Carlin's death in June 2008 <http://bit.ly/1165CwC>.*)

For "Filthy Words, Circa 2013," see this month's *Washinton Beat*, on page 7. *Source: Published reports*

## BBC-1 Dilemma: 'Ding Dong,' Do We Play the Song?

The death of former British Prime Minister Margaret Thatcher put BBC Radio 1 into a proverbial sticky wicket.

It seems detractors of Thatcher started buying and downloading so many copies of *Ding Dong the Witch is Dead*, the song rocketed to No. 2 on the official weekly "Radio 1 Chart Show."

Wireless aficionado Corey Dietz crystallized BBC Radio 1 Controller Ben Cooper's dilemma: how do you maintain the integrity of a particular show that is based on sales (objective) and also maintain the integrity of respect toward a former Prime Minister (subjective)?

Ultimately, "Cooper decided not to play the entire song. Instead, he instructed the show to play only seven seconds . . . and offer an explanation as to why it did." Cooper's full reasoning was posted online.

For Dietz's full story, visit <http://bit.ly/18FuzMZ>. *Source: Radio.About.com*



**Photo A.** To work around a Jupiter, Florida antenna height ordinance, WJTW-FM owner Tom Boyhan stuck that station's aerial up 70 feet in a Washingtonian palm tree. That's 20-feet higher than it could go via a manmade structure. *Palm Beach Post* Photographer Bruce R. Bennett took a picture of the lash-up. (*Internet screen grab <http://bit.ly/10z3R3r>*)

## Communications News, Trends and Short Takes

Compiled by  
Richard Fisher, KPC6PC

### Rádio Nacional da Amazônia Broadcasts Captured in Recordings

"Last night," writes *Pop Comm* contributor and *The SWLing Post* Editor Thomas Witherspoon, "Rádio Nacional da Amazônia had a booming signal into North America on 11,780 kHz. Rádio Nacional's AM signal was very wide. I actually opened up the filter on my SDR to 16 kHz to record this broadcast. In truth, that's probably too wide, but it certainly made for great audio fidelity.

Witherspoon recorded it on Sunday, April 28 "starting around 22:15 UTC on 11.78 MHz." (*LISTEN: To recordings of Rádio Nacional da Amazônia, visit <http://bit.ly/13UwpbV>.* – KPC6PC)

The *SWLing Post* can be viewed at <http://swling.com/blog>.

(Source: *The SWLing Post*)

### Amateur Talks About the 'New' 6 Meters in New Zealand

George Boorer, ZL3PN, of Timaru, New Zealand,

in an interview in late April explained to Radio NZ listeners how radio amateurs are now able to use the 50-MHz band following the switch to digital of the TV2 television transmitter at Studholme.

(*LISTEN: To the Radio NZ broadcast at <http://bit.ly/115HtGx>.* *READ: A story about ZL3PN from the Timaru Herald at <http://bit.ly/ZHuGqX>.* *MORE: About 50 MHz in New Zealand at <http://bit.ly/18la9vi>.* – KPC6PC)

(Source: *Southgate ARC News*)

### Asia-Pacific Officials Meet in Phnom Penh to Prepare for WTDC-14

Broadcast and telecommunications officials from across the Asia-Pacific region met in Cambodia in early May to prepare for the World Telecommunication Development Conference in 2014, (WTDC-14).

According to the Asia-Pacific Broadcasting Union (ABU), more than 175 delegates from 31 countries attended the Asia-Pacific Regional Development Forum (RDF) and the Regional Preparatory Meeting (RPM) in Phnom Penh.

At the opening session, Director of the ITU's Development Bureau, Brahima Sanou, "outlined the ITU's development efforts around the world and underlined the importance of equal broadband access to all," the report noted. (*IN DEPTH: Read the full ABU story at <http://bit.ly/13d1Uym>.*)

(Source: *ABU*)

### Survey: Half of U.S. Adults Watch Video on Non-TV Devices

Twenty-seven percent of adults in the U.S. watch video on devices other than a TV set daily, and 53 percent do it weekly.

Consumer data from Leichtman Research Group found this to be up from 14 percent daily, and 37 percent weekly two years ago.

"These non-TV devices include home computers, mobile phones, iPads, tablets, and eReaders," according to a posting at *AdvancedTelevision.com*. It noted eReaders were not included in the survey two years ago.

More than 1,200 U.S. households took part in the survey. Among the survey findings reported by *AdvancedTelevision.com*:

- 44 percent of all households have at least one television set connected to the Internet via a video game system, a Blu-ray player, an Apple TV or Roku set-top box, or the TV set itself — up from 38 percent last year, 30 percent in 2011, and 24 percent in 2010.

- 22 percent of all adults stream Netflix video weekly, compared to 4 percent in 2010.

- 80 percent of Netflix streaming subscribers use it to watch TV shows and movies on a TV set and 53 percent of this group access Netflix via a video game system.

(*INDEPTH: Read the full AdvancedTelevision.com story at <http://bit.ly/1817eCK>.* – KPC6PC)

### WATCH: A 3-Year Solar Spectacular in Less Than 4 Minutes



NASA's Solar Dynamics Observatory for three years has been in Earth orbit watching the Sun, capturing massive solar flares, Venus' transit across its face, and "a mystifyingly beautiful phenomenon known as solar rain," according to *TheAtlantic.com*. The video at <http://bit.ly/16EjgrQ> compresses three years into three minutes, 40 seconds "using two frames from each Earth day . . . If you pay close attention, you'll notice two partial eclipses by the moon, several roll maneuvers the satellite undertook, and a few major solar flares." (*Internet screen grab*)



# Capitol Hill And FCC Actions Affecting Communications

Compiled by  
Richard Fisher,  
KPC6PC

**Photo A.** Tom Wheeler, the President's choice to head the FCC, with venture capital firm Core Capital Partners.  
(Internet screen grab  
<<http://bit.ly/167YYH4>>)



## Communications Industry Lobbyist Eyed for FCC's Top Post

A major fundraiser for President Obama's political campaigns, venture capitalist and communications industry lobbyist has been nominated to replace Julius Genachowski as head of the Federal Communications Commission.

If the Senate confirms 67-year-old Tom Wheeler's nomination, **Photo A**, he will take over for the Commission's leading Democrat, Mignon Clyburn, who has served as acting Chairman since Genachowski's resignation in March.

Wheeler is former President of the National Cable Television Association — now known as National Cable & Telecommunications Association — and former Chief Executive Officer of the Cellular Telecommunications & Internet Association. At the time of his nomination, Wheeler was Managing Director at Core Capital Partners, a venture capital firm in Washington, DC. (Source: *Published reports*)

## Commission Calls for Input on RF Radiation Exposure Rules

The FCC has issued a Notice of Inquiry seeking input on possible changes to its rules regarding exposure to RF radiation. Specifically mentioned for additional review is the current provision in the amateur radio rules which consider an amateur's home to fall under less-restrictive "occupational/controlled" exposure limits, while areas outside the amateur's property are subject to the stricter "general population/uncontrolled" limits. For specifics, see ET Dockets 13-84 and 03-137, on the FCC website, <<http://www.fcc.gov>>. (Source: *CQ Newsroom*)

## Howard Stern Blasts FCC's Genachowski for Indecency 'Hypocrisy'

Shock radio host Howard Stern blasted the FCC after hearing Boston Red Sox player David Ortiz was not being fined for using the "F word" on air after the Boston Marathon bombings. *Why?* The Commission decided his statements were "from the heart."

Shortly after the remarks to the Fenway Park fans, the official FCC Twitter account posted a message from former Chairman Julius Genachowski: "David Ortiz spoke from the heart at today's Red Sox game. I stand with Big Papi and the people of Boston — Julius."

On his satellite radio broadcast, Stern ridiculed what was described as the "ongoing display of hypocrisy" from the FCC.

"I *always* spoke from the heart," Stern said. "During his time on terrestrial radio, Stern and the stations he worked for were fined a total of \$2.5 million for 'indecent programming,'" Examiner.com reported in a Web posting <<http://exm.nr/12BsVsg>>. (Source: *Published reports*)

## Head of FEMA Adds ARRL Field Day to Summer Plans

The Administrator of the Federal Emergency Management Agency (FEMA) said in March "he was looking forward to operating during 2013 ARRL Field Day ... and to have an opportunity to 'test my own field gear,'" according to League officials.

Craig Fugate, KK4INZ <<http://www.QRZ.com/db/KK4INZ>>, met with ARRL President Kay Craigie, N3KN; Chief Executive Officer Dave Sumner, K1ZZ; General Counsel Chris Imlay, W3KD; and Emergency Preparedness Officer Mike Corey, K1IU, to discuss amateur radio's role in public service and disaster communications. Fugate has long been an outspoken advocate of amateur radio as a communications resource in emergencies. (Source: *Published reports*)

## State EmComm Committees Urged to Review EAS Plans

The FCC's Public Safety and Homeland Security Bureau is urging state emergency communications committees to make sure their EAS plan is up-to-date, according to RadioWorld.com's Leslie Stimson.

"During the national EAS test in 2011, the FCC and FEMA found that some stations didn't know which Primary Entry Point stations to monitor in their market to get their alerts," she reported. "That's one of the points the bureau made in its recently-released report on the test findings."

Since June 30, 2012, Stimson reported, "stations have been required to be able to receive EAS alerts formatted in Common Alerting Protocol from FEMA's web-based interface. State and local alert originators may use CAP-based alerting; if so, their state plan needs to spell out how the alerts would be aggregated and distributed to stations within their state, including monitoring assignments." (*IN DEPTH: Read Stimson's full story at* <<http://bit.ly/10yKo2Y>>. (Source: *RadioWorld.com*)

# The Changing Picture of How We Watch Television

By Rob de Santos, K8RKD  
 email: <commhorizons@gmail.com>  
 Twitter: <@shuttleman58>

*“Time-shifting is becoming so common that Nielsen and advertising agencies are struggling to find ways to measure viewership.”*

In my younger years there was only one way to watch a TV show. You had to be in front of the TV when the program aired. If you were late or forgot, then all you could do is hope it was repeated a few months later.

Then in the 1970s, along came the VCR. Now you could record a program and watch it later. You still had to remember to set the VCR to record, make sure there was a tape in the recorder with sufficient space, hope the power didn't go out, or the schedule was changed, or the program delayed. *Better*, but often it didn't work. The quality was often marginal, too.

In 1999, two new companies began selling a new device they called the DVR (digital video recorder) or PVR (personal video recorder). It recorded television like a VCR but did so to a hard disk. Tivo™ and ReplayTV were expensive devices but offered much-improved capabilities where recording could be tied to a downloaded schedule or guide, automatic recording by saved searches, higher quality, and more.

While ReplayTV did not survive, Tivo™ is still going strong and has spawned an entire industry of clone products. Today, more than half of U.S. homes have at least one DVR and many have multiple units. The technology has moved forward so that it is now possible to record the program in one place and watch it in another room or half way across the world or on a different device such as a tablet computer.

The DVR has accelerated dramatically the phenomenon first made possible by the VCR: time-shifting. This is the situation where a program is recorded live but watched hours, days, or even weeks later. Time-shifting is becoming so common that TV ratings services such as Nielsen and advertising agencies are struggling to find ways to measure it and determine what it means for sponsors and networks.

Several major TV series now have more viewers watching on a delayed basis than watch in the preferred time slot chosen by the network. One analysis in late 2012 by Nielsen suggested that 8 percent of all TV viewing is now delayed.

Ratings used by advertisers to sell programs have begun using the live numbers plus all view-

ers in the first three days afterward. Some industry executives believe they will soon have to go to a one-week window. The rub here is that advertisers doubt that many of the delayed viewers are watching the commercials in the same proportion, as does the live audience. This disconnect makes everyone who depends on TV advertising nervous.

With the “TV Everywhere” movement in full swing, the location counterpart known as “place-shifting” has also taken off — whether originated by the user via technology such as the “Slingbox™” or using the cable technologies making it possible to watch your favorite programs on your laptop or iPad™ anywhere you are.

It doesn't take much insight to see where all of this is going. Television guides, once a staple of the grocery store checkout line and the Sunday newspaper, no longer matter much and where they are important, they are electronic. Viewers choose when and where to watch a program rather than being tied to what a network programmer decided. Advertisers will be forced to adjust to making decisions based on the program rather than the time slot or location. Programmers will begin to treat all viewers, live or delayed, equally.

There are two notable exceptions to some of these trends: live sporting events and live news. In both cases, the immediacy of the program and the unpredictability or historical nature of the event ensures that viewers will still be drawn to it.

Generally, sports and live news still have limited delayed viewing, though place-shifting is becoming more common.

Where we will be in another decade is uncertain, but it's clear we are in the midst of a transformation in the way we view television programming. The experience of the next generation will be radically different from those of my generation or yours.

*What do you think will happen with TV viewing? Let me hear your views on viewing. I'm looking forward to your “picture.” —K8RKD*

# Spanning the World . . .

## Great Reading for the Radio Amateur



Print or Digital... Your Choice\*

(\* WorldRadio offered only in digital format)

Visit Us at [www.cqcomm.com](http://www.cqcomm.com)

### CQ Amateur Radio

For 68 years the reading choice of active hams. Clearly written and aimed at involving you, the reader...whether it's a story of operating from some exotic location, an article to deepen your understanding of ham radio science and technology, or a fun-to-build project that will have practical use in your ham shack

### Popular Communications

Covers the entire range of the radio hobby from shortwave listening to scanner monitoring and everything in between.

### CQ VHF

This quarterly magazine is the only publication in the USA devoted solely to amateur radio operating and technology above 50 MHz.

### World Radio Online

The first major amateur radio publication delivered solely in digital format. A fun, fast read that covers all aspects of amateur radio from the human side.

Be Sure To Visit Our On-Line Store!

<http://store.cq-amateur-radio.com>

**CQ Communications, Inc.**  
25 Newbridge Road • Hicksville, NY 11801

**Phone: 516-681-2922**  
**[www.cqcomm.com](http://www.cqcomm.com)**

# Journey into X Band for Amazing Communications @ 10,368.100 MHz!

By Gordon West, WPC6NOA/WB6NOA

*“Longtime microwave enthusiasts can now start to work relatively low-power stations, far too weak for a direct contact, but easily heard on a mutual mountain bounce!”*

At 10,000 MHz, radio amateurs can bounce SSB signals for some amazing contacts. The amateur spectrum there is a whopping 500 MHz wide. Not 500 kHz, but 500 MHz. We’re talking MEGA-hertz in every respect! **Photo A.**

Entry-level Technician class ham operators, as well as all the grades above, have full access to this 10-GHz — pronounced gigahertz — or 10,000-MHz band. It is slightly higher than small-boat radar frequencies, **Photo B.** Other names for 10 GHz are 3 cm (centimeters) or  $10^6$  Hertz. In ham parlance, though, it’s referred to affectionately as X band.

*(CLARITY: So, if your hobbyist communications buddy tells you he’s going on 10 gigs, you can bet he’s not referring to upcoming appearances of his garage band. But we digress . . . — WPC6NOA)*

By the way, you don’t need to be a radio amateur to enjoy X band. Shortwave listening, in its most literal interpretation,



**Photo A.** There is a lot of action on X band, and the San Bernardino Microwave Society is one of the most active groups in the United States. Equipment is compact and portable, as the X band station of Gene Monroe, K6BNN, shows. *(Photography courtesy of WPC6NOA)*

**Photo B.** At 10 GHz, the amateur radio X band is right next door to small boat marine radar in the RF spectrum. →



**Photo C.** Charles Olive, N6EQ, of Oak Hills, California, works microwave using a Kenwood transceiver and X-band transverter. It's a popular configuration for 10,000 MHz.

can take you on a trip to the outer valences of the amazing frequency spectrum that is 10 GHz.

## Making Your Appearance on X Band

Weak-signal Single Sideband (SSB), CW, and digital modes can be found on 10,368.100 MHz — otherwise known as the band's "calling" channel. During 10-GHz operating events annually in August and September, activity can be found on each side, as well.

Kits for building 10-GHz gear are available from several sources, including Down East Microwave, now based in Florida <<http://www.DownEastMicrowave.com>>.

There are also fully-assembled 10-GHz stations, built in Europe:

- Kuhne Electronic <<http://www.Kuhne-Electronic.de/startseite.html>>
- SSB Electronic USA <<http://www.ssbusa.com>>

These 10-GHz stations are actually transverters. (*IN DEPTH: What is a transverter? Visit <<http://bit.ly/ZW9X3u>>.* — WPC6NOA)

Each transverter requires a multimode 10- or 2-meter transceiver to generate a transmit signal to be multiplied up to 10,000 MHz, **Photo C**, as well as a sensitive multimode receiver to hear the signal coming out on 10 meters or 2 meters from the

transverter. A small rig such as the Yaesu FT-817 multimode HF/VHF/UHF ham transceiver is a favorite "LO" (local oscillator) for the 10-GHz transverter, <<http://bit.ly/ZA9EKF>>.

## Dishing Out the Signal

At 10,000 MHz, we use compact dish antennas to direct our signal within a +/- 5-degree pattern. Beacon stations may employ a slotted-zero gain antenna system for omnidirectional propagation transmissions, <<http://bit.ly/12nBGpU>>.

A variety of feed systems concentrate the 10,000 MHz signals into waveguide — not coax — cable. The waveguide exhibits negligible loss on X-band frequencies, and lets us get the signal from the rear of the dish down to the transverter with minimal attenuation, **Photo D**.

## Amazing Propagation

The big excitement on 10 GHz is exploring propagation characteristics of this band. Like radar, signals on the X band are highly reflective off buildings, water towers, mountain peaks, inversion layers, and even weather and airplane scatter.

A Southern California Microwave enthusiast was giving a microwave talk to the Fullerton Radio Club (FRC) which became the catalyst for some interesting propagation observations, according to legendary microwave operator Wayne Overbeck, N6NB.



**Photo D.** While the communications goals are the same, equipment and station layouts can be quite different from one X-band station to the next.

Wayne calculated the distance between his home, with a microwave antenna system 75 feet high, to an area radio club meeting site to be just under 9 miles away. But even over this short distance, the signal was only one S unit out of the noise — not very impressive to the radio club members, many of whom are aerospace engineers.

“We then heard W6SZ, Rein [Smit] come into our conversation, indicating he was *not* pointing toward us, but rather, at a distant peak on a mountain range overlooking Los Angeles,” N6NB said. “When we and I rotated our antennas toward that peak, [Rein] instantly became armchair copy, with signals much stronger over an 80-mile reflected path [when compared to] our 8.5-mile direct path.”

### X Band: On the Air

“Sometimes,” Overbeck said, “I think we should get rid of calculated beam headings to distant stations and just rotate our antennas to find the best path.” His idea was quickly adopted into an *every* Wednesday evening 10-GHz microwave-operating event.

“On our first operating night, it was a great success,” W6SZ said, citing radio contacts with California stations:

- K6HLH (Lancaster)
- KC6QHP (Redondo Beach)
- N6NB (Tustin)
- N6RMJ (Lancaster)
- WA6CGR (Torrance)

Initially, coordination of who will call whom, and what

direction to aim, would be conducted on a UHF repeater system — in this instance, the Cactus Intertie <<http://www.cactus-intertie.org>>.

Under consideration is the recommendation I made that every 15 minutes, *everyone* on microwave will simultaneously point to a known reflective mountain or tall office building for a *hot bounce*. On X band, non-line-of-sight contacts might easily be made via a bounce from a local peak!

### 10-GHz Maritime Mobile

When I was operating X-band maritime mobile, the pitching and rolling of the boat had little effect on my signal as it bounced and skipped over the seawater. And when I sailed close to shore, I would often make contact with distant stations that *just happened* to be swinging their dish antennas in line with mutually-in-view distant island peaks. In my case, it was Santa Catalina Island.

Something non-technical might just occur — longtime microwave enthusiasts can now start to work relatively low-power stations, far too weak for a direct contact, but easily heard on a mutual mountain bounce.

The small-boat marine radar band, down at 9 GHz, is a perfect example of using microwave bounces to determine targets all around them, on the water, and land masses in the distance.

### Putting Temperature Inversion to Work

There’s even more excitement at X band in my region: The summertime West Coast inversion layers extending well into Baja California present fascinating possibilities. They become

so pronounced in July and August that stations in the San Francisco Bay area have completed 1,000-kilometer (about 621-miles) contacts with 10-GHz microwave operators on both SSB and

CW, hundreds of miles south of the Mexican border.

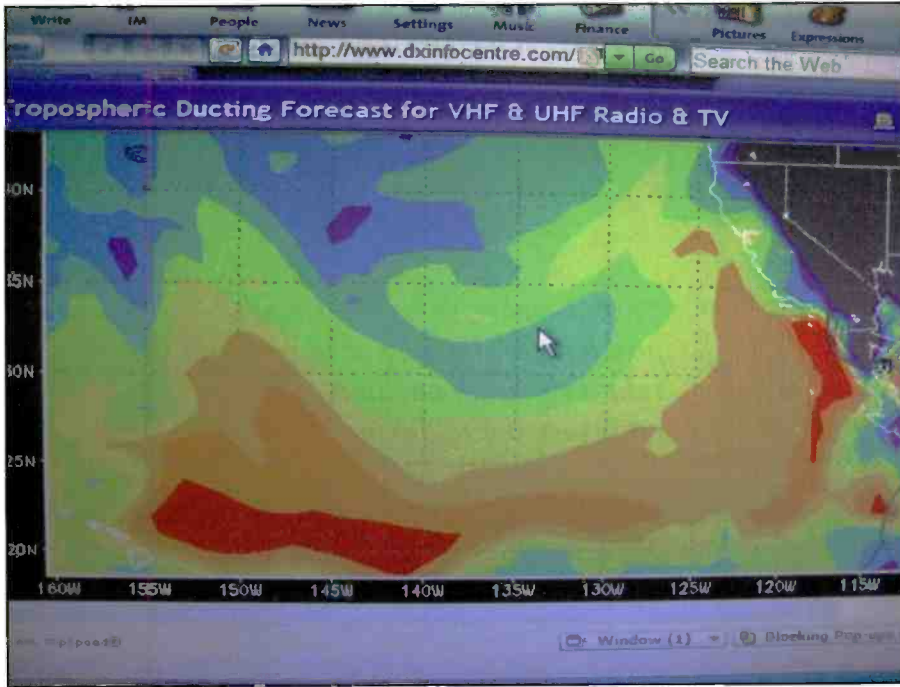
The actual path may be skewed by as much as 10 degrees, depending on the characteristics of the tropospheric duct,

**Photo E.** Generally, it takes a 10-degree air temperature inversion to extend VHF-microwave signals well over the horizon. With much of this 1,000-kilometer path over seawater, and with good strong signals in each direction, who knows how much greater the path might extend. (*IN DEPTH: Learn more on meteorological temperature inversion at <<http://bit.ly/11Y6SgO>>. – WPC6NOA*)

## OK, Let's Get Involved

For the curious, make note that members of the San Bernardino (California) Microwave Society gather monthly, sharing their meeting on amateur television for anyone to see <<http://bit.ly/11W8SY9>>. Contact the organization at <[SBMS@ham-radio.com](mailto:SBMS@ham-radio.com)>.

In August and September, during the twin weekend ARRL 10 GHz and Up contests — Round One, August 17-18; and Round Two, September 21-22 <<http://bit.ly/13MZqpV>> — consider tagging along with a microwave group, **Photo F.** You'll be amazed to see and hear what members can do on a DX bounce using their directional dish antennas pointed to a local mountaintop or tall building downtown!



**Photo E.** Monitor for strong tropospheric ducting paths — shown here in red at <<http://www.DXInfoCentre.com>> — and you may find microwave X-band signals going well beyond the horizon.



**Photo F.** Members of the San Bernardino Microwave Society work their X-band gear at a yearly tune-up session in Orange County, California.

## Portable and Custom Stand-Alone Solar Power Systems



- Folding Solar Panels
- Portable Solar Powered Lithium Battery Packs
- Thin Film Solar Panels
- QRP Power Systems
- Solar Power Components
- Back-up Emergency Power Systems

Telephone Customer Tech Support

Portable/Field Day Solar Power Solutions

Custom Home/Commercial Power Systems

We guarantee that our products will work for your application and we guarantee your satisfaction with our products.



Call us at 772-233-8485 or  
visit us at [www.ctsolar.com](http://www.ctsolar.com)

# On an AM Broadcast Band Trapping Expedition

## **Build This Simple Circuit to Cut Down on Interference from Local Stations**

By Richard Fisher, KI6SN

**W**hen using relatively simple receivers such as the Hendricks QRP Kits Scout Regen<sup>1</sup> or the Tablerock Shortwave Daddy<sup>2</sup>, it can be challenging to hear stations on any frequency when a local AM powerhouse is overwhelming the front end of your radio.

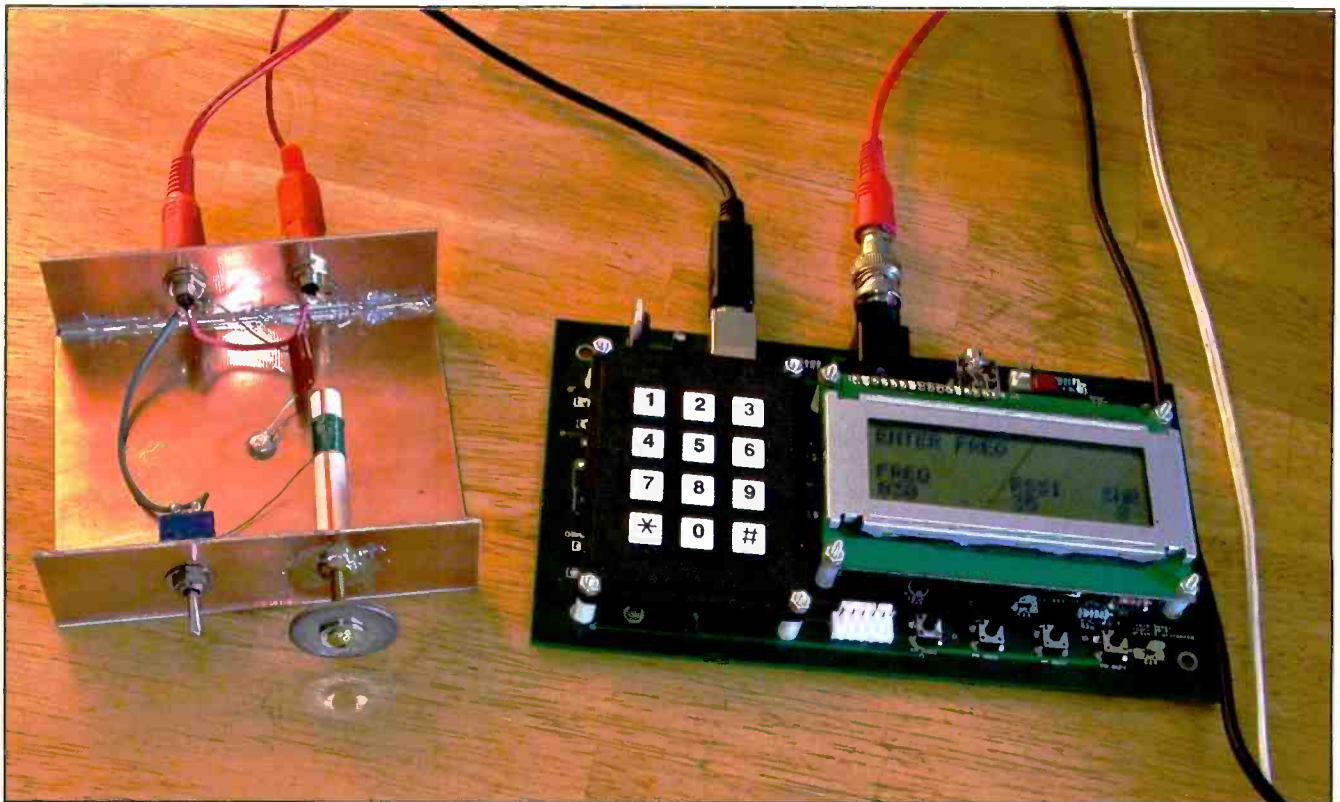
It's a common problem, and certainly is the case where I live — just a few miles from KPRO, "Inspirational Radio." Running 5,000-watts daytime and 194 watts at night into four phased verticals, it can bring on headaches. Literally. I can practically see its antennas' blinking red lights from the end of my street.

The gospel music and fiery preachers could be heard from one side of the dial to the other on the Scout Regen. They weren't so pronounced on the Shortwave Daddy, but could be heard in

*"Front-end receiver overload is a common problem for those of us in proximity to relatively large amounts of RF. But it's not an insurmountable one"*

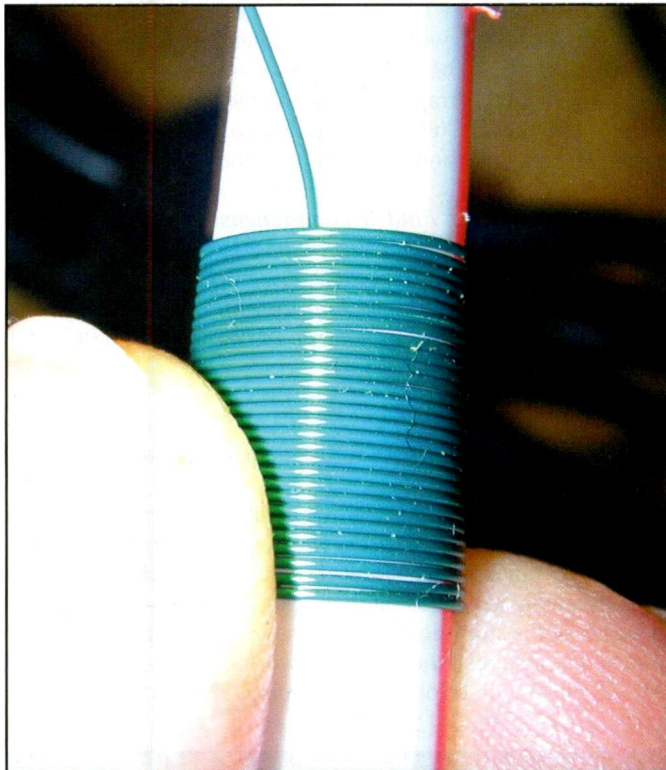
the background just about everywhere on the AM broadcast band and in some spots on shortwave.

Since Marconi got things started, our first instinct generally is to blame the receiver: *Oh, it's got a poorly-designed front end. No filtering. Poor selectivity.*



**Photo A.** An easy-to-build AM broadcast band wave trap can be the solution to interference problems caused by a nearby and powerful, commercial radio station that's wreaking havoc on your AM or shortwave receiver. (Photography courtesy of KPC6PC)





**Photo B.** A McDonald's plastic soda straw and some No. 28 or 30 enameled wire are all that are needed to make the trap's inductor.

Well, hold on there a minute, fella. *Simple* regenerative short-wave receivers are just that. And even SDRs, such as the Shortwave Daddy, aren't completely bulletproof.

Front-end overload is a common problem for those of us so close to relatively large amounts of RF. But it's not an insurmountable one.

### Why Not a Wave Trap?

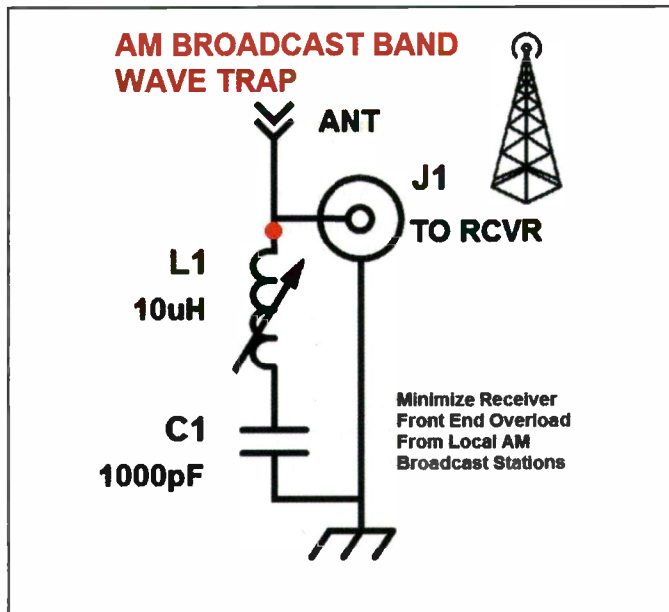
An easy remedy can often be to add a broadcast band wave trap to your listening post configuration, **Photo A**. It joins in the fun where the antenna meets the receiver. These little inductor-capacitor gadgets go back to the earliest days of radio — when just about all receiver front ends were vulnerable.

Properly designed, they can give overwhelming AM signals a knock-out punch that will be pleasing to your ears and bring a boost to your broadcast band and shortwave logging.

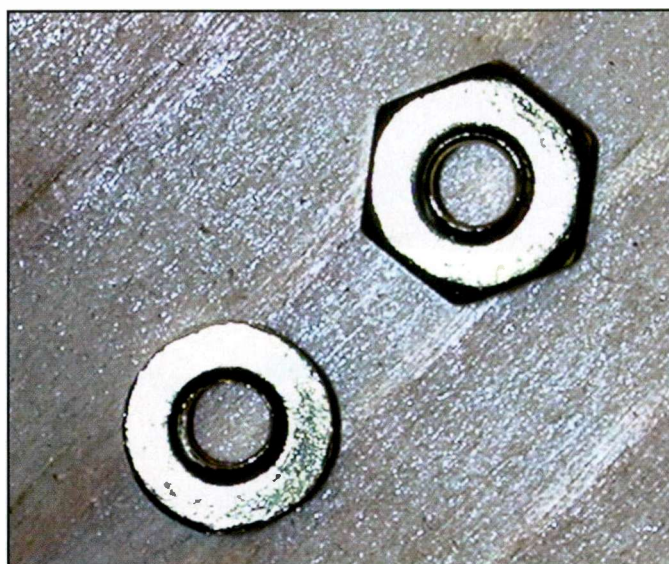
In seeking *The KPRO Solution*, we dug out old *ARRL Handbooks* and amateur radio technical texts to find a suitable circuit. A broadband filter — or wave trap — looked pretty easy, requiring only two toroids and a handful of capacitors.

Fortunately, before rummaging around in the parts boxes, we decided to bounce the idea off Kurt N. Sterba, the curmudgeonly antenna guru whose column, *Aerials*, has appeared in *WorldRadio* and *WorldRadio Online* magazines for a million years <<http://www.WorldRadiomagazine.com>>.

Through several levels of intermediaries — *he's a very secretive guy, you know* — the Krusty One sympathized with my situation, but said a broadband wave trap would never do. For this level of interference, a wave trap must be fine-tuned. That would mean designing one that bears down on KPRO's 1570 kHz specifically, choking off its signal and stomping it



**Figure 1.**



**Photo C.** Two No. 6-32 brass nuts are used to mount the adjustable brass tuning slug to Kurt's wave trap's front panel. The one on the left was rounded using a metal file to fit snugly into one end of the air-wound inductor.

to the ground. As you can see in the schematic at **Figure 1**, that's just what happens.

### About the Circuit

The design is a classic and trusted ally featuring the ol' *L/C one, two*. Here's Kurt's formula: *Proper L (inductance) and C (capacitance) = Victory*.

For really specific tuning, L can be slug-tuned, meaning a brass or powdered iron "slug" slides within an air-wound coil to change the inductance.

Kurt was perplexed, however, about where to get slug-tuned coils. "It's hard to find anyone who manufactures them anymore," he said. I suggested using a soda straw and brass bolt to

make the permeability-tuned inductor, and the Krusty One got excited. "Great idea! Go for it," he said.

Kurt's circuit included a 0.001-microfarad silver mica capacitor (1000 picofarads) going to ground as its C. We needed to decide what plastic soda straw to use, and how many turns it would require to achieve a resonant frequency of 1570 kHz.

The straw part was easy: McDonald's. They're all over the place. Anyone wanting to duplicate this wave trap wouldn't have much trouble finding the straw. And quench your thirst while you're at it.

For winding the coil, we chose No. 28 enameled wire because it was on hand. No. 30 wire will do just as well, and can be found at RadioShack®.

Now, how many turns? Kurt told us the inductor had to be somewhere in the 10-uH (microhenry) range. But to really be effective, it would be best to calculate for 1570.

Using a couple of tremendous resonant frequency and air-wound inductor calculation programs on the Internet, we determined that on a quarter-inch diameter form (the plastic McDonald's soda straw) with 1,000 picofarads of capacitance, we'd need an inductance of 10.276 uH to hit a resonant frequency of 1570 kHz. Winding 27 turns of No. 28 enameled wire on the straw would give us 10.125uH — close enough!

Now, following Kurt's admonition about fine-tuning, we

allowed for a bit of wiggle room to account for the brass slug. We know that brass within an air-wound coil *decreases* inductance. We'd like to be able to sweep from about 1440 through 1570 kHz with this trap to be able to tune out a couple of other strong AMs in KPC6PC's listening area. So, we opted for 29 turns. The slug, we hoped, would give the *fudge factor* needed to get the job done.

*(REFERENCE: Find a comprehensive list of coil turn counts for wave traps corresponding to each standard AM broadcast frequency — 0.540 to 1.710 MHz — on the Pop'Comm On the Web blog <<http://www.PopCommMagazine.blogspot.com>>. Then design a trap of your own! — KPC6PC)*

## Putting It Together

OK, with our parameters and parts in hand, it was time to get building.

The coil would be first. Putting a bunch of turns of thin wire on a plastic straw may at first seem like a daunting task. It's not.

Start by pinching the straw about a half-inch from one end. Push a sewing needle through the plastic, piercing a hole from one side of the straw across its diameter. While still holding the pinched straw, push the end of a two-foot-long-or-so piece of No. 28 or 30 wire through that piercing.

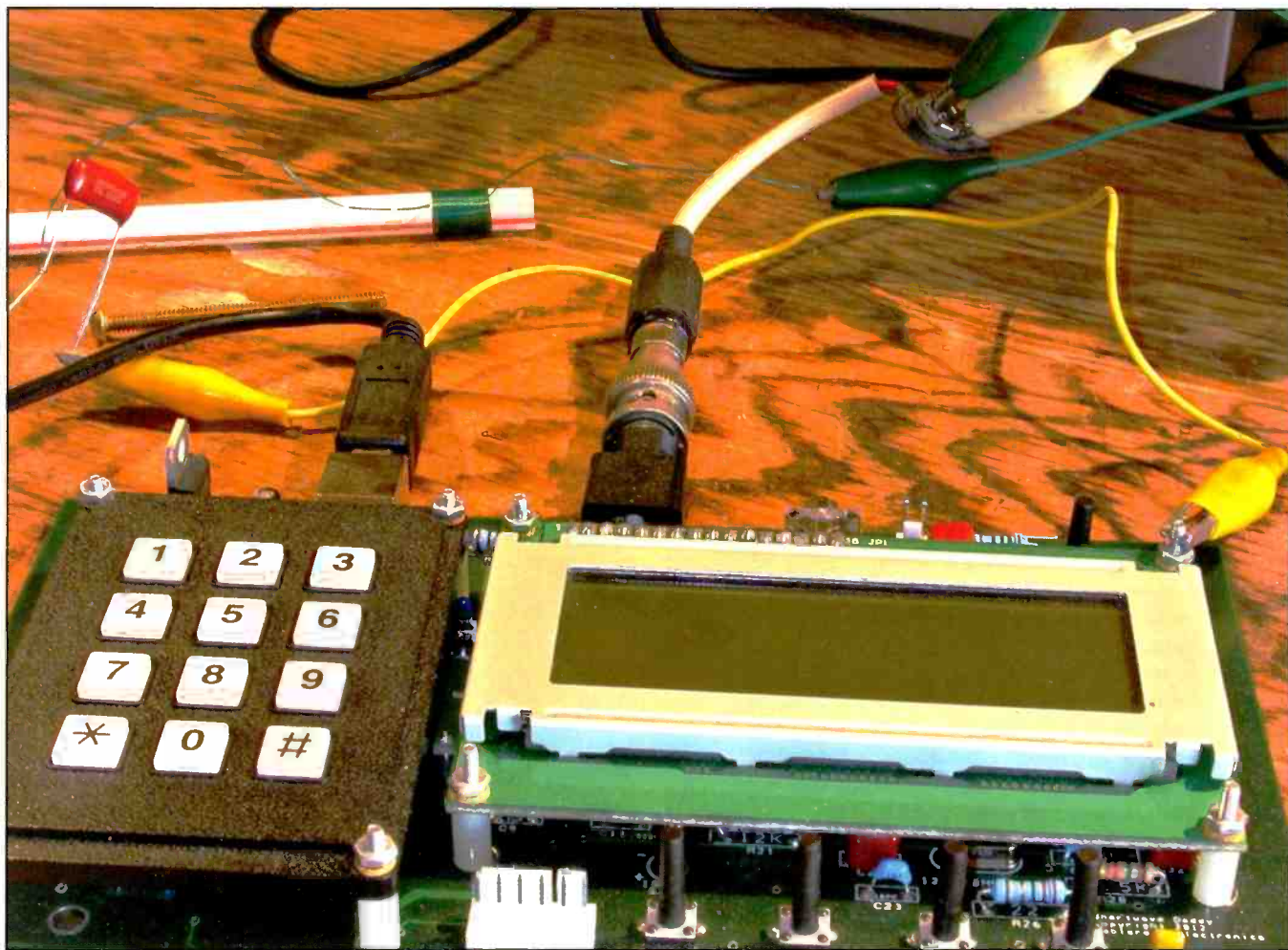


Photo D. At KPC6PC, we tested the trap's efficiency first by hay wiring it together on the workbench — a pretty sight, indeed.

Release the pinch and you're ready to start winding. Just be careful not to pull too hard on the wire as you're winding it. You don't want to draw the part of the wire going through the body of the straw out of its holes.

*(WINDING TIP: If you're like me, just about any distraction can throw off your windings count. So, turn off your phone, the TV and radio, or retreat to a quiet place where you won't be disturbed. There's nothing worse than being in the middle of winding an inductor when the stock market report comes on. All of a sudden the air is filled with numbers, and you're suddenly winding the Dow average instead of the number of turns you really need. Time to start over. Sigh. — KPC6PC)*

Now that you've reached the turns count — in this case, 29 — it's time to repeat the needle-through-the-straw procedure one more time to affix the turns permanently on the straw at the end of the winding. Eureka, you've done it, **Photo B**.

*(CAUTION: We don't want the brass slug hitting the wire that passes through the center of the straw via those sewing needle piercings. After completing the coil winding, use a wooden chopstick or other long, thin object to push the No. 28 or 30 wire to the inside wall of the plastic straw at each of the coil's ends, clearing the way. — KPC6PC)*

Before doing any chassis work, we felt it would be a good idea to test the wave trap to see if it was really all Kurt said it would be. The circuit was hay wired together on the workbench using clip leads and twisty wire connections, **Photo D**.

Firing up the Shortwave Daddy SDR we were impressed by how this little gem eliminated KPRO interference across the AM band. Inserting and removing the circuit from the configuration showed there was little loss, if any, in the 'Daddy's sensitivity above and below 1570 kHz. This trap was right on the money, just as Kurt said it would be.

### An Enclosure, Please

Now it was time to make a chassis in which to mount this little wave trap. At KPC6PC, double-sided copper-clad printed circuit board was cut with a hacksaw and soldered to make a base and front and back panels. We started with a piece of 4 x 5-inch PC board. The vertical panels were cut from it — each 1.125-inches (one and one-eighth) tall. That left a base of 3.75 by 4 inches. As you can see in the

## Discount Prices - Great Service



\$95 Dual Band  
**Wouxun**



QJE Supplies  
From \$39.95



ALINCO



Heil



Uniden



Your source for Amateur, CB, Marine, Scanners and Parts. Brands shown and more!

**www.CheapHam.com**

Hometek LLC, 1575 Rte 37W, Unit 4, Toms River, NJ 732-716-1600

For 50 years  
our volunteers have  
endured long hours  
and tough  
working conditions  
for no pay.



And 9 out of 10  
would do it again.

TO FIND OUT WHY  
contact

**REACT International, Inc.**

(301) 316-2900 • (866) REACT-9-9

155 North Wacker Drive, Chicago, IL 60606

REACT.HQ@REACTintl.org

**www.REACTintl.org**

pictures, that's an awfully big container for such a small circuit. *But, what the heck.*

Holes were drilled on the front panel to accommodate the brass tuning slug and an ON/OFF switch — we wanted to be able to put the trap in- or out-of-line. The RED dot in **Figure 1** shows where the switch was placed in the circuit. It connects or disconnects the wave trap to the point where the antenna meets the receiver.

On the back panel we'd need two RCA-style jacks for the antenna input and the wave trap output going to the receiver. Of course, you can use any jacks you'd like. And the front-panel ON/OFF switch is optional.

## Slugging Away

To mount the brass bolt used for the slug tuning, we used two No. 6-32 brass nuts. The bolt is No. 6-32, 2-inches long.

One end of the plastic straw is mounted on one of the nuts that has been soldered to the inside of the front panel. First, though, we needed to file the edges of the nut to make it round — just the right diameter to snugly fit into the straw's end, **Photo C**. Brass is soft, so this "rounding" takes no time at all.

The unfiled nut is soldered to the front side of the panel. The brass slug passes through the two nuts on its way into the center of the air-wound coil. We put a couple of washers at the head of the bolt to make a fancy tuning knob.

A small island-style pad, punched out of PC board material, was glued to the chassis as a connection point between one end of the coil winding and one end of the 1,000-pF capacitor, **Photo E**.

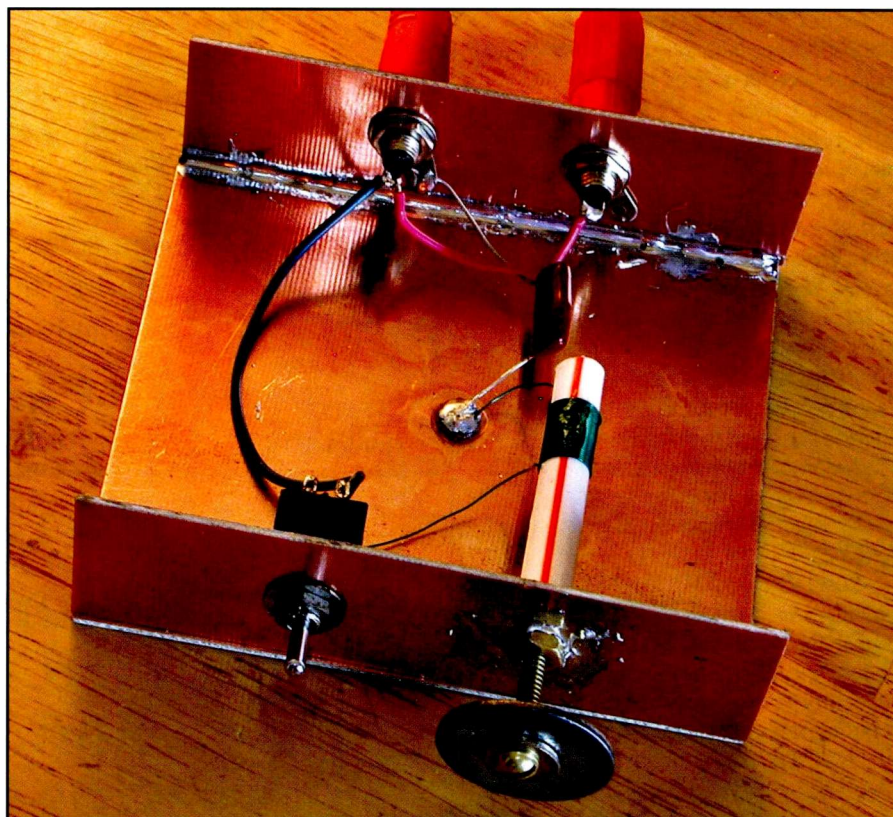
We wanted to be sure the brass slug would go fully through the center of the coil when turned clockwise, and would be fully removed from the coil when turned counter-clockwise. That's a simple matter of cutting the straw to proper length.

Since we plan to do a lot more experimentation with this wave trap, the straw was not permanently glued to the rounded brass bolt on the inside of the front panel. But that day will come.

## The Stuff Needed

Here's a list of parts for Kurt's super-duper wave trap. RadioShack® RS parts numbers are included:

- 4 x 5-inch piece of double-sided copper clad PC board\*
- 1 McDonald's plastic soda straw (0.25-inch diameter)
- 1 1,000-picofarad silver mica capacitor



**Photo E.** A small copper pad, punched out of PC board material, serves as the solder point for one end of L1 and one end of C1. It is shown here glued to the center of the chassis base.

itor (Dan's Small Parts and Kits <<http://www.danssmallpartsandkits.net>>)

- No. 28 or No. 30 enameled wire (RS 278-501)
- 2 RCA-style jacks (RS 274-346)
- 1 single-pole, single-throw (SPST) toggle switch (RS 275-645)
- 1 No. 6-32 brass bolt, 2-inches long (home improvement store)
- 2 No. 6-32 brass nuts (home improvement store)

\* *If you've got an enclosure you like, by all means, use it. Altoids, anyone?*

## Overall Performance

In practical use, without the trap in line we could hear KPRO prattling in the background when listening to KLAC-AM way down at 570 AM. With the trap in use, KPRO disappeared and there was no negligible signal loss to the 5,000-watt sports station from Los Angeles.

A similar scenario was repeated as we scanned across the 'Daddy's AM dial. When landing on KPRO itself, switching the trap in line brought a significant loss in 1570 AM's signal. Things were working just fine.

With the Hendricks QRP Kits Scout Regenerative Shortwave Receiver, results were just as impressive. We were able to use a very long wire for an antenna without having KPRO make listening challenging on the regen's approximate 3.3- to 10-plus-MHz tuning range. There was no noticeable loss of shortwave signal strength with the trap in line. *Wow!*

## An Invitation

So, if you're plagued with broadcast band interference to your AM BCB or shortwave receiver, try this circuit to wrestle the problem to the ground. You may be pleasantly surprised with the results of your trapping expedition. And please let us know how it all worked out!

### Footnotes

1. See "A Dial Twister's Delight: The Hendricks 'Scout Regen' Is a Throwback to Radios of a Bygone Era," *May 2013 Popular Communications*, page 10.

2. See "Build the Shortwave Daddy: A DIY USB-AM-FM-SWL SDR," *June 2013 Popular Communications*, page 10.

## Flashing Back to the Classic CB 'Coffee Break' of the '70s

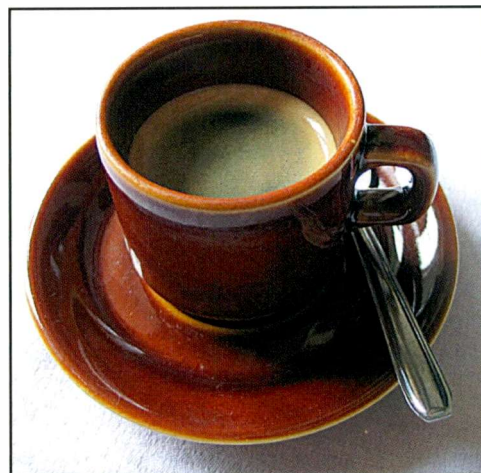
By Cory G.B. Sickles,  
WPC2CB/WA3UVV  
<wa3uvv@gmail.com>

*“CB Coffee Breaks aren’t as popular or numerous as they once were, but that doesn’t mean you and a few friends can’t start one up in your area.”*

While attending a hamfest hosted by a local amateur radio club recently, I took a break from the normal activities of looking for deals on new parts, accessories, and used treasures of the past to catch up with some friends, sit down, and enjoy an incredibly good cherry Danish pastry — made earlier that morning.

While “people watching,” I started to see something that I’d probably seen many times before, but never really noticed — there were a lot of attendees there who were CBers. In fact, closer examination of the tables revealed that about 35 percent of the used gear on display was CB-oriented, **Photos A and B**.

As there were tables set up for folks to relax and enjoy some coffee and the aforementioned selection of wonderful pastries, they seemed to join together in their own section of the room and



*(Courtesy of Wikimedia Commons)*



**Photo A.** “I started to see something that I’d probably seen many times before, but never really noticed,” writes WA3UVV after attending a recent hamfest. “There were a lot of attendees there who were CBers. In fact, closer examination of the tables revealed that about 35 percent of the used gear on display was CB-oriented.” *(Courtesy of WA3UVV)*

were having a great time. It reminded me of the “Coffee Breaks” that popped up from time to time back in the 1970s.

### ‘Coffee Breaker, One-Nine’

Through posters at radio stores, on the air announcements, and face to face conversations, word would get out that there was going to be a Coffee Break — *CB, get it?* — at some fire hall, VFW, truck stop, or shopping center parking lot and that all were invited.

Sometimes run by CB clubs, most had no admission charges, although tickets were sold for prize drawings. First prize might have been an SSB mobile, big antenna, or some other desirable gear. Maybe some local dealers would show up with stuff for sale with a “show discount,” but mostly the selection of stuff was used gear from someone upgrading or from an estate sale. Along with the tailgating, the most bizarre item I ever saw at one was a Collins 5-kilowatt broadcast transmitter sitting in the back of a box truck being touted as the “ultimate linear.” *Good grief!*

There was also a smattering of shortwave receivers and ham radio gear, but the primary focus was on CB and social interaction — finally matching faces with voices and *handles* — and well, *fun!* They really were great ways to meet and talk with

others who shared similar interests, plus it built a sense of “community” within the hobby radio enthusiasts in attendance. Even some dating and eventual marriages resulted.

### Bonding to Form a Community

When you know something about the people you are talking to and get to know them better, a certain sense of accountability and responsibility becomes evident when everyone’s on the air. Coffee Breaks encourage and reinforce that. Some also invite local public service organizations to attend for awareness demonstrations and to encourage volunteerism with REACT® (Radio Emergency Associated Communication Teams, <<http://bit.ly/YdCdWg>>) fire departments, police explorers, SKYWARN <<http://skywarn.org>>, and yes — amateur radio.

### Let’s Bring ‘Em Back!

Coffee Breaks aren’t as popular or numerous as they once were, but that doesn’t mean you and a few friends can’t start one up in your area. By using the traditional tools mentioned, plus all of the social media resources we have at our disposal today, it should be easy to get the ball rolling — especially if you already have a CB club.



**Photo B.** People attending hamfests often gather in a break area to relax — many of them with similar interests in hobby communications. Radio amateurs, shortwave listeners, computer geeks, and yes, CBers can sit and gab — reminiscent of the CB “Coffee Breaks” of years gone by. (Courtesy of Wikimedia Commons)

# This race is far from over..... Version 6 is only the beginning Take the lead with Ham Radio Deluxe!

The ultimate ham radio software package is here and growing. Control your radio, your logbook, and your digital modes with just a few clicks of your mouse.

HRD SOFTWARE LLC

www.hrdsoftwarellc.com  
sales@hrdsoftwarellc.com  
(813-381-7714)

**Photo C.** The September 1961 edition of *CQ* magazine carried a feature by Don Stoner, W6TNS, on how to convert the Globe Pocketphone from the Citizens Band to 10-meter amateur radio operation — one of the many intersections of CB and hamming that continue even today. (Courtesy of *CQ*)

Start out at your local fire department. They're always looking to recruit volunteers. If they handle the food concession, it serves as a fundraiser for them, too. Ask the publicity chair and PIO (Public Information Officer) from your area ham radio club if they would like to get involved with a demonstration and hand out some information. The ARRL (American Radio Relay League <<http://www.arrl.org>>) makes it easy to do, since it has so many resources available.

If you don't know where your local ham radio club is, then the League's website is a good place to start looking for one <<http://bit.ly/13LEtv>>, **Photo C.** Maybe there's a growing SET (Science, Education, Technology) program at your county 4-H and it would like to get the word out. Invite your local CB radio dealer. Also, check to see if there's a GMRS (General Mobile Radio Service) repeater club in the area that would like to join in on the festivities. The more *buzz* it gets in advance, the better the results will be.

The first one may not have a huge turnout, but don't let that discourage you. Take lots of pictures, especially close-up shots of people and scene-setters showing the action and fun. Then use them as a follow up on social media sites and to promote the next one — to be held in about three months.

Figure out what you did right and what you didn't, then make adjustments. Eventually, some others may pop up in the area and you'll have a movement on your hands. It's always nice to

## Converting The Globe "Pocketphone"

### To Ten Meters

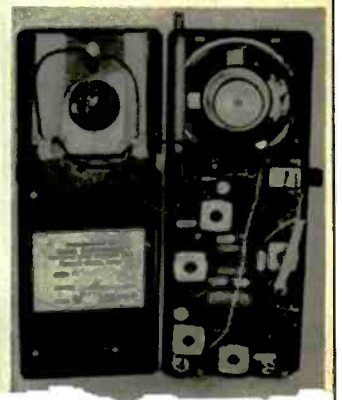
DONALD L. STONER\*, W6TNS

Eleven meters was lost several years ago. One small compensation however, is the CB equipment mass produced at low cost and available for modification to 6 or 10 meters. Typical of these is the Globe "Pocketphone" modified here.

SEVERAL YEARS AGO the radio amateur fraternity was forced to evacuate the 11 meter band to make room for the stampeding hordes of Citizens Band stations. All has not been lost, however. The rapid acceptance of this new service by the American public has resulted in a flood of beautiful QRP equipment which can be easily modified for use on the amateur 10 and 6 meter bands. The equipment and the materials for conversion are very inexpensive.

Of particular interest are the new hand-held transmitters designed to comply with Part 15 of the FCC regulations. This section of the rules (Subpart B, Section 15.205) specifies that the power input to the transmitter be less than 100 milliwatts (0.1 watts), the antenna be less than 5 feet in length, and the output frequency be confined to the band between 26.97 and 27.27 mc. This type of equipment may be easily modified to work on the 10 meter band for Civilian Defense, transmitter hunts, antenna testing and similar activities.

One of the first, and finest, QRP hand-held stations is the Globe "Pocketphone", manu-



get together as part of an area hamfest, but *even better* if the theme is Citizens Band radio.

Coffee Breaks can be as simple as a few folks getting together over breakfast, lunch, or just coffee, to a large gathering of communications and public service enthusiasts.

Don't be afraid to start small and work your way up. Building that sense of community and having fun is what it's all about.

## Up Close With Pirate Radio Historian Andrew Yoder

By Steven Handler,  
WPC9JXK  
<stevenhandler-  
popcomm@yahoo.com>

*“The author of more than a half dozen books about pirate broadcasts, Yoder’s interest in pirate radio spans three decades.”*

Andrew Yoder is perhaps the most prolific chronicler of pirate shortwave radio stations. He is the author of more than a half dozen books about pirate broadcasts, **Photo A**. His interest in pirate radio spans three decades. His latest book, the *2013 Pirate Radio Annual* is expected to be released soon.

Andrew graciously consented to be interviewed for this month’s *COPS*.

**Handler:** Andrew, when did you first get interested in shortwave pirate radio stations?

**Yoder:** In August of 1981. Within a few months of each other, one of my best friends got a Hallicrafters SX-28A (restored for him by his father), **Photo B**, I discovered *S9* magazine (which contained a pirate radio column), **Photo**

**C**, and I read “*How to Tune the Secret Shortwave Spectrum*,” **Photo D**. (**WATCH and LISTEN:** To a classic Hallicrafters SX-28A receiver at <<http://bit.ly/ZVo1dO>>. – WPC9JXK)

**Handler:** What about them attracted your interest?

**Yoder:** They were fun and mysterious . . . people from “who knows where” playing radio and wondering where their signal will go. I’ve always been fascinated with things like kids who launch balloons with nametags to see who will find them and also graffiti. Pirate radio is often in the same realm as these.

**Handler:** Since you apparently have held an interest in them for a long time, what has held your interest in shortwave pirate radio?

**Yoder:** What was true in 1981 is still true now. Also, as the government deregulated radio, stations were bought up by a few companies, and the programming was homogenized. I believe that programming created by hobbyists is even more refreshing to hear now than it was 30 years ago.

**Handler:** In an average week, about how many hours do you spend listening to pirate radio on shortwave?

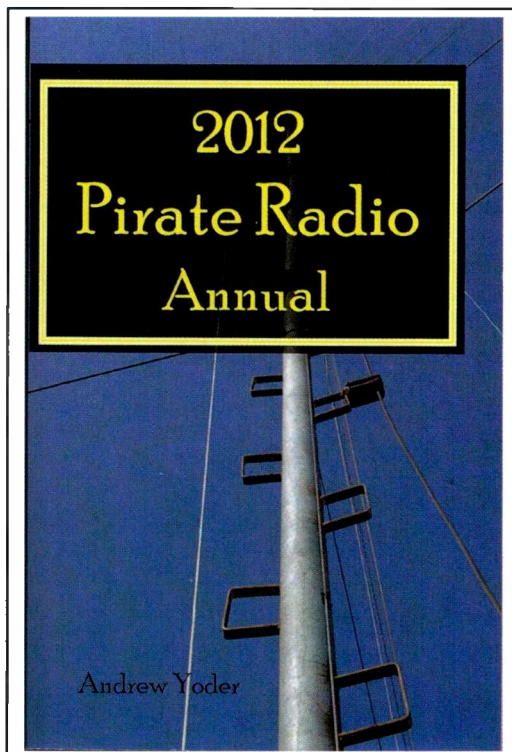
**Yoder:** Probably 5-10 hours. It’s not the main focus of my life, but I do enjoy listening to it.

**Handler:** Is your interest mostly in North American shortwave pirates or are you also interested in Euro pirates?

**Yoder:** No, I enjoy listening to Euro pirates. I have QSLs from about 100 different European stations, so I’ve hung in there through an awful lot of static over the years.

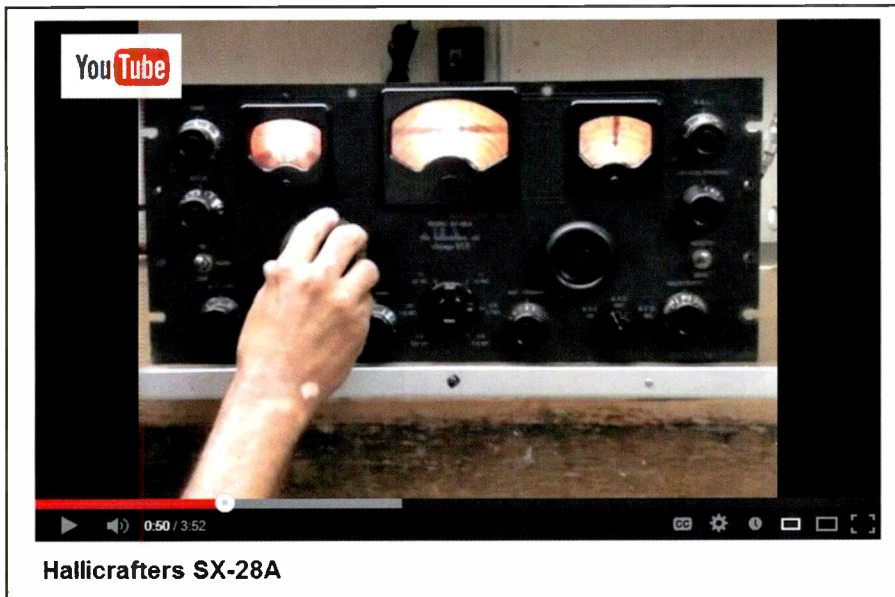
**Handler:** In working on your many books, I assume that you have had substantial contacts with shortwave pirate radio operators. In general, is there a common thread or motivation you find which leads them to create and operate a pirate radio station?

**Yoder:** Not really. Probably the most common reason would be a general dislike of licensed radio. But even that’s not always the case. There seem to be as many reasons to go on the air as there are personalities out there: Some do it because they want to contribute to the hobby, some have a novel idea to celebrate, for some it’s



**Photo A.** Andrew Yoder’s *2012 Pirate Annual* was published by Hobby Broadcasting, Copyright Cabinet Communications. (Courtesy of Cabinet Communications)





**Photo B.** A Hallicrafters SX-28A, like the one Andrew Yoder listened to as a budding pirate radio DXer, is put through its paces in this YouTube video <<http://bit.ly/ZVo1dO>>. (Internet screen grab)

radio scene or have you been involved with (unlicensed) stations in the past?

**Yoder:** Mystery is part of the intrigue of listening. At times, I've been told by people that they operate a particular station and it subtracts some of that mystery. So, I avoid discussing the *whos and wheres* of stations, both for the safety of the operators and for the enjoyment of the listeners.

**Handler:** Where and when would you suggest new listeners monitor for North American Pirate activity? My thought would be checking between 6900 and 6975 kHz on Saturday evenings between 6 and 11 p.m. EST/EDT, followed by Friday and Sunday evenings at a similar time. I am interested, however, in your thoughts.

**Yoder:** Any evenings and also weekend mornings. The best way to hear pirates is to keep your radio on and to check it regularly.

**Handler:** Many pirate stations have issued QSL cards for valid reception reports. In terms of artistic design, do you have one or several favorite pirate QSL cards of those you have received over the years?

**Yoder:** They're a reflection of the personality and programming of the station, so I enjoy them all.

politics, but for others it's just to share music from their collection. Of course, there are also the professional aspects of engineering your own transmitters and antennas or broadcasting jokes or ideas that you can't do at your job in the radio business. I'm sure that pirates have other reasons, too.

**Handler:** Over the years you have spent listening to shortwave Pirate Radio, do you have any favorite stations and if so what are they and why are they your favorite?

**Yoder:** I have a lot of either favorite stations or favorite moments. Some stations might not be as professional as others, but they either have a synergy going on a particular broadcast or it's just how I respond to a particular program.

A good example of the latter would be the first time that I heard the Halloween-themed WBST (the beast) on Halloween night 1984 while traveling with my family in Maine. Not only was it the first time that I heard the station, but I wasn't far from its announced broadcast area (Salem, Massachusetts) and I had the lights off and was listening on the headphones.

It was a strange and personal experience for me, much different from times when I run into the radio room, tune in a pirate, listen for a few minutes, then run off to fulfill another commitment.

**Handler:** Do you find that shortwave pirate broadcasters tend to be short-term operators or are there many that continue over a long period of time, either under

a single station banner or in a changing series of banners?

**Yoder:** Yes. I've seen many examples of all of these.

**Handler:** If you care to talk about it, are you a passive observer of the pirate

<p><b>TERRORISM FORCES US TO MAKE A CHOICE. WE CAN BE AFRAID. OR WE CAN BE READY.</b></p>	<div style="border: 2px solid black; padding: 5px; display: inline-block; margin-bottom: 10px;"><b>READY</b></div> <p><b>WWW.READY.GOV</b></p> <p><b>1-800-BE-READY</b></p> 
---	---

**Is AM radio a passion?**

**The CC Radio 2  
by C.CRANE**

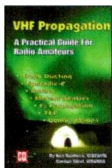
**AM/ FM/ WX/  
2-Meter Ham Band**




**Call us and mention PopComm and you will receive a  
FREE Radio Turntable with the purchase of a CC Radio 2**

**800-522-8863**
**ccrane.com**
**call for free catalog**

# Relax this Summer with... CQ Books



## VHF Propagation

by Neubeck, WB2AMU & West WB6NOA

A comprehensive source-book on VHF propagation by two great authors. Includes: Tropo ducting, Aurora, Meteor Scatter, TEP, Sporadic-E, Combo Modes and more!

6 X 9 Paperback \$15.95

## The NEW Shortwave Propagation Handbook

by W3ASK, N4XX & K6GKU

This authoritative book on shortwave propagation is your source for easy-to-understand information on sunspot activity, propagation predictions, unusual propagation effects and do-it-yourself forecasting tips.

8.5 X 11 Paperback \$19.95

New! CD Version \$14.95

Buy both for only \$29.95



## W6SAI HF Antenna Handbook

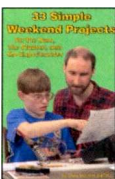
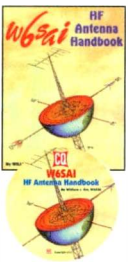
by Bill Orr, W6SAI

W6SAI was known for his easy-to-understand writing style. In keeping with this tradition, this book is a thoroughly readable text for any antenna enthusiast, jam-packed with dozens of inexpensive, practical antenna projects that work!

8.5 X 11 Paperback \$19.95

New! CD Version \$14.95

Buy both for only \$29.95



## 33 Simple Weekend Projects

by Dave Ingram, K4TWJ

Do-it-yourself electronics projects from the most basic to the fairly sophisticated.

Practical tips and techniques on creating your own projects.

6 X 9 Paperback \$17.95

Shipping & Handling: USA - \$7 for 1st book, \$3.50 for 2nd, \$2 for each additional. CN/MX - \$15 for 1st, \$7 for 2nd, \$3.50 for each additional. All Other Countries - \$25 for 1st, \$10 for 2nd, \$5 for each additional.

**CQ Communications Inc.**  
25 Newbridge Rd., Hicksville, NY 11801  
516-681-2922; Fax 516-681-2926  
<http://store.cq-amateur-radio.com>

HOW TO HANDLE CB EMERGENCIES—P. 9

# S9

JULY 1965

50¢

the citizens band journal

2 BAND RECEIVER  
YOUR BATTERED BATTERY  
SSB & VOX FOR CB?  
MAKE A MOBILE MOUNT



The OFFICIAL CB RADIO MAGAZINE

**Photo C.** S9 magazine, founded by Tom Kneitel, K2AES/WPE2AB/WPC4A (SK), covered a broad range of listening interests, including pirate radio, according to Andrew Yoder. Kneitel was founding editor of *Popular Communications* as well. (Courtesy of WPC4A [SK])

**Handler:** As a listener to pirate radio for more than two decades, would you provide listeners new to listening to pirate radio some advice and tips on listening to pirate radio stations?

**Yoder:** The best way to hear pirates is to turn the radio on and listen to frequencies where pirates have been known to operate. I often leave my radio turned on to 6925 kHz when I'm nearby and I hear stations when they come on the air. I'll tune the radio occasionally to check and see if I can find something on another frequency.

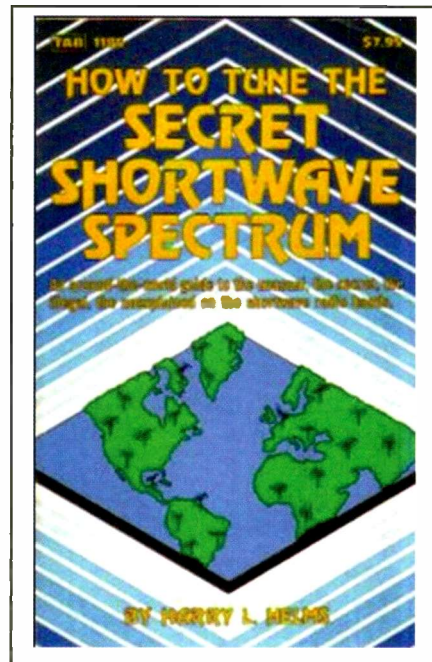
Also, it's a good idea to check the pirate loggings message boards and chat rooms on the Internet. The loggings from other listeners can be really helpful . . . and you can avoid some of the common pitfalls of new listeners — such as realizing that the mixing product of WPCR on 6970 kHz and that Galei Zahal on 6885 kHz are not pirates, for example.

**Handler:** What was the first book you wrote about pirate radio?

**Yoder:** *Pirate Radio Stations*, 1990, TAB Books.

**Handler:** Why did you write that book?

**Yoder:** Very little had ever been published on the topic.



**Photo D.** *How to Tune the Secret Shortwave Spectrum*, by Harry L. Helms, was an impetus to Andrew Yoder's entry into the world of pirate radio listening. (Internet screen grab)

**Handler:** The 2012 edition of *Pirate Radio Annual 2012* is now available. I understand that the 2013 edition will be out this summer. For someone who does not have a copy of your publication, would you advise them to wait for the new edition or purchase the 2012 edition?

**Yoder:** It depends on what you want. Some people want to catch up with the activities over the past few years and they buy any — or all — of the annuals from 2010 to 2012. Other people just want what's current and they buy the most recent. Each of the books has articles on different aspects of pirate radio, so that alone is a reason that someone might want a back copy.

**Handler:** Can the public order the 2012 Edition of *Pirate Annual Directly* from you and, if so, at what address and cost and using what method of payment?

**Yoder:** Any of the annuals are \$16 + \$2.50 shipping to the U.S. (\$4 to Canada or \$10 worldwide) to: Hobby Broadcasting, P.O. Box 109, Blue Ridge Summit, PA 17214. PayPal is also OK, with the payment to <info@hobbybroadcasting.com>.

**With Appreciation:** I thank Andrew Yoder very much for sharing his time and insight with *Pop'Comm* readers. For those wishing to inquire about the availability of Andrew Yoder's 2013 *Pirate Radio Annual*, he can be reached at



**Photo E.** Raucous, high-pitched music from China is the foundation for Fire Drake jamming, as captured in this YouTube video <<http://bit.ly/ZmB1UY>>. (Internet screen grab)

Hobby Broadcasting, P.O. Box 109, Blue Ridge Summit, PA 17214. Several of Andrew's Pirate Radio Annuals are available, as well, through Universal Radio <<http://www.universal-radio.com>>, or by calling (800) 431-3939.

### Chinese Jamming Endangers Australian Mariners

Fire Drake, the shortwave station operated by the Chinese government, has interfered with weather forecasts used by mariners to safely navigate coastal waters.

From 1130 UTC until 1148 UTC on April 7, Fire Drake was heard interfering with an Australian weather broadcast. Station VMC is the Australian Bureau of Meteorology's HF marine weather station located in Charleville, Queensland.

Each day VMC's marine weather forecast is broadcast on 12365 kHz, USB, beginning at 1130 UTC and continuing until all of the required weather information has been broadcast. On the day in question, the broadcast lasted until 1148 UTC. VMC's broadcast times and frequencies are published and have long been in use. This particular broadcast provided weather information for the coastal waters adjacent to Queensland. Australia's second largest state, Queensland is located in the northeastern portion of the country.

Fire Drake, using a powerful AM short-wave transmitter, chose to broadcast on

12370 kHz, just five kilohertz away from VMC's frequency. Because of the AM signal bandwidth used by Fire Drake, it encroached on the Australian weather broadcast. Fire Drake broadcasts loud, high-pitched music. (LISTEN: To Fire Drake jamming at <<http://bit.ly/ZmB1UY>>, **Photo E.** – WPC9JXK)

Its purpose is to jam selected short-wave broadcasts that the Chinese government wishes to block from its citizens. Fire Drake's primary targets include the Mandarin language broadcasts of the Sound of Hope, the Tibetan and Mandarin language broadcasts of Radio Free Asia, the Voice of America, the Voice of Tibet, and others.

The Chinese Government's Fire Drake broadcast of April 7 was apparently being directed against a frequency believed to be used by the Sound of Hope for a low-powered shortwave broadcast to China.

Why are the Fire Drake broadcasts so effective in jamming frequencies? I have used a software program — Audacity® Version 2.0 — to create a chart of the audio frequencies heard in a segment of a Fire Drake jamming broadcast, **Figure 1.**

The typical human voice on an AM shortwave radio signal occupies the 300- to 3,400-Hz frequency range. The chart shows that a large portion of the audio energy from the Fire Drake musical broadcast saturates that frequency range, making any other broadcast on that frequency or a close adjacent frequency, hard to understand.

The Chinese government's Fire Drake

**Why just listen?**  
Morse Code requirement dropped!

### HamTestOnline™

#### Online courses for the ham radio written exams

- ▶ Fastest way to learn — most students pass the ham radio exam after only 10 hours study.
  - ▶ Study material, practice exams, and a virtual private tutor, all rolled into one. An intensely effective learning system. Just ask our students!
  - ▶ 100% guaranteed — you pass the exam or get your money back.
  - ▶ Online system — study when you want, at your own pace.
  - ▶ Free trial — try before you buy!
- [www.hamtestonline.com](http://www.hamtestonline.com)

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

## POWERPORT

### LITHIUM ION


**Mobile Power  
High Energy  
Lightweight**



831-427-8197 • KC6QLB

www.powerportstore.com

**Hobby books, cds, dvds & calendars!**



CQ Communications, Inc.  
Online Store!  
<http://store.cq-amateur-radio.com>

### ADVANCED SPECIALTIES INC.

Orders/Quotes 1-800-926-9HAM

[www.advancedspecialties.net](http://www.advancedspecialties.net)

BIG  
ONLINE  
CATALOG



Uniden HomePatrol Digital, Easy To Use, On-Screen Controls



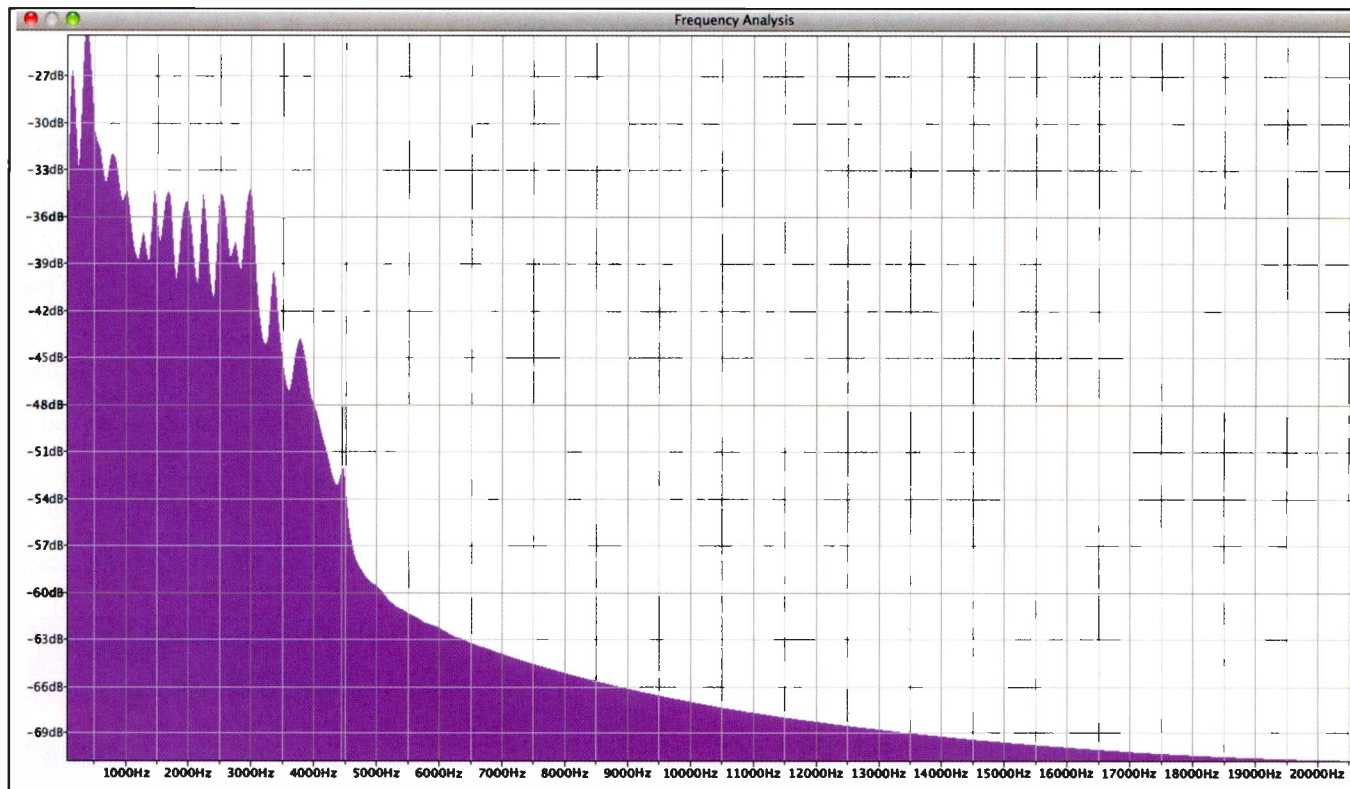
BCD996XT  
25,000 Channel Digital Trunking Scanner

UNIDEN BEARCAT & GRE DIGITAL SCANNERS  
• CB • AMATEUR • RADIOS & ACCESSORIES  
ALINCO • YAESU • GALAXY  
• GRECOM • COBRA

(201)-VHF-2067

114 Essex Street, Lodi, NJ 07644

Closed Sunday & Monday



**Figure 1.** Here is an audio frequency analysis of a Firedrake musical jamming broadcast. This chart was created using Audacity® version 2.0.3. Audacity® software is © 1999-2013 Audacity Team. Audacity® is free software distributed under the terms of the GNU General Public License. Its website is <<http://audacity.sourceforge.net>>. The name Audacity® is a registered trademark of Dominic Mazzoni.

jamming broadcast clearly caused interference to the Australian weather broadcasts. It could have resulted in catastrophic consequences, preventing needed weather information from reaching mariners who rely on the weather broadcasts to safely navigate coastal waters.

## Radio Dabanga, Broadcasting News to Darfur

Darfur, located in Northern Africa, **Photo F**, is a 200,000 square-mile territory about the size of Spain. Since 2003, it has been the site of an on-and-off armed conflict with the Government of Sudan. Ceasefire and peace agreements have come and gone. The fighting has brought death and a humanitarian crisis to the region. Those living in Darfur continue to see great suffering.

A little recent history: A 2010 ceasefire agreement has been less than effective, being marred by accusations that Sudan has continued military actions against Darfur. A Peace agreement was signed in July 2011 between Sudan and the Liberation and Justice Movement of Darfur. It halted the run up to a previously promised Darfur independence referendum.

In return, Darfur was to be governed by a Regional Authority and divided into three indigenous states. Since then, there seems to be little progress toward a lasting peace. Accurate statistics are elusive, but estimates are that a million Darfurians have sought, and sometimes been coerced into, displacement camps. Unlike its neighbor South Sudan, which obtained its recent freedom through a referendum, no such choice appears to be an option for Darfur anytime soon.

In response to the lack of a local free and effective press,

Radio Dabanga, an opposition shortwave radio station, was created. Launched in late 2008, Radio Dabanga's shortwave broadcasts bring news and information to the people of Darfur. It is operated by Free Press Unlimited located in the Netherlands.

A coalition that includes Sudanese journalists, international media organizations, and reporters on the ground in both Darfur and abroad help gather the news for Radio Dabanga. Financial support is provided by donations from humanitarian organizations, Non-Governmental Organizations (NGO's) and others.

Twice each day, Radio Dabanga broadcasts a shortwave program of news and information to the people of Darfur. Its broadcasts begin and end with a beautiful Radio Dabanga musical identification. (**WATCH and LISTEN: To the Radio Dabanga musical ID at** <<http://bit.ly/14VqFmC>>, **Photo G.** – WPC9JXK)

Its current schedule is 0430 to 0557 UTC using 11650 kHz from transmitters at the Vatican, 15400 kHz from transmitters in Madagascar, and 15550 kHz from transmitters in Dhabayya, United Arab Emirates. Its daily 1530 to 1627 UTC broadcast uses 15150 kHz from transmitters in Madagascar and 15725 kHz from transmitters at the Vatican. For North American listeners, the Vatican transmitters may offer the best signal.

Remember, frequencies are subject to change. Current Radio Dabanga frequency information can be found at its website <<http://bit.ly/1600kDM>>.

Naming the station *Radio Dabanga* was an interesting choice. The word *dabanga* has a singular meaning in the Darfur region. It is the name for a container made of clay and dry grass mixed with water, which is used by farmers to store food. A local proverb states that the world is similar to a *dabanga*, and you should take care to construct it. Besides the literal mean-

# Darfur Region, Sudan

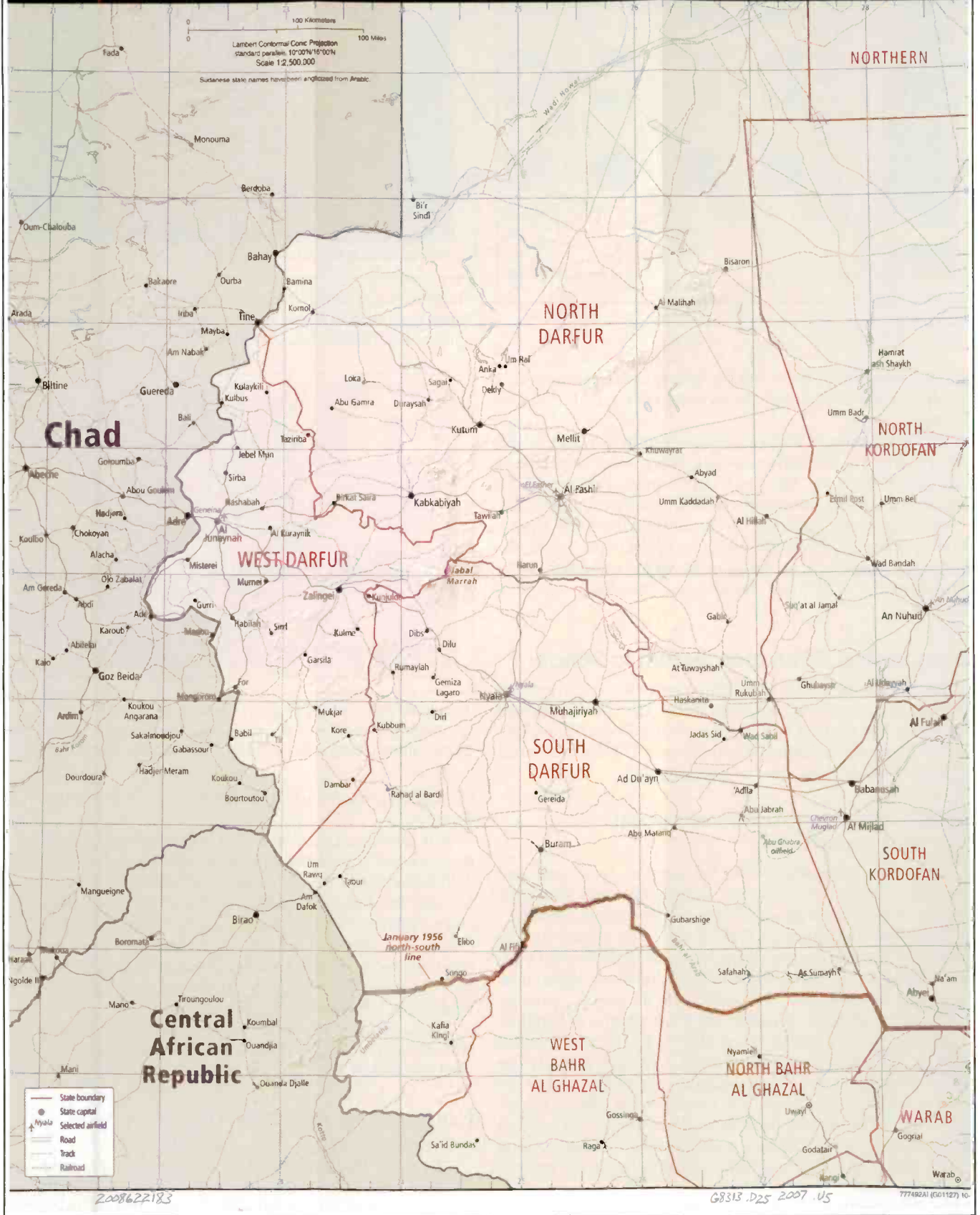


Photo F. This map, labeled *CIA Darfur Map 5*, shows the home of Radio Darfur, serving the region's population across some 200,000 square miles. (Courtesy of U.S. Central Intelligence Agency)

**Cuban Numbers Station HM-01 Schedule: 0700-1000 UTC**

TIME-UTC	FREQ-KHZ	MON	TUE	WED	THU	FRI	SAT	SUN
+/- 0700	9330	X		X				
+/- 0700	13435							
+/- 0800	9065	X		X		X		X
+/- 0800	11635		X				X	
+/- 0900	9240	X		X		X		X
+/- 0900	11635		X				X	
+/- 0900	12120						X	
+/- 1000	5855	X		X		X		X
+/- 1000	9155	X		X		X		X
+/- 1000	11635		X		X		X	
+/- 1000	12180		X		X			

M-W-F/Sun  
Tue/Thu/Sat

Source: WPC9JXK

Figure 2.

ing, the proverb alludes to life being fragile and precious. It is always at risk from dangers. So, as you go through life, be careful and go slow.

When listening to Radio Dabanga's broadcasts, be mindful that you live in a free and democratic society and the people of the Darfur hope for the same opportunity. Perhaps Radio Dabanga's news and information will help them reach their goal.

(NOTE: Radio Dabanga verifies correct reception reports with its QSL card, Photos H and I. Send reports to <radiodabanga@yahoo.com> or by post to Radio Dabanga, Witte Kruislaan 55, 1217 AM Hilversum, The Netherlands. - WPC9JXK)

### Clandestine QSL Notes: Return to Sender

For those who collect QSL cards, be aware that my recent reception reports to Radio Xoriyo at P.O. Box 27618, Toronto ON M3A 3B8 Canada and also Free North Korea Radio, P.O. Box 92, Mok-dong, Yangcheon-gu, Seoul 158-600, Republic of Korea were both returned as undeliverable.

### Cloak and Dagger: More Cuban Spy Broadcasts!

Every day in the shadows of Washington, New York, Los Angeles, Miami, and elsewhere, lurk Cuba's spies with their shortwave radios, awaiting coded instructions from Havana.

The Cuban Intelligence Service uses its numbers station, known as HM-01, about a dozen times each day to send messages to its agents in the United States and elsewhere. These broadcasts are one way — from Cuba to the agents — reaching the spies without compromising their identity or location.

*Enigma 2000*, a hobby group that tracks spy and numbers stations, assigned these broadcasts the designator HM-01. The HM is short for *Hybrid Mode* because both voice and data are used in the same broadcast. The voice portion of each broadcast is mechanically generated and includes groups of five-digit numbers in Spanish. The data portion uses Redundant Digital File Transfer (RDFT), a digital mode developed for amateur radio operators.

In last month's COPS, I included a chart containing the schedule and frequencies used by HM-01 for broadcasts from 1600 to 2400 UTC. This month you will find another chart, also created from my loggings, containing the sched-



Photo G. Listen to the Radio Dabanga station identification music beginning at about 20 seconds into this YouTube video <<http://bit.ly/14VqFmC>>. (Internet screen grab)



Photo H. Take a look at the Radio Dabanga QSL card, confirming reception of the opposition shortwave station in North Africa. (Courtesy of Radio Dabanga via WPC9JXK)

ule and frequencies used by HM-01 from 0700-1100 UTC, Figure 2.

It is interesting that the 1000 UTC broadcast appears to be the only one transmitted simultaneously on two frequencies. Additionally, one set of frequencies (5855 and 9155 kHz) is used for broadcasts on Monday, Wednesday, Friday, and Sunday and a different set of frequencies (11635 kHz and 12120 kHz) is used for Tuesday, Thursday, and Saturday's broadcasts. The two frequencies used at 1000 UTC are not synchronized. Often the broadcast on one frequency is several seconds ahead of, or behind, the broadcast on the other frequency.

Watch future columns for more information about Cuba's HM-01 spy-numbers station, as well as spy and number stations used by other countries.

### North American Pirate Loggings

Note that all days and times are UTC.

**Hardtack Radio**, on 6925 kHz USB. Sunday, 2309 until 2326 sign off. ID and frequency announcement by a man followed by talk about American Civil War. Played *The Yellow Rose of Texas* and closed with *Battle Hymn of the Republic* sprinkled with "firsts" from the Civil war period. Email address given was <hardtackradio@gmail.com>. Responded

# WorldRadio ONLINE

- DX World
- Trail-Friendly
- DX Predictions
- Propagation
- Aerials and more!

A general interest online only ham magazine with a special focus on the human side of amateur radio and on projects and activities accessible to the average ham. Regular topics include DXing, emergency communications and "trail friendly" radio!



**Subscription Special!**  
**1 year subscription only \$19.95**  
**2 years \$29.95**  
**3 years \$39.95**

View on your PC, Mac, iPad, iPhone or Android (2.0+)

## WorldRadio Online

25 Newbridge Rd., Hicksville, NY 11801  
 1-800-853-9797 [www.worldradiomagazine.com](http://www.worldradiomagazine.com)

## CommRadio CR-1



The CommRadio CR-1 is a true software designed receiver, but does *not* require a computer. Enjoy the benefits and performance of state-of-the-art SDR, but in a conventional radio package. The CR-1 SDR is independent of a host PC, using embedded digital signal processing technology that provides a degree of portability and performance previously unavailable to the radio enthusiast. Coverage includes: 500 kHz-30 MHz, 64-260 MHz and 437-468 MHz in AM, SSB, CW, WBFM, NBFM modes. The incredible performance is combined with exceptional portability and ease of use. The radio may be powered via USB or 6-18 VDC input. Enjoy *top-shelf* American technology in a compact, metal case measuring 5.64 x 2.43 x 6.10" 1.8 lbs. With printed manual and DC cord.

Visit [www.universal-radio.com](http://www.universal-radio.com) for details!



**Universal Radio, Inc.**  
 6830 Americana Pkwy.  
 Reynoldsburg, OH 43068

- ▶ 800 431-3939 Orders & Prices
- ▶ 614 866-4267 Information
- ▶ [dx@universal-radio.com](mailto:dx@universal-radio.com)

## SUPPORT RADIO DABANGA



Radio Dabanga is the only source of independent news available for the people of Darfur. For security reasons the station broadcasts from Hilversum in The Netherlands. The editorial staff are all Sudanese journalists, as well as correspondents and informants from Sudan and the refugee camps in Chad. Radio Dabanga now produces three hours of original programming per day, including a daily news bulletin that is broadcasted in the 5 local languages of Darfur.

Radio Dabanga does not take sides in the Darfur conflict. Its reports are based on journalistic best practice and provide a diversity of opinions. In this way, Radio Dabanga aims to give more hope and decrease uncertainty by informing the Darfuri. It also aims to reduce the distrust between ethnic groups and promote dialogue.

For our radio frequencies and more information, please visit our website [www.radiodabanga.org](http://www.radiodabanga.org).

You can also directly support Radio Dabanga by donating any amount to IBAN NL28 INGB 0657.1138.91. Friends of Radio Darfur, Hilversum. Or you can send this card to your family and friends. Thank you!

Reception:  
 Date: 18 February 2011  
 Time: 1900 - 1721 GMT  
 11515 KHz

Thank you for  
 listening to  
 Radio Dabanga!

2348, 2358, and at the close 0012. Good signal. (Handler-IL)

*The Crystal Ship*, on 6925.6 kHz AM. Tuesday, 0103 until 0142 sign off. Rock music, ID, music by *The Who* followed by another ID, skit, more vocals, and so on. Off with ID and FAX transmission prior to carrier being terminated. Poor to fair. (D'Angelo-PA)

*The Voice of Pancho Villa*, on 6925 kHz AM. Sunday 0500 sign on until 0505 sign off. Opened with familiar theme music followed by Pancho's adventure as he headed to the Vatican for the selection of the next Pope — Pope Enid I. Great signal. (D'Angelo-PA)

*Wolverine Radio*, on 6935 USB. Sunday 0124-0141 program with songs with the word "Happy" in the title. Several IDs by man. Good signal. (Handler-IL)

**Contributors:** Richard A. D'Angelo, Pennsylvania; Steven Handler, Illinois.

## Land Ho!

Thanks for reading this month's COPS. If you'd like to contribute Pirate, Clandestine, Opposition, Spy or number station loggings for inclusion in this column, I can be reached at <[stevenhandler-popcomm@yahoo.com](mailto:stevenhandler-popcomm@yahoo.com)>. — WPC9JXK

**Photo 1.** Here's the back of the Radio Dabanga QSL, giving a thumbs-up on the listener's reception of the station on February 18, 2011 on 11515 kHz. (Courtesy of Radio Dabanga via WPC9JXK)

to email report, with an electronic PDF reply in two hours. Poor to fair. (D'Angelo-PA)

*Radio RKNW*, on 6925 kHz AM. Saturday, 2246-2307 songs and IDs as

operating on 197 meters so this must be some sort of relay. (Handler-IL)

*Renegade Radio*, on 6935 kHz USB. Saturday 2338 to Sunday 0013 sign off. Several IDs by man including at 2344,

## This Month's Feedback from Pop'Comm Readers

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

### A Glaring Omission in the NOAA Story?

Editor, *Pop'Comm*,

I read with great interest the piece in April's *Pop'Comm* (A NOAA Weather Radio Primer: Your Wireless Gateway to Nature's Excitement, page 15).

It was very comprehensive and informative, but it failed to say how NOAA Weather Radio got its name.

My uncle, who fancies himself as a radio historian and did *very well* in high school, told me it is a reference to *NOAA and the Ark*, the famous bible story from Genesis. Isn't this a fascinating and glaring omission?

On top of that, the name is pretty clever and obvious, seeing how NOAA's life in biblical times was so impacted by awful weather. My uncle said the Weather Service's name choice stirred up a big fight in Congress because of the separation of church and state, but the name stuck because the legislators were afraid *they* would be impacted by awful weather (lightning) if the proposal was not adopted.

– Dustin "Dusty" Davis  
Flooded Gulch, Oklahoma

### FEMA Director Was a Bit Late With His EmComm Advice

Editor, *Pop'Comm*,

I was reading the February *Pop'Comm's InfoCentral* news column about FEMA Director Craig Fugate's CBS interview during which he said everyone should own an emergency-powered radio. (*SEE: "FEMA Director: Hand-Cranked or Battery Radios Are Vital," page 6. – KPC6PC*)

My question is: Why did he wait until a bad emergency happened (Hurricane Sandy) to say this? It seems like the amateur radio operators are the only ones who knew how to keep electronic equipment going when there's a disaster.

Many times the *Pop'Comm* staff tells people they should own a portable radio.

Well, I have a Magnavox D-2935 receiver that covers shortwave and long wave along with AM, FM, and SSB. I have two Red Cross FR-250 Eton hand-crank emergency radios. They each work well and I keep them in their boxes. If I need them, they're ready.

I also have quite a few scanners and two-way radios for FRS (Family Radio Service), MURS (Multi-Use Radio Service), and GMRS (General Mobile Radio Service). I do need to renew my GMRS FCC license.

The public at large needs to stay informed about communicating in an emergency. They have SKYWARN®

school. Why not have Public Emergency school to train people how to stay informed? Amateur radio operators could teach it. They are well trained on how to handle emergency communications (EmComm).

I would like to see more public safety information carried on TV — explaining how viewers can "be ready" in case of an emergency.

As I have — *and get* — a lot of catalogs covering amateur radio, survival, scanning, handling medical emergencies, and so on, I think others should be aware of them too. I find them *very* useful.

I want to thank *Pop'Comm* and its writers for the articles focusing on preparing for emergencies. They have appeared periodically over the years.

I also own two cell phones — one for every-day use and a Tracfone LG-500G (prepaid) as a backup.

I have been reading *Pop'Comm* for many years and plan to do so for many more to come.

– George Speck, KTX5FT,  
Forest Hill, Texas

### May the U.S. AM Broadcast Band Live Long and Prosper

Editor, *Pop'Comm*,

Regarding Rob de Santos' *Horizons* column in November 2012's *Pop'Comm* headlined "There's a Crisis Brewing in U.S. AM Radio," on page 10:

My husband and I still listen to AM radio. I also know many truck drivers who drive at night listen to it, too. My favorites are "Coast to Coast AM" and I like listening to (KUTR 820 AM) a Christian station out of Salt Lake City — about 110 miles from us.

AM broadcast band DXing has been a hobby of ours since we were in grade school. I received my first portable AM transistor radio around 1963. I still have it, and its leather case!

I have been interested in all bands since the late '60s. I finally got my General class amateur radio license in the summer of 2011. My husband — Roger, KE7EYM — gave me a lot of support. Maybe I'll finally learn Morse code when we get our log cabin done and our 5 acres a bit more settled. We do use 2 meters from time-to-time, as well as 75, 40, and 20 meters.

We are both 58 and live in a remote area of eastern Utah. One of these days we will get connected to the Internet. But right now, even getting dependable cell phone service is difficult. We would hope the AM broadcast band is not re-purposed. But I suppose it's inevitable. Stations *do have* to be able to pay the bills!

– Linda Wirt, KF7LPP,  
Duchesne, Utah



# New Procedure: Pop'Comm July 2013 Reader Survey

Your feedback is important to us at *Pop'Comm*. You'll notice there is **no longer a pull-out card** to fill in. Instead:

- **Cut out or photocopy** the *Popular Communications Survey Response* below.
- **Circle the appropriate numbers** corresponding to this month's questions.
- **Place it in a stamped envelope** and mail to: July Reader Survey, Popular Communications, 25 Newbridge Rd., Hicksville, NY 11801.

As always, we'll pick a respondent at random for a year's free subscription or an extension of an existing subscription as thanks for your participation — **so don't forget to fill in your name, mailing address, and other contact information.**

Please write your response to our "comment" question on a **separate piece of paper** and include your name. Send it to us in the envelope with the Reader Survey Card.

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

## About how often do you build a radio-related project from a magazine article?

- Often ..... 1  
Occasionally ..... 2  
Almost never ..... 3  
Never ..... 4

## Do "homebrew" or DIY (do it yourself) projects interest you?

- Yes ..... 5  
Sometimes ..... 6  
Not at all ..... 7

## How would you describe your ability to "read" and interpret schematic diagrams?

- Excellent ..... 8  
Good ..... 9  
Fair ..... 10  
Poor ..... 11  
Non-existent ..... 12

## When considering difficulty, what level of DIY radio projects do you prefer?

- Complex – challenging ..... 13  
Fairly complex – for experienced builders ..... 14  
Only moderately difficult – for homebrew "newbies" ..... 15  
Easy: Not complex at all – for beginners ..... 16  
Zilch: Not interested in DIY projects ..... 17

**COMMENT:** What type of projects would you like to see in *Pop'Comm*? For example, kits? Scratch-built? Both? Receivers? Antennas and tuners? Accessories? SWL? VHF-UHF? (Please write your answer on a separate piece of paper. Include your name.)

## Take This Reader Survey Online

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

## And the Winner Is . . .

For participating in the *Pop'Comm Readership Survey*, the winner of a free *Pop'Comm* subscription or extension is **Howard Pepper of Palm Coast, Florida**, who suggests SWLers let international broadcasters know we're listening and want their shortwave activity to continue. *Congratulations, Howard! Good idea, and please keep us posted on your monitoring activities.* – KPC6PC

## POPULAR COMMUNICATIONS

Survey Response for Issue: \_\_\_\_\_

Circle the numbers below that correspond to your answers.

Copy and mail to: Popular Communications, 25 Newbridge Rd., Hicksville, NY 11801.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

Name \_\_\_\_\_ Call Sign \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

E-mail \_\_\_\_\_

# SUBSCRIBE POPULAR COMMUNICATIONS



The World's most authoritative monthly magazine for Shortwave Listening and Scanner Monitoring.

Read by more active listeners world-wide.

You'll find features on scanner monitoring of police, fire, utility, and aircraft communications; international shortwave listening; CB radio; amateur radio; FRS; GMRS; monitoring radio digital communications including CW, RTTY, SITOR, etc; AM/FM commercial broadcasting; weather and communications satellites; telephone equipment and accessories; radio nostalgia; alternative radio; and military radio.

Choose the PRINT Edition or New DIGITAL Edition!

Buy both at a SPECIAL price!

### Combo Sale!

1 year	Print	Digital	Both!
USA	\$34.95	\$24.00	\$49.95
CN/MX	\$44.95	\$24.00	\$59.95
Foreign	\$54.95	\$24.00	\$69.95

## Popular Communications

25 Newbridge Road,  
Hicksville, NY 11801

Phone: 516-681-2922

Fax 516-681-2926

Visit our web site:

[www.popular-communications.com](http://www.popular-communications.com)

# Solar Cycle 24 Disappoints AM Broadcast Band DXers . . . Again

By Bruce A. Conti,  
WPC1CAT

*“The excitement was building as the geomagnetic storm watch was underway. Then, nothing materialized.”*

Space weather is of particular interest to long distance (DX) AM broadcast band enthusiasts as it can have a significant impact on reception. However the peak of the current Solar Cycle 24 has been nothing but one disappointment after another for those who look forward to auroral reception conditions, **Photo A**. This synopsis of a recent *dud* is a good example of yet another solar event gone bad.

## Solar Flare Excites DXers

Local news was buzzing about a forecast for visible northern lights on the weekend of April 13. Radio and television news reported that the aurora borealis might be visible as far south as Long Island, New York.

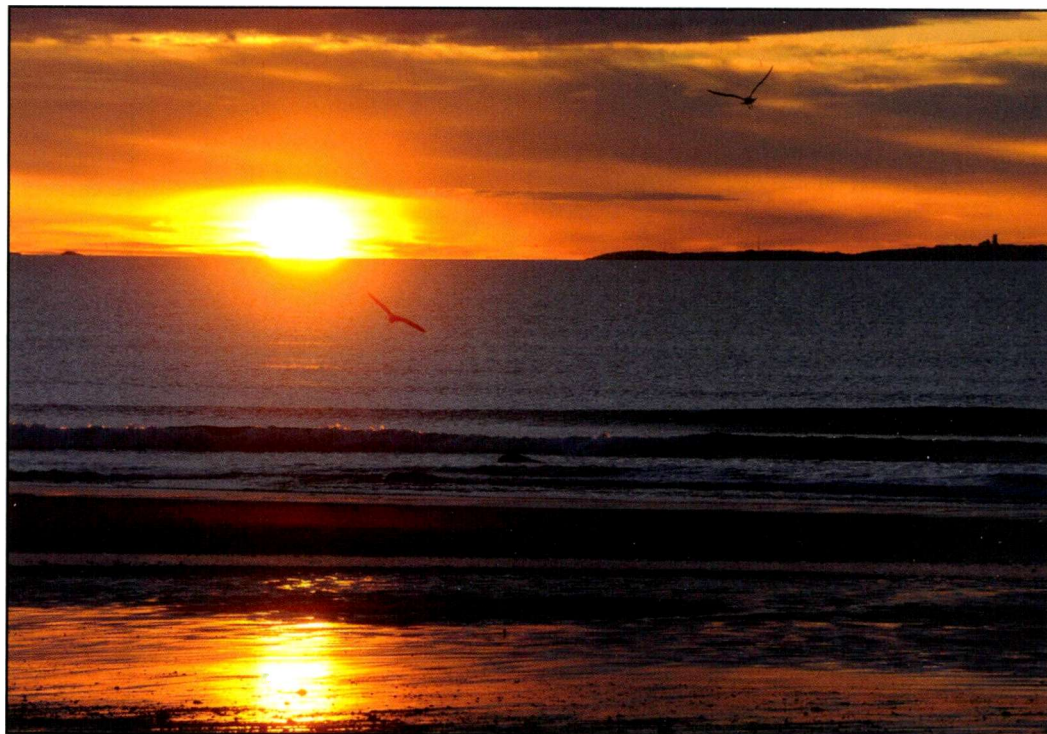
That evening the folks at 1100 WHLI Hempstead, New York, told listeners to keep an eye to the sky after 8 p.m. and 1600 WWRL New

York City was airing announcements from EarthSky.org <<http://www.EarthSky.org>>, **Photo B**, about the solar cycle and coronal mass ejection (CME) disturbances to communications.

NASA reported that the largest solar flare of 2013 had taken place. The Joint USAF/NOAA Solar Geophysical Activity Report and Forecast predicted major storm levels for the weekend.

“This event was considered a mid-level event, with a classification of M6.5, 10 times less powerful than the strongest flares, which are labeled X-flares,” reported Deborah Byrd, President of EarthSky.org. An M-class flare is considered the weakest of solar events capable of causing a space weather disturbance. “This might be a great weekend to watch for auroras, or northern lights,” said Byrd. “GPS and communications signals might also undergo some disruption.”

The excitement was building as the *geomagnetic storm watch* was underway. Then, nothing



**Photo A.** The sun rises for another day after a disappointing night of auroral DXing never materialized. Predictions of solar cycle peaks toward the end of this year and in 2015 keep AM broadcast DXers hopeful for tropical reception conditions. (Courtesy of WPC1CAT)

# Relax this Summer with...

**FREE Shipping on orders of \$100 or more!**

## DX World Guide

by Franz Langner, DJ9ZB

This 384-page DXer's guide-book is the first edition using color throughout and the first to be entirely in English.

Includes info on well over 300 DX entities. Geographical info, WAZ and ITU zones, ITU callsign allocations, amateur prefixes and more!

6 X 9 Paperback \$42.95  
**New! CD Version \$22.95**  
**Buy both for only \$60.95**

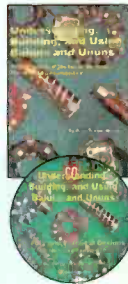


## Understanding, Building & Using Baluns & Ununs

by Jerry Sevick, W2FMI

The successor to the popular and authoritative Baluns and Ununs. Great deal of new tutorial material, and designs not in previous book, with crystal clear explanations of how and why they work.

8.5 X 11 Paperback \$19.95  
**New! CD Version \$14.95**  
**Buy both for only \$29.95**



## 2013 World Radio TV Handbook

The most up-to-date info on mediumwave, shortwave, FM broadcasts and broadcasters. Articles, reviews of the latest equipment, maps, and more. Due in mid-Dec. You will not be charged until it ships!

Order No. WRTH \$35.00



## HEATHKIT

A Guide to the Amateur Radio Products

by Chuck Penson, WA7ZZE

**Back by popular demand!**

This 328-page Second Edition is a must-have for collectors and Ham history buffs alike.

Order No. HEATH \$32.95



## The Short Vertical Antenna and Ground Radial

by Sevick, W2FMI

This small but solid guide walks you through the design and installation of inexpensive, yet effective short HF vertical antennas. With antenna restrictions becoming a problem, it could keep you on the air!

6 x 9 Paperback \$10.00



## Mouse Code

by Joel Thurtell, K8PSV

A great book for the kids in your life! When humans start plowing up North Field and cutting down trees, two field mice (re-)invent radio to warn the animals of danger, using a form of Morse code that can only be called... Mouse Code!

Order No. Mouse \$12.95



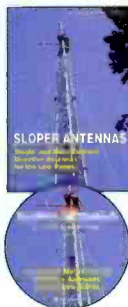
## Sloper Antennas

By Juergen A. Weigl, OE5CWL

Single- and Multi-Element Directive Antennas for the Low Bands

With calculations and practical experience, this book shows which basic concepts have to be considered for sloper antennas for the low bands.

6 X 9 Paperback \$24.95  
**New! CD Version \$18.95**  
**Buy both for only \$36.95**



## MIL SPEC Radio Gear

Korean to Present Day  
 by Mark Francis, KIØPF

Detailed write-ups for many familiar sets: PRC-25/77, RT-68, PRC-1099, GRC-106, GRR-5, R-392 and more. Over 230 pages of ops, mods, and maintenance tips 200+ illustrations.

Order No. MILSPEC ~~\$27.95~~ \$15

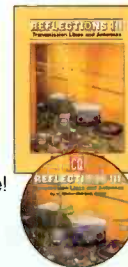


## Reflections III

by Walter Maxwell, W2DU

Includes all the information in Reflections I & II and much, much more! This fully revised and updated, this 424-page, third edition is truly a must have!

8.5 X 11 Paperback \$39.95  
**New! CD Version \$29.95**  
**Buy both for only \$59.95**



## HF Antennas for Everyone

Edited by Giles Rad, G1MFG  
 RSGB

No matter the size of your available space - you'll find antenna designs that will help you get your signals in and out!

Order: RSHFAE \$27.95



## HF Amateur Radio

RSGB 2007 Second Edition

This full revised and expanded second edition guides you through setting up an efficient amateur radio station, equipment to choose, installation, the best antenna for your location and MUCH more.

Order: RSHFAR \$23.00



## Collins Radio Repair & Tune-Up DVD Guides

From Hi-Res Communications, Inc., these well-produced, authoritative DVDs cover all the most common repair and tune-up subjects on these classic radios. It's like having an experienced professional right next to you!



**Collins KWM-2**  
 2 disc set, 236 minutes  
 Order No. C-KWM  
 \$89.95



**Collins 75S-3/32S-3**  
 2disc set, 226 minutes  
 Order No. C-75S  
 \$89.95



**Collins 30L-1**  
 Single Disc, 61 minutes  
 Order No. C-30L  
 \$39.95

Shipping & Handling: U.S. add \$7 for the first item, \$3.50 for the second and \$2 for each add'l item. FREE shipping on orders over \$100 to one U.S. address. CN/MX-\$15 for 1st item, \$7 for 2nd and \$3 for each add'l. All Other Countries-\$25 for 1st item, \$10 for 2nd and \$5 for each additional. Buy Both=Single item!

**CQ Communications, Inc., 25 Newbridge Road, Hicksville, NY 11801**

**Call: 1-800-853-9797 • Fax: 516-681-2926**

**website: <http://store.cq-amateur-radio.com>**

materialized. The K-index remained low and the geomagnetic field continued to be relatively quiet, **Figure 1**. *What happened?*

## Polarity Perplexes Predictors

“Basically this was a ‘long foul ball’ for the forecasters,” said Joseph M. Kunches,

Space Scientist at the Space Weather Prediction Center (SWPC) of the National Oceanic and Atmospheric Administration (NOAA). “It illustrates the missing piece — we who are in the business all know this. That is, the orientation of the embedded magnetic field in the coronal mass ejection (CME). If it is what we call ‘Southward,’ then a strong storm; if

‘Northward’ then what you saw this weekend. Forecasters, or anyone on the planet, have no ability to predict this; they got the timing of the CME almost spot on.”

“By southward I mean this: we arbitrarily have determined the direction of Earth’s magnetic field to be northward, i.e., field lines go from south pole to north pole. Given that (now forget about the Earth and think of the CME) we know that the best transfer of energy from the CME to the earth’s magnetic field is when the two fields are opposite in their configuration. So that’s why I say southward.

“In the graph of solar wind conditions over the past few days, it’s the red trace ( $B_z$ ), **Figure 2**, in the top panel that I’m talking about. We consider southward to be negative, and northward positive. You can see that since the CME passed the Advanced Composition Explorer (ACE) late on the 13<sup>th</sup>, that field has been almost all positive. The forecasters nailed the arrival (look at step increase in yellow coincident with the red/white at the top), but cannot predict the red. It could have just as easily been negative, and then the storm would have been strong,” concludes Kunches.

A CME is most commonly associated with sunspots and the more powerful solar flares from sunspots. The energy discharged by an Earth-directed CME can be enough to impact the atmosphere, resulting in the northern lights and disruption of communications.

The graph of “ACE Real Time Solar Wind” data can be monitored online at <<http://1.usa.gov/YbZ2k4>>, **Photo C**. Remember to watch the polarity of the red graph at the top where a negative trace indicates auroral conditions during a geomagnetic disturbance.

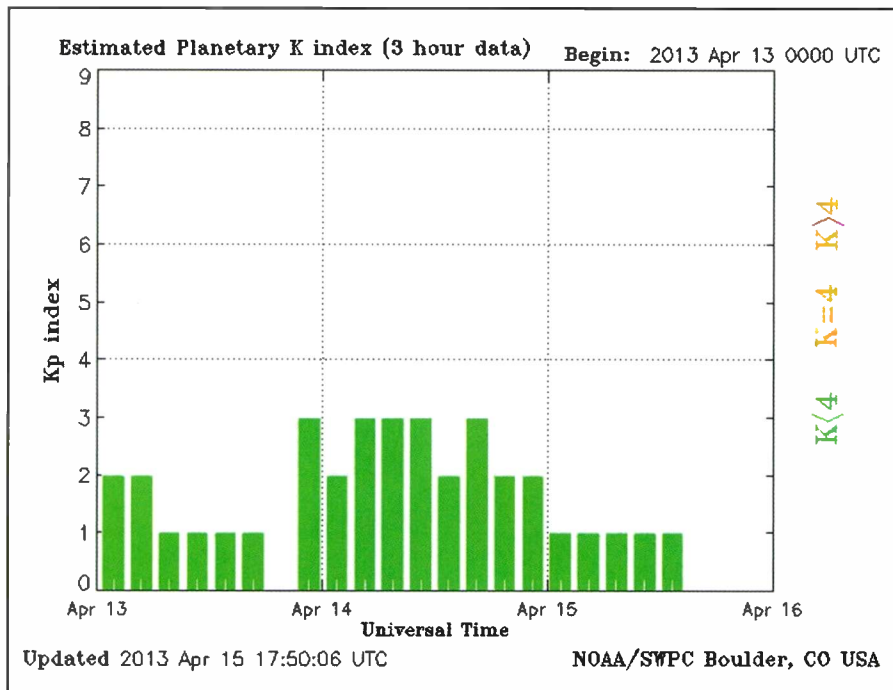
## Latest Long-Range Forecasts

After a longer than expected solar minimum, the sun finally began to awaken in 2009. The peak of the current solar cycle was predicted to coincide with the misrepresented yet popularized end of the Mayan calendar last December. As solar activity remained low through the end of 2012, the predicted peak was pushed out to February, then May, and now scientists forecast Solar Cycle 24 to reach its peak sometime toward the end of this year.

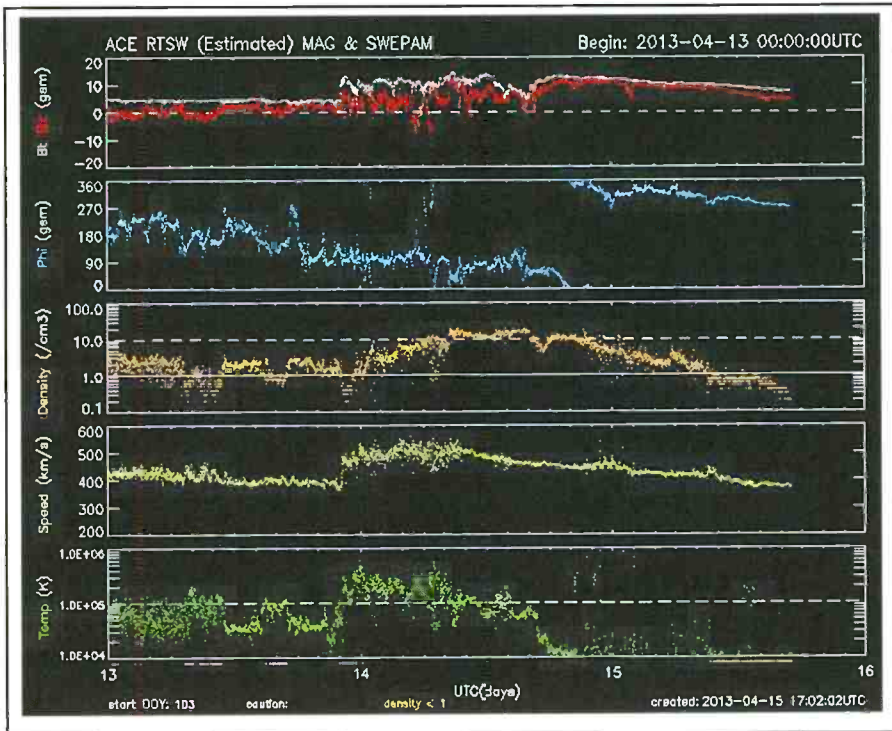
“The current prediction for Sunspot Cycle 24 gives a smoothed sunspot number maximum of about 66 in the fall of 2013,” reports the Solar Group of the NASA Marshall Space Flight Center.



**Photo B.** During April’s event, WWRL-AM 1600 in New York City was airing announcements from EarthSky.org about the solar cycle and coronal mass ejection (CME) disturbances to communications. (Internet screen grab <<http://www.EarthSky.org>>)



**Figure 1.** The K-index remained in the quiet green zone during the geomagnetic storm watch on the weekend of April 13. (Courtesy of WPC1CAT)



**Figure 2.** The red trace at the top of the ACE Solar Wind graph remained positive during the event of April 13, indicative of a “northward” CME and another solar dud. (Courtesy of WPC1CAT)

“The smoothed sunspot number has already reached 67 (in February 2012) due to the strong peak in late 2011 so the official maximum will be at least this high and this late. We are currently over four years into Cycle 24. The current predicted and observed size makes this the smallest

sunspot cycle since Cycle 14 which had a maximum of 64.2 in February of 1906.”

Some scientists are now predicting a double peak in Solar Cycle 24, the first occurring this year and a second in 2015. Such a double peak would also be comparable to Cycle 14. The peak of a solar

cycle typically occurs approximately four years into the cycle followed by a gradual decline toward the solar minimum between cycles. Past solar cycles have lasted anywhere from nine to 14 years, averaging 11 years in duration. If the comparison between cycles 14 and 24 holds true, then the peak or double peak can be expected to be followed by exceptionally quiet solar weather leading up to the beginning of the next cycle toward the year 2020. There were more than 1,000 spotless days during the end of Cycle 14.

While quiet solar activity can result in excellent transoceanic and transpolar medium-wave DX conditions, many AM broadcast band DXers look forward to the peak of a solar cycle for enhancement of tropical reception. However periods of enhanced reception have been few and far between so far in Cycle 24.

A radio blackout at mid-to-high latitudes caused by a Polar Cap Absorption (PCA) event can take place when a CME is strong enough to ionize the atmosphere at the poles. This ionization results in daytime-like, medium-wave reception conditions during nighttime hours. Normally medium-wave signals limited to ground wave coverage during the day due to the ionizing energy from the sun will propagate over long distances at night. Although a PCA event will prevent high-angle, sky-wave propagation at night, often signals from lower latitudes to the south will slip beneath the edge of the auroral dome of energy, thus distant mid-

## NOAA / Space Weather Prediction Center

### ACE

## Real Time Solar Wind

**Introduction**

**Real Time Data**

- Dynamic Plots
- 18.5 min Lists
- Hourly Lists
- Geomagnetic Activity Product
- Ground-station Tracking
  - 6-hour Plot
  - 48-hour Plot

**More ACE Links**

- [ACE Home \(Caltech\)](#)
- [ACE Science Center](#)

\* Leaving SWPC web site

**ACE RTSW News and Announcements**

**Dynamic ACE RTSW Plots**

Dur	SOLAR WIND: Mag field & Plasma	Magnetic Field	Plasma	Low Energy Electrons & Protons	Low Energy Electrons	Low Energy Protons	High Energy Protons
2 hrs	MAG SWEPAM	MAG	SWEPAM	EPAM	EPAM <sub>e</sub>	EPAM <sub>p</sub>	SIS
6 hrs	MAG SWEPAM	MAG	SWEPAM	EPAM	EPAM <sub>e</sub>	EPAM <sub>p</sub>	SIS
24 hrs	MAG SWEPAM	MAG	SWEPAM	EPAM	EPAM <sub>e</sub>	EPAM <sub>p</sub>	SIS
3 days	MAG SWEPAM	MAG	SWEPAM	EPAM	EPAM <sub>e</sub>	EPAM <sub>p</sub>	SIS
7 days	MAG SWEPAM	MAG	SWEPAM	EPAM	EPAM <sub>e</sub>	EPAM <sub>p</sub>	SIS

**Photo C.** “ACE Real Time Solar Wind” data can be monitored online during a geomagnetic disturbance. (Internet screen grab <<http://1.usa.gov/YbZ2k4>>)

to-high latitude signals are overtaken by tropical signals.

## Current Solar Conditions

Monitoring current solar conditions via the Internet is easy. The three-day estimated K-index monitor at <http://1.usa.gov/K5TVg7> is a simple graphical representation for a quick read of conditions. The graph is color-coded to represent quiet to major storm conditions on a scale of zero to nine.

Values of zero to four are defined as below storm levels and color-coded green. The auroral dome is basically confined within the Arctic Circle when the K-index is below five.

A yellow value of five represents a G1 minimal geomagnetic storm warning, and the PCA auroral dome may expand beyond the Arctic Circle to the U.S.-Canadian border.

K-indices of six to nine are *code red* and represent increasing geomagnetic storm levels corresponding with G2 through G5 events with a potential for visible aurora into the lower Midwest and mid-Atlantic states.

The "NOAA Space Weather Scales" at <http://1.usa.gov/18b74Of> attempt to provide more definitive descriptions of the K-indices and associated G levels. Visible aurora from Canada to northern Michigan and Maine is common during a yellow alert at the G1 minor storm level.

G2 is described as moderate, resulting in some propagational fading at high latitudes with visible aurora possible in Idaho and as far south as New York City.

G3 represents a strong storm level capable of disrupting low-frequency navigational systems with aurora seen at latitudes as low as Illinois and Oregon.

Severe storm conditions are assigned a G5 level leading to significant HF radio disruptions with visible aurora reaching Alabama and northern California. The maximum G5 level is defined as extreme with radio propagation disruption for days at a time while aurora can be seen in Florida and Texas.

Storm levels are cross-referenced to a radio blackout scale of R1 through R5 and the associated solar flare classes. An M1-class flare is the least disruptive, an M5 moderate, an X1 strong, X10 severe with potential hour-long HF radio blackout, and the maximum X20 extreme with a loss of HF communications over several hours. X20 solar flares are rare, occurring perhaps only once during a cycle if at all.

Finally, now armed with this minimal knowledge of the K-index and solar flare classes, the numbers in the "3-Day Report of Solar and Geophysical Activity" at <http://1.usa.gov/KRvVY9> begin to make some sense. This report is a written summary of observed and forecast conditions, which includes K-index and solar flare data. Monitoring the K-index and daily report along with the ACE solar wind graph will ensure that you won't miss the next aurora, **Photo D**.

## Broadcast Band DX

**Norman Hill** checks in from Virginia, noting FM translators after reading about "AM on FM" in last month's *Broadcast*

*Technology*. "730 WTNT Alexandria, Virginia, (8-kilowatt day/20-watts night) is now on 102.9 FM with a translator somewhere in northern Virginia. WAMU Bluegrass Country 88.5 FM HD2 is also on 93.5 and 105.5 FM translators." Hill also reports receiving 950 WWJ Detroit lately on a regular basis. WAMU Bluegrass Country is relayed by two FM translators on 93.5 MHz; W228AB Paramount, Maryland, and W228AM Frederick, Maryland, along with 105.5 W288BS Reston, Virginia. WTNT is relayed on 102.9 FM by translator W275BO Chantilly, Virginia.

"Signals from Cuba and Florida were audible with good punch," reported **Allen Willie** in Newfoundland. "Under local

## This Month in Broadcast History

**75 Years Ago (1938):** It was a big year for Orson Welles on the radio. The *new* March of Time with Orson Welles on the NBC radio network was brought to you by the editors of *Life* magazine, which also began a series of March of Time behind-the-scenes reports in the magazine. *Mercury Theatre on the Air* starring Orson Welles premiered on the CBS radio network with its adaptation of Bram Stoker's *Dracula*.

**50 Years Ago (1963):** "Fingertips" by Little Stevie Wonder topped the Tuff Tunes music survey on 1450 KSAN San Francisco.

(*WATCH and LISTEN: To Stevie Wonder sing and wail on the harmonica in a reprise of his 1963 mega-hit at The Apollo Theater in 1985* <http://bit.ly/158mYug>) (Internet screen grab)

**25 Years Ago (1988):** The U.S. Senate approved an amendment to an appropriations bill which would end FCC rules that allowed sexually explicit programming over the airwaves between midnight and 6 a.m. – *WPCICAT*





**Photo D.** Knowing about the K-index and solar flare classes, the numbers in the “3-Day Report of Solar and Geophysical Activity” at <http://1.usa.gov/KRvVY9> can begin to make some sense. Monitoring the K-index and daily report along with the ACE solar wind graph will assure that you won’t miss the next aurora, such as this one in Illinois in 2004. (Courtesy of Doug Bowman via Wikimedia Commons)

CBY Cornerbrook on 990 kHz, I heard what seemed like kiddie pop music. Suspecting a Radio Disney outlet, I matched it up the dial to 1460 WDDY in Albany, New York to confirm it was indeed a Disney outlet. The signal later strengthened to the point of armchair length quality over temporarily faded CBY. A new catch for the logbook. A couple of other Florida stations audible with decent signals were 970 WFLA, Tampa <http://bit.ly/181MWXb>, **Photo E**; and 1470 WWNN, Pompano Beach,” **Photo F**. Newfoundland is far enough north to be under the influence of the auroral dome even when solar activity isn’t strong enough to impact middle latitudes.

## July’s AM BCB Logs

*This month’s selected logs highlight tropical reception during the sub-par performance of this solar maximum thus far. All times are UTC.*

**630 Radio Progreso, Cuba**, at 0100 parallel 640 with pop-soul female vocal, mixed with co-channel WUNO and WPRO. (Connelly-MA) At 0559 over/under WPRO, contact info, “Radio Progreso, Infanta 105, La Habana Cuba, coreo postal 10300,” and web address, parallel 640 and 690 kHz. (Conti-NH)

**690 Radio Progreso, Santa Clara, Cuba**, at 0900 good, end of political speech about the revolution with cheering crowd, then live network ID, “Transmite Radio Progreso, cadena nacional desde la Habana Cuba,” chime with time check, “Las cinco en punto,” into “A Primera Hora, el programa de la familia cubana,” parallel an excellent 640-kHz signal. (Conti-NH)

**700 HJXC Cali, Colombia**, at 0000 parallel 690 HJXC with soft music, “W Radio, la . . . de Colombia” network ID; dominant over jumble. (Connelly-MA)

**790 Radio Reloj, Cuba**, at 0200 Reloj beeps, news, in jumble with co-channel WPRV, WAXY, and WNIS. (Connelly-MA) At 0600 good and dominant, “Dos de la madrugada,” and “En año 55 de la revolución, transmite Radio Reloj desde Habana Cuba.” (Conti-NH)

**840 CMHW Doblebé, Santa Clara, Cuba**, monitored at 0900 over/under co-channel WHAS, canned ID with theme music, “Esta es Doblebé, desde Santa Clara, en el centro de Cuba,” and nostalgia. (Conti-NH)

**850 KOA Denver, Colorado**, at 1415 local spot for Johnson Auto Mall, fanfare music, “It’s 7:15 on 850 KOA.” Very good after local sunrise. (Barton-AZ)

**Photo E.** Tampa Bay’s News Radio 970, WFLA-AM, was copied decently recently in Newfoundland, Canada. (Internet screen grab <http://bit.ly/181MWXb>)

**940 WIPR San Juan, Puerto Rico**, at 0200 “Máxima . . . nueve cuarenta” ID slogan, and at 2328 Máxima ID over second Spanish talker (likely YVNN) and U.S. religious station. (Connelly-MA)

**990 WDYZ Orlando, Florida**, at 0814 with Radio Disney programming, ID’s, over co-channel local CBY during fades at times. (Willie-NL)

**990 Radio Guamá, Pinar del Río, Cuba**, at 0500 under co-channel WDCX sign-off, canned ID with theme music, “Esta es Radio Guamá, la señal sonora de la familia pinareña,” choral nation anthem, then another ID with slogan. (Conti-NH)

**990 XET Monterrey, Mexico**, at 0800 under co-channel WNTP, canned ID, “XET La T Grande de Monterrey . . . con 50 mil wats de potencia . . . cubriendo todo México, cubriendo todo México . . .” with a flourish of tones in the middle. Later heard the same canned ID on XET streaming audio. (Conti-NH)

**1110 KDIS Los Angeles, California**, at 1356 heard a Radio Disney reference and promo, a fair to good signal well after local sunrise. (Barton-AZ)

**1130 CKWX Vancouver, British Columbia**, at 0423 “News 1130 weather . . . downtown, it’s still 4 degrees.” Very good and alone on the channel. (Barton-AZ)

**1140 CHRB High River, Alberta**, at 1400 country music

up out of the jumble and quickly to ID into gospel program, “CHRB High River Alberta . . . Golden West Radio . . . Your community radio for southern Alberta.” (Barton-AZ)

**1140 Radio Surco, Morón, Cuba**, at 0030 over/under co-channel WRVA, canned ID, “Esta es CMIP Radio Surco, desde Ciego de Avila, capital de la locución cubana.” (Conti-NH)

**1170 KCBQ San Diego, California**, at 0054, “There’s more of Hugh Hewitt coming up, on intelligent talk, 1170 KCBQ.” (Barton-AZ)

**1210 KUNF Washington, Utah**, monitored at 0118 with local spots, mentions of Utah and other local references, during fadedown of KGYN, which was doing live basketball at the time. (Barton-AZ)

**1300 XEP Cd. Juárez, Chihuahua, Mexico**, at 0045 local spot in Spanish for Bank of Mexico, “Radio Thirteen” slogan. Outstanding signal with no co-channel interference. With normally strong showing local evenings from KROP Brawley, California, haven’t heard this one as much of late. (Barton-AZ)

**1310 KFKA Greeley, Colorado**, at 0115 spot for El Charro Mexican café, then ID, “News/Talk 1310 KFKA Greeley-Loveland-Fort Collins.” Good signal. (Barton-AZ)

**1520 HJLI Bogotá, Colombia**, at 0859 under co-channel WWKB open carrier, “La palabra de Dios . . .” and “la comunidad manantial” with Bogotá and Colombia mentions. Per Henrik Klemetz at RealDX, this was a plug for meetings of the Comunidad Manantial de Vida at “Diagonal 46A No. 51-40 en Bogotá, Colombia, Centro Comercial Venecia Plaza, 20 piso, Barrio Venecia, Comunidad Manantial.” (Conti-NH)

**1620 WDHP Frederiksted, U.S. Virgin Islands**, at 0400 relay of BBC World Service, somewhat distorted audio, over co-channel Cuba. (Connelly-MA)

**1620 Radio Rebelde, La Habana and Guantánamo, Cuba**, at 0200 parallel 1180 et al., with 9-note Rebelde sounder, news, dominant. At 2304 Spanish talk including Rebelde ID, over WDHP. (Connelly-MA)

**1660 KXOL Brigham City, Utah**, at 1750 Catholic mass in Spanish, sounded like mention of “Radio Catolica Mundial” on the hour. (Barton-AZ)

## The DXers and Their Equipment

**Rick Barton, KPC7RAT**, El Mirage, AZ: Hammarlund HQ-120X with Slinky antenna and barefoot Panasonic RF-2200.

**Mark Connelly, WA1ION**, Cape Cod, MA: Perseus SDR with terminated loop antennas.

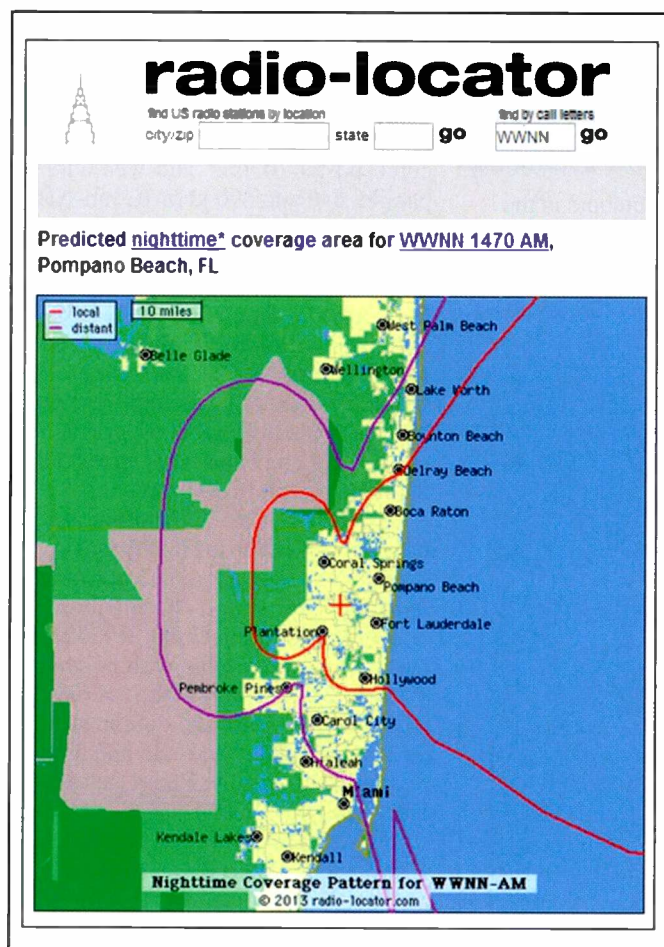
**Bruce Conti, WPC1CAT**, Nashua, NH: Excalibur SDR with phased SuperLoop antennas.

**Norman Hill**, Alexandria, VA: Various ultralights including a Panasonic FR-444.

**Allen Willie, VOPC1AA**, Bristol’s Hope, Newfoundland, Canada: Sony SRF-M37W ultralight.

## Easy Does It

If you can’t keep up with the online daily solar reports yourself, then hook up with the free solar storm alert service from Spaceweather.com. Aurora and solar flare alerts are available from <<http://spaceweathertext.com>> (text); and <<http://spaceweatherphone.com>> (voice). Also visit my ¡BAMLog! website at <<http://www.bamlog.com>> for a comprehensive compilation of more solar activity monitoring sites. – 73 and Good DX, WPC1CAT



**Photo F.** Radio Locator notes that “this map only shows the predicted ‘groundwave’ coverage of this station. At night, changes in the Earth’s atmosphere can greatly extend the coverage of AM radio stations,” as Allen Willie can attest from Newfoundland. (Internet screen grab <<http://bit.ly/ZRVX14>>)



## CR-1 Communications Receiver, An SDR with Knobs, Keys, and a Display



**Photo A.**

Welcome to a world where you don't need a computer to enjoy the benefits of a Software Defined Radio (SDR). CommRadio is bringing you that world with the introduction of its latest communications receiver, the CR-1, **Photo A**.

Its outward appearance is made up of a compact, black aluminum box measuring 5.64-inch wide by 2.43-inches high by 6.10-inches deep that weighs 1 pound, 12 ounces. The front panel features a prominent black-anodized aluminum tuning knob, a separate black-anodized aluminum volume/menu control knob, and a 1.5-inch-diagonal, 64 x 128 OLED display with an EMI-filtered lens, **Photo B**.

Inside the box, CommRadio equipped the CR-1 with a 32-bit Digital Signal Processor (DSP) with digital audio CODEC with low-IF and I-Q sampling which provides dual conversion on high frequencies and single conversion on VHF. The DSP is user selectable and comes with the following demodulation algorithms: DSB-AM, SSB, CW, WBFM, and NBFM.

Getting that signal to your ears will be an internal, 2.5-inch-diameter, mylar-cone speaker. Or you can opt to plug in your own external speaker by using the 3.5-mm stereo jack on the rear panel or using your headphones with the 3.5-mm stereo jack on the front panel. Also on the rear panel are two 50-ohm female BNC connectors, one 1000-ohm, 3.5-mm jack for external antennas and a mini USB 2 jack as well as 6- to 18-VDC jack to power the unit, **Photo C**.

Covering a wide array of frequencies, the CR-1 will pick up 500 kHz to 30 MHz including the 160- to 10-meter amateur bands and the 120- to 11-meter shortwave bands in AM, SSB, and CW modes. The tuning resolution, which is cursor controlled, is 1 MHz/100-10.1 kHz/100-10 Hz.

In addition, the CR-1 provides continuous coverage of 64 to 260 MHz and 437 to 468 MHz. Sensitivity from 87.0 to 150.0 MHz is nominal -90 to -95 dBm for 12-dB SINAD with 15-kHz filter bandwidth (5-kHz deviation). Sensitivity for 150.0 to 260.0 MHz is nominal -95 to -105 dBm for 12-dB SINAD with 15-kHz filter bandwidth (5-kHz deviation). UHF sensitivity is



**Photo B.** The front panel of the CR-1 has a large tuning knob, 1.5-inch OLED display, volume control, and headphone jack.



**Photo C.** The rear panel features jacks for connecting external antennas, speakers, and a USB 2 mini port.

-83 to -86 dBm for 12-dB SINAD, 15-kHz filter bandwidth (5-kHz deviation).

Other bands include:

- FM Broadcast: 87.7 to 107.9 MHz, Monaural, 7-kHz audio bandwidth
- Aircraft Band: 108.000 to 136.975 MHz, AM auto-select, 25-kHz channel steps
- Amateur: 2 meter, 1.25 meter, and 70 cm (upper portion starting at 437.0 MHz)
- NBFM mode default with SSB-CW mode selects
- Marine & NOAA Weather Radio
- Public Service: 137.0 to 225.0 MHz in 12.5- and 25-kHz steps, NBFM default.
- FRS-GMRS 462 to 467 MHz, NBFM, 25-kHz steps
- Note: The 6-meter amateur band is not included.

ComRadio said the CR-1 has an MSRP of \$650 and comes with a limited, one-year warranty. For more information, contact Universal Radio, Inc. 6830 Americana Parkway, Reynoldsburg, OH 43068. (800) 431-3939. Website: <<http://www.universal-radio.com>>.

# BROADCASTING

## World Band Tuning Tips

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

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

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

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0000	7510	Democratic V. of Burma, via Armenia	Burmese	0400	6045	Adventist World Radio, via Austria	FF
0000	4319u	Armed Forces Network, Diego Garcia		0400	9579	Radio Medi Un, Morocco	AA
0000	7420	Islamic Republic of Iran Broadcasting	SS	0400	11690	Radio Okapi, Congo, via South Africa	FF
0000	4835	Ondas del Oriente, Peru	SS	0400	9800	Deutsche Welle, Rwanda Relay	
0000	4450	Radio Santa Ana, Bolivia	SS	0400	7240	Voice of Turkey	
0000	4717	Radio Yura, Bolivia	SS	0500	4990	Radio Apinte, Suriname	DD
0000	5040	Radio Havana Cuba	SS	0500	9700	Voice of Turkey	TT
0000	7375	The Mighty KBC, Neth., via Germany		0500	5005	Radio Nacional, Equatorial Guinea	SS
0000	15240	Radio Australia		0600	4885	Radio Club do Para, Brazil	PP
0100	9560	Vatican Radio	Tamil	0600	4790	Radio Vision, Peru	SS
0100	5035	Radio Aparecida, Brazil	PP	0600	5995	Radiodiffusion Malienne, Mali	FF
0100	5110	WBCQ, Maine		0600	6060	Super Radio Deus e Amor, Brazil	PP
0100	9870	All India Radio		0600	5890	WWCR, Tennessee	
0100	11780	Radio Nacional Amazonia, Brazil	11780	0600	9820	Voice of Turkey	TT
		Radio Nacional Amazonia, Brazil	PP	0600	9905	Radio Cairo, Egypt	AA
0200	4826	Radio Sicuani, Peru		0600	5910	Alcaravan Radio, Colombia	SS
0200	4876	Radiodif. Roraima, Brazil	PP	0600	6060	Radio Havana Cuba	SS
0200	9430	Radio Liberty, USA, via Germany	Farsi	0700	6155	Radio Fides, Bolivia	SS
0200	4055	Radio Verdad, Guatemala	SS	0700	6070	CFRX, Canada	
0200	5085	WTWW, Tennessee		0700	6090	University Network, Anguilla	
0200	6160	CKZN, Canada		0800	4835	Northern Territory SW Service, Australia	SS
0200	7435	BBC, Seychelles Relay		0800	4910	Northern Territory SW Service, Australia	
0200	11815	Radio Brazil Central	PP	0800	7410	Radio Australia	
0200	11710	Radio Argentina al Exterior		0800	4915	Radio Difusora Macapa, Brazil	PP
0200	6885	Galei Zahal, Israel	HH	0800	5940	Voz Missionaria, Brazil	PP
0200	9690	KBS World Radio, South Korea		0900	4965	Radio Alvorada, Brazil	PP
0230	6100	Radio Tirana, Albania		0900	4755	Radio Imaculada, Brazil	PP
0300	4985	Radio Brazil Central	PP	0900	4796	Radio Lipez, Bolivia	SS
0300	5025	Radio Rebelde, Cuba	SS	0900	4810	Radio Logos, Peru	SS
0300	5950	Voice of the Tigray Revolution	Tigrinya	0900	4905	Radio Nossa Voz, Brazil	SS
0300	3240	TWR, Swaziland	Vernacular	0900	4975	Radio Pacifico, Peru	SS
0300	3255	BBC, via South Africa		0900	5020	Solomon Is. Broadcasting Corp.	
0300	3350	R. Exterior Espana, Spain, Costa Rica	SS	0900	3310	Radio Mosoj Chaski, Bolivia	SS
0300	4747	Radio Huanta 2000, Peru	SS	0900	4755	The Cross, Micronesia	
0300	4930	VOA, Botswana Relay		0900	4785	Radio Caiari, Brazil	PP
0300	4950	Radio Nacional Angola	PP	1000	2380	Korean Central Broad. Station, N. Korea	KK
0300	5010	Radio Madagasikara, Madagascar	Malagasy	1000	3330	Ondas del Huallaga, Peru	SS
0300	7375	Voice of Croatia, via Germany		1000	4805	Radio Difusora Amazonas, Brazil	PP
0300	7200	Voice of Sudan	AA	1000	6010	Radio Mil, Mexico	SS
0400	4976	UBC Radio, Uganda		1000	6105	Radio Panamericana, Bolivia	SS
0400	4775	TWR, Swaziland		1000	4699	Radio San Miguel, Bolivia	SS
0400	4780	Radio Djibouti	AA	1000	3925	Radio Nikkei, Japan	JJ
0400	4960	VOA, Sao Tome Relay		1000	4775	Radio Tarma, Peru	SS

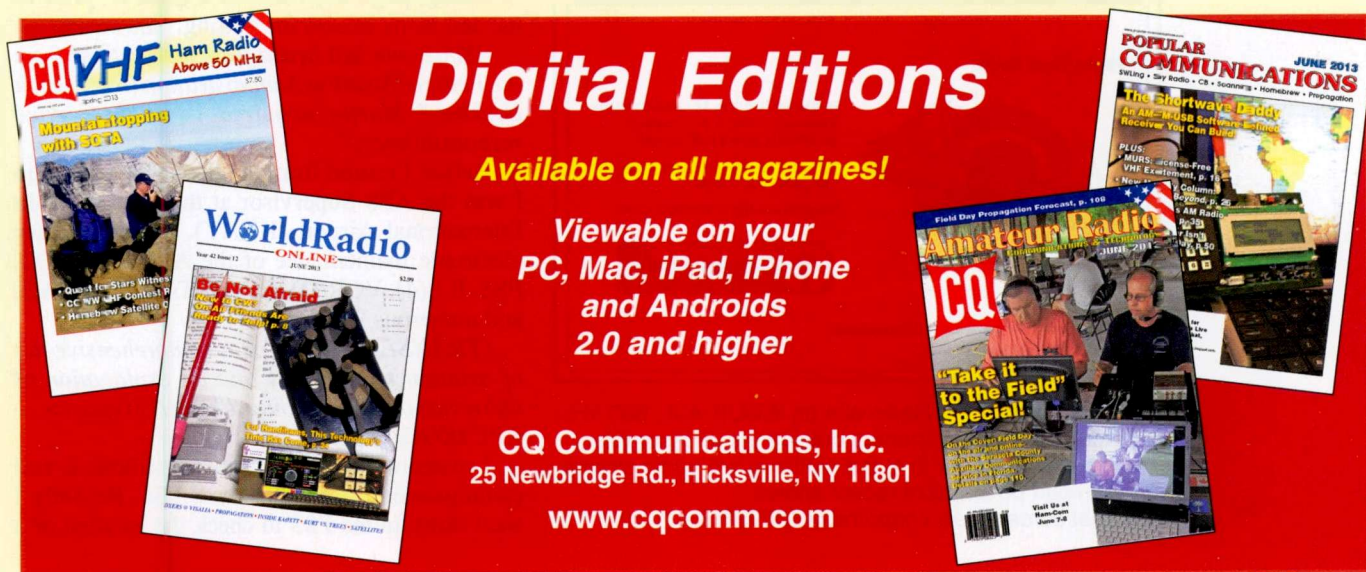
UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
1000	5025	Radio Quillbamba, Peru	SS	1500	9760	Voice of America, Philippines	
1100	5039	Radio Libertad, Peru	SS	1500	9780	Republic of Yemen Radio	AA
1100	4780	Radio Oriental, Ecuador	SS	1600	17575	Adventist World Radio, via Germany	Somali
1100	2485	Northern Territory SW Service, Australia		1600	17560	Broad. Svc. of Kingdom, Saudi Arabia	AA
1100	3385	Radio East New Britain, PNG		1600	17615	Radio France International	Hausa
1100	4815	Radio El Buen Pastor, Ecuador	SS	1600	11765	Sound of Hope, Taiwan to China	Mandarin
1100	4985	Voz Cristiana, Peru	SS	1600	17745	Sudan Radio Service, via England	AA
1100	6010	Voz de su Concenia, Colombia	SS	1600	9800	Deutsche Welle, Rwanda Relay	vernacular
1100	6170	Voice of Korea, North Korea	FF	1700	15245	Voice of Asena, to Eritrea	Tigrinya
1100	9835	Sarawak FM, Malaysia	Malay	1700	11600	Radio Libye, Libya	FF/AA
1100	11730	Radio Station Belarus	Belorussian	1800	12025	All India Radio	Hinsi
1200	9540	China National Radio (jammer)	Mandarin	1800	13640	All India Radio	Burmese
1200	9280	Family Radio, USA, via Taiwan	Mandarin	1800	13650	Radio Kuwait	AA
1200	9595	Radio Nikkei, Japan	JJ	1800	15190	Radio Pilipinas, Philippines	unid
1200	9910	Trans World Radio, Guam Trans World Radio, Guam		1900	15105	BBC, Ascension Is. Relay	
1200	7260	Voice of Russia	VV	1900	15290	Radio Cairo, Egypt	
1200	12075	Voice of Russia		1900	12080	VOA, Botswana Relay	
1200	4750	Bangladesh Betar	Bengali	1930	13670	Islamic Republic of Iran Broadcasting	
1200	4940	Voice of the Strait, China	CC	2000	11735	ZBC, Zanzibar	Swahlii
1200	5150	MND Radio, South Korea	KK	2000	9395	Radio Algerienne, Algeria	AA
1200	7295	Traxx FM, Malaysia		2000	9655	Deutche Welle, Rwanda Relay	
1200	7355	KNLS, Alaska		2000	15720	Radio New Zealand International	
1200	9526	Voice of Indonesia	II	2100	9555	Broad. Svc. of Kingdom, Saudi Arabia	AA
1200	11570	Radio Pakistan	Urdu	2100	7550	All India Radio	
1200	9580	Radio Australia		2200	9580	Africa No. One, Gabon	FF
1300	11720	Islamic Republic of Iran Broadcasting	Urdu	2200	9445	All India Radio	
1300	15755	Trans World Radio, via Moldova	Hindi	2200	15190	Radio Inconfidencia, Brazil	PP
1300	4750	Radio Republik Indonesia, Makassar	II	2200	11535	Voice of Korea, N. Korea	Mandarin
1300	5765	Armed Forces Network, Guam		2200	11670	Voice of Korea, N. Korea	Mandarin
1300	5875	BBC, Thailand Relay		2200	6100	International Radio of Serbia	
1300	5900	Voice of Russia		2200	6150	Radio Taiwan International	CC
1300	5940	Radio Australia		2200	7255	Voice of Nigeria	
1300	5950	Radio New Zealand International		2200	7290	Radio PMR, Moldova	
1400	15505	Bangladesh Betar	Urdu	2200	9405	Far East Broadcasting, Philippines	
1400	15560	Radio Sultanate of Oman	AA/EE	2300	9455	China National Radio	Mandarin
1400	13740	China Radio International		2300	8989u	El Pescador Preacher, Nicaragua	SS
1400	9950	Radio Thailand		2300	5050	WWRB, Tennessee	
1400	9990	Radio Farda, USA, via Sri Lanka	Farsi	2300	6050	HCJB, Australia	SS
1500	9965	Nippon no Kaze, via Palau	KK	2300	9600	Vatican Radio	
1500	15280	Radio Romania International	AA	2300	9645	Radio Bandeirantes, Brazil	PP
1500	9905	Radio Free Asia, USA, via Palau	Mandarin	2300	9720	Radio Veritas Asia, Philippines	Tagalog
				0400	6165	Radio Nationale Tchadienne, Chad	FF

# Digital Editions

Available on all magazines!

Viewable on your PC, Mac, iPad, iPhone and Androids 2.0 and higher

CQ Communications, Inc.  
25 Newbridge Rd., Hicksville, NY 11801  
[www.cqcomm.com](http://www.cqcomm.com)



# Q&As: From the Air Mail Pouch, What's on the Readers' Mind



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

*"I hope 'Plane Sense's Quiz the Know-It-All' brings closure to readers' requests and questions. And thanks for setting me straight where I needed it."*

This month we're digging into the air mail pouch that has been filling up with your questions and observations about *Plane Sense*. Our readership is well informed and sharp as a tack. And, as you'll see, writers aren't reluctant to get out the paddle. *Ouch!*

## Tune in Aviation on the AM Radio

Bill,  
First off, thanks for the great articles in *Pop'Comm*. I'm not a flyer but did work in avionics in the Navy a few years ago.

I'm writing to let you know about a radio program called Flight Time that airs on WBOB, where I work. We run it on Saturday afternoons at 1 p.m. Eastern time. It's probably the only program about aviation I know of that is on the radio. Flight Time has its own Facebook page and website. For those close enough to Jacksonville, Florida, you can tune in WBOB-AM at 600 kHz. For out-of-the-

area listeners, tune in online at <<http://www.600WBOB.com>>, **Photo A**. The show is looking for other stations to air the program.

– Al Ogrizovich (a.k.a. John Kingston),  
Producer/Traffic Reporter, WBOB

*Al/John: Flight Time sounds very interesting and has a great website <<http://www.flighttimeradio.com>> and Facebook page <<http://on.fb.me/16eQOYd>>. I highly recommend readers take a look — and a listen. Thank you so much for telling us about this show. (MORE: Readers, are you aware of any other programs or websites like this? Please follow Al's/John's initiative and let us know. Send me an email at <[flacap388@gmail.com](mailto:flacap388@gmail.com)>)*

– KPC4KGC

## KPC4KGC: So Good to Read You Again

Bill,

Welcome back to *Pop'Comm*. I have been a subscriber since the magazine's launch in 1982 and enjoyed your former column. Hope the new one will be as good — or better.

One statement you made in the August 2012 *Plane Sense* (*Inside the World of Aviation Scanning*, page 46) came as a great surprise to me and is my reason for writing. You wrote:

*"Since you last heard from me I retired from the Federal Aviation Administration (FAA) when Lockheed Martin acquired its flight service responsibilities."*

Before I retired from the FAA 30+ years ago I was the AFS Supervisor at the Dayton, Ohio International Airport (KDAY), responsible for electronic maintenance of the ATCT, TRACO, FSS, ILS(4), VOR/DME, VORTAC (2), RCAG, and numerous RTRs and RCOs.

*(TRANSLATION: For a comprehensive list of aviation terminology and an explanation of abbreviations, visit <<http://bit.ly/13G3xny>>. – KPC4KGC)*

I oversaw the relocation, construction, and commissioning of the then new FSS. Recently I went down to the FSS to check the location of a



**Photo A.** Flight Time Radio airs on WBOB-AM , 600 kHz, Saturdays at 1 p.m. Listeners outside the Jacksonville, Florida area can tune in to the station's live audio stream or download podcasts of recent shows. (*Internet screen grab <<http://bit.ly/10P78TG>>*)

LF MHW beacon whose identification letters I had heard when monitoring the LF band. I was *shocked* by what I found. The FSS building was abandoned. There was grass 2-feet high in the cleared area. A stout chain and lock on a rusted chain link fence prevented entry. The letters of the FSS sign hung at grotesque angles and the parking lot was littered with debris and broken glass. Here are my questions:

- What happened to the FSS operations?
- Who now provides the FSS services and where are they located?
- To where was the DAY FSS relocated?
- How is the remote monitoring of the associated NAVAIDs accomplished?
- Who remotely controls the associated NAVAIDs?
- Do they have remote receivers at DAY for the FSS frequencies?
- Do they broadcast over the RTR at DAY airport (if it is still there)? How is it done?
- Do they still broadcast over the VORs?

I know they still do over DAY VOR (DQN) as I often listen to the hazardous weather broadcast on it and it still refers to the DAY FSS.

– Ralph Craig, AJ8R,  
Tipp City, Ohio

*Ralph: Flight Service still lives under the auspices of Lockheed Martin, which took control of FSS from the FAA in 2005. Prior to the acquisition of FSS, the FAA had been consolidating the smaller flight service stations into automated units throughout the country. At the time of the changeover most of the stations in the lower 49 states (the stations in Alaska remained with the FAA) had been relocated to 58 sites throughout the country.*

*As of today there are now six stations in the lower states and three in Alaska. The stations in Alaska are in Fairbanks, Juneau, and Kenai. Seasonal flight service stations are located throughout the state, including Northway, where I was in the summer of 2001. The six in the lower 49 include three hubs: Ashburn, Virginia; Fort Worth, Texas; and Prescott, Arizona — all open 24/7. The remaining are Miami, Florida (also open 24/7), and part-time facilities in Raleigh Durham, North Carolina; and Princeton, Minnesota.*

*In the Ashburn hub, where I work, there are five “quads:” DCA, Great Lakes, Nashville, Northeast, and Southeast. Dayton, Ohio flight service is in the Great Lakes quad. There are four sections — pre-flight, flight data, inflight, and flight watch. Of course, only the latter two positions transmit to aircraft in flight but flight watch is part of the specific quad, not a specific flight service station.*

*At the Dayton airport, flight service frequencies are 122.2, 122.55, and the duplex*

*frequencies of 114.5/122.1 where the pilot transmits on 122.1 and monitors the DAY VOR on 114.5, Photos B and C. The frequency of 122.55 is usable at all altitudes but is mainly used above flight level 180. In fact, Dayton radio uses 11 different VORs, VORTACs, and RCOs throughout the state.*

*The NAVAIDs were, at one time, monitored by flight service but for the last few years they’ve been monitored exclusively by FAA’s Airways Facilities.*

*Even though flight service moved from the old facilities to the current hubs, it’s my understanding that all radio transceivers remained in the facilities. All flight service equipment has been removed and the only items left are the radios. Inflight can still operate these radios from the hubs.*

*Yes, we still use the facilities names. When I’m working inflight in the southeast, I still say Macon, Anderson, Gainesville, St. Petersburg, or Miami radio, even though I’m physically in Virginia. I hope this covers your questions.*

– KPC4KGC

### ‘That’s a B-25? I Beg to Differ!’

Bill,

In regard to *Plane Sense* in the October 2012 edition of *Pop’Comm*, page 46, the plane next to the B-17 is, in fact, a Consolidated B-24 Liberator, not a B-25, **Photo D**.

The B-25 is a two-engine medium bomber. The B-24 is a

**OHIO** **235**

---

**JAMES M COX DAYTON INTL** (DAY) 9 N UTC-5(-4DT) N39°54.14' W84°13.17' CINCINNATI

1009 B S4 FUEL 100, JET A OX 1 LRA ARFF Index—See Remarks NOTAM FILE DAY H-106, L-27E

RWY 06L-24R: H10901X150 (ASPH-CONC) S-100, D-210, 2S-175, 2D-583, 2D/2D2-870 IAP, AD

HIRL CL

RWY 06L: ALSF2. TDZL. PAPI(P4L)—GA 3.0° TCH 67'.

RWY 24R: MALSR. VASI(V4L)—GA 3.0° TCH 56'. Tree.

RWY 18-36: H8502X150 (ASPH) S-100, D-210, 2S-175, 2D-583, 2D/2D2-870 HIRL

RWY 18: MALSR. Trees.

RWY 36: REIL. PAPI(P4L)—GA 3.0° TCH 60'. Trees.

RWY 08R-24L: H7285X150 (CONC-GRVD) S-100, D-210, 2S-175, 2D-583, 2D/2D2-870 HIRL

RWY 06R: REIL. PAPI(P4L)—GA 3.0°. TCH 50'. Tree.

RWY 24L: MALSR. PAPI(P4L)—GA 3.0°. TCH 54'. Pole.

**RUNWAY DECLARED DISTANCE INFORMATION:**

RWY 06L: TORA-10900 TODA-10900 ASDA-10900 LDA-10900

RWY 06R: TORA-7285 TODA-7285 ASDA-7001 LDA-7001

RWY 18: TORA-8502 TODA-8502 ASDA-8502 LDA-8502

RWY 24L: TORA-7285 TODA-7285 ASDA-7001 LDA-7001

RWY 24R: TORA-10900 TODA-10900 ASDA-10900 LDA-10900

RWY 36: TORA-8502 TODA-8502 ASDA-8502 LDA-8502

**AIRPORT REMARKS:** Attended continuously. Deer, coyotes, birds and waterfowl on and in/ov arpt. First 1400' of Rwy 24R concrete. Class I, ARFF Index C. ARFF index E avbl with 24 hrs notice; call arpt operations 937-454-8299. Twy H clsd between Twy D and Rwy 18-36 indef. Twy C between Twy N and Twy V not avbl for air carrier ops. Twy K, Twy H and Twy J not avbl for group IV and higher acft. Terminal ramp is a non-movement area. Runups prohibited in Rwy 24L holding area. Flight Notification Service (ADCUS) available.

**WEATHER DATA SOURCES:** ASOS (937) 454-7845. HIWAS 114.5 DQN. TDWR.

**COMMUNICATIONS:** ATIS 125.8 UNICOM 122.95

DAYTON RCO 122.1R 114.5T 122.2 122.55 (DAYTON RADIO)

® COLUMBUS APP/DEP CON 118.85 (091°-180°) 118.45 (360°-090°) 134.45 (181°-359°)

DAYTON TOWER 119.9 GND CON 121.9 CLNC DEL 121.75

**AIRSPACE:** CLASS C svc continuous ctc APP CON

**VOR TEST FACILITY (VOT)** 111.0

**RADIO AIDS TO NAVIGATION:** NOTAM FILE DAY.

DAYTON (L) VDR/DME 114.5 DQN Chan 92 N40°00.99' W84°23.81' 131° 10.7 NM to fld. 989/1W. HIWAS.

BRUNY HDB (LOM) 315 AT N39°50.82' W84°20.09' 062° 6.3 NM to fld.

ILS 108.3 I-DAY Rwy 18.

ILS 108.9 I-ATD Rwy 06L. LOM BRUNY NDB.

ILS 110.3 I-EGK Rwy 24L.

ILS/DME 111.9 I-VUQ Chan 56 Rwy 24R. Class IE.

**Photo B.** For Dayton International Airport, various frequencies are designated for specific uses, as spelled out in COMMUNICATIONS on this data sheet. (Courtesy of KPC4KGC)

four-engine heavy bomber. My father, recently deceased, was a decorated B-24 pilot. He instilled a love for the plane in me and sealed the deal by purchasing a flight on the plane some years ago.

Your planes appear to be part of the Collings Foundation group. This particular B-24 is the only flying true B-24 in the world.

– Bob

*Bob: My condolences on the passing of your father. I lost mine, a World War II veteran, just 3 years ago.*

*Those photos I took while I was a controller at Grand Island Nebraska in 1995. It was a privilege to work not only these two aircraft as well as one of the few Lockheed L1049 Constellations left in the world.*

*The week these two bombers were at*

*Grand Island they were giving joy rides — for a price of course. I was going to ride in the front gunner seat of the B-24 but I caught a major flu bug and couldn't make the trip. It was actually a good thing as the B-24 had a landing gear problem and did a nose-gear-up touchdown. I just don't know what I'd be doing when the gear collapsed. I can only imagine.*

*Sorry I mixed up the B-24 and B-25. They weren't contemporary aircraft to me. Now, if I mixed up a Cessna 152 and a Lear 55 Longhorn — then I'd really be embarrassed. Thank you for setting things straight.*

– KPC4KGC

## 352

### FLIGHT SERVICE STATION COMMUNICATION FREQUENCIES

VHF frequencies available at Flight Service Stations and at their remote communication outlets (RCO's) are listed below for the coverage of this volume. Frequencies in bold type are available all altitudes but recommended for use FL180 and above. "T" indicates transmit only and "R" indicates receive only. RCO's available at NAVAIDS are listed after the NAVAID name. RCO's not at NAVAID's are listed by name.

#### CLEVELAND RADIO

BELLAIRE VOR/DME 117.1T 122.1R  
 BRIGGS VOR/DME 112.4T 122.1R  
 CHARDON VOR/DME 112.7T 122.1R  
 CLEVELAND RCO 122.1R 122.2 **122.35**  
 DRYER VOR/DME 113.6T 122.1R  
 FLAG CITY VORTAC 108.2T 122.1R  
 FINDLAY RCO 122.2 122.65  
 JEFFERSON VOR/DME 115.2T 122.1R  
 MANSFIELD VORTAC 108.8T 122.1R **122.6**  
 NEWCOMERSTOWN VOR/DME 111.8T 122.1R  
 SANDUSKY VOR/DME 109.2T 122.1R  
 WATERVILLE VOR/DME 113.1T 122.1R  
 YOUNGSTOWN VORTAC 109.0T 122.1R 122.2  
 ZANESVILLE VOR/DME 111.4T 122.1R 122.2 **122.5**

#### DAYTON RADIO

ALLEN COUNTY VOR 108.4T 122.1R  
 ATHENS-ALBANY RCO 122.25  
 APPLETON VORTAC 116.7T 122.1R  
 CINCINNATI RCO **122.4**  
 COLUMBUS RCO 122.2 **122.3**  
 DAYTON RCO 114.5T 122.1R 122.2 **122.55**  
 DAYTON VOR/DME 114.5T 122.1R  
 GALLIPOLIS RCO 121.65  
 HILLSBORO RCO 122.2  
 ROSEWOOD VORTAC 117.5T 122.1R  
 YELLOW BUD VOR 112.5T 122.1R

**Photo C.** Flight Service Communications Frequencies are listed here for both Cleveland and Dayton, Ohio. (Courtesy of KPC4KGC)



**Photo D.** One eagle-eyed writer asserts that in October 2012's *Plane Sense*, page 46, "the plane next to the B-17 is, in fact, a Consolidated B-24 Liberator, not a B-25 . . . The B-25 is a two-engine medium bomber. The B-24 is a four-engine heavy bomber. (Courtesy of KPC4KGC)

## Monitoring Memories in Hampton, Virginia

Bill,

I read *Plane Sense* today and am glad to know that you spent a considerable bit of time in the U.S. Air Force. Your email address looks very much like a callsign in the Florida Wing of the Civil Air Patrol. I used to monitor a multitude of aviation frequencies while I lived in Hampton, Virginia.

There is a tremendous amount of traffic throughout the area with the commercial, U.S. Navy, Marines, Air Force, and Army installations in the Hampton Roads area and a lot of FAA en-route repeaters in the area also.

I don't bother with the monitoring here in Lexington County, South Carolina, as there are only two active fields in the area and one Air National Guard base too far away to hear. About the time you were really getting into the swing of things in the Air Force, I was on the downhill run to Air Force retirement with 20+ years. (NOTE: Dave was a Master Sergeant in Command Control and Communications, retiring in 1974. – KPC4KGC)

I'm looking forward to your continuing columns in *Pop'Comm* each month.

– Lieutenant Colonel Dave Friedenberg,  
 South Carolina Civil Air Patrol

*Dave: I appreciate hearing from a fellow "zoomie." You are correct: my email reflects my time in the Civil Air Patrol. I've been in Public Affairs in the Georgia and Nebraska wings and Communications Officer in Nebraska and Florida wings.*

*I spent just 10 years in the Air Force — primarily in air traffic control — and command and control, as well. Even though I started in ATC in 1972, begin-*

STATION AND OPERATING AGENCY	RADIO CALL	TRANSMITTING FREQUENCIES	REMARKS
NEW YORK (FAA)	New York Radio (Volmet)	3485* 6604 10051 13270* kHz	*3485 Volmet broadcasts from 1 hour after sunset to 1 hour before sunrise.
			*13270 Volmet broadcasts from 1 hour before sunrise to 1 hour after sunset.
			Broadcasts at H+00-05; Aerodrome Forecasts, Detroit, Chicago, Cleveland. Hourly Reports, Detroit, Chicago, Cleveland, Niagara Falls, Milwaukee, Indianapolis.
			Broadcasts at H+05-10; SIGMET, (Oceanic-New York). Aerodrome Forecasts, Bangor, Pittsburgh, Charlotte. Hourly Reports, Bangor, Pittsburgh, Windsor Locks, St. Louis, Charlotte, Minneapolis.
			Broadcasts at H+10-15; Aerodrome Forecasts, New York, Newark, Boston. Hourly reports, New York, Newark, Boston, Baltimore, Philadelphia, Washington.
			Broadcasts at H+15-20; SIGMET (Oceanic-Miami/San Juan). Aerodrome Forecasts, Bermuda, Miami, Atlanta. Hourly Reports, Bermuda, Miami, Nassau, Freeport, Tampa, West Palm Beach, Atlanta.
			Broadcasts at H+30-35; Aerodrome Forecasts, Niagara Falls, Milwaukee, Indianapolis. Hourly Reports Detroit, Chicago, Cleveland, Niagara Falls, Milwaukee, Indianapolis.
			Broadcasts at H+35-40; SIGMET (Oceanic-New York). Aerodrome Forecasts, Windsor Locks, St. Louis. Hourly Reports, Bangor, Pittsburgh, Windsor Locks, St. Louis, Charlotte, Minneapolis.
			Broadcasts at H+40-45; Aerodrome Forecasts, Baltimore, Philadelphia, Washington. Hourly Reports, New York, Newark, Boston, Baltimore, Philadelphia, Washington.
			Juan). Aerodrome Forecasts, Nassau, Freeport. Hourly Reports, Bermuda, Miami, Nassau, Freeport, Tampa, West Palm Be-rt Atlanta

**Photo E.** There is a lot of aviation communications activity on the high-frequency bands. Here's a snapshot of just part of the action. KPC4KGC will be devoting an installment of *Plane Sense* to address this topic soon. (Internet screen grab <<http://bit.ly/18fLw0n>>)

ning at Keesler AFB, I was enjoying communications monitoring from the mid-1960s, first with AM DXing with an old five-tube wonder, and then shortwave monitoring.

My old Popular Electronics monitor ID was KPE4JZZ. Over the years I've used three different RadioShack® scanners, two Zenith portable SWL radios, a RadioShack® DX-394 shortwave radio, and a Hallicrafters boat anchor.

In the last few months, I acquired a RadioShack® Patrolman 2-B VHF dual-band receiver. Can anyone say "ancient?" This is in addition to my Yaesu ham transceiver, a RadioShack® mobile 2-meter radio, an ICOM mobile 2-meter radio, and an ICOM handheld 2-meter transceiver. Yep, I'm a radio-geek. My amateur call is KG4KGC, but I was first licensed KBØULJ in Nebraska.

I appreciate you writing, Dave.

– KPC4KGC

## Aviation Comms: Can We Hear Them Now?

Bill,

Is there a website that has live takeoffs and landings with Air Traffic Control audio? Thanks for each month's *Plane Sense* and for your help.

– Tom Corwin

Tom: I'm aware of a couple of Internet sites. I haven't tried many of them as I'm constantly listening to my radios. For your home computer, there's LiveATC, found at <<http://www.liveatc.net>>.

I recommend using it with either of these two websites: <<http://www.flightradar24.com>>, or <<http://www.flightaware.com>>. I use each of them and both have advantages and disadvantages. While Flightaware can give you an aircraft's status via latitude-longitude, speed, alti-

tude, climb, and descent rate and even which ATC facility the pilot is talking to, Flightradar24 has two distinct pluses:

All aircraft on Flightaware, to my knowledge, are shown on screen with a 5-minute delay.

On Flightradar24, aircraft colored in orange have that delay, but flights highlighted yellow use a system called ADS-B and are shown in real time. In addition, Flightradar24 can give you a simulated view out of the pilot's window using Google maps. I'm quite impressed.

For those with iPhones, like me, there's a Live ATC Air Radio app that can be found on iTunes, <<http://bit.ly/ZvuESM>>.

Please check out these various options and let me know what you think of them.

– KPC4KGC

## Whither HF Aviation Communications Monitoring?

Bill,

I've been enjoying *Plane Sense* and its focus on aviation communications. I live in an area with a major airport, several regional airports, and an Air Force base. There's always plenty of activity to listen to.

I've been scanning VHF for years and am more interested in the communications than the aircraft themselves. I was wondering if in the future you would do an article on high-frequency (HF) communications. I accidentally stumbled across them a while back while running my shortwave on USB (upper side-band). I went to the Internet to research what I was hearing as well as the SELCAL tones — which I thought were cell calls at first. I found a wealth of information, thanks to people who post their information for others. I am grateful for their work.

Now I'm hooked on HF and have copied the MWARA maps to keep track of frequencies in the areas I can pick up — mainly North Atlantic and Caribbean air routes.

It opened up a new aspect of aviation communications for me I hadn't heard before, as well as some military air communications. I just thought it might make an interesting article in the future. Thanks.

– Andre Phillips

*Andre: That's a really good idea. The majority of the scanner monitors in the United States are familiar only with the VHF frequencies used by civilian and military air operations. I've explained a little bit about LF frequencies, but few know about the HF frequencies for long-distance international flights, Photo E. I'll research this aspect of aviation scanning and report to you and other "Plane Sense" fans, as well, in a column soon.*

– KPC4KGC

## Scanning Military Communications

Bill,

Do you know of any handheld scanner that has AM from 137 to 144 MHz to cover the new military communications band? Any information coming? Thank you!

– Dan McClendon

*Dan: I don't normally test scanners. I've owned one portable and two desktop units. Both of my current units cover the band between the civilian VHF and 2-meter ham frequencies. But here are several websites to start your search:*

C. Crane <<http://www.CCrane.com>>  
Uniden: <<http://www.Uniden.com>>  
Universal Radio: <<http://bit.ly/ZLe2aO>>  
GRE America: <<http://www.GREAmerica.com>>  
Yaesu: <<http://www.Yaesu.com>>  
ICOM America: <<http://bit.ly/11RXdIA>>  
Kenwood USA: <<http://www.KenwoodUSA.com>>  
The DX Zone, Scanners: <<http://bit.ly/ZLepCb>>  
Scanner Master: <<http://www.scannermaster.com>>  
Scanner World: <<http://bit.ly/ZvCMTk>>  
RadioShack®: <<http://bit.ly/ZXyMaQ>>  
Amateur Electronic Supply: <<http://www.AESham.com>>

*Check those out and perhaps you'll find a radio that fits your needs.*

*FYI, I need to set up an outside VHF discone antenna at my house here in Front Royal. My desktop picks up quite a few frequencies with the built-in whip, but an outside antenna would be outstanding.*

– KPC4KGC

## In Boston, ZBV vs. ZBW: Which is Correct?

Bill,

I've been enjoying *Plane Sense*. A couple of questions:

In February's *Pop'Comm* Aviation column (*Scanning the Skies Via the 'Centers' of Attention*), a list of Air Route Traffic Control Centers on Page 36 indicates Boston as ZBV. But on the map on page 37, it's shown as ZBW. Is ZBW correct?

I was looking for an IATA code from the LogisticsWorld Airport Locator <<http://bit.ly/MGUk8P>>. I tried sterling Virginia; sterling VA; Sterling, VA; and so on. Even Dulles International Airport, but nothing ever came up. Searching on

just Virginia brought up two pages, but Dulles was nowhere to be found. Any ideas of what I'm doing wrong?

Thanks, and keep those articles coming!

– Phil Karras, KE3FL,  
Mount Airy, Maryland

*Phil: I appreciate your questions. They are very simple to answer.*

*ZBW or ZBV? The answer is ZBW. I can blame it on spell check, but it's actually my fat fingers. Sorry. (NOTE: This slipped through the editor's accuracy safety net, as well. Let me add my apology to Bill's. – KPC6PC) You may want to bookmark this website for airport reference, as well: <<http://bit.ly/Y8X6cd>>*

*When it comes to airport locations, some seem to be screwy. For example, Cincinnati airport is in Kentucky. Go figure.*

*When it comes to Dulles, you'd expect, correctly, to find the information in Virginia — but alas, such is not the case. If you look at the A/FD covering Virginia you need to look near the*

## Air Show Dangers



We realize this is a disturbing photograph, but is illustrative of the dangers inherent in attending the modern air show. We present it here in the public interest. The pilot at low level had little or no control of his aircraft. It narrowly missed a crowd before slamming into four buildings. One can only imagine the horror of the people inside. No one was killed, and you can insert your own descriptor as to what impact such a collision would have had on the occupants. (Courtesy of KPC4KGC)



front — in, of all areas, the District of Columbia. There you can find information on Reagan National airport, which is located in DC, as well as Washington National airport and the Pentagon Heliport, which are each in Virginia. Trust me, it makes sense.

— KPC4KGC

## Oh, Canada: More ARTCCs to Make the List

Bill,

I was reading your *Plane Sense* column with interest as an avid aircraft monitoring enthusiast (**REFERENCE**: “*Scanning the Skies Via the ‘Centers’ of Attention*,” February 2012 *Pop’Comm*, page 36. — KPC4KGC)

I am very disappointed in the image where you outline virtually all ARTCCs in the U.S. but only show five of the seven in Canada — leaving out Moncton and Gander Centre. In fact, you cut out most of the Canadian east coast.

I’m sure you have many Canadian readers who feel the same. Maybe you will feature them in a future article!

— All Cyples, Bridgewater,  
Nova Scotia, Canada

*All: I assure you, leaving out some Canadian centers is not part of a big conspiracy. It’s just that the column was primarily about centers south of the border.*

*I’ll be doing another article focusing on your neck of the woods. So, my apologies to anyone in the north who may have*

## Grab Your Scanner and Listen ‘Up!’

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

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

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

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

Here are some basic frequencies in MHz to keep handy:

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

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

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



**Photo F.** Here’s a look at the Lear 55 Longhorn jet KPC4KGC made reference to in this month’s *Plane Sense* under the sub-headline: “*That’s a B-25? I Beg to Differ!*” (Courtesy of russavia via Wikimedia Commons)

# HamRadio Anthologies

Enjoy collections of the best material published in *HamRadio* magazine, conveniently arranged by subject and original publication date.

Choose your interest, your time period, your anthology!

**SPECIAL!  
SAVE \$27**

**Buy all 4 for  
only \$15 ea.  
Get free  
shipping!**

**Homebrewing Techniques** - This anthology brings together the most useful and practical advice and techniques for the person who wants to build anything from small solid state projects to beam antennas.

Order **AHOME** \$19.95 **SALE \$16.00**



**Test Equipment & Repair Techniques** - From building test gear to trouble shooting the rig, this anthology of the best articles on the subject has been carefully selected to meet today's needs. Techniques and devices that work and are easily duplicated, and gives today's Hams a much-needed helping hand at solving equipment problems.

Order **ATEST** \$19.95 **SALE \$16.00**



**Antennas 1968 - 1972** Order **ANTS1** \$19.95 **SALE \$16.00**

**Antennas - 1973 - 1975** Order **ANTS2** \$19.95 **SALE \$16.00**

Our two Antenna Anthologies cover all types of antenna designs and theory from 160 meters through microwaves. All articles have been selected to be as timely and valuable to today's Ham.

**\* All 4 for \$15 ea. plus free shipping/handling** Order **4ANTS** **SALE \$60.00**

Shipping & Handling: USA - add \$7 for first book, \$3.50 for second and \$2 for each additional. Foreign- calculated by weight & destination and added to your total.

**CQ Communications, Inc.**

25 Newbridge Road, Hicksville, NY11801 516-681-2922

www.store.cq-amateur-radio.com

been troubled by the omissions. Your note is an incentive to ensure my next piece on Canadian ARTCCs is comprehensive.

By the way, I drove through New Brunswick en-route to Prince Edward Island a few years back; what a gorgeous territory. I hope to visit again before too long — especially the Bay of Fundy.

— KPC4KGC

## KPC4KGC: An Aviation Service Snapshot

May's *Plane Sense* focused on the Berlin Air Route Traffic Control Center — BARTCC — pronounced Bartack, and prompted a query about my air traffic service history. Here it is:

- 2179<sup>th</sup> Communications Squadron at Patrick AFB, Florida — Patrick Radar Approach Control (RAPCON)
- 1948<sup>th</sup> Communications Squadron at Columbus AFB, Florida — Columbus RAPCON
- 1946<sup>th</sup> Communications Squadron at Tempelhof Zentral Flughafen in West Berlin, Germany — BARTCC
- Southwest Georgia Tower and Non-radar Approach Control at Albany, Georgia
- Orlando Executive Control Tower in Orlando, Florida
- Central Nebraska Control Tower in Grand Island, Nebraska
- St. Petersburg Automated Flight Service Station in St. Petersburg, Florida and Ashburn, Virginia

In addition, I had temporary duties at:

- Georgia Ag-Expo temporary Control Tower in Moultrie, Georgia (6 times)
- Sun-n-Fun Fly-In temporary Flight Service Station in Lakeland, Florida (5 times)
- Northway seasonal Flight Service Station in Northway, Alaska

So basically, I've been there and done that.

## Wheels Down . . .

OK, so ends *Plane Sense's* "Quiz the Know-It-All." I hope you got closure on your requests. And thanks for setting me straight where I needed it. I look forward to the next installment addressing your questions, suggestions, requests, and ideas. Thanks for your interest!

— KPC4KGC

## "Getting Started" DVD Paks

### CQ Ham Radio Welcome Pak

1 DVD contains 3 programs:

Ham Radio Horizons, Getting Started in Ham Radio, Getting Started in VHF

Order # **HAMDVD** ~~\$24.95~~ \$16

### CQ HF Specialty Pak

1 DVD contains 2 programs:

Getting Started in DXing, Getting Started in Contesting,

Order # **HFDVD** ~~\$24.95~~ \$16

### CQ VHF Specialty Pak

1 DVD contains 3 programs:

Getting Started in Satellites, Getting Started in VHF, Getting Started in Packet

Order # **VHFDVD** ~~\$24.95~~ \$16

### CQ DVD 3 Pak -

one of each of the 3 DVDs above

Order # **3DVD** ~~\$65.95~~ \$42



**Buy any  
combination  
of DVDs  
and save!**

**1 Pak for \$16  
2 Paks for \$30  
3 Paks for \$42**

Shipping & Handling: U.S. & Possessions-add \$7 for the first item, \$3.50 for the second and \$2 for each additional item. FREE shipping on orders over \$100 to one U.S. address.

CN/MX-\$15 for 1st item, \$7 for 2nd and \$3 for each add'l.

All Other Countries-\$25 for 1st item, \$10 for 2nd and \$5 for each additional.

**CQ Communications, Inc.,**

25 Newbridge Road, Hicksville, NY 11801

Call: 1-800-853-9797 • Fax: 516-681-2926

website: <http://store.cq-amateur-radio.com>

# Speak Now: The Finer Points of Transmit Audio

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

*“For me, several experiences over the years have highlighted the importance of using the correct microphones for the tasks at hand.”*

No matter how far into the digital revolution we venture, the quality and performance of the remaining analog station parts are as important as they ever were — perhaps even more so. Until you can directly *speaK digital*, a quality microphone and the chops to use it and adjust it correctly will make or break the quality of your transmitted SSB, AM, or FM signals.

After the microphone does its job, the remaining audio and RF systems may include the magic of digital signal processing, but it takes the entire transmit chain to produce high-quality audio. A lot of money isn't necessary, but a bit of work and experimentation usually are.

## Live and Learn

For me, several experiences over the years have highlighted the importance of using the correct microphones for the tasks at hand. As a teenager, one of my Elmers had a pair of Drake Twins — separate transmitter and receiver boxes for high-frequency (HF) amateur use — that I would occasionally borrow for working SSB DX contests. I didn't have an external VFO to allow my Tempo One to work split on 80 and 40. All these years later I'm still grateful that he was so enthralled with his new Drake TR-7 hardware that he actually let me — a kid — borrow the B-Line boxes, **Photo A**.

The venerable Drake transmitter had a classic Astatic D-104 crystal microphone, **Photo B** — and I was surprised that it sounded so good on the tube-powered Drake, but not very good at all on my solid-state Ten-Tec transceiver. Understanding the basics of microphone impedance and the differences between high-impedance tube amps and low-impedance solid-state amps was still in my future.

As a radio-oriented individual, one of the first things I did as a college freshman was to volunteer as an announcer at the school's FM radio station. At this point, most of my “transmit audio” efforts had been focused on properly tuning up my HF transceiver, not overdriving the speech amplifier and balanced modulator, and properly loading the fragile TV sweep tube finals so they wouldn't melt — and cost me money. The complexity, and my budget, didn't leave room for “extras” like impedance matching, equalization, and compression.

## ‘Father of Broadcast Audio Processors’

What did get me thinking about the “finer things of transmit audio,” however, was the station's chief engineer, who introduced me to his prized Orban Optimod, **Photo C**. Known as the “father of broadcast audio processors,” the

**All NEW from DRAKE**

**R-4B RECEIVER**  
with new solid state circuitry

**T-4XB TRANSMITTER**  
with new double 8 pole crystal lattice filters

**Photo A.** This advertisement, from the June 1968 edition of *CQ* magazine, announced the new Drake B-Line, featuring the R-4B receiver and T-4XB transmitter, which would go on to be very popular choices for the radio amateurs of the time. They are still prized as pieces of vintage gear today.  
(Courtesy of *CQ*)

Optimod is a split-band EQ, compressor, stereo generator, and more, designed to make transmitted FM/AM/TV audio sound fabulous, which it did.

The audio response could be tweaked for sweet-sounding classical music, with its searing dynamic range, rich and authoritative talk radio, or mind-numbing, overly-compressed pop. That demonstration helped me become aware of how FM broadcast stations “sounded,” and from that point on, it was easy to figure out which local station was which simply by the sound of its transmitted signals — good, bad, or other.

## EQ Experimentation

Some years later I remember experimenting with various equalizers, compressors, and speech processors — homebrew and scrounged commercial units — in an attempt to make my Shure 444 dynamic microphone sound its best and pack a bit more punch. Back in the day, most transceivers didn’t have much, or anything, in the way of EQs and speech processors. I didn’t have much luck until I discovered the AGC-EQ, a kit from Analog Technologies.

The AGC-EQ circuit uses a Signetics NE570 compandor chip configured as a compressor/AGC and a pair of low-noise op-amps as low- and high-frequency EQs and preamps. Although much less sophisticated, it’s a poor man’s Optimod — or more of a poor man’s W2IHY TX audio equalizer. By carefully adjusting the microphone input gain, the compression levels and the high- and low-EQ settings, the SSB audio quality of my Shure desk microphone and transceiver was noticeably improved, and the operators on the other end agreed.

## Today’s Transceivers

Most modern radios have more sophisticated audio processing and transmit equalization controls built in. Some feature transmit compandors, multiband EQs, and continuously variable transmit filter bandwidths. Because of the almost ridiculous level of customization, setting up these rigs is often more complicated than it otherwise would be.

All hams, I assume, want great-sounding transmit audio that’s tailored to our voices, our equipment, and our on-air interests. The technology and equipment required to produce hi-fi, ragchew-quality audio is essentially the same as that required to produce clean, punchy, DX

pileup-busting audio. The equipment settings may be different and the microphone elements themselves may be slightly different, but the concepts are pretty much universal.

In this month’s column, let’s start with microphone basics and, in a future column, we’ll finish up with EQs, compressors and other goodies.

## Microphone Check!

Most hams think all microphones are pretty much created equal, and if you’ve seen one, you’ve seen ‘em all. In a certain sense — mostly an *exterior* sense — that’s true, but as with automobiles, which span a vast gulf of price and quality, not all microphones are created equal — although many may be “equalized equal.”

The microphones that came with our radios are the only ones many of us will ever use. And while most “bundled” microphones work reasonably well, what if you want better-sounding signals or a microphone that’s better suited for DXing, contesting, or mobile operation in noisy environments? You may need to branch out.

Maybe you have a hand-held mic right now, but want a desk or a boom microphone with a footswitch. Maybe you’d like a headset for contesting or better environmental noise performance. The options are many, so how do you choose?

Whether desktop, handheld, boom or

headset, **Photo D**, to be usable, a microphone must at least reasonably match the input impedance of our radio’s speech amplifier and have a connector that’s compatible with our radio, or can be



**Photo B.** “The venerable Drake transmitter had a classic Astatic D-104 crystal microphone,” KPCØZZZ writes, “and I was surprised that it sounded so good on the tube-powered Drake, but not very good at all on my solid-state Ten-Tec transceiver.” (*Internet screen grab <<http://bit.ly/18ajs13>>*)



**Photo C.** In the '70s and '80s, the Orban Optimod — this one’s a model 8100 FM processor — ushered in a new era of modulation control for the broadcast industry, and even in today’s digital world, plenty of these “antique” analog Optimods are still on the air and are still sought after, serviced, and supported. (*Courtesy of Bohn Broadcast Services, Chelsea, Alabama*)

adapted. Many microphones do just that, so our job isn't necessarily easy.

Almost all modern radios are designed for low- to medium-impedance dynamic or condenser microphones, and some can even handle the higher-impedance — crystal — microphones favored by some older tube-type transceivers, such as my Elmer's Drake B-line transmitter.

## Making Connections

The microphone connectors on most modern transceivers also provide a DC voltage to power electret-condenser microphone elements or other low-current external accessories, although some condenser microphones are powered by batteries to get around this limitation. Many radios also have rear-panel audio inputs that typically connect to external audio processors or audio interface units for digi-mode operation, and may not support microphones directly.

Most amateur radio microphones have PTT switches and unbalanced outputs/connectors, which limits cable lengths and often necessitates RFI/EMI protection measures to reduce RFI susceptibility. Broadcast and vocal/stage microphones often lack built-in PTT switches but usually feature balanced "XLR-



**Photo D.** Most amateur radio headsets are rather expensive, and most inexpensive, PC-type headsets don't work all that well with traditional amateur radio transceivers and applications. Sometimes, however, just the opposite is true. Solid reviews on an Elecraft newsgroup pointed me to Pyle's PHPMC2 noise-canceling stereo PC headset, which is intended for speech-recognition apps. Serendipitously, this headset sounds great with my Elecraft KX3 and requires a minimum of EQ tweaking, and so on. Like many non-communications headsets, the PHPMC2 doesn't have built-in PTT, but the KX3 does, and includes VOX and connections for external PTT. The PHPMC2 is relatively comfortable — probably more so on heads smaller than mine — and for about \$20 delivered from amazon.com, the price is pretty much unbeatable. (Courtesy of pyleaudio.com)

## If you enjoy Amateur Radio...

You'll enjoy **CQ**

Fun to read, interesting from cover to cover, written so you can understand it. That's CQ. Read and enjoyed by thousands of people each month in 116 countries around the world.

**It's more than  
just a magazine.  
It's an institution.**

CQ also sponsors these world-famous award programs and contests: The CQ World-Wide DX Phone and CW Contests, the CQ WAZ Award, the CQ World-Wide WPX Phone and CW Contests, the CQ World-Wide VHF Contest, the CQ USA-CA Award, the CQ WPX Award, the CQ World-Wide 160 Meter Phone and CW Contests, the CQ World-Wide RTTY Contest, the CQ 5 Band WAZ Award, the CQ DX Award, and the highly acclaimed CQ DX Hall of Fame.

**Accept the challenge. Join the fun.  
Read CQ.**

### Print & Digital Edition Combo Sale!

Buy both at a **SPECIAL** Combo price and save!

1 Year	Print	Digital	Both
USA	\$38.95	\$27.00	<b>\$55.95</b>
CN/MX	\$51.95	\$27.00	<b>\$68.95</b>
Foreign	\$63.95	\$27.00	<b>\$80.95</b>

### CQ The Radio Amateur's Journal

25 Newbridge Road • Hicksville, New York 11801

Phone 516-681-2922 • FAX 516-681-2926

[www.cq-amateur-radio.com](http://www.cq-amateur-radio.com)

style” outputs/connectors that typically afford greater RFI immunity and the ability to match impedances and voltages with inline transformers. Just imagine how much RFI and other electrical crud

a vocalist’s microphone might pick up if it had a 120-foot run of unbalanced cable.

Only a few high-end ham rigs have XLR-style microphone connectors, although most studio mixing gear does,

as do some ham radio audio processors such as W2IHY’s line of EQs and compressors. Balanced microphones can easily be adapted to work in unbalanced systems, but some method of PTT switching must usually be provided. If you favor VOX operation, PTT isn’t an issue.

**Hi-Fi Audio in SSB**  
Exploring Excellence in Quality Amateur Radio Audio  
By Larry M. Wassman

I also suggest that, unless all you do is rag chew, you may have more than one setup so that if you like to work DX as I do or contest, you will have a flexible setup so that you can easily switch between a great conversational station to a good DX or contesting audio station. I do not believe there is any universal audio that is optimum in both extremes.

I don't intend to be insulting or over critical to anyone or group of hams working in audio today or in the past, but I do see many problems and may hams have asked for my advice. This page is for the ham who does not want to get so involved in audio that he has thousands of dollars in equipment and modifies his equipment to squeeze that last bit of audio quality out of his equipment that only those few know what they are looking for.

## Other Audio Factors

The quality of your transmitted signal depends on many factors that go beyond the basics of microphone style, type, impedance, and connectors. These things, which we’ll address in detail in the future, include variations in the human voice — male, female, young, old, and so on — the ideal audio response for human voice communication under varying conditions, microphone placement, and “usage techniques;” how the audio and RF response of the transmitter circuitry affects our sound; and equalization and audio/RF processing issues.

Even if you have a stellar-quality microphone that’s perfectly matched to your rig, these remaining factors are still important. For example, if you connect a broadcast quality, high-fidelity microphone to a transmitter with a narrow RF transmit bandwidth, no amount of processing and equalization will provide “ragchew-quality” sound. The opposite is also true. If you connect a microphone optimized for contesting and pileup busting to a hi-fi transmitter, your transmitted signal will still sound “contesty” and not hi-fi.

Although modern rigs feature enhanced DSP-based transmit equalization and audio/RF processing, setting everything up just right still usually involves work beyond finding a properly matched microphone. Be prepared for experimentation. In the end, the results will be worth the effort.

## Web Resources

A great place to start learning about transmit audio is W2IHY’s demonstration page at <<http://bit.ly/18jQPMi>> which features recorded, before-and-after, on-air comparisons of “typical” and “perfectly equalized” SSB signals.

The contrast is dramatic, and W2IHY’s site features a lot of valuable information on audio processing for communication applications. It’s a great all-around reference, as is the amateur radio audio site maintained by Larry Wassman, W3OZ, at <<http://bit.ly/13IUCC7>>, **Photo E**.

**Photo E.** Websites devoted to high-quality transmit audio, such as Larry Wassman, W3OZ’s *Hi-Fi Audio in SSB*, give the visitor a lot of news-to-use about audio processing for communication applications. Also, W2IHY’s demonstration page at <<http://bit.ly/18jQPMi>> features recorded, before-and-after, on-air comparisons of “typical” and “perfectly equalized” SSB signals. (*Internet screen grab* <<http://bit.ly/13IUCC7>>)

## Collins Radio Repair & Tune-Up DVD Guides

Restoring or repairing classic Collins S-Line equipment?  
These DVDs are like having an experienced professional right next to you!

From Hi-Res Communications, Inc., these well-produced, authoritative DVDs cover all the most common repair and tune-up subjects on these classic radios.



**Collins KWM-2**  
Two disc set, 236 minutes total  
Order No. C-KWM \$89.95



**Collins 75S-3/32S-3**  
Two disc set, 226 minutes total  
Order No. C-75S \$89.95



**Collins 30L-1**  
Single Disc 61 minutes total  
Order No. C-30L \$39.95

Shipping & Handling: US & Possessions-add \$7 for the first item, \$3.50 for the second and \$2 for each additional item. Foreign-calculated by order weight and destination and added to your credit card charge.

**CQ Communications, Inc.**  
25 Newbridge Rd, Hicksville, NY 11801  
800-853-9797 - FAX us at 516 681-2926  
<http://store.cq-amateur-radio.com>

# Off and Tuning: WPC3DNC Shares Recent QSLs from Around the World

Compiled by  
Richard Fisher, KPC6PC

*“If you haven’t done so already, we encourage you to share your stories and pictures with us. And we’re happy to share them with readers.”*

**P**opular Communications Monitoring Station Director of Registration and Associate Pop’Comm Editor Jason Feldman, WPC2COD, has been pedaling as fast as he can to keep up with your ID requests and collects your recollections on how you got into the monitoring world. As always, we’re impressed and amazed.

This month, Daniel Amoroso, WPC3DNC, shares some of the shortwave reception confirmations — QSLs — he has recently received from around the world. We’ve also heard from Giacomo Gaspari, IKPC4LM, Pescara, Italy, who says: *“I keep calm.”* He’ll explain.

Shortwave listeners, AM and FM broadcast band DXers and scanner monitors from around the world are continuing to line up to get onboard the Pop’Comm Monitoring Station program.

If you haven’t done so already, we encourage you to share your stories and pictures with us. Then, we’d like nothing more than to share them with Pop’Comm readers around the world. Please write: <PopCommMonitor@gmail.com>. We’ll take it from there.

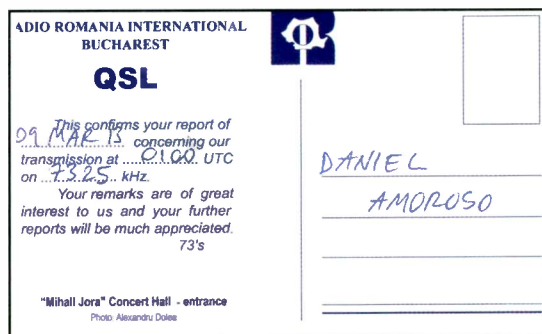
Here’s a sampling of your observations and memories for July:

## Daniel Amoroso, WPC3DNC, Media, Pennsylvania

I copied Radio Romania International at 0100 UTC on March 9 on 7325 kHz. It had a great signal into my Media, Pennsylvania listening post.



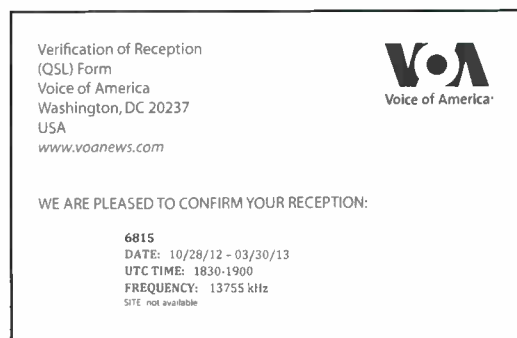
**Photo A.** This reception confirmation from Radio Romania was received by Daniel Amoroso, WPC3DNC, who joined the Pop’Comm Monitoring Station program on March ’13. (Courtesy of WPC3DNC)



**Photo B.** The reverse side of the Radio Romania QSL — slightly cropped in this photo — shows WPC3DNC’s signal confirmation on the day he joined the Pop’Comm monitoring community. (Courtesy of WPC3DNC)

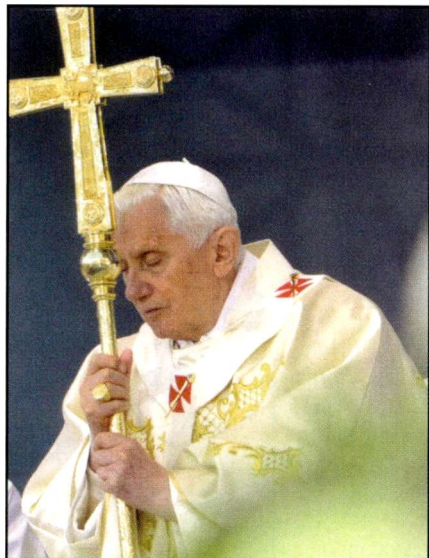


**Photo C.** A studio photograph graces the front of the QSL from Voice of America WPC3DNC received after sending in the required information for a QSL. (Courtesy of WPC3DNC)



**Photo D.** Verification of reception from the VOA included this caption, explaining what was going on in the picture on the front of the card: “Assignments editors discuss the latest story developments in the VOA newsroom in Washington, DC.” (Courtesy of WPC3DNC)

**Photo E.**  
Pope Benedict XVI is the image on the front of the Vatican Radio QSL received by WPC3DNC. (Courtesy of WPC3DNC)



**Photo G.** The Heathkit AR-3 receiver — like the one used by WPC4USA as a child — gets a thorough vetting in this YouTube video. (Internet screen grab <<http://bit.ly/11Facga>>)

I was using my WinRadio 313 with a loop antenna and recently received a QSL, **Photos A and B**.

I've also logged and confirmed the Voice of America, **Photos C and D**, on March 30 at 1830 UTC on 13755 kHz, and Vatican Radio, **Photo E**.

### Daryl Staehle, KPC7TAE, Oso, Washington

My amateur radio callsign is W7TAE, so I am glad to have gotten my first preference for a *Pop'Comm Monitoring Station* ID sign.

The TAE suffix reflects my deep respect and admiration for Thomas Alva Edison.

I started shortwave listening in Detroit about 1959 with an old Admiral stand up radio-record player with SWL frequencies, and was hooked by hearing all the stations from so far away.

I got a little four-tube Arvin radio for Christmas one year and would listen to DX AM broadcast band stations late at night. Detroit was a great location, drawing in New York City, Philadelphia, Nashville, Chicago, and, of course, KSL in Salt Lake City. (SEE: *A gallery of classic Arvin radios at <<http://bit.ly/18fs2f4>>*, **Photo F**. – KPC6PC)

### Larry Cohen, WPC4USA, Stuart, Florida

I started shortwave listening at age five on a Heathkit AR-3 that was newly built by my father. I helped him put up an antenna on the roof and learned how to use the radio by turning every dial until I figured out how it worked. (WATCH and LISTEN: *To a Heath AR-3 in action, including a comprehensive tour of the radio and details of its specifications <<http://bit.ly/11Facga>>*, **Photo G**. – KPC6PC)

I later built a crystal radio receiver as a Cub Scout project and learned Morse code in Boy Scouts. That led to my first amateur radio license around age 12.

Somewhere in between, being an avid reader of Tom Kneitel's articles in *Popular Electronics*, I qualified for the *Popular Electronics Short-Wave Monitoring Station* program, receiving an official monitoring certificate with the station ID of WPE2NSU. If memory serves me, I had to send in a few QSL cards as proof of being a serious monitoring station.

Over the years I have thoroughly enjoyed all aspects of radio and communications and have read every issue of *Popular Communications*. Thank you for bringing back a great program.

### Giacomo Gaspari, IKPC4LM, Pescara, Italy

Well, there is not much to explain about my choice of PCMS station ID sign. It you look closely, it speaks for itself.

I just tried to form a common word with the letters and numbers available to make them easier to remember. In this case I was able to form a proper sentence: *I keep calm*. And that fits pretty well with my personality.

Using it for my new SWL station certainly is very exciting and fun for me. I can't wait! Thank you so much for the wonderful job you're doing and best regards from Italy!

### Scott Vawter, WPC6SEV, Morongo Valley, California

My primary enjoyment is civil aviation monitoring and military communications. I am a ham operator — W6SEV — so getting a *Pop'Comm Monitoring Station* ID similar to it is really great.



**Photo F.** A multi-picture gallery of Arvin radio receivers can be viewed at <<http://bit.ly/18fs2f4>>. (Internet screen grab)



## Paul Tokar, WPC6TWS, Shaker Heights, Ohio

My first choice for a *Pop'Comm Monitoring Station* ID is the suffix of my first ham radio license when I was about 16 years old. I'm now more than 60 years old.

Back then, I identified my station as having a "trans-world signal" – TWS.

I'm still an amateur radio operator, but my first interest is shortwave radio. Many an evening was spent listening for that special or new station from around the world.

There's nothing like hearing the superheterodyne whistle while tuning the band via a vernier dial.

## Gregory Rosenberg, WPC9GDR, Tinley Park, Illinois

I have loved electronics, radio communications, and technology since I was five years old. My dad taught my two brothers and me to solder. I started designing circuits and making PCs when I was a freshman in high school. I started to program by age eight on an IBM 360.

By the time I was 12, I had access to mainframes and minis to both work and play on. In 1979 I got to work on some elements of ARPANET. I lived the transition from NCP to TCP/IP on the Internet in 1983. Today my passions have expanded to include emergency communications.

I have set up a very state-of-the-art amateur station at our EMA and started re-establishing our ARES and RACES program. My amateur radio callsign is AB9MZ, <<http://www.QRZ.com/db/AB9MZ>>.

I used to live in a very large house with a nice tower. I had many VHF/UHF antennas, but my pride and joy were my homebrew inverted L and inverted V antennas.

Now that I am older and in a townhome, I have had to get more creative. I have 10.5 feet of clearance in my shack, so the verticals fit up there easily — spaced about five feet apart.

I have a 200-foot loop that is fed by two coaxial lines. That goes into a 4:1 balun into my antenna tuner and then finally into the rig. It acts somewhat as an NVIS antenna <<http://bit.ly/no9Nbe>>, but it has proved to work exceptionally well for state nets and a fair amount of DX.

I hope to have my tower up soon. Then I can get my inverted L back up. Hard to say if the homeowners association will let me also put up an inverted V. Either way, I have managed to persuade them to let me do more than any other ham in the neighborhood.

I love to do AM DX and have enjoyed shortwave listening for over 50 years.

## Lon Shaffer, KPC3WPA, Johnstown, Pennsylvania

I've been a ham for almost 20 years but have listened to shortwave for as long as I can remember. My dad had a Transoceanic receiver when I was really young and I was allowed to turn it on and tune it when I was about 4 or 5 years of age. That was a huge honor. I was not allowed to abuse it or the privilege would have been taken from me.

I got my first crystal scanner when I was seven years of age. My parents lived through the Great Depression as children, and my dad fought in World War II. He was 51 when I was born and radio was a huge part of his life. He made it part of mine, as well.

I got a Heathkit HW-101 (for a receiver) when I was 12. It was a gift from a local ham! Not long after that I took my FCC tests and eventually my Amateur Extra class license.

I promote our communications hobbies to people all the time. I hope it has the impact on others as well as it has me.

# DX World Guide

By Franz Langner, DJ9ZB

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

The first edition printed in full color throughout;  
this 384 page, 6x9 paperback is only \$42.95  
CD Edition \$22.95  
(Plus applicable shipping)

Order today! 800-853-9797



CQ Communications, Inc.

25 Newbridge Rd, Hicksville, NY 11801 • FAX 516 681-2926

<http://store.cq-amateur-radio.com>

## MONITOR OF THE MONTH

Listening, Around the World

# WPC7COF, Sierra Vista, Arizona

## Monitor, Radio Amateur: Living Large at His 'Dream Station'

Everett Wittig's interest in radio monitoring dates to the Popular Electronics "Short-Wave Station Monitor" program in the last millennium when he had the station identification sign WPE7COF. When Pop'Comm got into the monitoring station identification game, he requested and received WPC7COF. Parallel universes, eh?

As you'll see, it's a nice compliment to his passion as a radio amateur, as well, where he's a General class operator with the callsign WB7VNF, **Photo A**.

His monitoring and amateur station is very nice, both inside and out. How about yours?

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

– Richard Fisher, KPC6PC

By Richard Fisher,  
KPC6PC

*"Seeing his beautiful monitoring and amateur radio communications post, WPC7COF is living large at his 'dream station,' indeed."*

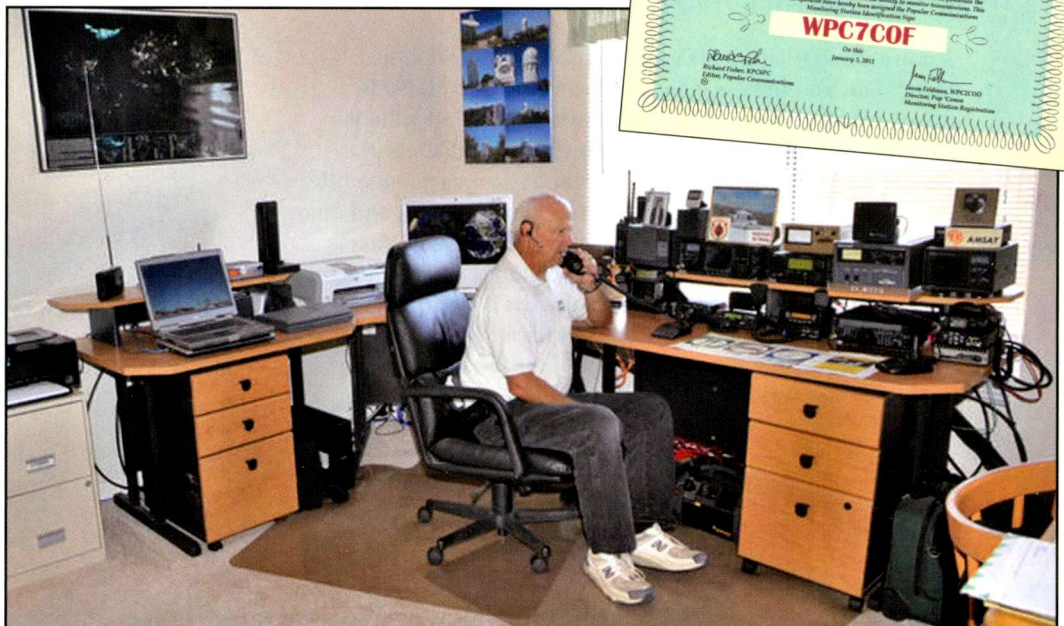
To say Everett Wittig, WPC7COF, has a "nice looking" radio setup would be like saying Da Vinci dabbled a bit in painting the *Mona Lisa*, giving her "a happy little face," Bob Ross-style <<http://bit.ly/132wBad>>.

In an October 2011 presentation to the Cochise Amateur Radio Association <<http://www.k7rdg.org>> Wittig described this "dream station" with a slide show chronicling its installation, along with three towers in Sierra Vista, Arizona, **Photo B**. (SEE: A photo gallery of WPC7COF's station and antenna installation at <<http://bit.ly/15bONSf>>.

– KPC6PC)

"Here is my current station," he writes:

- ICOM 706MKIIG HF/VHF/UHF transceiver
- ICOM 756PROII HF plus 6-meter transceiver
- ICOM R-75 HF receiver



**Photo A.** Everett Wittig, WPC7COF/WB7VNF, operates from his beautiful L-shaped Sierra Vista, Arizona transmitting and listening post. (Courtesy of WPC7COF)



**Photo B.** The communications gear at WPC7COF is well organized, accessible and, as we're sure his logs will attest, quite functional. (See text for details.) (Courtesy of WPC7COF)



**Photo C.** Three impressive towers are a key part of the WPC7COF/WB7VNF radio setup at his southeast Arizona location. (Courtesy of WPC7COF)



**Photo D.** WPC7COF's listening post in Sierra Vista, Arizona puts him in "The Hummingbird Capital of the United States," <<http://www.visitsierravista.com>>. (Internet screen grab)

**NOW ON SALE!**

## 2013 World Radio Handbook

The world's most  
comprehensive  
and up-to-date  
guide to  
broadcasting!



**SUPER  
SALE!**

This great directory offers the most comprehensive guide to broadcasting on the planet. Completely revised and updated, this 2013 edition is the most accurate guide to national and international SW, MW and FM broadcasting available.

Also included is a reference section containing listings of international and domestic transmitter sites, standard time and frequency transmissions, DX Club info and more!

Now only  
**\$35.00**  
+ Shipping

**CQ Communications, Inc.**

25 Newbridge Rd., Hicksville, NY 11801

<http://store.cq-amateur-radio.com>

- Tokyo Hy-Power HL-1.2FX Amplifier
- ICOM IC2820H
- Tait TM9100 P25-capable VHF transceiver
- Motorola CDM1250 64-channel VHF transceiver
- Motorola CDM1250 32-channel VHF transceiver
- Yaesu FT-847 HF/VHF/UHF transceiver
- Yaesu FT-817ND HF/VHF/UHF transceiver
- Tokyo Hy-Power HL50B amplifier (for FT817ND)
- GRE PSR600 scanner
- GRE PSR500 scanner

"The antennas to support this equipment sit on three towers," WPC7COF said. "(There are) two Rohn 45G 40-foot, free-standing towers and one TX-455 55-foot, crank-up tower, which has the HF and 6-meter beams," **Photo C. Beautiful!**

He is a member of Cochise County RACES® and ARES®, National Weather Service SKYWARN® Spotter No. 335, and

a State of Arizona recognized Type III All-Hazard Communications Unit leader.

According to his *Ham Radio Nation* profile <<http://bit.ly/16tAacm>>, Wittig was first licensed as a radio amateur in 1966 and held callsigns WA1RZP and WA6GYT prior to his current WB7VNF in Sierra Vista, **Photo D.**

He is a fan of 75-meter SSB and counts his best DX as Antarctica. Oh, he works low power, as well, with Vermont being his best QRP DX.

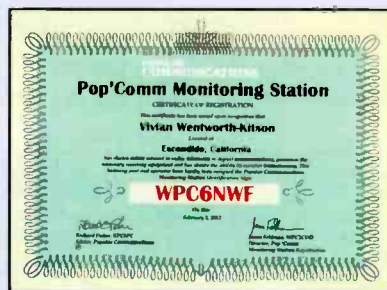
On the monitoring front, he has also used Uniden BC9000XLT and BC780XLT scanners.

In addition to his monitoring interests and 47-year amateur radio activity, Wittig is a retired public safety microwave/two-way radio systems engineer.

Looking at his beautiful monitoring and amateur radio communications post, WPC7COF is living large at his "dream station," *indeed.*

## New Members: *Pop'Comm Monitoring Station Program*

Here are the newest station monitors granted a station identification sign, authorized to receive a Certificate of Registration and welcomed to the *Pop'Comm Monitoring Station* program. They are listed by name, station identification sign, and monitoring station location:



### KPC and DX Prefixes

Lon Shaffer, **KPC3WPA**, Johnstown, PA; Giacomo Gaspari, **IKPC4LM**, Pescara, Italy; Laurie Margolis, **GPC3L**, Hendon, London, England.

### WPC Prefixes

Also: Jerry Canaday, **WPC2ACF**, Hyde Park, NY; Timothy Delong, **WPC0TAD**, Indianapolis, IN; Larry Cohen, **WPC4USA**, Stuart, FL; Gregory Rosenberg, **WPC9GDR**, Tinley Park, IL; Paul Tokar, **WPC8TWS**, Shaker Heights, OH; Raymond Vallee, **WPC4WBZ**, Clayton, NC; Jeff Hillwig, **WPC3HLG**, Parker, PA; Matthew Athas, **WPC1MA**, Hampden, ME; Gary Boyd, **WPC4KTY**, Chesterfield, VA; Bruce Jefferson, **WPC9WXE**, Palatine, IL; Al Rhodes, **WPC2SOU**, Virginia Beach, VA; Scott Young, **WPC9FST**, Bellingham, MA; Robert Gaiardelli, **WPC1HCC**, Harwich, MA; John Cooper, **WPC3JPC**,

Lebanon, PA; Tim Hagfors, **WPC1EZ**, Greenville Junction, ME; Daniel Amoroso, **WPC3DNC**, Media, PA; Edward Francisco, **WPC4JGE**, Salem, VA; John Mercer, Jr., **WPC7WY**, Riverton, WY; Sam Neal, **WPC5AF**, Cleveland, TX; Phillip Jacquart, **WPC1RCA**, Southbridge, MA; Rudolph Perme, **WPC8ISE**, Euclid, OH; John Marchand, **WPC1CWL**, Dracut, MA; Charlie Ronayne, **WPC1QZ**, Rindge, NH; Larry Ransom, **WPC0LPR**, Fruitland Park, FL; Jim Turner, **WPC4HTH**, New Market, VA; Mark Michel, **WPC9OP**, Neenah, WI; Kevin Dehne, **WPC9APE**, Sheboygan, WI; Jess Lewis, **WPC4GB**, Manchester, TN; Robert Ruckman, **WPC7RCR**, Kettering, OH; Vivian Wentworth-Kitson, **WPC6NWF**, Escondido, CA; Howard Johnson, **WPC1HBJ**, West Hazelton, PA; Bernard Fuller, **WPC3COL**, Saegertown, PA; Timothy Rogers, **WPC4TMR**, Knoxville, TN; Isabella Piso, **WPC1IDP**, Franklin, MA; Angela Piso, **WPC1AMP**, Franklin, MA; Richard Slover, **WPC4RS**, Knoxville, TN; Michael Hayes, **WPC6EWY**, Lincoln, CA; Larry Johnston, **WPC4SAT**, Tallahassee, AL; Ernie Blair, **WPC4BPS**, Huntsville, AL; Robert Hynd, **WPC5URL**, Arcadia, OK; Dave Fant, **WPC5DF**, Mulberry, AR; Jim Stevens, **WPC4JFX**, Sanford, NC.

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

— Jason Feldman, **WPC2COD**  
Director, PCMS Registration  
<[PopCommMonitor@gmail.com](mailto:PopCommMonitor@gmail.com)>

## Snap, Crackle, Pop . . . It's All About the Noise, Part II

By Tomas Hood,  
WPC7USA/NW7US

*“There are two sources of noise after dealing with man-made sources. We are left with atmospheric and cosmic noise.”*

Last month, we began to explore the question of noise by addressing local noise sources and how to isolate them. Once isolated, it could be possible to cure the problem.

There are many examples on the Internet of helpful resources for curing the problem of local noise. For instance, on the ARRL website at <http://g.nw7us.us/13oDKA8> you'll find a list of articles and links that you'll find useful. A Google search using either search phrase, “radio reception and noise,” or “curing local radio noise” yields a wealth of links that include

resources focusing on AM broadcast reception and the problems of local noise, as well as VLF radio reception.

This month, let's look beyond local noise generation. After dealing with local noise problems, how does noise affect radio signals? There are two other sources of noise: after dealing with man-made sources, we are left with atmospheric and cosmic noise.

• **Cosmic noise**, which originates at points outside of the Earth's atmosphere, doesn't contribute



**OUCH:** You can bet radio listeners in Denver heard loud and clear with this bolt of lightning, which lit up the night sky. (Courtesy of Wikimedia Commons)

much to the problem of radio signal reception.

• **Atmospheric noise** has a significant impact on the reception of a radio signal.

As we begin our look at atmospheric noise, it is most useful to look at the problem as an issue of effectiveness. Often, when people talk about radio reception, signal strength is touted as the most useful factor in the effort of getting a signal from the transmitter to the receiver. However, since the problem of reception is more complex than a simple power issue (just pump more watts into the antenna), the better way to get a handle on the problem is to use the Signal-to-Noise Ratio (SNR) measurement of a circuit (the path between, and including, the transmitter and receiver). The SNR is a good measure of effectiveness. With it, we can better understand how effectively a signal can get from point A to point B.

Take a look at the four sample radio circuit analysis graphs — **Figures 1a** through **1d**. These are all modeled on the software propagation tool, ACE-HF PRO <<http://g.nw7us.us/XOs2yo>> with isotropic antennas on both ends of the radio circuit, and the transmitter is running 100 watts.

Each graph shows the signal-to-noise ratio (SNR) in dB, on each of the standard amateur radio HF bands, at 2000 UTC, for February, between Washington state and Alaska. **Figure 1a** models the circuit with a Man-Made (MM) noise level of “remote” at the receiver (164-dBW-Hz, for 1 Hertz bandwidth at 3 MHz). Note that propagation is possible on a number of bands. The green color for a frequency band indicates that the circuit reliability is at least 80 percent. This means that for 80 percent of the month, statistically, the signal will be reliably received on this circuit.

Increase the MM noise by 10 dB, and

we see a slight degradation on the bands, but the same bands are mostly usable, **Figure 1b**. Increase noise by another 10 dB, however, and you can note a significant degradation in circuit quality on most bands, **Figure 1c**. Finally, increasing the noise level a full 24 dB over the remote level as shown, you can see severely limited circuit usefulness on any band, **Figure 1d**.

This means that with all parameters except noise staying the same (power, antenna, solar activity, azimuth, time-of-day), MM noise makes a very large difference in the quality of a circuit. Be careful not to generalize from that finding, as different circuits and different seasons would yield different data, I’m sure. The noise factor in these examples was based on MM sources. The other source of noise also plays the same way in a circuit’s usefulness.

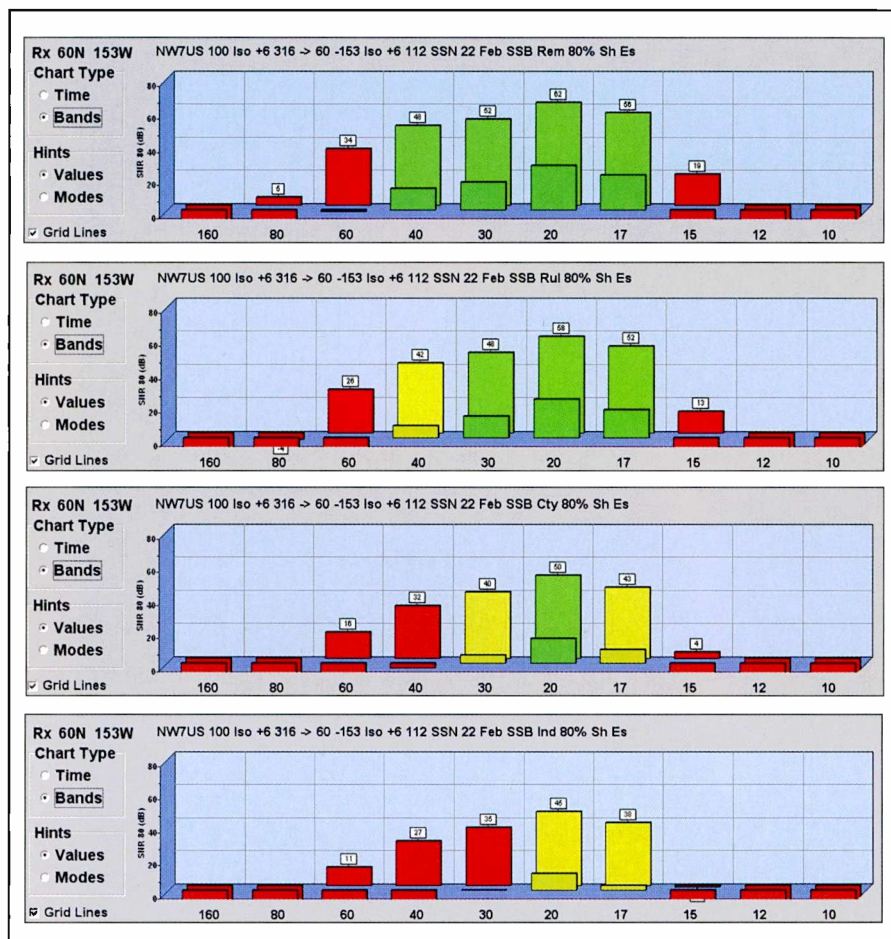
## Blame It on the Weather

All atmospheric noise is created by weather. More specifically, this noise comes from lightning flashes, with most of the noise caused by cloud-to-ground flashes because the currents in those strokes are much stronger than those of cloud-to-cloud flashes.

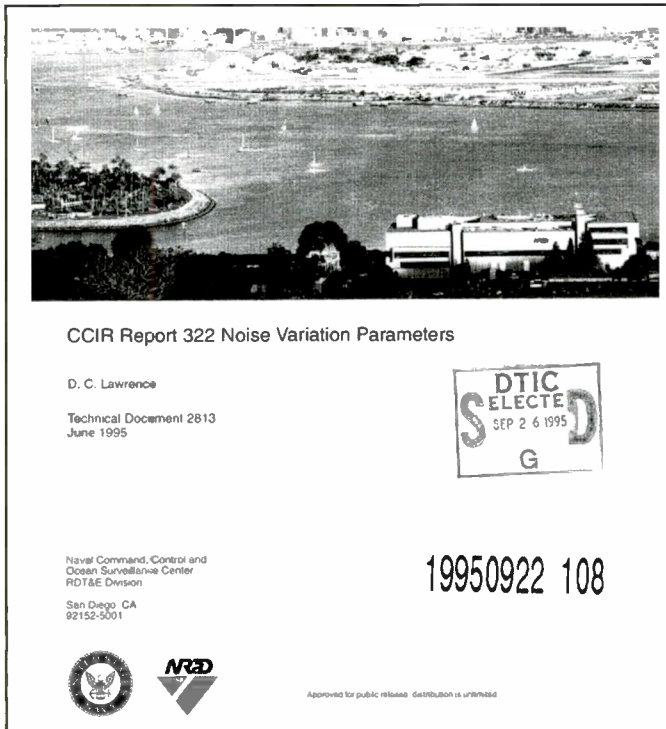
However, some energy from horizontal flashes gets converted into vertically polarized energy and adds to the total at the ground receiver. Horizontally polarized energy doesn’t propagate well to the surface, but is an important factor with airborne radio reception, such as used in trans-oceanic flights.

Worldwide, more than 8 million lightning flashes occur daily. That’s roughly 100 lightning flashes (with their resulting pulse of radio noise) per second. (**WATCH: NOAA slow-motion footage of the evolution of a lightning strike at** <<http://bit.ly/18kelsi>>. — KPC7USA)

If your receiver is very far away from most of the storm centers, you’ll only experience what is sometimes called “white noise.” Atmospheric noise is impulsive, though, and is not evenly distributed as is true white noise. White noise, when viewed on an oscilloscope is pretty evenly distributed, as would arise from cosmic “background” noise. A Gaussian distribution of most parameters usually follows a “normal” (or Gaussian) probability curve — often called a bell-shaped curve. But impulsive noise is just that — *impulsive*. If you view it on a scope, it looks like short-lived pulses rising out of an even bed of background noise.



**Figures 1a through 1d.** Four sample radio circuit analysis graphs, each modeled with isotropic antennas on both ends of the radio circuit, and with the transmitter running 100 watts. Each graph shows the signal-to-noise ratio (SNR) in dB on each of the standard amateur radio HF bands, at 2000 UTC, for February, between Washington state and Alaska. Clearly, noise makes a difference. (See text). (Courtesy of NW7US, using ACE-HF PRO software <<http://hfradio.org/ace-hf>>)



**Figure 2.** CCIR 322, which summarizes the vast amounts of raw data on noise, <<http://1.usa.gov/17vCI7W>>, has been updated several times. The latest version is the CCIR 322-3.

Atmospheric noise, then, is the combination of many, many lightning flashes. Radio scientists model each thunderstorm center as a radio transmitter, usually called an “Equivalent Noise Transmitter” or ENT. Such energies then propagate around the world just like international broadcast radio transmissions. At a receiver we can then add up all of those energies propagated from worldwide storm centers. We find that the amount of that power-sum varies with seasons and with the nearness of the major storm centers.

### The Initiative to Quantify the Problem

Starting in the 1960s and continuing through the 1980s, a worldwide effort was made to measure all of this. The result was the CCIR 322 publication, **Figure 2**, which has been updated several times. The latest version is the CCIR 322-3, which summarizes the vast amounts of raw data on noise, <<http://1.usa.gov/17vCI7W>>.

A reader of the publication will quickly note that frequency plays a great part in HF communication from a noise standpoint. Lightning creates a broad-spectrum emission, but in the high-frequency range, it is frequency dependent, with noise power decreasing as frequency increases. In VLF work, atmospheric noise dominates nearly completely (assuming an electromagnetic interference-clean local environment and EMI-clean radio components). At HF, however, MM noise is a large part of the total energy in the high bands.

### Patience Is a Virtue

When the question is asked, “When will good propagation occur?” the reader should look at more factors than just concentrating on the space-weather disturbed environment. The other factors that affect propagation are radio circuit path

length and orientation, frequency, diurnal effects, as well as the transmitter power and antenna gain, and the parameters of the receiving station. Space weather and geophysical (weather, geomagnetic field, location) factors are not changeable by the average radio hobbyist (but, if you were God, perhaps you could tweak conditions). The rest of these factors are the parts you can control.

The principal effect is always propagation itself, which is the result of ionospheric profiles that vary over the world as the day-night terminator sweeps through — and that cannot be controlled by the radio operator.

### Crunching the Numbers

One might start by running propagation analysis tools — such as ACE-HF <<http://g.nw7us.us/XOs2yo>> — to see how different the ionosphere is between steady-state daytime and nighttime, and how that affects reception on simple circuits, **Photo A**.

ACE-HF defines the most reliable mode at every time of the prediction. You might not need the power of a computer propagation tool like ACE-HF to see what happens in cases where the radio circuit exists completely in either a day or night ambient environment. But, when the circuit crosses the terminator and part is in day and part in night the problem gets harder, and using computer modeling to sort out all the variables is about the only practical solution.

So we ask again: “When will good propagation occur?” ACE-HF will show you, and will sort out the best frequencies to use, regardless of environmental conditions. ACE-HF PRO includes very powerful Shortwave Listening tools and features.

Using ACE-HF, a selected radio circuit can be defined, and then an analysis of the effect of noise can be made. Change out different antenna models, and see what that does to your reception. After you begin to understand the way these factors influence radio propagation, then you can begin playing with the differences caused by the range of Smoothed Sunspot Numbers (SSN), the month, and so on. Using the powerful modeling tools of ACE-HF (like the animated maps that show the hour-by-hour coverage of a transmitted signal) one can quickly see that generalized “rules of thumb” about sunspots are often overly simplified. While low SSNs are usually worse, some frequencies favor lower SSNs while others favor higher SSNs. It all depends on time-of-day, season, circuit position, and so on.

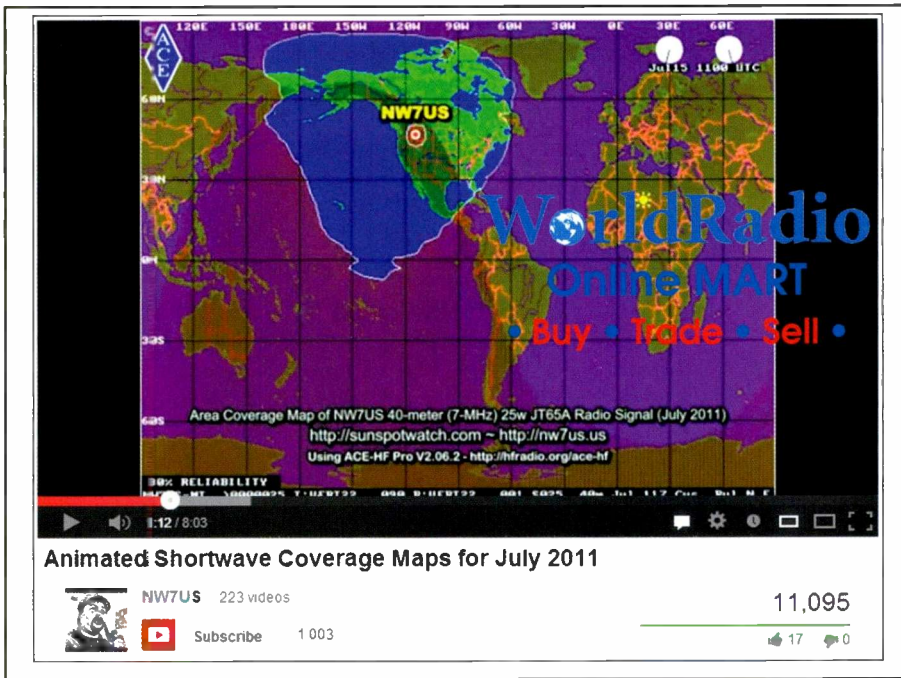
### View from Above

So now we have progressed a long way into understanding “when good propagation will occur.” And we haven’t touched on the disturbed environment. What then about A and K indices, solar flux, solar flares, geomagnetic fields, and so on? I suggest that to emphasize those factors alone is a mistake, because ACE-HF and other propagation tools that use the Voice of America VOACAP engine — which is keyed to the CCIR data <<http://www.greg-hand.com/hfwin32.html>> — have built-in compensations for such factors. This is where statistics comes in.

The reason is that VOACAP was calibrated through measurements made during a wide range of environmental conditions, so that the resulting SNR distributions implicitly include the effects of a range of disturbed conditions. The range of environmental effects is built into the model, and shows up in the statistical factors. Since VOACAP was validated through so many years of testing, and is generally acknowledged to be the







**Photo A.** By running propagation analysis tools — such as ACE-HF <<http://g.nw7us.us/XOs2yo>> — you can see how different the ionosphere is between steady-state daytime and nighttime, and how that affects reception on simple circuits. (Internet screen grab <<http://bit.ly/101emwK>>)

“gold standard” of propagation models, it’s a relief to know how easy it is to use with confidence. From a radio hobbyist standpoint, it is much easier to use tools based on VOACAP, like ACE-HF, than other models where such factors must be laboriously worked out and inputted.

## Looking Ahead

In upcoming issues, *The Propagation Corner* will dig deeper into propagation tools, such as ACE-HF. We’ll explore how to use these tools to begin unlocking the science of radio propagation at HF. More than ever before, with powerful computers available for reasonable prices, and with affordable tools, any radio hobbyist can begin to make sense of all these factors that play a role in radio communications on HF.

## HF Propagation for July

We can expect poor to fair openings into most areas of the world throughout the day on 22, 19, and 16 meters, for those of us in the lower latitudes. At higher latitudes (above 40 degrees), these openings are a bit less frequent, and tend to be weaker.

Through the summer, you can expect propagation between north and south regions during the daylight hours. Nineteen and 16 meters will be the strong day-

time bands, with 19 remaining a popular band throughout the year. Reception of stations located in tropical or equatorial areas may be possible well into the hours of darkness. For distances between 800 to several thousand miles, expect exceptionally strong signals. Multi-hop signals will be observed.

Thirty-one meters is a year-round power band with outstanding domestic and international paths, around the clock. During periods of low geomagnetic activity this summer, this band may offer long distance DX all through the night.

Forty-one and 49 meters offer domestic propagation during daylight hours and somewhat during the night. The tropical bands (60, 75, 90, and 120 meters) are not noticeably affected by the solar flux, but are degraded during geomagnetic storminess. Through the summer, expect these bands to be more challenging, though less this year than last year.

Overall, daytime bands will open just before sunlight, and last a few hours after dark. Look higher in frequency during the day, as these frequencies will be less affected by any solar storms occurring, and more broadcasters have transmissions in these upper bands.

## VHF Conditions

The summertime Sporadic-E ( $E_s$ ) season for the Northern Hemisphere will be

## Licensed Before 1988?

QCWA invites you to join with those distinguished amateurs licensed 25 or more years ago. Request an application from:

QCWA, Inc., Dept. PC  
8400 NW 115th Avenue  
Ocala, FL 34482-1098  
USA  
[www.qcwa.org](http://www.qcwa.org)

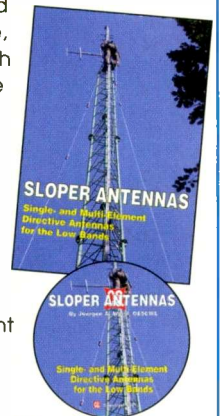


## SLOPER ANTENNAS

By Juergen A. Weigl, OE5CWL

Single- and Multi-Element Directive Antennas for the Low Bands

With calculations and practical experience, this book shows which basic concepts have to be considered for sloper antennas for the low bands. These fundamentals are supplemented by construction guidelines for directive antennas using a single element or several elements.



Also available on CD!

6 X 9 Paperback \$24.95

New! CD Version \$18.95

Buy both for only \$36.95

**Shipping & Handling:** US: \$7 for first item, \$3.50 for 2nd, \$2 for each additional. CN/MX \$15 for first item, \$7 for 2nd, \$3.50 each add'l. Other Countries: \$25 for first item, \$10 for 2nd, \$5 each add'l.  
**CD Only - USA** \$5 for one \$3 each add'l; CN/MX \$10 for one \$7 each add'l; Other Countries: \$15 for one \$10 each add'l.

**Book & CD to a single address = ONE item!**

CQ Communications, Inc.

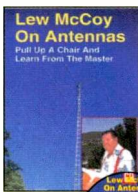
25 Newbridge Rd, Hicksville, NY 11801  
<http://store.cq-amateur-radio.com>

Order today! 800-853-9797



# BOOKS

Back by popular demand!



## Lew McCoy on Antennas

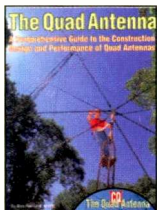
by Lew McCoy, W1ICP

Unlike many technical publications, Lew McCoy presents his invaluable antenna information in a casual, non-intimidating way for anyone!

8.5 X 11 Paperback \$19.95

New! CD Version \$14.95

Buy both for only \$29.95



## The Quad Antenna

by Bob Haviland, W4MB

A comprehensive guide to the construction, design and performance of Quad Antennas. Chapter titles include General Concepts, Circular-Loop & Arrays, Rectangular & Square Loops, Multi-Element Quads, Delta Loops & Arrays, Design Variations, Optimizing a Quad Design and more!

8.5 X 11 Paperback \$19.95

New! CD Version \$14.95

Buy both for only \$29.95

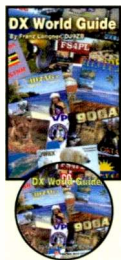


## The Vertical Antenna Handbook

by Paul Lee, N6PL

You'll learn basic theory and practice of the vertical antenna. Discover many easy-to-build construction projects.

6 X 9 Paperback \$17.95



## DX World Guide

by Franz Langner, DJ9ZB

This 384-page DXer's guidebook is the first edition using color throughout and the first to be entirely in English. Includes info on well over 300 DX entities. Geographical info, WAZ and ITU zones, ITU callsign allocations, amateur prefixes and more!

6 X 9 Paperback \$42.95

New! CD Version \$22.95

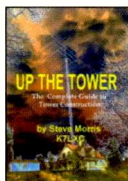
Buy both for only \$60.95

## Up The Tower

The Complete Guide to Tower Construction

by Steve Morris, K7LXC

A highly experienced professional tower installer, Steve has over 25 years of tower experience on over 225 amateur radio installations as well as dozens of commercial sites and has a rich background of tower and antenna construction.



6 x 9 Paperback \$35.00

**Shipping & Handling:** US: \$7 for first item, \$3.50 for 2nd and \$2 for each additional. CN/MX \$15 for first item, \$7 for 2nd, \$3.50 for each add'l. All Other Countries: \$25 for first item, \$10 for 2nd, \$5 for each add'l.

**CD Only:** USA \$5 for one \$3 each add'l; CN/MX \$10 for one \$7 each add'l; All Other Countries: \$15 for one \$10 each add'l.

Book & CD to a single address = ONE item!

CQ Communications Inc.

25 Newbridge Rd., Hicksville, NY 11801

516-681-2922; Fax 516-681-2926

Order Toll-Free 800-853-9797

<http://store.cq-amateur-radio.com>



quite active through July. Usually these E<sub>s</sub> openings are single-hop events with paths up to 1,500 miles, but July's E<sub>s</sub> events, like June's, are often double-hop. Look for HF openings on the higher frequencies, as well as on low-VHF, throughout the day. Don't forget to check during the night hours, too. Be sure to check out *CQ VHF* for details regarding VHF propagation through the spring and summer.

## Current Solar Cycle 24 Progress

The Royal Observatory of Belgium, the world's official keeper of sunspot records, reports a monthly mean sunspot number of 57.9 for March 2013, up from 38.0 for February, yet still lower than 62.9 for January. The low for the month was 22 on March 26. The high of 91 occurred on March 14. The mean value for March results in a 12-month running smoothed sunspot number of 58.1 centered on September 2012. Following the curve of the 13-month running smoothed values, a smoothed sunspot level of 81 is expected for July 2013, plus or minus 12 points.

Canada's Dominion Radio Astrophysical Observatory at Penticton, British Columbia reports a 10.7-cm observed monthly mean solar flux of 111.2 for March 2013, up from February's 104.4. The 12-month smoothed 10.7-cm flux centered on September 2012 is 118.9, nearly the same as in August when it was 119.2. A smoothed 10.7-cm solar flux of about 134 is predicted for July 2013.

The geomagnetic activity as measured by the planetary-A index (A<sub>p</sub>) for March 2013 is 7.8. The 12-month smoothed A<sub>p</sub> index centered on September 2012 is 7.8. Geomagnetic activity should be much the same as we had during June. Refer to the Last Minute Forecast published in *CQ* magazine or on the author's website <<http://SunSpotWatch.com>> for the outlook on what days that this might occur.

## I'd Like to Hear From You

I welcome your thoughts, questions, and experiences regarding this fascinating science of propagation. You may email me, write me a letter, or catch me on the HF amateur bands. On Twitter, please follow <@NW7US> and if you wish to have an hourly automated update on space weather conditions and other radio propagation-related updates, follow <@hfradiospacewx>.

I invite you to visit my online propagation resource at <<http://sunspotwatch.com>>, where you can get the latest space data, forecasts, and more, all in an organized manner. If you are on Facebook, check out <<http://www.facebook.com/spacexw>>, hfradio> and <<http://www.facebook.com/NW7US>>.

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

Until next month,

73, Tomas, NW7US  
P.O. Box 27654  
Omaha, NE 68127  
<[nw7us@nw7us.us](mailto:nw7us@nw7us.us)>  
<@NW7US>  
<@hfradiospacewx>

# In Sri Lanka, Ekala's Lone Mission May Be to Relay VOA and Other U.S.-Run Broadcasters

by Gerry L. Dexter,  
WPC9GLD  
<gdex@wi.rr.com>

*“Sometimes you can tell a lot from what international shortwave stations program — or don't air at all.”*

**L**ast month I talked about the worsening state of the Ekala transmitting site in Sri Lanka and worried as to how a potential shutdown might affect things. *Well, now we know.*

The SLBC is dropping the use of that site in favor of broadcasting via the former Deutsche Welle relay site at Trincomalee. So it seems that Ekala will be reduced to *just* serving as a relay point for the Voice of America and the other broadcasts of U.S. government-run broadcasters.

## The Korean Peninsula

Have you tuned in the **Voice of Korea** recently? Lately there *have* been reports of sudden dropoffs, signal losses, or just plain non-appearances of the station and its cousin the Korean Central Broadcasting Station (KCBS). Both appear to be having technical problems. That may be due to the process of putting in the new transmitters Pyongyang has acquired from China — or it may be caused by a growing shortage of electrical power. (**NOTE:** *Probably you've seen the famous photo “North Korea at night,” which shows the northern half of the peninsula completely dark while the southern half is ablaze with light and life.* — WPC9GLD)

Sometimes you can tell a lot from what inter-

national shortwave stations program or don't air at all. Back in the days of the Soviet Union when **Radio Moscow** began playing all classical music instead of its regular programming you could be sure it was getting ready to announce the death of their president or some other major shuffle had taken place within the Politburo. When some small African country's government station suddenly went quiet you *almost knew* a revolution was underway.

Considering such history and tendencies, it might not be a bad idea to make a practice of monitoring signals from North Korea. (**LISTEN:** *For frequencies and times of shortwave broadcasts from North and South Korea, see this month's World Band Tuning Tips on page 42.* — WPC9GLD)

## Shortwave Newslines for July

Bolivia's **Radio Panamericana** has become active again. It's now scheduled from 1000 to 0300 in SS on slightly variable 6105.

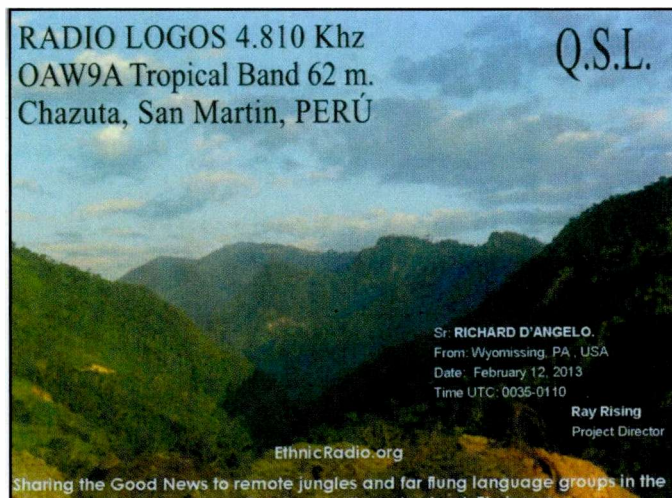
**Radio Cultura** in Cuiaba, Brazil, is also reactivated on 5015. It carries the “*A Voz da Libertacao*” program around the clock.

The opposition broadcaster **Radio Free Sarawak**, targeting Malaysia, has announced that it will now use 9900 on a permanent basis, with programs beginning at 1100.

It appears that Britain's **Skelton transmission site** is to be cut back, if not completely silenced. Now that the A-13 season is in full swing, more than 21 weekly transmission hours once used by Skelton have now been moved to Wooferton. Those include **KBS** (South Korea), **FEBA Radio** (Philippines) and several BBC languages. In addition the **Rampisham facility** is in the process of being demolished and its shortwave use has been nearly eliminated. The operator, Babcock International, seems to be wasting no time in its race to obliterate much of the BBC's facilities. And while I'm at it, the **BBC's Middle East relay station** at Limassol, Cyprus, has also been axed.

## COPS: A New Sheriff's in Town

Congratulations to **Steven Handler**, of Buffalo Grove, Illinois, on becoming *Pop' Comm's* new Clandestine-Opposition-Pirate-Spy



Peruvian Radio Logos, (4810) from the town of Chazuta QSL'd Rich D'Angelo recently.



NDR (North German Radio) confirmed D'Angelo's reception with this nice view of Hamburg.

radio columnist — or **COPS**, for short. I'm sure he will welcome logs and news items on such stations, *as do I!*

Steve has been around the hobby awhile and earlier edited a loggings column for NASWA — the North American Shortwave Association, <<http://www.naswa.net>>. He is a regular and welcome reporter to this column, as well, and publisher of *Just the Fax* and the *Utility QSL Address Book* <<http://www.shortwavereport.com/books>>, which I reviewed a few months back.

## What Have You Been Hearing?

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

Also needed are spare QSLs or good copies you don't need to be 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 way beyond time your photo graced these pages!

## July's Shortwave Logs

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

**ALASKA**—KNLS-Anchor Point, 9615 at 1245 ending an interview, then W with ID at 1236 and M with a talk on Saint Augustine, then a brief hymn and pgm on Bible archaeology at 1249. (Coady, ON) 9615 at 1400 with IS, ID and anmts in CC. The EE hour (1200-1300) not heard on this date. (Sellers, BC)

**ANGOLA**—Radio Nacional, 4949.7 at 0144 with W and phone interview to 1057 when they went into African hi-life vocals, time pips at 0200 and Radio Nacional ID, then news in PP. (Coady, ON)

**ANGUILLA**—University Network, 11775 with Pastor Scott at 1215. (Maxant, WV)

**ARGENTINA**—Radio Argentina al Exterior, 11710.7 at 0200 with time pips, station info loop in SS to 0202, then M with *The English Connection*, f/by pgm highlights and contact info to 0207 when they went into LA vocals. (Coady, ON)

**ASCENSION ISLAND**—BBC-South Atlantic Relay, 7435 at 0310 with EE news features, ID at 0330 f/by news. (D'Angelo, PA) 11810 at 2040 on the U.S. Border Patrol. (Brossell, WI)

**AUSTRALIA**—Radio Australia, 5995-Brandon at 1147 with piano music, //6020, 9475, 9580 and 11945. (Handler, IL) 6140 via Singapore with a current events pgm at 1130, but seemed under-modulated. (Barton, AZ) 9580 at 1230 with an interview about Fiji politics, 11945 with country songs at 1445, 15515 with soccer game coverage at 0335. (Maxant, WV) 11660 with news headlines at 1440, 15230 at 2229 with promos and live soccer coverage. (Brossell, WI) 11945 at 1110 with a news and current events pgm, 21740 at 2210 with an interview. (Coady, ON) 12080 with soccer coverage at 1157 (using a WinRadio DRM decoder). (Rippel, VA)

Northern Territory SW Service: VL8K-Katherine 2485 at 1100 with M talk. (Sellers, BC) 1300 with world news. (Brossell, WI) VL8T-Tennant Creek 2325 at 1210-1220 with excerpts of EE talk. (Sellers, BC) 1120 with sports discussion buy M, but fading fast. (Rippel, VA)

**AUSTRIA**—Trans World Radio, 7225 in Polish at 0650 with a religious talk, brief music, and IS. Went off at 0700. (Coady, ON) 9830 at 2119 with African-accented M in EE preaching f/by contact info at 2126. (Sellers, BC)

Radio Symban, (p) 2368.5 with pops at 1327 continuing through the bottom of the half hour, although weakening as the sun rose. (Sellers, BC)

**BANGLADESH**—Bangladesh Betar, 15105 at 1256-1300\* with some flutter. Music, man with EE ID and closedown anmts, f/by time pips, and carrier termination. 15505 at 1356-1430\* with O/C, f/by IS, TOH time pips, W opening the Urdu service after brief music, W again with news, W with sign off anmts at 1429. (D'Angelo, PA) 1415-1429\* in (I) Urdu with several songs, W presenter, full ID and contact details at sign off. Good signal, with audio hum. (Handler, IL)

**BOTSWANA**—VOA-Botswana Relay, Mopeng Hill, 4930 at 0335 with *VOA News Now*. (Coady, ON) 0330 with world news. (Brossell, WI)

**BOLIVIA**—Radio Lipez, Uyuni, 4795.8 at 0950-1015 with M in SS. It's been a near regular lately. (Wilkner, FL)

Radio San Jose-San Jose de Chiquitos, 5580.2 at 0000-0025 with M in SS and music. (Wilkner, FL)

Radio San Miguel-Riberalta, 4699.9 at 0141 in SS with M and an impassioned preacher. (Coady, ON) 0958 with a vocal to 1015. (Wilkner, FL)

Radio Yatun Ayllu-Yura, Yura, 4716.6 in SS at 0000-0010 strong with music. (Wilkner, FL)

Radio Santa Ana-Santa Anta del Yacuma, 4451.2 at 0000-0020 fair in SS. Best in USB. (Wilkner, FL)

Radio Panamericana-La Paz, 6105.4 in SS talk at 1050-1100, hetting with Taiwan. (Wilkner, FL)

Radio Fides-La Paz, 6155 at 1055-1115 — best ever with CP music and unintelligible ID. (Wilkner, FL)



Pirate Hard Tack Radio added another QSL to the D'Angelo collection for his reception on 6925.

## Help Wanted

We believe the Global Information Guide — month after month — offers more logs than any other monthly SW publication! (Nearly 300 shortwave broadcast station logs were processed this month) Why not join the fun and add your name to the list of GIG reporters? Send your logs to Gerry Dexter, Global Information Guide, 213 Forest St., Lake Geneva, WI 53147 or email them to me at <gdex@wi.rr.com>. See the column text for formatting suggestions.

*\*Not all logs submitted are used. There are usually a few which are obviously inaccurate, unclear, or lack a time or frequency. Also discounted are unidentified, duplicate items (same broadcaster, same frequency, same site), and questionable logs. — WPC9GLD*

### BRAZIL—(all in PP – gld)

Radio Rural-Santarem, 4765 (p) at 0155 with W talk, Brazilpops, M/W talk and string of promos. Into possible news at 0209. (Coady, ON)

Radiodifusora Roraima-Boa Vista, at 0234 with Brazilpops and ballads. (Coady, ON) 1015 with a vocal and time check at 1025. (Wilkner, FL)

Radio Clube do Para-Belem, 4885 at 0336 with two M and excited talk in front of a live audience. (Coady, ON) 0520 with ballads, some EE lyrics. (Wilkner, FL)

Radio Novo Tempo-Campo Grande, 4895 with W ballad, M in brief talk then a string of ads and promos then another ballad at 0218. (Coady, ON)

Radio Daqui-Goiania, 4915 at 0420 with mix of Brazilian ballads and Brazilpops, no anmts to 0451 then Bryan Adams hits. (Coady, ON)

Radio Inconfidencia-Belo Horizonte, 6010 with an apparent roundtable discussion, then a talk by a W over classical music. (Coady, ON)

Radio Aparecida, Aparecida, 11855 at 0047 with M talk, W ancr at 0058 with ID, M and several anmts and promos, time pips at 0199, f/by M with more talk. (D'Angelo, PA)

CANADA—CFRX-Toronto, 6070 with a sports interview at 0340. (Maxant, WV)

CFVP-Calgary, 6030 at 2135 with country selections, time check and ID, //1060. (Sellers, BC)

CKZN-St. John's (Newfoundland), 6160 at 0320 on future plans of NASA. (Maxant, WV) 2208 on trade with China. (Brossell, WI) Bible Voice Broadcasting, 15470 (via Wertachtal – gld) ancing a Canadian address. (Maxant, WV)

COLOMBIA—Alcaravan Radio-Puerto Lleras, 5910 at 0325 with M and long SS talk with ID, f/by music and formal ID. (D'Angelo, PA) 0502 with M in SS talk, ID and into LA ballads. (Coady, ON)

La Voz de su Concencia-Puerto Lleras, 6010 at 0355 with similar pgm to Alcaravan. Long SS talk, brief instl music, ID, and another talk in SS. (D'Angelo, PA)

CHINA—China Radio International-Shijiazhuang, 6020 at 2237-2259\* with W in SS talk hosting a pgm of Chinese music. Off at 2259 in mid-song, 11790-Xi'an at 0024-0059\* with W hosting pgm of news features and brief music segments. Poor, and almost gone by closedown. (D'Angelo, PA) 9440 in (l) Mandarin at 1153. (Brossell, WI) 11885-Xi'an at 0050 with M/W EE co-hosts, 13580-



## Hobby Books and Cds!

### Reflections III

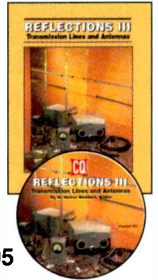
by Walt Maxwell, W2DU

All the info in Reflections I and II and more! This completely revised and updated, 424-page 3rd edition is a must-have!

8.5 X 11 Paperback \$39.95

New! CD Version \$29.95

Buy both for only \$59.95



### The Quad Antenna

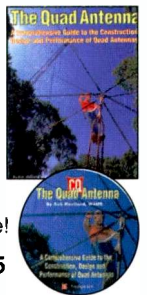
by Bob Haviland, W4MB

Comprehensive guide to the construction, design and performance of Quad Antennas. General Concepts, Circular-Loop & Arrays, Rectangular & Square Loops, Multi-Element Quads and more!

8.5 X 11 Paperback \$19.95

New! CD Version \$14.95

Buy both for only \$29.95



### The NEW Shortwave Propagation Handbook

by W3ASK, N4XX & K6GKU

This authoritative book on shortwave propagation is your source for easy-to-understand information on sunspot activity, propagation predictions, unusual propagation effects and do-it-yourself forecasting tips.

8.5 X 11 Paperback \$19.95

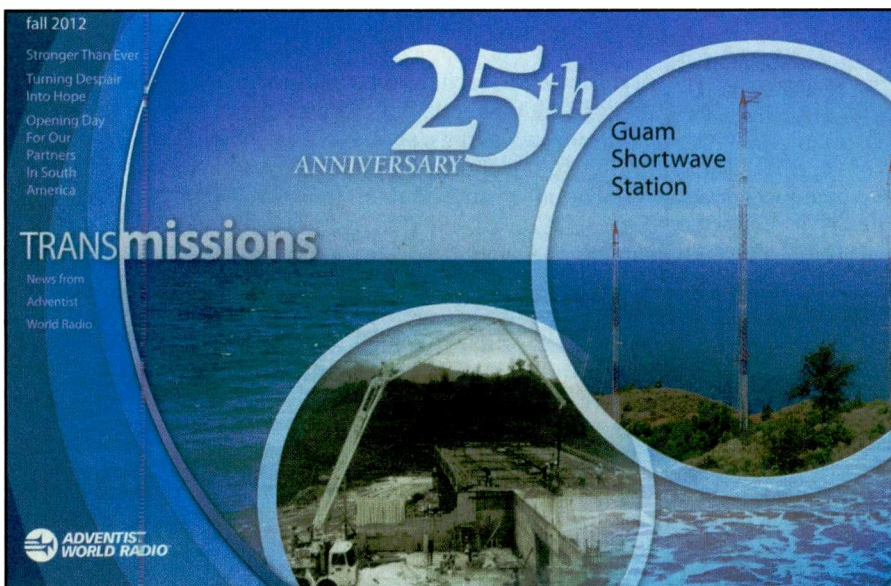
New! CD Version \$14.95

Buy both for only \$29.95



Shipping & Handling: USA - \$7 for 1st book, \$3.50 for 2nd, \$2 for each additional. CN/MX - \$15 for 1st, \$7 for 2nd, \$3.50 for each additional. All Other Countries - \$25 for 1st, \$10 for 2nd, \$5 for each additional.

**CQ Communications Inc.**  
25 Newbridge Rd., Hicksville, NY 11801  
516-681-2922; Fax 516-681-2926  
<http://store.cq-amateur-radio.com>



Adventist World Radio celebrated a quarter century of their station on Guam with this pamphlet.



The VOA Relay station at Delano, CA many years ago. The QSL card has a paste-over that says that info on the specific site used is "not available." I'll say! (Courtesy of John Miller)

Xi'an? in VV at 0020, 13650 via Cuba opening at 2300 and clobbered by OTH radar bursts. (Barton, AZ) 9460-Kashi at 1218 with M interviewing a Chinese professor on China's Social security system. (Coady, ON) 9570 via Cuba at 1240. (Maxant, WV) 11980-Kunming at 1312 on China real estate investment. (Handler, IL)

China National Radio/CPBS, CNR-1, 4905 (Xizang PBS) at 0005 with W in a domestic language. (Wilkner, FL) 4940 (Voice of the Strait) in CC with W and jazz at 1242. (Sellers, BC) 7410-Beijing in Mandarin at 1144. (Brossell, WI) 11710-Shijiazhuang at 2216 with CC talk and brief music segments between talks. (D'Angelo, PA) 11945 (site?) at 1600 in (p) CC with W talk over music, numerous //s including 7415 and 7445. (Barton, AZ)

**DIEGO GARCIA** — AFN/AFRTS, 4319u with news items and a utility beep on top. (Wilkner, FL)

**DJIBOUTI** — Radio Djibouti, 4780 at 0300-0330 with AA talk. Poor to occasionally fair. (Wilkner, FL) 0349 in AA with W leading children in a traditional song, M with brief talk then HOA instl at 0403. (Coady, ON)

**ECUADOR** — HCJB Global via Wertachtal at 2311 in GG. (Brossell, WI)

Radio Oriental, Tena, 4781.7 at 1107 with loud and clear vocal in SS. (Wilkner, FL)

**ENGLAND** — BBC-Oman Relay, 5905 with news, 17640 via South Africa with news at 1804. (Brossell, WI) 6040-Cyprus Relay at 0355-0359\* in the AA service with M/W hosting features (some in EE before the translation analysis began). Off at 0359 after brief instl music. (D'Angelo, PA) 12015 via South Africa at 0434 with the balance being EE talk features on income tax policies. (D'Angelo, PA) 0414 with a *Newsday* interview on the abdication of Pope Benedict, and 15755-Thailand Relay with time pips and a promo for *World Briefing*, //15335 (Singapore). (Coady, ON) 15710 Cyprus in listed Dari with M presenter and some sort of promo using musical bridges, then a different M host. (Handler, IL) 17640-South Africa relay at 1817-22 with M host talking to a W guest. (Handler, IL) 21470 (Cyprus Relay - gld) and selections of African tribal chants. (Maxant, WV)

**EGYPT** — Radio Cairo, 11890 with news to 2138 than into AA music. (Sellers, BC)

**EQUATORIAL GUINEA** — Radio Africa-Bata, 15189.9 at 1856 with a hymn and into M/W preaching. Another pgm began at 1901. (Coady, ON)

**ERITREA** — Voice of the Broad Masses (2<sup>nd</sup> pgm), 4700 at 0414 in presumed Amharic with HOA vocals and M with a talk at 0418. //7175. Also, 9705 at 0418 in a local language with HOA vocals, M with a talk at 0424 and then more HOA vocals, //7180. (Coady, ON)

**FRENCH GUIANA** — Radio France International-Montinsery Relay, 21690 in FF at 1705 with M/W doing news in FF and a mention of *La Magazine France*. (Coady, ON)

**GABON** — Africa No. One, 9580 at 2235 with W in FF hosting music pgm, M with news and many remote reports. Poor to fair with a bad hat which disappeared at 2301. (D'Angelo, PA)

**GERMANY** — Radio Oeoemrang, 15215 via Wertachtal at 1637-1700\* with their annual bcst in Lower GG including an interview with many EE translation snippets. Closed at 1657 with ID "Hello, this is Radio Oeoemrang, the Voice of the 'freisian ... Aamrum ... 15215 ... 1100 New York Time ... 1600 UTC ... 1700 (Germany?) Goodbye until next year. I am ... presenter of this broadcast." (D'Angelo, PA)

Deutsche Welle-Rwanda Relay, 12070 in (l) Swahili at 1542 and 17800-Rwanda at 1808 with talks in (l) Hausa. (Brossell, WI) 17800-Rwanda at 1823 in (l) Hausa with M speaking to a male guest. (Handler, IL)

**GUAM** — Adventist World Radio/KSDA, 9880 in KK with M/W vocal and W with talk and a mention of AWR and their website. (Coady, ON) 9910 at 1223 to close at 1227 with several IDs in Mandarin. (Handler, IL) 1226-1227 in Mandarin just prior to sign off. (Wilkner, FL) 15320 in EE at 2355 with M/W doing wrap up closing out the hour. (Barton, AZ)

Armed Forces Network, 5765 at 1039. (Wilkner, FL) 1335 with an off-beat news items, promo for the *Chicago Fire* TV show. (Sellers, BC)

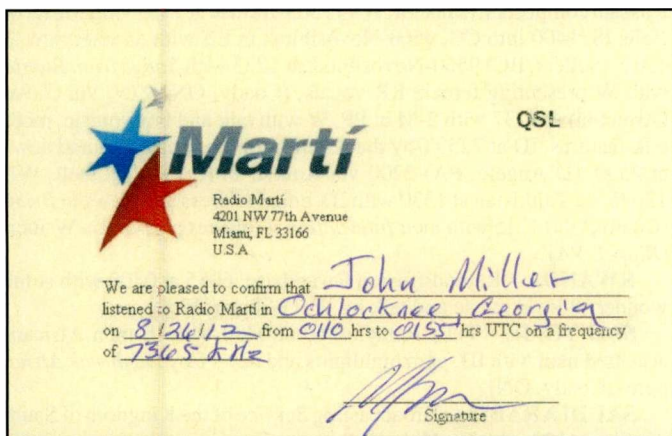
**GUATEMALA** — Radio Verdad-Chiquimula, 4055 with religious hymns at 1055 in SS. (Barton, AZ) 1040 with an EE preacher. (Wilkner, FL)

**INDIA** — All India Radio-Thiruvananthapuram, 5010 at 0028 with usual IS, anmts at 0020 and into short talks by W, sub-continental music at 0222. (Rippel, VA) 9870-Bengaluru at 1625 in Hindi with interesting vocals. (Barton) 11670-Bengaluru at 2107-2230\* with EE comments on Nepal, f/by ID for General Overseas Service, pgm preview, Indian instl music. Closed at 2230 with W giving times and frequencies of their broadcasts. Also, 11740-Panaji (Goa) at 0049-0110\* with M/W talk in (l) Sinhalese f/by Hindi vocals. (D'Angelo, PA) 11670 with EE pgm lineup f/by sub-continental music. (Sellers, BC) 11670 (Bengaluru - gld) at 2130, 13710 (Bengaluru - gld) with music and into world news. (Maxant, WV) 1369-Bengaluru at 1123 in Tamil with songs, //15050-Delhi, 15050-Delhi in (l) Tamil at 1123-1126. 13695 and 17510. (Handler, IL) 15040-Delhi at 1240-1250 in (l) Burmese with song intros. (Handler, IL) 1258 in (l) Burmese with W presenter. (Handler, IL) 15175-Panaji (Goa) at 1549 with talks in (l) Gujarati. (Brossell, WI)

## This Month's Winner

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

This month's prize winner is **Mark Taylor**, Madison, WI, who collects a copy of Joe Carr's *Loop Antenna Handbook (Your Guide to Large and Small Loop Antennas for Transmitting and Receiving)* from Universal Radio — your first rate source for SWL and related equipment. Everything from antenna wire to books on how to put them up — to the receivers to which you can hook them is at Universal's superior store at 6830 Americana Parkway in Reynoldsburg, Ohio. If you can't visit them in person then check their website <<http://www.universal-radio.com>> or call them at (614) 866-4267 to request a copy of their giant catalog. It's a "read" in itself.



The IBB's Radio Marti service to Cuba confirmed John Miller's 2012 reception on 7365.



Steven Handler, *PopComm's* new columnist covers opposition, pirate, numbers stations, and other intriguing broadcasters.

TWR India, 15755 via Kishinev in listed Hindi at 1315-1319 in apparent sign on in Hindi. W then M talk with a music selection. (Handler, IL)

Athmeeya Yatra Radio, 15150 via Sri Lanka at 1604 in (I) Awadhi with a M in religious talk and a Hindi-like hymn at 1612. Into listed Hindi at 1615. (Coady, ON) 1545 in presumed Pashto-Dari beamed to Afghanistan. (Brossell, WI)

**INDONESIA**—Radio Republik Indonesia-Palangkaraya, 3325 at 1303 with II pops, M ancr. (Sellers, BC) 4750-Makassar in II at 1236 with M in II, possible religious message in AA at 1245. (Sellers, BC) 4789.8-FakFak at 1050 with long talks by M, but fading fast. (Rippel, VA)

**IRAN**—Islamic Republic of Iran Broadcasting, 5950 in listed Bosnian at 2150. (Brossell, WI)

**ISRAEL**—Galei Zahal, 6885 in HH at 0254 with a number by Al Stewart, ads or promos at 0258, and W with apparent news at 0300. (Coady, ON) 0352 with M/W in HH, light guitar, more talk and some vocals, fanfare at 0400, ID and news. Returned to music pgm at 0403. (D'Angelo, PA)

**JAPAN**—Radio Japan, 9835 at 1730 with M offering jazz. Also, 13650 with W and music pgm at 2330. Closed after TOH. I usually have CRI via Cuba here at this hour but was a no-show today, allowing good reception of NHK. (Barton, AZ) 15445 via Wertachtal with U.S. pops at 1753, 15720 at 1800 with ID and world news. (Brossell, WI) 17540 via South Carolina in PP opening at 2130. (Sellers, BC)

**KUWAIT**—Radio Kuwait, 15540 at 1819 with pops, M with ID and station info at 1820, then back to pops. (Coady, ON) 1858 with ID at TOH and clear ID as "The International English Broadcasting Radio of the State of Kuwait." ID at 2002 was just "Radio Kuwait" with MW and shortwave frequencies. Also, 21540 with M in AA QRM'ed by some sort of data transmission. (Handler, IL)

**LIBYA**—Radio Libye-Sabrata, 11600 at 1634-1710 with M/W and excited AA discussion with some music segments. ID and news at 1700. (D'Angelo, PA)

**MEXICO**—Radio Mil-Mexico City, 6010 strong in SS at 1040-1100, 1,000 kHz. (Wilkner, FL)

**NETHERLANDS**—The Mighty KBC, 7375 via Nauen at 0057 with a Neil Diamond song and a singing ID at 0100. (Coady, ON) 0114-0200\* with a jukebox pgm of oldies and several IDs mentioning Nauen, TC, ads for KBC Imports. At 0130 introduced Kim Andrew Elliot with the weekly digital test. Also, 9450 via Kostinbrod at 0045-0159 with Moody Blues and other 60s things, MEE host with *The Giant Jukebox*. Kim Elliot with another digital test at 0130. (D'Angelo, PA)

**NEW ZEALAND**—Radio New Zealand International, 9765 at 1645 with lite pop vocals and recap at :50 with W ancr. (Barton, AZ)

**NIGERIA**—Voice of Nigeria, 15120 at 1510 on travel in Nigeria. (Brossell, WI)

**NORTH KOREA**—Voice of Korea, 2850 at 1105 with spirited talks and martial music. 11710 at \*1300 the day after declaring a "state of war" with news of U.S. reaction. (Rippel, VA) 6185 in KK with coral songs at 1430. (Barton, AZ) 11710 at 1319 on how wonderful things are in the DPRK and criticizing the "imperialists." (Sellers, BC) 1512 with news, ID at 1518 f/by commentary. (Coady, ON) 9355 at 1225 with W in KK, QRM from WBCQ, 11710 with ID and talk on Korean culture. (Maxant, WV) 13760 at 2112 with comments on NK's nuclear capability, //15245. (Sellers, BC)

Korean Central Broadcasting Station, 2850 with very animated and unhappy-sounding M in KK, 3320 with revolutionary songs at 1350 and 9665 with a soprano vocal at 1745. (Barton, AZ) 2850 at 1100-1120 with just some audio. 3250 at 1105 with audio in KK. (Wilkner, FL)

#### OPPOSITION—

Radio Okapi, (via South Africa to Congo, D.R.), 11690 at 0410 with M/W in FF, several IDs, M with news after changing to an African language. (D'Angelo, PA)

Denge Kurdistanya, 11510 via Madagascar to Iran, in listed Kurdish at 1439. (Brossell, WI)

Nippon No Kaze, via Palau to N. Korea, 9965 in (I) KK at 1535. (Brossell, WI)

Radio Tamazuj (via Vatican to Sudan), 15535 in AA at 1521. (Brossell, WI)

Voice of Asena, (via Samara to Eritrea), 15245 at 1730 in (I) Tigrinya with HOA vocals, W with long talks, more HOA vocals at 1743. (Coady, ON)

Voice of Iranian Kurdistan (Iraq to Iran), 4860 at 0334 in (p) Kurdish with M talk and ME-like vocals. Weak with CODAR QRM. (Coady, ON)

Radio Dabanga (via Vatican to Sudan), 7315 at 0502 with M/W vocals and W with ID and a phone interview. (Coady, ON)

**PERU**—Ondas del Huallaga-Huanuco, 3329.5 in SS at 1030-1040, (Wilkner, FL)

Radio Voz Cristiana-Huancayo, 4984.2 at 12105 in SS to fade out at 1130. (Wilkner, FL)



This view of Deutsche Welle's headquarters almost seems too big, given its current reduced size. (Courtesy of Daniel Amoroso, WPC3DNC)

Radio Logos-Chazuta, 4810 at 1050 with musica del Peru, Good on this date. (Wilkner, FL)

Radio Libertad de Junin-Junin, 5039.1 with M in SS chat, but fading out at 1100-1120. (Wilkner, FL)

**PHILIPPINES**—Far East Broadcasting Corp., 9400 at 1208 in Mandarin with W giving a prayer, then brief lite instls. Also 9920 in listed Black Tai with M and talk, hymn at 1329, W with brief talk at 1331 f/by IS and sign off at 1332. (Coady, ON) 9920 at 1305 with vocals and M in Black Tai language. Possibly jammed by Vietnam with that "wow-wow" sound. (Handler, IL) 12095 at \*2259-2330\* with IS and EE ID, fanfare at 2300 and into listed Hmong language pgm. (D'Angelo, PA)

**PIRATES**—The Crystal Ship, 6925.6 at 0103 with rock, IDs, a skit, then more vocals. Off at 0142 with a FAX transmission. (D'Angelo, PA)

Wolverine Radio, 6935u at 0051 with big-band swing music and rock/pop with a bird theme. SSTV and FAX mode at just after 0210 close. (Hassig, IL) 0240 with oldies and a simple ID at 0246. (Coady, ON)

Radio Ronin, 6925 just at sign off at 2324. (Wilkner, FL)

Rave on Radio, 6925u at 0014 with old rock and Grateful Dead. (Hassig, IL)

XFM, 6950 repeating a loop of bass beat instls, ID, bits of rock, M with TC and ID at 0218. (Coady, ON)

Captain Morgan Shortwave, 6924+ with pop tunes at 0050. (Wilkner, FL)

Channel Z Radio, 6925 with static, 60s British pops and British-sounding ancr. (Hassig, IL)

Red Mercury Labs, 6940u with rock. <redmercurylabs@yahoo.com> ancd as address. (Hassig, IL)

Radio Duplicado/XEROX, 6925 at 1130-1223\* with music and many IDs. (Rippel, VA)

WPOD, 6935u at 0150 with rock. (Hassig, IL)

Wolverine Radio, 6925u at 0115 started with good pgm of music from the 20s and 30s. Later went to Motown things. (Hassig, IL)

Hard Tack Radio, 6935u at 2309-2326 with ID, talk on the Civil War. E-address was <hardtakradio@gmail.com>. (D'Angelo, PA)

The Voice of Pancho Villa, 6925 at \*0500-0505\* with Pancho's adventure as he headed to the Vatican for selection of the next Pope. Great signal at the (SWL) 'Fest hotel. (D'Angelo, PA)

Spaceshuttle Radio (Finland), 15880u at 1242 with Europop, M mentioning "broadcast" and a definite ID. Very weak. (Coady, ON)

**ROMANIA**—Radio Romania International, 7310 at 2139 on culture, Website and ID given at 2144. (Sellers, BC) 11810 at 2300 with Romanian news by M/W. (Rippel, VA) 17530 (Tiganesti - gld) on Romanian composers. (Maxant, WV)

**RUSSIA**—Voice of Russia-Moldova Relay, 7290 at 0340 on

Russian composers. (Maxant, WV) 7305-Irktusk at 1359 with Moscow Bells IS, 1400 into CC, 9560-Novosibirsk in EE with an interview at 1250. (Sellers, BC) 9560-Novosibirsk at 1233 with *Songs from Russia* with W presenting female RR vocals, (Coady, ON) 9750 via Gavar (Armenia) at 2237 with 2-M in PP, W with talk and brief music, more talk features, ID at 2259 f/by the Kremlin Bells, another ID and news at 2300. (D'Angelo, PA) 2200 via Amavir in (I) PP. (Brossell, WI) 12075 via Tajikistan at 1330 with ID, email address and *News in Brief*. (Coady, ON) 1215 with their *International Business Report* by W ancr. (Rippel, VA)

**RWANDA**—Radiodiffusion Rwandaise, 6055 at 0400 with some wonderful local music and talk by W. (Wilkner, FL)

**SAO TOME**—VOA Relay, 4960 at 0400 with IS then African-accented man with ID, pgm highlights and news f/by *Daybreak Africa* pgm. (Coady, ON)

**SAUDI ARABIA**—Broadcasting Service of the Kingdom of Saudi Arabia, 11820 with the Holy Qu'ran service with recitations and AA talk. Off at 2300 after the last recitation. (D'Angelo, PA) 2151 at 1349 with M/W AA presenters, into music at 1351. (Handler, IL)

**SERBIA**—International Radio of Serbia, 6100 at 2208 with a survey of their government agencies, (Brossell, WI) 6190 via Bosnia at 0133 with W and news, ID loop at 0134 and news from 0135. (Coady, ON)

**SEYCHELLES**—BBC-Indian Ocean Relay Station at 0233 with *World Business Report*. (Coady, ON)

**SINGAPORE**—BBC-Far East Relay Station, 9740 at 1130 with news and into *World Business Daily*. (Coady, ON) 9900 at 1344 sign on in Burmese by M/W. (Sellers, BC)

**SOMALIA**—Radio Hargeisa, 7120 in Somali at 0339 with marching band anthem, M with talk at 0330, ID and into Qu'ran recitations, then M with a long talk. (Coady, ON) 0400 with mentions of Somaliland. (Brossell, WI)

**SOUTH AFRICA**—Channel Africa, 15235 at 1700 with time pips and W presenting *Africa Digest*, ID and into news. (Coady, ON)

Radio Sonder Grense, 3320 at 0317 in Afrikaans with pop and folk, small talk, and a few ads or promos, back to songs at 0330. (Coady, ON)

**SOUTH KOREA**—KBS World Radio, 15575 with M/W on the music industry there. (Coady, ON)

**SPAIN**—Radio Exterior de Espana-Costa Rica Relay, 3350 with M and phone interview in SS then into M vocals. (Coady, ON) 9535 at 2350 with vocals to 2355 and W with SS ID. Strong on //9620. (Barton, AZ)

**SRI LANKA**—Sri Lanka Broadcasting Corporation, 9770 at 0135 with oldies and M with small talk. (Coady, ON)

**SUDAN**—Voice of Sudan, 9505 in AA at 0445, W with ID at 0447, into possible news headlines. (Coady, ON)

**SURINAME**—Radio Apinte, 4990 in DD at 0312 with M DJ and W pop vocals. (Coady, ON) 0950-1000 with M in DD. (Wilkner, FL)

**SWAZILAND**—Trans World Radio, 4775 at 0347 in (I) Lomwe with M in excited talk to 0355 then a choral hymn, M with brief talk, brief IS and O/C. And, 9500 at 0512 with preacher and brief pgm close f/by instl to ID at 0515. (Coady, ON)

**TAIWAN**—Radio Taiwan International, 9465 at 1157 giving frequencies and target areas. (Brossell, WI) 15440 via WYFR, loud and clear in SS at 2235. I thought they were in EE at this time? (Barton, AZ) 2200 with ID and into news. (Sellers, BC)

**TURKEY**—Voice of Turkey, 6129 at 1954 with 5-1 time pips, 2000 ID in language and into (p) news by M. (Rippel, PA) 15200 in AA at 1550. Off at 1553 after IS. (Brossell, WI)

**UGANDA**—UBC Radio, 4976 at 2136 with music of black pop stars from the 80s. Off at 2144 with no anmts. (Coady, ON)

**UNITED STATES**—Voice of America-Greenville, 5745 at

## In Times Past

Here's your "blast from the past" for this month: Radio Sonora, TGTA, Guatemala City, on 6005 kHz in SS at 0315 on June 13, 1955.





Here's a view of Cairo from Radio Cairo. Oddly, given its usual modulation, the image on this QSL is nice and clear. (Courtesy of Michael Ychnicki)

\*0227-0300\* with an OC until music at 0230 with the *Radiogram* pgm began with Kim Andrew Elliot hosting talking about digital transmission modes and the software for same. Email as: <radiogram@voanews.com> (D'Angelo, PA) 9570 via Vatican in (I) Uzbek at 1525, 9760-Thailand Relay at 1527 with EE lessons, 9875-Thailand at 2207 in (I) Mandarin, and 15620 in (I) Somali at 1755. (Brossell, WI) 11750 at 1225 on Iranians shipping weapons to Syria. (Maxant, WV) 17530 via Vatican at 1343. (Handler, IL)

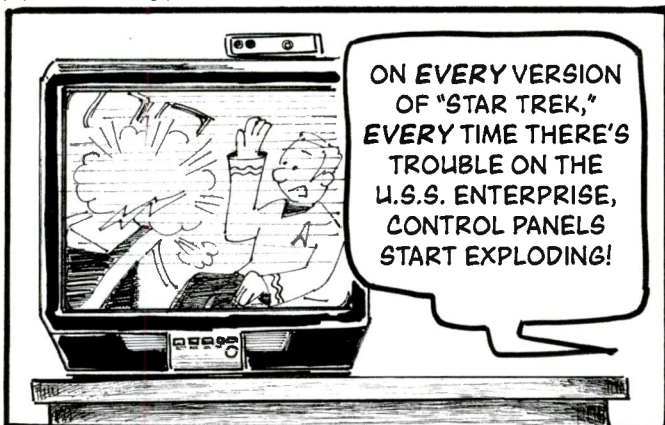
Radio Free Asia-Northern Marianas Relay, 9325 in (I) Lao at 1150, 9780-Northern Marianas in (I) Cantonese at 2200, 9905 via Palau in Mandarin at 1533, and 11945 via Tajikistan in Mandarin at 2053. (Brossell, WI)

Adventist World Radio, 9890 at 2153 in (I) Korean, 11755 in FF 2103 and 15255 via Sri Lanka in (I) Tibetan at 1555. (Brossell, WI)

## SPURIOUS SIGNALS

popcommcomic.blogspot.com

By Jason Togyer KB3CNM



©2013 Jason Togyer KB3CNM—jtogyer@gmail.com—Popular Communications magazine



www.popular-communications.com

KJES, New Mexico, 7555 at 0210-0230\* with SS talk with children's chants with W ancr prior to carrier termination. (D'Angelo, PA) 11715 at 1455. (Maxant, WV) 1545 with children's chorus and children doing litany prayer with ID at 1554. (Coady, ON) 1645 with nice music, W ancr to ToH and annoying sudden close without any anmt. (Barton, AZ)

Family Radio, 9280 via Taiwan at 1255 in Mandarin with W presenter at 1259 with signoff at 1300. (Handler, IL)

WRMI, Florida, at 1455 with Brother Stair. (Maxant WV)

WEWN, Alabama, at 1150 with Sacred Heart pgm. (Maxant, WV)

WWRB, Tennessee, 3185 with Brother Stair and audio problems. (Maxant, WV)

WBCQ, Maine, 7490 at 1215 on lesbian living. (Maxant, WV)

WRNO, Louisiana, with a preacher at 0315. (Maxant, WV)

**VATICAN**—Vatican Radio, 9600 via Philippines in Mandarin at 2200, 12035 via Philippines in VV at 2322, and 15570 at 1603 in listed Swahili. (Brossell, WI) 11625 in FF at 2057 ending a song from Africa and into its IS until off at 2100. (Sellers, BC) 0315 on Pope Francis. (Maxant, WV)

**VIETNAM**—Voice of Vietnam, 9640 via Wooferton at 0103-0127\* with W and news/features to 0127\* close. (D'Angelo, PA) 0330 on growing coffee. (Maxant, WV) 12000 at 1312 with W, later joined by M in Mandarin. (Handler, IL)

**ZANZIBAR**—ZBC Radio, 11735 in Swahili at 1856 with choral hymns, M with soft talk to drums at 1900 and ID, news. (Coady, ON)

It's "high five" time! Time to salute those of you who came through with the logs this month. Namely: Mark Coady, Peterborough, ON; Rich D'Angelo, Wyomissing, PA; William Hassig, Mt. Pleasant, IL; Steve Handler, Buffalo Grove, IL; Rick Barton, El Mirage, AZ; Robert Wilkner, Pompano Beach, FL; Harold Sellers, Vernon, BC; Robert Brossell, Pewaukee, WI; Chuck Rippel, Chesapeake, VA; and Charles Maxant, Hinton,

## CQ VHF Ham Radio Above 50 MHz

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

By taking advantage of our subscription specials you'll save money and have CQ VHF delivered right to your mailbox. Only \$28 for four information-packed quarterly issues.

Or better yet, enter a two or three year subscription at these special prices. As always, every subscription comes with our money back guarantee.



	USA	VE/XE	Foreign	Add a Digital Sub
1 Year	28.00	38.00	41.00	11.00
2 Years	56.00	76.00	82.00	20.00
3 Years	84.00	114.00	123.00	28.00

Please allow 6-8 weeks for delivery of your first print issue.

Mail your order to:

CQ VHF • 25 Newbridge Road • Hicksville, NY 11801

Subscribe on line at [www.cq-vhf.com](http://www.cq-vhf.com)

FAX your order to us at 516 681-2926

Call Toll-Free 800-853-9797

# The Pioneering Thrill of One or Two Channels of Black & White Television or . . . Getting Early TV Where It Didn't Want To Go

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

*"I heartily agree with Gary's assessment that today's under 50-year-old cable subscribers have no idea what TV reception in rural North America was like prior to the 1980s or '90s."*

**T** Tyler Wheelock got so excited when spotting TV maker *Transvision's* return address on the hefty parcel that he nearly lost his lunch right in front of the Hawthorne, Nevada post office. The 13-year-old's expectations had been dramatically amplified several months earlier when he focused on a magazine article picturing a couple of girls he knew. They were shown watching television with their father in the January 1957 issue of *Popular Electronics*. Tyler had heard that a few families in his community had TV sets, but whenever he suggested that his folks should shift their evening recreation from checkers, reading, and radio to television, they'd dismiss the idea as not quite ready for prime time.

"Son, you know that the nearest TV stations are nearly 250 miles away in San Francisco," Tyler's Dad would note, "and I reckon there's no television on the market that can pull reception that far and then over 10,000 feet of mountain into our valley."

That was exactly *Popular Electronics* writer, Dave Scher's point in his piece, "TV Over the Hill and Into the Dale."

"Literally thousands of [rural] Americans have been deprived of TV, not because they can't afford to buy receivers, but because reception is poor or impossible in their communities." Scher's exclamation took into consideration that, even in early 1957, most of his readers were well within the RF footprint of at least two video choices, so judged those without an option of "turning on the tube" to be stuck in a rather primitive existence.

"Most of us take for granted our nightly sessions before the magic screen," he admitted to his fellow urbanites and suburbanites, "but there are many regions that are literally land locked, and TV signals have not yet learned to climb mountains."

When Tyler rode the bus home while thumbing through a borrowed copy of that *Popular Electronics*, he decided against confirming his father's negative notions about mixing distant television transmission with high peaks. Instead, he figured on amazing his parents with details of how a tiny TV Translator station was already pushing television pictures into the clear western

air around their ranch. His science teacher had mentioned something about it, too.

And Tyler had deciphered the identity and then talked to one of the girls shown in a grainy photo within the article. He recognized her more for the

**BIG MONEY IN TELEVISION**  
**BUILD TELEVISION SETS for PLEASURE and PROFIT!**

Learn television by building your own television set with the famous **TRANSVISION** Television Kit. Big future in this growing field.

**TRANSVISION KITS** save you upward of 50%. Large 12" tube Kit costs you only \$299.50; gives larger image, better sight and sound reception than many sets selling at \$500.00. Each Kit is COMPLETE with all tubes, pre-tuned R.F. Unit, antenna, wire, solder, and instructions.

**EASY TO ASSEMBLE.** No technical knowledge required. Clear step-by-step instruction manual guides you to successful assembly in 24 hours. **TRANSVISION "Service Notes"** gives you priceless education in television.

**FLASH!** Brand new 15" tube Kits now available. Also 7", 10" and 12" tube Kits. Tremendous savings. All Kits backed by factory guarantee. Write today for further details to Dept. P.S.

**SEND FOR FREE CATALOG**

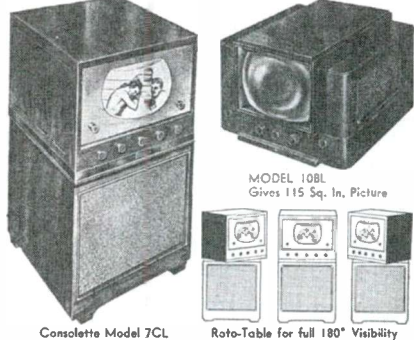
**BEACON TELEVISION, INC.**  
785 THIRD AVENUE NEW YORK 17, N. Y.

**Photo A.** The Wheelock's kit TV featured a 7-inch screen like the one being happily home-built in the upper left-hand corner of the miniscule February 1948 ad. Beacon Television was apparently a middleman outfit that bought Transvision TV kits wholesale and marketed them to early adopters with sufficient self confidence in electronic assembly to spend what likely amounted to a month's wages on the then novelty. Our first story's contributor recalls his set's cabinet as being "pretty boxy" and with none of the graceful curves on top like the one pictured center stage here. That's because his family's first TV lived in a case hammered together on a garage workbench and was primarily intended to keep hands away from the high voltage pulsing inside.

# TRANSVISION

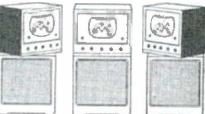
**BIGGEST VALUES IN TELEVISION!**  
Large-Image, Direct-View TV Kits at Low Cost!

Kits Engineered for EASE of ASSEMBLY and Top Performance.  
Cabinets designed and built for Beauty, Utility, Durability.  
**NO TECHNICAL KNOWLEDGE REQUIRED for ASSEMBLY.**



Console Model 7CL

MODEL 10BL  
Gives 115 Sq. In. Picture



Roto-Table for full 180° Visibility

TRANSVISION manufactures the most extensive line of high quality Television Kits, Cabinets, and Components. Models illustrated and listed here are only representative of Transvision's leading values. See your distributor.

MODEL 10BL TV/FM Kit, gives 115 sq. in. picture; complete FM Radio; receives all channels; streamlined cabinet NET \$299.00

Roto-Table for Model 10BL gives full 180° visibility NET \$ 24.95

MODEL 7CL TV Kit, gives 60 sq. in. picture; console cabinet complete with Roto-Table; streamlined design NET \$199.00

MODEL 7BL same as 7CL except that it is a table model NET \$189.00

All prices include cabinets, tubes, antennas, and 60 ft. of lead-in wire. (Models 7CL and 7BL can be supplied with complete FM Radio for small additional cost.)

**— FREE —  
Fascinating  
BOOKLET  
On Television**

Illustrated 20-page 2-color booklet gives you essential basic information on television. Call or write distributor for a FREE COPY; or write to us for names of distributors.

**"SERVICE NOTES"**

by Transvision  
Full information on the latest National Television News and information product of expert-ecor with over 200,000 television sets. Complete with photos, diagrams, worth a small fortune. Cost usually \$1.95 NET

All prices 5% higher west of Mississippi; all prices fair traded.

For further information see your distributor, or write to:

**TRANSVISION, INC. Dept. RR NEW ROCHELLE, N. Y.**

In Calif.: Transvision of California, 8572 Santa Monica Blvd., Hollywood 46

For TELEVISION, IT'S TRANSVISION—the complete line of High Quality Kits, Cabinets, Antennas, Lenses, Filters, Boosters, Components—Ask your distributor!

**Photo B.** This ad, in the jobber-focused publication *Radio & Television Industry*, was published six months after the winter 1948 advertising already noted. During that half-year interval, Transvision updated its line to include primarily "large image" screens and furniture-quality cabinetry. The reference to "direct-view TV kits" distanced Transvision's offerings from more primitive homebrew video experimenters' concoctions or products from smaller kit companies that still marketed sets with long — cheaper — vertical-mounted picture tubes reflected horizontally in a mirrored cabinet lid. Check out the line drawings of Transvision's "Roto-Table" console swivel. One can almost hear a parent yelling to his or her kid, "Hey! Stop twirling the TV!" Almost invisibly tiny, but there to add a bit of bonus incentive to any buyers on the TV/FM radio fence (as FM radios, circa 1948, were considered a rather costly premium) was mention that most of Transvision's chassis included — or could at a nominal charge — 88-108 megacycles FM circuitry.

checked sweater she often wore in school and had on in the magazine than for the few millimeters of face revealed in the miniscule side shot. His detective work didn't yield much intel, however, as she wasn't particularly scientific and knew nothing more than what shows were on and when. The girl did recall that her TV was topped with a box that looked like a radio and got channel 4 from San Francisco because her Dad dialed it to channel 70, but that not even her mother was "supposed to fool with it because it's real sensitive or something."

Though he tried hinting, Tyler wasn't able to manage an invite to witness the sights and sounds of this electronic marvel in person. Nor was he successful in interesting his Dad about Scher's narrative: "Dwellers in fringe areas," Tyler read aloud and added, *that would be us*, "can take hope with the development of an ingenious new system for bringing big-city TV to any remote area." Pausing for emphasis and then turning to catch his mother's ear, the boy continued: "Known as a TV Translator, this device picks up standard VHF telecasts, converts them to a UHF channel between 70 through 83, and re-transmits them for the benefit of viewers in a given area. Sound and picture quality of translated TV," Tyler enunciated for extra persuasion, "is said to be as good as in big city areas."

"Um hum," remarked his father in a way that conveyed the noncommittal message, "Whatever you say, Son."

But Tyler's Mom politely requested that he continue reading, perhaps if only to savor the cozy winter's evening when they were all safe, warm, healthy, and together without any particular distractions.

## A Small Electronics Company To the Rescue

Before he returned to the article, Tyler interjected a summary of a science lesson his teacher offered as response to questions about the TV Translator some know-it-all nerd bragged that his uncle had helped install "atop a mountain peak near Hawthorne. It picks up channel 4 from San Francisco and re-transmits programs on channel 70," the kid enunciated snootily. Tyler later noticed with suspicion that those exact words were contained in a caption on the first page of the *Popular Electronics* exposé. The science teacher nodded and then offered historical background regarding techniques used to get a

TV signal into towns otherwise shaded from acceptable reception.

He told the class that, originally, some rural-based guys itching to bring TV to their hometowns and who were clever with electrical stuff had built pint-size TV transmitters that would boost a VHF signal by receiving a half-decent distant signal via an antenna at a high elevation, amplifying it, and then rebroadcasting it to locales further than the "main station's" coverage could muster. While such ad-hoc, unlicensed boosters solved reception problems for some communities, their transmitter sections and oft-times aggressive, high-gain transmit antennas (including passive reflector antennas) went much further than intended, thus causing interference to licensed TV stations on the same or nearby channels.

During the late 1940s and early '50s, FCC officials tended to look the other way on homebrew television Robin Hoods. Complaints from legitimate TV stations on behalf of viewers unable to rid their sets of snowy or ghost signals and other hash inadvertently picked up from well-meaning booster units eventually irked the Commission enough for the agency to "order all unlicensed boosters to shutdown [in early 1956] because such devices were held to be in violation of existing FCC broadcast regulations." This mandate dovetailed with the Commission's then new authorization of TV Translators for areas where video signals are either weak or nonexistent.

Tyler scanned his magazine for the name of the modest outfit that pioneered this solution. "Adler Electronics of New Rochelle, New York developed the lower-power (10-watt) Translator," he resumed reading aloud. "The Adler system sidesteps possible interference by converting the [typically VHF] signal to a different frequency," ideally on a "clear channel" in the nearly vacant channel 70 to 83 attic of UHF-TV band. Adler's product was a single cabinet unit housing a sophisticated VHF receiver tuned to one specific channel, VHF to UHF converter — or "translator" — UHF amplifier/10-watt transmitter, and an automated Morse code key that beeps the Translator's station identification. Those half-hourly beeps were the only "programming" independent of the mother/translated station's fare that the FCC allowed early Translator licensees to offer. Adler figured a 10-watt operation with a mountaintop VHF receive Yagi and surgically

directed, high-gain UHF transmit antenna could cover five to 10 miles of previously unserved valley community.

The little company's 1956 demonstration for FCC bigwigs watching TV sets in signal-barren Quincy, Washington easily brought in a clear image of KXLY-TV channel 4 from Spokane (about 150 miles away) via a channel 78 Translator. While Commission people viewed a receiver about 6 miles from the Translator's mountain venue, reports of acceptable reception were fielded from delighted viewers in a burg some 18 miles from Adler's test Translator unit.

When Tyler finished his article presentation, he gently folded back the pages preceding it and showed his parents the 1.5-by 2.5-inch image of the Hawthorne Translator site and the picture of local folks watching its translated San Francisco-originated program. His Mom thought she recognized the family in that latter shot. Mr. Wheelock felt pretty sure he knew one of the guys standing in the mountaintop image; a fellow from church who ran a modest radio repair shop as a sideline. He promised to ask the guy about Hawthorne's TV Translator next Sunday. "Maybe, if it would give us clear reception, we should think about getting a television," Tyler's mother said pensively.

A week later, his Dad announced that the church acquaintance had sung the praises of the Translator's signal and steered him to an "unbeatable bargain" price on a late model TV. The discounted set was available through the repair shop owner via mail order from some Midwestern electronics supply house. "We won't be watching it for a while yet," Dad conditioned. "The reason why the cost is so reasonable is that this television comes in kit form and we have to build it first. And actually, it's a 1948 leftover model, but the fellow guarantees it'll do the trick in our living room."

Tyler let out a 10-watt "Whoop!"

## "Men . . . You Can Make \$150 A Week In Television!"

That's what the television receiver kit maker, Transvision's full-page ad in the April 1949 *Popular Science* magazine boasted, anyway. And, there was a catch, though it had nothing to do with the apparent fact that the do-it-yourself electronics firm didn't consider women — not even the thousands of females who'd skillfully helped win the then recent world war by building military electronics — capable of *manning* a soldering iron or following a schematic.

Transvision, Inc., of the rather suburban New Rochelle, New York, offered such success to any guy who could "assemble and sell only one Transvision TV kit per week." Ambitious men simply needed to follow Transvision's three-point plan: 1) Sell high-quality television sets constructed by you from our TV kits, at competition beating prices. 2) Feature our beautiful line of exclusive custom-built cabinets, designed and finished to your customers' specifications. 3) Make profits from the resale of the nationally advertised Transvision line of TV kits and accessories."

The company cared little for men with knowledge, as it noted *none* was required for assembly of their TVs which were "a pleasure" to put together. Just in case, however, any Transvision purchaser could get a 162-page television course and detailed instruction sheet, free for the asking. Also included in the 1949 series of television set kits — either accompanying the 10-inch picture Model 10A at \$199 and a 2-inch larger Model 12A for \$263 — was an "all channel, double-folded dipole and 60 feet

**TURNER'S NEW UHF CONVERTER**

Gives clearer sharper TV pictures

Use with VHF-UHF combination antenna

Easy-to-read illuminated slide scale dial

Smooth, single knob continuous tuning

Attractive Mahogany plastic cabinet

It's smaller! 6 by 6 by 6

Get the best UHF-TV reception . . . get the UHF Converter shown to give sharper, clearer pictures than other leading converters in actual comparison tests . . . get the new Turner UHF Converter. Turner's Converter is smaller than most . . . takes less room on the receiver. Its handsome mahogany plastic cabinet is an attractive addition to any room. The unit is self powered and complete with all tubes and instructions. Silver-plated coaxial tuning elements for longer wear. Lowest noise figure possible. The finest Converter you can buy for the sharpest, clearest UHF-TV reception.

TURNER UHF CONVERTER, List price . . . \$57.50

**THE TURNER COMPANY**  
 933 17th Street N.E., Cedar Rapids, Iowa  
 EXPORT: Ad. Antenna, Inc. IN CANADA: Canadian Marconi Co.  
 87 Broad St., New York 4, N. Y. Toronto, Ont., and Branches.

Photo C. When the attic channels 14-83 were opened for broadcast television expansion in 1952, a wave of electronics companies jumped on the UHF-TV converter bandwagon in hopes of selling thousands of them to owners of existing VHF sets and as accessories for new TV buyers. In fact, until the all-channel bill became law during the Kennedy administration, makers of UHF converters had about a dozen gold rush years to market their wares as a "must have" in locales with at least one pioneering UHF-TV broadcaster. Like the myriad home computer brands circa 1982, companies with even the most peripheral connection to television rolled out a converter. Here, famed microphone maker, Turner, announced its entry into the nosebleed megacycle fray. "Its handsome mahogany plastic cabinet is an attractive addition to any room," boasted the 1953 ad. This column's story catalyst, Tyler Wheelock, remembers that such a Turner topping his family's "kit" television made the homemade TV cabinet look even more amateurish. "Oh phooey!" his Dad would protest to any such observations. "After all, we're supposed to watch the picture tube, not the scrap plywood."

of lead-in wire." Cheaper kits with smaller screens were noted, too, albeit in teeny print hinting of obsolescence.

Cabinetry was in the Transvision line, too. A basic walnut "with beautiful rubbed finish, fully drilled and ready for installation," ran about \$45. A range of modular cabinets, "supplied in knockdown, unpainted form," could be had for those with woodworking acumen. Carpentry-minded, Transvision-equipped assemblymen might even tackle the combination TV-phono/record storage unit that sported a small bar. "For added profits," one can imagine a Transvision factory rep wildly



**Photo D.** My Aunt Carol (that grinning little auburn-red head at right) sent me this snapshot of her 5<sup>th</sup> birthday party; a scene just minutes before being treated to a seat in front of the boob tube. The kids had all enjoyed their cake and ice cream and the finger painting activity evident by those masterpieces on the floor. Carol's father, Walter Thomas, promised the youngsters they could watch a bit of TV when local WKTV(TV) signed on with its string of kiddie shows around 4 p.m. She remembers from family lore that her Dad had built the first television in their neighborhood and that many of her kindergartner colleagues had never experienced video prior to visiting her place. The set in this 1950 picture is likely Mr. Thomas' second TV kit project, as flickering family memories think there had been an earlier TV with "a postage-stamp sized screen." Though Utica had its own late 1940s era television station and several video outlets 50 miles to the west in Syracuse, as well as General Electric pioneer WRGB(TV) 90 miles east in the Albany/Schenectady market, the Thomas' apartment landlord barred rooftop antennas. So, those kids in the Kodak image had to be content with a single channel via rabbit ears.

promise a prospective do-it-yourselfer/*dealer*, "may we suggest securing a liquor license and offering to deliver to your high-rolling customers this true audio/video entertainment center fully stocked with beer, wine, and bubbly."

## An Old *Transvision* Strikes It Rich In Nevada

The TV kit was shipped through the U.S. Postal Service in its original box. A small mailing label served as the sole clue that the unit had not come directly from the manufacturer. Tyler's Dad could only

speculate that the nine-year-old kit with *Transvision*'s very basic 7-inch picture tube managed to get passed over during its prime and was in a truckload of some "fire-saled" inventory bought-up by the Chicago-based electronics discounter for pennies on the dollar. His friend from church reportedly learned of the deal from some electronics parts supply jobber and suggested that taking a chance on the "blow-out sale" obsolete *Transvision* didn't represent much of a risk at all.

As part of the transaction, Tyler and his father were able to unpack the kit in the guy's shop and get a couple of point-

# Relax this Summer with...

## Hobby Books and Cds!

### *Understanding, Building & Using Baluns & Ununs*

by Jerry Sevick, W2FMI

The successor to the popular and authoritative Baluns and Ununs. Great deal of new tutorial material, and designs not in previous book, with crystal clear explanations of how and why they work.

8.5 X 11 Paperback \$19.95

New! CD Version \$14.95

Buy both for only \$29.95



### *Sloper Antennas*

By Juergen A. Weigl, OE5CWL

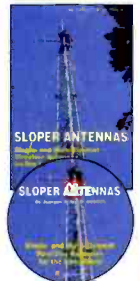
#### Single- and Multi-Element Directive Antennas for the Low Bands

With calculations and practical experience, this book shows which basic concepts have to be considered for sloper antennas for the low bands.

6 X 9 Paperback \$24.95

New! CD Version \$18.95

Buy both for only \$36.95



### *Lew McCoy on Antennas*

by Lew McCoy, W1ICP

Unlike many technical publications, Lew presents his invaluable antenna info in a casual, non-intimidating way for anyone!

8.5 X 11 Paperback \$19.95

New! CD Version \$14.95

Buy both for only \$29.95



Shipping & Handling: USA - \$7 for 1st book, \$3.50 for 2nd, \$2 for each additional. CN/MX - \$15 for 1st, \$7 for 2nd, \$3.50 for each additional. All Other Countries - \$25 for 1st, \$10 for 2nd, \$5 for each additional.

**CQ Communications Inc.**  
25 Newbridge Rd., Hicksville, NY 11801  
516-681-2922; Fax 516-681-2926  
<http://store.cq-amateur-radio.com>

ers on good assembly techniques. Also included was “complimentary tube testing,” a process that revealed just one dud. Not bad for components that had been sitting who-knows-where for nearly a decade. Tyler and his Dad even came away from the session with a “loaner” soldering gun. Mom quipped that all of the fellow’s “friendly customer service” was simply some fancy salesmanship engineered to get the family to fork over nearly \$60 for a Turner-brand UHF Converter — more than the cost of the vintage VHF *Transvision* it would be assigned to “convert” in order to see channel 70.

All three Wheelocks participated in the month-long evenings and weekends project that saw the TV kit take shape. Mom’s assistance came mostly in her willingness to allow the dining room table to be used as a workbench and parts department. She also helped sand and stain the plywood and knotty pine cabinet Dad built from scratch to house the bare set. The family agreed that it was like a dozen Christmas mornings all rolled into one when they took turns tightening the little screws affixing the wire from a four bay UHF bow-tie antenna installed on the chimney and facing the mountain where that Hawthorne Translator was beaming. Minutes later, the trio symbolically joined their fingers at the “on” knobs, first firing up the Turner UHF converter and then the *Transvision*. When the tubes had time to do their thing, Dad clicked to an empty channel 4 and fine-tuned for channel 70. A pretty good picture appeared on the rounded 7-inch screen. Needless to say, the Wheelocks were mesmerized by that single video choice hopping to their bucolic Nevada community’s pint-sized TV Translator station all the way from California’s *City by the Bay*.

Today, Tyler still recalls those early years of TV reception as something magical. He doesn’t remember, though, whatever happened to the old *Transvision* after it was replaced with a bigger “store bought” set, which later got superseded by an even larger color console when cable first came to town. “The last time I saw it,” he muses, “it was out in the garage when I came home from college for the summer sometime in the early 1970s. And during the otherwise sad afternoon a few years back when my mother passed away, we shared a happy memory of she, Dad, and I working together on that primitive TV project. ‘Imagine us getting so excited about the prospect of being able to watch one channel,’ she had smiled.”

## Rocky Mountain 40-Foot High (TV Antenna Masts)

*Pop’Comm* subscriber, Gary Yates, nowadays of Ogden, Utah, says one of my previous columns on the early days of television put him in the mood to reminisce about what TV was like in a Rocky Mountain fringe reception area, circa 1958. Gary was 10 during late winter/early spring that year when his Dad bought the family its first television.

“Although Sears-Roebuck had their house *Silvertone* brand,” he notes, “our local Sears store in Logan, Utah also sold a cheap make of TV called Meteor.” Reportedly, Meteor’s 17-inch model weighed more than 100 pounds. Its dark brown steel cabinet was finished in a rough crinkle surface. Gary recalls the Meteor logo “looked more like a comet than a meteor.” In any event, the set’s quality wasn’t so great and the darn thing “conked out about a week after [his] Dad brought it home. In fact, the Sears salesman who sold him that supposedly wonderful Meteor TV tried to hide when he saw [Gary’s] father bringing it back to the store’s radio/TV department. But it was repaired, and many more times during the next 10 years we sat in front of its flickering screen.”



**Photo E.** Can you tell why this is my favorite Norman Rockwell painting? Featured as cover art on the November 5, 1949 *Saturday Evening Post*, the famed illustrator’s work crystallized the exciting essence of an America coming into the video age — even an old fellow retired to an urban attic apartment with few other mid-20<sup>th</sup> Century amenities. After emailing this image to our first story’s Tyler Wheelock, I received a quick response. “That man’s expression included as broad of a smile as my family’s when we first realized our television kit was actually doing something besides buzzing and throwing-off heat,” he reported. “Truth be told, our grins were probably wider than the picture tube on our newly-soldered *Transvision* TV!” Check out the installer’s communication with the elated set owner . . . arguably, he’s asking for an indication of when the picture looks clearest, as he points the dipole antenna toward the city’s fledgling television stations’ towers.

Gary correctly surmises that “in those days not even the ‘good’ brands were as dependable” as are the flat screen sets marketed in today’s average big-box stores. “There sure used to be a lot of TV repair shops around in the 1950s and 60s,” he points out. “Try to find one now!”

And what kind of signals did that hefty Meteor have a chance to grab from the airwaves over the Cache Valley college town where Gary lived with the valley’s floor approximately 4,500 feet above sea level, and hemmed in by 9,000-foot mountain peaks? “The three Salt Lake City stations (channels 2, 4, and 5) were some 80 miles away,” he calculates, “and although their transmitters were on mountaintops, the Wasatch Range loomed in between them and us.

There were *no translators* [in our region] at that time, so everyone in Logan had a 40-foot mast on their roof, with plenty of guy wires to support it. Almost universally the antennas used were 10-element Yagis for low-band VHF. Dealers had to install the



**Photo F.** This rendition of a late 1940s edition of KRON-TV's station identification slide looks sufficiently pixelated to have been cut from a page in the San Francisco video outlet's sister media property, *The San Francisco Chronicle*. Still, even this degree of clarity delighted otherwise landlocked TV viewers in Hawthorne, Nevada who were treated to distant video via a television translator picking up a long hop of the West Coast channel 4 and "translating" it locally through a few watts of UHF channel 70 for easy pickings in the valley below.

kind that worked well, or risk lots of service callbacks." Gary vividly recalls "seeing a few homes with a trailer-mounted tower in their front yard and topped with an aggressive antenna." In retrospect, he believes "these were temporary loaners provided by a store so their customer could enjoy their new TV until a crew could get there to make a permanent installation on the roof."

Because Gary's folks couldn't spend the big bucks required to authorize a "store-bought" antenna installation, a friend of his father's donated what looked to be a very strange and obviously pre-owned antenna. Closing his eyes and sending his thoughts back through the decades, he describes the signal sponge this way: "It had a zigzag pattern of elements which were joined at the ends, forming the point of a triangle, with two separate systems which crossed back and forth to alternate sides of the central support boom, and each place they crossed the elements were insulated from both each other and the boom. The elements grew somewhat longer toward the rear. One wire of the 300-ohm, twin lead hooked to one system, and the other wire to the other system. Perhaps one might call it a flat-helical design?"

Murphy's Law came into play shortly after the antenna's donor deposited the alloy unit on Gary's family's doorstep. He smiles that his Dad quickly discovered that the gift didn't include a mast or twin-lead wiring. They scrounged a 10-foot section of mast and leaned it against the trailer-house while considering how to link the array to the TV.

'Eukeka!' A ratty roll of old lamp cord for emergency lead in to the rescue.

Neighbors told the Yates such a thing "would never work, but it did. Only channel 5 came in clear," Gary indicates. Channel 2 was a no show, "but we could spin the antenna around and get an extremely snowy picture from channel 3 in Idaho Falls, Idaho, probably 150 miles to the north . . . on zip cord. The next night [Mr. Yates] came home from work with three more sections of mast, guy wire, hardware, and real lead-in wire, and after installation the picture was clear."

I heartily agree with Gary's assessment that today's under 50-year-old cable subscribers have no idea what TV reception in rural North America was like prior to the 1980s or '90s. Take, for another example, the town of Wellsville, Utah, some seven miles to the southwest of Gary's boyhood Logan home and "in a severe shadow at the foot of a mountain. They had a CATV system, but not with coax cable. There was bare open ladder wire — the kind often used by amateur radio guys as transmission line — strung all over town on telephone poles.

In 1960, when Gary's family relocated to Ogden, Utah, much closer to the "local" TV stations, and "with no mountains blocking line of sight, there was extreme ghosting — probably reflections from large aircraft hangers at the community's U.S. Air Force base, or maybe bounce from mountains." He muses that that "back in Logan the signal had been too weak to produce ghosts. Even using coaxial cable for lead-in this problem did not completely vanish there until the switch to digital.

With cable and satellite now having long been the norm in television transmission, it's appropriate to give at least of bit of historical credit to those quaint TV Translators and backyard television towers; once the only bridges to television viewing in rural communities sporting America's sparsest postal zones.

*And so end's another flicker of video history on Pop'Comm . . .*

## EDITORIAL (from page 4)

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

Yes. There are fewer stations from which to choose	80
No. Despite the hoopla, they seem unchanged	14

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

A major role. They're the wave of broadcasting's future	32
A minor role. Old habits (AM reception) die hard	48
No role at all	18

**If you see value in shortwave broadcasting, what specific action should each SWLer take to preserve its existence?** (NOTE: This response from Howard Pepper of Palm Coast, Florida is representative of many: "I would say to contact the shortwave broadcasting stations to let them know people are still listening, but I'm afraid that won't help. It takes a lot of money to run shortwave stations, whereas Internet broadcasts are considerably cheaper . . ." — KPC6PC)

## Pop'Comm-WRO Live Online Chat, July 7: Independence Day After-Party!

The Pop'Comm-WRO Live Online Chat will be Sunday, July 7 at 8 p.m. Eastern time. It's the July Fourth After-Party! Visit the WorldRadio Online blog at <<http://www.WorldRadioOnline.blogspot.com>> and click on the Cover It Live box. See you there!

— Richard Fisher, KPC6PC

## Communications Trivia and Other Pursuits

By R.B. Sturtevant,  
KPC7RBS/AD7IL

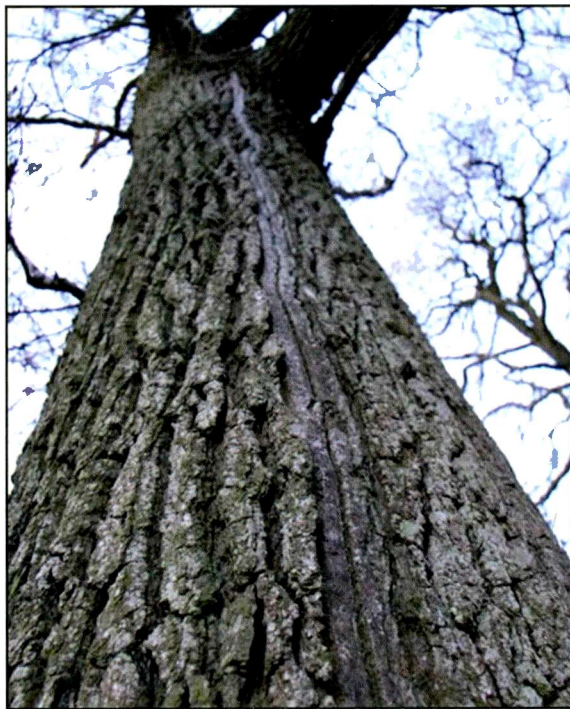
*Q: I've heard that underground and resistance units during World War II put up antennas that the Nazis — who were hunting them — could not find. If this is true, how did that work?*

**A:** Winston Churchill wanted to establish stay-behind troops that would fight the German invaders after an invasion. The idea was to give the British Army a chance to regroup after Dunkirk and meet the invaders in an organized way. Thus, groups known as Auxiliary Units were formed — independent groups not part of the regular Army. Their existence was kept secret until the 1990s.

The communications units were called Special Duty Sections and worked from underground operational bases. Antennas for these radio posts had to be invisible, not just hard to see.

The radios were beneath ground, but the antennas had to be above. England is covered with tall trees that have been there for centuries. The communications groups — many of their members licensed radio amateurs — often took small chisels and climbed these trees, cutting a small groove in the bark, **Photo A**.

Their dipoles' feed lines were placed in these grooves. The wood and bark were then glued back in place, shielding the wires from view. This is the only



**Photo A.** Many outlying World War II resistance radio stations used dipole antennas fed with 80-ohm flat, twin down-leads. Where possible, these doublets were strung in the highest trees for good transmission and away from prying eyes. The feed lines were buried behind the bark, a very imaginative camouflage.  
(Courtesy of the British Resistance Archive)

permanent antenna installation I've heard used by any resistance group.

Most operators relied on portable antennas that had to be put up and taken down after use. Perhaps some folks today living under antenna restrictions might find this information useful.

*Q: You have mentioned the first British efforts to broadcast behind the Iron Curtain in 1946. How did the first programs go over with its eastern European audiences?*

**A:** As with most beginning projects, there were some "teething" problems in the beginning. At first the British embassies reported that the accents of the presenters seemed strange to the local audiences. The voices were mostly émigrés who were not completely familiar with the current language as it was spoken after the war. The voices sounded like exaggerated university accents.

The audiences enjoyed the talk programs but didn't like the music as well. They preferred English and American dance music. In time, as listener responses came in, the BBC got in sync with its listeners.

In 1947, before the Communist takeover in Czechoslovakia, about 20 percent of the population listened to the BBC. After the takeover, according to the Czechs themselves, half of those with radios tuned into the British. There were more people listening to the BBC than to the Czech Broadcasting Service.

*Q: When Marconi made his first trans-Atlantic test between Cornwall, England and Newfoundland on the Canadian east coast, wasn't there some doubt about if he had actually received the signal?*

**A:** Yes, there was. The signal was so weak that it didn't register on the inking attachment to the receiver. Only Marconi and his assistants actually heard the signal. Many stations around the country were aware of the upcoming test and were listening in on the announced frequency. None of them picked anything other than static.

In early 1902, Marconi arranged to install his equipment aboard the U.S.S. Philadelphia and continued his tests on his way back to Europe. The station at Poldhu was directed to send the test "S" on a regular schedule. The signals were picked up at 2,000 and 1,500 miles out to sea from the sending station. This, witnessed and certified by the officers of the ship, verified Marconi's accomplishment.

It was during this trip that it was discovered that at night the signals would go two-to-three times more distant than they did in the day. Dubbing this *The Night Effect*, Marconi had no idea what caused it. It was not until there was a great understanding of the ionosphere that the reason for this effect became known.

**(REFERENCE: Tomas Hood, NW7US/WPC7USA, who monthly writes Pop'Comm's The Propagation Corner, devoted his October 2012 column to this subject. See "Marconi Baloney? Could He Have Really Done It?" beginning on page 66. — KPC6PC)**



# readers' market

**Advertising Rates for Readers' Mart:** Non-commercial ads are 30 cents per word, including abbreviations and addresses; minimum charge \$6.00 per issue. Ads from firms offering commercial products or services are \$1.00 per word; minimum charge \$20.00 per issue. Boldface words are \$1.20 each (specify which words). Leading key words set in all caps at no additional charge. All ads must be prepaid in full at time of insertion; a 5% discount is offered for prepaid 6 time insertions. All ads must be typewritten double spaced.

**Approval:** All ad copy is subject to Publisher's approval and may be modified to eliminate references to equipment and practices which are either illegal or otherwise not within the spirit or coverage scope of the magazine.

**Closing Date:** The 10<sup>th</sup> day in the third month preceding date of publication. Because the advertisers and equipment contained in Readers' Market have not been investigated, the Publisher of *Popular Communications* cannot vouch for the merchandise listed therein. Direct all correspondence and ad copy to: Attention: Classified Dept., PC Readers' Market, 25 Newbridge Rd., Hicksville, NY 11801.

**TWONOVELS** involving ham radio: Full Circle and Frozen in Time, by N4XX. Visit <http://www.theodore-cohen-novels.com/>

**SuperBertha.com** ULTIMATE LONG BOOM OWA YAGIS: Designed by WA3FET and K3LR. Scott W3TX. 814-881-9258.

**OLD TIME RADIO SHOWS** on CDs. The Lone Ranger; Have Gun Will Travel; Sam Spade; Johnny Dollar and more! All legal public domain programs. www.edvdmart.com

**FOR SALE - DRAKE TR-7/TR-7A/R-7/R-7A Service kit.** Includes 13 Extender Boards and Digital Jumper Card. \$64.95 includes postage. See http://wb4hfn.com/Services/W7AVK/tr7ext2.htm Bob W7AVK, 5581 Panorama Drive, Moses Lake, WA 98837, w7avk@arrl.net, 509-750-7589.

**SuperBertha.com** CUSTOM ROTATING POLES: No guy wires, entire pole rotates, stack all your antennas, rotor at ground level. 50ft to 300ft high. EIA-TIA-222-G. Starting at \$37,799.00. Scott W3TX. 814-881-9258.

# ADVERTISERS' INDEX

Advertiser	Page #	Website Address
AOR USA, Inc.	Cov III	www.aorusa.com
Advanced Specialties	25	www.advancedspecialties.net
C. Crane Company	23	www.ccrane.com
CTsolar.com	13	www.ctsolar.com33
CQ Merchandise	9,33	www.cq-amateur-radio.com
CheapHam.com	17	www.CheapHam.com
Cutting Edge	25	www.powerportstore.com
HRD Software, LLC	21	www.ham-radio-deluxe.com
HamTestOnline	25	www.hamtestonline.com
Homeland Security	23	www.ready.gov
ICOM America, Inc.	Cov II	www.icomamerica.com
Kenwood USA	Cov IV	www.kenwoodusa.com
MFJ Enterprises, Inc.	3	www.mfjenterprises.com
PowerPort	25	www.powerportstore.com
QCWA	63	www.qcwa.com
REACT International, Inc.	17	www.reactintl.org
Universal Radio	29	www.universal-radio.com
W5YI Group	1	www.w5yi.org

Reach this dynamic audience with your advertising message, contact Charlie Payne at 859-305-6117  
e-mail: cpayne@cqcomm.com  
Please direct editorial and subscription questions to (516) 681-2922

# SUBSCRIBE

## POPULAR COMMUNICATIONS



The World's most authoritative monthly magazine for Shortwave Listening and Scanner Monitoring.

Read by more active listeners world-wide.

You'll find features on scanner monitoring of police, fire, utility, and aircraft communications; international shortwave listening; CB radio; amateur radio; FRS; GMRS; monitoring radio digital communications including CW, RTTY, SITOR, etc; AM/FM commercial broadcasting; weather and communications satellites; telephone equipment and accessories; radio nostalgia; alternative radio; and military radio.

Choose the PRINT Edition or New DIGITAL Edition!

Buy both at a SPECIAL price!

### Combo Sale!

	Print	Digital	Both!
1 year USA	\$34.95	\$24.00	\$49.95
CN/MX	\$44.95	\$24.00	\$59.95
Foreign	\$54.95	\$24.00	\$69.95

### Popular Communications

25 Newbridge Road,  
Hicksville, NY 11801  
Phone: 516-681-2922  
Fax 516-681-2926

Visit our web site:  
[www.popular-communications.com](http://www.popular-communications.com)

# With Apologies to Admiral Stockdale<sup>1</sup>: Who Am I? Why Am I Here?

By Urban Bates,  
YJPC1UB

*“To refresh my memory: I am an avid shortwave listener living in the Espiritu Santo region of Vanuatu — formerly New Hebrides.”*

**M**ost of the time, I don't remember who I am. So why should you? In April 2012, I directed the *Pop'Comm-Bates Reader Survey* — a scientific study of SWLing habits based on my long experience in the South Pacific.

To refresh my memory: I am an avid shortwave listener living on Mount Tabwemasana in the Espiritu Santo region of Vanuatu — formerly New Hebrides.

Anyhow, we got tons of responses to the questionnaire, which appeared in print and online. Here are the questions and your answers, tabulated from both the mail-in cards and Internet replies:

**Have you ever picked up the ocean on your shortwave receiving set?**

Yes	20%
No	35
What in blazes are you talking about?	44

**Do you ever listen to shortwave without an antenna?**

Yes	35
No	29
Refer to response 3 in question 1	36

**I love a nice piece of mahi-mahi, but now it upsets my stomach.**

This is not a question	35
I prefer a freshwater catch	26
You should see a doctor immediately	12

**In 1942 I picked up Radio Xanadu. I could hear Olivia Newton-John fading in and out of the Mongolian narrative. Has this happened to you?**

Yes	26
What?	12
No, but I could hear Gene Kelly's dance steps	18

**Pencils Ready!**

Our essay question was: For the most part, do you find April Fools pranks interesting or annoying?

**Ken Weinstock**, of Sycamore, Illinois answered a most definitive, “No.” **James Davis**, **KB9VRR**, of Des Plaines, Illinois, on the other hand, answered just as stridently, “Yes.”

Many of you responded: Annoying! But **Bob Brossell**, **WDX9GSO**, of Pewaukee, Wisconsin took it further: “Simply annoying. Shortwave is a great hobby. Let's not belittle it!” (*COMMENT: Bob, I could not agree with you more!* — YJPC1UB)

**Douglas Edwards**, **KB2RLO**, seemed conflicted, writing from Arcade, New York: “Very interesting, but dumb!”

**Sam Neal**, **N5AF**, of Cleveland, Texas, placed a “Get Well Soon” stamp on his survey card, adding, “I dropped my radio in the water once!”

“Not sure about April Fool's Day, because no one seems to do it anymore,” wrote **Richard Horseman** of Baltimore. (*COMMENT: Agreed! Pop'Comm needs to loosen up a little. All these years without a prank. The editor is kind of a dope.* — YJPC1UB)

**William Wilkins**, **KPC0WW**, of Springfield, Missouri, wrote that he thought he was hearing Gene Kelly's dance steps, but “eventually realized my tinnitus had kicked in.” (*IN DEPTH: Are you a tinnitus victim? Visit: <http://bit.ly/YpM42p>.* — YJPC1UB)

“What prank?” asks **Jerry Moon** of Nyack, New York. (I had the same question!) He does suggest, however, that *Pop'Comm* look into “a wireless sky hook.”

“Love April Fool's jokes,” wrote **Robert Strobel** from Charleston, South Carolina. “It is amazing that some people do not get it . . . Thanks for the laugh.” (Just like Mr. Moon, I don't know what Mr. Strobel is referring to.)

**Avery Finn**, **K0HLA**, of Hopkins, Minnesota, seemed to lapse into a stream of consciousness:

- Bury antennas to get the best ground wave
- “5-9, solid copy, OM . . . Please repeat!”
- Put rotors on vertical antennas to get the best signal direction
- Does your VFO oscillate backward and send out sub-harmonics?

(*COMMENT: Excellent observations, Mr. Finn. By the way, mahi-mahi still doesn't agree with me.* — YJPC1UB)

“I picked up Radio Xanadu, but not in 1942. It was in 1989 and I can confirm Olivia Newton-John was heard fading in and out of the Mongolian narrative,” wrote **Steve Lawrence**, **KA0PMD**, of Burbank, California. “This occurred directly after my fifth bourbon of the evening, so things are a bit fuzzier from that point.”

Getting back to the fundamental question about April Fool's pranks: **Cory GB Sickles**, **WA3UVV**, from Richwood, New Jersey, wrote, “it all depends on the content of the humor and who the joke is on. It's funny when someone else slips on a banana peel, but not so much when it's you . . .” (*COMMENT: I respectfully disagree. I slipped on a banana peel yesterday at the HolottaYummy Polynesian restaurant and nobody was laughing. A large table of injury attorneys was lunching at the table right next to mine. They were smiling. Not laughing.* — YJPC1UB)

Finally, in a non-sequitur, **Mark Hyland**, **KB5BAI**, of Albuquerque, wrote: “April Fool's is a fine holiday.” But then asks: “Is your fridge running?”

**Pencils Down**

In answer to Mr. Hyland, my fridge is *not* running. It broke several years ago, but I am stupefied as to how he'd even know to ask about it! *How kind!*

Aren't *Pop'Comm* readers the most intuitive people on the planet? If anyone knows of a repair person willing to travel to Vanuatu, please drop me a note via <editor@Popular-Communications.com>.

**Footnote**

1. Who? Why? Watch and listen to Admiral James Stockdale at <http://bit.ly/ZANbKb>.

# AR6000 Professional Grade 40 kHz ~ 6 GHz Wide Range Receiver

Now tunes  
to 6 GHz

## Continuous Coverage That Goes Far Beyond!



**The AR6000** delivers continuous tuning from 40 kilohertz to 6 gigahertz in a wide variety of modes for professional monitoring performance that's nothing short of amazing in terms of accuracy, sensitivity and speed. Standard modes include AM, FM, WFM, FM Stereo, USB, LSB and CW. An optional module can add the capability to receive APCO25 digital communications plus an optional I/Q output can be added to capture up to one megahertz of bandwidth onto a storage device for later listening or signal analysis.

Designed for the monitoring or technical service professional, there are no interruptions in the AR6000's tuning range. With exceptional tuning accuracy and sensitivity throughout its tuning range, the AR6000 begins at the floor of the radio spectrum and continues up through microwave frequencies so it can be used for land-based or satellite communications. It works as a measuring receiver for those seeking a reliable frequency and signal strength standard. To support its broad spectrum, the AR6000 has two antenna ports, with the added capability of an optional remote antenna selector from the front panel of the receiver.

With its popular analog signal strength meter and large easy-to-read digital spectrum display, the AR6000 is destined to become the new choice of federal, state and local law enforcement agencies, the military, emergency managers, diplomatic service, lab technicians, news-gathering operations and security professionals.

Continuously amazing, the AR6000 professional grade receiver features:

- 40 kHz ~ 6 GHz coverage with no interruptions
- Multimode AM, FM, WFM, FM Stereo, USB, LSB and CW
- Tuning steps of 1 Hz up to 3.15 GHz; 2 Hz from 3.15 ~ 6 GHz
- Receiver is programmable and manageable through a USB computer interface
- Up to 2,000 alphanumeric memory channels
- Analog S-meter, large tuning dial, front panel power, volume & squelch controls
- Direct frequency input
- Fast Fourier Transform algorithms
- An SD memory card port can be used to store recorded audio
- Two selectable antenna input ports plus optional remote antenna selector

**Add to the capabilities of the AR6000 with:**

- Optional APCO-25 decoder
- Optional interface unit enables remote control via the internet
- Optional I/Q output port allows capture of up to 1 MHz onto a computer hard drive or external storage device



® The Serious Choice in Advanced Technology Receivers

AOR U.S.A., Inc.  
20655 S. Western Ave., Suite 112  
Torrance, CA 90501, USA  
Tel: 310-787-8615 Fax: 310-787-8619  
info@aorusa.com • www.aorusa.com



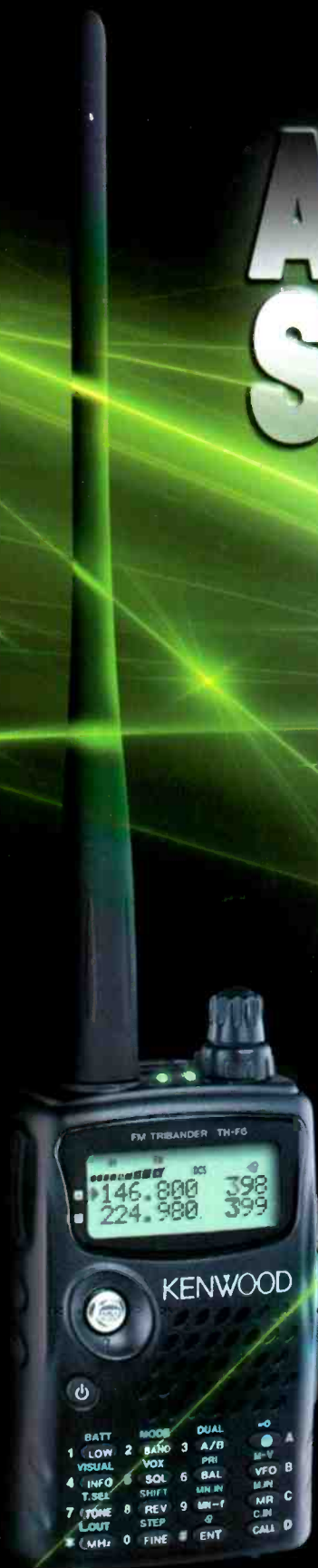
Available in the US only to qualified purchasers with documentation. Specifications subject to change without notice or obligation.

# AIRWAVE SUPERIORITY

Never before has a compact HT offered as many features, and such high powered performance as the TH-F6A. Arm yourself with one today and gain your own airwave superiority.

- Triband 144/220/440 MHz all at 5W
- Receives 2 frequencies simultaneously even on the same band
- 0.1-1300MHz high-frequency range RX (B band)<sup>1</sup>
- FM/FM-W/FM-N/AM plus SSB/CW receive
- Bar antenna for receiving AM broadcasts
- Special weather channel RX mode
- 435 memory channels, multiple scan functions
- 7.4V 2000mAh lithium-ion battery (std.) for high output<sup>2</sup> and extended operation
- 16-key pad plus multi-scroll key for easy operation
- Built-in charging circuitry for battery recharge while the unit operates from a DC supply
- Tough construction: meets MIL-STD 810 C/D/E standards for resistance to vibration, shock, humidity and light rain
- Large frequency display for single-band use
- Automatic simplex checker
- Wireless remote control function
- Battery indicator • Internal VOX • MCP software

<sup>1</sup>Note that certain frequencies are unavailable. <sup>2</sup>5W output



## TH-F6A TRIBANDER

**KENWOOD**

Customer Support: (310) 639-4200  
Fax: (310) 537-8235

[www.kenwoodusa.com](http://www.kenwoodusa.com)

ADS#43512



Scan with your phone to  
download TH-F6A brochure.