



ROUNDTABLE

PRESIDENT'S MESSAGE

By Bryan Steinberg – KB0A

With springtime comes the reminder of severe weather and dry conditions. In April the club assisted the Wheat Ridge Police Department perform their annual emergency siren tests. We will do the same for Lakewood this month. We've already had one major fire in Jefferson County and considering the below average snow pack this year, and the not very wet spring, I expect we will see more. As I write this the headline in the newspaper mentions the tornadoes that moved through Southeast Colorado in the middle of the night. I suspect we are in for a wild summer. So the question is: "are you prepared?" Not just your radio equipment, your training and your eagerness to help out should a disaster strike, but on the home front, as well. Does your family know what to do in the event of a tornado warning, or if a wild fire is taking aim on your neighborhood. Now is the time to make sure that you've taken care of all emergency training and preparations for yourself. This way if, or when you get called out to assist an affected community you can be sure that you left your home and family in good shape.

Speaking of emergency preparedness, Field Day is coming June 23rd and 24th this year. It is possible that there may be a change in location; details should be finalized in time for the June issue of the RoundTable. If you would like to help out speak with Dave, K0HTX for ideas. Remember to use the club's calendar (<http://w0tx.org/calendar.htm>) to keep track of upcoming events (e.g. Hamfests, Field Day, Meetings, etc.) of interest to the Denver ham community.

Thanks to Gerry, W0GV, and Jim, K0TOR for their presentation on Software Defined Radios. Gerry and Jim have had FlexRadio SDRs for a year or so. Their presentation on the SDRs at our April meeting was enlightening. Our May meeting will feature an evening with Jack Ciaccia, WM0G. Jack is the ARRL Colorado Section Manager he will discuss ham radio in Colorado, the ARRL and more. Additional info on Jack can be found in the pages of this issue of the RoundTable. Join us at our regular meeting location, the El Jebel Shrine in Denver. 7:30 PM for the membership meeting and 6:30 for the Elmer or Tech Committee meetings. Also, don't forget our weekly nets at 8:30 PM Sundays on the 145.49/448.625 repeaters. BTW, on those same repeaters every Wednesday, except meeting night, join the Elmer Net at 7:30 PM.

Are you aware that we are now making available past issues of the Roundtable, our club newsletter, on our website? As time allows we're also working on building an issue index to make it easier to find a particular article.

Until next month...

Bryan – KB0A
President



INSIDE THE ROUND TABLE

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APRIL MEETING - WHAT'D I MISS

By Bill – W6OAV

There were 49 attendees this month. KB0A began the meeting by describing the talks that are scheduled for the next four monthly meetings. He then described the upcoming annual Field Day event activities and how the DRC participates in the event. After that, WG0N announced that Marshall Quiet's son has donated a lot of equipment to the DRC (See article in the following pages). The equipment will be inventoried and priced. Once completed, equipment not needed for club use will be specially priced for club members only. Anything remaining will be either put on eBay or the club's table at the DRC ham fest.

KB0A then had attendees introduce themselves. After introductions, the meeting was turned over to the guest speakers, K0TOR and W0GV. Their presentation covered Software Defined Radio (SDR):



1. **Comparison of "old" superhet verses SDR architectures.**
2. **Advantages of SRD.**
3. **Basics of SDR technology and architecture.**
4. **Many features of SDR.**
5. **Comparison of the Flex-2500 and Flex-5000A SDR's.**
6. **PC requirements.**
7. **Operating experiences using SDR.**

K0TOR and W0GV finished their presentation with a demonstration of the Flex SDR using an application which emulates the actual system. The audience was amazed at all that the SRD systems can do! There were a lot of good questions.

MAY MEETING ANNOUNCEMENT

Interested in learning about the future of the various aspects of amateur radio? If so, plan to attend the May meeting. Jack, WMØG, who is the ARRL Rocky Mountain Division Section Manager, will discuss the following topics:

1. ARRL CO Section - now and future.
2. ARES CO - now and future.
3. The Amateur Radio hobby and its future.
4. The ARRL - Q & A.

Jack has provided us with a very interesting biography:

- Electrical Engineering ASEE from UMD – BA from Bryant College and MBA from Ashridge College in Hertfordshire, UK.
- USAF Vietnam Veteran – Radar Officer – RECON/ECM Op in RF-101B
- Married 50 years this June with 4 grown children and 5 grandkids.
- Lived in Boulder area since 1982 and currently reside in Erie, CO.
- Worked in electronics industry for my entire career since leaving the USAF, both as an engineer and later as a sales and marketing executive for major electronics companies. I still retain ownership in a local manufacturer's rep firm and a data imaging and storage company. I am a consultant to small companies for their government/military sales and marketing effort.
- Other interests and time-sinks include: Genealogy (Certified Genealogist and author), Sports Fishing and Non-Fiction Writing. I most recently co-authored a cookbook with my wife, and I am currently working on a book about the Old West based on the history of my wife's family.

Ham Radio Background and Leadership Qualifications:

I was first licensed in 1958 in my hometown of Providence, RI – My Novice call, KN1IVY was obtained while earning my radio merit badge and working towards my Eagle Scout rank in BSA. I tested a year later at the FCC Field Office in Boston, MA and obtained my General Class call, K1IVY and held that callsign until 1967 when I 'hibernated' from the hobby for the next 20 years. I eventually rekindled my interest in ham radio and retested here in CO back in 1987 when I received my current Extra Class callsign, WMØG.

I like to chase DX (5BDXCC) and/or ragchew on HF SSB or CW; I am an occasional contester, I like to experiment with different modes, build antennas and homebrew accessories, I also collect old 'boat-anchors', etc... I really like most anything that has to do with our hobby!

1. Past President (three different times) - Boulder Amateur Radio Club (most recently from 2005-2012).
2. Past ARES EC (twice) - Boulder D-11 (BCARES).
3. Past newsletter editor of 'BARC's Bark' and the 'MHDXA Wire'.

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4. Past (original) member - Boulder County Sheriffs Office SWAT Video Team (ATV).
5. BCARES - D-11 Public Information Officer.
6. Asst. Section Manager - ARRL CO Section – (October, 2009 to October, 2011).
7. Appointed as ARRL Colorado Section Manager in October, 2011.

APRIL TECH COMMITTEE REPORT

By Bill – W6OAV

This report provides an overview of items discussed at the April Technical Committee meeting. Comments are in red.

Power Line Noise at Station 4

Goal: Reduce the power line noise affecting all systems: Xcel was at the site on 4/18 and fixed the sources of the noise. The DRC systems are working very well now. WWOLF will use his equipment to verify Xcel's work.

Club ATV

Goal: Investigate possibility of the DRC building a digital Amateur TV (ATV) system: DRC has determined that it is not feasible for the club to build and maintain an ATV system.

Voter System

Goal: Design, build and test a 147.33 MHz voter system consisting of a central voter site and one remote site (Phase 1):

- Phase 1 Items to be completed as time permits:
 - o Re-install the voter controller.
 - o Adjust UHF link transmit antenna - KB0A will use his analyzer to check the receive antenna system.
 - o Sync the hang times of Station 4 and the remote
 - o Calibrate the local and remote audio levels and responses - KB0A will use the IFR to set levels.
- Phase 2 initial items:
 - o Determine the transmitter's coverage areas and "dead zones" for possible remote sites:
 - § Use Radio Mobile plot to identify the "dead zones".
 - § Pick predominate "dead zones" for possible remote sites.

KB0A has re-installed and powered up the voter controller. He will take the link receiver home and test it. After successful testing, KB0A will re-install the link receiver, have N1ETV re-activate the remote link transmitter and set levels.

Hudson Repeater

Goal: Obtain site key and troubleshoot repeater problem. W0GV has obtained a key. Several club members will go out ASAP to troubleshoot the repeater.

Centennial Repeaters

Goal: Ground the hard lines:

- Determine hardware required.
- Schedule a work party.

No report as WWOLF out of town.

New MotoTRBO Repeater

Goal: Build a new MotoTRBO repeater:

- KB0A has received RSC approval which specifies the St. Anthony Hospital campus as the site.
- Develop a project plan.

KB0A and KF0RW are obtaining and evaluating bids for equipment.

6 Meter Repeater Dropouts.

Goal: Determine cause of dropouts.

W0GV and KB0A feel that certain unused options are causing the problem. They will reprogram the controller to eliminate these options.

Climate Control at Station 4

Goal: Design and install a climate control system to prevent excessive heat buildup:

- KB0A and WWOLF have designed and accumulated equipment to be installed this spring:
 - o Exhaust fans in the upper air vent.
 - o An input vent near the floor.
 - o Small thermostatically controlled fans on the back of the equipment racks.

KB0A has installed two exhaust fans. He will add another fan near the HF rig.

TS-940 Failure

Goal: Determine if re-soldering and cleaning connectors will fix radio:

- K0TOR has re-soldered many bad connections and replaced several bad solid state devices. He is now troubleshooting the built in automatic tuner.

K0TOR is making good progress.

Station 4 Maintenance

Goal: Implement weed control (install ground cover and layer of rocks) and paint shed.

KB0A has a list of volunteers. He will email several possible dates to the volunteers who will indicate the best dates for themselves. The work party will be scheduled for the best overall date.

WHEATRIDGE SIREN TEST

By Jim – K0TOR

On April 11th the DRC supported the annual Wheatridge Emergency Warning siren system. The system includes 15 sirens located within the City of Wheatridge. We were also asked to monitor three locations to determine if the sirens could be heard and if voice messages could be understood. These three locations were outside parking areas for senior citizen housing.

DRC hams provide on-site inspection and monitoring of siren performance. This is an important service we provide to the City of Wheatridge. The siren test is conducted in early spring to verify siren performance prior to possible threatening weather with citizens out and about. This required the time and commitment of 21 ham operators. Which is another excellent opportunity for the DRC to show our desire and ability to support community events. It also gives us the chance to demonstrate our ham radio skill and capability.



Lt Mark Cooney, Patrol Division, gave us thanks and appreciation on behalf of the City of Wheatridge for our support on the siren test. I thank the following hams for their support and a job well done.

Grace KC0UZU	Paul KC0CXX	Steve KF0RW
Bill N0LAJ	Bryan KB0A	Ken KA5DKS
Chris KD0DUJ	Charles N6LD	Joel N0KEZ
Paul K0WSU	Doug N4ATA	Bob KC0CZ
Bob KX0I	Orlen WW0LF	Bill W6OAV
Bob KB0BZZ	Dick K8ZTT	Ron K0HRT
Susan N0TPT		Chad KC0WWW

If you covered a Lakewood siren last year we will be contacting you for this years test. If you have not participated in a siren test and would like to, please contact Jim Beall, K0TOR, at 303-798-2351. If I'm not available please leave a message. We may need additional ham radio operators to replace those that are not available this year. Those that can are invited to join us for pizza at the Lakewood Public Safety building, 445 S. Allison Parkway. This is a great public service to Lakewood, an enjoyable exercise, where the siren test and reporting are done by 11:30. Lakewood badged volunteers please report your hours. Please come out and join us.

ELMER SESSION INFORMATION

By Paul – KD0CXX

Thanks to Doug Parker N4ATA for the effort and contribution to our April meeting "Packet without a radio". In May, Bud Chick – KD0PHG will tell us about hiding his antenna from property management and HOA critics. At the June Elmer Session, we can look forward to hearing from Lance Wilson about battery Power and checking condition of your batteries. This will be timely as we approach "FIELD DAY 2012". Again thanks N4ATA for a great presentation. If you've never attended an Elmer Session You're missing a lot of great presentations and exchange of ideas. Plan to attend May's Elmer Session before the regular club meeting at 6:30pm you might learn something too.

Paul – KD0CXX
Interim Education Coordinator

*Don't forget to join in Wednesday nights
at 7:30pm for the
DRC Learning Net!
145.49/448.625 machines*

LAKWOOD SIREN TEST

By Jim – K0TOR

DRC will be supporting the Lakewood siren test on Wednesday, May 9th at 11:00 AM. I ask that you be on station by 10:30 AM so you can check in with net control and have time to check out the siren facility. Net control will be using 145.490 MHz and 448.625 MHz and monitoring 147.330 MHz. There are 25 siren sites.

ARMED FORCES DAY
**KEEPING AMERICA
STRONG AND SECURE**
United in Purpose - Steadfast in Service
Saturday, May 19, 2012

I HEARD IT THROUGH THE GRAPEVINE

By Bud – KD0PHG

Living in a large apartment complex and on the first floor, I am restricted to having a stealth antenna. After experimenting with a magnetic mount Diamond VHF/UHF antenna setting on my patio metal railing, for use with the local repeaters and packet operation I found that I could hit most of the repeaters but the packet operation was unreliable at best, no matter what power level I used.

After countless hours of testing with Doug N4ATA, Bill W6OAV, and Bill AC0VC to name just a few, it was suggested by all of these stations to try an Arrow J Pole antenna. I acquired a new Arrow J Pole. Doug N4ATA made up a temporary 2 gallon plastic bucket filled with wet, tamped sand, with a short piece of electrical P.V.C. pipe which I used to mount the J Pole on. Future plans are to pour cement in this bucket to make it more rigid.



The signal meter reports went up by 3 bars instantly on VHF and 1 1/2 bars on UHF. Most importantly though, the packet operation became rock solid and reliable to almost all stations even when using low power on my Kenwood D 710. Connections were made through W0TX, DRL and all of the above mentioned stations made trips of 4,000 miles around the world and back to me repeatedly. This is a GREAT antenna!

At this time I decided to try to make the antenna as invisible to passersby as possible and turned the decorating of it over to my wife Lucille, who is not a Ham but is very good at crafts. We purchased a large wooden bucket and set the plastic bucket and antenna in it. From there we mounted a 6 foot high wooden trellis in front of the antenna which was then covered with plastic grapevines.



At the base of the antenna she filled the wooden bucket with plastic, potting soil and decorative artificial peat moss. It was then set on a plant roller so it can be moved around when necessary. At first, I had the antenna mounted directly to the wooden trellis. After doing several signal tests, it was realized that the wood was interfering with the signal, so I made some stand offs out of Styrofoam to keep the antenna away from the wood. With this, the packet operation became rock solid and reliable.

My thanks to N4ATA, W6OAV, AC0VC, my wife Lucille and everyone else that helped make this project work. I hope this article may help anyone that is thinking of stealth operations; passers by now make comments to my wife such as "how cute" instead of "what is that thing".

THE END OF AN ERA

By Bill – AC0VC and Dave – WG0N

AG0X was the "Colorado kilowatt" station of Marshall Quiat, a prominent Denver attorney, who picked up the hobby in the late '60s. "Marsh" as he was often called, was a past president of the Denver Radio Club and the Rocky Mountain Division Director of the ARRL. During the time he traveled to Newington, CT and back for the league (and us), he was prime author of PRB-1, the FCC directive that provides a federal mandate for cities and states to provide for adequate antennas and towers to carry on the amateur radio hobby. Without Marshall, it is quite possible that, by now, few of us would have the right to install efficient antenna systems for our stations.



The AG0X station antennas consisted of a Hy-Gain Th6 -DXX super thunderbird, triband beam with an even larger 40-meter 3-element beam above it. The Hy-Gain 40m antenna is a real monster with a boom length of 36 feet and a reflector element of 45 feet which covered much of the house and produced a 7.5 db forward gain. There was also a 75 meter dipole and a 2 meter Ringo Ranger. All of this was pushed into the sky by a Tri-Ex 70 ft., motor drive, "crank up," nesting tower called a "Sky Needle." The top of the 40m antenna suspension system was approximately 80 ft. above ground. The system was in that sky near Quebec and 6th Avenue for 30 years. But, all good things must come to an end.

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Marshall passed away 6 years ago and his son, Matthew decided not to continue the ham radio tradition and wanted to re-arrange the skyline of the neighborhood. This brings us to **Tuesday, April 3**, snow, a crane, a freezing morning, lots of ropes and a couple of fascinating "flights."



Four members of the DRC, Orlen Wolf - WW0LF, Dave Baysinger - WG0N, Dave Gillespie - K0HTX, and Bill Burek - AC0VC arrived on Wednesday April 3rd after the first snow storm for April. WG0N was up the tower preparing the antenna array to be removed first. About 10am he could hear the crane as it made its way into the neighborhood. WG0N also noticed

a pair of Hawks circling overhead wanting to know what Big Bird with the bright yellow head, (hardhat), was doing to their perch.



The crane set up in front of the house. WW0LF took up his position in front. K0HTX was on the rooftop. AC0VC was in the yard on the ground to watch the alignment on the crane and the antennas. WG0N sat perched on the tower awaiting the ball and hook.

The complete antenna array was lifted off of the tower and over the house to the front. The street had to be blocked off as the 45ft long elements stretched from the front of the house well into the street. Once on the ground we removed the elements, after WW0LF marked each item with a paint marker. Then they were stacked off to the side.

WG0N had been in the backyard preparing the tower for removal. Again the crane operator extended the boom over the house.



AC0VC on the ground and K0HTX on the roof guided the ball and hook over the tower. WW0LF and WG0N climbed the tower to thread a strap through the sections of tower so all sections were lifted as one unit. The strap was slipped over the hook and K0HTX gave the operator the signal to begin the lift. Once the tension was on the tower, WW0LF and WG0N came down.

The remaining bolts were removed from the base by AC0VC and WG0N. Again the signal went out to raise the crane. Up, up and away it went. The tower was lowered to the side of the drive being careful to position the power disconnect box and winch assembly on the top.



The whole removal was completed without incident. The home owner was happy. Now if he could find a new home for his dad's tower and antennas.

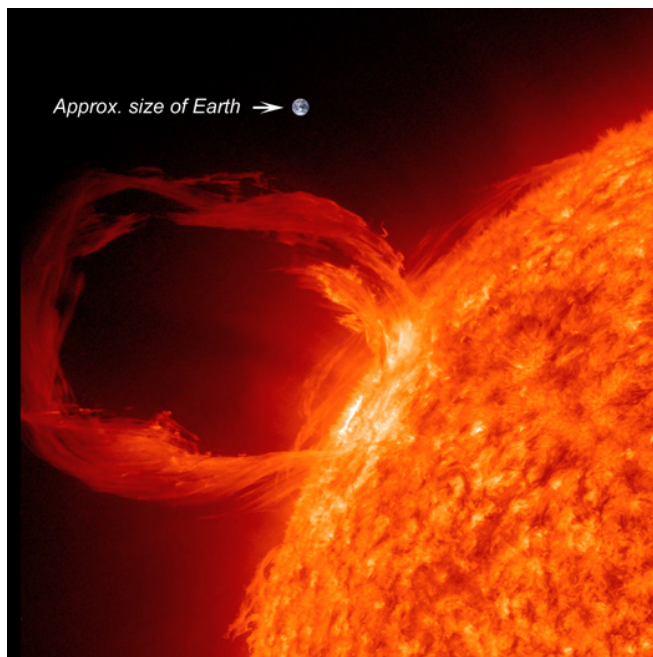


THE SUN PERFORMS FOR SDO - AIA

Soon after the instruments opened their doors, the Sun began performing for SDO with this beautiful prominence eruption. This AIA data is from March 30, 2010, showing a wavelength band that is centered around 304 Å. This extreme ultraviolet emission line is from singly ionized Helium, or He II, and corresponds to a temperature of approx. 50,000 degrees Celsius that's 90,032 degrees Fahrenheit.

In the Photo, the Earth is superimposed on a solar eruptive prominence as seen in extreme UV light (March 30, 2010) to give a sense of how large these eruptions are.

Credit: Solar Dynamics Observatory - Atmospheric Imaging Assembly



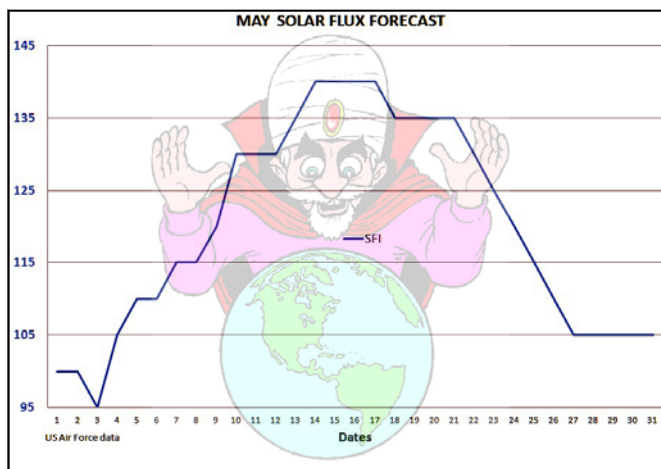
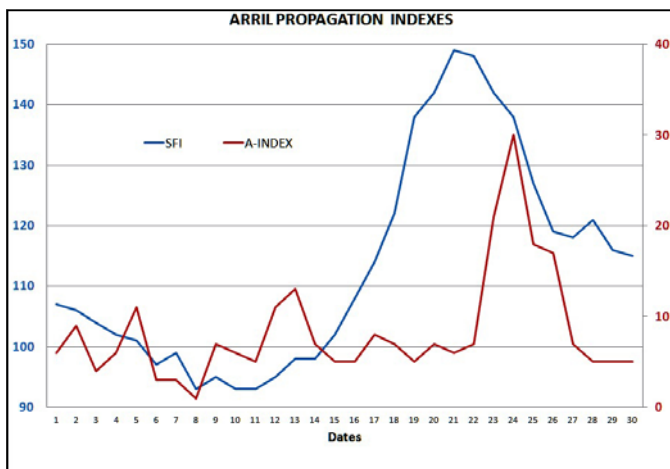
PAST & FUTURE PROPAGATION CONDITIONS

By Bill – W6OAV

This article provides two charts: the propagation conditions for last month and a forecast of next month's propagation conditions.

USING THE PROPAGATION INDEX CHART

Note two things on the chart: the trend of the SFI and A indexes and the date of largest SFI peak. The trend of the SFI shows the progress of the solar cycle during the past month. The SFI peak allows the rough forecasting of the reoccurrence of SFI peak in the next month. In order to "forecast" the next SFI peak, note the date when the SFI peak occurred and project out to about 28 days. Due to the sun's 28 day rotation, the SFI peak will often reoccur in about 28 days. The reason is because the sun spots causing the SFI peak move with the sun's rotation and face the earth every 28 days. This 28 day repetition will become more pronounced as the solar cycle improves. Refer to the September 2010 *Roundtable* for more complete information on the "SFI" and "A" indexes.



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UP COMING EVENTS

HAMFESTS & CONVENTIONS

The following are the HamFests & Conventions which have been registered with the ARRL so far. More information can be found on www.arrl.org/hamfests.

June 2 – MARC Tailgate Party
Lions Club Pavilion at Confluence, Park Delta, CO

June 23-24 – ARRL Field Day
More information later.

July 14 – PPRAA Megafest
Lewis Palmer High School, Monument, CO

August 19 – **DRC HAMfest**
Jefferson County Fairgrounds

September 23 – BARCfest
Boulder County Fairgrounds

2013

May 31 – Rocky Mountain Division Convention
Rocky Mountain Park Inn, Estes Park, Colorado



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MAY 2012							<i>DRC Net Sunday's at 8:30pm Local on 145.490 & 448.625 (No PL)</i>						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 <i>May Day</i>	2 <i>Learning Net</i> 7:30pm	3	4	5							Full Moon
6	7	8	9 <i>Learning Net</i> 7:30pm <i>Siren Test</i>	10	11	12 <i>AFD Comm. Test</i>							Last Quarter
13 <i>Happy Mother's Day</i>	14	15	16 <i>DRC Meeting</i> Elmer 6:30pm General 7:30pm	17	18	19 <i>Armed Forces Day</i>							
20 New Moon	21	22	23 <i>Learning Net</i> 7:30pm	24	25	26							
27	28 <i>MEMORIAL DAY</i> First Quarter	29	30 <i>Learning Net</i> 7:30pm	31									

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DRC REPEATERS

BAND	Freq / Shift / PL Tone	Additional Information
6m	53.090mHz (-1mHz)	
Packet	145.05mHz<>14.105mHz	
2m	145.490mHz (-) 100Hz PL	Linked to the 70cm - 448.625mHz machine.
2m	147.330mHz (-) 100Hz PL	Local Area, Members Auto-Patch Does Not TX a PL!
2m	147.330mHz (-) 131.8Hz PL	Temporarily Off The Air!
1.25m	224.380mHz (-) 100Hz PL	
70cm	447.825mHz (-) 100Hz PL	Saint Anthony's
70cm	448.625mHz (-) 100Hz PL	Linked to the 2m - 145.490mHz machine.
70cm	449.350mHz (-) 100Hz PL	Wide area coverage with Echolink Node # 4140.

EDITOR'S NOTE

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DRC members - this is your newsletter. If there is something which is club or amateur radio related that you'd like to see as a regular feature, email suggestions to the editor. Members are the heart and sole of The Denver Radio Club, 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 AG0S@arrl.net. Submission deadline is the 25th of the Month. **Editor**