



ROUNDTABLE

The Denver Radio Club Newsletter

Since 1917

August 2016

PRESIDENT'S MESSAGE

By Gerry Villhauer, W0GV

Hello All,

This will be a short message this month. I am out of town and I am having computer problems trying to get this article out on time while on the road...my apologies!

Thank you to Lee Reedy (KE0COP) for a super interesting program at our July meeting on the Kepler Deep Space Program. You could tell from the questions asked by the audience that there is a lot of interest in deep space exploration in our group. Super job Lee! I hope you will return on a later date and give us another presentation.

Are you interested in instrumentation for amateur radio? Steve Manion (KD0MFT) will be telling us the basics about Digital Multi-meters, Frequency Counters, Oscilloscopes and Spectrum Analyzers at this month's meeting. He will give advice on what and where to buy new and used test equipment. See page 8 for more detail.

DON'T FORGET...August 21st is the BIG ONE...The DRC Hamfest. It is being held at the Jefferson County Fairgrounds. Come out and give your support at this major DRC event, and, bring along a friend! Tables are still available. See page 7 for additional information.

Thanks to all of you who recently joined and made the DRC "Your Club". Please stay active on the air, come to meetings, programs and events.

73 for now,

Gerry (W0GV)
President



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JULY MEETING - WHAT'D I MISS?

By Bill Rinker, W6OAV

There were 39 attendees. President Gerry Villhauer (W0GV) conducted introductions and then invited our Field Day Chairman, Jason Smallwood (ACOUA) to provide a FD update to the group. Jason, using PowerPoint, presented a humorous report on the FD activities. In spite of marginal HF propagation conditions the group did well and had a good time.

The meeting was then turned over to the presenter Lee Reedy (KE0COP). Lee's PowerPoint, titled "Analytical Determination of Kepler Uplink Lock Frequency" covered the following topics:

- Kepler's Mission Description.
- Kepler's discoveries.
- Processes Kepler uses to explore.
- Description of Kepler's transponder operation.
- Uplink problems that have occurred.
- Troubleshooting process used to resolve the uplink problems.

The presentation ended with many very interesting questions ranging from Kepler to "things in space".

Further info:

[Laboratory for Atmospheric and Space Physics](http://lasp.colorado.edu/home) (lasp.colorado.edu/home)

[NASA's Kepler Mission Information](http://kepler.nasa.gov/Mission) (kepler.nasa.gov/Mission)

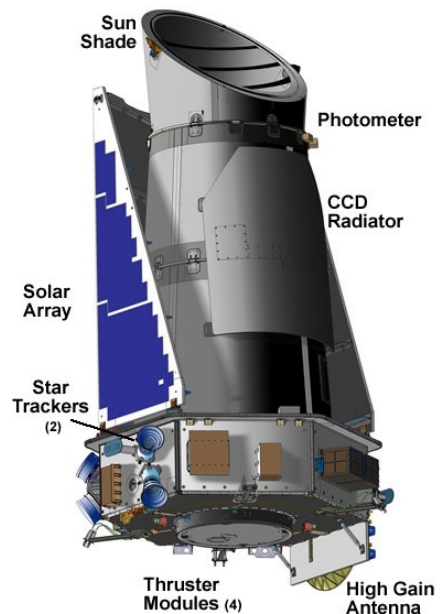


Image courtesy of NASA



DRC President Gerry Villhauer (W0GV) on the left and Lee Reedy (KE0COP) on the right.

2016 FIELD DAY

By Jason Smallwood, AC0UA and Zach Smallwood KD0SGF

Welcome to the recap of the 2016 ARRL Field Day for the Denver Radio Club.

The amazing and lively event started on Friday around 12:00 PM when the first members of the DRC rolled up to the Chief Hosa Campground. For the early set up, we began by placing the Salvation Army Com Van and their crank up tower near each other. A little while later the Salvation Army Canteen rolled up to the Camp Ground. The Canteen provided drinks, meals and snacks to all the operators and visitors who visited the operation site.

On Saturday the tower trailer was positioned and people began to assemble the 20 Meter beam atop the tower. At around 11:00 AM the tower was working its way into the sky, the beam reflecting the light from the sun. Around lunch time, Orlen (WW0LF) began to set up his own personal tower. The olive drab tower rose into the sky as well. From Orlen's tower hung Alex's wire beam. From the Salvation Army tower Dave (K0HTX) ran his long wire antenna which was used on 80 and 40 Meters. Jason (AC0UA) set up his Gap Titan. In total we had 5 different styles of antennas in the air. A beam for 20 meters, the long wire for 80/40 meters, the GAP Titan for 15/10 meters, Orlen's beam for 6/2 meters and the wire beam for 20 meters as well.

The station located inside of the Com Van ran 20 meters voice the whole event, and Dave at his station on the long wire, also ran voice. The station connected to the GAP Titan ran voice, digital, and CW. The wire beam was also used for CW; the 6/2 meter beam was also a voice station. Throughout the event we were visited by many people outside of the club. Most notable was Jack Ciaccia (WM0G), our ARRL Section Manager who visited on Saturday afternoon. Also of note was Ed Callaway (N4II) from Florida. He was in Colorado for a business trip and decided to visit our little site for Field Day. He operated CW. Overall, it was an amazing Field Day. This year we made a greater number of contacts than last year. We had a total of 882 contacts; 477 phone, 402 CW, 1 digital, totaling up to 1,283 QSO Points.

Hope to see you next year at the 2017 ARRL Field Day.

73,
Jason Smallwood (AC0UA)
Zach Smallwood (KD0SGF)



Top photo: "the cul de sac" - 40m, 20m and crank up tower area. Bottom photo: Orlen's (WW0LF) tower.



The 20m CW station is ready



Crank up tower & trailer with tri bander



Orlen (WW0LF) & his crew raising the mast



Salvation Army Canteen run by Jim (K0TOR)



Doug (N4ATA) and Gerry (W0GV) stop to chat for awhile



The Orlen Mast is almost set up

**Don't forget to join in Wednesday nights at 7:30p.m. for the
DRC Learning Net on 145.49/448.625 Repeaters!**



Alex (AF0E) is almost ready to raise his wire beam



The wire beam's up, supported by a pump up mast at one end



Trying for QSOs at the 40 m station. It got real tough at times.



Partying hard in the CW tent



Working contacts in the Salvation Army Com Van



Calling "CQ Field Day" from one of several W0TX stations



Enjoying the shade while working other Field Day groups

WHO'S NEW IN THE DRC?

By Bob Willson, KC0CZ

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. 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.

- Dennis Harden KF0LF
- James Strickland KE0JQA
- Michael Swanger KD0YPK

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 7:00 p.m. For new hams we have the Elmer session which starts at 6:00 p.m. before the regular meeting.

More information can be found on the Denver Radio Club website at w0tx.org.

TECHNICAL COMMITTEE REPORT

By Bill Rinker, W6OAV

The following is an overview of the subjects discussed at the July Technical Committee meeting. The project coordinators' call signs are in red.

AllStar Link Voter System (W0GV)

Goal: Determine the feasibility of establishing an AllStar Link Voter network.

Status: W0GV is working with KD0WHB, and K0LAI. One voter is in test mode. Three remote receivers have been built but not tested.

AllStar Link Voter System (W0GV)

Goal: Locate possible remote sites.

Status: W0GV has located some possible sites. W6OAV is developing propagation coverage maps to determine if the possible sites will fill in the 147.33 transmitter's "dead spots".

DRC/TSA Aurora Site (W0GV)

Goal: Maintain contact with TSA relative to establishing a "communications room" for the DRC.

Status: W0GV is attempting to meet with the new TSA contact. K0TOR worked with Burnie and did locate some of our equipment stored there. The site is still being remodeled.

Noise at Station 4 (W6OAV)

Goal: Monitor noise level.

Status: Xcel has replaced equipment on a nearby pole. Noise level is now back to the original level. HF port is now on line. W6OAV will monitor the HF port's performance. Unfortunately, monitoring is difficult as the 20 meter propagation has been terrible for the past three months.

Redesign Packet Gateway (W6OAV)

Goal: Re-design the gateway for more reliability.

Status: AC0UA has given the DRC a long-term loan of a FT-950 transceiver. W6OAV will build interface cables for the receiver and a PK900. The new configuration will replace the existing KAM and TS-430. The DSP filtering in the FT-950 and the PK900 should improve the gateway's performance.

Fusion Repeater Upgrade (AC0UA)

Goal: Equip the Fusion repeater with a Wires-X Link unit to connect it to the Wires network.

Status: KBOA will mentor AC0UA who will take over administering the upgrade. With managing the upcoming DRC Hamfest, AC0UA has not had much time to work on this one.

DRC TRBO Move (K0HTX)

Goal: Move the TRBO repeater to Centennial Cone to provide better coverage.

Status: Awaiting coordination approval for the DMR system move to Centennial Cone.

~ Editor's Note: The Technical Committee meeting is open to members of the DRC. It is held in the Arvada room, starting at 6:00 p.m. on the evening of the DRC monthly meeting.

ELMER SESSION START TIME

The Elmer Session Starts at 6 p.m. before the regular 3rd Wednesday DRC Meeting! All are welcome. Meet in Hearing Room 2.

Come join in on the sharing of information.

HAM SITE OF THE MONTH

[Ham Nation](http://HamNation.com)
(twit.tv/shows/ham-nation)

Sunday August 21st - Jefferson County Fairgrounds

DENVER HAMFEST 2016

Denver Radio Club, WØTX



Since 1917

- ◆ DEALERS ◆ FLEA MARKET ◆ PRIZES
- ◆ FORUMS ◆ FCC EXAMS ◆ FOOD ◆ INDOORS

More Tables & Less Crowding

Admission: \$6 (Children under 13 free w/adult)
 Tables: Advance Purchase: \$12 (Paid by Aug 8)
 At the Door \$16

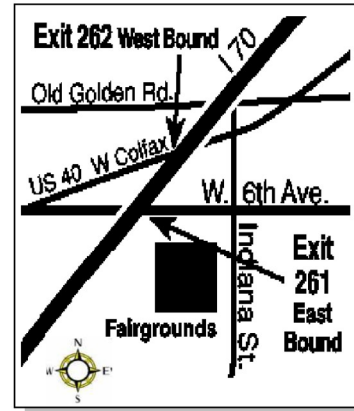
Hourly Door Prizes - Main Drawing at Noon
 (Must be present to win)

Doors Open: 8:30 AM - 1:00 PM
 License Testing/VE Exams at 10 AM
 (Vendor Set-Up Starts at 7:15 AM)

Talk-In: 145.490-/448.625- PL 100.0Hz
 GPS: Lat 39d 43' 19"N Lon 105d 10' 15"W

Handicapped Parking & Access Available

WWW.WØTX.ORG



Jefferson County Fairgrounds
15200 West 6th Avenue Golden, CO

For more info visit our website or contact:

Jason Smallwood, ACØUA, 303-429-2536 eMail: drcfest@w0tx.org

Advance Table Reservation Form

Make checks payable to: Denver Radio Club, do not mail cash!

Payment is required with reservation and must be received by August 15, 2016 to obtain the \$12 per table advance registration price
 AC Power is limited, available on a FCFS basis. Reservation confirmations will be emailed. Vendor badges & tickets will be
 provided at the Hamfest. Tables must be claimed by 8:30 AM or they will be subject to resale - no refunds
 Save the upper portion of this flyer for your records

Name: _____ Call: _____

Org: _____ Phone: _____ Email: _____

of Tables _____ @ \$12.00 each = _____

of Vendor Admissions _____ @ \$6.00 each = _____

AC Power: yes no Total Enclosed : _____

Special Requests: _____

Please mail all reservations to (New Address): Denver Radio Club, 7780 Bradburn Blvd., Westminster CO 80030-4526



AUGUST MEETING PRESENTATION

By Bill Rinker, W6OAV

Interested in learning about instrumentation for Amateur Radio? If so, plan to attend the August club meeting. Steve Manion (KDOMFT) will discuss the basics of DMM, Counters, Oscilloscopes and Spectrum Analyzers. He will also cover what to look for and where to buy both new and used test equipment as well as User and Service manuals.

Biography

Steve worked for Hewlett-Packard Co, Agilent Technologies Inc and also for several other electronic firms in the medical field. When he was with all of these companies he was customer support either by phone or as an onsite service engineer. Steve's early career was testing oscilloscopes in the Colorado Springs division of Hewlett-Packard.

Steve got his HAM Technician Class license in 2010 and his General license in 2013.



As you've likely heard, the ARRL is running a year-long National Parks on the Air (NPOTA) event. The idea is to encourage Hams to visit certain National Park Service (NPS) sites and activate a station. In so doing the ham can educate the public both about the National Parks and amateur radio. If you are going to be activating a site or already have, and want to share your experience with the club, let us know! Email us at: drc.editor@gmail.com. For more information, visit: arrl.org/NPOTA





Colorado 14er Event

Celebrating 25 Years!!!

August 6 & 7, 2016

Saturday and Sunday

www.ham14er.org

Amateur Radio operators from around Colorado will be climbing many of **Colorado's 14,000-foot mountains** and **Summits On The Air (SOTA)** peaks to set up amateur radio stations in an effort to communicate with other radio amateurs across the state and around the world. Join in on the fun during the **25th annual event** and see how many of the mountaintop stations you can contact. This year the event is expanded to include the entire weekend. However, many mountaintop activators will hit the trail early with the goal of being off the summits by noon due to lightning safety concerns. See the very cool **25 Year Anniversary t-shirts** available at <http://www.cafepress.com/wg0at>

Now including **Summits On the Air (SOTA)**, which adds over 1700 potential summits! If you aren't up to climbing a 14er, there are many other summits to choose from (with a wide range of difficulty). See the W0C SOTA web page at w0c-sota.org

Radio operators who plan to activate a summit should post their intent on the ham14er Yahoo Group. To subscribe to the "ham14er" email list, visit the Yahoo groups site at <http://groups.yahoo.com/group/ham14er/> . Also, be sure to check out the event information at <http://www.ham14er.org> It is also a great idea to post an ALERT on the SOTAwatch.org website.

Frequencies used during the event

Activity can occur on any amateur band including HF and VHF. The 2m fm band plan uses a "primary frequency and move up" approach. The 2m fm primary frequency is 147.42 MHz. At the beginning of the event, operators should try calling on 147.42 MHz. As activity increases on that frequency, move on up the band using the 30 kHz steps. *Don't just hang out on 147.42 MHz...move up!* The next standard simplex frequency up from 147.42 MHz is 147.45 MHz, followed by 147.48 and 147.51 MHz.

Frequency (MHz)	Comments	Frequency (MHz)	Comments
147.42	Primary 2m FM Frequency, then up in 30 kHz steps	7.032	40m CW Frequency
147.45	Alternate 2m FM frequency	7.185	40m SSB Frequency
147.48	Alternate 2m FM frequency	10.110	30m CW Frequency
147.51	Alternate 2m FM frequency	14.060	20m CW Frequency
446.000	Primary 70 cm FM frequency	14.345	20m SSB Frequency
446.025	Alternate 70 cm FM frequency	18.092	17m CW Frequency
144.200	2m SSB calling frequency	18.158	17m SSB Frequency
50.125	6m SSB calling frequency	21.060	15m CW Frequency
		21.330	15m SSB Frequency
Other Bands/Modes	Standard calling frequencies and/or band plans apply.	28.060	10m CW Frequency
		28.350	10m SSB Frequency

Warning: Climbing mountains is inherently a dangerous activity. Do not attempt this without proper training, equipment and preparation.

Sponsored by *The Colorado 14er Event Task Force*

LEARNING NET REPORT

By Fred Hart, AA0JK

Thanks goes out to our Net controllers: Gary (KD0SQA), Larry (KØLAI), Alex (W2PBR), Steve (KDØWMO).



Topics discussed this past month:

- D-Star (dstarinfo.com)
- DMR (dmr-marc.net)
- ECHOLINK (echolink.org)
- ILRP (irlp.net)
- Off-CENTER Dipole antennas
- Windom antennas and their pros and cons
- Dipoles Antennas: How to setup yours with space available.
- Different configurations of the Dipole antenna
- Feed-lines impedance matching
- Baluns
- Masts
- Kenwood 710 G
- N3FJP Logging Software (N3FJP.com)

We also discussed the recent *Megafest* in Monument. There was a great turnout and it was lots of fun. Also, there was a reminder about the upcoming Ham Fest: THE BIG ONE, our Denver Radio Club Hamfest on 08/21/2016, at the Jefferson County Fairgrounds (w0tx.org/hamfest.htm)

Great topics from our group. We certainly enjoy everyone's participation. Thanks to all. If you are listening and don't yet have your license, you can contact us at the W0TX web-site, w0tx@w0tx.org or elmer@w0tx.org. If we don't have the answer here on the net, we have a lot of experienced hams in the club that can help. Questions can also be submitted on the YAHOO Learning Net web page (groups.yahoo.com). Here you will also find information from past activity that you might find of interest.

Getting that first Technician license? Upgrading to General or Extra? We're here to help. We would encourage those who have been Hams for several years to also join us. Your experience and input is welcomed.

What topics would you like to discuss? Join us Wednesday nights, 7:30 PM, 145.490. (Note: The third Wednesday of the month is devoted to the DRC club meeting. See the w0tx web site for additional information (w0tx.org).

73,
AAØJK
FRED

ATTENTION**SUPPORT THE DRC FROM YOUR AMAZON PURCHASES**

You can now support your Denver Radio Club when you make purchases from Amazon.com. Amazon Smile donates 0.5% of your purchase to the non-profit (501.c.3) organization of your choice. This is at no additional cost to you. To support the DRC just visit smileamazon.com. Select Denver Radio Club, Inc. as the organization you want to support and proceed with your order as usual. Amazon Smile will credit the DRC automatically. Thank you for your support.

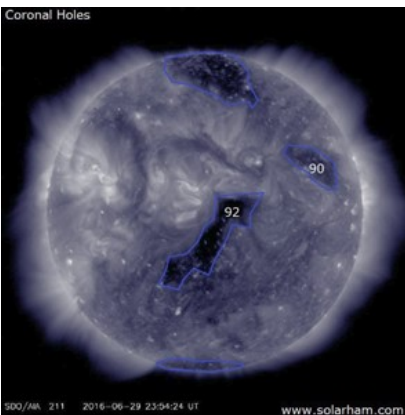
SOLAR UPDATE

Provided By Fred Hart, AA0JK

Week One

July solar activity started out quiet. The visible disk remained spotless for the seventh day in a row.

The only news of interest was that a minor (G1) geomagnetic storm that was in effect through the weekend when a coronal hole solar wind stream was expected to become geoeffective. The Sun appeared to be an enormous yellow billiard ball.



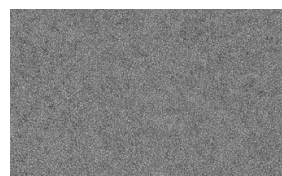
The last time sunspots vanished for a whole week was in Dec. 2010, a time when the sun was bouncing back from a long Solar Minimum. In this case, the 7 week interregnum is a sign that a new Solar Minimum is coming.

The sunspot cycle is like a pendulum, swinging back and forth every 11-years or so between times of high and low sunspot numbers. The next low is expected in 2019-2020. Between now and then sunspots will become increasingly rare with stretches of days, then weeks, then months of "billiard-ball suns."

Without sunspots, there will be fewer solar flares and CMEs. However, that doesn't mean space weather will stop. On the contrary, new forms of space weather will rise to the fore, including high doses of cosmic rays, more "space lightning" (sprites), altered states of ham radio propagation, and geomagnetic storms triggered by solar wind streams and co-rotating interaction regions instead of CMEs. Stay tuned for the next phase of the solar cycle

July 2nd - Forecasters expected a CIR to strike Earth's magnetic field. CIRs (co-rotating interaction regions) are transition zones between slow and fast-moving streams of solar wind. Density gradients and shock waves in CIR's often spark interference to HF propagation (Figure 3).

WHAT SUNSPOTS LEAVE BEHIND: With the sunspot number dropping to zero, the face of the sun is blank. Or is it? A closer look at the stellar surface reveals what the vanishing sunspots have left behind: [Solar Granulation](#).



"Solar Granulation"

What are these granules? The sun is so hot, it literally boils. Granules are bumps on the boiling surface, much like the bumpy surface of water boiling on a hot stove. One difference: While the granules on your stove are only a few centimeters across, granules on the sun are as wide as Texas.

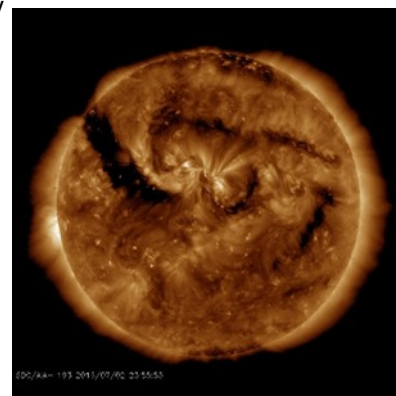


Figure 3: Earth is inside a stream of solar wind flowing from the indicated coronal hole. Credit: SDO/AIA.

MAGNETIC CANYON ON THE SUN: A canyon-shaped hole opened up in the sun's atmosphere, and was spewing solar wind into space. NASA's Solar Dynamics Observatory was monitoring the structure, which stretches more than 700,000 km from end to end.

This is called a "coronal hole." Coronal holes are places in the sun's atmosphere where magnetic fields peel back and allow hot gas to escape. A gaseous stream of solar wind flowing from this opening was expected to reach Earth on July 8th or 9th, possibly sparking polar geomagnetic storms when it arrived. HF operators would see its impact on propagation.

(Continued on page 12)

(Continued from page 11)

July 7th - A couple of small sunspots (2559 and 2560) were numbered on the sixth. Breaking the spotless sun streak, they both faded away within 24 hours. A new sunspot was forming in the southwest quadrant and was being monitored. An enhanced solar wind stream became geoeffective.

A minor (G1) geomagnetic storm watch was in effect for the next 24-48 hours.



Figure 6

July 9th - ENORMOUS CORONAL HOLE: Earth was inside a high-speed stream of solar wind flowing from an enormous hole in the sun's atmosphere. Figure 6 shows an extreme ultraviolet image from NASA's Solar Dynamics Observatory, the opening (called a "coronal hole") sprawls across most of the sun's northern hemisphere.

NOAA forecasters were reporting a chance of G1-class geomagnetic storms on July 10-11 as Earth dipped in and out of gaseous structures in the emerging stream.

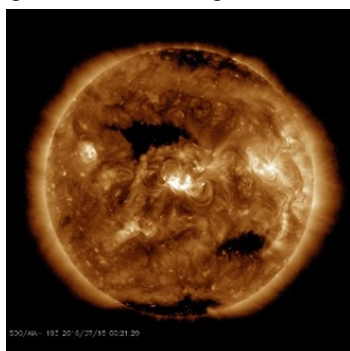
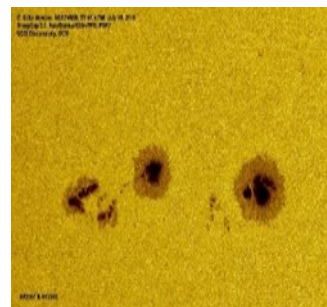
Week Two

July 15th - Solar activity was at very low levels, although, an increase occurred with the addition of sunspot 2567. The region formed just behind region 2565 and was possibly producing minor C-Flares. There was also a small chance for an isolated M-Flare according to NOAA/SWPC. All other visible numbered regions were stable. No Earth directed coronal mass ejections were observed.

Week Three

July 17th - Solar activity has been low for months. This was expected to change with two big sunspot groups that were directly facing Earth. One had an unstable magnetic field that posed a threat for M-class flares.

July 19th - Sunspot AR2567 was regaining its magnetic complexity. This prompted NOAA forecasters to boost the possibility of an M-class solar flare. Such a flare would be geoeffective being it was Earth-directed. (Figure 8)



Forecast:

Geophysical Activity Summary, the geomagnetic field was expected to be at quiet levels. Solar wind speed reached a peak of km/s. Expected levels are expected to be at quiet to unsettled levels.

73,

AA0JK
Fred



Fred (AA0JK)

Figure 8: Solar wind flowing from the indicated coronal hole could reach Earth on July 19th. Credit: SDO/AIA

5...4...3...2...1: READABILITY REPORTS

By Dan Romanchik, KB6NU

I'm big on Twitter. It connects me to a lot of interesting amateur radio operators, and I find a lot of food for thought there. Yesterday, I saw the following Tweet:

Charlie – M0PZT @M0PZT

Blog updated: RST and Speed Matters <http://www.m0pzt.com/blog/rst-and-speed-matters/> #hamradio

Being a CW geek, of course I was interested. Charlie's point is that if you get a bad report, you probably should send more slowly. I certainly have no argument with that. What I do take a little bit of an issue with is that Charlie says, "A Readability 4 report should really make it known that information needs to be brief, but repeated – Certainly no ANT/RIG/WX waffle!"

According to most sources, Readability 4 means, "Readable with practically no difficulty." When I receive an R4 report, I might slow down a little, but it doesn't mean to me that I have to cut the contact short or repeat information over and over. I replied on Twitter that if the operator at the receiving station is having so much trouble copying, then the report should probably be 319 or even 219.

Of course, RST reports are open to interpretation. With that in mind, I thought I'd explain a little more fully how I decide what Readability report to give:

R5: Perfectly readable. To me, this means that copying a signal is no work at all, and that it sounds like it's coming out of a code practice oscillator. I can put my feet up on the desk or putter around the shack while I'm rag-chewing with the other operator.

R4: Readable with practically no difficulty. "Practically no difficulty" is the key phrase here. There may be some QRN or QSB on this signal, and I have to pay some attention while copying. An R4 is still solid copy, though, and ragchewing is definitely possible.

R3: Readable with considerable difficulty. A signal that rates an R3 needs my full attention. I have to work at copying the signal, and even then, might miss characters here and there. Even though I don't copy every single character, I'm able to fill in the gaps. An R3 signal might not be good enough for a ragchew, and repeating information is probably a good idea.

R2: Barely readable, occasional words distinguishable. A signal that rates an R2 is usually so weak that it's below the noise level or drops below the noise level occasionally. At this level, the contact will definitely be brief and any important information, such as the callsign needs to be repeated.

R1: Unreadable. Generally, I would never give out this report, as I would never attempt making contact if a signal was truly unreadable.

Although my explanations above reflect the fact that I'm primarily a CW operator, I think they also apply to phone or even digital contacts. For example, an R5 for a phone contact would mean that the signal sounds like it could be coming from just down the street or coming through the local repeater.

What do you think? How do you decide what Readability report to give?

=====

Dan, KB6NU, is the author of the "No Nonsense" amateur radio license study guides, and blogs about amateur radio at KB6NU.com. You can contact him by e-mailing cwgeek@kb6nu.com. If you want an honest Readability report, look for him most evenings on 40m CW.

LOOKING BACK AT THE DRC PROVIDED BY WOODY LINWOOD (W0UI) - ROUNDTABLE, JUNE 1960

List of local nets and a 6-meter report.

WE PAY CASH or TRADE
FOR: ★ COMMUNICATION RECEIVERS
★ TEST EQUIPMENT ★ TRANSMITTERS
Need Gear? Better come in -- may have it!

PAT'S CAMERA & LOAN OFFICE
(Next Door to RAPSCO)

1610 Larimer CH 4-0155

NET SKEDS

COLORADO EMERGENCY PHONE
 0800 Sunday—3890 kc.

SIX METER
 2000 Monday—50.3 mc.

LCL-YL
 0900 Monday—7235 kc.

COLORADO STATE 2 METER
 2130 every night—146.25 mc.

HI NOON
 1200 Monday-Saturday—7240 kc.

COFFEE CLUB
 0600 Monday-Saturday—3985 kc.

COLORADO WEATHER (CWXN)
 0650 Monday-Saturday—3945 kc.

DENVER AREA RACES
 0900 Sunday—29.624 mc.
 1930-2000 Tues., informal (members &
 non-members welcome)

SIX METER CD
 1900 Tuesday—50.35 mc.

ENGLEWOOD CD
 2000 Wednesday—29.500 mc.

COLORADO CW
 1900 Monday-Friday—3655 kc.

OBS (WØKQD, Irene)
 1230 Mon., Wed., Fri.—7225 kc.

12th REGIONAL
 1900 every night—3570 kc.

**NEW MEXICO BRASSPOUNDERS
 (NMBP)**
 1900 Mon., Wed., Fri.—3570 kc.

12th REGIONAL (TWN)
 No. 1—1815 Mon.-Fri.—7060 kc.
 (summer)
 No. 2—2000 Mon.-Sun.—3570 kc.

BEEHIVE UTAH NET (BUN)
 1230 Mon.-Sun.—7272 kc.

SIX METERS AND UP

The past two months have been wild ones for a lot of the local crew on 6 mtrs. Dx has been rolling in from all directions and all signs indicate this will be continuing through the summer.

—Ø—

The E.B.Q. in May was at Walts, KØCLJ. Fifteen members and at least half that many XYL's were at the meeting. The net members are donating \$1.00 each towards the purchase of a used portable TV set to be fixed up and used by the TVI committee. The committee is hoping to locate two more portables. Plans are to locate one TV set in each sector of Denver. At present the committee has only one set, and it is greatly overloaded with TVI complaints.

—Ø—

WØWYZ, Ray; KØBTO, Dennis and KØWXY, John are in mobile operation now.

—Ø—

WØRQI, Larue is moving to South Denver to be closer to work.

—Ø—

New calls on 6 are KØDAY, John; KP4AMN/Ø, Vick and at least 3 others that I'm not acquainted with at this time.

—Ø—

June 5 was the date picked for the Porsche Hill Climb Race. About 5 or 7 mobiles will be present for the timing of the race, even better results than last year are expected.

—Ø—

June 12 is the date for the High-Banders Picnic at Washington Park. A large group is expected as usual. Hi.

—Ø—

A reminder that after June 6, 50 to 50.1 mc. will be for CW use only as ordered by ARRL.

73's for now and CU on 6,

Glenn, WØIJR.

This puzzle is provide courtesy of Chris Codella - W2PA. The URL for his website is w2pa.com. The solution for the puzzle is on page 16.

Encoded

Across

- 1. Cluster cmd
- 4. Tribander part
- 8. *10MHz, with 30-down
- 14. Grammy category
- 15. Sushi fish (some may generate RF noise)
- 16. Especially comfortable place for a DXpedition, say
- 17. Words of understanding
- 18. Radiation from a "cloud burner"
- 19. EP city
- 20. Early radio construction material
- 22. Part of IARU (abbr.)
- 24. 5Z
- 25. Contender, e.g., for ARRL director
- 27. Copies
- 29. 160m luminary Perry
- 30. Polar explorer, early radio user
- 31. Early radio noise maker
- 34. WAS item
- 36. Charge opposite?
- 37. Spectrum Defense

- 38. With 40-across, a hint to solving the clues indicated with a *
- 39. Paddle
- 40. See 38-across
- 41. Sky hooks, briefly
- 42. Some HV paths
- 43. Young's accounting partner
- 44. Relative of cap. and ind.
- 45. Bumpkin
- 46. Wire, from 44-across, say
- 47. Simple
- 48. Conclusion
- 51. Monastery head

- 54. RF effect
- 56. Fly high
- 57. Flying high
- 59. Used to stabilize a crystal
- 61. Owed
- 62. VHF antenna measurers?
- 63. 59-across product
- 64. Before, in verse
- 65. *7MHz, with 30-down
- 66. Some service hams
- 67. Band condition influencer

Down

- 1. *21MHz, with 50-down
- 2. Internet cry?
- 3. What's needed after barefoot tower climbing?
- 4. Doubled, it's a "net"
- 5. "Recent Equipment"

- 6. 50's Collins
- 7. "Hey ... over here!"
- 8. Crumb
- 9. Stank
- 10. Blown resistor remnants
- 11. Norse goddess of fate
- 12. *3.5MHz, with 30-down
- 13. I-land island peak
- 21. Mimeographs
- 23. E, F and others
- 26. ___-do-well
- 28. Prefix with -selector
- 30. *
- 31. Microwave parts
- 32. Some gates
- 33. W6 summer time
- 34. Kind of tissue
- 35. Nearly always 9

- 36. Electromagnetic, and others
- 37. Coulombs per volt
- 40. "It's ___ real!"
- 42. Ether
- 45. Prefix with -geneous
- 46. Amplifier type
- 47. Place to stay at the Hamvention, possibly
- 48. Libya
- 49. C2
- 50. *See 1-down
- 51. Ethereal
- 52. *5.4MHz, with 30-down
- 53. Kind of joint
- 55. One V per mA
- 58. UA 73
- 60. Tfc. org.

1	2	3		4	5	6	7		8	9	10	11	12	13
14				15					16					
17				18					19					
20			21		22			23		24				
25				26				27	28					
		29					30					31	32	33
34	35					36					37			
38						39			40					
41					42				43					
44				45					46					
			47					48					49	50
51	52	53				54	55				56			
57					58		59			60			61	
62							63						64	
65							66						67	

FACT OF THE DAY

Discount Lithium-Ion Batteries

Beware of purchasing lithium-ion batteries that are offered at exceptionally low prices. Lithium-ion batteries must be recharged periodically during storage to retain their design runtime performance. It is expensive for dealers and distributors to repeatedly recharge batteries in inventory, so many don't do it. The performance of lithium-ion batteries that have been in stock a considerable time without recharging will be poor. Even where inventory has been recharged periodically, each recharge during storage will have subtracted from the total number recharge cycles that will be available after purchase. It is important to check lithium-ion battery code-dates and insist of freshly manufactured batteries.

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~ Ham Tip ~

If you have knowledge of a **GREAT** ham radio related website or just a general tip, let us know and we will share it with the rest of the DRC membership here in the RoundTable. Send to drc.editor@gmail.com.

THE ROUNDTABLE ARCHIVE

Go to: <http://www.w0tx.org/RoundtableAccessPage.htm>

THE ROUNDTABLE ARTICLE INDEX

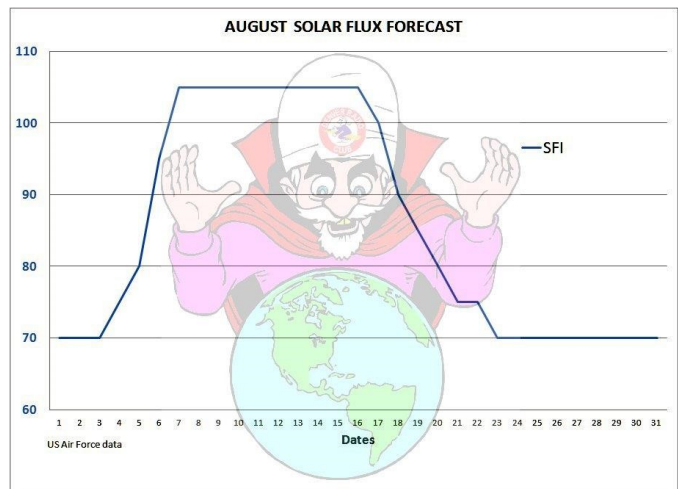
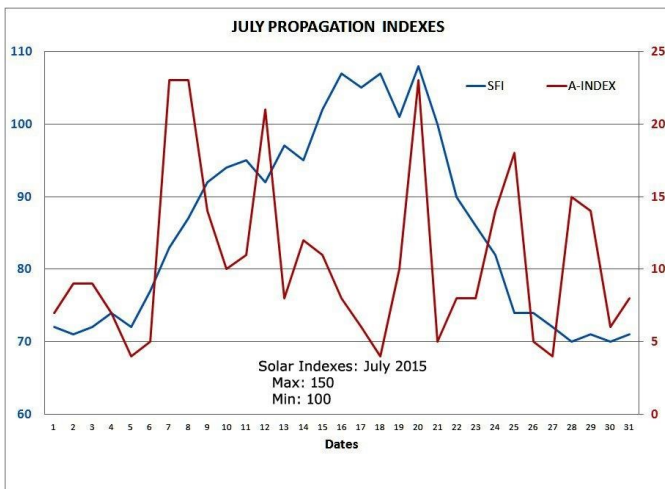
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PAST & FUTURE PROPAGATION CONDITIONS

By Bill Rinker, 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/RoundtableArchive/2010-RoundTables/RT201009\(SEP\).pdf](http://www.w0tx.org/RoundtableArchive/2010-RoundTables/RT201009(SEP).pdf)



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UPCOMING EVENTS

HAMFESTS & CONVENTIONS

Event	Date	Location	Sponsor Website
Denver Radio Club Hamfest	08/21/16	Golden, CO	Denver Radio Club
BARCfest	10/02/16	Longmont, CO	Boulder Amateur Radio Club (BARC)

UPCOMING ARRL CONTESTS

[ARRL CONTEST CALENDAR](#)

Contest	Start Date	Start Time	End Date	Stop Time	Notes
10 GHz & Up – Round 1	08/20/2016	0600 Local	08/21/2016	0000 Local	
Rookie Roundup – RTTY	08/21/2016	1800 UTC	08/21/2016	2359 UTC	
September VHF	09/10/2016	1800 UTC	09/12/2016	0259 UTC	
10 GHz & Up - Round 2	9/17/2016	0600 Local	9/18/2016	2359 Local	
EME - 2.3 GHz & Up	9/25/2016	0000 UTC	9/26/2016	2359 UTC	

UPCOMING QSO PARTIES

The following are the Contests not sponsored by the ARRL. Please submit additions for future issues.

State/Province	Start Date	End Date	Sponsor Website	Notes
Maryland-DC	08/13/2016	08/14/2016	Anne Arundel Radio Club	
Kansas	08/27/2016	08/28/2016	Kansas QSO Party	
Hawaii	08/27/2016	08/29/2016	Hawaii QSO Party	
Ohio	08/27/2016	08/28/2016	Ohio QSO Party	
Colorado	09/03/2016	09/04/2016	Pikes Peak Radio Amateur Association	Based on 2015 date.
Tennessee	09/04/2016	09/05/2016	Tennessee QSO Party	Based on 2015 date.
New Jersey	09/17/2016	09/18/2016	New Jersey QSO Party	
Washington	09/17/2016	09/18/2016	Western Washington DX Club	Based on 2015 date.
New Hampshire	09/17/2016	09/18/2016	Port City Amateur Radio Club	
Maine	09/24/2016	09/25/2016	Wireless Society of Southern Maine	
Texas	09/24/2016	09/25/2016		
California	10/01/2016	10/02/2016	California QSO Party	
Pennsylvania	10/08/2016	10/09/2016	Nittany Amateur Radio Club	
Arizona	10/09/2016	10/10/2016	ARRL Arizona Section & Catalina Radio Club	Based on 2015 date.
Iowa	10/15/2016	10/16/2016	Ottumwa ARC	Based on 2015 date.

DRC REPEATERS

BAND	Freq / Shift / PL Tone	Additional Information
6m	53.090MHz (-1MHz) 107.2Hz PL	
Packet	145.05MHz<>14.105MHz	2 meter / 20 meter gateway. Useable by Technicians on 2 meters. See January 2015 RT.
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	449.775 MHz (-) 100Hz PL	Yaesu Fusion Digital / Analog, 100 Hz Tone Required for Analog.
70cm	446.7875MHz (-)	MotoTRBO Repeater Slot 1 – DMR-MARC WW, Slot 2 – Local



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AUGUST 2016		<i>DRC Net Sunday's at 8:30 p.m. on 145.490 / 448.625 (No PL)</i>				
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2  New Moon	3 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	4	5	6
7	8	9	10 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)  First Quarter	11	12	13 Maryland-DC QSO Party
14 Maryland-DC QSO Party	15	16	17 DRC Meeting Elmer 6:00 p.m. General 7:00 p.m.	18  Full Moon	19	20 ARRL 10 GHz & Up (Round 1) Contest
21 Denver Radio Club Hamfest: 8:30 - 13:00 @ Jeff Co Fairgrounds  ARRL Rookie Roundup – RTTY & ARRL 10 GHz up	22	23	24 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)  Last Quarter	25	26	27 Hawaii QSO Party Kansas QSO Party Ohio QSO Party
28 Hawaii QSO Party Kansas QSO Party Ohio QSO Party	29 Hawaii QSO Party	30	31 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)			

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Please Let Us Know

Over the years we occasionally hear from hams who have read the RoundTable in other states and countries around the world. We appreciate the comments and we would like to know where you are located. So if you live outside the Front Range or Denver Metro Area and read the newsletter either online, email or hard copy please send a short note via email with your *City, State or City, Country*.

We will publish it at a later date in our new regular feature called RoundTable RoundWorld.

To respond to this request send your information to drc.editor@gmail.com.

Subject: I'm located in...

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DRC members - this is your newsletter. Please email your club or amateur radio related suggestions to the editor. Members are the heart of The Denver Radio Club, so 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.editor@gmail.com. The submission deadline is the 20th of the Month. ~ Editor