



# ROUNDTABLE

### PRESIDENT'S MESSAGE

By Gerry Villhauer-W0GV

Hello DRC Members,

Have you noticed that the sunlight is lasting a little longer every evening? Spring is on the horizon...I like to think it is anyway. I need the warmer weather to get my 40 plus year old Mosley beam down on the ground for service. It will also help with our several outside club projects that are piling up.

I am always looking for quality programs. If you or someone you know would be willing to make a presentation that would be of interest to the club, please get in touch with me.

The club will be purchasing a table at most of the area swap fests this season. We need members to man the table, talk to prospective members and pass out our printed material. Real easy work and a big help to our membership effort. If you can help, contact me or any other club officer.

A big thank you to Bryan, KB0A, for his interesting presentation on home automation, at our January meeting.

Are you interested in easily determining?

1. The best type of HF antenna for your lot (dipole, inverted-vee, vertical, sloper).
2. Element length for a given height.
3. How best to effectively "bend" a horizontal antenna to fit your lot.
4. What would be gained, or lost, if you raised your antenna a few feet.
5. The theoretical SWR, bandwidth and impedance of your antenna design.

Bill, W6OAV, will answer these and more questions at the February meeting. He will give a presentation covering EZNEC. EZNEC is a powerful, but easy to use, program for modeling and analyzing nearly any type of antenna *in its actual operating environment*. Bill will demonstrate designing, and comparing, a dipole and an inverted-vee. The demonstration will include showing what happens when a dipole is raised above ground

I would like to welcome new DRC members David Doherty, KD0JUB; Ken Green, WD0FCP; Jim Morrow, K0JDM; Randy Neilson, KK2O; Scott Trumpeter, N0LNE and Jan Trumpeter, W0DVM. Please check in on the nets, come to the meetings and activities and remain an active member.

See you all at the meeting February 17<sup>th</sup> at the St. Joseph's Episcopal Church, 11202 West Jewell Ave., Lakewood, CO. That is about two blocks West of Kipling on West Jewell. The Elmer Session and Tech Meeting start at 6:30 pm followed by the Regular Meeting and Program at 7:30 pm. And remember to check our website, [www.w0tx.org](http://www.w0tx.org), for lots of important information about the DRC.

Gerry, W0GV  
President

*Happy Valentine's Day*

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## JANUARY MEETING - WHAT'D I MISS

By Bill – W6OAV

Forty nine folks attended this month's meeting! Gerry, W0GV, began the meeting with introductions. He then gave an overview of the DRC's repeaters and various club activities for the new members and the guests attending the meeting.

The meeting was then turned over to Bryan, KB0A. Bryan gave a great and interesting program on the X10 Home Automation System. Basically, this system allows manual and automatic control of just about anything in and around a house. Bryan gave an overview of the system hardware and features, how to set up the system, how it communicates between controllers and modules and some of the issues he's had with his system. One can install a basic system for just a few dollars using X10's starter kit.



The meeting concluded with several lucky attendees winning door prizes.

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## TECHNICAL COMMITTEE REPORT

By Bill – W6OAV

This report provides an overview of items discussed during the January Technical Committee meeting.

### Voter System

Goal: Determine link frequencies and coordinate with CCARC as needed.

KB0A will meet with the frequency coordinator to pick link frequencies and will obtain the necessary paperwork to reserve the frequencies.

### Interference to 449.35

Goal: Determine the commercial repeater that mixes with the RMRL 449.45 repeater and produces a spur on the 449.35 input.

KC0CZ and W9UW will work to identify the commercial and amateur repeaters located on Squaw so that inter-mod studies can be accomplished. This issue might require a visit to Squaw.

### Temporary Salvation Location:

Goal: Determine feasibility for installing VHF/UHF systems and for installing a temporary NVIS station should the need arise for the latter.

K0SSE, K0HTX, N1ETV, W6OAV, W0GV, and W9UW will inspect the site ASAP.

### SDR Remote HF Transceiver

Goal: Determine the feasibility of building an Internet accessible Remote HF station for club member use.

W6OAV and N1ETV will research various methods using Internet compatible radios and using methods developed by other amateur radio clubs.

### Tech Committee Meeting Productivity

Goal: Investigate the possibility of increasing the tech committee meeting productivity by using tools like Skype audio conferencing.

W6OAV, N1ETV, KC0CZ and KD0CPE are investigating the various systems, such as Skype, Live Meeting, etc, that might enable this goal.

### Station 4 Antennas Verses New Fire Station

Goal: Determine if the height and proximity of the new building to the tower is blocking antenna coverage.

KB0A will take pictures from the hill north and west of the site to show the position of the building relative to the antennas and the antennas' fields of view. He will forward the pictures to W6OAV who will then forward them to the tech committee for discussion at the next tech committee meeting.

### Field Day

Goal: Start laying the ground work for the 2010 Field Day.

K0SSE will develop a list of action items for discussion at the next Tech Committee meeting.

## MY LOOP ANTENNA EXPERIENCE

### PART 3

By Irv – K6DUX

The antenna was first placed on the lawn. The feed loop was attached first at the bottom and then slowly moved up to the center. By moving the feed loop a 50 ohm match was finally found at about the position that is shown. Several stations were used to test the antenna and it didn't seem to matter much as to where the feed loop was finally placed. However rotation of the antenna did make quite a bit of change in the direction of the signal. A small null was found that was not quite broadside to the plane of the antenna.



The trombone capacitor worked quite well and it was easy to follow the resonance frequency with the use of an MFJ antenna analyzer. I found that I had to decrease the voltage to the small control motor as the full 12 volts moved the resonance frequency too fast to stop at a particular frequency.

I could hear signals much easier on the loop than on the R7000 vertical which I used for comparison with the difference being the amount of noise encountered. The R7000 picked up all of the local power company and automobile noise which was mostly absent on the loop. At certain directions, namely towards the house, the vertical worked much better however it was mounted quite a bit higher and more in the clear.

The second test was to place the antenna on top of the patio cover. A steel pipe was inserted through the slats of the patio cover with the bottom resting on the concrete below. The schedule 80 main support was slid over the pipe and secured with a locking pin through both the pipe and schedule 80. I learned the hard way that schedule 40 simply wasn't strong enough to support the weight and bending moment of the antenna in a strong wind. I also mounted the loop horizontally above the patio cover and reran the tests. Of the few stations that I contacted they indicated that they had difficulty telling which antenna worked better. I got tired of climbing up and down the ladder to turn the antenna so I cut that test rather short.



All of the pictures that you now see are from the rebuilt antenna after the main support broke again in a strong wind.

Unfortunately this was the last picture of the 40 meter antenna. When testing it on top of the patio the main support broke once again during a very strong and gusty wind storm and the trombone capacitor was damaged when it hit the deck. The loop is now back in the garage being reduced in size and will become a 20 meter antenna when it is finished. The small loop feed will be replaced with a smaller loop feed through two FT-240-61 cores which will be mounted on the loop antenna and the trombone capacitor will be replaced with a butterfly type of capacitor which will make the antenna much lighter and won't require such a strong supporting structure.

*(Continued on page 4)*

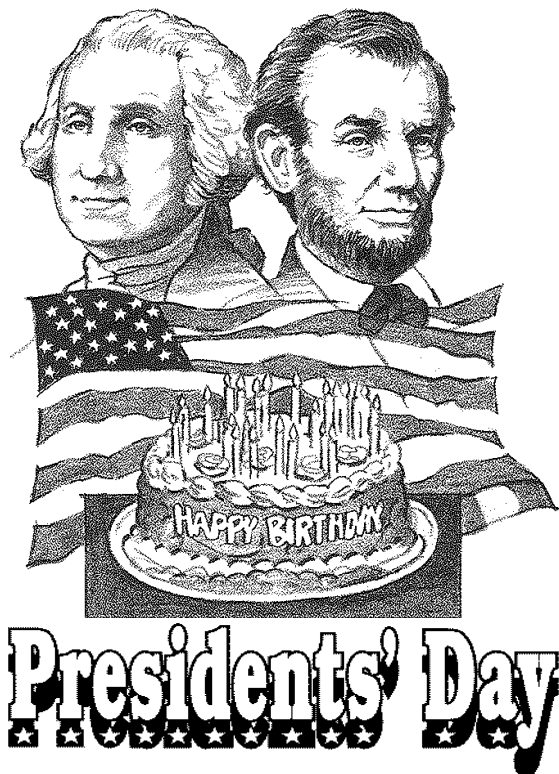
(Continued from page 3)

Anyone got a **cheap** Jennings Vacuum Variable capacitor available?

I learned from Ken, K6HPX, who has built many of these antennas for both 40 and 80 meters, that he mounts them quite close to the ground and uses a simple support structure to keep them up. He mentioned that he even built one for his car which would be quite interesting to see!

For those interested in these types of antennas I refer you to the following articles which contain many of the calculations that are needed to design one.

- Home-Brew Loop Tuning Capacitor – November 1994 QST Bill Jones, KD7S
- Magnetic Loops – [http://www.qsl.net/mnqrp/Loop/Mag\\_Loop.htm](http://www.qsl.net/mnqrp/Loop/Mag_Loop.htm)
- Symmetrical Coupling Loop – <http://home.datacomm.ch/hb9abx/loopcple.htm>
- PA3CQR Magnetic Loop Antenna Page – <http://www.iri.tudelft.nl/~geurink/magnloop.htm>
- Antenna Theory: Analysis and Design – Constantine A. Balanis Wiley ISBN: 0471592684
- Ken, K6HPX – url: [info@cal-av.com](mailto:info@cal-av.com)



## DRC PENNSYLVANIA HAM STATION IS NO MORE!

By Bill – W6OAV

The Salvation Army is moving from its Pennsylvania location to a temporary location near East 70th Ave and Washington. Later they will move to a permanent location East of Downtown Denver on Champa St. once it has been built. Therefore, the DRC needed to disassemble and store its Pennsylvania ham station.

In October, K0HTX, KU5X and W6OAV moved the DRC radios and computer to temporary storage at K0HTX's work location.

On January 9 several members of the DRC completed the removal of the DRC ham station desks, coaxes and



antennas. This was no easy job, taking most of the day. Photo at left shows K0HTX lowering one of the many 90 pound antenna stan- chions from the 4<sup>th</sup> story roof.

In the photo below is the work party standing in front of the trailer furnished by K0HTX. Shown are (left to right) are K0HTX, W0BKZ, N1ETV, N3PQ, KK0JD, N4ATA, KD0IOZ, and W6OAV. Not shown are WG0N and W0GV who

had to leave before we were able to assemble for the picture. THANK YOU guys for all the help and THANK YOU K0HTX for temporarily storing all the equipment.



## TWO INTERESTING WEB SITES

By Bill – W6OAV

Interested in reading the USMC Field Antenna Handbook? Then go to:

<http://www.scribd.com/doc/299766/USMC-Field-Antenna-Handbook>

Interested in reading the Marines Radio Operators' Handbook? Then go to:

<http://www.scribd.com/doc/12930898/Marines-Radio-Operators-Handbook>

## GO BACK IN TIME

By Bill – W6OAV

Interested in reading, or in obtaining articles from, back issues of QST, Popular Electronics or Popular Communications magazines? If so, visit the main downtown Denver library. The following are located in the stacks on the 3<sup>rd</sup> floor:

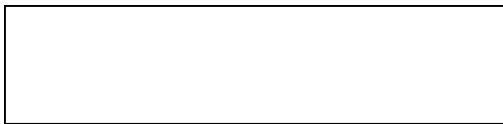
QST – 1922 to present.

Popular Electronics – 1955 to 1999.

Popular Communications – 1989 to present.

## A QUICK MEDICAL EXAM

Take a deep breath and exhale on the space provided below:



Exam results:

- If the area turns yellow, see your dentist.
- If the area turns purple, see your doctor.
- If the area doesn't change, you are healthy and we'd like to see you at our next club meeting.

## SHOW CLUB SPIRIT & STAY WARM THIS WINTER

If you've been to a club meeting lately you've seen the DRC logo jacket. If not the jacket is black, the back is emblazoned with a large full color embroidered DRC logo. So everyone knows who you are the front will have your first name and call.

Price: \$ 60.00 + taxes

Call or email Doug and don't forget to give him your name and the size of the jacket you want.

Why not buy two one for the YL and one for you.

Contact: Doug Parker-N4ATA

Phone: 303.922.3305

Email: [jtbembsvcinc@comcast.net](mailto:jtbembsvcinc@comcast.net) or [n4ata@comcast.net](mailto:n4ata@comcast.net)



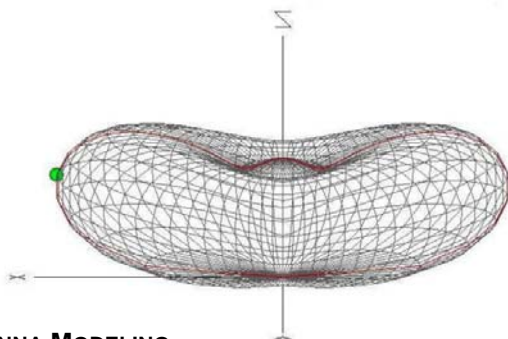
*HRO 12 STORE BUYING POWER WORKS FOR YOU!*

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## FEBRUARY MEETING PRESENTATION

HAVE YOU EVER WONDERED WHAT THIS IS AND WHAT IT MEANS? WELL COME TO THE FEBRUARY MEETING AND FIND OUT!



### ANTENNA MODELING

Interested in easily determining:

1. The best type of HF antenna for your lot (dipole, inverted vee, vertical, sloper).
2. Element length for a given height.
3. How best to effectively "bend" a horizontal antenna to fit your lot.
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### HAMFEST LIST

**February 7, 10** – ARA Swapfest, Adams County Fairgrounds

**April 3, 10** – Longmont ARC, LarcFest, Boulder County Fairgrounds

**June 26-27, 10** – ARRL Field Day

**July 17, 10** – PPRAA Megafest, Lewis-Palmer High School

**August 22, 10** – DRC Hamfest, Jefferson County Fairgrounds. This is the BIG one, start planning to participate now.

**Contact Bryan - KB0A for more information.**

**YOU MIGHT BE ADDICTED  
TO HAM RADIO IF:  
When you look at a full moon and wonder  
how much antenna gain you would need.**

<b>February 2010</b>							<i>DRC Net Sunday 8:30pm Local</i>
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
	1 <b>National Freedom Day</b> 	2 <b>Ground Hog Day</b> 	3 <b>Learning Net</b> 7pm	4	5	6	 Last Quarter
7 <b>ARA Swapfest</b> 	8	9	10 <b>Learning Net</b> 7pm	11	12	13	
14 <b>Valentine's Day</b>  New Moon	15 <b>President's Day</b> 	16	17 <b>DRC Meeting</b> Elmer 6:30pm General 7:30pm	18	19	20 <b>ARRL Int'l CW DX Contest</b> Begins 0000U	
21 <b>ARRL Int'l CW DX Contest</b> Ends 2400U	22	23	24 <b>Learning Net</b> 7pm	25	26	27	 First Quarter
28  Full Moon							

*Check [www.Arrl.org](http://www.Arrl.org) for Contests and Rules!*

## DRC BOARD OF DIRECTORS

President	W0GV	Gerry Villhauer	303-467-0223	W0GV@hotmail.com
Vice-President	KB0A	Bryan Steinberg	303-987-9596	KB0A@arrl.net
Secretary	WA9TVH	Orlen Wolf	303-279-1328	owolf@mines.edu
Treasurer	K0TOR	Jim Beall	303-798-2351	K0TOR@arrl.net
Board Member	WG0N	Dave Baysinger	303-987-0246	WG0N@arrl.net
Board Member	K0HTX	Dave Gillespie	303-880-1938	K0HTX@comcast.net
Board Member	AC7SX	Joe Delwiche	303-233-6229	lakewoodjoe@aol.com
Board Member	K0RCW	Robert White	303-619-1048	rcwhitejr@mac.com

## DRC STAFF AND VOLUNTEERS

Trustee	WA9TVH	Orlen Wolf	303-279-1328	owolf@mines.edu
Net Control	K0TOR	Jim Beall	303-798-2351	K0TOR@arrl.net
Emergency Coordinator	K0SSE	Oscar Hall	303-375-0627	oscarh1934@aol.com
Membership	KC0OUQ	Bob Proctor	303-986-0612	KC0OUQ@att.net
Club Librarian	WG0N	Dave Baysinger	303-987-0246	WG0N@arrl.net
VE Team	AC0T K0MEL	Wally Gamble Mel Minnick	303-202-0339 303-761-3456	wallygamble@comcast.net k0mel@msn.com
Swapfest Mgr	KB0A	Bryan Steinberg	303-987-9596	drcfest@comcast.net
Field Day	K0SSE	Oscar Hall	303-375-0627	oscarh1934@aol.com
Tech. Committee Chair	W6OAV	Bill Rinker	303-741-2537	W6OAV@arrl.net
APRS Chair	KB0MQQ	Lloyd Plush	303-277-0785	LloydPlush@aol.com
Benevolent		Carolyn Wolf	303-279-1328	
RT Editor	AG0S	George McCray	303-751-7246	AG0S@arrl.net
Education	K0RAR	Robert Rude	303-841-6443	K0RAR@comcast.net

## DRC REPEATERS

BAND	Freq / Shift / PL Tone	Additional Information
10m	29.620mHz (-100kHz) FM	Not In Service
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	NE Area Remote Does Not TX a PL!
1.25m	224.380mHz (-) 100Hz PL	
70cm	448.625mHz (-) 100Hz PL	Linked to the 2m - 145.490mHz machine.
70cm	449.350mHz (-) 100Hz PL	Wide area coverage with Echolink Node # 4140.

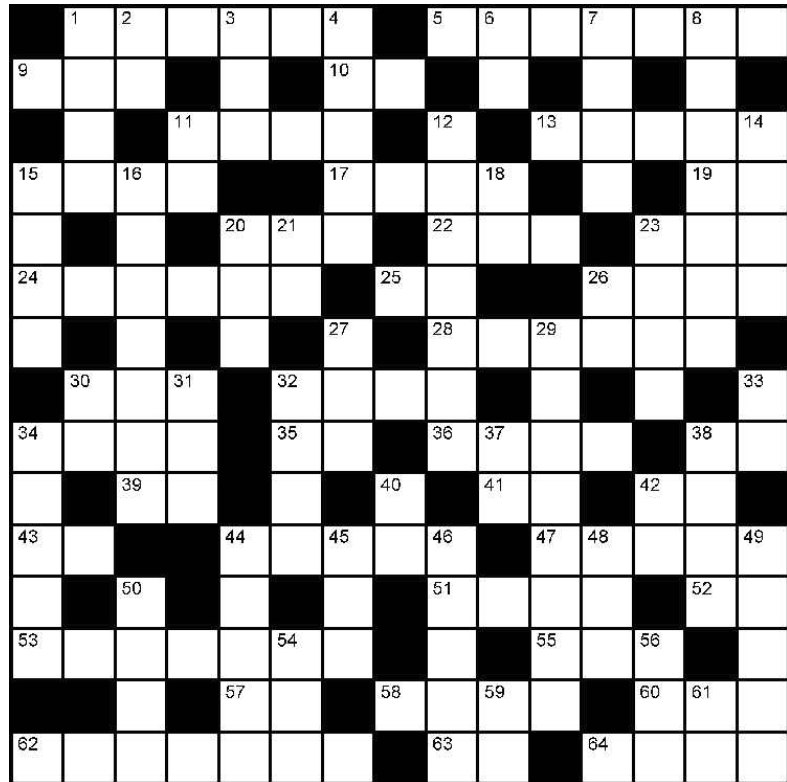
## EDITOR'S NOTE

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 DRC\_RT@comcast.net. Submission deadline is the 25th of the February. **Editor**

"It's a Bird. It's a Plane. It's an Antenna!" Tickle your brain with visions of a Super Antenna while working through this construction-themed puzzle.

Ah, spring is in the air. Can the first antenna work parties be far behind? You can hear the climbing belt, the slingshot, the coiled ropes out there in the garage, calling your name. The *Antenna Book* is sitting on your nightstand with bookmarks at those special projects. Ready? Set... Go!

By H. Ward Silver, N0AX



**Across**

- 1. This always comes first
- 5. Recover from damaged items
- 9. Type of screw head
- 10. Horizontal direction (abbr.)
- 11. Set of tools
- 13. Throws a shot
- 15. Agency in charge of safety (acronym)
- 17. Accidentally let fall
- 19. Transmitter output (acronym)
- 20. Type of plastic pipe (acronym)
- 22. Utilize
- 23. A contest category using spotting assistance (acronym)
- 24. Wheel used for lifting with ropes
- 25. Answer only (Morse prosign)
- 26. Feeling good
- 28. Found with a block
- 30. Gentle blow
- 32. A heap of stuff
- 34. Difficult
- 35. What goes down must go here first
- 36. Ladder step
- 38. That (Morse abbr.)
- 39. Determining direction (acronym)
- 41. Makes time with 37 Down
- 42. End of message (Morse prosign)
- 43. Supposing
- 44. Raise yourself on a structure
- 47. Rebuild or repair
- 51. Type of relay
- 52. Unit of inductance (abbr.)
- 53. Wrap guy wire around these
- 55. Short pull
- 57. Internal receiver signal source (acronym)
- 58. What the tower sits on
- 60. Type of organic antenna support
- 62. Unusual or unorthodox devices
- 63. Metric distance (abbr.)
- 64. Divulge a secret

**Down**

- 1. Antenna wire stretches and ....
- 2. One of several
- 3. Loop or hole
- 4. Cubic measure of volume
- 6. Most conductive metal (chemical symbol)
- 7. Unit of potential
- 8. Used for lifting on a tower (two words)
- 11. Gauge (abbr.)
- 12. Type of weight that provides tension
- 14. Desired outcome
- 15. What you say after 17 Across happens
- 16. A rope for raising or lowering
- 18. Comes after the signature
- 20. Large mail-order ham radio vendor (acronym)
- 21. Near or against
- 23. Take care of your....
- 26. Weak (abbr.)
- 27. Tear
- 29. Foundation material
- 30. Technical Field Organization appointment
- 31. Type of computer document (acronym)
- 32. Apply tension
- 33. Quiet (abbr.)
- 34. Lift with a rope or cable
- 37. Makes time with 41 Across
- 38. Cut to length
- 40. Greeting before noon (Morse abbr.)
- 42. One of the continents (abbr.)
- 44. Coaxial feedline
- 45. Forms on antennas in cold weather
- 46. Separate by force
- 48. Web address abbreviation for colleges
- 49. Hit this with a hammer
- 50. Attached with a knot
- 54. More than a little
- 56. Form a flexible solid
- 59. Scandinavian prefix, neighbor to 61 Down
- 61. Scandinavian prefix, neighbor to 59 Down