ROUNDTABLE

The Denver Radio Club Newsletter

May 2014

Since 1917

PRESIDENT'S MESSAGE
By Gerry Villhauer – W0GV

Hello DRC Members,

I hope this issue of the Round Table finds you all well and enjoying spring time activities in Colorado.

Welcome to our new members! We had several new members join at our April meeting. THANK YOU! Your name and call signs are listed in this publication. We appreciate you choosing the DRC as YOUR radio club and encourage you to become active with club activities.

I am going to devote most of my message this month to the details of our upcoming May program. First, thank you to Robert White, K0RCW, for a most informative program on the Raspberry Pi computer at our April meeting. Robert's presentation was very informative and very well attended. By my count we had about 55 members and guest in attendance. Thanks Robert, GREAT JOB!

Our May program will be provided by Paul, WA2YZT, at the transmitter site of Paul's employer, KCNC Channel 4 on Lookout Mountain. First a little about Paul and then some facts about the transmitter site. The Lake Cedar Group who built the HD site in 2008 is a consortium of 4 Denver TV stations. KCNC channel 4, KMGH channel 7, KUSA channel 9 and KTVD channel 20. Each station maintains their own equipment. Paul is the Transmitter Maintenance Supervisor for KCNC channel 4, where he has worked for 17 years. The tour will take place on both floors of the building and outside to look at the tower. There is a 220 foot long tunnel for the transmission lines to get to the tower and we can go down the tunnel to the base of the tower, but the tunnel is on a 17 degree incline going down.

There is also a radio room at the base of the tower with 2-way radios for the TV stations as well as the D-Star repeaters and other RM Ham TRBO radios to look at. Please use your own judgment if you think this may be too much for you. On the main floor you will see the HD television transmitters and the system used to combine the transmitters for transmission on a common antenna. I guarantee you will be impressed with the massive size of the equipment and especially the transmission lines.

The following is very important, please pay attention. The address is 21119 Cedar Lake Road, Golden, CO. Please GPS it or pull up a good map. Arrive between 6:30 and 6:45 p.m. on Wednesday May 21st. Parking is very limited. Please ride share if at all possible. You can park on Cedar Lake Road, which is a dead end road with very little traffic and car pool in from there to the site address above. We will monitor our 147.33 repeater at both West and East sites with 100.0 Hz and 131.8 Hz tones respectively.

Refreshments and snacks will be provided. Hope to see you there!

73,
Gerry, W0GV

> *Don't forget to join in Wednesday nights at 7:30pm for the DRC Learning Net !*
> *45.49/448.625 machines*

INSIDE THE ROUND TABLE

APRIL MEETING - WHAT'D I MISS

By Bryan – KB0A

There were 55 members in attendance. W0GV began the meeting with announcements and introductions.

The meeting was then turned over to our guest speakers, Robert White, K0RCW who talked about the use of the Raspberry Pi microprocessor board for hams. Robert went through an introduction on the basic details of the Raspberry Pi (RPI). The RPI was created to support students to help them develop applications and understand the inner workings of computers. The RPI features an ARM processor and 256MB of onboard memory. It also has an HDMI output for a monitor and 2 USB, 1 Ethernet and a headphone jack. The RPI runs a few variants of LINUX. Robert first started looking at the RPI in order to use it as an interface to the club's Echolink node. There is software developed by SØSVX, called SVX-Link, which provide the Echolink configuration. All that is needed is a USB sound card, keyboard, mouse 5v power and a SD card. Robert demonstrated a closed loop Echolink system in the room using two HTs. One was connected to the RPI system through the sound card, and the other was used to activate the Echolink system by Robert. Whole the system still has some quirks it was a great presentation and demonstration on the RPI and its capabilities for Hams.

MAY MEETING PRESENTATION SPECIAL LOCATION

by Bryan – KB0A

Our May meeting will be presented by Paul Deeth, WA2YZT, who is an engineer for CBS-4 here in Denver. Paul will be hosting the meeting at the new CBS-4 transmitter/Lake Cedar Group antenna site up on Lookout Mountain just West of town. The tower is located at 21119 Cedar Lake Rd. Golden 80401. *There is very limited parking available at the transmitter site so we must car pool as much as possible.*

Two good locations to use as car pool meeting sites are the RTD Park and Ride locations at the I-70 exits for Morrison (Exit 259) and Lookout Mountain (Exit 256).   Paul also operates a very popular repeater system from this location. You can find more information on Paul at his website http://www.wa2yzt.com.   Due to the special circumstances involving the use of this location we will not have an Elmer meeting this month but you need to arrive at the site between 6:30pm and 6:45pm. For our June meeting we will return to our regular meeting site, the El Jebel Shrine in Northwest Denver. Please join us on the weekly Sunday night net and watch the club website, http://www.w0tx.org, for additional meeting details and information.

Who's New In The DRC

The DRC is a very active club in the Denver metro area and we'd like to have all of our members listen for these new calls and personally to make them feel welcome.

Jocelyn McComb	KD0ZVA
Barry Lanky	KA0GKS
Charles Bertuch	W2DOC
Chris Hamilton	KD0ZYF
Chris Wienecke	KD0MEU
Clyde Hoadley	KB0AMJ
David Nolan	KD0ZOC
Frankie Freeman	KC0JAV
Mike Bywater	KD0ZYI
Carol Cook	KB0LPS
Dan Cook	AA0QC

Welcome to our newest members. We have a number of activities throughout the year and we'd like very much for you to participate in serving your community. If you have questions please feel free to ask on any of the repeaters or see the contact information on the last page of this publication. Also please join us once a month at the regular club meeting on the 3rd Wednesday at 7pm. For new hams we have the Elmer session which starts at 6:00pm before the regular meeting.

More information can be found on the Denver Radio Club website at http://www.w0tx.org.

APRIL TECH COMMITTEE REPORT

By Bill – W6OAV

This report provides an overview of items discussed at the April Technical Committee meeting.

TS-940 Repair (K0TOR)

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

Work in progress as time permits.

Voter System Redesign (W0GV)

Goal: Evaluate the test location at K8ZTT's site:
· Review the Radio Mobile coverage plots.
· Have members, when mobile, note coverage compared to plots.
· Evaluate raising the antenna.

WW0LF will prepare the antenna and feed line for installation on the tower. Once completed, a work party will be scheduled.

145.49/448.625 Repeater - New Controller Programming (AC0UA)

Goal: Program and test our 7330 controller to allow the splitting of the repeaters when D13 ARES uses the 145.49 repeater for emergency activities (plus other features).

AC0UA plans to complete programming the controller by the end of the month.

145.49/448.625 Repeater - Controller and Radio Upgrade (WW0LF)

Goal: Replace the S Com 7k with the preprogrammed 7330 controller and replace the Syntors with Kenwoods.

WW0LF has fabricated cables for connecting the 7330 controller to both Kenwood repeaters when they are installed in place of the Syntors (See note below). One of the cables has wiring to supply power to the 7330. The UHF Kenwood is programmed and tested. The VHF Kenwood is currently in use at the 147.33 east site. WW0LF has the program ready to load when the Kenwood is moved to Centennial Cone. Duplexers are already in place so all should be ready to go. WW0LF will test the complete system at his house before taking everything to Centennial Cone to ensure all "bugs have been squashed".

Note: A spare VHF MASTR II and controller will probably be installed in place of the Kenwood at 147.33 East to free it up for installation at Centennial Cone. This will require the installation of a controller.

Existing Voter System Tune Up (W0GV/WA2YZT)

Goal: "Tune up" the existing test voter configuration consisting of the Station 4 central voter site and the N1ETV remote receiver site:
· Items to be completed:
  o Rewire link receiver to voter controller interface. KB0A to obtain configuration from WA2 YZT.
  o Adjust UHF link transmit antenna position - KB0A will use analyzer to check the receive antenna system.
  o Sync the hang times of Station 4 and the remote.
  o Calibrate the local and remote audio levels and responses - KB0A will use IFR to set levels.

A work party is scheduled for 08:30 on May 3rd. W0GV, WA2YZT and KB0A will be at Station 4. N1ETV will be at the remote voter receiver site.

147.33 Auto Patch (WW0LF)

Goal: Re-program the auto patch controller to allow calls to the 720 exchange.

Project completed - WW0LF has reprogrammed the auto patch to allow calls to the 720 exchange.

DRC/TSA Station Move

Goal: Dismantle the station and install in the new TSA location:
· Obtain the address of the new location.
· Inspect the new location and design the new station layout.
· Develop a move plan and move date.
· Obtain volunteers.

Discussion tabled until next month's meeting.

The calls in red are project coordinators.

THE ROUNDTABLE ARCHIVE

Have you been looking for back issues of the RoundTable? Many are available on the DRC web site.

Scan the QR code or go to http://www.w0tx.org/RoundtableAccessPage.htm

COMMUNITY EMERGENCY RESPONSE TEAM

By Gary – KD0SQA

Some of you may have already heard of the emergency preparedness program called "CERT" – Community Emergency Response Team. For those who have not, CERT is a Federal Emergency Management Agency (FEMA) program that had its official origins back in the early 1980s. Literature from FEMA about CERT says this:

> *"The **Community Emergency Response Team (CERT)** Program educates people about disaster preparedness for hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. Using the training learned in the classroom and during exercises, CERT members can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help. CERT members also are encouraged to support emergency response agencies by taking a more active role in emergency preparedness projects in their community."*

The City and County of Denver has a very robust CERT program demonstrated by having trained well over 3,000 citizens over the last several years. The emphasis of the training is really about individual preparedness but participants are encouraged to take the knowledge they gain in the classes back to their homes and families, their neighbors, their workplace and faith institutions, neighborhood associations, civic groups and schools to share the importance of being ready when something really bad happens. The training involves basic skills an individual would need to handle a natural or other disaster which affected them by preparing emergency kits, establishing a family or individual communication plan to assure all family members are accounted for and letting other relatives and friends know so rescuers don't waste time looking for people who are already known to be OK.

The Denver CERT program is like all other CERT programs across the country in terms of content and method of training. But in terms of organization, Denver is using an organization structure that only a few programs in the country are using at the urging of the ARRL: In Denver the CERT program is united with the ARRL's Amateur Radio Emergency Services (ARES) program. The intent is to produce a blended capability that emphasizes the importance of prompt reaction to the emergency at hand with the need to communicate in a relatively foolproof manner the situation, the needs and the progress made handling whatever has occurred to the authorities and others who might help. A number of the people who have completed the CERT training classes in Denver over recent years have gone on to become radio amateurs. Last fall during the regional flood disaster, CERT and ARES team members worked side-by-side at Denver Red Cross Headquarters in service to the Red Cross and their disaster response efforts. While communication was working well in Denver that was not the case in Boulder and Larimer counties and ARES teams from the northern Front Range areas were deeply involved for days coordinating communication between various sites, several emergency operations centers and the State of Colorado to coordinate the response.

The capstone event for every CERT training class is a graduation exercise where trainees come together with ARES radio operators and a large contingent of volunteer role players made up to be "survivors" of a "disaster" that require rescue and the trainees practice their various skills handling the situation. The next such exercise is set for late in July at a location in the Denver area. Amateur radio operators, whether ARES members or not, as well as folks interested in being "survivors" are encouraged to contact the author directly.

A MUST HAVE APP

By Bill – W6OAV

RepeaterBook is a free app which is a must have for hams, especially those who travel. This powerful app displays all types of repeaters in the USA and Canada.

RepeaterBook uses both a network connection and GPS to determine its precise location. However, a network connection is not required. RepeaterBook will work well just using GPS. If GPS is not available, it still works well based on entering a Grid Square. The latter is useful for researching repeaters in other cities.

We'll take a tour of the user friendly programming screens to illustrate the power of the app and the ease of programming it. These screens are from an iPhone. The screens on an Android phone may be a bit different but all the functions are there.
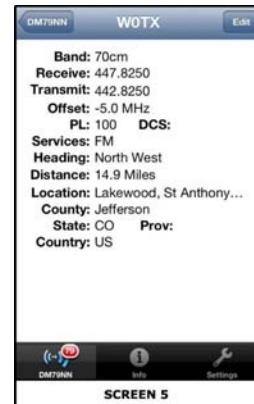

SCREEN 1

Screen 1 allows configuring the types of repeaters that should display on the main screen. In this example, only FM repeaters and Echolink repeaters will be displayed.

SCREEN 2

Screen 2 allows configuring which repeater bands should display. In this example, only repeaters on 2 m and 70cm will be displayed.

SCREEN 3

Screen 3 allows either enabling GPS or allowing a Grid Square to be entered instead. Entering the Grid Square allows the app to display repeaters in other cities. Screen 3 also allows configuring the distance radius of interest and the sorting method for the repeaters to be displayed.

Screen 4 shows the resulting repeater directory screen for Denver. Notice that the local Grid Square is shown as well as the number of repeaters in the defined distance radius, in this case, 79 repeaters.

SCREEN 4

SCREEN 5

Screen 5 shows the repeater specifications when the right arrow is depressed for a particular repeater. In this example, Screen 5 displayed when the right arrow for W0TX was depressed.

The Denver Radio Club
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Special Service Club
Support your hobby
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ARMED FORCES DAY CROSSBAND MILITARY/AMATEUR RADIO COMM TEST – May 10

By Jeremy Carter, ARRL

The Army, Air Force, Navy, Marine Corps, and Coast Guard are co-sponsoring the annual military/amateur radio communications tests in celebration of the 64th Anniversary of Armed Forces Day (AFD). Although the actual Armed Forces Day is celebrated on Saturday, May 17, 2014, the AFD Military/Amateur Crossband Communications Test will be conducted 10 May 2014 to prevent conflict with the Dayton Hamvention (16-18 May 2014), which is the same weekend as the actual Armed Forces Day.

The annual celebration features traditional military to amateur cross band communications SSB voice and Morse Code tests. These tests give Amateur Radio operators and Short Wave Listeners (SWL) an opportunity to demonstrate their individual technical skills, and to receive recognition from the appropriate military radio station for their proven expertise. QSL cards will be provided to those stations making contact with the military stations.

RESONANT WIDEBAND ANTENNAS

All resonant antennas that have good performance over wide bands of frequencies have crosswise dimensions that are relatively large compared to their lengths. A large crosswise dimension has very little effect on the radiation resistance of a halfwave dipole, but increases its capacitance and reduces its inductance. Both those effects lower the resonant Q, which is the reason the bandwidth is wide. Low-Q circuits often are thought of as having high losses, because low Q most commonly results from high inductor resistance, high inductor core loss, and/or high capacitor dielectric loss. However, it is important to note that large crosswise dimension dipole antennas have low Q's, not because of high losses, but because of lower Inductive and capacitive reactances. Their efficiencies are high, even though their bandwidths are wide. *©2005 Martek International All rights reserved.*

Solar Update

CONTINUED QUIET: Solar activity remains low. Only a few sunspots are facing Earth, and none has the kind of complex magnetic field that harbors energy for strong explosions. NOAA forecasters estimate a 10% chance of M-class flares and only a 1% chance of X-flares on April 28th.
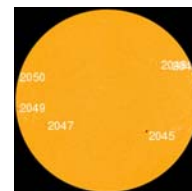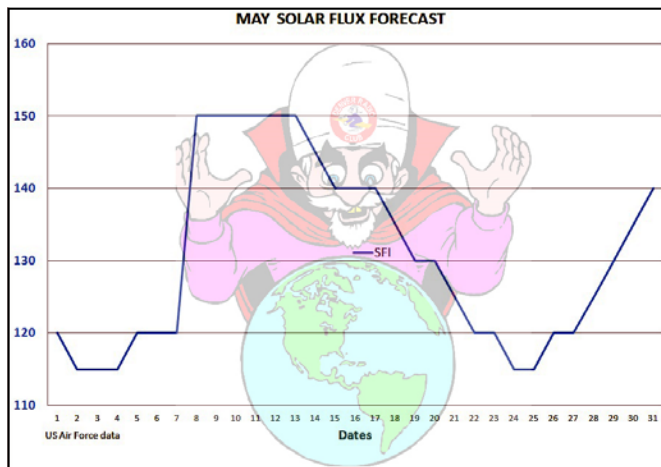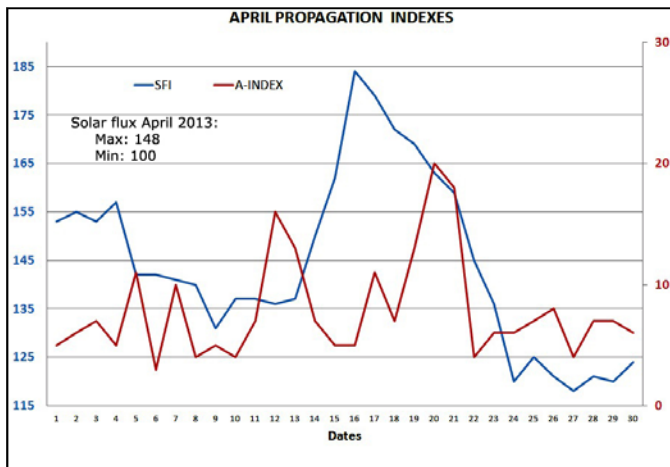
PAST & FUTURE PROPAGATION CONDITIONS

By Bill – W6OAV

The charts below show the Solar Flux and "A" indexes for last month and the forecast for this month's Solar Flux index.

Refer to the September 2010 *Roundtable* for more complete information on interpreting these charts. Issues of the *Roundtable* are available at http://www.w0tx.org/RoundtableAccessPage.htm.

UP COMING EVENTS

HAMFESTS & CONVENTIONS

The following are the HAMfests & Conventions which have been registered with the ARRL so far. More information can be found on **www.arrl.org/hamfests***.*

May 10 – **Annual Armed Forces Day Crossband Military/Amateur Radio Comm Test**

June 7 – **MRC Tailgate Party**
Lions Club Pavilion, Delta, CO
http://montrosehamradio.org/

July 26 – **PPRAA Megafest**
Lewis-Palmer High School
http://ppraa.org/megafest

August 17 – **DRC Hamfest**
Jefferson County Fairgrounds
http://www.w0tx.org

Sept. 28 – **PHC Pueblo HamFest**
First United Methodist South Building
Email: sworley.sw@gmail.com

HELP WANTED

MAY 2014

DRC Net Sunday's at 8:30pm Local on 145.490 & 448.625 (No PL)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 *May Day*	2	3
4	5	6	7 *Learning Net* 7:30pm First Quarter	8	9	10 *Armed Forces Day Comm. Test*
11 Happy Mother's Day	12	13	14 *Learning Net* 7:30pm Full Moon	15	16	17 Armed Forces Day
18	19	20	21 *DRC Meeting* See Page 2 for more information Last Quarter	22	23	24
25	26 MEMORIAL DAY	27	28 *Learning Net* 7:30pm New Moon	29	30	31

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DRC REPEATERS

BAND	Freq / Shift / PL Tone	Additional Information
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	**Local Area, Members Auto-Patch Does Not TX a PL!**
2m	147.330MHz (+) 131.8Hz PL	***In test mode. Please send signal coverage reports to Tech Committee.***
1.25m	224.380MHz (-) 100Hz PL	
70cm	447.825MHz (-) DCS~073; NB 12.5; +/- 2.5	**Saint Anthony's Note: This is a narrow band repeater requiring DCS.**
70cm	448.625MHz (-) 100Hz PL	**Linked to the 2m - 145.490MHz machine.**
70cm	449.350MHz (-) 100Hz PL	**Wide area coverage with Echolink Node # 4140.**
70cm	446.7875MHz (-)	**MotoTRBO Repeater	Slot 1 – DMR-MARC WW, Slot 2 – Local**

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 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**