



VOLUME 63 ISSUE 12

December 2013

ARRL AFFILIATED-SPECIAL SERVICE CLUB

December Activities

Ham Breakfast (Black Bear Diner)

Saturday Dec 7
8:00AM-9:30AM

Board Meeting (Daniel's Taco)

Monday Dec 9
6:30PM - 8:00PM

Annual Christmas Party (IHOP)

Wednesday Dec 11
6:00PM-9:00PM

PPRAA and ECOM

Nets

PPRAA HF/VHF/UHF SSB

Every Thursday
7:00 PM
Start on 28.390
50.125 and 144.200

PPARES (146.97- 100Hz)

Every Tuesday
7:00 PM

PPARES (144.220 USB)

Every Monday
7:00 PM

PPRAA - AN ARTICLE OF INCORPORATION

Pikes Peak Radio Amateur Association (PPRAA) was established in the early-to mid-1930s. Unfortunately we have not yet been able to ascertain the exact year establishment. In the November Ø-Beat the First article of incorporation was presented, Second article of incorporation listed is:

To have its members participate in and to encourage others to participate in civil defense, public assistance, charitable fund drives and other similar activities, for which amateur radio is particularly adapted.

EMERGENCY COMMUNICATIONS

Amateur Radio Emergency Service (A.R.E.S.®) provides communications in times of major and unforeseen disasters; without pecuniary (financial) compensation.

There is no substitute practice of any form. PPARES nets as well as public service activities are much more than just getting on the air, these activities help each operator be an effective communicator, no matter how seasoned, in a real or simulated emergency. To avoid complacency practice frequently, with other operators practicing.

PIKES PEAK ARES

(Submitted by: John Bloodgood, PPARES Publicity Officer)

The local ARES introduction and local net information can be found online at:
www.ppares.org/files/General/ppares_intro.pdf.

Big news for Pikes Peak Amateur Radio Emergency Service (PPARES) was the announcement of Dr Rich Russel, ACØUB, moving up to the Colorado Region 2 (South Central) Emergency Coordinator (EC) position and Don Johnson, KØDRJ, taking the EC position for Region 2 District 2 (PPARES).

PPARES is already getting requests for support of special events in 2014 and plans are underway for the annual SkyWarn Appreciation Day in December - Sid White, K4ARM, the PPARES Weather Operations guru made the announcement tonight on the weekly PPARES net.

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PPRAA OFFICERS AND BOARD MEMBERS

<i>President</i>	<i>Michael Derbort</i>	<i>KCØELG</i>	<i>Board member</i>	<i>Tom Brereton</i>	<i>WØTOM</i>
<i>Vice President</i>	<i>Jim Bishop</i>	<i>KDØKQL</i>	<i>Board member</i>	<i>Doug Nielsen</i>	<i>N7LEM</i>
<i>Secretary</i>	<i>John Wishart</i>	<i>NGØI</i>	<i>Board member</i>	<i>Diana Nordstrom</i>	<i>KCØNPP</i>
<i>Treasurer</i>	<i>Pam Scott</i>	<i>WØPRS</i>	<i>Board member</i>	<i>Jim Rader</i>	<i>KDØNQM</i>
			<i>Board member</i>	<i>Jim Harris</i>	<i>WØEM</i>
			<i>Board member</i>	<i>Virgil Yost</i>	<i>NØXRS</i>
<i>Ø-Beat Editor</i>	<i>Dan Scott</i>	<i>WØRO</i>	<i>Board member</i>	<i>Chris Schroeder</i>	<i>KDØUQI</i>

All PPRAA board of directors can be contacted at: boardmembers@ppraa.org

All PPRAA officers can be contacted at: officers@ppraa.org

PPRAA SCHOLARSHIP FUND

Your contribution will make an enormous difference to some deserving student. PPRAA strives to raise \$1,000 yearly. Please make a tax deductible donation of \$5, \$10, \$20 or more.

ONLINE DONATIONS:

<http://ppraa.org/donations>

SEND CHECKS TO (OR BRING TO A MEETING)

Write check to: "PPRAA Scholarship"
PPRAA-Scholarship Fund
PO Box 16521
Colorado Springs, CO 80935-6521

ANONYMOUS DONATION TO:

THE FOUNDATION FOR AMATEUR RADIO:

Write Checks to: "PPRAA Scholarship"
FAR Scholarship Committee
P.O. Box 911
Columbia, MD 21044

WGØAT – ADVENTURES OF ROOSTER AND PEANUT

<http://www.youtube.com/user/goathiker>

Steve, WGØAT, a frequent speaker at PPRAA meetings, lost one of his hiking



buddies.

This tweet was received Nov 6th:

"Rooster" goat died suddenly last night of unknown causes ...his ashes will be scattered on many SOTA peaks.

To watch Adventures of Rooster and Peanut, follow the link above.

COLORADO QSO PARTY

By: Doug Nielsen, N7LEM

Below are the final scores, by category, for the 2013 Colorado QSO Party. The individual In-State High Score was logged by Randall Martin, KØEU with 255,444 points. The individual Out of State High Score was logged by Bill Waters, W7GKF, with 16,804 points (Second year in a row for Bill). Congratulations to them and everyone for their fine effort.

Included in the listing is the placement in each category. At the end of the listing are the winners of the Special Categories. Congratulations to all the winners.

Below are some interesting numbers from the COQP.

- 129 Operators – in & out of state

- 140 logs received
- 96 out of state
- 44 in state

There were a tremendous amount of positive soapbox comments received from the COQP participants. They will be published in the December or January edition of the PPRAA's Zero Beat newsletter.

The judging team recomputed all scores.

Again, my thanks to everyone for their participation and support. Special thanks go to the PPRAA and especially its Board of Directors.

COQP – CATEGORY WINNERS

In State - Winners

Mode	Power	Operation	Position	Name	Call
CW	Low	Single	Mobile	Ken Anderson	WØETT
CW	Low	Single	Portable	Mike Stansberry	KØTER
CW	Low	Single	Fixed	William Hendrick	NØAC
CW	QRP	Single	Fixed	Dick Schneider	ABØCD
Digital	QRP	Single	Portable	James Griffin	KCØTRK
Mixed	Low	Single	Mobile	Randall Martin	KØEU
Mixed	Low	Single	Fixed	Bill Brown	KØUK
Phone	Low	Multi	Portable	Royce Seymour	AAØJD
Phone	Low	Single	Mobile	Nick Hanks	NØLP
Phone	Low	Single	Portable	Brian Milesosky	N2ZGT
Phone	High	Single	Fixed	John Raydo	KØIZ
Phone	Low	Single	Fixed	Bob Witte	KØNR
Phone	Low	Multi	Fixed	Jim Langsted	KCØRPS

Out of State - Winners

Mode	Power	Operation	Name	Call
CW	High	Single	Mario Borstel	DL5ME
CW	Low	Single	John Deslge	N6MU
CW	QRP	Single	Dan Alwin	KEØG
Digital	Low	Single	Ed Sutter	KC9JBU
Mixed	High	Multi	Barry Cohen	N2BJ
Mixed	High	Single	Bill Morgan	KØDEQ
Mixed	Low	Single	Bill Waters	W7GKF
Mixed	QRP	Single	Ron Duncan	W4UT
Phone	High	Single	Mike Heenan	W7MH
Phone	Low	Single	Jeff Guidry	AC5O
Phone	QRP	Single	James Stiles	WBØIWG

SPONSORS: COPQ CATEGORY PLAQUES AND AWARDS:

PPRAA – [Pikes Peak Radio Amateur Association](#)
CCARC – [Colorado Council of Amateur Radio Clubs](#)
GMCC – [Grand Mesa Contesters of Colorado](#)
WIOWA – [Iowa DX and Contest Club](#)

WHAT IS THE COLORADO QSO PARTY?

PPRAA sponsors the QSO party for the state of Colorado. The primary objective of state QSO parties is to contact as many station as possible operation within the bounds of Colorado.

There are two primary divisions for participants:

- You can be an “in state” station where stations from outside Colorado or inside Colorado try to make contacts with you.
- You can operation the Colorado QSO Party (COQP) as an “out of state” participant.

In both cases the goal is two-fold, contact as many Colorado Stations, and collect contacts from as many Colorado counties as possible.

Scores are determined by the number of contacts multiplied by the number of Colorado Counties you contacted or “worked”. Additional multipliers are gained by the mode you are working, power lever, and other criteria.

See <http://ppraa.org/coqp> for rules, scoring and additional information concerning the 2013 COQP.

SPECIAL AWARD WINNERS

SK Memorial Award- High-Score PPRAA Member
Dick Thompson, WØRAA (Sponsor: WØRAA)

Top Mobile Score

Randall Martin, WØEU (Sponsor: WØETT)

Out-of-State with most mobile QSOs

TBD (Sponsors: WØZA, WØETT, WØHXB)

PPRAA BOARD MEETING 11 NOVEMBER 2013

President Michael Derbort called the PPRAA board meeting to order at 6:30 PM at the Thai Guy Restaurant.



Meeting minutes were approved as published.

Committee Reports

Treasurer's Report - Pam provided a copy of the treasurer's report. Balance as of 31 October was \$12,331.92

Building Committee

- Station Bldg - we want to get our stuff out of the building and into the trailer
- Land Use Agreement - still awaiting approval from the landowner.
- Solar Panels - donor would like us to take possession before the end of the year. Who has enough room for these to store on a temp basis? A motion (not seconded) to purchase a solar controller from Big R for \$150 was tabled.

Electronic Media

Jim reported on a problem he had with the Forums website. A popup on the site installed a bunch of garbage programs which he had a lot of trouble getting rid of.

Asset Committee - No report as Virgil was absent.

Scholarship Fund - No further donations reported.

Zero Beat

Dan has been publishing it now. He wondered about how to arrange the columns.

ARES

Four upcoming events: Thanksgiving & Christmas dinners, Falcon 50 bike race, MTCC 100. If you can help with these, go through the ARES website to sign up.

Tech Ed - Mike is still offering tech & general class instruction and code training.

New Business

COQP Plaques - We currently have at least 18 sponsored and all categories that have multiple entries are sponsored. **El Paso County Combined Club Membership Proposal** Proposal is to combine the four radio clubs in the area with a single dues payment. Is this something we want to pursue? Pam is currently the treasurer for 3 out of 4 clubs (PPRAA, CMRG, PPFMA, GofG). We need to come up with a firm proposal before we distribute it to the various groups. Mike will initiate the proposal.

Upcoming Events

Megafest 2014 Jim provided a list of proposed raffle items. Our recommendations: Elecraft KX3, Butternut HF9V, Rig Expert AA54, Yaesu FT60, Kenwood mobile. Christmas Party - next month at IHOP, order off the menu. Door prize is Yaesu FT60 HT.

Elections & Open Appointments

Key Position - Megafest Chairman

President - Mike is currently job hunting and may depart at any time if he gets an offer.

Special Events - we would like to have one next year at end of summer. Possibly during AFA home games. 2014 is our club's 75th anniversary.

Unfinished Business

Ham Breakfast - Black Bear Diner on Dec. 7.

Next Board Meeting: Monday, 9 December 2013, at Daniel's Taco Shop

Around The Table

Dan - what is status of our repeater? Should we donate to the eastern EC person? Nancy from Eads could use it.

Jim - presented a carpet sample for possible use on the trailer floor.

Respectfully Submitted,
John Wishart NGØI
Secretary
16 November 2013

30 YEARS AGO - DECEMBER 1983

A motion will be made at the December to establish a club repeater. Please attend. (Interesting to note this has not appeared in any previous 0 Beat to this date.)

The Red Cross gave the program at the November meeting, and led an interesting Q&A discussion. The Red Cross would like to work more closely with the club. The club purchased an insurance policy for \$300,000, with a \$1,000,000 rider for the Mall demonstration. Cost is \$100 per year. Les KCØNC will set up a calling tree to notify club members of important information. The first item will be

notification of the club's Christmas party.

The repeater issue was brought up by Frank KL7IPV at the November meeting. Still looking for a club callsign trustee, preferably an extra class operator. The club will look into determining whether or not it should purchase an antenna rotator.

The Chapel Hills Mall demo was a success, with a number of potential new members dropping by. A motion was passed that the board recommend to the club members that the repeater motion be passed at the December 14 meeting.

PPRAA GENERAL MEETING

13 NOVEMBER 2013



President Michael Derbort called the PPRAA general meeting to order at 7:00 PM at IHOP Restaurant at 5749 Stetson Hills Blvd.

Silent Keys – Dave Shavey, K7WU (Formerly KØHOA here in Colorado Springs)

Noted: Rooster (Steve WGØAT Galchutt's goat)

The October club meeting minutes were approved as published.

Committee Reports

- *Recent Events* -
- CMRG – Donated an ICOM ID-51A HT with D-Star. Thank you!!
- CCARC meeting - well attended
- *Treasurer's Report* - Pam: \$12,331.92 balance as of 31 Oct 2013.
- *Asset Committee* - Virgil - no report (V was absent)
- *Club Station update* - Dan - Jim brought a floor carpet sample. No signoff yet on the landowner agreement. Need a trailer to move donated solar panels.
- *Electronic Media* – Doug - no report
- *Forums Site* - Site banner was hacked, no resolution as yet.
- *Technical Education* - no report
- *Zero Beat* – Deadline for article submissions is November 22nd to Dan Scott WØRO. Also for December 22.
- **ARES Update**
- John KD0SFY highlighted the following upcoming events ARES will be supporting:
 - Thanksgiving (Need 5, have 4)
 - Christmas (Need 6, have 5)
 - Falcon 50 Race – May 3 (have 2)
 - MPC 100 Race – June 21st (Need 12, have 1)
 - Quarterly meeting - new EC: Don Johnson
- **Scholarship Fund**
- Please donate for the 2013 school year. – Can now donate directly to "Foundation of Amateur Radio"

El Paso County Amateur Radio Club Consolidated Membership

Details still being formulated. A proposal to combine membership of all EPCo radio clubs so you can pay once to join all EPCo radio clubs.

Megafest 2014 –

Saturday, July 26th (tentative, pending making the reservation with LPHS after Jan 1).

Committee:

Pam Scott, Jim Rader, Virgil Yost, Jim Bishop

Prizes have been picked out (total expenditure <= \$3K):

- Elecraft KX3
- Kenwood Mobile rig, dual band 2m/440MHz
- Butternut HF9V 80 thru 6 vertical antenna
- RigExpert AA 54 antenna analyzer 0.1 thru 54 mhz
- Signal Link USB external sound card
- ICOM ID-51A HT with D-Star (donated by CMRG)

Upcoming Events / Notices

- *VE Session* – Saturday, December 14th at CTU at 9:00 am
- *Plaque Sponsorship* – Plaques are still available for sponsorship. \$40 donation/plaque.
- *Special Event Station* – Celebrating our club's 75th year anniversary in 2014. We are still in planning for next year.
- *Christmas Party* – 6PM, December 11th at the IHOP, Powers & Stetson Hills Blvd. We will order off the regular menu.
- *Ham Breakfast* in December will be at the Black Bear Diner, 975-A N. Academy Blvd, Saturday, 7 December 2013, 8-9:30 AM.
- *By-Laws Review* - Mike recommends adding list of standing committees, their roles, and responsibilities.
- *Goals & Objectives* - if you have any suggestions in this area, please submit your ideas to officers or board members.
- *COQP* - Doug noted the 2014 event will be on August 30 next year. There were 163 logs submitted. Dick won the highest club member score award. Randall Martin got the highest score overall, 255,444.
- *Thursday night net*: Every Thursday at 28.390 MHz (USB) in the 10m band. Doc update.
- *Program* - Chris Schroeder (owner & leader of USSC) gave a presentation on the "The United States Storm Chasers Inside Look".

Next Meeting: 6:00PM, Wed, 11 Dec 2013, at the IHOP, Powers & Stetson Hills Blvd. – Christmas Party

Respectfully Submitted,
John Wishart NGØI
Secretary
16 November 2013

SOCIAL MEDIA

PPRAA.ORG

The PPRAA.org web site provides additional club information, useful links, propagation information and much more.

PPRAA.FORUMOTION.NET

Very lightly used. This is intended to allow on-going discussion on area amateur radio activities.

FACEBOOK

From the link on PPRAA.org, in Facebook find "PPRAA-Pikes Peak Radio Amateur Association".

GOOGLE+

From the link on PPRAA.org, in Google+ find "PPRAA-Pikes Peak Radio Amateur Association".

PPRAA MEETING LOCATIONS

"HAM" BREAKFAST

All are warmly invited to come on down and join us!



Black Bear Diner

975-A N. Academy
Saturday, 7 December 2013
Time is from 8:00-9:30 AM

The "HAM" breakfast is generally held the first Saturday of the month with periodic QSY to other dates based on QRM of other local or state activities.

The "HAM" Breakfast location moves around town providing an occasional location near you

MEMBERSHIP MEETING



IHOP on Stetson Hills Blvd
5749 Stetson Hills Blvd
(Just west of Powers Blvd)
November 13th 7 pm

The General membership meetings are open to all amateur radio operators, those interested in amateur radio, and guests. This meeting consists of club business and interesting presentation. The meetings are the 2nd Wednesday of the month.

Most people will order off the menu starting around 6:00 PM. Eat and enjoy meeting new (or old), friends over the meal

BOARD MEETING



Daniel's Taco Shop

6817 Space Village Ave
(Just outside the north gate of Peterson AFB)
Board Meetings are open to all members.
Meeting starts at 6:30 PM

THURSDAY NIGHT NET



Every Thursday evening (some holiday exceptions) the PPRAA holds a net starting on 10 Meter at 28.390 USB. Other USB frequencies commonly used during the net are 50.125, and 144.220. The net is open to all licensed amateur radio operators.

This very informal net provides a forum for you to better understand your radio(s) or a place to just drop by to just say "howdy".

General net where checking out your equipment is encouraged. New antennas, microphones, radios, mobile setup, whatever, can be discussed as you tweak your station.

DIPOLE AND INVERTED "V" BASICS

While reviewing various articles and YouTube videos to reference in the Ø-Beat, I ran across this excellent video which is one of, if not the best explanations of antennas I have run across.

Zed's Zed YouTube tutorial can be found at:

<http://www.youtube.com/watch?v=fyOWRTWdDKM>

HAM CENTRAL TERMINAL

Submitted by: Shel Radin, KFØUR

This is a story of how an idea became a homebrew project, which then became a commercial product; all within a year.



The story starts out talking about new technology and what it can do for us. New technology just marches on. We reap more stuff in smaller packages. There always seems to be new opportunities available. For portable QRP, more stuff in smaller packages is a wonderful thing.

That's the way I felt when Elecraft announced the KX3 transceiver (<http://www.elecraft.com/KX3/kx3.htm>). All HF+6M bands, all modes; all in one small, lightweight, current sipping, package. Are you kidding me?

I've been operating portable QRP for a number of years using my trusty Elecraft KX1. With 20M, 30M, and 40M, CW only, I was a happy hiker, having made many an enjoyable QSO from the trails and mountaintops here in the Colorado Rockies. But I must admit, there were times I wished I had more bands available, or SSB when I had non-ham friends with me, so they could listen in and participate. The KX3 fit that bill nicely.

But wait, there's more. The KX3 sports a built in decoder for PSK31 and RTTY, so no computer is needed. You mean I can be in a RTTY contest operating lightweight portable in the hills? Perfect.

So I tried it. It works. The KX3 decodes the characters and puts them on an 8 character scrolling display at the bottom right of the screen. Yes, it works, but I found it fatiguing after a short time, as I dare not take my eyes off of the constantly scrolling characters, less I miss something. And keeping track of what characters went by was a bit more than my brain wanted to handle. Was that call W1ABC, W1ABS, W1AB? I might have received it differently due to QRM, QSB, or a host of other maladies of the band. I sure wanted to go back and compare and see if at least two received calls matched.

To transmit, you send CW and the rig converts it into the characters to send. I've been doing CW for many decades now, but found my CW timing to be less than perfect. I call it a CW Drawl, from the days of when we all had our unique fists using a straight key. My Drawl, however, made the rig misinterpret my letters at times. And once they are sent, well, there's no talking them back.

The "idea" I mentioned started to incubate after I attended a Sierra Radio Systems (<http://www.hamstack.com/>) forum on microcontrollers at the Dayton Hamvention. This was all new to me, and I liked the idea of using a microcontroller, and thought it would be interesting to learn, but for what project? I didn't want to spend time and energy for a project I really didn't need or would use. Then it hit me. What if I could read the received decoded text from the KX3 and put it on a bigger screen? The guys at the Sierra booth thought it would work and would be a good application for a microcontroller. Travelling a few hundred feet to the Elecraft booth, Wayne, N6KR, the Elecraft co-owner and chief technical dude, thought it would work from the KX3 perspective. Since I got nods from both booths, I decided to give it a try.

Enter the Ham Central Terminal (HCT). The initial idea was to take the scrolling characters on the KX3 and putting them on a bigger screen to read. You know, read a whole sentence of a paragraph at a time and while still being able to take a drink or swat a fly (that never works) and not miss anything.

So I purchased the Hamstack microcontroller (<http://www.hamstack.com/>) system from Sierra. The guys at Sierra were, and still are, extremely helpful. They got me started with this new technology to me, and provided excellent support.

If you're not familiar with microcontrollers, it's basically a computer on a very small chip that contains

- CPU
- Program memory
- Data memory
- Non-volatile EEPROM
- Serial Port
- Keyboard Port
- Analog and Digital I/O ports

Within a few weeks of arriving home with my Hamstack, I had the foundation of the HCT working. The received characters were displayed on an 80 character screen, with the ability to freeze the screen and scroll back so you could see what you didn't remember. I have to admit that I've been doing software development for many years, but this was using a new device, new programming language (C), and new software development system. It was a nice challenge, and it all came together.

The Hamstack system had a PS2 keyboard port on it. Well, that got me going on using a keyboard...for lots of things. So that was the next sub-project inside of this bigger project. Once I got the keyboard working, I could send PSK31, RTTY, or CW characters with it instead of using the CW paddles. And I could send all kinds of commands to the KX3 to control it. The creative floodgates had been opened!

I took it out on a few outings and always came home with a list of refinements and feature additions I thought it needed. I like to say it was developed out of use in the field.

I put my project, which I affectionately called the "Data Depot", on the KX3 reflectors and received a lot of encouragement, and requests to get one! One of the folks responding was Steve, KB3SII, who had experience manufacturing this type of technology. He said "Great idea...let's make it into a product!". Months later, the next thing I knew, Steve and I were standing in our booth at Hamvention in Dayton introducing our new Ham Central Terminal. From concept to product was one year, or another way to look at it is from "Hamvention to Hamvention".

Then more ideas started to roll in based on our personal use of the HCT and that of users.

One of the more significant features is the addition of a log. It'll hold 1000 QSOs and you can export them in ADIF format when you get home, and integrate into your main log, a contest log for scoring, Logbook of the World, etc. Other nice features, all born from a need in the field,

include:

- 10 text message buffers (80 characters each), to send contest exchanges, CQ, station info, etc.
- 10 rig macros to control the KX3
 - Just about anything you can do from the front panel or menus can be programmed. A macro is a one or more of these commands.
- Quick QSY, to QSY and change mode with a minimum of keystrokes. Easier than doing it on the rig.
- Call and contest serial number substitution in the text messages. Perfect for Field Day.
- Transmit buffer, so you can backspace when sending PSK31, RTTY, or CW and correct that typo.
- SOTA support to store Summit References, activate one, and export it with the log.
- Multiple LCD backlight levels, so you can conserve battery power. It has a Transflective display, so you don't need ANY backlighting outside. It's been measured to run 22 hours in this mode.

Besides a Coloradan being the software developer (me), the printed circuit boards are manufactured and completed just up the road in Aurora, CO.

I'm thrilled that my original idea is now being enjoyed by hams worldwide. It's a unique feeling, and I highly recommend it! And to top it off for me, some of the first units were obtained by some folks at Elecraft.

Pretty cool.

BOB'S BLOG

I own a variety of Yaesu ham radio transceivers and like them a lot; except for that one little annoying feature that the FM rigs have: WIRES.

About once every two weeks, one of the local radio

hams gets on the repeater with a DTMF beep at the start of every transmission. We've come to expect it now, so the first question to the ham is "are you by chance using a Yaesu radio?" They always say "yes" and then we talk them

through the process of turning off the WIRES "feature." The WIRES function sends a DTMF signal at the start of every transmission for use with Yaesu's version of internet repeater linking (which is not used much in the US). The problem is that it is very easy to bump the

wrong button on your radio and accidentally get it into this mode. This means that this is mostly a nuisance feature in the US.



I recently came across a way to disable this feature on your Yaesu radio so that it won't send the DTMF tone *even if you activate it by accident*. I did not come up with this clever hack...in fact, I am not sure who put this together. (If you do, let me know and I'll give them credit.) Take

a look at this pdf file and follow the instructions to de-WIRES your radio: [Turn Off Wires](http://www.k0nr.com/wordpress/wp-content/uploads/2013/11/Turn-Off-Wires.pdf) (<http://www.k0nr.com/wordpress/wp-content/uploads/2013/11/Turn-Off-Wires.pdf>)

73, Bob KØNR

NUMBERS STATIONS

Submitted by: Dan Romanchik, KB6NU

Uno, Dos, Tres...

If you have done any amount of listening to shortwave radio outside of the ham bands, you have undoubtedly run across "numbers stations." The broadcasts from these stations consist of streams of numbers or letters, often in a computer-generated female voice speaking in Spanish. Every now and then, a numbers station pops up on 30m, sending five-character groups in Morse code.

According to the Conet Project (<http://www.irdial.com/conet.htm>), "Shortwave Numbers Stations are a perfect method of anonymous, one way communication. Spies located anywhere in the world can be communicated to by their masters via small, locally available, and unmodified Shortwave receivers. The encryption system used by Numbers Stations, known as a 'one time pad' is unbreakable. Combine this with the fact that it is almost impossible to track down the message recipients once they are inserted into the enemy country, it becomes clear just how powerful the Numbers Station system is."

The Conet Project sells a CD with a number of recordings for \$55, but you can find a bunch of mp3 files at <http://www.archive.org/details/ird059> for free.

Recently there was a thread on the Glowbugs Google Group about numbers stations. One fellow mentioned "The Numbers Station," a movie released earlier this year starring John Cusack. IMDB (<http://www.imdb.com>) says that The Numbers Station is about "a disgraced black ops

agent dispatched to a remote CIA broadcast station to protect a code operator. Soon, they find themselves in a life-or-death struggle to stop a deadly plot before it's too late." It's currently available for streaming on Netflix, and I watched it recently. It's kind of violent (lots of people get shot), but it's a decent thriller.

Jim, K6FWT mentioned ENIGMA 2000 (<http://www.apul64.dsl.pipex.com/enigma2000/>). The group's website describes ENIGMA 2000 as "a UK based online group, whose aims are to bring together listeners and enthusiasts who monitor and gather information on 'Number Stations' and other related radio transmissions. Through our Yahoo Group monitors can share their logs, discuss frequencies, thoughts and opinions on this most emotive subject." Jim says, "These folks are SERIOUS enthusiasts. I have heard that they surpass many intelligence services with their thoroughness. You can get in up to your eyeballs if you don't watch it."

These stations have been around since World War II. I remember as a kid in the 1960s and 1970s, reading articles about numbers stations in Popular Electronics and Electronics Illustrated. They're as much of a mystery today as they were back then.

When he's not listening to numbers stations, Dan, KB6NU enjoys working CW on the HF bands and teaching ham radio classes. For more information about his operating activities and his "No-Nonsense" series of amateur radio license study guides, go to KB6NU.Com or e-mail cwgeek@kb6nu.com

CONTEST CORNER

For those testers in the club, or those curious about contesting below is a subset of contests the Ø-Beat editor thought interesting.

The **WA7BNM Contest Calendar**. site provides detailed information about amateur radio contests throughout the world, including their scheduled dates/times, rules summaries, log submission information and links to the official rules as published by the contest sponsors. The url for this information can be found at:

<http://www.hornucopia.com/contestcal/weeklycont.php>

The following lists the Start Date and a contest description. More information can be found at the above link.

*Dec 6 – ARRL 160-Meter
Dec 8 – Ten-Meter RTTY
Dec 11 – NAQCC Straight Key/Bug Sprint
Dec 14 – ARRL 10-Meter
Dec 22 – ARRL Rookie Roundup, CQ
Dec 28 – Stew Perry Topband Challenge
Dec 28 – Original QRP Contest*

GETTING AN HF ANTENNA TO WORK - PART 7

SUBMITTED TO THE Ø-BEAT BY: RALPH WDØEJA

[ed. In the last Ø-Beat I mistakenly indicated that Part-6 was the last in this series of articles by Ralph, WDØEJA., that was incorrect and these articles will be an on-going column in the Ø-Beat.]

The November article mentioned 4 characteristics or values of antennas:

- X_L -INDUCTIVE REACTANCE,
- X_C -CAPACITIVE REACTANCE,
- RADIATION RESISTANCE
- R -NONREACTIVE RESISTANCE.

If you are using a SWR meter at the radio through a length of coax, you are limited as to what you can determine. You can scan a section of frequency and find the minimum SWR. This will tell you the resonant point of antenna and coax combined. Not too bad, but sometimes we need more data to make the antenna match closer to 1:1.

If you are building an antenna, you may have purchased some kind of analyzer. This device has measurements for X_L , X_C , Z and R. How do we use it?

- The instrument needs to be connected at the antenna. On HF, a short coax jumper will work.
- Scan the area of frequency you are working with. If you are building an antenna for 40 meters, then scan the frequencies in the 7 MHz area.

What are you looking for is Zero Reactance.

Set your analyzer for reading reactance. When you have found Ø you are at the resonant point of the antenna. This



will also be the minimum SWR.

What if the minimum SWR is greater than 1:1? Change the setting on the analyzer to the

Resistance. In some units you have a resistance meter. You should hold your thumb over that meter, or ignore it until you find where the Reactance's are at 0. Take your thumb away and see how close to 50 ohms it is. At any other point this value does little to help you.

You now know if the antenna is above or below 50 ohms. Depending on the design of the antenna, R value can be adjusted (possibly) to measure needed 50 ohms.

Now you are ready to connect your coax and operate. **Wrong!** The coax is also a component of the antenna. It does not radiate, but it does change the readings you just obtained.

Now what do you do? The next article will start to address this.

73,
Ralph WDØEJA
BILAL COMPANY
137 MANCHESTER DR.
FLORISSANT, CO. 80816 U.S.A
PH/FX: 719/687-0650
wd0eja@isotronantennas.com

LOCAL HAPPINGS

HAMFESTS

January 18th

Northern Colorado ARC Hamfest
Loveland, Colorado

<http://www.ncarc.net/>

Check the ARRL Rocky Mountain Division website for other activities and last minute updates:

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

JANUARY MEETING HOMEBREW – SHOW-AND-TELL

If you designed it, built it - bring it.
If you thought it, constructed/bought it - bring it.
ECOM, Contest, Rag Chew, DX, your idea - show it.

ORGANIZATIONS

Pikes Peak Amateur Radio Emergency Service (PPARES)

<http://www.ppares.net>

Tri-Lakes Monument Fire Radio Association (WØTLM)

<http://www.w0t1m.com/main/>

Garden of the Gods Amateur Radio Club (GGARC)

<http://ggarc.org/>

Mountain Amateur Radio Club

<http://nx0g.org/>

Pueblo Ham Club

<http://pueblohamclub.com/>

Pueblo West Colorado Amateur Radio Club, Inc.

<http://www.qsl.net/na0pw/>

Pikes Peak FM Association (PPFMA)

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

Cheyenne Mountain Repeater Group

<http://www.qsl.net/cmrg/>

LOCAL AMATEUR RADIO EXAMINATIONS

PIKES PEAK RADIO AMATEUR ASSOCIATION (PPRAA)

When:

*Feb, Apr, Jun, Aug, Oct, Dec
2nd Saturday at 9 AM*

Location:

*Colorado Technical University (CTU)
4435 North Chestnut
Colorado Springs, CO 80907*

Directions:

<http://ppraa.org/ve-testing>

or contact:

*Dan Martin
VE@PPRAA.org*

MOUNTAIN AMATEUR RADIO CLUB (MARC)

When:

*Jan, Mar, May, Jul, Sep, Nov
1st Saturday at 10 AM*

Location:

*Woodland Park
Woodland Park Library-Community Meeting RM
218 East Midland Avenue*

Directions:

<http://www.nx0g.org/ve.html>

or contact

*Wes Wilson (KØHBZ)
k0hbx@arrl.net
Call (719) 687-8758*

APPLICANTS WILL NEED THE FOLLOWING ITEMS AT THE SESSION:

1. A valid **PHOTO ID**, driver's license preferred (if you do not have a valid photo ID, please call for alternative identification requirements).
2. Your **FRN** or **SOCIAL SECURITY NUMBER** (now required – this includes children).
3. Your **CURRENT ORIGINAL** amateur radio **license** (if any) **and** a **PHOTOCOPY** for the VE Team to keep.
4. The **CURRENT ORIGINAL CSCEs** you have **and** a **PHOTOCOPY** for the VE Team to keep.
5. Cash, Check or Money Order for \$15 (standard ARRL VE Fee). Checks and money orders should be made out to either PPRAA or MARC (site dependent). This covers all exams you wish to take at this VE session.

NOTE: PPRAA and MARC VE Team policy, as with many VE Teams, is to not allow same day retests on failed exams.

PPRAA – COLORADO SPRINGS TESTING ONLY

Anyone passing their Technician Class examination at a PPRAA test session will receive a free year's membership to the Pikes Peak Radio Amateur Association.

Licensing Prep & Testing

Licensing and upgrading

Material including ARRL publication and technical books can be found locally at Centennial Electronics.

Centennial Electronics
2324 E Bijou St.
Colorado Springs, CO 80909
(719) 633-4666

Education – PPRAA

For one-on-one amateur radio license and Morse code tutoring as well as practical hams skills classes

Mike Anderson, WV7T
wv7t@arrl.net
719-229-8610

Education - HamRadioSchool.com

An integrated learning system developed by Stu Turner WØSTU and James Bucknall KDØMFO of Monument, Colorado. Stu combines his skills as an engineer and educator with his enthusiasm for Amateur Radio in this excellent learning system's books for the Technician Class and General Class licenses. James maintains the complementary web site that includes an eMagazine of informative articles and section-by-section supplements to the license preparation books.

HamRadioSchool.com available on the site, HRO Denver, and online at these retailers: Amazon.com, R&L Electronics, DX Engineering, Universal Radio.



Membership Application
Pikes Peak Radio Amateur Association, Inc.
P.O. Box 16521, Colorado Springs, Colorado 80935

Date: _____ ☐ New Membership ☐ Renewal

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Call: _____ License Class: _____ Telephone: _____

E-mail address: _____

Are you an ARRL member? ☐ Yes ☐ No

Additional Name: _____ Call _____ Class _____ ARRL member? ☐ Yes ☐ No

Additional Name: _____ Call _____ Class _____ ARRL member? ☐ Yes ☐ No

Additional Name: _____ Call _____ Class _____ ARRL member? ☐ Yes ☐ No

☐ Full Member - \$15.00

☐ Full Member over 65 - \$10.00

☐ Family Membership (same address) - \$18.00

☐ Family Membership (both over 65) - \$12.00