

# DTARC ENCOUNTERS



October 2023, 5th Edition, Betty Breen, WY7MOM, Editor



## From the President

It has been a while since I sat down and put fingers to the keyboard to produce a note from the President.

September was a great month for DTARC.

First, we had a reasonably successful September VHF contest. Although the bands really stunk, we did okay and are still unofficially in the top ten nationwide. I guess the whole nation was affected by the bad band conditions.

Next, we got notice that our application for repeater space on Warren Peak was approved. The donor for the power and tower space wants to remain unpublished. I will respect their wishes. I think we will be installing a repeater system on the mountain top in the Spring.

Finally, the Parks on The Air event was a great success. DTARC had its first POTA event. I heard several comments about the fun and food, all favorable. The on-air fun was shared by several of our members. Bill, KK7KDB made

his first HF contacts. Katie, WY7YL is friends with the bulk of the US Ham population and talked to several of them as they called in. There was a YL that had just upgraded to General Class and a Ham that made their first ever QSO among the Amateurs that worked us. In my opinion, THIS IS WHAT HAM RADIO IS ALL ABOUT.

I want to take this opportunity to thank Jerry and Pat for the legwork to get us a site at Keyhole State Park. And thanks to AL for his work in getting us registered with the POTA system. Thanks to all that showed up to participate. It was a great time.

I also heard mention of a DTARC holiday party. We will talk about this at the October meeting. I hope all of you can attend.



Parks on the Air (POTA) event held at Pat's Point in Keyhole State Park

## Devils Tower Amateur Radio Club

Minutes for 21 September 2023 / 18:07 / Club House

### Attendees:

Betty Breen, Pat and Jerry Boone, Clay Hutchinson, Dwayne and Katie Allen, Al Wessel, Mac Frank, and Terry Van Benschoten

### Monthly Meeting

The treasurer's report was given by Jerry Boone. A motion to approve the report was made by Mac and seconded by Terry. Motion passed.

A motion to approve last month's minutes was made by Mac, seconded by Pat and the motion passed.

### Old Business

Dwayne mentioned that we needed to pick up the windows that were donated. We have had a donation of 3 windows.

### New Business

We discussed the use of the club owned repeaters and Dwayne announced that we have found a site to install the radios and the possibility of adding some small devices around the county to extend the range to people using handheld radios. There was a short discussion on installation logistics.

Dwayne has acquired 5 gallons of paint and mentioned a workday in the future to spruce up the meeting facility at Sunny Divide.

Terry made a motion to adjourn, and it was seconded by Jerry.

Meeting closed at 18:25 on 9-21-2023

Minutes submitted by Club Secretary Al Wessel

**Next Meeting: Thursday,  
October 19, 6:00 pm at  
Sunny Divide**

## The Doppler Effect

Some folks have asked me about the Doppler effect. So, I will try to explain it in what I hope is a short article.

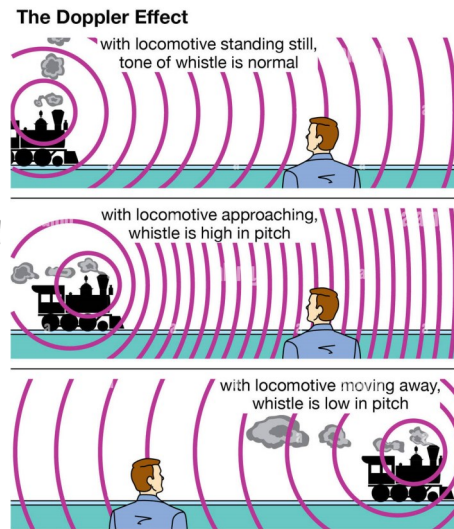
In 1842, Christian Doppler, an Austrian physicist described the effect of sound waves when the source and the receiver are approaching or leaving each other. I am pretty sure that you may have noticed this when hearing the horn of an approaching train or when the horn is past you and leaving you.

The speed of sound is approximately 767 miles per hour. If the moving train is 60 miles per hour, this means that the wavelength of the horn sound is slightly reduced, thus its frequency will be slightly increased. As the train moves past you, the wavelength slightly increases and the frequency decreases. This sound effect is widely over emphasized by Hollywood filmmakers, in bullet ricochets, passing subway trains or busses and the list goes on.

If the apparent speed of the change is significant enough, the speed of light and radio waves are affected as well. Nothing in the universe ever stands still. All heavenly bodies are in motion. Nearly all are moving VERY fast. The Earth rotates at just over 1000 MPH. The moon orbits the Earth at nearly 2300 MPH. The Earth is moving around the Sun at 67,000 MPH. The Sun is moving around the center of the Milky Way at nearly half a million MPH.

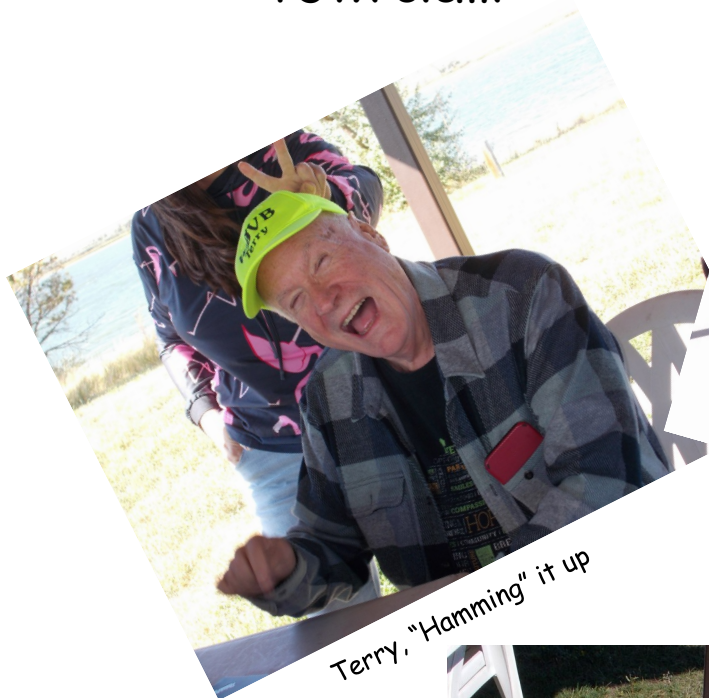
When one looks into the clear Wyoming night skies, they see thousands if not millions of stars. These are all in motion. The ones that change colors or twinkle are most likely binary or trinary star systems. As they orbit around each other, the Doppler effect is dramatic enough to change the wavelength of light. Red light has the longest wavelength and blue the shortest. In the case of a binary cluster, the color of the approaching star in the rotation will be more blue than yellow and the leaving star will be more red. These stars are locked in a rotating pair like the Earth and our moon.

What does all this have to do with Amateur Radio? Well, W0VB, Terry has made a few Earth-Moon-Earth or EME contacts on two-meter. As the moon is rising, it appears to be approaching his station. So, the frequency of the received signal will be slightly higher. When the moon is overhead it appears to be nearly standing still and the Doppler is not very noticeable. And, as it sets, the apparent frequency will be moving lower. The Doppler with respects to satellite communications is much more pronounced as they move about 17,500 MPH. The receive frequency is moving up as the satellite approaches and down after it passes. This move is sometimes several KHz.



I hope this helps us to understand Doppler and its effects on our hobby. I will be glad to answer any questions you may have, just ask.

# Just some pictures from our POTA event!



Terry, "Hamming" it up



One of the radio set-ups with Al, Mack Bill, Dwayne and Jerry



Power Source



Getting set up—food is most important!



Keyhole State Park



Another radio set-up with Jerry, Bill, Ed and Al on the mike



Katie



Mac & Ed strategizing



Terry, Pat, Jerry

**DTARC Board Members:**

- Dwayne Allen, WY7FD, President
- Wade Dennis, KD7KNZ, Vice President
- Jerry Boone, WY7JB, Treasurer
- Al Wessel, NOVMD, Secretary
- Terry Van Benschoten, WOVB, Member at large

**Newsletter Material!**

Feel free to communicate. Feedback is important and welcomed. We will be looking for contributions, pictures, etc.

Email me at [newsletter@wy7dt.com](mailto:newsletter@wy7dt.com)