

# WorldRadio

**ONLINE**

Year 40, Issue 11

MAY 2011

## **A Piece of Antenna History Is Still Flying High, Page 8**



**YLs Raise Radio Activity  
in Puerto Rico, Page 25**



**Into the Mind of an Avid  
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**Kurt Takes Readers for  
a Loop, Page 52**

**NEWS • FCC • DX • SATELLITES • CONTESTS • HAMFESTS • AERIALS • CW**



## Change in Work Schedule Delays Launch of ARISSat-1

The launch of ARISSat-1, the amateur radio satellite currently on board the International Space Station (ISS), has been delayed until July.

The satellite was initially scheduled to be hand-launched by the ISS crew during a spacewalk in mid-February. However, a change in the work schedule for the February spacewalk pushed back the ARISSat launch and the ham community was initially told it would be launched in April, to coincide with the 50th anniversary of the first manned space flight, by Yuri Gagarin.

Updates indicated that the next spacewalk by ISS crew will not take place until July. For the latest information on ARISSat-1, visit the CQ Newsroom at: < <http://www.cqnewsroom.blogspot.com/> > or the ARISSat-1 website at < <http://www.arissat1.org> >.

(CQ Newsroom)

## Sunspot Count in Early March is Highest in Six Years

A sunspot count of 143 on Saturday, March 5 was the highest since 2005, according to data on the website of *CQ Amateur Radio* magazine Propagation Editor Tomas Hood, NW7US.

Both 10 and 15 meters were particularly active that weekend, due in part to improved propagation and the date coinciding with the 2011 ARRL SSB DX Contest.

For frequent updates on solar activity, visit *CQ's* Facebook page < <http://on.fb.me/ignTjj> > and the NW7US website: < <http://prop.hfradio.org/> >.

(CQ Newsroom)

## DXpedition to Spratly Islands Put On Hold Until Next Year

A planned DXpedition to the Spratly Islands has been postponed until April 2012, according to a report from Bernie McClenny, W3UR, in *The Daily DX*, < <http://www.dailydx.com/> >.

DXØDX Team Leader Chris Dimitrijevic, VK3FY, said the postponement is due to circumstances beyond the control of the DXØDX team and “in the best interests of the team of operators,” according to a report from the ARRL.

The DXØDX DXpedition was originally scheduled to take place this year from January 6 to February 1.

Spratly currently is at No. 32 on *DX Magazine's* “Most Wanted” list. Visit: < [http://www.dxpub.com/dx\\_news.html](http://www.dxpub.com/dx_news.html) >.

(ARRL)

## California Court Issues Mixed Decision in Antenna Case

A California appeals court has invalidated a municipal antenna ordinance as unenforceable because it was too vague, but told Palmdale, California radio amateur Alec Zubarau, WB6X, that he would not be able to keep up his HF (high frequency) antenna.

According to the *ARRL Letter*, the court said that permitting Zubarau to keep his VHF/UHF vertical antenna constituted “reasonable accommodation” because it allowed him to be active in some part of amateur radio.

(CQ Newsroom, ARRL Letter)

## UK Radio Amateur Funded to Study EmComm Systems

A member of the United Kingdom's Radio Amateurs' Emergency Network – RAYNET – has received two months' funding to examine how the organization could best use data communications to support police and other services.

Howard Winter, G1BY, a member of Mid-Herts RAYNET, made an application to the Vodafone World of Difference Scheme in November. According to the Radio Society of Great Britain, Winter will spend two months undertaking his own research and experimentation, collating the work that has already been done by RAYNET groups and comparing the experiences of members experimenting with data.

There is an increasing demand from emergency response services using RAYNET to have it provide data links, leading many groups to experiment on a variety of digital systems, according to reports.

RAYNET members are now using APRS to track vehicles responding to incidents in remote locations, transmitting photographs from the scene of emergencies and sending data files back to their control and command centers.

(ARN, GB2RS)

## U.S. House Bill Poses Threat to Amateurs' 70cm Spectrum

Creating a nationwide interoperable broadband network for emergency responders has emerged as a high priority item for both the FCC and the new session of Congress, and one bill – H.R. 607 < <http://1.usa.gov/grTdQW> > – could endanger the 70-centimeter amateur band.

Virtually all plans involve dedicating certain frequencies in the 700-MHz band to creating the network. These frequencies were freed up by the migration of television broadcasting from analog to digital transmissions, and were initially scheduled to be auctioned off for commercial broadband use.

According to the ARRL, H.R. 607, introduced by House Homeland Security Committee Chairman Peter King (R-New York), includes a provision to provide alternative spectrum to commercial users who would lose potential frequencies through the creation of the emergency response network.

Among the frequencies that would be subject to reallocation are 420-440 MHz, part of the 70-centimeter band currently shared by radio amateurs and federal government radiolocation services, such as PAVEPAWS radar.

(CQ Newsroom)

## Report: 3 Americans Killed by Pirates Were Radio Amateurs

Three of the four American sailors killed by Somali pirates in the Indian Ocean in February were radio amateurs, according to a report from the ARRL.

It identifies the three as Scott Adam, K9ESO; his wife Jean, KF6RVB; and Bob Riggle, KE7IIV. The fourth person on board the *S/V Quest* was identified as Phylis Macay, who was not a ham.

The Adams were from the Los Angeles area while Riggle and Macay lived in Seattle.

(CQ Newsroom)

# The perfect combo, without compromise.

HF/6m/2m/70cm/23cm<sup>1</sup> Transceiver

## IC-9100

For years, the attention to receiver design focused on the HF bands, leaving the upper bands a bit neglected. Icom changed the ham world with the introduction of the IC-7800, which incorporated a new front-end design just for 6m. Now, Icom's introducing the newly FCC approved IC-9100, extending the latest in front-end technology up to more of the VHF/UHF bands. 2m, 70cm, and 23cm<sup>1</sup> enthusiasts can now benefit from high-end IF-DSP performance too!



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# WorldRadio ONLINE

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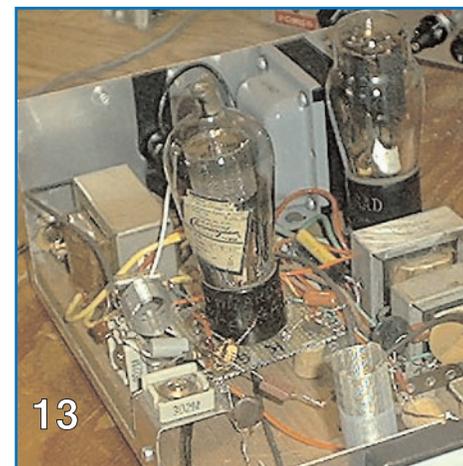
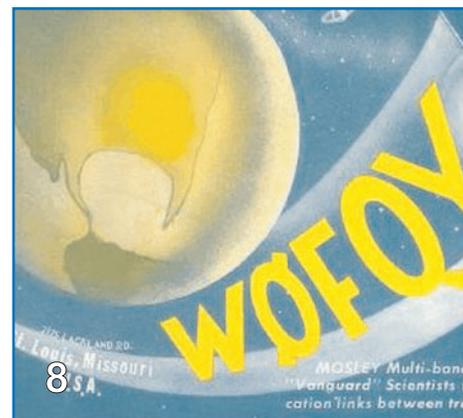
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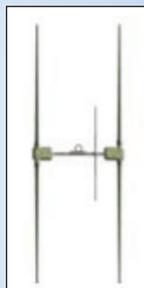


**On the Cover:** With the Carl Mosley's historic TA-33 beam – circa 1959 – as a backdrop, Richard Burns, KE6RGB, stands in front of his Merced, California home. Meanwhile, YLs Valmarie Rivera, NP3YL, left, and Sheila Rivera-Laboy, NP3SI, recently picked up honors for their amateur radio activities in Puerto Rico. (Courtesy of KE6RGB and WP3GW)

# Which *SteppIR* Product is Best for You?

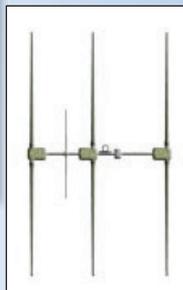
## 2, 3, and 4 Element Yagis

For the hams who are fortunate enough to have towers in their backyards. Gain and directivity is yours with a SteppIR Yagi.



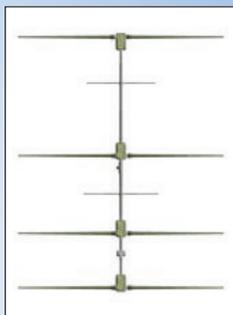
### 2 Element 20m-6m Yagi

2 element Yagi, 20m-6m continuous coverage; 57" boom, 36 ft longest element, 18.2 ft turning radius, 6 sq ft wind load, 30 lb; SDA 100 controller included.



### 3 Element Yagi 20m-6m

3 element Yagi, 20m-6m continuous coverage; 16 foot boom, 36 ft longest element, 19.7 ft turning radius, 6.1 sq ft wind load, 51 lb; SDA 100 controller included.

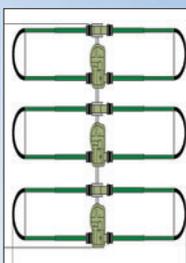


### 4 Element Yagi 20m-6m

4 element Yagi, 20m-6m continuous coverage; 36 ft longest element, 24.1 ft turning radius, 9.7 sq ft wind load, 99 lb; SDA 100 controller included.

## Dream Beam Series Yagi's

The Dream Beam series offers antennas for both space limited Hams as well as the "Big Guns" who have the space and want the very best.

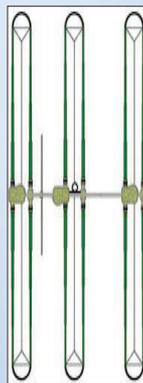


### DB11 Yagi Antenna

DB11 Yagi, 18.5 ft element length, 11 ft boom, 10.8 ft turning radius, 61 lb, 5.9 sq ft wind load; 2 active elements on 20m; 3 active elements on 17, 15, 12, 10, 6m.

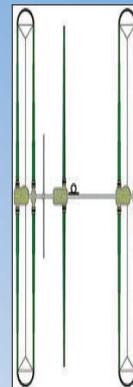
### DB18 YAGI

Dreambeam DB18 yagi, 3 el on 20m-6m, 2 el on 40/30m, 18 ft boom; Does not include optional 6m passive element kit; Includes SDA100 controller.



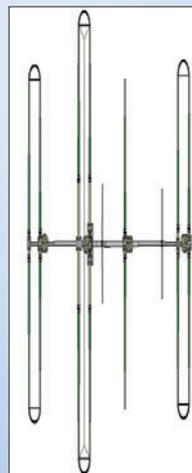
### DB18E YAGI

Dreambeam DB18E, 3 el 30m-6m, 2 el 40m, three looped elements, does not include optional 6m passive element kit, 18 foot boom; Includes SDA 100 controller.



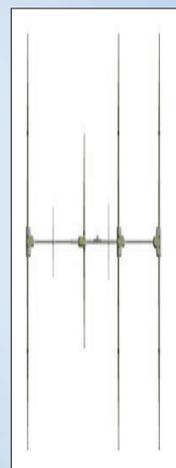
### DB36 DreamBeam Yagi, 40m-6m

DreamBeam DB36 4 element Yagi, 40m-6m continuous coverage; 36ft boom, 48 ft longest element, 26 ft turning radius, 17.5 sq ft wind load, 160 lb; SDA 100 controller included.



### MonstIR 4 Element Yagi 40m-6m

MonstIR 4 element Yagi, 40m-6m continuous coverage with full length elements; 34ft boom, 70 ft longest element, 39.7 ft turning radius, 23.9 sq ft wind load, 160 lb; SDA 100 controller included.



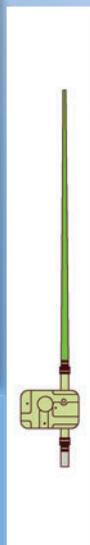
## Vertical and Dipoles

For the ham who may not have a tower, but a tree or two for a dipole. SteppIR verticals work great when there are no tall structures around to hang some wire. And, the low take-off angle can be your friend.



### BigIR Vertical Antenna, 40m-6m

BigIR vertical antenna, 40m-6m continuous coverage, 32 ft length, 15 lb total weight, 2 sq ft wind load; EIA 222C wind rating when guyed; Comes with SDA 100 controller and 1.5" mounting pole; Does not include optional 80m coil.



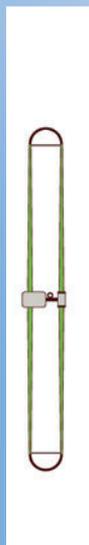
### SmallIR Vertical Antenna 20m-6m

20m-6m continuous coverage, 18 ft total length, 12 lb weight, 1 sq ft wind load; EIA-222C wind rating without guys.



### 20m-6m Dipole

20m-6m continuous coverage dipole; 36 ft element length; Comes with SDA 100 controller.



### 40m-6m Loop Dipole

40m-6m continuous coverage, 39 ft total length; SDA 100 controller included.

# SteppIR

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## Start Packing: It's Dayton Hamvention® Time Again

Last year about this time, I was whipping myself into a frenzy in anticipation of my first-ever Dayton Hamvention®. "I can't remember having this kind of anticipation since waiting for the mailman to deliver my Novice ticket in 1965," I'd written in May 2010's *Editor's Log*.

You'd think the shine would have worn off by now. Well, it hasn't. I'm as excited to go to Hara Arena this year as I was last. *Maybe even more.*

Of course, one of the best parts of Dayton is *its people*. It was fabulous having so many of you take time to visit the CQ Communications booth on the Hara Arena's Main Floor last year. A truly unforgettable experience.

Please make a point to stop by the booth this year, as well. Representatives from *WorldRadio Online*, *CQ Amateur Radio*, *CQ VHF*, and *Popular Communications* magazines and the *CQ Bookstore* will be there to greet you. There will be lots of our magazines and items from the bookstore for you to browse.

Oh, you can renew subscriptions to *CQ*, *CQ VHF* or *Pop'Comm*, too, if you'd like. It's fast and easy.

Among the highlights, though, is meeting readers. Your feedback is important to us.

If you've never attended the Dayton Hamvention®, please give it a try. Take it from this tenderfoot: It's likely to be everything you'd imagined – *and more.*

### Talkin' 'Trail-Friendly Radio'

In addition to being at the *CQ* booth, I've been asked to give a presentation about *Trail-Friendly Radio* on Friday, May 20 from 9:15 to 10:15 a.m. in the arena's Room 5. You're certainly invited to come by. I'd like to hear about your outdoor radio operating experiences and am eager to share mine – as well as a lot of photographs.

### Poll Vaulting During March's Online Chat

What a nice crowd we had for the *WRO Live Online Chat* on March 6. The conversation meandered from the weekend's DXing, to AM phone operation, to the apparent resurgence of 10 meters. Let's hope George Harrison had it right: *Here Comes the Sun!*

We chatted at length about the prospects for D-Star < <http://bit.ly/efRrwB> > and how it might impact VHF and repeaters in years to come. It was fascinating stuff from some very in-the-know people.

Each month we conduct online polls. They're always fun and offer a snapshot of ourselves.

For example, March 6 fell on ARRL SSB DX Contest weekend. Only 9 percent of chat respondents said they took part in the contest "with a vengeance." Another 36 percent were in it "casually," while 5 percent retreated to non-contest bands. A whopping 50 percent stayed off the radio altogether. *Yikes.*

*Which do you like better, we asked chatters, the ARRL DX SSB Contest or the CQ WW SSB WPX Contest?* Results showed 48 percent liked them equally, 14 percent preferred the ARRL contest, 14 percent preferred the *CQ* contest and 24 percent didn't like either one.

In response to a chatter's question, we asked everyone: *Do you think D-Star will replace FM on repeaters for utility communication?* Fully 92 percent felt it would not.

We occasionally like to poll on what we lovingly refer to as "useless information." In March we asked, "What letter did your first amateur radio call sign begin with?" Fifty percent of respondents said *W*, while 31 percent said *K*. The letters *N* and *A* each received 3 percent, and 13 percent replied *Other*.

To see a replay of the entire conversation, more poll questions and their results, visit the *WorldRadio Online Blog*: < <http://WorldRadioOnline.blogspot.com> >.

### New Time for May's WRO Live Online Chat

Don't miss our first *Midday USA WRO Chat* on **Sunday, May 1** – also to be known as the *Mid-Evening EU WRO Chat*.

This session was the result of a request from our friends in the **United Kingdom** and other parts of **Europe** to schedule a chat at an earlier hour for them. *Right!* It will begin at 3 p.m. Eastern Daylight Savings Time (1900 UTC).

Radio amateurs *everywhere* are welcome.

– **Richard Fisher, KI6SN**

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# After 50+ Years, Carl's Baby Is Still a Radiant Beauty

*How Mr. Mosley Brought His First Trap-Master TA-33 Tri-Band Beam West in 1959 – And How It's Still Flying High Today*

**By Don Thomas, W6LRG**

“I met Carl Mosley in Albuquerque, New Mexico in 1959 getting gas,” recalled Grady Williams, K6IXA, of Atwater, California. “He had a brown Dodge station wagon with a crank-up tower and a beam on the luggage rack.” Mosley told Williams he was on his way to California to demonstrate a new antenna at various amateur radio stores. He ended up at Custom Electronics on Fifth Street in Modesto.

Mosley, WØFQY (SK), was an engineer for Southwest Bell Telephone Co., in the 1940s when he and another engineer – Barney St. Varind – jointly came up with the TA-33 tri-band antenna design. The two of them started a company to make the antenna.

In the November 1958 copy of *QST* magazine the Mosley Co. of St. Louis Missouri < <http://bit.ly/gSXFbB> > had eight separate advertisements for its new Trap-Master TA-33 Tri-band antenna. The price was \$99.75 with a one-year warranty.

The Mosley beams used aircraft-drawn seamless tubing and stainless steel and brass hardware. As described in the advertisements, it was a well-made and durable antenna.

Edwin Ed Hill, K6MDX (SK), owned the electronics store in Modesto that, among other things, did two-way radio work. He also had a large amateur radio station in his garage at home and

had previously talked to Mosley on his HF (high frequency) radio. When he learned Mosley was coming west from St. Louis to demonstrate his new antenna in central California, Hill invited him to use the space and power at his store.

“Mosley set up the tower and antenna and used an Art Collins KWM-1 transceiver for a week of demonstrations,” Williams recalled. Hill’s store was the only place Mosley planned to go.

Mosley sold the beam to Bill Bates, W6CF (SK), < <http://bit.ly/hR2GQs> > who was the owner of radio station KTRB in Modesto. Bates used it several years at the radio station until the Pappas brothers – Pete, Mike and Harry, who amassed a fortune in the broadcast radio business in northern California – bought him out in 1973.

“I bought the beam and sold it to Bob Blyth, K6GM (SK), who put it up on Wallace Road in Winton, California,” Williams said. “Due to his failing health, his amateur radio equipment, beam, and tower ended up in the annual Turlock Amateur Radio Club auction. The high bidder was Richard Burns, KE6RGB, of Merced.”

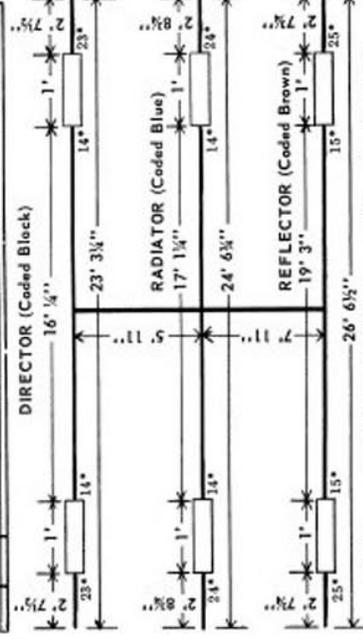
“Grady had seen it and I knew a little bit about the historical significance of the antenna,” Burns recalled. “I paid about \$380 for the beam, a rotor and other parts.”



**Richard Burns, KE6RGB, at his operating position in Merced, where – just feet away in his back yard – stands the first TA-33 tri-band antenna Carl Mosley brought to California in 1959. (Photographs courtesy of KE6RGB)**

**PARTS LIST**

PART NO.	QUAN.	DESCRIPTION
1	1	Element Support
2	4	Insulators
3	8	10-32 x 1 1/2" Screws
4	12	No. 10 Lock washers
5	4	10-32 x 1 3/4" Screws
6	2	1" OD x .058 wall, Element (coded BLUE)
7	2	7/8" OD x .058 wall, Element (coded BLUE)
8	2	Trap Assemblies (coded BLUE)
9	2	5/8" OD x .035 wall, Element (coded BLUE)
10	6	5/8" Coplugs
11	19	No. 7 Sheet Metal Screws
12	10	U-Bolts
13	2	No. 40 Clamping Blocks
14	20	1/4" Lock washers
15	20	3/16-20 Nuts
16	2	Solder Lugs
17	2	1-1/8" OD x .058 wall, Elements (coded 1 BLACK and 1 BROWN)
18	2	1" OD x .058 wall, Elements (coded 1 BLACK and 1 BROWN)
19	4	7/8" OD x .058 wall, Elements (coded 2 BLACK and 2 BROWN)
20	4	Trap Assemblies (coded 2 BLACK and 2 BROWN)
21	4	5/8" OD x .035 wall, Elements (coded 2 BLACK and 2 BROWN)
22	1	Moist Plate
23	1	Boom
24	1	Ground Strap
25	1	Boom Splice
26	-	2 Metal Caps and 2 Plastic Coplugs
27	7	No. 43 Clamping Blocks

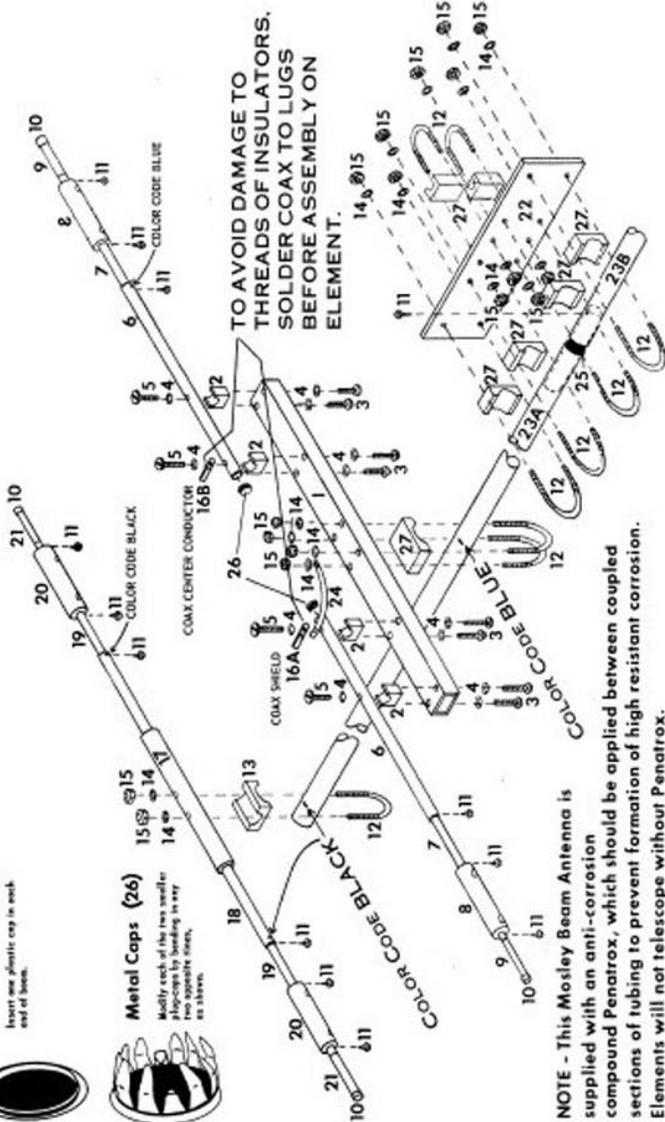


Settings are for Code 1, add 10 1/2" to center Dimension for Code 1.  
 \* Indicates number of coil turns.

**Plastic Caps (26)**  
 Insert one plastic cap in each end of boom.



**Metal Caps (26)**  
 Mutilate each of the two ends of the boom by filing to a sharp edge.



**TO AVOID DAMAGE TO THREADS OF INSULATORS, SOLDER COAX TO LUGS BEFORE ASSEMBLY ON ELEMENT.**

**NOTE - This Mosley Beam Antenna is supplied with an anti-corrosion compound Penatrox, which should be applied between coupled sections of tubing to prevent formation of high resistant corrosion. Elements will not telescope without Penatrox.**

**ASSEMBLY**

**CAUTION:** Coil Assemblies are color coded on one end only; this color should ALWAYS be nearest the boom. Reversal of traps will cause high SWR and other mal-function of beam.

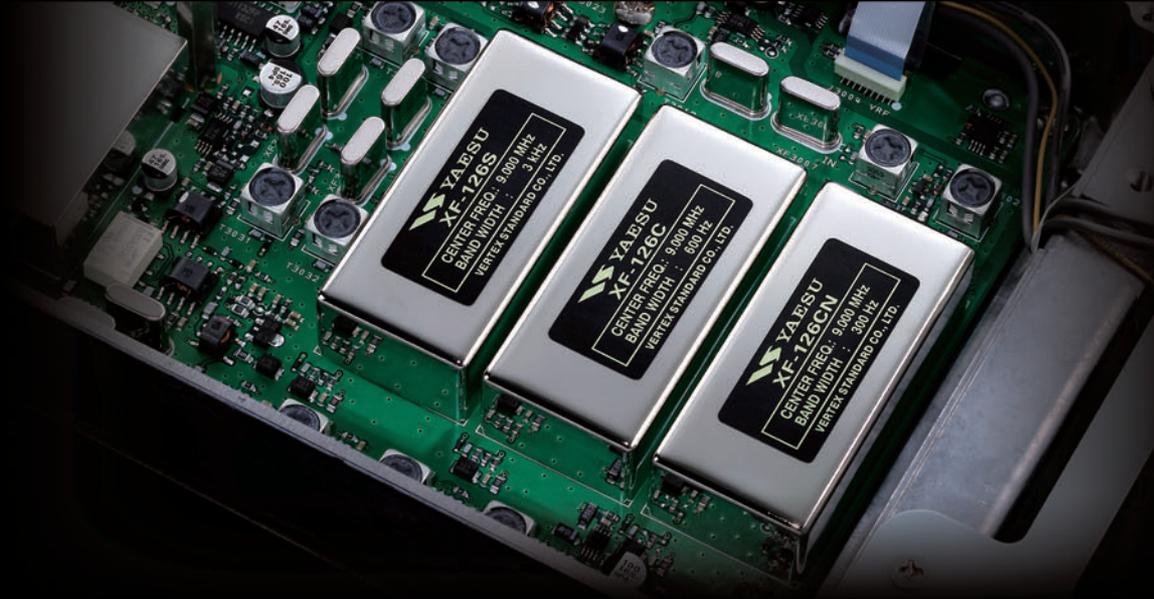
**Read Directions Carefully!**  
 Begin assembly by grouping all element and coil sections according to color code.  
 For proper matching use 52 ohm coax. RG-8/U is recommended.

**RADIATOR ASSEMBLY - Color coded BLUE**  
 Loosely install insulators (part 2) to Element Support (part 1) with Screws and Lock washers (parts 3 and 4). Place Element Section (part 6) into 'V' of Insulator (part 2) so that screw hole on Blue color coded end of Element (part 6) is facing DOWN. This is important to assure proper position of coil assemblies that are provided with breather holes and should face down.  
 Place Screws (part 5) through Lock washers (part 4) and secure to outermost Insulator (part 2). Place Screw (part 5) through Lock washer (part 4), Solder Lug (part 16A), Ground Strap (part 24), Element (part 6) and secure to

Insulator (part 2). Insert Screw (part 5) through Lock washer (part 4), Solder Lug (part 16B), Element (part 6) and secure all insulators. Insert Blue color coded end of Element Section (part 7) into corresponding color coded end of Element (part 6).  
 Align holes according to frequency chart and secure with Screw (part 11). Insert Blue color coded end of Trap Assembly (part 8) into Element Section (part 7) and secure with Screw (part 11).  
 Insert Blue color coded end of Element Section (part 9) into end of Trap Assembly (part 8) and secure with Screw (part 11). Place Coplug (part 10) over outer ends of Element Sections (part 9) and press Metal Cap (part 26) into inboard ends of radiator elements (part 6).  
**ATTACHING RADIATOR TO BOOM:**  
 Loosely install two U-Bolts (part 12) to Element Support (part 1) with Lock washers and Nuts (parts 14 and 15). At this time attach Ground Strap (part 24) to one of the U-Bolts. Place Support (part 1) directly over Blue color code on Boom (part 23A). Install Clamping Block (part 27) between Element Support (part 1) and Boom (part 23A). Secure with Nuts and Lock washers.

Assembly instructions posted on the Internet show the detail of how the TA-33 goes together – and comes apart.

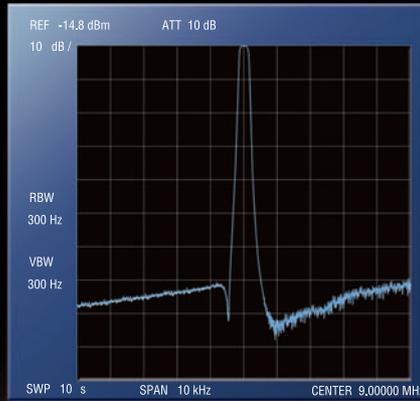
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**FT DX 5000 Series**  
 The Dawn of a New Era - Dynamic Range  
 112 dB / IP3 +40 dBm



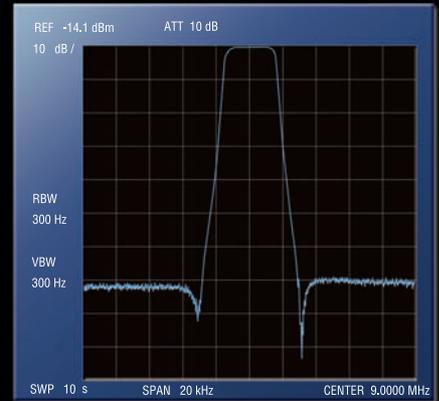
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Super sharp "Roofing" filters for VFO-A/Main Receiver to give you the best performance and flexibility

Newly designed sharp "Roofing" filters for VFO-A/Main Receiver, selectable between 300 Hz, (optional/included in MP), 600 Hz, 3 kHz (6-pole crystal filter), 6 kHz, 15 kHz (4-pole MCF).



300Hz



3kHz

**NEW**



Photography shows FT DX 5000MP

HF/50 MHz 200 W Transceiver  
**FT DX 5000MP**

Station Monitor SM-5000 included  
 ±0.05ppm OCXO included  
 300 Hz Roofing Filter included  
 600 Hz Roofing Filter included  
 3 kHz Roofing Filter included

HF/50 MHz 200 W Transceiver  
**FT DX 5000D**

Station Monitor SM-5000 included  
 ±0.5ppm TCXO included  
 600 Hz Roofing Filter included  
 3 kHz Roofing Filter included

HF/50 MHz 200 W Transceiver  
**FT DX 5000**

Station Monitor SM-5000 optional  
 ±0.5ppm TCXO included  
 600 Hz Roofing Filter included  
 3 kHz Roofing Filter included

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## 5.2" x 1.6" Large dot matrix (264 x 64 dots) LCD display

## GPS / APRS® / Bluetooth® Features

# FTM-350AR

New Vacuum Cup-Mounting Bracket permits Angle Adjustment  
 New APRS® Operation Capability, and newly Expanded User Friendly Functions



144/(220)\*430 MHz 50 W FM Dual Band Transceiver

## FTM-350AR **NEW**

220 MHz 1 W (USA version only)

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#### 1. New Vacuum Cup-Mounting Bracket with Angle Adjustment

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- Programmable keys on the DTMF Microphone provide direct access to APRS® functions

\*APRS® is a registered trademark of Bob Bruninga WB4APR  
 \*SmartBeaconing™ from HamHUD Nichetronix

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The auction, Burns said, “was in 1999 or 2000.” After bringing the antenna home, it was ultimately pulled apart. “We used a green scrubber pad to clean the metal,” polishing all connections and applying non-seizing conductive compound to the joints.

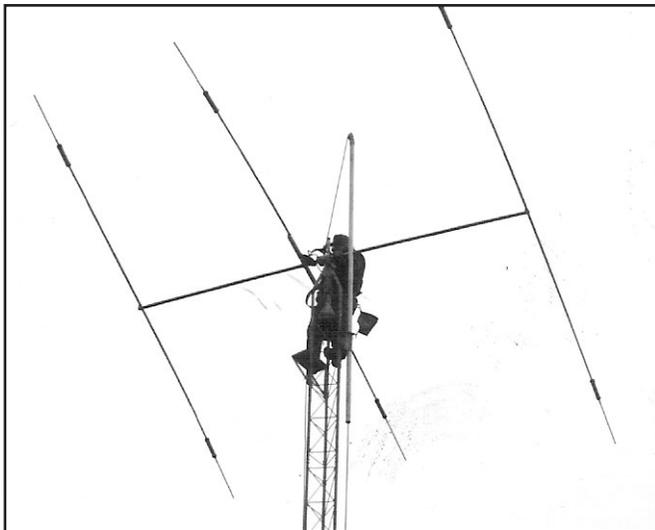
Burns contacted the Mosley Co., and ordered a set of trap seals. After all these years, the company still supports the TA-series of antennas. *Durable* the antenna and the company are.

A volunteer crew of local radio amateurs – including Vaughn Wilson, K6IMN; Kent Le Barts, K6IN; Don Thomas, W6LRG; and Burns, KE6RGB – put up the classic TA-33 in January 2004.

“First we balanced the antenna on six-foot ladders to see what was going on,” Burns said, adding that field strength measurements looked good. “It passed the test.”

Mosley’s TA-33 was hoisted to the top of a 62-foot tower, the coax and antenna control cables temporarily pushed through an open window in a hurry and hooked to Burns’ Kenwood TS440SAT/Heathkit SB200 station. *He was ready to go.*

With a big smile on his face, KE6RGB made his first contact with a station in the Midwest.



Vaughn Wilson, K6IMN, towers above ground as the classic TA-33 beam is fixed in position at KE6RGB in 2004.



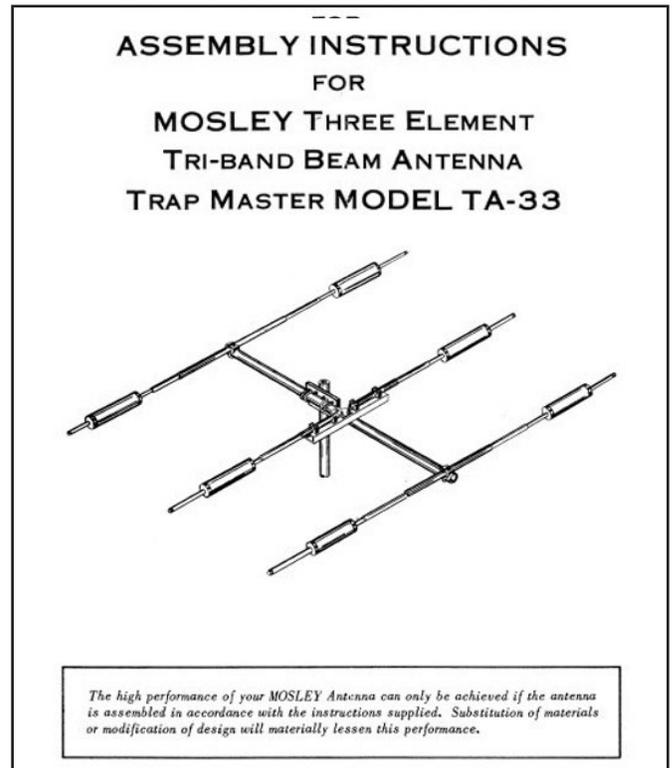
Hoisting the beam its last several feet to the top of the 62-foot tower, K6IMN gently moves the Mosley TA-33 into place.

Now, 11 years and hundreds of QSOs after coming to Burns’ Merced home, Carl Mosley’s 52-year-old TA-33 tri-band beam is still going strong at KE6RGB.

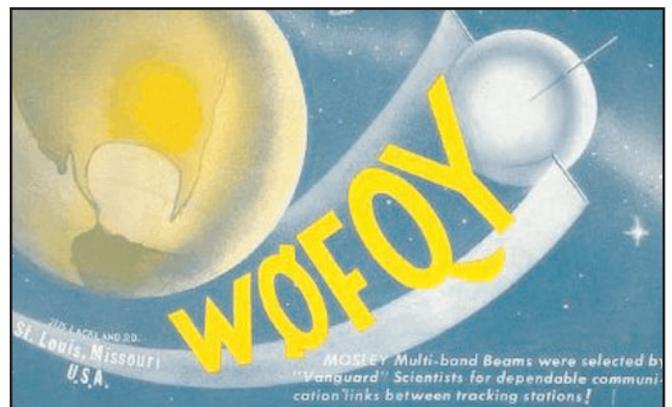
When Burns tells the other station he’s using an original TA-33 beam brought to California more than 50 years ago by Mosley himself, the reaction is usually, “Wow, wee! Many of them tell me what a good signal it’s still putting out.” Burns is amazed, as well. “That beam is older than I am.”

KE6RGB has Carl Mosley’s Trap-Master TA-33 Tri-band antenna ready to last another fifty years – *at least!*

*(The WRO staff contributed to this story – Ed.)*



A graphic illustration on the cover of the Mosley Trap-Master TA-33 Tri-band antenna manual shows the classic beam’s configuration.



Carl Mosley, WØFQY’s, QSL card from the 1960s featured a celestial display with the notation: “Mosley Multi-Band Beams were selected by *Vanguard* scientists for dependable communications between tracking stations,” harkening to the early days of the U.S. space program.

# A Boy's Life Homebrewing and the Amazing Book It Inspired

By Frank W. Harris, KØIYE

*From a very young age, Frank W. Harris' natural curiosity inspired a life of building things – a pursuit that fit well with his passion for amateur radio. In KØIYE's free, online book **Crystal Sets to Sideband**, Harris shares decades of workbench wisdom. In this story, get an insight into the author's homebrewing philosophy. – Ed.*

**A**s individuals we are each different, but a common denominator is that we all strive to gain control over our lives.

For example, as a kid, my brother was an entrepreneur and always had lawn mowing businesses and jobs to earn money. Money and understanding financial issues made him feel in control. So I wasn't surprised that he ended up a bank president.

If people are successful in one endeavor, but are incompetent or no better than average in others, they will usually capitalize on what they do best. In my case, I was impressed by the power of science. It gave me a feeling of control if I could understand, fix or build something.

For me, science was not only fun – people who have no interest in how things work were happy to pay me to explain or do those jobs for them. Heck, I was even excused from serving in Vietnam *because electronic engineers are too scarce to send over there.*

## The Value in Homebrewing

It's true that homebrewing can be extremely frustrating. You rebuild a circuit five times and it still doesn't work. I continue

### Get A Copy of *Crystal Sets to Sideband* — Free

To download the recently updated 12th revision of Frank W. Harris, KØIYE's, *Crystal Sets to Sideband*, free from the Internet site of the Four States QRP Group, visit: < <http://bit.ly/evrbwr> >.

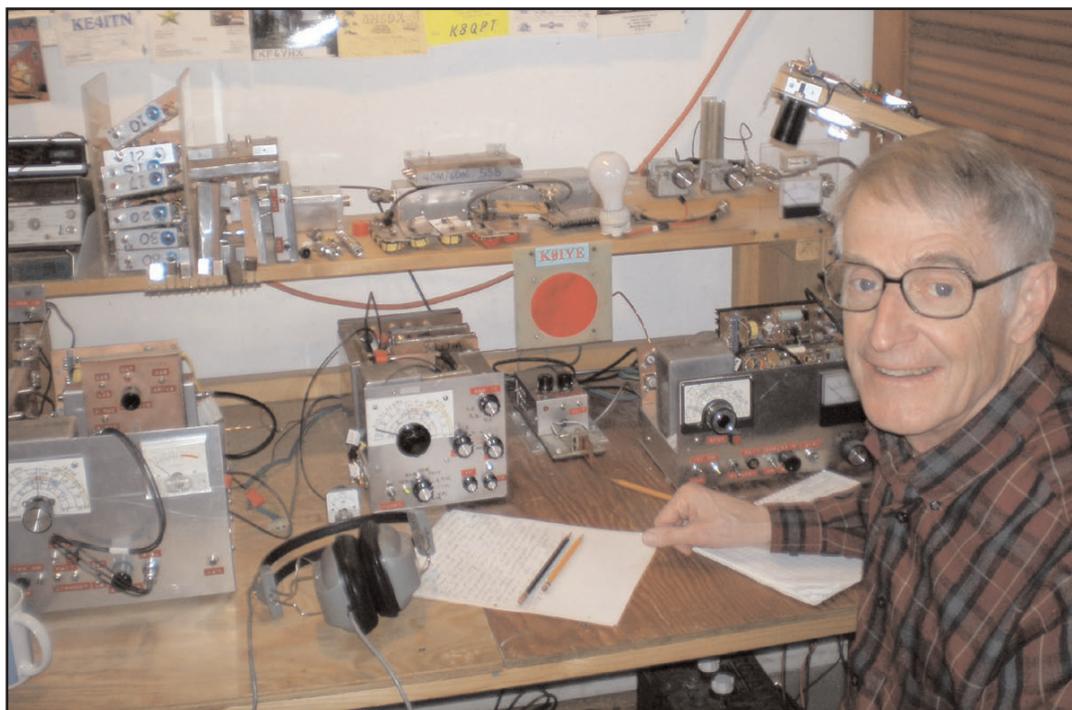
### A Simple Project for the First-Time Homebrewer

If you've never tried your hand at building a piece of radio gear but would like to, see Richard Fisher, KI6SN's, *Trail-Friendly Radio* column elsewhere in this edition of **WRO**. Homebrew a small audio amplifier featured in Frank W. Harris, KØIYE's, *Crystal Sets to Sideband* – a great way to stick your toes into the ham radio homebrewing waters.

struggling because, unlike solving Sudoku puzzles, when my circuit finally works, it's not just a personal triumph – the circuit continues to perform for me.

The challenge of the puzzle haunts me until I solve it. I can't get it out of my head. And because the quest is enjoyable, I don't try to. When it finally works, the story of the circuit is just beginning and not an end in itself. Often years later my circuit will still be working and, in effect, congratulating me.

I can go on-line and point to products I helped design decades ago that are still on the market. Yes, the world doesn't know or care that I designed or invented some feature, but I know, and it feels great. It isn't even important that I wasn't showered



**Frank W. Harris, KØIYE, sits at the all scratch-built homebrew amateur station he constructed and has refined over the years. (Photographs courtesy of KØIYE)**



A hand-lettered front panel shows the coverage of KØIYE's multi-band receiver.

with wealth for my work. In my opinion guys who need mansions and luxuries to gain a feeling of self-worth should spend time with a psychotherapist.

### You Say Tomato . . .

We're all different. For example, every Sunday morning on NPR, *New York Times Crossword* Editor Will Shortz inflicts his quiz show-like puzzle torture on some volunteer who seems to enjoy being embarrassed nationwide.

I have never been able to think fast enough to solve such puzzles. Can I think of, say, a seven-letter word that means asparagus? *No*. It would take me hours or perhaps forever. But even if I could solve it, what would I really gain? To me, the NPR puzzle segment is annoying and I turn it off.

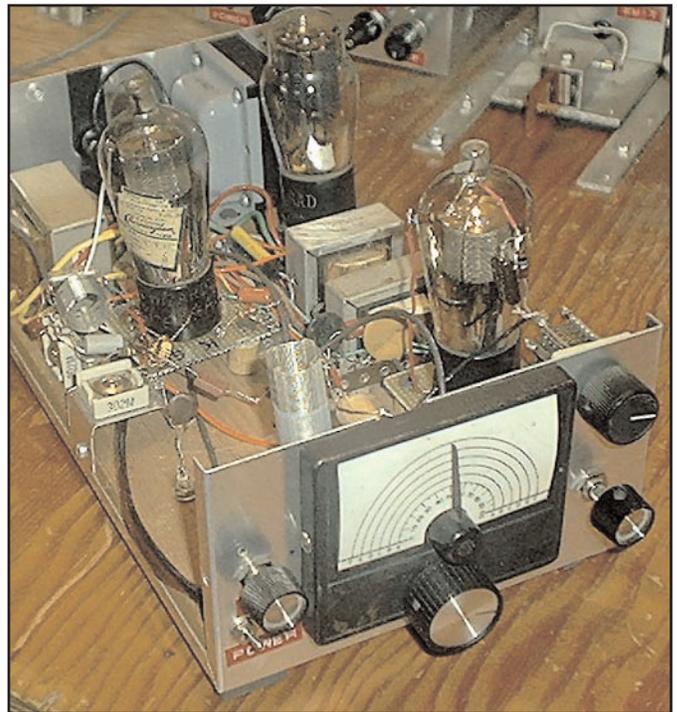
In contrast, I willingly spend days, even weeks, puzzling over some engineering roadblock. It must be a similar skill, but my motivation is that I desire the final product and the pleasure that comes from knowing that I built it and it works!

From analyzing my motivation, it's clear that most people will never be interested in homebrew. It simply isn't the way they approach the world. They control their world by playing music, selling products, entertaining with jokes, designing furniture, practicing medicine, farming, manipulating genes, driving race cars and a thousand other careers. My approach will only work for people able to see the world as I do.

### An Inquisitive and Busy Boy

Being old, I've had plenty of opportunity to build things. I look back on my basement efforts and a few projects immediately jump to mind. These were truly successful and gave me the thrill and joy we all seek. A common characteristic of the better projects was that they not only worked, but led me to adventures I wouldn't have otherwise had.

When I was in elementary school my projects were mostly models and toys. My favorite projects were the homemade bows and arrows. I liked them because they were real – not just models. My friend Garth and I actually hunted squirrels with them. That led to tanning hides, taxidermy, cooking wild game and



Tubes, transformers, chokes, coils and capacitors seem to be everywhere in the superregenerative receiver Frank Harris built.

studying anatomy. We even presented a dissection of frogs to our sixth grade class.

### Enter: The Magic of Radio

My first radio projects were a bit frustrating. In the seventh grade I thought it would be cool to build a radio, hide it in a cut-out book and bring it to school. I wanted to sit in the back of the classroom and listen to my secret radio, just like some sort of spy.

The crude radio eventually worked, but only with a long wire, a solid ground and a big earphone – not exactly *James Bond technology*. The stealth radio fantasy never worked out and I had to listen to the teacher. *Oh, shucks!*

In the 1950s I became interested in shortwave listening – SWL. I used a World War II *Morale Radio* which worked well, but had few shortwave bands and no beat frequency oscillator – BFO – for copying Morse code and SSB.

By 1957 I had a Hallicrafters S-40A which had poor sensitivity and no selectivity. When *Sputnik* was launched, I heard the announcement on the news, immediately tuned the S-40A to 20.0 MHz and there it was!

It was so loud I couldn't believe it was the satellite. But five minutes later it faded and vanished. Like many kids in the *Sputnik* era, I was building little rockets, but my *big* ones – perhaps a foot long – always exploded or failed in other ways.

### 3, 2, 1 Liftoff, Then Row

I did succeed in developing tiny three-stage rockets that would make three distinct hissing smoke trails as they climbed a couple of hundred feet.

Kids today can wander down to the toy store where they buy inexpensive, elegant rockets that zoom to extreme heights



Internal labeling identifies the duty for this piece of gear built by KØIYE – an SSB transmitter for 40 and 60 meters.

where the nose cones automatically deploy pretty parachutes. Notice how the kids have been stripped of the joy of accomplishment.

My first really big home project was an *orange crate canoe* built from plans in *Boys' Life* magazine. Even today, how many eighth graders own a full-sized canoe? Thanks to helpful parents who hauled the boat around on the car roof, we floated it down the creek, spent days fishing on local lakes and used it as a swimming platform in the reservoir.

### Into Amateur Radio

My first serious ham project was a seven-watt 80/40-meter transmitter built from plans in the 1957 *ARRL Handbook*. Radio parts were expensive for a kid and scraping up \$35 for the components was a struggle.

My friend Bob Hamilton, KNØIYF (now NØRN), and I took our Novice exams together. When our licenses arrived in the mail, we immediately had

a fine, slow QSO on 40 meters. Our classmate and mentor, Eric Raimy, KØDUA, joined us in a three-way and it was a great day for all of us. Bob and I hand-made QSLs for each other and proudly hung them on the walls of our shacks.

Unfortunately, in the 1950s typical receivers were so poor that hardly anyone outside of town could hear my seven watts. In contrast, Bob and Eric with their 50-watt kit transmitters were working people all over the country. I felt left in the dust.

I added a 6L6 final to my one-tube QRP transmitter but the power transformer was not able to supply the extra current. The 6L6 added little to my signal, but I did meet a fellow ninth grader on the air who was equipped with similar crummy equipment. Ray Phillips, KNØKZO, had just moved into the other side of town. I pedaled over to his house to meet him.

Ray had built a tiny plywood, tree-house-like shack in the one-car garage of his house. It was suspended over the hood of his folks' car. You couldn't even stand up in there. It was a junior high kid's dream – talking to the world (well, across town) with his one-tube transmitter from inside his own *secret hide-out*. I loved it! By contrast, my station on a well-lit table in a heated bedroom had no romance at all.

### Improving Our Gear

Ray and I souped-up our lousy receivers for 15 meters by building pre-selectors from plans in *Popular Electronics*. And, when we finally had our 50-watt kit transmitters, we had signals as strong as Bob's and Eric's. Bob and Eric were into DX and became super operators, while I continued to be engrossed in making things.

Today, Bob is on the *DXCC Honor Roll* and has worked pretty much everywhere, except P5, of course. Sadly, Eric is a silent key.

One of my electronic projects that worked well back then was a homebrew Geiger counter made from plans in *Popular Electronics*. The 1950s was the era of *duck and cover* and nuclear *mutual assured destruction*, so the Geiger counter was quite in vogue. And of course, I was the only kid who had one.

While staying at a friend's family cabin in the mountains, we hiked over to a nearby uranium mine. We were greeted by a huge explosion and a cloud of rock dust billowing from the tunnel.

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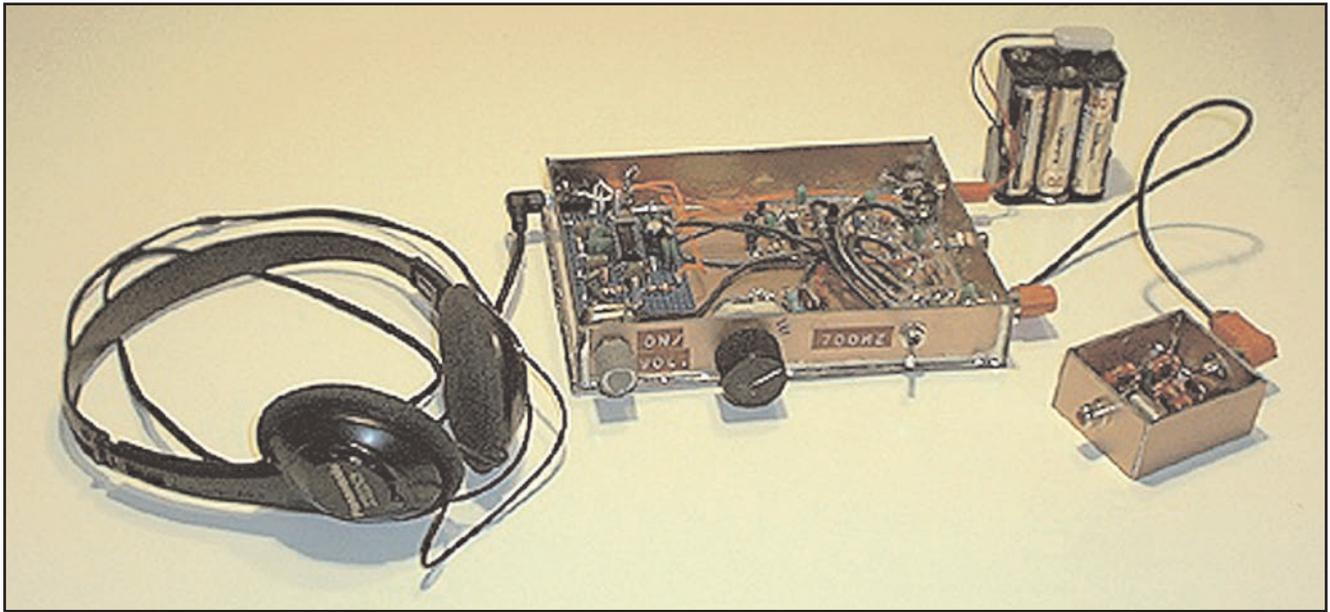
For detailed specifications on Diamond's Base & Mobile Antennas, please go to [www.diamondantenna.net](http://www.diamondantenna.net)

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**This direct conversion receiver was KØIYE-designed for outdoor operation.**

The miners emerged from hiding near the entrance and asked us what we wanted. I explained that we wished to try out the Geiger counter on their tailings heap. They said, “What a coincidence! We’re hoping that blast has just opened up a new vein, but we left our counter in town. Would you guys like to come in and help us check out the results?” We followed them into the mine and climbed over the rubble. At the end of the tunnel was a newly exposed skinny vein of pale green crystals – the ore! My counter clicked wildly. *Sweet success.*

### **Walkie-Talkies Among Friends**

While in high school I built a 10-meter walkie-talkie from plans in the 1946 *ARRL Handbook*. It put out one-quarter watt, had a two-foot-long antenna with a loading coil and worked super. Well, *super* by 1959 standards.

Bob, Ray and Brian Hunt, KØDTJ, were inspired to build

*talkies* like mine and we four had fun playing with them on Field Days, coordinating on 80-meter transmitter hunts and chatting around town.

One day I was up on the roof with my *talkie* trying for “DX.” I worked Al Biezer, KØKZL, mobile, who was just driving in from Denver. We chatted and he drove to my house. We had a pleasant eyeball QSO, became great friends and he joined our local ham club.

One of my biggest thrills in ham radio was standing on my chimney staring out at the eastern horizon and talking to a guy in New Jersey 2,000 miles away with my little *talkie*. That was nothing. Bob was walking over to my house with his walkie-talkie and worked Morocco. More than 50 years later, he still remembers the call letters, CN8NN. Ah, the good old days of sunspots.

### **Balloons Meet Amateur Radio**

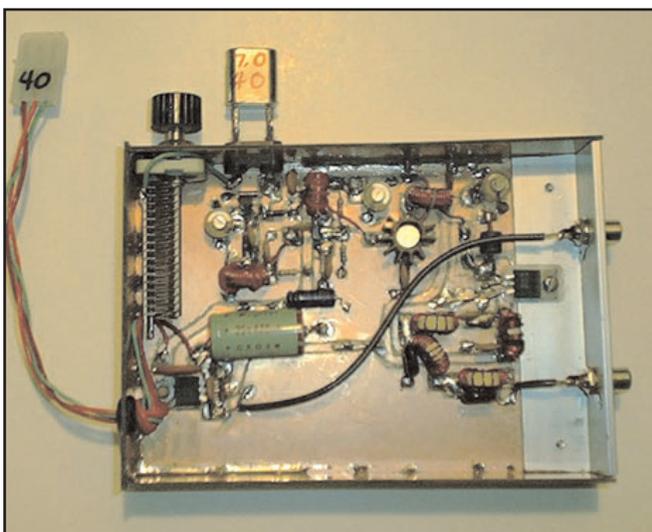
In high school Bob and I discovered we could generate hydrogen with scrap aluminum and muriatic acid. We developed a way to purify the gas by bubbling it through water and were soon filling garment bags from the cleaners and sending up balloons.

It took 10 bags to lift a one-pound camera. We developed an acid-aluminum timer and took aerial photos of our town. *The Denver Post* came out and did a Sunday supplement article with pictures of us launching our camera balloon.

I also sent up a 40-meter oscillator beacon. I sat at my receiver and listened to the CW musical whistle while it slowly faded into the static and my expensive 7.15 MHz crystal floated over the eastern horizon. It wasn’t exactly exciting. I never did get it back, even though we did manage to retrieve all of our labeled camera payloads.

In high school I built the “flying spot scanner” TV camera described in Chapter 16 of *Crystal Sets to Sideband*. I didn’t just have fun with it – it won the county science fair. But when I got to the state competition, the judges were mostly biologists.

By then nearly every family had a TV in their living room, so the judges failed to see it as anything unusual. And that’s



**A small low-power transmitter is paired with the direct conversion receiver for KØIYE’s “go bag” to the field.**

a problem with modern ham radio. Non-technical people already have cell-phones and the Internet. *Why bother with amateur radio?*

### Some Things Just Didn't Work Out . . .

OK, lots of my projects weren't so hot. The *Big Ear* amplified microphone for distant eavesdropping worked poorly. The infra-red night vision device didn't work worth a darn.

It's fortunate that my hang glider prototype never flew high enough to kill me. In college I built a 75-meter AM phone mobile rig for my World War II surplus Jeep. It worked well, but since I didn't really do much with it, it doesn't stand out as one of my golden homebrew projects.

In 1967 I made a pretty good combination mobile or fixed base all-band rig, but I hardly used it until I was retired decades later. I included pictures of that receiver and transmitter in the book in Chapters 8 and 13. They are examples of equipment that worked well in their day, but aren't up to modern requirements. They suffered from drifting VFOs, AM phone instead of SSB, no WARC band coverage, obsolete parts, and an insensitive, unselective receiver.

As an adult I never stopped building things, but I built few electronic projects at home while I was soldering on my day jobs. If you solder for a living, it loses appeal when you do it on your free time.

### . . . But Others Were Triumphs

Most home building is fun, but there have been several projects that were particularly satisfying. My favorite homebuilt projects over all the years are probably the canoe, the TV camera, my solar-heated house, my homebrew electric car and – of course – my present-day *all scratch-built* HF amateur radio station.

I enjoyed my work as a research and development biomedical engineer and my life plan was to work until age 90. Then, after retiring, I was going to build my *scratch-built* station.

The only downside of my engineering jobs was my corporate experience that resembled Dilbert cartoons to varying degrees. I loved working every day on real medical devices surrounded by interesting people and often with patients who were using our equipment. But, alas, the

company was destroyed by a hostile takeover by an inferior company.

### Forging Ahead to *The Book*

When my job ended, my dear mother was still living in her home, but she was becoming increasingly infirm. Mother became a significant part-time job and I didn't see how I could commute to a full-time job and still take care of her.

Happily, I was rich enough to retire early. Consequently, between phone calls from mother, I began work on my ham station.

The Boulder Amateur Radio Club has a newsletter every month and needed articles, so I began writing about my ham projects. Eventually the stack of articles began to resemble a book, so I thought it might be fun and useful to assemble *Crystal Sets to Sideband* – a homebrewer's guide. It's supposed to be the handbook I wished I had had when I was in the ninth grade.

Readers will notice that all my projects, especially in the early years, were directly inspired by plans from handbooks and magazines. Without literary inspiration, most of them would never have happened.

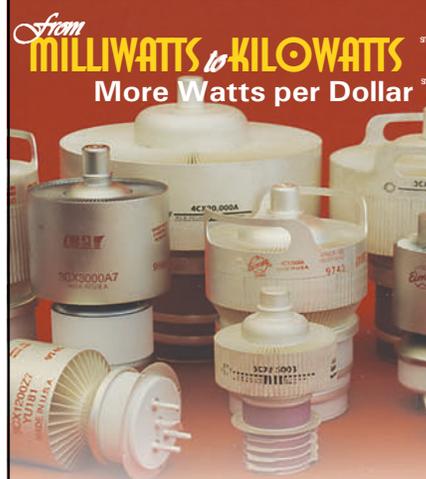
### 'Crystal Sets . . .' Lands on the Web

When I finished an early version of my book, I approached several electronic publishers. They had no interest in a huge illustrated book that only a handful of eccentric hams would care about. I wasn't surprised. I had already had doleful experiences in the modern world of publishing.

Today you need an introductory literary agent to find you a literary agent, let alone an agent to find you a publisher! I gave up on publishing, but whenever someone on the air expressed an interest in my homebrew rig, I sent them a copy of my book on a 37-cent CD.

One day in 2003, Pete DiVolpi, K3PD, called me on the phone and wanted to know if he could put my book on his website. This was interesting because I had never worked Pete – or the guy he got a copy of my book from.

*Crystal Sets to Sideband* had taken on a life of its own. And now, for reasons I don't fully understand, the book has taken off again. Perhaps the unfathomable complexity of modern digital wonders has finally driven experimenters back to our electronic roots.



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3CX400A			86-SS
3CX400A			86-SS
3CX800A			87A
3CX1200A			
3CX1200A			
3CX1200A			
3CX1500A			
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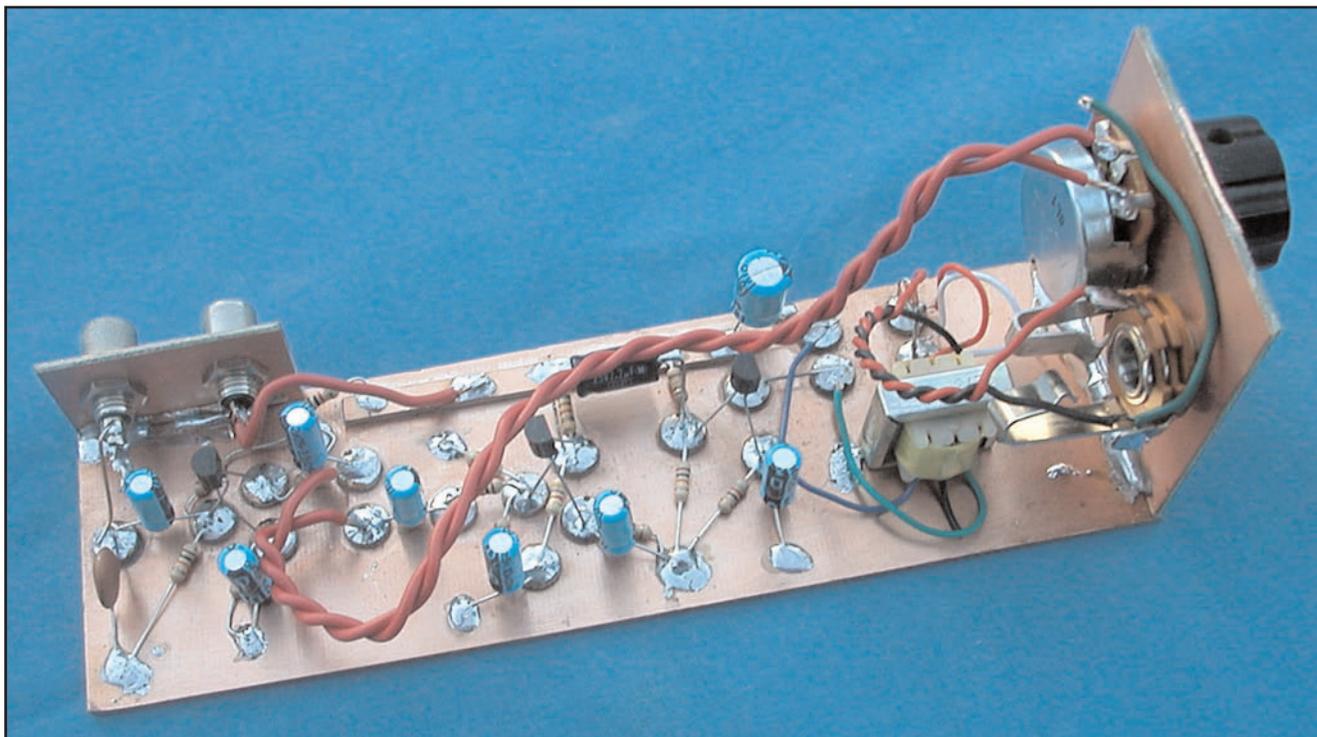
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# You Can Do It: Help Put the Lie to Myth No. 5

By Richard Fisher, KI6SN



The KØIYE Audio Amplifier, *a la* KI6SN, is a great project for the first-time builder and yields a trail-friendly radio accessory for bringing more headphone punch into the field. (Photographs courtesy of KI6SN)

**CQ** Amateur Radio Editor Rich Moseson, W2VU, did some fascinating *mythbusting* in his *ZERO BIAS* editorial in February’s edition. From the perceived demise of amateur radio to the death of CW, he pushed back on those theorists who say many areas of hamming are on life support.

W2VU’s Myth No. 5 has always set my hair on fire. *Hams Don’t Build Anything Anymore*. I’ll bet it lights a fire on the head of lots of trail-friendly radio enthusiasts. *We’re nothing if not builders, right?*

The survey results reveal quite an interesting picture. “At least for CQ readers, building in ham radio is alive and well,” W2VU wrote. Supporting statistics help prove his point.

## A ‘Must See’ Homebrewing Primer

Frank W. Harris, KØIYE, in his 426-page online book *Crystal Sets to Sideband*, tells how satisfaction from building your own equipment is not only achievable, it’s happening all the time. In a feature elsewhere in this edition, under the headline *A Boy’s Life Homebrewing and the Amazing Book It Inspired*, Harris

shares his philosophy on building your own gear – with decades of personal experience to draw upon.

When it comes to radio operation outdoors, KØIYE is a kindred soul, as well.

“For over 20 years I hiked or snowshoed once a week with Bob Hamilton, NØRN,” Harris said. “For a while we were doing minimum-weight overnight backpacking because it enabled us to reach tantalizing peaks and lakes that were out of range on our day hikes.

“Aside from the frigid weather, winter camping has the disadvantage of 14 hour nights. We thought (trail-friendly operation) might occupy boring winter evenings and might work well up on high mountainsides.”

KØIYE said the “little (direct conversion) receiver described in Chapter 7 was built with that in mind. It was supposed to stack on top of the QRP transmitter described in Chapter 6.”

## A KØIYE Audio Amplifier You Can Build

In *WRO* T-FR’s ongoing campaign to support home building trail gear, we are taking a piece of KØIYE’s “little receiv-

20M SSB

TX

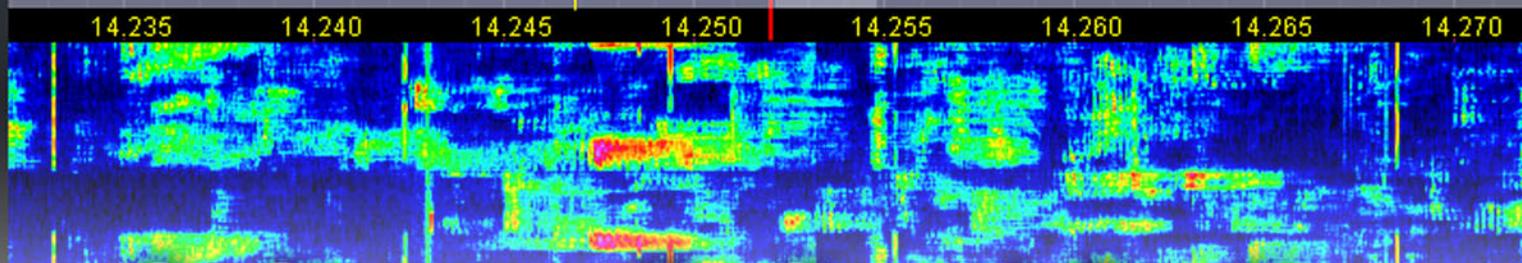
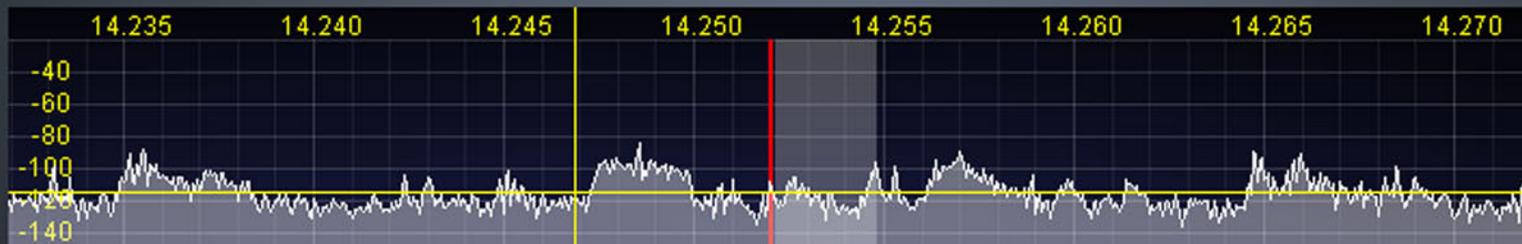
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er” circuit and presenting it this month as a first-time homebrew project almost anyone with patience and *stick-to-it-ness* can build and enjoy.

The simple three-transistor audio amplifier shown on Page 191 of *Crystal Sets* . . . could be just what’s needed to give your low power transceiver more headphone punch to overcome the low audio levels that can plague so many trail-friendly radios. You might use it to amplify a crystal set, as well. Or use it as a foundation on which to build a T-FR direct conversion receiver of your own. It’s all about *learning and experimentation*.

Having built the amplifier, I can attest that it’s *hot*, producing quite a bit of gain. It doesn’t take too much to overdrive this *little pistol*. You may have to play with the gain control on your transceiver and the volume control on the KØIYE amplifier to find a comfortable audio level at the headphones. But that’s all part of the learning experience, and the fun. (*View the amplifier page or download the book free by visiting: < <http://bit.ly/evrbwr> >. – Ed.*)

You’ll need to print the schematic to see what you’re getting into – and what you’ll be getting out.

As Harris describes in *Crystal Sets* . . . , a neat feature of this amplifier is its built-in *pseudo* automatic gain control (AGC) via a loop created by R1, R2 and C1. It “biases the amplifier on for weak signals and biases it off for loud signals.” The KØIYE amplifier is an extensively modified version of a circuit found in the 1986 *ARRL Handbook*.

Three common NPN transistors – two 2N3904s and a 2N2222 – form the amplification chain. Two parts you might consider getting from Radio Shack: the output transformer (RS 273-

1380) and 5K audio taper volume control potentiometer (RS 271-1720). The rest of the parts are capacitors, resistors and a couple of diodes that are easy to find at such parts houses such as Digi-Key, Mouser and Dan’s Small Parts and Kits. You might already have them in your parts box.

A handy component list for the KØIYE audio amplifier is on the *Trail-Friendly Radio Extra* online blog: < <http://trail-friendlyradio.blogspot.com/> >.

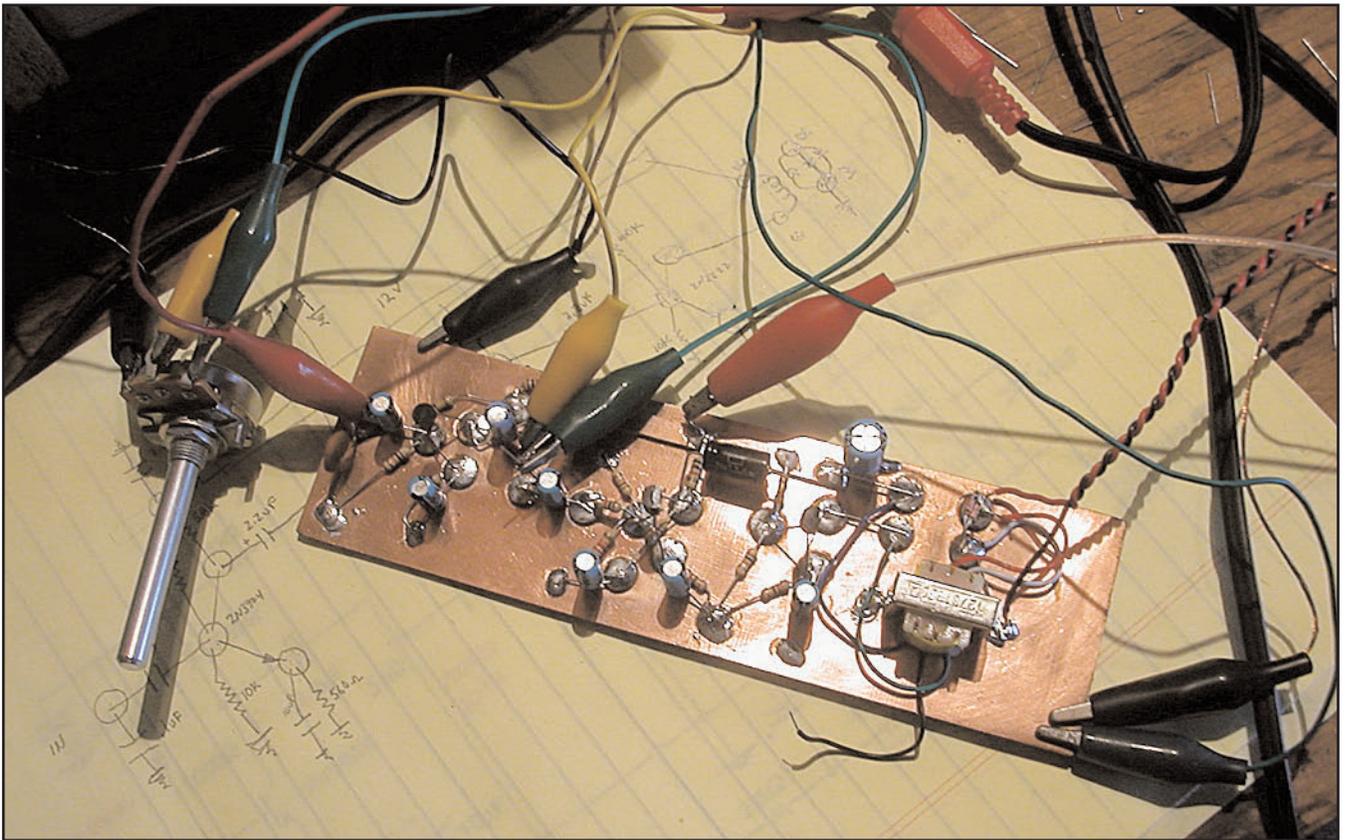
### Let’s Go to Manhattan

At KI6SN, we chose Manhattan-style construction for this project. Chuck Adams, K7QO, has an excellent tutorial on this building technique. Visit: < <http://bit.ly/idkbir> >.

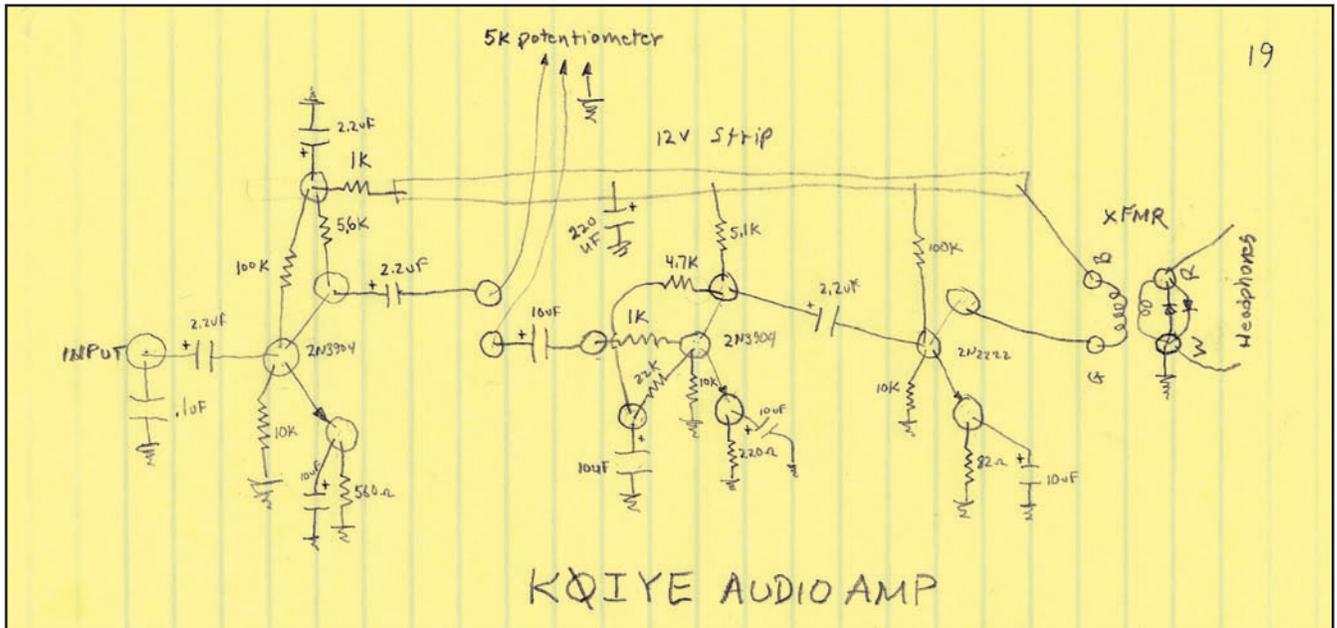
In short, small islands made of printed circuit board material are glued to a PC board ground plane creating solder points for the amplifier’s circuitry. An accompanying photograph shows how the circular pads were positioned – before mounting any parts – to roughly match the schematic.

The circular pads are created using a hole punch. But small scraps of PC board material in any shape will work just fine. The long, rectangular piece running horizontally along the top of the ground plane is a 12-volt DC power *strip*. It’s where the power is connected to the circuit. And, as you’ll see in the schematic, there are multiple points where power is needed. A nice, long run of 12-volt accessibility just makes things tidier and easier.

A copy of my hand-drawn Manhattan layout shows the rough placement of the pads and how each component is connected to those pads – or to the ground plane – to form the amplifier.



With alligator clip leads going in all directions, the audio amplifier passed its first “smoke test” on the homebrew bench at KI6SN with flying colors.



A hand-drawn sketch of the pad placement using Manhattan-style construction shows how the parts interconnect to form the KØIYE audio amplifier. The number 19, in the upper right corner, is a notation of how many pads were needed for this project.

We built the circuit from left to right, going from audio input through the 2.2uF electrolytic capacitor to the headphone or speaker output transformer.

Once you've gotten your parts gathered and organized, you'll be amazed how quickly and effortlessly Manhattan construction can be. It's like doing a picture puzzle, one piece at a time.

### Solder Once, Check Twice (Or More)

With your *on-board* parts mounted, it's time to check and double check your work for accuracy. Study the schematic or your hand drawing and compare it to your finished board. All parts should be in their proper places and have their proper values.

*Off-board* parts include the potentiometer for volume control, a headphone jack, and two RCA-style jacks—one for 12-volts DC and another for audio input. They are mounted on the front or back panel of the enclosure in which you choose to house the unit.

Here, once all the *on-board* parts were in place and checked, I was eager to find out if I'd done the work correctly. Using alligator clip leads, I connected 12-volts DC, the volume control and the audio input line in the lash-up shown in the accompanying photograph. It's not very pretty and it's only temporary, but it's important to adopt the same care to checking this *off-board* circuitry *before*



Small, circular pads made of printed circuit board material are affixed to the PC board ground plane using Super Glue® - roughly following the flow of the schematic, with the audio input to the left and audio output to the right.

power is supplied as you do to the *on-board* circuitry. One misplaced lead or short can leave you in a cloud of smoke and disappointment.

### Will It Really Work?

With a NorCal-40A transceiver feeding the audio input and a pair of eight-ohm headphones at the amplifier's output, it was the moment of truth. Power applied, the circuit immediately came to life - with ear-splitting volume. Cranking back the volume control yielded very nice sounding CW on the 40-meter band. *Hooray!*

Initially, there was some broadcast interference from a local AM station, but that was eliminated by better grounding

the amplifier ground plane to the NorCal-40A chassis.

You can learn a lot by going through homebrewing exercises such as this. In the future, if the circuit you're building is being bombarded by an AM broadcast, you'll know from *the amplifier experience* you might have a grounding issue. And therein lies the value of trial and error.

With the KØIYE audio amplifier, once the circuit is in an enclosure and the volume control, input and output jacks and ON / OFF switch are solidly mounted, you should have a *clean, mean amplifying machine* that's great for bringing along on trail-friendly radio excursions.



# Sunspots and 10.7 cm Solar Flux – A Cycle 23 Anomaly

By Carl Luetzelschwab, K9LA

When scientists sat down to develop a model of the F<sub>2</sub> region of the ionosphere for predicting HF propagation, they quickly realized that the highly variable day-to-day nature of the F<sub>2</sub> region negated any efforts to come up with a daily model. Instead, they determined that the best correlation was a statistical model (over a month's time frame) using monthly median (i.e., 50 percent probability) ionospheric parameters and the smoothed sunspot number.

In retrospect, they could have used the smoothed 10.7 cm solar flux as the solar index, as it is highly correlated to the smoothed sunspot number. But at the time of the development of the model (late 1960s and early 1970s), the measurement of 10.7 cm solar flux was kind of new (it started in 1947). Figure 1 shows the correlation of smoothed sunspot number to smoothed 10.7 cm solar flux from August 1947 (the first data point for smoothed 10.7 cm solar flux) through December 1996. This period covers the decline of Cycle 18 through the end of Cycle 22.

The correlation value R<sup>2</sup> of .9908 confirms that the smoothed 10.7 cm solar flux is highly correlated to the smoothed sunspot number for the time period chosen. The red trend line in Figure 1 is a second order polynomial, and that's what you'll see in the ionospheric literature – a second order equation (of the form  $a + bx + cx^2$ ) to calculate the equivalent smoothed 10.7 cm solar flux given the smoothed sunspot number (See Footnote 1).

If you plot Cycles 18, 19, 20, 21, and 22 in terms of the smoothed sunspot number and the smoothed 10.7 cm solar flux you'll simply see an offset in the two parameters, which is another indication of the

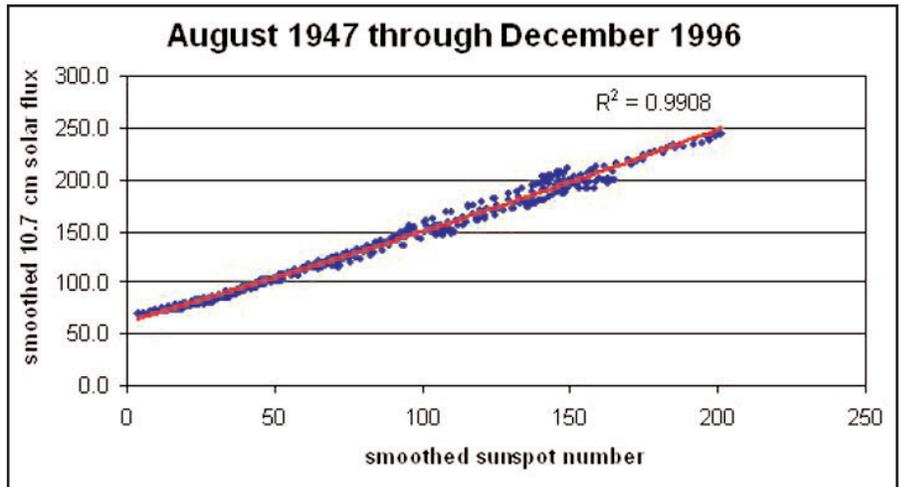


Figure 1 – Correlation Between Solar Indices for 1947-1996

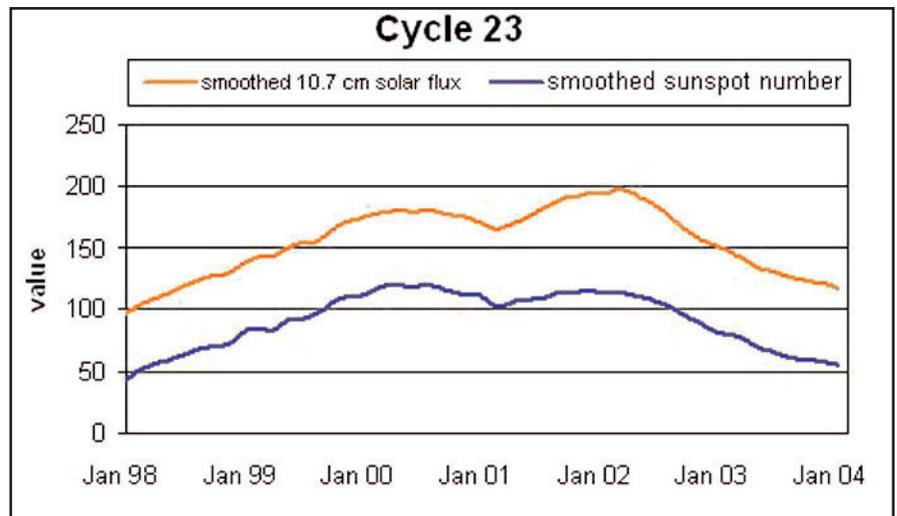


Figure 2 – The Anomalous Cycle 23

high correlation between the two parameters. But Cycle 23 introduced an anomaly. Figure 2 plots Cycle 23's smoothed sunspot number and smoothed 10.7 cm solar flux around the time of its maximum (first peak in April 2000 and second peak in November 2001).

Note the fairly constant offset between the smoothed sunspot number and the smoothed 10.7 cm solar flux during the

ascent and during the first peak of Cycle 23. Thus the relationship between the smoothed sunspot number and the smoothed 10.7 cm solar flux during Cycle 23's ascent and first peak pretty much followed the relationship seen in the data in Figure 1.

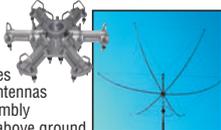
But note what happened during the second peak of Cycle 23. The second peak of Cycle 23 had a slightly lower smoothed

**Footnote 1:** The equation you'll likely find is smoothed 10.7 cm solar flux = 63.75 + 0.728 x (smoothed sunspot number) + 0.00089 x (smoothed sunspot number)<sup>2</sup>. This was derived from data covering the period from 1947 through about 1970.

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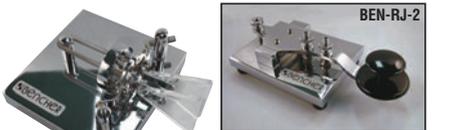
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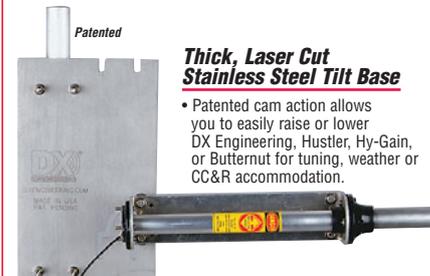
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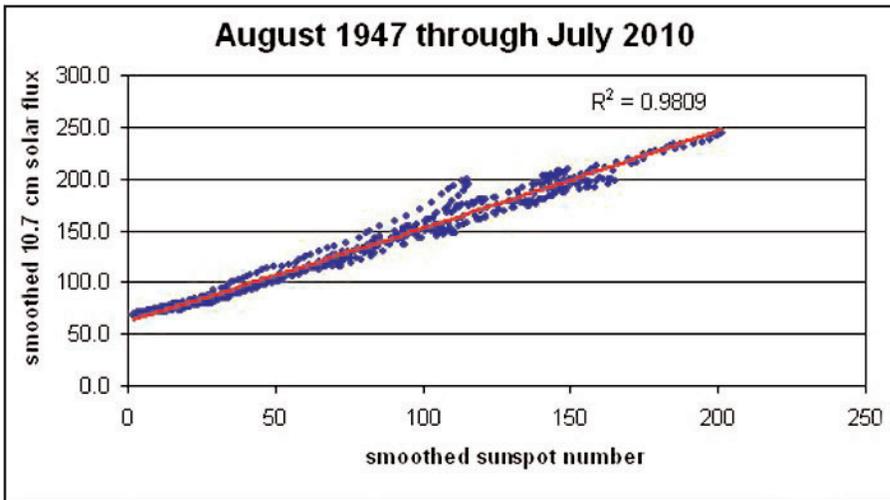
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**Figure 3 – Correlation Between Solar Indices for 1947-2010**

sunspot number than the first peak, whereas the second peak in terms of the smoothed 10.7 cm solar flux had a significantly higher value than the first peak. This suggests a fundamental change in the relationship between the smoothed sunspot number and the smoothed 10.7 cm solar flux. The larger offset between the two parameters appears to carry over into the descent of Cycle 23, too. Figure 3 adds the Cycle 23 data to the data of Figure 1.

Comparing Figure 3 to Figure 1 shows the anomalous data points falling above the red trend line in the range of smoothed sunspot numbers from about 25 to 110. This introduces more scatter about the trend line, and it reflects in the correlation value  $R^2$  decreasing to .9809.

So what's causing this anomalous behavior between the smoothed sunspot number and the smoothed 10.7 cm solar flux? To answer that, I'll point to a paper titled *The Solar Radio Microwave Flux* by Dr. Leif Svalgaard (See Footnote 2). This May 2009 paper is available at <http://www.leif.org/research/>. It is item 1020 on the list of papers at that web site. A summary of this paper follows.

Dr. Svalgaard reviews lots of data, and finally speculates on three possible answers:

- 1) The sunspot counting procedure or observers have changed with resulting artificial changes of the sunspot number (as they have in the past).
- 2) There are changes in the Sun's corona or chromosphere accounting for additional 10.7 cm emission.
- 3) Penn and Livingston's observations (Penn, M. J. and W. Livingston, *Temporal*

*Changes in Sunspot Umbral Magnetic Fields and Temperatures, The Astrophysical Journal*, 649, L45-L48, 2006 September 20) suggest that sunspots have been getting warmer during the last decade, leading to a decreased contrast with the surrounding photosphere and hence lessened visibility, possibly resulting in an undercount of sunspots.

Dr. Svalgaard doesn't favor No. 1 because he doesn't think the artificial changes would be big enough to impact what is seen. He doesn't favor No. 2 either, based on the constancy of the 10.7 cm solar flux at solar minimum since 1954. He doesn't directly say he favors No. 3 – all he says is discounting No. 1 and No. 2 leaves the exciting possibility that Penn and Livingston may be correct.

Wouldn't it be interesting if No. 3 is the truth – that we're not seeing all the sunspots? Regardless of why this is really happening, the fact that the smoothed sunspot number and the smoothed 10.7 cm solar flux have diverged has an implication to our propagation prediction efforts. We'll take a look at which index is better for predicting propagation, both in the long-term and in the short-term, in next month's column.

**Footnote 2:** Dr. Leif Svalgaard is a voting member of The Solar Cycle 24 Prediction Panel (which is organized and chaired by NOAA, and funded by NASA). If you go to his web site, you'll see that Dr. Svalgaard is a prolific writer on varied topics that are of interest to those of us trying to understand the Sun's influence on propagation.



# A Busy Year So Far, and So Much More to Come

By Cheryl Muhr, NØWBV

The first half of 2011 has been brimming with YL events and opportunities. I hope you have been able to participate. There have been numerous hamfests around the United States with YL tables and forums at many.

May, June and July have big events planned, too!

## Puerto Rico Hams: All in the Family

**Vilmarie Rivera, NP3YL**, is a name you might remember from the September 2010 YL column. It turns out she isn't the only YL ham in the family. Her sister-in-law, **Sheila Rivera-Laboy, NP3SI**, is also active.

Vilmarie, with her brother **Nando, KP4JRS**, and father **Jose, KP4JFR**, plus Nando's wife, NP3SI, are keeping radio right in the family. They all love contesting and RTTY is a favorite among many of them, not just Vilmarie.

Sheila was surprised to receive two certificates from the **2010 CQ WPX SSB Contest**: One for *Single Operator Low Power-10 meters* and one for the *Rookie Category*. A wonderful thing for a Technician class ham!

Vilmarie was recently invited to a ham-fest hosted by the Caribbean Amateur Radio Group. It recognized her for her participation in 2010 ARRL Field Day and her RTTY contesting. (She was pictured at Field Day on the cover of the September 2010 edition of **WRO**. – Ed.) To see a video of CARG's certificate presentation to Valmarie, visit: < <http://bit.ly/ft450M> >.

*Great to see such an active group of family and friends enjoying amateur radio and congratulations on all the awards!*

## May is Simply Amazing

If you plan on attending the Dayton Hamvention® this month, don't forget to stop by the YLRL-Buckeye Belles table. The Young Ladies Radio League, Inc. has



**In Puerto Rico, this group certainly makes amateur radio a family affair: Vilmarie Rivera, NP3YL, (second from left) with her brother, Nando, KP4JRS, and father Jose, KP4JFR, plus Nando's wife, Sheila, NP3SI, and Sheila's two sons. (Courtesy of WP3GW)**

been at the event for more than 25 years, partnering with the local Ohio YL group – the Buckeye Belles – to share the table.

Every year it is a great place to meet up with YLs from all over the world. You can usually find a parking lot net or two going on, as well, where some YLs get their first taste of on-the-air talking to other YLs.

It is often a family affair with mothers and daughters taking licensing tests together at the event. In many cases, this will be their first chance to get on the air with their own licenses.

Don't look for too many YLs at the table on Friday from 1 to 2:15 p.m., though. You will instead find them at the YL forum. This year's forum includes recognizing YLRL Youth Columnist **Emily Bishop, WE4MB**, this year's recipient of the Hiram Percy Maxim Memorial Award presented by the ARRL each year to a ham under the age of 21 for his or her work in amateur radio. *Emily may not be there, though, if final exams are still in session.*

Other forum topics will include the 2011 YLRL Convention being held near



**Vilmarie Rivera, NP3YL, flanked by Wilfredo Junior Aviles, KP4ARN, and Serafin Martinez, KP4FIE – members of the Caribbean Amateur Radio Group and organizers of the hamfest – after the certificate presentation. To see a video of the ceremony, visit: < <http://bit.ly/ft450M> >. (Courtesy of WP3GW)**



**Relaxing during a break are Vilmarie Rivera, NP3YL, and sister-in-law Sheila Rivera-Laboy, NP3SI – part of a family that takes part in amateur radio enthusiastically. (Courtesy of WP3GW)**

Boston, Massachusetts, in July < <http://www.ylrl.org/> > and the YL International Meet in Australia in 2012 < <http://bit.ly/h4370v> >.

A few YLs have asked to speak, so come visit to find out even more.

### **YL Friendship Award for 2011 Announced**

Carolyn Donner, N8ST, dropped us a note about the new YL Friendship Award sponsored by the YLRL for 2011 only.

This year you may hear a few YLs at Dayton discussing their favorite color. *Why?* This year's award is very colorful requiring each YL to contact 15 different YLs each with a different favorite color.

While you can't repeat a specific color such as blue, variants do count. So, light blue, navy blue and dark blue all qualify as different colors.

For more details, check out the rules at the YLRL website: < <http://www.ylrl.org> >.

### **Yahoo Site for YLRL Convention Near Boston, July 2011**

Anne Manna, WB1ARU, writes that there is now a Yahoo group for the 2011 YLRL Convention in Quincy, Massachusetts.

Post message: < [YLRL\\_2011@yahoo.com](mailto:YLRL_2011@yahoo.com) >.

Subscribe: < [YLRL\\_2011-subscribe@yahoo.com](mailto:YLRL_2011-subscribe@yahoo.com) >.

The group is called *YLRL Convention 2011 Boston* or *YLRL\_2011*. She adds that for those interested in the convention tours, they have just finalized the information and it will be going out shortly.

### **New Website for CLARA**

Thanks to Val Lemko, VE5AQ, for letting me know that the new website for the Canadian Ladies' Amateur Radio Association (CLARA) is now up and running: < <http://www.clara.ca> >.



**The 2011 YLRL Convention logo captures the flavor of its location – the Boston suburb of Quincy. (Courtesy of YLRL)**

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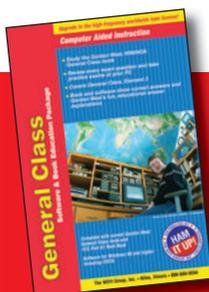
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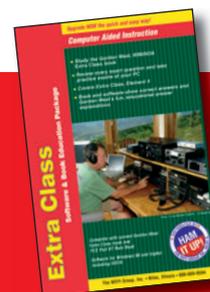
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Each February, members of the Huntsville Area Young Ladies Amateur Radio Club, their friends and guests gather for the organization's anniversary dinner. This year they put a 34th candle on the cake. (Courtesy of WB4RIV and HAYLARC)

[claranet.ca](http://claranet.ca) >. Val and Yvonne van Dijk, ZR6TBL, have been putting their hearts and souls into the new site, which looks great!

### June Will be Busting Out All Over

Many YLs will be busy at 2011 ARRL Field Day, so look for more on them soon. Don't forget to send in information on what *you* are doing for Field Day and pictures are always welcome.

### Clubs Are Celebrating Mile Markers!

HAYLARC – Huntsville Area Young Ladies Amateur Radio Club – was organized in February of 1977 and has remained active ever since. Each February the members cele-

brate by having dinner and inviting spouses, significant others or guests. During the 34 years, the members have undertaken several projects and services.

The **Buckeye Belles** is about to celebrate 50 years as an active Ohio YL club. It is planning a weekend event to be held at the Mohican State Park in Ashland County (Ohio) to commemorate its golden anniversary on August 12, 13 and 14.

The **Colorado-YLs** is about to celebrate 50 years of being a club, as well. The officers have just realized the fact and plans are getting started to commemorate the event.

### YLs Love to Contest!

The YL-OM contest may be over, but it isn't the only contest where you can find a female voice or fist.

**Anna Veal, WØANT**, acted as team leader while working a 160 meter CW contest with partners **Bill Buckwalter, KC7CPM**, and Anna's father, **Paul Veal, NØAH**. As a team, they made 665 QSOs and worked Japan and Europe running low power.

Anna is working on her code speed and is very motivated to learn more. Right now she is working on passing her Extra Class operator exam before going to Dayton this month.

### Save The Date!

Be sure to mark Saturday, June 4, the date of the YLRL luncheon at Sea-Pac < <http://seapac.org/index.htm> > in Seaside, Oregon. The guest speaker will be **Vicky Luetzelschwab, AE9YL**, and the YL of **WRO** Propagation columnist **Carl Luetzelschwab, K9LA**, who will be speaking at SeaPac, as well.

Her topic: *Get Radio-Active*, and hopefully she will share details about her DX experiences.

And if you are thinking ahead, the YLRL will be hosting its convention next time in 2014. This is important, as it is the club's 75th anniversary!



The YLRL 2011 Friendship Award is quite colorful, both in name and theme. (Courtesy of YLRL)



# On the Bands, the Propagation Paths Not Taken

By Kelly Jones, NØVD

## First, A Personal Note

It's hard to believe, but this issue marks my fifth year as the DX columnist for *WorldRadio*. It seems just like yesterday (or was it the day before?) that the then-editor Nancy Kott, WZ8C, put out a request for a new DX editor. At the time, I sent off an email expressing my interest, then pretty much forgot about it. Little did I know I would "get the job," and still be here five years later.

It's been a great five years and we've covered many topics together. The Art of QSLing, Logbook of the World, Dayton Hamvention recaps, Tools for the DXer, Most Memorable QSO and probably one of my favorites – an exclusive interview with Bob Vallio, W6RGG, just days prior to activating BS7H, Scarborough Reef. And now with ol' Sol kicking in a few sunspots, things can only get more interesting.

As I look forward to the next five years, I hope that you will share your experiences and stories with the readers of *WorldRadio Online*.

One of the great things about our hobby is that is constantly changing and evolving. There are always opportunities to try something new, improve your station or work that *new one*. I'd like to hear what you have been doing.

If you're a new DXer, perhaps you've finally made your first DX contact on 10 meters. Or maybe you have upgraded that stealth, under-the-gutter antenna to something bright and shiny planted in the yard. Whatever you've been up to, let me know. Let's make the next five years even better than the last.

## Finding Those Hidden Paths

Speaking of 10 meters, did you know the high bands might be open and nobody knows it? I've been hearing some DX on 15 that I haven't heard in years.

Over the past few weeks, European signals have been phenomenal. It's been many, many years since I've heard east-west propagation like this. I've also been

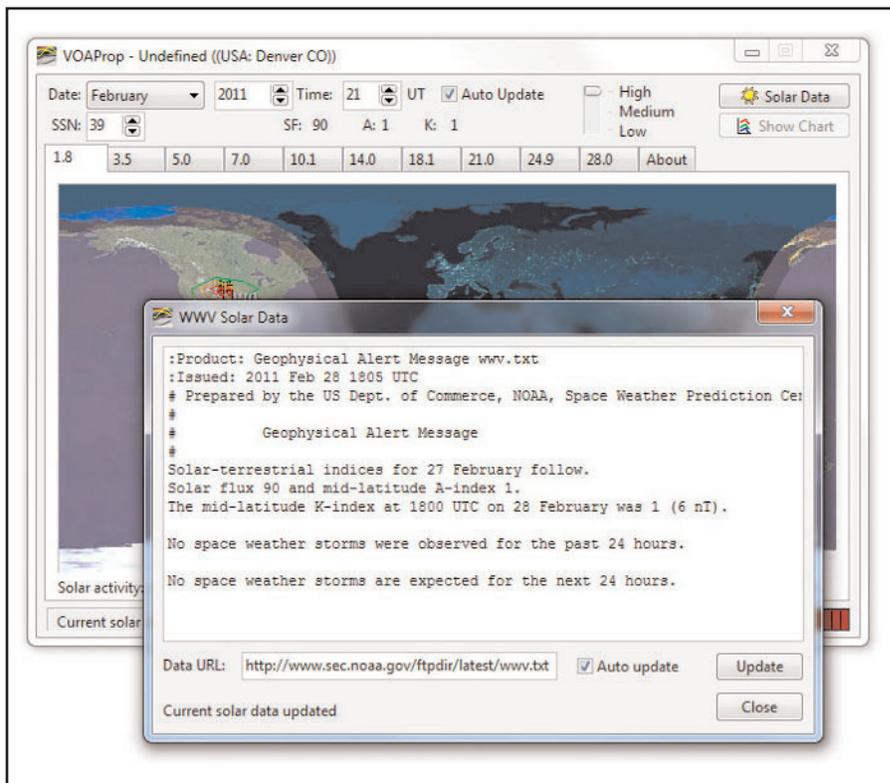


Figure 1

scanning 12 and 10 meters in hopes that the bands are open, but so far no European contacts there. That said, I have heard some VK and ZL activity on 10. This is certainly encouraging – but I often wonder if the band is open and nobody knows it.

## SFI: Getting A Feel for Conditions

One way to help predict the unpredictable is to watch the SFI (solar flux index) numbers. The higher the SFI, the more likely the high bands will be open – and often open to some very interesting places. There are a couple of places where you can find this information.

If you are a user of the DX cluster system, you can simply ask for the SFI number by typing: `sh/wwv`. This will

give you numbers trend over the last 12-18 hours.

You can also find this information at various websites including < <http://dx.qsl.net> >. While the raw numbers can provide some insight about what bands might be open, putting this data into a graphical view can really help tell the story.

## Programs Putting Band Conditions in Global View

There are many programs available that will "map" propagation prediction, but I prefer a combination of VOACAP and VOAProp.

VOACAP is a propagation prediction engine based on the Ionospheric Communications Analysis and Prediction Program (IONCAP), a scientific product

released in the '80s by the U.S. National Telecommunications and Information Administration.

VOAProp is a graphical front end developed by Julian Moss, G4ILO, that makes VOACAP much easier to use and understand. These two tools provide us with an excellent visual representation of propagation that *might be*.

To get started, you will need to download both of these applications. VOACAP can be found at < <http://bit.ly/fDvQSy> >. This is the address for the Windows version.

As a side note, Greg Hand is the author of VOACAP and retired from the Institute for Telecommunication Sciences. It's great that Greg continues to maintain this software even after retirement. I should also mention there is a Linux project which has ported VOACAP. However for purpose of this discussion, I will focus on the Windows version.

In addition to VOACAP, you will also need to download Julian's VOAProp user interface which can be found at < <http://bit.ly/eWNXH7> >. One of the many great things about both of these programs is that they are free – but be careful, there are many “false” links on Julian's website. Look for the link that reads: *Download VOAProp 1.1 Setup (1Mb)*.

Once downloaded, you will simply need to install these programs. There is one small “gotcha” when installing VOACAP. Most programs will typically install into your “program files” directory. However, VOACAP has an issue when using a directory name that contains spaces or is longer than eight charac-

ters – this goes back to the old DOS days. So as a general rule, it's best to simply take the defaults when installing these two programs.

## Getting Up and Running

After installation you will see two new program groups – “ITS HF Propagation” and “VOAProp.” Start VOAProp by finding it in your “Start” menu and launch it. When the program begins you need to set your location. To do this, simply right click anywhere on the map and choose “Set Home Location.” VOAProp will let you add a custom location using the “Location Editor,” but for now just choose a location near you – in my case, Denver, Colorado.

It's also a good idea, after first launching the program, to “tick” the auto-update box. This tells VOAProp to continuously map in real time. You should also update the SFI data being used. To do this, click the “Solar Data” button – this will open a new window. Leave the “Data URL” the default and check the “Auto Update” box. Finally click the “Update” button. This tells VOAProp to retrieve the latest data from the URL specified. You should see something similar to Figure 1. Once complete, you should have a basic working VOAProp.

From here you can change the band tabs to see what kind of propagation could be expected. If you click in the map, you will also see a line drawn between your QTH and where you clicked. This will not only provide a beam heading, but dis-

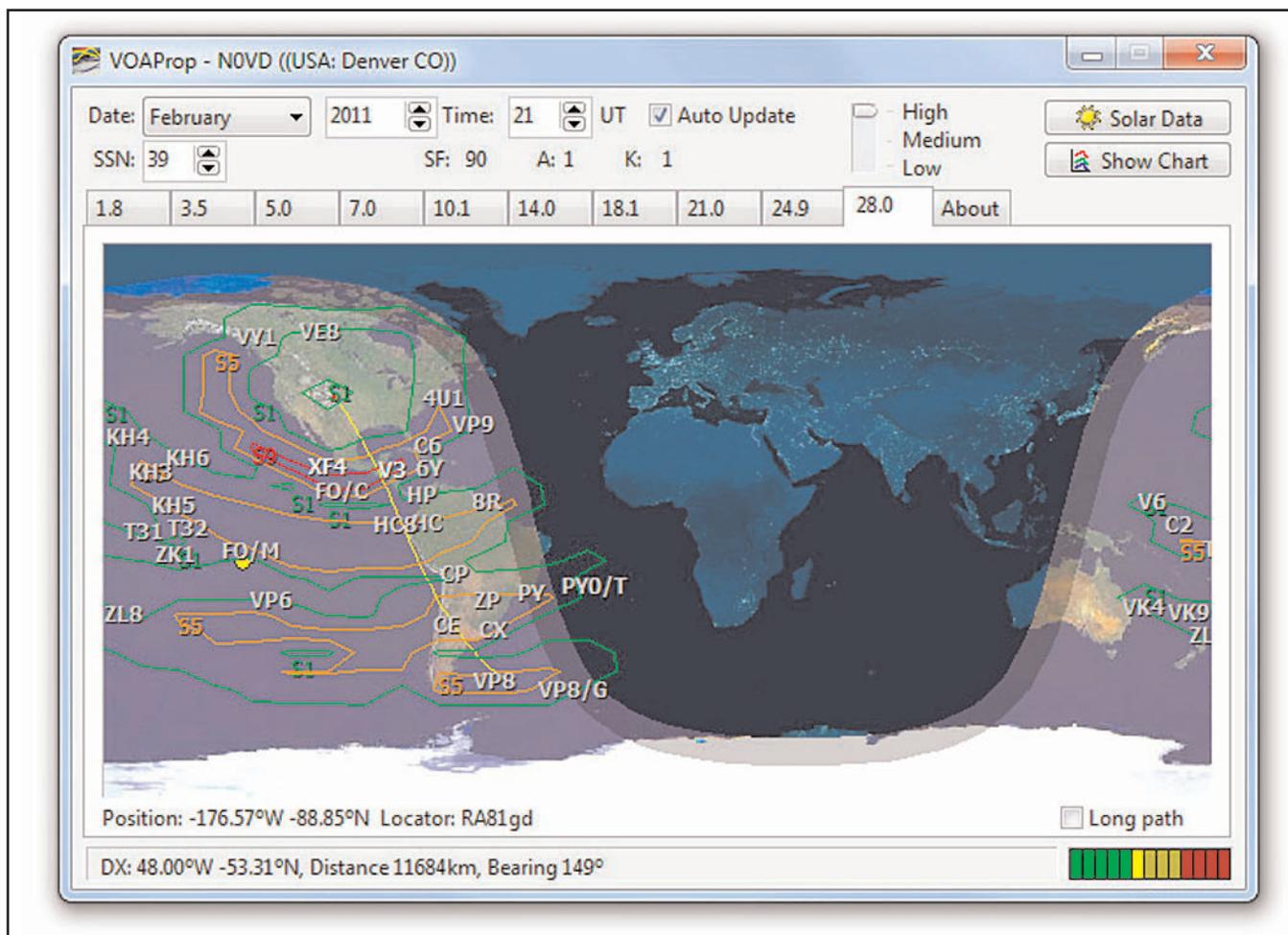


Figure 2

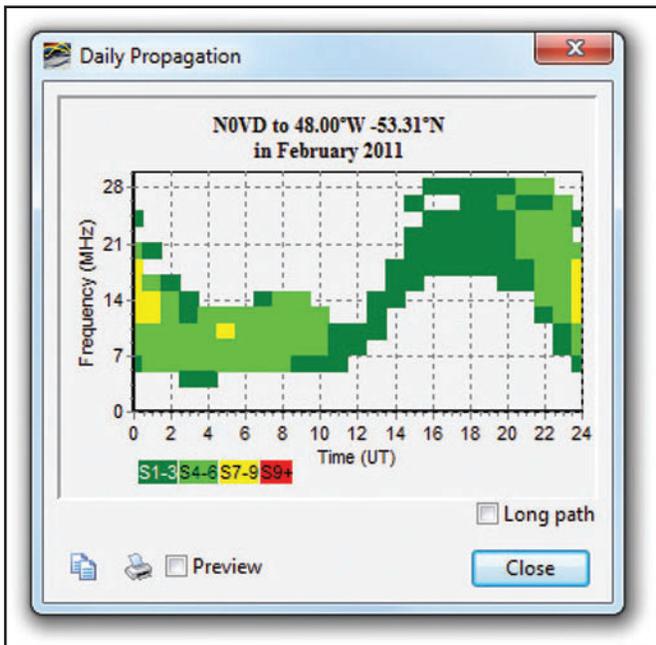


Figure 3

tance and what “S-Meter” reading might be expected at the receiving end. In Figure 2, I can see I should have decent propagation between my QTH and VP8 (Falkland Islands) on 10 meters.

### But There’s Even More

Another interesting feature of VOAProp is the ability to check when you might expect propagation to a given location at some time in the future. The real time map provides predictions for this moment in time.

But suppose you’re curious about what propagation might look like 6 or 12 hours from now. By clicking on a location within the map, then clicking the “Show Chart” button, you will

get an estimated MUF chart and what could be expected over time to that location. Now you have an idea when propagation could be expected, at what time and on what band. In our example – Figure 3 – it would appear the best time for propagation to VP8 on 10 meters would be between 1600-2200z.

### Taking the Long Path

One of the more interesting features is experimenting with the “long path” predictions. Many times this path is open but there is nobody “checking propagation via the long path.” I’ve found this particularly true on 10 meters when the band seems dead. A few CQs will often result in QSOs on a “dead” band.

The next time you tune across a band and don’t hear any signals, put out a CQ. It may be a case that everybody else is tuning and also thinking the band is dead, but in reality there is a path open to *somewhere*.

### In Summary

Playing with some of the available propagation tools can be very interesting. If you’re like me, you have a set routine and rarely deviate from it. I know I’m often in front of the radio at the same times. However, tools like VOAProp might alert you to openings that you may otherwise miss.

I’ve only scratched the surface when it comes to using tools like VOAProp. As you become more familiar with these programs, you will find many options that can be specifically tailored – such as your QTH, antennas and power.

There are also many tutorials on the web that can provide you with tips and tricks for these programs. However, this should be enough to get you started and on track to finding those *unpredictable* openings – even when the band is *dead*.

*That’s it for this month’s column. I look forward to hearing your comments, complaints or whatever is on your mind. If you have a story or opinion you would like to share, please send it to me at n0vd@dxcentral.com. I’ll do my best to include it in and upcoming column. Look for me on Facebook or Twitter, as well, and until next time, see you in pileups!*

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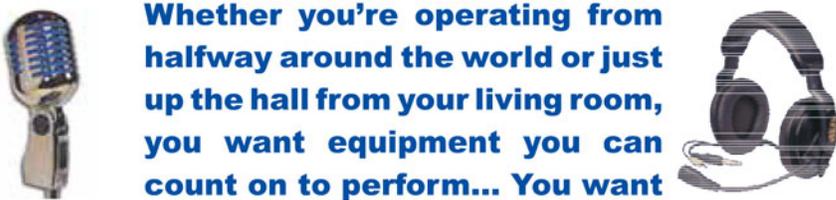


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# Two Days, Two Schools and Twice the Fun

By Carole Perry, WB2MGP



Students focus on their computers during technology class at Lantana Community Middle School, a stop on Carole Perry, WB2MGP's, recent visit to Florida. (Photographs Courtesy of WB2MGP)

**W**hen I visit an out-of-town school, I usually spend the day at one location. On my last visit to the Boynton Beach, Florida area I arranged to spend one day in an elementary school and another in a middle school.

Each has been chosen to be part of the Radio Club of America's Youth Activities network whose goal is to introduce radio/technology into schools across the country.

### First Stop: Citrus Cove Elementary

On day one I visited Citrus Cove Elementary School in Boynton Beach where arrangements had been made for me to do a presentation for third graders. Jeff Perry, KA2SXY, arranged for nine classes to assemble for the program in the school's cafeteria.

I've been retired from teaching for six years, but it takes only minutes for me to feel *right at home* in front of youngsters in a school setting. There were nearly 200 students there, and they were an attentive, excited, and involved audience.

I gave them the background about how I had used ham radio with my 6th, 7th, and 8th graders in the classroom, and had contacted the astronauts through the years.

I showed them pictures on a large screen of my classroom with walls covered with QSL cards from all around the world.

They got to see photographs of youngsters on the radio, building kits, using globes and maps to pinpoint locations, and making projects to coordinate with science classes.

My 2-meter handheld was a big hit when the kids realized it wasn't a cell phone. It gave me a chance to speak about the changing technologies since I began teaching 30 years ago.

I showed videos of my radio classes in action, as well as of our space shuttle contacts. Since these children live in Florida, they were especially interested in learning about how school kids in New York City, as well as students from all over the world, have been able to communicate with space shuttles and with the International Space Station via ham radio.

When the time came to go to their next class, the children were still eager to hear more, and to ask more questions. So I followed one of the classes to their next room. The teacher was kind enough to let me continue the radio demonstration and discussion. Their questions about space travel and communications were so insightful and so interesting that we continued for the whole next period.

I left behind lots of materials about ham radio in the classroom for the third grade teachers. I was invited to come back and teach a lesson on Morse code and different modes of radio communication.

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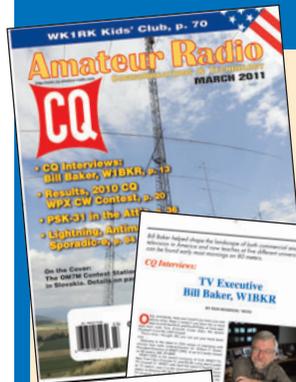
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With such enthusiasm, I was definitely considering a return trip. Then I met with Judith Asbury, the school's principal, who was very enthusiastic about learning more about radio/technology programs at the elementary school level.

Well, that clinched the deal for me. I promised to return in the near future and to supply whatever materials or books the interested teachers might need. Thanks to funding from the RCA educational committee, we're able to lend assistance to schools that are interested in introducing the radio curriculum.

### Next: Lantana Community Middle – Venue 1

Lantana Community Middle School in Lantana County was where I spent Day 2. And there I found two distinct venues:



About 200 Citrus Cove Elementary third graders assembled for WB2MGP's radio/technology presentation at the school in Boynton Beach, Florida.



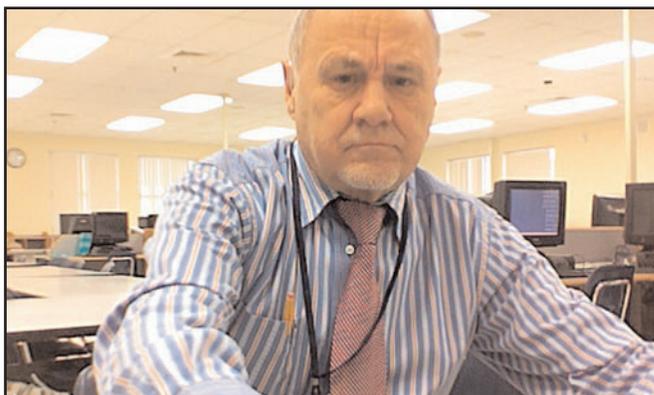
Retired teacher, radio/technology curriculum expert and WRO columnist Carole Perry, WB2MGP, takes questions from students at Lantana Community Middle School in Florida.

The first was the technology program taught by Bob Pauley. I've spent time with his classes before.

Mr. Pauley's program is the recipient of RCA funding to help replace some computer equipment. I emphasized the importance of radio communications in all our lives and suggested many career opportunities for those who pursue radio/technology studies.

The students in this Lantana program do not use notebooks or pens. Their assignments, reports, and homework are all done on the computer. They make contacts with other countries and are eager to have amateur radio as part of their curriculum.

Mr. Pauley will be receiving a complementary Instructor's Curriculum package from my RCA educational committee.



**Bob Pauley oversees the technology program at Lantana Community Middle School.**

## Lantana Community Middle – Venue 2

Ms. Aylene, my next teacher contact at Lantana Community Middle, arranged for me to meet with four special needs classes in one large classroom setting.

We agreed ahead of time that I would adjust my time and adjust my presentation to be appropriate for the attention span of the kids. Well, the teachers and I were very pleasantly surprised to see how interested and attentive these 6th, 7th and 8th graders were.

Many of the children contributed to the discussion about communications used in space. Their questions were very insightful. My presentation was an hour long and included some instruction on telegraph keys.

Several students wanted to know more about Samuel Morse

and how the telegraph worked. Once again, I promised to return to the school and bring more code keys with me for all of them to use.

In follow-up letters from the students, there was a real receptivity to learning more about using radio in classrooms.

As every teacher can tell you: You're always learning new things from your students.

My two days in Florida schools taught me many things. The most important lesson *this* teacher learned was that children of every background and ability can find something fun to relate to in radio/technology when it's presented as an age appropriate activity.

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# The Rules Say...

John B. Johnston, W3BE

## Broadcasting or Hamcasting?

**Q** I have been under the impression that we were allowed to engage in only two-way communications. We all know, however, there are broadcasting operations on our most popular ham bands. Is it now permissible for an amateur station to broadcast?

**A.** Nope, no broadcasting. Section 97.113(b) says that an amateur station shall not engage in any form of broadcasting. Section 97.3(a)(10) defines broadcasting in the context of amateur radio as transmissions intended for reception by the general public, either direct or delayed.

Section 97.111(b), however, authorizes an amateur station to transmit certain types of one-way communications. Paragraph (6) therein expressly authorizes one-way transmissions necessary to disseminate information bulletins and Section 97.3(a)(26) defines an information bulletin as a message directed only to amateur operators consisting solely of subject matter of direct interest to the amateur service.

*W3BE-O-GRAM:* BE informed No. 31 Hamslanguage < <http://bit.ly/ieUla1> > recommends such one-way information bulletin transmissions be called hamcasting.

**Q.** At a recent club meeting, someone asked about a "Quiet Zone" near FCC monitoring stations. We all thought there was no such quiet zone. It turns out, however, that is not correct. Section 97.13(b) says that a station within 1,600 meters (1 mile) of an FCC monitoring facility must protect that facility from harmful interference. Where are those quiet zones?

**A.** Read Section 97.0.121(b) for the geographical coordinates of the protected FCC field installations. They are referred to North American Datum 1983 (NAD83):

Allegan, Michigan, 42°36'20.1" N. Latitude, 85°57'20.1" W. Longitude

Belfast, Maine, 44°26'42.3" N. Latitude, 69°04'56.1" W. Longitude

Canandaigua, New York, 42°54'48.2" N. Latitude, 77°15'57.9" W. Longitude

Douglas, Arizona, 31°30'02.3" N. Latitude, 109°39'14.3" W. Longitude

Ferndale, Washington, 48°57'20.4" N. Latitude, 122°33'17.6" W. Longitude

Grand Island, Nebraska, 40°55'21.0" N. Latitude, 98°25'43.2" W. Longitude

Kenai, Alaska, 60°43'26.0" N. Latitude, 151°20'15.0" W. Longitude

Kingsville, Texas, 27°26'30.1" N. Latitude, 97°53'01.0" W. Longitude

Laurel, Maryland, 39°09'54.4" N. Latitude, 76°49'15.9" W. Longitude

Livermore, California, 37°43'29.7" N. Latitude, 121°45'15.8" W. Longitude

Powder Springs, Georgia, 33°51'44.4" N. Latitude, 84°43'25.8" W. Longitude

Santa Isabel, Puerto Rico, 18°00'18.9" N. Latitude, 66°22'30.6" W. Longitude

Vero Beach, Florida, 27°36'22.1" N. Latitude, 80°38'05.2" W. Longitude

Waipahu, Hawaii, 21°22'33.6" N. Latitude, 157°59'44.1" W. Longitude

For other quiet zones, read BE Informed No. 59 QUIET ZONES DIRECTORY < <http://bit.ly/i9egzV> >.

**Q.** If my station is in one of those FCC monitoring quiet zones, what must I do?

**A.** Contact your FCC District Director to verify that your station does not interfere with its monitoring work. Section 97.13(b) says that failure to protect an FCC monitoring facility from harmful interference could result in imposition of operating restrictions upon the amateur station by a District Director pursuant to Section 97.121, Restricted operation.

**Q.** Where are the District Directors?

**A.** They're at 16 FCC District Offices:

Atlanta, GA; Boston, MA; Chicago, IL; Columbia, MD; Dallas, TX; Denver, CO; Detroit, MI; Kansas City, MO; Los Angeles, CA; New Orleans, LA; New York, NY; Philadelphia, PA; San Diego, CA; San Francisco, CA; Seattle, WA; and Tampa, FL.

**Q.** What is *harmful interference*?

**A.** Section 97.3(a)(23) defines *harmful* interference as that which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunication service operating in accordance with the international radio regulations.

**Q.** What sort of operating restrictions could the FCC impose on my amateur station?

**A.** Section 97.121 says (a) if the operation of an amateur station causes general interference to the reception of transmissions from stations operating in the domestic broadcast service when receivers of good engineering design, including adequate selectivity characteristics, are used to receive such transmissions, and this fact is made known to the amateur station licensee, the amateur station shall not be operated during the hours from 8 p.m. to 10:30 p.m., local time, and on Sunday for the additional period from 10:30 a.m. until 1 p.m., local time, upon the frequency or frequencies used when the interference is created. Paragraph (b) says in general, such steps as may be necessary to minimize interference to stations operating in other

services may be required after investigation by the FCC.

**Q. With regard to BE Informed No. 5 < <http://bit.ly/fIDLz7> >, when making up Element 3 questions sets for our VEC, when we withhold all of the defective questions and those questions that should have been included in Element 2, we end up with only 295 questions rather than the 350 specified. Should I add back 55 unusable questions or is there a better way?**

**A.** No to your first question and yes to your second. There is no legitimate justification for administering defective or inappropriate questions. Including such questions in an Element 3 question set would preclude the administering VEs from determining whether or not their examinee is qualified for a General Class operator license.

Section 97.507(c) says that the coordinating VEC must provide the administering VE teams that it coordinates with question sets, or with suitable instructions for making them. Element 3 questions sets are intended to enable the VEs to determine if the examinee can prove possession of the operational and technical qualifications required to perform properly the duties of a General Class operator. Read Section 97.503(b).

Maintaining the pools is the obligation of all 14 VECs. They must cooperate in doing this. Read Section 97.523. Element 3 has been revised and is scheduled for going on line as of July 1, 2011. See BE Informed No. 5.1, ANALYSIS OF ELEMENT 3 < <http://bit.ly/giFp4F> >.

**W3BE-O-GRAM:** Proceed with the valid questions only. Rearrange them into 35 meaningful groups. When assembling each question set, select one question from each group.

**Q. We intend to use stations at three locations transmitting on different bands and modes simultaneously, using the same Special Event callsign. Is that OK?**

**A.** Yes, provided the station licensee for the special event call sign shown on the common data base coordinated, maintained and disseminated by the special event call sign data base coordinators takes on the station licensee responsibility, including the physical control, for all three stations. Then, he or she would designate the station control operators at each station.

Additionally, each station must transmit the call sign assigned to the station

licensee's station at least once per hour during such transmissions. Read Section 97.119(d).

The phrases "a station," "that station" and "the station" refer to the one shown on the special event callsign data base for which the one-by-one callsign is substituted. It does not hamper in any way what it is the station is authorized to do if it was not a special event callsign station.

**Q. We were taught that it was permissible to send a third party message through a foreign station as long as the intended recipient of the third party message is a licensed amateur operator.**

**A.** Not quite. Your instructor must have had in mind Section 97.115(a)(2). It says that an amateur station may transmit messages for a third party to any station within the jurisdiction of any foreign government when transmitting emergency or disaster relief communications and any station within the jurisdiction of any foreign government whose administration has made arrangements with the U.S. to allow amateur stations to be used for transmitting international communications on behalf of third parties. No station shall transmit messages for a third party to any station within the jurisdiction of any foreign government whose administration

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## Maine-ly Hams



Here's an impromptu ham seafood sit-down in Bath, Maine. From left: XYL Pat Corderman, Al Corderman, W3ZD; Linda Towns, N1ZYC; John Johnston, W3BE; Betty Johnston, N3PKX; XYL Joann Chapman; Charlie Chapman W1WTG; Bruce Randall, W1ZE; Paul Towne, N1ZYB; Sidney Corderman, W2CML; and XYL Mrs. Corderman.

has not made such an arrangement. This prohibition does not apply to a message for any third party who is eligible to be a control operator of the station.

The term control operator applies to Part 97. In places where the FCC regulates communications, the control operator is an amateur operator designated by the licensee of a station to be responsible for the transmissions from that station to assure compliance with the FCC Rules. Read Section 97.3(a)(13). It does not directly apply to hams in other countries. Allowable recipients of amateur service communications in other countries is a matter for the foreign station's regulatory authority to decide.

The last sentence in Section 97.115(a)(2) can only mean, therefore, that an FCC-licensed amateur station may transmit a third party message to any country – even to one with which

there is no third party arrangement – for a person who is eligible to be the control operator of that FCC-licensed station.

Section 97.117, however, still must be observed: Transmissions to a different country, where permitted, shall be limited to communications incidental to the purposes of the amateur service (self-training, intercommunication and technical investigations carried out by amateurs) and to remarks of a personal character.

### Read the rules - Heed the rules

Visit <<http://www.w3BEInformed.org>> for links to rules and information sites. E-mail your questions about the amateur service rules to [john@johnston.net](mailto:john@johnston.net).

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# DX Predictions

## May 2011

Maximum usable frequency from West Coast, Central U.S. and East Coast (courtesy of Engineering Systems Inc., Box 1934, Middleburg, VA 20118). The numbers listed in each section are the average maximum usable frequencies (MUF) in MHz for contacting five major areas of the world centered on Africa-Kenya/Nairobi, Asia-Japan/Toyko, Oceania-Australia/Melbourne, Europe-Germany/Frankfurt, and South America-Brazil/Rio de Janeiro. Smoothed sunspot number = 41.

Chance of contact as determined by path loss is indicated as bold \*MUF for good, plain MUF for fair, and in (parenthesis) for poor. UTC is hours.

### WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SA
10	(15)	*15	*18	(13)	*19
12	21	*12	*16	18	17
14	24	*15	*15	21	23
16	27	15	(14)	22	*28
18	*28	*18	(14)	21	*31
20	*27	*23	27	18	*33
22	23	*24	*33	14	*32
24	19	*24	*34	12	*29
2	17	*24	*34	(11)	*24
4	*18	*23	*33	*17	*20
6	22	*21	*29	*18	*18
8	18	*19	*21	15	*16

### CENTRAL U.S.A.

UTC	AFRI	ASIA	OCEA	EURO	SA
8	(15)	15	*19	13	*16
10	(18)	*13	*17	17	*16
12	23	*17	*16	*20	*23
14	26	17	*15	*22	*27
16	27	14	(14)	*23	*31
18	*28	(13)	(14)	*22	*33
20	*27	18	27	*21	*34
22	23	21	*32	*18	*33
24	19	22	*35	*15	*27
2	*17	22	*34	*13	*24
4	*18	20	*33	*15	*19
6	19	*18	*28	*15	*17

### EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SA
7	*20	15	*23	13	*16
9	21	(13)	*17	17	*16
11	*27	18	*16	*20	*23
13	*31	18	(15)	*22	*27
15	*33	15	(14)	*23	*30
17	*33	(13)	(14)	*23	*32
19	*30	17	(21)	*12	*34
21	*25	20	30	*20	*33
23	*21	22	34	*18	*31
1	*18	22	34	*15	*25
3	*15	20	*33	*13	*21
5	*22	*18	*27	*15	*18

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# Remotely Speaking – the New Age Rage in Ham Radio

By Bill Pasternak, WA6ITF

**Y**ears ago, when my buddy Jim Hendershot, WA6VQP, still lived here in Los Angeles, I had access to his remote-base system that sat atop Contractors Point at the northeast corner of the San Fernando Valley.

That system operated on the 220 MHz band as a “closed repeater” built from a Midland model 13-509 equipped with a Communications Specialists CTCSS decoder board. It also had 10 channel remote-base crossband capability using a Motorola Metrum 2-meter transceiver.

When Jim moved to Oregon and the repeater went away, I lost interest in remote-base operations. By then, VHF low-power SSB DXing had caught my fancy and I procured a set of used Yaesu FT-690R (6 meter) and FT-290R (2 meter) transceivers. Two-and-a-half watts with attic-mounted dipoles in a valley surrounded by hills made for rough going, but the end result of making contacts via E and F<sub>2</sub> under these conditions made the chase all the more fun. And to this day – while the radio and antenna system has changed – the fun of the pursuit remains.



Looking West columnist Bill Pasternak, WA6ITF, poses on his last day in the Television Operations Center at KTTV Fox 11 television in Los Angeles. “If you are a ham interested in remote station control and are ever invited to visit a local TV station,” Bill writes, “be sure to ask to be shown through TOC.” (Photo by Randy Evans)

## Going Remote in the TV World

My next encounter with radio remote control took place about two years ago, but had nothing to do with ham radio. It was really the last few months I spent working for KTTV Fox 11 television before retiring.

From November 2008 to early August 2009 I had spent my work days as a *go between* for the station working on the digital television conversion project. I had my own office, computer, telephone and even unrestricted Internet access. And from 9 a.m. to 5 p.m., I was the *interface* – for lack of a better term – between the station and various TV distribution systems – DIRECTV®, DISH Network®, Verizon FiOS, and several others.

After the switch I dealt with all of these plus the FCC and general public in solving reception problems. Being a *people person*, this was a job I really enjoyed

even though the commuter traffic working those hours on the San Diego Freeway (I-405) was a nightmare.

The job was supposed to be short term, ending about a month after the originally-scheduled DTV changeover date. Then Congress got involved and the changeover was put off until June because of the shortage of converter boxes. My boss, knowing my retirement plans, asked if I would stay on. He was, and remains, a good friend. I could not say no.

Once we closed down this ombudsman position, I met with the station management and said I was going to retire. As the Maintenance Department had been trimmed, I suggested that I wait out my last two months in the Television Operations Center (commonly called TOC) as, among other jobs, I had been a dinner relief operator there on and off for

almost 20 years. I basically knew its operation, so all I would require was being brought up to speed by one of the skilled day-to-day TOC operators – in this case my friend and AM SWL DX enthusiast Chris Clementson.

Working in this recently rebuilt, all digitally-controlled TOC turned out to be another of the true highlights of my TV broadcast engineering career. Chris was a good teacher and with my previous experience I was *flying solo* in about two weeks.

If you are a ham interested in remote station control and are ever invited to visit a local TV station, be sure to ask to be shown through the TOC. With more and more stations now hubbing their master control operations from distant locations, the TOC has become the new *nerve center* for any station that does live TV news and airs syndicated or network programming.

It's also a wonderland of digital and analog remote control operations. If you want to see (and learn) the *art* of remote control radio operations, just watch a good TOC operator for a few hours.

It was during those last months at KTTV that I really learned how far remote control of radio and TV operations had come. In the old days, if you had a news helicopter in the air you needed to continually go back to that signal source and manually adjust the hilltop receive antenna to keep it on target.

In the years since I had last worked in TOC, a system called Nav-Trak had been invented. The news chopper now carries a GPS receiver tied to a data link that constantly updates the hilltop dish receiver on the helicopter's latitude, longitude and altitude. That information in turn is used to automatically keep the receiving antenna directed on the chopper.

All the TOC operator has to do is gain initial acquisition of the helicopter's signal, click the screen icon to engage the Nav-Trak function and go onto his or her next chore.

## So, How Are Radio Amateurs Using Remote Control?

Well, all of this got me to wondering what hams might be doing with their versions of remote control technology. And over the past few weeks have I learned a lot.

For instance: You will note that more and more ham transceivers are coming equipped with USB capability. Some of the newest high-end models have RJ-11 interfaces – or at least their manufacturers have said an upcoming model will. Now marry that to an Internet connection, load some control software in your laptop or notebook (or MacBook for those of you on the other side of *The Force*) and head off to – wherever.

And you are sitting there, under a starry night sky on an exotic South Seas island, wanting to get on the air. But your station is 2,000 miles away – *no big deal*. Just fire up your laptop, plug in a USB or analog headset, load your remote control software, remotely turn on your radio and begin searching the ether for a contact.

Even better, there are now apps (applications) for some *smart phones* that will let you do the same with that or another handheld device.

## DXpeditioner: Friend or Faux?

Want to be the ultimate in truly *rare DX* but don't want to go on a DXpedition? Well, if you have the finances, simply send a radio that accepts remote command, plus an antenna to that rare spot.

If there's an Internet connection where that remote radio is, you can be on the air as *rare and exotic DX* without ever leaving the confines of your home. In fact, if the online blogs and message boards are correct, this seems to be a growing trend among wealthy, want-to-be DXers who are too busy to travel but want to attract attention from the amateur radio community.

It has also led to some spirited arguments among those who believe any way to be DX is fair vs. those who feel remote stations should not be permitted eligibility to be considered a valid DXCC or other award contact. The remote DX operators counter that it's where the radio is, not the location of the ham in control.

My take is that this will all come to a head when someone applies for DXCC status for an operation where no hams – just

a radio or two – are present at the DXpedition site. That will be for the ham radio politicians to figure out.

## A Remote Control Information Resource

A wonderful source of real-world information is the Remote Control forum on eHam.net. You will find it at: < <http://bit.ly/hJMYTP> >. Among the topics being discussed recently were *How to Set Up Remote Over Internet, Remote Operation Using VoIP With an ICOM 718, Remote Control Software for AOR 8600 in Windows 7, Remote Shutdown of a Station*, and much, much more.

## Remote Possibility: One Man's Practical Ambitions

You can probably tell that I am kind of hooked on this concept. I live in a planned community that has severe antenna restrictions and is surrounded on all sides by iron-ore hills.

These factors combine to make traditional HF (high frequency) operation almost impossible. Yes, digital operation and the like is possible and in fact does work pretty well. But I'm one of those hams who wants to talk – with my lips – and listen with my ears. I want to hear the other operator's voice rather than merely read his words from an LCD screen.

At age 69, and living on fixed income, I'm not about to go house hunting. But I might consider purchasing a new transceiver with a USB connection that I can put at the home of a friend who lives on a hilltop and has a high speed Internet connection.

With a bit of software for control, one day I might be writing this column and at the same time using the same computer while working friends around the world on 20-meter SSB. *That idea I find truly exciting.*

## Dayton Forum: Amateur Radio Goes Hollywood

This year I'll once again be hosting the *Ham Radio Town Meeting* at the Dayton Hamvention®. The session will take place on Saturday, May 21 from 11:45 a.m. to 2 p.m.

We'll be discussing *How to Make An HD Ham Radio Movie in the 21st Century*, though perhaps a better title might be *How to Use HD Video to Promote Ham Radio*.

As of this writing our guest list includes **Henry Feinberg, K2SSQ**, who is a former producer of the award-winning NBC children's science program *Watch Mr. Wizard* (and these days an interpreter of science and technology).

Also on board is **Jack Parker, W8ISH**, who has more than 40-years experience as a professional television photojournalist; **Mark Abramowicz, NT3V**, aka Mark Abrams, who is a reporter/writer and editor for KYW Newsradio in Philadelphia; ARRL Public Relations Manager **Allen Pitts, W1AGP**; and award winning Hollywood television video editor **Keith Glispie, WA6TFD**, who is the owner of Suite 16 Post Production in Burbank, California.

We will also have a sneak preview of some of the material being included in a new video I am producing and co-writing with K2SSQ for the ARRL titled *The DIY Magic of Amateur Radio*.

If you want to know how to use simple, modern HD home video gear to make a presentation about the hobby, this will be the class for you. See you at Hamvention 2011.

– de WA6ITF



## AB9QU, Trail Creek, Indiana: A Long and Winding Road

*It took him 25 years to get on the air, but now that Bill Carter, AB9QU, is there, he's taken on amateur radio with gusto.*

*As you'll see, from modest beginnings after retirement from a life on the road, he has gone on to amass an array of equipment and developed a passion for working special event stations.*

*He's got gear and certificates everywhere around his Indiana radio shack – but you can bet AB9QU isn't stopping there.*

*Are you as proud of your station's appearance as AB9QU? Send digital photographs of your station with details to: < [WorldRadioOnline@gmail.com](mailto:WorldRadioOnline@gmail.com) > and we'll consider them for publication in **Station Appearance** in an upcoming edition of **WRO**.*

*If there's a **You Tube** video to accompany the still pictures, let us know and we'll set up a link.)*



**B**ill Carter, AB9QU, of Trail Creek, Indiana, first got his amateur radio ticket in 2006, but his interest in becoming a ham started long before that.

"I got the (licensing) book from Radio Shack to study for the test about 25 years ago," he said, "but I was an over-the-road trucker and really didn't get into the study."

After retiring, though, 'QU decided to go for it. "Thank goodness for the Internet," he said. "When I first got my Technician ticket I got a new Yaesu VX-150 2-meter FM handheld transceiver < <http://bit.ly/eMKunW> > and started checking into the local ARES® (Amateur Radio Emergency Service) net.

"Right away I decided I wanted to upgrade," he said. "So I started working on that. My first HF (high frequency) rig was a Drake TR-3 < <http://bit.ly/gz176d> >," borrowed from Danny Scheetz, W9DWS, of Chesterton.

'QU soon put up a G5RV antenna. Next came a Kenwood HF transceiver, "also borrowed from my friend W9DWS."

From there, he'd "saved up and finally got my own new rig – a Yaesu FT-897D < <http://bit.ly/dXcQ9P> > – and an LDG auto tuner," he said. "Later I was able to get an Ameritron AL 811H amplifier

**The radio shack of Bill Carter quickly tells a story of who AB9QU is – and what drives his interest in amateur radio. The combination of solid gear and antennas gives him the tools to chase special event stations, as visitors can clearly see from the certificates on his wall. (Photographs Courtesy of AB9QU).**



**A vintage Hallicrafters S-20R receiver on the shelf at AB9QU is in "very rough condition," Bill Carter says. "But it does work. I think it is beyond my ability to restore."**



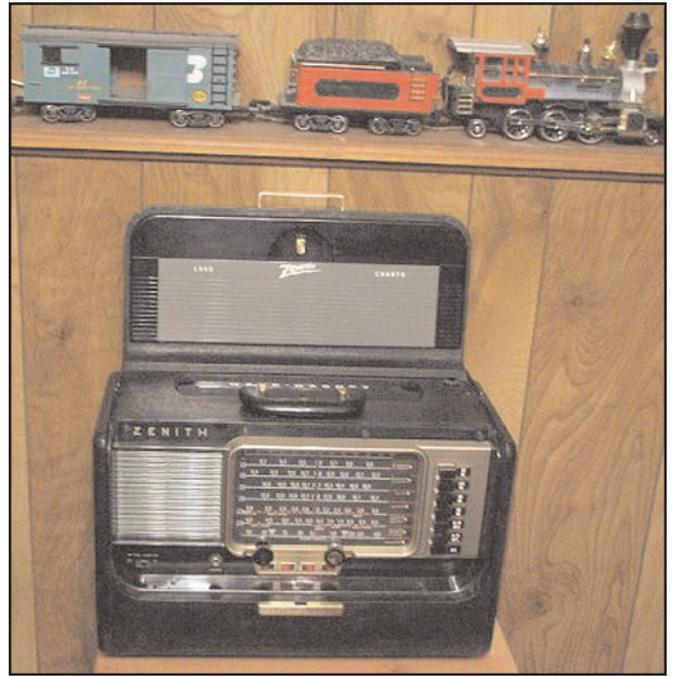
AB9QU's plunge into high-frequency communications was via a classic Drake TR-3 transceiver, borrowed from a friend.

< <http://bit.ly/hoK522> > and I put up a Gap Voyager DX antenna < <http://bit.ly/eNu6vP> >.

"Certificates on the wall are from special event stations," he said. "I particularly like the museum ships and lighthouses, but I'll make contact any time I hear a special event on the air."

"I now have a Kenwood TS-2000 (transceiver) < <http://bit.ly/f2umsg> > and an Ameritron ALS-600 amplifier," < <http://bit.ly/fHdR4B> > he said. There's a Hustler 4BTV antenna < <http://bit.ly/guw3Rt> >, and a "Cushcraft R8 < <http://bit.ly/h4i0e5> > that I will put up someday."

'QU's gear seems to find a spot most anywhere: The TS-2000 is in the shack. He has an FT-2800 < <http://bit.ly/e4jVhW> > in the garage; an FT-7800 < <http://bit.ly/gKdWhU> > in his truck and "a VX-6R < <http://bit.ly/hH7tSs> > sitting in the charger most of the time." His original VX-150 HT has been loaned out.

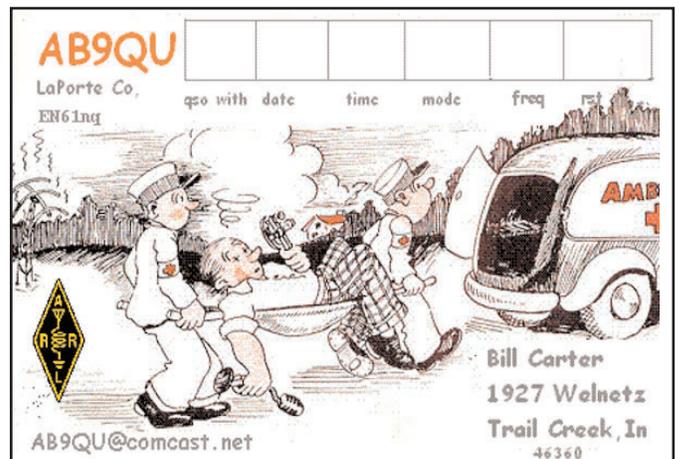
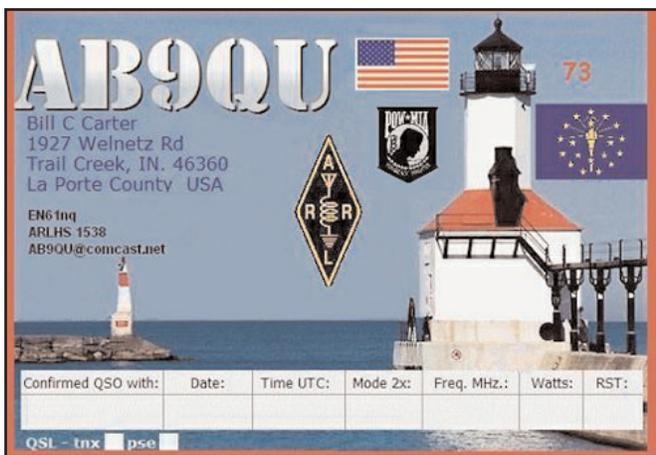


AB9QU likes to collect vintage radios and he loves trains, "both the real ones and model trains. It's amazing to me how many of my ham friends also like trains."

For VHF/UHF he uses a Diamond dual band 2-meter / 70cm antenna, a cubical quad for 2 meters and a loop for 6 meters.

'QU said he enjoys making his own QSL cards, as well, and collecting old radios. "On the shelf in the shack is a Hallicrafters S20R that is in very rough condition, but it does work," he said. "I think it is beyond my ability to restore."

"I am a member of the American Radio Relay League, Amateur Radio Lighthouse Society, Porter County (Indiana) Amateur Radio Club and Vietnam Veterans of America," he said. "I also love trains – both the real ones and model trains. It's amazing to me how many of my ham friends also like trains."



Producing his own QSL cards is also an interest of AB9QU. He has used his own design, left, and modified the design of others, as well, right.



# What Qualities Make a Good Volunteer?

By Dave Hayes, VE3JX

**Q**CWA members have recently elected a slate of officers and directors for their national organization. They took office September 1 for a two-year term. All are unpaid volunteers.

Shortly thereafter, a 2012 Nominations Committee was formed. Its purpose is to *“Identify and select at least two (2) QCWA Members as prospective candidates for each office (President, Vice-President, Secretary, and Treasurer) and twelve (12) QCWA Members as prospective candidates for Director (8 Director positions available) in our 2012 Election.”*

With interest running high in selecting candidates for the elected positions in 2012, some may be wondering how they may assist the committee to fulfill its mandate.

Who of their friends and acquaintances would make excellent candidates for inclusion on the roster? What qualities make a good volunteer? What do we want to see in those who are responsible for our association?

Such qualities, as we will examine, apply to volunteers locally at the chapter level, or at QCWA National. They would universally apply to any organization or club; not just QCWA.

So, what makes a good volunteer? Here are a few of those desired attributes.

## Do You Have the Skills?

Some positions encourage specific skills. For example, to be Treasurer, or a member of the Finance Standing Committee, it would require that an individual know how to read financial reports and have some familiarity with accounting practices.

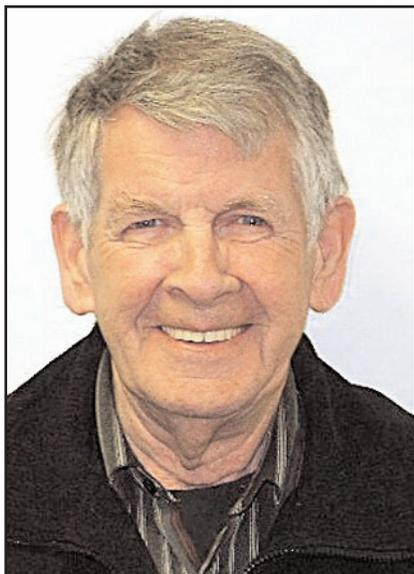
For the Secretary’s office, one would have to be fluent in English – reading and writing – being able to take accurate detailed notes and record them in a legible and readable manner. Persons who possess such specific skills are very much appreciated.

## Are You Sensible?

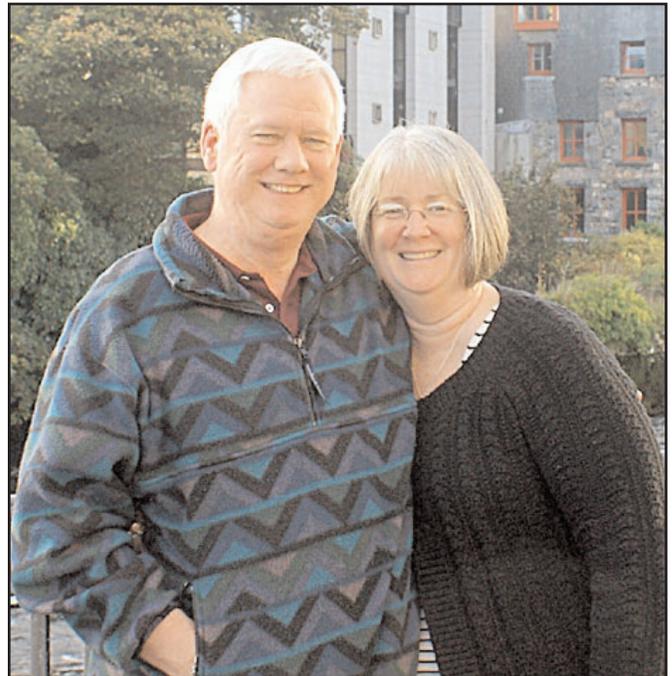
In all cases, a most important ingredient is common sense. Beneficial decisions need this commodity more than any other.

For example, we can have the best idea in the world for a chapter project, but if it is too great for the size and character of our group, it would be useless to try to accomplish it with our limited resources. Common sense would dictate that we choose a less-ambitious, but a more-doable goal.

We have to be sensible, as well, with respect to what we, personally, can handle. It is not sensible to take on more than we can handle. We need to decide whether we have the time and energy to properly look after the assignment we seek. That involves considering our vocational and family responsibilities,



**Earle Smith, VE6NM, chairman of QCWA’s Nominations Committee, works with fellow committee members Jeff Beals, WA4AW, and Larry Staples, WØAIB. (Courtesy of QCWA)**



**Skip Swenson, WB6VVA, and his wife Diane, are volunteers on this year’s QCWA Convention Committee. The event will be held in Warwick, Rhode Island, September 9-11 < <http://bit.ly/ihsCdS> >. Skip is a QCWA National Director, as well. (Courtesy of QCWA)**

as well as our own limitations. In so doing, we can sensibly volunteer to do what we reasonably can accomplish.

## Are You Dependable?

A volunteer has to be dependable, that is, willing and able to follow through on his volunteer commitment. It does no one any good to volunteer for an office or a task and then procrastinate or lose interest in it to the extent that it is put in jeopardy.

Bob Roske, NØUF, President of QCWA National, once said to me: *"My pet peeve is the person who says, 'It's just a hobby!' I agree with that, it is just a hobby, but when I say I'm going to do something, I do it, hobby or not."*

Bob is correct. We should always take seriously whatever commitment we've made to do something, whether it's hobby-oriented or a necessary duty elsewhere in our lives. Therefore, a dependable volunteer will only take on those responsibilities that he or she can reasonably expect to fulfill.

However, unexpected things do happen – such as health issues or serious accidents – and it would be understandable if we had to "pass the torch" while we concentrated on these urgent personal issues. (See *'Are You Sensible?'*)

## Are You Humble?

A synonym (from Wikipedia) of humility is "egolessness." That word is self-descriptive. While it may take strong, motivated people to get things done, cooperation is a key element for progress as well.

Humility helps individuals appreciate that they are not the center of the universe. Humility helps us to realize that we can learn from each other, even from those whom we might normally consider "below" us on the social, educational or intelligence ladder.

This very quality will help our meetings to function more smoothly, and to value all input – whether it be aligned with our own initial thinking or not. Seriously considering an opposite viewpoint to what we may originally have is the mark of a truly intelligent person. Humility helps us to maintain good relations with others while we also contribute our thoughts and energies to the advancement of our common goals.

Humility also engenders the attitude of being in the service of our fellow members who collectively chose us – not a disposition of being part of a "royal family."

Volunteering for any amateur radio organizational position requires that we view all members of that organization as equals – maybe as superiors.

Obviously, a volunteer is not inferior to other members, but he or she is among equals. Notwithstanding, if a volunteer has the *attitude* that the members are superior, he will do all he can to satisfy the needs of that membership.

If we are in "the service of our fellow members," then, in reality, we are their "servants." Are not our officers and

directors – whether in a local chapter or club, or national entity – "serving" us by performing the necessary organizational functions required for smooth operation? Yes, they are. And, if they serve us competently and with humility by showing honor to us, we, in turn, show greater honor to them, and express our gratitude and appreciation for their good work.

## Will You Be 'Open, Frank, Candid?'

A necessary quality for a volunteer to

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*“A volunteer has to be dependable, that is, willing and able to follow through on his volunteer commitment. It does no one any good to volunteer for an office or a task and then procrastinate or lose interest in it to the extent that it is put in jeopardy.”*

have is a good measure of transparency. What do we mean by that? One of the definitions for being transparent is being “open, frank, candid.” A “transparent” person is one who is willing to share information about what one is doing and what has been accomplished. One who is not transparent operates with a cloak of secrecy, which fosters suspicion.

Take for example the office of Treasurer, or Secretary/Treasurer, in a local chapter. What do you think would happen if that chapter officer refused to make public any meaningful financial data, perhaps hiding behind the statement: “You have to trust your officers.” How long do you think he or she would last in that position? Trust is something earned by known performance. However, how can trust be generated if one’s activities are hidden?

Mind you, on inspection, this individual could have done absolutely nothing wrong with the finances of the club and may have been exemplary in handling them, except for withholding information that is rightly shared with the members.

So, in order to prevent nasty suspicions from ever developing, an astute and prudent volunteer in such an office would want to be completely open with the work he or she is doing on behalf of fellow members. Actually, the law may require it.

Many U.S. clubs and organizations are registered as not-for-profit corporations and have been granted 501(c)(3) status. In return for the tax-exemptions they enjoy, both federal and state governments require public disclosure of all operations, especially financial. So, if your club or chapter enjoys such status, then your members, by law, have freedom to information, whether it is meeting minutes or financial records or project progression. Such information should be freely, not grudgingly, shared with all.

Of course, “transparent” volunteers already want to be open in all respects. After all, the members of a club are really the owners of it. They have the right to know how their money is being managed and spent, and what decisions are made for the activities and direction of the club or association. When that right is satisfied by true openness, suspicion has nowhere to germinate. And, you have a happy membership who are honored with due transparency.

### And In Summary . . .

Our volunteers know the value of these qualities, and we’re grateful for their service. They are a treasured, priceless commodity in a largely narcissistic world. Our hats are off to them all! Whenever you can, be sure to thank those working hard for us. We owe them *big time* for all the success our organizations, clubs and associations enjoy.

And, at the same time, consider how you can volunteer. If you are looking at a national position in QCWA, Earle Smith, VE6NM, and his Nominations Committee would like to hear from you before it has to submit its slate by June 15.

If your aim is local, your chapter management will be glad to hear from you. Either way, you will become a beloved active part of “the Proud, the Elite, and the Many.”



# HAMFESTS & SPECIAL EVENTS

## MAY

**DAYTON, OHIO – Dayton Hamvention®**, May 20-22, Hara Arena, 1001 Shiloh Springs Rd. Complete details: <http://www.hamvention.org/>.

**DAYTON, OHIO – DX Dinner™** sponsored by the Southwest Ohio DX Association (SWODXA). In conjunction with the Dayton Hamvention®. The dinner will be held on Friday, May 20, at the Dayton Marriott, 1414 S. Patterson Boulevard <http://www.marriott.com/hotels/travel/dayoh-dayton-marriott>, (937 223-1000). **“DXpedition of the Year”** to be announced. Program details and a list of the prizes available soon at: <http://www.swodxa.org> or <http://www.swodxa.blogspot.com>. Cash bar starting at 5:30 p.m., with dinner served at 7. Tickets, \$40 each, payable in U.S. funds. Sorry, we do not process Paypal or credit card payments. If a vegetarian meal is desired, it must be indicated when tickets are ordered. Check or money orders, payable to SWODXA, should be sent to Kirk Swallow, W8QID at 3137 Compton Rd, Cincinnati, OH 45251. Be sure to include an SASE for ticket return.

**CADILLAC, MICHIGAN – Wexauke Amateur Radio Club** will sponsor the **49th Annual Cadillac Swap**, Saturday May 7 at Cadillac Junior High School, 500 Chestnut St. Admission: \$5. Tables: \$10. Talk-in 146.98 MHz (no PL). Commercial vendors and VE session. For information and reservations: Alton McCommell, (231) 867-3774, <[nu8l@yahoo.com](mailto:nu8l@yahoo.com)>, Wexauke Amateur Radio Club, PO Box 163, Cadillac MI 49601.

## JUNE

**KNOXVILLE, TENNESSEE – Knoxville Hamfest and Electronics Exposition and ARRL Tennessee State Convention**, Kerbel Temple, Knoxville, Tennessee. Saturday, June 11, 8:30 a.m. to 4 p.m. In association with **Radio Amateur Club of Knoxville, RACK**. Latest information: <http://www.W4BBB.org>. Contact Lou Dreinhoefer, WB3JKQ, e-mail: [wb3jkq@arrl.net](mailto:wb3jkq@arrl.net) or David Bower, K4PZT, e-mail [d.bower@ieee.org](mailto:d.bower@ieee.org). Talk-in 53.770, 147.300, 224.500, 444.575 MHz. VE exams. Tickets \$7. Inside tables \$20. Outside tailgating \$5.

**QUEENS, NEW YORK – The Hall of Science Amateur Radio Club Hamfest** will be held June 12 at the New York Hall of Science parking lot, Flushing Meadow Corona Park, 47-01 111th Street, Queens, New York. Doors open for Vendors to set up at 7:30 AM. Buyers admitted at 9 a.m. Free parking, door prizes, drop and shop, QSL card checking, food and refreshments. Free admission to museum from 10 a.m. to 11 a.m. or \$6 after with hamfest ticket. VE Exams at 10 a.m. Admission by donation. Buyers \$5. Sellers \$10 per space. Talk-in on 444.200 (PL 136.5), 145.270 (-600 kHz, PL 136.5). For further information: <http://www.hosarc.org> or call at night only: Stephen Greenbaum, WB2KDG, (718) 898-5599. Via e-mail: [WB2KDG@arrl.net](mailto:WB2KDG@arrl.net).

**PISCATAWAY, NEW JERSEY – Raritan Valley Radio Club ARRL Hamfest**, June 18 at Piscataway High School (Lots 11/12), 100 Behmer Rd., Piscataway, NJ. Information: <http://www.w2qw.org>. Talk-in: 146.625 and 442.250 (both PL 141.3). Public contact: E. Drew, W2OU. E-mail: [drumor@optonline.net](mailto:drumor@optonline.net).

**MISSISSAUGA, ONTARIO, CANADA – Special Event Station VE3MIS, Mississauga Amateur Radio Club**, June 4-5, 1400-2000Z daily. **Annual Streetsville Bread & Honey Festival**. Frequencies: 28.480, 14.240, 7.230 MHz. Certificate: MARC, c/o Michael Brickell, VE3TKI, 2801 Bucklepost Cres, Mississauga, ON, Canada L5L 1M6. Include \$2 U.S. for postage. Please note: We cannot use U.S. postage stamps in Canada. Information: <http://www.marc.on.ca/>.

**PHILADELPHIA, PENNSYLVANIA – Special Event Station K3DN**, 17:00Z, June 4 to 17:00Z, June 5. **Warminster Amateur Radio Club** at the **Union League in Philadelphia** to honor the American Flag. Frequencies: 28.70, 21.050, 21.280, 14.050, 14.280, 7.050, 7.280, 3.580, 3.880 MHz and PSK31 on 14.070 MHz. More information: <http://www.k3dn.org>. Certificate via self-addressed, stamped letter-size envelope along with \$1 U.S. to K3DN, Warminster Amateur Radio Club, PO Box 113, Warminster, PA 18974. Foreign stations must include the correct amount of postage. Contact: Irwin Darack, KD3TB, [irwindarack@comcast.net](mailto:irwindarack@comcast.net) or (267) 261-4959.

*Have your hamfest or special event listed . . . click here!*

## Visit Your Local Radio Club

### COLORADO

**Denver Radio Club (DRC)** meets 3rd Wed., 7:30 PM, El Jebel Shrine Temple, 4625 W. 50th Ave., Denver, CO. Learning/Tech sessions 6:30 PM. Oldest club in Colorado (1917). Net Sun 8:30 PM 145.490/448.625 rptr, w0tx@arrl.net: www.w0tx.org 01/12

### MICHIGAN

**Muskegon Area Amateur Radio Council** meets the 1st Thursday of every month at 7 PM at our clubhouse at 2888 Scenic Drive. Visit our website: <http://w8zho.org> 01/12

*Click here to have your club listed!*



# CONTEST CORNER

**CONTEST:** AGCW QRP/QRP Party  
**DATE & TIME:** 1300-1900Z 1 May  
**BANDS/MODE:** 80 & 40M CW  
**POINTS:** 1 Pt. each QSO; 2 Pts. QSO with Class A sta  
**MULTIPLIERS:** DXCC Countries  
**EXCHANGE:** RST + Serial # + category  
**ENTRY CATEGORIES:** A = <5W; B = 5-10W  
**ENTRIES:** 31 May Jo (Juergen) Mertens, DJ4EY, Am Muehlenbruch 32, D-59581 Warstein, Germany  
 E-mail: qrp-party@agcw.de  
 Rules at: [www.agcw.org/en/?Contests:QRP-QRP-Party](http://www.agcw.org/en/?Contests:QRP-QRP-Party)

**CONTEST:** Indiana QSO Party  
**DATE & TIME:** 1600Z 7 May - 0400Z 8 May  
**BANDS/MODE:** 160-10M SSB/CW  
**POINTS:** 1 Pt. Phone, 2 Pts. CW  
**MULTIPLIERS:** IN Counties (92 possible); IN sta's count States/Provinces/Countries  
**EXCHANGE:** IN sta's give RS(T) + County; All others give RS(T) + State, Province or DX  
**ENTRY CATEGORIES:** Single Op, High, Low, QRP; Multi Op, Single XMTR; Mobile; Portable; Rover  
**ENTRIES:** 15 Jun Mike Goode, N9NS, 10340 Broadway, Indianapolis, IN 46280-1344  
 ASCII or Cabrillo logs to: [inqp@hdxcc.org](mailto:inqp@hdxcc.org)  
 Rules at: [www.hdxcc.org/inqp/rules.html](http://www.hdxcc.org/inqp/rules.html)

**CONTEST:** 7th Call Area QSO Party  
**DATE & TIME:** 1300Z 7 May - 0700Z 8 May  
**BANDS/MODE:** 160-2M SS/CW/Digital  
**POINTS:** 2 Pts. SSB; 3 Pts. CW or Digital  
**MULTIPLIERS:** 7th call area sta's count States/Provinces/Countries; All others count 7th call area counties (259)  
**EXCHANGE:** 7th call area sta's give RST + 5-letter state/county designator; All others give RST + State/Province/Country  
**ENTRY CATEGORIES:** Single Op High, Low (<150W), QRP (<5W); Multi-single High, Low, QRP; Multi-multi; Mobile  
**ENTRIES:** 5 June 7th Call Area QSO Party, c/o CODXC, 61255 Ferguson Rd., Bend, OR 97702  
 Cabrillo logs to: [7qplogs@codxc.org](mailto:7qplogs@codxc.org) (Note: Any log with 40 or more QSO's must be submitted electronically)  
 Rules at:  
<http://www.codxc.com/new/Page.asp?Content=DRYLAND7S&Page=3>

**CONTEST:** New England QSO Party  
**DATE & TIME:** 2000Z 7 May - 0500Z 8 May & 1300Z - 2359Z 8 May  
**BANDS/MODE:** 80-10M SSB/CW/Digital  
**POINTS:** 1 Pt. SSB; 2 Pts. CW/Digital  
**MULTIPLIERS:** NE Counties: CT/8; MA/14; ME/16; NH/10; RI/5; VT/14. (NE sta's use States/Provinces/DXCC)  
**EXCHANGE:** RS(T) + State/Province/DX; NE sta's give RS(T) + County/State  
**ENTRY CATEGORIES:** Single op - High, Low (150W or less), QRP; Multi op - single XMTR  
**ENTRIES:** 30 Days NEQP P.O. Box 3005, Framingham, MA 01705-3005  
 Cabrillo to: [logs@neqp.org](mailto:logs@neqp.org)  
 Web page: [www.neqp.org](http://www.neqp.org) Rules at: [www.neqp.org/rules.html](http://www.neqp.org/rules.html)

**CONTEST:** 10-10 International Spring CW/Digital  
**DATE & TIME:** 0001Z 7 May - 2359Z 8 May  
**BANDS/MODE:** 10M CW/Digital  
**POINTS:** 1 Pt. non-member; 2 Pts 10-10 member  
**MULTIPLIERS:** None  
**EXCHANGE:** Call + Name + State/Country + 10-10 #  
**ENTRY CATEGORIES:** Single-op; Club; QRP  
**ENTRIES:** 17 May Dan Morris, KZ3T, 131 Valencia Ln., Statesville, NC 28625  
 E-mail: [tencontest@roadrunner.com](mailto:tencontest@roadrunner.com)  
 Web page: [www.ten-ten.org](http://www.ten-ten.org)  
 Rules: [http://www.ten-ten.org/Forms/QSOPartyRules\\_05312009.pdf](http://www.ten-ten.org/Forms/QSOPartyRules_05312009.pdf)

**CONTEST:** FISTS Spring Sprint  
**DATE & TIME:** 1700-2100Z 14 May  
**BANDS/MODE:** 80-10M CW  
**POINTS:** 5 Pts. member; 2 Pts. non-member

**MULTIPLIERS:** States/Provinces/DXCC Countries  
**EXCHANGE:** RST + State/Province + Name + FISTS # (non-members give power)  
**ENTRY CATEGORIES:** QRO = >5W; QRP = <5W; Club  
**ENTRIES:** 30 Days Gil Woodside, WA1LAD 30 Hilltop Ave., West Warwick, RI 02893-2825  
 Cabrillo or ASCII to: [wa1lad@cox.net](mailto:wa1lad@cox.net)  
 Rules at: [www.fists.org/sprints.html](http://www.fists.org/sprints.html)

**CONTEST:** Alessandro Volta RTTY DX  
**DATE & TIME:** 1200Z 14 May - 1200Z 15 May  
**BANDS/MODE:** 80-10M RTTY  
**POINTS:** Not clear - see rules at: [www.contestvolta.com](http://www.contestvolta.com)  
**MULTIPLIERS:** DXCC Countries worked each band  
**EXCHANGE:** RST + Serial # + CQ Zone  
**ENTRY CATEGORIES:** Single op, Single band; Single op, All bands; Multi op; SWL  
**ENTRIES:** 30 Online submission only!  
 Cabrillo to: [log2011@contestvolta.it](mailto:log2011@contestvolta.it)  
 Rules at: [www.contestvolta.com](http://www.contestvolta.com)

**CONTEST:** Run for the Bacon  
**DATE & TIME:** 0100-0300Z 15 May  
**BANDS/MODE:** 80-10M CW  
**POINTS:** 1 Pt. non-member QSO; 3 Pts. FP member; 5 Pts. FP DX member  
**MULTIPLIERS:** States/Provinces/Countries (X 2 if more than 50 members worked)  
**EXCHANGE:** RST + State/Province/Country + FP #; (non-members give power)  
**ENTRY CATEGORIES:** Single band; All band  
**ENTRIES:** Logs submitted by online link, only!  
 See web page: [www.fqprp.com/fqprprun.php](http://www.fqprp.com/fqprprun.php)

**CONTEST:** His Majesty, The King of Spain  
**DATE & TIME:** 1800Z 21 May - 1800Z 22 May  
**BANDS/MODE:** 160-10M CW  
**POINTS:** DX sta's = 1 Pt per QSO other countries, 3 Pts. QSO with EA sta's; EA sta's = 1 Pt. per QSO DX, 2 Pts. Per QSO EA sta's  
**MULTIPLIERS:** Spanish provinces(52 possible) in each band  
**EXCHANGE:** RST + Serial #; EA sta's give RS(T) + Province + Serial #  
**ENTRY CATEGORIES:** Single-op, EA or non-EA monoband; Single-op, EA or non-EA multiband; Multi-op, EA or non-EA  
**ENTRIES:** 30 Days Online submissions only!  
 Cabrillo (only format accepted) to: [smreycw@ure.es](mailto:smreycw@ure.es)  
 Rules: <http://www.ure.es/contest/431-sm-el-rey-contest-english-version.html>

**CONTEST:** CQ WW WPX  
**DATE & TIME:** 0000Z 28 May - 2359Z 29 May  
**BANDS/MODE:** 160-10M CW  
**POINTS:** 1 Pt. Same Country; 1 Pt. Same Continent, 20/15/10M; 2 Pts. Same Continent, 160/80/40M; 3 Pts. Other continents 20/15/10M; 6 Pts. Other Continents, 160/80/40M; 2 Pts. NA sta's (same continent), 20/15/10M; NA sta's (same continent), 4 Pts. 160/80/40M  
**MULTIPLIERS:** Prefixes  
**EXCHANGE:** RS + serial #  
**ENTRY CATEGORIES:** Rookie; Single Op - Single Band, QRP (<5W), Low (<100W), High, Tri-band/Single Element; Single Op - All Band, QRP, Low, High, Triband/Single Element; Multi Op; Single-op, assisted; Multi Op - 2 XMTR's; Multi Op - Multi XMTR's  
**ENTRIES:** 1 July CQ WPX Contest 11 Hollis St., Uxbridge, MA 01569  
 Cabrillo to: [cw@cqwpx.com](mailto:cw@cqwpx.com);  
 Forms and rules at: [www.cqwpx.com/rules.htm](http://www.cqwpx.com/rules.htm)

**CONTEST:** MI-QRP Memorial Day Sprint  
**DATE & TIME:** 2300Z 31 May - 0300Z 1 Jun  
**BANDS/MODE:** 160-6M CW  
**POINTS:** 2 Pts. W/VE non-members; 4 Pts. DX non-members; 5 Pts. MI-QRP members  
**MULTIPLIERS:** States/Provinces/DXCC  
**EXCHANGE:** RST + State/Province/Country + member number (non-members give power)  
**ENTRY CATEGORIES:** A = <250mW; B = 250mW-1W; C = 1W-5W; D = >5W  
**ENTRIES:** 30 Days Hank Greeb, N8XX, 5727 11 Mile Rd. NE, Rockford, MI 49341-9502 E-mail: [n8xx@arrl.org](mailto:n8xx@arrl.org)  
 Rules at: [www.qsl.net/miqrclub/contest.html](http://www.qsl.net/miqrclub/contest.html)

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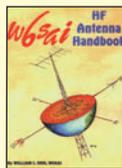


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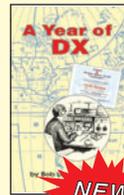
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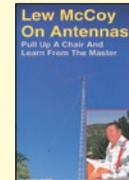


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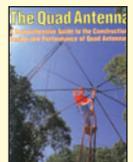
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# VE EXAMS

As a service to our readers, WorldRadio Online presents a feature listing of those VE exams, times and locations which are sent to us. Please remember that our deadline for publication is two months in advance. For example, if your group is scheduling an exam for December, please have the information to us by October 1st. *World Radio Online*, VE Exams, 25 Newbridge Road, Hicksville, NY 11801. List the location (city and state), any information examinees should have (advance registration, etc.) and the name of the person to contact for further information. Examinees should bring their original license (along with a photo copy), two forms of identification (at least one should be a photo), and required fee.

p/r pref. = pre-register preferred but w/i OK  
p/r = pre-registration only-no w/i

w/i = walk-in only  
w/i pref. = w/i preferred to p/r

CITY	DATE	CONTACT	NOTES	CITY	DATE	CONTACT	NOTES
<b>ARIZONA</b>				<b>NEVADA</b>			
Mesa	3rd Mon	Steve KY7W, 480-804-1469, kj7wk@cox.net	w/i	Stagecoach	2nd Sat	Jack, AC6FU, 775-577-2637 ac6fu@arrl.net	
Phoenix	4th Sat	Gary Hamman, 602-996-8148, K7GH@arrl.net		<b>NEW JERSEY</b>			
<b>ARKANSAS</b>				Roselle	4th Sat	Gerry, AA2ZJ, 732-283-2795, aa2zj@arrl.net	
Little Rock	3rd Sat	Daryl Stout, AE5WX, 501-291-5058	w/i	Winslow	4th Tues	Mark, K2AX, 609-820-1523, JTRA@comcast.net	
Vilonia	3rd Sat	James, KE5OVE, 501-796-3910, ke5ove@arrl.net	p/r pref.	<b>NEW YORK</b>			
<b>CALIFORNIA</b>				Bethpage	2nd Tues	Bob, 631-499-2214, w2ilp@optonline.net	p/r
Highland	5/21	Ed , WU6I, 909-864-0155, wu6i@arrl.net	p/r pref.	Canandaigua	1st Wed	Squaw Island ARC, David A. Foster, 585-398-0216, www.siarc.us	w/i
LaVerne	Last Sat	Frank, K6FW, 909-628-8661, k6fw@arrl.net	p/r	Valhalla	Call	Stanley, WA2NRV, wa2nrv@weca.org	
Long Beach	3rd Sat	Louise, N6ELK, 562-429-1355	p/r	Yonkers	Call	Paul, AC2T, 914-237-5589, w2yrc@hotmail.com, www.yarc.org	w/i ok
Manteca/Tracy	4th Sat	David, N5FDL, 209-835-6893, n5dfll@arrl.net	p/r	<b>NORTH CAROLINA</b>			
Redwood City	Call	Al, WB6IMX@arrl.net, www.amateur-radio.org	w/i	Fayetteville	Call	Patricia Edwards, N4UGH, n4ughpat@aol.com, 910-584-1801	w/i
Sacramento	Hotline!	916-492-6115, n6na@arrl.org		<b>OHIO</b>			
San Francisco	See site	www.hamcrams.com	p/r pref	Cincinnati	1st Sat	Dale, KC8HJL, 513-769-0789	p/r pref
Santa Rosa	Hotline!	Hotline-Recording 707-579-9608	w/i ok	Sandusky	Call	Luther, N8HC, 419-684-7864, n8hc@arrl.net	p/r
Sebastopol	Hotline!	Recording 707-579-9608		<b>OREGON</b>			
Sunnyvale	Visit Site	Gordon, W6NW, Sv@amateur-radio.org, www.amateur-radio.org	w/i	Astoria	Call	AA7OA, 503-338-3333	p/r
<b>COLORADO</b>				Bend	Weds	Joe, K7SQ, 541-385-3152	p/r
Englewood	1st Sat	Dave, N0HEQ, 303-795-5718, n0heq@arrl.net, Commerical Exams also	p/r pref	Lincoln City	1st Sat	Carl, w7li@arrl.net, 503-965-7575	w/i ok
<b>FLORIDA</b>				McMinnville	Call	Mark, AC7ZQ, 503-843-3580	w/i only
Longwood	4th Sat	James, N4ZKT, 407-333-4245		Sisters	Call	Dave, N7TYO, 541-549-7831	p/r
Melbourne	1st Sat	John, AA8IS@earthlink.net, 321-412-2779	w/i ok	Tigard	Call	John, KS0F, 503-626-7399	p/r
North Port	Call	Bill Norris, KC7TSG, 941-426-0214	w/i pref.	<b>PENNSYLVANIA</b>			
St. Pete	Call	Mark, NP3R, 727-528-0071	w/i pref.	Erie	3rd Sat	Ron, KB3QBB, 814-833-6829, kb3qbb@arrl.com, www.wattsburg-wireless.us	p/r
Sanford	4th Sat	James, N4ZKT, 407-333-4245, n4zkt@bellsouth.net		Lebanon	3rd Sat	Wa3gpm@arrl.net	
<b>HAWAII</b>				<b>PUERTO RICO</b>			
Oahu Is.	Call	Lee, KH6BZF, 808-247-0587	p/r	San Juan	Last Sat	Hotline: 787-789-4998, prarl@prarl.org	w/i
<b>IDAHO</b>				<b>SOUTH CAROLINA</b>			
Kamiah	2nd Tues	Alan, 208-937-2222, Ken 208-935-8888		Charleston	3rd Wed	Robert Johnson, ae4rj@amsat.org; www.qsl.net/wa4usn/	w/i
<b>IOWA</b>				Charleston	2nd Sat	Riley Stone, 843-832-9105, k4hyy@sc.rc.com	w/i
Ames	Call	George Oster, NP2N, 515-233-3535	w/i pref.	<b>VIRGINIA</b>			
Vinton	3rd Tues	Kenneth, N0EGV, 319-223-5739, n0egv@southslope.net	w/i ok	Alexandria	2nd Sat	John, WZ4A, 703-971-3905, wz4a@arrl.net	w/i
<b>ILLINOIS</b>				Stafford	Sat	Bart, N3GQ, 540-373-4506, n3gq@arrl.net, www.qsl.net/semcomm	p/r
Bolingbrook	3rd Sat	Dale, W9KHX, 815-723-3332	w/i ok	<b>WASHINGTON</b>			
Burr Ridge	Any Day	Argonne ARC, W9DS, 630-986-0061	p/r	Tacoma	2nd Tues	Radio Club of Tacoma, 253-759-2040, www.w7dk.org	
Lake in Hills	4th Sat	Jeffrey Dubin, N9MXT, 847-815-9407		Vancouver	Hotline!	CCARC, 360-896-8909	p/r
Roselle	2nd Tues	Sam, W9SFB, 630-894-0708, w9sfb@aol.com	p/r	Vancouver	Call	Vancouver ARC-Clark County, 360-892-5580 C. Wayne Schuler, AI9Q ai9q@arrl.net	w/i ok
<b>INDIANA</b>				<b>WEST VIRGINIA</b>			
Richmond	5/7	Mike, 765-439-4230, w1idx@arrl.net	w/i	Parkersburg	2nd Mon	Dana Pickens, WV8G, 304-422-6101	w/i, p/r
South Bend	3rd Mon	Alan, NY9A, 574-232-6883	p/r	<b>WISCONSIN</b>			
<b>MASSACHUSETTS</b>				Racine	1st Sat	Robert, W0WLN, 262-886-8551	w/i pref.
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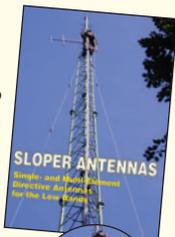
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# Theater in the Round: Here We Go Loop De Loop

By Kurt N. Sterba

**A** letter to Kurt from **David Benedict, W7DBH**, of Beaverton, Oregon, asks about the *AlexLoop WalkHam* antenna by PY1AHD. He'd seen an item about it in the November 2010 *QST*.

"A *magnetic loop* covering 7-30 MHz at up to 20 watts SSB. I was shocked at the price of \$299, and then a whopping \$50 shipping to the USA.

"Wow! \$349 for a little table-top antenna. I immediately thought of bottled water for \$16 by Evian (*naive* spelled backward!).

"Please tell us your opinion of the antenna as to efficiency, radiation pattern, etc. And please tell us if there is a similar *do-it-yourself* antenna that can be built by most of us *naive* Americans for a quarter of that price. Maybe you could tell us, too, why it is rated at 20 watts, and what we might do to increase that power input on a *naive loop* we could build."

## The Krusty One Weighs In . . .

Kurt took a look at the website < <http://www.alexloop.com> > and found an interesting group of small loop antennas. The company, founded by Alexandre Grimberg, PY1AHD, is devoted solely to loops. All appear to be made of readily available materials such as aluminum chimney tubing, plastic water pipe and coaxial cable.

The "Walkham" portable loop's name comes from one application: The ham walking down the street with the horizontal loop held above his head by a pole attached to his back while talking to a distant ham on a band from 40 to 10 meters.

It is difficult for Kurt to imagine himself walking down the street or on the trail while working DX. Nevertheless this is a unique application of a loop.

Kurt can readily visualize himself as the operator shown seated on a camping chair while in on-the-air conversation. It would not be difficult to carry the loop to your camping site.

Although the loop is about three-feet in diameter, the entire antenna – loop, supporting pole, feeder cable and tuning unit – fit into a soft-sided carrying case about 15-by-10-by-8 inches. That's Kurt's estimate, anyway. The website is devoid of specifications for the carrying case and any of the antennas pictured.

*To answer the reader's questions:* Kurt estimates the loop to be about three-feet diameter and, if the cable is RG-8 size the shield diameter is 0.32 inches. Rather than

make calculations Kurt turned to < <http://www.66pacific.com> > where the calculations are made for you.

It shows the radiation resistance as 0.058 ohms, the loss resistance as 0.1 ohms and the efficiency as 35 percent. This is highly optimistic. The wire mesh shield is not the same as a solid conductor of this size although, because of skin effect, it is not much worse. And there are other losses, such as in the two connectors that put the loop together.

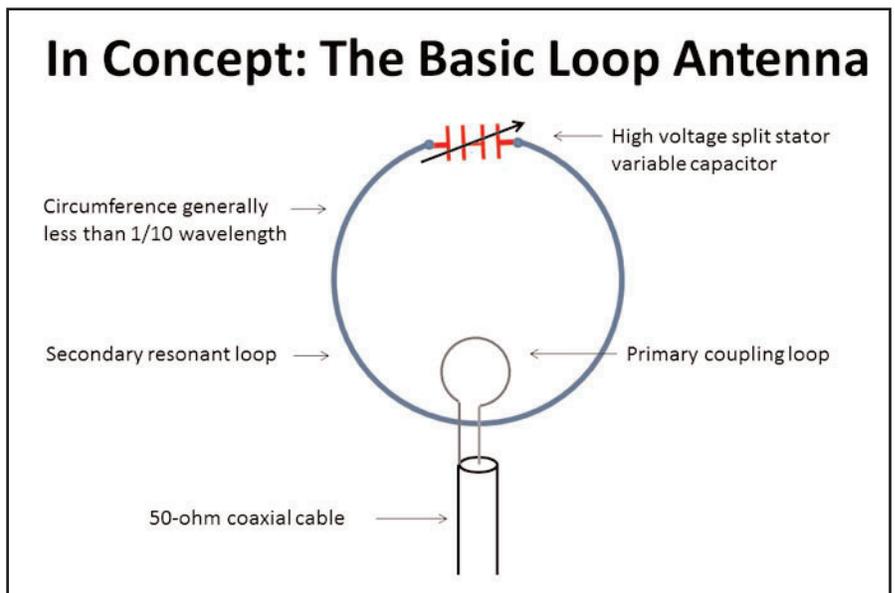
If we add just two one-hundredths of an ohm additional resistance, the efficiency drops to 31 percent. This is not bad for an antenna this small. The efficiency will be better on 10 meters and worse on 40.

*Is the price of \$299 too high?* Well, if you look around, some commercially-made loops in the U.S. are priced well into the \$300 to \$500 range.

*As to the \$50 shipping charge:* We don't know the weight of the Brazilian loop with its carrying case. As a *guesstimate*, if it is 10 pounds, the U.S. Post office wants \$53.85 to ship it to Brazil. So the shipping charge seems reasonable.

*Why the (20-watt PEP or 10-watt continuous carrier) maximum power for the PY1AHD loop and can we increase it to 100 watts or so?* This has to do with the very low radiation resistance of the loop. Remember that Power = (Current squared) X Resistance. If the resistance is very low, then the current will be mighty high. With this antenna fed 10 watts, the current is 5.5 amperes. This makes the capacitor voltage 700 volts RMS. You can handle this with a small capacitor.

At 100 watts the current is 17-amperes and the capacitor voltage is 2,200 volts. Let's try 250 watts: 27 amperes and 3,450



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volts. Either of these takes a big transmitting capacitor with wide-spaced plates. And Kurt thinks either current would melt the coax shield.

PY1AHD also has a same-size loop made of copper tubing that would be more efficient. Also one made of four-inch aluminum chimney tubing that would be even more efficient.

These loops are made of commonly-available materials and are lightweight. They can be hand-held or mounted outside a window. But note that they are narrow band so they must be retuned for even a small frequency change. So you have to be close enough to the antenna to turn the capacitor knob any time you change frequency.

This problem was solved by Ted Hart, W5QJR, inventor of the noise bridge. His loop was described in June 1986 QST. Some editions of the ARRL Antenna Book describe it, as well.

Ted used eight pieces of three-quarter inch copper pipe with 45-degree elbows to connect them. Most importantly, he explained that split stator tuning capacitors must be used to avoid the resistance of wiping contacts. A stepper motor allowed remote tuning so you don't have to be right at the loop to operate. MFJ Enterprises uses DC motors for this purpose in its loops.

Kurt highly recommends that you read W5QJR's article before you build your own loop.

Kurt welcomes questions of general interest from readers and will answer them in his kolumn. Write to him at: WorldRadioOnline@gmail.com.

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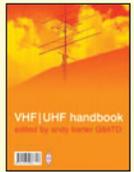


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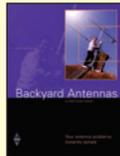


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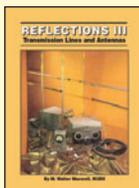
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