



THE ROUND TABLE

Monthly Newsletter Of The Denver Radio Club

Since 1917

March 2023

PRESIDENT'S MESSAGE

BY GERRY VILLHAUER, W0GV

Hello DRC Members.

Looks like better weather is coming! It sure has been a tough winter. In my mind, I see winter as being over when March 1st rolls around. We may have heavy wet snow but milder temperatures and faster melting...Usually!

The ARA/RMHam Swap fest has come and gone. It appeared to me they had a successful event. We did very well with our table and also, passed out flyers for our DRC Hamfest in August. Speaking of Hamfests, April 1st. will be the LARCFEST at the Boulder County Fairgrounds in Longmont. We will have a couple tables, so, come by and say hello.

Thanks to Barry, W2UP, for his presentation on High-Speed Telegraphy at our February meeting. If you remember, there are people out there capable of copying well over 100 words per minute. My primary mode on the HF bands is CW. I can't imagine any person that is able to copy Morse code at that speed. Amazing!

At this time, we are waiting for confirmation from the presenter for our March 15th, 2023 meeting. When finalized it will be announced on our nets and published on the DRC website. Stay tuned for the announcement.

Thanks to all of our new members who have recently joined the DRC. Your support is very much appreciated. Please come to meetings and events and stay active. Your name and call will be posted in this edition of the Round Table.

73 for now,

Gerry
W0GV
President



WHO'S NEW IN THE DRC?

FROM CATHY VILLHAUER, N0CRZ, DRC MEMBERSHIP

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 welcome them to the club and repeaters. Welcome to our newest members:

- Linda Tzouanakis - Associate Member
- Marcel Krzystek - KØMKX
- Eric Wiley - KFØLMM
- Stuart Rakley - KC2MAJ

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.

FIELD DAY COORDINATOR NEEDED

FROM DRC PEOPLE

Many thanks are due to Doron, K1DBC, for his coordination of the DRC's Field Day over the last few years. Due to his taking on other responsibilities for the Club, we are now in need of a Field Day coordinator.

This year Field Day is on June 24th and 25th. If you have questions, or are interested in taking over the role, and helping the club with one of the more important Ham events each year, please contact Gerry (president@w0tx.org) and Doron (k1dbc@w0tx.org).

For more information about what Field Day entails, please see: arrl.org/field-day

-- / -

ADAMS-ARAPAHOE COUNTY ARES MONTHLY DMR / WINLINK NET

FROM DOUG COMER, KE0DC

This email came over the wire from Doug, the ACARES Digital Coordinator and Deputy Training Officer:

Adams-Arapahoe County Amateur Radio Emergency Service holds our monthly DMR/ Winlink net on the DRC DMR repeater, TS1, TG 310873, at 7 pm on the first Thursday of the month.

-. / -

AMAZON SMILE ENDED

NEWS PROVIDED BY JED BAER, KD0YMG
 COMMENTARY PROVIDED BY EDITOR

Amazon ended the *Smile* program in February. So, instead of buying anything on Amazon you can just donate the cash that would have gone towards Amazon directly to the DRC. The funds can be used to help, for example, establish repeaters and their associated links from the southern border to the northern border. That way more people can check in to the club's nets. We'll be famous.

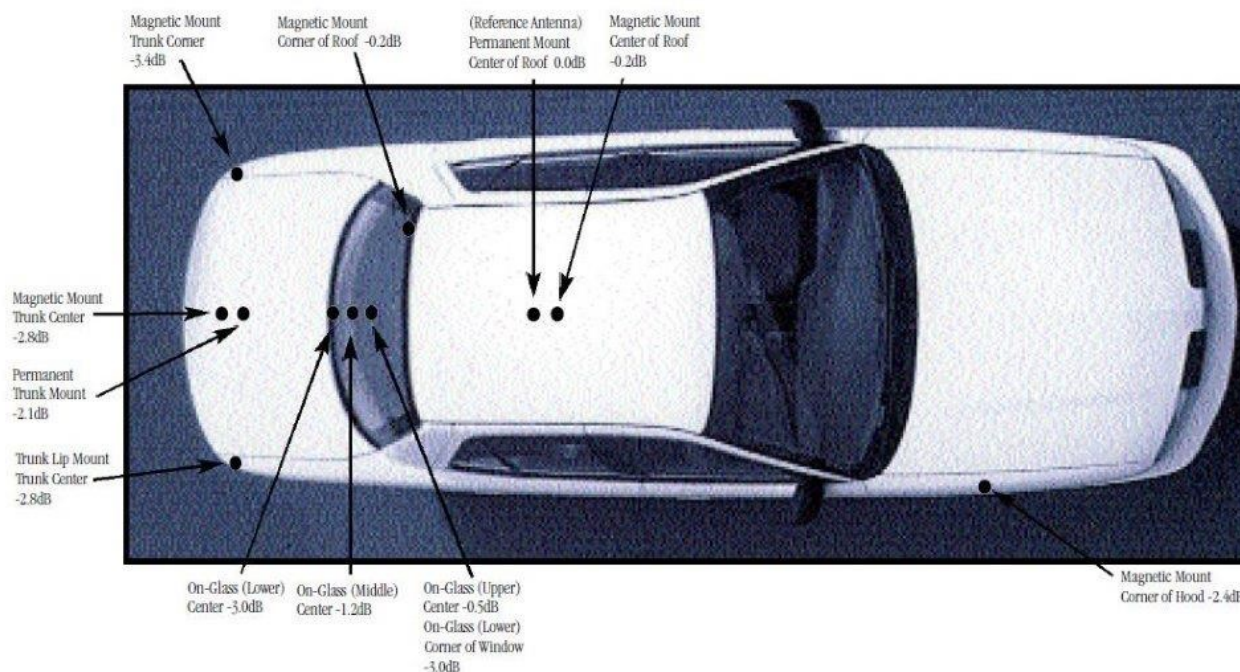
MOBILE ANTENNA THEORY AND PLACEMENT

BY BILL RINKER, W6OAV

The latest Larsen antenna catalog contains a lot of good technical information about coax, portable antennas (rubber ducks), mobile antennas and portable antennas (mag mounts). Of particular interest to many hams is the section on the performance of mobile antennas at various locations on a vehicle. See Figure 1.

The catalog can be accessed at:

https://issuu.com/pulseelectronics/docs/amateur_radio_pulselarsen



DOES WEATHER AFFECT RADIO SIGNALS

BY BILL RINKER, W6OAV

The weather can affect the various radio frequency spectrums differently:

- HF (160 thru 10 meters): Lightning is about the only weather phenomenon which affects this spectrum. Lightning is the largest contributor to atmospheric noise.
- VHF thru UHF: Temperature inversions created by a layer of warm air over a layer of colder air often create troposphere ducting. (Figure 1). This ducting allows VHF and UHF signals to refract off the inversion layer and propagate much farther than the normal line-of-sight distances. Extremely heavy precipitation, such as rain and snow, can cause very slight propagation attenuation.
- 1 GHz and above: The various aspects of weather, such as rain, snow, fog, humidity, etc. can cause serious attenuation by absorption and signal scattering. (Figure 2). The attenuation is caused by the short RF wavelengths relative to the size of the precipitation. The precipitation causes the signal to scatter and suffer attenuation as it passes thru the precipitation. The higher the frequency, the greater the precipitation attenuation.

Contrary to some folks' belief, wind has no affect in any frequency spectrum, unless an affect is caused by the antenna moving due to the wind!

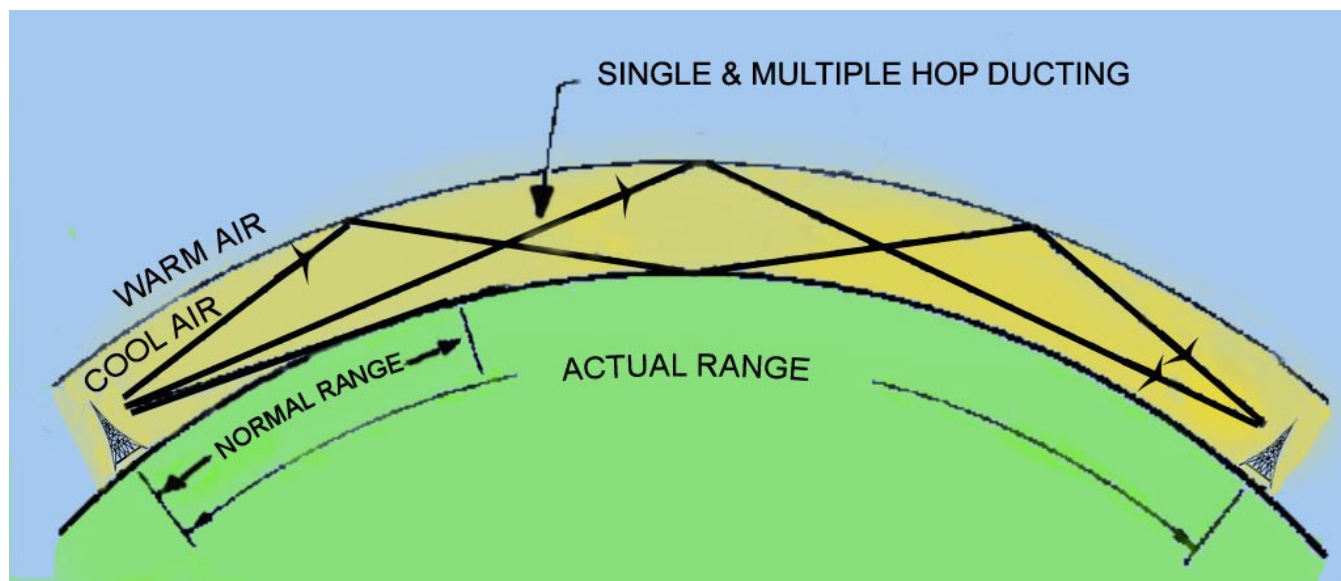


Figure 1 - VHF/UHF signals may be propagated long distances due therminal inversions

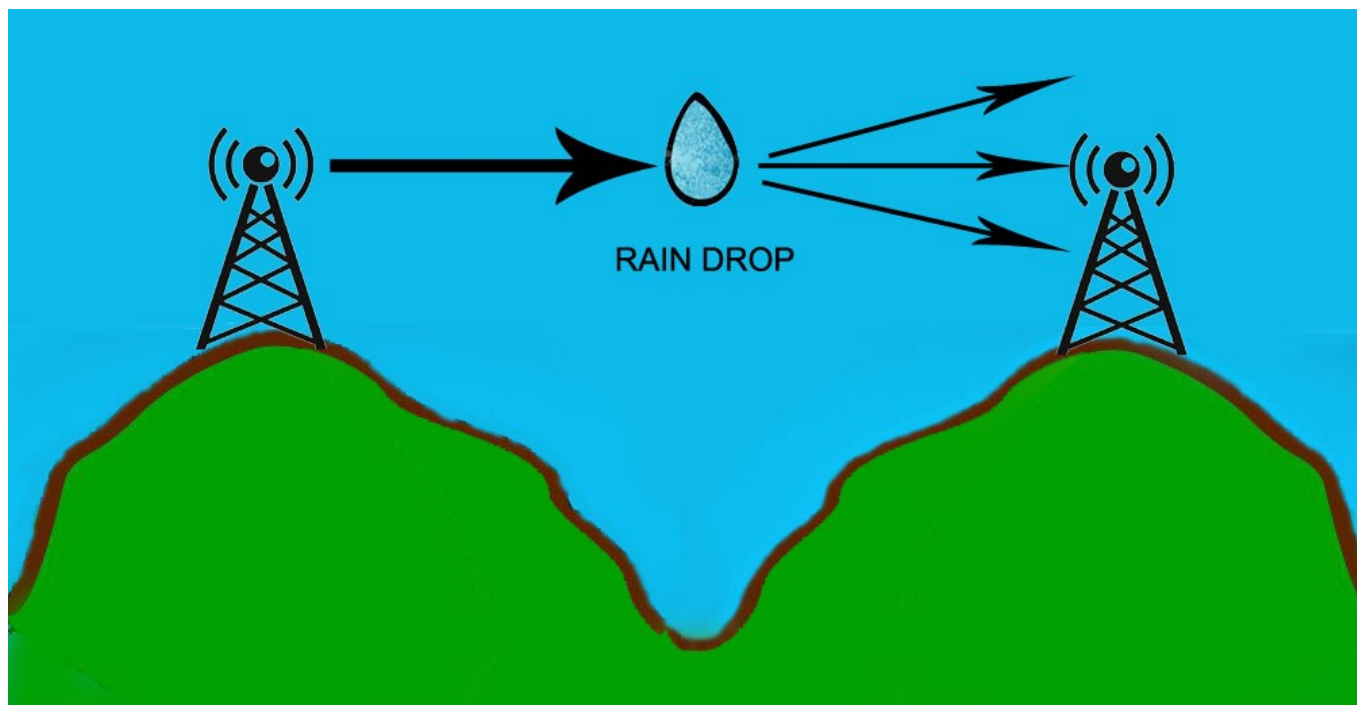


Figure 2 - Rain attenuation and scattering of gigahertz frequencies

References:

https://en.wikipedia.org/wiki/Radio_propagation#Rain_scattering

<https://www.barrettcommunications.com.au/news/can-hf-and-vhf-radio-propagation-overcome-extreme-weather/>

<https://www.aowireless.com/blog/bid/34066/Does-Weather-Effect-Wireless-The-5-Misconceptions-Part-1>

<https://digitalcommons.imsa.edu/cgi/viewcontent.cgi?article=1059&context=issf2018#:~:text=Radio%20waves%20are%20generated%20by,radio%20waves%2C%20due%20to%20temperature.>

~Editor's Note: We would love to publish a monthly column profiling DRC members' stories about how they got into the ham radio hobby, their interests and backgrounds. You may be boring but your story is probably interesting! Please submit your story to roundtable@w0tx.org.

LOW-COST HAM RADIO ASSEMBLIES & PARTS

By Ed, WA7EM

Note: The following article was published in the [March 2022 issue](#) of the *Splatter* (Longmont Radio Club). Permission to publish was provided by WA7AM and W0UM. Article provided by W6OAV.

HF Ham radio equipment typically costs several hundred dollars or easily into the thousands. That's true for a reasonably modern, new transceiver bought at one of the big name Ham retailers. But, there is an aspect of radio that you can get into for tens of dollars. That aspect is building small low power kits and DIY projects following some internet or magazine instructions. You can even get a 40 meter transceiver for a little over \$5.

Old timers can tell stories about how easy it was when you could go to your nearby Radio Shack and buy parts. Radio Shack is gone, but in its place has popped up a large number on internet stores serving the hobbyist market. Below are those I am aware of.

Even if the something you build is not real practical for you, or you are not into CW or don't yet have your General license, there is a joy in succeeding in a small project and learning a little about how things work.

eBay.com

eBay has everything from used expensive vintage equipment to \$1 components. Some are competitive auctions. Many are "buy it now" for a fixed price. There is a mixture of sellers – from established US businesses to garage shops selling auction/surplus to individuals selling what they own to Asian import companies shipping directly from China.

I bought a \$5 "Pixie" 40 meter transceiver on eBay for about \$5. It is a 2 transistor 1 watt, fixed frequency CW rig. It does work. I made a contact to Colorado Springs with little difficulty. Its receiver is pretty broad and you hear a lot of stations at the same time. It is more of a novelty than a real daily use rig. But, you learn something and have some fun for \$5.

Pixie \$5 transceiver

https://www.ebay.com/sch/i.html?_from=R40&_trksid=p2334524.m570.l1312&_nkw=pixie+cw+transceiver&_sacat=0&LH_TitleDesc=0&_osacat=0&_odkw=qrp+transceiver

I also bought my 1960 Vintage Heathkit HW100 on eBay for \$120. I won that auction, bidding against several others. It was listed as "for refurb or parts". With some minor work, it is now fully operational.

I have bought a lot of different components, connectors, wire, etc. on eBay.

You should get a PayPal account to pay many of these very small businesses.

Amazon

<https://www.amazon.com/>

Amazon is a middle-man company that does the internet advertising and order taking for 1000s of very small companies. Don't be bashful about looking for fairly specialized electronic and Ham parts on Amazon. I pay the annual fee for Amazon Prime. That gives me free shipping. It continues to amaze me that I can order a few dollars worth of obscure electronic parts on Amazon and it shows up at my door 2 days later for \$0 shipping fee.

QRPME

<http://qrpme.com/>

QRPME sells mostly very small, simple projects. They love producing projects that can be mounted in a tuna can. They have supported a variety of "buildathons" at recent Ham conventions or on line events like the "QSO Today Virtual Ham Expo" on 3/12/22. They sell a "better" version of the Pixie transceiver that can be moved to different frequencies and has better filtering.

Pacific Antenna

<https://www.qrpkits.com/index.html>

Their company name is a little misleading. They do sell wire antennas for QRP and portable. Most of what they sell is small, inexpensive kits. I bought a \$25 audio bandpass filter from them. I may buy a transmit/receive switch from them.

QRP Transceivers, Amplifiers, Audio Kits, etc

QRP Guys

<https://qrpguys.com/>

As their name implies, they are into low power, simple kits. They are a pretty stable business that has grown a few steps beyond a "garage shop" I bought an iambic keyer from them for \$15. Most modern radios support iambic paddle keyers. But, my vintage radios don't. With this \$15 kit, it does.

QRP Labs

<http://shop.qrp-labs.com/kits>

QRP labs has a strong "cult" following for their QCX series of QRP transceivers. You find a lot of operators doing POTA/SOTA portable CW work using the QCK radios. These radios are full feature radios of very modern design. I have bought a 20 meter QCX-Mini 5 watt palm size transceiver from these guys for \$60. The QCX radios users have a strong support community on their qrplabs@groups.io email group.

HF Signals

<https://www.hfsignals.com/>

Before there was the QRP Labs products there were the BITX transceivers. These are multi band CW/SSB transceivers imported from India. They also have strong support groups on Facebook and groups.io. The basic BITX has been the launching platform for many skilled builders doing modifications and improvement. There is a very active Facebook group offering help to each other and sharing their mods and improvements.

Max Gain Systems

<https://mgs4u.com/>

They primarily sell parts for building antennas. But, they have a odd collection of surplus and specialty components. I bought a 6:1 vernier dial and knob to slow down and stabilize the tuning on my vintage HW100 transceiver.

Hy Power Antenna Company

<http://www.hypowerantenna.com/products>

I have not bought from them. But, they sell a large variety of wire antennas, for both fixed and portable use.

Sparkfun

<https://www.sparkfun.com/>

Sparkfun is mostly about Arduino and Raspberry Pi. They sell many versions of the basic CPU boards. And they sell a wide range of all kinds of I./O modules. But, they also sell a variety of assembly tools, breadboarding fixtures and many components for breadboarding. Their warehouse is just down the road in Niwot. Prior to Covid, you could go to their will-call desk to pick up your order same day. For now, it is internet order and shipment. Maybe someday pickup will again be possible.

Adafruit

https://www.adafruit.com/?gclid=Cj0KCQiAr5iQBhCsARIsAPcwRONGqI9QvLT6Ltzvd808AkPVfCWxRov3hOIVcRhWTyVYEKjsWRqCBFcaAiWTEALw_wcB

Adafruit is a direct competitor to Sparkfun, carrying much the same merchandise.

Mouser

<https://www.mouser.com/>

Mouser and the next several companies are industrial component businesses. They carry a very wide variety of transistors, integrated circuits, resistors, capacitors, inductors, switches, etc, etc. But, they will sell you parts individually or in small lots with no difficulty or extra cost. I have bought various integrated circuits, diodes, transistors, etc from them.

Digikey

[Digikey](#)

Same as Mouser

Circuit Specialist

https://www.circuitspecialists.com/electronics-components?gclid=Cj0KCQiAr5iQBhCsARIsAPcwRONIaR7jHvn4ImD6GJ8kAyStdHB0A15Q55qctCHcG4FdRuA_HukUz2gaAjrJEALw_wcB

Same as Mouser

Original Article: w0eno.org/storage/2022/02/Splatter-Vol-10-Issue-108.Mar_.2022.pdf



The Denver Radio Club
is an ARRL Special Service Club

Support your hobby and *join the ARRL today!*

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



DRC's Trading Post

Don't forget you can find **locally-sourced, ham-grown** merchandise at:
w0tx.org/trade

ATTENTION

The DRC Board of Directors meetings are held on the 4th Wednesday of the month and are open to any member. Due to scheduling of meeting space, the board does not always meet at the same location and on occasion meetings are held via Skype. Anyone wishing to attend, please contact a board member prior to meeting night for specific information.

PAST ROUND TABLE PAGES

PROVIDED BY WOODY LINWOOD, W0UI

From the November 1960 edition.

Readin' the Mail

(From Splatter Chatter)

The Ft. Collins group of hams had a stake in the recent election. A base station was set up at the Sheriff's office. With mobiles scattered throughout the area, all one had to do to register for voting was call the Sheriff's Office, then a relay to the nearest mobile and up would drive a TVI chariot complete with a notary public. Of course both parties were duly represented by W0KTX and K0HRS. Even in politics ham radio enthusiasts cooperate. Congratulations, gang, on a function of public service.



BUY-SELL-SWAP

FOR SALE—Excellent condition, Gonsset Mobile Twins; G-66B, G-77. W0RQ1. 7998 Chestnut Ave., Littleton. PY 4-4284

FOR SALE—Viking II with VFO. \$200 NC 183 D Receiver like new, \$225. D104 Push to talk mike and stand, \$25. Don, K0CEQ, SK 6-2373

FOR SALE—Complete mobile rig. VFO transmitter (6146), class B modulator mike, power supply, antenna loading coil, and receiver converter. First \$50 buys it. Len Wright, W0UQM. EA 2-3296

TRADE—Ham gear, components, etc. to swap for trading stamps. Dennis, K0BTO

FOR SALE—Pair of 810's modulated with 810's class B. In two racks. 800 watts for \$250. Roscoe, W08YA, PE 3-3823.

FOR SALE—Compact all-band kilowatt rig with vacuum condenser, B&W pi modulators, T50 ma. power supply, variac seven meters. Also have factory wired Eleo T20 modulator. Misc. tubes. Milo. W0YEB, SU 1-5898.

FOR SALE—Johnson Valiant, Match Box and HRO 50T with four sets of coils all for \$450. Ed Perkins, W0OHL, 625 Roosevelt Ave., Loveland, Colo.

WANTED—Used amateur band receiver Peter Rueck, WE 4-0272.

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EDITORIAL

The Responsible Few

"Of course," said John Q. Hamateur, escorting a rake around his leaf-covered lawn, "if there's a real emergency, I'll be there to help. But I just can't take part in Simulated Emergency Test. Gotta get this lawn cleaned up, you understand."

John Q. was not alone. All over the city—all over the country, for that matter, they were saying it. "If there's ever a real emergency . . ."

In the meantime, John Q. and his counterparts can't be bothered. John, like all amateurs in the U.S. gets his license free and enjoys the protection of government regulations. He has been told, and professes to understand, that he gets his license and protection because it is in the public interest, convenience or necessity—not just for his own enjoyment. John would be the first to agree that he has a responsibility to the public in return for his privileges as an amateur. But to him, that responsibility is met merely by saying "If . . ."

Meanwhile, at ARES or RACES exercises, the same few responsible amateurs represent the hundreds of amateurs in this area. True enough, their numbers will be swelled in the event of a critical need, but until that need arises, can those few operators impress relief agencies and the public in general with the ability, willingness, and public interest, convenience, or necessity of the amateur?

Put it another way. You might tell yourself that you know that rules of emergency operation and need no training. But when the emergency comes and you check in to the RACES or ARES network to offer your services, what will happen? The operator in charge has never heard of you. He doesn't know your capabilities or background. Will he be able to trust you with important traffic at a time like that? He won't even try.

Sure, you'll be there when the real emergency comes, John Q. But by that time they won't need an amateur service anymore.



"Buy-Sell-Swap" ads are available free to members of the Denver Radio Club at the rate of two ads per membership year. More than two ads per year or ads to non-members will be charged at the rate of \$2.50 per ad of reasonable length.

DRC's EMERGENCY RESPONSES

In the event of a disaster in the metro area, please monitor our repeaters on 145.490/448.625 (primary) and 449.350 (secondary).

The emergency Net Control Operator will provide information and/or requests to members for assistance.

[W0TX Repeater Directory](#)



RANDOM SITE OF THE MONTH
RADIOAMATEUR.CH

THE ROUND TABLE ARCHIVE

Go to: w0tx.org/roundtable

THE ROUND TABLE ARTICLE INDEX

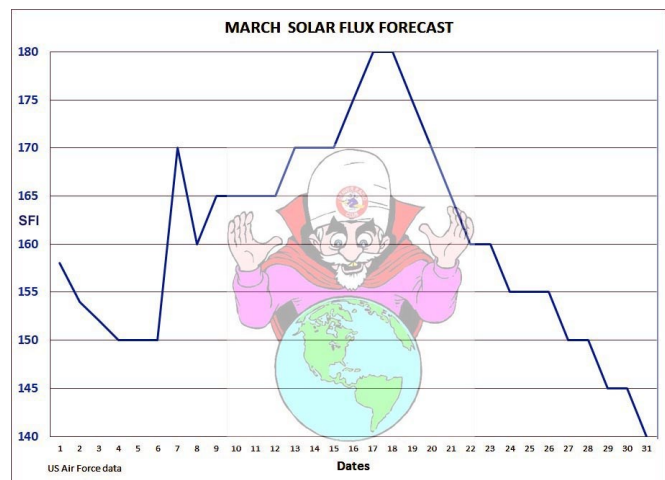
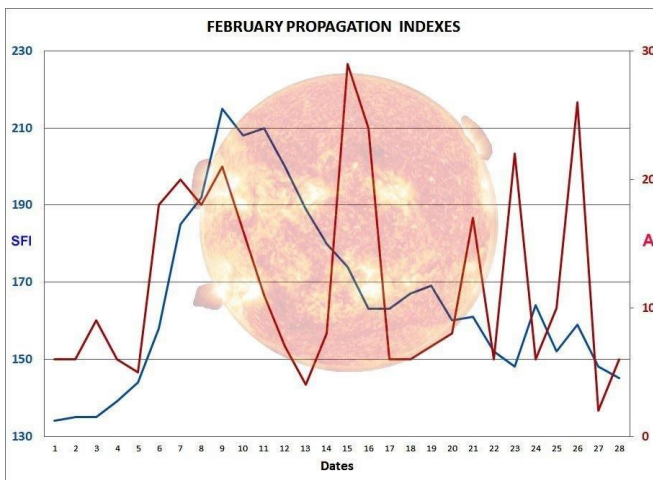
Go to: w0tx.org/RoundtableArchive/-RoundTables-Index.pdf

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 *Round Table* for more complete information on interpreting these charts, which is available at: [http://www.w0tx.org/RoundtableArchive/2010-RoundTables/RT201009\(SEP\).pdf](http://www.w0tx.org/RoundtableArchive/2010-RoundTables/RT201009(SEP).pdf)



UPCOMING EVENTS

HAMFESTS & CONVENTIONS

Event	Date	Location	Sponsor Website
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None

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
Idaho	03/11/2023	03/12/2023	Idaho QSO Party	
Oklahoma	03/11/2023	03/12/2023	Oklahoma DX Association	
Wisconsin	03/12/2023	03/13/2023	West Allis Radio Amateur Club	
Virginia	03/18/2023	03/19/2023	Virginia QSO Party	
Louisiana	04/01/2023	04/02/2023	Louisiana Contest Club	
Mississippi	04/01/2023	04/02/2023	ARRL Mississippi Section	
Missouri	04/01/2023	04/02/2023	Boeing Employees' ARS – St. Louis	
Georgia	04/08/2023	04/09/2023	Georgia QSO Party	
Nebraska	04/08/2023	04/09/2023	Nebraska QSO Party	
New Mexico	04/08/2023	04/09/2023	New Mexico QSO Party	

Source: qsoparty.eqth.net/index.html See contestcalendar.com/contestcal.html for a larger QSO parties list.








DRC REPEATERS

BAND	Freq / Shift / PL Tone	Additional Information
6m	53.090MHz (-1MHz) 107.2Hz PL	
Packet	145.05MHz	Metro Denver Area Coverage
2m	145.490MHz (-) 100Hz PL	Linked to 70cm / 448.625MHz. Primary frequency during emergency net.
2m	147.330MHz (+) 100Hz PL	Local area. Has voting receivers. 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 2m / 145.490MHz. 1° disaster net freq.
70cm	449.350MHz (-) 100Hz PL	Wide area coverage with Echolink, node # 4140. Secondary frequency during emergency net.
70cm	449.775 MHz (-)	Yaesu digital, C4FM, Wires-X, DN, VW & Data. No analog FM. W0TX Room 40931.
70cm	446.7875MHz (-)	BrandMeister Repeater: Slot 1 – Wide Area Traffic, Slot 2 – Local Talk Group 310804

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MARCH 2023		<i>DRC Net Sundays at 8:30 p.m. on 145.490 / 448.625 (no PL)</i>				
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	2	3	4 ARRL DX Phone- Begins 0000 UTC
5 ARRL DX Phone - Ends 2359 UTC	6	7  Full Moon	8 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	9	10	11
12 	13	14  Last Quarter	15 DRC Online Meeting Elmer 6 p.m. Meeting 7 p.m. School Club Roundup	16	17 	18
19	20 	21  New Moon	22 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	23	24	25
26	27	28  First Quarter	29 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	30	31	

See arrl.org/contest-calendar for additional details about contests.

DRC BOARD OF DIRECTORS

President	W0GV	Gerry Villhauer	303-467-0223	president@w0tx.org
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Board Member	KB0CHT	Jeff Irvin	Check Roster	Check Roster

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EmComm Coordinator	AD0UZ	Brennan Pate	Check Roster	emcomm@w0tx.org
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VE Team	K0RAP	Robert Pickett	720-336-0114	k0rap@w0tx.org
Website & YouTube	K1DBC	Doron Ben Chaim	720-254-1561	websiteadmin@w0tx.org

Please Let Us Know

Over the years we occasionally hear from hams who have read the Round Table 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 Round Table Round World.

To respond to this request send your information to roundtable@w0tx.org.

Subject: I'm located in...

EDITOR'S NOTE © 2023 Denver Radio Club. Articles in the RT may be reprinted with permission for non-commercial or educational use only.

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 roundtable@w0tx.org. The submission deadline is the 25th of the Month. ~ Editor