



July 2014

ROUNDTABLE

The Denver Radio Club Newsletter

Since 1917

PRESIDENT'S MESSAGE

By Gerry Villhauer – W0GV

Hello all,

As I have previously announced, we are losing our meeting place at the El Jebel Shrine due to the building being sold. It has been a great location and many thanks to El Jebel Shrine, it has served our needs well for the last couple of years. But as they say, nothing is forever and we are forced to move on and search out a suitable new location, which we have been doing for the better part of a year. I believe we have hit the jackpot on a new location. Starting on July 16th we will be meeting at the Jefferson County Administration & Courts Building. Many Jefferson County residents know it as "The Taj Mahal". It is a fantastic location with plenty of close parking and easy access, handicap friendly and the Light Rail "W" line ends about 50 yards from the main entrance. We will be using Hearing Room #2, also known as "The Small Hearing Room" which seats over 70 people. There is 24 hour security provided by the Jeffco Sheriff and the room has a full audio/visual package. One rule that we will abide by 100%, NO food or drink in the room. It is okay in the hallway and lobby. The club owes a BIG THANKS to our members Jeff Irvin, KB0CHT and Dave Baysinger, WG0N, for doing the per missions and coordination for use of this facility. Great Job Guys! See more details in this issue.

Welcome to our new members! 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.

Thanks to Barry Wilson, KA0BBQ, for last month's program on Doppler Weather Radar. Barry did a fine job of showing the different modes used with Doppler radar including a live demonstration on the big screen. The July program will be presented by Bryan Steinberg, KB0A. Bryan will be talking about the pan adapter he is building for his KX3 transceiver and showing a live demo of the MFJ 225 antenna analyzer with the display on his computer and tablet. You say, what is a "Pan Adapter"? Come find out, you will find it very interesting.

Any member wanting to get into CW Morse Code operation or improve your Morse Code skills, I have a code course available from the FISTS CW Club on CD. If you have an interest please contact me.

73,
Gerry, W0GV
President

INSIDE THE ROUNDTABLE

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W0TX

<http://www.w0tx.org>

JUNE MEETING - WHAT'D I MISS

By Bill – W6OAV

There were 48 attendees this month. Gerry, W0GV, began the meeting with attendee introductions. He then stated that he is looking for a volunteer to coordinate a weekly VHF Saturn net. Anyone interested can contact him. Lastly, Gerry announced a new meeting location (See President's Message and Page 8 in this issue).

Our Field Day chairman Jason, AC0UA, then provided an overview of the FD site and the activities planned.



The meeting was turned over to the guest speaker, Barry, KA0BBQ. His presentation was titled "What is Doppler Radar?" Barry's PowerPoint covered the following subjects:

- Definition of Doppler radar.
- How Doppler radar works.
- Agencies that use Doppler radar.
- Software packages providing weather radar monitoring.
- The pros and cons of the various software packages.
- How to interpret the software outputs.

Barry ended his presentation with very interesting real time radar maps with detailed analysis of the displays. The maps were very active as there were severe thunder and hail storms in the area!

JULY MEETING PRESENTATION

At our July meeting Bryan, KB0A, will discuss two items. First, Bryan is working on building a panadapter for his KX3 (similar to the one on the cover of the May 2014 QST) using a BeagleBone Black processor board with an attached color touch-screen display. The BeagleBone Black, or BBB, is a single board computer similar to the Raspberry Pi however; it has a faster processor and more I/O capability. Bryan will discuss the differences between the Raspberry Pi, Arduino and BBB boards.

Second, Bryan will give a demo of the MFJ-225 graphical antenna analyzer. This unit, first introduced last year, provides a monochrome display for looking at an antenna's "dip" for tuning.

The MFJ-225 also provides a USB output which allows the unit to interface with a PC or Tablet/Smartphone to provide more sophisticated functions such as true tuning plots and on-demand Smith Charts. It promises to be interesting, don't miss it.

New Meeting Location!

For more information on the new meeting location and how to get there go to Page 8 in this publication.

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.

Edward Wellman	KG7AOZ
Kotomi Wellman	KG7LNL
Noah Wellman	KG7LNK
Robert Polson, II	KK4QYE
Aaron Repp	KE0AVI
Alexis Quintana	KE0AVO
Cameron Hallock	KC0WOS

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>.





JUNE TECH COMMITTEE REPORT

By Bill – W6OAV

This report provides an overview of items discussed at the June meeting.

TS-940 Repair (K0TOR)

Goal: Repair non working TS-940

K0TOR has replaced several defective parts. He is now repairing cold solder joints.

Voter System Redesign - South (W0GV)

Goal: Install antenna on tower at K8ZTT's site:

Required hardware is stored at Station 4. WWOLF has tested the antenna.

Work party to be scheduled ASAP to install antenna on tower.

Voter System Performance Testing - East (W0GV)

Goal: Evaluate the test location at N1ETV's site:

Preliminary tests indicate the Radio Mobile coverage plots are fairly accurate. The remote site provides coverage into the areas not covered by Station 4.

Voter System Expansion - East (W0GV)

Goal: Locate additional sites

W0GV is investigating possible sites in Wheat Ridge and Centennial.

145.49/448.625 Repeater - New Controller Programming (AC0UA)

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

AC0UA has about completed the programming. If necessary, the controller could be installed at the site and remaining programming done remotely.

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

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

The plan is to replace the Kenwood at voter south with a Master2 and its controller. The Kenwood would be installed at Centennial Cone when the 7330 controller is installed.

DRC/TSA Station Move (W0GV)

Goal: Dismantle the current station and install in the new TSA location:

- Inspect the new location and design the new station layout.
- Develop a move plan and move date.
- Obtain volunteers.

W0GV has met TSA at the new site. A room is available for the club station.

A work party will be scheduled ASAP to remove the present TSA station by August.

DRC IRLP/Allstar (Group discussion)

Goal: Determine if IRLP/Allstar will add enhancements to the DRC/Echolink system.

After a group discussion, several tech committee members will research both systems.

FEED-LINE MISMATCH MECHANICAL ANALOGY

If a mechanical wave was induced into one end of an infinite length rope, the wave would propagate down the rope to infinity and would never return. However, imagine what would happen if the far-end of a finite-length rope, for example a 15-meter rope, was attached to a solid object, such as a large tree trunk, and a mechanical wave was induced into the other end by whipping it up and down sinusoidally. Mechanical waves would propagate down the rope just as in the infinite-length case until they reached the tree trunk. If the tree trunk had the same mechanical impedance as the rope, it would move up and down with the rope and no energy would be reflected. However, a large tree trunk is much more difficult to move than rope and therefore has a different mechanical-impedance. The impedance mismatch would cause waves propagating down the rope to reflect back toward the sending end, just as electrical waves reflect back from a transmission-line impedance mismatch. ©2005 Martek International All rights reserved.

ARRL DIVISION NEWS

JUNE 2014

NEW ASSISTANT DIRECTOR APPOINTED

Paul Veal N0AH of Littleton, Colorado has been appointed as an Assistant Director of the Rocky Mountain Division. An Assistant Director (AD) is an appointee who provides assistance to the Division's selected Director and Vice-Director through research on certain topics, member engagement, and other tasks as needed. Paul's appointment will focus on advising and promoting science, technology, education and mathematics (STEM) and other aspects of amateur radio in the classroom around the Rocky Mountain Division.

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He's been active on the air for nearly 20 years, has earned 5-band WAZ (all 200 zones) and 8-band DXCC, enjoys low band DXing and contesting, and is in pursuit of his last three entities for ARRL DXCC Honor Roll.

Paul has a Master's in Education (M.Ed) and is a licensed gifted education specialist (P-12) in Colorado. In 2009 he helped found the Rabbit Ears Radio Club, an amateur radio club at Acres Green Elementary in Douglas County, completed ARRL's Teachers Institute on Wireless Technology in 2010, and helped earn an ARRL ETP school grant to equip Acres Green Elementary in 2011. From 2011-2014 Paul was involved with Cherry Creek School District's Inside/Out Gifted Education Program and wrote the curriculum as well as taught its "Wireless Technology Literacy and Amateur Radio" and "Space in the Classroom" program modules. In 2012 he co-authored an ARRL ETP grant awarded to the Cherry Creek Young Amateur Radio Club (W0CCY) and has spent much of 2014 within Douglas County STEM School and Academy teaching its space related modules and serving as trustee of its own ham club, the STEM School and Academy Spartan Amateur Radio Club (AB0BX). *Source: ARRL Rocky Mountain Division Email*



From there it traveled through the three pieces of hard line cable to the tower exiting through the tower ground and the East guy cable where it blew a two foot round section of dirt and rock out of the ground.

While all this was happening, in what I would guess was a few milliseconds, the force was so great in the repeater shack that it blew out the East and West walls and the entrance door.



Lesson Learned... Never underestimate the power of lightning!

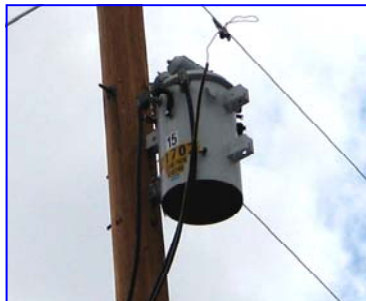
WOW! THAT WAS A DIRECT HIT!

OR WHAT LIGHTNING CAN DO TO A HAM SHACK

By Gerry – W0GV

I have had a private repeater site on Blue Mountain, which is South West of Rocky Flats for about 30 years. A few weeks ago during one of the many thunderstorms in the area my site took a direct lightning strike. The attached pictures will show what devastation lightning, especially a direct hit can do.

The lightning struck the high voltage transformer on the pole adjacent to the shack, which housed a vhf and uhf repeater.



From the pole it entered the shack via the electrical wiring, totally vaporizing the electrical system feeding the repeaters. It jumped from the power panel to the vhf duplexer burning a quarter size hole in the can.

SUNSPOTS AND A SPACESHIP

The sunspot number jumped for a fraction of a second this morning, June 30th, when a winged silhouette raced across the face of the sun. It was the International Space Station, and Maximilian Teodorescu of Magurele (Ilfov), Romania, captured the transit:



International Space Station transiting the solar disk near very large sunspots.

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"The moment of transit was predicted by Calsky," says Teodorescu. "Together with my wife, I drove a few kilometers from my workplace and settled into a corn field in 30 degrees Celsius. When the moment came we both pushed our remote control buttons and got the dark silhouette of the ISS close to the freshly emerged sunspot groups AR2104 and AR2107. So for a very brief instant (0.6 seconds) there were three large sunspot groups on the Sun for us."

In New Hampshire, photographer John Stetson saw a similar transit just a few hours later. "International, indeed!" says Stetson.

The space station is gone, but sunspot AR2104 and AR2107 remain. The two active regions are crackling with minor C-class solar flares. They could, however, pose a threat for stronger eruptions as they turn toward Earth this week. NOAA forecasters estimate a 25% chance of M-class solar flares during the next 24 hours. *Excerpted from <http://www.spaceweather.com> 1 July 2014*





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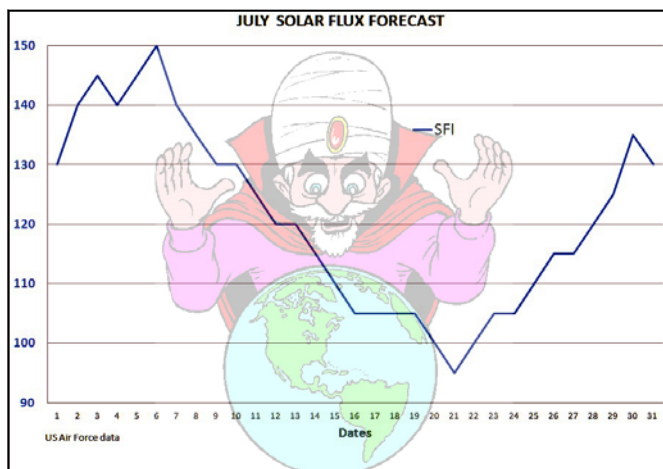
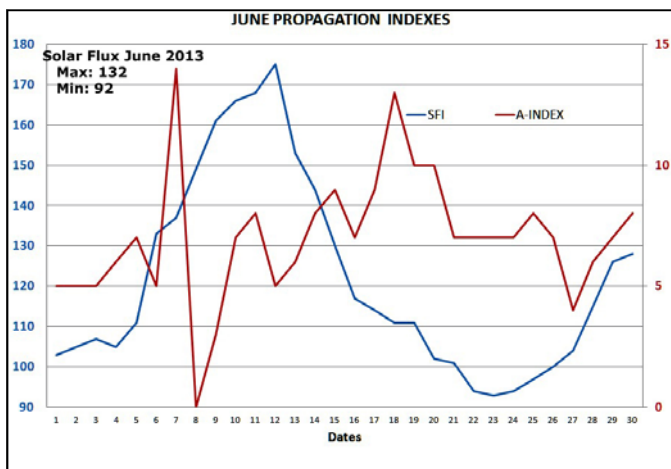
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PAST & FUTURE PROPAGATION CONDITIONS

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>.



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The BIG one is coming!



The Denver Radio Club Hamfest
Jefferson County Fair Grounds

When: Sunday August 17 - 8:30am to 1pm

Food Fun

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

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

JULY 2014						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 New Moon	2 Learning Net 7:30pm	3	4 	5
6	7	8 First Quarter	9 Learning Net 7:30pm	10	11	12 IARU HF Championship Starts 1200U
13 IARU HF Championship Ends 1200U	14	15	16 DRC Meeting Elmer 6:00pm General 7:00pm Full Moon	17	18	19
20	21	22	23 Learning Net 7:30pm	24 Last Quarter	25	26 PPRAA HAMfest
27 	28	29	30 Learning Net 7:30pm New Moon	31		

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

NEW MEETING LOCATION DENVER RADIO CLUB

Where: Jefferson County Administration & Courts Bldg., Hearing Room #2

Also Called: The Taj Mahal (after the expensive royal palace in India opened in yr. 1648)

Address: 100 Jefferson County Parkway, Golden

Coordinates: N 39.727962– W -105.201500

Come to the main entrance (facing east). Enter and keep left, walking west on the main floor, down a large hallway. You pass Hearing Room #1 and then arrive at Hearing Room #2 (our meeting room).

Note: The security, residents and guides also know Hearing Room #2 as the "Small Hearing Room."

Security: Best to have a Driver's License and a DRC badge for admission until they get to know us.

Note: *The building is a county building NO weapons are allowed in the building.*

Parking: Over 500 Free spaces in the east lots in front of the main entrance.

RTD Lite Rail? Train arrivals every 7-10 minutes at the south edge of the parking lot. Check with RTD for exact service times and prices. The Jeffco Admin Bldg. is the end of the tracks for the "W" line from downtown. From the train ramp, simply walk 50 yards to the main entrance under the glass dome.

Access: Wheelchair friendly from parking lot or train ramp to meeting room?

Wi-Fi: "Guest" access for 30 minute sessions in building. More time by Ethernet plug-in.

Rules: NO food or drink in the meeting room. OK in the hallway outside the room. Leave room clean and chair setting as we find them.

TRAVEL DIRECTIONS

From westbound I-70

Take Exit 262 to Colfax Ave. then westbound .9 miles to U.S. 6, Sign: "Golden, Central City right lane."

Take U.S. 6 to the right .5 miles to traffic light.

Turn right then take turn lane to the left, to traffic circle into parking lots. You're there!

From eastbound I-70

Take Exit 260 to W. 6th avenue. Ramp splits, keep left. Take long ramp .65 miles to 6th Avenue exit. At traffic light continue straight, take left turn lane, and turn left to traffic circle and parking lots. You're there!

From westbound C-470

Pass Alameda exit, then see Sign: West to U.S. 6 to Boulder LEFT LANE. Take exit and travel 1 mile to 6th avenue Exit. Take exit to traffic light. Continue straight across U.S. 6th, use left turn lane, and turn left to traffic circle and parking lots. You're there!

DRC BOARD OF DIRECTORS

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Web Master	N0LAJ	Bill Hester	Check Roster	

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	Test Mode Operation. Send signal 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

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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 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**