



ROUNDTABLE

The Denver Radio Club Newsletter

Since 1917

July 2015

PRESIDENT'S MESSAGE

By Gerry Villhauer – W0GV



Hello DRC Members,

Cathy and I have been doing some vacation traveling this month. The excessive amount of rain has forced us to make some variation in our travel plans and the heat and humidity in the Midwest has been intense.

Thanks to Jason (AC0UA) for chairing our field day and to all who came and participated and especially those who helped him with setup and tear down. It takes a lot of help and coordination to put it all together. We should have a report on our number of contacts in the August RT issue. It will take the ARRL a couple months to post the official standings. Our goal is not to have a high point score, but, to introduce as many people as possible to ham radio and get them on the air; many for the first time. And most of all to have FUN!

Thanks to Rodney (KA0USE) for the very interesting and informative presentation on "Bicycle Mobiling" at our June meeting. Rodney's humorous approach was very well received and a lot of questions were asked.

How antennas function is a mystery to many hams. There are many theories and a lot of math involved in books explaining these theories. Interested in hearing what happens at the antenna when a transmitter's push-to-talk button is depressed? If so, plan to attend the July meeting. Bill (W6OAV) will give a Power-Point presentation titled "Why and How Do Antennas Radiate". The presentation will not contain math

Thanks to all who recently joined and made the DRC "Your Club". Please stay active on the air, come to meetings, programs and events. Each member, new or old is the lifeblood that makes us successful...you are appreciated!

73 for now,
Gerry (W0GV)
President



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JUNE MEETING - WHAT'D I MISS?

By Bill, W6OAV

There were 44 attendees. Gerry (W0GV) began the meeting by having the attendees introduce themselves. Dave (K0HTX) then gave an overview of the upcoming Field Day activities. Afterwards, the meeting was turned over to the guest speaker Rodney (KA0USE) who gave a PowerPoint presentation titled "Bicycle Mobile".

The topics covered were:

- History of bicycle mobile.
- Sources for buying bicycles.
- Types of bicycles.
- The process for properly fitting a rider to a bicycle.
- Protective equipment and accessories.
- Antenna safety in the field.
- Safety and rules of the roads and trails.

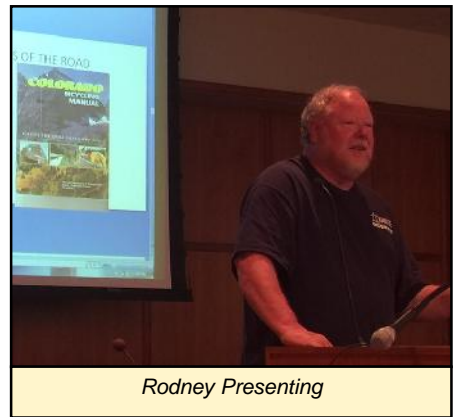
Rodney then showed very interesting pictures of many types of bicycles equipped with a myriad of HF and VHF/ UHF equipment. He then demonstrated the various features of his bicycle mobile which he had brought to the meeting location. After the meeting, several attendees were heard saying that they'd like to get into this aspect of ham radio.



Gerry Warming Up The Crowd



Technical Difficulties



Rodney Presenting



The Denver Radio Club
Is an ARRL
Special Service Club
Support your hobby
Join the ARRL TODAY



THE ROUNDTABLE ARCHIVE

Have you been looking for a back issue of the Roundtable? Many are available on the DRC web site.

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

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.

Jim Flannery	K0UNX
Steve (Coyote) Ciotti	K0SDC
Albert F. Scheckenbach	KE0DSF
Floyd D. McCready, Jr.	K6HJV
James J. (Jim) Morin	KB9LED
Matt DiVincentis	NA

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 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 <http://www.w0tx.org>.

TECHNICAL COMMITTEE REPORT

By Bill, W6OAV

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



June Technical Committee Meeting

TS-940 Repair (K0TOR)

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

Status: The TS-940 is still successfully "cooking" on the bench. It will be used for field day.

Voter System (W0GV)

Goal: Develop a network configuration based on location of a main transmitter.

Status: KFORW will investigate a possible central transmitter site downtown. Paper work has been submitted

for a possible tower site east of town. If approval is obtained for the site east of town, Bill (W6OAV) will run coverage plots of that site and Station 4 to determine the resulting weak signal areas.

Voter System Expansion - East (W0GV)

Goal: Locate additional sites.

Status: Still looking for a South Site. There may be a possible site North of Denver. If so, W6OAV will run a coverage plot to determine if the coverage will be beneficial to the system.

145.49/448.625 Repeater - Controller and Radio Upgrade (AC0UA)

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

Status: WWOLF and AC0UA hope to perform the equipment upgrade ASAP.

DRC/TSA Aurora Site (W0GV)

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

Status: Work is still in progress. The DRC's radios and antennas are now stored at the site.

Packet Gateway (W6OAV)

Goal: Re-design the gateway for more reliability.

Status: Kantronics sent a new firmware upgrade which W6OAV installed in the KAM XL TNC. However, the firmware tests are not presently in progress due to the HF port of the gateway not hearing due to the excessive line noise at Station 4. (See next item below).

Line Noise at Station 4 (WWOLF)

Goal: Locate the source(s) of excessive noise which has made the HF packet port "deaf". Document and contact Xcel to correct.

Status: WWOLF is gathering the equipment and will coordinate the tests.

Establish a DRC YouTube Channel (KB0A)

Goal: Provide access to various DRC videos.

Status: KB0A has obtained a channel for the DRC. He will forward log-in info to W6OAV and to others.

Station 4 Site Maintenance

Goal: Implement weed control and clean up the radio shack.

~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.



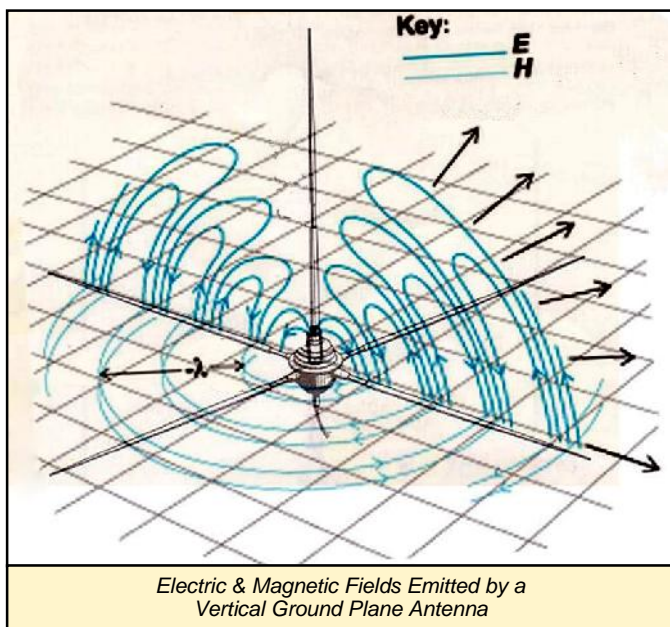
JULY MEETING PRESENTATION

By Bill, W6OAV

How antennas function is a mystery to many hams. There are many theories and a lot of math involved in books explaining these theories.

Interested in hearing what happens at the antenna when a transmitter's Push-to-Talk button is depressed? If so, plan to attend the July meeting.

Bill (W6OAV) will give a PowerPoint presentation titled "Why and How Do Antennas Radiate". The presentation will not contain math!



Questions can also be submitted on the YAHOO Learning Net: <https://groups.yahoo.com/neo/groups/HamLearningNet/conversations/topics/376>. 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.

Some of the topics discussed this month:

- Amateur radio communication support for public events.
- Radio and antenna issues.
- Satellite communications.
- Field Day activities.
- Bicycle mobile.
- Fox Hunting (Radio Direction Finding).
- Solar impact on HF communications and internet outages.

We encourage all those with interests in amateur radio to join us. What topics would you like to discuss? Join us Wednesday nights, 7:30 PM, 145.490 / 448.625.

(Note: The third Wednesday of the month is devoted to the DRC club meeting. See the DRC web site for additional information. <http://www.w0tx.org>)

Don't forget to join in Wednesday nights at 7:30 p.m. for the DRC Learning Net !

145.490 / 448.625 Repeaters

Watch the RoundTable for any changes to Learning Net Schedule

W0TX LEARNING NET UPDATE

By Fred, AA0JK

In opening, I would like to thank our Net Control Operators for the great job they do in conducting the W0TX learning net on Wednesday nights. Larry (K0LAI), Steve (KD0WMO), and Gary (KD0SQA) do a great job and it is greatly appreciated.

We've been having a great turnout for the net and no shortage of topics to discuss. If you're just listening on the side, please join us, and voice any questions you may have. Also if you can help in answering any questions we may have, it is greatly appreciated.

If you are listening and don't yet have your license you can contact us at the W0TX email w0tx@w0tx.org. Also at 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.

THE ROUNDTABLE ARCHIVE

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REMEMBER WHEN?

By Bill, W6OAV

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

Today's transceiver digital displays allow tuning to a frequency with accuracies of 1 Hz or 10 Hz depending on the transceiver model. In the 50's and 60's hams with inaccurate analog dial displays could only dream of these accuracies. However, hams had a tool that allowed fairly accurate frequency determination. Let's look at how they did this.

Figure 1 shows a typical 1950's era receiver with analog dials. The dial on the left is the main tuning dial (coarse tuning) and the dial on the right is the band spread dial (fine tuning). **Figures 2** and **3** are close ups of the both dials. If a ham wanted to tune to approximately 21.050 MHz on 15 meters, he would tune the main tuning dial to the 21 MHz mark. Note that each mark here represents 200 kHz. The ham would then tune the band spread dial to between the 21.040 and the 21.060 MHz marks as shown in **Figure 3**. Note that each mark on the 15 meter scale represents 20 kHz. Inspection shows that this is not very accurate. There are two problems. The first problem is that the dial settings are approximate. The second problem is not knowing the accuracy of the dials. So, how did hams overcome this issue? They used a crystal calibrator!

A crystal calibrator is a crystal controlled oscillator (CCO) which generates a signal every 100 kHz. **Figure 4** shows a typical CCO of those days. So, how would a ham use the CCO to obtain dial accuracy? We'll use 21.050 MHz again for this discussion. The ham would set both the main tuning dial and the band spread dials to the 21 MHz mark. He would then turn on the CCO and slightly tune the main tuning dial for a peak reading on the S Meter. This would calibrate both dials at 21 MHz. He would then verify the band spread dial accuracy by tuning up frequency and verifying that there were S meter peaks at 21.1, 21.2 and 21.3 MHz. Once satisfied of the band spread dial accuracy or, after making slight adjustments, he would then tune the band spread dial to 21.050 MHz. This process was awkward but gave some degree of accuracy. The more sophisticated receivers had built in CCO's. Some CCOs also produced signals every 25 kHz for better tuning accuracy. Since tube receivers drifted during warm up, the ham would power up the receiver and wait for a half hour or more before calibrating the receiver.

All CCOs had a crystal tuning capacitor for calibration. When first powering up a CCO, the standard practice was to calibrate the CCO. This involved tuning a receiver to WWV and then adjusting the capacitor and zero beating the CCO's signal with WWV's signal. Zero beat was accomplished by listening to the receiver while tuning the CCO's capacitor. As the CCO signal approached that of WWV, the beat tone would go down in frequency. When zero beat was obtained, there would be no tone indicating that the CCO frequency was identical to that of WWV.

One often hears the phrase "Ah, for the good old days". In this discussion, that's not the case!



Figure 1 - National NC183D Ham Band Receiver



Figure 2 - NC183D - Main Tuning Dial

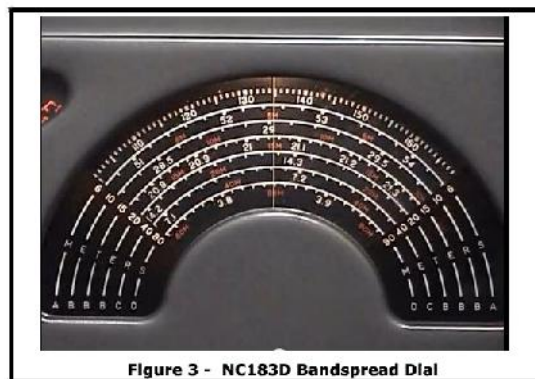


Figure 3 - NC183D Bandspread Dial



Figure 4 - Heathkit Calibrator



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ROUNDTABLE ROUNDWORLD

Submitted By Editor, N0HI

From time-to-time, we 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 Country.

We will publish it at a later date in this spot. We want to thank those who have sent us information.

To respond to this request send your information to n0hi@arrl.net.

We would love to hear something about you and how you came to read our newsletter.

session in Centennial on Saturday, June 20.

Floyd (K6HJV), a.k.a. Tom, a.k.a. Floyd, upgraded from General to Extra. Floyd is a DRC member and U.S.A.F. veteran!

Brennan Pate successfully completed the exams for Tech and General.

Congratulations to them both, and thanks to the VE Team members Lance (N1ETV), Robert (K0RCW), and Kevin (KC9PDX) for giving up their Saturday morning to administer this exam!



VE SESSION REPORT

By Tom, KC2CAG

The DRC VE Team conducted an ad hoc (on demand)

MAY TOWER WORK PARTY

By Gerry, W0GV

Mild temperatures, sunny skies, no wind, no lightning or rain; that is exactly what we got for our work party at our Centennial Cone repeater site on May 30th. We met as planned at 7:30 a.m. in Golden and proceeded with a nine vehicle caravan to our tower site.



The group about to "git er' done".



The tower climbers!

At the site our climbers Dave (K0HTX), Dave (WG0N), Jason (AC0UA) and our first time climber Patrick (W4PSS), donned their gear and proceeded one by one up the 180 foot tower. The remainder of the ground crew Steve (K0SDC), Kevin (KC9PDX), Jan (WY0J), Bill (AC0VC), Carmen (N0OCL), Bob (KE0SJ), Kenny (KE0CNS), Wally (AC0T), Cathy (N0CRZ) and Gerry (W0GV) assisted on the ropes, sent parts and tools up the tower, took pictures and just generally enjoyed a day out in the beautiful Colorado Rockies.



Jason in action!



The tower in all of it's glory.

On the tower loose hardware was removed, clamps and grounds were installed or secured, and feed-lines checked for condition and security. One interesting condition found by Dave (WG0N) was lightning damage to a connector on our 145.490 repeater antenna. The damage was repaired and the connector resealed. And finally an antenna feed cable was replaced on the Intermountain Repeater Group's 145.280 antenna.

I can definitely say; it was a "Mission Accomplished" day for the DRC. Now it is about noon time and the weather is still wonderful. What do you do after a successful trip to a repeater site? Eat lunch of course. The caravan proceed down the mountain back to Golden where the majority of the group enjoyed a good lunch and lots of ham conversation.

FOXHOLE RADIO

Submitted By Fred, AA0JK

Compare this radio receiver to the radio you use today.

The "Foxhole radio" was developed and used by GI's during the late war eras. Your basic crystal receiver minus the crystal. They were unable to use regenerative tube type receivers of the day, for fear of detection.

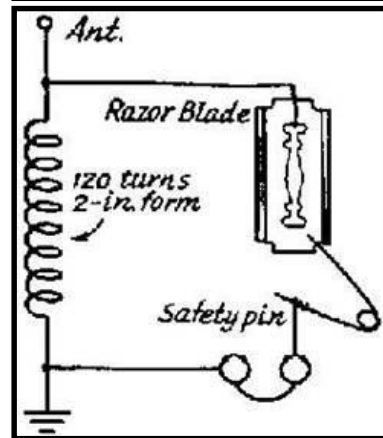
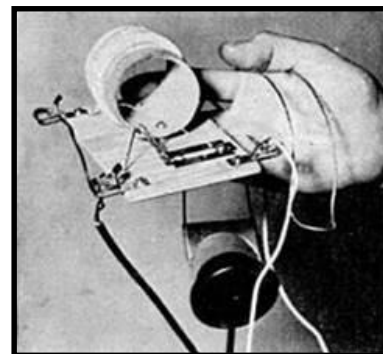
The oscillators in the receivers generated an RF signal, (a QRP transmitter). In the case of the European wars, the Germans found that they could locate the hidden radios using RDF, (Radio Direction Finding), Fox hunting techniques, and eliminate their operation along with the individuals using them. POW's fabricated these foxhole receivers to gain news and information from the outside world.

Consider the creativity of the individuals who fabricated these gems while in environments lacking the resources needed to make a conventional radio of the time. In many cases these individuals were amateur radio operators drafted into military service, some enlisted. Sinking ones bayonet into the dirt to obtain an earth ground. Stringing a wire for the antenna. This was taking it down to the basics.

It worked.

http://cdn.makezine.com/make/wp_foxholeradio.pdf

<https://youtu.be/1qHyliSK7Lo> Radio Direction Finding (RDF)



COLORADO TO HOST USA AMATEUR RADIO DIRECTION FINDING CHAMPIONSHIPS IN AUGUST

Submitted By Tom, KC2CAG

Registration is open for the 15th USA and 8th IARU Region 2 Amateur Radio Direction Finding (ARDF) championships, August 27-30, in Elbert, Colorado. The event will take place at the Peaceful Valley Scout Ranch, a 3300-acre site at 7000 feet elevation, about 40 miles southeast of Denver.

An optional ARDF "training camp" will take place on Monday through Wednesday, August 24-26, just prior to the competition, with separate morning and afternoon sessions planned for each day. Participants may attend as many sessions as they wish. Training sessions will concentrate on how to take reliable bearings, interpret reflected signals, and determine likely transmitter locations, as well as on course strategies, route choices, and other essentials for success.

The championship competition begins on Thursday, August 27 with foxoring -- a combination of RDF and classic orienteering on 80 meters, in which participants navigate to marked locations on their maps where very low power transmitters can be found nearby. A 10-transmitter short-course sprint competition on 80 meters takes place the next day.

The classic full-course 2 meter main event gets under way on Saturday morning, with five transmitters in a very large forest. The banquet and awards presentation follows that evening. A similar full-course 80 meter main event takes place Sunday morning; an awards presentation follows.

The International Amateur Radio Union (IARU) sets ARDF championship rules. Participants are divided into 11 age/gender categories. In classic ARDF championships, competitors start in small groups made up of different categories. Working independently, they navigate through the course -- a distance of between 4 and 10 kilometers -- seeking hidden transmitters. They plot their direction-finding bearings on



(Continued on page 9)

(Continued from page 8)

provided orienteering maps that show terrain features, elevation contours, and vegetation type.

The USA ARDF Championships are open to anyone of any age who can safely navigate the woods alone; a ham radio license is not required. Participants compete as individuals and bring their own direction-finding gear to the events.

More information is on the Event Information Page. All entering the ranch must be registered. For additional information on ARDF, visit the Homing In website. -- Thanks to ARRL Amateur Radio Direction Finding Coordinator Joe Moell (K0OV).

YAESU FUSION DEMYSTIFIED

By Gerry, W0GV

Since the club installed the new Yaesu Fusion repeater there have been lots of questions and discussion about it. I will attempt to explain some of the features of this new system including what it will and will not do. First off unlike most other repeaters the Fusion comes from the factory as a dual band repeater.



We have ours set up as a UHF repeater. With a little front panel programming it can become a VHF 2 meter repeater. However, we would need a different antenna and duplexer. How is this possible? Inside the repeater case is actually a dual band, mobile type radio with a detached dual band power amplifier, ac power supply, control electronics and cooling fans.

First we have the analog mode, which is the same as the majority of the other DRC repeaters; analog FM modulation in and analog FM modulation out. Now here is where the differences come into play; C4FM digital modulation in and C4FM digital modulation out. For this mode you must have a Yaesu radio that is capable of C4FM modulation. If you have a newer Yaesu radio, consult your manual to see if you have this feature.

Keep in mind whether you have an older or newer Yaesu radio capable of C4FM; Make sure you have downloaded the latest version of firmware from Yaesu's website. What makes the digital modulation different and better in some situations? It is the lack of noise with a weak signal in and out of the repeater and a pleasant easy to understand voice quality along with the ability to transmit data along with voice. Data along with the voice has some cool features like displaying the other stations distance and direction from you. In addition the digital data does bit error checking which helps avoid dropouts in the digital voice mode.



There is also a full voice mode which is supposed to have improved audio quality but lacks the digital data along with the voice. Our repeater is set to the digital voice along with data mode. There is also a full data mode. In this mode you can send pictures from one radio to another radio. To do this you must have a Yaesu microphone with the camera option.

As you can see, the Fusion is designed to sell equipment and accessories. So you ask how does the repeater know what is going on? It has what they call Automatic Mode Set (AMS). The way our repeater is set; if its receiver hears an analog FM signal, it transmits an analog FM signal. If its receiver hears a digital C4FM signal it transmits a digital C4FM signal, all automatically. There is another mode that will let the repeater always transmit an analog FM signal regardless of it receiving an analog or digital signal. Our repeater is NOT set up for this mode.

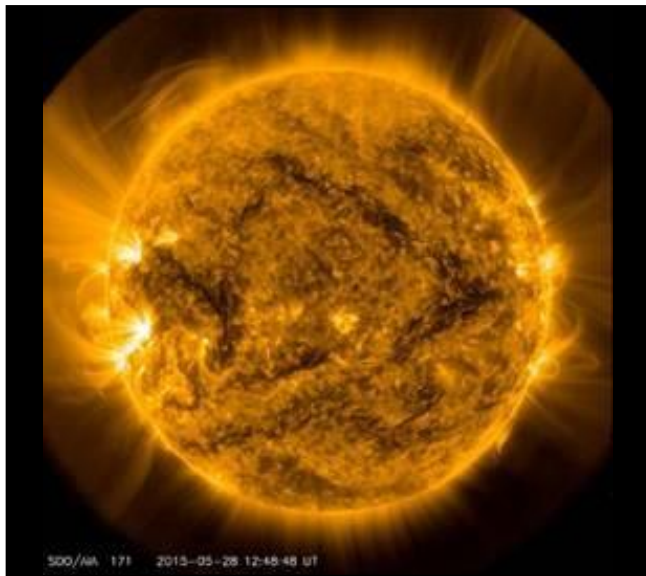


The Yaesu Fusion is NOT compatible with other digital modes like D-STAR or MOTOTRBO. Also the Fusion is not really a spectrum efficient mode when compared to MOTOTRBO; which can have two simultaneous conversations on the same amount of bandwidth as the Fusion has one conversation. I hope this helped demystify your understanding of the Fusion system. Our Wednesday evening Learning Net and our Elmer Session prior to our monthly meeting is a great place to get further clarification.

SOLAR UPDATE

BY FRED, AA0JK

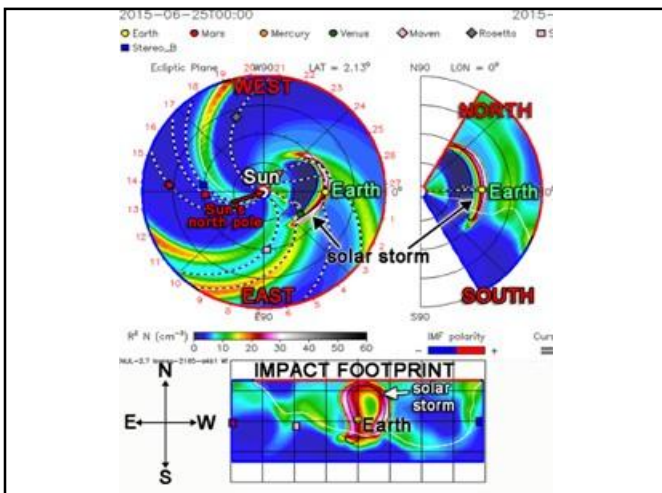
Solar Activity Report



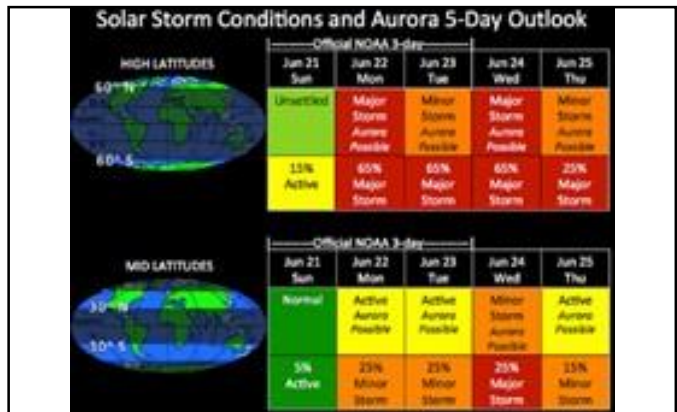
From quiet to OMG!!!

June started out with Solar activity reports of activity being low, the Sun mostly quiet. June 16th reported little chance of significant flares and the odds of an X-class explosion at no more than 5%.

Well did that change fast. Along comes sunspot AR2371 and AR2361 around the east limb, growing rapidly during a 24 hour period with a CME emerging from the blast site facing Earth. The sun seems to have woken-up and there goes the HF bands. Geomagnetic storming reached the G4 –Severe – level at 05:13 UTC on June 23rd and NOAA (SWPC) predicted more storming ahead.

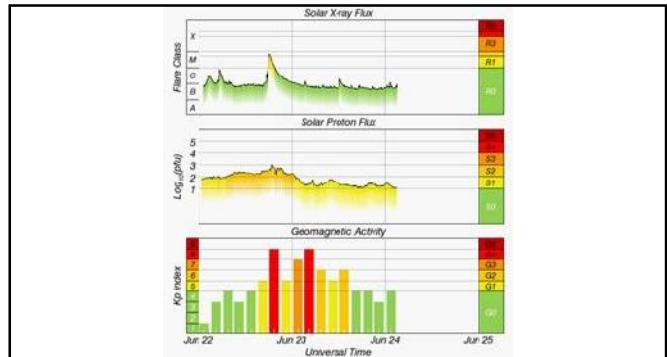


G4 levels, Severe, can cause widespread voltage control problems and some protective systems will mistakenly trip out key assets from the grid. Spacecraft operations may experience surface charging and tracking problems, corrections may be needed for orientation problems. Other systems induced pipeline current affect preventive measures, HF radio propagation sporadic, satellite navigation degraded for hours, low-frequency radio navigation disrupted, and aurora has been seen as low as Alabama and northern California (typically 45' geomagnetic lat.). NOAA.gov.



Forecast of Solar and Geomagnetic Activity 22 June - 18 July 2015

Solar activity is expected to be at moderate to high levels (R1-R2, minor-moderate). Active Regions 2367 and 2371, and the return of old Region 2365 on 30 Jun, are expected to keep activity levels enhanced through the outlook period.



Forecast:

Unsettled to active periods are expected on 06-08 Jul, 12-13 Jul and 18 Jul, along with minor storm periods (G1-minor) on 05 and 11 Jul, due to CIR/CH HSS effects. Predominately quiet to unsettled levels are expected for the remainder of the outlook period.

Stay tuned.....

LOOKING BACK AT THE DRC PROVIDED BY WOODY (W0UI)

COVER OF ROUNDTABLE, JUNE 1960

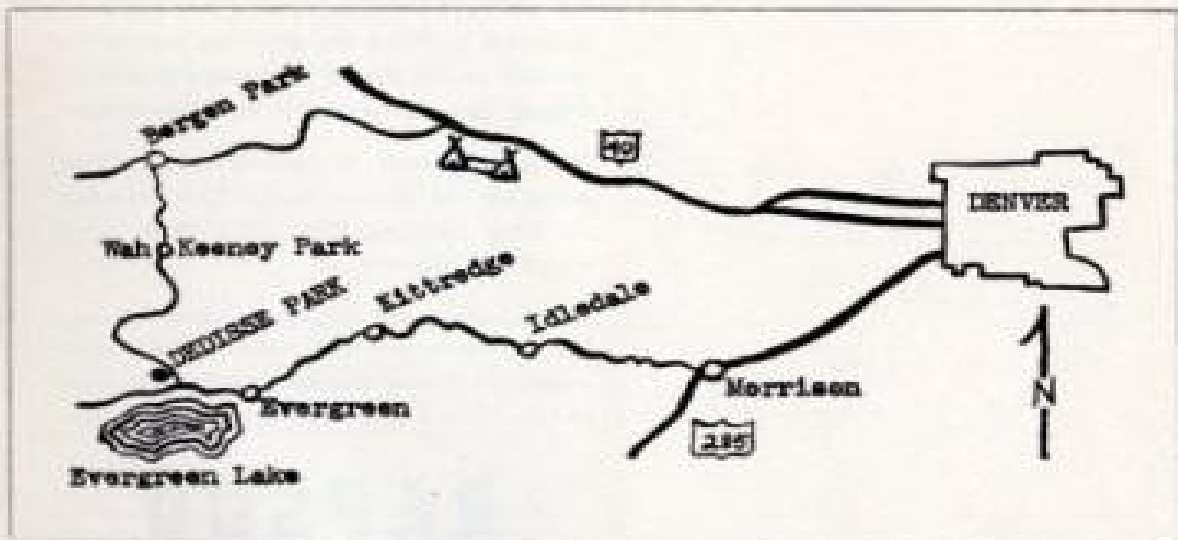
HAMFEST ISSUE



THE
JUNE 1960

ROUND TABLE

THE DENVER RADIO CLUB, INC.



COLLINS 75S-1 HEADS PRIZE LIST DEDISSE PARK SCENE OF HAMFEST

FOR DETAILS ON THE BIGGEST HAMFEST EVER, SEE PAGE 3

WALKER HEADS JUNE PROGRAM

Every Ham who has a transmitter will want to attend the Denver Radio Club meeting Wednesday, June 15th, at the Sabin Hall of the Colorado General Hospital when "Bill" Walker, W0DWP, will

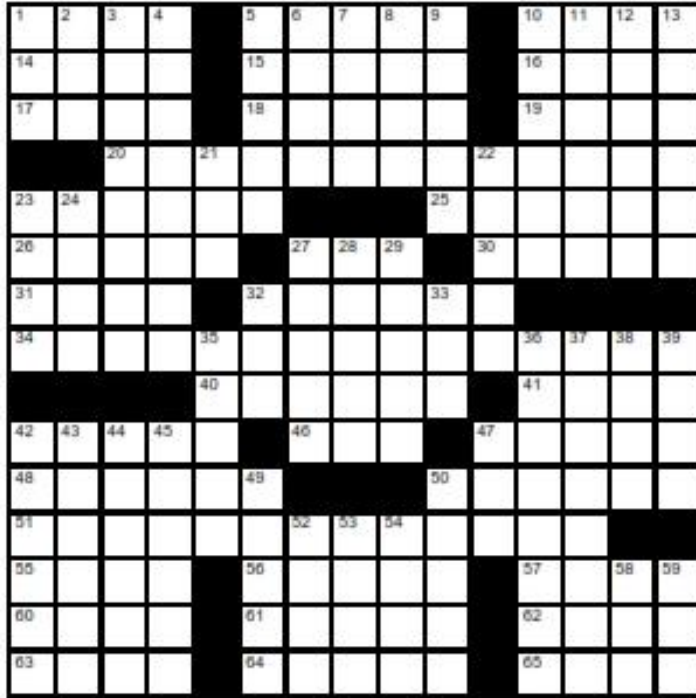
give a program entitled "Similarity of Wave Behavior," discussing SWR with film. For simplicity and accuracy of explanations you cannot beat what Bill hands out.

This puzzle is provide courtesy of Chris Codella - W2PA. The URL for his website is <http://www.w2pa.com>. The solution for the puzzle is on page 13.

DXpedition Ditties

Across

- 1. Call heard during November
- 5. Bygone
- 10. CQ DX ____ of fame
- 14. "Hurry!"
- 15. Deleted HK0 last name
- 16. Hebrew month
- 17. Org. not for OMs
- 18. Less inept
- 19. KH6 root
- 20. VP6 air space?
- 23. News manager
- 25. Listened attentively
- 26. The missing ones for your DXCC #1, say
- 27. Suffix with MOS or J
- 30. Engine sounds
- 31. W8 - VE3 separator
- 32. Provides weapons again
- 34. What it costs to get to BS??
- 40. Less fat
- 41. Three-ply cookie
- 42. Kind of finish, on a front panel, say
- 46. Modern alternative to a #47, e.g.
- 47. Navigation radio
- 48. "We got ____!" - early ham radio headline
- 50. S, SWR and others
- 51. Bad WX on KH8?
- 55. Suffix with posi-
- 56. "E pluribus unum," e.g.
- 57. Elevator guy
- 60. Lunar effect
- 61. Plate



- 62. Plenty
- 63. Midmonth time
- 64. Temporary guys
- 65. EI language, e.g.

Down

- 1. IOTA item
- 2. "Got it"
- 3. IS-land island
- 4. Talk incoherently
- 5. Hamshack sign, when transmitting
- 6. Grease
- 7. Where to find a hero
- 8. Fifty-fifty
- 9. 0 or 360
- 10. Prefix with -dync
- 11. KL7

- 12. Listener to a QSO, say
- 13. Belonging to dx-peditioner Colvin
- 21. Sin minus 90
- 22. Severe
- 23. She sheep
- 24. DL org.
- 27. Wild
- 28. Spanish PX
- 29. Aligned
- 32. Future fish
- 33. Buro alt., sometimes
- 35. Grace word
- 36. A little number?
- 37. Word with lightning, for hams especially
- 38. Kind of admiral

- 39. Geologic periods
- 42. DX-peditioner Laine
- 43. Tick or mite cousin
- 44. 3-500Z, for example
- 45. Metric 62-across
- 47. KH6 garland
- 49. Winds of propagation
- 50. Long tresses
- 52. Billionth: Prefix
- 53. Last bit, in RTTY, say
- 54. Like a splattering SSB signal
- 58. PC key
- 59. VP6 heading from KH6

ELMER SESSION START TIME

The Elmer Session Starts at 6 p.m. before the regular 3rd Wednesday DRC Meeting!

Come out and join in on the sharing of information.

FACT OF THE DAY

NE-2 Lighting Protection

Sometimes NE-2 neon lamps are used on receiving antennas to provide protection from transient voltages induced by lightning. There are several problems with that. One is the high firing potentials of typical NE-2 lamps. Individual lamp firing potentials vary, but they generally fire at about 90 VDC or 65 VAC. That is a lot of voltage to apply to the input of a sensitive RF amplifier designed to amplify signals in the microvolt range. Current-carrying capacity is another problem. Lightning induced voltages are commonly high enough to flash across any current-limiting series resistor, causing lamp current to greatly exceed NE-2 ratings. Even if the current doesn't cause a lamp to explode or show visible signs of damage, internal sputtering will remove rare-earth coating from the electrodes. That will increase both the DC and AC firing potentials and cause the lamp to provide even less protection next time.

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WHAT IF THE WEATHER CHANGES?

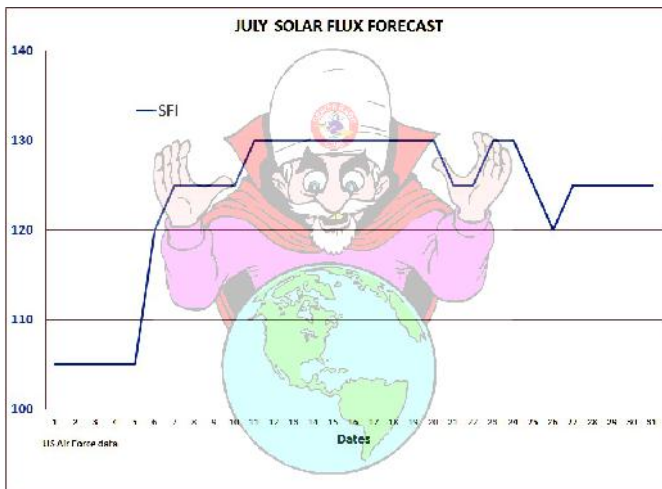
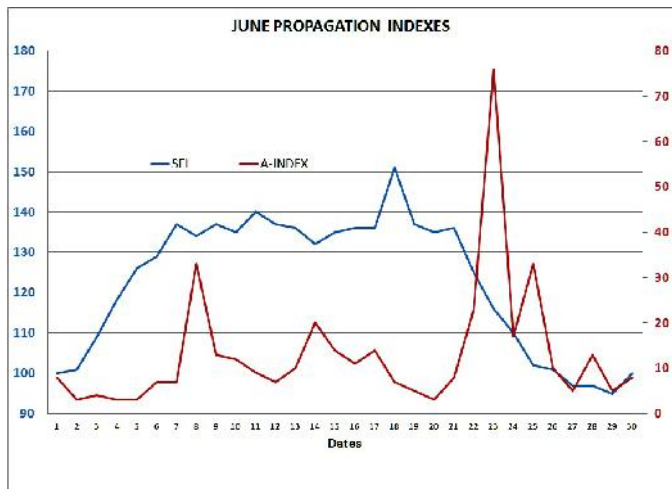
As every Coloradoan knows our weather can take a sudden change for the worse. If we should experience a turn in the weather on the day of our monthly DRC meeting it may be necessary to cancel the meeting. If this should happen listen for meeting status reports on 145.49 or 448.625 MHz repeaters during the afternoon on the day of the meeting.

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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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.

2015

- July 11** – **PPRAA MegaFest**
Monument, CO
Lewis-Palmer High School
<http://ppraa.org/megafest>
- July 23** – **Central States VHF Society Conf.**
Westminster, CO
<http://csvhfs.org>
- August 16** – **DRC Hamfest**
Jefferson County Fairgrounds
<http://www.w0tx.org>






Sept. 27 – **Boulder BARCfest**
Boulder County Fairgrounds
<http://www.qsl.net/w0dk>

Nov. 7 – **285 TechConnect 2015**
Lakewood, CO
<http://na0tc.org>

2016

May 13 – Rocky Mountain Division Convention
(HamCon Colorado)
Keystone, CO
<http://www.hamconcolorado.org>

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 club membership here in the RoundTable. Send to n0hi@n0hi.com.

JULY 2015							DRC Net Sunday's at 8:30 p.m. on 145.490 / 448.625 (No PL)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday							
			1 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL) 	2	3								
5	6	7	8 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL) 	9	10	11 ARRL IARU HF World Championship Begins 1200 UTC							
12 ARRL IARU HF World Championship Ends 1200 UTC	13	14	15 DRC Meeting Elmer 6:00 p.m. General 7:00 p.m. 	16	17	18							
19	20	21	22 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL) 	23	24	25							
26	27	28	29 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	30	31								

Check www.ARRL.org for Contests and Rules!

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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	Usable by Technicians on 2 meters. See January 2015 RoundTable.
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.
NEW 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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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 n0hi@arrl.net. The submission deadline is the 20th of the Month. ~ Editor