

ROUNDTABLE

The Denver Radio Club Newsletter

Since 1917

April 2020

PRESIDENT'S MESSAGE

BY GERRY VILLHAUER, W0GV

Hello DRC Members,

Life has changed dramatically for all of us since my last month's president's message. I have not heard of any DRC members contracting COVID-19; I hope this holds true throughout these very turbulent times. All of the members I have talked to on the radio and phone the last couple of weeks appear to be complying with the "Stay at Home Order". It is the only way to combat the spread of the virus to friends, family and co-workers. Keep up the good work and stay in; even as hard as it is to do.

THE FOLLOWING PARAGRAPH IS IMPORTANT...PLEASE READ

Here is the plan for our April 15th meeting night. We will have a meeting and a program for April 15th in a way we have never done before. This will be a virtual (online) meeting complete with audio and video. We will do this through a Google platform called "Hangouts Meet". Prior to the meeting night, everyone on our email list will receive an email that contains the meeting attendance information below. On the meeting night (04/15/20), five to ten minutes before you want to join (6PM for Elmer session, 7PM for the meeting program) click the link and your browser will be directed to a waiting room that contains a "Join" button. Click Join and you will be admitted to the meeting. To limit background noise, everyone's audio will be muted.

If you don't have a device to access the meeting via the link (Smart Phone, Tablet or iPad, PC) you can call in by telephone. See the phone number and PIN code below.

Denver Radio Club Virtual Meeting When: Wednesday, April 15, Elmer session 1800-1845, Program 1900-end Where: Hangouts Meet: <u>http://meet.google.com/biz-oyhc-uwp</u> Recommend use of computer audio (headset/mic). Questions can be asked via the Chat function in Hangouts. Or join by phone: 912-421-0252 PIN: 393 233 332# (Please mute your phone by entering *6.) Questions can be texted to 303-898-0586

The program will be presented by Jeff Ryan (K0RM). Jeff is the ARRL District Director for the Rocky Mountain District. (Colorado, Wyoming, Utah and New Mexico) you can see his information listed in QST magazine. Jeff will be telling us about the ARRL, Past, Present and Future. Jeff is a very good and entertaining speaker; you will enjoy what he has to say along with some PowerPoint slides.

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 Roundtable.

73 for now and please stay safe and well,

Gerry W0GV President



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Who's New In The DRC?

BY BOB WILLSON, KCOCZ

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 personally to make them feel welcome. Welcome to our newest members:

Georgene Harsh	Craig Touchton - W0DVL
Richard Harsh - N0TOE	Greg DeWit - N0JMH

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.

TECHNICAL COMMITTEE REPORT

BY BILL RINKER, W6OAV

The following is an overview of current issues:

DRC/TSA Aurora Site

<u>Goal</u>: Work with the TSA relative to establishing a "communications room" for the DRC. <u>Status</u>: The Board has reviewed the MOU received from the TSA. No commitment from the TSA.

Internet Access at Station 4

Goal: Obtain access to the Fire station Internet. Requirements: 8 Mbps or faster. Global IP address. Static IP address for PC/Wires-X. UDP ports 46100, 46110, 46112, 46114, 46120 & 46122 forwarded to PC/Wires-X. TCP port 46190 open. Possible sandboxing required?

C4FM Repeater to Wires-X

<u>Goal</u>: If compatible Internet not available, is this a good alternative?

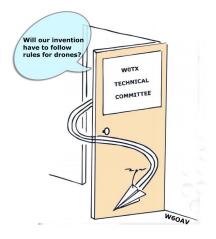
<u>Status</u>: Remote Wire-X node at a member's home (see figure below). (Ref: WIRES X – The Bible). Note: This mirrors our Echolink configuration.

Replace 220 Repeater Antennas

<u>Goal</u>: Improve coverage for the new repeater. <u>Status</u>: Schedule a work crew when weather permits.

Station 4 Remote Power Control.

Status: Shelve this item until we have internet access at Station 4



LEARNING NET REPORT

BY FRED HART, AA0JK

Our group gathers here to discuss, and respond to topics aimed at enhancing a better understanding of our hobby. The net is open to all and we encourage your participation.

March Topics:

- How to be a net control operator: https://youtu.be/YZbLbllwotE
- Five Easy Steps to Get Your Ham Radio License: https://youtu.be/9mcVLxQUSak
- <u>Amateur Radio Satellites for Beginners</u>, by Steve Ford, WB8IMY. ISBN:978-1-62595-130-4 <u>ARRL Item No.:1304</u>.
- https://www.amsat.org/introduction-to-working-amateur-satellites/
- Denver SKYWARN Training Calendar: <u>https://www.weather.gov/bou/spot_training</u> SKYWARN Spotter Training - ALL TRAINING HAS NOW BEEN CANCELLED THROUGH APRIL 30TH
- Errata to 2020 2024 Amateur Extra-Class Question Pool Released 03/18/2020 http://www.arrl.org/news/errata-to-2020-2024-amateur-extra-class-question-pool-released

Great topics from our group. We certainly enjoy everyone's participation. Thanks to all. If you are listening and don't yet have your license, you can contact us via <u>w0tx@w0tx.org</u> or <u>elmer@w0tx.org</u>.

We are always looking for additional net control operators. If you would like to participate we can help you with the basics of becoming a net controller. This is a great opportunity to learn and get experience running a net.

Net controllers are always needed to perform Emergency Communications services. The Amateur Radio Emergency Service[®] (ARES) consists of licensed amateurs who have voluntarily registered their qualifications and equipment, with their local ARES leadership, for communications duty in the public service when disaster strikes. <u>http://www.arrl.org/ares</u>. In the event of emergencies such as floods, fires, or other public service, the amateur radio community is always ready to help. If you have an interest in participating, when the need arises, learn and train now to be prepared. For additional information contact our EmComm Coordinator: Mike Vespoli (KE0HFH) at <u>emcomm@w0tx.org</u>.

If we don't have the answer here on the net, we have a lot of experienced hams in the club that can help.

Getting that first Technician license? Upgrading to General or Extra? We're here to help. We would encourage those who have been Hams for several years to also join us. Your experience and input is welcomed. What topics would you like to discuss? Join us Wednesday nights, 7:30 PM, 145.490, 100 Hz PL tone & linked to 448.625, 100 Hz PL tone.

(Note: The third Wednesday of the month is devoted to the DRC club meeting. Elmer Session: 6 PM, Main Meeting: 7 PM. See the <u>W0TX web site</u> for additional information.)

73,

Fred AA0JK



APRIL MEETING PRESENTATION

BY GERRY VILLHAUER, W0GV

Jeff Ryan (K0RM) will discuss the ARRL; how it is organized and how it operates.

Bio: Jeff Ryan is the ARRL Director for the Rocky Mountain Division. He has been an active member of the Colorado Amateur Radio community for over 20 years, serving in various ARRL volunteer positions including Emergency Coordinator, Colorado Section Manager and RM Division Vice-Director. He has also held leadership positions with local organizations including director of Pikes Peak Radio Amateur Assn, chair of Pikes Peak FM Association, vice chair of the Colorado Council of Amateur Radio Clubs and president of Rocky Mountain Ham Radio. He is also currently serving as co-chair of HamCon Colorado.



OUR NEW 220 MHZ REPEATER

ORIGINAL BY DAVE BAYSINGER, WOGN EDITOR REPRINT OF NOTICE

The new 220 club repeater was installed at station #4. We are not changing the frequency, keeping 224.380 Mhz with a 1Z PL (100 hz). The repeater is now in "burn in" mode with emphasis on the "in", not the "burn". It sounds great.

The antenna is at the 50 ft. level of a 60 ft tower at West Metro Fire station #4 on West Alameda Avenue (at the base of Green Mountain). It is a 2-bay loop antenna aimed just south of downtown Denver, featuring a cardioid pattern with power to the North, South and East and a moderate null to the west, into the east face Green Mountain.

Try it out. Monitor the frequency. Tell the repeater you are monitoring. Enjoy a brand new band. Prove, as Dave and Gerry did, that Kenwood TH-F6 Talkies actually do work well on 220. Better still, call a friend with a 220 radio who hangs out on another channel and tell her/him to meet you on 224.38. You'll be glad you did, and put in a signal report on the Sunday evening net.

REMEMBER WHEN?

BY BILL RINKER, W6OAV

The purpose of this article is to bring back memories to old hams like me and to let newer hams know what ham radio was like in the 50's and 60's.

As a teenage ham, I will always remember the headline "AMATEURS LOOSE THE 11 METER HAM BAND". That headline appeared in 1958 announcing that the 11 meter ham band was being given to a new service called Citizens' Band Radio (CB). I, as well as many other hams, was devastated as I was a very active mobile station on that band. I still have my 11 meter ham band Hustler stinger coil! Many of us sent letters to the FCC stating that the service would never work as specified. For one reason, daytime skip had very little loss compared to the losses of ground wave. Consequently, daytime ground wave communications would be "drowned out" by the stronger sky wave. Secondly, did the FCC expect the users would not communicate via sky wave? As predicted by the

hams, daytime CB was useless during the day during the late 50's and early 60's. Since solar cycle 19 then was the strongest ever measured, 5 watt sky wave signals totally drowned out the weaker ground wave signals. And of course, CB operators couldn't resist working skip.

The history of CB is interesting. Many think that CB started in 1958 when the hams lost 11 meters. Actually, CB started in 1948! Al Gross (W8PAL) had earlier invented a small 2.5 pound Handy-Talkie (HT). See Figure 1. The HT measured 6"x3"x1.25" and had a folding antenna on the top. The HT used subminiature tubes in a super regeneration circuit. The 3 watt input transmitter produced an A3 30% modulated AM signal.

Al worked with the FCC to establish a 460 MHZ to 470 MHZ CB band and to get his HT approved. There were two classes of service established; Class A and Class B. Class A stations had to adhere to strict technical specifications and could run 50 watts on select portions of the band. Class B stations had to adhere to simpler technical specifications and could run 10 watts on a smaller portion of the band. Figure 2 shows a popular Class B transceiver. It had 3 tubes which operated as a superregerative receiver or, when the PTT was depressed, became a 3 tube 2 AM watt transmitter.

The 460 MHZ CB didn't really take off because of the high equipment cost, equipment inefficiencies and the spotty coverage of UHF. In 1958, communications companies convinced the FCC that they could build inexpensive efficient 27 MHz transceivers which would give better coverage compared to UHF coverage. They ignored the sky wave verses the ground wave conflict and the temptation to work skip. They foresaw the money to be made with this service. And, the rest is history.

Footnote: Al Gross was quite an inventor. He invented the HT for the military during WWII, the pager, cordless phones and many other inventions. His biography can be found at <u>https://ethw.org/Al_Gross</u>.



Figure 1 - AI Gross, W8PAL(SK), with his UHF HT



Figure 2 - JRC-400 465MHz 3 tube CB Transceiver

A WWII 500W MOBILE AM/CW TRANSMITTER

BY BILL RINKER, W6OAV

A 29 minute movie titled "Voice of Victory", produced in 1942 by Hallicrafters, shows how the Hallicrafters HT-4 amateur 500 watt HF AM/CW/MCW transmitter was modified to become the military's SCR-299 battlefield ready mobile HF transmitter (Figure 1). The SCR-299 weighted approximately 400 pounds! It was mounted in a large truck known as the SCR-399 (Figure 2). The SCR-399 contained the SCR-299, receivers, operating position and auxiliary equipment (Figure 3). It also pulled a large generator.

Hallicrafters enlisted hams for this project because of their communications knowledge, some of whom are shown in the movie. The movie shows what it took in those days to provide a reliable high power mobile HF transmitter

that would withstand the rigors of the battlefield.

Check out the movie at: https://www.youtube.com/watch?v=Jps0_2adUvo&feature=player_embedded.

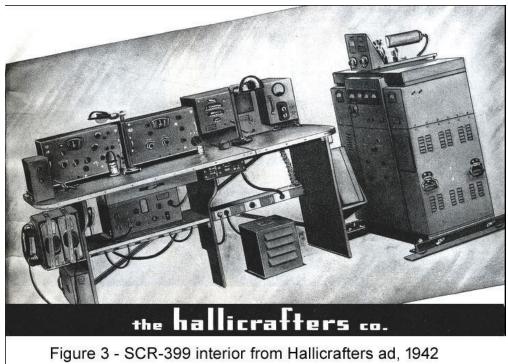
Footnote: Some of you old military hams may recognize the SCR-299 as the BC-610 which was the post war version of the SCR-299. I modified one for SSB at the MARS station when I was stationed in Germany. It was quite a machine!



SCR-299

Tuner





SOLAR GEOPHYSICAL ACTIVITY REPORT

PROVIDED BY FRED HART, AA0JK



March starts off with a spotless Sun, 28 days and counting.

The Sun was patchy, with shifting coronal holes in the central heliographic longitude area, while bright areas were entering at the top of the east limb.

These bright areas did not appear to have any sunspot activity beneath the surface, and fairly slow moving evolution was keeping them confined in the corona.

The longest stretch of blank Suns in modern history was 92 days, a record set during the Solar Minimum of 1913.

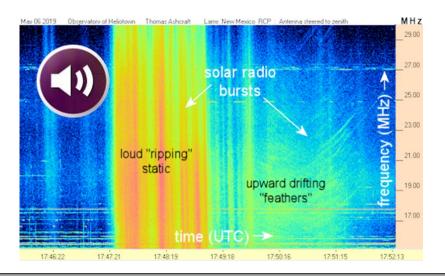
Sunday, March 8th, 2020 - A NEW SUNSPOT: Breaking a string of 34 spotless days, a new sunspot was emerging in the Sun's southern hemisphere.

First spotted region to form in over a month. Assigned region 2758, and belongs to Cycle 25. Located in southeast quadrant.

The high latitude, and magnetic polarity of the sunspot, identify it as a likely member of new Solar Cycle 25.

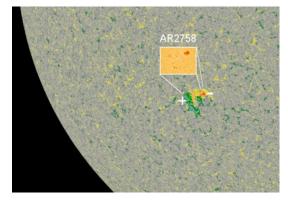
Thursday, March 19th - The vernal equinox, when the Sun crossed the celestial equator as it moves north, occurred at 11:50 P.M. EDT. This event marked the beginning of spring in the Northern Hemisphere, which will last until the summer solstice on June 20.

Solar radio bursts.



Solar, space weather quiet? For some maybe, but don't tell the shortwave listener. During periods of high solar activity, the Sun emits broadband bursts of radio energy. Many shortwave radio operators have been surprised by a roar of static in their headphones after a strong solar flare.

AR2758 continues a trend of increasing Solar Cycle 25 activity. So far this year, there have been 4 numbered sunspots. Three of them, (75%), have been from Solar Cycle 25. Solar Cycle 25 is still weak, but it is coming.



Magnetic image courtesy of SDO/HMI. The sunspot is inset in this magnetic map of the sun's surface from NASA's Solar Dynamics Observatory:

Forecast:

Predicted solar flux for the next 45 days is 72.

Predicted planetary A index is 8.

We have been looking forward to the vernal equinox, which occurred, March 20.

This is a favorable time for HF propagation, with both the northern and southern hemispheres receiving approximately equal amounts of solar radiation.

Report of Solar-Geophysical Activity

Prepared jointly by the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center. UPDATED 2020 March 20 1230 UTC.

24 hr Summary:

Solar activity was very low. No Earth-directed CMEs were observed in available coronagraph imagery.

Forecast:

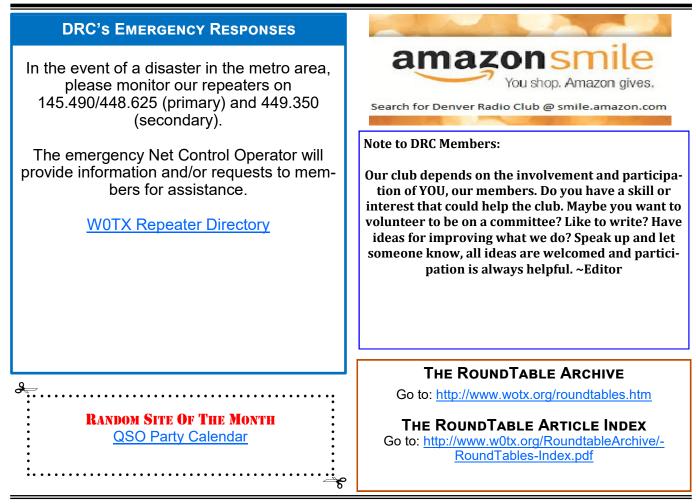
Very low solar activity is expected to continue thru March.

S	olar-Terr	estrial Data	- http://	'uuu.n0	nbh.com			
19 Mar 2020 1929 GMT	VHF C	onditions	HF C	onditi	ons	Condition	K-Ir	A-In
SFI 73 SN O	Iten	Status	Band	Day	Night	Quiet	0-2	0-7
A 6 K 1/Plntry	Aurora	Band Closed	80n-40n		Good	Unsettled	3	8-15
X-Ray n/a			30n-20n	Fair	Fair	Active	4	16-29
3040 03 5 8 SEM	4n EsEU			Poor		Minor stor		30-49
Dto Elv. No Dot		Band Closed	12n-10n			Major stor		50-99
		Band Closed				Severe sta		
	EME Deg	Poor	Sig Nois			SFI A-In I	K−In Pro	ip Opng
Aurora /n=	MUF ES-S	SEASON BREAK	MUF US B	oulder	NoRpt	>180 <8	<3 E-	W open
Aur Lat No Report	HS at the		MUF US B Solar Fl	are Pr	b 1%	>180 <8	>3 N-	S open
Bz -4.2 SW 416.6	MIN	12 18 UTC MAX	(C) Paul I	. Hennma	an 2013	>250 >30	<u>>3 Au</u>	irora

73,

Fred AA0JK

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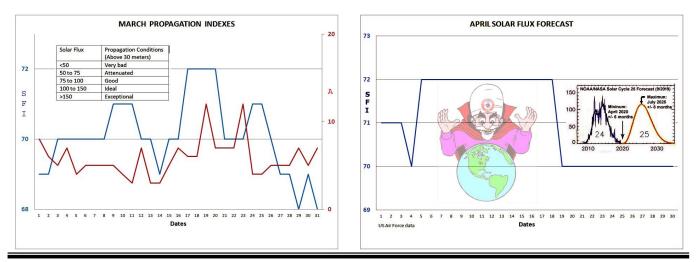


PAST & FUTURE PROPAGATION CONDITIONS

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 *Roundtable* for more complete information on interpreting these charts, which is available at: <u>http://www.w0tx.org/RoundtableArchive/2010-RoundTables/RT201009(SEP).pdf</u>



UPCOMING EVEI Hamfests & Convent			
Event	Date	Location	Sponsor Website
LARCFest 2020	4 /4/20	Boulder County Fairgrounds Exhibit Bld	g (Event Postponed)

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	04/04/2020	04/05/2020	Louisiana Contest Club		
Mississippi	04/04/2020	04/05/2020	ARRL Mississippi Section		
Missouri	04/04/2020	04/05/2020	Boeing Employees' Amateur Radio Society – St. Louis		
Georgia	04/11/2020	04/12/2020	O <u>Georgia QSO Party</u>		
New Mexico	04/11/2020	04/12/2020	Valencia County Amateur Radio Association		
North Dakota	04/11/2020	04/12/2020	0 ARRL ND Section Manager		
Michigan	04/18/2020	04/19/2020	20 <u>Michigan QSO Party</u>		
Ontario	04/18/2020	04/19/2020	20 <u>Contest Club Ontario</u>		
Florida	04/25/2020	04/26/2020	D Florida QSO Party		



BAND	Freq / Shift / PL Tone	Additional Information
6m	53.090MHz (-1MHz) 107.2Hz PL	
Packet	145.05MHz<>14.105MHz	2m / 20m gateway. Useable by Technicians on 2m.
2m	145.490MHz (-) 100Hz PL	Linked to 70cm / 448.625MHz. Primary frequency during emergency net.
2m	147.330MHz (+) 100Hz PL	Local area. Has voting receivers. Does not TX a PL.
2m	147.330MHz (+) 131.8Hz PL	Test mode operation. Send signal reports to Tech Com- mittee.
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. Second- ary frequency during emergency net.
70cm	449.775 MHz (-)	Yaesu digital, C4FM, Wires-X, DN, VW & Data. No analog FM.
70cm	446.7875MHz (-)	BrandMeister Repeater: Slot 1 – Wide Area Traffic, Slot 2 – Local Talk Group 310804

DRC REPEATERS



APRIL 2020	APRIL 2020 DRC Net Sundays at 8:30 p.m. on 145.490 / 448.625 (no PL)					
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	2	3	4
5	6	7	8 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	9	10	11
12	13	14	15 DRC ONLINE Meeting Elmer 6 p.m. Meeting 7 p.m. (See President's Mes- sage for meeting de- tails.)	16	17	18
19 Rookie Roundup - Phone 1800 - 2359 UTC	20	21	22 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL) New Moon	23	24	25
26	27	28	29 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	30 First Quarter		

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DRC BOARD OF DIRECTORS

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Website & YouTube	NOLAJ	Bill Hester	Check Roster	w0tx@w0tx.org

Please Let Us Know

Over the years we occasionally hear from hams who have read the RoundTable 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 RoundTable RoundWorld. To respond to this request send your information to <u>are editor damatican</u>.

Subject: I'm located in...

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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 drc.editor@gmail.com. The submission deadline is the 25th of the Month. ~ Editor

Sunday August 16st - Jefferson County Fairgrounds



Denver Radio Club, WØTX 🍏



DEALERS FLEA MARKET PRIZES FORUMS FCC EXAMS FOOD INDOORS

More Tables & Less Crowding

Admission: \$6 (Children under 13 free w/adult) Tables: Advance Purchase: \$12 (Paid by Aug 12) At the Door \$16

Hourly Door Prizes - Main Drawing at Noon (Must be present to win)

Doors Open: 8:30 AM - 1:00 PM License Testing/VE Exams at 10 AM (Vendor Set-Up Starts at 7:15 AM)

Talk-In: 145.490-/448.625- PL 100.0Hz GPS: Lat 39d 43' 19"N Lon 105d 10' 15"W

Handicapped Parking & Access Available



Jefferson County Fairgrounds 15200 West 6th Avenue Golden, CO

For more info visit our website or contact: Cathy Vilhauer, N0CRZ 303-467-0223 E-Mail: drcfest@wØtx.org

Advance Table Reservation Form

Make checks payable to: Denver Radio Club, do not mail cash!

Payment is required with reservation and <u>must be received by August 16, 2020</u> to obtain the \$12 per table advance registration price AC Power is limited, available on a FCFS basis. Reservation confirmations will be <u>emailed</u>. Vendor badges & tickets will be provided at the Hamfest. Tables must be claimed by 8:30 AM or they will be subject to resale – no refunds Save the upper portion of this flyer for your records

Name:		(Call:
Org:	Phone:	Emai	il:
# of Tables	@ \$12.00	each =	
# of Vendor Admissions_	@ \$6.00 @	each =	Denver Radio Club 2020
AC Power:yesr		closed :	
Special Requests:			
	ons to: Denver Radio Club	, 6511 W 74 th Ave.,	Westminster CO 80003

Early Bird Discount Registration is Available Now! at http://www.hamconcolorado.com

HAMCON COLORADO 2020 ROCKY MOUNTAIN DIVISION MARK THESE DATES ON YOUR CALENDAR! August 7 - 9, 2020

FRIDAY Separate Event - DX University 8AM - 5PM \$50 includes Lunch-

ALL DAY SATURDAY & SUNDAY Many engaging technical sessions & forums Numerous club, organization and manufacturer exhibits!

MEALS MUST BE PURCHASED IN ADVANCE TO HEAR THE SPEAKERS

Booked so far are Riley Hollingsworth K4ZDH & Rick Roderick K5UR

SATURDAY

- Kickoff Breakfast with speaker (TBA)
- Afternoon Delicatessen Buffet with a nationally known Speaker (TBA)
- · Evening Meet and Greet Buffet with ARRL Officials and a Keynote Speaker
- Midnight Wouff Hong Ceremony (Details TBA)

SUNDAY

- · Breakfast with a nationally known Speaker (TBA)
- · BBQ lunch with a nationally known Speaker (TBA)

MORE FOR YOU!

- Show your CW skills and coordination in a QLF (Details TBA)
- Show your skills in a challenging CW Pileup Contest (Details TBA)
- Operate W1AW/Ø HF/VHF/UHF All modes including Digital on fantastic hardware
- Hourly prize giveaways
- Hospitality Suite sponsored by Mile High DX Association and Grand Mesa Contesters of Colorado

CU Denver South - 10035 S Peoria St. - Parker, CO