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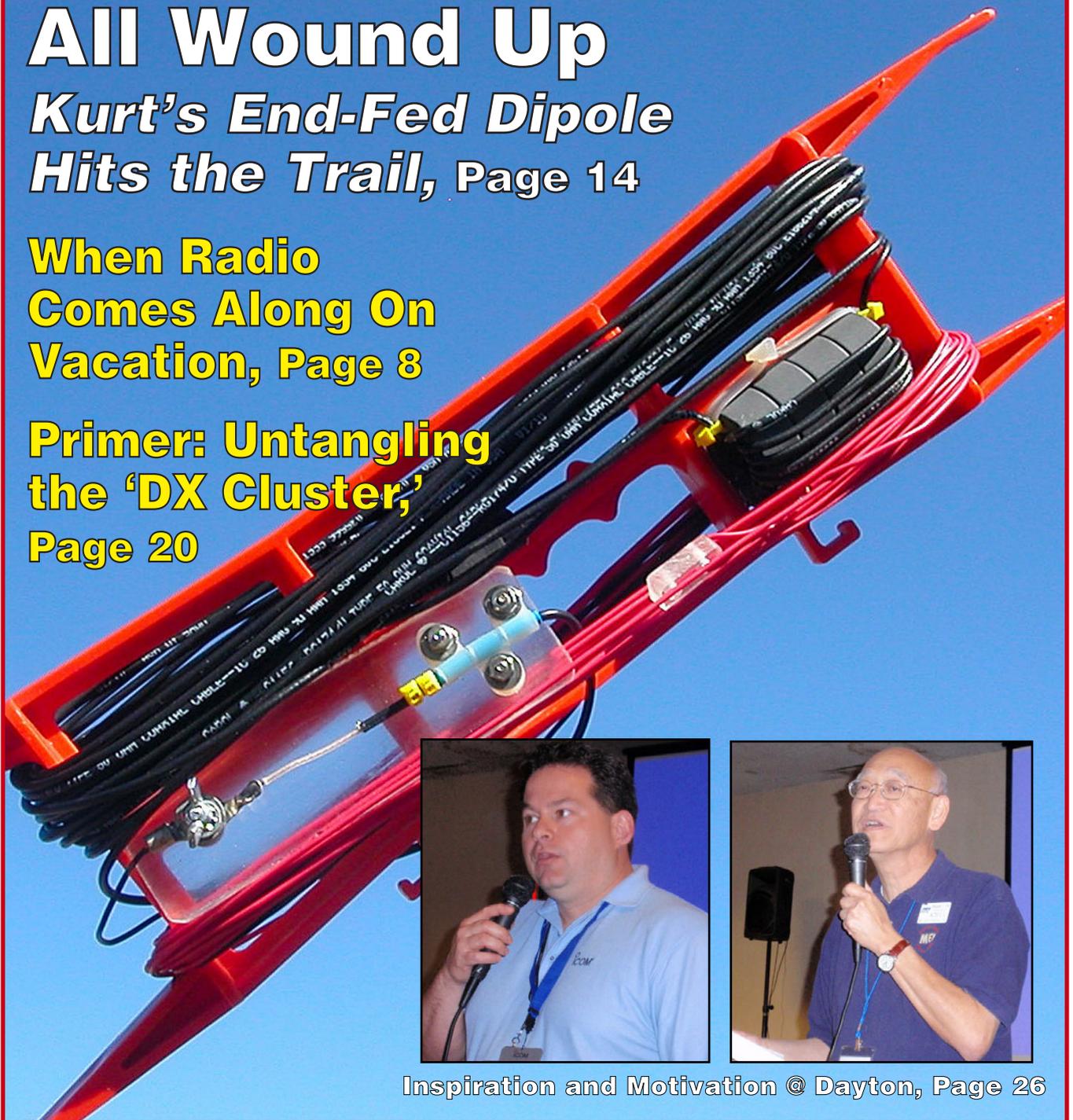
Year 40, Issue 4

OCTOBER 2010

All Wound Up *Kurt's End-Fed Dipole Hits the Trail, Page 14*

**When Radio
Comes Along On
Vacation, Page 8**

**Primer: Untangling
the 'DX Cluster,'
Page 20**



Inspiration and Motivation @ Dayton, Page 26

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



FCC Nixes Petition to Expand 15-Meter Phone Spectrum

The Federal Communications Commission has turned down a request from a New York radio amateur to expand the spectrum available on 15 meters for phone operation.

In his December 2009 petition, Richard Ebeling, K2UTC, of White Plains had proposed that the segment of the band authorized to General Class and Amateur Extra Class licensees for voice emissions be increased by 75 and 50 kHz, respectively.

He primarily argued that the frequency segment that General Class licensees may use for phone should be returned to what it was prior to the Commission's Incentive Licensing decision in 1967, which he believed unfairly disadvantaged General Class licensees.

But in its August 9 dismissal order, the FCC noted it had recently extended the spectrum amateur stations could use for voice communications in various amateur bands. In particular, the spectrum that General Class licensees may use for phone emissions in the 15 meter band was increased by 25 kHz. The Commission said Ebeling's Petition, among other things, did not present evidence that the current amount of spectrum in the 15 meter band available for voice communications is inadequate. (*Amateur Radio Newslines, FCC*)

SWODXA Dinner Moves to Dayton Marriott for 2011

Southwest Ohio DX Association President Don DuBon, N6JRL, has announced that 26th annual DX Dinner will be held on Friday, May 20, 2011 in a new location – the Dayton Marriott Hotel, 1414 S. Patterson Boulevard.

The event will be held in conjunction with the 2011 Dayton Hamvention®.

"We are excited about our new venue," the SWODXA Web site said. "While it is less than five minutes from our previous location, it has a much larger capacity, has been recently renovated, and we will have a new menu selection. Other advantages are that there are no steps, as the dinner will be held on the ground floor – and there is ample, free, on-site parking.

"In our planning meetings, the staff has been very receptive and is anxious to meet the needs of our attendees and graciously welcomes SWODXA," the Web announcement said.

More information is available at the SWODXA Web site: <http://www.swodxa.org/> (ARN, OPDX)

From Space: AO-51 Back in Service After Brief Outage

AMSAT Vice President of Operations Drew Glasbrenner, KO4MA, reported that after a brief outage aboard AO-51 reported on Saturday, July 31, the amateur radio satellite was restored to service.

The 145.92/435.300 repeater was set to run with the 67 Hz tone required to activate the satellite and power output was reported as 740 milliwatts. (*ANS*)

Annual Asia Pacific DX Convention Slated for November

The Third Asia Pacific DX Convention – or APDXC – will be held at the Osaka International House in Osaka, Japan, between November 5-7.

Presentations will be conducted in English and will include discussions on some recent DXpeditions along with technical discussions. There will also be an opportunity to join a tour to visit the ICOM factory and participate in a technical session led by the ICOM High Frequency radio design team. Program details and updates will be posted on the APDXC Web site when available: <http://www.apdxc.org/>. (OPDX)

CQ VHF Magazine Website Gets New Look

CQ Communications, Inc., has announced the launch of a new and easier-to-navigate website for CQ VHF magazine <http://www.cq-vhf.com/>. Like the recently updated sites for *WorldRadio Online* and *Popular Communications*, the new CQ VHF site features a cleaner look and a streamlined user interface to make it quicker and easier for visitors to find what they are looking for.

CQ VHF is a quarterly magazine edited by Joe Lynch, N6CL, devoted to "Ham Radio Above 50 MHz." First published in 1996, it combines articles designed for newcomers with historical and technical features best appreciated by more experienced VHF operators. (*CQ Communications, Inc.*)

'Global Friendship' Adopted for Dayton 2011 Theme

When the Dayton Hamvention® opens May 20, 2011, for its sixtieth consecutive year the theme, "Global Friendship," will reflect an important part of ham radio, according to Michael Kalter, W8CI, General Chairman for the event. "The theme emphasizes how the technology continues to bond amateur radio operators from all over the world," Kalter said.

Kalter, who has more than 20 years of experience at the event, selected Joshua Long, KD8BVB, as his Assistant General Chairman. Both were approved in June by the board of the Dayton Amateur Radio Association, sponsor of Hamvention®.

Kalter noted that Long also has volunteered at Hamvention® for a number of years and served as chairman of the Communication Committee during 2010. "I know that Josh will give me the kind of support needed to build upon the success of last year and to lay a foundation for another great Hamvention®."

More information about Dayton Hamvention® 2011 (scheduled for May 20-22) can be found on the Web <http://www.hamvention.org/>. (Dayton Hamvention®)

NPR: First TubeSat to Be 'MusicSat'

A National Public Radio report says that one of the first of the do-it-yourself low orbit satellite kits from Interorbital Systems has been purchased by a professional astronomer. Alex Antunes says that he will use it to create nature's own music from space, according to NPR.

As reported earlier this year on *Amateur Radio Newslines*, "California-based Interorbital Systems is offering a personal satellite kit for \$8,000 called TubeSat that includes a ride into space."

In the NPR interview, Antunes says that the Sun interacts with the Earth's magnetic field in the ionosphere and causes all sorts of activity, according to ARN. His goal is to use his satellite to put something in orbit to convert that interaction directly to sound data "so we can hear it."

The first TubeSats, along with an amateur radio CubeSat, are currently slated to launch on an Interorbital Neptune 30 rocket from Tonga at the end of 2010. You can listen to the NPR-Antunes interview on the Web. (ARN, NPR)



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TABLE OF CONTENTS

Year 40 Issue 04

OCTOBER 2010

FEATURES

R&R: Radio and Relaxation = The Great Family Vacation

By Gene Bartsch, W17N8

1

COLUMNS

1-13 EDITOR'S LOG6

TRAIL-FRIENDLY RADIO:

End-Fed Dipole *Lite*: Taking Kurt's Design to the Field14

STATION APPEARANCE: Home Improvement:

WB2AZE and KC2GGB, Whitehouse Station, New Jersey.....18

2

DX WORLD: A DX Cluster Primer: Seeing What Others Are Hearing20

HAMS WITH CLASS: Dayton Youth Forum, Part II:

The People Who *Make It Happen*26

14-29

PROPAGATION: More on Cycle 24 and Two Recent Predictions30

FISTS: CW Naysayers:

Would You Like Hollandaise Sauce With That Hat?32

AMATEUR SATELLITES:

Money Certainly Helps Make the Satellites Go 'round36

3

MARS: After Connecting All the Dots,

Emcomm Faces a Tougher Task: Connecting All the Agencies38

30-43

PROMOTION AND RECRUITMENT: Strategies for Updating

Our Promotional "Toolkit"44

RULES & REGS: Examining Our VECs46

AERIALS: Sometimes What Goes Around Just Keeps Coming Around55

4

DEPARTMENTS

WorldRadio Online Newsfront2

44-55

DX Predictions - October49

Contest Calendar.....50

Visit Your Local Radio Club.....51

VE Exams52

Hamfests & Special Events53

WorldRadio Online Mart54



ON THE COVER: Krusty ol' Kurt's End-Fed Dipole is all wound up and ready to go in a trail-friendly version constructed by KI6SN. Also: ICOM America's RayNovak, N9JA; and MFJ Enterprises' Martin F. Jue, K5FLU, speak at the 2010 Dayton Hamvention® Youth Forum.

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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.



A Free-Wheeling Online Gab Brings 'Spokespeople' Out in Force

Have you ever operated two-wheel mobile – bicycle or motorcycle? That turned out to be the hot topic during the *WorldRadio Online Live Chat* on Sunday evening, August 1.

We had 112 people on board for the hour-and-a-half gabfest beginning at 8 p.m. Eastern time (0000 UTC, Monday). More than 320 comments flew fast and furious.

With that many *spokespeople* on live, it's only fitting that two-wheel mobile amateur radio would stir up a lot of the buzz.

Tim Hufnell, WA3BDV, posted from Bristol, Pennsylvania, that he "was bicycle mobile many years ago and used a quarter wave whip mounted on the rear carrier. It worked better than the rubber duck, but there's no way to mount radials that won't hurt passersby."

Nowadays, Tim said he's "found that for hiking and bicycle riding, my ICOM P7A (144/440 MHz handitalkie) with the little antenna works fine most of the time. I also carry a quarter wave whip that rolls up which I'll add if the coverage is spotty. But I don't ride and talk.

"Most of my bicycle operating is either through nearby repeaters or to help coordinate the rides on simplex," he said. "I'm doing a 50K ride as part of the annual Princeton Free Wheelers event (soon) and I'll have the P7A with me in the handlebar bag. I'll be listening, but paying more attention to the ride.

Tim noted that "for the last 30 years the Princeton Free Wheelers sponsors a series of rides on the first Saturday of August. Rides go from 25K to 100K over hilly or flat terrain. Usually several thousand riders participate."

On the bicycle he carries only 2-meters and 440. "I mostly carry the HT in case I need it. The sound of the wind in the spokes is a treat."

During the August 1 chat, we put up an *Instant Poll* for the group, asking: *Have you ever operated bicycle mobile?* Of those responding, 26 percent said they had; 74 percent hadn't.

While VHF/UHF appeared to lead in two-wheeled popularity, the high frequencies were represented, as well.

Cory Sickles, WA3UVV, of Glassboro, New Jersey, said he has "an HF setup and have a Hamstick on one bike with a Hustler RM-20 and mast on the other.

"Still not sure if one is greatly better than the other," he said. Cory's gear is "nothing too fancy – either an MFJ-9420 or an FT-817ND," he said. "The advantage of the '817 is I can lock it on frequency while riding. I have to ride the MFJ, as well as the bike," he quipped. "From the car or bike, I work SSB mostly. If I'm riding far and stopping at a picnic table or bench for a while, I'll get on 30 or 20-meter CW. My CW skills aren't good enough to do it while in motion."

Cranz Nichols, WB5BKL, chimed in from Burnet, Texas that he "used a 5/8 wave on the back of the motorcycle for 2-meter, 5-watt APRS. Fairly successful."

Len Johnson, K6LRF, of Santa Clara, California, said that soon he'd be using his Yaesu "FT-60 (144/430 MHz handheld) and testing bike-to-bike and bike-to-base station coverage at different power levels. I will use two different antennas and resort to a half-wave if necessary.

"When the next 'quake comes to California," he noted, "bike mobile will be the only way to get around. In 1989 all traffic lights were out and traffic came to a standstill. Hence, the need for 2-meter mobile."

Joey Fiero, W5TFW, of Magnolia, Mississippi, said he "could put a radio on my tractor, but I might hit a tree trying to log QSOs." Good point, Joey. That's something we'd never want to see.

Riders: Have a Story to Pedal?

Do you have experiences to share with *WRO* readers about using amateur radio aboard a two-wheeled vehicle? Motorized or not, we'd like to hear about it. And photographs illustrating your two-wheel set-up would help tell your story even better.

Let us know by dropping an e-mail to: WorldRadioOnline@gmail.com. We'll consider your free-wheeling stories for an upcoming edition of *WorldRadio Online*. Meanwhile, please remember: *Safety is no accident – especially on two wheels.*

More WRO Live Online Chats on Tap

Here's how the *WRO Live Online Chats* are shaping up for the rest of the year: **October 3, November 7 and December 5.**

Of course, we have every intention of carrying on with them into the New Year. The schedule will be announced as soon as we can get our hands on a 2011 calendar.

Your Internet *WRO* chat portal, as always, is through the *WorldRadio Online blog*. Hope to see you there.

– **Richard Fisher, KI6SN**

WorldRadio Online

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R&R: Radio and Relaxation= The Great Family Vacation

By Gene Bartsch, WI7N

The Orcas Island vertical strikes a beautiful pose with the Sun and water as a backdrop.

When I was first licensed years ago as a teenager I dreamed of operating someday from a rare, exotic location. Rather than spending hours calling a DX station, I'd be the guy on the other end of the pile-up. Handing out the contacts in rapid succession certainly seemed more fun than endlessly trying for even a single QSO with a rare entity.

Reality has a nasty habit of intruding on dreams. College and marriage and kids and buying a house and paying the bills took priority over ham radio ambitions. Still, I eagerly read the magazine articles describing trips made by others to remote places.

Sometimes those journeys required days of tiring air travel or weeks churning through storm-tossed seas to reach a place where one might be subjected to coral cuts and biting insects and blistering heat, or perhaps snow and ice and howling winds able to flatten antennas and rip sturdy tents to shreds.

Those obstacles didn't bother me when I was young, but as the years passed they seemed far more intimidating. I reached the tipping point following a series of Boy Scout campouts with my son, where I found that I no longer enjoyed sleeping in a tent on frozen ground, that a week-

end of continuous rain in a soggy campground is miserable, and that summer heat and biting insects aren't very enjoyable either.

And far more unpleasant and even dangerous conditions can be experienced by

ham operators at a rare location. I admire those who go on those difficult DX-peditions to exotic locations, but I no longer wanted to join them.

Okay, there are other places – perhaps less rare, but more comfortable – where



During an Orcas Island vacation, a vertical on the hillside off the coast of Washington State is visited by grazing deer. (Photographs courtesy of WI7N)



A dipole is strung between the “tall trees” on Nantucket Island.

one can experience the thrill of being the sought after station in a pile-up and I considered the possibilities.

Operation from a semi-rare location during a contest seemed a good choice, and combining the trip with a family vacation trip would save money. My wife was lukewarm to the idea, but agreed to let me give it a try.

An Islands On The Air (IOTA) contest was my first attempt at combining a vacation with ham radio. We live near Portland, Oregon, and the San Juan Islands of Washington State are within relatively easy driving distance.

Ham Fantasy Island

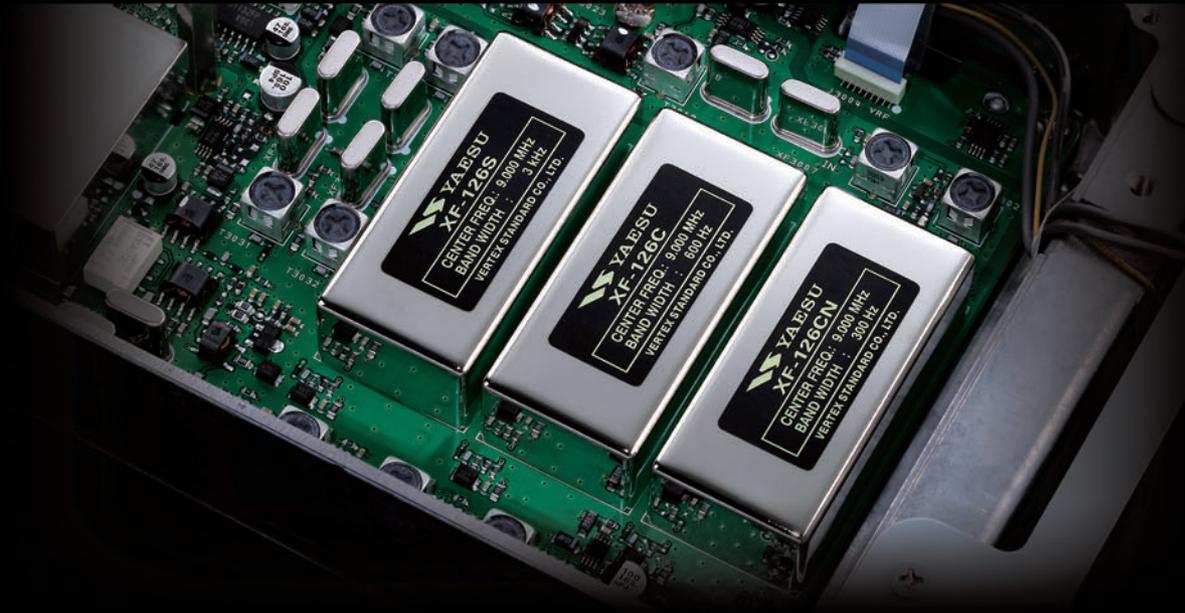
We chose Orcas Island and rented a house situated on five acres near the shore, arriving there several days before the IOTA contest for a weeklong stay. Since we were driving instead of flying, I had plenty of room for my Kenwood TS-940 transceiver, my Ameritron AL-80B amplifier, a borrowed Hustler 4BTV 40-10 meter vertical, and could easily carry my coax and test equipment and tools.

The trip from Portland to the ferry in Anacortes, Washington took four hours. The ferry ride to Orcas Island lasted another hour, but that consisted mostly of watching beautiful scenery with bald eagles and dolphins while eating the delicious clam



Dipoles attached to the roof overhang got WI7N on the air from Hawaii.

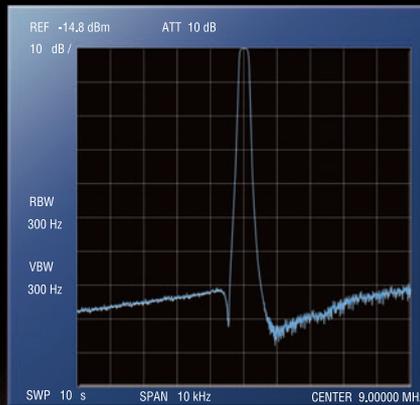
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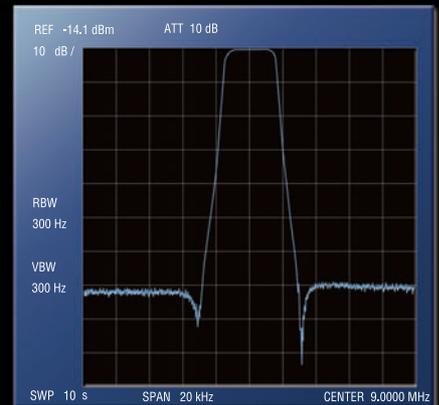
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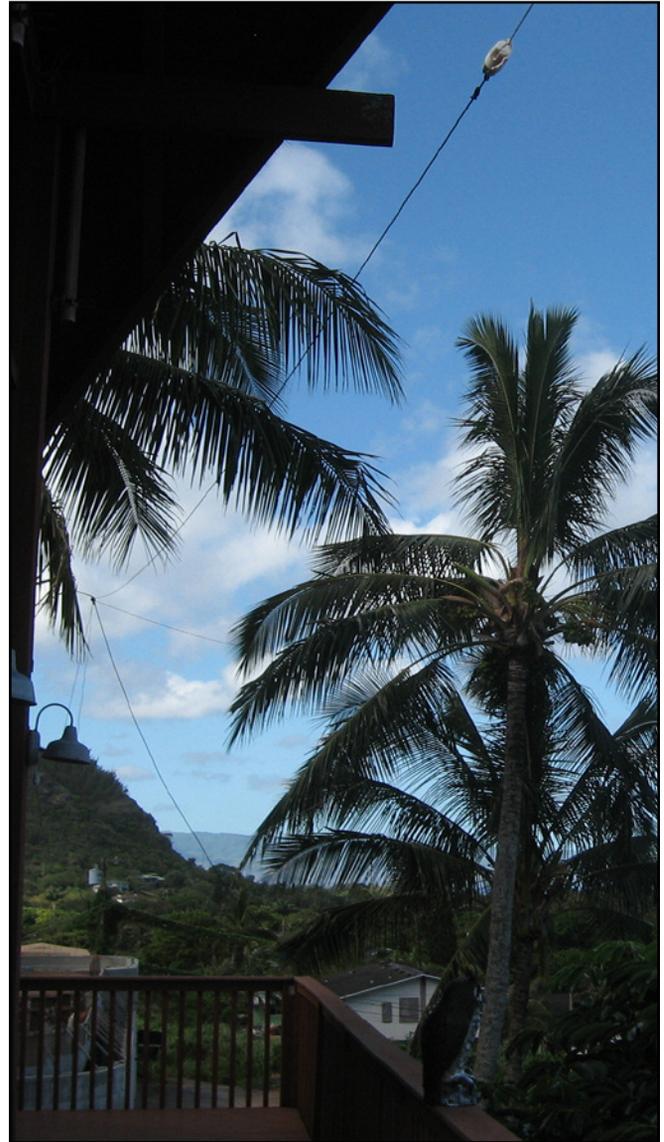
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Simple wire antennas – such as dipoles – can be erected quickly and easily.

chowder served aboard. Another half-hour of driving after reaching the island and we were at the house. I was on the air an hour later.

I situated my 40-10 meter antenna on the hillside above the house only a short distance from the water. Other islands visible in the distance completed the peaceful scene.

Since this was primarily a family vacation, I wanted my wife and two children to enjoy themselves and made sure I didn't skimp on sightseeing or hiking or going to the beach or eating out.

Although I only operated briefly each evening, making 50 or 100 QSOs each day was fun, and island hunters seemed to appreciate the contacts.

The following days were relaxing. Deer grazed in the yard and bald eagles fished in the waters offshore. The tides came and went. Huge ferry boats passed the island frequently. At night they looked like floating, brightly-lit Christmas trees.

During the IOTA contest it was great to be on the receiving end of a modest pile-up, and I had fun making several hundred



The Pacific Ocean adds a deep blue to the view from WI7N's operating position in Hawaii.

contacts. Every person in the family declared the vacation an enjoyable one.

On to Nantucket Island

The next year, my wife was agreeable to visiting Nantucket Island for a weeklong vacation that included the IOTA contest. When contacting realtors on Nantucket, I requested a house with a yard and tall trees because I planned to bring simple wire antennas and use them with my ICOM IC-706 transceiver.

After receiving assurances that the house we selected had numerous tall trees, I sent my deposit. Here's a hint: Ask how tall the trees are *in actual feet* before signing the contract. If you come from a place like Oregon where only trees a hundred or more feet high are considered tall, you might otherwise be disappointed with the 15-foot-high trees you find when you arrive at your destination. I could easily reach the center connector of my dipole by standing on a lawn chair.

Still, live and learn. Using only that low-height dipole I was able to work a few hundred stations during the contest.

The Travel Log Expands

My experience at combining family vacations with a few hours of operating time resulted in many additional ham radio vacations over the years.

I now have an airline carry-on pack that contains everything needed for a casual vacation operation: My ICOM IC-706 transceiver, an Astron SS-25M power supply, a microphone a telegraph key, a few lengths of RG-58 coax, and several rolled-up dipoles. I have used this equipment successfully while on vacations in Wyoming (semi-rare in some contests), from Canada, and during a visit to France, where it was fun to have 5A1A answer my CQ instead of fighting through a pile-up for a con-

tact with him. And making contacts with European stations on 6 meters isn't something I can usually accomplish from the Pacific Northwest.

What's Not to Like About KH6?

Our most-recent family vacation was to Hawaii, which is not particularly rare, but I always find it interesting to operate from somewhere new. Within an hour of our arrival, I had set up my simple station, erected a dipole, and called CQ. Before going to bed an hour later I had worked 35 stations in Europe.

You Can Do It, Too

I encourage others to try a relaxed ham radio operation while on vacation. You don't need to spend tens of thousands of dollars to experience the thrill of a small pile-up. Operating from a state with a low ham population like Wyoming or North Dakota or Vermont can make you popular during a contest.

Checking my logs, I found that a few other places like South Carolina, Mississippi, and sometimes West Virginia may be the only sections I've missed during a contest, and those are easily reached from nearby states with larger ham populations.

Operating from a rare county during a state QSO party or from a rare grid during a VHF contest can also generate plenty of calls – just like operating from an island during the IOTA contest. You don't need to travel overseas to experience a modest pile-up.

Not interested in contests? Choose any somewhat-rare place for a family vacation and operate casually for a few minutes each evening. See what the ham bands sound like from a new place.

Providing a contact that *someone* needs is rewarding. Try it, and I think you'll have fun.



End-Fed Dipole *Lite*: Taking Kurt's Design to the Field

By Richard Fisher, KI6SN

Krusty Ol' Kurt N. Sterba's *Aerials* column in the August edition of *WorldRadio Online* sure got the attention of this trail-friendly radio enthusiast.

"What we have here is a coax-fed dipole, except that we don't have the coax hanging down from the center . . . Instead the feedline coax comes from one end of the antenna. Simple but elegant."

A dipole that is fed to the transceiver or tuner at one end and needing only one support at the other? Backpackers have got to like that. What could be more perfect for the trail?

Kurt went on to explain how he had been inspired by a design by James E. Taylor, W2OZH, published in 1991. After making critical refinements and improvements, Kurt would go on to come up with an end-fed dipole design of his own.

Taylor's "Resonant Feed-Line Dipole" employs a quarter-wavelength of wire and a quarter-wavelength of coaxial cable to form a half-wave dipole that's fed at one end. Mr. Sterba took a good idea and made it even better.

The theory behind this remarkable design is detailed in Kurt's August column. <http://worldradiomagazine.com/wro_issues/2010/WRO_08_2010.pdf> If you haven't read it, please do so – it'll make what follows so much easier to understand.

Theory Into Practice

One of the antenna's secret weapons is an RF choke positioned one-quarter wavelength down the coaxial cable from the dipole's center point. It's what establishes the resonant part of the coax, leaving a non-resonant length of 50-ohm RG-58 to connect to your transceiver or tuner.

Instead of employing W2OZH's six-inch-diameter air-wound coil choke, though, Kurt opted to use a much smaller coil for a 20-meter version with 10-turns of coax wound through two F240-61 stacked toroids. Much more efficient and reliable.

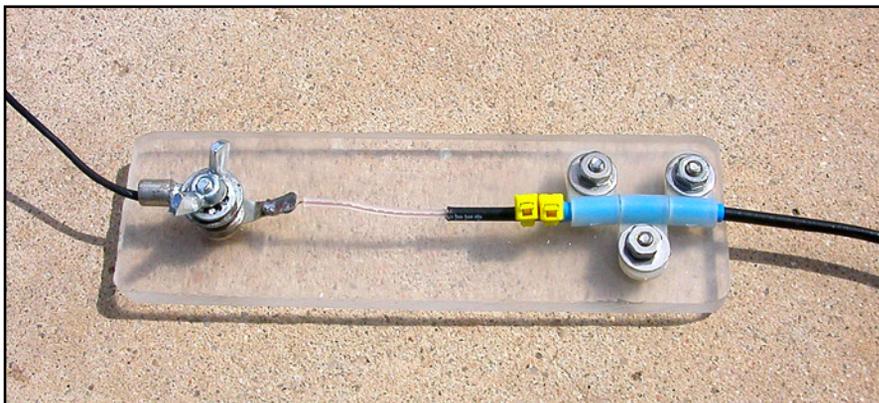
Unfortunately, the F240-61s are rather large ferrites to accommodate heavy duty RG-58 coax. That combination can



All wound up and ready to go, the trail-friendly version of Kurt N. Sterba's End-Fed Dipole Lite fits easily in a backpack and won't weigh you down on the trail. (Photos courtesy of KI6SN)



Stacked F114-61A toroids are one of the secret weapons of the trail-friendly End Fed Dipole Lite. Nylon wire ties hold the ferrite cores and coax in place.



Quarter-inch thick Plexiglass was used to secure the center point of the KI6SN trail-friendly version of Kurt's End-Fed Dipole Lite. The 40-meter single wire portion of the antenna can be easily changed for other bands by removing the wing nut, left, and attaching a quarter-wave wire for another band.

The NorCal40A Transceiver Kit

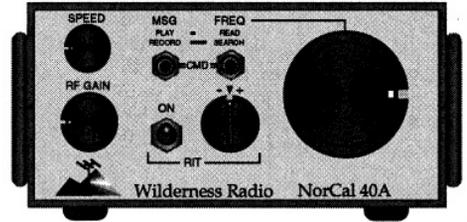
Sure, there are a few 40 meter cw kits out there to choose from. But the NorCal 40A stands apart from the rest with a unique combination of custom features and big-rig performance.

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.



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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.

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weigh down a hiker in a real hurry.

Is there a way to duplicate this antenna in a trail-friendly configuration – light and durable with a small backpack “foot-print?” Once again Kurt came through, describing an end-fed dipole “using RG-174U (50 ohm) cable and a toroid core choke just adequate for (a) five or 10-watt transmitter. RG-174U is a tenth-of-an-inch outer diameter.”

In addition to much lighter coax, this trail-friendly design replaces the large F240-61 toroids with much smaller and lighter F114A-61s. The antenna measurements and choke requirements for this tidier version are the same as for the

home-based higher power version.

With an *end-fed dipole lite*, though, we would really be in T-FR business.

Gathering the Pieces

The parts list for the KI6SN trail-friendly 40-meter version of Kurt's design is pretty spartan: 40-feet of RG-174U, four F114-61A toroids, about 35-feet of No. 22 stranded hook-up wire, a couple of pieces of one-quarter-inch Plexiglass, nylon wire ties, and a handful of nuts-bolts-and-washers. You'll need some elbow grease, as well.

Several parts houses carry F114-61A toroids. I got mine from Palomar Engineers in Escondido, California. <http://www.palomar-engineers.com/> They're pretty inexpensive and shipped overnight.

The RG-174U was found locally, but this lightweight coax is carried by many distributors and is readily found on the Internet.

The hook-up wire came right from RadioShack (RS 278-1224). There are three 25-foot-long rolls of the stranded wire in the package, so you'll have to splice two rolls together to get the necessary length for a 40-meter quarter-wave wire. *No big deal.*

The Plexiglass for the dipole's center connection point – one-quarter inch thick and shaped rectangularly to 4.75-by-1.25



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Let's Go . . .

OK, time to get building. I was shooting for a resonant frequency of 7.040 MHz – a popular T-FR hangout on 40 meters. A half-wave at that frequency is: $468/7.040$, or 66.48 feet. Divide that by two to get a quarter-wave and you'll have 33.24 feet. That's about 33-feet, 3-inches – our magic number for both the quarter-wave resonant portion of the RG-174U and for the quarter-wave single wire. We'd have several feet of non-resonant coax beyond the choke point to connect to the transceiver or tuner, but we'll get into that later.

We started by stacking the four toroids atop one another and cinching them with nylon wire ties. Next, the "center" connection point of the RG-174U was prepared by carefully cutting the coax's black outer plastic insulation with a knife and exposing about 1.5 inches of the coax's braid. We next cut away the outer braid with a small pair of scissors, leaving just the insulated center conductor. After stripping away a bit of the center conductor insulation, we

added a solder lug to the end of the inner conductor. At the center point of the antenna, the coax's outer braid isn't connected to anything.

The total exposed portion of the insulated center conductor (center conductor plus solder lug) is two inches from where the braid ends.

Next, we soldered together the ends of two rolls of the 25-foot-long stranded No. 22 wire. Since there are two inches of coax center conductor exposed at the Plexiglass insulator, we'd have to subtract two inches from the quarter wave measurement for the single wire (that's 33-feet, 3-inches minus 2-inches, or 33-feet, 1-inch). That's how long the single wire would need to be.

We'd need to factor in the length of a solder lug on one end of the single wire and a loop of the wire through a small Plexiglass insulator at the other end. Then: Measure twice. Cut once.

Time to make the Plexiglass center connection point. After cutting and shaping the plastic, we drilled four holes:

- One for a bolt-washers-wing nut combination that would be the connection point between the RG-174U center conductor and the single wire part of the antenna.
- Three other holes would accom-



The Plexiglass center piece is the connection point for the RG-174U coax and No. 22 stranded hook-up wire in the trail-friendly End-Fed Dipole Lite.



A piece of string was used at the RF choke point of the RG-174U coax to tie-off the EFD about four-feet above the ground. Non-resonant coax leading from the bottom of the toroid stack goes to the transceiver or tuner.

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WR

modate nuts, bolts and washers to mount three small plastic cable clamps to keep the RG-174U firmly in place on the Plexiglass.

Finally, it was time to measure one-quarter wave of coax to determine the point at which to slide the toroid stack into place to make the RF choke.

We precisely measured from the braid ending point on the Plexiglass down the coaxial line 33-feet, 3-inches. At that point we wound 10-turns of the RG-174U through the toroid stack and secured the lash-up with a couple of small, yellow nylon wire ties. The coax length that was left over would be used to reach the feed point at the transceiver or tuner.

With this end-fed dipole, the coax is connected at the transceiver or tuner just as you would any conventional center-fed dipole.

I wanted to be able to make this a multi-band field antenna, so the single quarter-wave wire is connected to the coax inner conductor on the Plexiglass using a wing nut. Just disconnect the 40-meter wire, put on, say, a 20-meter wire and reposition the toroids along the coaxial line at one-quarter wave for 14 MHz. You're good to go. *Pretty cool.*

But Will It Work?

After soldering an RCA-style plug to the end of the coax for the transceiver/tuner feed point, it was time to take Kurt's trail-friendly End Fed Dipole Lite to the field for a smoke test. To make things easy to handle, we wrapped the entire antenna on an orange plastic wire/rope organizer from the

hardware store. It would fit nicely in our backpack and unfurled easily.

In the back yard, the single wire end of the dipole – with insulator – was hoisted about 20-feet into a tree. The coaxial end was tied-off at the RF choke point about four feet above ground. The remainder of the coax was fed through a tuner to a NorCal-40A QRP transceiver powered by a 12-volt gel-cel battery.

Running a little less than one-watt, the end-fed dipole tuned up beautifully – no problem achieving a 1:1 SWR. It was mid-afternoon on a Friday. Forty meters was pretty noisy and void of signals. *Let's hope for the best.*

Eureka!

After a couple of CQs, we hooked up with Bill Ferrell, WB6CRM, several hundred miles away in West Sacramento, California. *Wow, it's working – even under these lousy conditions and at less than one watt output.*

Next, Brian Hunt, KØDTJ, came back from Half Moon Bay up the California coast. We chatted solidly for about a half hour, despite the QRN (static) and QSB (fading). His Elecraft K3, inverted V antenna and operating skills did a great job pulling me through. He is several hundred miles from me, as well.

It was proof positive this antenna *really works*. Perfect for the trail and what fun to use.

For any dipole fan who wants to try a no-nonsense antenna that's easy to build, carry and put up and take down in the field, look no further. This trail-friendly version of Kurt's EFD is a beautiful performer.



Home Improvement: WB2AZE and KC2GGB, Whitehouse Station, New Jersey

(Editor's note – This month's Station Appearance features the operating position of David Kanitra, WB2AZE, and Marjorie Kanitra, KC2GGB, of Whitehouse Station, New Jersey. The husband-wife duo reminds us that even a routine trip to a home improvement store can result in finding innovative and efficient ways to "package" our home radio station.

Meantime, are you proud of your station's neat appearance? Or does that clutter 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 YouTube video to accompany the still pictures, let us know and we'll set up a link.)



An easy-to-assemble Sauder entertainment center serves as home for the amateur radio equipment of David Kanitra, WB2AZE, and his wife Marjorie, KC2GGB. Cables are routed through the back of the cabinet, out of sight. (Courtesy of WB2AZE)

“A few years ago I was looking through one of the ham magazines and it had an article about Collins radios. It showed a picture of a Collins on a table with *nothing else*,” David Kanitra, WB2AZE, wrote. “There were no cables or wires and it was an XYL-approved shack.”

“I looked at my shack, with its coax cables and wires and junk and dust and manuals and magazines everywhere, and it made me jealous. I wanted everything in one place and I wanted it to look good.”

David said that on a visit to a Lowe's home improvement store with his wife Marjorie, KC2GGB, he saw “a nice entertainment center by Sauder – the maker of ready-to-put-together furniture. *That* was my new shack.”

The cabinet was “easy to assemble,” he said. “The hard part was getting it out of the car and lugging it upstairs to my office.”

“The cabinet comes with two adjustable shelves. The top one holds an MFJ-901 tuner and a Yaesu FT-1500 2 meter



Upper shelves hold WB2AZE's and KC2GGB's HF and VHF equipment, Morse key and other accessories – right above his stereo equipment.



A bottom compartment of the entertainment unit houses their power sources, including an Astron RS-20M and gel-cell battery.

mobile rig, plus a CW key for the HF rig. The second shelf holds the Yaesu FT-747gx HF transceiver and a Transel SWR/wattmeter.

“On the bottom shelf is my CD player and stereo. The door on the right contains racks for my music CDs. All cables are routed through the back neatly and out of sight.”

David wrote that “on the unit’s bottom shelf is the Astron RS-20M power supply, which powers both the HF and 2 meter rig. Two gel-cell batteries for my ARES ‘go kit’ and charger are kept there as well as a charging schedule.”

Copies of David’s and Marjorie’s FCC licenses “are taped to the inside of the lower door. The very top of the cabinet is where I keep some of my HTs, the speakers for the stereo and my antique Gamewell Fire Alarm Box – a memento of my 20 years as a volunteer firefighter.”

Their antennas are “a mag mount Larsen 5/8 wave 2 meter antenna mounted in the attic on a 2-by-3 foot metal pan, and a Hustler 6 BTV ground mounted vertical antenna in the back yard.

“Our new shack is pleasing to the eye and easy to operate as well, and the glass door keeps most of the dust out.”

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A DX Cluster Primer: Seeing What Others Are Hearing

By Kelly Jones, NØVD

‘Because the DX Cluster is a worldwide network, you have the benefit of seeing what others are hearing. So instead of just tuning around the bands yourself, you have the “ears” of many others who are also tuning the bands. When somebody hears a DX station, they can post this information to the cluster (on the Internet) for all to see. Now you know exactly where to go to find that DX station.’

As fall arrives and the days become shorter, chances are you will be spending more time in front of the radio. As an avid DXer, one of the things I enjoy about chasing DX is the use of DX Clusters.

While this tool has been around for nearly 20 years and is often very polarizing in some circles, I still run across DXers who have never used a Cluster.

The “grandfathers” of the Packet Cluster, as it was called years ago, are Dick Newell, AK1A, and Ken Wolff, K1EA. While the technology has changed

over the years, the original concept has not. DX Clusters are an effective way for you to pick up that elusive new one and add to your country count.

In the beginning . . .

In the early days of the cluster network, nodes were typically linked by RF using packet radio – hence the name “Packet Cluster.” It was also very common at the time for nodes to be located many miles apart. The problem with RF linking at the time was that the network was more or less a “peer-to-peer” network. That meant if

somebody’s link in the middle went down we’d end up with orphaned nodes.

While the network would run fine for days on end, it never failed that when a major contest came along, the cluster network would inevitably break into many pieces and essentially render it, by today’s standards, useless. Remember, packet speed in those days was primarily 1200 baud.

Giant Leap for Clusterkind

Somewhere around 1996 I began experimenting with using the Internet to

Configuration Set Help

Connected to VE7CC-1 [Disconnect] Sunset 08 May -1:52 01:44:41

BER^HA7UG^226^69^AB5K^8^5^28^15^MA^CT-Connecticut-W^Hungary-HA^FN32^JN97
User UK2UK has logged out

Spotter	Freq	DX	Time	Comments
U01AU	7004.0	HC1MD	0138Z	
AD1C	7237.0	WA1ENO	0139Z	Plymouth, MA (also WB1ARU)
W2YJ	28476.5	ZL4PW	0139Z	10m open!!!
PY2DO	1817.5	EW60IG	0139Z	tnx
AA3B	3517.8	SN8F	0138Z	ARI
W0FLS	14020.5	PY1CE	0143Z	
N5CRO	21308.0	UK1CW	0141Z	
G8UHB	3768.0	9A4D	0141Z	
K4KVK	7012.0	IR4T	0140Z	TEST, 599 PLUS 30 IN TN
G8UHB	3773.0	IQ3AZ	0141Z	GO
G8UHB	3786.0	IQ2CJ	0141Z	MI
Y02LDC	1832.9	SU5/DJ5AA/P	0141Z	
AA3B	3510.1	ON6NR	0139Z	ARI
W2RQ	7070.0	IK0PHY	0141Z	qsx 7215 for stateside..
W2XYZ	7041.5	K1ZZ	0140Z	NEQP
W9YK	28430.0	XE1ZGG	0143Z	
HA7UG	7037.0	K1TTT	0144Z	MA- BER

Settings Country State Bands Locals = 27 DX WWV Login Msg Ann Wx Mail

ALL 85
160 7 7
80 22
40 29 29
20 5 5
15 11 11
10 11 11

Alarm
Minor Radio Blackouts
SA: Eruptive
GMF: Quiet
Aurora
SFI=110 A=17 K=4

Chat Fix Spots Set Alarm Clear ALL Announce Send Spot Get Spots ALL

Typical main screen from VE7CC's "CC User" software.

link clusters. What a fantastic leap forward this was! No longer did you have to worry about the RF links breaking. However, in 1996 the Internet was still relatively young and the Windows operating system was still new to most people. Sure, Windows 3.1 was around, but remember that Win3.1 ran on top of DOS. And if you were playing with computers back then, I'm sure you can recall how much of a challenge it was to run networking under DOS. While DOS networking had its own set of issues, the node-to-node linking using the Internet was far superior to RF linking.

The AK1A software was pretty much the "defacto" standard until the late 1990s. At that time other clones began to pop up. One of the early clones that was quickly adopted was called CLX – an acronym for "Cluster software running under linux."

CLX proved to be popular for many years. However, by the early to mid 2000's the original AK1A "Packet

Cluster" and CLX had pretty much run their lifecycles. During this time we saw the rise of the "next generation" of cluster software with the likes of AR Cluster, DXSpider and CC Cluster – all which have more or less become the three primary DX Cluster software packages on the market today, with DXSpider being the most popular.

What DX Clusters Can Do for You

So how can the DX Cluster network help you in your endeavors? The old saying goes: *A picture is worth a thousand words.* One could argue: *A cluster is worth a thousand ears.*

Because the DX Cluster is a worldwide network, you have the benefit of seeing what others are hearing. So instead of just tuning around the bands yourself, you have the "ears" of many others that are also tuning the bands. When somebody hears a DX station, they can post this information to the cluster for all to see.

DX Central - View and Post Spots - Windows Internet Explorer
<http://www.dxcentral.com/dxcspots.cfm?>

DX FOR AND ABOUT DX CENTRAL

Entity Name: **Zambia** DXCC: **9J** CQ Zone: **36**
 Filters: **Currently Not Active** Short Path: **73°** Sun Rise: **04:26Z**
 SP Distance: **9200Mi / 14806Km** Long Path: **253°** Sun Set: **15:47Z**

If you find DX Central and this web cluster useful, please consider [making a donation](#) to help offset the cost of providing this service.

DX de NN3W	21013.1	V31UB		17:44Z	INFO
DX de EA7IC	7092.0	EG7LE	TNX 5/9 Gracias deMARIA	17:44Z	INFO
DX de IT9MRZ	21013.0	V31UB	simplex tnx	17:42Z	INFO
DX de RA3GGW	14103.0	EB5DBW	ROS -24 dB My QTH is Lipetsk	17:44Z	INFO
DX de G91NN	14200.0	7Z1CQ	Hey I'm calling you big butt	17:43Z	INFO
DX de DK5AD	18070.7	9J2BO		17:42Z	INFO
DX de EA7IOJ	7092.0	EG7LE	saluditos joaquin	17:43Z	INFO
DX de PB5X	14258.0	VU2PAI	5/8 tu Pai	17:41Z	INFO
DX de G3VYF	50131.0	ER1SS	JO01FNKN46JX CQ - SSB	17:43Z	INFO
DX de IZ7GLL	14195.1	6L0NJ/4	=3	17:42Z	INFO
DX de UN7ECA	7016.7	SP8BBK/P	Tnx i rst 559 FB TU 44	17:42Z	INFO
DX de LU2DC	21070.0	IZ8MCG	BPSK31 Massimo	17:41Z	INFO
DX de NN3W	28030.0	PY4XX	LOUD	17:41Z	INFO
DX de EA1QT	50001.3	IW3FZQ/B	519	17:41Z	INFO
DX de W0RSB	21012.9	V31UB		17:41Z	INFO
DX de G0KSC	50094.5	LY2LE		17:41Z	INFO
DX de IZ4TSC	28450.0	PY2TKB	tnx qso	17:40Z	INFO
DX de EA4BMQ	7095.0	EA5HJO/P	SPA 434 ULTIMAS LLAMADAS	17:40Z	INFO
DX de G3VYF	50091.0	US0SU	JO01FNKN28JW 599 - Tnx.	17:40Z	INFO
DX de IZ8GEL	14258.0	VU2PAI	Tnx PAI 59 in Naples	17:38Z	INFO
DX de DJ2OR	28450.0	PY2TKB	tnx qso	17:39Z	INFO
DX de UA3DQ	7021.3	UA3EDP/6/P	tnx QSO cq cq	17:39Z	INFO
DX de IR1CCL	14175.0	IR1CCL	SAN BERNARDINO MONASTERY	17:39Z	INFO

Ready to send spots from NQVD

DX CALL	FREQ	COMMENTS
<input type="text"/>	<input type="text"/>	<input type="text"/>

SEND SPOT

Done Internet 100%

Web interface into the DX Cluster network from DX Central.

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The screenshot shows the DX Summit website interface. At the top, there's a navigation bar with links for NEWS, DX SPOTS, BAND SPOTS, ANNOUNCEMENTS, SEND SPOT, SEARCH, FORUM, and DONATE. Below this is a large table of DX spots with columns for call sign, frequency, mode, and other details. On the right side, there are several widgets including 'Solar-Terrestrial Data', 'Calculated Conditions', and 'YASME FOUNDATION'.

DX Summit has been around since about 1997.

Now you know exactly where to go to find that DX station.

Plunging Into the DX Cluster

So how do you tap into the information that is flowing through the DX Cluster network? The truth is doing so has become quite trivial these days. Many logging and contest programs have a "cluster window" built in. They allow you to simply choose a node, give it a few pieces of information – such as your call sign – and you're ready to go.

If you haven't taken the leap into computer logging, there are a few "web clusters" which allow you to join the cluster network by way of your browser. Two examples of web clusters are DX Summit <<http://www.dxsummit.fi/>> and DX Central <<http://www.dxcntral.com/>>. DX Summit was the first web cluster and has been around since about 1997. DX Central followed shortly thereafter launching in 1999 (full disclosure: your author is the "sysop" of the DX Central website and telnet cluster).

Connecting: Keeping It Simple

Finally, if you want a simple method for connecting to the DX Clusters via the Internet, you can always rely on a telnet connection. Microsoft Windows comes

with a very basic telnet client that is good enough to get you connected.

To use this method, go to "Start," "Run" and type "telnet" without the quotes. You should now see a "console" window and something like Microsoft Telnet>.

At this prompt you should be able to type "open cluster.dxcntral.com" – again without the quotes. You should now see a login prompt. Type your call sign and hit enter. If you see double characters, you will probably need to turn off "local echo."

Keep in mind that using the Microsoft telnet client will be quite clunky. I highly recommend either using the cluster features built into your logging program or, as an alternative, using a program designed specifically for DX Cluster.

A very popular "cluster only" program is called CC User, written by Lee Sawkins, VE7CC. This program hides much of the manual interaction between the user and the cluster and replaces it with a graphical interface. You can download CC User from the Web <<http://www.ve7cc.net/>>.

The best thing about CC User is that Lee has made it free for the ham community. That is certainly a price everybody can afford!

```

c:\Telnet cluster.dxcentral.com
Your callsign: nn00vudd--55

Hello Kelly, this is N0UD-7 in Woodland Park, Colorado
running DXSpider V1.55 build 0.33
Cluster: 285 nodes, 105 local / 2905 total users Max users 4927 Uptime 375 23:
05
N0UD-5 de N0UD-7 2-Aug-2010 1746Z DXCentral >
DX de EB7BMU: 50128.0 VL2GP IM67WI<ES>K027 THANKS 1746Z
DX de F6JHM: 50090.0 ES4EQ IM78<ES>K039 any ko49 qrv? 1747Z
DX de PA2J: 50097.8 ES0NV 579>>jo21 1747Z
DX de G0KSC: 50063.0 LY0SIX 579 1747Z
DX de PE7T: 50098.5 OM3CLS J032KF<>JN99FC 1747Z
DX de IZ0HQI: 14258.0 U02PAI pai 5/8 tnx 1747Z JN61
DX de EA1UT: 14029.0 PC10SAIL qsl via pa0rby up 1 1747Z IN53
DX de IZ6FUQ: 21235.0 PP2/DL3SEZ op. Lutz QTH Goiania 1748Z
DX de IZ7KNV: 7062.0 IQ7DG/P dci bt-007 1748Z JN81
DX de G8AXA: 50060.0 GB3RMK/B J001AI<ES>I077UO Short burst 1748Z
DX de UR7IQ: 7005.0 E05JFF URFF-093 UP 1 1748Z
DX de F4BYF: 14085.8 S9MBH 599 tnx Stelios 73 1749Z IN97
DX de EA7IC: 7080.0 EA3GFP/EA7 TNX5/9 Gracse Maria 1749Z
DX de LA1RCC: 14258.0 U02PAI Tnx 4 QSO 1748Z
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DX de EA2CTQ: 28455.0 D01KRT IM57>Es>K029, strong 1750Z
DX de ES1CW: 50076.0 CS5BLA/B J046DC<ES> 559 QSB 1750Z
DX de 5Q5Z: 50084.4 U00DMW/B tnx.5/9 in Norway-UP 5. 1750Z
DX de LA4UOA: 14195.0 6L0NJ/4 cq cq Dx 1750Z IM67
DX de EA7AH: 50087.0 F8OP tnx?! up5 1750Z
DX de RA1OHX: 14166.9 XT2EME tnx new one59 in finland 1749Z
DX de OH2BAI: 14167.0 XT2EME tnx qso 73 1750Z J020
DX de OX3MI: 28495.0 S9MEE URFF-093 UP 1 WFF NEW ONE 1750Z
DX de UR7IQ: 7005.0 E05JFF 1750Z KN08
DX de OX3SA: 7015.8 U0PZZ J047UA<>KN18JS 559 here 1750Z
DX de OZ6PI: 50084.0 U00DMW/B Simplex. Band in good shape 1750Z
DX de EA8TH: 21012.9 U31UB QRP Qsy 7042 khz 1750Z
DX de U03SIE: 7042.0 U03SIE tnx QSO cq cq 1751Z
DX de U03DQ: 7015.7 U0PZZ Tnx 5/2 73! 1751Z
DX de IZ3QET: 14195.0 6L0NJ/4 YOU ARE THE WORST JERK BIG 1751Z
DX de A00IUV: 14200.0 9K2GS I075TU<ES>J091CQ 539 1751Z I075
DX de GM4ZMK: 50028.0 SR3FHB/B

```

“Old school” telnet connection to a DX cluster node. While this is still an option to connect to the cluster network, it should be a last option.

OK, You're In the Cluster. Now What?

So now that you are logged in, what do you do? Well, you could just let the cluster go about its business and you'll begin to see spots come across the screen.

Generally speaking, reading the spot from left to right you see the station that posted the spot, the frequency of the DX, the DX station's call, comments made by the poster and finally the time the spot was posted.

There are cases where you may see additional information such as DXCC prefix of the DX or whether the DX station uses Logbook of the World. As the underlying protocols of the cluster network continue to evolve, the various software authors occasionally add features that may not be supported by all nodes.

If you are using a graphical program to connect to the cluster network – such as your logging program or CC User – you should have “buttons” that will issue commands to the cluster. Probably the most popular command you will use is “sh/dx” for Show DX. This gives you a listing of roughly the last 20 spots on the network. This command is very helpful when you first log in as it will give you a snapshot of the last few minutes worth of spots.

A Few Caveats

While the DX Cluster network is a great way to find stations on the bands, there are a couple of things to always keep in mind.

First and foremost, never “just assume” the posted spot is correct. For example, just because the spot was posted as P5AA, always listen to the DX station and verify his or her call sign. I have seen many instances where spots (information about a DX station) being posted are completely wrong – or “busted” as it's frequently called.

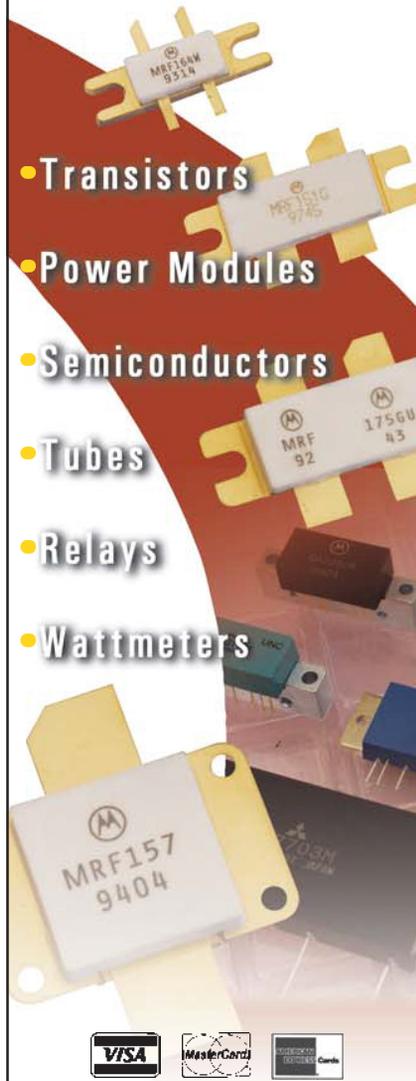
Second, when a spot is posted, don't just tune to the frequency and start calling. Again, listen for the DX. Can you hear him? The band might not be open to his part of the world from your QTH. If you can't hear him, you can't work him – and if you just call blindly you'll likely be making QRM for somebody who *can* hear him. I can't stress enough the importance of listening – but that's another topic unto itself.

That ‘Polarization’ Thing

As I mentioned earlier, the cluster network can be polarizing to some. Many have argued that the advent of the DX Cluster has killed the art of DXing. While

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I don't subscribe to that train of thought, it has certainly added to some of the mayhem we hear on the bands today.

Since there can be thousands of DXers connected to the network at any given time, when a rare spot pops up, those thousands of DXers all descend upon the DX station at once.

Again, the most important thing to do is to listen first. Once you're satisfied the station is who the cluster said he is and you feel he's workable, now is an excellent time to put him in the log.

Years of Experience

I have been running DX Clusters for over 15 years. While many of the "local" packet cluster nodes are a thing of the past, there are many clusters accessible via the Internet.

[A great resource for finding more information and even a cluster to connect to on the Internet is DXCluster.Info <http://www.dxcluster.info/>](http://www.dxcluster.info/). It's a site maintained by Jim Reisert, AD1C, and is a wealth of knowledge to get you started.

Whether you're just starting out in your DX endeavors or an accomplished DXer, the cluster is a great tool to help you find that rare station. I'll let you explore the possibilities from here. If you have any questions about how to access or use the DX Cluster network, don't hesitate to ask via the e-mail address at the end of this column. I'll try my best to answer any question you may have.

More On 'What's in a Callsign?'

... Maybe more than you realize. I received an email from Ed Ray, W4NEZ, in response to July's *DX World*. Ed was commenting on my discussion around the best letters and their phonetics to have in a call sign. Ed writes: "I can imagine that your July, 2010, *WorldRadio Online* article stirred up many more responses than this one of mine. But, this old man's memory was so deeply triggered by your final paragraph that I am forced to offer you another phonetic call sign twist – this one out of history."

He went on to say that "this may have come from when the ZERO call area was created, but I first heard it in the 1950s when the number of us "Quacking Ducks" on 20-meters was on the increase.

"Using clever phonetics for call-signs was *the* thing to do in those days. The call sign was WØIWR, and his phonetic call was *Doubleyew Nothing, I Was Robbed*. I can't remember the fellow's name, but his phonetics stay with me, even after half a century – Chip was right."

The "Chip," Ed is referring to is Chip Margelli, K7JA. In my July column Chip pointed out that many might not recognize the call "KH6 Bravo Zulu Foxtrot." However, "KH6 Bloomin' Zipper Flipper" is an unmistakable call sign that still lives in minds of many today.

Enduring DX Friendships

And finally this month, *WRO*

Promotion & Recruitment columnist "Dee" Logan, W1HEO, wrote in response to my August column. I was discussing the seeming degradation of our on-air operating habits.

Dee writes: "Enjoyed your column. It took me back to some of Hugh Cassidy's articles and his collected works in the book *DX Is!*"

"Your points are well taken, and we can only wish that some of the lids you referred to would read and learn. Alas, I doubt that it will happen.

"Over my 40 years of DXing it has been evident that apart from chasing entities, there are much more rewarding aspects to enjoy. Friendships for example. I'm still in close touch with G3ZCA and VK9LH after some 35 years, and have visited both, and vice versa. These I treasure."

"Helping other DXers is another important aspect," Dee continued. "I was helped by others as I chased the rare ones. A telephone call one Sunday afternoon from a friend steered me to a needed Asian country, for example. The W7PHO family hour helped me find a few rare ones as well.

"International fellowship has got to be one of the most important and rewarding aspects of our wonderful hobby. Our one-on-one international conversations over the airwaves may do more good than a politician's hot air. This is the human side of ham radio, and we should make the most of it.

"We DXers owe a great deal to the many unselfish operators who have activated the rarest entities, often at great personal risk and expense. We need to remember (these things) the next time a rare one comes on, and follow good operating practices."

I couldn't agree more with Dee's sentiments as I, too, have had the pleasure of becoming good friends with hams on the "DX side."

We have the ability as DXers to transcend cultures and traditions with a simple push of a microphone button or key paddle. Let's always try to put our best face forward and remember it's not always about *being first* to put the DX in the log.

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

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Dayton Youth Forum, Part II: The People Who *Make It Happen*

By Carole Perry WB2MGP

What a wonderful gift of time. This year, the terrific folks at the Dayton Amateur Radio Association, DARA, generously gave me a three-hour session for our Saturday morning time slot of the 23rd annual Youth Forum at the Dayton Hamvention®.

It was very exciting to be part of this special event on May 15 with the nine young speakers who gave such excellent presentations.

In Part I of *Hams With Class*' Dayton report in *WorldRadio Online*'s August edition, I highlighted the youngsters who spoke and summarized what their interesting and impressive talks were about. I was a very proud moderator that day.

There are so many wonderful people who work diligently to make this annual forum a success. Several co-sponsors of the Youth Forum, as well as some people with exciting announcements for the kids, stopped by to wish them well.

Ken Salhoff, N4TCP, had volunteered to help us out after he had attended the 2009 Youth Forum. He made the wonderful surprise announcement at the start of the forum that he would be producing anodized aluminum dog tags personalized with the children's call signs and names, in a choice of color.

Every youngster in the audience, as well as every young speaker, had their own personalized souvenir mailed to them by Ken. He even surprised the moderator with one. I love mine, and I wear it all the time. Thank you, Ken. [Click here to find out more about what Ken does <http://www.warp9engraving.com/>](http://www.warp9engraving.com/).

Fellow Radio Club of America (RCA) Director, Tim Duffy, K3LR, and his young Contest University student, Cal Darula, KØDXC, spoke at my Instructors' Forum and at the Youth Forum about this wonderful event that now takes place at Dayton.

Contest University (CTU) was started in 2007 by Tim. He noticed the Potomac Valley Radio Club had conducted a contesting-related seminar in the Washington, D.C., area that was highly attended. Combining the idea of contesting presentations for an entire day alongside the Dayton Hamvention® seemed like a great idea. Tim assembled world class presenters (professors) and announced the first event in January 2007. ICOM America has been a substantial supporter from the beginning. Nearly 150 attended the first CTU in Dayton in May 2007. CTU was off and running!

Since that time nearly 1,200 amateur radio contest enthusiasts have attended the nine CTUs in four countries. Every CTU has had a scholarship program for operators under 25 years of age, that is 100 percent funded by donations.

In 2011, CTU Dayton will increase its focus on youth contest operating. With Scott Johns, W3TX, and me leading the initiative, CTU will add a classroom totally dedicated to youth radio operating and learning.

K3LR is doing a superb job with this project. [Watch Contest University's website for up to date information <http://contestuniversity.com/>](http://contestuniversity.com/).



Cal Darula, KØDXC, with Tim Duffy, K3LR, from Contest University, at the Dayton Youth Forum.



Al Eckman, WW8WW, left, leader of Amateur Radio Group of Youth in Lowell (Michigan), who recorded the Dayton Youth Forum, poses with Carole Perry, WB2MGP, and Ralph Irish, W8ROI.

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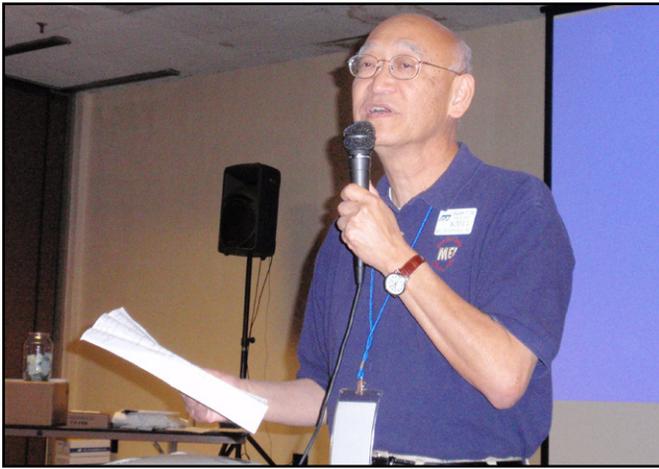
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Martin F. Jue, K5FLU, founder and CEO of MFJ Enterprises, encourages the kids to be passionate about their radio hobby.

Ray Novak, N9JA, ICOM America's general manager of amateur products, is a longtime friend of our Youth Forum. Through Ray, ICOM donated a dual-band HT to every one of my 9 young speakers.

In addition, two more handhelds were donated as door prizes to be won by two lucky youngsters in the audience. Because Ray is totally dedicated to the effort of getting people involved in amateur radio in the schools, he also donated, on behalf of ICOM America, an HF rig, to be won by one of the supportive adults in our audience. It was, in fact, won by a gentleman who is starting a radio class in a school.

Ray also spoke to the audience about the importance of young people pursuing their interest in a technical hobby. In addition, ICOM had a whole table set up with ham radio comic books and T-shirts for everyone. ICOM has supported the Dayton Youth Forum for all 23 years it has been presented.

Gordon West, WB6NOA, another fellow RCA member, greeted the audience in his usual flamboyant manner. Dressed as a professor, he called up several kids to demonstrate exciting ways of teaching basic principles. It's always fun to have Gordo at our forums. I personally use his excellent study guides and training manuals when introducing a new radio program in a school.

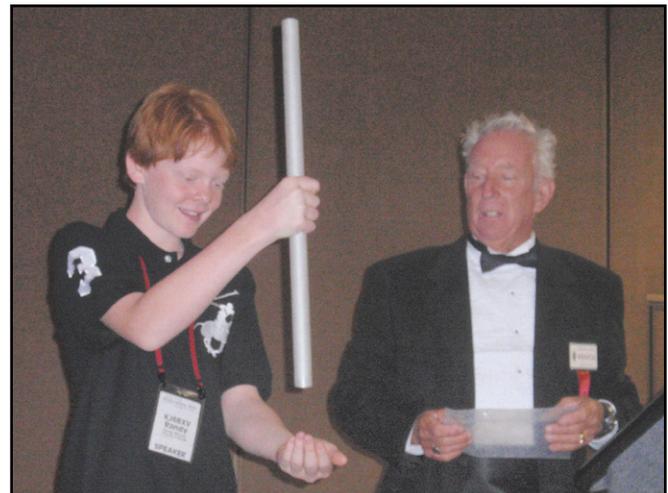
Martin F. Jue, K5FLU, CEO and founder of MFJ Enterprises, has been a supporter of my educational endeavors for almost 30 years. He has always been there for us when we needed door prizes for the Instructors' Forum as well as for the Youth Forum in Dayton.

His wonderful, heartfelt talk to our audience about the importance of young people choosing their hobbies carefully and being passionate about it was extremely well received. He told of his own experiences as a young boy, first getting involved with building a crystal radio at eight years old, enjoying reading about it, being in Cub Scouts, and how it led to a lifelong passion and the founding of a most successful business.

Dave Kalter, KB8OCP, Forums Chairman, and his assistant Don DuBon, N6JRL, brought their Youth DX Adventure team to the Forum to make an announcement about their plans to go to Costa Rica with selected kids from across the country. There are no costs to the children thanks to the sponsors and their host Carlos Diez, TI5KD. The goal is to teach youngsters how to



Ray Novak, N9JA, Division Manager Amateur Products of ICOM America, addresses a Dayton Youth Forum session.
(Photos courtesy of WB2MGP)



Eleven-year-old Randy Mitchell, KJ6BXV, participates in a demonstration with Gordon West, WB6NOA, at the forum.

handle DX pile ups and how to operate correctly and learn to exchange cultural data. Dave and Don, and all those who support this exciting venture, believe that youth is the lifeblood of amateur radio.

As of the writing of this column, they hadn't finished their write-up about the Youth DX Adventure in July. Stay tuned to this column for lots more information about how it went and how you can get involved with this worthwhile project. [There's also more information about Youth DX Adventure on the Web <http://www.qsl.net/n6jrl/>](http://www.qsl.net/n6jrl/).

One of the longtime sponsors of the Dayton Youth forum is the L'Anse Creuse ARC. For 18 years Ralph Irish, W8ROI, as a member of this club, has provided us with printed door prize tickets, along with numerous donations every year, including prizes for the youngsters in the audience. In addition, with club president Dr. Henry Catherino, N8AT, telling us about the educational efforts of their club, they distributed packets of amateur radio stamps, space covers, and other *goodies* to each of the nine speakers. They also donated four MFJ radios as door

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prizes. I count on Ralph as a great "monitor" every year, and I totally appreciate the support of the L'Anse Creuse ARC.

Bob Heil, K9EID, of Heil Sound, wasn't able to make it to the Youth Forum, but spoke at the Instructors' Forum about the importance of getting kids interested in radio technology. He was a sponsor of that forum as well.

We were proud to have Kenwood join us as a co-sponsor of both my forums this year. An instructor won one of their radios, and a youngster in the audience won another. The kids are so excited when they win these prizes. It's a joy to see it.

It was my pleasure to introduce Roy Wildermuth, W2IT, who is the AWA (Antique Wireless Association) banquet chairman this year. Roy has invited me to be keynote speaker at their conference in Rochester, New York, August 17-21. He announced the launching of their "Give a Kid a Rig" campaign which will raise money through the sale of used radios and through donations which will go directly into the RCA Educational Youth Activities Fund. Roy is a staunch supporter of getting young people into radio and technology programs in the schools.

Last, but definitely not least, was the huge support of the organization through which I devote my efforts to promote radio in the schools - the Radio Club of America. In attendance this year was my dear friend Richard Somers who is responsible for donating the "seed money" we use to reward technically talented youth in grades 12 and below, and to donate to schools who are setting up radio/technology programs.

RCA President Stanley Reubenstein - always an enormous help - handed out the RCA Young Achiever's Award Certificate, along with a stipend of \$100 to each of the young speakers. We were cheered on with the support of other RCA members Steve Meer, Jeff Grazi, Jim Hendershot, and Ron



Dave Kalter, KB8OCP, general forums chairman, and Don DuBon, N6JRL, both whom, organized the Youth DX Adventure to Costa Rica.

Jakubowski, all of whom were such big helps to me at both of my forums.

Enough good things can't be said about all the above mentioned co-sponsors who do so much work to help make sure that the Youth forum is a fun, educational and inspiring experience for all the young people. Special thanks always go to DARA for its tremendous support and promotion of youth in amateur radio.

Please have technically talented and enthusiastic youngsters you meet, contact me this fall if they'd like to speak at the Youth Forum next May.



More on Cycle 24 and Two Recent Predictions

By Carl Luetzelschwab, K9LA

The May 2010 column looked at our recent solar minimum period in detail, and then evaluated the rate of ascent of Cycle 24 compared to previous solar cycles (specifically Cycles 19, 20, and 22).

Table 1 of this month's column updates Table 1 of the May column for data through the end of December 2009. The May column had smoothed sunspot number data for seven months after solar minimum for each cycle – this new data goes to 12 months after solar minimum, and I added data from Cycles 21 and 23.

Instead of simply calculating a percent increase using the smoothed sunspot number at the start and at the desired end point, I curve-fit an exponential equation to the ascent of each of the six cycles, calculated the derivative of the resulting equation, and then calculated the slope at the 12-month point. This is a more rigorous analysis than the *percent increase* method I used in the May column. Table 1 shows this data.

The data is ordered from the cycle with the highest smoothed sunspot number (Cycle 19) to the cycle with the lowest smoothed sunspot number (Cycle 20). Of course we don't have any data on Cycle 24's maximum yet, so it's listed last.

The important observation of the data in Table 1 is the bigger cycles (in terms of their maximum smoothed sunspot numbers) have higher slopes after 12 months (Cycle 21 is a bit of an anomaly). That generally means a big cycle has a faster rate of ascent (slope) than a small cycle. This trend does not bode well for Cycle 24 so far with the value of its slope at 12 months.

This suggests Cycle 24 may be an average or below average cycle. This is in accord with two recent predictions for Cycle 24. The first prediction comes from A. Yoshida and H. Yamagishi (*Predicting amplitude of solar cycle 24 based on a new precursor method*, *Annales Geophysicae*, Volume 28, pages 417-425, February 2010).

They showed that the monthly smoothed sunspot number or its rate of decrease during the final years of a solar cycle is correlated with the amplitude of the succeeding cycle. Based on this relationship, they predict the amplitude of Cycle 24 to be 84.5 +/- 23.9. This prediction is in line with NOAA's current prediction of 90 +/- 10 (<http://www.swpc.noaa.gov/SolarCycle/>).

The second prediction comes from R. P. Kane (*Size of the coming solar cycle 24 based on Ohl's Precursor Method, final estimate*, *Annales Geophysicae*, Volume 28, pages 1463-1466, July 2010).

For his prediction of Cycle 24, Kane used the precursor method of A. I. Ohl, which says the geomagnetic activity during the declin-

Cycle	Maximum smoothed sunspot number	Slope after 12 months
19	201	4.57
21	165	1.50
22	158	3.70
23	121	3.32
20	111	1.18
24	unknown	1.24

Table 1 – Slope Comparison

ing phase of a sunspot cycle is well correlated with the maximum smoothed sunspot number of the next cycle. For geomagnetic activity, Kane employed the *aa* (antipodal amplitude) index (for a discussion of the *aa* index and other geomagnetic activity indices, see the April 2009 column). In essence, Ohl's method says the lower the *aa* index at solar minimum, the smaller the next cycle.

In 2007 Kane predicted Cycle 24 would attain a smoothed sunspot number of 124 +/- 26. This was based on a 12-month running mean *aa* index of 15.5 in March-May of 2006. At the time, this was considered solar minimum, but we know now that it wasn't.

A further decrease of the *aa* index to 14.8 in July 2007 resulted in Kane modifying his prediction for Cycle 24 to 117 +/- 26.

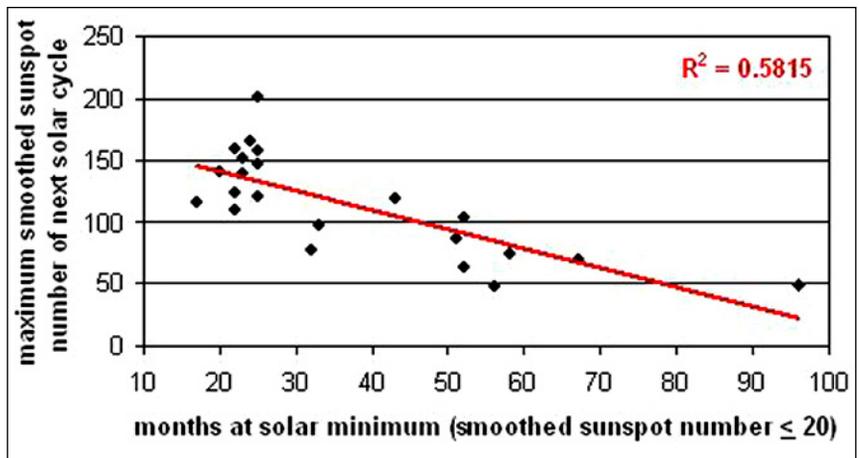


Figure 1 – Next Maximum Versus Duration at Solar Minimum

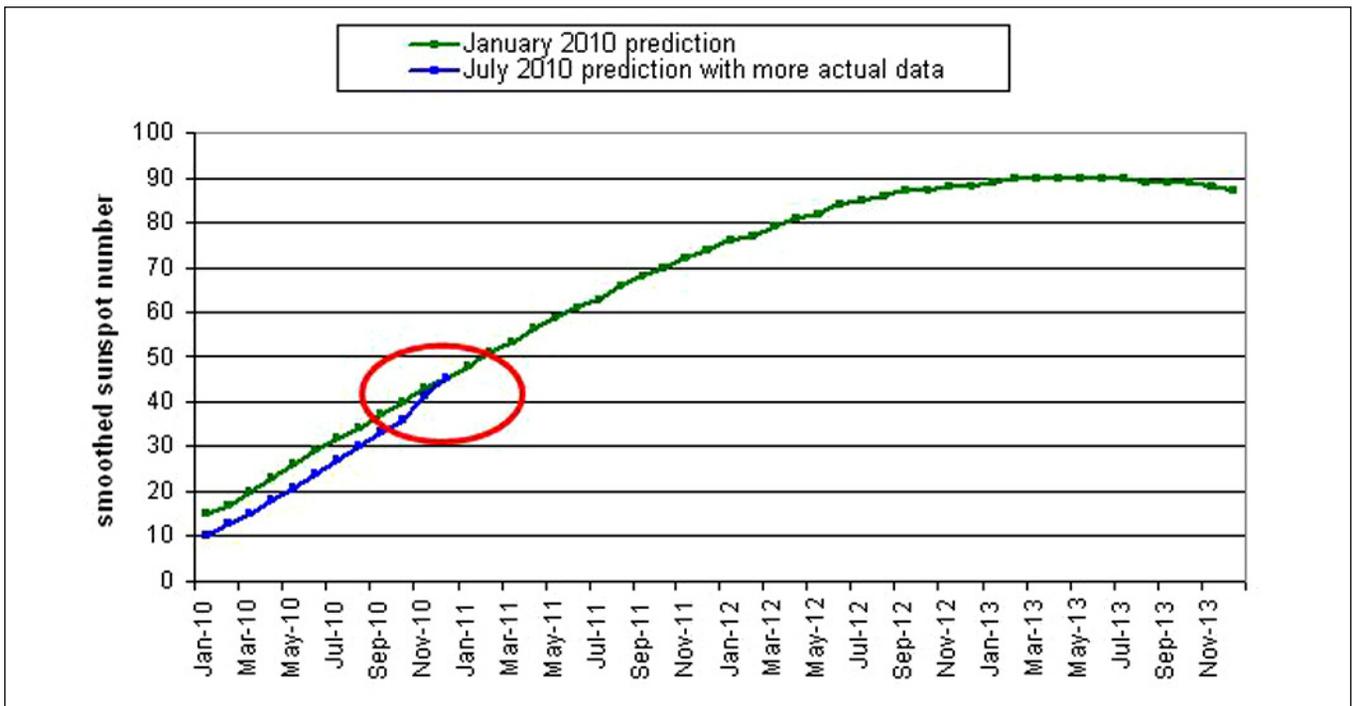


Figure 2 – NOAA Predictions

Again, this was considered solar minimum, but again it wasn't. The *aa* index kept decreasing, and it decreased to a value of 8.7 in May 2009. It is likely that this is the true minimum in the *aa* index as the smoothed sunspot number minimized in December 2008. This gives Kane's final prediction of 58 +/- 25.

Now Kane's prediction of 58, even with an uncertainty of 25 each way, is pretty darned low. I think most solar scientists now believe Cycle 24 will be a low one.

Unfortunately many of the early predictions of a big cycle based on our understanding of the processes in the Sun may not come true – thus solar scientists still have work to do. On the other hand, it's good to know that simple precursor methods may still be valid, like Ohl's method used by Kane and the one I presented in the October 2008 column. The latter plots the magnitude of the next solar cycle versus the length at solar minimum for all previous cycles, and is Figure 1.

For our recent solar minimum period, the number of months below a smoothed sunspot number of 20 appears to be headed for 55 months – which predicts a maximum of 80 for Cycle 24.

What about NOAA's prediction at <http://www.swpc.noaa.gov/SolarCycle/>? Is it still a good prediction? I'm beginning to believe there's a new prediction in our future from NOAA. The problem

is Cycle 24 didn't start when the NOAA prediction expected it to start. This anomaly can be seen in Figure 2.

The green curve is the NOAA prediction issued in early January 2010, and incorporates smoothed sunspot data through June 2009. The blue curve is the NOAA prediction issued in early July 2010, and the difference is due to six more months of actual data. The maximum is

still expected to be a nominal 90 in May 2013, but the prediction has a "catch-up" period (circled in red) in late 2010. If this "catch-up" doesn't happen, the maximum will likely be pushed farther to the right than May 2013 – and maybe even lowered.

How do we summarize all of this? I think the best way is to say we'll just have to wait to see what happens.

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CW Naysayers: Would You Like Hollandaise Sauce With That Hat?

By Randall Noon, KCØCCR

Data recently released by the FCC indicates that as of June 10, 2010, there were 694,346 FCC licensed amateur radio operators. This is the all-time highest number of licensed amateurs, and is double or triple the number of amateurs licensed back in the so-called “golden age” of ham radio, depending upon when a person thinks the “golden age” occurred. The percentage breakdown:

Male:	85%
Female	15%
Novice:	2.3%
Technician:	49%
General:	22%
Advanced:	8.6%
Extra:	17.5%

As was noted in a previous column, the number of Morse Code contacts submitted in Field Day logs since code tests were eliminated as a license requirement has not dropped off. In fact, it may be increasing slightly as a percentage of total QSOs. While the exact QSO numbers will not be published until December, there did not appear to be any decrease in CW activity during Field Day 2010.

The number of members belonging to FISTS, the International Morse Preservation Society, now tops 15,000, and is growing at a faster rate now than when the Morse Code test requirement was in place.

Several other Morse Code clubs have also sprung up since the end of Morse Code testing and have had no problem gathering members. SKCC, the Straight Key Century Club, for example, which was begun in 2006 now has about 7,000 members.

Facts being facts:

- 1) Will the journalists and other experts who predicted that the Internet would kill off ham radio, or that ham radio was a passé technology, please order crow for dinner tonight?
- 2) Will those who predicted that ending Morse Code testing would be the death knell of Morse Code on the airwaves, please find your hat and eat it? Would you like Hollandaise sauce with that?

Ham radio continues to be a vital hobby and Morse Code continues to be an important part of that hobby. Of course, the obvious reason why Morse Code has been *and continues to be* an important part of amateur radio is because Morse Code is a practical and dependable communication mode, not because the FCC required a test.

The new numbers also suggest some actions that clubs and Elmers should consider. Since half of all licensed hams are Technicians, are Techs being encouraged to use their CW privileges on the HF bands? And, what are clubs and Elmers doing to encourage more women to become hams? With only 15 percent of licensed hams being female, there is a lot of potential growth in this area.



SKCC
Straight Key Century Club

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The *Straight Key Century Club* - aka SKCC is the fastest growing group of straight key, morse code operators in the world. First organized in January of 2006 our membership has rapidly grown to include thousands of members from all corners of the globe.

Here's how it works:

- Membership is free.
- SKCC is open to any interested licensed radio amateur.
- SKCC numbers are issued for life. Once you get it, it's yours.
- Exchange SKCC numbers using a Straight Key, Bug or Side Swiper.

To Request a SKCC Number, send an email with 'SKCC # Request' as the subject. Include: Your name, call, city and state and a brief description of why you're joining SKCC

The Straight Key Century Club's web site reported the organization's membership at almost 7,000 – and growing – at the end of July.

I sometimes hear some hams denigrate the current tests given for the three license classes. If you are such a ham who believes the tests have been *dumbed down*, please do the following:

If you were granted a license more than 10 years ago, take an on-line test equal to your current license level and see how well you do. Can you pass it the first try?

I suggest as a personal improvement project, or perhaps even a club project, that those amateurs who were licensed a decade or more ago take a current test, and then brush up on the questions they miss. I think it would be an eye-opener for many.

Plotting Good Things @ QRZ.com

If you haven't noticed it yet, let me tell you that the QRZ.com call sign lookup site has been providing a new feature that is very handy for propagation purposes. While the website has been providing the Maidenhead Grid Square, license class, name and address of the call sign entered into the "call sign search" window for some time, it is now providing the land distance from your location of record to the call sign in question as well as the azimuth angle.

In other words, if KCØCCR made contact with WB9M and then looked up WB9M on QRZ.com, in addition to the usual information, he would also find that the azimuth angle between the two stations was 133.3 degrees, and the land distance was 215.5 miles.

This makes analysis of your antenna's performance easy in several ways. After a number of single-hop QSOs are made, the azimuth angles, distance, and RST report can be mapped to determine the radiation pattern of your antenna. If one QSO was a single hop, and another was a double hop, a person can even estimate the attenuation related to the double hop as compared to the single hop.

This data also allows a person to estimate the signal's take off angle. Assuming that a sporadic E's sky wave "bounce" occurs at a height of about 70 miles, and ignoring the curvature of the earth to simplify things, (*relax, it's just an approximation*) the take off angle of your antenna for that contact can be estimated.

For example, consider a single-hop 6-meter QSO distance of 450 miles from station to station. The triangle used to estimate take off angle is 225 miles along the base (half the station to station distance) and 70 miles in height. The ratio of height to base is then 0.267.

Dusting off some old trigonometry, the ratio of height to base is the tangent of the takeoff angle. So, using a calculator (or even a slide rule or trig tables) to determine the inverse tangent of 0.267, sometimes called the arctangent, finds that the take off angle is 15 degrees, which is a pretty good take off angle for 6-meter DXing.

Here is a second example – using a high frequency band QSO completed at night, which usually involves the F2 portion of the ionosphere:

For estimation purposes, use a height of 161 miles for the F2 layer. In this case,

a contact was made between KCØCCR and KA9NSA on 40 meters. QRZ.com indicated the azimuth angle was 96.5 degrees, mostly eastward, and the distance between stations was 38.8 miles. The ratio of height to base is 8.300. The arctangent of this ratio is 83 degrees, which means that the take off angle for this contact was 83 degrees.

From this data, it is concluded that the antenna in question for this QSO was effectively transmitting a NVIS – a near vertical incidence sky wave. The signal report, 559 given by KA9NSA, suggests

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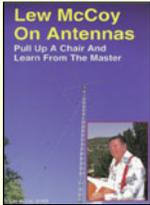
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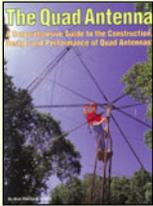


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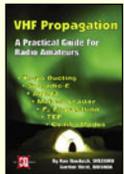


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by Dave Ingram, K4TWJ

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that the transmitted signal was outside the primary signal take off angle lobe.

This was indeed the case. The antenna in question was an end-fed, long-wire, about 160 feet long, 25 feet high, and oriented north and south. A similar 40-meter contact made the same night with an operator in Seymour, Indiana, at an azimuth of 93.8 degrees, a distance of 517.9 miles, and a signal report of 599, indicates that for that second QSO the take off angle was about 32 degrees.

Since the signal report for this QSO was an S9 and the previous signal report was an S5, if a person can believe the signal reports, then the take off angle at 83 degrees for this antenna in the eastward direction was about 24 dB less strong than at the take off angle of 32 degrees. A one S unit drop is supposed to be about a 6 dB drop in signal strength.

Of course, it was always possible to do these sorts of calculations before QRZ.com provided azimuth and distance data as part of the "look-up" page. However, it is now *armchair easy* to do this type of performance analysis. A person doesn't have to drag out maps, scale distances, and plot azimuths. Thank you, QRZ.com.

Just How Fast Are you Going?

When sending CW, do you sometimes wonder what your words-per-minute speed is? Here are two easy ways to estimate your sending speed.

Method 1. Using a clock that has a seconds hand, send a string of dashes using your normal spacing and dash length such as you would for the number zero (*dahdahdahdah*). The number of dashes that you send in five seconds approximates the number of words per minute at that pace.

Method 2. The word "Paris" in Morse Code is considered the standard word when figuring speed. If you send the word "Paris" 20 times in one minute, your sending speed is 20 words per minute. However, sending "Paris" over and over again for a minute can be a little boring, so I suggest this: Send the word "Paris" five times and time yourself.

Now check the following table to see how fast you're sending. As a point of comparison, I have labeled the sending and receiving speeds that used to be required for the Novice, General and Extra Class licenses.

100 seconds	= 3 wpm
60 seconds	= 5 wpm (the old Novice and Tech Plus requirement)
43 seconds	= 7 wpm
33 seconds	= 9 wpm
27 seconds	= 11 wpm
23 seconds	= 13 wpm (the old General Class requirement)
20 seconds	= 15 wpm
18 seconds	= 17 wpm
15 seconds	= 20 wpm (the old Extra Class requirement)

Upcoming CW Events...

Don't forget the Fall Sprint on Saturday, October 9, from 1 p.m. to 5 p.m. Eastern time (1700 UTC to 2100 UTC) sponsored by FISTS, the Morse Code people. If you haven't participated in a Sprint, you are missing a fun CW event and you don't even have to be a member of any organization to participate.

There are at least four reasons why you should participate:

First, it is short – just four hours. It is not an endurance contest to determine if a person can still send code after being sleep deprived for two days.

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Second, it is not like some of the other contests where a person just learning his way around a key has to compete with CW that sounds like it is coming from a Maxim machine gun. Slow code operators can find plenty of other slow code operators.

Third, the pace is relaxed. The participants are not over-caf-feinated on triple espressos. It is not unusual for contacts to include a little chit-chat.

Last, if a person is trying to earn a Worked All States CW award from FISTS or some other organization, this is a great way to make contacts with CW operators from a lot of states in a short period of time. To check out the rules, go to the FISTS website <<http://www.fists.org/sprints.html>>.

For operators who want to participate in full contact, cage match CW radiosport, I suggest that you prepare for the ARRL CW Sweepstakes on November 7-9. The contest begins on 2100 UTC Saturday and runs until 0259 UTC on Monday. Stations participating may operate no more than 24 of the 30 hours. The object is to exchange QSO information with as many other CW operators as you can on the HF bands, excluding 12, 17, and 30 meters. For more information, check out the ARRL's Sweepstakes website <<http://www.arrl.org/sweepstakes>>.

See you on the left side of the bands – KCØCCR.

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Special Thanks to AB3AP, Mike Markowski, for the design of this web page.

About Fists

- There is only one requirement to join FISTS:
A love of Morse code and a concern for its perpetuation
- What is FISTS, and what do we want to accomplish?
- The official story of how FISTS got its name, from our founder, Geo G3ZQS

Membership in FISTS, the International Morse Preservation Society, "now tops 15,000, and is growing at a faster rate now than when the Morse Code test requirement was in place."



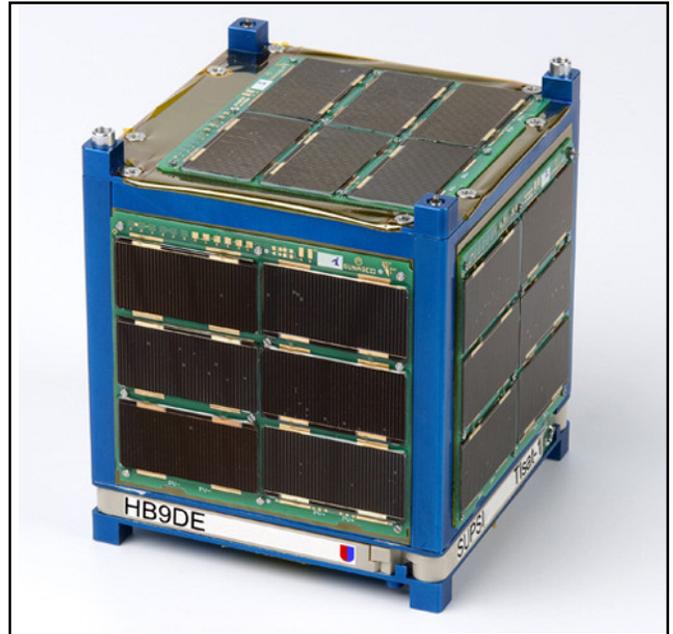
Money Certainly Helps Make the Satellites Go 'round

By Terry Douds, N8KI

At the Dayton Hamvention®, a challenge was issued by the Dayton Amateur Radio Association (DARA) for a one-for-one matching gift to AMSAT-NA of up to \$5,000. The goal was met in less than two months, due to the generosity of AMSAT members and others. These donations will help to support getting AMSAT back into space.

DARA President Steve Coy, K8UD, wrote to AMSAT President Barry Baines, WD4ASW, saying, "I am glad that this promotion has worked well and I am looking forward to other endeavors in the future. AMSAT has been a major attraction to Hamvention® for many years, and hopefully for many years to come. I hope other organizations will step up with similar programs. Launches have not been going down in price, however with the recent launch of Falcon 9, perhaps there may be other opportunities in the future. We all need to continuously look outside the box for new solutions. Again, DARA congratulates all the AMSAT members and best wishes for the new satellite."

While this one-for-one matching opportunity has been met, AMSAT continues on its capital drive to raise \$100,000 in both 2010 and 2011. One AMSAT member has just agreed to pledge \$500 to AMSAT as an additional "one-for-one" matching opportunity, so donations made now will continue to grow.



The Swiss CubeSat TI sat-1, HB9DE, has a 145.980MHz FM, AFSK uplink; a 437.305MHz FM, AFSK downlink and a 437.305MHz CW beacon.

2010 AMSAT Space Symposium This Month

In the Future Fun Events Dept., the 2010 AMSAT Space Symposium and Annual Meeting will be held on October 8-10 at the Chicago/Elk Grove Holiday Inn, located near O'Hare International Airport.

The 2010 Symposium Committee has completed the room reservation and registration details for the event. The hotel booking code for the Elk Grove Village Holiday Inn is AMS for the AMSAT convention. The \$79 per-night room rate will apply for those using this group code. There is a direct Web page link to the Elk Grove Village Holiday Inn.

On Sunday following the conclusion of the Symposium activities you are invited to participate in a tour of the Tevatron at the Fermi National Accelerator Laboratory. Part of the activity will be a tour of the multi-megawatt RF portions of the particle accelerator as well as a tour of the new Super Conducting RF Test Facility. Carpools will be arranged for travel to FermiLab and back to the hotel. The planned start time for the FermiLab tour will be noon.

Reflections on Dayton 2010

If you weren't able to attend the Dayton Hamvention this year (and I fall into that category), you missed five interesting and informative presentations at the AMSAT Forum. The complete presentations are now available on the AMSAT website. From the menu on the left side of the home page, select *AMSAT Video News*.

There's also a direct link to the AMSAT Video News Page. Here's what you'll find: "AMSAT Status Report," "AMSAT Satellite Operations and International Satellite Operations," "Integrating Satellite Operations into DXpeditions," "Getting ARISSat-1 Ready to Fly," and "NextGen CubeSat Program Update."

The files are in Windows Media Video (.wmv) format and will work with Internet Explorer and Windows Media Player on a PC, Safari and QuickTime (with .wmv plug-in) under OS X on an Apple Macintosh, and with a .wmv player under Linux or other operating system.

As you can see, it's not all AMSAT when it comes to creating satellites and developing new uses for them. I found this very interesting and it will be intriguing to see how it develops.

Lunar CubeSat in Planning Stages

In a story that was first reported in the European EE Times, Vermont Technical College, Norwich University, St. Michael's College, and the University of Vermont are working together to land a CubeSat on the moon.

The team is currently working on initial designs for the spacecraft, with the aim of achieving further NASA funding in June 2011. Primary funding for this effort is being provided by the Vermont Space Grant Consortium under a NASA grant.

In the current phase of the program, The Vermont CubeSat project, led by Professor Carl Brandon of Vermont Technical College, aims to launch by 2015. It is developing the first CubeSat that can be launched from a geostationary orbit to successfully land on the moon. The CubeSat electronics are based on a Texas Instruments (TI) MSP430 processor and the software will control navigation, communications, scientific instruments, camera and the CubeSat's propulsion system.

The proposed lunar lander will be a single unit CubeSat (10x10x10 cm) with four mini-thrusters on the bottom to maximize control and maneuverability. Two potential options for propulsion are being examined – a bi-propellant booster or a Xenon powered ion drive booster. The Xenon thruster can also be used for a triple CubeSat that would go to and orbit the moon.

This will be an exciting project. And if it is successful, it will bring a new level of sophistication to the development and use of CubeSats.

From Around the World . . .

In international news, B.A. Subramani Mani, VU2WMY, noted from the ISRO Satellite Center in India that the July 12 launch of the Indian Space Agency's Polar Satellite Launch Vehicle (PSLV-C15) from Sriharikota was successful. "All five satellites including the StudSat and TISat aboard the PSLV-C15 were successfully separated from the vehicle and they are in the (correct) 640 Km orbit right now," he wrote.

The PSLV-C15 launch included a primary payload of the CartoSat-2B remote sensing satellite and AISat-2A satellite. The three other satellites included AISSat-1, a Norwegian Defense Research Establishment satellite to demonstrate a new maritime AIS receiver; and the TISat-1 and StudSat amateur radio CubeSat payloads.

Frequency information:

TISat-1: Swiss CubeSat

Uplink: 145.980MHz FM, AFSK

Downlink: 437.305MHz FM, AFSK

Beacon: 437.305MHz CW

Callsign: HB9DE

StudSat : India CubeSat

Uplink: 437.505MHz, 9600bps FSK

Downlink: 437.505MHz, 9600bps FSK

Beacon : 437.861 MHz (10 mW), 20bps ASK

For updates, visit the Team STUDSAT website.

Christian Leloup, F1AFZ, noted the beacon on 437.305 MHz TISat-1 was on over Europe "HI HI HI TISAT K." You can listen to a recording of the pass he posted.

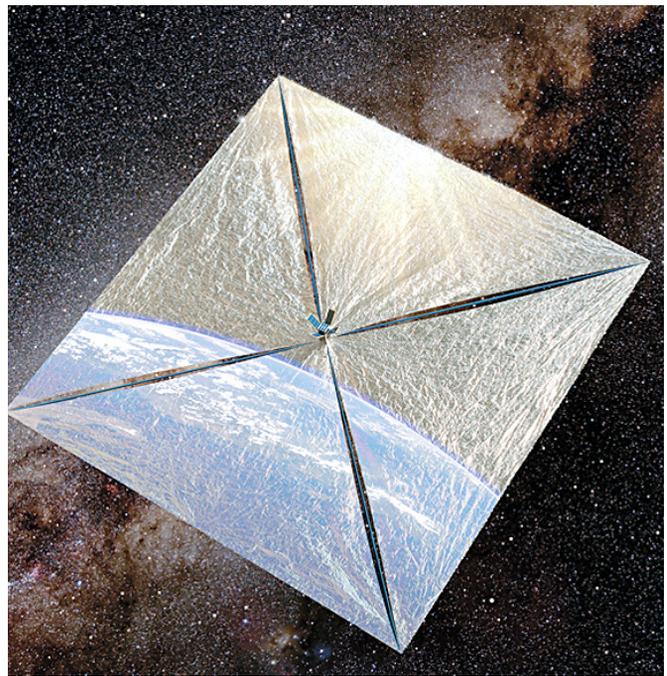
You can find the latest keps and other details on the project and mission status on the Web.

The TISat-1 team invites your continued feedback. While copying the beacon please collect and report the characters emitted AFTER "HI HI HI TISAT" along with time in UTC, your location and signal quality.

There is also a video of the launch on the Internet.

Ultra-light 3U CubeSat Passes Soup-to-Nuts Review

LightSail-1, the Planetary Society's new ultra-light 3U CubeSat-based solar sail spacecraft, has passed its Critical Design Review.



The Planetary Society's LightSail-1 ultra-light 3U CubeSat-based solar sail spacecraft, has passed a Critical Design Review.

At a two-day meeting in Pasadena, a team including JPL project veterans Bud Schurmeier, Glenn Cunningham, Viktor Kerzhanovich, and Aerospace Corporation's Dave Bearden reviewed the LightSail-1 project from soup-to-nuts and gave the thumbs up to proceed with building the spacecraft's hardware and software.

LightSail-1 will demonstrate that sunlight alone can propel a spacecraft in Earth orbit. The 4.5-kilogram spacecraft will be an amazing example of advances in technology.

LightSail-1 has:

- 10 solar panels — four deployable arrays with panels on each side plus one panel on the top and one on the bottom of the spacecraft,
- Two 2-megapixel cameras mounted at the end of two of the solar panels
- Four Sun sensors mounted at the end of four of the solar panels,
- Six tiny ultra-sensitive accelerometers that will provide a direct measure of the light-force,
- A momentum wheel for attitude control,
- Three single axis gyros,
- Three torque rods also part of the attitude control system,
- A battery

You can visit the Planetary Society web site for more details on the Critical Design Review.

There is lots more information on the LightSail Solar Sailing program, as well.

That's a Wrap . . .

And as always, I'm out of space to talk about space! With the new satellites just put into orbit, and a number of other CubeSats set to go up shortly, it will be an exciting fall amateur satellite season. I look forward to hearing you soon on the birds!



After Connecting All the Dots, Emcomm Faces a Tougher Task: Connecting All the Agencies



By Bill Sexton, N1IN/AAM1RD/AAR1FP

What a station for contesting! The 20-by-20-foot shack boasts four fully-equipped operating positions with networked computers, broadband Internet and emergency power. There's air-conditioning, too, and refrigerator and coffee pot of course. To cut feed-line loss, the station sits directly underneath a high-rise antenna farm.

But when Gary Sessums, KC5QCN/AFA3GS, and his team fire up the rigs for an evening's high-stakes drill, it's not about scoring points and multipliers. It's about defending the homeland. Meet Whisky Alpha Romeo, the MARS station staffed by members of the Pentagon Amateur Radio Club on the top floor of the DOD's vast headquarters outside Washington.

On MARS nets you might have heard their other call signs: AAN3PNT (Army), AGA3DC (Air Force) or NNNØPNT (Navy-Marine Corps). The 60-odd members all have two things in common. Whether military or civilian, government employee or contractor, active-duty or retiree, each is or has been stationed at the Pentagon. And given the security clearances that go with the jobs, their mission statement justifiably struts a bit. WAR, it says, *provide(s) backup communications for the Joint Chiefs of Staff (and) National Military Command Center.* Impressive!

Most recently, four WAR volunteers teamed up to join Defense Department exercises testing real-life contingency communication between commanders on the ground and military assets that are airborne. Details (such as the nature of the "military assets") are classified except to say participants used Automatic Link Establishment (ALE) for handling traffic with planes aloft, and the drills have taken place over a period of months.

A Fresh New Life for ALE

ALE may be old news – the utility that continuously scans assigned frequencies testing propagation and automatically connects on the best channel when an operator has traffic. However, there are some new twists of direct concern to EmComm in general and MARS in particular:

- In one of the EmComm community's many responses to Hurricane Katrina, National Guard units are acquiring MARS-ALE capability state by state, under guidance of the Defense Department's National Guard Bureau, which coordinates Guard activity for both the Army and Air Force.

- Under Navy-Marine Corps MARS sponsorship, volunteer developers have expanded the suite of programs providing ALE capability within reach of many – if not most – members' pocketbooks. Forbiddingly expensive military-standard ("MIL-



At the dedication of the Pentagon's new MARS station last October, two members describe an operating position to John G. Grimes (right). Before his recent retirement Grimes oversaw all MARS operations as Assistant Secretary of Defense. Gary Sessums, left, and Navy Capt. Rick Low are active participants in the station's unique support operations for DOD. (Courtesy of Sally Sobsey, Department of Defense)

STD") hardware no longer is required; recent-model, plain vanilla transceivers work just fine as long as PC and sound card meet ALE specifications.

All modes are accommodated once the link is made: voice, digital, POP3/SMTP e-mail, photos, maps, SSTV, even Winlink 2000. (As this is written, testing of an ALE-WINMOR RMS hybrid was just getting underway.)

- There's been some movement within the federal establishment to loosen its hold on the coveted 60-meter band and allow amateur digital activity – not of direct impact on MARS but an encouraging signal of attitudinal change toward hams' usefulness in emergencies.

The bottom line: A long-sought direct connectivity between MARS and the military is becoming economically as well as technically feasible. The incompatibility of radios will no longer cut it as an excuse for failing to work together. This new com-

The Ham's-Eye View of ALE

It's a fairly exclusive group although anyone may join: they're the hams trained, equipped and ready to roll in an emergency with Automatic Link Establishment on the amateur radio bands.

Around 15 or 20 stations worldwide regularly congregate on eight pre-set data channels (provided the frequencies aren't in use for other modes). Information is available on the Internet. The required software is a close kin to MARS-ALE.

Here's how it works:

“Each ham radio ALE station uses the operator's call sign as an *address* in the ALE controller. When not actively in a QSO with another station, each HF SSB transceiver constantly scans through a list of frequencies (called channels in ALE jargon), listening for its call sign.

To reach a specific station, the caller simply enters the call sign just like dialing a phone number. The ALE controller selects the best available frequency and sends out brief *selective calling signals* containing the call signs.

When the distant scanning detects the first few characters of its call sign, it stops scanning and stays on that frequency. The two stations' ALE controllers automatically *handshake* to confirm that a link is established and they are ready to communicate.

The receiving station, which was muted up until now, will typically emit an audible alarm and visual alert for the receiving operator of the incoming call. It also indicates the call sign of the linked station. The operators then can talk in a regular QSO.” *

– Bonnie Crystal, KQ6XA's, <http://HFLINK.net>

* Or communicate in any other mode for which the two stations are equipped. ALE only provides the “front end.” – ed.

patibility is being most impressively demonstrated by WAR's operators at the highest level (no pun intended), and the National Guard Bureau is sharing in the economies it facilitates.

“The prevailing opinion among DOD officials is that MARS should be able to conduct interoperable contingency radio communications with active duty and Reserve/National Guard units using both voice and MIL-STD digital protocols,” says WAR's Gary Sessums. “MARS in general needs to evolve beyond using amateur radio digital protocols and embrace MIL-STD to provide the support that we are charged with under the new DODI 4650.02.” (That's the revised post-Katrina marching orders issued for the Military Auxiliary Radio System last December).

MIL-STD certification is a complex business, but at the operational level when a MARS-ALE station connects with a MIL-STD station, the latter *sees* the same waveform as its own and proceeds with the communication. The only difference is the software *virtual* modem in MARS-ALE and the hardware modem used by traditional ALE radios. Link Protection, a secure authentication utility to protect military stations from *spoofing* connects, will be added to MARS-ALE in the future, says Steve Hajducek, N2CKH/NNNØWVL, chief author of the program.

Three Branches, One Team

The software that facilitates the new jointness is jointness personified. While *Air Force* MARS member Sessums and three



Ken Heitner, a retired federal employee, is operating an ALE rig at Whisky-Alpha-Romeo (WAR), the Defense Department's MARS station. The equipment is MIL-STD, but MARS members have developed software that enables typical amateur radio transceivers for Automatic Link Establishment. Heitner is deputy national ALE manager for Air Force MARS, which uses HF mode for long-distance air-ground communication. (Courtesy of Sally Sobsey, Department of Defense)



Steve Hajducek, shown with some of his many rigs, began development of MARS-ALE after a systems engineering career on projects ranging from electronic countermeasures and weapons systems for the U.S. Air Force to Battlefield sensor systems for the U.S. Army and RFID systems for commercial applications. He continues today as a consultant on hardware, software and firmware development. Hajducek put his collection of amateur, commercial and military HF transceivers to good use testing and tweaking MARS-ALE for application throughout the amateur community – for which he also now maintains the PC-ALE software. See the sidebar, “Ham's-Eye View of ALE.” (Courtesy of KC2KQG)

colleagues in the Pentagon Amateur Radio Club put the rubber to the road – as the NASCAR saying goes – Steve Hadjucek of *Navy-Marine Corps* MARS has been improving the rubber, that is, developing the software, and you could say Gray Reid, W4NGR/AAA9HT, of *Army* MARS was paving the road. In his post as national high-tech coordinator of *Army* MARS, Reid, a past Virginia state director from Newport News, Virginia, coordinates issuance of *Army* MARS-ALE licenses to the *Army* MARS membership and *Army* National Guard units.

During his on-duty hours at the Pentagon, Sessums, an Arlington, Virginia, civilian contractor, is manager of command-and-control communications at the National Command Center.

Hajducek, of Hendersonville, North Carolina, has headed the MARS-ALE development team since 2006 and is principal developer of the C++ source code as well as chief trainer. His MARS membership goes back almost a quarter-century.

Of all the embarrassments generated by Hurricane Katrina in 2005, none was more immediately costly than the inability of the many relief agencies and military responders to communicate with each other. Three-and-a-half years later the same disconnect still hobbled forces guarding President Obama's Inauguration. Now at last there's a formidable fix available.

The National Guards of all 50 states are in the process of acquiring the Defense Department's Joint Incident Site Communications Capability system (JISCC). This is a highly-sophisticated (*if unpronounceable*) communications package that can cross-link military and civilian responders using whatever comms the clients have brought along. The plug-it-in menu ranges from UHF handheld transceivers of RACES and Fire Departments to SATCOM and JACCs (joint airborne command centers) – and with e-mail and cell phone connectivity on the side. You need a repeater? The typical JISCC brings half a dozen.

This Rig Can Travel

Capt. Jeremy Downer, who oversees the JISCC unit that went into service at Westover Air Reserve Base, Massachusetts this spring, calls it a command post in a box – “hurricanes, floods, whatever we would be asked to do inside or outside the wire, we can do with this system.”

Actually, the JISCC is a whole bunch of boxes, none heavier than two men can

carry. A pair of flatbed trucks and a trailer transport from planeside into action. As proof of its universal interoperability, not to mention agility, the North Carolina National Guard dispatched its JISCC and operating crew to unfamiliar Alaska for a statewide exercise in May.

As of this writing, I haven't seen any MARS-wide blueprint for plugging into these huge routers. However, Texas provides a working model fully tested in hurricanes Gustav and Ike two summers ago. There, MARS is fully integrated into the State Military Forces, which for operational purposes embraces National Guard units. An *Army* MARS station has its own

cubicle aboard the Texas Military Forces command trailers. JISCC connectivity, of course, would not require this physical presence, only a dedicated electronic input channel like ALE.

There's no better example of amateur radio's advancing the state of the communications art than ALE. Soon after the U.S. and its NATO allies embraced the concept in the early 1980s, an English ham, Charles Brain, G4GUO, started researching the use of computer-controlled HF transceiver and PC sound card as modem to obviate costly transceivers built specifically for ALE. He eventually posted his very basic PC-ALE proof-of-concept pro-

HF Radio: 'Back to the Future'

In 2001, a retired officer wrote in the U.S. Army Signal Corp's official journal, *Army Communicator*: “After almost 30 years of being the only army in the world and the only service in the Defense Department failing to see the continued military value of HF (high frequency) radio development, the Army has recently done an ‘about face’ on a large scale.”

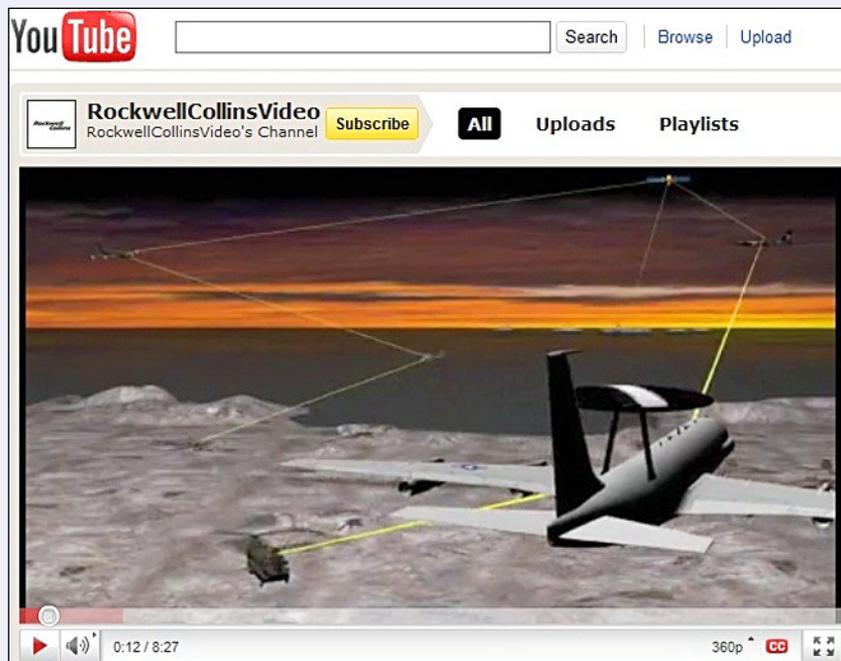
Well, it has taken quite a while but as Lt. Col. (Ret.) David Fiedler put it, the U.S. Army has definitely gone “back to the future.”

Just how dramatically the future of HF is unfolding can be seen in a video recently posted on YouTube by Rockwell-Collins. <http://www.youtube.com/user/RockwellCollinsVideo#p/a/u/0/mhbFYDsuZI8> Although the purpose is to tout one vendor's products, it's a useful primer on new applications – you might call it science fiction becoming non-fiction in front of your eyes.

Hams will understand the terminology with one possible exception: “SIPRNet” is the acronym for Secret Internet Protocol Router Network, the DOD's secure Internet paralleling the public one.

– Bill Sexton, NIIN/AARIFP

Screen shot of the Rockwell-Collins video showing how HF's future is unfolding. (YouTube video)





View of an operating bench of the new "command post in a box" based at Westover Air Reserve Base, Massachusetts. The Joint Incident Site Communications Capability (JISCC) system serves as a giant router capable of interconnecting multiple civil and military communications channels in a disaster area. Two trucks plus a trailer (visible through the opening in the background) transport the modular installation to the scene. (Courtesy of 439th Communications Command)



Members of the 439th Communications Squadron take part in an exercise with the Joint Incident Site Communications Capability system in April. Westover is the first Air Force Reserve Command base to receive the JISCC. (Courtesy of 439th Communications Command)

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gram on the Internet in 1998. In the interim, he'd been busy pioneering digital voice transmission, the system implemented by AOR's ARD9800 modem.

Hams on the Leading Edge

In 2004, Brain generously provided the proprietary PC-ALE source code to an Army MARS software development team then headed by Carlos Santiago, WB2FOZ/AAM2SB, in upstate New York. Steve Hajducek, at the time a member of New Jersey Army MARS (and eventual successor as ALE team

leader) took on the years-long task of expanding Brain's PC-ALE into a full-service program.

Army MARS HQ cancelled its ALE program in early 2007 so that the HF channels could be reassigned to the brand-new MARS-Winlink operation. Bo Lindfors (N9UH/NNNØASA), Chief of Navy-Marine Corps MARS and a pioneer user of ALE, agreed to take the program under his wing. Hajducek transferred over from Army MARS. The joint-service development team continued its work, now using frequencies solely contributed by N-MC and AF MARS.

Army members remained active under the new sponsorship.

In the meantime, SHARES had adopted ALE for some of its emergency backup nets. That's the Homeland Security Department's SHARED RESOURCES program interlinking HF emergency backup stations at federal agencies and the major commercial phone and data carriers. The three MARS services participate in its ALE operation.

WAR's Gary Sessums served on the SHARES HQ staff before coming to the Pentagon. He currently is the ARRL ARES Emergency Coordinator for Arlington County, Virginia and was previously the RACES Radio Officer for Hillsborough County FL, leading a commo team to Mississippi during Hurricane Katrina. Besides Sessums, the WAR airborne exercise team included Navy Capt. Rick Low, N6CY/AAT3PG; Van Evans, KB3XC; and Ken Heitner (WB4AKK-AFD3LE).

There's an interesting spin-off of the fresh attention that HF is now getting from government communicators who all too long were convinced SATCOM could do everything. After years of opposing amateur digital operation on the 60-meter band (5060-5450 kHz), the National Telecommunications and Information Administration, which allocates frequencies for federal agencies, has signaled its OK for CW, PSK31 and Pactor III. Ham activity would be under very strict conditions and on only a relatively tiny slice of the spectrum.

The final decision belongs to the FCC, but NTIA's assent was at least enough to spur action on an ARRL petition that had been gathering dust at the Commission since 2006. MARS isn't directly affected – we already have a handful of allocations in that priceless neighborhood – but the augury is a good one.

One of the unambiguously positive events in a history beset with obstacles – both technical and organizational – occurred just a year ago. On Oct. 21, 2009 WAR dedicated its new quarters, part of a top-to-bottom refurbishing at the Pentagon. News releases were widely published showing a recently-retired high government official at one of the all-new operating positions.

The story called leadership's attention to the strategic importance of MARS resources, and the result was WARS getting its invitation to join the recent air-ground exercises . . .

– Bill Sexton, NIIN/ AARIFP

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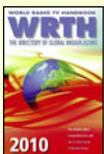
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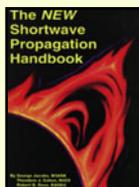
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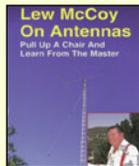
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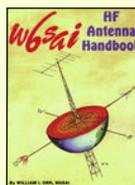
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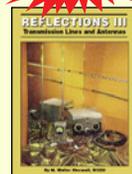
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Strategies for Updating Our Promotional 'Toolkit'

Devere "Dee" Logan, W1HEO

Change is one of the constant challenges we face as members of the human race. And changes are certainly affecting the way we promote and publicize amateur radio. Consider how the media is moving away from print and toward digital and the Internet options. Certainly *WorldRadio Online* is a prime example of this. So as we plan our promotional activities, let's be flexible and consider using newer approaches when appropriate.

We were reminded of this while reviewing the contents of the 50-page promotional how-to manual or "toolkit" that the Ham Radio Promotion Project provides to participating radio clubs.

Sending hard copy news releases via regular mail or FAX to the print or broadcast media used to be the gold standard. No more. The explosive growth of electronic communications such as e-mail, cell phones, Facebook, texting and similar modes requires that we include them in our plans. So our "toolkit" is regularly updated to include them.

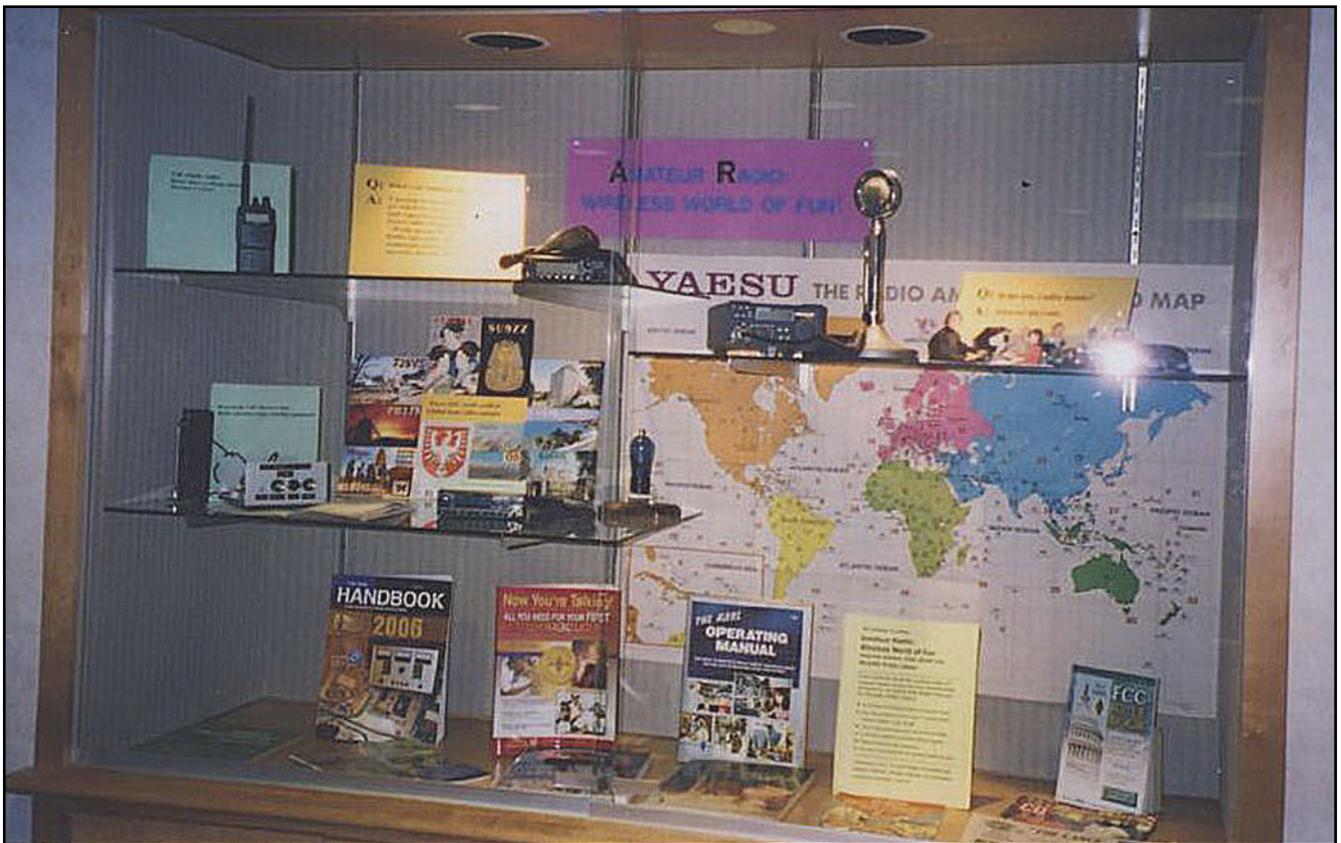
Traditional media can't be ignored, however. People still turn there for news. A survey by the Pew Research Center for the People and the Press found that television is the number one choice for local news (64 percent), followed by newspapers and the Internet.

Using Social Media

There are several important differences to consider with the so-called social media – such as Facebook and Twitter – or texting. These demand that your messages be concise and to-the-point while avoiding excess verbiage.

Social media allow you to focus on specific targeted audiences, and even solicit feedback if necessary. Facebook enables you to add pictures and links, and isn't limited to the 140-character limitations of Twitter.

Immediate feedback and interactive dialogues with audiences certainly are a contrast to the old one-way printed news release. Instead of depending upon editors to tell your story, there's



A custom amateur radio display, such as this one in a library, can feature various radio items, including ham radio books and magazines. It can also promote an upcoming presentation on amateur radio.

potential for a more conversational exchange of information and handling questions in real time.

The downside is that true interactive media require that someone be available to engage in a dialogue.

Writing a news release for distribution via e-mail or social media channels requires a different approach than the old inverted pyramid style of writing taught for years in journalism schools, for example. Instead of including the “who, what, where, when and why” in the first paragraph, a short catchy sentence and fewer words in the text is more appropriate. Not all the main facts need to be squeezed into the lead.

While there are benefits from having a variety of “new” communication channels available, let’s remember the importance of the *content* of our messages. The medium itself isn’t the message, so stay focused on what you have to say. That’s what counts.

The degree to which your ham radio publicity uses social media depends upon your resources. Some radio clubs have a publicity chairman who issues the usual releases and may even be using social media. Regardless, do become familiar with the various outlets and styles and adopt your messages accordingly.

A group called TechSoup supports non-profits and has information on social media on line. Let us know how you’re using social media and we’ll pass along the info in a future column (deverelogan@gmail.com).

Promotional Updates

A major reason for ham radio promotion is to recruit new licensees. So how are we doing?

In the first six months of 2010 there were 18,270 new amateur radio licenses issued, which is about 8.5 percent higher than last year.

In the same period in 2009, the FCC issued 16,844 new licenses. That’s an encouraging trend, indeed. We hasten to add, however, that we shouldn’t become complacent. Trend is not destiny!

Many of us are aware of the efforts over many years of *WRO Hams With Class* columnist Carole Perry, WB2MGP, to introduce students to amateur radio. Her experience as a teacher is very helpful in suggesting how to present our hobby to young people.

Since schools are the logical place to focus, her insights into working within

the system are important. You may want to read her excellent article, “Getting that proverbial foot in the door” that appeared in *WRO’s* July 2010 issue.

Attracting youth to our wonderful hobby and keeping them interested through association with their own age groups is resulting in a variety of techniques.

We hear from Ryan Lee, K3SFG, that there’s a Youth Net held Saturdays at 2 p.m. California time on the N6NFI Palo Alto repeater, 145.230. Young hams, 18 or younger, can check in via Echolink, using KR6DD-R (271122) or N6WN-R (477737). If you have any questions, contact Ryan at k3sfg@arrl.net.

Promotional Displays

One of the oldest, but most useful ways to present our message to the public is the display. Interesting and attractive designs can do a good job of publicizing amateur radio and recruiting new club members.

One benefit of a standalone unit is that it doesn’t need a person to accompany it, although that would be a plus.

Does your club have a display that introduces both ham radio and your group? It can be made quite inexpensively, so it won’t break the bank.

The basic design that was developed by the Ham Radio Promotion Project uses a standard three-panel lightweight unit available at low cost from office supply stores such as Staples or Office Max.

A top “header” can feature the name of your club or a generic “Wireless World of Amateur Radio” theme using large stick-on letters. The panels can feature

photos of various activities such as Field Day, mobile operations, classes, or kit building.

Items such as newsletters, ham magazines, typical radios, etc. can be added. Club contact information should be highlighted, and literature can be placed near the exhibit.

Your display can be offered to local libraries, schools, senior centers, shopping malls and other public areas. Used in conjunction with a ham radio presentation, it also can publicize an upcoming event.

A custom display was developed by the Indian Hills Radio Club of Wickliffe, Ohio, as part of a program to introduce ham radio to the public. Using an existing library display case, the shelves held various radio books and magazines, small transceivers and HTs, a world prefix map, and placards with information on ham radio and details of the upcoming program.

Another valuable use for a radio club display is at a local hamfest. Put it on your table and offer copies of your club newsletter and a promotional handout listing some of the group’s attractions as well – programs, nets, licensing courses, and social events.

Be sure to invite the visitors to your table to leave their name, call, address and e-mail. You may want to use them to develop a mailing list of prospective members.

Devere “Dee” Logan, WIHEO, is 40-year ham radio veteran who is an accredited member of the Public Relations Society of America and member of its College of Fellow.

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The Rules Say...

John B. Johnston, W3BE

Examining Our VECs

For the past 26 years, under agreements with the Federal Communications Commission, our 30,000 volunteer examiners have been recruited and accredited by our volunteer-examiner coordinators. Now 14 in number, our VECs must also cooperate in maintaining our question pools. The VECs have formed themselves into the National Conference of Volunteer Examiner Coordinators, for which W3BE serves as Vice-Chairman. The following is from his lighthearted welcome to the annual NCVEC meeting in Gettysburg, PA, on July 23, 2010.

Welcome, Volunteer-Examiner Coordinators. We have some important work to accomplish here today. It is imperative, therefore, that everyone participating in this meeting be prepared to consider fully all of the facts that will be presented and to vote wisely on all questions.

My job is to preside as the leader for our Principal Examination System Team (PEST). Our objective is to prepare and administer the examination that will determine whether or not you are ready to participate properly in this meeting. So, everyone please take out a clean sheet of paper and a pencil. Settle down and let's get serious.

Our administering PESTs are the Ham brothers, Manny, Moe and Jack. They are having breakfast and will be here later to sign any papers that need signing.

We will, of course, be using our usual multiple-choice examination format. The minimum passing grade is 74 points.

Your first question is worth 10 points. It is:

NCVEC 1(a) What is the name of the gentleman who will be our Chairman today?

- a. **Larry Pollock**
- b. Diane Zimmerman
- c. Maria Somma
- d. Donna Scott

The correct answer is: *Larry Pollock* from the W5YI VEC. Diane Zimmerman is the Chairlady for the Laurel Amateur Radio Club VEC. Maria Somma heads up the ARRL/VEC. Donna Scott is a key member of the FCC staff here in Gettysburg.

Did anyone miss this one? No one? Fine. You now have 10 points. Here's the next one; it is also worth 10 points:

NCVEC 2(b) What is the name of the person who will be our Secretary today?

- a. Michelle Williams
- b. **Michele Cimbala**
- c. Michelle Pfeiffer
- d. Michelle Obama

Hint: Our Secretary spells her first name with only one "L" and her last name with only one L.

The correct answer is: *attorney Michele Cimbala*. Michelle Williams is a singer and actress. Michelle Pfeiffer is a movie actress. Michelle Obama is our nation's First Lady.

Did everyone get it right? You now have 20 points. Your next question is worth 10 points:

NCVEC 3(c) What is the responsibility of our NCVEC Secretary?

- a. File papers
- b. Answer the phone
- c. **Take minutes**
- d. Get coffee

The correct answer is: *take minutes*. They are the written legal record of this meeting and may be subpoenaed. If it isn't in the minutes, it didn't happen.

You now have 30 points. Your next question is worth another 10 points:

NCVEC 4(d) Which parliamentary procedure have the VECs agreed to use?

- a. Tom's Rules of Order
- b. Dick's Rules of Order
- c. Harry's Rules of Order
- d. **Robert's Rules of Order**

The correct answer is (d). The VECs have agreed to use *Robert's Rules of Order*. They were first developed by Brigadier General Henry M. Robert. Wikipedia says that he is most famous for his collection of rules regarding parliamentary procedure published in 1876.



Laura Smith of the FCC Enforcement Bureau presents her briefing.



Representatives of the VECs attending the 2010 Conference.

Following his poor performance in leading a church meeting, Robert had resolved that he would learn all about parliamentary procedure before attending another one.

Some of you may know how disordered such gatherings can become. Why, they can sometimes be almost as chaotic as our ham radio club meetings.

Parliamentary procedure is widely used in America to facilitate the democratic transaction of decision-making in an organized group. A multitude of books have been published on this topic. One easy-to-use version is **ROBERT'S RULES IN PLAIN ENGLISH** by Doris P. Zimmerman published by HarperPerennial. It is a very readable and authoritative guide to running meetings. If you ever have the misadventure of finding yourself as the president of your radio club, it can be your best friend.

For the rest of us, there is **THE GUERRILLA GUIDE TO ROBERT'S RULES** by Nancy Sylvester published by ALPHA. It is designed to give you the tools you need to participate effectively in a meeting. When everyone involved knows the procedures and has the full information, the process will win out and the group will make wise decisions.

Your now have 40 points. Your next question is worth 20 points:

NCVEC (5)(a, b, c, d) Whose rights do parliamentary procedures protect?

- a. the majority to decide**
- b. the minority to be heard**
- c. individual members**
- d. absentees**



Bill Cross of the FCC Wireless Telecommunications Bureau Mobility Division presents his briefing.

All of these answers are correct. The rules of parliamentary procedure are based upon common sense and logic. They have evolved throughout centuries of usage and custom. By practicing correct parliamentary procedure, we also protect our self-governing NCVEC.

Each one of these correct answers is worth 5 points. So, you now have 60 points. Here is your next question; it is worth 10 points:

NCVEC 6(d) Why are we all here?

- a. Confer with the FCC staff
- b. Plan for the future
- c. Elect officers for next year
- d. All of the above**

Keeping with our World's worst-kept secret examination algorithm, *all of the above* is usually the correct answer and is usually in position (d). There will, however, very likely be a lot more going on at this conference. The informal person-to-person interaction and the exchange of ideas have been a key factor in the success of our VE system.

When this all began, we had only the FCC model to use as our template. We now have 25-years of experience in coordinating examination preparation and administration by VEs. We have a wealth of insight to share and our own army of battle-proven experts from whom to learn.

You now have 70 points. Here is your final and toughest question; it is worth 30 points:

NCVEC 7 What is the purpose of our VEC system?

- a. Stimulate radio apparatus commerce
- b. Teach electrical engineering
- c. Augment land mobile, personal and marine systems
- d. Manipulate licensing trends**



Members of the Laurel Amateur Radio Club VEC team in attendance.

Although you may have heard some or all of those answers at one time or another, none of them set forth accurately the fundamental purpose for its existence. The correct answer, unfortunately, consumes more characters and spaces than our multiple-choice exam format will accommodate.

That factual answer is codified in Section 97.503: A written examination must be such as to *prove that the examinee possesses the operational and technical qualifications required to perform properly the duties of an amateur service licensee.*

Keep this in mind: Our amateur service community depends upon us getting it right. Your new Element 2 question pool shows that we are on the right track. Read BE Informed No. 55 What Do Hams Really Need To Know and When Do They Need To Know it? It is available from my website. It is an overview of the 1,600-plus questions in your pools. Sixty percent of your questions address technical matters deemed necessary to making meaningful our good amateur and good engineering practices (24 percent) and our FCC rules (15 percent). Only 1 percent of your questions do not fit into one of those three categories.

Your distribution of the questions reveals what you judge to be the most

suitable privileges for each operator class. In particular, it appears that you consider Technician and General Class Operators to be authorized far too much, notably excessive transmitter power limits, unwarranted emission type privileges and unsuitable special operations privileges.

Because this question is unusable, everyone gets a presumptive 30 points. That means you have all scored 100 points.

Make use of today's unique opportunity wisely. Consider those VEs for whom you serve. They are on the front line donating their time and talent in attempting to determine whether or not their examinees are ready for the privileges afforded by an FCC license.

The Ham brother PESTs are enjoying another cup of coffee, but they will later sign the Certificates of Successful Completion of Examination saying that they were present and administering the exam. This meeting, therefore, may proceed.

Mr. Chairman! It is my pleasure to announce that these outstanding candidates have all aced the exam, thusly proving that they are properly prepared to participate in this meeting.

Congratulations! Thank you for your efforts and for being here.

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.

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DX Predictions

OCTOBER 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 = 12.

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	*15	(8)	14
12	(9)	8	*14	(8)	13
14	(19)	8	*13	15	*23
16	22	10	*16	15	*28
18	*23	(10)	(13)	(13)	*29
20	23	*20	20	(9)	*29
22	19	*20	25	(9)	*28
24	16	*19	28	(8)	*26
2	*13	16	28	8	*21
4	11	11	*24	8	*18
6	(10)	10	20	*9	*16
8	(10)	9	*17	(8)	*13

CENTRAL U.S.A.

UTC	AFRI	ASIA	OCEA	EURO	SA
8	(10)	8	*14	(8)	*13
10	(9)	8	*13	(8)	*13
12	19	8	*12	16	*23
14	22	8	*19	*17	*26
16	23	(8)	16	16	*28
18	*24	(8)	(14)	13	*29
20	*22	16	21	(10)	*29
22	19	18	25	(9)	*28
24	*13	16	27	8	*25
2	11	(11)	*22	8	*21
4	11	(9)	18	8	*18
6	(10)	(9)	16	*8	*15

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SA
7	12	(8)	(14)	*8	*14
9	(12)	8	*13	(8)	*13
11	*24	8	*12	16	*20
13	*28	9	*20	*18	*24
15	*30	(8)	17	*18	*27
17	*30	(8)	(15)	*16	*28
19	*25	(8)	(18)	13	*29
21	*21	16	24	(10)	*29
23	*17	16	27	9	*27
1	*15	(10)	21	8	*22
3	*13	(9)	18	8	*18
5	*13	(9)	15	8	*16



CONTEST CORNER

CONTEST: TARA Fall Classic PSK Rumble
DATE & TIME: 0000-2359Z 2 Oct
BANDS/MODE: 160-6M PSK
POINTS: 1 Pt. per QSO
MULTIPLIERS: W/VE/JA/VK Call areas + DXCC countries, once per band
EXCHANGE: Name + Call Area; DX gives Name + Country prefix
ENTRY CATEGORIES: Normal - <100W; Great - <20W; Super - <5W; Novice, SWL; Team
ENTRIES: 30 Oct.
 Use on-line score form at www.n2ty.org/seasons/tara_rumble_score.html
 Rules at: www.n2ty.org/seasons/tara_rumble_rules.html

CONTEST: EU Autumn Sprint
DATE & TIME: 1600-1959Z 2 Oct
BANDS/MODE: 80/40/20M SSB
POINTS: 1 Pt. per QSO
MULTIPLIERS: None
EXCHANGE: Both calls + Serial # + Name
ENTRY CATEGORIES: Single op only!
ENTRIES: 15 Days Dave Lawley, G4BUO, Carramore, Coldharbour Rd., Penshurst, Kent, TN11 8EX, England, UK.
 Cabrillo logs to: eusprint@kkn.net
 Web page: www.qsl.net/eusprint
 Rules at: www.eusprint.com/index.php?page=140&lang=g

CONTEST: California QSO Party
DATE & TIME: 1600Z 2 Oct. – 2200Z 3 Oct.
BANDS/MODE: 160-2M SSB/CW
POINTS: 2 Pts. SSB, 3 Pts. CW
MULTIPLIERS: CA sta's count States + Canadian Provinces, all others count CA counties (58 possible)
EXCHANGE: CA sta's give serial # + County, all others give serial # + State/Province/Country
ENTRY CATEGORIES: Single op, QRP (<5W); Low (5-100W), High; Multi-Single QRP, Low, High; Multi-Multi QRP, Low, High; CA County Expedition; Mobile; School; Novice/Technician
ENTRIES: 31 October NCCC, c/o Rick Eversole, N6RNO 1225 Vienna Dr. #119, Sunnyvale, CA 94089
 Cabrillo (preferred) to: logs@cqp.org
 Online server for log submission: <http://logs.cqp.org>
 Free logging software at: www.cqp.org/Software.html
 Rules at: www.cqp.org/Rules.html

CONTEST: Oceania DX
DATE & TIME: 0800Z 2 Oct - 0800Z 3 Oct
BANDS/MODE: 160-10M SSB
POINTS: 3 Pts. 10M; 2 Pts. 15M ; 1 Pt. 20M; 5 Pts. 40M; 10 Pts. 80M; 20 Pts. 160M
MULTIPLIERS: Prefixes, onces per band
EXCHANGE: RS + Serial #
ENTRY CATEGORIES: Single op - All bands or Single band; Multi-single - Multi-op, single XMTR; Multi - Multi - Multiple ops, XMTRS
ENTRIES: 8 Nov. Oceania DX Contest c/o Wellington ARC
 P.O. Box 6464 Wellington 6030 New Zealand
 Cabrillo to: ph@oceaniadxcontest.com
 Online log forms at: www.b4h.net/cabforms
 Web page: www.oceaniadxcontest.com
 Rules at: www.oceaniadxcontest.com/rules.pdf

CONTEST: DX/NA YLRL Anniversary Contest
DATE & TIME: 1400Z 8 Oct - 0200Z 10 Oct
BANDS/MODE: All bands, all modes
POINTS: 1 Pt. ARRL section/Canadian Province QSO; 2 Pts. DX
MULTIPLIERS: Total of Sections/Provinces/Countries
EXCHANGE: Both calls + Serial # + RS(T) + ARRL Section/VE Province
ENTRY CATEGORIES: QRP (>5W), Low (50100W); High
ENTRIES: 30 Days Cheryl Muhr, NØWBV P.P. Box 342, Littleton, CO 80160
 E-mail: n0wbv@earthlink.net
 Rules at: www.ylrl.org/ylcontests.html#DXYL

CONTEST: EU Autumn Sprint
DATE & TIME: 1600-1959Z 9 Oct
BANDS/MODE: 80/40/20M CW
POINTS: 1 Pt. per QSO
MULTIPLIERS: None
EXCHANGE: Both calls + Serial # + Name
ENTRY CATEGORIES: Single op only!
ENTRIES: 15 Days Karel Karmasin, OK2FD Gen. Svobody 636 CZ-674 01 Trebic Czech Republic
 Cabrillo logs to: eusprint@kkn.net
 Web page: www.qsl.net/eusprint
 Rules at: www.eusprint.com/index.php?page=140&lang=g

CONTEST: FISTS Fall Sprint
DATE & TIME: 1700-2100Z 9 Oct
BANDS/MODE: 80 - 10M CW
POINTS: 2 Pts. non-member QSO; 5 Pts. member QSO
MULTIPLIERS: States/Provinces/DXCC once only
EXCHANGE: Name + State/Province/DXCC Country + FISTS number (non-members give power)
ENTRY CATEGORIES: QRP (<5W); QRO (5-100W); Club (Note: 100W maximum for all!)
ENTRIES: 30 Days Gil Woodside, WA1LAD, 30 Hilltop Ave., West Warwick, RI 02893-2825
 Cabrillo or ASCII logs to: wallad@cox.net
 Web page: www.fists.org
 Online entry form: www.fists.org/fists_entry_form.txt
 Rules at: www.fists.org/sprints.html

CONTEST: Pennsylvania QSO Party
DATE & TIME: 1600Z 9 Oct. – 0500Z 10 Oct & 1300-2200Z 10 Oct.
BANDS/MODE: 160-2M SSB/CW/PSK/FM
POINTS: CW – 2 Pts. 160 & 80M, 1.5 Pts all other bands; SSB – 1 Pt.; PSK – 2 Pts; FM – 1 Pt.; 200 Pts. QSO with W3OK
MULTIPLIERS: PA sta's count ARRL/Canadian Sections + PA Counties + 1 DX; All Others count PA Counties
EXCHANGE: Serial # + County or ARRL/Canadian Section
ENTRY CATEGORIES: Single op, QRP (<5W), Medium (6-150W), QRO; Single op, CW (<150W); Multi-single, Multi-multi; Single op, portable; Multi-multi, portable; Mobile; Rover
ENTRIES: PA QSO Party, C/O NARC, P.O. Box 614, State College, PA 16804-0614
 Online submission (format not specified) paqso@nittany-arc.net
 Rules at: www.nittany-arc.net/paqso09rules.html

CONTEST: Arizona QSO Party
DATE & TIME: 1600Z 9 Oct. – 0600Z 10 Oct. & 1400-2359Z 10 Oct.
BANDS/MODE: 80-2M SSB/CW/Digi
POINTS: 1 Pt. SSB; 2 Pts. CW, Digi (100 Pt. bonus for QSO with W7SA)
MULTIPLIERS: AZ sta's count States/Provinces/Countries; All others count AZ counties (15 possible)
EXCHANGE: AZ sta's give RS(T) + County; All others five RS(T) + State/Province/Country
ENTRY CATEGORIES: Single op, Multi op, Portable, Mobile
ENTRIES: 31 October Catalina Radio Club c/o Gary Keck, P.O. Box 18135, Tucson, AZ 85731
 Cabrillo to: logs@azqsoparty.org
 Rules at: www.azqsoparty.org

CONTEST: Oceania DX
DATE & TIME: 0800Z 9 Oct - 0800Z 10 Oct
BANDS/MODE: 160-10M CW
POINTS: 3 Pts. 10M; 2 Pts. 15M ; 1 Pt. 20M; 5 Pts. 40M; 10 Pts. 80M; 20 Pts. 160M
MULTIPLIERS: Prefixes, once per band
EXCHANGE: RST + Serial #
ENTRY CATEGORIES: Single op - All bands or Single band, High or Low power; Multi-single - Multi-op, single XMTR; Multi - Multi - Multiple ops, XMTRS
ENTRIES: 30 Days Oceania DX Contest c/o Wellington ARC P.O. Box 6464 Wellington 6030 New Zealand
 Cabrillo to: cw@oceaniadxcontest.com
 Online log forms at: www.b4h.net/cabforms
 Web page: www.oceaniadxcontest.com
 Rules at: www.oceaniadxcontest.com/rules.pdf

CONTEST: North American Sprint
DATE & TIME: 0000-0400Z 10 Oct
BANDS/MODE: 80/40/20M RTTY
POINTS: 1 Pt. per QSO
MULTIPLIERS: States (no KH6!)/CA Provinces/NA Countries (USA and Canada do not count as countries!)
EXCHANGE: Both calls + Serial # + Name + QTH
ENTRY CATEGORIES: Single op – QRP, Low or High
ENTRIES: 16 Oct. Days Ed Muns, W)YK, P.O. Box 1877 Los Gatos, CA 95031-1877
E-mail: rttysprintmgr@ncjweb.com
Cabrillo logs: www.ncjweb.com/sprintlogsubmit.php
ASCII logs to: rttysprint@ncjweb.com
Paper to Cabrillo converter: www.b4h.net/cabforms/nasprintrtty_cab.php
Rules at: www.ncjweb.com/sprinrules.pdf

CONTEST: NAQCC Sprint
DATE & TIME: 0130-0330Z 13 Oct
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); Gain
ENTRIES: 7 Days John Shannon, K3WWP, 478 E. High St., Kittanning, PA 16201
E-mail: naqcc33@windstream.net
(Submit log as plain text, NO attachments!)
Auto-logger: http://naqcc.n4lcd.com/sprintlog.html
Web page: http://home.windstream.net/yoel/index.html
Log form available at: http://naqcc.n4lcd.com/sprintlog.html
Rules at: http://home.windstream.net/yoel/sprint_rules.html

CONTEST: Illinois QSO Party
DATE & TIME: 1700Z 17 Oct – 0100Z 18 Oct
BANDS/MODE: 160-2M Phone/CW/Digi
POINTS: 1 Pt. Phone; 2 Pts. CW/Digi
MULTIPLIERS: Illinois Counties; IL sta's count
States/Provinces/Countries
EXCHANGE: IL sta's give RS(T) + County; All others give RS(T) + State/Province/Country
ENTRY CATEGORIES: IL Fixed, Portable, Mobile, Rover; Outside Illinois
ENTRIES: 18 November WIARC, P.O. Box 3132, Quincy, IL 62305-3132
Cabrillo (preferred) to: n9jf@arrl.net
Rules at: www.w9awe.org/ILQP%202009%20Rules.pdf

CONTEST: Run for the Bacon
DATE & TIME: 0100-0300Z 17 Oct
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: Not specified
ENTRIES: Online log submission only: www.fpqr.com/autolog.php
Rules at: www.fpqr.com/fpqrprun.php

CONTEST: New York QSO Party
DATE & TIME: 1400Z 16 Oct. – 0200Z 17 Oct.
BANDS/MODE: 160-2M Phone/CW/Digi
POINTS: 1 Pt. SSB; 2 Pts. CW; 3 Pts. RTTY/Digi
MULTIPLIERS: NY sta's count NY Counties (62) + States/Provinces; All others count NY Counties
EXCHANGE: NY sta's give RS(T) + County; All Others give RS(T) + State/Province or DX
ENTRY CATEGORIES: Single op; Multi-single; Multi-multi; School; Mobile – All can use QRP (<5W), Low (6-100W), High (>100W)
ENTRIES: 14 Days Cabrillo only! to: logs@nyqp.org
Online Cabrillo formatter: www.b4h.net/cabforms
Rules at: www.nyqp.org/NewsLetters/NYQP_-_Rules_2010.pdf

CONTEST: CQ WW DX
DATE & TIME: 0000Z 30 Oct - 2359Z 31 Oct
BANDS/MODE: 160-10M SSB
POINTS: 1 Pt. Same Continent, 20/15/10M; 2 Pts. NA to NA contacts; 3 Pts. Other continents
MULTIPLIERS: Zones/Countries per band
EXCHANGE: RS + CQ Zone
ENTRY CATEGORIES: Single Op - Single Band; Single Op - All Band, QRP, Low, High; Multi Op; Multi Op - 2 XMTR's; Multi Op - Multi XMTR's
ENTRIES: 1 Dec CQ WPX Contest 25 Newbridge Road Hicksville, NY 11801
Cabrillo to: ssb@cqww.com
Rules at: www.cqww.com/2009_Rules_cqww.pdf

CONTEST: 10-10 International Fall/CW/Digital
DATE & TIME: 0001Z 30 Oct - 2359Z 31 Oct
BANDS/MODE: 10M CW/Digital
POINTS: 1 Pt. non-member; 2 Pts. member QSO
MULTIPLIERS: None
EXCHANGE: Call + Name + QTH + 10-10 # (if any)
ENTRY CATEGORIES: Individual; Club
ENTRIES: 9 Nov Dan Morris, KZ3T, 131 Valencia Ln., Stateville, NC 28625
E-mail: dbm72941@roadrunner.com
Rules at: www.ten-ten.org/Forms/QSOPartyRules_05312009.pdf

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

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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 Wednesday at 7 PM on W6TO/R www.W6TO.com; W6TO@ARRL.net. Contact Ken, WA6OIB @559-323-6753
12/10

ILLINOIS

North Shore RC - www.ns9rc.org - is one of Chicago's largest/most active radio clubs. Meetings feature a wide variety of amateur radio topics and are normally held on the second Tuesday of each month at 7:30 PM, the Heller Nature Center, 2821 Ridge Rd., Highland Park, IL. Regular weekly net is held on Thursday night at 8:00 PM on the 147.345+ (107.2) and 442.725+ (114.8) repeaters. Club's other repeaters include: 224.32- (110.9), D-Star 442.09375+ and 1292.20- voice and 1242.20 data. Provides licensing classes, exams and help to new hams.
11/10

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!



VE EXAMS

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

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

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

CITY	DATE	CONTACT	NOTES	CITY	DATE	CONTACT	NOTES
ARIZONA				NEW JERSEY			
Mesa	3rd Mon	Steve KY7W, 480-804-1469, kj7wk@cox.net	w/i	Roselle	4th Sat	Gerry, AA2ZJ, 732-283-2795, aa2zj@arrl.net	
Phoenix	4th Sat	Gary Hamman, 602-996-8148, K7GH@arrl.net		Winslow	4th Tues	Mark, K2AX, 609-820-1523, JTRA@comcast.net	
ARKANSAS				NEW YORK			
Harrison	2nd Sat	Bob, AJ5C, 870-365-3871, aj5c@cox.net		Bethpage	2nd Tues	Bob, 631-499-2214, w2ilp@optonline.net	p/r
Sherwood	1st Sat	Daryl Stout, AE5WX, 501-681-1551, ae5wx@arrl.net	p/r pref.	Canandaigua	1st Wed	Squaw Island ARC, David A. Foster, 585-398-0216, D1161F@aol.com	w/i
CALIFORNIA				NORTH CAROLINA			
Highland	10/16	Ed , WU6I, 909-864-0155, wu6i@arrl.net	p/r pref.	Canandaigua	1st Wed	David Foster, 585-398-0216, www.siacr.us	w/i
LaVerne	Last Sat	Frank, K6FW, 909-628-8661, k6fw@arrl.net	p/r	Valhalla	10/14	Stanley, WA2NRV, wa2nrv@weca.org	
Long Beach	3rd Sat	Louise, N6ELK, 562-429-1355	p/r	Yonkers	Call	Paul, AC2T, 914-237-5589, w2yrc@hotmail.com, www.yarc.org	w/i ok
Manteca/Tracy	4th Sat	David, N5FDL, 209-835-6893, n5dfi@arrl.net	p/r	OHIO			
Redwood City	Call	Al, WB6IMX@arrl.net, www.amateur-radio.org	w/i	Fayetteville	10/9	Patricia Edwards, N4UGH, n4ughpat@aol.com, 910-584-1801	w/i
Sacramento	Hotline!	916-492-6115, n6na@arrl.org		OREGON			
San Francisco	10/24	hamcrams.com		Astoria	Call	AA7OA, 503-338-3333	p/r
Santa Rosa	Hotline!	Hotline-Recording 707-579-9608	w/i ok	Bend	Weds	Joe, K7SQ, 541-385-3152	p/r
Sebastopol	Hotline!	Recording 707-579-9608		Lincoln City	1st Sat	Carl, w7li@arrl.net, 503-965-7575	w/i ok
Sunnyvale	Visit Site	Gordon, W6NW, Sv@amateur-radio.org, www.amateur-radio.org	w/i	McMinnville	Call	Mark, AC7ZQ, 503-843-3580	w/i only
COLORADO				PENNSYLVANIA			
Englewood	1st Sat	Dave, N0HEQ, 303-795-5718, n0heq@arrl.net, Commerical Exams also	p/r pref.	Erie	3rd Sat	Ron, KB3QBB, 814-833-6829, kb3qbb@arrl.com, www.wattsburg-wireless.us	p/r
FLORIDA				PUERTO RICO			
Melbourne	1st Sat	John, AA8IS@earthlink.net, 321-412-2779	w/i ok	San Juan	Last Sat	Hotline: 787-789-4998, prarl@prarl.org	w/i
North Port	Call	Bill Norris, KC7TSG, 941-426-0214	w/ipref.	SOUTH CAROLINA			
St. Pete	Call	Mark, NP3R, 727-528-0071	w/i pref.	Charleston	3rd Wed	Robert Johnson, ae4rj@amsat.org; www.qsl.net/wa4usn/	w/i
Sanford	4th Sat	James, N4ZKT, 407-333-4245, n4zkt@bellsouth.net		Charleston	2nd Sat	Riley Stone, 843-832-9105, k4hyy@sc.rr.com	w/i
HAWAII				VIRGINIA			
Oahu Is.	Call	Lee, KH6BZF, 808-247-0587	p/r	Alexandria	2nd Sat	John, WZ4A, 703-971-3905, wz4a@arrl.net	w/i
IOWA				WASHINGTON			
Vinton	3rd Tues	Kenneth, N0EGV, 319-223-5739, n0egv@southslope.net	w/i ok	Tacoma	2nd Tues	Radio Club of Tacoma, 253-759-2040, www.w7dk.org	
ILLINOIS				WEST VIRGINIA			
Bolingbrook	3rd Sat	Dale, W9KHX, 815-723-3332	w/i ok	Parkersburg	2nd Mon	Dana Pickens, WV8G, 304-422-6101	w/i, p/r
Burr Ridge	Any Day	Argonne ARC, W9DS, 630-986-0061	p/r	WISCONSIN			
Lake in Hills	4th Sat	Jeffrey Dubin, N9MXT, 847-815-9407		Racine	1st Sat	Robert, W0WLN, 262-886-8551	w/i pref.
Roselle	2nd Tues	Sam, W9SFB, 630-894-0708, w9sfb@aol.com	p/r	NEVADA			
INDIANA				MINNESOTA			
Richmond	Call	Mike, 765-439-4230, w1idx@arrl.net	w/i	Apple Valley	2nd Thur	Jim, N0OA, 612-384-7709, N0OA@arrl.net	p/r pref.
South Bend	3rd Mon	Alan, NY9A, 574-232-6883	p/r	MISSISSIPPI			
MICHIGAN				MISSISSIPPI			
Garden City	Call	Ken Wardell, AB8ZD, 734-421-7730, gsnapshot@att.net	w/i ok	Gulfport	1st Sat	Harrison Cty., Clay, W5ACS 228-863-2042, w5acs@arrl.net	w/i ok
Oak Park	1st Tues	D. Flint 248-981-8145		NEVADA			

*Add your local VE Exam information to this FREE monthly listing!
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HAMFESTS & SPECIAL EVENTS

OCTOBER

INDIANA – Special Event Station W9JOZ, from The Town That Never Was, Oct. 2. Sponsored by the Starke County Amateur Radio Club operates from Radioville, IN – a town that was to be developed as a city, but it all fell through. It is still recognized by the state as a town, even though nothing was ever developed there. W9JOZ will operate from Radioville on 10 - 80 meters from 10 a.m. to 3 p.m. CST. QSL via callbook address.

NEW YORK CITY - Hall of Science Amateur Radio Club Hamfest, New York Hall of Science parking lot, Flushing Meadow Corona Park, 47-01 111th St., Queens, on Oct. 3. Doors open for vendors at 7:30 a.m.; buyers admitted at 9 a.m. Free parking. Door prizes, Drop and Shop, QSL card checking, food and refreshments. Free admission to museum from 10-11 a.m., or \$6 after that with hamfest ticket. VE exams at 10 a.m. Admission by donation: buyers \$5, sellers \$10 per space. Talk-in: 444.200 MHz repeater (PL 136.5); 145.270 MHz, -600 kHz (PL 136.5). Information: <http://www.hosarc.org>.

CALIFORNIA – Special Event Station N6W, in commemoration of National Wildlife Refuge Week, Sunday, Oct. 10 and Saturday, Oct. 16. Operating at the Kern County Wildlife Refuge in Delano. Operating both days on 20 meters around 14.240 (+/- QRM). Contact five stations listed as active sites to earn a certificate. Check <http://www.nwrweek-radio.info/>. For more information on the LCWR in Delano, visit: <http://www.fws.gov/kern/refuges/kern/>. QSL to N6AJ, 2701 Fordham, Bakersfield, CA 93305.

WISCONSIN - USS Cobia Amateur Radio Club, NB9QV, WW II Submarine “USS Cobia” AGSS-245 will be on the air commemorating the 28 submarines that were built in Manitowoc, WI during WW II era. Oct 23-24, 1400Z-2100Z - 7.250, 14.260 MHz (+/- 25kHz) SSB. For QSL send your QSL and a #10 SASE to: Fred Neuenfeldt W6BSF 4932 So. 10th St. Manitowoc, WI. 54220-9121. For a special color certificate please send \$1 and your QSL to: Tom McNulty KOEFV 4015 Independence Ave. Waterloo, IA. 50703-9317. See: <http://www.qrz.com/nb9qv> for more information.

VIRGINIA - Lynchburg Amateur Radio Club, N4J. Archaeology Open House at Thomas Jefferson’s Poplar Forest, his retreat home and farm in Bedford County, VA. Uncovering evidence of life and work on the plantation 200 years ago. Oct 9, 1300Z-2000Z, Forest, VA - 7.260, 14.263, 14.070 PSK. QSL. Dick Hiner, W4HMK, 3977 Waugh Switch Rd., Big Island, VA 24526. <http://www.k4cq.n4kss.net>.

ALASKA – 2010 National Wildlife Refuge Week, Oct. 15-17, 1600Z-2400Z. Alaska Hams, Friends of Alaska National Wildlife Refuges, Alaska Maritime National Wildlife Refuge, Homer, Alaska. 21.310, 14.265, 7.240, 3.910. QSL KL1YY.

TEXAS – Lufkin Hamfest 2010, Oct. 16, jointly sponsored by the Deep East Texas Amateur Radio Club and Nacogdoches Amateur Radio Club. Location will be the gymnasium of the Lufkin First Church of the Nazarene, 1604 S. Medford Drive, Lufkin, TX – directly across the street from the Toyota dealership on Loop 287 South. Anyone wanting to set up early may do so on Friday evening, Oct. 15, between 3 p.m. and 9 p.m. On Oct. 16, vendor setup will begin at 7 a.m., and doors will open to all others at 8 a.m. Sales will cease at noon. Everyone is invited to participate. There is no charge for admission, for vendors, for inside tables or for setting up in our tailgate area. Talk-in will be on 146.940 (- offset, PL 141.3), a club repeater located in Lufkin. Prize tickets will be sold for \$1 each or 6 tickets for \$5. A variety of prizes will be drawn for and given away throughout the morning. All prize tickets will be returned to the hopper for the grand prize drawing noon. Visit: <http://www.lufkinhamfest.com/> for details and up-to-the-minute changes regarding Lufkin Hamfest 2010.

ARIZONA - Old Pueblo Radio Club Annual Swap Meet, Saturday, Oct. 16, from 7 a.m. to noon MST at the Kino Community Center, 2805 E Ajo Way, Tucson. Vendors, swap meet, testing. Admission to public is free, vendors, \$5. Talk-in on 147.3 MHz, CTCSS 110.9 Hz. Contact Ron, N7SPW for further information at 5402 E 8th St., Tucson, AZ 85711. (520) 207-3852, or n7spw@arrl.net.

MASSACHUSETTS - K1W, From National Wildlife Refuge Week, Parker River NWR, Newburyport, Massachusetts; Pentucket Radio Association; 1500-2000Z Oct. 9-17 on 18.125, 14.265, 7.240, 3.880 MHz. For QSL send SASE to Pentucket Radio Association, K1KKM, 25 Elm Park, Groveland, Massachusetts, 01834.

NEW JERSEY - Special Event Station N2CMC, Cape May County Amateur Radio Club, Wildwood, New Jersey. Oct. 2, 1300 to 2100Z. Commemorating the CMCARC 35th Anniversary at former USCG Loran Unit, Wildwood. CW: 7.030, 14.040, 21.040; SSB: 7.260, 14.260, 21.260. Stations contacted may request certificate or QSL. Name and address to QSL to: CMCARC Fox Run Road, C.M.C.H. NJ, 08210.

MASSACHUSETTS - N1P - Special event station: Franklin County Pumpkinfest 2010. Saturday, Oct. 23 in Turners Falls, Massachusetts. “Number 1 Pumpkin.” For full information: http://n1kxr.webs.com/pumpkinfest_2010.htm.

TEXAS – HamEXPO, Oct. 2. Bell County Expo Center, 301 Loop 121 (West) Belton, TX. Sponsored by the Temple Amateur Radio Club. Visit: <http://www.beltonhamexpo.org/>. VE testing. Talk-in: 146.820 (PL 123.0). Contact: Mike LeFan, WA5EQQ – (254) 773-3590. E-mail: expo@tarc.org.

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CW-Easy/Success-Easy	33	www.success-is-easy.com
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DX Store	24	www.dxstore.com
Diamond Antenna	21	www.diamondantenna.net
Electric Radio	42	www.ermag.com
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Engineering Systems, Inc.	31	
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ICOM America, Inc.	3	www.icomamerica.com
IIX Equipment Ltd.	22, 41	www.w9iix.com
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Kenwood U.S.A. Corporation	7	www.kenwoodusa.com
Mackey, James E.	31	www.net1plus.com/users/ryoung/index.htm
NiCd Lady, The	33	www.NiCdLady.com
Nifty! Ham Accessories	22	www.niftyaccessories.com
Palomar Engineers	19, 41	www.Palomar-Engineers.com
Penny's Stitch n' Print	31	www.pennystitch.com
Popular Communications	12	www.popular-communications.com
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SteppIR Antennas Inc.	5	www.steppir.com
TEN-TEC, Inc.	12	www.tentec.com
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Vibroplex	22	www.vibroplex.com
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Sometimes What Goes Around Just Keeps Coming Around

Kurt N. Sterba

It was more than 10 years ago that Krusty Olde Kurt reviewed an antenna that originated in England called the *Crossed Field Antenna*.

It used a principle new to antenna design based on the Poynting Vector. One of these was installed in Egypt. Just 21-feet tall, it replaced a 211-foot broadcast tower and allegedly produced a radiated field 6-dB stronger. A 30,000 watt transmitter replaced a 100,000 watt transmitter and gave the same coverage. Kurt commented that if there was 70,000 watts lost in the original installation, it must have been pretty hot at the transmitter site.

There was considerable disbelief in the antenna engineering community. It wanted certified field strength measurements that proved the claims. Unfortunately these were not available. *Not available?* A broadcast station in operation with no field strength measurements made?

In the U.S. one has to supply field strength measurements in eight different directions and at several distances before going on the air with programming. What kind of engineering was done to install this antenna, anyhow?

To answer the questions the manufacturer arranged to have a group of engineers from the U.S. come to the transmitter site and verify the claims. A representative of the online magazine *Antennex* was among those armed with field strength meters and other test equipment.

A date was set but, unfortunately, it could not be met because of "government entry problems." The problems were never solved and the independent evaluation never happened.

A new station was to be built on the Isle of Man where verifiable measurements *would* be made. There was construction delay-after-delay and finally the project was scrapped after the government began to wonder if the performance claims were true. Again, those elusive field strength measurements were not made.

Two Years Later . . .

An antenna using the same principles appeared two years later in the U.S. called the *EH Antenna*. It was only 2/100 of a wavelength high as compared to a dipole at 50/100 wavelength long. And it allegedly had near 100 percent efficiency – just like a dipole. Again, it worked on this new principle of crossed fields. Because of this, conventional antenna concepts do not apply. Another miracle antenna but, as before, field strength measurements were not available.

But, at last, verified tests were made. And these are the only verified tests Kurt knows about. They were run at radio station WKQV-AM in Eatonton, Georgia. The *EH* was tested against WKQV's standard vertical. The reported result: The *EH* antenna is woefully inefficient and does not by any means radiate as well as a standard vertical.

. . . And Today

While browsing the Internet recently, Krusty Olde Kurt happened upon an antenna for sale called the *Super "C"*. It is "a radical change in antenna design . . . The first fundamental

change in over 50 years." And what is this marvelous antenna? A small antenna – only 3-feet high and 6-feet wide – that performs as well as a full size antenna.

How does it do this? By using the same principle as used in the *Crossed Field Antenna* and the *EH Antenna*. There is a very short vertical mast. At its top is a wire mesh basket looking like an upside down waste basket. At the base of the mast is a flat wire mesh plate with a hole in its center. These two parts form a capacitor that creates a large electric field. The short mast creates a magnetic field. The two fields combine to form an electromagnetic wave.

Kurt can tell you that *this is not so*. A radio-frequency electric field produces a magnetic field. The magnetic field produces an electric field. This process continues as the field radiates into space. You can't form an electric field all by itself, then produce a magnetic field all by itself, and then combine them to form a radio wave. The radio frequency electric wave produces its own magnetic field and the two gallop happily off into space.

We are told that ordinary antennas are "magnetic field dominated" whereas the *Super "C"* is "electric field dominated" because of the intense field generated by the capacitor current.

"Maxwell and Poynting, pioneers in electromagnetic radiation in the late 1800s, developed the basic equation $E \times H = S$. The E vector *crossing* or interacting with the magnetic field vector H produces electromagnetic radiation S. Both fields must be present. If one antenna has a large magnetic field 10H and a small electric field 2E, radiation is $10H \times 2E = 20S$. If instead, the antenna has a large electric field, 10E, and a small magnetic field, 2H, radiation is still 20S."

Again Kurt is here to tell you that this is *baloney*. The ratio of E to H is easily found from Ohm's law which works in space just as well as it does in our circuits here on earth.

We all know that $E/I = R$. The impedance of free space is 377 ohms. So the electric field strength, E, divided by the magnetic field strength, H, equals 377 ohms. You can't have a giant electric field and a tiny magnetic field. Their ratio will not equal 377 ohms so they cannot exist in space.

Kurt does not think that the *Super "C"* can change the impedance of space.

In Conclusion . . .

What we have here is another attempt to foist off this wacky idea with a lot of pseudoscientific explanations. It flies in the face of basic engineering principles.

The only verifiable independent test on record casts doubt on its efficiency. The fact that it is patented (patent No. 5,796,369) does not mean it's a good radiator.

Kurt's advice is to just keep your current antenna. Especially if you know it works.

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