



ROUNDTABLE

PRESIDENT'S MESSAGE

By Bryan Steinberg – KB0A

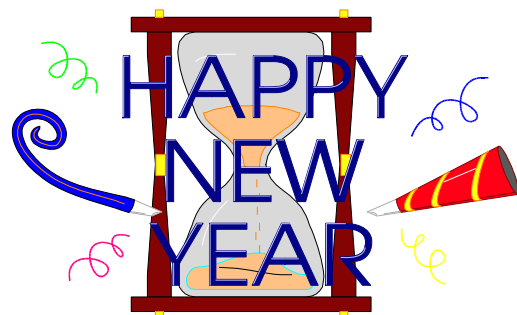
Happy New Year! I hope everyone had a great holiday and that Santa brought you whatever you needed to make your shack a little better. Now we're all looking forward to some great DX during the rest of the cold winter months here in Colorado. With the new year we have some changes going on. Becky Campbell, KDOAOE, has stepped down from her position of managing the weekly "Learning Net". She started the net over 5 ½ years ago and has done a great job since then keeping it active. We thank her for the effort she put into this project. Larry Irons, K0LAI, has stepped up and will keep the Learning net active. At this time Larry is looking to move the night of the weekly net in order to increase the availability of elmers. So keep your ears open and we will make announcements on the weekly club net.

The club is still in need of an Emergency Communications Coordinator. We've been limping along for most of last year without one and the vacancy is obvious. We need a person who can oversee our relationship with organizations we support: The Salvation Army; City of Lakewood; and West Metro Fire District. We have individuals who manage each of these relationships but the job of the ECC is to oversee the total effort and bring it all together in a consistent manor. If you are interested, or know someone in the club that could fulfill this position please contact me or any board member.

As everyone is aware we had to reschedule our holiday meeting, which was planned for December 19th, until this month due to some severe weather.

So we're going to give our annual holiday party another try on January 16th. This will be in place of our regular January meeting. As originally planned we will meet at the Golden Corral, 3677 S. Santa Fe Dr., Sheridan, CO 80110 (Phone: 303-643-5898) which is the same location we used in 2011. We will be using one of the rooms at the left end of the restaurant. Our presentation this year will be the "K4T DXpedition to the Dry Tortugas" by Pete Fountain, WD4IXD. Pete will discuss the planning and implementation procedures involved in coordinating a DXpedition. He will also talk about the issues that had to be overcome to bring this event to fruition. Don't miss this great presentation. Our holiday meeting will be held in place of our normal January meeting on the 16th. People usually start showing up around 5 PM and we expect to start the presentation at 6:30 PM. Also, don't forget the door prizes and member grand prize. Hopefully I will get a chance to see many of you at the holiday dinner.

Till next time...
Bryan, KB0A



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DECEMBER MEETING - WHAT'D I MISS

December Dinner Meeting was canceled due to inclement weather.

The Holiday Dinner Meeting has been rescheduled for the Wednesday 16th of January in place of our regular January meeting

See you there!

JANUARY MEETING ANNOUNCEMENT

Our holiday meeting presentation will be given by Pete Fountain, WD4IXD, documenting the trip he and seven others made in March 2010 to Fort Jefferson in the Dry Tortugas.



This location is steeped in history and made for an excellent location for HF, VHF, UHF, and satellite operations. It is a very rare entity on the IOTA (Islands On The Air) program and an extremely rare grid square for VHF and amateur satellite operators. Hear the details of all that was involved in making this 4 day operation such a success and how they overcame obstacles such as the basic preparation, permitting requirements to camp and operate from there, power requirements, and transportation of the equipment. This will be an interesting and entertaining program that could benefit the club with ideas for future Field Day operations as well.

Pete has been licensed since 1977 and his interests are DXing, contesting and VHF/ UHF/Microwave weak signal work (including EME). Pete is an RF Engineer for ViaSat and in his spare time enjoys helping the club as a VE.

NO TECH COMMITTEE REPORT FOR DECEMBER

Who's New In The DRC

The DRC is a very active club in the Denver metro area and we'd like to have all of our members listen for these new calls and personally to make them feel welcome.

Welcome to our newest members. We have a number of activities throughout the year and we'd like very much for you to participate in serving your community. If you have questions please feel free to ask on any of the repeaters or see the contact information on the last page of this publication. Also please join us once a month at the regular club meeting on the 3rd Wednesday at 7pm. For new hams we have the Elmer session which starts at 6:30pm before the regular meeting.

More information can be found on the Denver Radio Club website at <http://www.w0tx.org>.

Rick Ogden	N3RO
J. Mike Needham	KD0JXP
John Burrell	K0IKN
Rick Budinger	WA9IPK
Bill Niles	KJ4CLO
Connie Krajcirik	W0SNO
Jim Krajcirik	W0JEK

It's Time Once Again For The Annual Holiday Meeting & Dinner

When: January 16th

Where: Golden Corral Buffet Restaurant
3677 South Santa Fe Drive
Sheridan, CO

Time: 5pm Dinner / 6:30pm Presentation and
Drawing

For map & directions check www.w0tx.org

BUILD A PVC J POLE ANTENNA

By Bill – W6OAV

Building a twin lead or a ladder line J Pole antenna is pretty straight forward. However, due to de-tuning issues, inserting the J Pole into a PVC pipe for portability isn't as straight forward. The purpose of this article is to detail how to build a portable PVC twin lead/ladder line J Pole antenna.

WHY A J POLE?

VHF /UHF Ground Plane antennas and J Pole antennas have been favorites among hams for many years. Figure 1 shows a typical J Pole. A J Pole is a 1/2 wave radiator end fed by a 1/4 wave matching section. Figure 2 shows a 2 meter twin lead J Pole and the formulas for calculating lengths. Note, the references to twin lead below also apply to "window" ladder line.

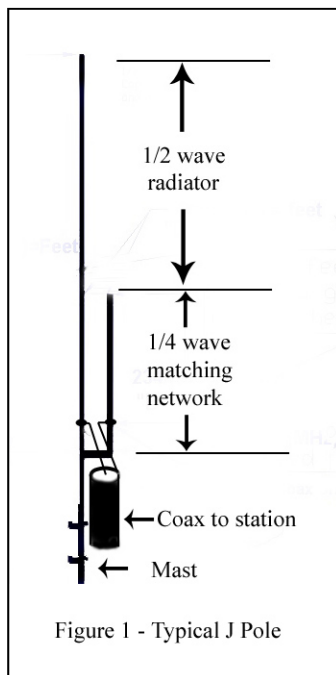


Figure 1 - Typical J Pole

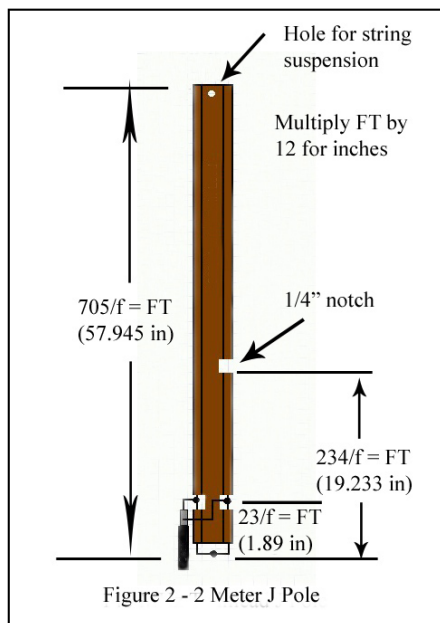


Figure 2 - 2 Meter J Pole

Most hams prefer J Poles over Ground Planes because they have the following advantages:

- Easier to build, especially as portable antennas.
- Easier to tune.
- Have some gain over Ground Planes.
- Produce a stronger signal at the horizon having a azimuth radiation angle of 3.5 degrees as opposed to the Ground Plane's azimuth radiation angle of 20 degrees,
- Greater bandwidth.
- Good "stealth" antenna.
- DC grounded so can be easily mounted to metal supports.
- Low receive noise due to DC ground.
- Safer antennas for providing temporary communications at various events as there are no dangerous radials sticking out.

I've built many twin lead J Poles over the years. The twin lead J Pole is inexpensive and very easy to build. The first time I installed a twin lead J Pole in a length of PVC pipe for portability, I ran into tuning problems. The dielectric constant of the PVC detuned the J Pole when I inserted it into the PVC pipe. I needed a process to "pre-tune" the J Pole so that it would be resonant where desired when inserted into the PVC pipe. The following describes the process.

BUILDING A TWIN LEAD PVC J POLE

The following describes the necessary steps to build a twin lead J Pole and to properly "pre-tune" it for insertion into a PVC pipe.

Obtain materials

The following items will be required for this project:

- Six and a half feet of 300 ohm twin lead or ladder line.
- Six foot minimum length of 1" in diameter white Sked 40 PVC pipe.
- Two PVC pipe end caps.
- 2" minimum length of 1/4" in diameter wood dowel.
- Short length of string or fish line.
- Desired length of coax feed line and a PL259 connector.
- Eye bolt.

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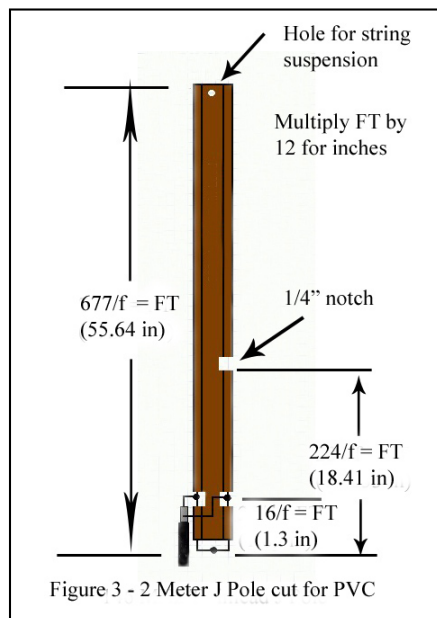
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Test PVC

The first step in this project is to find PVC pipe that is suitable for the antenna. Most white Sked 40 PVC pipe is suitable. To verify suitability, place a short piece of the PVC pipe in a microwave oven. Turn the oven on for one minute. If, after the minute, the PVC pipe is hot, it is not suitable as it will adversely affect the J Pole's radiation efficiency.

Cut twin lead to proper length

When the twin lead J Pole is inserted into the PVC pipe, the PVC's dielectric constant will cause the J Pole's resonant frequency to decrease. Therefore, the J Pole must be constructed to be resonant at a higher frequency than desired so that it will "detune" down to the desired frequency when inserted into the PVC pipe. Figure 3 shows the formulas which will produce a twin lead J Pole which



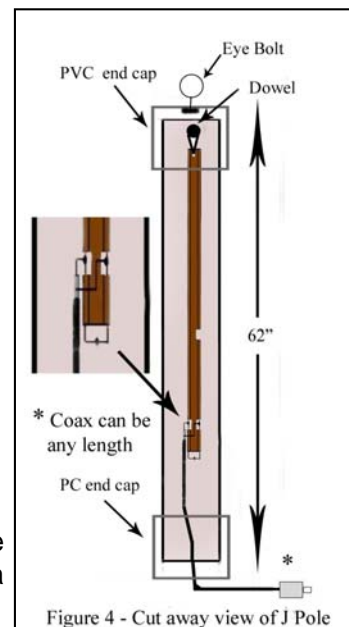
will be close to the desired frequency when placed in a PVC pipe. When cut as shown for 2 meters, the J Pole will resonate outside of the PVC at approximately 151.5 MHz. When inserted into the PVC pipe it should resonate close to 146 MHz. It may be necessary to slightly trim the J Pole for resonance when it is in the PVC pipe.

Build the PVC J Pole

Refer to Figure 4 for the following procedures:

1. If the antenna is to be configured to hang from an overhead support, cut a hole in the top PVC end cap and mount the eye bolt.
2. Cut the twin lead as shown in Figure 4 using the dimensions calculated from the formulas.

3. Solder the coax feed line to the twin lead feed point as shown.
4. Cut a small hole in the top of the twin lead and tie a small string or fish line loop through the hole. This loop will be used to support the twin lead from a wood dowel inside the PVC pipe.
5. Cut the PVC pipe to a length of eight inches, or more, than the length of the J Pole. This extra length is for mounting the PVC pipe to a mast or a tripod, if desired.
6. Mark the top end of the PVC pipe approximately 1/2" from the end. Drill small opposing holes just large enough to accommodate the wood dowel. Insert the dowel through the holes with the far end just flush with the outer edge of the PVC pipe. Cut the long end of the dowel so that it is flush with the outside of the PVC pipe.
7. Remove the dowel, insert the twin lead into the pipe and reinsert the dowel through the loop. Place the top end cap over the pipe covering the dowel. This will hold the dowel in place.
8. Drill a hole just slightly larger in diameter than the coax in the base PVC end cap.
9. Push the coax through the hole in the base end cap. Slide the end cap on to the base of the PVC pipe.
10. Solder a PL259 onto the coax.
11. Seal the end cap hole around the coax.
12. Mount or suspend the J Pole in an open area and measure the SWR. Trim the long side of the J Pole if necessary.



(Continued on page 5)

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My PVC J Pole measured as shown in the chart:

MHz	SWR
144	1.8:1
146	1.1:1
148	1.7:1

Final comments

Some designers prefer to install a choke as close as possible to the feed point to keep RF off the coax shield. If desired, for 2 meters create a choke by winding the coax into a coil as close as possible to the feed point. The coil should consist of 5 taped side by side turns about 3 inches in diameter. These dimensions are not critical. For UHF, reduce the dimensions by about a third.

Figure 5 shows my PVC J Pole mounted on a tripod. This is a handy arrangement for providing temporary communications at various events. Should I not have a tripod, I can throw a rope over a high support and, using the eye bolt on the top of the J Pole, hoist it high into the air.



Figure 5 - Completed Antenna

THE GOOD BOOK WAS RIGHT

By Bill – W6OAV

You might be interested in a not too scientific experiment that Al, W6WSH and I performed. It seemed to prove that, like the good book says, an antenna works best in the center of the car roof.

In the experiment, my car was pointed towards Al's base station with 30 miles separating us. With a 5/8 wave Larson on the center of the roof, Al copied me with about 75% quieting. With the antenna on the trunk lid, Al could hear me in the noise, but could not copy the words. This was interesting, as theoretically, with most of the car body between the antenna and Al, I should have had a major lobe towards Al, whereas the antenna on the roof should not have had any lobes. To verify the lobe, the antenna was placed on the hood. Al could not hear us at all, indicating the lobe had now shifted to the rear of the car.

We also tried a 1/2 wave Gam in the center of the car roof. Al could not tell the difference between the 5/8 and 1/2 wave antennas.

So, when the XYL isn't home, get out the drill and move the antenna up to the center of the roof! By the way, thanks to Irv, K6DUX, who not only supplied the antennas, but did all the leg work moving them while I just stay there and pushed the mike button.

*Don't forget to join in Wednesday nights at 7:30pm for the DRC Learning Net !
145.49/448.625 machines
Watch the RoundTable for Upcoming changes to Learning Net Schedule*



The Denver Radio Club
Is an ARRL
Special Service Club
Support your hobby
Join the ARRL TODAY



*Note to DRC Members:
Due to the fact that many ISP's reject documents which contain active hyperlinks, the URLs in the RoundTable are not active. However, you can copy and paste the link into you browser and view the web content. Sorry for the inconvenience. Editor*

UP COMING EVENTS

HAMFESTS & CONVENTIONS

The following are the HAMfests & Conventions which have been registered with the ARRL so far. More information can be found on www.arrl.org/hamfests.

2013

January 19 – NCARC Winter Hamfest
 Larimer County Fairgrounds
<http://www.ncarc.net>

February 10 – ARA Swapfest
 Adams County Fairgrounds
<http://www.n0ara.org>

April 6 – LARCfest
 Boulder County Fairgrounds
<http://w0eno.org>

June 28 – Rocky Mountain Division Convention
 Rocky Mountain Park Inn, Estes Park,
 Colorado
<http://www.hamconcolorado.org>

More to come later...



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THE ROUNDTABLE ARCHIVE

Have you been looking for a back issue of the Roundtable? Many are available on the DRC web site. Access <http://www.w0tx.org>. On the left side of the page, click on "Roundtable".

WHAT IF THE WEATHER CHANGES?

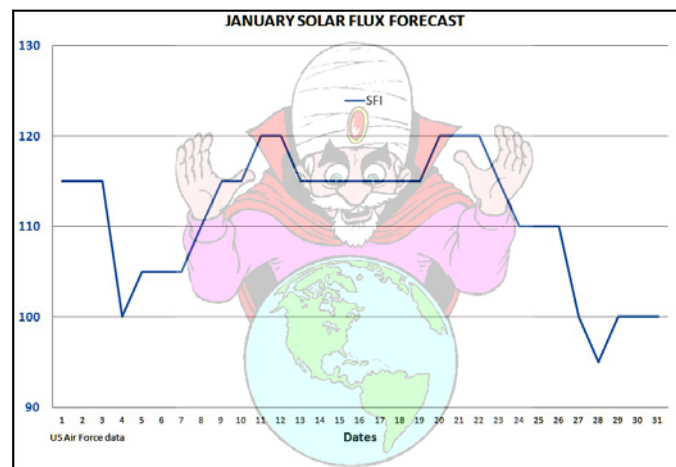
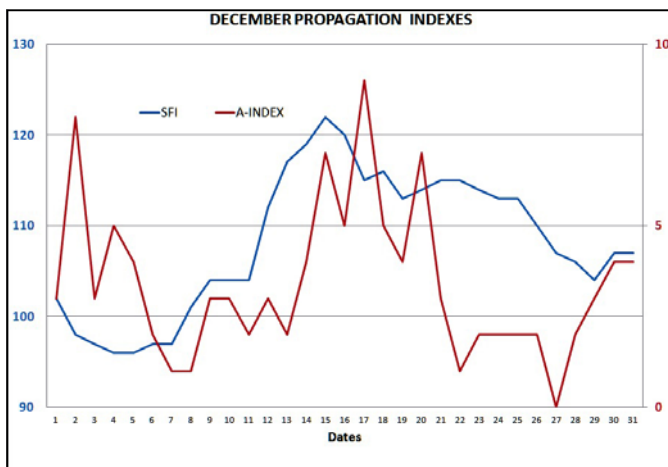
As every Coloradoan knows our winter weather can take a sudden change for the worse. If we should experience a turn in the weather on the day of our monthly DRC meeting it may be necessary to cancel the meeting. If this should happen listen for meeting status reports on 145.49 or 448.625 MHz repeaters during the afternoon before the meeting day.

PAST & FUTURE PROPAGATION CONDITIONS

By Bill – W6OAV

The charts below show the Solar Flux and "A" indexes for last month and the forecast for this month's Solar Flux index.

Refer to the September 2010 *Roundtable* for more complete information on interpreting these charts. Issues of the *Roundtable* are available at www.w0tx.org.

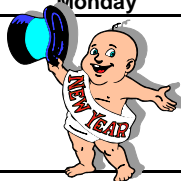









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It's Time Once Again For The Annual Holiday Meeting & Dinner

When: January 16th
Where: Golden Corral Buffet Restaurant
 3677 South Santa Fe Drive
 Sheridan, CO
Time: 5pm Dinner / 6:30pm Presentation and Drawing
For map & directions check www.w0tx.org

JANUARY 2013							<i>DRC Net Sunday's at 8:30pm Local on 145.490 & 448.625 (No PL)</i>
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
		1 ARRL Straight Key Night	2 Learning Net 7:30pm	3	4 <div style="text-align: right; font-size: small;">  Last Quarter </div>	5 ARRL RTTY Round-Up Begins 1800U	
6 ARRL Kid's Day 1800U to 2359U ARRL RTTY Round-Up Ends 2400U		8	9 Learning Net 7:30pm	10 Save The Eagles Day 	11 Amelia Earhart Day  <div style="text-align: right; font-size: small;">  New Moon </div>	12	
13	14	15	16 Club Holiday Dinner & Meeting 5pm	17	18 <div style="text-align: right; font-size: small;">  First Quarter </div>	19 ARRL January VHF Sweeps Begins 1900U	
20 ARRL January VHF Sweeps Ends 0359U Jan 21	21 Martin Luther King Day 	22	23 Learning Net 7:30pm	24	25	26 <div style="text-align: right; font-size: small;">  Full Moon </div>	
27	28	29	30	31			

DRC BOARD OF DIRECTORS

President	KB0A	Bryan Steinberg	303-987-9596	kb0a@arrl.net
Vice-President	W0GV	Gerry Villhauer	303-467-0223	w0gv@arrl.net
Secretary	WW0LF	Orlen Wolf	303-279-6264	owolf@mines.edu
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DRC STAFF AND VOLUNTEERS

Trustee	WW0LF	Orlen Wolf	303-279-6264	owolf@mines.edu
Net Control	K0TOR	Jim Beall	303-798-2351	k0tor@arrl.net
TSA/EmComm Coordinator	OPEN			
Membership	KC0CZ	Bob Willson	303-659-0517	kc0cz@comcast.net
Club Librarian	WG0N	Dave Baysinger	303-987-0246	wg0n@arrl.net
VE Team	KC2CAG	Tom Kocalski	720-493-1426	kc2cag@arrl.net
Swapfest Mgr	KB0A	Bryan Steinberg	303-987-9596	drcfest@comcast.net
Field Day	OPEN for 2013			
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Benevolent		Carolyn Wolf	303-330-0721	
RT Editor	AG0S	George McCray	303-751-7246	ag0s@arrl.net
RT Assoc. Editor	W6OAV	Bill Rinker	<i>Check Roster</i>	
Education	KD0CXX	Paul Meenach	720-746-1488	elmer@w0tx.org
Web Master	N0LAJ	Bill Hester	<i>Check Roster</i>	

DRC REPEATERS

BAND	Freq / Shift / PL Tone	Additional Information
6m	53.090mHz (-1mHz)	
Packet	145.05mHz<>14.105mHz	
2m	145.490mHz (-) 100Hz PL	Linked to the 70cm - 448.625mHz machine.
2m	147.330mHz (+) 100Hz PL	Local Area, Members Auto-Patch Does Not TX a PL!
2m	147.330mHz (+) 131.8Hz PL	Not in service at this time!
1.25m	224.380mHz (-) 100Hz PL	
70cm	447.825mHz (-) 100Hz PL	Saint Anthony's
70cm	448.625mHz (-) 100Hz PL	Linked to the 2m - 145.490mHz machine.
70cm	449.350mHz (-) 100Hz PL	Wide area coverage with Echolink Node # 4140.
70cm	446.7875mHz (-)	MotoTRBO Repeater Slot 1 – DMR-MARC WW, Slot 2 – Local

EDITOR'S NOTE

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DRC members - this is your newsletter. If there is something which is club or amateur radio related that you'd like to see as a regular feature, email suggestions to the editor. Members are the heart and sole of The Denver Radio Club, if you have an expertise or an interest in a particular segment of ham radio that you'd like to write about, you may email your submissions to AG0S@arrl.net. Submission deadline is the 25th of the Month. Editor