



# ROUNDTABLE

The Denver Radio Club Newsletter

## PRESIDENT'S MESSAGE

By Robert White – K0RCW

For my inaugural column in the Roundtable, I first want to thank our outgoing president Gerry Villhauer, W0GV for his devotion and service to the Denver Radio Club. Isaac Newton's famous phrase seems appropriate - "If I have Seen Further It is by standing on the shoulders of giants". Gerry is one of those giants. I remember first meeting Gerry at the Hamfest in Estes Park in 2006. He and two other hams I had just met, Bob Wilson KC0CZ, and Bill Rinker, W6OAV met at a sandwich shop nearby and invited me in a totally unknown and a potentially lunch ruining move, to join them . I was struck with a sense of, "Wow these are friendly people with amazing knowledge and willingness to reach out to a new ham who can barely spell G5RV." I've been increasingly involved in the club ever since. Gerry's devotion to our community and putting the well being of others first is a value I hold closely in my life and one that Gerry enshrines. I wish you well in your "retirement" Gerry and in your future endeavors. Gerry has promised he will continue to be right there for us.

Our September meeting was primarily a business and election meeting, though we did manage to squeeze in an abbreviated video presentation. One of them was a pretty clever CGI animation of how packets traverse the Internet. I want to thank Bryan, KBOA for moderating the meeting and putting together the presentation.

I would like to welcome a new member Ron Pitcock - KD0MNV and congratulate him on his recent upgrade to Extra Class. I would also like to congratulate Phillip - KB0YTF for his upgrade to General Class and Mike - KF4DUS for his upgrade to Extra Class.

The Glorious Fall weather is in full display here in Colorado. It was a perfect day yesterday, Sep 25<sup>th</sup>, for several of us to travel up to Golden Gate Canyon and support the "Hike for Youth". This event began in 2004 and exposes youth to the outdoors. The founder of this event started the hike based on concern that kids were spending far too much time indoors in front of computers! Several DRC members including Mike Hughey – KF4DUS, Ryan Frederick – KD7NZE, Dick Williams – K8ZTT, and Chris Huston – KD0HMT assisted in this event supporting safety and logistics for the hikers under an azure blue sky and golden Fall colors.

I have made a point of talking to as many members as possible to gain some opinion of what the vision of the Denver Radio Club should be. If you have an opinion on this, please contact me at [k0rcw@arri.net](mailto:k0rcw@arri.net) or call me at 303-619-1048. There seems to be a consensus to maintain focus on good technical programming and presentations. There is also a strong desire to implement certain technical projects such as our voter system. There is also a strong tradition of service to our served agencies such as the Salvation Army, Colorado ARES District 13, the Lakewood and Wheat Ridge Police Departments and the West Metro Fire District. In discussions with several members, there is a desire to reach out to and welcome members at our events, particularly visiting hams, new members, or upgrading licensees. I would like to recruit a couple of members as greeters for our club, who would reach out to and make a point of talking to new and visiting hams or newly licensed and upgraded members before or immediately following our meetings. Please contact if you are willing to serve the club in this informal but important position.

In addition, it seems like our Field Day is an increasingly strong event. It has grown in a very few years from a handful of participants to a large, active group with many hams, modes, and bands activated for this three day event the last weekend of June. I would like to see us engage the community a bit more and have more community members come to see ham radio in action. I am always struck at social events about how many people are genuinely curious about what it is we do and why.

Our next meeting and technical presentation will be held on October 20<sup>th</sup> at the El Jebel Shrine Center one block west of the intersection of 50<sup>th</sup> Avenue and Tennyson Street. Proceed to the second floor in the East Room. Please remember to always check our web site at <http://www.w0tx.org> for important information about the DRC. The Elmer Session and Tech Meeting begin at 6:30 pm immediately followed by the regular program at 7:30 pm.

Robert - K0RCW  
President

## INSIDE THE ROUNDTABLE

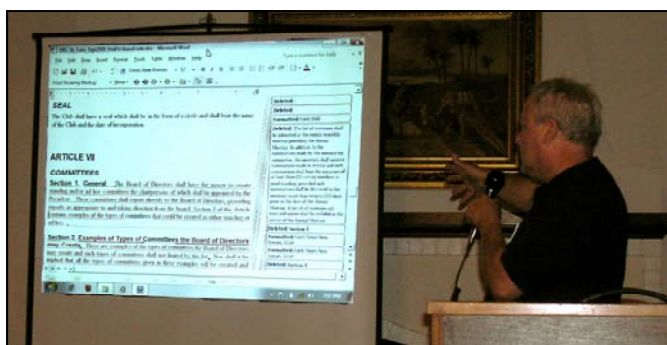
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# SEPTEMBER MEETING - WHAT'D I MISS

By Bill – W6OAV

Forty two folks attended this month's meeting! Bryan, KB0A, began the meeting with attendee introductions. After the introductions, Bryan announced that he is looking for someone to take over chairing the DRC ham fest. He has completely "mechanized" the process so it would be a very easy project to do. Please contact him if you can help.

Bryan began the formal meeting by reviewing the board recommended changes to the club by laws. A couple of minor changes were recommended from the floor. The meeting attendees seconded and approved the recommendations.



Bryan then began the annual club board nominations. Gerry announced that he could not run again for club president due to many other commitments. Gerry has served as club president for five years. Nominations were made and seconded for the various board positions. Details are listed in the "Meet the New DRC Board" article elsewhere in this publication.

After the nominations were completed, Bryan conducted two very interesting presentations. The first presentation was a clever and entertaining amateur radio music video made by OZ1ADL. It was called "Seek You" and can be viewed at: [http://www.oz5e.com/html/the\\_ham\\_band.html](http://www.oz5e.com/html/the_ham_band.html). The second video, titled "Warriors of the Net", was a simple and entertaining explanation of how the internet works.

# MEET THE NEW DRC BOARD

By Bill – W6OAV

As a result of the September board elections, the DRC has a new president and a new board member. Gerry, W0GV, was not able to run again due to personal commitments. Gerry served as president for five years. **THANK YOU** very much Gerry for all you've done for the club and for all your time.

Our new president is Robert, K0RCW. Our new board member is Frank, N3PQ. The remaining board members agreed to serve on the board for another year. Whenever you see a board member, please thank them for all they are doing for us.



The photo shows the new board members. Left to right are Bryan, KB0A (Vice President), Dave, WG0N (Board Member), Frank, N3PQ (Board Member), Dave, K0HTX (Board Member), Jim, K0TOR (Treasurer), and Robert, K0RCW (President). Unfortunately, Orlen, WW0LF (Trustee), and Gerry, W0GV, were not available when the picture was taken.

# EDITOR'S NOTE

By George – AG0S

If you are like me you know the people who make up the Board of Directors and most of the Staff & Volunteers. But you may not know how they actually got involved in amateur radio or much about what they do in their real every day lives. Well, in the next few months we are going to feature each of the board members and as many of the staff & volunteers with a picture and a short bio as will allow us to do so.

On the following page allow me introduce our new president Robert White - K0RCW.



# MEET THE PRESIDENT

## Robert White - K0RCW Biography



As a native of Denver, I grew up the second youngest of seven kids. My father was a Professor of Geology and my mother a music teacher in Cherry Creek. Attended Cherry Creek High school and graduated in 1980, then attended Dartmouth College and graduated in 1984 with a degree in Geology.

After College I took a job with a company that built engineering workstations on the Unix platform to explore for oil and gas. In 1987, I started a company that sold coordinate conversion and map projection software which to this day is used in many commercial CAD and Geographic Information System software. I Started WhiteStar Corporation in 1990 which provides digital map data subscriptions to the oil, gas and wind energy industries and have about 1,400 clients. I've been the CEO of this company for 21 years.

Scuba Diving is a passion, I received my PADI Scuba Instructor Certification and am associated with A1 Scuba and Travel located in Englewood. I have been active in assisting handicapped people as well as able-bodied people to learn to scuba dive or to review their skills. International travel is also my passion and have travelled to more than 75 countries and hope to visit them all in my lifetime. I speak Spanish, some German as well as a bit of Russian and Chinese.

I've had an interest in Ham Radio since I was 8 or 9, but didn't act on it until January, 2006 at which time I got my Technician License (still with code). Bitten by the bug, by June I had my General and by November my Extra class license. Shortly thereafter registered for the ARRL VE Testing program and have participated in many sessions since then. I've served on the Board of the DRC for three years and have become increasingly more active during that time.

### CONGRATULATIONS ROB - K0RAR

Check out page 60 of the current *CQ Magazine*, in the lower left you will see a picture of our very own Education Chairman Rob Rude. Rob was instrumental in reuniting a worried wife with her husband, who was sailing in the Sea of Cortez, after she lost contact with him four days earlier. **Way to Go Rob!**

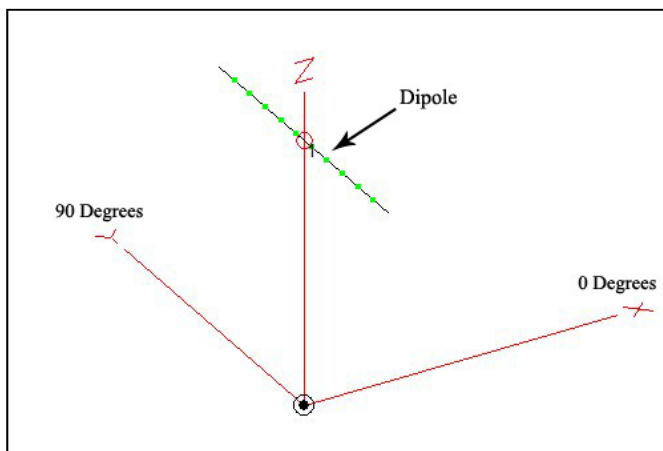
## WHAT IS AN ANTENNA RADIATION PATTERN?

By Bill – W6OAV

Often newer hams are heard saying that they don't understand the antenna radiation patterns that appear in antenna articles. This article will present an overview of this subject.

### What is an antenna radiation pattern?

An antenna radiation pattern is a graphical picture of the relative RF field strength transmitted from, or received by, an antenna. Antenna radiation patterns usually take three forms: 3-D, elevation and azimuth.



To understand antenna patterns one must think in terms of the three dimensions in space, namely the horizontal X axis, the horizontal Y axis and the vertical Z axis. Figure 1 shows a dipole above the ground which contains the X axis and Y axis and above the ground by the distance up the Z axis. By convention, the X axis is 0 degrees and 180 degrees. The Y axis is 90 degrees and 270 degrees.

This particular dipole antenna will be used in the discussions of antenna patterns in Part 2 of **"What Is An Antenna Radiation Pattern?"** Read Part 2 in the November issue of the *RoundTable*.



The **Denver Radio Club** is an **ARRL** Special Service Club!

**Not a member? You need to join TODAY!**





## HIGH SIERRA VERTICAL ROOF MOUNT

Lloyd Plush – KB0MQQ

The reason for this article is that I have an unusual screwdriver type of vertical antenna mounted on my roof that I have used for many years. The High Sierra vertical is normally used to be mounted on a vehicle with the body acting as a ground for the antenna. With a little help and some experimenting I found the antenna could be mounted on a roof top with good results.



Here is how I mounted my first High Sierra vertical. I installed a tripod on my roof and put the antenna on a long TV type mast. I then put 4 radials onto the base of the antenna made of 4 wire TV rotor cable. I cut and tuned the wires for 10, 15, 20 and 40 meters in the digital frequency range I would be using. I operated this arrangement for many years with good results. During the peaks of Cycle 23 I logged over 80 DX countries although I am not a contester or DX chaser. I made my first contacts with Australia using this antenna and the digital mode called MT-63 on 10 meters. Most of my other DX contacts were made using PSK-31 digital mode. I used this antenna arrangement for many enjoyable years but found I had made one major mistake. The long TV mast was too weak to hold the heavy antenna during ice storms and the very high winds we have here in Golden, Colorado. The antenna went down and was destroyed beyond repair.

I ordered another High Sierra which was a newer redesigned version. It was tunable from 80 meters through 10 meters. It also had a newly designed high efficiency 12 volt reversible motor.

The company also had a radial kit which I ordered which consisted of 8 ten foot radials to be attached to the bottom of the antenna. (You can make them yourself) These radials make the antenna tunable from 80 through 10 meters with an acceptable SWR. I am now operating on 20 meters on 14.105 all the time; the Network 105 frequency. Although minimally so I added 4 more radial wires cut for this frequency for more efficiency of the antenna giving me a total of 12 radials. I also added a capacity hat to the stainless steel stinger on the top of antenna for even more efficiency. Of course the antenna is not as good as a beam but I am happy with the results of this antenna arrangement and the cost. You can find High Sierra antenna's on their web site. <http://www.hamcq.com/>



## READY OR NOT? WINTER DRIVING IN COLORADO

By Frank – N3PQ

Summer is officially over in Colorado and we are all getting ready for the wonderful winter weather. If many of you are like me, we seem to procrastinate on many of our "to-do" things and wait for the last minute for something catastrophic to happen. Every year I promise myself I would have my vehicles ready for the winter season, but unfortunately, life and our amateur radio hobby seem to get in the way. I'm no weather forecaster, but living here in beautiful Colorado, we seem to get a good dumping of snow every few years and sometimes a couple in the same season.

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At the last few monthly meetings, I have noticed a few new faces and don't know if they may be new to Colorado or if they are long-time Colorado residents. Since I am getting ready for this season I thought I'd share the things I do to prepare for winter driving in Colorado.

General information for driving in Colorado during the winter months:

- *Fuel:* maintain at least ½ a tank.
- *Check all fluid levels.*
- *Windshield washer fluid:* if using pre-mix, make sure it is *not* rated to +32 degrees Fahrenheit which is sold during the summer months. *I learned this one the hard way.*
- *Windshield wipers:* in Colorado it is my experience they dry rot after about 6 months, so you may want to replace them.
- *Snowbrush and snow scraper:* make sure they're in your vehicle, you may have removed them for summer.
- *Battery:* inspect your battery, check and compare the 1<sup>st</sup> in-use date vs. the expected life of the battery.
- *Tires:* Inspect (pressure/wear/replacement); winter tires (get them ready).
- *HT:* If you have a handy talkie, make sure it's charged.
- *Mobile Rig Manual:* make sure you have a copy in your car.
- *Auto-patch Operation:* Make sure you know the code and how to use the DRC's auto-patch.

In addition to this you may want to have the following in your vehicle:

- Repeater frequency directory
- Jumper cables (know how to use them)
- Tow rope
- Spare tire (check tire pressure and that all tools are present)
- Bottled water
- Food (Power Bars, snacks, perishable foods)
- Extra medication (if needed)
- Battery operated radio
- Flashlight
- Gloves, hat and jacket
- Blanket/sleeping bag
- First aid kit
- Small shovel
- Tool kit
- Gallon of windshield washer fluid

There are many items you can include in this kit, but you can definitely personalize them or you can buy bundled kits. I just thought I would remind everyone to get ready for winter and to expect the unexpected.

## REMEMBER WHEN?

By Bill – W6OAV

The purpose of this article is to let the newer hams know what ham radio was like in the late 50s and early 60s and to bring back memories to the older hams like me.

FM repeaters started to appear around 1962. However, they did not really "take off" until the very early 70s. The main reasons for the delay was because of the issues involved with getting FCC approval, building and then operating repeaters.

In the 60s repeaters and repeater users' radios were difficult to build. Most had to be "homebrewed" using a collection of parts or rarely available expensive converted commercial transmitters



and receivers. In the very early 70s relatively inexpensive commercial surplus FM equipment became available due to the FCC changing the commercial specifications. Hams began to modify equipment for ham service. Examples are the venerable Motorola HT200 and HT220 handhelds and the Motorola Motrac mobiles. The photo above shows the HT200 and below is the Motrac used for both home and mobile stations.



Then, in the 60s and early 70s, there was the amount of paperwork required to be submitted to the FCC in order to obtain a repeater license. The paperwork had to contain such things as height of antenna, effective radiated power (ERP), output power etc.

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(Continued from page 5)

It often took months to receive an FCC response. Often a small error would cause the FCC to reject the application. Then, the process would have to start all over again.

Once the repeater was on the air, a control operator had to be present to monitor and log all activity on the repeater. If the control operator had to leave, and another control operator was not available, the control operator had to shut down the repeater. As logging all activity was a tough job, many repeater operators resorted to installing a squelch controlled recording system. This took the load off the control operator logging requirements but resulted in stacks of tapes having to be stored at the control operator's home. Control operators also had to keep logs of any maintenance performed on the repeater.

Most repeaters were controlled by transmitting Touchtones (TT). Since speaker mikes were not available then, the control operators had to build them. Most operators built TT transmitters by removing a TT pad from an old telephone and mounting it in a box with an amp and speaker. They would then hold the TT transmitter next to their vhf/uhf transmitter mike to control the repeater.



My TT transmitter is shown in the photo below.

In 1972, the repeater rules were simplified. The FCC began to assign repeater calls beginning with "WR" For example, the repeater I was associated with in San Jose California became WR6ABD. Control operators were no longer required to keep activity and maintenance logs. Also, repeater sub-band frequencies were established and a maximum of two repeaters could be linked but cross band linking was not permitted.

In 1974 the FCC eliminated the requirement that repeater data be submitted with the repeater application. Instead it was to be entered into the repeater log.

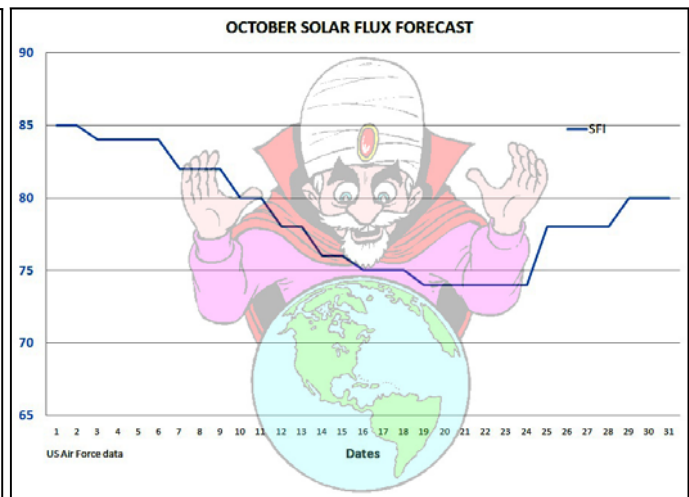
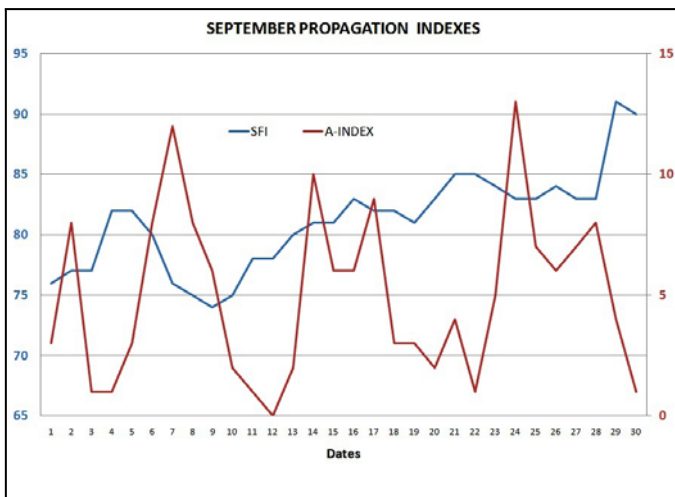
In 1975 the FCC allowed the linking of repeaters. However, the licensee(s) had to submit a network diagram to the FCC for approval before linking them. Also, automatic control was authorized thus removing the requirement for a control operator having to be present to monitor the repeater.

Today, anyone can activate a repeater using their call sign. No paperwork has to be submitted to the FCC for approval.

**HOW TO USE THE CHART**

Note two things on the *Roundtable* chart: the trend of the SFI and A indexes for the month and the largest peak, or peaks, value(s). The index trends show the progress of the solar cycle during the past month, in other words, is it getting better with time? The SFI peak(s) allow the rough forecasting of the reoccurrence of SFI peak(s) for the next month. To "forecast"

note when the SFI peak(s) occurred and project the peak(s) out to about 28 days. Due to the sun's 28 day rotation, the SFI peak(s) will often reoccur in about 28 days. The reason is because the sun spots causing the SFI peak(s) move with the sun's rotation and face the earth every 28 days. This 28 day repetition will become more pronounced as the solar cycle improves.



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# GENERAL CLASS LICENSE TRAINING

By Jim – K0TOR

A General class license training class started on September 24<sup>th</sup>. It will run for 13 weeks with VE testing on the 14<sup>th</sup> week. Class is being held at St Joseph Episcopal Church, 11202 W. Jewell (1 1/2 blocks west of intersection of Kipling and Jewell). Class meets from 7:00 to 9:00 PM on Fridays evenings.

Theory, regulations and applications of Ham radio will be covered. We do not cover just the questions and answers in the General question pool. Practical, operational and technical information and references will be provided. Over 90% of those completing this class have successfully passed the General Class VE exam.



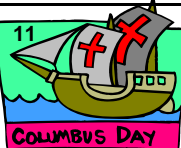




The ARRL General Class License Manual 6<sup>th</sup> edition will be used as the study guide. This manual is available through HRO or ARRL for \$25.00. There is no other cost for this course. We will meet in Crown Hall (center room on the ground floor with entry on the west side of the church).

Even though this announcement will be received after the first class session, you should not have any problem starting late. If you have questions or need further information, please call Jim Beall 303-798-2351 or email at [k0tor@arri.net](mailto:k0tor@arri.net).

Please join us. Obtaining your General Class license will be perfect timing for sunspot cycle 24 and excellent DX propagation. Now is a good time to take advantage of the many exciting and enjoyable applications provided through a General Class license. Hope to see you in class!



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OCTOBER 2009							<i>DRC Net Sunday 8:30pm Local</i>
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
					1  Last Quarter	2 ARRL Int'l EME Competition Round 1 Begins 0000 UTC	
3 ARRL Int'l EME Competition Round 1 Ends 2359 UTC	4	5	6 Learning Net 7pm	7  New Moon	8	9	
10	11  COLUMBUS DAY	12	13 Learning Net 7pm	14  First Quarter	15	16	
17	18	19	20 DRC Meeting Elmer 6:30pm General 7:30pm	21	22	23 ARRL Int'l EME Competition Round 2 Begins 0000 UTC  Full Moon	
24/31 EME Rnd 2 Ends 	25	26	27 Learning Net 7pm	28	29	30  Last Quarter	

## DRC BOARD OF DIRECTORS

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## 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.

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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@comcast.net. Submission deadline is the 25th of the October. **Editor**