



DTARC ENCOUNTERS



April 2023, 2nd Edition, Betty Breen, WY7MOM, Editor

From the President

Hello DTARC,

Our little club is now two years old. Time flies when we are having fun. We will be holding our third Field Day this June.



A look back at the last two years shows a productive time. We have done a lot. Many clubs 10 or 20 years old haven't experienced the positive things we have. Our Treasurer, Jerry, has done a fantastic job. We are incorporated with the State of Wyoming and the IRS.

We are also taking steps to introduce all three county school systems to the joys of our hobby through Amateur Radio on the International Space Station (ARISS). Everyone at the schools is on board with our initiative. I think this will get many kids thinking about Ham Radio.

There were growing pains and I expect more to come. That is the way it is. But I

hope the major hurdles are behind us.

With Field Day comes our annual meeting. This year we will also hold elections for all officers. Please give some thought on how you, as a member of DTARC, want your club to be when the next two-year cycle ends in June of 2025. If you would like to serve as leadership of DTARC, or have suggestions, please contact our Nominations Committee. The Chair is Terry, W0VB. His email address is w0vb144@gmail.com.

Here is "Question E1E03" of the
Amateur Extra Test
(source ARRL "On the Air" Magazine
Jan/Feb 2023)

What is a Volunteer Examiner Coordinator?

- A person who has volunteered to administer amateur operator license examinations.
- A person who has volunteered to prepare amateur operator license examinations.
- An organization that has entered into an agreement with the FCC to coordinate, prepare, and administer amateur operator license examinations.
- The person who has entered into an agreement with the FCC to be the VE session manager.

Find the answer elsewhere in this newsletter

Minutes of the February 25, 2023, DTARC Meeting

The February meeting was opened by President Dwayne Allen at 12:10 PM. There were 11 members present: Dwayne, Katie, Betty, Jerry Boone, Jerry Hawley, Pat, Terry, Al, Cynda, Brady and Bill Vance.

The Treasurer's report was given by Treasurer, Jerry Boone. A motion was made by Terry and seconded by Bill to approve the report. All present voted in favor.

Old Business:

Betty received a great deal of praise for the club newsletter she published several days ago. She then gave a report about it and explained that the newsletter's goal was to make a visual connection with the public. Betty asked for pictures, announcements, things to share and suggestions for a name of the newsletter. After several names were considered and discussed, a motion to choose the name "DTARC Encounters" was made by Katie and seconded by Terry. All present voted in favor.

Terry had no new information to share regarding the upcoming election of club officers. The election will take place during Field Day, the last weekend in June.

The idea of an ARISS (Amateur Radio on the International Space Station) contact for the schools was discussed. A motion for the club to pursue the idea was made by Terry and seconded by Jerry Hawley. All voted in favor. A committee consisting of Jerry, Katie, Al, Cynda and Brady was formed to reach out to the schools, explain and promote the idea and publicize the event. Jerry will lead the committee which will begin by contacting the school district superintendent. If we have Mr. Broderson's approval, we'll then reach out to all the school principals. The best location for an actual ARISS contact will be at Moorcroft school due to its open terrain.

New Business:

Our next hands-on project of oatmeal box receivers was tabled till our next meeting on April 29, 2023.

Dwayne announced that the club won an award for its June VHF Activities. There were several members that showed up at the Dennis farm. DTARC had the best score in both the Rocky Mountain Division and the Wyoming Section.

The June VHF contest for 2023 is scheduled for the second full weekend in June.

Winter Field Day was discussed. The club members who braved the weather and operated at Sunny Divide were Dwayne, Wade and Al.

Dwayne discussed plans for setting up repeaters at two locations: Al and Cynda's home and the possibility of a repeater installing on Warren Peak.

Our next meeting will be at 11:00am on April 29th at Sunny Divide with the possibility of a pot-luck.

The motion to adjourn was made and seconded at 1:30pm with all present voting in favor.

Patricia Boone
Secretary

Understanding how the sun affects radio propagation

By Dwayne Allen

Our sun is a giant ball of gasses undergoing a constant nuclear reaction. As atoms are ripped apart, energy is created in the form of heat, light and electricity. Heat and light have been used by us Earthlings since the dawn of man. But use of the electro-magnet energy is relatively new in the scope of history.



Sol is the Latin name for our star. All things about the sun are referred to as Solar events. Let's delve into the solar events that affect our hobby.

Every 11 years or so the magnetic poles of Sol exchange places. This polar exchange is not instant. As this exchange takes place, the surface of the sun becomes more unsteady. Sunspots start to appear, and solar flares occur more frequently. This activity emits energy, lots of energy, so much energy that if it were not for the magnetosphere surrounding the earth, life on our planet would cease.

The solar flux units (SFU) are the measure of radio frequency (RF) noise at 2800 MHz. This is a number from 0 to 300. The SFU affects the ionization of the F2 region of the earth's atmosphere. The F2 region is 100 to 140 miles above the Earth's surface. The maximum usable frequency (MUF) is a result of the SFU effect, the higher the SFU, the higher the frequencies that are refracted by the atmosphere. SFUs above 200 are good, above 250 are great. There is a downside to this. As the SFU climbs and stays high for several days in a row, the lower bands usefulness for DX diminishes. Think of a set of balance scales, as one side goes up, the other goes down.

There are 2 more indexes that are used in propagation predictions. These are the A Index and the K index. The A and K indexes are measurements of geomagnetic fluctuations. These indexes are measured at several testing stations around the earth and averaged. The A index is numbered from 0 to 100. The K Index is numbered from 0 to 10. These three-hour, averaged numbers are referred to as planetary indexes and are represented as Ap and Kp.

The K index is logarithmic and difficult to average. The formula is ugly. Some scientists came up with an easier method and the A index was developed.

These indexes are in essence, a measure of the noise on the bands. The lower the index, the lower the atmospheric noise on our bands. Good numbers are lower than 3 for the K Index and lower than 30 for the A index.

As Hams, we like a high SFU and a low Kp and Ap.

I hope this helps when you read the propagation predictions. Propagation predictions are available via email from the ARRL or The K7RA Solar Update on the ARRL website. www.ARRL.org

WHAT IS ARDC?

The mission of Amateur Radio Digital Communications (ARDC) is to support, promote, and enhance digital communication and broader communication science and technology, to promote Amateur Radio, scientific research, experimentation, education, development, open access, and innovation in information and communication technology. Within the ARDC is a group of volunteers that review and advise the ARDC Board of Directors on eligible proposals and helps identify potential grant-making opportunities. This is the Grants Advisory Committee. In January 2023, our member **Katie Allen, WY7YL** became a member of this committee. "I'm on a subcommittee that focuses on amateur radio applications. I have always loved writing or reviewing grants and this is a way that I can give some of my time back to

the larger amateur radio community. Some projects are funding for just a few thousand dollars for a repeater infrastructure project, or for much more (over \$175,000) like a grant approved this year for the University of PA. I'm amazed at all of the digital, technical, and amateur radio projects that are happening around the world and it's thrilling to be a part of the process to help see these projects funded." To see some examples of funded projects, visit <https://www.ardc.net/apply/grants/>

The correct answer is C. A Volunteer Examiner Coordinator is an organization, not a person. The organization enters into an agreement with the FCC to be a VEC.



Weather permitting, our next meeting will be Saturday, April 29, 11:00 am at our club house on Sunny Divide. The oatmeal box receiver will be making an appearance that day. If you feel so inclined, food sharing can also be part of the meeting.

DTARC Board Members:

Dwayne Allen, WY7FD, President
 Wade Dennis, KD7KNZ, Vice President
 Jerry Boone, WY7JB, Treasurer
 Pat Boone, KF7RJT, Secretary
 Ken Bollinger, KF7PTK, Member at large
 Al Wessel, NOVMD, 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