

Rochester DX Association



President's Letter

Welcome to yet another exciting year at RDXA!

The organization continues to have an enthusiast group and even though our primary interests are a bit diminished, we still have found time to work a few folks, improve our stations and learn more about new facets of our hobby.

Back in June, we had 2 participation events that were well represented by RDXA members. In association with the RVHFG, we once again supported their 70th anniversary with many local DXer's firing up their VHF and UHF radios.

The January VHF scores were in and RDXA was integral in a projected "win" for our category. June would seem to have the same results.

A week or so later, FD was once again a huge success as preliminary results would indicate. Several of us had conflicts but other club members took up the slack and provided (once again) an outstanding operating experience "in the field". Granted, there are always a few "learning experiences" but the FD crew is already meeting on ways to alleviate those for the 2020 effort.

As for the coming months, programs for the 2019-20 "season" are being scheduled so if you'd like to tell us of any of your exploits, educate us on a piece of gear or anything else you deem interesting to the group, let us know!

Contest season begins in the next few weeks with a full slate of multi mode events which should satisfy any DX hound (or NY county chaser).

The October program will actually be a review of practices which local stations utilize to maximize score **and operating time. Software updates, optimal mults timing and even diet will be discussed. These opportunities, even in the "down cycle" present the best opportunity to finish off your DXCC, get those last ones on 80m for 5 Band or outside of the contest (when stations are "testing") pickup a few on 12m.**

Remember, bands are only truly "dead" when no one is transmitting on them... You'd be surprised what may show up on 10m in the next few months.

Thanks to those who attended the very successful Combined RDXA/RVHFG Awards Banquet which was held at the end of August. A "sold out" event, it was great to see so many even though it was held at the end of the summer months. In 2020, the banquet is once again scheduled to be held in April, returning to its normal time-frame. More information on that as it becomes available but it looks like we'll remain at Jimmy G's as the facility suited our needs as was enjoyed by all.

With the loss of Lillian's and now Rick's Prime Rib, our annual Holiday Party may well be held at Jimmy G's as well. Sad to see those business close as the RDXA has had many fond memories at each location thru the years.

Looking forward to another great year, thanks once again for your continued participation, enthusiasm and support.

Best DX es 73, Chris, K2CS President, Rochester DX Association

Ham Humor

Notables from K2FR's old log...

Selected by Raj N2RD

G0TH one who sets his cw pitch to 70
SQ3AKR one who sets his cw pitch to 1000
2T0NE novice RTTY operator
BA0DOT translates 5 bit characters into 16 bit unicode
W8RRR FT8 Operator
SLOWR Another FT8 Operator
SN0RR Waiting for FT8 qso to finish
BO0R FT8 evangelizer
EI4LF one who operates Clover
N0FEC one who does not like Clover
LO0NY EME operator in Argentina
MO0NY EME operator in UK
ROBOT Russian SSTV operator
AM1GA Female SSTV operator
KN0YL 10 dB advantage? Maybe
WA5YL 5 dB advantage
IS1OM -10 dB attenuator

Field Day Battery Box Project.

David W. Pfonner AC2VE

My battery box project needed to meet three objectives. Listed in order of priority:

1. A constant 13.8 volts DC, at up to 20 amps continuous. With the battery voltage down to 10 volts.
1. I own an Icom IC-7300, 100 watt transceiver. The radio will work down to 11.7 volts, but everything seems to work better at 13.8 volts. I need 13.8 volts output to help compensate for dc cable losses. Plus, during field day, I always use extreme compromised antennas. QRP just does not work for me. The 13.8 v at 20 amp ability helps compensate for the sub-par antennas I use. I normally run 90w SSB so a 20 amp spec was sufficient.
2. Cost: Cheap. This piece of equipment is not used very often. Hard to justify a First Class box.
3. Able to last all day. The battery capacity must be large enough to carry SSB at 90 watts for 6 hours. Battery must also be able to handle the amperage level needed by the IC-7300.
4. Size and weight. I will not need the lightest battery. I will not be trekking 5 miles up to a mountain top for field day. Most likely taking 15 paces from the van to the picnic table. Needs to be carried by hand or hand truck.
5. Easy to recharge.
6. Ability to power other devices. Cell phone, VHF equipment.

This has been an ongoing process over two years. Just working in my spare time and changing things as I change my mind.

The heart of the project is the battery. I used a Harbor Freight solar battery. By using a super coupon, the price became manageable. No lithium battery here. This is a standard AGM deep discharge battery. Its weight is manageable.

This is what the finished product looks like from the outside.



the box.

The box has handles on the side (not shown). There is an accessory cigarette box mounted to the lid. The accessory box can supply 7 amps at battery voltage. The accessory box has a red lighted power switch and is shown here with a power pole adaptor and a USB/ red voltmeter adaptor. The green switch controls the 13.8v/20 amp output. The IC-7300 is powered thru the power pole pig tail. The pigtail voltage is monitored by the green voltmeter on the top of

The battery is charged thru the accessory box using a cigarette light style plug.

This battery box will supply a regulated 13.8 volts at up to 20 amps continuous until the battery voltage drops to 10 volts. At which point the output will shut down to prevent damage to the battery.

I have run this set up test loaded at 20 amps/13.8v continually for 20 minutes with no ill effects.

Inside the box:



Everything is fused. 25 amp for the regulated 13.8 volts and 10 amp fuse for the accessory box. Parts and wiring output for the pig tail had to be sized to handle 20 amps.

The 35AH battery is shown on the top of the picture with the electronics on the bottom of the picture. The battery charger is stored in the battery box when not in use. It is shown here on the very top of the picture and the charger cables are in the space to the right of the battery.

On the bottom right is the DC boost converter. On the bottom left is the EMI filter and 8 volt regulator assembly.



Here is close up picture of the DC boost converter. The converter under voltage protection was set to 10 volts. The current limit was set to Max. (Specs say it can output 30 amps, but in reality it tops out at about 22 amps). The output voltage set to 13.8 volts. A 17 volt Zener was added to the output of this module, just in case.

The module has a fan over the heat sink (not shown). It was supposed to activate when things got hot. However, when fully loaded under test, the fan never

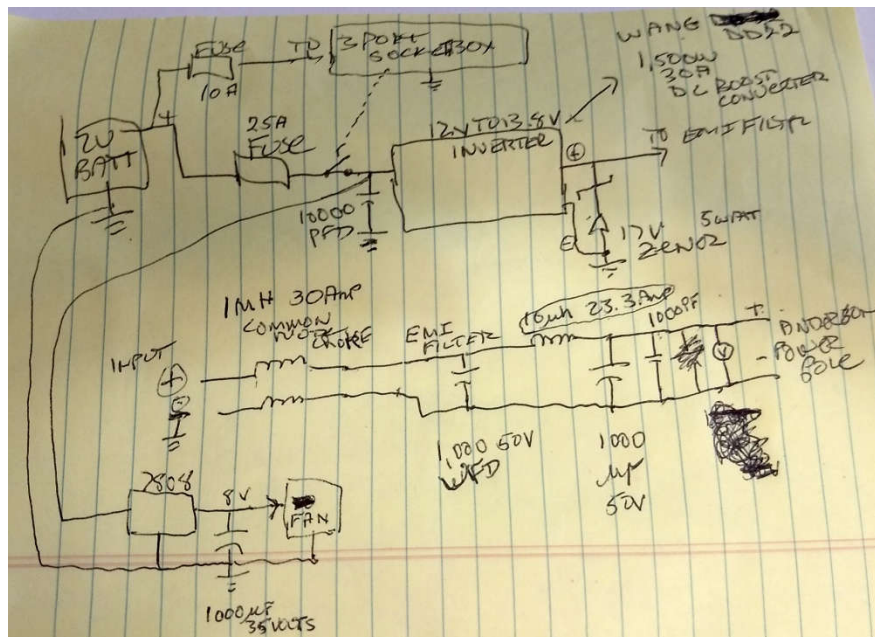
activated. I decided to run the fan at low speed, full time whenever the boost converter was on. I lowered the fan speed by running it on 8 volts. This also lowered the fan noise. The box seems to be an echo chamber. I also added bubble wrap inside the case to keep fan noise down.

This is a close up of the EMI filter/8 volt regulator.

On the far left is the 8 volt regulator with a flat washer heat sink. On the far right is the Common mode filter coil. In the center is the differential mode filter coil.

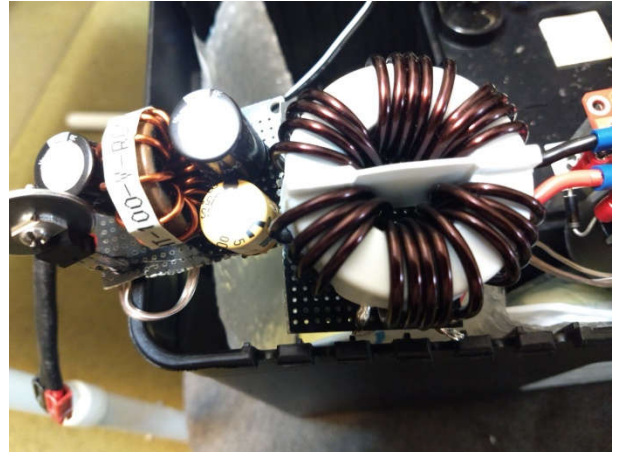
These filters are needed because the DC boost converter can generate RF in the ham bands.

This is the schematic:



Some of the costs:

- The battery box itself was ordered online. About \$12.
- The accessory cigarette box ordered on line. About \$12
- The green switch was added. About \$2.
- The green voltmeter was added. About \$ 2.
- The red voltmeter/USB adaptor. About \$3.
- The battery. About \$50
- The DC boost converter. About \$30
- Special low ESR capacitors. About \$8



- Differential and common mode choke. About \$12.
- Harbor Freight 4 amp battery charger. About \$30

Here is picture of me working a field day is Chili NY with Westside Amateur Radio Club using the battery box. I was able to make a contact with a ham in Costa Rica that day.



Picture is my proof that the box does work.

Bouvet Island

According to Dom, 3Z9DX, the Rebel DX group may be planning another attempt at Bouvet later this fall. No details other than “hints” from a recorded QSO posted while he was /MM Apparently all of their equipment is being stored in Capetown. We shall wait to hear! (One of the comments suggested Crozet... I’m sure some would like that as well.) - *submitted by Doug N2BEG*

My Hamfest Special Tuner

Doug StewartN2BEG

Hamfests are one of the great things in ham radio. Not only do you get a chance to pick up some needed things that may or may not be readily available, you also get a chance to see an often eclectic collection of wares offered by an even more eclectic group of people AND you get to socialize with your friends, eat great food and maybe even down an adult beverage or two. Often you go with the notion of picking up some PL259s or coax seal or some other small trinkets and sometimes you are looking for that radio or accessory to add to or complete your station. Even with Ebay and Amazon, there is almost always something unique to find in the bins and boxes of collections hauled in from all over for your perusal. Then there is the often overlooked art of haggling. Some would say hams represent the epitome of this art form. I find it is always entertaining to watch or participate in this as it often makes the hamfest purchasing experience a memorable one.

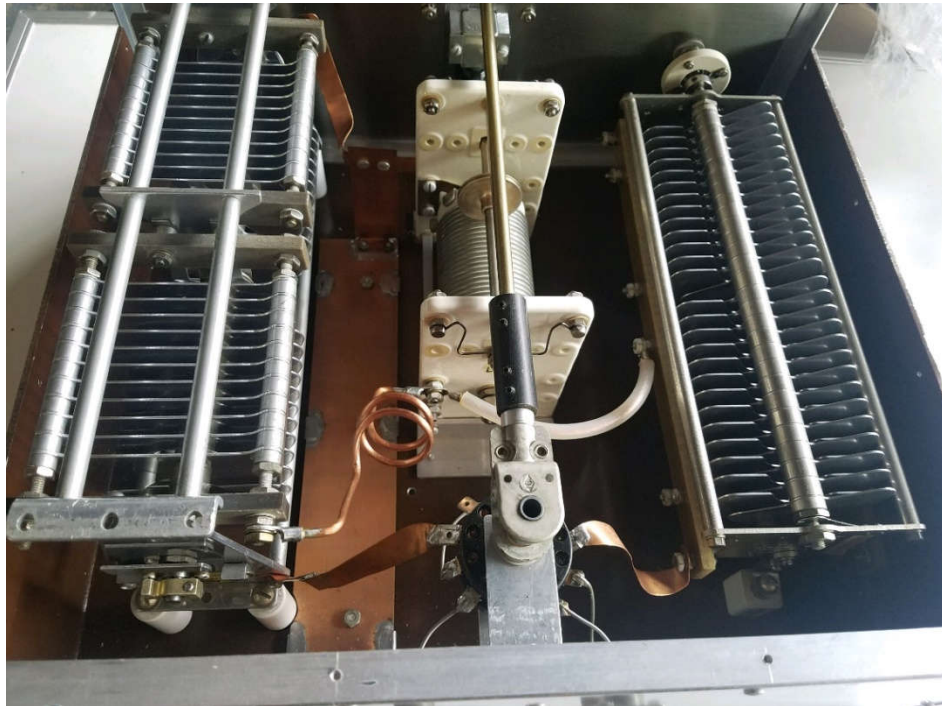
The recent Batavia hamfest (now known as the Alexander hamfest) was no exception. I had gone looking for a few odds and ends, nothing critical. I had my eyes open for a tuner that would handle a KW, or parts to repair one I had, any cheap TV rotator I could find and some odds and ends, connectors, etc. All of these were found in the small grass field in short order. After much more socializing than actual purchasing, I had located several options, venturing from the expected to the absurd in terms of price. No real deals jumped out, but it was early. Hamfests are funny that way. You will often find great deals at the very beginning and then often more so at the end when people realize they don't want to bring whatever they brought, back home. (sometimes they do actually...)

I spied a few tuners, all around the \$200+ range. I have serious misgivings about putting a KW through anything that MFJ makes and the prices didn't seem that great on the lot. I ran across a pile of used TV rotators that were on top of home brew tuner offered by the "J-pole lamp guy" whose call escapes me. I looked over the rotators, they were the old yellow channel masters 3 wire rotators that looked like they were "ok" and had the controllers with them. The tuner caught my eye after I moved the rotators off of its ugly beige cabinet. I looked at the front and thought this may be a good option.



the "Prize"

I asked the price and he said the we wanted \$40 for the 2 rotators and controllers. I asked about the tuner. He said he was looking for \$150 for it. I told him I would think about it. I did another lap. After surveying the other options, I returned to this tuner and rotator pile a second time. The rotators looked rough, but the controllers looked good. I was still on the fence. A closer inspection of the tuner revealed that it was homebrew, but appeared very well built. It was in a custom cabinet with a lot of screws. It looked good, but again, not being able open it up bothered me. I conferred with Chuck NN2L and he agreed it looked good, however the proof is on the inside... too may screws to deal with. I did another lap... As time wound down for the hamfest (it was pushing 11:00 am!) It was starting to get warm out as was predicted. Some folks were already packing it in. I went back and looked at the package again. Something I learned from watching "American Pickers" is that sometimes a "bundle" is a good thing to offer, especially if time is short. Well, I went low and offered him \$100 for everything, not knowing what was inside the tuner. (I didn't care about the rotators, really) He countered with \$130 and I said....deal. That was less than any of the other tuners I had looked at, and this one looked very beefy. I was happy and took it all home. The next day I took out the 16 screws holding the top cover on. I have shared some of these pictures with a few members.



1

the guts



To say the tuner will handle 1KW is rather conservative IMHO. I haven't measured the caps to yet, but the thing will tune a wire from 160-10 with no issues. The only thing I did to it was to repaint the cabinet and replace the hardware. The case is custom, and the metal work is superb. I found the original builder is an SK from the Albany area but could find no other info on him. Here it is as it looks now.



I'm not sure whether I will modify it any further, other than to replace the broken spinner knob on the inductor. It has no balun or output for balanced wires, but I don't have any antennas requiring that now. I'll just enjoy my prize for now and see how it works this contest season. You never know what hidden gems you will find at hamfests!!

ARRL News of Note

No Consensus Reached for FCC on "Symbol Rate" Issues

<http://www.arrl.org/news/no-consensus-reached-for-fcc-on-symbol-rate-issues>

Ken Hendrickson N8KH comments: "So we are stuck with idiotic FCC regulations on 420 MHz (and other bands). On 70cm, the symbol rate of a data signal cannot exceed 56 kbaud, and the bandwidth cannot exceed 100 kHz, according to 97.305(c) and 97.307(f). And yet fast-scan TV signals may be 6 MHz wide. Complete idiocy."

But there may still be hope:

ARRL Renews Request for FCC to Replace Symbol Rate with Bandwidth Limit

<http://www.arrl.org/w1aw-bulletins-archive/ARLB020/2019>

Also:

Ad Hoc Legislative Advocacy Committee to Meet with Lawmakers

<http://www.arrl.org/w1aw-bulletins-archive/ARLB021/2019>

Looks like they are getting back in the fight for the Amateur Radio Parity Act.

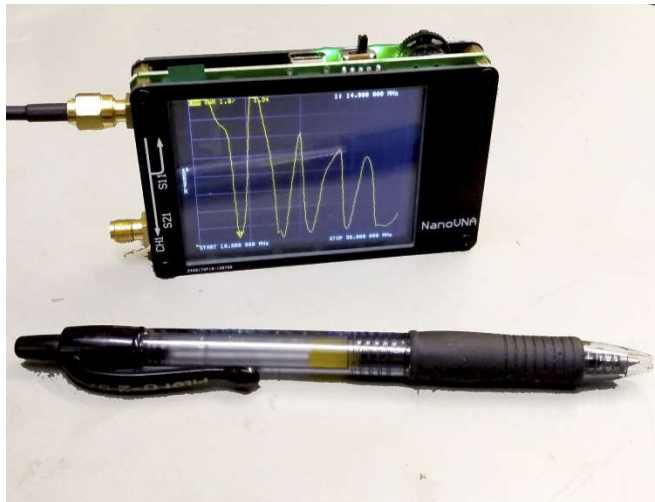
(Thanks to Ken Hendrickson N8KH for submitting these items)

RDXA/RVHFG Awards Banquet



The Amazing NanoVNA

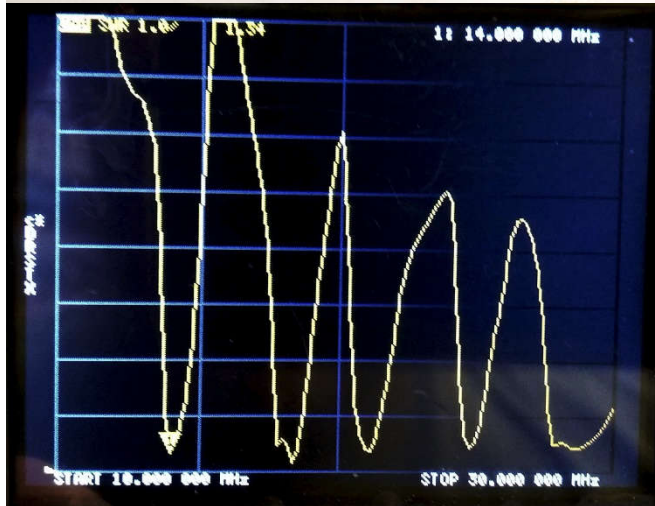
John Hall – AC2RL



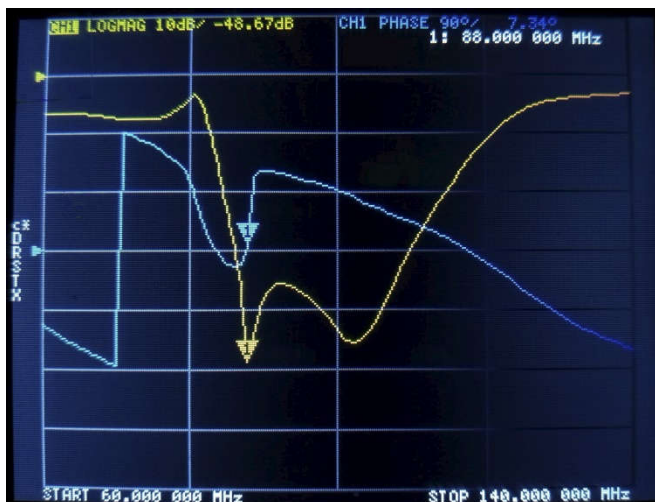
This summer saw the arrival of a very interesting new piece of test gear, the NanoVNA. This credit-card size device is a Vector Network Analyzer with a TFT color touchscreen that covers 50 KHz to 900 MHz. It sells for about \$50 direct from China or about \$75 from U.S. vendors.

Like many people, I wasn't exactly sure what a vector network analyzer was for. Talk of "S11" and "S21" measurements was intimidating.

It didn't take me long to figure out that S11, among other uses could show SWR of an antenna. This picture shows an SWR sweep of my hexbeam. The horizontal scale runs from 10 to 30 MHz, 5 MHz per division. The vertical scale is SWR with 1:1 at the bottom, 2:1 above that, and 9:1 at the top. You can clearly see where the SWR dips down below 1.5:1 for the 20, 17, 15, 12, and 10 meter bands. The marker, the yellow triangle containing the number "1" is at 14.00 MHz and 1.34:1 SWR.



S21, on the other hand, uses both ports, one to feed a signal into a device, the other to read the amplitude and phase at the device's output. The next picture shows the amplitude and phase of an FM broadcast bandstop filter. The yellow trace is amplitude, 10 dB/division with zero at the yellow triangle on the left and the blue trace is phase, 90 degrees per division. The horizontal scale runs from 60 to 140 MHz. The marker is at 88 MHz where attenuation is -48.67 dB and phase is 7.34 degrees.. The filter attenuates 30 to 40 dB across the whole FM band and shows an insertion loss of 4-6 dB..



There are a number of other uses and displays

including the dreaded Smith Chart.

It has a rechargeable battery that charges through a USB cable. That same cable can be used to run a PC app that controls the NanoVNA and displays plots on the PC screen. The PC app is pretty basic, but since it's open source we're likely to see improvements in the future.

On the negative side, it's not what you'd call robust. There is no real case. The circuit board and display are just held between the front and back panel with spacers. It has a three direction switch that you can use to move cursors and select menu items. That switch is flimsy and fussy to work with. Fortunately, it's also mostly superfluous. All of those functions can also be done on the touchscreen. Given the small size, a stylus is easier than a finger to operate the touchscreen. Oh, and while the screen is sharp and clear, I have to wear my bifocals because otherwise the text is too small for my old eyes. The display is bright enough indoors, washes out in sunlight. Buy hey, it's only fifty dollars!

The design is open source and they are being manufactured by a number of Chinese companies. I bought mine through Amazon and paid \$79. I got it in three days. I see them as low as \$43 on eBay, but those ship from China.

If you buy one, there are a couple of things to watch for. Some vendors say they do not include a battery, probably to avoid mailing issues with lithium cells. Some include SMA cables and calibration loads, others do not.

In summary, this is a very handy tool at an incredible price point that fits in your pocket and costs less than a good multimeter. Buy one.

RDXA at the ROC City Net Hamfest



2019 New York QSO Party



Saturday, October 19th, 10:00 AM-10:00PM ET

Phone – CW – RTTY/Digital

Help us Spread the word!

Tell your friends, fellow club members and folks you know from other clubs in NY.

Since 2009 Rochester has been the home of the NY QSO Party. This is a great opportunity to be a station that everyone wants to work. All stations work only NY'ers!

All the information you need such as rules, FAQ's and awards are just a click away... www.NYQP.org.



"But my station isn't good enough." WRONG!

There is lots of activity on 40 and 80 meters so signals (yours and theirs) will be strong. QRP stations have made almost 600 QSO's in the NYQP. Activity on the upper bands grows every year.

Work a few, work a bunch. Operate from home or grab a friend and mobile a number of Counties (only if you can deal with being very popular). Can you work all 62 NY Counties? The fun is there waiting to happen!

If you expect to be operating mobile from a number of counties please post your plans to the NYQP website. More contacts, more fun!

CQ NYQP!

RDXA 2019-20 Calendar

September 2019

12 BOD – K2TER
14-16 ARRL September VHF
17 Meeting – Show Shack
28-29 **CQWW RTTY**

October 2019

1 BOD – KM2B
15 Meeting – Contest Prep
19-20 **NYQP**
26-27 **CQWW SSB**

November 2019

5 BOD – N2BEG
2-4 **ARRL SS CW**
16-18 **ARRL SS SSB**
19 Meeting – Raspberry Pi
23-24 **CQWW CW**

December 2019

3 BOD
6-8 **ARRL 160m CW**
TBD RMSC Event
14-15 **ARRL 10m**
17 RDXA Holiday Dinner
28-29 Stew Perry 160m CW

January 2020

4-5 **ARRL RTTY Roundup**
7 BOD
18-20 ARRL January VHF
21 Meeting – IC9700
24-26 **CQWW 160m CW**



February 2020

4 BOD
8-9 **CQWW WPX RTTY**
15-16 **ARRL DX CW**
18 Meeting
28-1 **CQWW 160m SSB**

March 2020

3 BOD
7-8 **ARRL DX SSB**
17 Meeting
28-29 **CQWW WPX SSB**

April 2020

7 BOD
21 Meeting
TBD Awards Banquet

May 2020

5 BOD
15-17 Dayton Hamvention
19 Meeting – Combined RVHFG ?
30-31 **CQWW WPX CW**

June 2020

2 BOD
TDB Rochester Hamfest
13-15 ARRL June VHF
16 Meeting
27-28 **ARRL Field Day**

July 2020

11-12 IARU
18-19 CQWW VHF

August 2020

18 IRVfest – Dolomite Lodge
TBA ROC City Hamfest
31 Contest season concludes
 Membership year concludes

Rochester DX Association

Club Station — W2RDX

Club Website — <http://www.rdxa.com>

This Bulletin is the official publication of the Rochester DX Association and is published Quarterly.

All those with an interest in amateur radio, DXing and contesting are cordially invited to any meeting and to join RDXA. Meetings are held at 19:30 Local time on the 3rd Tuesday of each month, September through June. Meetings are located at the Monroe County Emergency Operations Center located at 1190 Scottsville Rd. Rochester, NY 14624.

President,.....Chris Shalvoy – K2CS
president@rdxa.com

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Please send all newsletter submissions, comments, and complaints to the editor:

John Hall AC2RL -- newsletter@rdxa.com



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<vacant>

Appointed Positions

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Calendar Chairman	<vacant>
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Membership Dues can be sent via:

Paypal: treasurer@rdxa.com

US Mail:

Mike Sanchez KM2B
8 Piccadilly Square
Rochester, NY 14625

Regular Membership: \$25.00

Family, Full time Student
or Out of State member: \$6.25

