



ROUND TABLE

August 2007

The Denver Radio Club Newsletter

Since 1917

President's Message

By Gerry Villhauer-W0GV

Hello DRC Members,

I am thrilled, as I hope the membership is in our new look for presenting news, technical articles and a variety of other ham radio related subjects. Our Denver Radio Club Roundtable is new to many of you, but not so new to the DRC member that has been around the area for a few years. As you may remember the old Roundtable was published in the printed form; unlike this electronic version. A sign of changing times do mainly to limited free time, rising printing and postage rates and the speed and ease of electronic delivery. We will be fine tuning it as future issues unveil; bringing our membership what we envision as the finest ham radio publication in town. Thanks go to George, AG0S, for being our editor (I guess that is the correct term). George has the knowledge, experience and software to make it all happen. If you have ideas, suggestions or something you think of interest or newsworthy for the Roundtable, please forward it to me via email at w0gv@arrl.net. Please put something in the subject line that will let me know that it is not junk mail.

I would like to welcome new members, Glenn Valenta, K0BO; Roger Shaltry, K5JAX to the DRC. Thank you for choosing the Denver Radio Club as your club. Please come to the meetings and activities and be an *active* member.

The date for our DRC Hamfest, August 19th is quickly approaching. Please plan to attend and bring another ham friend. We need a big crowd to have a successful hamfest; please help make this happen! See our website w0tx.org for details or contact our Hamfest Chairman, Bryan, KC0CUA.

Thanks to Bill, W6OAV, for last months program on Antenna Radials Demystified. I can tell it was a very successful program because I am still hearing discussion about it on the repeaters.

Our August program will be presented by Mike Gelski, KB0PVD. Mike has been coordinating disaster in Colorado since 1985. He is presently employed by The Salvation Army and has previous experience as a volunteer for the Red Cross and The Salvation Army. In 2007, the Salvation Army was one of four agencies to receive part of a \$1M grant. Part of the grant was spent on communication and related equipment; part of which includes a trailer mounted 50' crank-up tower, Kenwood and Icom HF and VHF/UHF radios, and antennas. Other items include water storage tanks, an 8X16' trailer, 4X4 pickup and a 40kw generator. Mike will have some of this equipment on display; and may have an operational HF station set up. He will be explaining it's use and answer questions. This will be an opportunity to view actual field emergency communication station. Don't miss it!

Finally, we are investigating the option of relocating our 147.330 repeater to a location that we think will give good coverage along the West side of town and in the Front Range mountain areas. Our technical committee will be doing some testing and if it is successful, relocating the equipment. More on that next month.

See you all at the meeting August 15th at the St. Joseph's Episcopal Church, 11202 West Jewell Ave., Lakewood. That is about two blocks West of Kipling on South Jewell. Remember to check our website, w0tx.org, for lots of important information about the DRC. The Elmer Session and Tech Meeting start at 6:30 p.m. followed by the Regular Meeting and Program at 7:30 p.m.

73,
Gerry, W0GV
President

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Technical Committee Report

By Bill - W6OAV
Technical Committee Chairman

This report gives an overview of Technical Committee activities for the past month.

449.35 Repeater

The new Kenwood repeater is working well. The original Master2 repeater is back in place next to the Kenwood to act as backup. WA9TVH is building a switching arrangement to allow remote switching between the Kenwood and the Master2.

220 MHz Repeater

The repeater is presently out of service. KC0CUA repaired the repeater by replacing a bad diode. He is in the process of installing a new controller in the repeater.

145.49/448.625 MHz Repeaters

WA9TVH went to the site and checked out the systems in June. All met specifications.

Salvation Army Ham Station

The NVIS 40/75 meter system is in place. On July 28 the station took part in an ARES D22/D44 NVIS test. N0LAJ, N1ETV and W6OAV operated the station during the test and analyzed the results. The system is working as designed.

Field day activities brought out the fact that the Kenwood and Drake HF rigs interfere with each other even though they are on different bands. The Drake is normally used on the NVIS antennas and the Kenwood on the R7 vertical. N1ETV is investigating building roll off filters for each of the rigs.

A computer is now in operation in the ham station. The computer has access to the Internet and contains applications for Echolink, Winpack, Digipan and Airmail.

The tech committee is discussing possible future antenna additions for the station.

The club purchased a pair of FRS radios to be used within the building should building power

be lost. The FRS radios would provide communications between Salvation Army personnel and the hams in the radio room.

Lakewood EOC

Lakewood EOC is moving to a new communications facility. K0TOR and WG0N are going to analyze the facility and make recommendations for antennas, radios, TNC's, etc.

Going Loopy



Work party on the roof erecting the 40/80 meter Loop at the Salvation Army Building in Denver. Pictured left to right; George-AG0S, Dave - K0HTX, Doug - N4ATA, Gerry - W0GV, and Lance - N1ETV.

Want to get on HF?

Then it's time to upgrade!!

***Call Wally Gamble, ACOT for VE Testing at
303-202-0339***

or email - wallygamble@comcast.net

Elmer's Corner

By Rob - AJ0C
DRC Education Chairman

What is an Elmer? A teacher; mentor; guide; advisor; recruiter; coach; tutor; counselor; sage; journeyman; and friend; interested in and possessed with enthusiasm for Amateur Radio. Elmer is the time honored title given to a fellow ham operator by other ham operators who received help.

When does one become an Elmer? When they perform the actions that cause another amateur to gain knowledge or skill they become an Elmer (even if the word is not spoken).

DRC is fortunate to be blessed with many Elmers with a combined experience totaling into the millenia and touching upon nearly every aspect of our hobby.

A good Elmer must recognize that there are many routes his fellow hams may take as they journey through our hobby. He may expose others to the aspects of the hobby he finds to be interesting, but he must allow the interest of the person taking the journey to prevail in the choice of the aspects to be pursued.

DRC is committed to goals of helping people become amateur radio operators, and helping amateur radio operators enjoy and learn more about their hobby. In pursuit of these goals DRC has taken the following actions:

1. It conducts amateur radio classes.
2. It conducts amateur radio license testing.
3. It conducts technical and operating skill lectures at its monthly meeting.
4. It conducts technical forums at the DRC Hamfest.
5. It conducts an "Elmer session" prior to the regularly scheduled club meetings. The Elmer session begins at 1830 MT and concludes at 1930 MT when the regular DRC meeting begins. (Third Wednesday of each month.) This is an open-forum question-and-answer period, with occasional pre-planned topics.
6. It sponsors the DRC Learning Net at 1900 MT every Wednesday except the third Wednesday of each month. The net uses the DRC linked repeater pair 145.490 (pl: 100.0) and 448.625- (pl: 100.0). Check-ins and questions about amateur radio are welcomed.

7. Elmer may be e-mailed at elmer@frupac.net. This is a collective e-mail address and any amateur interested in seeing the questions sent to Elmer, and seeing Elmers responses, may subscribe to this group address. To subscribe send an e-mail to Elmer and ask to be added to the Elmer list (remember to provide your name and call sign). Questions to Elmer may be deferred to the DRC Learning Net or to a future Elmer session.

Future actions to enhance the DRC Elmer program are always being considered. Send your suggestions to Elmer@frupac.net.

One of the next actions is to organize activities to increase exposure time between our club's Elmers and those who are seeking to gain knowledge and experience in our hobby. Activities will be scheduled according to the mutual availability of participants. Locations will be selected that facilitate group gatherings and access to the necessary resources for the activity. The number of Elmers participating will be a limiting factor on the number of locations that can be simultaneously supported. Weekend activities may commence with a group breakfast followed by an in-the-field demonstration or group participation activity such as an antenna construction project. Activities under consideration include: Dipole and J-Pole antenna construction, use of directional antennas, Amateur Satellite communications, packet radio, PSK31, APRS, and field trips to club member's stations for our new members who want ideas on how to put their own station together.

What can you do to help your club and amateur radio? A basic list of goals...

1. Attend at least one club meeting every three months. (Come early enough to attend the Elmer session.)
2. Bring a guest amateur to a club meeting at least once a year.
3. Bring a non-ham, who is interested or curious about the hobby, to a club meeting or event at least once a year.
4. Help another ham with their station.

73, Rob – AJ0C

WHAT HAPPENED TO MY MOBILE SIGNAL?

By Bill - W6OAV

As you mobile along beside buildings or trees, have you wondered what is happening to your mobile signal? If so, you'll find the following of interest.

Buildings are somewhat transparent to RF. A two meter signal suffers about 2.5 dB to 10 dB attenuation through a brick wall. The amount depends upon whether the bricks are dry or wet. Wooden structures give very little attenuation. The loss through a window is from 0.5 dB to 3 dB, depending upon the type of glass. These losses vary with frequency. Compared to two meters, the losses are about half as large at six meters and almost twice as large at 450 MHz.

In the case of a mobile traveling with buildings on both sides of the street, the signal arriving by reflection is often greater than the signal passing through, or diffracting, around the building in the direct path.

Trees in the vicinity of the mobiles have an interesting effect. The following losses generally apply in flat terrain with dense woods adjacent to the mobile and extending at least 500 feet from the mobile.

FREQUENCY	DB LOSS
Six meters	4
Two meters	12
70 centimeters	18

For smaller expanses of trees, assume smaller losses, but not proportionally since the change in dB is not linear with the change in depth. Reduce the above dB losses by a factor of 0.5 for a 100 foot dense wood depth.

Reduce the above losses by a factor of 0.5 for thinned out stands of trees, especially where underbrush is absent;

Reduce the above losses by a factor of 0.5 where a cleared area intervenes between the mobile and the trees. Use a factor of 0.5 for several hundred feet of clearing. Ignore tree loss with 1000 feet or more of clearing.

For deciduous trees, it may be assumed that losses in the winter are reduced by a factor of 0.2
With horizontal polarization, (for you SSB types) tree losses for six and two meters are substantially less than with vertical polarization.

Reference: An old forgotten Bell System Technical Publication

Solar Watch

Editor

Although the number of Sunspots is very low our Sun is still very active. In the year 2000, our Sun went though Solar Maximum, the time in its 11-year cycle where the most sunspots and explosive activities occur. Sunspots, the Solar Cycle, and solar prominences are all caused by the Sun's changing magnetic field. Pictured is a solar prominence that erupted in July 2002, throwing electrons and ions out into the Solar System. This image was taken in the ultraviolet light emitted by a specific type of ionized helium, a common element on the Sun. Particularly hot areas appear in white, while relatively cool areas appear in red and Sunspots appear as black spots moving across the face of the Sun. At Solar Minimum our Sun becomes very quiet, and sunspots are few in number. No one can precisely predict when Solar Minimum will occur, although the signs indicate that it has arrive! Soon we will see a gradual increase in solar activity which will herald the beginning of Cycle 24, predicted by some solar scientists to be a very active Solar Cycle.

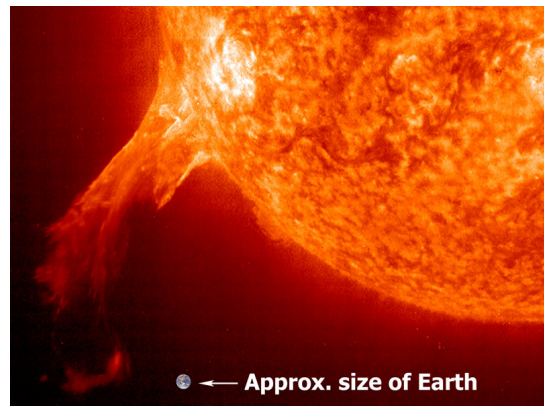


Photo Reference: NASA Science News

Propagation Bulletin

By Tad Cook - K7RA

Average daily sunspot numbers and solar flux are down this week. Average daily sunspot number declined nearly 28 points to 1.7, and the daily solar flux average was down nearly 7 points to 67.4. When the solar flux is less than 70, it often means no sunspots, and the sunspot number has been zero for a week. Predicted solar flux for the next week is 70, which suggests a sunspot or two, with the chance for sunspots increasing after August 2.

Currently the IMF (Interplanetary Magnetic Field) points south, making our planet vulnerable to geomagnetic upset. The effect from solar wind should be mild, with the planetary "A" index for July 27-31 predicted at 15, 5, 5, 8 and 15. Geophysical Institute Prague predicts quiet to unsettled conditions for July 27, quiet for July 28, quiet to unsettled July 29, unsettled July 30, quiet to unsettled July 31 and quiet again on August 1-2.

Lightening Safety Tips

Lightening in the Nation's #2 Storm Killer. No place outside is safe when thunderstorms are in the area. If you can hear thunder you can be struck by lightening. Take cover!

PLAN: Plan your outdoor activities to avoid thunderstorms. Listen to NOAA Weather Radio for the latest weather forecast before heading out.

30-30 RULE: If 30 seconds or less between lightening and its thunder, go inside. Stay inside 30 minutes or more after the last rumble of thunder is heard.

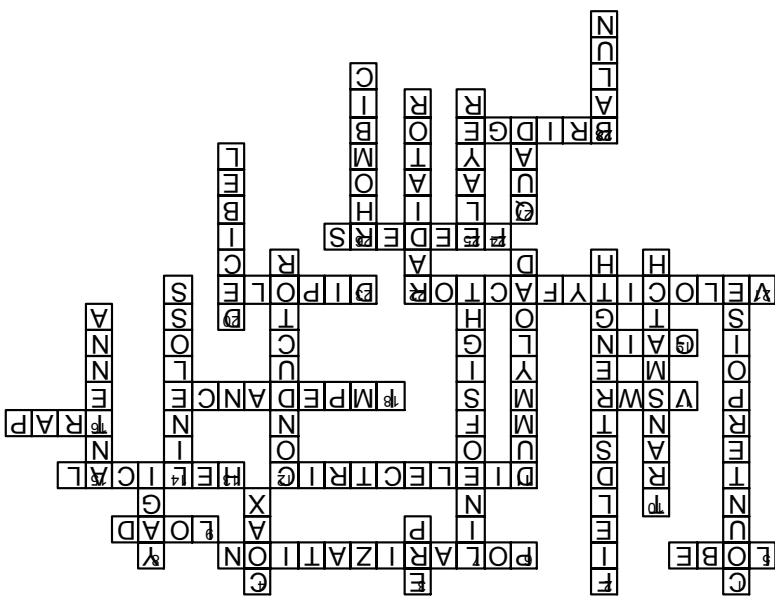
SAFE PALCES: Fully enclosed large buildings provide good lightening protection.

INDOORS: Don't use corded telephones. Keep away from electrical appliances, wiring, plumbing, and windows.

OUTDOORS: Avoid elevated places and open spaces. Stay away from water and isolated objects. DO NOT go under trees! Allow time to reach safety. Don't seek refuge in open structures.

FIRST AID: Call 911! All lightening deaths are from cardiac/respiratory arrest. Used an AED, CPR, or rescue breathing.

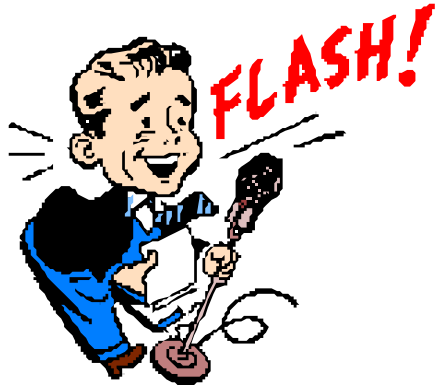
The Hamfest is just around the corner!
More information on Page 6, <http://www.w0tx.org>, or contact Bryan - KC0CUA.



Words

- antenna
- balun
- bridge
- coax
- conductor
- counterpoise
- decibel
- dielectric
- dipole
- dummy load
- E layer
- ERP
- feeders
- field strength
- gain
- helical
- impedance
- line loss
- Line of sight
- load
- lobe
- polarization
- quad
- radiator
- rhombic
- transmatch
- trap
- velocity factor
- VSWR
- Yagi

Up Coming Events

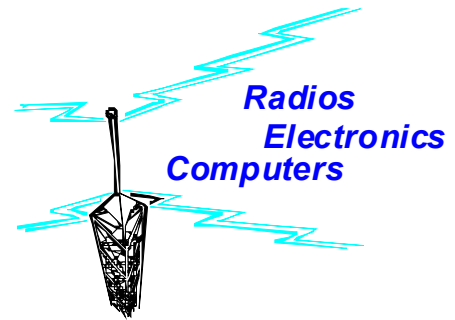


The BIG one is coming!

**The Denver Radio Club Hamfest
Jefferson County Fair Grounds**

When: Sunday August 19 - 8:30am to 2pm

**Volunteers Needed
contact Bryan - KCOCUA.**



August 2007						
<i>DRC Net Sunday 8:30pm Local</i>						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 <i>Learning Net 7:30pm</i>	2	3	4
5	6	7	8 <i>Learning Net 7:30pm</i>	9	10	11
12	13	14	15 <i>DRC Meeting</i>	16	17	18 <i>Setup for Hamfest</i>
19 <i>DRC Hamfest 8:30am - 2pm</i>	20	21	22 <i>Learning Net 7:30pm</i>	23	24	25
26	27	28	29 <i>Learning Net 7:30pm</i>	30	31	

DRC Board of Directors

President	W0GV	Gerry Villhauer	303-467-0223	W0GV@hotmail.com
Vice-President	WG0N	Dave Baysinger	303-987-0246	WG0N@arrl.net
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Treasurer	K0TOR	Jim Beall	303-798-2351	K0TOR@arrl.net
Board Member	KC0CUA	Bryan Steinberg	303-987-9596	KC0CUA@arrl.net
Board Member	KC0OUQ	Bob Proctor	303-986-0612	KC0OUQ@att.net
Board Member	N1ETV	Lance Wilson	303-750-0630	Immonty@comcast.net
Board Member	N6LD	Charles Wright	303-347-0188	cwright@haxsystems.com

DRC Staff and Volunteers

Trustee	WA9TVH	Orlen Wolf	303-279-1328	owolf@mines.edu
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Club Librarian	WG0N	Dave Baysinger	303-987-0246	WG0N@arrl.net
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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	
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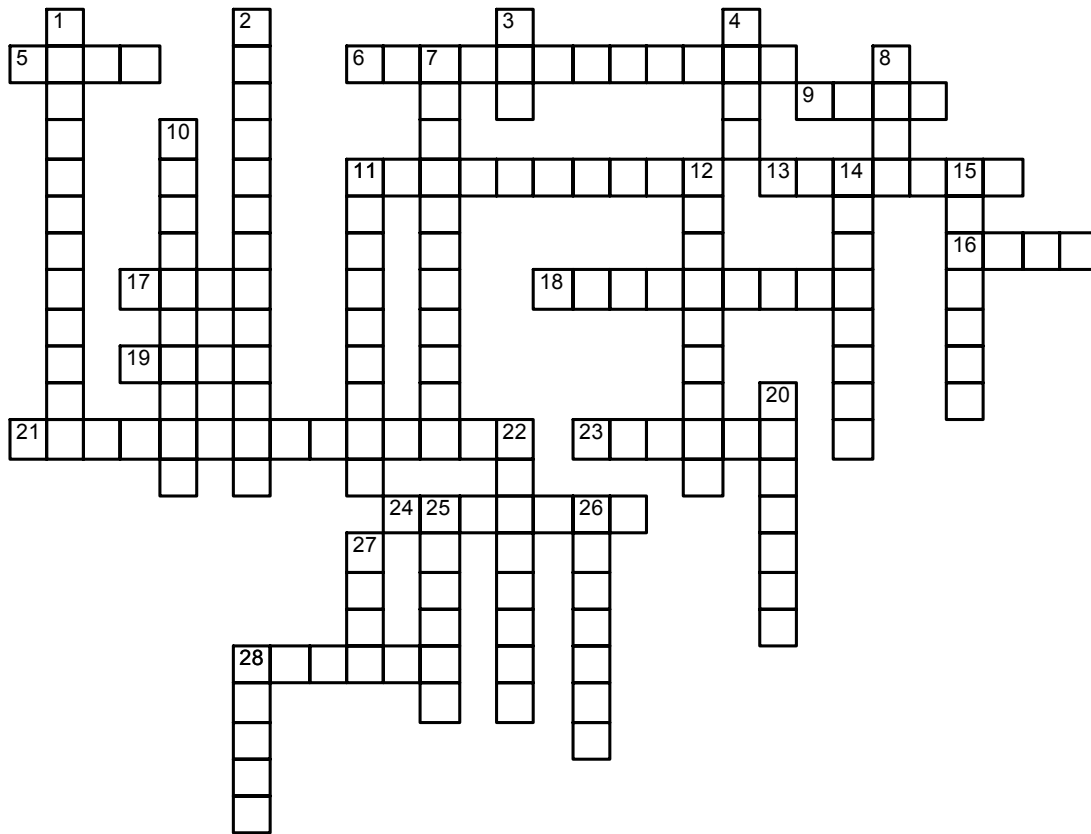
DRC Repeaters

BAND	Freq / Shift / PL Tone	Additional Information
10m	29.620mHz (-100kHz) FM	Temporarily Off-Line
6m	53.090mHz (-1mHz) 107.2Hz PL	
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	
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***

Antenna Know-How



ACROSS

5. A defined field of energy that radiates from a directive antenna.
6. The sense of the wave radiated by an antenna.
9. The electrical entity to which power is delivered.
11. Insulating materials used in antenna systems.
13. An antenna that consists spiral conductor.
16. Parallel L-C network inserted in an antenna element to provide multi-band operation with a single conductor.
17. Not a power ratio, rather this is the ratio of forward to reflected voltage on a line.
18. The Ohmic value of an antenna feed point, matching section or transmission line.
19. The increase in ERP in the desired direction of the major lobe.
21. The ratio of the velocity of radio wave propagation in a dielectric medium to that in free space .
23. An antenna that is split at the exact center for connection to a feed line.
24. Transmission lines of various type that are used to route RF to an antenna.
28. A circuit used in measurements of impedance , resistance or standing waves in antenna system .

DOWN

1. A wire or group of wires mounted close to ground , but insulated from ground , to form a low - impedance , high - capacitance path to ground .
2. The intensity of a radio wave as measured at some distance from the antenna.
3. Effective radiated power.
4. A transmission line that has the outer shield (solid or braided) on the same axis as the center conductor.
7. Transmission path of a wave that travels directly from the transmitting antenna to the receiving antenna.
8. An antenna named after one of two Japanese inventors.
10. An antenna tuner.
11. A non-radiating substitute for an antenna .
12. A metal body such as tubing, rod or wire that permits current to travel along its length.
14. The power lost in a transmission line, expressed in dB.
15. This electrical conductor or array of conductors is used to collect signal energy when not in use to radiate signal energy.
20. A logarithmic power ratio, abbreviated dB.
22. The discrete conductor which radiates RF energy in an antenna system.
25. The ionospheric layer nearest to the Earth from which radio signal can be reflected.
26. An antenna with the shape of an oblique-angled parallelogram with only the opposite sides equal, having legs (sides) that are one or more wavelengths
27. A parasitic array using rectangular or diamond shaped loop elements.
28. A device for feeding a balanced load with an unbalanced line.

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