THE ROUND TABLE

November 2026 Monthly Newsletter of the Denver Radio Club Since 1917

President's Message

Greetings and Salutations,

I hope all is well with you and your families. Fall season is certainly upon us with the holidays getting in full swing at the end of the month.

If you haven't already, make time to check all your outdoor equipment and antennas. When the cold, snowy weather is upon us, you'll wish that maintenance work was completed allowing you to remain on the air.

The club held its last DRC Saturday on the 17th of October at Barr Lake State park. All those athat attended had a great time and the park was "activated" as a POTA (Parks on the Air) with SSB and CW. This was a help session for newer hams and the technicians that visited gleaned a lot of information helpful for them. Technicians were able to make a few HF contacts utilizing the club call sign.

While we are on that subject, as club members, what would you like the club to offer next year in the way of events? The Board of Directors would like to hear your suggestions as we start to draft a schedule of events for the new year. Don't worry; Field Day is already on the calendar. If you have any suggestions, please send them to President@W0TX.org. We want to hear from you.

Our club meeting on the 21st of October was on APRS. Jason, KM4ACK, presented material that those that have a VHF radio capable of transmitting packets can utilize to send messages to other hams, SMS messages to phone numbers, get the weather forecast, etc. over radio. If you missed the meeting, a Youtube video is online to watch.

The BOD held their meeting last week and finally approved the August and September minutes. These are included in the Roundtable for your review.

Thanksgiving is right around the corner. We all are thankful for our health, our families and friends, and the ability to get on the air. Just remember that there is a fine line between satiation and gluttony, often just one extra bite which I often forget. Happy Thanksgiving to all of you and I am grateful for all of our members of this club.

73,

Kevin – KØKPS

DRC - Blast from the Past

Provided By Woody Linwood, WOUI



1981 DRC Christmas Banquet

Question of the Month

By Bill Rinker, W6OAV

What Does It Take to Enter a Contest?

The answer can be found on page 3 of the October 2008 issue of the Roundtable: https://w0tx.org/RoundtableArchive/2008-RoundTables/RT200810(OCT).pdf

Monthly DRC Lunch - Reminder

By Pete Sobanski, AB8WN and Kevin Schmidt, KOKPS

Join us on the third Wednesday of each month at 11:30 a.m. for lunch at Sunrise Sunset. The address is 1424 S Wadsworth Blvd, Lakewood, CO 80232. No reservations are required. If you are interested in meeting and talking about radio, or other topics, don't hesitate in coming by. w0tx.org/2024/06/09/denver-radio-club-lunch



How do anti-theft tags work?

By Bill Rinker, W6OAV

Ever wonder how anti-theft tags work? The process is called magnetostriction. Anti-theft tags contain a tiny mechanical oscillator that is activated by a magnetic field. The detectors at a shop's doorway can detect the oscillation magnetically.

A good explanation video can be found at: https://www.youtube.com/watch?v=KAm7qAKAXwI



A typical anti-theft tag

Amateur Radio License Map

By Bill Rinker, W6OAV

Want to know what Hams live in your neighborhood? There may be more than you think! Check out the Amateur Radio License Map at https://haminfo.tetranz.com/map



Which DRC Digital Repeater Should I Use?

By Bill Rinker, W6OAV

The DRC has both DMR and Yaesu Fusion Wires-x repeaters. A question often heard among hams is what are these systems and what features do they provide relative to the DRC analog repeaters? Well, let's investigate that.

The first question is "Why go digital?" The following chart may answer that question.

Advantages of Digital Repeaters Over Analog Repeaters [1]		
Feature	Digital Repeaters	Analog Repeaters
Audio Quality	Improved, clear, and crisp audio	Prone to distortion and noise
Channel Efficiency	More efficient use of frequency spectrum	Less efficient use of frequency spectrum
Communication Range	Extended with less degradation (Error detection & correction)	Limited range and prone to noise and interference
Data Capabilities	Supports text messaging, GPS tracking, file transfer	Limited to voice communication & GPS
HT Battery Life	Extended	Normal
Worldwide comms w/o repeaters	Yes, with Hotspots [2] [3]	No
Dashboards [4]	Yes	No

The second question is "What features do each of the DRC digital repeaters provide?" Again, let's investigate that.

DMR and Fusion are both digital radio standards for voice and data transmission. However, there are some key differences between the two standards.

DMR is a two-slot TDMA system, meaning that it can transmit two voice channels in a single 12.5 kHz channel. Fusion is a one-slot FM system, meaning that it can transmit only one voice channel in a single 6.25 kHz or 12.5 kHz channel.

DMR uses a 4-state FSK modulation scheme, while Fusion uses a 4-state FSK (C4FM) modulation scheme. This gives Fusion a slight edge in terms of signal-to-noise ratio (SNR) performance.

DMR is an open standard, while Fusion is a proprietary standard developed by Yaesu. This means that there is a wider range of DMR radios available from different manufacturers, while Fusion radios are only available from Yaesu. DMR is more popular than Fusion.

The following chart compares the DMR and Yaesu Wires-X Fusion protocols.

COMPARISON OF DMR AND YAESU WIRES-X [5] [6]		
FEATURE	DMR	YAESU FUSION
Radio Setup	Somewhat complicated	Simple
User Radio Interface	Has a learning curve	Easy to learn
Voice channels	2 (simultaneous) (Tier II)	1
Bandwidth	12.5 KHz (split to 2 channels)	12.5 or 6.25 KHz
Worldwide Network	Yes	Yes
Network Structure	Talk Groups (Virtual channels)	Rooms (Virtual spaces for groups of users)
Cross Links to Other Types of Networks	Yes	No
Hotspot Access	Yes	No
Data Base of Users	Yes	No
Send Data	Text	Formatted messages, images, etc.
Scan	Yes, can scan Talk Groups	No, can only monitor a Room
Real time Navigation display	No	Yes. Direction, location, & distance
Cost of Radios	Low to medium	Medium to high
Multiple Manufactures	Yes. (A worldwide standard). Wide selection of radios	No. (Yaesu proprietary) Limited selection of radios
Field Programmable	Not easy	Yes
Forward Error Correction (FEC)	Good	Better

Both DMR and Fusion are excellent digital radio standards. The best protocol for a user will depend on individual needs and preferences. For a protocol that is open, popular, and more affordable, DMR is a good choice. For a protocol with the best possible SNR performance, easy to learn and use, Fusion is a good choice.

Since the DRC doesn't have a D Star repeater this article does not cover D Star compared to DMR and Fusion. However, the references below do compare the protocols.

References:
[1]. 7 Reasons Why Digital is Better Than Analog for Ham Radio
https://www.youtube.com/watch?v=PdvqgTsHOcM
[2]. Digital Hotspots for DMR, D-Star, and C4FM (#141)
https://www.youtube.com/watch?v=dQuuMYNeyyE
[3]. What Is A Digital Ham Radio Hotspot? DMR/DSTAR/C4FM Hotspots Explained
https://www.youtube.com/watch?v=TuEpFJbXNq4
[4]. Monitoring the Brandmeister DMR network on your PC
https://www.youtube.com/watch?v=WoI0hwANC98
[5]. DMR, D Star, Fusion: Which Is Right For You?
https://www.mikemyers.me/home/2016/2/19/d-star-dmr-fusion-which-is-right-for-you
[6].Ham Radio Digital Modes Comparison - DMR, DSTAR or YSF? P25 or NXDN?
https://www.youtube.com/watch?v=oBYjPkXJFa8
Ham Radio Digital Modes: Which Will Survive The Test of Time?
https://www.youtube.com/watch?v=GDAu3YR7mKI

Realtime Monitoring of HF and VHF/UHF Propagation

By Bill Rinker, W6OAV

DXMAPS 4.2 is a real-time mapping and information service for amateur radio operators. When working around my computer I use DXMAPS as a screen saver. The reason I do this is because I love working Sporadic E which, as the name indicates, occurs sporadically between different locations, can be a short term opening and very unpredictable. When an opening occurs, I'll see it and immediately fire up the radio!

Figure 1 shows a 144 MHz Sporadic E occurrence. I also, when I have time to operate HF, I check DXMAPS to see which bands are open and to where. The YouTube links at the end of this article describe using DXMAPS.

DXMAPS 4.2 provides the following key features for all types of operators:

Interactive Maps

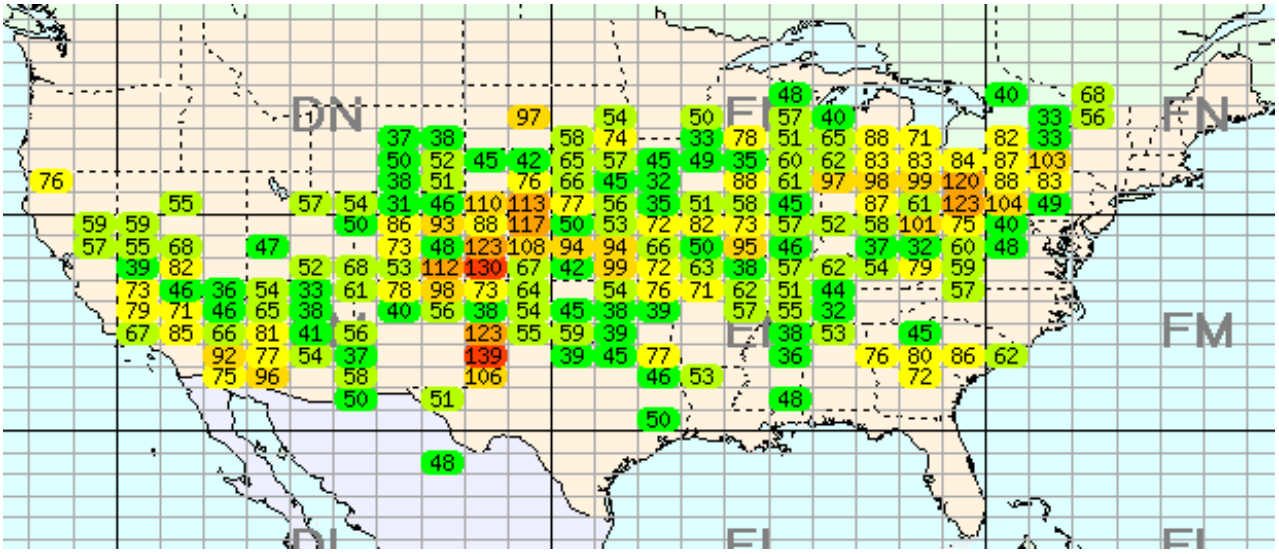
- Uses the Google Maps API for interactive world maps that can be zoomed, panned, and have different layers applied (terrain, satellite, etc.).
- Real-time updates of spots on the map every minute.
- Option to show a layer with propagation predictions from 10m to 80m bands based on the VOACAP model.

Filtering and Display Options

- Ability to filter spots by band, mode, propagation mode (for VHF), and source network.
- Different color codes for spots based on their source (DX cluster, WSPR, Reverse Beacon Network, etc.).
- Option to show only spots involving a specific callsign.
- List view and band graphs in addition to map view, with color coding for spot sources.

Additional Features

- Sends customized propagation warnings via email when openings are detected in areas of interest.
- Click on locations to get information like DXCC, WAZ, WAC, etc.



- Click on callsigns to get propagation calculations, statistics, etc.
- MUF ES world map available.
- Remembers user selections and configurations if cookies are enabled.
- Works on various devices and modern browsers, with some limitations on older systems.

References:

Using DXMAPS to understand HF propagation conditions:
https://www.youtube.com/watch?v=XpaArKy9D2Q

DX MAPS great website to see what bands are open in real time:
https://www.youtube.com/watch?v=0dpLw-D97dk

DXMAPS Great website to see propagation openings and Sporadic E skip FM:
https://www.youtube.com/watch?v=_UvSkovcdGs

DXMAPS is a great website to see overall propagation but also sporadic e activity:
https://www.youtube.com/watch?v=Q5q6XUJmFxc

DXMAPS 4.2 - QSO/SWL real time information:
https://www.dxmaps.com/spots/mapg.php?Lan=E&

DXMAPS.COM 4.x QSO maps/lists user manual:
https://www.dxmaps.com/spots/manual.html

WORK DX VIA SPORADIC E:
https://w0tx.org/RoundtableArchive/2009-RoundTables/RT200901(JAN).pdf

From The Archives

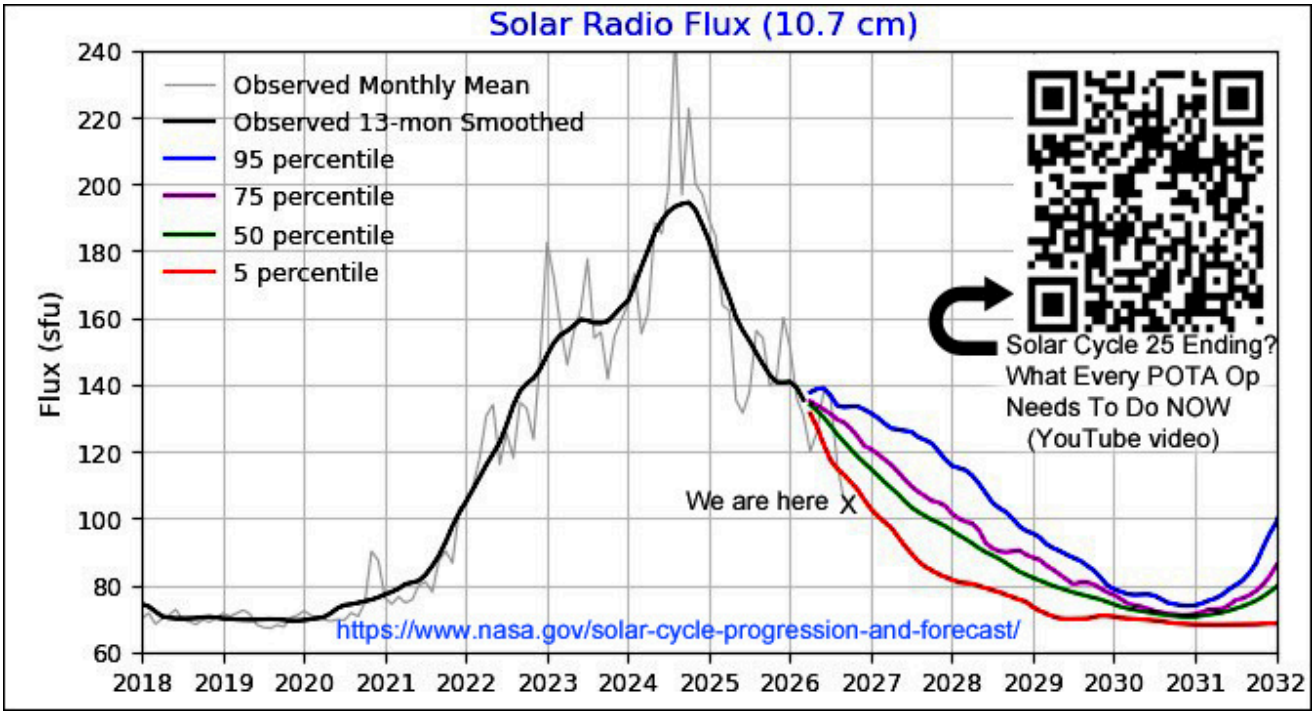
April 1958

LATVIAN AMATEUR SEEKS MILE HIGH AWARD

Bruno UK2AN who is located in Riga, Latvia desires to make more contacts with Denver hams to earn his Mile High Award. Bruno operates in the 20-meter band, and can usually be found at 14,075 plus or minus 1 kc. on cw, or at 14,210 kc. and below on phone.

Propagation Forecast

By Bill Rinker, W6OAV



DRC Board of Directors				
President	K0KPS	Kevin Schmidt	303-475-9234	president@w0tx.org
Vice-President	N6WHV	Dick Nelson	Check Roster	n6whv@w0tx.org
Secretary	WW0LF	Orlen Wolf	303-279-6264	secretary@w0tx.org
Treasurer	WW0LF	Orlen Wolf	303-279-6264	treasurer@w0tx.org
Board Member	KF0AWC	Brian Diem	970-218-5543	kf0awc@w0tx.org
Board Member	K1DBC	Doron Ben Chaim	720-254-1561	k1dbc@w0tx.org
Board Member	KE0YKV	Bill Worthington	720-626-5485	ke0ykv@w0tx.org
Board Member	K4RNY	Ronnie Bock	303-519-8510	k4rny@w0tx.org
Board Member	KE0VR	Bruce Kirkpatrick	Check Roster	ke0vr@w0tx.org
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	Open			digital@w0tx.org
Education Coordinator	Open			elmer@w0tx.org
EmComm Coordinator	Open			emcomm@w0tx.org
Field Day Chairman	N6WHV	Dick Nelson	Check Roster	fieldday@w0tx.org
Hamfest Manager	KE0YKV	Bill Worthington	720-626-5485	drcfest@w0tx.org
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VE Team	K0RAP	Robert Pickett	720-336-0114	k0rap@w0tx.org
Website & YouTube	K1DBC	Doron Ben Chaim	720-254-1561	websiteadmin@w0tx.org

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. 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



Upcoming Events

November 7	TechFest 2026
January 16	Winter 2027 Hamfest
November Sweepstakes	CW: 7-9 & Phone: 21-23

Upcoming DRC Activities

Learning Net	Wednesday's (except 3rd Wednesday)	@ 1930
DRC Lunch	3rd Wednesday	Sunrise Sunset, in Lakewood @ 1130
DRC Monthly Meeting	3rd Wednesday	Elmer @ 1800 & Meeting @ 1900

Random Site of the Month

Weld Amateur Radio Society
weldamateurradio.org



August Board Minutes

Minutes of the Denver Radio Club Board of Directors meeting held via Google Meet on August 26, 2026. The meeting convened at 19:00 with the following present:

Kevin Schmidt KØKPS – President
Dick Nelson N6WHV – Vice-president
Orlen Wolf WWØLF – Secretary/Treasurer
Doron Ben Chaim K1DBC – Board member
Peter Sobanski AB8WN – Board member
Brian Diem KF0AWC – Board member
Ronnie Bock K4RNY– Board member
Bruce Kirkpatrick KE0VR – Board member

Minutes of the July 22nd meeting were accepted as presented.

Orlen gave a treasurer's report dated July 31st. After discussion the report was accepted with one date change on a motion by Ronnie seconded by Peter. A discussion ensued on restructuring Certificates of Deposit to more evenly space maturity dates throughout the year. Further discussion included requirements for cash on hand. Orlen will check with the credit union on actions needed to implement the restructure.

The Tech Committee reported website and system updates including WordPress plugins and automatic system updates. Access to the DRC QRZ page was recovered and the page was updated with additional club information. The committee also discussed reprogramming the Scom 7330 controller.

Orlen reported troubleshooting an intermittent strong digital signal found on frequencies in use by the DRC at the Lower Squaw repeater site. The signal is strong enough to desense a receiver and at times can trigger the CTCSS causing the repeater to re-transmit noise. The repeaters test normally when isolated from the antenna system indicating the interference is external to the system. Orlen and Dave WG0N plan a return visit with RDF and spectrum analysis equipment to continue searching for the interference source.

Backup power for 449.350 repeater: A motion was made and seconded to authorize up to $400 for a 100AH AGM battery for power backup to the 449.350 repeater. Discussion covered battery chemistry, site temperature fluctuations and the Kenwood repeater's built-in charging system. Orlen noted he preferred to get the repeater system stable and interference free before modifying the system or adding backup power. The motion was tabled for later consideration.

Equipment donation: Orlen reported the club obtained useful RF equipment from the estate of Steve Ciotti K0SDC including duplexers, filters, combiners and related components. These could be used for improvements including combining transmitters and improving antenna systems.

Club event banner: The board reviewed a proposed 60" x 48" multipurpose banner intended for use at Field Day, POTA and other public events. The board favored a general-purpose design rather than wording tied to a specific event (ie Field Day) and suggested changing the wording "Come join us today" to "Come visit us today." The Sparky trademark will be retained. A motion was made to establish a working budget of nte $200. Kevin will update the Word and

PDF source files and place them on the shared drive and Dick will assist with printing when his schedule permits.

Elections: The board discussed the upcoming September election and continuing efforts to identify a candidate for the open board position. One person has expressed interest in serving but the board could not his current membership status. A board member noted a candidate must have been a member in good standing for one year prior to election and must remain a paid up member while serving. The board will continue outreach and will include eligibility requirements and reply instructions in election communications.

DRC Saturday: Peter reported the September DRC Saturday is planned for September 12th around the Colorado QSO Party. It will be held at the Prospect Park Arena and is expected to run from approximately 9AM to noon. Plan is to operate a single transmitter with the W0TX call with a 7300 radio, DX Commander antenna and battery power if practical.

Youth and community outreach: Brian reported contact with Heritage High School regarding an introductory amateur-radio/STEM activity. Representatives expressed interest, particularly in the digital aspects of amateur radio. The board recommended using polished ARRL educational materials and considering a live repeater demonstration. Facilities guidance allows limited ground stakes for antenna support, provided they do not penetrate more than approximately six inches.

Club promotion: Dick reported that Ham Radio Outlet displays printed materials from several local radio clubs. He will scan and share an example so the board can consider improving the Denver Radio Club's counter presence and handout materials.

Donated radio equipment: The board discussed the donated radio inventory. Donated radios will be tested before being offered for sale. The intent is to offer attractive member pricing as a membership benefit rather than maximize resale value. A one-radio-per-member approach was suggested to limit immediate resale by buyers. The club expects to retain one FTDX-3000 for club and Field Day use. Bruce will test the FTDX-5000 radios and report their condition. It was noted many of the donated radios do not include normal accessories such as microphones or power cords. That will be considered in sale pricing.

QRZ, Logbook of The World (LoTW) and Club Call Signs: The club already has a QRZ presence and plans to move forward with Logbook of The World (LoTW) setup. The LoTW process may require action by the club trustee because verification is tied to the trustee address. The board discussed maintaining a gatekeeper or authorization process before members operate under a club call sign so two operators do not unknowingly use the same call at the same time. A controlled process is also needed for receiving and uploading ADIF/log files and protecting account credentials and certificates.

Additional Reports: The club check-in spreadsheet was refined, including improved operator email information and a self-check-in option. A recent hamfest was reported to have approximately 400 attendees. Club sales were modest, but one membership renewal was received and the board felt the club's table presence remained worthwhile. Dick has continued posting amateur-radio technical videos through Groups.io; participants supported continuing that use of the group.

September Board Minutes

Minutes of the Denver Radio Club Board of Directors meeting held via Google Meet on September 23, 2026. The meeting convened at 1900 with the following present:

Kevin Schmidt KØKPS – President
Dick Nelson N6WHV – Vice-president
Orlen Wolf WWØLF – Secretary/Treasurer
Doron Ben Chaim K1DBC – Board member
Brian Diem KF0AWC – Board member
Ronnie Bock K4RNY– Board member
Bruce Kirkpatrick KE0VR – Board member
Bill Worthington KE0YKV– Board member
Peter Sobanski AB8WN – Membership Involvement Committee

Board minutes approval: Orlen moved to table approval of the August 26 minutes until the next board meeting. Doron seconded and the motion passed with no opposition. A spelling correction for Steve Ciotti was also noted.

Treasurer's report: Orlen presented the August 31st treasurer's report. After review it was accepted after correcting a typographical error on a motion by Doron seconded by Dick. CD maturity dates have been adjusted to provide staggered maturity. Doron changed the Stripe payout from weekly to monthly.

Credit Union account signature card changes: Orlen moved to remove Cathy Villhauer, Gerry Villhauer, and Jim Beall as Credit Union of Denver account signatories and add club president Kevin Schmidt and vice-president Dick Nelson. Dick seconded the motion. The motion carried with no opposition. Orlen will arrange the required credit-union appointment and provide the approved minutes.

T**echnical, Website, and Site Operations:** W0TX.org domain was renewed for one year. The next Technical Committee meeting will address moving from Bluehost and review Ryan's All-Star-to-Discord connector before installation. The banner order will wait for improved Sparky artwork. Doron will provide the original TIFF, Peter will prepare a higher-resolution version, and Dick will proceed after the artwork and size are settled. EchoLink relocation was deferred to the next Technical Committee meeting. The immediate task is to obtain and document remote-desktop access so more than one person can administer the system. The club will investigate an Internet-controlled power solution for Centennial Cone; no purchase was approved. Orlen moved to purchase an Optima BlueTop AGM battery for Lower Squaw for nte $400. The motion was seconded and carried without opposition. The Green Mountain GE repeater is out of service. Orlen will reinstall the Kenwood repeater and continue remote-controller programming.

Programs, Membership, and Club Business: Peter will finalize the next DRC Saturday format and send the details to Ronnie for distribution. The Membership Committee will continue meeting. Jason (KM4ACK) is scheduled to give a virtual APRS presentation on October 21. The board also discussed following up on club shirts and existing embroidery artwork. Bill will investigate Christmas-party venue options.

The meeting adjourned at 20:15