



ROUNDTABLE

August 2011

The Denver Radio Club Newsletter

Since 1917

PRESIDENT'S MESSAGE

By Robert White – K0RCW

Where has the summer gone? It won't be long until the leaves start turning, but first the "dog days" of summer lie ahead. This phrase actually refers to the "Dog Star" Sirius prominently at its zenith in the summer and thus has nothing to do with canines. Let us hope our weather dries up enough so we can experience at least a few weeks of the famous Colorado "dry heat".

The tallied Field Day numbers have been submitted to the ARRL. The results should be available online around the beginning of November, and then in print form in the December QST. All in all it looks like we did a fine job. We had lots of QSOs on SSB, CW, and even digital modes such as BPSK31. For the first time in a long time we even garnered some points on 6 meters. It's not a contest – we score points in a variety of ways. I look at a higher score representing a club that's pretty balanced and engaged and do a good job of serving our served agencies such as the Salvation Army.

KB0A – Bryan and I attended the recent PPRAA Megafest at the Lewis Palmer High School in Monument. This event is alive and doing very well. It seemed to us that ham events out here in Colorado seem to be prospering. Maybe it's something in the mountain air, but the excitement is contagious.

Part of our motivation was also to hand out some flyers for our very own Hamfest coming Sunday, August 21st at the Jefferson County Fairgrounds.

I know that Bryan is having even better success selling tables this year than last. If any tables are left by the time you read this, you're lucky. This date also happens to be my birthday (thank you for scheduling it that way, Bryan) so I expect all of you to show up and at least say hi to me on my special day. Let's just say it's still south of 50 (but north of 45!). As my Dad is fond of saying, it's still the right side of the dirt!

I wanted to thank KB0A-Bryan, KA2YZT – Paul, and N1ETV – Lance for their work on the voter system at Station 4. They installed the relay to allow the Mastr II PL line to operate the voter controller COR circuit. They also installed a Motorola mobile radio, courtesy of Paul, as the voter receiver for the voting site at Lance's house. Working with Lance the team changed the frequency on the cross-band repeater at his house to match the new receiver as Station 4. They did some audio level checks and it appears to be working and sounding good. So, give it a try around town. Similar to operating linked repeaters wait a second or two to start talking after keying up.

Bryan also did some work on the TNC for the packet gateway. He replaced the memory battery in the KAM-XL TNC, which forced a hard reset, then reloaded the standard configuration that we use. Hopefully all is well with this unit now.

Until next month, 73 and great DX!

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JULY MEETING - WHAT'D I MISS?

By Bill – W6OAV

There were 49 attendees at the meeting. After introductions the meeting was turned over to our guest speakers, Dan Meyer, N0PUF, and Kris Kringle, KB0YRZ. They gave a very interesting Power Point presentation covering Fox Hunting. At the end of the presentation they showed various Fox Hunting antennas and told stories of various situations that had occurred during Fox Hunting events. Dan and Kris ended the presentation with Kris hiding a Fox Hunt transmitter in a radiator cabinet in the meeting room and with Dan finding it, in spite of all the RF reflections within the room.



Some of the other items covered were:

- Active verses passive attenuation.
- Doppler arrays for mobiles – Pros and cons.
- Transmitter controllers.
- Tape measure antennas which can be built for around \$5 each.
- Fox Hunt procedures and creative hiding.
- Techniques of DF'ing, especially with respect to reflections, refractions, etc.
- Sources for good Fox Hunting information:
<http://www.homingin.com>
<http://www.arrowantennas.com>
<http://www.eoss.org>

Colorado Reflector:
 RDF_Colorado@yahoo.com

The local area Fox Hunting group meets the second Sunday of the month. They welcome you to either participate or to just ride along with them to see what it's all about. For more information, contact N0PUF at n0puf@earthlink.net.

Please Note: The "Learning Net" starts at 7:30pm Wednesdays.

TECHNICAL COMMITTEE REPORT

By Bill – W6OAV

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

Voter System

Goal: Design, build and test a 147.33 MHz voter system consisting of a central voter site and one remote site (Phase 1):

KB0A has built a CTCSS reed relay circuit which will be wired between the Motorola radio and the voter controller. The CTCSS voltage from the radio is too low to drive the voter controller. The relay will apply 12 volts to the controller when operated by the radio's lower CTCSS voltage.

KB0A and WA2YZT will wire in the relay and adjust the radios ASAP. The remote site at N1ETV's location is operational.

Also, KB0A will monitor the higher control frequencies to determine which frequencies are available. Originally the system was planned to use one of the lower control frequencies. However, it was discovered that the Motorola radio will not tune to the lower frequencies. Different radios will have to be used when the system is expanded to allow use of the lower frequencies since more lower frequencies are available.

DRC/SATURN station

Goal: Complete station installation:

KB0ZBB, N0QHF, and W6OAV will develop a procedure for installing and removing the NVIS antenna. Once the procedure is completed, volunteers will be asked to test the procedure to insure it is clear and complete. At the same time, the volunteers will be asked to activate and operate the NVIS station to insure those instructions are clear.

ST Anthony Repeater

Goal: Repair the poor transmit and receive performance:

Tests have shown that the repeater signal is weaker than it should be and that the repeater does not "hear" well. A troubleshooting work party will be scheduled ASAP.

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TS-940 Failure

Goal: Determine if re-soldering and cleaning connectors will fix radio:

K0TOR has been working on the TS-940. He has found many cold solder joints. This project has been very painful as the circuit boards are hard to access and the cold solder joints have the appearance of good solder joints. Hence, they are hard to quickly identify.

10 Meter Repeater

Goal: Determine the future of the 10 meter repeater project.

As is usual with 10 meter repeaters, the DRC repeater was a split site system. The repeater was taken off the air when the DRC lost access to both sites. Volunteers were never found to re-enable the system at new sites

The Tech Committee decided to abandon the project and to remove mention of the 10 meter repeater in the *Roundtable*. Should the DRC decide in the future to put up a 10 meter system, it will be a remote base interfaced to one of the VHF or UHF repeaters. Remote bases work much better than repeaters.

Directions to The Denver Radio Club 's Monthly Meeting

From I-70 Westbound take exit 271B then continue West on 48th Ave to Tennyson St., turn North to 50th then go West 0.1 miles to the El Jebel Shrine Center.

From I-70 Eastbound take exit 270 continue East on 48th go North on Sheridan Blvd then turn East on 52nd Ave to Tennyson Ave, go South to 50th Ave then West 0.1 miles to the El Jebel Shrine Center.

DRCFest is here!
Are you ready for
the big one Colorado?



20 METERS HF ON A SMALL COLORADO SAILBOAT

By Michael Mason – KU5X

I was motivated by the recent field day experimenting as well as an upcoming 4th of July sailing trip to Lake Granby in Colorado to experiment with installing a temporary 20 meter HF station on my small cruising sailboat. I had had success in installing and operating a marine HF SSB and autotuner during the summer of 2008 when I crewed on the 96-foot, "tall ship" Nina. On the Nina I was able to use a very long wire sloper as her antenna. Due to the small size of my boat, an 18-foot Sovereign sailboat, the longest sloper length I could have was 23 feet. I also wanted to avoid the added complexity of having to use an antenna tuner.

I made an inverted V for 20 meter with each leg cut to about 16 ½ feet, using 12 gauge stranded copper wire and an ancient REX BASSETT brand 1:1 balun. The inverted V seemed to work just fine when I suspended it from a large cottonwood tree in Cook Park in Denver.

In order to avoid contact with the metal guy wires for my sailboat mast (shrouds and stays), when I installed the inverted V on my sailboat, I extended the balun above the sailboat mast about a foot using a ¾ inch PVC pipe raised up the sailboat mast.



Prior to taking my boat to Granby, I staged it in my driveway, erected the mast, and tried out the inverted V with one leg going from above the top of the mast to the bow, and the other leg to the stern. This antenna configuration resulted in SWR well over 3 in the frequencies of the 20 meter band. The angle between the legs of the inverted V was only about 65 degrees, and the legs were quite close to some of the metal standing rigging of the boat. (See Photo on Page 4)

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I was able to solve the SWR problem by extending the legs from the bow and the stern using a 14-foot telescoping boat hook and a 14-foot whisker pole. Both of these sailing items I already had on the boat. Using these extensions, I got an angle between the legs of about 145 degrees, and the SWR dropped down into the range of 1 - 1.3 in the 20 meter band frequencies. The SWR and impedances that I got once the boat was on the water at Granby were as follows:

14.000MHz	1.1SWR	42 ohms
14.126MHz	1.1SWR	45 ohms
13.350MHz	1.4SWR	50 ohms

The poles that extended the legs of the inverted V to closer to a horizontal position could not be used while sailing the boat, but were fine if the boat was at anchor or pulled up to shore under calm conditions.



I had a great 4-day excursion to Granby, living on the boat, sailing during the early afternoons, and playing with the radio (Yaesu FT 100D, 100 watts) and antenna in the mornings and evenings.

My first HF SSB contact was with Eric at the special event station VY1T in White Horse, Yukon, Canada. Later on Friday, I made contact with Roberto YV5IAL in Pampatar, Isla Margarita, Venezuela. Several other state side contacts were made to Georgia, Tennessee and Florida. Saturday evening I had my most distant contact with Vlad RA4LW in Dimitrovgrad, Russian Federation, a great circle distance of about 5700 miles.

The experimenting with the inverted V seems a success. It is great fun to tell other Hams that I am operating "maritime mobile", maybe that should be "limnic mobile", from an 18-foot sailboat in the mountains of Colorado, at 8300 feet of elevation.

STATION 4 VOTER SYSTEM UPDATE

By Bryan – KBOA

On Sunday morning Paul, WA2YZT, and I went over to West Metro Station 4, up Alameda Pkwy across from Green Mountain High School, to continue our work on the voting system. A few months back Paul and I tried to get it going but ran into a few road blocks.

This morning we were able to use a small relay so that the original 147.33 radio would be able to activate the voter controller. We were also able to install a Motorola mobile radio to use as the first voting link receiver. Then, working with Lance, N1ETV, we got the remote cross-band voter site radio at his home set to the correct link frequency and tested it out. With audio levels looking good we are leaving the system up for testing.

This means that when a ham transmits on the 147.33 input frequency, 147.93 with the 100 Hz tone enabled it will be possible for both the station 4 radio and the one in Aurora, at Lance's house to receive the signal. If they are received Lance's, remote voter site in Aurora the signal will be relayed via the link radios to Station 4 in Lakewood. When received the voter controller will evaluate all the received signals and the loudest one with the least noise will be sent on to the 147.33 transmitter at Station 4.

Please try out the system, especially if you live, work or travel East into Aurora. You need to do nothing special to activate the system. It is always operational. You should wait a second or so after pressing PTT to give the system time to select the appropriate voter signal and activate the transmitter.

DRC HAMFEST COMING AUGUST 21ST

Bryan – KB0A

Well it's that time of year again. The annual Denver Radio Club Hamfest will be later this month on Sunday, August 21st. We will again be at the Jefferson County Fairgrounds in Golden, just West of Indiana Street on the South side of US-6.

General admission remains at \$5, however our table prices have gone up a bit, \$12 prior to August 14th and \$16 at the door the day of the show. Doors open for buyers at 8:30 AM, vendors begin setup at 7 AM. Once again we will have VE Testing, technical seminars and door prizes. We also will have coffee, donuts, soft drinks and barbeque sandwiches for sale in the kitchen.

I am looking for some help during the event. The club setup will now be on Sunday morning at 6:30 AM, there will not be any setup on Saturday evening, as we have done in the past. Please let me know if you can help out for part or the entire event.

More details are on the club website
<http://www.w0tx.org/hamfest.htm>

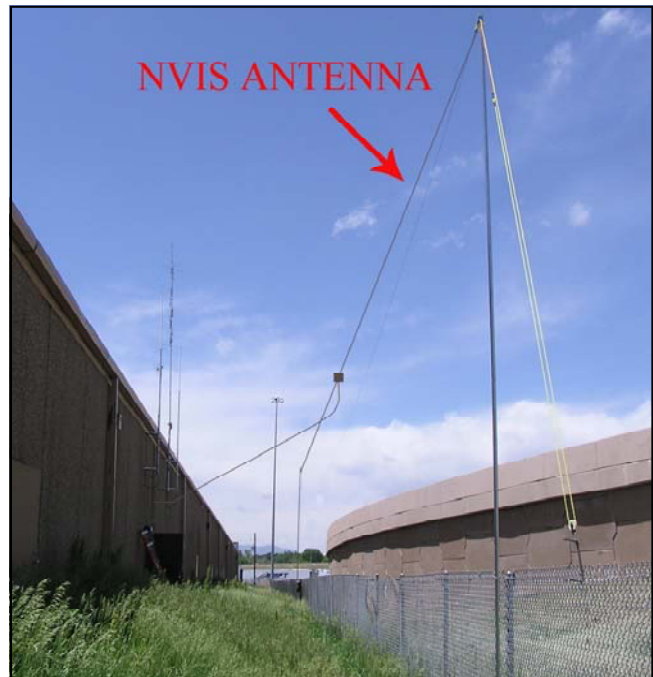
DRC/SATERN HAM STATION NOW HAS NVIS

By Bill – W6OAV

On June 13th, N1ETV, KB0BZZ, N4ATA, N0QHF, KF0RW AND W6OAV installed an NVIS antenna system at the 70th and Washington Salvation Army location. The antenna is a 120' dipole approximately 20 feet above ground and fed with open wire. The picture shows the NVIS dipole on the right and the R7 and two dual band VHF/UHF antennas on the left.

After the installation, tests were performed on 75 and 40 meters with W0GV (approximately 6 miles from the station) and AC0VC (approximately 40 miles from the station). The antenna tuned up nicely on both bands. W0GV heard us very well via ground wave and AC0VC heard us very well via NVIS propagation.

The antenna system was designed by N1ETV to be easily erected when needed. Until needed, the antenna will be stored in the building. When needed, the support poles will be inserted into pivotal supports at ground level and then raised vertically and fastened with U clamps at the top of the fence posts. The antenna wire will then be pulled taut via N1ETV's unique pulley tensioning system.



The following emails were received from the TSA in response for the work done by DRC members:

Subject: Installation of the NVIS Installation

Awesome Job yesterday! We had a lot going on, thanks for getting that installed. The fire in Teller County last week showed how we need to bolster communication capabilities.

Bart Banks
 Emergency Disaster Services

Subject: Installation of the NVIS Installation

I want to add my thanks as well. We never know when or under what circumstance this crucial communication link will enable us to provide services in time of need!

Your efforts are truly appreciated!

Respectfully,

Sherry Manson
 Divisional Service Extension and
 Emergency Disaster Services Director
 The Salvation Army Intermountain Division

Sunday August 21st - Jefferson County Fairgrounds
DENVER HAMFEST 2011
 Denver Radio Club, WØTX  Since 1917
 ♦DEALERS ♦FLEA MARKET ♦PRIZES
 ♦FORUMS ♦FCC EXAMS ♦FOOD ♦INDOORS

UP COMING EVENTS

HAMfests

August 5-7 – 2011 Rocky Mountain Div. Convention
 Taos, New Mexico

August 21 – DRC HAMfest, Jefferson County Fair
 Grounds — More information Page 7

September 25 – Boulder Amateur Radio Club,
 BARCfest, Boulder County Fair Grounds,
 Longmont, CO

November 5 – 285TechConnect Radio Club, Fall
 TechFest — More information in future Newsletters



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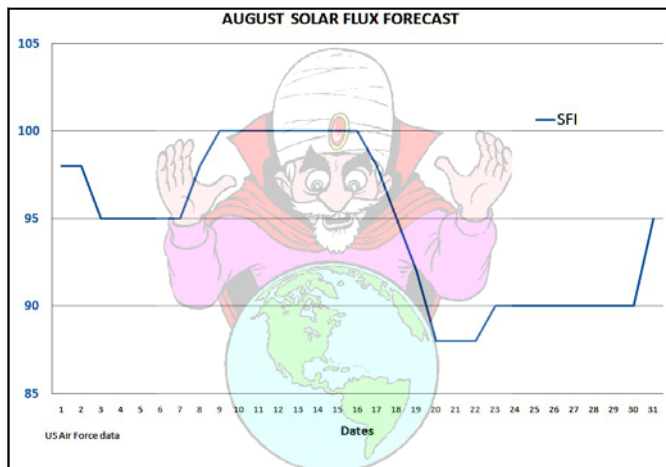
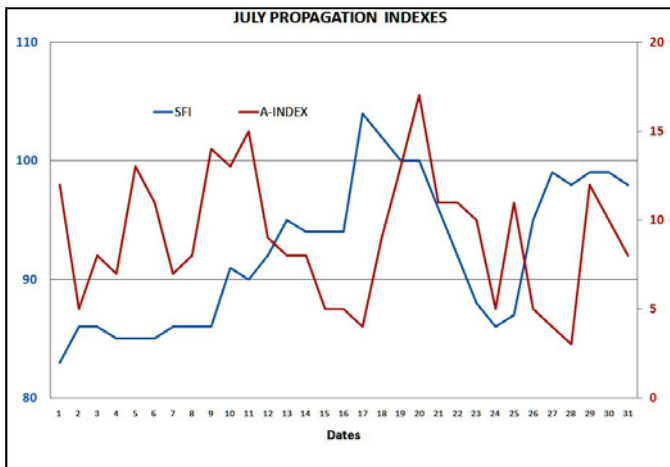
PAST & FUTURE PROPAGATION CONDITIONS

By Bill – W6OAV

This article provides two charts: the propagation conditions for last month and a forecast of next month’s propagation conditions.

USING THE PROPAGATION INDEX CHART

Note two things on the chart: the trend of the SFI and A indexes and the date of largest SFI peak. The trend of the SFI shows the progress of the solar cycle during the past month. The SFI peak allows the rough forecasting of the reoccurrence of SFI peak in the next month. In order to “forecast” the next SFI peak, note the date when the SFI peak occurred and project out to about 28 days. Due to the sun’s 28 day rotation, the SFI peak will often reoccur in about 28 days. The reason is because the sun spots causing the SFI peak 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. Refer to the September 2010 *Roundtable* for more complete information on the “SFI” and “A” indexes.



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The BIG ONE is HERE!



The Denver Radio Club Hamfest Jefferson County Fair Grounds





When: Sunday August 21

8:30am to 1pm

*For more information!
contact Bryan-KBOA
drcfest@w0tx.org
Or visit www.w0tx.org
Volunteers Needed*

Food Fun

*Lots of vendors with everything you need
Computers ~ Radios ~ Antennas
Parts + pieces
You name it and you'll see it here!!!*

AUGUST 2011							<i>DRC Net Sunday 8:30pm Local</i>
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
	1	2	3 <i>Learning Net</i> 7:30pm	4	5	6 <i>ARRL UHF Contest</i> Begins 1800U	 First Quarter
7 <i>ARRL UHF Contest</i> Ends 1800U	8	9	10 <i>Learning Net</i> 7:30pm	11	12	13	 Full Moon
14	15	16	17 <i>DRC Meeting</i> Elmer 6:30pm General 7:30pm	18	19	20 <i>10GHz & Up Contest</i> 6am to Midnight Sunday, August 22	
21 <i>The Big One!</i> <i>DRC Hamfest</i> 8:30am - 2pm  Last Quarter	22 <i>Rookie Roundup</i> <i>August 21</i> 1800U to 2359U	23	24 <i>Learning Net</i> 7:30pm	25	26	27	
28	29	30					 New Moon

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Education		TBD		
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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	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@arrl.net. Submission deadline is the 25th of the Month. **Editor**