



# THE ROUND TABLE

Monthly Newsletter Of The Denver Radio Club

Since 1917

April 2023

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## PRESIDENT'S MESSAGE

BY GERRY VILLHAUER, W0GV

Hello DRC Members.

I hope you all are staying well. The March weather has been hanging on to winter. I'm getting tired, as I am sure you are waking up to a few inches of snow. Oh well, I am sure this will soon pass into much better conditions.

Please assure your calendar has our [DRC Hamfest](#) on it for August 27th 2023. The location is the same as last year, the Adams County Fairgrounds, Henderson, CO. Don't miss it!

Another date to keep is Wednesday May 10, 2023. That will be the date for the Lakewood Siren Test. This is a public service the club does for the City of Lakewood. It is at 10 o'clock in the morning and takes only an hour or so to complete. If you have helped before, Jim, K0TOR will be contacting you. If you have not participated and would like to, information will be kept current on our Sunday evening net. Oh yes, pizza and soft drinks are served afterwards at the Lakewood Police Department HQ. This is a great time to socialize with other DRC members.

Thanks to Mark Strachan, KD6IQW and his son Lyle, KE0ZNV for their presentation on Youth Groups in Ham Radio. As you all should know, Ham Radio needs more youth to get involved with the hobby to keep it going and growing. You will soon see a youth page on our [website](#); where Mark and Lyle will be posting lots of interesting items.

Our April program will be presented by Amanda Alden, K1DDN our ARRL Rocky Mountain Section Manager for Colorado. Amanda will bring us up to date on happenings at the League and the direction the ARRL is progressing. The date is Wednesday April 19, 2023 at 7 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:

Tim Aldrich - KFØJRB

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.

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## FIELD DAY INFORMATION

FROM MISCELLANEOUS PEOPLE

Thanks is due to Dick Nelson, N6WHV, for taking on the role of Field Day Coordinator.

Current Field Day Information:

June 24 - 25

Prospect Arena

13805 West 52nd Avenue

Arvada, CO 80002

[Google Map](#)

[View Venue Website](#)

If you have questions you can reach Dick via [fieldday@w0tx.org](mailto:fieldday@w0tx.org).

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## SOLAR CYCLE 25 MAY BE AN INTERESTING ONE!

BY BILL RINKER, W6OAV

It appears that Solar Cycle 25 will be a very active and interesting cycle. Its solar activity has been much higher than "normal", or predicted, at this part of the cycle. Northern Lights were visible in northern Colorado in March and February. Propagation on 15, 12, and 10 meters has been very good.

The following paragraph describing the solar activity appeared in the Denver Post:

"What we're observing now is quite a bit higher than predicted, especially in the last couple of months," said Bill Murtagh, program coordinator for the Space Weather Prediction Center of the National Oceanic and Atmospheric Administration (NOAA) in Boulder. "It (solar activity) is higher

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and rising faster than expected. With the increase in sunspots, we are going to see more eruptions. We saw a lot of that in the past couple of months, and it will continue. "We will see more space weather, more magnetic storms and more aurora sightings with the larger sunspot cycle," he added.

So, if you haven't done so, check out the upper bands and work that DX!

## References

Newsweek:

<https://www.newsweek.com/solar-cycle-sunspots-increased-activity-flares-1785427>

Denver Post:

<https://www.denverpost.com/2023/03/15/coloradans-will-see-northern-lights-aurora-borealis-more-often/>

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## A LOW-PROFILE VHF ANTENNA

BY BILL RINKER, W6OAV

If you are interested in unique antenna designs, or if you have a high vehicle which doesn't allow whip antennas, go to the URLs below. ZCG sells a low-profile horizontal VHF antenna which according to their data sheet has the same radiation characteristics as a quarter wave vertical. The antenna measures 21.62" long by 2.50" high. See Figure 1. They also sell a radome for the antenna. See Figure 2. An enterprising ham could build a similar antenna.

Spec sheet:

<https://zcg.com.au/wp-content/uploads/pdf/04a-CT160.pdf>

Installation sheet:

[https://zcg.com.au/wp-content/uploads/Bagsheets/CT160\\_Installation\\_Guide.pdf](https://zcg.com.au/wp-content/uploads/Bagsheets/CT160_Installation_Guide.pdf)

Radome:

<https://zcg.com.au/wp-content/uploads/pdf/04a-CT160-RD.pdf>



Figure 2 - CT160-RD Radome

Figure 1 - Low profile 160 VHF antenna

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## NEAT WAY TO CHECK COAX LOSS

BY TOM DOUGLAS, KB4PIX

Note: The following article was published in the “Tom’s Tech Tips” [section of the Powhatan Area Radio Club website](#). Permission to publish was provided by Tom Douglas, KB4PIX. Article provided by W6OAV.

### The thought:

So how is your coax cable? – it ages, it gets water inside, it reduces your transmit & receive signals... With Field Day coming up, it might be the perfect time to CHECK your coax. If it is doing fine – excellent. If not, you have time to order some new coax and get it installed.

### Tools you will need:

Have you ever noticed how coax makes SWR look better? Yep - It does that! We can use that property to determine the coax loss in decibels and compare that to new coax. As a bonus this method checks the connectors on the coax as well.

You need an antenna analyzer, a barrel connector, and a resistive load that will give you 3:1 SWR. You make the resistive load yourself inside a PL-259 connector! To get a 3:1 SWR you need three times 50 Ohms, so 150 Ohms. Here is the one I use. It has two 300 Ohm resistors in parallel soldered inside the PL-259.



Just twist the resistor leads together so they are in parallel (150 Ohms). Insert into the PL-259 so resistor leads come out of the tip. Bend the other resistor leads so they come out the side of the PL-259. Solder the resistor leads (tip & side) and clip off the excess resistor leads. Screw on PL-259 shell – you are done!

**The method:**

You are going to take 2 SWR measurements with your SWR analyzer at a given frequency. The key here is to use the same frequency that the coax manufacturers use to specify losses. Typical frequencies are: 28, 50, 144, & 440 MHz.

We will do a little math to determine the loss in this specific piece of coax. We will normalize our loss to 100 ft, and that will allow us to compare our coax directly against the manufacturer's specifications.

**Here is an example:**

I have a piece of RG-8X coax cable with PL-259 connectors that is 49.5 ft long. I want to use it for HF, so I will test it at 28 MHz.

First, I connect the 3:1 SWR load directly to my SWR Analyzer and set the frequency to 28 MHz. Get the SWR reading and write it down. My set-up looks like this:



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The SWR reads as 2.88 when the 3:1 SWR load is connected directly (with small adapter) to my antenna analyzer.

Now connect the test piece of coax between the antenna analyzer and the 3:1 SWR load. I did have to add a barrel connector (double SO-239) at the end of the coax so I could connect my 3:1 SWR load. My set-up looks like this:



The SWR reads as 2.21 when the 3:1 SWR load is read through the coax cable under test.

Notice how the SWR went down when reading the 3:1 SWR load through the coax cable.

That may sound good at first, but that really means less power was reflected back towards the antenna analyzer – due to the LOSS in the cable.... So now we need to figure out how much loss this cable has and if this cable is good.

We have two SWR measurements:

2.88 – Directly on analyzer

2.21 – With coax cable

We now calculate (look up) the return loss for the above measurements. Please reference the Amphenol attachment at the end of this article that gives a conversion from VSWR to return loss.

You can also use an online converter to convert VSWR to return loss directly.

<https://www.allaboutcircuits.com/tools/vswr-return-loss-calculator/>

Here are the approximate return losses for our measurements:

2.88 SWR – Directly on analyzer => Return loss of 6.29 dB

2.21 SWR – With coax cable => Return loss of 8.48 dB

Now you subtract the smaller return loss number from the higher one AND divide by 2.

$(8.48 - 6.29) / 2 \Rightarrow$  **1.1 dB loss in our 49.5 ft cable and connectors**

By the way, you divide by 2 since we sent energy down the cable and it reflected back from the 3:1 SWR load. The signal experienced loss heading down the cable AND, on the way back (hence twice the loss).

Now we must normalize our numbers to 100 ft so we can compare directly with the manufacturer's specifications. Normalizing just means scaling our measurement to some standardized value. Here is what the numbers mean in the equation below:

100 is the normalized length of 100 ft (manufacturers length data)

49.5 is the length of coax cable we have in feet

1.1 is the loss measurement we calculated in our cable

$100/49.5 * 1.1 \Rightarrow 2.2$  dB

So, if our cable were 100 ft long it would have 2.2 dB of loss at 28 MHz.

Here is a handy quick reference chart with typical numbers from manufacturers:

<b>Quick Reference of coax cable loss in dB per 100 ft</b>						
	RG-58	RG-8X	LMR-240	RG-213	9913	LMR-400
3.5 MHz	0.8	0.65	0.45	0.3	0.23	0.2
7 MHz	1.2	0.85	0.64	0.5	0.32	0.3
14 MHz	1.7	1.21	0.91	0.7	0.46	0.5
28 MHz	2.4	1.74	1.29	1	0.65	0.7
50 MHz	3.2	2.36	1.73	1.4	0.88	0.9
144 MHz	5.5	4.2	2.95	2.4	1.54	1.44
440 MHz	9.9	7.92	5.23	4.4	2.82	2.7

Go over to the column for RG-8X coax and move down to 28 MHz.

You will see the number 1.74 dB.

Our piece of coax normalized to 100 ft has a loss of 2.2 dB, that is 0.46 dB MORE LOSS than a brand new piece of RG-8X coax.

Remember this piece of coax has 2x PL-259 connectors and I used a barrel connector in the

measurement. For my purposes 0.46 dB additional loss compared to new...is fine...coax cable is GOOD!

**Conclusion:**

You can never escape loss, BUT you can find out if you are losing more than you should be!!



**VSWR to Return Loss Conversion Chart**

VSWR	RL (dB)	VSWR	RL (dB)	VSWR	RL (dB)	VSWR	RL (dB)	VSWR	RL (dB)
1.001	66.025	1.060	30.714	1.138	23.803	1.480	14.264	5.400	3.255
1.002	60.009	1.061	30.575	1.140	23.686	1.490	14.120	5.600	3.136
1.003	56.491	1.062	30.438	1.142	23.571	1.500	13.979	5.800	3.025
1.004	53.997	1.063	30.303	1.144	23.457	1.520	13.708	6.000	2.923
1.005	50.484	1.064	30.171	1.146	23.346	1.540	13.449	6.200	2.827
1.006	50.484	1.065	30.040	1.148	23.235	1.560	13.201	6.400	2.737
1.007	49.149	1.066	29.912	1.150	23.127	1.580	12.964	6.600	2.653
1.008	47.993	1.067	29.785	1.152	23.020	1.600	12.736	6.800	2.573
1.009	46.975	1.068	29.661	1.154	22.914	1.620	12.518	7.000	2.499
1.01	46.064	1.069	29.538	1.156	22.810	1.640	12.308	7.200	2.428
1.011	45.24	1.070	29.417	1.158	22.708	1.660	12.107	7.400	2.362
1.012	44.489	1.071	29.298	1.160	22.607	1.680	11.913	7.600	2.299
1.013	43.798	1.072	29.181	1.162	22.507	1.700	11.725	7.800	2.239
1.014	43.159	1.073	29.066	1.164	22.408	1.720	11.545	8.000	2.183
1.015	42.564	1.074	28.952	1.166	22.311	1.740	11.370	8.200	2.129
1.016	42.007	1.075	28.839	1.168	22.215	1.760	11.202	8.400	2.078
1.017	41.485	1.076	28.728	1.170	22.120	1.780	11.039	8.600	2.029
1.018	40.993	1.077	28.619	1.172	22.027	1.800	10.881	8.800	1.983
1.019	40.528	1.078	28.511	1.174	21.934	1.820	10.729	9.000	1.938
1.02	40.086	1.079	28.405	1.176	21.843	1.840	10.581	9.200	1.896
1.021	39.667	1.080	28.299	1.178	21.753	1.860	10.437	9.400	1.855
1.022	39.267	1.081	28.196	1.180	21.664	1.880	10.298	9.600	1.816
1.023	38.885	1.082	28.093	1.182	21.576	1.900	10.163	9.800	1.779
1.024	38.52	1.083	27.992	1.184	21.489	1.920	10.032	10.000	1.743
1.025	38.7	1.084	27.892	1.186	21.403	1.940	9.904	11.000	1.584
1.026	37.833	1.085	27.794	1.188	21.318	1.960	9.780	12.000	1.451
1.027	37.51	1.086	27.696	1.190	21.234	1.980	9.660	13.000	1.339
1.028	37.198	1.087	27.600	1.192	21.151	2.000	9.542	14.000	1.243
1.029	36.895	1.088	27.505	1.194	21.069	2.100	8.999	15.000	1.160
1.03	36.607	1.089	27.411	1.196	20.988	2.200	8.519	16.000	1.087
1.031	36.327	1.090	27.318	1.198	20.907	2.300	8.091	17.000	1.023
1.032	36.055	1.091	27.266	1.200	20.828	2.400	7.707	18.000	0.966
1.033	35.792	1.092	27.135	1.210	20.443	2.500	7.360	19.000	0.915
1.034	35.537	1.093	27.046	1.220	20.079	2.600	7.044	20.000	0.869
1.035	35.29	1.094	26.957	1.230	19.732	2.700	6.755	22.000	0.790
1.036	35.049	1.095	26.869	1.240	19.401	2.800	6.490	24.000	0.724
1.037	34.816	1.096	26.782	1.250	19.085	2.900	6.246	26.000	0.668
1.038	34.588	1.097	26.697	1.260	18.783	3.000	6.021	28.000	0.621
1.039	34.367	1.098	26.612	1.270	18.493	3.100	5.811	30.000	0.579
1.04	34.151	1.099	26.528	1.280	18.216	3.200	5.617	32.000	0.543
1.041	33.941	1.100	26.444	1.290	17.949	3.300	5.435	34.000	0.511
1.042	33.763	1.102	26.281	1.300	17.692	3.400	5.265	36.000	0.483
1.043	33.536	1.104	26.120	1.310	17.445	3.500	5.105	38.000	0.457
1.044	33.341	1.106	25.963	1.320	17.207	3.600	4.956	40.000	0.434
1.045	33.15	1.108	25.809	1.330	16.977	3.700	4.815	42.000	0.414
1.046	32.963	1.110	25.658	1.340	16.755	3.800	4.682	44.000	0.395
1.047	32.78	1.112	25.510	1.350	16.540	3.900	4.556	46.000	0.38
1.048	32.602	1.114	25.364	1.360	16.322	4.000	4.437	48.000	0.362
1.049	32.427	1.116	25.221	1.370	16.131	4.100	4.324	50.000	0.347
1.05	32.256	1.118	25.081	1.380	15.936	4.200	4.217	55.000	0.316
1.051	32.088	1.120	24.943	1.390	15.747	4.300	4.115	60.000	0.290
1.052	31.923	1.122	24.808	1.400	15.563	4.400	4.018	65.000	0.267
1.053	31.762	1.124	24.675	1.410	15.385	4.500	3.926	70.000	0.248
1.054	31.604	1.126	24.544	1.420	15.211	4.600	3.838	75.000	0.232
1.055	31.449	1.128	24.415	1.430	15.043	4.700	3.753	80.000	0.217
1.056	31.297	1.130	24.289	1.440	14.879	4.800	3.673	85.000	0.204
1.057	31.147	1.132	24.164	1.450	14.719	4.900	3.596	90.000	0.193
1.058	31	1.134	24.042	1.460	14.564	5.000	3.522	95.000	0.183
1.059	30.856	1.136	23.921	1.470	14.412	5.200	3.383	100.000	0.174

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International: +1-203-743-9272

Original Article: [n4pow.com/files/ugd/edd0b7\\_459de1c2edc24c0e94118761f476f69e.pdf](https://n4pow.com/files/ugd/edd0b7_459de1c2edc24c0e94118761f476f69e.pdf)



## A BRIEF HISTORY AND OVERVIEW OF NVIS

BY BILL RINKER, W6OAV

Most hams are familiar with NVIS propagation. However, a lot of hams are not familiar with the interesting history of NVIS. A brief overview of NVIS and the history of NVIS follows. Also, many references are provided for those that want to read more about NVIS.

### NVIS OVERVIEW

NVIS propagation, generated by low to the ground antennas, is used to fill in the “dead zone” distance which exists between ground wave coverage and skywave coverage. This dead zone typically is between 30 miles and 600 miles. NVIS also allows coverage in mountainous terrain. See Figure 1 and references [1] [2] below.

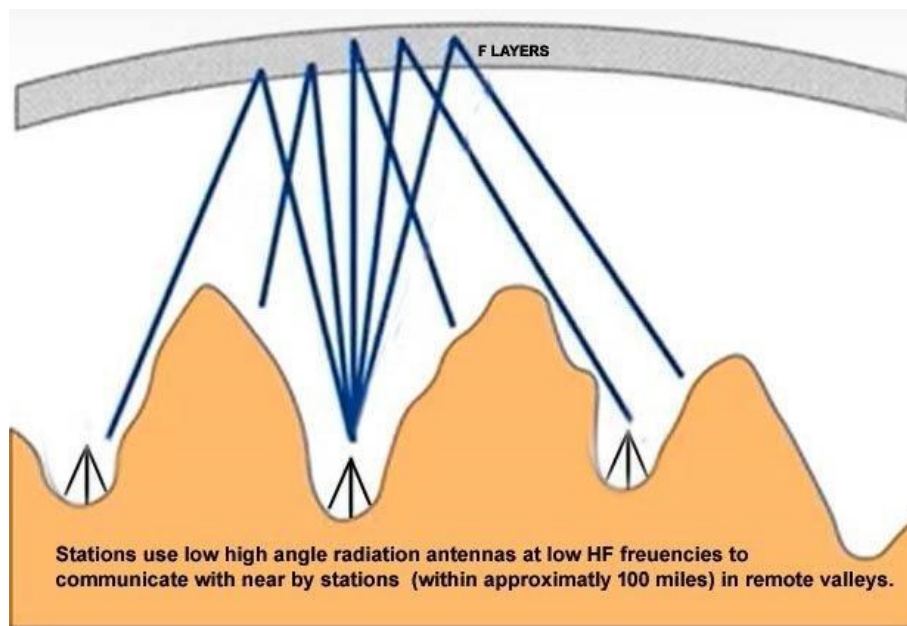


Figure 1 - An example of using NVIS to communicate over mountains

### DISCOVERY OF NVIS

British radio engineer and space physicist Edward Appleton discovered NVIS in the 1920s. Reference [A] below. In 1947 he received the Nobel Prize in Physics for his discovery of the layer in the Earth's ionosphere that reflects shortwave radio. During the late 1920s and early 1930s. the English, Germans and Americans investigated NVIS but did not use it.

### WW2 NVIS HISTORY

The British did not use NVIS during WW2. The Americans used it only during the Normandy D Day invasion (at the suggestion of Harold Beverage who invented the Beverage antenna in 1921). However, the Germans extensively utilized NVIS on their tanks and command cars. They created special loop antennas and mounted them horizontally on their vehicles to give their lower HF frequency signals maximum amplitude directly up. Figure 2 shows an armored vehicle with an NVIS loop. Figure 3 shows a command vehicle equipped with an NVIS loop.

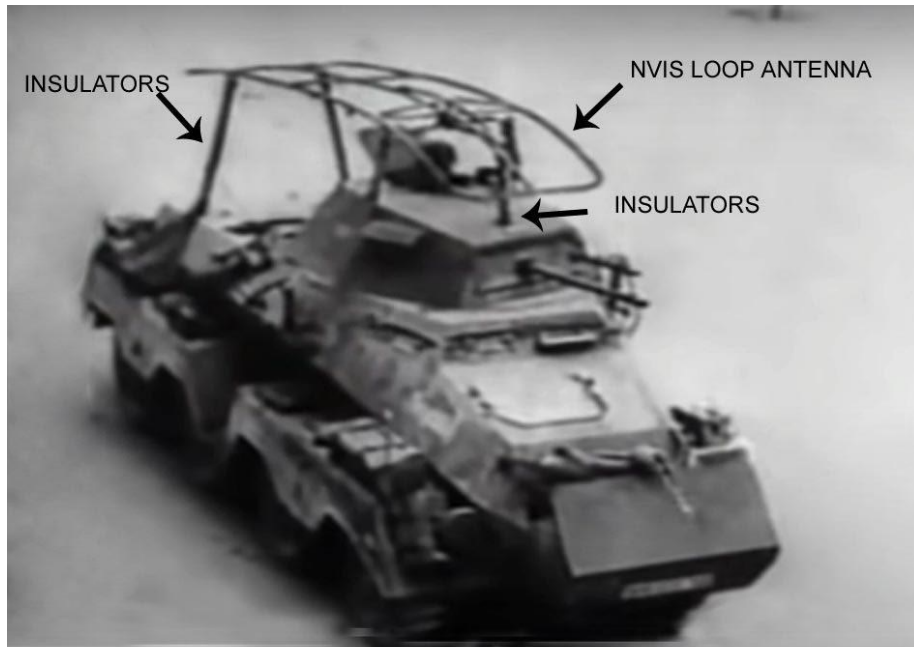


Figure 2 - Armored vehicle with NVIS loop.

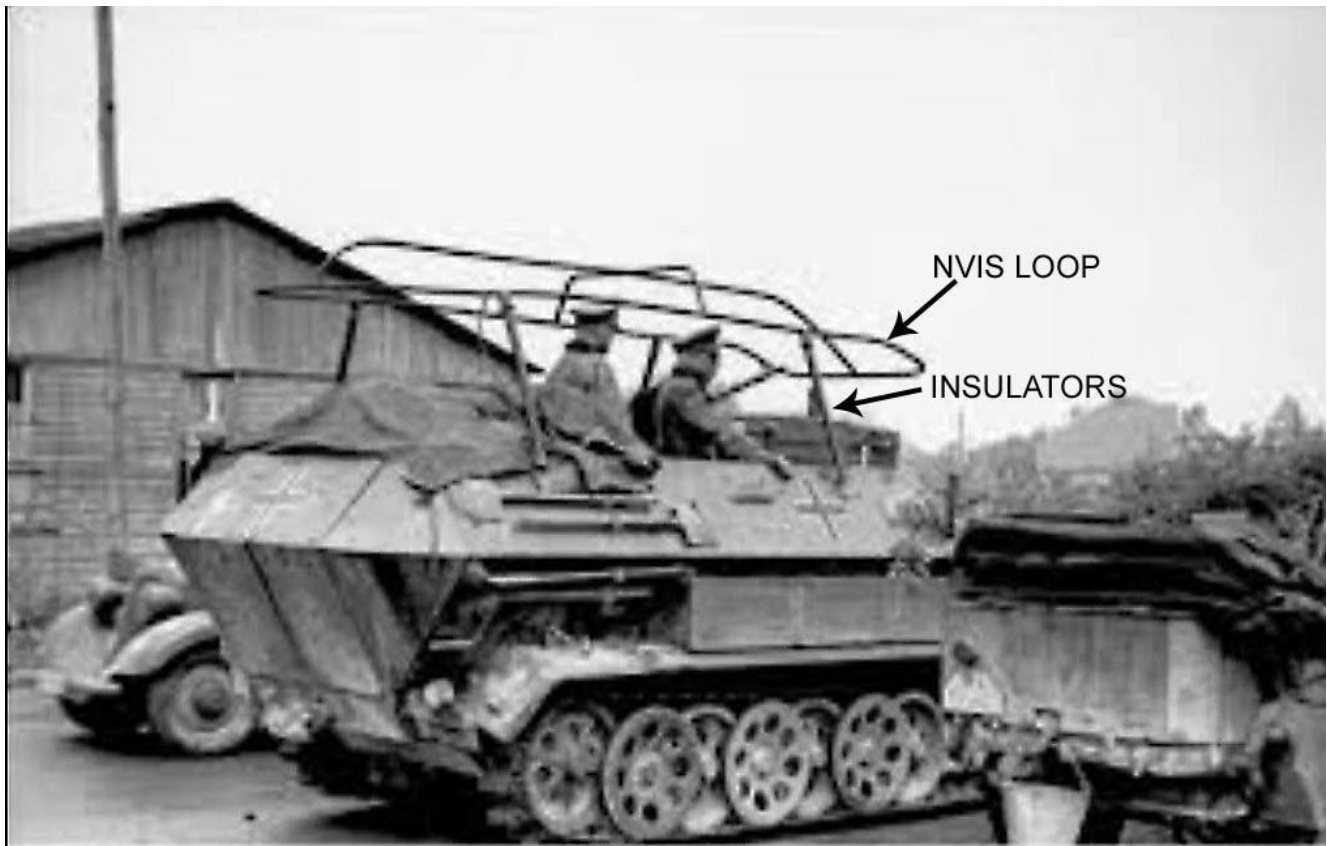


Figure 3 – Command vehicle with NVIS loop.

(These pictures are from an old German WW2 propaganda film). The Germans found that they had better coverage across their widespread battlefields with the loops than with whip antennas on HF and VHF. The German NVIS systems used 30 watts AM or CW at 1,130 kHz to 7,000 kHz.

### VIET NAM NVIS HISTORY

During the Viet Nam war the US military often used NVIS for several reasons:

- Better coverage into the many valleys beyond the hills.
- Better coverage down into the jungle rather than limited bad coverage through lossy jungle.
- Harder for the enemy to DF as the signal to them propagated down from above.
- Harder for the enemy to jam since they did not have NVIS coverage.
- Low NVIS antenna height made it harder for the enemy to spot.

After the Viet Nam war the US military continued to use NVIS in various regions. Figure 4 shows a military mobile configured for NVIS. Figure 5 shows the military AS-2259 NVIS antenna [5]. These two figures are from the military manual referenced below [3]. Figure 6 (an Army photograph) shows a military command vehicle configured for both NVIS (the loop) [4] and long-distance communications (the whips). By phasing the whips directivity is achieved.

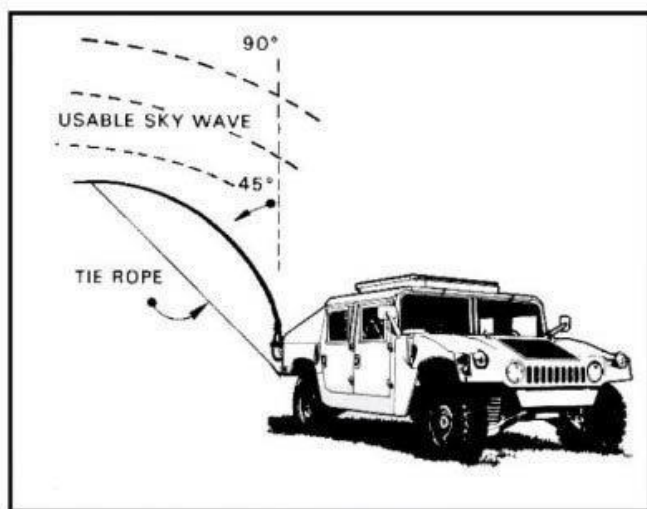


Figure 4 – Military vehicle configured for NVIS operation.

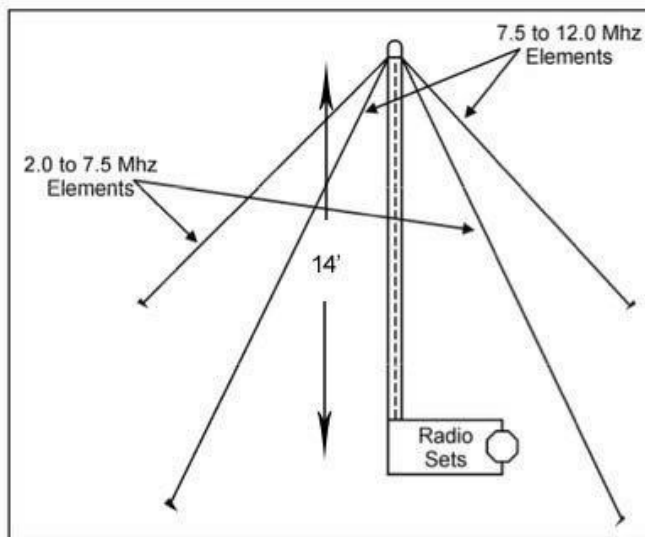


Figure 5 – Military NVIS Antenna AS 2259/GR

According to several articles in military pubs, the military used NVIS in the mountainous regions of Afghanistan using the equipment described above and for the reasons detailed above.

### CIVILIAN NVIS HISTORY

For the past few years NVIS has been used in remote parts of the world such as the Australian outback and in the plains of the middle east. Several commercial NVIS antennas are used. Figure 7 shows an NVIS antenna made by Stealth Telecom.

[6].



Figure 6 - Military command vehicle equipped with NVIS and long range comms



Figure 7 - Commercial NVIS loop antenna made by Stealth Telcom

White Wolf sells mobile and fixed NVIS loop antennas [7]. Figure 8 shows their mobile NVIS antenna. Figure 9 shows their fixed NVIS antenna.

Atlas-Elektronik Corp [8] and Valco [9] sell fixed mode loop NVIS antennas.

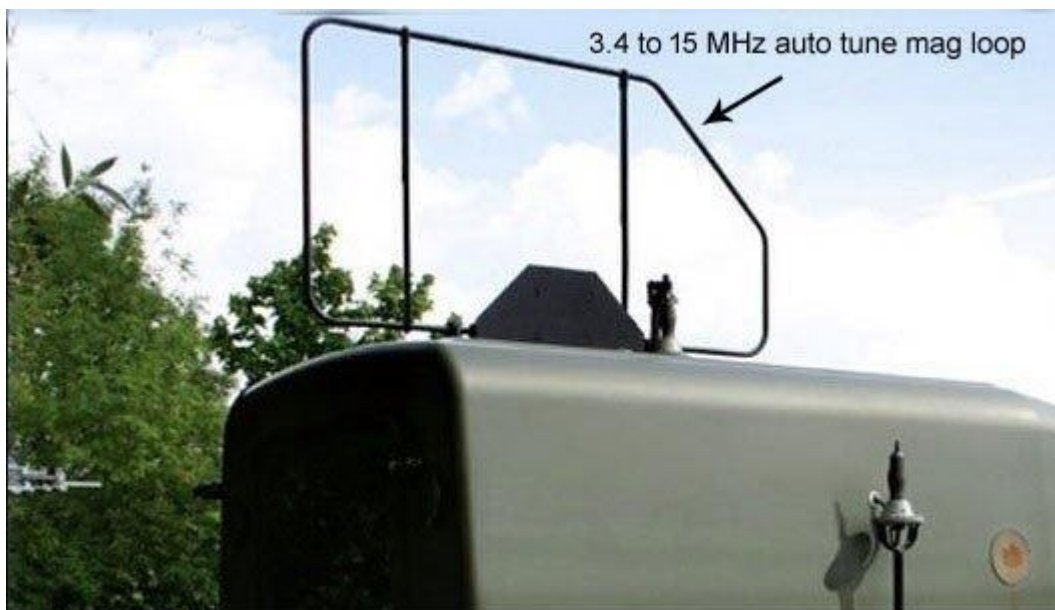


Figure 8 - Commercial mobile NVIS loop antenna sold by White Wolf

### AMATEUR NVIS HISTORY

Since WW2 hams have used NVIS for “dead zone” coverage and for emergency communications. This was especially true before high level repeaters became available providing coverage similar to that of NVIS. However, in mountainous areas repeater coverage cannot match that of NVIS.

Hams have built many different types of NVIS antennas. These include many types of low dipoles, low vertical plane beams and vertical magnetic loops. Vertical magnetic loops are extremely popular for many reasons. They produce both NVIS and far field radiation, are low noise receivers, are efficient and are great in HOA environments [10]. Just “Google” NVIS antennas for many hours of interesting reading!

There are even commercial NVIS antennas available for hams! [11].

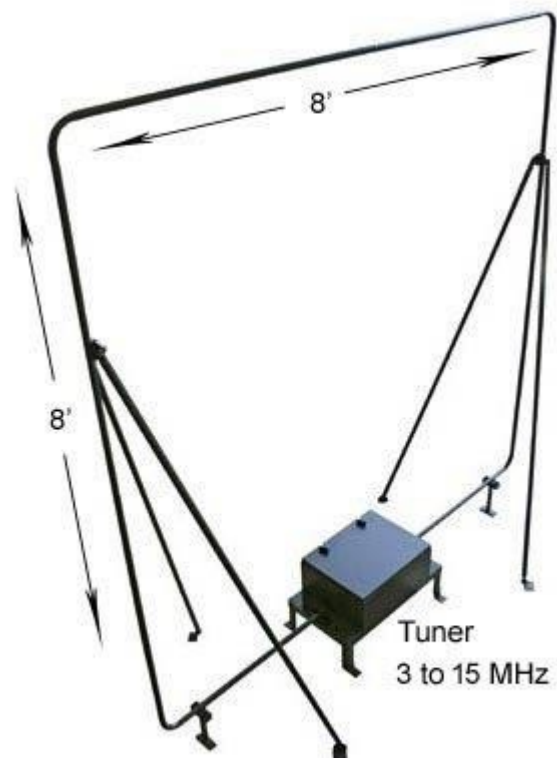


Figure 9 - Fixed NVIS loop sold by White Wolf

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**REFERENCES**

[A] Appleton, E. V., & Bartlett, M. A. F. (1925) "On some direct evidence for downward atmospheric reflection of electric rays". Proceedings of the Royal Society of London, 109(752), 621–641.

[1]. NVIS Overview by Dave, KE0OG  
<https://www.youtube.com/watch?v=s2iMoXLO0s4>

[2]. A good discussion of NVIS:  
<https://practicalantennas.com/applications/nvis/>

[3]. FM 24-18 Tactical Single Channel Radio Communications Techniques:  
<https://archive.org/details/milmanual-fm-24-18-tactical-single-channel-radio-communications-techni>

[4]. Military L3Harris Mobile NVIS loop  
[https://www.l3harris.com/sites/default/files/2020-07/cs\\_tc\\_datasheet\\_rf-3134-at003-5\\_web\\_tcm26-19129.pdf](https://www.l3harris.com/sites/default/files/2020-07/cs_tc_datasheet_rf-3134-at003-5_web_tcm26-19129.pdf)

[5]. Army Technical Manual - Antenna AS-2259/GR  
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[https://www.rigpix.com/antennas/stealthtele\\_st940b\\_manual\\_080610.pdf](https://www.rigpix.com/antennas/stealthtele_st940b_manual_080610.pdf)

[7]. White Wolf NVIS Loop Antennas  
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[8]. Atlas-Elektronik Corp Mag Loop  
[https://www.hmk.atlas-elektronik.com/fileadmin/user\\_upload/01\\_Images/Hagenuk/Produkte/NLA/NLA\\_3050\\_180329.pdf](https://www.hmk.atlas-elektronik.com/fileadmin/user_upload/01_Images/Hagenuk/Produkte/NLA/NLA_3050_180329.pdf)

[9]. Valcom Fixed Mag Loops  
[https://www.valcommfg.ca/files/ugd/fcd44a\\_9d6dda612db346ceb2ddc960df765b1a.pdf](https://www.valcommfg.ca/files/ugd/fcd44a_9d6dda612db346ceb2ddc960df765b1a.pdf)

[10]. Small Magnetic Loops -by AA6TB  
<https://aa5tb.com/loop.html>

[11]. Commercial Ham NVIS Antennas  
<https://static.dxengineering.com/pdf/wp-nvis-rev2.pdf>  
<https://hamsource.com/product/nvis-antenna/>  
<https://chameleonantenna.com/shop-here/ols/products/cha-f-loop-30>  
<https://mfjenterprises.com/products/mfj-1786>  
<http://www.alexloop.com/>

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Additional Reading

Military NVIS: Theory, Techniques, and Validation

[https://www.radionerds.com/images/e/ea/Near\\_Vertical\\_Incident\\_Skywave\\_Communications-NVIS-Fiedler\\_-\\_1996.pdf](https://www.radionerds.com/images/e/ea/Near_Vertical_Incident_Skywave_Communications-NVIS-Fiedler_-_1996.pdf)

Military NVIS Antenna Theory and Design

<https://www.limarc.org/wp-content/uploads/2018/04/MILITARY-NVIS-Antenna-Theory-and-Design-Applications.pdf>

Magnetic Loops for NVIS & Far Field (page 6)

[https://w0tx.org/RoundtableArchive/2017-RoundTables/RT201701\(JAN\).pdf](https://w0tx.org/RoundtableArchive/2017-RoundTables/RT201701(JAN).pdf)

Attic Antennas (8JK, Bent Dipoles & Mag Loops)

<https://www.youtube.com/watch?v=syYa2CNk8ZE>



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](http://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.

**Characters . . .**

(Continued from Page 2)

ranges from giving license examinations to inspecting radio installations. And, of course, the inevitable task of finding an illegal transmitter or soothing an irate victim of television interference.

And the darndest things happen. He has been threatened by people he caught operating illegally, he has been cursed by TVI complainants, he has been accused of always being on the side of the ham, and he has been accused of always being against the ham.

Once a year, the morning after what must have been a dandy New Year's Eve party, the same woman calls Andy to inquire how she can force a local radio station to play the records she wants. Andy always advises her to buy the station. She always agrees that it's a wonderful idea, thanks him for his help, and hangs up in a pink glow.

And once, in the line of duty, Andy found himself on an ocean-going vessel that sank. In the best tradition of the sea, Andy went down with the ship—all the way to the bottom. It was fortunate indeed that the craft was in the Savannah River at the time and the bottom was only five feet below the hull of the huge tanker on which Andy was making an inspection of radio equipment. The ship struck a bridge support, ripping open the hull. The tanker was filled with gasoline, and Andy put in some nervous moments before he could abandon ship.

On another occasion, Andy was making his way to the dock at Jacksonville, Fla. to make an inspection. Storm warnings were out, and parts of Jacksonville were flooded. Passing through a flooded area, he lost track of the location of the road. Suddenly he realized that he was not only off the road, but off land altogether. The car was floating. The car finally came to rest on high ground, and then, too late he realized that he'd missed a dandy chance to sign "maritime mobile." Once a ham, always a ham.

⊖—⊖—⊖  
**CQ**

A CQ ham is an operator who doesn't know who will answer him or what he will say if someone does. Except yak and call it a QSO.

**TVI Committee**

For benefit of the local amateurs, we list the TVI Committee of the Denver Radio Club, as follows:

- Walter N. Gardiner—K0CLJ EM 6-8574  
(Chairman)
- Frank Sauter—K0TNS SU 9-5229
- Fred Hofer—K0ZAY AL 5-7781
- Donald Baker CR 9-1315
- Kenneth Opel—K0OKO WE 4-7066
- Norton Schwartz—K0MFV SU 9-9320
- Robert W. Ayre—K0KKW WE 5-2127
- Keith B. Farris—W0YDM AT 8-8742
- Rudy Fleisher EM 6-8502
- Orville Johnson—W0BON (call chairman)
- Robert Gooch—K0IIX EM 6-8900
- Ray M. Uherecken EM 6-7293
- Ray J. Uherecken FL 5-2744
- Joe Belohlavek—K0YDF WE 4-3396
- Sol Abramovitz—W0WSK DU 8-3043
- Glenn Schultz—W0LJR HA 9-7287
- Dennis Boruchin—K0BTO AT 7-4787
- Fred Harmon—W0BHLJ EA 2-3952
- Chris Current—K0RJA EM 6-1649
- John Waer—K0RGV EM 6-2821
- Earl Marcum—K0RRC AT 8-0873
- Everett Blinn—K0QAR MA 3-7559

(Others are welcome. We would like to have two members within each metropolitan telephone exchange.)

TVI Committee Consultants are: Andrew W. Bahlay and Larry Hastings, FCC Engineers, Denver Field Office, 15th District.

⊖—⊖—⊖

**Did U Know . . .**

That K0PGM came by a used receiver and transmitter and will be mobile someday.

—⊖—

That Everett, KN0QAR has his SB-10 working and is now on SSB.

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### 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](#)



### THE ROUND TABLE ARCHIVE

Go to: [w0tx.org/roundtable](http://w0tx.org/roundtable)

### THE ROUND TABLE ARTICLE INDEX

Go to: [w0tx.org/RoundtableArchive/-RoundTables-Index.pdf](http://w0tx.org/RoundtableArchive/-RoundTables-Index.pdf)

### RANDOM SITE OF THE MONTH

[YELLOWKNIFE AMATEUR RADIO SOCIETY](#)

## 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)

No reports for this month.

## 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
Louisiana	04/01/2023	04/02/2023	<a href="#">Louisiana Contest Club</a>	
Mississippi	04/01/2023	04/02/2023	<a href="#">ARRL Mississippi Section</a>	
Missouri	04/01/2023	04/02/2023	<a href="#">Boeing Employees' ARS – St. Louis</a>	
Georgia	04/08/2023	04/09/2023	<a href="#">Georgia QSO Party</a>	
Nebraska	04/08/2023	04/09/2023	<a href="#">Nebraska QSO Party</a>	
New Mexico	04/08/2023	04/09/2023	<a href="#">New Mexico QSO Party</a>	
North Dakota	04/08/2023	04/09/2023	<a href="#">ARRL ND Section Manager</a>	
Michigan	04/15/2023	04/16/2023	<a href="#">Michigan QSO Party</a>	
Ontario	04/15/2023	04/16/2023	<a href="#">Contest Club Ontario</a>	
Quebec	04/16/2023	04/16/2023	<a href="#">Club Radio Amateur de l'Outaouais</a>	
Florida	04/29/2023	05/30/2023	<a href="#">Florida QSO Party</a>	

Source: [qsoparty.eqth.net/index.html](https://qsoparty.eqth.net/index.html) See [contestcalendar.com/contestcal.html](https://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	<a href="#">Metro Denver Area Coverage</a>
2m	145.490MHz (-) 100Hz PL	<a href="#">Linked to 70cm / 448.625MHz. Primary frequency during emergency net.</a>
2m	147.330MHz (+) 100Hz PL	<a href="#">Local area. Has voting receivers. Does not TX a PL.</a>
2m	147.330MHz (+) 131.8Hz PL	<a href="#">Test mode operation. Send signal reports to Tech Committee.</a>
1.25m	224.380MHz (-) 100Hz PL	
70cm	447.825MHz (-) DCS~073; NB 12.5; +/- 2.5	<a href="#">Saint Anthony's. Note: This is a narrow band repeater requiring DCS.</a>
70cm	448.625MHz (-) 100Hz PL	<a href="#">Linked to 2m / 145.490MHz. 1° disaster net freq.</a>
70cm	449.350MHz (-) 100Hz PL	<a href="#">Wide area coverage with Echolink, node # 4140. Secondary frequency during emergency net.</a>
70cm	449.775 MHz (-)	<a href="#">Yaesu digital, C4FM, Wires-X, DN, VW &amp; Data. No analog FM. W0TX Room 40931.</a>
70cm	446.7875MHz (-)	<a href="#">BrandMeister Repeater: Slot 1 – Wide Area Traffic, Slot 2 – Local Talk Group 310804</a>

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<b>APRIL 2023</b>							<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	5 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)			8	
9 	10	11	12 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)			15	
16 Rookie Roundup Phone - 1800 - 2359 UTC	17	18 	19 DRC Online Meeting Elmer 6 p.m. Meeting 7 p.m.			22	
23 30	24	25	26 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)			29	

See [arrl.org/contest-calendar](http://arrl.org/contest-calendar) for additional details about contests.

## DRC BOARD OF DIRECTORS

President	W0GV	Gerry Villhauer	303-467-0223	<a href="mailto:president@w0tx.org">president@w0tx.org</a>
Vice-President	K0KPS	Kevin Schmidt	303-475-9234	<a href="mailto:k0kps@arri.net">k0kps@arri.net</a>
Secretary	WW0LF	Orlen Wolf	303-279-6264	<a href="mailto:secretary@w0tx.org">secretary@w0tx.org</a>
Treasurer	N0CRZ	Cathy Villhauer	303-467-0223	<a href="mailto:treasurer@w0tx.org">treasurer@w0tx.org</a>
Board Member	N0XRX	Mark Thomas	720-438-0848	<a href="mailto:n0rx@w0tx.org">n0rx@w0tx.org</a>
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Board Member	WG0N	Dave Baysinger	303-987-0246	<a href="mailto:wg0n@arri.net">wg0n@arri.net</a>
Board Member	KB0CHT	Jeff Irvin	Check Roster	Check Roster

## DRC STAFF AND VOLUNTEERS

Benevolent		Carolyn Wolf	303-279-1328	<a href="mailto:benevolent@w0tx.org">benevolent@w0tx.org</a>
Club Librarian	WG0N	Dave Baysinger	303-987-0246	<a href="mailto:wg0n@arri.net">wg0n@arri.net</a>
Digital Committee	W6OAV	Bill Rinker	Check Roster	<a href="mailto:digital@w0tx.org">digital@w0tx.org</a>
Education Coordinator	Open			<a href="mailto:elmer@w0tx.org">elmer@w0tx.org</a>
EmComm Coordinator	KE0HFH	Michael Vespoli	303-215-8862	<a href="mailto:emcomm@w0tx.org">emcomm@w0tx.org</a>
EmComm Coordinator	AD0UZ	Brennan Pate	Check Roster	<a href="mailto:emcomm@w0tx.org">emcomm@w0tx.org</a>
Field Day Chairman	N6WHV	Dick Nelson		<a href="mailto:fieldday@w0tx.org">fieldday@w0tx.org</a>
Membership	N0CRZ	Cathy Villhauer	303-467-0223	<a href="mailto:membership@w0tx.org">membership@w0tx.org</a>
Net Control	K0TOR	Jim Beall	303-798-2351	<a href="mailto:net@w0tx.org">net@w0tx.org</a>
Public Relations	K0AXP	Dave Verlinde	248-515-2371	<a href="mailto:publicrelations@w0tx.org">publicrelations@w0tx.org</a>
RT Managing Editor	AD0UZ	Brennan Pate	Check Roster	<a href="mailto:roundtable@w0tx.org">roundtable@w0tx.org</a>
RT Associate Editor	W6OAV	Bill Rinker	Check Roster	Check Roster
Hamfest Manager	KE0YKV	Bill Worthington	720-626-5485	<a href="mailto:drcfest@w0tx.org">drcfest@w0tx.org</a>
Tech. Committee Chair	Open			<a href="mailto:tech@w0tx.org">tech@w0tx.org</a>
Trustee	WW0LF	Orlen Wolf	303-279-6264	<a href="mailto:trustee@w0tx.org">trustee@w0tx.org</a>
VE Team	K0RAP	Robert Pickett	720-336-0114	<a href="mailto:k0rap@w0tx.org">k0rap@w0tx.org</a>
Website & YouTube	K1DBC	Doron Ben Chaim	720-254-1561	<a href="mailto:websiteadmin@w0tx.org">websiteadmin@w0tx.org</a>

### 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](mailto: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](mailto:roundtable@w0tx.org). The submission deadline is the 25th of the Month. ~ Editor