

WorldRadio

ONLINE

Year 40, Issue 6

DECEMBER 2010



Keeping Young Hams Interested, Page 8

Understanding Logbook Of The World, Page 18

Krusty Ol' Kurt's Simple Wire Beams, Page 55

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



How Former Netherlands Antilles Impacts CQ Awards and Contests

With the *new* DX entities created by the breakup of the Netherlands Antilles, questions have arisen regarding their status for CQ DX awards and contests. This announcement updates and supplements the preliminary information that appeared in the November issue of *CQ Amateur Radio* magazine.

CQ DX Awards: Each of the five islands involved in the change of status retains its previous PJ callsign prefix (Curacao - PJ2; Bonaire - PJ4; St. Eustatius - PJ5; Saba - PJ6; and St. Maarten - PJ7). According to CQ DX Awards Manager Billy Williams, N4UF, the previous entities of the Leeward Islands (PJ2/PJ4) and Windward Islands (PJ5/PJ6/PJ7) Islands were deleted as of October 9, 2010. Four new entities—Curacao (PJ2), St. Maarten (PJ7), Bonaire (PJ4) and Saba/St. Eustatius (PJ5/6)—became active on October 10, for a net gain of two DX entities. Confirmations for contacts made with the new entities will be accepted for CQ award credit effective immediately.

New Multipliers in the CQWW: The country multiplier list for the CQ World Wide DX Contest (SSB weekend already held October 30-31; CW on November 27-28) is based on a combination of the ARRL's DXCC list and the DARC's WAE (Worked All Europe) list. Since the ARRL has also made the same changes, deleting the old Windward and Leeward Islands entities and adding PJ2 (Curacao), PJ4 (Bonaire), PJ5/6 (St. Eustatius & Saba) and PJ7 (St. Maarten) as four new entities effective October 10, these *new ones* will each count as separate country multipliers in the CQWW.

There is no need to worry if your own contest logging software is not updated, according to CQWW Contest Director Bob Cox, K3EST. "In the end, the log checking software calculates final tallies anyway," he noted, adding that the software "is very up-to-date and reflects any status changes."

DX Marathon Double-Dip: Competitors in the 2010 CQ DX Marathon will have a *double-dip* opportunity in working the islands of the Netherlands Antilles for Marathon points. Those who worked any of the islands before 10/10/10, get credit for either the Windward or Leeward Islands, as appropriate. Hams who work them again after 10/10/10 will get additional credit for the new entities, providing a maximum of six country credits for working the islands in 2010.

(*CQ Amateur Radio Newsroom*)

More Gear Expected to Be Labeled 'Made in China'

The sales success of low-priced Wouxon dual-band hand held transceivers has not been lost on the well-established amateur radio retail trade, according to a report on Amateur Radio Newsline®.

The five-member buying group Ham Pros announced "it will be selling both the Wouxon and other made-in-China ham radio gear under the banner of *nowchinadirect.com*, the story noted.

"In addition to the Wouxon HT, other gear . . . includes several metered power supplies, a pair of SWR and power meters

and two hand held transceivers from TYT. These are the TH-F5 single bander that covers 2 meters and the UV-F1 that covers both 2 meters and 70 centimeters."

(*ARN, nowchinadirect.com, others*)

300 Millionth QSO Uploaded to Logbook of The World

Victor Morozov, RD3PQ, of Tula, Russia, has the distinction of uploading QSO number 300 million to ARRL's Logbook of the World electronic QSL service.

January 2011 will mark a decade since the first digital log and confirmation of QSOs in this program were first published. LoTW was launched in 2001.

"As for Morozov, upload 300 million was his way of confirming a QSO with Ivan Gombos, OM3CGN, operating portable SV2" that took place October 5, according to Amateur Radio Newsline®.

(*WIA News*)

Special Event Station BV100 Commemorates Republic of China Anniversary

Amateur radio operators from the Republic of China Centenary Foundation in Taiwan have activated special event station BV100, expected to be in operation through December 31, 2011. For more information, visit: <<http://www.bv100.tw/EN/>>.

"This operation is to celebrate the 100th anniversary of the Republic of China. Operations will be on all bands and modes," OPDX reported. QSL via BV2KI.

(*Amateur Radio Newsline®*)

Brit Receives Prestigious DX Award

Neil Carr, GØJHC, of Preston, England, has been awarded the prestigious Royal Order of Transatlantic Brass Pounders trophy that recognizes outstanding and consistent DX work.

The Royal Order of Transatlantic Brass Pounders trophy was first awarded in 1924. The original Members of the Order were from those who operated transatlantic tests from 1921 to 1924.

As such, GØJHC joins a small group of elite UK operators who have earned this honor. RSGB President Dave Wilson, MØOBW and HF Awards Manager, John Dunnington, G3LZQ, were scheduled to visit GØJGC to present the award.

(*RSGB*)

HB9EHT Re-Elected ITU Secretary-General

Member states of the International Telecommunication Union have elected Dr. Hamadoun Tour, HB9EHT, of Mali, as Secretary-General for a second four-year term. Dr. Tour won the position with 151 votes, with 157 countries present and voting.

(*Amateur Radio Newsline®*)

ARRL June VHF Contest

New 6M Score Record for Team W5ZN!



W5ZN at his 6M station. Congratulations on a job well done, Team W5ZN.

“The IC-7700’s proven contest lineage enabled Team W5ZN to achieve a new record of grids worked in the Limited Multi-op category in the 2010 ARRL June VHF Contest, achieving the highest 6 meter score in the category.

Most HF equipment manufacturers build their radios and add 6 meters simply as a novelty add-on, relying on preamplifiers and filtering designed for HF. Icom chose to take the initiative to engineer and implement components specifically for 50MHz in the IC-7700 making it a clear choice for HF and VHF operators alike.”

— Joel Harrison, W5ZN



For the love of ham radio.


ICOM®

WorldRadio ONLINE

TABLE OF CONTENTS

Year 40 Issue 06

DECEMBER 2010

FEATURES

Nothing is Impossible: The Art of Keeping Young Hams

Interested in Radio By Neil Dabb, KC7GCL8

COLUMNS

EDITOR'S LOG6

PROMOTION AND RECRUITMENT:

2011: New Decade of Opportunity14

PROPAGATION: Taking Advantage of Circular Polarization 16

DX WORLD: An Introduction to Logbook of the World18

STATION APPEARANCE: Born to Be Wild (On the Amateur Bands):

KA9PGC, Michigan City, Indiana 23

RULES & REGS: What Does An Examinee Really Need to Know? 28

MARS: Maybe a Small Shuffle at the Pentagon, But This Could

Loom Large for MARS 32

WITH THE HANDIHAMS: Doing A Lot With A Little When

Traveling Abroad 38

FISTS CW CLUB: The Long and Short of It:

CW Is Really Clever Stuff 40

AMATEUR SATELLITES: Satellite Presentations Are As Close

As Your Computer..... 48

TRAIL-FRIENDLY RADIO: A Novel Approach to Long Distance

T-FR Signal Monitoring - From Your Computer 50

AERIALS: From Simple Wire Beams to Curtain Hanging 55

DEPARTMENTS

WorldRadio Online Newsfront2

Hamfests & Special Events 27

Visit Your Local Radio Club 27

DX Predictions - December 31

VE Exams47

Contest Calendar..... 53

WorldRadio Online Mart 54



On the Cover: Jerry Whiting, KB5VGD, helps a Learning About Research and Technology Through Science (LABRATS) student with soldering.

See this month's Promotion & Recruitment for details about the program.

(Courtesy of LABRATS)

THE NEW DB 11...

If it fits here, it will fit anywhere!

Truly small size with truly big performance.

SteppIR™

INTRODUCING THE NEW DREAM BEAM 11

INTRODUCTORY PRICE - \$2195.00

WEIGHT - 63 lbs (28.57kg)

WIND LOAD - 5.9 sqft (0.54sqm)

TURNING RADIUS - 10.5ft (3.20m)

FREQUENCY COVERAGE - 13.9Mhz - 54 Mhz

BOOM LENGTH - 11 ft (3.35m)

LONGEST ELEMENT - 19 ft (5.79m)

POWER RATING - 3KW continuous

BAND ACTIVE ELEMENTS

20m 2

17m 3

15m 3

12m 3

10m 3

6m 3

Refer to our website for more technical specs and gain figures as they are released. The DB 11 will be available in the Fall of 2010. Get your name on the order list now.

BS7H

W6RGG on Scarborough
reef DXpedition.



Season's Greetings: All They Want for Christmas . . .

As dedicated radio amateurs, we know that it is "as blessed to send as it is to receive" – at least that's how we're going to spin it heading into this holiday season.

So, during a recent **WRO Live Online Chat**, we asked "What amateur radio stuff is on the top of your holiday wish list?" Obviously, the chatters had been thinking about this because the responses came fast and furious:

Dave Gomberg, NE5EE, of San Francisco, wrote: "Xmas wish: Sunspots," a sentiment seconded by **Angel Santana, WP3GW**, of Trujillo Alto, Puerto Rico and **Jim Keasey, WD3IT**, of Zelienople, Pennsylvania. Will they ever come back?

"All I want for Xmas is a new HF rig," wrote **Bob Sommer, KL7FU**, from Lakeland, Florida. **Graham Rogers, VK6RO**, agreed. "A Kenwood TS-590S, please" for his shack in Ferndale, Washington." By the way, the December edition of **CQ Amateur Radio** magazine has a *first look* article about this new rig written by Gordon West, WB6NOA.

Terry Fletcher, WA0ITP, of Ottumwa, Iowa, wants Santa to bring "a new o'scope," while **Kevin Jones, W8KJ**, of Hamilton, Ohio, put "a CW filter for my FT817nd" at the top of his wish list.

"I'm looking for a new digital interface that also does FSK and works with Windows 7," wrote **Rick Crockett, W0PC**, of O'Fallon, Missouri. "I'm using RIGblaster P&P now." Let's hope the North Pole has its digital shelves well stocked.

"My wish list is a friendly carpenter to create entry into the sealed attic on my condo," wrote **Bill Sexton, N1IN**, who likes to operate from Sarasota, Florida, "after which Santa will have no problem stringing stealth antennas. So goes retirement."

Steve Fletcher, G4GXL, chimed in from Norfolk, England: "I want a Flex-1500 (software-defined radio). I will get an ARRL 2011 Handbook (but that's ok, too)."

Ron Erickson, K0IC, of Essex, Iowa, "would like a whole-house AC generator," a request endorsed by **WA0ITP**, as well.

Never one to be greedy, **Dave Kalter, KB8OCP**, of Kettering, Ohio, "would settle for a half-house generator!"

Cory Sickles, WA3UVV, wishes for "the gift of more time," in Glasboro, New Jersey, "so I can build or finish several kits and a homebrew transmitter that's tube-based."

From Kempner, Texas, **Ernest Wankowski, KB5OJ's**, Christmas list includes "a gallon of frequency cleaner and QRM absorbers." Now couldn't we all use some of that?

We hope Santa himself was lurking on the WRO chat that night – and taking good notes!

From all of us at WorldRadio Online, here's wishing you a joyous holiday season and the happiest, healthiest, most prosperous New Year ever.

October Live Online Chat Poll Results

During October's **WRO Live Online Chat** we conducted several instant polls.

In WRO, I'd like to see more: Technical articles (19 percent), Human interest stories (3 percent), Construction articles (42 percent), Humor (6 percent), A combination of all the above (29 percent).

Do you still use Q-Signals? Only on CW (19 percent), Only on phone (7 percent), Only in digital modes (4 percent), Yes, all the time (67 percent); Never (4 percent).

Do you plan to chase the new ones during the PJ (Netherlands Antilles) DXpedition? With vigor (29 percent), Nope (29 percent), If I hear them (38 percent), Not sure (4 percent).

Will you be operating in the CQ WW SSB DX Contest (Oct. 30-31)? Yes (52 percent), No (41 percent), Not sure (7 percent).

The economy is having an impact on my involvement in amateur radio. Yes (36 percent), No (50 percent), Somewhat, but not really (7 percent); What economy? (7 percent).

2011: The Beat Goes On . . .

Closing out 2010's **WRO Live Online Chat** schedule is our **December 5** session. Sure hope you can make it.

Meanwhile, we've racked up 2011's schedule, and it's kicking off like this: **January 9, February 6 and March 6.**

If there's enough interest, we'll hold a mid-week session or two, as well.

We hope you'll be able to join us for these Sunday sessions. They begin at 8 p.m. Eastern time and are casual, friendly affairs. Visit: < <http://www.WorldRadioOnline.blogspot.com> > to sign-up for an e-mail reminder that a chat is imminent.

– **Richard Fisher, K16SN**

WorldRadio Online

EDITORIAL STAFF

Richard Fisher, K16SN, Editor

(E-mail: worldradioonline@gmail.com)

Richard S. Moseson, W2VU, Editorial Director

(E-mail: w2vu@cq-amateur-radio.com)

CONTRIBUTING EDITORS

Terry Douds, N8KI, Amateur Satellites

(E-mail: n8ki@amsat.org)

Richard Fisher, K16SN, Trail-Friendly Radio

(E-mail: ki6sn@aol.com)

Gerry Gross, WA6POZ, 10-10

(E-mail: wa6poz@arrl.net)

Dave Hayes, VE3JX, QCWA

(E-mail: ve3jx@bell.net)

John B. Johnston, W3BE, Rules & Regs

(E-mail: john@johnston.net)

Kelly Jones, N0VD, DX World

(E-mail: n0vd@dxcentral.com)

Dee Logan, W1HEO, Promotion/Recruitment

(E-mail: deverelogan@gmail.com)

Carl Luetzelschwab, K9LA, Propagation

(E-mail: k9la@arrl.net)

Cheryl Muhr, N0WBV, YLs

(E-mail: n0wbv@earthlink.net)

Randall Noon, KC0CCR, FISTS CW Club

(E-mail: rknoon@nppd.com)

Bill Pasternak, WA6ITF, VHF, FM & Repeaters

(E-mail: wa6itf@arnesline.org)

Carole Perry, WB2MGP, Hams With Class

(E-mail: wb2mgp@ix.netcom.com)

Bill Sexton, N1IN/AAR1FP, MARS

(E-mail: sextonw@juno.com)

Kurt N. Sterba, Aerials

(E-mail via: worldradioonline@gmail.com)

Patrick Tice, WA0TDA, With the Handi-Hams

(E-mail: wa0tda@comcast.net)

BUSINESS STAFF

Richard A. Ross, K2MGA, Publisher

Jon Kummer, WA20JK, Associate Publisher

(E-mail: jkummer@cq-amateur-radio.com)

Emily Leary, Sales Coordinator

Sal Del Grosso, Accounting Manager

Doris Watts, Accounting Department

CIRCULATION STAFF

Melissa Gilligan, Operations Manager

Cheryl DiLorenzo, Customer Service Manager

Ann Marie Auer, Customer Service

PRODUCTION STAFF

Elizabeth Ryan, Art Director

Barbara McGowan, Associate Art Director

Dorothy Kehrrieder, Production Director

Emily Leary, Production Manager

Rod Somera, Production/Webmaster

A publication of



CQ Communications, Inc.
25 Newbridge Road
Hicksville, NY 11801-2953 USA

WorldRadio Online, Year 40, Issue 6, published monthly by CQ Communications, Inc., 25 Newbridge Rd., Hicksville, NY 11801. Telephone 516-681-2922. FAX 516-681-2926. Web Site: <http://www.cq-amateur-radio.com> Entire contents copyrighted © 2010 by CQ Communications, Inc. *WorldRadio Online* & CQ Communications, Inc. assume no responsibility for information, actions or products on/from external links/sites.

Nothing But Performance



Kenwood has essentially redefined HF performance with the TS-590S compact HF transceiver. The TS-590S RX section sports IMD (intermodulation distortion) characteristics that are on par with those "top of the line" transceivers, not to mention having the best dynamic range in its class when handling unwanted, adjacent off-frequency signals.*

- HF-50MHz 100W
- Digital IF Filters
- Built-in Antenna Tuner

- Advanced DSP from the IF stage forward
- Heavy duty TX section
- 500Hz and 2.7KHz roofing filters included



- 2 Color LCD

KENWOOD
Listen to the Future



www.kenwoodusa.com

KENWOOD U.S.A. CORPORATION
Communications Sector Headquarters
3970 Johns Creek Court, Suite 100, Suwanee, GA 30024

Customer Support/Distribution
P.O. Box 22745, 2201 East Dominguez St., Long Beach, CA 90801-5745
ADS#39810 Customer Support: (310) 639-4200 Fax: (310) 537-8235

* For 1.8/3.5/7/14/21 MHz Amateur bands, when receiving in CW/FSK/SSB modes, down conversion is automatically selected if the final passband is 2.7KHz or less.

Nothing Is Impossible: The Art of Keeping Young Hams Interested in Radio

By Neil Dabb, KC7GCL

Former major league baseball player Chili Davis once said, “growing old is mandatory, growing up is optional.” Whatever your age, remember that to youth and to those who *think young*, nothing is impossible . . .

We need to keep this in mind as we usher young people into amateur radio. They’re the lifeblood of our future and need to be mentored and encouraged – or we’ll lose them.

Here are some overarching concepts to consider as we skew our message younger.

Connecting With, and Nurturing Teens

Many teenagers won’t believe you when you tell them something. They have to learn it for themselves. This is not always a bad thing.

There have been lots of great accomplishments by people who didn’t *know it couldn’t be done*. For example, when my wife bought a new sewing machine, an old cabinetmaker told us there was no

way to convert the old-style sewing cabinet we had to fit her new machine.

Just like most teenagers (I was a few years older than that at the time), I didn’t believe him and consequently had my wife’s new machine in the old-style sewing cabinet within a couple of days.

While there is much to be learned from more experienced hams, there are things that young people coming into the hobby will figure out how to do – things that some old timers have told us for years are *impossible*.

The trick is to keep those young people interested in the hobby, experimenting and learning long enough to make those discoveries.

These young hams may also find interest in areas that older hams may have never explored, and thus know little about.

Frame That License – And Don’t Let It Lapse!

The more people I talk to, the more I find that many hams go through times of

inactivity and in some cases that time leads to the lapse of their licenses.

I was a classic example. In high school I got my Novice ticket – KA7ASA – but because of limited funds and lack of equipment I let it lapse. It was many years later before I came back and relicensed. I also recently ran into the wife of a man who was a ham at one time, but didn’t think that hams were still around.

If half the battle is getting the license, then the other half should be keeping it current.

The first thing most of us probably did, or should have done, when we got our licenses, was to frame the large copy and hang it on the wall. This simple act can be a strong reminder of that one accomplishment and a good reminder to renew the license when it comes due.

The Value of Awards and Encouragement

There are also many awards available to all hams through *CQ*, the ARRL and other organizations.

Young people should be encouraged to work toward any that interest them – such as the Amateur Radio Newsline®-sponsored *Young Ham of the Year* award, with corporate support from *CQ Amateur Radio* magazine of Hicksville, New York; Vertex-Standard Corporation of Cerritos, California; and Heil Sound of Fairview Heights, Illinois. The 2010 YHOTY recipient is 17-year-old Cody Anderson, KI4FUV, of Harriman, Tennessee. Read more about him at: <<http://bit.ly/bovz5n>>. As you’ll see, nominees must have made a significant contribution to their community or the nation.

But any type of award can be the ultimate encouragement for young people just getting started in the hobby, helping to expand their horizons and get involved.

Make sure award certificates get framed and are prominently displayed.

When it comes to young people, never underestimate the power of *simple encouragement*. Though they may some-



ARRL Field Day is a great time to encourage and mentor young people interested in amateur radio as Neil Dabb, KC7GCL, demonstrates. (Photographs courtesy of KC7GCL)

times say or act otherwise, these young people do respect the opinions of others – especially those who may be older than they are.

A few words of encouragement or recognition for a job well done can do wonders for a young person's morale and drive to do more.

Making Gear Attainable and Affordable

It is said: *The difference between men and boys is the price of their toys.*

All of a sudden the young people we have gotten involved in the ham radio are looking at toys that are very expensive. Allowances and after-school jobs (or even grownup paychecks) can only go so far, especially when that money is also needed for clothes, CDs and other teenage *necessities*.

At a club meeting, I was talking to a young man who was a few months from turning 16. He was plotting how to get a mobile rig that fit perfectly in the car he had been promised by his father. The gyrations he went through involved inheriting a rig his father was using at the time – never mind that it also fit just perfectly into his father's car.

We need to make sure young hams have access to equipment, as well as being generous with our old equipment as we upgrade to new stuff.

Since teenagers love to shop, make sure they get the chance to window shop at the local radio store. If there aren't any close by, see that they get on the mailing list of a good ham radio supply company or help them search online.

Swap meets can be a good opportunity for youth to find affordable equipment, as well as keep the goal of their own rig in the forefront. Birthdays and the holiday season can be a good time for generosity in this area.

Teaching Moments for Youth

"My sense is that most young people want to give," General Colin Powell said in an April 1999 *Parade* magazine article. "Some are just waiting to be asked."

As radio amateurs we are regularly involved in volunteer service. If there is not enough going on with your local club, check the youth service groups in the Web reference list accompanying this story. These young hams can be a great asset when events like the National Youth Service Day come around.

Scouting is a great builder of character for young people and there are merit badges related to communications. It is more than just enjoying the outdoors. It is about community service and friendship. *Sounds a lot like ham radio, doesn't it?*

Other organizations – such as the Civil Air Patrol (CAP) – have found the value of getting youth involved in their programs early.

The CAP Cadet Program is for young people ages 12 to 21 with formal training and opportunities to participate in various activities. They learn about radio propagation, protocols and other aspects of radio using CAP assigned frequencies, and many with those particular interests will go on to earn their amateur radio license on their own.

Most clubs work with local groups in preparing for emergencies and disaster relief, but there are also many opportunities to provide communications for groups on a non-emergency basis. For example, bike races, parades, hikes, and other activities all need communications between different points in the activity. While many of the organizers will use cell phones, amateur radio has the advantage of being able to work where

cell phones won't. Young people can be a great help in providing communications for such activities.

Teens can often find time to help when adults cannot, and they may have more interest in some activities that their parents do not. Providing communications can also be a family affair.

At the "Top of Utah Marathon" several years ago there were two parent-teen groups providing radio communications on the race route. One of those teams has continued to help in subsequent "Top of Utah Marathon" races as well. We need to make sure young people have these types of experiences.

Overcoming the Old Boy Network

Here's a sad story: About 20 years ago, an ARRL Section Manager had appointed a 15-year-old as ASM (Assistant Section Manager) for youth activities. When the young man got up at a club meeting to talk about what he was doing, he was essentially told to sit down and shut up.

While such blatant hostility is rare, the attitude may be expressed more subtly today and may not be targeted only at young people.

Several years ago my daughter Julie Dabb, KC7RPP, ran for secretary of the local club. While the leaders of the club were excited to have a young person running for office, the other candidate had a much greater network of friends. You can guess who won.

Fortunately, she has since run again and served as secretary for several terms.



The "toys" radio amateurs play with are not cheap. Young hams – and even *not so young* hams – may have trouble getting that first rig. Amateur radio swap meets are a good source for affordable used gear.

The New Premium HF/50 MHz Transceiver

FT DX 5000 Series

The Dawn of a New Era - Dynamic Range

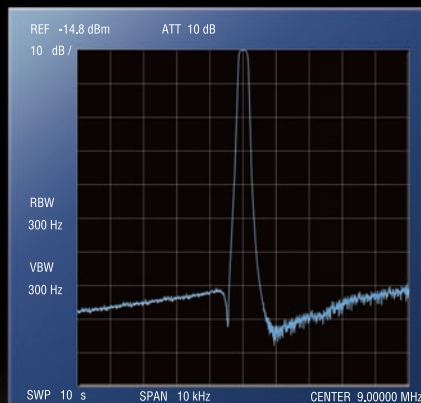
112 dB / IP3 +40 dBm



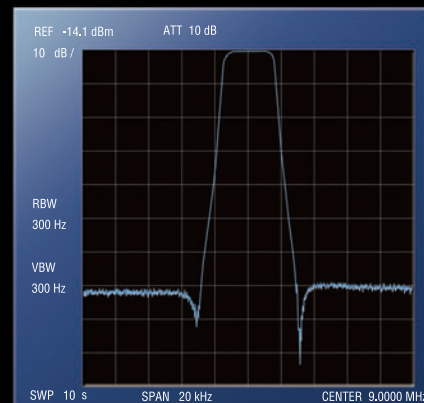
Roofing Filter Performance

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

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

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

YAESU
Choice of the World's top DX'ersSM
Vertex Standard US Headquarters
10900 Walker Street Cypress, CA 90630 (714) 827-7600

A TECHNOLOGY BREAKTHROUGH

New Advanced VX-8 Series GPS/APRS® Handheld Transceivers Choose the Yaesu that meets your APRS® operating preferences in the field



Actual Size



Actual Size

VX-8DR NEW

All-in-one Prestigious Tri-band Transceiver
Bluetooth® for hands-free Operation with optional accessories
Waterproof/Submersible IPX 7 rated - 3 ft for 30 minutes

VX-8GR NEW

144/430 MHz Dual Band Transceiver with GPS unit included
Built-in GPS Antenna - Waterproof
Wide Band Receive for 108-999 MHz (Cellular blocked - US Version)



Optional GPS and antenna unit for GPS/APRS operation



The optional GPS Antenna Unit FGPS-2 attached to the optional speaker Microphone MH-74A7A



Supports APRS® communication by the Built-in Worldwide Standard AX.25 Data TNC

The VX-8 series radios are compatible with the world wide standard APRS® (Automatic Packet reporting System) using the GPS system to locate and exchange position information.

- SmartBeaconing™ Function
- Memories to list 50 stations
- Memories to store 30 APRS® messages
- DIGI-PATH routing indication function
- 8 DIGI-PATH routing settings

- GPS Compass Display - "Heading Up" or "North Up"
- APRS® Symbol Icon pre-set function
- Clearly displayed APRS® Beacon Messages
- Selective Message Received indicated by Flashing LED

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

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

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

YAESU
Choice of the World's top DX'ersSM

Vertex Standard US Headquarters
10900 Walker Street Cypress, CA 90630 (714) 827-7600

Hams who have been in the hobby for many years have developed many strong friendships. Consequently when a young person (or even an older newly-licensed ham) comes along and competes for leadership positions, the fact that their competitor has more friends will put them at a distinct disadvantage.

These things being constant, young people need a champion to give them opportunities to take the lead and get involved. If that is too much to ask, at least allow new hams the opportunity to express their opinions and become involved – remember, you were the new kid on the block once, too.

Developing a network of friends in the ham community takes time and patience and is a must for the new ham who wants to take the lead.

Becoming a Champion

There is a great deal of talk about finding “Elmers” or old timers to help young people get the technical expertise they need.

My father once made the comment that I was either one step behind or two steps ahead of him. Many hams may feel unqualified to instruct or help young people learn about principles that they may just barely understand themselves. This is espe-

Links to Websites of Interest to Young People

Amateur Radio Newsline® Young Ham of the Year Award:

< <http://www.arnewsline.org/> >

Society of Amateur Radio Astronomers: < <http://www.radio-astronomy.org/> >

Handihams: < <http://www.handiham.org/> >

Motorcycling Amateur Radio Club: < <http://www.marc-hq.org/> >

America's Promise Alliance: < <http://www.americaspromise.org/> >

Youth Service America: < <http://servenet.org/> >

Salvation Army Team Emergency Radio Network: < <http://www.satarn.org/> >

cially true as those young hams begin to understand the principles behind the equipment and leap from one step behind to two steps ahead.

In school many moons ago I remember watching a film on geometry. It talked about a little two-dimensional shape (I don't even remember what it was now) that told the story of how he met a sphere from the three dimensional world. As he met all of the new shapes he began to wonder and ask excitedly about the fourth dimension, and the fifth dimension, and the sixth dimension . . . At this point the sphere sternly said that they didn't exist, and thrust the tiny shape back down to its two-dimensional world. How often do we do this to young people when they have new ideas?

In the classic television series *Remington Steele* the title character was consoling his partner after the loss of her house. “Now, all things are new, think of the possibilities,” he said. One of the hallmarks of youth as well as ham radio is seeing the possibilities where others see none.

To be a champion of youth, make sure that young people have the opportunity to help in any and all public service projects that the local club may participate in.

Making opportunities for young people to give presentations at meetings can be a real boost to their self-esteem – another area where we can become champions of youth.

While young people may find themselves fighting an uphill battle, they have to start somewhere and should be encouraged to run for offices in local clubs. Sooner or later they will succeed.

Many times young people will have more time to work on projects than the older hams do. These new hams bring a variety of interests and skills into the mix that can give a club the diversity that will keep it interesting and fun.

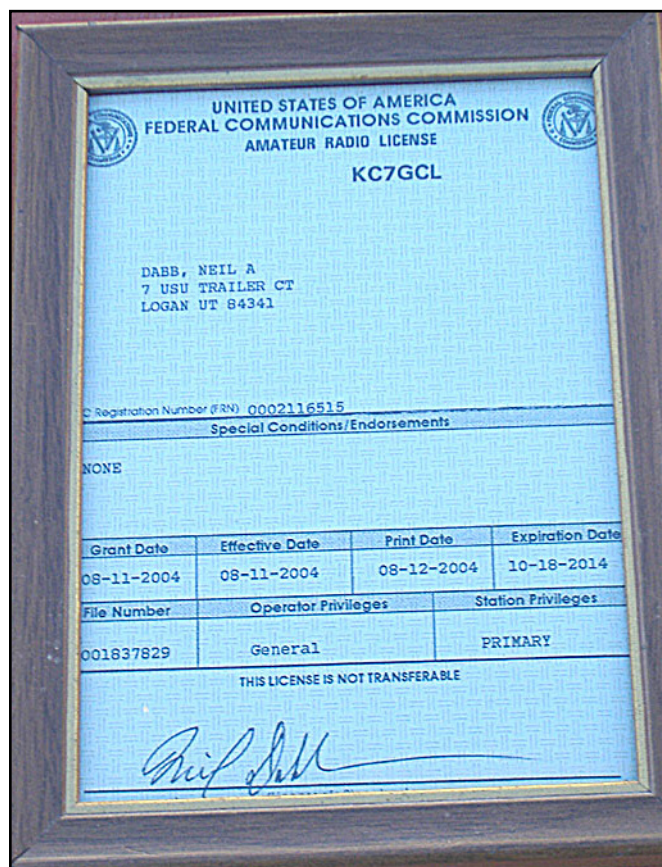
Teenagers are often accused of taking more stock in what their peers say than what grownups say. If this is the case, why not take advantage of that fact and have young hams help get other young people involved in the hobby. Encouraging young people to start clubs in their schools can be a great way to keep them involved as well as getting other young people interested in the ham radio.

Move Forward Carefully

It is human nature to desire to be the best and know everything. And while teenagers are more vocal about it, many older people will cling to long-held attitudes, scoffing at or dismissing ideas and accomplishments that young people may claim.

When working with youth, we – as *semi-grown-ups* – must give up enough control to let young people explore and learn, as well as achieve that feeling of accomplishment that we all crave.

On the other hand, we should retain enough control so that we can share the “wisdom” of age that we have. We need to keep the pendulum from swinging too far either way.



The first thing any ham should do is frame his or her license. It is a great accomplishment at any age and displaying the “ticket” proudly is a good reminder of the work and determination that went into getting it. The displayed license is also a ready reference for when it is time to renew.

20M SSB

TX

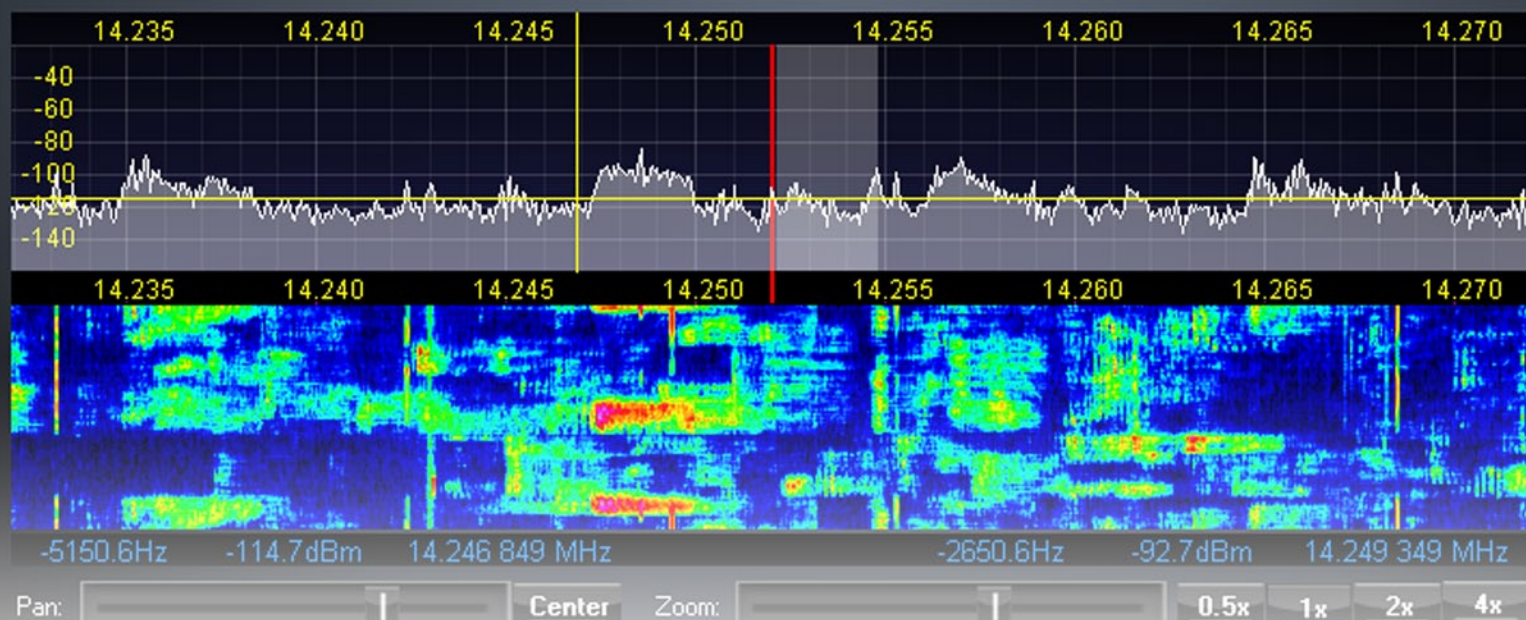
7.000000

Save

Restore

TX

20M Ext/Adv SSB



FLEX-5000A

HF-6m Transceiver
+2M&70CM



FLEX-3000

HF-6m Transceiver

See it, Click it, Work it!

- Point and click instant tuning
- Visually tunable filters
- See the weak ones before you hear them
- Find that clear frequency during split-operation

Tune in Excitement.™

Order Now!

www.flex-radio.com
sales@flex-radio.com 512-535-5266

©2010. All rights reserved. FlexRadio Systems is a registered trademark and Tune in Excitement is a trademark of FlexRadio Systems. All prices and specifications are subject to change without notice. Personal computer and monitor required but not included. *Some modes may require second receiver.

FlexRadio Systems®
 Software Defined Radios



2011: New Decade of Opportunity

By Devere "Dee" Logan, W1HEO

As a new decade approaches, it promises to bring the usual mix of the old familiar challenges and exciting new opportunities.

Before turning our calendar pages however, let's review the past year: *What promotional activities were conducted? What worked or didn't and why? Did we introduce someone to amateur radio? Did our club recruit new members?*

The report card may suggest room for improvement and, as the saying goes, there's always room for improvement. Change is a constant, so we should be aware of the new and interesting ways of promoting ham radio. The explosive growth of digital communication is a typical example. Staying flexible and changing with the times is necessary to avoid being left behind.

One of the most commonly heard challenges is how to get young people interested in ham radio. Students generally head the list of target groups, which means working with the schools and teachers. Getting our hobby integrated into the school curriculum can be a tough sell. There are, however, ways in which radio can become a welcome part of some school-based activities such as clubs or labs.

Helping the LABRATS

A wonderful success story comes from Dolores "Lollie" Garay, KD5WZM, who teaches science at Redd Middle School in Houston, TX. She created the Learning About Research and Technology Through Science (LABRATS) program.

The after school activity includes an amateur radio club plus robotics, engineering, and aeronautics. Since its start in 2004, the program has prepared students ages 10-12 and adults for the radio exam, taught Morse code, basics of electronics and circuitry, plus helped them to build oscillators and crystal radios.

Instructor Garay says that "the success of our radio club is the direct result of our partnership with the Northwest Amateur Radio Society (NARS) and the mentors who have volunteered their time and expertise through the years." Jerry



Instructor Lollie, KD5WZM, left, looks on as mentor Jerry, KB5VGD, helps a Learning About Research and Technology Through Science (LABRATS) student with soldering. (Courtesy of LABRATS)

Whiting, KB5VGD, has served as mentor and liaison with NARS. He's attended club meetings, developed a summer radio chat program and helped teach basic electronics for camp students.

Garay reports that the most recent project was the construction of regenerative radios. "It was made possible through the generous donation by NARS and student contributions." Students spent seven weeks building the radios under the supervision and guidance of five NARS volunteers. "The highlight of the project was undoubtedly learning how to solder," she adds.

This cooperative effort between a radio club and a creative teacher demonstrates the synergy possible when the two join forces. Amateur radio benefits and so do the students.

Congratulations to NARS and instructor Garay. (A *CQ Amateur Radio* magazine article published in December 2009,

Building Kits as a Group may provide some ideas for your group.)

Do You Twitter or Tweet?

Social networking is getting lots of attention these days by radio hams and clubs. Among the communication modes available to spread the word about our hobby and radio service, Internet-based social media such as Twitter, Facebook, YouTube and blogs are growing tremendously. Twitter, for example, is among the most popular with 105.8 million registered users and growing at 300,000 new users daily.

How do hams use it? One current Twitter user is Lloyd Colston, KC5FM. You can see his approach at <http://www.twitter.com/kc5fm> or do a Google search. Lloyd says that one of the early users of social media was Altus Skywarn Association. It includes a calendar to announce club meetings along with a link

to bring weather information to the page. Visit them at <http://altusem.blogspot.com>.

The degree to which social networking is used depends upon several factors, not the least of which is how much time and effort we're willing to devote to it. It is unquestionably another communication medium with special qualities that can enhance our promotional reach in an interactive way.

There are pros and cons, just as there are in a number of areas in the ham radio world. Have a success story to share? Let us know at deverelogan@gmail.com.

Down Under PR Views

The Wireless Institute of Australia (WIA) is celebrating 100 years of organized amateur radio *down under*. While its past is worth celebrating, the President of WIA, Michael Owen, VK3KI, also is focused on the future. Growing our ranks, he emphasizes, means that amateur radio must promote itself.

"We are suggesting that the centenary can provide a focus for a 'story.' Talking about how it all started and how much has changed in 100 years is a good way of leading into a story of what amateur radio does and what it does for the community," he writes.

Owen points out the value of promoting ham radio in our local communities. "It is often easier to get a local story into a local newspaper or radio station, or even a regional TV station than it is in the vast cities like Sydney and Melbourne."

Centennials and anniversaries are commonly used as the basis for generating news releases and feature stories. When a local twist is added, the odds of some media pickup increase. The 75th anniversary of the Amateur Radio Emergency Service® being celebrated this year is providing such an opportunity in a number of communities.

A New Year's Checklist

Ensuring that your promotional information reaches the proper media and individuals requires regular updating of your distribution list.

Reporters come and go, e-mail addresses become obsolete, shifts from print to on-line modes need adjustments, and telephone and cellphone numbers can change. Try to check your list regularly. If you put your list in a PC file, it makes it easy to update as well as to print mailing labels.

Radio clubs often change their key contact individuals, and should be sure to update rosters, newsletters, and other references. If there's a club website, update it regularly. If club meetings are changed to a different day or time, remember to check it.

Making simple plans for recruiting new club members at the start of the year can establish a clear goal. Get members involved, and encourage individual one-on-one contacts, plus some public presentations on ham radio. If you need a promotional video, consider using the 15-minute DVD *Amateur Radio: Wireless Window to the World*. Information is on the Ham Radio Promotion Project Website: <http://www.neoham.org>. We're grateful to Hank Ellenbogen, K2ZIN, for producing the DVDs.

How about holding a licensing class? There's plenty of help available from the ARRL and other sources that make it easy

for most persons to handle. A team of instructors can share the podium and the club can benefit from helping newcomers become licensed. Some clubs provide their newsletter, a welcome letter, and even a free one-year membership to those taking their tests at a VE site.

How can you help newly licensed hams put their stations together? This is where an "Elmer" or mentor is so important. If your club has a list of "helping hams," and can distribute it at VE sessions and on its website, chances are you'll build a lot of good will and even recruit new members as well.

Do keep us posted on your efforts to publicize and recruit.

Devere "Dee" Logan, WIHEO, is a veteran public relations professional and writer. Reach him at: deverelogan@gmail.com.

Real Hams Do Code

Learn code with hypnosis today.

Download Now!

www.success-is-easy.com

561-302-7731

Success Easy 160 W. Camino Real, Ste. 128 Boca Raton, FL 33132

VIBROPLEX®

The Vibroplex Co. Inc.

2906 Tazewell Pike, Suite A2B

Knoxville, TN 37918 800-840-9973

Morse code keys, parts, accessories, logo items

www.vibroplex.com

Batteries, Antennas, Coax & more!

2700 MAH AA cells
\$2.95

Free catalog upon request

DC ACE, INC.

1-877-803-5550

P.O. Box 364, Lincolnshire, IL 60069

www.dcace.com sales@dcace.com

W2IHY Technologies

Outstanding Transmit Audio
Is Our Specialty

8 Band EQ

W2IHY 8 Band EQ &
Noise Gate Thousands
of Satisfied Users
Worldwide



Add the legendary W2IHY 8 Band Equalizer And Noise Gate to your shack and get ready for great audio reports! From smooth rag-chew audio that makes them ask what you're running ... to penetrating DX/Contest audio that gets results, wide-range adjustability is at your command. Noise Gate reduces background noise for a cleaner, more effective signal. Universal Interface lets you use most any microphone with any radio including classics. I-K-Y selector for plug-n-play with popular brand micro-phones. Switched outputs for 2 radios. Headphone Monitor. RFI protection.

EQplus By W2IHY

Premium Audio
Processing



Did you turn on an amplifier? Your signal is loud and squeaky-clean. EQplus users hear that report all the time. Compressor/Limiter increases talk power without the distortion and restricted frequency response of ordinary speech processors. Dual Band EQ, Down-ward Expander for noise reduction, Effects for psychoacoustic magic. LED Bar Graph. Front panel controls. Universal Interface matches most all mics, all radios. I-K-Y mic selector. Switched outputs for 3 radios. Headphone Monitor. RFI protection. Powerful stand alone system or combine with W2IHY 8-Band EQ for maximum adjustability.

Products purchased from W2IHY include 30 Day Money Back Guarantee and 3 Year Parts/Labor Warranty.
Top-rated Product Quality, Technical Support and Customer Service.

Awesome Audio
Demonstrations
www.w2ihy.com

845-889-4253
email: julius@w2ihy.com
order online at
www.w2ihy.com

W2IHY Technologies Inc.

19 Vanessa Lane
Staatsburg, NY 12580





Taking Advantage of Circular Polarization

By Carl Luetzelschwab, K9LA

One of the mysteries in amateur radio, at least in my mind, is trying to understand why we haven't taken more advantage of circular polarization. I'm not talking about the low bands where antennas are big. I'm talking about the higher HF (high frequency) bands (20m through 10m) and 6m where antenna dimensions are more manageable.

Throughout the years, there have been several articles extolling the virtues of circular polarization on the higher HF bands and on 6m (one such article by G2HCG titled *The Enhancement of HF Signals By Polarization Control* in the November 1990 issue of *Communications Quarterly* was reviewed in my September 1998 column). One common method of producing circular polarization is to use crossed Yagis properly phased. The basis for this type of array is the turnstile antenna (which typically is used to provide omnidirectional radiation with horizontal polarization).

Before going too much further on this topic, it'd be a good idea to review the basics of polarization in the ionosphere. If you've been a reader of this column for several years, you may remember the March 2007 column titled *A More In-Depth look at Polarization*. That column discussed the ordinary wave and the extraordinary wave, which are the two characteristic waves that propagate through the ionosphere due to the ionosphere's immersion in the Earth's magnetic field. Our linearly polarized antennas, whether they are horizontal or vertical, couple their energy into and receive energy from these two characteristic waves.

How much energy your linearly polarized antenna couples into each characteristic wave on transmit depends on the polarization of the two characteristic waves at the entry point into the ionosphere. Similarly, how much energy you receive is dependent on the polarization of these two waves at the exit point of the ionosphere. In addition to having our

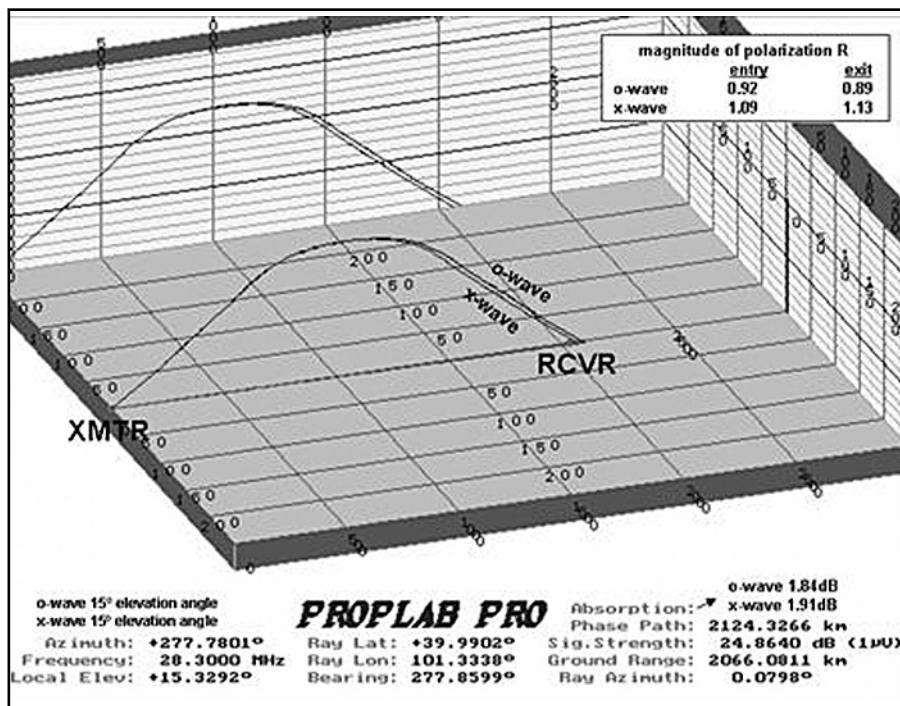


Figure 1 – 10m Ray Trace

antennas pointed in the right direction (azimuth) and putting energy at the proper elevation angle, we need to match polarizations for maximum signal strength.

On the higher HF bands and on 6m, the two characteristic waves are circularly polarized and rotating in opposite directions. Figure 1, from the March 2007 column, shows a ray trace on 10m of the ordinary and extraordinary waves over a simple one-hop path.

Note that the magnitude of the polarization value R in the upper right corner for both waves is near 1, indicating circular polarization. Also note that both waves incur about the same amount of ionospheric absorption (lower right corner). The extraordinary wave does give a slightly shorter hop on 10m, which means the path it takes through the ionosphere is slightly different (slightly more bending) than the ordinary wave due to seeing a

slightly lower index of refraction because of the Earth's magnetic field.

There is a 3 dB loss when using a linearly polarized antenna to receive a circularly polarized wave. That's not much when signals are S9 and above, but it's significant when signals are weak and/or when the propagation conditions are changing. The easy way to get this 3 dB back is to employ a circularly polarized antenna.

As an example of a circularly polarized array (using crossed Yagis), the December 1961 issue of *QST* had an advertisement for a company called Space-Raider Antennas and Crank-Up Antennas (thanks to WB8IMY at ARRL HQ for scanning this for me). This company, in Pasadena, was owned by George Messenger, K6CT (don't confuse George, who is a Silent Key now, with the current holder of K6CT). George had a nice article in the December 1962 issue

of the RSGB Bulletin (titled *Polarization Diversity Aerials*) explaining his line of antennas and their performance.

At the end of his RSGB article, K6CT discussed the performance of his 10m Space-Raider array with respect to eight parameters ranging from fading characteristics to band opening/closing observations. In a nutshell, K6CT found that fading was reduced dramatically on both transmit and receive, and the crossed-Yagis opened the band earlier and closed it later than comparison antennas (a cubical quad and a ground plane).

A similar article, but aimed at 6m operators, appeared in the January 1965 issue of 73 magazine (thanks to NN1N at ARRL HQ for scanning this for me). It was titled *So We Bought A Spiralray* and was authored by WA4EPY. This was a product review of Telrex's 10-element 6m Spiralray antenna on a 27-foot boom. The approach to circular polarization for this antenna was not two crossed Yagis. Telrex progressively twisted the elements on the boom from vertical at the reflector to horizontal at the last director. It sure looks weird (see Figure 2), but it apparently did the job.

WA4EPY reported similar results on 6m with his Spiralray antenna compared to those reported by K6CT with his Space-Raider antenna on 10m. WA4EPY also experienced less fading and "first-in and last-out" conditions.

The Space-Raider antennas and the Telrex Spiralray shared being circularly polarized. Unfortunately they shared another trait – neither of them really caught on in the amateur radio world. I'm not sure why, as the observations are backed up by sound ionospheric physics for the better performance. Perhaps the mechanical aspects of circular polarization on the higher HF bands and on 6m were too complicated. After all, a linearly

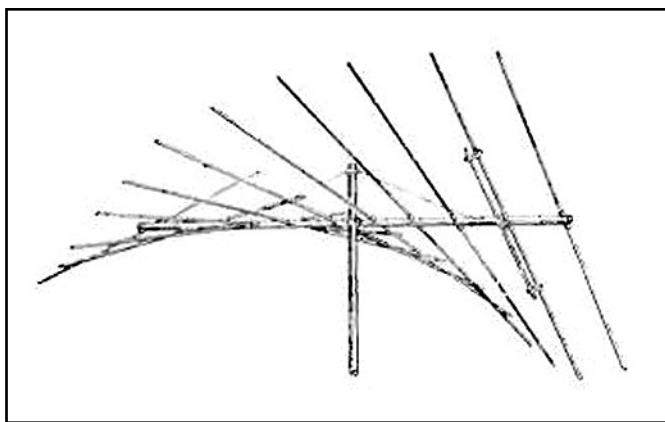


Figure 2 – The Telrex Spiralray

polarized Yagi is electrically pretty simple, withstands environmental extremes very well, and is only 3 dB down from a circularly polarized antenna.

It's too bad that circular polarization hasn't caught on. Perhaps this column will inspire more to try it. It's really not tough to do on the higher HF bands and on 6m.

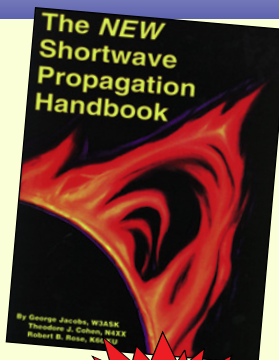
Maybe I'll even take the challenge. I have two Cushcraft Ten 3s (3-element 10m Yagis) in the garage gathering dust that could be used to generate circular polarization. And I'm going to seriously think about circular polarization for next summer's sporadic E season on 6m.

Stay tuned – I may have more to report in a future column.

The NEW Shortwave Propagation Handbook

The single most comprehensive source of information on HF propagation is once again available from CQ!

- Principles of ionospheric propagation
- Solar cycle predictions
- Stunning photography
- Ionospheric forecasting
- Specific predictions for Cycle 23
- Analysis of HF propagation prediction software
- Unusual HF and VHF ionospheric propagation
- Expansive references and data sources
- How to access NOAA's geophysical databases
- "Do-it-yourself" propagation predictions/charts
- Scores of charts, tables, and summary information
- Overview of WWV and WWVH propagation services



\$19.95

plus shipping

Order Today!!!!



CQ Communications, Inc.

25 Newbridge Road, Hicksville, NY 11801

Phone 516-681-2922 • FAX 516-681-2926



Build a Better Antenna with DX Engineering!

High Quality, Economical Wire Antenna Kits & Accessories!

- DXE-UWA: Center-T and End Insulators
- DXE-ANTW: Pre-Cut or Bulk Antenna Wire
- Coaxial Cable and Ladder Line



Secure Online Ordering: www.DXEngineering.com

Order by Fax: 1-330-572-3279 24 hrs./7 days

Order by Phone: 1-800-777-0703 Mon.-Fri. 8:30 am-4:30 pm EST

Product Support Line: 1-330-572-3200 Mon.-Fri. 8:30 am-4:30 pm EST

JAMES E MACKEY

PHILATELICS, STATIONERY



OVERSEAS POSTAGE
AIR MAIL ENVELOPES

P.O. BOX 270569
WEST HARTFORD, CT 06127-0569
(860) 521-7254
e-mail: k3fn@aol.com

web site: <http://www.airmailpostage.com/>

Personalized Skywave Propagation Programs

- **SKYCOM 2.0 — \$35.00** (includes P/H)
- all WINDOWS OS
- Hourly HF Predicts & Beam Headings from your QTH to over 400 worldwide prefix areas
- Path Loss calculation identifies optimum path openings
- Comprehensive Technical Manual

ENGINEERING SYSTEMS INC.
P.O. Box 1934 • Middleburg, VA 20118
E-mail: w4het@aol.com



An Introduction to Logbook of the World

By Kelly Jones, NØVD

If you have been DXing for any amount of time or have started chasing awards, then I'm sure you've heard about LoTW – Logbook of the World. This is the electronic QSL exchange system developed and implemented by the American Radio Relay League.

If you have not yet looked at LoTW or have heard that it's too difficult to use, I suggest taking a look at it and giving it try. Despite what you might have heard, it really is fairly simple to use, costs nothing to upload your logs and in fact, you don't even need to be a member of the ARRL to use it.

So how do you get started using LoTW? The first thing you will need to do is have your logs in electronic form. Since computer logging has become quite common over the past few years, this hurdle may already be behind you.

Choosing A Logging Program

If you have yet to begin computer logging, there are many logging programs available. You'll find logging programs for the casual DXer to full blown contest loggers ranging in price from free to around \$50. The one thing to keep in mind, however, is that whatever logging program you choose, you'll want to make sure it can export your logs into either the ADIF <<http://bit.ly/asAA8V>> or Cabrillo format <<http://bit.ly/aUMHC9>>.

Sign Up and Installation of LoTW

Once you have your logs into a logging program you will need to begin the process of signing up for LoTW. At first the process to begin using LoTW may seem a little daunting, however, it really is quite easy. My advice is to take the time to understand what you are being asked to do. This is where I've seen most hams get tripped up.

First you will need to download the TQSL program (Trusted QSL) which can be found on the ARRL website at <<http://www.arrl.org/logbook-of-the-world>>.

Currently there are versions of TQSL which run on Windows, Mac OSX and Linux. You can do one of two things when down-

loading. Typically you will be prompted and asked if you would like to "Save" or "Run" the file.

If you want to save the installation files for later use, perhaps to install on multiple computers, save this file to your system. Something that I have found helpful is to create a directory and save all of your files in this directory. I call mine LoTW.

Having this separate directory will also be useful when uploading your signed logs (we'll get to that shortly). Otherwise, select the "Run" option which will install TQSL on your computer. Once the program has finished installing, you will receive a message stating the installation was successful.

Getting That "Certificate"

Now that TQSL is installed you're ready to request a certificate. This is what makes LoTW unique compared to any other electronic QSL services. When the ARRL developed its system, a conscious effort was made to make it as secure as possible, yet making it easy enough to use.

In your "Start / Programs" menu you should now see an entry called TQSLCert. You will need to run this program. It may complain that you don't have any certificates created and ask



Figure 2.

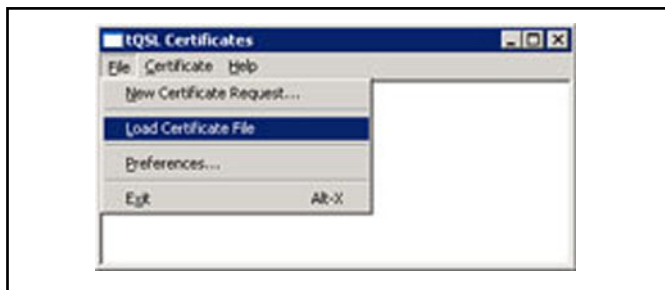


Figure 1.

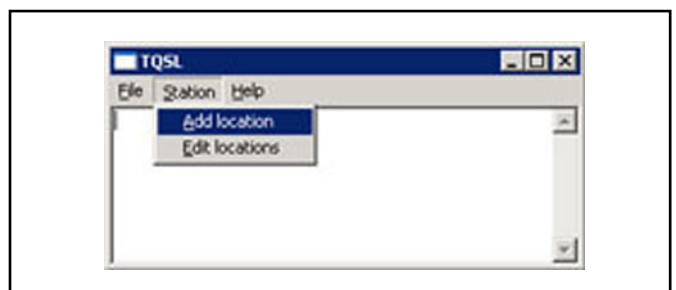


Figure 3.

REAL TIME DRAMA. LIVE & UNEDITED.



Find out what's going on around
you with the first scanner for everybody.

With our HomePatrol-1 scanner, you will need:

~~Control Channels, Talk Group IDs, CTCSS, DCS, NAC,~~
~~P25, Status Bits, EDACS, LTR, Logical Channel Numbers,~~
or Zip Code.

Only

Uniden's HomePatrol-1 is a revolutionary touchscreen receiver that lets you instantly listen to police, fire, ambulance, military, weather reports & more.* Visit www.HomePatrol.com to learn more.



H O M E P A T R O L
SIMPLY INFORMED

Uniden

Product is not to scale. *Some services not available in all areas. Operation is covered by patents including 5,784,388, 5,956,648, 6,192,223, 6,519,472, 6,941,120. © 2010 Uniden. All rights reserved.

whether or not you want to request one. Answer “yes.” A wizard will begin. Then simply answer the following questions.

- **1. Call Sign.** Use your current licensed call sign – without any portable identifiers. (you can apply for additional certificates for other calls later).
- **2. Start Date.** The QSO start date is the first date for which you’ll enter QSO records into the system using the call sign in Step 1. Normally this is the issue date for your license. Leave the QSO end date blank for a license that is current.
- **3. Mailing Address.** For U.S. call signs, the mailing address you enter should match with the address in the FCC database.
- **4. Password.** You will be asked to supply an optional password. Keep in mind this password is case sensitive and protects your certificate’s private key. If you choose a password, write it down somewhere and store it in a safe place. You will need this password when you attempt to sign a log. The ARRL will not know this password nor will they have a way to retrieve it. Only you will know what the password is!
- **5. Digital Signature.** The request wizard includes a step that allows you to digitally sign the certificate request. On your initial request, you must choose “*unsigned*” since you have no certificate with which to sign.
- **6. Saving the Certificate Request File.** You will finally be prompted to save the certificate request file (remember the directory you created above – this is a perfect place to save this file. After you hit ‘Save,’ a message will appear telling you to email or upload your .tq5 request file. You will be able to recognize the certificate request file as it will end with .tq5 file extension.

Processing . . .

Now that you have created a certificate request file, you need to send it to the ARRL for processing. This can be done by either attaching the .tq5 file to an e-mail addressed to lotw-logs@arrl.org or by uploading it via the Web at <<https://www.arrl.org/lotw/>>.

If you are a U.S. licensee, you will receive a postcard in the mail in a few days. Remember, the postcard will be sent to the address you have in the FCC database, so make sure that is correct.

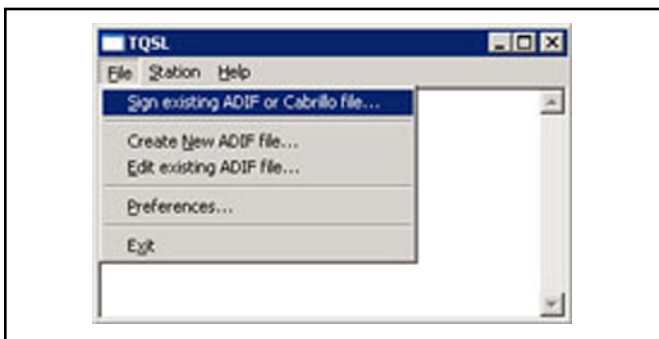


Figure 4.

The postcard has instructions on how to complete the request process along with a password. This password is not the same password (if you used one) in step 4 – *Password* – above. The password on the postcard is the method used to verify that you are who you claim to be.

Since the postcard was mailed to the address the FCC has on file, if you receive it, there is a high probability you’re really you – *makes sense, huh?*

If you are submitting a request for a non-U.S. call sign, you will receive an e-mail asking you to submit proof of license – such as a photocopy – and a copy of one other official document that shows your name, such as a driver’s license or country ID card.

After Verification

Once you have verified yourself by following the instructions on the postcard or by submitting the necessary documentation, the ARRL will issue your full certificate, a .tq6 file.

This will be e-mailed to you at the address you provided during the request process. You may be able to just double click the e-mail attachment and have the certificate automatically install.

If this doesn’t work, save the attachment (another reason to create a directory specifically for LoTW that I mentioned earlier), then run the TQSLCert program.

Once the TQSLCert program starts, click “File”, then “Load Certificate File” (figure 1).

When the dialog pops up, browse to the directory where you saved the .tq6 file. Once the file has loaded, you should see a

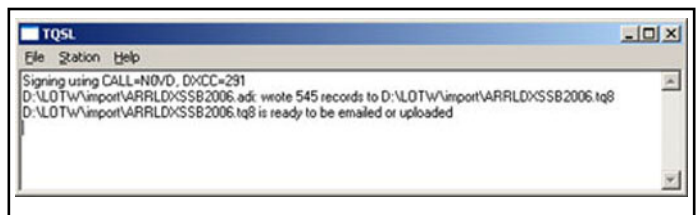


Figure 5.

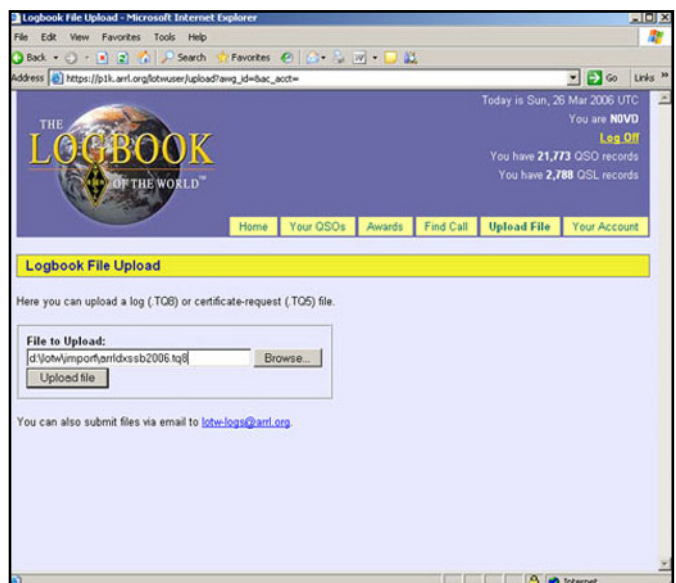


Figure 6.

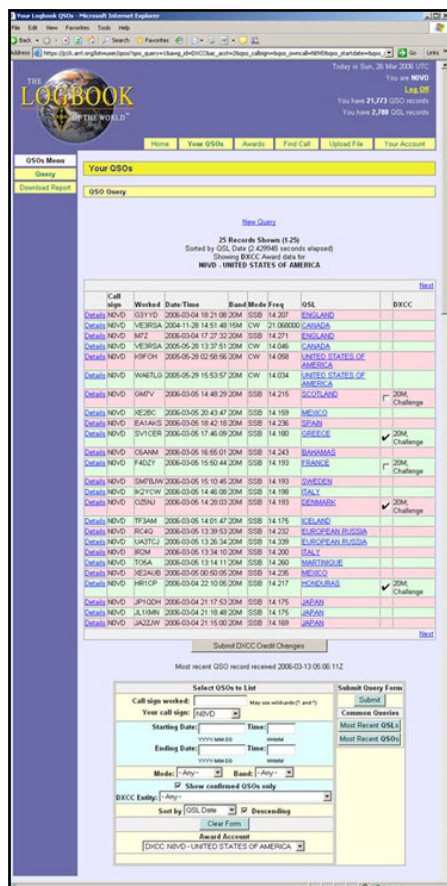


Figure 7.

“gold ribbon” icon next to your original request. (figure 2) This means you have successfully requested and loaded your LoTW certificate. You’re now ready to begin signing and uploading logs!

Pleasing the Wizard

Open the TQSL program. Now you need to create a “station location.” From the top menu, click “Station”, then “Add Station Location.” (figure 3). A wizard will begin. Simply fill in the appropriate information as requested.

Something to keep in mind when filling out the wizard is to complete as much information as possible. This will ensure matching QSOs will receive credit for things such as your state, CQ zone, grid square, etc.

Location, Location, Location

At the final step you will be asked for a “Station Location Name.” Give this a meaningful name, especially if you have used the same call sign from multiple locations.

For instance, my previous callsign was KE9KD which was activated from three

The DX Store

Amateur Radio Equipment for DXers!



Whether you're operating from halfway around the world or just up the hall from your living room, you want equipment you can count on to perform... You want



sales@dxstore.com

www.dxstore.com

Synthetic Paper • Tear Resistant
Rugged Waterproof
All Weather Amateur
Radio Log Book
 ASA Inc. P.O. Box 454 • Glenwood, NJ 07418
WaterProofLogBooks.Com

J-ames Pole Antennas
 www.jamespole.com
 James & Joyce Pike
 760.780.6484
 kb6wht1@juno.com ~ kb6bld@juno.com

handhams
 Ham Radio for people with disabilities since 1967
 • License manuals and books on tape
COURAGE HANDI-HAM SYSTEM
 763-520-0511 hamradio@courage.org
 3915 Golden Valley Rd., Golden Valley, MN 55422

Click here to Sign Up for New Issue Posting Alerts!

WorldRadio
ONLINE

HamTestOnline™
Web-based training for the ham radio written exams

- ▶ Quick, easy way to learn.
- ▶ 100% guaranteed — you pass the exam or get your money back.
- ▶ Better than random practice tests.
- ▶ Provides additional information.
- ▶ Presents concepts in logical order.
- ▶ Tracks progress on each question.
- ▶ Focuses on your weak areas with “intelligent repetition”.
- ▶ Better than books — question drill keeps you engaged.
- ▶ Try our free trial.

www.hamtestonline.com

The BEST in Mobile Mounts

www.w9iix.com

4421 West 87th St.
 Hometown, IL 60456
 Phone: 708-423-0605
 Cell: 708-337-8172
 Fax: 708-423-1691

W9IIX EQUIPMENT LTD.

TOROID CORES®

Ferrite and iron powder cores. Beads. Our RFI kit gets RFI out of TV's, telephones, stereos, computers, etc. 12 beads, 12 cores, full instructions. Model RFI-4.....\$35.00

VISA +\$8 S&H (for total order) Tax in Calif.

PALOMAR®
 BOX 462222, ESCONDIDO, CA 92046
 TEL: 760-747-3343 FAX: 760-747-3346
 email: info@Palomar-Engineers.com
 www.Palomar-Engineers.com

different locations. So I have chosen to name my locations as follows: KE9KD – Tazewell County; KE9KD – Jackson County; and KE9KD – Williamson County.

While I no longer use these locations, it was helpful when entering old logs into LoTW and will give matching QSOs the proper credit from each location.

Now, Create a Log File

Now that you have a location created, you're ready create a log file. If your logging program can export a small number of QSOs or a date range, pick the last 100 Qs or perhaps the last month to export into an ADIF or Cabrillo file. This will give you a small amount of data to test with.

Save this file to your hard drive. Open TQSL (if not already open) and select "File," then "Sign Existing ADIF or Cabrillo File" (figure 4).

You will be prompted for a location. Simply select the appropriate location you created earlier.

You will be prompted for a file to sign. Browse to the ADIF or Cabrillo file you exported from your logging program.

Finally, you will be asked where you want to save the signed file (a .tq8) and to give it a name. I usually name my exported files by date range. That way I can quickly look at the files and know what's in them. So you might call it "yourcall_20100601-20101031" where "yourcall" is the call you are signing. By looking at that filename, I know that it's for callsign x (for example, NØVD) with a date range of June 1 – October 31, 2010.

If you opted to use a password during your certificate request, the program will prompt you for that password as it begins to write the signed file. At this point, you should see the program

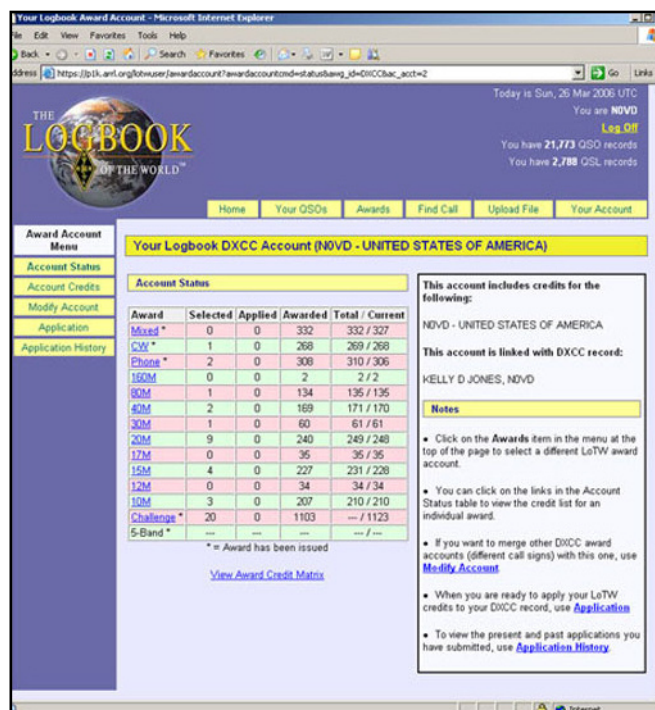


Figure 8.

begin signing your log as it will indicate how many records have been signed.

After it is complete, you will see how many records were signed, the input ADIF or Cabrillo file that was used and the resultant signed .tq8 file (figure 5).

Let the Fun Begin

You have finally reached the exciting part of LoTW – uploading your logs and receiving QSO confirmations. You can upload your signed logs in one of two ways. You can either e-mail a signed log (your .tq8 file) as an attachment to < lotw-logs@arrl.org > or you may upload the file directly to LoTW after logging in to your account as shown in figure 6.

Once your logs have been uploaded to LoTW you will begin to see matching QSOs (figure 7). These credits can be applied toward your DXCC and DXCC Challenge standings in addition to the Worked All States Award.

Looking at your account status page, you can quickly get an overview of your current DXCC counts, how many QSOs could be applied toward your awards and which awards have been issued (figure 8).

So, What's Stopping You?

That is how to get started with LoTW in a nutshell. If you haven't given it a try, I encourage you to take it for a spin. If it's been a while since you last took a peek or became frustrated in the past, take a few minutes to reacquaint yourself. There are many features within LoTW once you get started - I'll leave those for you to discover.

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. Also look for me on Facebook or Twitter and until next time, see you in the pileups!

4x HIGHER OUTPUT POWER FOR \$249?

The Ten-Tec 715 RF Speech Processor provides up to 4x higher average SSB output power on any HF transceiver!

Click here for details



TEN-TEC
The SSB Company

www.tentec.com

1 (800) 833-7373



Born to Be Wild (On the Amateur Bands): KA9PGC, Michigan City, Indiana

By John Phillips, KA9PGC

*(Editor's note – This month's **Station Appearance** features the two-wheeled operating position of **John Phillips, KA9PGC**, who rides out of Michigan City, Indiana. For two decades he has been fine-tuning his motorcycle mobile set-up with remarkable and innovative results, while keeping **SAFETY FIRST**.)*

Are you as proud of your station's appearance and operation as KA9PGC? Or does your messy shack provide just the comfort level you need to most enjoy the hobby?

*Send digital photographs of your station with details to: **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.)*

Living in northwest Indiana I have about a two-hour trip to and from work. Having such alone time available I have combined my two favorite hobbies, ham radio and motorcycles. For the last 20 years I have worked on this 10 months out of each year.

Commonly found at highway speeds, most operators cannot tell I am mobile. Wind noise is reduced to almost nothing when wearing a full-face helmet. Nothing here is plug-and-play. The effort is worth it.

My favorite HF band while mobile is 40 meters. I regularly check into the WB2JKJ Classroom Net out of Junior High School No. 22 in New York City – 7.238 MHz at 7 a.m. Eastern time.

There have been many mornings WB2JKJ is mobile either on the Jersey turnpike or somewhere else and the QSO is solid copy. It is always a challenge to check in with him because there is always a pile up to break through. If you can hear me, trust me I am motorcycle mobile.

The Neverending Story

Pictured is a 1985 Honda V-65 Saber with 115,000 miles on the clock. This mobile station has been continuously



John Phillips, KA9PGC, has spent 20 years honing his motorcycle mobile techniques. Here, he's sitting on his 1985 Honda V-65 Saber "with 115,000 miles on the clock." (All photographs courtesy of KA9PGC)

evolving. There has been a lot done to make things work in this environment.

The stock charging system on motorcycles cannot support a 100-watt rig. Equipped with a Yaesu FT-100D since 2001, I have run 80 meters up to 440 MHz using two different antennas: A commercially-made dual-bander for UHF/ VHF operation and a homemade screwdriver type for lowband operation.

The radio and the antennas have survived 64,000 miles so far in their present form. This includes whatever Mother Nature has thrown at me.

Behind the windscreen is the Yaesu FT-100D control head. At this location rain and snow are not a problem.

Because of the need to wear gloves, additional controls were built for the radio. In the middle of the handle bars is a large knob volume control. PTT (push-to-talk) is controlled by a trigger style button on

the ride side handle bar. The left side has one for CW operation. Both of these switches are commonly found for aviation and are fairly cheap and waterproof.

Controls on the left side of the fuel tank light up and are for directly controlling the radio: Up/Down, VFO, memory channel, Step, Call channel, VOX/PTT, (voice activated transmission / push-to-talk) and intercom mute.

The right side of the tank controls raising/lowering of the dual band antenna, garage door opener, outdoor lighting and so on.

'Can You Hear Me Now?'

Audio management is homemade. My original helmet headsets were J&M units that I had to convert to an electric condenser microphone. The dynamic microphone they had at the time could not com-

pete with the aviation mics. What I ended up using is the same noise-canceling microphone that you can now buy for your home computer for about \$20.

The homemade intercom with automatic level control and noise gate brings everything together. Installed at the headlamp is a microphone which samples the ambient noise level and adjusts the TX (transmit) level, VOX level, and RX (receive) level to the helmets. All this is needed for speeds about 50 MPH. At (high speed) I sound the same as at 30 MPH. Both pilot and passenger are connected in together. Many times my daughter, Justyne, is on the back and both of us are talking back to Mommie, KC9JHR. I run things on VOX and all three of us work simplex. It seems flawless. Some hams are not sure who is at home and who is on the bike.



The control head for KA9PGC's Yaesu FT-100D sits protected behind the windscreen where "rain and snow are not a problem."



Fifty-caliber ammunition boxes on each side of the motorcycle carry all electronics, tools "and when needed, an extra battery for special events."

If that isn't enough, the cell phone and MP3 player are incorporated automatically. The intercom and radio take priority – all other signals are muted.

HF and VHF/UHF Antennas

The low band antenna is completely homemade and designed out of about 50,000 miles of experience. I describe it as an *off center fed vertical dipole*. Sliders on both loading coils allow tuning from 80 meters up to 10 meters. Sliders are marked so I manually set the coils where I want to tune to and go. There's a five-foot whip on the upper element and a three-foot "J" style whip on the bottom half. There's eight feet of antenna total.

The reason for the vertical dipole is the fact that on a motorcycle there really is no ground plane to be the other half of the antenna. A loaded coil with a one-foot whip at 40 meters will outperform what ground plane exists on this size of motorcycle. Matching is almost perfect with no additional matching networks needed. Another benefit is that the pattern is almost perfect compared to a car. No directivity noticed.

The VHF/UHF antenna is a Comet SSB-7. Unless you shock-mount this antenna, it will not hold up for long on a motorcycle. Rubber washers on the mounting arm provide the cushion.



The low band antenna "is completely homemade and designed out of about 50,000 miles of experience. I describe it as an 'off center fed vertical dipole,'" KA9PGC says.



In profile is KA9PGC's mobile station. Visible on the back is a five-foot whip on the upper element of the HF antenna and a three-foot "J" style whip on the bottom half – making eight feet total of antenna.

This antenna is also isolated from ground at the mount. I highly recommend this antenna.

Managing the Volts and Amps

Power management is a whole other subject. I have a timer set so when you bump the starter, the radio shuts down for 10 seconds on start up. This is important because of the inductive kick involved in starting with such a small battery, you will cause some damage to the radio. I found this out the hard way on a Kenwood TM-732 where I wiped out the memory by having it on when starting the bike.

That timer will also shut down the radio after one hour when the ignition key is removed. Push-starting a bike is not easy or fun. Most of the lighting has been converted to LED to increase the available capacity of the charging system.

At idle, the charging system has about a 10 ampere reserve. At speed is where things improve.

The battery is an Odyssey 22 AH (amp-hour) deep-cycle battery designed for this application. Running QRP, I can park for

about four hours and still able to start the bike. The last battery was retired after 10 years, which just goes to prove *use it or lose it*.

All this electronics is housed in the right side box of the bike. The side boxes are made out of 50 caliber ammunition boxes. The left side box carries tools and when needed, an extra battery for special events.

EmComm and Special Events

This bike has been used for emergency communications and special events. Field Day 2010 I started running PSK-31 – parked of course. The NUE-PSK modem is a standalone unit with its own display. This has opened a whole new capability when parked. There's all-day power on the primary battery – something I am going exploit when setting up as a special events station, such as my regulars: Lighthouse weekend, Heston Steam Show, Radioville and, of course, ARRL Field Day.

Public service has not been forgotten on this bike. I have 17 years with the local

DIAMOND
ANTENNA

*The Standard By Which All
Others Are Judged*

MAXIMUM PERFORMANCE WITHOUT COMPROMISE

X510HDN & X510HDM High Power Antenna

Diamond Antenna's best base antenna. Designed for strength and performance, the X510HD Series is pretuned to achieve maximum gain in both the 2m and 70cm amateur bands.

X50NA

The X50NA is an excellent choice where ruggedness is required in a medium-gain, dual-band, base/repeater application.

5G7900A & 5G7900ANMO

One of Diamond Antenna's® Supergainer® "top of the line" mobile antennas.



For detailed specifications on Diamond's Base & Mobile Antennas, please go to
www.diamondantenna.net

Available through selected quality dealers.

770-614-7443



Diamond Antenna
Division

YOUR COMPLETE BATTERY SOURCE

**2-way Radio • Cellular • Digital • Camcorder
Laptop • Chargers • Analyzers • Cells**
HIGHER CAPACITY • HUGE SAVINGS!




Custom Assembly & Battery Rebuilding for:
• Handheld Radios • Laptop • Camcorder • Test Equipment





MOTOROLA
Authorized Dealer
OEM Battery Packs
sales@nicdlady.com

NiCd Lady Company

20585 Camino Del Sol Unit B, Riverside, CA 92508

5000+ Batteries Online
WWW.NICDLADY.COM Toll Free **800/906-6423**

Ten-Ten International Net, Inc.
PROMOTING THE USE OF
TEN METERS SINCE 1962

Awards-QSO Parties-Special Events-PaperChasing
Nets Daily (except Sunday) on 28.380 and 28.800 at 1800z

CHECK US OUT ON THE WEB

www.ten-ten.org / www.10-10.org

643 N 98th Street - #142
Omaha, NE 68114-2342

1-585-591-8149
Custom Ham Hats
Only! **\$14.99 + S&H**
Exclusive EMBROIDER for Amateur Radio Operators!
www.pennystitch.com

IIX EQUIPMENT LTD. The Finest in Tower Accessories

Ginpole Kits, Antenna Mounts, Standoff Brackets, Quadpods, Mast Adapters, Climbing Steps, Rotor Mounts, Mast Plates, Strap Brackets, Hot Dip Galvanizing, Custom Fabrication

Download a Catalog at www.w9iix.com

Order Online! IIX Equipment Ltd.
iix@w9iix.com 4421 West 87th St.
708-423-0605 Hometown, IL 60456
Cell: 708-337-8172
Fax: 708-423-1691

Visa MasterCard PayPal

ELECTRIC RADIO MAGAZINE

In circulation over 20 years, ER is a monthly publication celebrating classic equipment that was the pride of our shacks just a few years ago. Send \$1 for a sample:

**ER, PO Box 242
Bailey, CO 80421-0242
720-924-0171**

NOW OFFERING VINTAGE EQUIPMENT REPAIRS
WWW.ERMAG.COM



"Controls on the left side of the fuel tank light up and are for directly controlling the radio: Up/Down, VFO, memory channel, Step, Call channel, VOX/PTT and intercom mute," KA9PGC says.

EMA (emergency management agency) just with use of the bike alone. We have what is called the *Black Cat Patrol* for Halloween. Both the bike and I get all dressed up for that. If all goes well, we are just another set of eyes and ears on trick-or-treat night.

Most Memorable QSO

My favorite QSO was two years ago when working the Battleship USS Alabama and the operator said, "I have been in this hobby for 50 years and never heard motorcycle mobile." At that time I was eastbound on U.S. Highway 20. I broke through the pile-up on this special event station on 20 meters. He reported 100 percent audio and no indication that I was mobile; no indication of wind noise.

After that QSO, I had a small following trying to work me. At that point, I pulled into a parking lot and started taking calls and reports. First a Polish station and then what seemed like the rest of Europe.

It could not be *that easy* at the home station.

CQ Great Books from CQ Communications, Inc.

33 Simple Weekend Projects
by Dave Ingram, K4TWJ

Do-it-yourself electronics projects from the most basic to the fairly sophisticated. Station accessories for VHF FMing, working OSCAR satellites, fun on HF, trying CW, building simple antennas. Includes practical tips and techniques.

Order No. 33PROJ **\$17.95**

The Vertical Antenna Handbook
by Paul Lee, N6PL

Learn basic theory and practice of the vertical antenna and discover easy-to-build construction projects.

Order No. VAH **\$17.95**

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

CQ Communications, Inc.
25 Newbridge Road, Hicksville, NY 11801 • www.cq-amateur-radio.com



HAMFESTS & SPECIAL EVENTS

DECEMBER

BETHLEHEM AND NAZARETH, PENNSYLVANIA - Special Event station WX3MAS. Christmas City and Delaware-Lehigh Amateur Radio Clubs will operate Dec. 11 and 12 from 1400Z to 0200Z each day for Annual Christmas greetings from the Twin Christmas Cities of Bethlehem and Nazareth PA. Operating frequencies: 28.465 21.365 14.265 7.270 3.970 MHz. For Certificate send QSL information to CCARC/DLARC WX3MAS, Greystone Building, Gracedale Complex, RR8, Nazareth, PA 18064. <<http://www.dlarc.org>>.

BETHLEHEM (BELEN), NEW MEXICO - Christmas in Bethlehem (Belen) New Mexico. December 18, 1300 to 2300Z. Operating frequencies: 7.172, 14.272, 21.372 MHz. For QSL card, send an SASE to VCARA, PO Box 268, Peralta, NM 87042.

JANUARY 2011

WINSTON-SALEM, NORTH CAROLINA - The Forsyth Amateur Radio Club will hold its annual **FirstFest Swap Meet** on Saturday, January 8 at the Summit School Athletic Center, 2100 Reynolda Road, Winston-Salem, NC 27106. Hours are 8 a.m. to noon with set up starting before dawn. Free coffee and donuts, tailgating at no additional cost, free parking. Admission \$5 at gate. Coupon available through <<http://www.worldradio.w4nc.org>>. Tables \$15 (must be reserved ahead of time). Information: <<http://www.w4nc.org>> or (336) 245-5740.

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

Visit Your Local RADIO CLUB

CALIFORNIA

Fresno Amateur Radio Club - Meets 2nd Friday/monthly, 7 PM at Cedar Lanes bowling alley, Cedar and Shields in Fresno. Net Sunday at 7 PM on W6TO/R, 146.94 (-) PL 141.3hz. Tech net Wed 7 PM on W6TO/R www.W6TO.com; W6TO@ARRL.net. Contact Ken, WA6OIB @559-323-6753 12/10

VIRGINIA

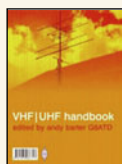
Williamsburg Area Amateur Radio Club (WAARC) meets on 2nd Tuesday of each month at 7PM at James City County Library, 7700 Croaker Rd., Williamsburg, VA. Talk-in on 146.76 (~). Contact Ken, NU4I at 757-564-7731 or nu4i@arrl.net. Website www.k4rc.net 03/11

Click here to have your club listed!

RSGB Books from CQ

More RSGB Books
www.cq-amateur-radio.com

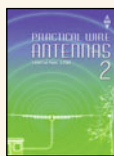
VHF/UHF Handbook



Edited by Andy Barter, G8ATD
2nd Ed., 320 pages.
Guides you through the theory and practice of VHF/UHF operating and transmission lines. Includes info on getting started, antennas, constructing your own equipment, and more.

Order: RXVUH **\$29.50**

Practical Wire Antennas 2



By Ian Poole, G3YWX
2005, 176 pages.
Significantly expanded and fully revised includes designs for a wide range of practical antennas. Complete and easy to understand designs

Order: RSPWA2 **\$23.50**

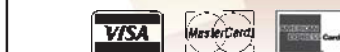
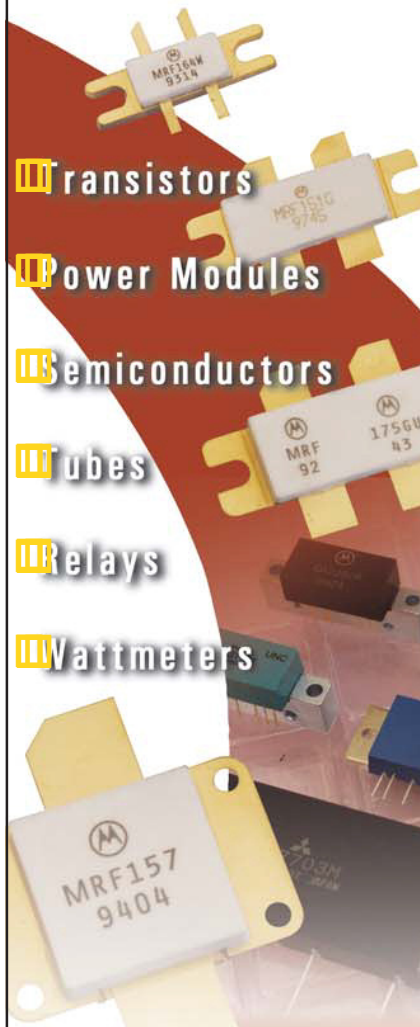
CQ Communications, Inc.

25 Newbridge Road □ Hicksville, NY 11801 □ 516-681-2922

Shipping and Handling: US and Possessions \$7.00 for the first book, \$3.50 for second, and \$2 for each additional book. Foreign - Shipping will be calculated by order weight and destination and added to your credit card charge.

from MILLIWATTS to KILOWATTS™

More Watts per Dollar™



ORDERS ONLY:

800-RF-PARTS □ 800-737-2787

Se Habla Español □ *We Export*

TECH HELP / ORDER / INFO: 760-744-0700

FAX: 760-744-1943 or 888-744-1943



An Address to Remember:

www.rfparts.com

E-mail:

rfp@rfparts.com





The Rules Say...

John B. Johnston, W3BE

What Does An Examinee Really Need to Know?

Q Where exactly in the FCC rules does it say what it is that a person needs to know in order to obtain an amateur operator license?

A. That is codified in Sections 97.501 and 97.503 <<http://bit.ly/8XEJQf>>. They say that the examinee must pass an examination such as to prove possession of the operational and technical qualifications required to perform properly the duties of an amateur service licensee. Each examination must be comprised of a question set concerning the privileges of the operator license class sought.

Technician: Element 2;
General: Elements 2 and 3;
Amateur Extra: Elements 2, 3 and 4.

Q. What does a ham need to know?

A. Our volunteer examiners and volunteer-examiner coordinators consider that to be what is maintained in their pools of more than 1,600 questions: technical rudiments (60 percent) necessary to making meaningful our good amateur and good engineering practices (24 percent) and our FCC rules (15 percent). See BE Informed No. 39 <<http://bit.ly/coAtOw>> VECs' Question Pool Syllabi.

Q. Don't those FCC exams cover everything?

A. The FCC hasn't prepared or administered our examinations since 1983. That is the job of our VEs. Section 97.507(b) <<http://bit.ly/cUQ5jh>> requires that each question set utilize questions taken from the applicable question pool. Section 97.523 <<http://bit.ly/cnIx7E>> says that all VECs must cooperate in maintaining these pools.

There must be at least 1,200 questions distributed among the three pools: Technician 350; General 350; and Amateur Extra 500. The questions in the VECs' pools, therefore, establish what it is that a person needs to know in order to be the station licensee or control operator of an amateur station transmitting from any place where the amateur service is regulated by the FCC, with the privileges of the class of operator license grant held.

The distribution of the questions in their pools, moreover, indicates what our VEs and VECs deem to be the most suitable privileges for each operator class, under any type of conditions. In particular, it is noticeable that they consider Technician and General Class Operators to be authorized far too many privileges, notably excessive transmitter power limits, unwarranted emission type privileges and unsuitable special operations privileges. This is evidenced by questions concerning Technician Class operator and - to a lesser extent - General Class operator, privileges appearing only in the higher level pools.

Q. Where are those good amateur and good engineering practices stated?

A. Some appear throughout the VECs' three question pools.

See BE informed No. 30 <<http://bit.ly/awyhvuv>> for another list of GAPS and GEPS that is being compiled.

Q. What types of questions do the pools contain?

A. The VECs have arranged the questions into 10 sub-elements for each of the three classes of operator license grant. Here is an overall summary:

Rules - 14.1%
Procedures - 11.7%
Circuits, equipment - 11.7%
Antennas, feed lines - 11.7%
Electrical components - 10.8%
Practices - 10.0%
Electrical principles - 9.1%
Modulation - 8.3%
Propagation - 7.5%
Electrical power, RF hazards - 5.0%

Q. But, what does an amateur operator really need to know?

A. There are at least two very diverse standards for that. *Standard One* comes directly from Section 97.503 <<http://bit.ly/drurt5>>. It has the objective of expanding our reservoir of trained operators, technicians and electronic experts. The examinee must prove that he/she possesses the operational and technical qualifications required to perform properly the duties of an amateur service licensee. A person must have those qualifications in order to enjoy our hobby fully and serve the purpose for which it exists, i.e., self-training, intercommunication and technical investigations carried out by amateurs, that is, duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest.

Standard Two comes from the objective of having as many people as possible obtain licenses. The examinee need only be able to give the correct answers to the minimum number of pool questions required to pass. One argument is that it only matters what you do after you get your license, not on how you go about obtaining it. Cutting corners should, apparently, be expected and tolerated.

Q. Doesn't Standard Two make the VEs' and VECs' efforts practically meaningless?

A. It trivializes our radio service and invites encroachment from those who are unable to justify a radio spectra allocation for their specialized purposes or who want to benefit from our less-expensive radio apparatus, our open architecture systems and our easy-to-get licenses.

It probably leads to the less-than-qualified licensees' eventual discouragement when they discover that they are ill-qual-

Study with the best!

Gordon West, WB6NOA
and The W5YI Group



NEW! Technician Class



Technician Class for the 2010-14 entry-level exam! Gordo has reorganized the questions into logical topic groups for easier learning! Key words are highlighted in the explanations to help you understand the material for test success. Web

addresses for more than 125 helpful, educational sites. GWTM \$20.95

Tech Book & Software Package

Package includes Gordo's book and Windows program that allows you to study at your computer and take practice exams. Gordo's explanations from the book are now on the software! Free Part 97 Rule Book. NCS \$39.95

Tech Audio Course on CD

Technician Theory Course recorded by Gordo walks you through what you need to know for the Element 2 exam. Great study companion to his *Technician Class* book, and an excellent study aid if you spend a lot of time in your car or truck! 4 audio CDs. GWTW \$27.95

General Class



General Class book Upgrade to the HF bands with Gordo & W5YI! Gordo's manual for 2007-11 reorganizes all the questions into logical topic groups for easier learning. His explanations include highlighted key words to help you

remember the material for test success. Audio CD is full of great operating tips! GWGM \$20.95

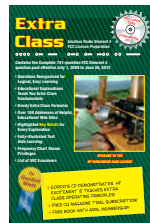
General Book & Software Package

Study at your computer and take practice exams. Software includes explanations from Gordo's book, scores your results and highlights areas that need further study. Free Part 97 Book. GUS \$44.95

General Audio Course on CD

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

Extra Class



Extra Class book Go to the top with Gordo! 2008-2012 book includes all Element 4 questions and answers, along with Gordo's fun, educational explanations. Full of Gordo's great memory tricks for those tough math and electronic theory questions (wait 'til you meet "Eli the Ice Man"!)

GWEM \$24.95

Extra Book & Software Package

Study at your computer and take practice exams as the W5YI software scores your results and highlights areas that need further study. Software includes explanations from Gordo's book. Package includes Gordo's *Extra Class* book and free Part 97 Book. ECS \$49.95

Extra Audio Course on CD

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

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

The W5YI Group P.O. Box 565101 Dallas, TX 75356

Mention this ad for a free gift.

WR

ified or not motivated to provide vital radio know-how when they must be relied upon to provide it. They might also not gain as much respect from our amateur service community

Q. We had a situation at a test session concerning the correct answer to a question for the General Class pool. The VECs' Element 3 pool gives the correct answer as D. Our VEs, however, disagreed. Who decides?

A. Section 97.509(g) <<http://bit.ly/cVJ601>> establishes that three administering VEs are responsible for determining the correctness of the examinee's answers. Hopefully, they can come to agreement amicably. Going along with the VECs' suggested answers might avoid a confrontation - as well as bypassing your responsibility.

Q. Aren't the VECs responsible for the correct answers to the exam questions?

A. They are not. In the enabling legislation, Congress authorized the FCC, for purposes of preparing or administering any examination for an amateur station operator license, to accept and employ the voluntary and uncompensated services of any individual who holds an amateur station operator license of a higher class than the class of license for which the examination is being prepared or administered. Section 97.509(g), <<http://bit.ly/cVJ601>> therefore, is on solid ground and means exactly what it says: The administering VEs are responsible for determining the correctness of the examinee's answers.

Section 97.519(a) <<http://bit.ly/9WD4Sg>> also means what it says: a VEC must coordinate the efforts of VEs in preparing

and administering examinations, and Section 97.523, <<http://bit.ly/cnIx7E>> means what it says: All VECs must cooperate in maintaining one question pool for each written examination element. Each question pool must contain at least ten times the number of questions required for a single examination. The only mention of providing answers in Part 97 <<http://bit.ly/9EiJRx>> is in connection with examinees and VEs; nothing is said about the VECs and answers.

Q. Can I use a calculator on the Amateur Extra Class operator exam as long as it is not a programmable one?

A. That depends upon the VE team doing your administering. *W3BE-O-GRAM*: Make first certain that the memory is clear.

Q. Hams are ignoring an ever increasingly glaring issue: the disconnection between operator privileges and the question pools. The only real differences of any substance between Technician, General, and Amateur Extra are more frequency privileges and shorter call signs.

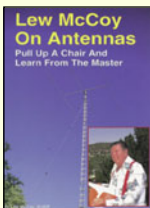
W3BE-O-GRAM: The increments between the privileges of our operator classes are way too small. That discomforting fact is not a recent development. It has been practically traditional, rather, for our amateur service community's rule-making petitions and comments to overlook taking into account the effect our called-for changes would have on the VECs' question pools.

Q. To maintain 350 questions for the General Class pool and 500 questions for the Amateur Extra Class pool means having to rely upon bazillions of questions about the sequen-



BOOKS

Back by popular demand!

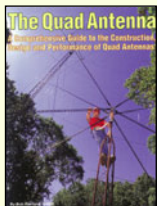


Low McCoy on Antennas

by **Low McCoy, W1ICP**

Unlike many technical publications, Low McCoy presents his invaluable antenna information in a casual, non-intimidating way for anyone!

Order No. MCCOY **\$19.95**

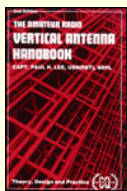


The Quad Antenna

by **Bob Haviland, W4MB**

A comprehensive guide to the construction, design and performance of Quad Antennas. Chapter titles include General Concepts, Circular-Loop & Arrays, Rectangular & Square Loops, Multi-Element Quads, Delta Loops & Arrays, Design Variations, Optimizing a Quad Design and more!

Order No. QUAD **\$19.95**

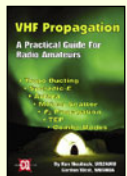


The Vertical Antenna Handbook

by **Paul Lee, N6PL**

You'll learn basic theory and practice of the vertical antenna. Discover many easy-to-build construction projects.

Order No. VAH **\$17.95**



VHF Propagation Handbook The Practical Guide for Radio Amateurs

by **Ken Neubeck, WB2AMU & Gordon West, WB6NOA**

The combined ham radio experience of the authors represents many years of VHF observations and research. Tropo Ducting, Sporadic-E, Aurora, Meteor Scatter, F2 Propagation, TEP, Combo Modes, it's all here!

Order: VHFProp **\$15.95**



33 Simple Weekend Projects

by **Dave Ingram, K4TWJ**

Do-it-yourself electronics projects from the most basic to the fairly sophisticated. You'll find: station accessories for VHF FMing, working OSCAR satellites, fun on HF, trying CW, building simple antennas, even a complete working HF station you can build for \$100. Also includes practical tips and techniques on how to create your own electronic projects.

Order No. 33PROJ **\$17.95**

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

CQ Communications Inc.

25 Newbridge Rd., Hicksville, NY 11801

516-681-2922; Fax 516-681-2926

Order Toll-Free 800-853-9797



tial call sign system or administer questions that should have been asked in the Technician exam. As privileges stand now, there should be a 100 question test for Technician, 15 questions for General and 5 questions for Amateur Extra.

A. For each class of operator license grant, our VEs and VECs have identified the knowledge base required to operate properly any amateur station anywhere the FCC regulates our amateur services under any set of circumstances. Their conclusions, however, noticeably are yet to be carried over to our policy-makers when formulating appropriate operator privileges for each class of license grant.

Another view is that practically all privileges should have been covered in our VECs' Element 2 Technician Class pool. Our General and Amateur Extra Class operator license grants, therefore, are unnecessary and superfluous. It is a waste of government resources to include in the ULS the four classes of operator license grants when the incremental differences between them are so small.

Q. What can be done to correct this imbalance?

A. For thoughts on achieving a more cogent balance between operator privileges and requirements, see **BE Informed No. 55** < <http://bit.ly/d0EjPP> > What Do Hams Need To Know And When Do They Need To Know It?

SUPERHAM



Our R&R Superham is Mark Erbaugh N8ME (standing left), LARC-VEC Regional Coordinator for VEC Region 8. Mark is also the Team Leader for the Dayton Amateur Radio Association LARC-VEC VE Team. Congratulations, Mark and your team of 54 VEs for a great job in administering 405 elements to 394 applicants during the 2010 Dayton Hamvention.

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.

If you enjoy
Amateur Radio,
you'll enjoy **CQ**



CQ is devoted entirely to the things that Hams care about. It's a fine blend of technical ideas and projects, news and reviews of new Ham products and operating information, written and edited by a group of people who are absolutely crazy about this hobby!



**Happy Holidays
Subscription Sale!**

	USA	VE/XE	Foreign
1 Yr	\$34.95	\$47.95	\$59.95
2 Yrs	\$62.95	\$88.95	\$112.95
<i>Best Deal!</i> *3 Yrs	\$90.95	\$129.95	\$165.95

Save an additional \$2.00!

Purchase a 2011 - 2012
CQ Amateur Radio Operators
Calendar along with any
CQ Amateur Radio, CQ VHF
or Popular Communications
3-year subscription and get
FREE shipping on your calendar - a \$2 value!



15-month calendar (Jan 2011 through Mar 2012) includes dates of importance to Ham Radio operators- major contests and operating events, meteor showers, phases of the moon.

CQ Amateur Radio Operators Calendar \$10.95

CQ Amateur Radio

25 Newbridge Road

Hicksville, NY 11801

Phone 516-681-2922

www.cq-amateur-radio.com

DX Predictions

DECEMBER 2010

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 Janerio. Smoothed sunspot number = 17.

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	(10)	8	*13	(8)	*12
12	(9)	8	*12	(8)	(12)
14	(15)	8	12	(12)	*24
16	19	10	*17	(10)	*28
18	21	(10)	(16)	(9)	*30
20	20	17	21	(8)	*31
22	17	*18	25	(8)	*29
24	*15	17	27	8	*24
2	12	14	25	8	*16
4	11	10	16	8	*15
6	(10)	*9	15	8	*13
8	(10)	9	*13	*8	*13

CENTRAL U.S.A.

UTC	AFRI	ASIA	OCEA	EURO	SA
8	(10)	8	*13	*8	*12
10	(9)	8	*12	(8)	*12
12	(16)	8	*12	12	*22
14	20	8	*16	14	*26
16	22	(8)	17	13	*29
18	22	(8)	(16)	(10)	*30
20	21	(8)	21	(9)	*29
22	*17	15	25	8	*25
24	*12	(13)	27	8	*17
2	11	(10)	(19)	8	*15
4	10	(9)	15	8	*14
6	(10)	(9)	14	8	*13

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SA
7	12	*8	(13)	8	*13
9	(12)	8	*12	*8	*12
11	21	8	12	13	*22
13	*26	9	*22	16	*26
15	*28	(8)	19	15	*29
17	*28	(8)	(15)	13	*30
19	*23	(8)	(19)	(10)	*30
21	*20	(13)	23	9	*26
23	*15	(13)	24	8	*18
1	*14	(10)	16	8	*16
3	*13	(9)	(14)	8	*14
5	*12	(8)	(13)	8	*13



Maybe a Small Shuffle at the Pentagon, But This Could Loom Large for MARS



By Bill Sexton, N1IN/AAM1RD/AAR1FP

Wall Streeters have an apt proword for companies running into hard times and looking for somebody to snap up the viable assets. They say the company is *in play*.

That pretty much describes the situation confronting Army, Air Force and Navy-Marine Corps MARS after the latest Defense Department “efficiency initiatives”— aka, slashing the payroll. We’re the (hopefully) viable assets in play, and fellow members, it’s not a game.

Here’s the story: On August 16, Defense Secretary Robert Gates abolished the office of Assistant Secretary of Defense for Networks and Information Integration. This was the critical junction where the three MARS chains of command were jointly tethered to DoD. In Army terms you might say ASD(NII), as the office is known, was the Division Headquarters to which our three Brigades report.

Regrettably, the Defense Secretary’s far-reaching cutback plan offered no clue to where we’d be hitched next, or when. Should this concern members? Absolutely.

It isn’t that MARS is in jeopardy – at least there is no reason to think so at this writing. The problem is that at a time just when MARS deserves high-level oversight and attention, the office that had begun to provide it is being dismantled.

“Few entities within the Office of the Secretary of Defense understand the capabilities MARS brings to the table and recognize the role it can play to support homeland defense requirements,” a D.C. source e-mailed. “Fewer still grasp the operational challenges that need to be addressed. NII did, but won’t get the chance to demonstrate it.”

Decisions Sidetracked

For six years DoD has avoided choices critical to MARS viability in the next



Against the backdrop of combat costs in Afghanistan and Iraq, Defense Secretary Robert Gates (here visiting Kabul) ordered immediate spending cuts that will alter the MARS program’s oversight and direction from the Pentagon. MARS itself apparently isn’t affected. (Courtesy of U.S. Army)

Katrina-scale domestic disaster. Now it could take two or three more to implement the extensive “efficiency initiatives” ordered by Gates and then reset our moorings, according to the insider quoted.

The DoD has dozens of cuts mandated, including the entire Joint Forces Command over which Army Gen. Ray Odierno, Commanding General of U.S. Forces in Iraq until Sept. 1, was slated to take command. On the DoD’s list of priorities, what to do with MARS presumably ranks well below finding a four-star job for one of its most highly-respected generals. Patience is called for.

The timing is just plain awful. After many months of drafting and re-drafting, MARS finally got an updated post-

Katrina charter last Dec. 23 affirming its responsibilities for Defense Support to Civil Authorities (DSCA). That mission now ranks equal with support to DoD Components, in official doctrine as well as common sense. As for providing MARS with “overall policy guidance . . . in matters of the objectives, administration and operations,” the new document, known as DoD Instruction 4650.02, assigned that to ASD(NII).

It wasn’t perfect, as tasking goes. Ignoring unity of command, or at least muddying it, DoDI 4650.02 gave “primary responsibility for the MARS DSCA mission” to a separate Assistant Secretary of Defense (Homeland Defense and Americas’ Security Affairs). Still, on administration and operations the DoDI

WWW.WBØW.COM

Visit our website for our Hamfest Schedule

Tarheel Antennas



Nifty!
Reference Guides

Ground Radial Kit



\$59.00

Stainless Steel construction with 20 lugs for connections and comes with 10 radials for Normal 10-80 operation.



Headsets, Microphones, Cables, and Accessories

WBØW, INC.

800-626-0834

816-364-2692 • Fax 816-364-2619

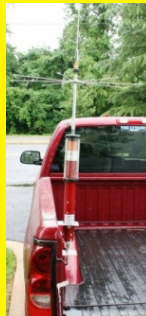
P.O. Box 8547, St. Joseph, MO 64508

WBØW@WBØW.COM

All Prices Subject to Change without Notice

HIGH POWER

Model 40A-HP	Model 100A-HP	Model 200A-HP
10-40 Mtrs.	10-80 Mtrs.	10-80 Mtrs.
1.5 Kw P.E.P.	1.5 Kw P.E.P.	1.5 Kw P.E.P.
\$389	\$389	\$409



Tarheel Antennas available in Black, Red, White, and Silver



EXTENDED COVERAGE

Model 75A	Model 300A	Model 400A
10-80 Mtrs.	10-160 Mtrs.	10-160 Mtrs.
250 watts P.E.P.	250 watts P.E.P.	250 Watts P.E.P.
\$389	\$389	\$409

Note: Mounts are not included.

Little Tarheel-HP
500 Watts P.E.P.
7.0 Mhz - 54.0 Mhz
\$379



Little Tarheel II Shown Mounted on Diamond K400-3/8C
Note: Mount not included

Little Tarheel II
200 Watts P.E.P.
3.5 Mhz - 54.0 Mhz
\$379

Programmable, Screw Driver Controller turns counter w/10 memories



SDC-102 \$130

Before Disaster Strikes

After a year's analysis of national readiness to deal with a second, escalated 9/11, a 13-member panel of experts found that DoD response plans are dated, federal-state command and control is "problematic," and no "civil-military common operating picture" exists. The chairman sounded this alarm in his Sept. 15, 2010 letter to the Defense Secretary and Congress, excerpted here:

It is with a profound sense of urgency that we deliver the report of the Advisory Panel on Department of Defense Capabilities for Support of Civil Authorities After Certain Incidents.

This is a matter of critical national importance.

All of us who have worked in the area of domestic disaster response know that there are factors that complicate effective response to major incidents . . . These factors will most certainly complicate a response to a major chemical, biological,

radiological, nuclear, or high-yield explosive incident, but they must not stand in the way of essential and timely preparation. Such an incident will happen. It is only a matter of time. The stakes are too high to delay action . . .

Notwithstanding the lower probability of the occurrence of such an incident compared with hurricanes, tornadoes, floods, wildland fires, and other natural disasters, the potential consequences demand that we quickly find those solutions.

(signed) Steve Abbot,
Chairman

Adm.(ret.) Abbot was the first Deputy Director of the Office of Homeland Security. His last assignment before retirement from active duty with four-star rank was Deputy Commander-in-Chief of the U.S. European Command during the Kosovo conflict; before that Deputy Director of Operations for the Chairman of the Joint Chiefs of Staff.

Before Disaster Strikes

Imperatives for Enhancing
Defense Support of Civil Authorities

EXECUTIVE SUMMARY



The Report of the
Advisory Panel on Department of Defense Capabilities for Support of Civil Authorities After Certain Incidents
to the Secretary of Defense and the
Chairman and Ranking Minority Members,
Committees on Armed Services,
U.S. Senate and U.S. House of Representatives

September 16, 2010

The executive summary Before Disaster Strikes – Imperatives for Enhancing Support of Civil Authorities.

2011-2012 **CQ** calendar

15 months of value
January 2011 through
March 2012

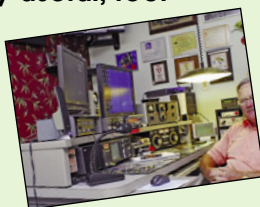


Better than ever! This year's calendar will bring you 15 spectacular color images of some of the biggest, most photogenic shacks, antennas, scenics and personalities from across the country for only \$10.95!

Calendar includes dates of important Ham Radio events such as major contests and other operating events, meteor showers, phases of the moon, and other astronomical information, plus important and popular holidays. The CQ Amateur Radio Operators Calendar is not only great to look at, it's truly useful, too!

\$10.95 ea.
+\$2 s/h

Shipping & Handling:
US \$2, Canada/Mexico \$4,
all other countries \$9.



CQ Communications, Inc.

25 Newbridge Road, Hicksville, NY 11801
Call 1-800-853-9797 • FAX 516-681-2926
www.cq-amateur-radio.com



was clear: ASD(NII) was to be our home address.

Problems Left Unaddressed

Nine months later, before a comprehensive work program could be implemented, that home address is shutting down. Still sidetracked are questions ranging in priority from prickly unity of command issues to the occasional discrepancies of military and NIMS procedures; from providing liability coverage for deployed members to issuing MARS ID required to approach response zones (and which other defense auxiliaries already possess, as indeed MARS did when I joined in 1992).

MARS officialdom was fortunate to get half-an-hour of face time with the Acting Secretary of Defense (NII) Cheryl Roby back in April. The visitors came away with her strong commitment to moving the program forward. The bad news would be if the Pentagon's ultimate decision is to plug MARS into some office with little grasp of amateur radio's resourcefulness and no direct commitment to homeland security. *It has happened before!*

The one document I've seen that offers any detail falls short of encouraging. It



The mobile communications center designed and built by John Scoggin, W3JKS/AAT3BF, seen above working inside it, caught the eye of senior officers at Ft Meade, Maryland during a Signal Corps exercise before Hurricane Katrina. With a starting boost from Scoggin, the National Guard is deploying its own state-of-the-art Joint Incident Site Communications Capability system (JIISCC) in the 50 states. He is senior systems engineer at a Conectiv, a major eastern utility. He serves on the Army MARS chief's volunteer staff as a special consultant. (Courtesy 311th Signal Command)

would send NII's command and control functions to the Defense Information Services Agency but doesn't even mention the warfighter's third "C" – communications.

There really is urgency here. While DoD personnel were still digesting their "efficiency initiatives," along came a blistering report on the nation's readiness for the next level of terrorist attack. Entitled "Before Disaster Strikes" – the more accurate word here would have been *catastrophe* – the document was published just a month after the Gates cutbacks. (See the sidebar *Before Disaster Strikes*.)

I'll cite just one finding by the independent blue-ribbon panel established by Congress two years ago: "There is currently no standard or sufficient mechanism for localities, State and Federal agencies to share a civil-military operating picture to support CBRNE incident response."

You want to remember "CBRNE." It stands for "chemical, biological, radiological, nuclear, or high-yield explosive incident."

But "mechanism for localities, State and Federal agencies to share a civil-military operating picture?" Isn't that what MARS is all about?

Unfortunately, just when the panel conveyed its "profound sense of urgency" to Secretary Gates, the DoD was riveted on his mandate "to reduce duplication, overhead, and excess, and instill a culture of savings and restraint." He had just disbanded a key office that might have helped draw the connection between "Before (Catastrophe) Strikes" and the DSCA mission assigned to MARS last December.

Connecting the Dots (Again)

In an admirable personal initiative, one member of Air Force MARS set about making that connection clear, and he chose a forum likely to be seen in the military's upper reaches.

David J. Trachtenberg, N4WWL, who wears two hats as Virginia state AFMARS director, AFF3VA and national planning coordinator AFN3PL, is a self-employed national security consultant in the Washington area. He's also a former congressional staffer and served in the early years of George W. Bush's presidency as Principal Deputy Assistant Secretary of Defense for International Security Policy.

A Pitch to the Pentagon On Behalf of MARS

Excerpts from David Trachtenberg's Internet commentary on the website of the Armed Forces Communications and Electronics Association International:

For decades, the military and specially trained civilian amateur radio operators of the Military Auxiliary Radio System (MARS) have provided reliable zero-cost back-up communications to the U.S. Defense Department and armed forces. This civilian-military partnership has served the nation well.

The U.S. military's reliance on sophisticated communications architectures and networks is a double-edged sword. It conveys distinct advantages to the armed forces. Yet the more sophisticated the technology, the more susceptible it becomes to unexpected failures, disruption or destruction from asymmetric threats, such as satellites' vulnerability to anti-satellite warfare. Systems *do* fail and *can be* compromised. Therefore, reliable back-up communications are critical.

In a February 2009 *SIGNAL Connections* article I discussed how MARS could benefit from OSD's active guidance and oversight. Under the DoDI [4650.02 issued Dec, 23, 2009], primary policy oversight for emergency communications initiatives involving MARS was assigned to the Assistant Secretary of Defense for Networks and Information Integration (ASD[NII]). In April 2010, Acting ASD(NII) Cheryl Roby declared her strong support for the MARS program and commitment to broadening its role within the department and the combatant commands.

The NII, however, is being eliminated as a result of the "efficiency initiatives" announced by Defense Secretary Robert Gates in August. Many of its functions will be transferred to the Defense Information Systems Agency, the Undersecretary of Defense for Acquisition, Technology and Logistics or elsewhere.

Where MARS program oversight will reside after the organizational disestablishment of NII remains to be seen. But wherever it migrates, MARS operators remain ready to fulfill their contingency communications mission and to expand their relationship with the Defense Department and civil agencies.



Dave Trachtenberg, N4WWL, qualified for membership in the Pentagon Amateur Radio Club while serving as a Principal Deputy Assistant Secretary of Defense in the early 2000s. A shortwave listener since age 13, he qualified for Air Force MARS after monitoring its net activity piqued his curiosity. There he "met some of the most dedicated and public-spirited amateur radio operators on the air," he later wrote in *QST* magazine. He's pictured operating during a PARC special event commemorating the 9/11 Anniversary. (Courtesy of DoD photographer Sally Sobsey)

Notwithstanding the uncertainties resulting from internal Defense Department decisions intended to reduce overhead, eliminate redundancies, streamline management and improve operational efficiencies, the value MARS provides to the Defense Department, civil agencies and the nation should remain strong for the foreseeable future.

David J. Trachtenberg, president and chief executive officer of Shortwaver Consulting, is a former Principal Deputy Assistant Secretary of Defense for International Security Policy and a member of Air Force MARS and SHARES.



At her first meeting with MARS representatives on April 16, Cheryl Roby, newly-designated Acting Assistant Secretary of Defense, expressed her strong support for the program and launched a familiarization study for her office. Barely six months later, the office—Networks and Information Integration—was abolished, so MARS awaits a new home in the Pentagon. (Courtesy of DoD)

So Trachtenberg spoke with some authority on the official Internet blog of the Armed Forces Communications and Electronics Association International (AFCEA), an influential actor in the Beltway defense sector. His intervention was an eloquent recapitulation of MARS' value to the DoD in general and homeland security in particular. (See the sidebar *A Pitch to the Pentagon On Behalf of MARS*).

MARS Resources to Remember

Jim Edmonds, WA1KPG/AFF1X, followed through on the AFCEA blog with some concrete detail. "MARS is an operations-oriented service," Edmonds wrote. "On a daily basis, the Air Force MARS Phone Patch Net runs official (80 percent) and morale (20 percent) phone patches for DoD airborne and ground based units.

"The joint MARS digital networks provide point-to-point as well as e-mail-over-HF capabilities to its military spon-

sors and, through the Defense Support to Civilian Authorities plan, to federal and state government agencies. Air Force, Navy/Marine Corps, and Army voice and digital nets are in daily operation and are used in military training exercises as well as for actual events.

"MARS subject matter experts routinely volunteer their knowledge in engineering and related fields to respond to requests for technical support from military units with whom working relationships have been established," Edmonds added.

Jim's last point brought to mind John Scoggin, W3JKS/AAT3BF, a power company systems engineer. His self-built communications trailer ("home-brew" doesn't do it justice) won active-duty envy during a pre-Katrina Signal Corps exercise. Post-Katrina, following a Scoggins slide show presentation at the National Guard Bureau, his concept evolved into the JISCC super-comcenter-on-wheels featured in the October MARS column. Now that was a military unit relationship with superlative results.

From Navy MARS, Peter Kean, K2AXI/NNN01NR, recalled AFCEA conventions in the 1960s (back when he joined MARS) that showed off "wide-band analog receivers . . . and other archaic and outdated technology."

"Much of our current-day federal and military work force (has) no experience or memory of such devices," Kean wrote. Still, "does a drowning person care if the life preserver thrown to him is 'state of the art,' or does he just want to be saved?"

A Time for Home-Brew Initiative

Naturally, N1IN/AAM1RD had to put in his own two cents worth on the Trachtenberg blog.

Implying that the three MARS chiefs ought to be able to jointly fix some of the problems left adrift in the Pentagon, I wondered, "Does the energy exist within MARS to start building solutions from the bottom up while awaiting the cosmic decisions from top down? You know, like houses are built, starting with the foundation?"

But let the last word come from Mr. Trachtenberg, who represented Air Force MARS at the April ASD(NII) meeting and may well be earning himself a role in the new-model, three-service MARS just now aborning. He's bullish on the company's prospects. That's a desirable atti-

tude when your enterprise finds itself *in play*.

"With new Defense Department guidance, an expanded mission, a proven record of accomplishments, and a pool of talented and capable radio operators providing their services voluntarily, MARS is a communications asset that has attracted the attention and support of senior Defense Department leaders," Trachtenberg blogged.

"Notwithstanding the uncertainties resulting from internal Defense Department decisions . . .," he concluded, "the value MARS provides to the Defense Department, civil agencies and the nation should remain strong for the foreseeable future."

(This column represents independent journalistic reporting about the Military Auxiliary Radio System (MARS), its members and activities. It does not represent official MARS or U.S. Department of Defense policy nor is it sanctioned or reviewed in advance by MARS or DoD officials. — Ed.)

Penetrating the Defense Department Thicket

Finding your way through the chain of command was complicated enough with MARS organized into three independent branches (Army, Air Force and Navy-Marine Corps), but that's just the start.

Together, the three MARS Chiefs had three separate reporting channels into the Department of Defense. And each of those works its way to the Secretary of Defense via a different path.

DoD Instruction 4650.02, issued at the end of Dec. 2009, assigned **MARS policy and operations guidance** to the Assistant Secretary of Defense (ASD) for Networks and Information Integration (*bottom right*); **homeland security** to the ASD (*far left*); and **equipment** to the Deputy Undersecretary for Logistics and Materiel Readiness (*right*).

Some totem pole. But not to worry about learning the chart. On August 16, Defense Secretary Gates ordered major organizational changes affecting MARS which could require a year or more to accomplish. (Source: *Office of the Secretary of Defense*)

— Bill Sexton, N1IN/AAM1RD

Office of the Secretary of Defense

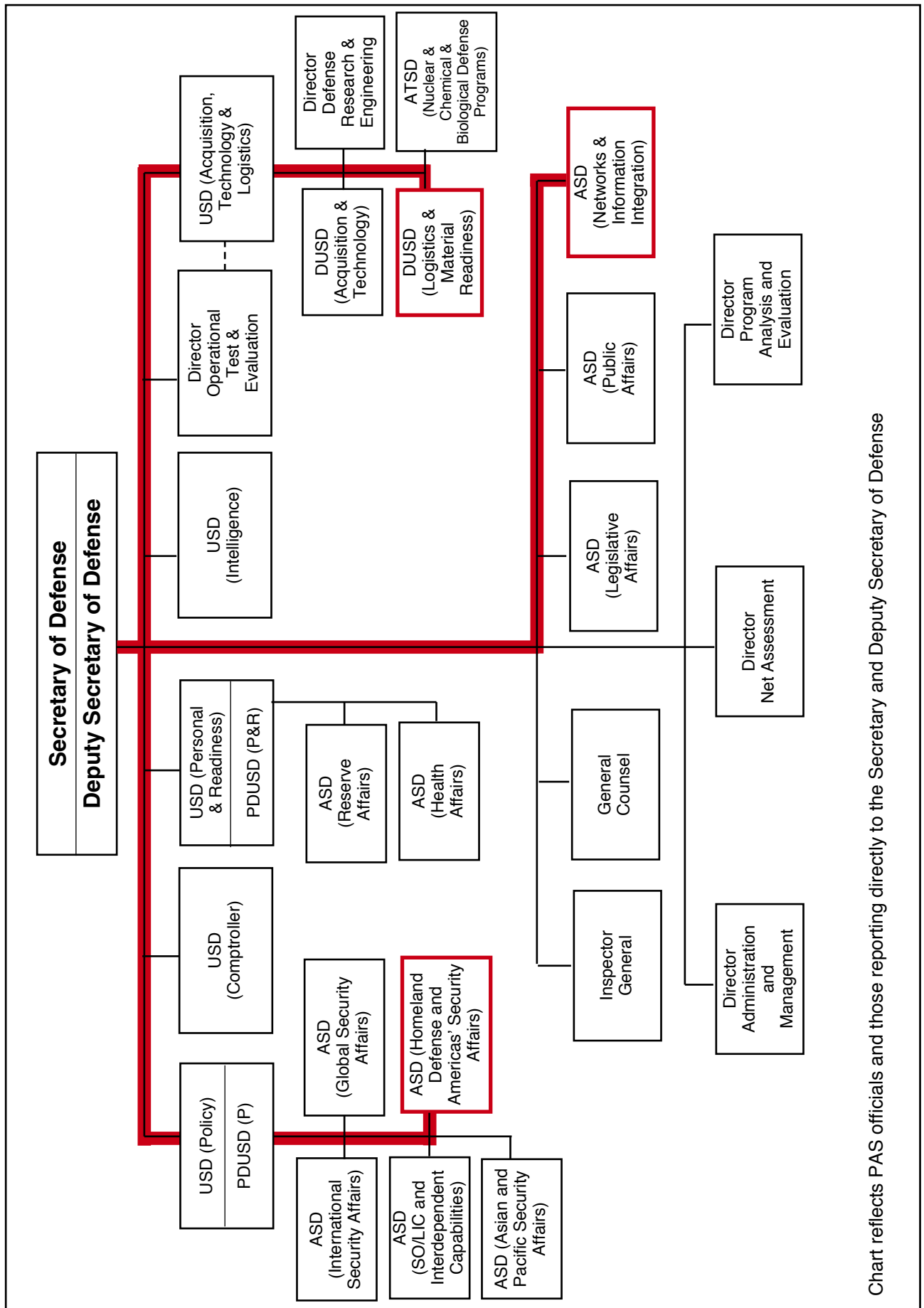


Chart reflects PAS officials and those reporting directly to the Secretary and Deputy Secretary of Defense



Doing A Lot With A Little When Traveling Abroad

By Patrick Tice, WAØTDA

One thing that I always think about when I am traveling is – *surprise, surprise* – how I am going to get on the air. Would ham radio make the trip when my wife and I spent some time in Europe to celebrate our anniversary? Well, only if I could make it fit into our limited luggage allowance!

Our trip took us to Paris, Florence, and Rome with a short stop at the airport in Amsterdam. What a pity that both the money and vacation days ran out before the long list of European countries that would have been fun to visit was completed.

Even so, you have to be thoughtful about what to pack and what you are willing to lug around train stations and airports. One thing I definitely didn't want to bother with was any kind of extra baggage that would add bulk and cost to the trip. That pretty much meant that I would not be bringing any kind of HF radio gear – at least none of the kind I own.

“So the one piece of ham radio gear that I brought was – drum roll, please – a small Dell netbook computer!”

Besides, I had no idea what the hotels would be like and whether it would be possible to string up a dipole or an end-fed wire. I didn't want to have the hassle of reciprocal licensing and getting permission to operate, much less having to explain an extra bag full of mysterious-looking electronics to wary security officials at every airport. So the one piece of ham radio gear that I brought was – *drum roll, please* – a small Dell netbook computer!

I had prepared the computer in advance by loading the necessary amateur radio software and – *this is important* – testing it before leaving on the trip. My essential software included Skype, EchoLink, and the W4MQrig control software. With this combination of lightweight technology I



This HF tribander and VHF beam in the downtown region were visible from a tourist's vantage point at the grounds of the Medici Palace in Florence, Italy. It must be challenging for the local hams to find space for wire antennas, but building tops work for antennas like these. (Courtesy of WAØTDA)



These HF log periodic antennas at Vatican City mean business. Look at the size of those towers. (Courtesy of WAØTDA)

was able to check in on the Handiham EchoLink net using the EchoLink application and the *HANDIHAM* EchoLink conference server.

I noticed that a German station also checked in during the same net session, so this kind of operation is no longer considered unusual. The main concern with EchoLink is that you need an Internet connection and to know how to operate EchoLink through a public proxy.

I recommend practicing in advance of your trip, whether you are going to London, England or New London, Connecticut. The reason is that virtually all public Internet access will pose firewall problems for the EchoLink application and operating through a proxy bypasses these firewalls, although with a proviso that your time linked to the proxy may be limited to 30 minutes.

The process of getting on HF is really a little less fussy than getting on EchoLink because firewalls don't seem to be such a big issue with the W4MQ rig control software and with Skype, which is used to port both transmit and receive audio between your computer and the radio that is being controlled at some distant point.

I used one of our Handiham remote base stations, WØZSW and WØEQO, depending on which one was free. It was fun and easy to check into a U.S. Midwestern regional HF net on 75 meters from Paris and Rome without having to worry about stringing up wire and hauling bulky equipment.

Since the netbook computer had a built-in microphone and speakers, there was no need to bring along a headset. Had I been traveling stateside by automobile, I would've brought along a handheld radio, the mobile radio in the car and a bigger laptop computer with a USB headset and boom microphone.

On some trips I have packed an IC-706M2G and a switching supply. But when you have to travel light, you can make do with less and still have a lot of fun leveraging this new technology.

Contact us at Handiham:

Courage Center Handiham System
3915 Golden Valley Road
Golden Valley, MN 55422
763-520-0512
hamradio@couragecenter.org
www.handiham.org

Optimize Your Antenna With the Field-Proven AntennaSmith™...

TZ-900 Antenna Impedance Analyzer

Designed for the field - portable and easy to operate with quick tuning and a high-resolution color display.



FREE ARRL Antenna Book with every TZ-900

... and Kill the Noise with the ANC-4 and DSP-599zx!



- DSP-599zx Audio Signal & Noise Processor
- ANC-4 Antenna Noise Canceller

See our TNCs & the HamLink™ family on our website

Upgrades for PK-232,
DSP-599zx & more!
Call Us Now!



Available at:

- ◆ Universal Radio
- ◆ AES
- ◆ HRO
- ◆ Radio City
- ◆ R&L Electronics

651-489-5080 Fax 651-489-5066 sales@timewave.com www.timewave.com
1025 Selby Ave., Suite 101, St. Paul, MN 55104 USA

THE ISOTRON ANTENNA

Great Things Come in Small Packages!

- Great Performance
- Easy Installation
- Single Band Models
- Multiband Models
- 1000 Watts PEP
- No Radials
- Portable Operation
- Maritime Operation

American Made—Our 30th Year!

www.isotronantennas.com

wd0eja@isotronantennas.com

BILAL COMPANY • 719-687-0650

**** THE WIREMAN, INC™ ****

***** 800-727-WIRE (9473) *****

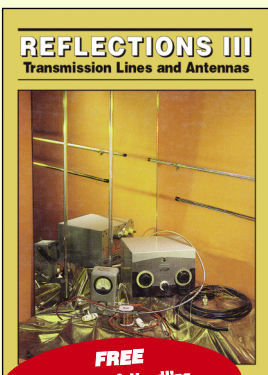
Still, after 28 years, the "Keywords" for "Certified Quality" Wire, Cable, Connectors, Accessories, and Service. See it all at www.thewireman.com Tech help 864-895-4195

SOUTHWEST US? Call (866)745-WIRE (9473) for TOP WM dlr **CLEAR SIGNAL PRODUCTS** www.coaxman.com or wire@coaxman.com

REFLECTIONS III

by Walter Maxwell, W2DU

Fully revised and updated third edition!



FREE
Shipping & Handling
on \$100 purchase!

- ◆ Too Low an SWR Can Kill You
- ◆ The View into the Conjugate Mirror
- ◆ Using the Smith Chart
- ◆ The Line Match Problem
- ◆ Computer Programs for Impedance Matching
- ◆ The Quadrifilar Helix Antenna
- ◆ ... and more!

This 424-page edition is a must-have!

Order today for only \$39.95

Shipping and Handling: US: Add \$7.00 for the first item, \$3.50 for the second, and \$2 for each additional item. **FREE Shipping On Orders Over \$100.00** (merchandise only) to a single US address. **CN/MX:** \$15 for 1st, \$7 for 2nd, \$3.50 for each add'l. **All Other Countries:** \$25 for 1st, \$10 for 2nd, \$5 for each add'l.



CQ Communications, Inc.
25 Newbridge Rd., Hicksville, NY 11801
www.cq-amateur-radio.com
Order Toll-Free 800-853-9797





The Long and Short of It: CW Is Really Clever Stuff

By Randall Noon, KCØCCR

Let me pose the following problem to you: Let's say you have been tasked with inventing a system to send messages by radio signals. To keep your message-sending equipment simple, you are limited to transmitting a single tone. In other words, you can turn the transmitter on or off. What would you do?

You could, of course, utilize equally short transmitted tones separated by measured spaces of no transmission – for example, *dits*. One *dit* could be assigned to A, two *dits* to B, three *dits* to C, and so on until you get to Z where you would send twenty-six *dits*. After each letter is sent, it would be separated from the next letter in the sequence by a measured quiet period.

This is a simple, easy code to learn, and has been independently invented by prisoners to communicate among adjacent prison cells. The *dit method*, however, is slow and error prone: *Was that twenty-two dits, or was that twenty-three dits?*

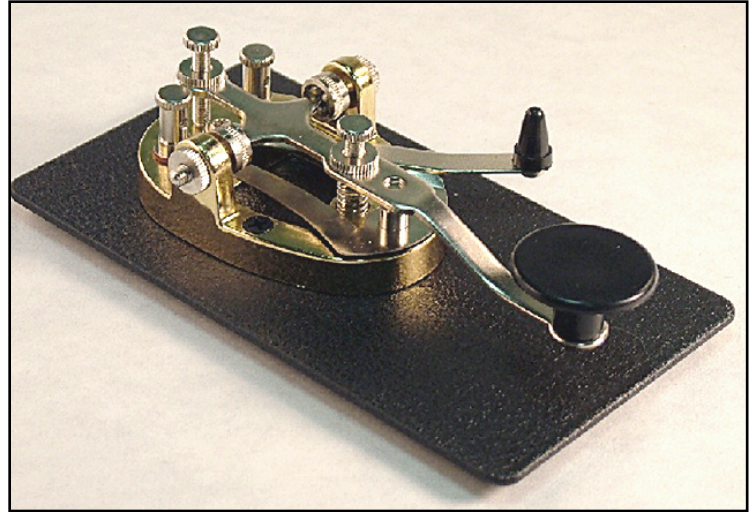
The same problems would also exist, of course, if you used only *dahs* – that is, longer, equal duration tones. However, instead of just being slow like the *dit method*, the *dah method* would be anguishingly slow.

Alternatively, you could mix up *dits* and *dahs* in various permutations, perhaps like a sequential binary code. In a binary code arrangement, which is the fundamental internal code used by all modern computers, the letter A could be a *dit* (binary number 001), a B could be *dit dah* (010), a C could be *dit dah dit* (101), and so on until the letter Z, which would be *dit dit dah dit dah* (11010). This is a significant improvement in sending efficiency over the *dit method* because the longest letter would require just five elements instead of twenty-six elements.

By the way, the Baudot code, once prominent for teletype-writers and RTTY, uses a five-element code system. ASCII, which is the basis for computer-to-computer information transfer, uses a seven-element code system. The unit of information transfer, the Baud, is derived from the word Baudot.

One way that this *dit-dah* binary code could be improved with respect to transmission time would be to assign the smallest code permutations of *dits* and *dahs* to the letters most frequently used. It is known, for example, that in English 80-percent of an average text is done with just 12 letters, and 65-percent of an average text is done with just eight letters.

This strategy is exactly what Alfred Vail had in mind in 1838 when he visited a typesetter's shop in Morristown, New Jersey, his hometown. Based upon the typesetter's experience, Vail determined which letters were more frequently used and then assigned the shortest permutations of *dits* and *dahs* to those letters. At that time the order of letter frequency as grouped for manual typesetting was as follows: ETAOIN SHRDLU CMFWYP VBGKQJ and XZ.



The AMECO K-4 key mounted on the UKB base plate from Milestone Technologies.

As readers of Edgar Allen Poe know, this was also the basis for one of his more popular detective short stories, *The Gold Bug*, which was published in 1843. In that story, Poe was able to break a simple substitution code, a cipher, by determining the frequency of coded letters in the message and comparing this to the ETAOIN frequency order of letters in common English texts. This was also the approach Friedrich Gerke used in 1848 when he developed the International Morse Code, which is the Morse Code version that has been used by radio operators since the beginning of radio. However, there is one last improvement in efficiency that can be made to reduce the number of elements from five to four that correspond to a letter. In using a binary assignment system, as represented by *dits* and *dahs* or 1s and 0s to correspond to the letters of the alphabet, the zeros to the left of the number were thrown away. The binary number two, for example, which is 10, could have also been written as 010 or even as 0010. Instead it was written as 10 and any zeros to the left of the 1 were not listed. If these other permutations were included, then really only 13 or so *dit-dah* letter permutations needed to be invented. The other 13 letters could simply be “reverse” *dit-dah* patterns of the first 13 letters.

Actually, what occurred is that 14 letters were assigned a specific *dit-dah* code pattern, and the remaining 12 letters were assigned the same code pattern, but in reverse. If an element was a *dit* in the first list of 14 letters, it became a *dah* in the reverse list.

Letter	Code	No. of Elements	Reverse Letter	Code
A	Dit dah	2	N	Dah dit
B	Dah dit dit dit	4	J	Dit dah dah dah
C	Dah dit dah dit	4	-	
D	Dah dit dit	3	W	Dit dah dah
E	Dit	1	T	Dah
F	Dit dit dah dit	4	Q	Dah dah dit dah
G	Dah dah dit	3	U	Dit dit dah
H	Dit dit dit dit	4	-	
I	Dit dit	2	M	Dah dah
K	Dah dit dah	3	R	Dit dah dit
L	Dit dah dit dit	4	Y	Dah dit dah dah
O	Dah dah dah	3	S	Dit dit dit
P	Dit dah dah dit	4	X	Dah dit dit dah
V	Dit dit dit dah	4	-	
Z	Dah dah dit dit	4	-	

Table 1. Morse Code Letters and Their Reverses

Letter	Code	No. of Elements	Sending Time Units*	Frequency in text
E	Dit	1	4	12.702%
T	Dah	1	6	9.056%
A	Dit dah	2	8	8.167%
O	Dah dah dah	3	14	7.507%
I	Dit dit	2	6	6.966%
N	Dah dit	2	8	6.749%
S	Dit dit dit	3	8	6.327%
H	Dit dit dit dit	4	10	6.094%
R	Dit dah dit	3	10	5.987%
D	Dah dit dit	3	10	4.253%
L	Dit dah dit dit	4	12	4.025%
C	Dah dit dah dit	4	14	2.782%
U	Dit dit dah	3	10	2.758%
M	Dah dah	2	10	2.406%
W	Dit dah dah	3	12	2.360%
F	Dit dit dah dit	4	12	2.228%
G	Dah dah dit	3	12	2.105%
Y	Dah dit dah dah	4	15	1.974%
P	Dit dah dah dit	4	14	1.929%
B	Dah dit dit dit	4	12	1.492%
V	Dit dit dit dah	4	12	0.978%
K	Dah dit dah	3	12	0.772%
J	Dit dah dah dah	4	16	0.153%
X	Dah dit dit dah	4	14	0.150%
Q	Dah dah dit dah	4	16	0.095%

*Note: dit =1, space = 1, dah = 3, space after letters = 3.

Table 2. Letter Frequency, Code Assignment, and Time to Send

Table 1 lists the 14 letters of the alphabet and their corresponding Morse Code *dit-dah* assignments, and the 12 letters of the alphabet that use reverse *dit-dah* assignments. There are two letters with just one element (the maximum number of permutations for one element), four letters with two elements (the maximum number of permutations for two elements), eight letters with three elements (the maximum), and twelve letters with four elements (the maximum is sixteen). Because not all the permutations of four elements needed to be used, four letters do not have reverses: H, V, C and Z. In those cases, the permutations with the most *dits* were chosen over those that had more dahs in them to minimize the time in sending a message.

By the way, this makes for an excellent bar bet with other hams: what letters of the International Morse Code do not have reverses? Another excellent bar bet is: *Who invented the International Morse Code?* It sounds like a variant of *Who's buried in Grant's tomb*, right? Be prepared to explain yourself when you tell people, no not Samuel Morse, it was Friedrich Gerke and Alfred Vail for American Morse.



ICOM IC-RX7

- ✓ Sale price
- ✓ Free Go Bag
- ✓ Free UPS shipping
- ✓ Free *Race Scanning* book

This is our **best deal** ever on a portable wideband receiver! The stylish **icom IC-RX7-05** receiver tunes from 150 kHz to 1300 MHz (less cellular and gaps), has 1650 memories, CTCSS/DTSC, backlit LCD, RF gain, attenuator and keypad. With Li-Ion battery, BC-149A charger and belt clip. List \$364.00
Regular price \$299.95 **SALE \$199.95**

Universal Radio
6830 Americana Pkwy.
Reynoldsburg, OH 43068
♦ Orders: 800 431-3939
♦ Info: 614 866-4267
www.universal-radio.com

By doing it this way, all twenty-six letters of the alphabet were assigned a *dit-dah* binary type code using no more than four elements. This beats the sequential binary numbering system, which required five elements.

Further, let's see how the arrangement of *dit-dah* assignments stacks up against the actual frequency of letters.

Table 2 shows: 1) the relative frequency of letters in English as determined by Cornell University after surveying 40,000 English words; 2) the corresponding International Morse Code assignment for each letter; 3) the number of elements in each letter; and 4) the relative sending time units for each letter.

So, how does it all work out? Checking Table 2, the letter E, as noted in the ETAOINSH list developed by typesetters in the 19th Century, is by far the most frequently used letter in the English lan-

guage at 12.702 percent, and also has the shortest sending time in the International Morse Code list, 4 units. One unit is for the E itself, and three more units are for the space that follows the E to separate it from the next letter.

The next most frequently used letter, T, has a frequency of 9.056 percent and a sending time of 6 units. The letter I also has six units of sending time, and I has a usage frequency of 6.966 percent.

The least used letter, Z, by the way, has a sending time of 14 units. The letters that take the most time to send, J and Q, which require 16 units of time to send, are also part of the small group of letters that are least used according to the Cornell study.

While Table 2 shows that the correspondence between low sending times for a letter to a high frequency of usage is not perfectly optimized according to the Cornell study, it is remarkably close.

Considering that the International Morse Code is also used for Spanish, French, German, and many other languages based on the Roman alphabet, and the variations of language usage even within English itself, the present correspondence between sending time and frequency of usage is excellent.

You know, the people who invented International Morse Code were pretty smart.

Upcoming CW Activities

You've waited all year for this, so get ready for **Straight Key Night**. SKN is, as always, a 24-hour good time for CW operators. It is not a contest, but more of a New Year's CW social event. It starts 0000 UTC on January 1, 2010, and runs until 2359 UTC (that's from 6 p.m. CST New Year's Eve to 5:59 p.m. January 1 for Midwesterners). The point is to use manual keys, bugs, or cooties to make CW contacts and enjoy yourself. All bands are fair game, but most QSOs will be on the HF bands. Since it is not a contest, you don't have to submit a log.

However, if you download and send in the SKN form at <<http://www.arrl.org/files/file/Contest%20Logs/sknform.pdf>>, you can vote for your most interesting QSO, vote for the best fist you heard, or tell about anything interesting that happened to you during SKN.

You can also include photographs, your list of contacts, or anything else you think was interesting. And, if you are new at CW, don't sweat it. There will be lots of people on the band just as slow as you are.

73 and HNY. See you on the left side of the bands.

And Check Out . . .

. . . the New Novice/Tech Activity Award sponsored by FISTS, the Morse Code Preservation Society. The award is open to Techs and Novices who work 25 CW contacts in the Novice/Tech sub-bands after May 18, 2009. You don't have to be a FISTS member to qualify for the award. For more information about this award, check out the following web address: <<http://www.fists.org/NTAward.html>>.

Similarly, if you are a General Class operator or higher, check out the second half of the Novice/Tech Activity Award. This second half is for General Class and higher who work Novices or Techs in the Novice/Tech CW sub-bands. Novice and Techs who are FISTS members are worth 2 points; non-FISTS members are worth 1 point.

Details are on the Web.



Ham Radio Insurance Associates

'Insurance for Hams by Hams'
Since 1994

1-800-545-8881

www.hamradioinsurance.com

VIS

invites you to visit us on the web
See all the places we have been
and the great products we stock.

CALL - 1-800-655-4267

VIS AMATEUR SUPPLY
P.O. Box 284
Coffeeville, AL 36524
<http://www.visradio.com>

CUSTOM TRANSFORMERS

Plate and Filament Transformers

- Hypersil or Grain Oriented DG Cores
- CM Chokes • Inductors • Toroidal Windings

Electronic Products Design, Inc.
919-365-9199 Fax 919-365-7005
www.epd-inc.com • sales@epd-inc.com
2231 Wendell Road, Wendell, NC 27591

COAX-SEAL
"The Original Connector Sealant"

MOISTURE PROOFS ALL COAX CONNECTORS
Universal Electronics, Inc.
4515 Little Savannah Rd • Cullowhee, NC 28723
(828) 293-2222 • FAX: (828) 293-2221
www.coaxseal.com

Licensed 1986 or Earlier?

QCWA invites you to join with those distinguished amateurs licensed 25 years or longer. Request an application from:

QCWA, Inc., Dept. WR
PO Box 3247
Framingham, MA 01705-3247
USA





Holiday Gift Ideas

2011/12 calendar from CQ 15-Month Calendar (January 2011 through March 2012)

CQ Amateur Radio Operators Calendar —brings you 15 spectacular images of some of the biggest, most photogenic shacks, antennas, scenics and personalities. These are the people you work, shacks you admire, and the antenna systems you dream about!

Order No. HRCAL **\$10.95**

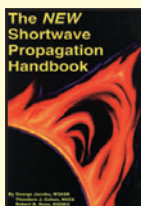


ONLY \$10.95

The NEW Shortwave Propagation Handbook

by W3ASK, N4XX & K6GKU

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



Order No. SWP **\$19.95**

Reflections III

by Walt Maxwell, W2DU

All the info in Reflections I and II and more! This completely revised and updated, 424-page 3rd edition is a must-have!

Here's a look inside:

Too Low an SWR Can Kill You
The View into the Conjugate Mirror
Using the Smith Chart
The Line Match Problem and much more!



NEW

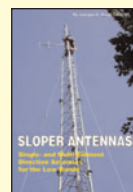
Order No. REFLEC **\$39.95**

Sloper Antennas

By Juergen A. Weigl, OE5CWL

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

With calculations and practical experience, this book shows which basic concepts have to be considered for sloper antennas for the low bands. These fundamentals are supplemented by construction guidelines for directive antennas using a single element or several elements. You'll find all the information needed for successful home building of the antennas.



Order No. Sloper **\$24.95**

cds Ham Radio Magazine on CD

Enjoy quick and easy access to every issue of this popular magazine, broken down by years!

ON SALE - only \$54.95 ea.

Three sets, each containing 4 CDs

1968-1976 Order No. HRCD1 **\$59.95**

1977-1983 Order No. HRCD2 **\$59.95**

1984-1990 Order No. HRCD3 **\$59.95**

Buy All 3 Sets and Save \$49.90!

Order No. HRCD Set

\$129.95 (Reg. \$149.95)



SPECIAL! Save \$50n each CD set

The Short Vertical Antenna and Ground Radial

by Sevvick, W2FMI

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



Order No. SVERT **\$10.00**

Understanding, Building & Using Baluns & Ununs

by Jerry Sevvick, W2FMI

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



Order No. 2BU **\$19.95**

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



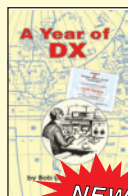
...more great gifts!



A Year of DX

by Bob Locher, W9KNI

Look over the shoulder as the author works country after country, in pursuit of the Holy Grail – winning the CQ DX Marathon.

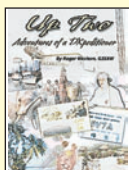


NEW!

Order No. YDX **\$19.95**

"Up Two" by G3SXW

Are you a DX'er? Have you longed to be on the other side of the pile-ups? Do you dream of taking a rig to exotic locations? If your answer to any of the above questions is yes, this book is certain to bring you the vicarious thrills of operating from exotic places.



Order: UPTWO **\$19.95**

The Complete DXer

Third Edition

The joy of the chase, the agony of defeat, the thrill of victory are the stuff of The Complete DXer, a book that is almost as seductive as the DX chase it describes. It excites, it entertains, it teaches!

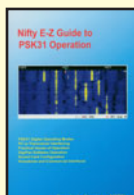


Order No. COMPDxer **\$19.95**

Nifty E-Z Guide to PSK31 Operation

A Complete PSK31 Operating Guide!

Using DigiPan software as a basis, a detailed step-by-step approach is used for configuring your interface hardware, software and computer system for PSK31 operation. Detailed instructions and computer screen shots are provided for several Windows operating systems.



Order No. NIFEZ **\$12.95**

Nifty E-Z Guide to D-STAR Operation

2nd Edition

A comprehensive guide to D-STAR operating! Ideal for those getting into D-STAR. Written for both the beginning and experienced D-STAR users. Straight forward and simple explanations.



Order No. NIFDS **\$13.95**

Collins Radio Repair & Tune-Up DVD Guides

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



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



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



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

2011 World Radio TV Hdbk

The most up-to-date info on mediumwave, shortwave, FM broadcasts and broadcasters. Articles of interest for listeners and dxers, reviews of the latest equipment, maps with SW transmitter sites and more.

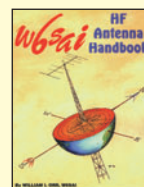


Order No. WRTH **\$35.00**

W6SAI HF Antenna Hdbk

By Bill Orr, W6SAI

Jam-packed with dozens of inexpensive, practical antenna projects.



Order No. W6SAI **\$19.95**



HR Anthologies

Sale!

~~\$19.95~~

Sale \$16 ea.

Buy all 4 for only \$60

Enjoy collections of the best material published in *Ham Radio* magazine, conveniently arranged by subject and original publication date. Choose your interest, your time period and choose your anthology!

Homebrewing Techniques Order # AHOM
Test Eqp't & Repair Techniques Order # ATEST
Antennas - 1968 - 1972 Order # ANTS1
Antennas - 1973 - 1975 Order # ANTS2
All 4 for \$60 Order # ASET

"Getting Started" DVD Paks

Our renowned "Getting Started" videos grouped together on DVDs!

On SALE!



CQ Ham Radio Welcome Pak

1 DVD contains 3 programs:

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

Order # HAMDVD ~~\$24.95~~ **\$16.00**

CQ HF Specialty Pak

1 DVD contains 2 programs:

Getting Started in DXing
Getting Started in Contesting

Order # HFDVD ~~\$24.95~~ **\$16.00**



CQ VHF Specialty Pak

1 DVD contains 3 programs:

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

Order # VHFVD ~~\$24.95~~ **\$16.00**



Buy any combination of DVDs and SAVE!

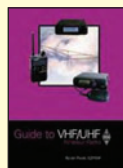
~~1 Pak for \$24.95 - \$16.00~~

~~2 Paks for \$49.95 - \$30.00~~

~~3 Paks for \$65.95 - \$42.00~~

Call 1-800-853-9797 or FAX your order to 516-681-2926
You can also order on our web site: www.cq-amateur-radio.com

RSGB Books



Guide to VHF/UHF Amateur Radio

By Ian Poole, G3YWX
112 pgs.

Everything you will need to help you enjoy VHF/UHF to the fullest. Choosing the right transmitter,

receiver, antenna, utilizing the correct part if each band and more!

Order No. RSGVUAR **\$16.00**



HF Antenna Collection

2002. 252 pages.

A collection of outstanding articles and short pieces which were published in *Radio Communication* magazine. Includes single- and multi-element, horizontal and vertical antennas, extremely small transmitting and receiving antennas, feeders, tuners and more!

Order: RSHFAC **\$33.00**



Morse Code for Radio Amateurs

by Roger Cooke, G3LDI

Fully revised and updated tenth edition shows how to learn Morse code and get the maximum enjoyment from using it. Includes a dual purpose CD (computer/audio) with nearly an hour of audio recordings of Morse code at 5, 10, 15, 20 and 25 words per minute

Order: RSMCRA **\$16.00**

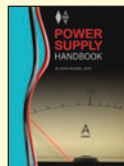
Microwave Projects 2

By Andy Barter, G8ATD

If you're interested in building equipment for the amateur radio microwave bands, the designs in this book are sure to please!



Order: RSPM2 **\$28.50**



Power Supply Handbook

By John Fielding, ZS5JF
288 pages

How power supplies work, selecting components, building and modifying supplies, measuring the finished supply, batteries, chargers, test equipment - it's all right here!

Order: RSPSH **\$28.50**

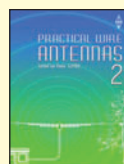
HF Antennas for Everyone

Edited by Giles Rad, G1MFG

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



Order: RSHFAE **\$27.95**



Practical Wire Antennas 2

By Ian Poole, G3YWX
176 pages

Significantly expanded and fully revised. Includes designs for a wide range of practical wire

antennas. Just about every type of wire antenna you could imagine with complete designs.

Order: RSPWA2 **\$23.50**

World at Their Fingertips

By John Clarricoats, G6CL

The story of amateur radio in the U.K. and a history of the Radio Society of Great Britain. Its pages and illustrations give an account of the development of a hobby that has provided technical knowledge and service to the community.

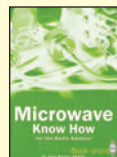


Order: RSWATF **\$16.00**

Microwave Know How for the Radio Amateur

Edited by Andy Barter, G8ATD

This 192-page compilation of articles aimed at those interested in building equipment for the microwave bands



Order: RSKH **\$25.00**

QRP Basics

By Rev. George Dobbs, G3RJV
208 pages

How to get the best results from a QRP station whether from home or outdoors. How to construct your own station, complete transmitters, receivers and some accessories. Includes toroidal coils, construction techniques and equipping a work station.

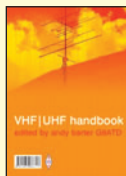


Order: RSQRPB **\$28.50**

VHF/UHF Handbook

Edited by Andy Barter, G8ATD
320 pages.

Guides you through the theory and practice of VHF/UHF operating and transmission lines. Includes information on getting started, antennas, constructing your own equipment, satellite ops, local nets and specialized modes.



Order: RXVUH **\$29.50**



Technical Topics Scrapbook 1995-1999

By Pat Hawker, G3VA
314 pages

This third compilation of 'Tech Topic' articles is a fascinating collection of circuit ideas, antenna lore, component news and scientific discussion, all at the most practical level

Order: RSTTC99 **\$27.50**



Digital Modes for All Occasions

By Murray Greenman, ZL1BPBU
208 pages

Simply the most "complete" book on digital modes available. Over 100 illustrations!

Order: RSDMFAC **\$28.50**

Technical Topics Scrapbook 1985-1989

By Pat Hawker, G3VA
346 pages

A collection of popular 'Technical Topics' published in RadCom. Info, ideas, mods and tips for amateurs!

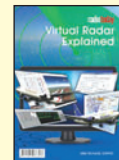


Order: RSTTC89 **\$18.00**

Virtual Radar Explained

By Mick Richards, G4WNC

The reception and plotting of ADS-B transmissions for aircraft. Great for aviation enthusiasts.



Order: RSVRE **\$16.95**

Shipping & Handling: U.S. - add \$7 for the first item, \$3.50 for the second and \$2 for each additional.

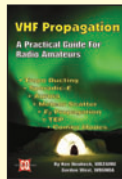
FREE shipping on orders over \$100 to one U.S. address. CN/MX - \$15 for 1st item, \$7 for 2nd and \$3 for each add'l. All Other Countries-\$25 for 1st item, \$10 for 2nd and \$5 for each add'l.

More great CQ books!

VHF Propagation

Practical Guide for Radio Amateurs
by WB2AMU & WB6NOA

Tropo Ducting, Sporadic-E, Auror, Meteor Scatter, F2 Propagation, TEP, Combo Modes - it's all right here!



Order No. VHFProp **\$15.95**

MIL SPEC Radio Gear

Korean to Present Day
by Mark Francis, KIØPF

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

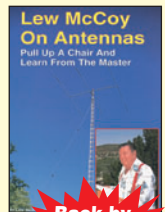


Order No. MILSPEC ~~\$27.95~~ **\$25**

McCoy on Antennas

by Lew McCoy, W1ICP

Unlike many technical publications, Lew presents his invaluable antenna information in a casual, non-intimidating way for anyone!



Order No. MCCOY **\$19.95**

Back by Popular Demand!

The Vertical Antenna Handbook

by Paul Lee, N6PL

Learn basic theory and practice of the vertical antenna. Discover easy-to-build construction projects.



Back by Popular Demand!

Order No. VAH **\$17.95**

The Quad Antenna

by Bob Haviland, W4MB

A comprehensive guide to the construction, design and performance of Quad Antennas.



Order QUAD **\$19.95**

33 Simple Weekend Projects

by Dave Ingram, K4TWJ

Do-it-yourself electronics projects from the most basic to the fairly sophisticated. Also, practical tips and techniques on creating your own projects.



Order No. 33PROJ **\$17.95**

magazines at holiday sale prices!

CQ Amateur Radio

CQ's editorial content is aimed squarely at the *active* ham. Within each issue, CQ's features and columns cover the broad and varied landscape of the amateur radio hobby from contesting and DXing to satellites and the latest digital modes. CQ includes equipment reviews, projects, articles on the science as well as the art of radio communication and much, much more.

Holiday Special! Domestic Rates: 1 year ~~\$38.95~~ **\$34.95** - 2 yrs ~~\$66.95~~ **\$62.95** - 3 yrs ~~\$96.95~~ **\$90.95**
Canada/Mexico: 1 year ~~\$49.95~~ **\$47.95** - 2 yrs ~~\$92.95~~ **\$88.95** - 3 yrs ~~\$135.95~~ **\$129.95**
Foreign: 1 year ~~\$61.95~~ **\$59.95** - 2 yrs ~~\$116.95~~ **\$112.95** - 3 yrs ~~\$171.95~~ **\$165.95**



Sale Ends 12/31/10

Popular Communications

The world's most authoritative monthly magazine for shortwave listening and scanner monitoring. Features scanner monitoring of police; fire, utility and aircraft communications; international shortwave listening; CB radio; amateur radio; FRS and more.

Holiday Special! Domestic Rates: 1 year ~~\$32.95~~ **\$30.95** - 2 years ~~\$58.95~~ **\$54.95** - 3 years ~~\$85.95~~ **\$79.95**
Canada/Mexico: 1 year ~~\$42.95~~ **\$40.95** - 2 years ~~\$78.95~~ **\$74.95** - 3 years ~~\$115.95~~ **\$109.95**
Foreign: 1 year ~~\$52.95~~ **\$50.95** - 2 years ~~\$98.95~~ **\$94.95** - 3 years ~~\$145.95~~ **\$139.95**

CQ VHF

The all-time favorite magazine for the VHF/UHF enthusiast is better than ever. This quarterly magazine focuses on Ham radio above 50 MHz. Regular columns include: Antennas, OpEd, Satellites, VHF Propagation, & FM.

Holiday Special! Domestic Rates: 1 year ~~\$26.00~~ **\$24.00** - 2 years ~~\$52.00~~ **\$48.00** - 3 years ~~\$78.00~~ **\$72.00**
Canada/Mexico: 1 year ~~\$36.00~~ **\$34.00** - 2 years ~~\$72.00~~ **\$68.00** - 3 years ~~\$108.00~~ **\$102.00**
Foreign: 1 year ~~\$39.00~~ **\$37.00** - 2 years ~~\$78.00~~ **\$74.00** - 3 years ~~\$117.00~~ **\$111.00**

Call 1-800-853-9797 or FAX your orders to 516-681-2926
You can also order on our web site: www.cq-amateur-radio.com



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

w/i = walk-in only

p/r = pre-registration only-no w/i

w/i pref. = w/i preferred to p/r

CITY	DATE	CONTACT	NOTES	CITY	DATE	CONTACT	NOTES
ARIZONA				NEVADA			
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		NEW JERSEY			
ARKANSAS				Roselle	4th Sat	Gerry, AA2ZJ, 732-283-2795, aa2zj@arrl.net	
Sherwood	1st Sat	Daryl Stout, AE5WX, 501-681-1551, ae5wx@arrl.net	p/r pref.	Winslow	4th Tues	Mark, K2AX, 609-820-1523, JTRA@comcast.net	
Harrison	2nd Sat	Bob, AJ5C, 870-365-3871, aj5c@cox.net		NEW YORK			
CALIFORNIA				Bethpage	2nd Tues	Bob, 631-499-2214, w2ilp@optonline.net	p/r
Highland	12/18	Ed, WU6I, 909-864-0155, wu6i@arrl.net	p/r pref.	Canandaigua	1st Wed	Squaw Island ARC, David A. Foster, 585-398-0216, D1161F@aol.com	w/i
LaVerne	Last Sat	Frank, K6FW, 909-628-8661, k6fw@arrl.net	p/r	Canandaigua	1st Wed	David Foster, 585-398-0216, www.siarc.us	w/i
Long Beach	3rd Sat	Louise, N6ELK, 562-429-1355	p/r	Valhalla	12/9	Stanley, WA2NRV, wa2nrv@weca.org	
Manteca/Tracy	4th Sat	David, N5FDL, 209-835-6893, n5fdl@arrl.net	p/r	Yonkers	Call	Paul, AC2T, 914-237-5589, w2yrc@hotmail.com, www.yarc.org	w/i ok
Redwood City	Call	Al, WB6IMX@arrl.net, www.amateur-radio.org	w/i	NORTH CAROLINA			
Sacramento	Hotline!	916-492-6115, n6na@arrl.org		Fayetteville	Call	Patricia Edwards, N4UGH, n4ughpat@aol.com, 910-584-1801	w/i
Santa Rosa	Hotline!	Hotline-Recording 707-579-9608	w/i ok	OHIO			
Sebastopol	Hotline!	Recording 707-579-9608		Cincinnati	1st Sat	Dale, KC8HJL, 513-769-0789	p/r pref
Sunnyvale	Visit Site	Gordon, W6NW, Sv@amateur-radio.org, www.amateur-radio.org	w/i	Sandusky	Call	Luther, N8HC, 419-684-7864, n8hc@arrl.net	p/r
COLORADO				OREGON			
Englewood	1st Sat	Dave, N0HEQ, 303-795-5718, n0heq@arrl.net, Commerical Exams also	p/r pref	Astoria	Call	AA7OA, 503-338-3333	p/r
FLORIDA				Bend	Weds	Joe, K7SQ, 541-385-3152	p/r
Longwood	4th Sat	James, N4ZKT, 407-333-4245		Lincoln City	1st Sat	Carl, w7li@arrl.net, 503-965-7575	w/i ok
Melbourne	1st Sat	John, AA8IS@earthlink.net, 321-412-2779	w/i ok	McMinnville	Call	Mark, AC7ZQ, 503-843-3580	w/i only
North Port	Call	Bill Norris, KC7TSG, 941-426-0214	w/i pref.	Sisters	Call	Dave, N7TYO, 541-549-7831	p/r
St. Pete	Call	Mark, NP3R, 727-528-0071	w/i pref.	Tigard	Call	John, KS0F, 503-626-7399	p/r
Sanford	4th Sat	James, N4ZKT, 407-333-4245, n4zkt@bellsouth.net		PENNSYLVANIA			
HAWAII				Erie	3rd Sat	Ron, KB3QBB, 814-833-6829, kb3qbb@arrl.com, www.wattsburg-wireless.us	p/r
Oahu Is.	Call	Lee, KH6BZF, 808-247-0587	p/r	Lebanon	3rd Sat	Wa3gpm@arrl.net	
IOWA				PUERTO RICO			
Ames	Call	George, NP2N, georgeoster@msn.com	w/i ok	San Juan	Last Sat	Hotline: 787-789-4998, prarl@prarl.org	w/i
Vinton	3rd Tues	Kenneth, N0EGV, 319-223-5739, n0egv@southslope.net	w/i ok	SOUTH CAROLINA			
ILLINOIS				Charleston	3rd Wed	Robert Johnson, ae4rj@amsat.org; www.qsl.net/wa4usn/	w/i
Bolingbrook	3rd Sat	Dale, W9KHX, 815-723-3332	w/i ok	Charleston	2nd Sat	Riley Stone, 843-832-9105, k4hy@sc.rr.com	w/i
Burr Ridge	Any Day	Argonne ARC, W9DS, 630-986-0061	p/r	VIRGINIA			
Lake in Hills	4th Sat	Jeffrey Dubin, N9MXT, 847-815-9407		Alexandria	2nd Sat	John, WZ4A, 703-971-3905, wz4a@arrl.net	w/i
Roselle	2nd Tues	Sam, W9SFB, 630-894-0708, w9sfb@aol.com	p/r	Stafford	Sat	Bart, N3GQ, 540-373-4506, n3gq@arrl.net, www.qsl.net/semcomm	p/r
INDIANA				WASHINGTON			
Richmond	Call	Mike, 765-439-4230, w1idx@arrl.net	w/i	Tacoma	2nd Tues	Radio Club of Tacoma, 253-759-2040, www.w7dk.org	
South Bend	3rd Mon	Alan, NY9A, 574-232-6883	p/r	Vancouver	Hotline!	CCARC, 360-896-8909	p/r
MASSACHUSETTS				Vancouver	Call	Vancouver ARC-Clark County, 360-892-5580 C. Wayne Schuler, AI9Q ai9q@arrl.net	w/i ok
Brookline	12/13	Jim, N1ICN, 617-364-4658, n1icn@arrl.net	p/r	WEST VIRGINIA			
MICHIGAN				Parkersburg	2nd Mon	Dana Pickens, WV8G, 304-422-6101	w/i, p/r
Garden City	Call	KenWardell, AB8ZD, 734-421-7730, gsnaps@att.net	w/i ok	WISCONSIN			
Oak Park	1st Tues	D. Flint at 248-981-8145		Racine	1st Sat	Robert, W0WLN, 262-886-8551	w/i pref.
MINNESOTA							
Apple Valley	2nd Thur	Jim, N0OA, 612-384-7709, N0OA@arrl.net	p/r pref.				
MISSISSIPPI							
Gulfport	1st Sat	Harrison Cty., Clay, W5ACS 228-863-2042 w5acs@arrl.net	w/i ok				

Add your local VE Exam information to this FREE monthly listing!
Click here for posting information.



Satellite Presentations Are As Close As Your Computer

By Terry Douds, N8KI

At this writing, it's just a few days until the annual AMSAT-NA Space Symposium, held in Chicago this year.

At the end of July, though, our friends at AMSAT-UK had their annual Colloquium, the 25th this year, at the Holiday Inn in Guildford, Surrey, about 30 miles southwest of London. It is always a popular event and videos of the presentations are now available on the Web. You can view and download them at: <http://www.batc.tv/>. Click on the *Film Archive* icon and then select a 2010 AMSAT video from the pull-down menu on the left.

Their audio and video quality is excellent and I believe you will find them very interesting.

While we are discussing videos, **Drew Glassbrenner, KO4MA**, has posted a short video illustrating the differences in received performance when your portable FM satellite antenna can be twisted to track downlink polarity. The video was recorded at the tail end of an AO-51 pass, with the satellite below 10 degrees elevation.

The downlink is received with the UHF half of an Arrow, 10 feet of high quality coax, and a Yaesu FT-817. Watch the video at: <http://www.youtube.com/watch?v=XTqjO9xIQQE>.

This Just In . . .

In new satellite news, a team from the Department of Aeronautics and Astronautics and the Department of Electrical Engineering at the National Cheng Kung University in Taiwan has announced a 2X CubeSat development project named PACEsat, or *Platform for Attitude Control Experiment*.

This cubesat will feature three-axis stabilization utilizing a miniature momentum wheel and magnetic coils. Attitude determination will use a three-axis magnetometer, a three-axis gyro, and coarse sun sensors. Temperature sensors will monitor the thermal environment inside the satellite.



KO4MA, Drew Glassbrenner, has posted a short You Tube video illustrating the differences in received performance when your portable FM satellite antenna can be twisted to track downlink polarity. (Screen grab from You Tube)

Frequencies discussed in the satellite design documentation include 145 MHz for uplink and downlink communication and 433 MHz for CW and/or AX.25.

The satellite was designed for a 600 kilometer near-circular orbit with a 98 degree inclination. Mission lifetime is planned to be two months, but the documentation states that it should last for six months or more. A stable attitude determination and attitude control system is a prerequisite for future CubeSat missions which will include propulsion systems to attain higher orbits. Technical details can be found on-line at: <http://www.iaalab.ncku.edu.tw/pace/>.

It is interesting that this new CubeSat project is starting just as NASA said at the end of July that the space agency anticipates launch opportunities for a limited number of CubeSats. They may be available on launches currently planned for 2011 and 2012. These launch opportunities would constitute a pilot project intended to demonstrate viable launch opportunities for CubeSat payloads as auxiliary payloads on planned missions. The full announcement was published on-line: <http://www.nasa.gov/pdf/430539>

[main CubeSat Launch Initiative Announcement 7 30 2010.pdf](#) >.

An earlier NASA announcement didn't generate enough proposals to fill the launch opportunities. NASA noted that, "If there is adequate response from the CubeSat projects, the initiative could be continued on future flight opportunities."

Successful CubeSat proposal teams will be required to enter in a collaborative Agreement to support the pilot project. NASA will provide integration and other services as necessary to complete the launch activity. Participation in the pilot program will be contingent upon selection by NASA and negotiation of an appropriate agreement between NASA and the collaborator. Collaborators may be required to provide partial reimbursement of the launch and integration costs of up to \$30,000 per 1U Cube associated with their participation in the pilot project, so it isn't a free ride, but it does accommodate a launch, which is not a guarantee anymore.

NASA selected AubieSat-1, a small satellite built by Auburn University students, as one of the CubeSats to be launched onboard a NASA rocket.

AubieSat-1 is an aluminum-alloy cube with four-inch sides weighing about 2.2 pounds. It is custom built by the Auburn students. The data collected by the satellite will be transmitted to the ground station in the university's Physics Department for analysis. The science mission is to measure gamma rays produced by high-altitude thunderstorms. In fall 2010 and spring 2011, AubieSat-1 will be tested at the NASA Kennedy Space Center for launch.

To help speed-up the CubeSat design process, Clyde Space published its full User Manuals online. They can be downloaded from: http://www.clyde-space.com/news/282_cubesat-user-manuals-now-online.

Clyde Space now has its own YouTube channel for videos showing hardware tests, presentations and general goings on. Check it out at: <http://www.youtube.com/user/ClydeSpace>.

But wait . . .

There's even more on CubeSats! Two videos on YouTube show the concept for a CubeSat propulsion system using plasma electrolysis of water. This prototype shows that thrust can be produced by plasma electrolysis – it *burns water*, so to speak. See: <http://tinyurl.com/2csky34>.

Another satellite design that is being looked at very extensively is the CanSat. A story appearing at *SpaceMart.com* section of *SpaceDaily.com* on August 27 described the success of the first European Space Agency CanSat competition.

High school students from different European Space Agency (ESA) member states were able to watch their own "satellites" soar into the sky aboard suborbital rockets during the first European CanSat competition, held at the Andoya Rocket Range in Norway.

The CanSat competition, organized by ESA's Education Office and the Norwegian Centre for Space-related Education (NAROM), was open to teams of at least four students, assisted by a teacher or tutor.

The selected teams had to build their own small CanSat "satellite" in six months, with each team developing an experiment that would fit inside a 350 milliliter soft drink can. These investigations ranged from calculating variations in Earth's magnetic field and tracking the Sun, to measuring solar radiation and levels of carbon dioxide.

CanSats offer opportunities for students to experience their first real space-related project. The participating countries in the first competition were Belgium, Czech Republic, Denmark, Greece, Italy, Ireland, Norway, Spain, Sweden and United Kingdom.

August 17 was a banner day when students were able to watch five Intruder rockets launch their CanSats from Skarsteindalen, a former military facility close to Andoya Rocket Range. The mini-payloads soared to an altitude of 1 kilometer before parachuting back to Earth, according to a report on Cansats In Europe http://www.esa.int/SPECIALS/CanSat/SEMIK98OTCG_0.html.

The European CanSat competition is one of many ESA hands-on initiatives to inspire young people to follow a career in science or engineering. In this way, it is hoped to guarantee the availability of a highly qualified work force in the space industry of the future. This is a great concept that some people in the States might want to take note!

All Aboard . . .

ARISSat-1 has been manifested to go to the ISS on Progress 41P in January 2011. Four satellites have been assembled in

Orlando, and two of them will be sent to Russia for more preparation before sending them on to Baikonur for launch to the ISS. Release into orbit will be done by the ISS personnel.

As always, the ISS is in the news. The ISS crew activated the MAI (Moscow Aviation Institute) SSTV Experiment aboard the Station on September 14. Robert, G8ATE reported receiving 4 good images from the ISS on the 1232UTC and 1406UTC passes before they switched back to packet operation. For more information, see: <http://ariss-sstv.blogspot.com/> Images have been archived here: <http://www.amsat.org/amsat/ariss/SSTV/>.

If you would like to have the opportunity to receive some of this yourself, try using MMSSTV, an easy-to-use SSTV program for your PC which will allow you to receive and decode the SSTV signals from the ISS.

Makoto Mori, JE3HHT, has released version 1.12. of MMSSTV and it can be downloaded at: <http://mmhamsoft.amateur-radio.ca/pages/mmsstv.php>.

Catching Up With ARISS

Many ARISS contacts have occurred in the past two months, including QSOs with Florida, New York, Utah and Virginia in the U.S., and around the world in Australia, Italy, Norway, Japan and Taiwan. Remember, the ARISS program is international and it brings a great deal of good will to people around the world.

That's A Wrap: Season's Greetings!

Happy Holidays! And I hope that new antennas are tweaked and ready to go. I look forward to hearing you soon on the birds!

EAGLE ONE VERTICAL ANTENNAS

- ★ Home & Portable Operation
- ★ Roof-Ground-Mobile Mounts
- ★ 160 Through 6 Meters
- ★ Restricted Area
- ★ American Made



w8afx.com

S&G Engineering
Proctorville, OH • 740-886-6077
w8afxw8gms@yahoo.com



A Novel Approach to Long Distance T-FR Signal Monitoring – From Your Computer

By Richard Fisher, KI6SN

Knowing the efficiency and quality of radio gear and antennas *before* heading into the field can be a pretty good thing for a lot of reasons.

After you've trudged miles up a trail and gone through the motions of antenna launching and gear set-up, it's no fun to learn you're not getting out as expected or that your radio's signal is a candidate for an Official Observer Report or FCC citation.

While radio bench test gear and in-shack monitoring can give us a good picture, we've found there's no substitute for putting the radio and antenna on the air – just as they would be in the field – and listening to our signal from a long distance. *But how?*

Thanks to the Internet and a growing number of innovative radio amateurs, it's possible to connect to far-flung remotely-based receivers using a home or laptop computer to listen for your signal as received in *their* location – a great tool for testing the mettle of a trail-friendly radio and its skywire; for comparing antennas, and so on.

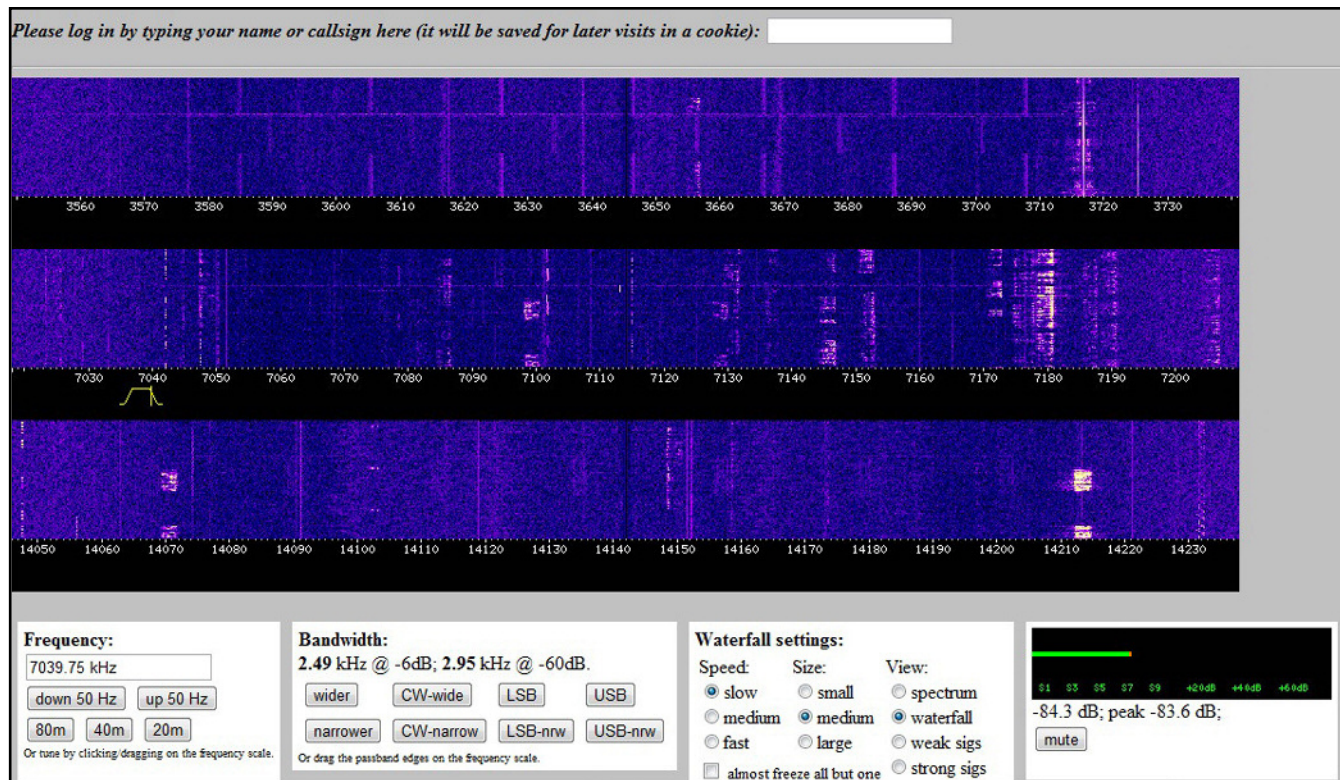
Of course, knowing where these Web-based receivers are located is a big factor in choosing which T-FR gear, antenna and bands to use. Factoring all the elements will help you establish reasonable expectations based on current band conditions.

Perhaps the best part, though, is you get to hear your T-FR signal as other radio amateurs do – hundreds or even thousands of miles away. *How cool is that?*

The number of readily accessible Web-based receivers is growing all the time. Here are a couple to whet your appetite.

On the Eastside

For listening east of the Rockies, we use WebSDR de WB4MAK based in Atlanta, Georgia: <http://bit.ly/bSRNqA>. This software defined receiver (SDR) covers approximately 3.560 to 3.730 in the 80-meter band, 7.030 to 7.200 MHz on 40 meters, and 14.050 to 14.230 on 20. Simply click and drag the



Located in Atlanta, Georgia, the WebSDR de WB4MAK Web-based receiver is ideal for listening to trail-friendly radio signals as received in the eastern United States. (WebSDR de WB4MAK Internet screen grab)

management from any WiFi device.
www.redingtoncounters.

RF Signal Generator
Low-Cost Test Solution for RF Device Manufacturers.
Get A Quote
Averna.com/URT_Sign

DST TruComm Probes
Data Sourcing Technologies, Inc.
Your one source for optical probes!
www.datasourcingtech.c

Homes for sale in salt lake city
Easy Search: UT Homes for Sale. See 4.4M Photos. No Hidden Addresses!
ZipRealty.com/Salt_Lai

Ads by Google

Utah Foreclosure Expert

Frequency 3995 kHz MHz
Fine Tune 0 Hertz
Mode
☐ AM (6 kHz)
☒ LSB (2.4 kHz)
☐ USB (2.4 kHz)
☐ CW (2.4 kHz)
☐ FSK (2.4 kHz)
☐ FM (12 kHz)
[Read This](#) [Submit Change](#)

U.S. 75-Meter Amateur Radio and International Broadcast Bands

270' 9" Delta Loop 60' above mountainside that slopes downward 20 degrees to the West

3995 kHz LSB

Salt Lake City, Utah
 Recorded DX
 Dallas, Texas
 AM Replay
 Swap Net Replay
 Pahump, Nevada
 NASA TV Viewer
 Antenna Design
 Feeds & Matching
 Ground Systems
 Amplifier Design
 Filters
 Gen. Electronics
 Propagation
 RF Spectrum
 Stations
 Statistics
 Radio Astronomy
 Extraterrestrial
 Aurora Photos
 Global Weather
 Your Website
 Facts of the Day
 FCC
 Other Resources

Last Change 13:04:24 UTC

The Salt Lake Remote S-Meter in Utah features a remotely-controlled Kenwood R-5000 receiver located 13-miles north of Salt Lake City. .
(Salt Lake Remote S-Meter Internet screen grab)

dial marker to listen to any frequency in those ranges – either CW or SSB (lower or upper sideband selectable). There is also user-adjustable filtering so you can narrow or widen the receiver's bandwidth for best listening. Fine-tuning is accomplished with *down 50 Hz* and *up 50 Hz* buttons.

Up to 40 listeners can use the receiver simultaneously and there's even a chat box for users to comment and respond to what they're hearing.

Another great feature from WB4MAK is a constantly-running *waterfall* that gives a visual reference to the location of signals on the bands (*a la* PSK-31). *Waterfall* settings are also user-adjustable.

Operation of the receiver is pretty intuitive, so you'll be tuning around the bands in no time. There's a slight delay between real-time signals and those rebroadcast on the Internet.

Listening to your own fist or voice can be kind of spooky at first. But you'll get used to it when you appreciate the value of having such long-distance receive capability.

On the Westside

For listening west of the Rockies we use the Salt Lake Remote S-Meter <<http://bit.ly/1a8H2g>> based in Utah. It's a little fussy as to which Web browser it will accept, so we recommend going

straight to Internet Explorer – that works just fine.

You'll be "using" a remotely-controlled Kenwood R-5000 receiver located 13-miles north of Salt Lake City.

This receiver protocol is a little different than Atlanta's. Everyone listening to the Salt Lake Remote S-Meter is hearing the same frequency, requiring a lot of cooperation among users.

"The receiver is a shared asset," the Web site points out. "There are multiple simultaneous listeners more often than not. What would be the reaction if you walked into a room where several people were listening to something on a radio and you suddenly tuned it to a different frequency . . .?" You don't want to *go there*.

People who abuse their listening privilege by inconsiderately changing fre-

The NorCal40A Transceiver Kit

Sure, there are a few 40 meter cw kits out there to choose from. But the NorCal 40A stands apart from the rest with a unique combination of custom features and big-rig performance.

Open up most QRP rigs and you'll find a rat's nest of wires. Open up a '40A-a snap with our quick-release latches-and you'll find clean, no-wires construction that's worth showing off! Performance is equally impressive: of several popular QRP rigs, the '40A posted the best receiver sensitivity (-137dBm; see June '96 *QST*). With its fast QSK, 2W output, RIT, crystal filter and ultra-stable VFO, the '40A is a joy to operate.



Wilderness Radio

P.O. Box 3422, Joplin, MO 64803-3422 (417) 782-1397
<http://www.fix.net/~jparker/wild.html>



Add your own accessories, or outfit your NorCal 40A as pictured above with the legendary **KCI Keyer and Morseoutput Frequency Counter**. The KCI is so small it'll fit into any rig, but it's a perfect match for the '40A. The KCI's message memory and Iambic A and B modes provide operating flexibility. Running from batteries? The '40A and KCI together draw only 20mA on receive! Please call or write for more details.

NorCal40A	\$145
KCI	\$ 45
(shipping additional)	

quencies may find themselves blocked from the site. Our best advice is to monitor the Salt Lake Remote S-Meter site for an extended period before using it for your own tests. You'll see and hear how it works when cooperative users are on board.

Then, be sure to study the listener rules. Near the upper left of the home page there's a button labeled *Submit Change* beneath a list of selectable listening modes. To the left of that button is a link called *Read This*. Click it and you'll find everything you need to know about proper protocol and cooperative operation of the receiver.

It's a fabulous Web-based receiver Internet site with lots of links to other interesting content.

What's Your Favorite?

The growth in population of remote receivers is a real boon to trail-friendly radio enthusiasts. If there's one or more you particularly like, please let us know and we'll feature them in a future Trail-Friendly Radio column. Write: KI6SN@aol.com.

Ice Axe CW Paddle Base On a 'Lean Summit'

Bruce Prior, N7RR, whose fascinating piece on the virtues of single-lever CW paddling appeared in November's *WRO*, writes from Blaine, Washington that he is "currently using the fine-quality American Morse Equipment Mini-B single-lever paddle for backcountry sending <<http://bit.ly/b6oWb2>>."

"An accessory for the Mini-B and other AME paddles is the Qwikmount plate < <http://bit.ly/9uW57o> >, with 3M/Scotch Dual Lock™ on its bottom < <http://bit.ly/cNoRUe> >, he said..

"I've now attached some Dual Lock™ to the two flatter sides of the shaft of my titanium ice axe, a bit above the balance point when holding the axe by its shaft. On my axe, that's about 18 cm (7.09-inches) below the ice axe head – a part of the shaft that is relatively unexposed to ice and snow contact while self-arresting, step chopping or during a boot-axe belay operation.

"A convenient way of using the ice axe as a paddle base is to leave the ice axe attached to my backpack with its spike extending above the top of the pack when the pack is worn. I simply set the pack down on its shoulder straps, attach the Mini-B paddle to the Dual Lock™ on the ice axe and paddle away.

"The same method could be used with any key sporting a flat base. Simply attach some Dual Lock™ to both the key base and the ice axe shaft. The standard adhesive that comes with Dual Lock™ isn't quite strong enough to be able to wrap the stiff Dual Lock™ segment around the slightly-curved ice axe shaft surface, so I've employed some Gorilla Glue <<http://bit.ly/BDu3g>>.

"I secured the Dual Lock™ to the shaft with hefty rubber bands while the Gorilla Glue cured. I can't imagine a more solid base for Morse paddling. Whenever I can put one piece of outdoor gear to more than one use, I'm *in Fat City*, errrr . . . on *Lean Summit!*"



By mounting an American Morse Equipment Mini-B single-lever CW paddle to the handle of his titanium ice axe, expert outdoorsman Bruce Prior, N7RR, has a rugged and stable paddle base when he's pounding CW in mountainous terrain. (Courtesy of K7MWP)



The magazine for the VHF/UHF Enthusiast



Within the pages of *CQ VHF* you'll find more meaty reading aimed at the really serious VHFer. That's what our surveys told us you wanted and that's what we deliver!

By taking advantage of our Holiday Subscription Specials you'll save money and have *CQ VHF* delivered right to your mailbox. Only \$24 for four information-packed quarterly issues. Or better yet, enter a two or three

Holiday Specials!

1 yr \$24. • 2 yrs \$48. • 3 yrs \$72.

Canada/Mexico - 1 year \$34, 2 years \$68, 3 years \$102

Foreign 1 year \$37, 2 years \$74, 3 years \$111

Payable in U.S. dollars

CQ VHF

25 Newbridge Road Hicksville, NY 11801

www.cq-vhf.com • Call Toll-Free: 800-853-9797



CONTEST CORNER

CONTEST: ARRL 160M

DATE & TIME: 2200Z 3 Dec - 1600Z 5 Dec

BANDS/MODE: 160M CW

POINTS: 2 Pts. W/VE QSO's; 5 Pts. DX

MULTIPLIERS: ARRL/RAC sections + Northern Territory (VY1, VYØ) + DXCC countries

EXCHANGE: RST + ARRL/RAC section; DX gives RST; Aeronautical or Maritime Mobiles give ITU region

ENTRY CATEGORIES: Single Op, QRP, Low, High; Multi Op, Single XMTR

ENTRIES: 4 Jan. ARRL 160M Contest 225 Main Street Newington, CT 06111 Cabrillo logs (preferred) to: 160meter@arrl.org
Rules at: www.arrl.org/160-meter

CONTEST: TARA RTTY Melee

DATE & TIME: 0000-2359Z 4 Dec

BANDS/MODE: 160-10M RTTY

POINTS: 1 Pt. per QSO

MULTIPLIERS: States/Provinces/Countries

EXCHANGE: RS + State/Province/Country (DX gives serial #)

ENTRY CATEGORIES: Single Op - All Bands high or low (<150W); Multi Op - All Bands, High or Low

ENTRIES: 1 Jan. by online submission only at: <http://www.n2ty.org/>
Rules at: <http://www.n2ty.org/>

CONTEST: ARRL 10M

DATE & TIME: 0000Z 11 Dec - 2359Z 12 Dec

BANDS/MODE: 10M CW/SSB

POINTS: 2 Pts. SSB; 4 Pts. CW

MULTIPLIERS: States + DC/Canada/Mexico States/DXCC countries + ITU regions (Maritime Mobiles QSO's only)

EXCHANGE: W/VE sta's give RS(T) + QTH; Mexico sta's give RS(T) + State; DX gives RS(T) + serial #; Maritime Mobiles give RS(T) + ITU region

ENTRY CATEGORIES: Single Op - QRP; Single Op - Mixed; Single Op - SSB; Single Op - CW (Specify high or low power for all categories except QRP)

ENTRIES: 13 Jan. ARRL 10M Contest 225 Main St., Newington, CT 06111 E-mail: Cabrillo (preferred) logs to: 10meter@arrl.org
Rules at: www.arrl.org/10-meter

CONTEST: MDXA Death Match Digital Duel

DATE & TIME: 0000Z 11 Dec - 2359Z 12 Dec

BANDS/MODE: 160-6M PSK31/63

POINTS: 1 Pt. per QSO 80-10M; 2 Pts. 160 and 6M QSO's

MULTIPLIERS: States/Provinces/DXCC countries, once per band and per mode

EXCHANGE: Name + State/Province/Country

ENTRY CATEGORIES: Single Op - Single XMTR only!

Class 1 = 50-75W; Class 2 = 25-50W; Class 3 = <5W

ENTRIES: 30 Days by e-mail only to: chucklem@comcast.net
Rules at: <http://www.mdxa1.org/deathmatch.html>

CONTEST: SKCC Weekend Sprint-a-thon

DATE & TIME: 0000-2359Z 12 Dec

BANDS/MODE: 160-10M CW

POINTS: 1 pt. per QSO, per band

MULTIPLIERS: States/Provinces/Countries

EXCHANGE: RST + QTH + Name + SKCC # (Non-members give "NR NONE")

ENTRY CATEGORIES: Single Op

ENTRIES: 6 days!

Online submission only at: www.skccgroup.com/sprint/wes/wes-submit.html
Rules at: <http://www.skccgroup.com/sprint/wes/#RULES>

CONTEST: NAQCC Sprint

DATE & TIME: 0130-0330Z 15 Dec

BANDS/MODE: 80/40/20M CW

POINTS: 1 Pt. non-member QSO; 2 Pts. member QSO

MULTIPLIERS: States/Provinces/Countries

EXCHANGE: RST + State/Province/Country + Member # (non-members give power)

ENTRY CATEGORIES: SWA = Simple Wire Antenna(s); Gain = Gain antenna(s)

ENTRIES: 4 Days! John Shannon, K3WVP 478 E. High St., Kittanning, PA 16201 Log submission online at: <http://naqcc.n4lcd.com/sprintlog.html>
E-mail: naqcc33@windstream.net
Rules at: http://home.windstream.net/yoel/sprint_rules.html

CONTEST: RAC Canada Winter

DATE & TIME: 0000Z - 2359Z 18 Dec

BANDS/MODE: 160-2M CW/Phone

POINTS: 2 Pts. non-VE QSO's; 10 Pts VE QSO's; 20 Pts. QSO with official RAC sta's (calls end in RAC)

MULTIPLIERS: Canadian Provinces (10) and Territories (3)

EXCHANGE: Canadian sta's give RS(T) + Province/Territory; All others give RS(T) + serial #

ENTRY CATEGORIES: Single Op - single band; Single Op - all bands; Single Op - Low (<100W); Single Op - QRP (<5W); Single Op All Bands, CW only; Single Op All Bands, Phone only; Multi - Op, Single XMTR, Low power (<100W); Multi Op, Single XMTR, High power (>100W); Multi Op, Multi XMTR

ENTRIES: 31 Jan RAC 720 Belfast Rd., Suite 217 Ottawa, Ontario K1G 0Z5 Canada

Rules and Cabrillo instructions at: www.rac.ca/en/rac/programmes/contests

CONTEST: OK DX RTTY Contest

DATE & TIME: 0000-2359Z 18 Dec

BANDS/MODE: 80-10M RTTY/Baudot

POINTS: 20/15/10M - 1 Pt. QSO own continent, 2 Pts other continents;

80 & 40M - 3 Pts. own continent, 6 Pts other continents

MULTIPLIERS: DXCC Countries and OK sta's each band

EXCHANGE: RST + CQ Zone

ENTRY CATEGORIES: Single Op, Single band; Single Op, All bands, Low (<100W); Single Op, All bands, High (>100W); Multi Op, All bands

ENTRIES: 15 Jan E-mail submission only of Cabrillo logs: okrty@crk.ca
Rules at: <http://www.crk.cz/ENG/DXCONTE>

CONTEST: Stew Perry Top Band Distance Challenge

DATE & TIME: 1500Z 18 Dec - 1500Z 19 Dec

BANDS/MODE: 160M CW

POINTS: 1 Pt. per QSO + 1 Pt. for every 500 Kilometers distance

MULTIPLIERS: 5-100W X1.5; <5W X3

EXCHANGE: Grid Square's (RST optional)

ENTRY CATEGORIES: Single op; Multi op - High, Low or QRP for both classes

ENTRIES: 31 Jan Boring ARC 15125 SE Bartell Rd., Boring, OR 97009
Mail submissions limited to logs with 50 or less QSO's)

Cabrillo logs to: tbd@contesting.com.

Rules at: <http://jzap.com/k7rat/stew.rules.txt>

CONTEST: Croatian CW contest

DATE & TIME: 1400Z 18 Dec - 1400Z 19 Dec

BANDS/MODE: 160-10M CW

POINTS: 1 Pt., own continent 20-10M; 2 Pts. own continent 160-40M; 3 Pts. other continents, 20-10M; 6 Pts., other continents 160-40M; 6 Pts. QSO with 9A sta's 20-10M; 10 Pts. QSO with 9A sta's 160-40M

MULTIPLIERS: DXCC + WAE per band

EXCHANGE: RST + Serial #

ENTRY CATEGORIES: Single Op, Single Band (High or Low <100W)); Sing Op, All Bands (High or Low); Multi Operator, All Bands, Single XMTR

ENTRIES: Deadline not given. Cabrillo logs to: 9acw@9acw.org
Rules at: [www.9acw.org/index.php?option=com_content&view=](http://www.9acw.org/index.php?option=com_content&view=article&id=47:rules-2010&catid=39:english&Itemid=66)

[article&id=47:rules-2010&catid=39:english&Itemid=66](http://www.9acw.org/index.php?option=com_content&view=article&id=47:rules-2010&catid=39:english&Itemid=66)

CONTEST: Run for the Bacon

DATE & TIME: 0100-0300Z 20 Dec

BANDS/MODE: 80-10M CW

POINTS: 1 Pt. non-member QSO; 3 Pts. FP member; 5 Pts. FP member different continent

MULTIPLIERS: States/Provinces/Countries

EXCHANGE: RST + State/Province/Country + FP #; (non-members give power)

ENTRY CATEGORIES: Single band; All band

ENTRIES: 7 Days Online only! Form at: www.fqqr.com/autolog.php

CONTEST: SKCC Straight Key Sprint

DATE & TIME: .0000-0200Z 22 Dec

BANDS/MODE: 160-6M CW

POINTS: 1 pt. per QSO, per band

MULTIPLIERS: States/Provinces/Countries

EXCHANGE: RST + QTH + Name + SKCC # (Non-members give power, i.e. 150W)

ENTRY CATEGORIES: Single Op

ENTRIES: 2 days!

Online submission only at: www.skccgroup.com/sprint/sks/sks-submit.html
Rules at: www.skccgroup.com/sprint/sks/#RULES

Click here for information on listing your contest in the next issue of WRO!

WorldRadio

Online MART

• Buy • Trade • Sell •

BEAM HEADINGS from your QTH to over 400 USA & Worldwide locations \$25.00. ENGINEERING SYSTEMS INC., P.O. Box 1934 Middleburg, VA 20118-1934; w4het@aol.com. xxx

CERTIFICATE FOR PROVEN TWO-WAY RADIO CONTACTS with amateurs in all 10 USA call areas. Award suitable to frame and proven achievements added on request. Send SASE to W6LS, 45527 3rd St. East, Lancaster, CA 93535-1802 to get data sheet. F00

WANTED FOR MUSEUM: PRE-1980 MICRO-COMPUTERS, also early-micro-computer journals, newsletters and advertising literature. KK4WW, P.O. Box 179, Floyd, VA 24091; 540/763-2321, 540/745-2322. F00X

SALE: CQ/HAM RADIO/QST/73 magazines and binders. SASE brings data sheet. W6DDB, 45527 Third Street East, Lancaster, CA 93535-1802. F00

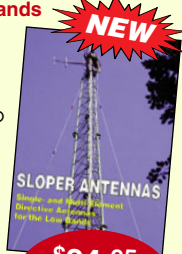
Click here to list your items!

SLOPER ANTENNAS

By Juergen A. Weigl, OE5CWL

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

With calculations and practical experience, this book shows which basic concepts have to be considered for sloper antennas for the low bands. These fundamentals are supplemented by construction guidelines for directive antennas using a single element or several elements. Previously, gathering all the necessary information to construct an effective sloper for a particular application was tedious and time consuming. You'll find all the information needed for successful home building of the antennas.



\$24.95

+ \$7 S&H

Some of the Topics: Vertical dipole and sloper in free space, over perfect or real ground - sloper with several elements - feeding sloper antennas - multi-band sloper - W3DZZ and double Zepp as a sloper antenna - multi-element sloper antennas for multi-band operation - special types of halfwave sloper antennas and much more!

CQ Communications, Inc.

25 Newbridge Rd, Hicksville, NY 11801

www.cq-amateur-radio.com

FAX us at 516 681-2926

Order today! 800-853-9797

ADVERTISERS' INDEX

10-10 International Net, Inc.	26	www.ten-ten.org & www.10-10.org
ASA, Inc.	21	www.waterprooflogbooks.com
Bilal Co./Isotron Antennas	39	www.isotronantennas.com
CQ Amateur Radio Magazine	31	www.cq-amateur-radio.com
CQ Books, CDs, DVDs	26, 43-46	www.cq-amateur-radio.com
CQ AR Ops Calendar	34	www.cq-amateur-radio.com
CQ VHF Magazine	52	www.cq-vhf.com
CW-Easy/Success-Easy	15	www.success-is-easy.com
Courage Handi-Ham System	21	www.handiham.org
DC Ace, Inc.	15	www.dcace.com
DX Engineering	17	www.dxengineering.com
DX Store	21	www.dxstore.com
Diamond Antenna	25	www.diamondantenna.net
Eagle One Antennas	49	www.w8afx.com
Electric Radio	26	www.ermag.com
Electronic Products Design, Inc.	42	www.epd-inc.com
Engineering Systems, Inc.	17	
FlexRadio Systems	13	www.flex-radio.com
Ham Radio Insurance Assoc.	42	www.hamradioinsurance.com
HamTestOnline	21	www.hamtestonline.com
ICOM America, Inc.	3	www.icomamerica.com
IIX Equipment Ltd.	21, 26	www.w9iix.com
J-ames Pole Antennas	21	www.jamespole.com
Kenwood U.S.A. Corporation	7	www.kenwoodusa.com
Mackey, James E.	17	www.net1plus.com/users/ryoung/index.htm
NiCd Lady, The	26	www.NiCdLady.com
Palomar Engineers	21	www.Palomar-Engineers.com
Penny's Stitch n' Print	26	www.pennystitch.com
Popular Communications	56	www.popular-communications.com
QCWA	42	www.qcwa.org
RF Parts Company	27	www.rfparts.com
RSGB Books	27, 45	www.cq-amateur-radio.com
SteppIR Antennas Inc.	5	www.steppir.com
TEN-TEC, Inc.	22	www.tentec.com
Timewave Technology Inc.	39	www.timewave.us
Uniden America Corporation	19	www.HomePatrol.com
Universal Electronics	42	www.coaxseal.com
Universal Radio, Inc.	41	www.universal-radio.com
VIS Amateur Supply	42	www.visradio.com
Vibroplex	15	www.vibroplex.com
W2IHY Technologies	15	www.w2ihy.com
W5YI Group	29	www.w5yi.org
WB0W, Inc.	33	www.wb0w.com
Wilderness Radio	51	www.fix.net/~jparker/wild.html
Wireman/Clear Signal Products	39	www.thewireman.com & www.coaxman.com
Yaesu	10, 11	www.vxstdusa.com

Advertise in the next issue of *WorldRadio Online!*

Click here for deadlines and contact info.



From Simple Wire Beams to Curtain Hanging

By Kurt N. Sterba

Back in the days before Hidetsugu Yagi and Shintaro Uda gave us our Yagi beam antennas, and Howard Morgan, in a 1940 article in *Electronics* magazine, the traps that allowed us to make our tribanders, beam antennas were made of wire instead of aluminum.

If they were big enough to give much gain, they were too big to be rotated unless you were Radio Netherlands. It had an enormous wire beam that was set on circular railroad tracks so it could be rotated.

The simplest wire beam is shown in Fig. 1. It looks just like a dipole fed with ladder line, except that each side of the antenna is a half-wave long instead of a quarter-wave in our usual half-wave dipole. The two half-waves are fed in phase.

This is not immediately apparent since the two sides of the ladder line that feeds the antenna are 180-degrees out of phase. But if the right-hand side of wire No. 1 is 0-degrees phase then by the time the current travels a half-wave to get to the other end of No. 1 (and get reflected) it has traveled 180-degrees. So the left side of No. 1 has the same phase as the left side of No. 2.

Also, the current flowing into No. 2 shifts 180-degrees by the time it reaches the other end. So the right-hand end of No. 2 has the same phase as the right-hand end of No. 1. The two wires are in phase and we have a *collinear* beam – collinear because the wires are all in a line.

The pattern is the same as that of a dipole: Radiation is at right angles to the wire in all directions – up, down, forward and backward.

The gain? It is 1.6-dB. *Not much.* (All gains in Kurt's article are dBd, gain over a dipole.)

The Broadside Beam

To get more gain we can put another collinear element a half-wave above the first one as in Fig. 2.

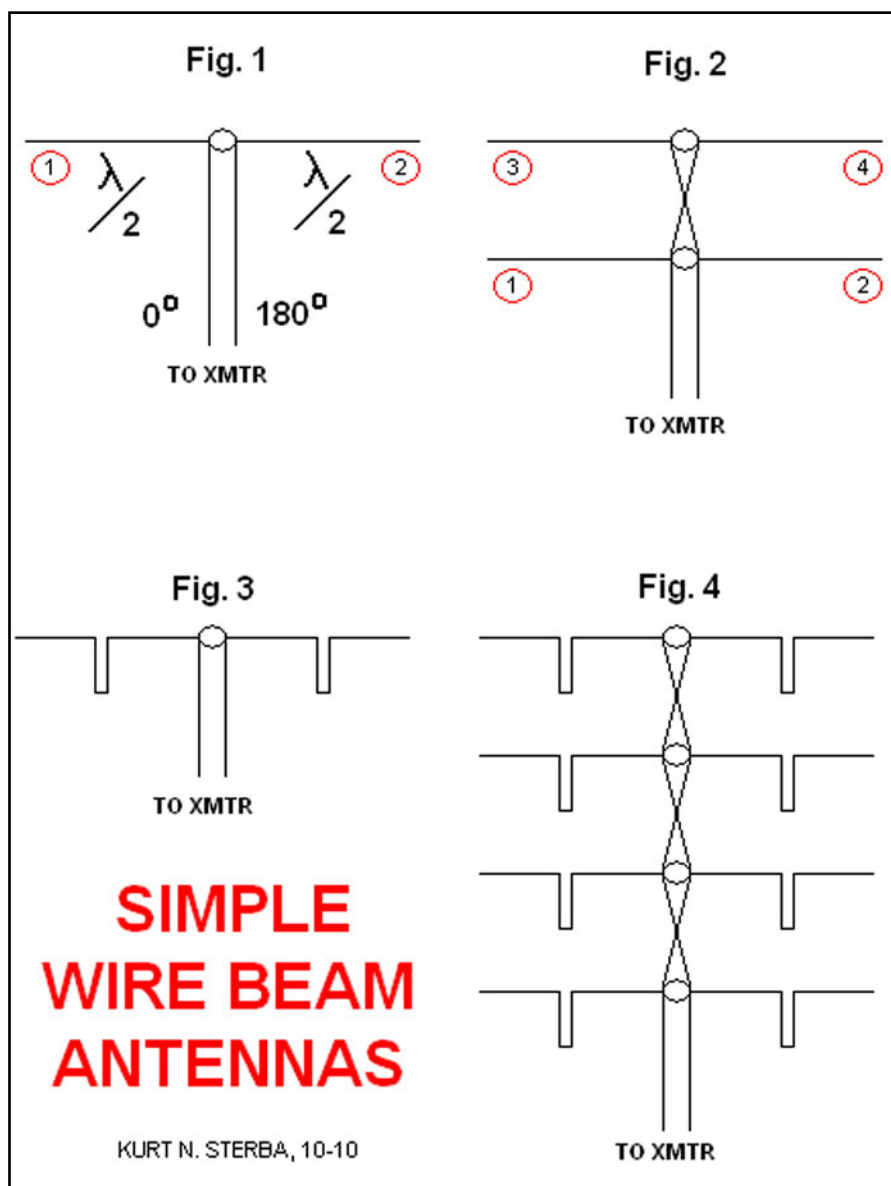
We want wires 3 and 4 to be in phase with wires 1 and 2. The transmission line

between the two sets of wires is a half-wave long so there is a 180-degree shift as the current travels up to 3 and 4. So if we ran the line straight up, the right-hand end of 3 would be 180-degrees out of phase with 1.

Easy to fix. Just cross the transmission line wires. This gives another 180-

degree phase shift and all the wires are now in phase. This gives us a *broadside* array. The beam is broadside to the wires.

Looking at the drawing, the beam is straight into the page. Also straight out of the page. This is a bidirectional beam shooting forward and backward unlike



Listening is only half the fun...

POPULAR COMMUNICATIONS is the other half!



Holiday SPECIAL!

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

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

Holiday Specials!

1 year ~~\$32.95~~ now only **\$30.95**

2 years ~~\$58.95~~ now only **\$54.95**

3 years ~~\$85.95~~ now only **\$79.95**

CN/MX- 1-yr \$40.95, 2-yr \$74.95, 3-yr \$109.95

Foreign- 1-yr \$50.95, 2-yr \$94.95, 3-yr \$139.95

Payable in U.S. dollars. Sale ends 12/31/10



Save \$2 more!!
Order a 2011/12
CQ Amateur Radio Operators Calendar
with your sub and get
FREE SHIPPING
a \$2 savings!

Calendar includes 15 spectacular images of some of the biggest, most photogenic shacks, antennas, sceneries and personalities in our hobby! Includes dates of contests, operating events, meteor showers, phases of the moon, important and popular holidays!
Only \$10.95 plus \$2 shipping. Free shipping if ordered with a subscription!

Popular Communications
25 Newbridge Road, Hicksville, NY11801
Phone: 516-681-2922; Fax 516-681-2926
Visit our web site:
www.popular-communications.com

"The Yagi has pretty much replaced the wire beam but it is helpful to understand them because once in a while they can be useful to us."

the Yagi beam we are used to. The gain? 6-dB. More than a 3-element Yagi.

The arrangement of Fig. 2 was once very popular and was called the *Lazy H*. In the larger scheme of things it is a 2-by-2, two collinear elements and two broadside elements.

More Gain

If you have plenty of room you don't have to stop at the *Lazy H*. We can add two more elements to our original collinear beam as in Fig. 3. We can't just connect the added elements directly because we have to have them phased correctly. To do this we connect a quarter-wave stub between them.

To get down the stub and back up again, the current travels a half-wave. This gives a 180 degree phase shift. Now all elements are in phase. The gain of this four-element collinear is 4.2 dB.

The next step, obviously, is to put two of these four-element collinears one above the other — as we did before. Why stop there? Let's put two more collinears above the first two. Fig. 4.

Now we have a really elaborate beam with a gain of 15-dB, a lot more than your tribander. Also using up much, much more real estate.

When these beams get this big they are called *Sterba Curtains*, since they look like a giant hanging curtain. The Sterba part has nothing to do with Krusty Olde Kurt. The arrays are named after E. J. Sterba, who designed the antenna at Bell Labs in the 1930s.

The Yagi has pretty much replaced the wire beam but it is helpful to understand them because once in a while they can be useful to us. They are easy and inexpensive to construct for those who can't afford a manufactured beam, tower and rotator.

Consult your ARRL *Antenna Book* for additional wire beam designs.

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

Collins Radio Repair & Tune-Up DVD Guides

Restoring or repairing classic Collins S-Line equipment?
These DVDs are like having an experienced professional right next to you!

From Hi-Res Communications, Inc., these well-produced, authoritative DVDs cover all the most common repair and tune-up subjects on these classic radios.



Collins KWM-2

Two disc set, 236 minutes total
Order No. C-KWM **\$89.95**



Collins 75S-3/32S-3

Two disc set, 226 minutes total
Order No. C-75S **\$89.95**



Collins 30L-1 -

Single Disc 61 minutes total
Order No. C-30L **\$39.95**

Shipping & Handling: USA - \$7 for first item, \$3.50 for 2nd and \$2 for each additional. CN/MX- \$15 for first item, \$7 for 2nd and \$3.50 for each additional. **All Other Countries-** \$25 for first item, \$10 for 2nd and \$5 for each additional.

CQ Communications, Inc. 25 Newbridge Rd, Hicksville, NY 11801
www.cq-amateur-radio.com - 800-853-9797 - FAX us at 516 681-2926