



THE ROUND TABLE

Monthly Newsletter Of The Denver Radio Club

Since 1917

October 2023

PRESIDENT'S MESSAGE

BY GERRY VILLHAUER, W0GV

Hello DRC Members.

We have lots of very nice days this time of year, but fall is definitely in the air with the 50 degree or lower night temperatures. Time to get those last minute antenna projects finished. I just installed an End Fed Wire for the low bands. I am in the testing phase now.

Elections for board members and officers were held at our September meeting. All board members and officers were retained in their positions.

All of our DRC Saturday's for this year have been completed. The committee is very pleased with the attendance and participation in these events. When they were scheduled we had no idea how they would turn out. We were very pleased with all of the events and received positive feedback. I am sure we will plan more for next year. Any comments or suggestions are welcome.

Thanks to John Protune, W6NBC for his presentation on chokes and baluns for antenna feed-lines at our September meeting. I believe it was an eye opener for many of us from comments I have heard and received. We always count on John for very interesting and informative presentations.

Our October program will be presented by Rob Steenburgh (AD0IU, formerly KA8JBY). Rob is a space scientist at the National Weather Service's Space Weather Prediction Center in Boulder, CO. He entered the space weather field over 15 years ago after serving 20 years as an Air Force meteorologist. A licensed radio amateur since 1980, he enjoys CW (particularly QRP), FT8, and building or repairing equipment. Please mark your calendar for our October 18th meeting at 7 p.m. and the learning net at 6 p.m.

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:

John Murdock - KFØNCP

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.

QUESTION OF THE MONTH

BY BILL RINKER, W6OAV

How did a romantic sunset lead to the development of the automobile radio?

The answer can be found on page 5 of the July 2020 issue of the Roundtable:

[https://w0tx.org/RoundtableArchive/2020-RoundTables/RT202007\(JUL\).pdf#page=5](https://w0tx.org/RoundtableArchive/2020-RoundTables/RT202007(JUL).pdf#page=5)

HAMFEST 2023 SUMMARY

BY CATHY VILLHAUER, HAMFEST CO-CHAIR

First of all, thank you to all who attended and helped make this year's hamfest a success. We had a total of 420 attendees, down from 473 from last year. We sold 110 tables, also down from the 120 from last year. Our overall expenses were less than last year, so we did make money this year.

We, as the board of directors, are in serious discussion to decide if we should pursue having a hamfest next year. The amount of time and work that goes into organizing it is very time consuming and we need to decide if it is worth it or not. Your input would be greatly appreciated.

Just send an email to drcfest@w0tx.org with your thoughts and comments.

Again, thanks to all who attended.

QSL CARD

Jim provided a copy of his card. He enjoys seeing cards that capture a bit of the sender's locale. He's done the same with his. Pictured are a couple of his grandkids fishing at Vallecito.



VARA WEAK SIGNAL DIGITAL MODE

BY BILL RINKER, W6OAV

INTRODUCTION

One area of ham radio that has grown significantly since the introduction of personal computers is the use of digital modes of transmission.

A relatively new robust digital protocol is rapidly becoming very popular in the ham community. This protocol is called VARA (Very-fast Adaptive Radio Application). The VARA system has been incorporated into various applications such as BPQ32, RMS Express, RMS Trimode, RMS Packet, VARA Chat, VARAC, and FLDigi. The VARA digital system is a high performance state of the art military grade technology software modem (there is a tactical version). It provides fast error free data speeds and performs well in weak signal and noisy environments.

VARA is compatible with Windows, Linux or Raspberry Pi.

This article provides an overview of the VARA software modems and VARA client software as well as many links to software installations, system features and usage.

So, what is VARA?

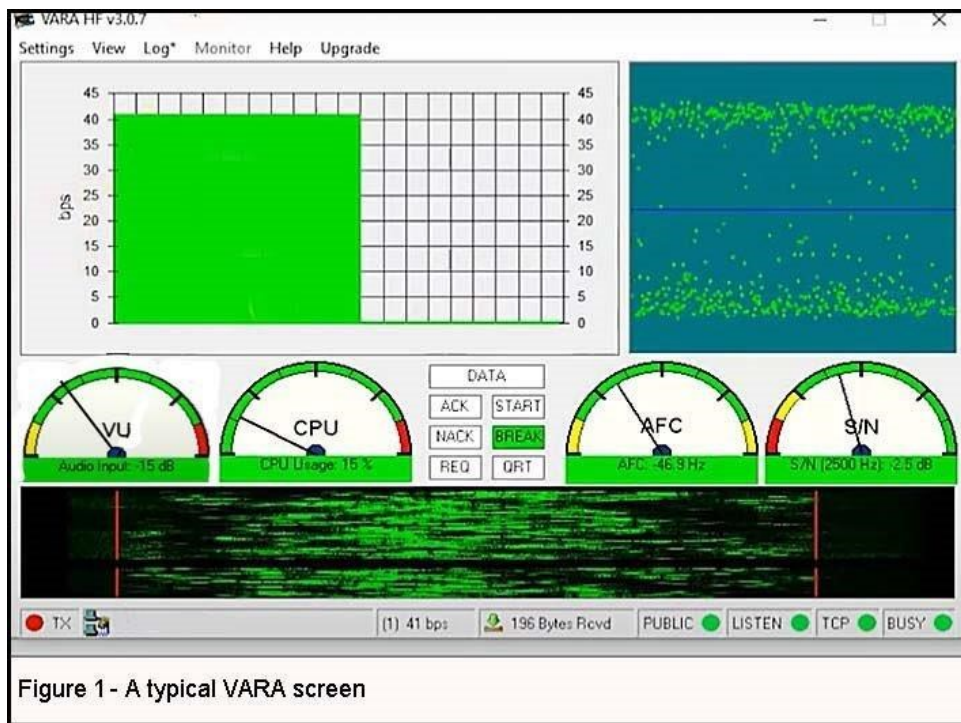
VARA

VARA consists of two separate software modem programs: VARA HF and VARA FM. Both use the computer's soundcard, or an external soundcard, to modulate and demodulate the radio signals.

VARA modems use a variety of techniques to achieve high data rates and reliability over poor radio channels. The modems use "channel probing" to measure noise and other impairments between two stations, and to negotiate the optimal modulation index, from low for noisy channels to high for quiet channels. One of the key techniques that VARA uses is OFDM subcarrier adaptive modulation (See reference below). VARA can adjust its OFDM subcarrier modulation scheme based on the current channel conditions. This allows VARA to maintain a high data rate even when the channel conditions are poor. Another technique that VARA uses is forward error correction (FEC). FEC adds redundant bits to the data that is transmitted. This allows the VARA receiver to correct errors in the incoming data without having to request a retransmission. VARA also uses ARQ (Automatic Repeat Request). When the receiver detects an error in a packet, it automatically sends a request to the sender to retransmit the packet (ACK/NACK).

Both modems also provide remote control of the radio using CAT commands, RTS/DTS, or OmniRig.

VARA HF modem operates on the HF bands with SSB transceivers. It has both wideband and narrowband modes. The wideband mode (VARA HF 2300) uses a bandwidth of 2.4 kHz with a maximum speed of 7,050 bps. The narrowband mode (VARA 500) uses a bandwidth of 500 Hz with a maximum speed of 1,543 bps. The wideband mode is better for applications where high data rates are required, such as file transfer and remote control. The narrowband mode is better for applications where noise immunity is important. Figure 1 shows a typical VARA HF modem screen.



The VARA FM modem operates on the VHF/UHF bands with an FM transceiver. It has two modes: wide and narrow. The wideband mode (VARA FM 9600) uses a bandwidth of 6 kHz with a maximum speed of 25,210 bps, while the narrowband mode (VARA FM 1200) uses a bandwidth of 3 kHz with a maximum speed of 12,750 bps. The VARA FM also provides a Ping function which displays the signal levels and signal to noise ratios at both ends of the circuit. Note: For EmComm events, VARA FM will work through FM voice repeaters.

Both VARA FM and VARA HF require a license to use their full speed and bandwidth capabilities. A free demo version is available for testing, however they operate in a reduced mode that limits the speed to 180 bps, the bandwidth to 500Hz and no ability to digipeat. A "for life" license for VARA protocol, can be purchased from the developer for a one-time fee of \$69 (single license) or \$55 (group purchase). The license is valid for the callsign and its 15 suffixes.

References:

What is OFDM: youtube.com/watch?v=KCHO7ziU25Q

VARA FM - (Start viewing at time 4:22): youtube.com/watch?v=0chHjD6Pb9g

Email using Winlink and VARA FM: youtube.com/watch?v=0uMbJoc3hJM

VARA HF installation and initial setup: youtube.com/watch?v=N8Kd_W_djVQ

VARA HF, Email Over Ham Radio, Winlink Express Tutorial, Military Grade:

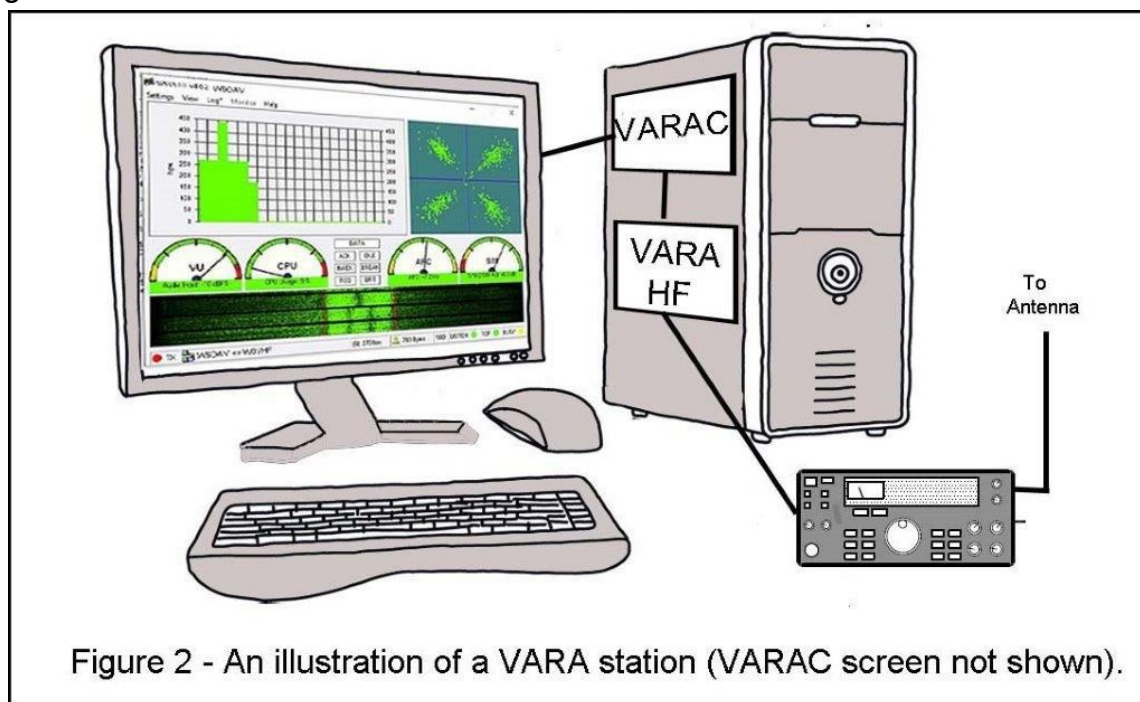
youtube.com/watch?v=SegKxnJSmiM

Install VARA on a Raspberry Pi 4: youtube.com/watch?v=kqdSr5SmV0I

VARA, High Speed Data Mode: k7yca.org/wp-content/uploads/2021/03/VARA-Rev-9.pdf

EmCom Email? Deep dive into VARA Winlink (Setup and Use): youtube.com/watch?v=2x-1UZ3iejE

There are three very popular client programs that use the VARA modems: VARAC, VARA Chat and Winlink Express. VARAC is a more feature-rich program than VARA Chat. However, VARA Chat is simpler to use and may be a better choice for some operators. Both are free. See Figure 2.



The following discusses two VARA client programs: VARAC and VARA Chat.

VARAC

VARAC is an enhanced chat application that uses either the VARA-FM or VARA-HF modems as the transport layer. VARAC has many enhanced features which are listed below. VARAC is considered a valuable tool for emergency communications because it provides fast error free data in poor conditions and real time alerts, the latter being important in EmComm operations.

VarAC is free and does not require any license or registration. However, it still depends on the VARA modems, so if the user wants to enjoy the full benefits of VARAC, they need the licensed VARA modem.

VARAC offers many features:

- **Enhanced chat:** Chat gestures with sounds and emojis.
- **Is Typing:** Real-time typing status of the remote connected station.
- **Ping:** Shows signal levels and signal to noise ratios at both the local and remote stations.
- **Messaging:** Can send text messages to other VARAC users.
- **Tags:** Manual or preprogrammed data strings that when transmitted trigger alerts when received at the remote station. Alerts can be very important in EmComm.
- **VMail:** A store-and-forward system that allows composing messages offline and have them forwarded once connected to the destination station. VMail provides OUTBOX, SENT, and PARKING folders to keep track of all messages. There are also mailbox indicators on the main screen for easy monitoring. Also has Spell Checker.
- **Beaconing:** Can send periodic canned messages (name, QTH & locator, station info, EmComm info, etc.) which will be decoded and recorded by remote stations. Every time the beacon is decoded by a station, if they have a Vmail to relay, they will send a "Relay Notification" broadcast and vice versa.
- **I'm Away:** 12 user programmed canned messages to be sent to the remote stations when the local station is online, but the operator isn't available. Allows the sending of queued mail and/or the receiving of mail.
- **PSKReporter:** available with a single mouse click. PSKReporter and VARAC work together to provide real-time information about VARAC activity on the air. VARAC automatically updates when frequency or mode is changed.
- **Auto QSO logging:** Records all QSOs in an ADIF file and send them to popular QSO loggers via UDP/TCP broadcasts.
- **Realtime metrics:** Shows the real-time metrics about a connection, such as the SNR signal levels, data speed and the number of data errors.
- **Frequency Monitoring:** Shows the ongoing QSOs on the channel.
- **Heartbeat:** A function that can be used to check the connectivity between two VARAC stations. This can be useful for troubleshooting problems.
- **Scheduler:** Allows the software to schedule the radio to automatically change to programmed frequencies at predetermined times.
- **Image Compression:** Has an effective image compression which allows faster transmission of images.
- **Seamless QSY:** Supports the QSY protocol, which allows changing frequencies with a mouse click without having to disconnect from the remote station.
- **CQ:** Contains caller information and desired slot number (1 of 15 frequencies) for any station answering. With a connection both stations automatically go to the slot with a mouse click. The software has a special window which displays all heard CQs.

- **File Transfer:** Uses the TFTP (Trivial File Transfer Protocol) to transfer files between stations. TFTP is a simple protocol that is designed to be efficient and easy to implement.
- **Broadcast:** Used for group chats or to provide bulletins.

References:

VARAC for EmComm: varac-hamradio.com/emcomm

A very good explanation and demo of VARAC & PSK31: youtube.com/watch?v=SC0UxNG2itE

Winlink with VARA HF: youtube.com/watch?v=h4HQDXmltdU&t=6359s

VARAC: HF Digital Instructional Video From A – Z: youtube.com/watch?v=prAN5ZOt5CQ

VARAC: FM Install, Configure and Use: youtube.com/watch?v=a6WMOcX8868

The Best Digital RagChew Mode for HF? Absolutely: youtube.com/watch?v=uyyGp88VJmk

VARAC Chat Client for VARA HF - Better Than FT8: youtube.com/watch?v=Dw12-MguZd4

VARAC Chat setup and demo on HF: youtube.com/watch?v=INjXXriezhA

VARAC Manual: a8210fd5-2af6-4e0e-a206-2337217160dc.usfiles.com/ugd/288b5d_2972ae9b755d4664a5750f6316afaa66

VarAC (Vara Chat) Training: youtube.com/watch?v=dYlYmgpstMU

VARA Chat on HF: youtube.com/watch?v=INjXXriezhA&t=6s

VARA CHAT

VARA Chat is a simpler client that focuses on basic chat functionality:

- Only supports simple chats and file transfers.
- CQ is a standard call for a contact. Unlike VARAC it doesn't have any special features.
- Broadcasts are limited to 91 characters.
- Is not compatible with Linux or Raspberry Pi.

References:

VARA CHAT Setup and Demonstration: youtube.com/watch?v=r59U3Tvcg_g

VARAC and VARA Chat (as well as Winlink with VARA) are very popular in Europe and are rapidly becoming very popular in the US. Ultimately, the best choice between VARAC and VARA Chat depends on one's specific needs. For a general-purpose data mode, VARA Chat is a good option. For an enhanced real-time chat protocol and EmComm, VARAC is a better option. However, the VARAC software due to its many features may require a long learning curve.

Notes:

- VARAC and VARA users can chat with each other but all the enhanced features of VARAC, such as Emojis, Sounds, "Is typing", etc., will not be available.
- Software updates are occurring almost weekly. So, features may be changed or added to the lists above.

Summary

Tom Whiteside, N5TW, developed a document titled "*A comparison of Winlink® digital mode performance based on simulation results using the Teensy IONOS Simulator*". Tom's tests indicated:

- "VARA provides quite excellent performance even exceeding the far more expensive SCS TNCs in many cases."
- ARDOP and WINMOR were slower and less reliable for lower Signal to Noise Ratio (SNR) cases.

Tom's document can be accessed at: winlink.org/sites/default/files/downloads/a_winlink_digital_mode_performance_comparison_based_on_the_ionos_hf_vhf_channel_simulator_-_may_18_2020.pdf

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!

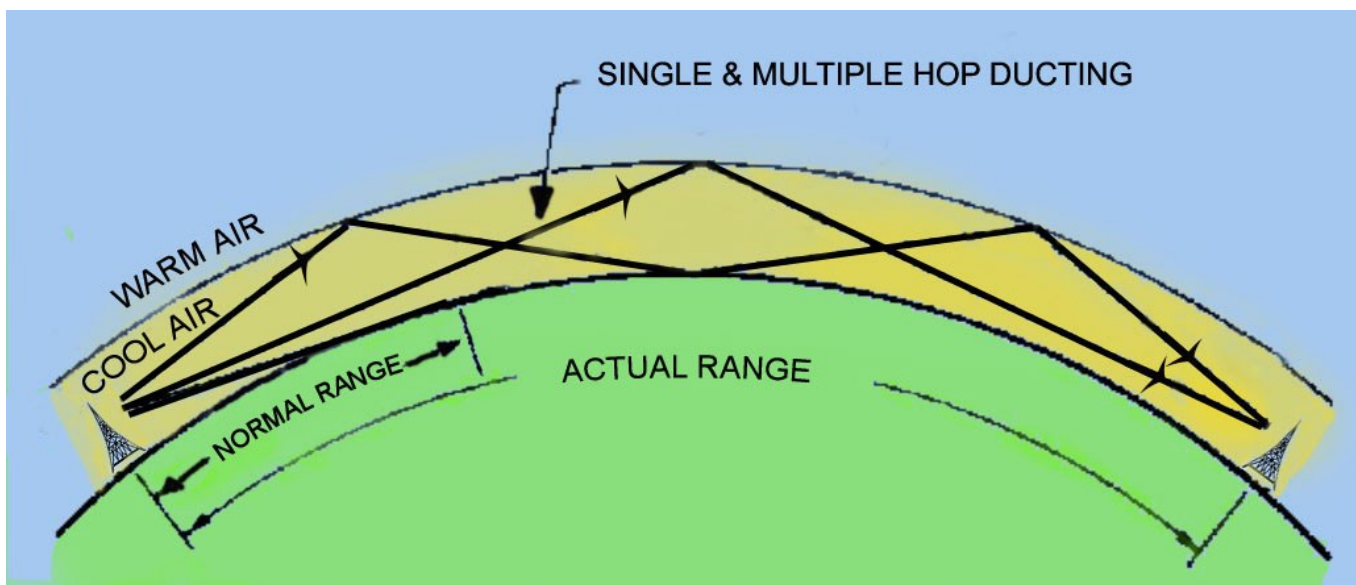


Figure 1 - VHF/UHF signals may be propagated long distances due thermal inversions

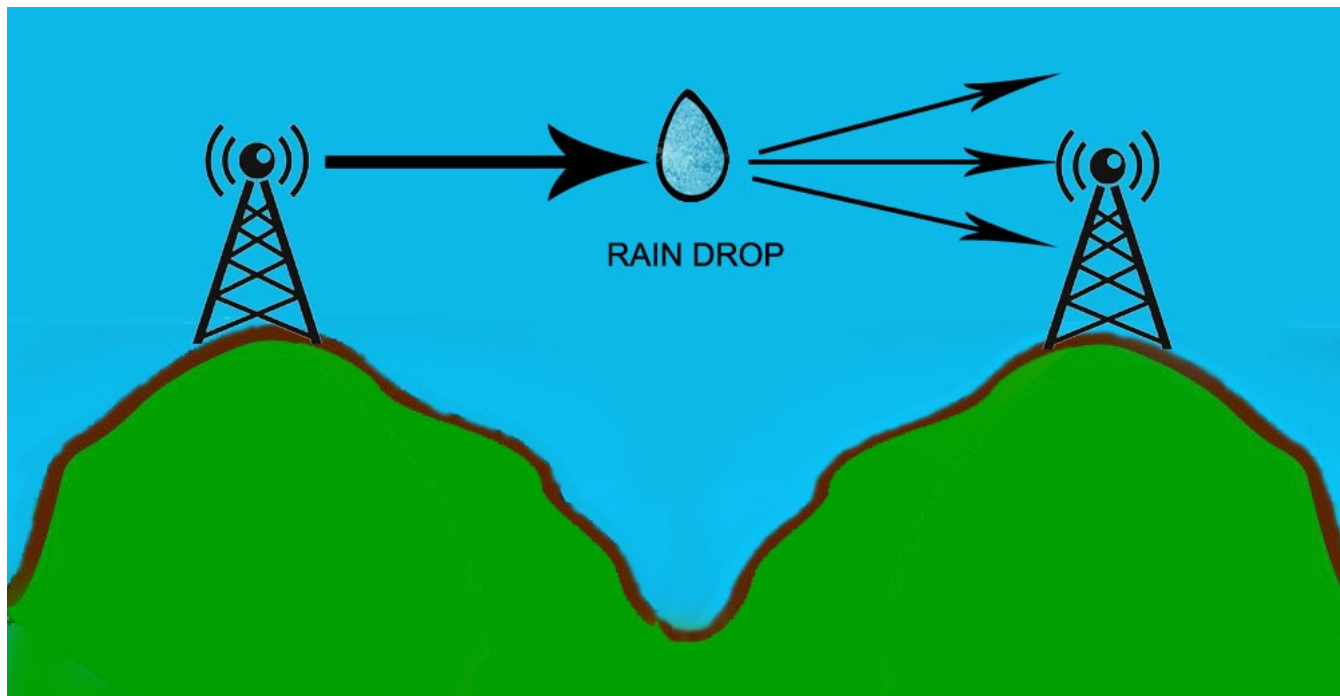


Figure 2 - Rain attenuation and scattering of gigahertz frequencies

References:

en.wikipedia.org/wiki/Radio_propagation#Rain_scattering

barrettcommunications.com.au/news/can-hf-and-vhf-radio-propagation-overcome-extreme-weather/

aowireless.com/blog/bid/34066/Does-Weather-Effect-Wireless-The-5-Misconceptions-Part-1

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

The DRC needs you!

Please contact W0GV (president@w0tx.org) if you are interested in helping with the open positions.
See the list at the end of the newsletter.

DRC's Trading Post

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

PAST ROUND TABLE PAGES

PROVIDED BY WOODY LINWOOD, W0UI

From the October 1960 edition.

ON FREQUENCY

By Walt, W0WRO

(Editor's Note—Walt Reed, who needs no introduction, has agreed to provide THE ROUND TABLE with news of on-the-air activities, with an emphasis, perhaps, on DX. Walt should be well qualified, for word was received at press time that he has been awarded the DXCC.)

Carl Yarebo, W0TW, has a rare one to brag about now. Ever hear of Kerquelin Island? All we know about it is that it has a station KB8XX and Carl worked it. His current total is 102 countries—80 of them confirmed.

Speaking of totals, Dick Lanz, W0GAA, now has 135 countries confirmed on phone, and Leonard Goldman, W0FUH, can show 194 confirmations on AM phone and 169 on sideband. Leonard, by the way, has a 10-80 meter Hy Gain vertical up now to replace the Matchstick he lost in a hail storm. The vertical is mainly for 40 and 80, of course.

Nort Schwartz, K0MPZ, now has his general and is touring the bands with the Collins S-Line.

Those who are trying to work all states and are sweating out Vermont will be glad to know that there's a station on the air trying to help alleviate the scarcity of Vermont signals. Listen for W2UYI portable 1 every night between 7 and 10 p.m. Denver time. The station is SSB between 14,300 and 14,315.

There'll be more next month, provided the readers keep us informed about what's happening. You're invited to call the author at SK. 6-3430 with news of your latest triumph.



TUNNEL DIODE

There's a new tunnel diode on the market which could conceivably count ten billion one-dollar bills in a second or make computer decisions of any kind with the same speed.

Because it will operate at a speed of ten billion cycles a second, 100 times faster than any computer device now in use, it is being studied for use in computers for the Department of Defense.

The new tunned diode is said to be 50 times faster than the fastest transistor.

Denver Area AREC SET

(Simulated Emergency Test)

Your AREC will conduct a drill, along with all other units in the U.S. and Canada; to test our preparedness for any actual emergency that may arise.

By the time you read this, the Test will be history. Such is the way of publications. Ho Hum! It just takes time.

We hope all of you that could, did participate, and to those who did not get the word, just give your SCM or E. C. a call on the air or otherwise. They will be glad to get your registration and cooperation.

We are behind Pueblo in AREC registrations as yet, but hope we can come up on them this following year.

Remember this is a part of the "Public Interest, Convenience or Necessity" that the F. C. C. is interested in, that we may keep our other operating privileges in ham radio. Besides that, we hope we will have some fun out of our exercise. BCNU.



Are you an ARRL member?

Official Bulletin No. 765 just received from ARRL gives us the names of Candidates for Director of the Rocky Mountain Division as, Carl Smith, W0BWJ and John Sampson, W7CX. Ballots are to be sent to full members of ARRL. You should be receiving yours shortly.



NEW CLUBS

Just received a letter from Betty Warrington, Secretary/Treasurer of the newly formed "Roaring Fork Amateur Radio Club", informing us of this event.

Thad Newhouse, W0HOO, has been elected President of the Club with an initial membership of ten.

Meetings are the 4th Sunday at 2200 GMT, at one of the members QTH. Betty's call is K0WJF and the address is Carbondale, Colo. They are already planning for Field Day and it looks like more competition coming up and this we like, the more the better.

Congratulations and Best Wishes to them.



Deadline for **The Round Table** is the day preceding the first Thursday of each month. All advertising and copy must be in by that time.

Page Three

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](#)



Kings Soopers Reward Program—Help the DRC.
kingsoopers.com/i/community/community-rewards
citymarket.com/i/community/community-rewards



RANDOM SITE OF THE MONTH
[EASHVK](#)

THE ROUND TABLE ARCHIVE

Go to: w0tx.org/roundtable

THE ROUND TABLE ARTICLE INDEX

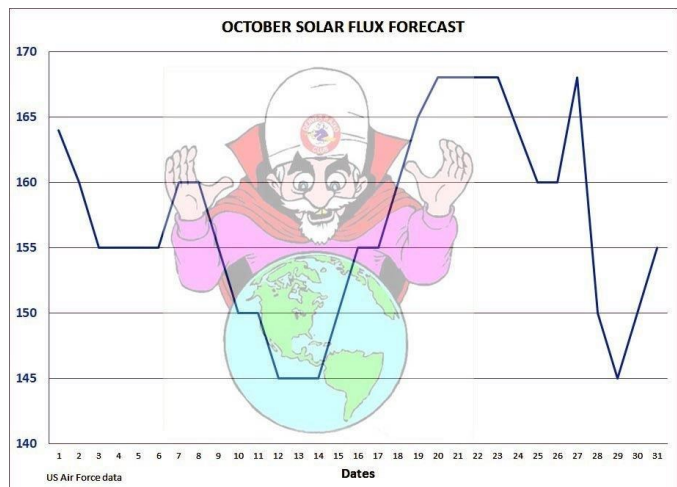
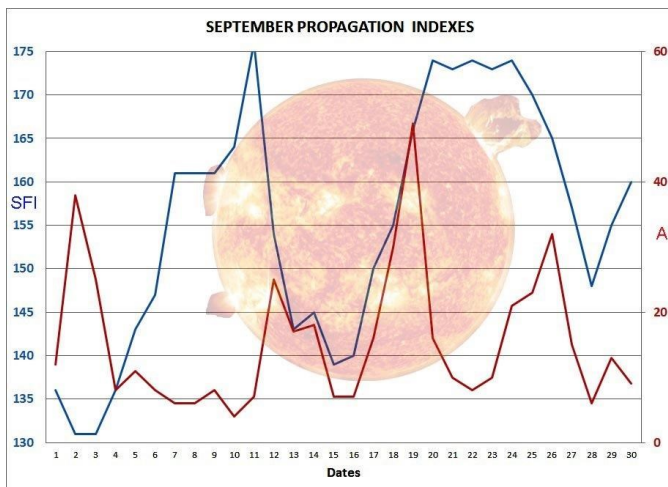
Go to: w0tx.org/RoundtableArchive/-RoundTables-Index.pdf

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
BARCfest Hamfest	10/08/23	Boulder County Fairgrounds Exhibit Bldg	gsl.net/w0dk/barcfest.html
TechFest	11/4/23	Bridge Church at Bear Creek	na0tc.org

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
California	10/07/2023	10/08/2023	California QSO Party	
Nevada	10/13/2023	10/15/2023	Sierra Nevada Amateur Radio Society	
Arizona	10/14/2023	10/15/2023	Arizona QSO Party	
Pennsylvania	10/14/2023	10/15/2023	The PA QSO Party Association	
South Dakota	10/14/2023	10/15/2023	Prairie Dog Amateur Radio Club	
New York	10/21/2023	10/22/2023	New York State QSO Party	
Illinois	10/22/2023	10/23/2023	Western Illinois Amateur Radio Club	

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

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.

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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OCTOBER 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	2	3	4 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	5	6  Last Quarter	7 Collegiate QSO Party	
8 Collegiate QSO Party	9	10	11 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	12	13	14  New Moon	
15	16 School Club Roundup - Begins 1300 UTC	17 School Club Roundup	18 DRC Online Meeting Elmer 6 p.m. Meeting 7 p.m. School Club Roundup	19 School Club Roundup	20 School Club Roundup - Ends 2359 UTC	21	
22  First Quarter	23	24	25 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	26	27	28 EME Contest - 50 to 1296 MHz Begins 0000	
29 EME Contest - 50 to 1296 MHz Ends 2359  Full Moon	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
Vice-President	K0KPS	Kevin Schmidt	303-475-9234	k0kps@arrl.net
Secretary	WW0LF	Orlen Wolf	303-279-6264	secretary@w0tx.org
Treasurer	N0CRZ	Cathy Villhauer	303-467-0223	treasurer@w0tx.org
Board Member	N0XRX	Mark Thomas	720-438-0848	n0rx@w0tx.org
Board Member	K1DBC	Doron Ben Chaim	720-254-1561	k1dbc@w0tx.org
Board Member	WG0N	Dave Baysinger	303-987-0246	wq0n@arrl.net
Board Member	KB0CHT	Jeff Irvin	Check Roster	Check Roster

DRC STAFF AND VOLUNTEERS

Benevolent		Carolyn Wolf	303-279-1328	benevolent@w0tx.org
Club Librarian	WG0N	Dave Baysinger	303-987-0246	wq0n@arrl.net
Digital Committee	W6OAV	Bill Rinker	Check Roster	digital@w0tx.org
Education Coordinator	Open			elmer@w0tx.org
EmComm Coordinator	KE0HFH	Michael Vespoli	303-215-8862	emcomm@w0tx.org
EmComm Coordinator	AD0UZ	Brennan Pate	Check Roster	emcomm@w0tx.org
Field Day Chairman	N6WHV	Dick Nelson		fieldday@w0tx.org
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RT Associate Editor	W6OAV	Bill Rinker	Check Roster	Check Roster
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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...

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