ROUND TABLE

The Denver Radio Club Newsletter

December 2007 Since 1917

President's Message

By Gerry Villhauer-W0GV

Hello DRC Members,

It is hard to believe that the holiday season and a new year is upon us. This has been a fast track year for me for sure. Do you remember those antenna projects I talk about at home? Well they are still waiting to be done. The club has faired better though, as we have accomplished all the planned antenna and tower maintenance in good weather.

I would like to welcome new members Lee Berkes, KD0CDF; Sparky Ullmer, KA0DPC and John Bridges, N0QOP. Thank you for choosing the Denver Radio Club as your club. Please come to the meetings and activities and be an active member.

About the only real news for this month is our Annual DRC Holiday Party which will be held at the Country Buffet (address is at the bottom of the page) on our regular meeting night, December 19th. This is always a fun and entertaining event. We will have great food, many drawings and prizes, a program and lots of good fellowship. Family and guests are welcome. We do have a paid member only policy for the "Grand Prize" item. All other prizes are open to all attending. You can show up and start eating about 5 p.m., buffet style and we do have the banquet room reserved. The program and drawings will start about 6:30. And by the way, you pay your own meal ticket. Don't miss this event!

Finally I would like to thank everybody that worked so hard this past year on all our projects, appointments and committees. It is YOU that makes the DRC the active, successful club that it is. Have a joyous, safe and happy holiday.

See you all at the **Annual DRC Holiday Party, Wednesday December 19th which will be held at The Country Buffet Restaurant, 8100 West Crestline Ave, Littleton, CO.** Crestline is just South of Belleview on South Wadsworth. (Between Belleview and Bowles) And remember to check our website, w0tx.org, for lots of important information about the DRC.

Gerry, W0GV
President

Inside The Round Table

Technical Committee Report

This report provides an overview of Technical Committee activities during November.

ACTIVITIES ACCOMPLISHED IN NOVEMBER.

147.33 Relocation Project

The sensitivity of the test repeater at Hudson was not up to standards. W0GV and KE0SJ installed a preamp to rectify this problem.

TSA (The Salvation Army) NVIS antenna system

N1ETV replaced his SGC tuner with the SGC tuner purchased by the club.

6 Meter Repeater

K0HTX built a galvanized strut for the 6 meter transmit antenna. He and WG0N removed the original wooden strut and installed the new strut.

Lakewood EOC

K0TOR met with EOC personal to discuss the station configuration required at their new location. Additional meetings will be required as the EOC plans develop.

Packet Gateway

The KAM controller defaulted to factory settings. KC0CUA went to the site and reprogrammed the KAM.

449.35 Repeater

N0YIX reprogrammed the controller's squelch tail timer for a shorter interval between the end of transmission and the courtesy beep.

145.49 Repeater

The repeater suddenly went off the air. KC0CUA coordinated the electrical repair to get power back to the repeater.

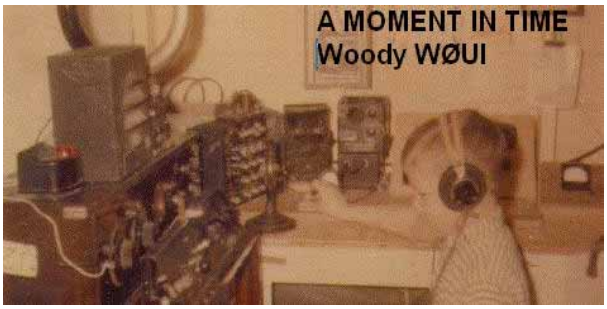
What'd I Miss?

NOVEMBER DRC MEETING REPORT

This month's meeting was held a week early due to the Thanksgiving Holiday.

The Elmer Session started at 6:30 PM. AJ0C and KB0MPY gave an overview and a practical demonstration of packet radio. They covered packet networking, nodes, gateways, Airmail and packet mailboxes. Figure 1 shows some of the attendees at the presentation. No one appears to be asleep!

The regular business meeting started at 7:30 PM followed by the feature presentation. W6OAV gave a visual presentation about magnetic loops. Figure 2 shows Bill comparing a homebrew 2 meter magnetic loop to a standard 2 meter ground plane. The topics covered were: (1. Advantages and disadvantages, (2. Radiation patterns, (3. Performance specifications, (4. Comparisons to other types of antennas and (5. Proper building practices. At the end of the presentation a commercial MFJ HF magnetic loop was dissembled for inspection.



PRESIDENT'S COLUMN
by: Dave Baysinger WB0BAE (now WG0N)

As some of you already know, there is the 1977 edition of the Denver Radio Club Christmas Party which will be held in the regular meeting place on Wednesday, December 21 at 7:30 PM. This is a family event with no business meeting, just fun and entertainment (see program notes this issue) and plenty of time to talk to other club members. I hope to see many of you in attendance.

A number of club members participated in the DRC sponsored amateur radio demonstration at Villa Italia shopping center on December 3 and 4. During nearly 15 hours of the activity we talked to many CB'ers, hobbyists, and others who were very curious about our avocation. Thanks to the helpful folks at Villa, the DRC was able to put a trapped vertical antenna on the roof of the complex and obtain good signal reports from coast-to-coast on 10, 15, 40, and 80. If you wonder why we didn't work 20m during the event, there is good reason. It takes more nerve than most of us could muster to invade the weekend 20-meter QRM… And every time we tried to tune-up on 20m we could be heard "clearly" throughout the mall on the roof-mounted public address system. Such is life when the antenna is on the roof and the sound system wires run through the roof and ceiling. Thanks to W0SIN's fine low-pass filter, the other bands stayed relatively clean. The visitors were interested, the questions were good and it seems safe to say the event was very successful for both the Denver Radio Club and for the ARRL. There is the chance that the club will have a chance to man another demonstration in the near future. I would suggest that those of you in the Denver area monitor the radio club net on Sunday evenings at 8:30 PM on WR0AMJ (147.33 +) for news updates. If anyone knows where we might find a nice reasonable vertical antenna for both demonstrations and emergencies, please drop a line or grab a phone. Installation at the Villa Italia demonstration was quick and the station was very efficient. You can't ask for more than that. See you on the net and at the party.

From The December 1977 Round Table of former DRC member C.F. Williams W0OMN from Wray, Colorado

Sunspot Numbers

Scientists track solar cycles by counting sunspots -- cool planet-sized areas on the Sun where intense magnetic loops poke through the star's visible surface. Counting sunspots is not as straightforward as it sounds. Suppose you looked at the Sun through a pair of (properly filtered) low power binoculars -- you might be able to see two or three large spots. An observer peering through a high-powered telescope might see 10 or 20. A powerful space-based observatory could see even more -- say, 50 to 100. Which is the correct sunspot number?

There are two official sunspot numbers in common use. The first, the daily "Boulder Sunspot Number," is computed by the NOAA Space Environment Center using a formula devised by Rudolph Wolf in 1848: $R=k\,(10g+s)$, where R is the sunspot number; g is the number of sunspot groups on the solar disk; s is the total number of individual spots in all the groups; and k is a variable scaling factor (usually <1) that accounts for observing conditions and the type of telescope (binoculars, space telescopes, etc.). Scientists combine data from lots of observatories -- each with its own k factor -- to arrive at a daily value.

The Boulder number (reported daily on SpaceWeather.com) is usually about 25% higher than the second official index, the "International Sunspot Number," published daily by the Sunspot Index Data Center in Belgium. Both the Boulder and the International numbers are calculated from the same basic formula, but they incorporate data from different observatories.

As a rule of thumb, if you divide either of the official sunspot numbers by 15, you'll get the approximate number of individual sunspots visible on the solar disk if you look at the Sun by projecting its image on a paper plate with a small telescope.

***Right**: Rudolf Wolf devised the basic formula for calculating sunspots in 1848. Today, Wolf sunspot counts continue, since no other index of the sun's activity reaches into the past as far and as continuously. An avid astronomical historian and an unrivaled expert on sunspot lore, Wolf confirmed the existence of a cycle in sunspot numbers. He also more accurately determined the cycle's length to be 11.1 years by using early historical records.*

By Dr. Tony Phillips © 2007

VERTICALS AND GROUND RODS

By Bill Rinker - W6OAV

One often hears “I have three 8’ground rods in the ground around my vertical. It should work just great without radials”. **WRONG!!** Those ground rods will provide a nice lightning protection ground but will do little to improve antenna efficiency.

Figure 1 is often used to explain how a vertical antenna works. The RF current from the transmitter is divided between the actual antenna and its image antenna within the earth. The earth is very lossy and absorbs a lot of the RF current. The more the RF current loss in the earth, the less the RF current is available for the antenna. So, the idea is to make the earth’s loss as little as possible.

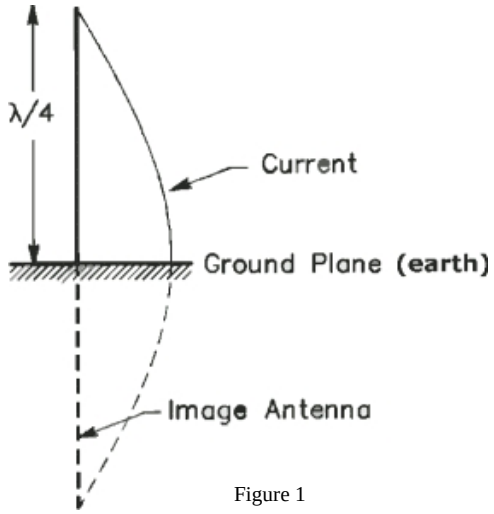


Figure 1

Figure 1 leads some to think that a ground rod driven deep into the lossy earth will provide a less loss in the path for the RF current in the ground. After all, the ground rod is in place of the image antenna. Actually, the image antenna doesn’t exist as shown in the figure. As mentioned earlier, the figure is used to show the concept of how a vertical antenna works as described above. Figure 2 shows the actual antenna operation and why ground rods do little to decrease the earth’s loss to RF current.

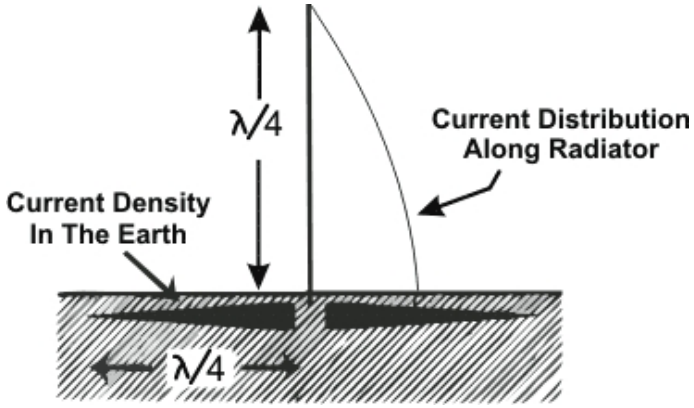
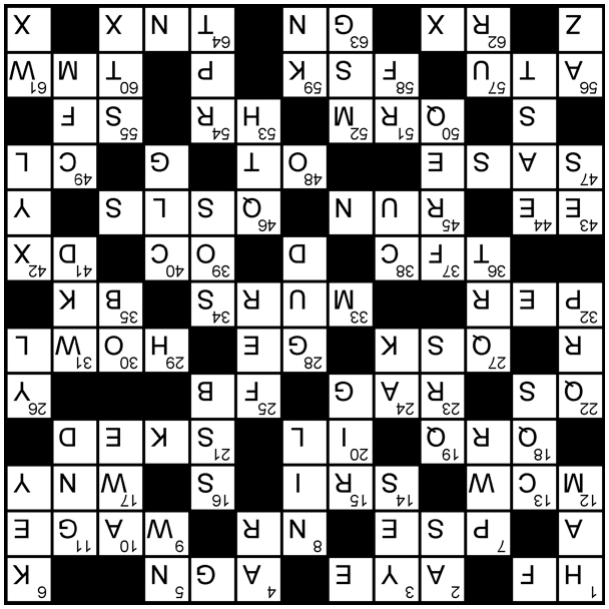


Figure 2

As shown in Figure 2, RF current flows only within the first few inches of the earth’s lossy surface. Therefore, the ground rods are not in the path of the RF current. To decrease the RF ground resistance, one must lay radials as close to the earth’s surface as possible. These radials provide a less lossy RF current path since they are in the path of the RF current. Hence, the RF current loss is minimized leaving more RF current to radiate a stronger signal from the antenna.



HOW’D WE DO?

The 2007 Field Day results are in and W0TX faired pretty well. Operating in the 2F category, 24 members racked up 351 contacts for a total score of 1,172 points. These statistics brought the DRC station to number 1334 out of 2332 participating stations.

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

When: December 19th
Where: Country Buffet
8100 W. Crestline Ave.
Littleton, CO
Time: 5pm Dinner/6:30pm Presentation and Drawing

December

DRC Net Sunday 8:30pm Local

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5  Chanukah ***Learning Net*** 7pm	6	7 ***Pearl Harbor Day***	8 **ARRL 10m Contest** Begins 0000U
9 **ARRL 10m Contest** Ends 2359U	10	11	12 ***Learning Net*** 7pm	13	14	15
16	17	18	19 ***Club Holiday Dinner & Meeting 5pm***	20	21	22 First Day of Winter
23/30	24/31	25 Christmas Day 	26 ***Learning Net*** 7pm	27	28	29

Check www.ARRL.org for Contest Rules!

DRC Board of Directors

President	W0GV	Gerry Villhaurer	303-467-0223	W0GV@hotmail.com
Vice-President	WG0N	Dave Baysinger	303-987-0246	WG0N@arrl.net
Secretary	WA9TVH	Orlen Wolf	303-2791328	owolf@mines.edu
Treasurer	K0TOR	Jim Beall	303-798-2351	K0TOR@arrl.net
Board Member	KC0CUA	Bryan Steinberg	303-987-9596	KC0CUA@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	

DRC Staff and Volunteers

Trustee	WA9TVH	Orlen Wolf	303-279-1328	owolf@mines.edu
Net Control	K0TOR	Jim Beall	303-7982351	K0TOR@arrl.net
Emergency Coordinator	K0SSE	Oscar Hall	303-375-0627	oscarh@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	KC0CUA	Bryan Steinberg	303-987-9596	KC0CUA@arrl.net
Field Day	N6LD	Charles Wright	303-347-0188	cwright@haxsystems.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	AJ0C	Robert Rude	303-8416443	AJ0C@comcast.net

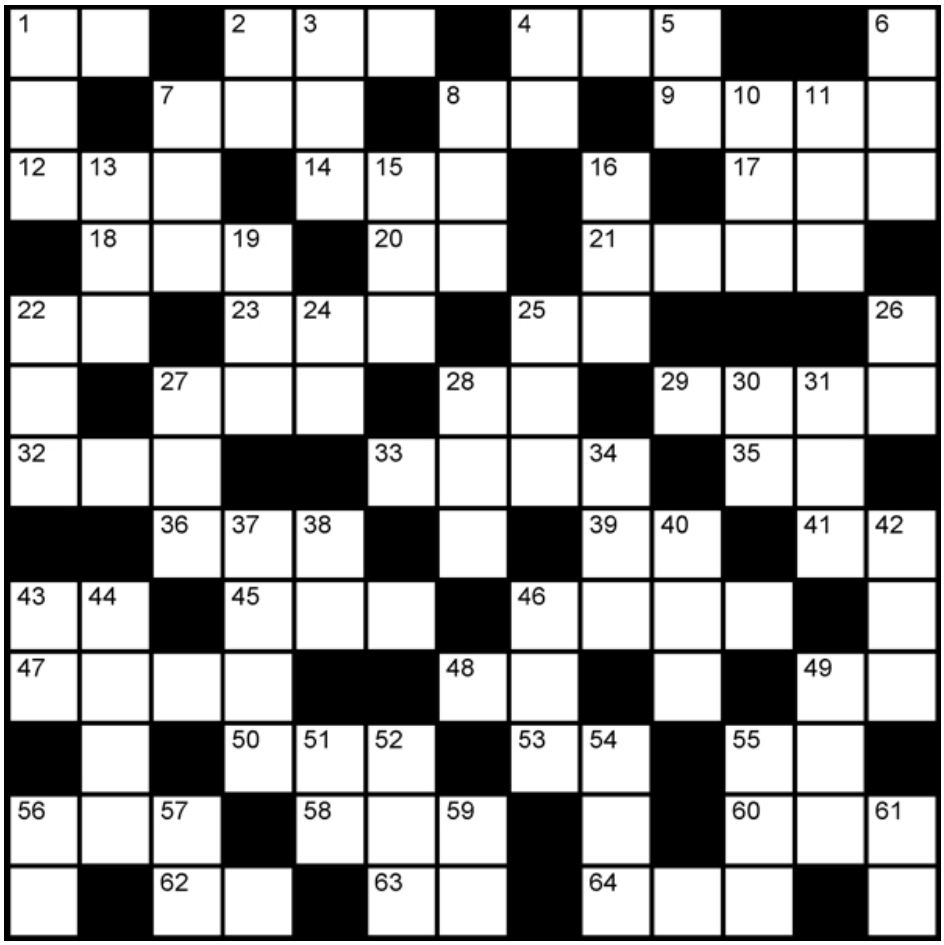
DRC Repeaters

BAND	Freq / Shift / PL Tone	Additional Information
10m	29.620mHz (-100kHz) FM	Temporarily OFF The Air
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	Members Auto-Patch
1.25m	224.380mHz (-) 100Hz PL	Temporarily OFF The Air -- For Controller Upgrade
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. **Editor**

CW ABBREVIATIONS, PROSIGNS, AND Q-SIGNALS



NOTE: Answer key and words used in this puzzle are located on page 5.

Across

1. Shortwave frequencies
2. Yes
4. Repeat
7. The magic word
8. Number
9. Conduct
12. Code sent as audio
14. Apology
17. Companion to ENY and NNY
18. Speed up
20. Companion to IN and WI
21. Prearranged contact
22. Contacts
23. What is chewed
25. Good or excellent
27. Break in
28. After afternoon greeting
29. Audio feedback sound
32. Between miles and hour
33. Unlicensed VHF service
35. Break
36. Messages
39. British term for long-time acquaintance
41. Distant station
43. Sent after "shave and a haircut"
45. Make contacts rapidly
46. Confirming cards
47. Sent to return 46 Across
48. Long-term operator
49. Shutting down
50. Interference
53. Not THR
55. Across the bay from EB section
56. Tunes antennas
58. RTTY modulation
60. It never comes
62. Feeds your ears
63. End of the evening sign off
64. Appreciation

Down

1. One of us
2. Stand by
3. Affirmative
4. End of message
5. Opposite of SE
6. Sends code
7. Amount of output
8. Nothing
10. Great respect of fast operators
11. Earth potential
13. Sent to attract callers
15. Transceiver
16. AM minus two of its components
19. Slow down
22. Low power
24. The 7th district state that's also an entity
25. For
26. Female of the species
27. Stop transmitting
28. Good
30. Variation on 39 Across
31. Contacted
34. Distress
37. Where to tune
38. See you
40. Sending your call
42. Female spouse
43. And
44. Direction of sunrise
46. Location
49. Confirm
51. Greater than audio
52. Information
54. Signal quality
55. Companion to NTX and WTX
56. Companion to EL
57. Your
59. Only you transmit
61. Weather