## PRESIDENT'S MESSAGE

By Gerry Villhauer, W0GV

Hello DRC Members,

Last month we had our first face to face monthly meeting in four years, maybe a little longer. This meeting was successful with an attendance of 21 members and guests. Most of our monthly meetings will, at this time, remain virtual meetings. Keep in mind that it is much easier to obtain program presenters for a virtual meeting than for a face to face meeting. Presenters for virtual meetings can be at any location with an internet connection and basic computer equipment. Having a face to face meeting which is also available online where people in the field can ask questions and make comments, requires extensive audio/video equipment which costs a lot of money outlay and operator expertise.  We may from time to time offer a face to face meeting, but, the majority of meetings will remain virtual. We are always looking for interesting programs. If you know of one, please let Jeff Irvin, KB0CHT or any board member know about it.

Thanks to Mark Thomas, N0XRX, for presenting a very informative program on Anderson Power Poles Connectors at our face to face meeting. After Mark showed and explained how to correctly install the connectors, everyone was invited to practice making a jumper cable, which was theirs to take home.

Our next monthly meeting will be November 20, 2024. At this time the program has not been confirmed. Please stay tuned to our Sunday and Wednesday night DRC Nets for details as they are available.

Please mark this date on your calendar-Saturday December 14th, 2024. That will be our DRC Holiday Party. The location will be Highlands Masonic Center, 3550 N. Federal Blvd. The details will be available soon, so please keep the date open so you don't miss the FUN - FOOD - PROGRAM and PRIZES. We will send an email blast to the membership with all the details.

Thank you to all the members that have named the DRC as your choice with the King Soopers Reward Program. We have had an increase in members participating in this program, which gives dollars to the club. If you are a King Sooper shopper and have not yet named the DRC as your choice for the rewards, please do so. It costs you nothing and really benefits the club.

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?
PROVIDED BY DORON BEN CHAIM, K1DBC

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:

| | |
|---|---|
| Eric Hueftle | KC0WOT |
| Christopher Molnar | KO4YAW |

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

Why do some HF verticals require radials whereas other HF verticals do not?

The answer can be found on page 4 of the June 2008 issue of the *Roundtable:*
https://w0tx.org/RoundtableArchive/2008-RoundTables/RT200806(JUN).pdf

## AI'S POEM ABOUT A RADIO AMATEUR'S WORKSPACE
PROVIDED BY BILL RINKER, W6OAV

In the corner of a quiet home,
A world of wonders starts to roam.
A radio shack, a sacred space,
Where signals dance with time and place.

Knobs and switches line the desk,
A transceiver hums, never at rest.
Meters flicker, green and bright,
Chasing distant calls through day and night.

The workbench tells a tale of craft,
Where circuits born and antennas drafted.
Solder smoke rises, a fragrant mist,
As components join with a gentle twist.

On walls, the world in maps unfurled,
Pins mark friendships 'cross the world.
QSL cards, a colorful display,
Of voices carried far away.

In late hours when the house is still,
The ham sits listening with a will.
Headphones on, he leans in close,
To catch a whisper from distant coasts.

Logbooks filled with dates and signs,
Tell stories between the lines.
Of storms weathered, contests won,
And the thrill of each contact done.

In this realm of wire and wave,
The radio amateur finds his cave.
A place where distance disappears,
And the world's voice rings in his ears.

CQ, CQ, the call goes out,
A beacon of hope, dispelling doubt.
In this shack, a simple den,
The whole world becomes a friend.

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**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.**

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## Calling All QSL Cards
By Editor

If you would like to have your QSL card featured in an upcoming edition of the Roundtable please send a copy of it (i.e. PDF or JPG) to roundtable@w0tx.org.

Alternatively, if you have received a unusual or exotic one in the past and would like to share it, then send it on over.



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## WHY DIGITAL RATHER THAN ANALOG COMMUNICATIONS?

BY BILL RINKER, W6OAV

Many hams are migrating to digital communication modes, especially for EmComm, because digital modes offer several advantages over analog modes, including:

- Efficiency: Digital modes can transmit more data in a shorter period of time than analog modes. This is especially important when large amounts of data must be transmitted or on the HF bands where signal conditions are often less than ideal.

- Reliability: Digital modes, which use error detection and error correction, are more resistant to noise, interference and weak signals than analog modes. This makes them ideal for communicating over long distances, in challenging signal conditions or when critical information must be transmitted error free. These digital signals are decodable even when inaudible in the noise.

- Flexibility: Digital modes can be used to transmit a variety of different types of data, including text, images, and files. This makes them versatile and well-suited for a variety of communication needs.

- Experimentation: Digital modes offer a variety of different ways to communicate, which appeals to the experimental nature of many ham operators.

- Contests: Ham radio contests are competitive events in which hams try to contact as many other hams as possible in a given period of time. Digital modes are often used in contests because they are efficient and allow hams to make contacts quickly.

- Emergency communications: Digital modes are often used for emergency communications because they are reliable, fast, efficient and error free. Emergency messages can be typed at one end of the circuit and automatically printed out at the other end.
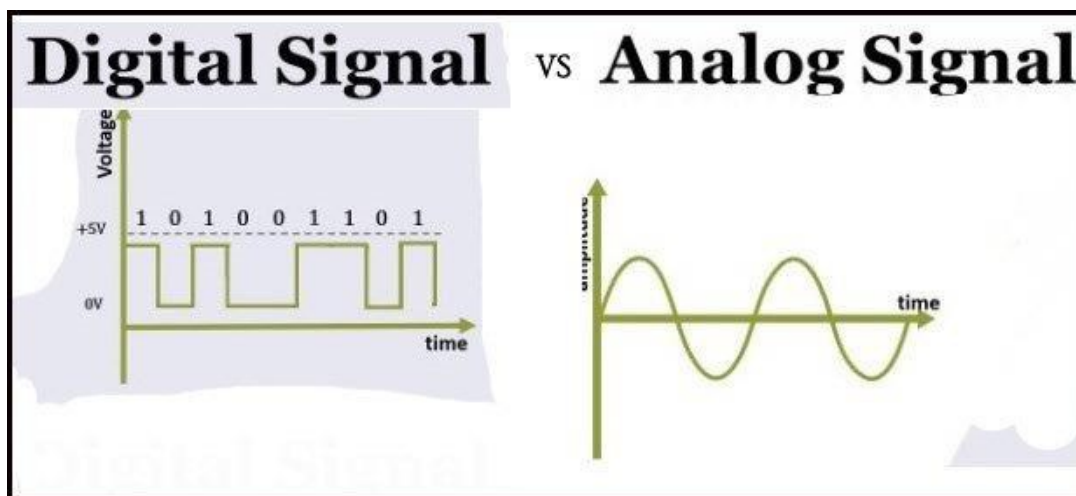
The text and chart below compare some of more popular weak signal digital communication modes used by hams:

- **FT8**: FT8 is a popular protocol for long-distance communication. It is very efficient at using bandwidth and can be used to communicate with very weak signals. FT8 is not designed for keyboard to keyboard chats or file transfers. It is primarily used for making contact with other hams and exchanging basic information. Maximum file size is up to 15 text characters with a maximum throughput of 3.125 bits per second (bps).

- **VARA**: VARA is a digital mode that offers a number of features, including keyboard to keyboard chats, email, image and any size file transfers at 100 bps. It is extremely suited for emergency communications and for sharing information with other hams and agencies.

- **WSPR**: WSPR is the simplest and most efficient of the three protocols. It is designed to be used for propagation monitoring and can be used to communicate with signals as weak as -20 dB SNR. However, WSPR is very slow, with a very small size file maximum at only 1.44 bps.

- **AX.25**: AX.25 is a versatile protocol that can be used for a variety of applications, including keyboard to keyboard communications, EmComm, any size file transfers at up to 19,200 bps, and networking.

| Comparison of Popular Weak Signal Digital Protocols | | | | |
|---|---|---|---|---|
| Feature | FT8 | VARA | WSPR | AX.25 |
| Purpose | HF weak signal communication | Chat, email, text | Study radio wave propagation | Chat, email, APRS |
| Throughput | 3.125 (bps) | 100 (bps) | 1.44 (bps) | ≤ 19,200 (bps) |
| File transfer | No | Yes | No | Yes |
| Max File size | 15 characters | Gigabytes | ≤ 100 bytes | Gigabytes |
| Efficiency | Very good | Excellent | Excellent | Good |
| Ease of use | Good | Fair | Excellent | Good |
| Networking | No | No | No | Yes |
| Email | No | Yes | No | Yes |
| Popularity | Very popular | Popular | Popular | Fair |
| Weak Signal | Excellent | Excellent | Excellent | Fair |
| Error Control | Excellent | Excellent | Excellent | Good |
| Contests | Yes | Yes | No | Fair |
| EmComm | No | Yes | No | Yes |
| Requirements | Transceiver, PC, sound card | Transceiver, PC, sound card | Transceiver, PC, sound card | Transceiver, PC, sound card/ TNC |

In summary, which protocol is best will depend on one's specific needs and requirements. For a protocol that is efficient and can communicate with weak signals, then FT8 is a good choice. For a protocol with higher throughput and versatility, then VARA or AX.25 may be a better option. For a protocol that is simple and efficient for propagation monitoring, then WSPR is the best choice.

## SIMON'S WORLD MAP

BY BILL RINKER, W6OAV

Simon Brown, G4ELI, has developed a dynamic world map that every HF ham operator should have, especially when working Greyline, satellites or chasing DX. The map is known as Simon's World Map.

Simon's World Map is a free and open-source software program that displays a real-time world map with a variety of features, including:
- Current time and date
- Sunrise and sunset times
- Greyline map (shows which parts of the world are in daylight and which are in darkness)
- Current positions of satellites and the International Space Station
- Moon phase
- Weather data
- Country prefixes
- Maidenhead squares

Simon's World Map is highly configurable, is very lightweight and can be run on Windows 7/8/10/11. Users can choose to display or hide any of the available features. The map can also be zoomed and panned, and users can add custom markers to indicate their current location or other points of interest. Figure 1 shows the map configured to display current time, Greyline, Aurora (the green area), Sunrise/Sunset, Solar Flux numbers and country prefixes.
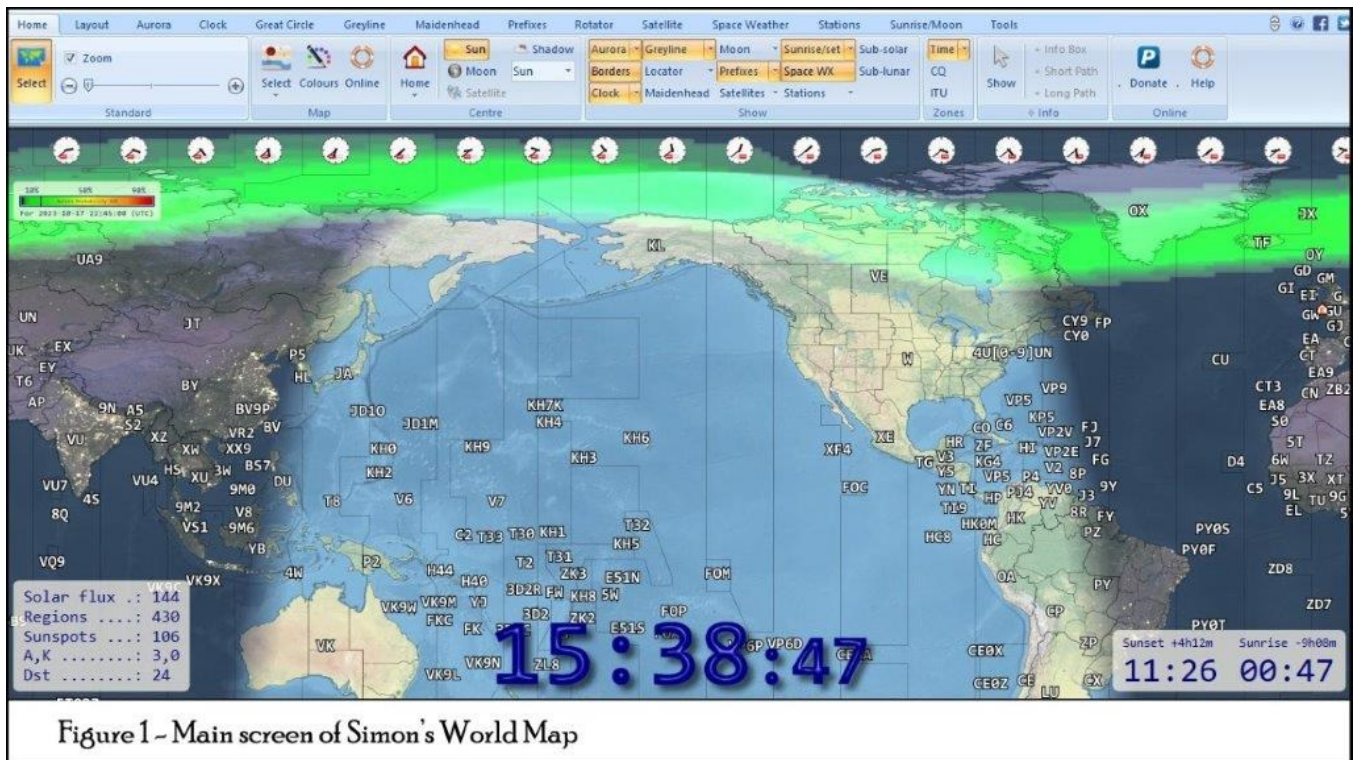


Figure 1 – Main screen of Simon's World Map

Below is a more detailed description of some of the features of Simon's World Map:

- Greyline map: The greyline map shows which parts of the world are in daylight and which are in darkness. This can be useful for hams who need to know where to point their antennas for optimal Greyline propagation.
- Satellite tracking: Simon's World Map can track the current positions of satellites and the International Space Station. This can be useful for hams who want to know when their favorite satellites will be passing overhead for possible contacts.
- Weather data: Simon's World Map can display weather data for different locations around the world. This can be useful for anyone who wants to know the current weather conditions in a particular location.
- Country prefixes: Simon's World Map can display the country prefixes for different countries around the world. This can be useful for hams who need to know the correct prefix to use when calling a station in another country.
- Maidenhead squares: Simon's World Map can display Maidenhead squares, which are a grid system that is used to identify locations on Earth. This can be useful for hams who want to know the Maidenhead square of a particular satellite.

Overall, Simon's World Map is a versatile and powerful tool that can be used for a variety of purposes. It is a free and open-source program, and it is available for download from the author's website at https://www.sdr-radio.com/world-map (see Figure 2).

References:
Awesome World Map for HAMs and Shortwave Listeners:
https://www.youtube.com/watch?v=kZeYrfmv0Fk
Simon's world map 1.3.10 update May 2023:
https://www.youtube.com/watch?v=Djzy6fvGiDY
Simon's World Map is a great tool to have on your PC:
https://www.youtube.com/watch?v=j8HBFLuWf9w#:~:text=Great%20app%20you%20can%20download%20for%20Windows%20PCs%20https://www.g4eli.com/world%2Dmap.



Figure 2 ~ Location on G4ELI's website for downloading the map

# Spy Radios and CIA Bugs

By Bill Rinker, W6OAV

There is a YouTube video which will be interesting to many hams. The video is about old and modern spy radios and CIA bugs. The speaker, Dr. Tom Perera, is a radio historian and collector. He talks about the different types of spy radios that were used during World War II and the Cold War, as well as the CIA bugs that were developed during that time.

Some of the key points of the video are:
- During World War II, resistance fighters used radios to send intelligence to the Allies and to receive instructions.
- The Germans used Enigma machines to encrypt their messages, but the British were able to crack the code.
- The Cold War saw the development of new spy technologies, such as miniature radio bugs that could be hidden in everyday objects.
- The CIA developed a variety of bugs, including one that was mounted on a live dragonfly.

The video is interesting and informative, and it provides a fascinating glimpse into the world of espionage.

A "thank you" goes to Bill, N0LAJ who brought this video to my attention.

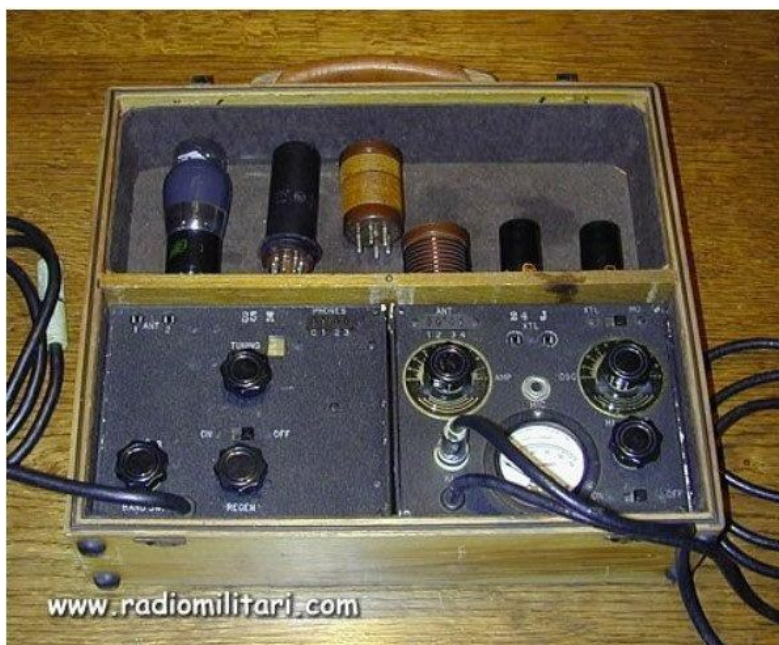The title and URL for this video are: Tom Perera, PhD, W1TP, Discusses "Spy Radios and CIA Bugs" https://www.youtube.com/watch?v=0J9M5ba8qaU

Additional URLs:
The Enigma Museum: https://enigmamuseum.com/
Paul Reuvers & Marc Simons' CryptoMuseum: https://www.cryptomuseum.com/
Vintage Tradecraft in Cryptology and Espionage: https://www.campx.ca/
Cipher Machines: https://ciphermachines.com/index.html



www.radiomilitari.com

## Past Round Table Pages
Provided By Woody Linwood, W0UI

From the September 1960 edition.

## *DRC's Emergency Response Info*

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
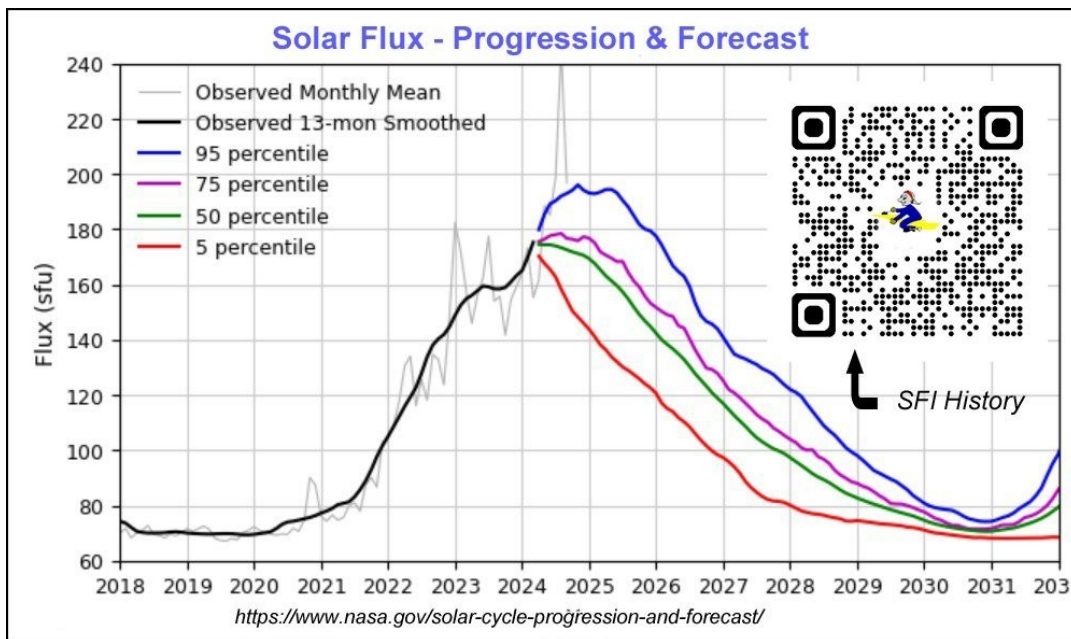
RANDOM SITE OF THE MONTH
Radio Amateurs of Manitoba

**THE ROUND TABLE ARCHIVE AND ARTICLE INDEX**

w0tx.org/roundtable

# PROPAGATION FORECAST
By Bill Rinker, W6OAV



*Solar Flux - Progression & Forecast*

https://www.nasa.gov/solar-cycle-progression-and-forecast/

## UPCOMING EVENTS
### HAMFESTS & CONVENTIONS

| Event | Date | Location | Sponsor Website |
|-------|------|----------|-----------------|
| Winter Hamfest 2025 | 1/8/25 | McKee 4-H Youth & Community Bldg | ARRL page |
| The Swapfest | 2/16/25 | Adams County Fairgrounds | ARRL page |
| HamCon Colorado | 10/23/25 | Doubletree Hotel Grand Junction | hamconcolorado.com |

## 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 |
|----------------|------------|----------|-----------------|-------|
|                |            |          |                 |       |

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 each month via Google Meet and are open to any member. If you wish to attend, please contact a board member prior to the 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.** |
| 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** |

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

*© Denver Radio Club*

# NOVEMBER 2024

*DRC Net Sundays at 8:30 p.m. on 145.490 / 448.625 (no PL)*

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| | | | | | **1**<br><br>New Moon | **2** |
| **3** | **4** | **5** | **6**<br>**Learning Net**<br>7:30 p.m.<br>145.490 / 448.625<br>(No PL) | **7** | **8**<br><br>First Quarter | **9** |
| **10** | **11** | **12** | **13**<br>**Learning Net**<br>7:30 p.m.<br>145.490 / 448.625<br>(No PL) | **14** | **15**<br><br>Full Moon | **16**<br>EME 50 - 1296 MHz<br><br>Nov Sweepstakes - Phone |
| **17**<br>EME 50 - 1296 MHz<br><br>Nov Sweepstakes - Phone | **18**<br>Nov Sweepstakes - Phone | **19** | **20** DRC Lunch<br>11:30 @ Valley Inn Restaurant, Lakewood.<br><br>**DRC Meeting**<br>Elmer 6 PM<br>Meeting 7 PM | **21** | **22**<br><br>Last Quarter | **23** |
| **24** | **25** | **26** | **27**<br>**Learning Net**<br>7:30 p.m.<br>145.490 / 448.625<br>(No PL) | **28** | **29** | **30** |

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 | n0xrx@w0tx.org |
| Board Member | K1DBC | Doron Ben Chaim | 720-254-1561 | k1dbc@w0tx.org |
| Board Member | WG0N | Dave Baysinger | 303-987-0246 | wg0n@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 | wg0n@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 |
| Field Day Chairman | N6WHV | Dick Nelson | | fieldday@w0tx.org |
| Membership | KB8OGP | Kelly Sobanski | | membership@w0tx.org |
| Net Control | KS0E | Alex Acerra | Check Roster | net@w0tx.org |
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| RT Associate Editor | W6OAV | Bill Rinker | Check Roster | Check Roster |
| Hamfest Manager | KE0YKV | Bill Worthington | 720-626-5485 | drcfest@w0tx.org |
| Tech. Committee Chair | Open | | | tech@w0tx.org |
| Trustee | WW0LF | Orlen Wolf | 303-279-6264 | trustee@w0tx.org |
| VE Team | K0RAP | Robert Pickett | 720-336-0114 | k0rap@w0tx.org |
| Website & YouTube | K1DBC | Doron Ben Chaim | 720-254-1561 | websiteadmin@w0tx.org |

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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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**EDITOR'S NOTE**   © 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*