



# THE RARA RAG

Newsletter of The Rochester Amateur Radio Association, Inc.  
Founded in 1931

JUNE 2019  
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### INSIDE THIS ISSUE

MONTHLY PROGRAM	1
NO GENERAL MEETING	2
ROCHESTER HAMFEST 2019	3
BOARDZ BUZZ	5
CALENDAR OF EVENTS	5
PEAK THE GRID	6
A WEEKEND PROJECT, PART II	7
FUN FACTS	9
EDUCATION	10
PUBLIC SERVICE UPDATE	10
TECHNOLOGY GRANT	11
FOR SALE	12
DAYTON HAMVENTION	12
RAGS OF THE PAST	13
VE TEAM	14
ELMERS	14
RARA CALENDAR	15
NEWS AREA FROM CLUBS	16
AMATEUR'S CODE	18
HAMFEST SPONSORS	19
RARA MARKETPLACE	20
RARA OFFICERS	21
AREA CLUB CONTACTS	22

THE ROCHESTER AMATEUR RADIO ASSOCIATION PRESENTS

## ROCHESTER HAMFEST 2019

SATURDAY JUNE 1, 2019

AT THE

HILTON EXEMPT CLUB

137 SOUTH AVE

HILTON, NEW YORK 14468

Country Store

Clubs Welcome  
Flea Market

Equipment  
Testing  
Station

Door Prizes

Free License Exams



QSL Card Checking

RVs are welcome the evening before, Friday May 31, no hook ups.  
RV parking will be in the main flea-market area.

Check the [RARA web site](#) and the Hamfest RAG for more details.

Check the Hamfest  
Edition of the [RARA  
RAG](#) for final details

New This Year  
**PRESENTATIONS**  
DX Engineering  
Ham Radio Deluxe  
HobbyPCB

### RAFFLE

ORP HF SDR Station

Including  
Radio, Power Supply,  
Antenna and Tuner  
And more prizes

Admission:  
RARA members are **FREE**.  
Non-members: \$10.  
Under 18 years of age:  
**FREE**.



RVs Welcome

On Site Parking

Flea Market Opens: 8AM

Vendor Entry: 7AM

Talk-in: WR2AHL Repeater 145.11MHZ, 110.9PL

K2JD

N2EH

W2EOC

**NO RARA GENERAL MEETING  
IN JUNE**

**MAKING IT EASIER TO  
VOLUNTEER FOR THE HAMFEST  
AND TOUR DE CURE**



Hams serving Hams  
We speak your language... QSL?

- \* **FREE** home relocation and property search services
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# Rochester Hamfest 2019

HELLO FROM THE ROCHESTER HAMFEST 2019 COMMITTEE!



- June 1st, 7am - 2pm
- Hilton Exempt Club
- 137 South Avenue
- Hilton, NY 14468

## WE NEED VOLUNTEERS

### Friday

- A few hours in the afternoon
- Setting up the indoor space, flea market parking layout, and free parking demarcation

### Saturday

- Various shifts from 5:30am to 4:00pm
- Ticket sales, Traffic and Parking guidance, Country Store, Cleanup

Please use this form to sign up: <https://goo.gl/forms/Fj4QYQDURDDVGWUC3>



### New This Year

### PRESENTATIONS

***DX Engineering***

***Ham Radio Deluxe***

***HobbyPCB***

Please mark all times or tasks for which you are available, and leave a comment such as "Interested in working one 2-hour shift. Prefer morning"

Once people start signing up, we'll put you into specific timeslots and put it on the hamfest site. We'll also send an e-mail to all volunteers to confirm that they are okay with their slots.

Watch future RAGs and <https://www.rochesterham.org/hamfest.htm> for updates.

## PRESENTATIONS

8:45



DX Engineering  
Bob Naumann, W5OV  
Putting Together an HF Contest Station

10:00



Ham Radio Deluxe  
Mike Carper, WA9PIE  
Ham Radio Deluxe Software

11:15



Hobby PCB  
Jim Veatch, WA2EUJ  
SDR Radio RS-HFIQ Plug N  
Play Variations

## BUCKET RAFFLE

### TICKETS

1 for \$1, 6 for \$5, 13 for \$10

### PRIZES

#### Complete HF Station

- IQ32 5W HF Software Defined Radio
  - Speaker Microphone
    - Power Supply
- MFJ941E Antenna Tuner
  - 50 ft RG-8X coax
    - 1:1 Balun
  - 300 ft Antenna Wire
    - End Insulators
    - Support Rope

#### Bird Model 43 Wattmeter

With certificate for element

#### Signalink

Soundcard Radio Interface

#### Computerized Battery Analyzer

## DOOR PRIZE

Must be present to win

### PRIZES

#### \$100 Gift Certificates

#### Magazine Subscriptions

- QRP Quarterly
- Nuts & Volts
- SERVO
- Circuit Cellar
- audioXpress

#### Wire Antennas

#### Ham Radio Software

- Ham Radio Deluxe
  - N3FJP

#### Accessories

- IQ Keyer
- Anti Corrosion / Weather Guard Kit
  - 20W Dummy Load
  - Atomic Alarm Clock
- LED DVM—Cigarette Lighter Plug
  - Lightning Surge Protector

#### And More

# BOARDZ BUZZ

KARL HEINZ KREMER, K5KHK

We are nearing the one year mark of when I was asked if I would consider volunteering on the RARA board – that happened during the picnic in June of last year. Why did I join the board? Mainly, because I know how hard it is to engage people to get and stay involved – and because Anand Choudri (KC2KPG) was very persistent.

My experience with non-profit boards at that point was only from the outside (did I mention how hard it is to get people involved?), so this is a new experience for me.

When I introduced myself in the September issue of last year's Rag, I said that I wanted to be an advocate for new (or new-again) hams, and I think I've done that: The Elmer's corner before the monthly meeting was started based on an email I sent to Tim Brown (WB2PAY), and I've been elmering frequently in these sessions. I also presented or co-presented during a couple of sessions of the RARA Academy.

I also mentioned in my introduction that I was feeling like a new ham again – after a hiatus of almost 25 years. It's amazing how much things change when you don't look for a while (but also how much things stay the same – there is always somebody who will complain about the latest development in our hobby and proclaim the end of ham radio as we know it). I've done a few things this past year that I had never done before. Here are a few of these things in which I feel like a new ham again:

- I started to participate in Parks on the Air, both as a “hunter” and as an “activator”. This is a great activity that helps to get a bit more fresh air while still enjoying playing with a radio. It also involves coming up with ideas for antennas that are easy to transport, easy to set up and take down, but still work better than the proverbial dummy load. This would be a great activity for anybody who has to deal with an environment with a high noise level. Move to a park and experience what an S0 noise level sounds like and be amazed how much you can hear (and how hard it gets to find a free spot on the frequency dial to call CQ).
- I started to finally learn CW the right way: Back when I got my Tech+ ticket, I had to pass the 5WPM CW test – and I did. The process to passing that test however was very flawed: I used the ARRL code cassette tapes that taught Morse code at the 5WPM speed, slow enough to count dits and dahs – and that is what I did. Of course, once you get into that habit, it's really hard to break free from this counting. When talk about a CW class started, I was all ears, and when the RXCW group started about half a year ago, I knew that I would finally be able to get on the air with a reasonable code speed, and with a method that would lend itself to improving my speed without the problems I had when I first started. I've since had about a dozen CW QSOs on the air. I am nowhere near perfect, but I am getting more proficient and calmer with every new QSO. A big “Thank You” to Tim Brown (WB2PAY) and the other CW Elmers (the full list is towards the end of this issue).
- I started more than six months ago on a quest to have at least one HF QSO per day, and so far, I've been doing this since October 30th. This is mostly

PSK31 (because it's easy, and I can do it while being remotely logged into my computer from the couch in front of the TV), but also SSB and lately CW.

- I started to use digital modes: When I was last active, PSK31 did not exist. I had to figure out how to connect my radio to the computer, and how to remote control it via a sound card and a serial port interface (there is not much use for my 25+ year old TNC anymore).
- For the first time, I started to do some lite contesting, and I ended up with a second and a third place in my power class in PSK31 contests. Will I become a full-time tester? No way - I have way too many other things that are fun and require time so that I don't really have the time for that. But, it's interesting to try something new and in the process learn some new operating procedures.
- One of the first RARA meetings I attended was about KiCAD, something I had heard about, but never actually seen with my own eyes. There was something very interesting that came out of that presentation: You don't have to be a big company to fabricate custom printed circuit boards in China. For only a few bucks (my first order was \$5 for 10 boards, including shipping), you can have a custom board made. It's almost not worth etching boards in your bathroom anymore. I downloaded and installed KiCAD and created professional looking printed circuit boards.

There were probably a lot of other things where I felt like a new ham again, but this should cover the big events.

If you are reading this as a new (or new-again) ham, and you have problems taking the theory you learned for the test and applying them to actual operating, find me at a meeting (or find my contact information further back in this Rag) and get in touch with me. I'll see what I can do to help. And, if you are not a new ham, keep in mind that it's always fun and interesting to try something new. Maybe a RARA Academy or a monthly meeting topic will give you some inspiration to do learn a new skill.

Oh, and if anybody is interested in an almost new set of early '90s ARRL code cassette tapes, let me know, I am willing to part with them.

## CALENDAR OF EVENTS

**SATURDAY JUNE 1, 2019 - ROCHESTER HAMFEST 2019**

**WEDNESDAY JUNE 5, 2019 - No RARA General Meeting**

**THURSDAY JUNE 6, 2019 - RARA Board of Directors**  
5:45 PM at Novaworks, 333 Metro Park, F-500

# PEAK THE GRID

FOREST SHICK, WA2MZG, HAMFEST RAFFLE PRIZE COORDINATOR

## VENDORS

For the previous three hamfests, 2016, 2017, 2018, and now this years' event, I have been seeking donations for our door prizes and raffles.

The first year it seemed like an insurmountable mountain to climb.

The real mountain was gathering all the vendor names, web sites, contact people, email addresses, phone numbers, etc. and then documenting the information for the next year.

My surprise was the generosity of the many vendors to support our hamfest through donations of product or gift certificates and significant discounts on items we planned to purchase.

Many vendors participate year after year and some only once. But as one vendor pointed out, there are many hamfests and we have to take our turn.

SO, my point is:

## PLEASE SUPPORT OUR HAMFEST VENDORS

When you need a new piece of equipment, a tool, antenna, radio, tuner, power supply, coax, magazine, book, etc., please contact our loyal vendors first. You can find the vendors in the hamfest editions of the RAG.

If you see one of our vendors at Dayton—please stop and say HI from RARA and Thank You for your generosity.

To make your search a bit easier, the following is a list of vendors from 2016 to the present.

### **Affirmatech**

Allied Electronics

American Radio Relay League

AudioXpress Magazine

Bird Technologies

**Chameleon Antennas**

Circuit Cellar Magazine

CQ Magazine

DX Engineering

Elecraft

Five Dash Inc

FlexRadio Systems

Gifts4Hams

**Ham Radio Deluxe**

**HobbyPCB**

Kits and Parts

**Maxcon-Antennas**

MFJ

**Micro Engineering Labs**

**Mosley**

NCG Company

Nuts and Volts Magazine

Pacific Antennas

QRP ARCI

Quicksilver

Radio Oasis

RF Adapter Guy

Radio Society of Great Britain

SERVO Magazine

Tigertronics

Universal Radio

West Mountain Radio

YourDuino

NOTE: There are 7 new vendors this year.

### VOLUNTEER FIRE DEPARTMENT

Two organizations that made last year and this year's hamfest possible are the Hilton Exempt Club and the Hilton Volunteer Fire Department.

Please remember to say thank you to these groups.

We all do not live in Hilton but many, many of us live in areas served by volunteer fire departments. Please remember to thank them for their service to your community as a way of thanking the Hilton Volunteers.



# JUST A WEEKEND PROJECT, PART II

Don Kiser, AC2EV

## Prepping the Panel

The transfer switch requires a 1 inch hole. While the transfer switch can feed from left or right side, I had no space on the right of my panel. I also didn't have a 1 inch knock out on the left side. I borrowed a punch set and proceeded to put a beautiful 1 inch hole in my panel.



1 inch Hole Required



Conduit Connection

## Mounting the Transfer Switch

Mounting the switch is pretty simple. For my installation this meant cutting a hole in the insulation and mounting the switch to the concrete block with the appropriate fasteners.



Transfer Switch Location



Transfer Mounted

## Wiring the Transfer Switch

Wiring is pretty easy as all the wires are clearly labeled. Though I did find Generac QC missed something and provided me with two neutral conductors for circuit 8. Not a big deal as all the neutrals are tied into the neutral bus in the transfer switch. At this stage you will have already planned which circuits will be on the transfer switch. The transfer switch comes with the breakers but like me you may find no need for the 220V 30A breaker and swap it out for two 15amp breakers and supply the needed neutrals.

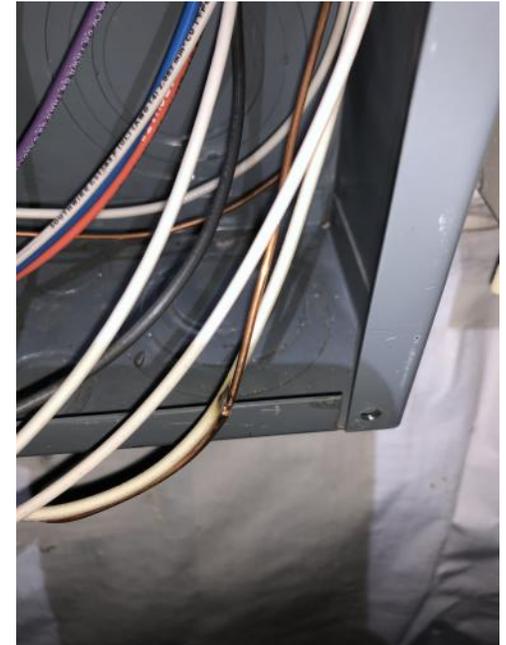
As you've turned the power off, You may also want to tape a piece of cardboard over the service entrance lugs as they will still have power and you don't want to accidentally touch them or have an errant wire cross them.

You're bound to find some hidden gems too. While re-wiring the panel I found this little surprise. This is the ground for my furnace. Since this circuit was going on the transfer switch I was able to cut it back.

Each circuit needs to be removed from its breaker and you need to locate the neutral also. Do not be tempted to land all the neutrals from transfer switch on the neutral bus of the panel. This doesn't meet code. The circuit neutrals need to be removed from the panel's neutral bus and tied to the transfer switch neutrals. You may find that some circuits are sharing neutrals. Nothing changes, you still remove the neutral and tie with the transfer switch neutral.

If you find that the original electrician put the neutral and ground conductors under the same screw, you may want to think about moving each to its own screw. While it meets code, it is generally frowned upon as you are relying on that one screw. If it comes loose, you lose both paths to ground.

Take your time and clean up some of the existing wiring if you feel the need. If you remove a ground or neutral from the bus you should cut off the old end and strip a new fresh one to prevent a loose connection from using an already crushed conductor. You may find that some of the neutral bus screws refuse to move or you may break one. In that case, simply cut the conductor flush and for good measure mark the screw with red ink as a reminder to not use them in the future.



Someone Shorted to the Furnace Ground



**Xfer Switch Neutral Bonding**



**Finished Panel**



A professional and neat job will make it easier for the inspector to assess the work.

Now it's time to bring generator power into the transfer switch. This is where it could get interesting. For my installation I was able to drill a hole through the rim joist and attach to the provided 30 amp four prong outlet I mounted to the house. I chose to run 10/3 Romex, hint buy it on Amazon if you have Prime it's \$20 cheaper than Home Depot or Lowes.

Since I'm going through the wood I and not the concrete block I don't have to add a protective sleeve. I'm also not using conduit since the box is attached directly to the house. You still need a strain relief as required by code in the outlet box.



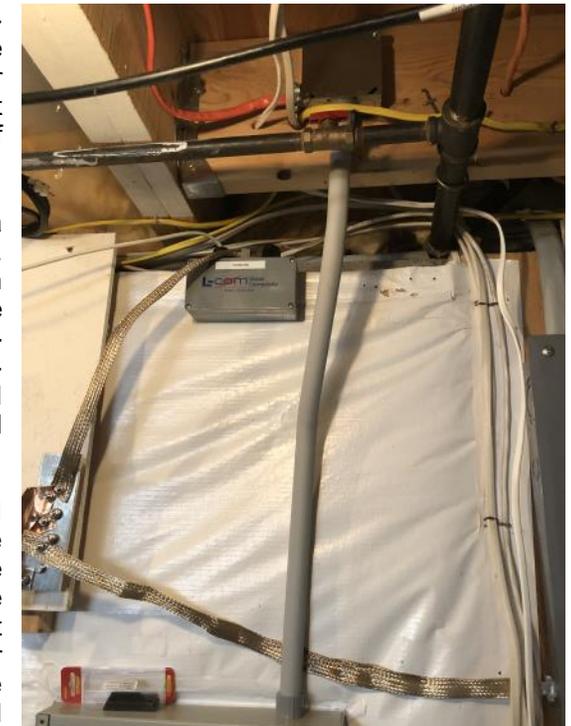
**Xfer Switch Hots**



At the transfer switch end I originally ran the Romex from the floor joist into the transfer switch. While functional it didn't meet code. I had 28 inches of unsupported wire.

The correct solution is to place a junction box on the floor joist. Run the Romex into that, with proper strain relief. Out of the junction box I ran a piece of conduit to the transfer switch. Because it's less than 36 inches I did not have to add additional support for the conduit.

I did get to buy a new tool. I used a heat gun to soften the conduit so that I could put in the offset. While you can use the existing Romex in the conduit you have to remove the outer jacket and run the separate wires. Once everything is wired I suggest getting out your Volt / Ohm meter and checking all the connections for shorts and opens.



**Conduit Installed and Code Compliant**

If you're wondering what the braided line is to the ground bus, that's the ground that bonds my radio equipment to the electrical ground. The lug is required since you can't split the ground and run it to two screws.

## Finishing it up and Testing

After all that hard work it's time to refer back to the manual and test things out.



**Final Live Test – Keep the exhaust away from the Furnace intake**



**Transfer Switch Working**

## Conclusion

You should now have a professional, code compliant, and safe functioning transfer switch and generator setup. You can now be sure that when the power goes out you won't be left in the dark.

Step back and take a look at your work and clean up any loose ends. I chose to add additional labels to the breakers on both panels so that when the cover is removed I know which circuit is which. Now is also a good time to put in the blank breaker covers. You don't want to leave those spots open, lest someone stick their finger in there.

Of course, the power never did go out



**Finished Product with non UL Monkey Sticker**

# TRANSMISSION LINE: FUN FACTS

JOHN VIGGIANO, NV2K

Whether it's coax, open-wire ladder line, twin lead, or ultra low-loss hardline, transmission lines all share certain properties, which I refer to as "Fun Facts." "Fun for whom?," you ask. "Fun for anyone that wants to work effectively with transmission line," is my response.

1. A transmission line terminated in its characteristic impedance will present that impedance at the other end, regardless of the length of the line.
2. The "physical" length of a transmission line is shorter than its "electrical" length. In other words, a transmission line behaves electrically as if it was longer than it actually is.
3. To get physical length from electrical length, multiply the electrical length by the line's velocity factor.
4. To get the electrical length from physical length, divide by the velocity factor.
5. The velocity factor of most coax is between 0.66 (for solid dielectric) to 0.85 (for foam dielectric). For the exam, the only one you need to remember is the 0.66, which is close enough to 2/3 to answer the questions.
6. If you short one end of a transmission line electrically shorter than one-quarter wavelength, it looks like one turn of a skinny coil. Not surprisingly, it behaves as an inductor.
7. If a transmission line electrically shorter than one-quarter wavelength is open at one end, you have two parallel conductors, just as in a capacitor. This arrangement behaves as a capacitor.
8. A transmission line that is electrically one-quarter wavelength will reverse whatever is at the other end. A short at one end looks like an open circuit (very high impedance) at the other; an open circuit at one end looks like a short (very low impedance) at the other. It will also transform a high impedance into a low impedance, and vice-versa.
9. If you take two quarter wavelength transmission lines and connect them in series, you'll have a half wavelength of transmission line. No surprise there! But what happens is amazing: The first quarter wave flips the impedance around, and the second one flips it back to what you started with. So a transmission line that is electrically half a wavelength will show at one end the impedance terminating the other end. This is true, whether the terminating impedance is matched to the line or not.

So, there you have the "fun facts" about transmission line. Remember:

- Behaves electrically as if were longer than it actually is
- Electrically shorter than a quarter wavelength: Shorted at one end, looks like a coil, so inductive. Open at one end, looks like a capacitor, is capacitive.
- Quarter wavelength of electrical length is special: It presents at one end the opposite of whatever is at the other end.
- Half wavelength of electrical length is special, too: Whatever is at one end is what you see at the other.

# EDUCATION

TIM BROWN, WB2PAY, EDUCATION COORDINATOR

## THE ELMERS CORNER

Our next Elmers Corner will be at the August Meeting. The topic for discussion will be CHIRP programming.

A laptop with CHIRP and a Baofeng cable will be available. Bring your rig and we will help you program it.

Questions may be submitted to:  
<mailto:education@rochesterham.org>

## RARA ACADEMY WORKSHOPS

The Saturday May 11th, 2019 Academy on Toroids and Baluns was well attended. In fact it was SRO for awhile.

This Session was hosted by Pete Schuch, WB2UAQ and Larry Brightenfield, W2LB.

### Sept. Academy

### STATION GROUNDING AND LIGHTNING PROTECTION

#### Date & Location TBD

Sign up for Academy Workshops by emailing  
<mailto:education@rochesterham.org>

Latest Academy information is available at  
[https://www.rochesterham.org/rara\\_academy.htm](https://www.rochesterham.org/rara_academy.htm)

# PUBLIC SERVICE UPDATE

MIKE MOORE, KC2NM, RARA PUBLIC SERVICE COORDINATOR

This year, the ARRL has redefined many aspects of our Amateur Radio Public Service role. A subcommittee of the ARRL board, Public Service Enhancement Working Group (PSEWG) has spent more than 3 years crafting the [ARES Plan](#) (See the link to the plan). ARRL officials believe that this plan will provide a much-needed update of the program's role in public service and emergency preparedness in the 21st century. Sections of the ARES Plan have redefined the Mission and Vision of the Public Service Role and have reinforced the definition of the Expertise, Capability, and Capacity of Ham Radio. An important

addition that is recommended in the ARES Plan is that the public service community will be asked to participate in and meet training standards consistent with the needs of our served agencies. Before, the only requirements were to maintain an Amateur Radio license and be willing to serve. No changes are currently being considered for the RARA Public Service Program but I did want to make our RARA membership aware of what is happening at the ARRL level. The ARRL has also adopted a new online registration system for ARES members. For more information about Public Service see the [ARRL Website](#). To learn more about what is happening locally see the [Monroe County ARES](#) website. I expect that as the new training for these roles becomes available, we can look to [Monroe County ARES](#) for guidance.

June begins our public service event season with the [ADA Tour de Cure](#). The June RAG will probably arrive before the day of the event so if you did not sign-up and find that you would like to participate, please email me and we will try and put you with someone. The date for Tour de Cure and other public service events is given in the table below.

#### Upcoming Events:

Tour de Cure	Xerox Campus Webster	Saturday	June 8, 2019
Bike MS: ROC the Ride	Genesee Valley Park - Rochester, NY	Saturday	August 24, 2019
Fairport Lift Bridge Regatta	Erie Canal – Fairport, NY	Saturday	Sept. 28, 2019
Jamboree On the Air	Camp Babcock Hovey	Saturday	Oct. 19, 2019
Pumpkin Patrol	Overpasses of the New York State Thruway	Wednesday & Thursday	Oct. 30-31, 2019
Holiday Science & Technology Day	Rochester Museum & Science Center	Saturday	Christmas Week

As you operate and participate in our public service event, please be aware that each month in QST's Field Organization Reports column, the [Public Service Honor Roll \(PSHR\)](#) recognizes the efforts of Amateur Radio operators who are active in many aspects of public service. This includes net operations, traffic handling, emergency operations and public service communication support. Chances are, that you're already involved with some aspect of Amateur Radio that would apply to the Public Service Honor Roll (PSHR). Participation in our RARA public service events will provide many of the qualifying points for inclusion in the PSHR. When you first make the Public Service Honor Roll (PSHR) you are awarded a certificate which makes a nice addition to your shack's "Wallpaper" and will get you the peer recognition that you deserve.

# TECHNOLOGY GRANT FOLLOW UP

Mike Moore

In May of 2018 RARA awarded its Technology Grant to St. Louis School, Pittsford, FIRST Lego Robotics Program. In their application St. Louis School requested \$2000 to purchase four Lego EV3 Lego Robotics kits at a cost of \$500 each. The grant application stated their goal to teach 20 4th and 5th grade students the use of visual sensors, touch sensors, and motor controls to perform useful tasks through the use of the programmable Lego robots. The new robot kits enabled St. Louis School to field two teams with the intention of competing in the First Lego League Championship. The two St. Louis teams were named "The Space Chickens" and "The 8 Magneteers".



We have just learned that "The 8 Magneteers" has been selected from more than 40,000 teams worldwide as one of 20 semi-finalists advancing to the Ninth Annual [FIRST® LEGO® League Global Innovation Award](#) in San Jose, Calif., USA, June 30-July 2.

Mrs. Leonor "Leo" Rivera, Educational Technology Coordinator, St. Louis School Pittsford NY wrote to express the gratitude of the school and team to RARA for making the Educational Grant available. She said, "Your RARA scholarship helped make this possible." Mrs. Rivera further stated that the team has established a [GoFundMe Page](#) so that the team can raise the money to travel to the competition.

\*\*\* Semi-Finalist Press Release \*\*\*



## Elementary Students' Vision of Dodgeball in Space Advances them to Global Award Finals

### FOR IMMEDIATE RELEASE:

April 29, 2019

**Pittsford, NY - April 16, 2019** Reinventing their favorite schoolyard game for outer space has led a local group of students from [Saint Louis School](#) to reach for the stars. [FIRST® LEGO® League](#) has announced that a team of fourth and fifth graders, the *Eight Magneteers*, has been selected from more than 40,000 teams worldwide as one of 20 semi-finalists advancing to the Ninth Annual [FIRST® LEGO® League Global Innovation Award](#) in San Jose, Calif., USA, June 30-July 2.

Working together, the team created **Magnetic Dodgeball**, a fast-paced game that uses both the properties of magnets and microgravity in space to improve astronaut fitness, flexibility and mental focus. The team came up with the game after discovering that astronauts on the International Space Station (ISS) must exercise for hours on stationary machines – exercise routines which these students found extremely boring.

"The idea was totally student-led," said Head Coach Brett Mancini. "When they first proposed the idea to me, I thought it was their way of having an excuse to throw things at each other in space, but they came up with a solution that addressed many different issues. We all ended up loving the idea."

To test their solution, the team consulted with two doctors from Mayo Clinic's Section of Aerospace Medicine within the Division of Preventive, Occupational and Aerospace Medicine on the Rochester, Minnesota campus. Dr. Robert Haddon worked at NASA with the ISS Astronaut Crews and Dr. Michael Harrison, an Aerospace Medicine Fellow and researcher, reviewed the project and validated that the game would be safe and that the magnets were not strong enough to endanger the ship's equipment. "I was very impressed with the magnetic idea when I first heard it," said Dr. Harrison, "It is a simple and very effective way to combat the effects of microgravity."

"This is magnificent! Well done!" added Haddon, "Tell the kids that it is perfectly sensible that any of them can wind up going to travel in space given the right ideas and setting goals early."

Saint Louis School, a Catholic elementary school in the village of Pittsford, has been participating in **FIRST® LEGO® League** since 2011 and had two teams compete in Lego First events this year. "I am so proud of our students and our Lego teams," said its principal, Fran Barr, "the students really showcase all that we value at our school: innovation, creativity and showing great compassion and kindness to others."

The **FIRST LEGO League Global Innovation Award** is designed to encourage and assist teams with further development of their ideas for solving global issues. At the three-day event, the team will collaborate with other student innovators, learn to pitch their solution to investors and present their idea to a panel of experts. The top three solutions at the event will receive cash awards to further develop their prototype in the hope it may eventually go to space.

The Eight Magneteers have been busy since receiving the nomination – starting the process to apply for a patent and planning a prototype of the Magnetic Dodgeball gear. To offset the team's costs, the parents have created a GoFundMe site at: <https://www.gofundme.com/the-eight-magneteers-reach-for-the-stars>.

The Global Innovation Award is sponsored by Booz Allen Hamilton, Collins Aerospace, John Deere, LEGO Education, Qualcomm Incorporated, and XPRIZE and in collaboration with the U.S. Patent and Trademark Office.

## DAYTON HAMVENTION 2019

Friday Morning, May 17, 2019, 8:45 AM

Waiting for the gates to open



Left to Right: John Viggiano NV2K, Forest Shick WA2MZG  
Tim Barrett K9VB, Mike Moore KC2NM, Bob Karz K2OID, Susan Aiello,  
Karl Heinz Kremer K5KHK

## FOR SALE

### MANUAL TRANSFER SWITCH FOR PORTABLE GENERATOR

Generac Model 1276 Power Transfer System with Load Manager. 6 circuits with individual 15A circuit breakers, 2 watt meters. Max. 7200 W. 30A @ 240VAC / 60A at 120VAC. Includes switch/panel box connection wires, outdoor connection box w/ receptacle, generator cord plugs, owner's manual. \$80.

Dave Timmons, W2DST  
[W2DST@arrl.net](mailto:W2DST@arrl.net)



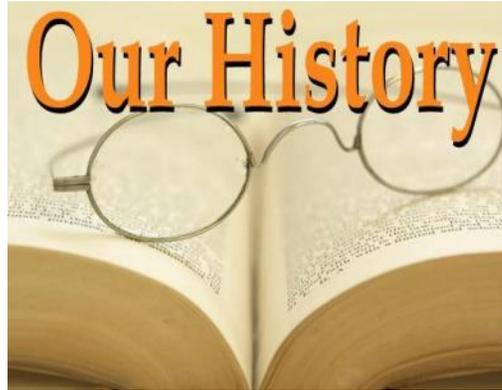
# RAGS OF THE PAST

ED GABLE, K2MP, RARA HISTORIAN



40 Years Ago, June 1979

A full cover spread announced the passing of popular local amateur and radio broadcaster Eddie Dunn, WA2KMI, W2ECH and W2XT (SK). Eddie was a past RARA President (1966/67) and will be remembered by all as the effervescent Master of Ceremony for many years at Rochester Hamfests. He was very popular on WHAM and was one of the first radio hosts in the country to use the radio call in format on his daily *Opinion Program*. This issue announced the new officers for the 79/80 session as: President Alan Komenski AC2K, VP Otto Bluntzer WB2RJB, Don Drennon W2EBF as Secretary with Ron Jakubowski K2RJ as Treasurer. You elected to the Board of Directors: Jim Collinsworth N2JC (SK), Bob Erskine W2NVZ, Ed Gable K2MP, Ed Holdsworth N2EH (SK), Harold Smith K2HC (SK), Len Gessin WA2ZNC and Jim O'Brien K2UDP. At the Annual Meeting the dues was set at \$6.00 for the year. RRRA wrote to announce their next meeting would be a 2 meter FM Bunny (Transmitter) hunt. Ed Gable K2MP and Ron Jakubowski K2RJ would be hiding the transmitter due to their winning the last event. (They were never found, ask Ed for the clever and controversial reason – Ed) Jerry Vogt WA2GCF (SK), founder of Hamtronics, announced a new 24 page catalog of high end VHF/UHF FM equipment kits and accessories. Side note: This issue is interesting in that there is a formatting error that caused page four to be printed twice. In over 40 years of writing this column I've never seen any production errors... a pretty good record. From the Want Ads you could buy a Swan 250C six meter transceiver from Len Gessin WA2ZNC. CQ Magazine, The Radio Amateur's Journal, offering a year's subscription for \$9.95, remains a long term commercial advertiser



20 Years Ago, June 1999

This issue was filled with words and pictures telling of the recently held 1999 Rochester Hamfest and unless all of the authors were unified in telling tall tales, the event was a huge success. "The WX was perfect with the temps just right and the right amount of sun, and there were plenty of fleas both Friday and Saturday," said RARA President Rick Wells, W2RW. Atlantic Division Director Kay Craige, WT3P, filled two pages announcing winners of the Division's three most coveted awards; the Amateur of the Year, the Grand Ole Ham and the Technical Achievement award. In alphabetical order we find the Grand Ole Ham award going to Angelo DeFazio W2SRP, of Batavia. Ed Gable, K2MP, was selected out of the entire Atlantic Division ham population and received the Radio Amateur of the Year recognition. Paul Shuch, N6TX, was recognized for his technical innovations and willingness to help fellow hams either directly or via his over 200 ham radio publications. Outgoing President Rick Wells, W2RW, took time to introduce and welcome incoming President Bob Moore, N2USB. The exchange of the Presidential Gavel took place during the well attended Hamfest banquet. Lloyd Caves, WB2EFU (N2PU) concluded his six part Hamfest column with a Hamfest review that ended with the announcement by Harry Dannals W2HD, Atlantic Division Director and then VP and President of the ARRL, that after 20 years never missing a Rochester Hamfest that this would be his last trip. Ed Holdsworth, N2EH, wrote telling that there were ten remaining public service operating events left in the year and to sign up. Ed Gable, K2MP/W2AN, Curator of the AWA Museum, wrote to announce the museum is open for the year and to bring the family for a fun and free weekend afternoon. Closing the Spring/Summer RARA licensing classes, headed by Tim WB2KAO, and VE Sessions directed by George AA2FO, found listed herein twelve new or upgraded hams in our ranks. From the Want Ads you could obtain for little money, but a fair amount of work, a six element HF yagi and a 70 foot crank up tower in Greece. You take down and haul away. A new commercial advertiser was Ray Jobes, WB2AFQ, selling and installing ADT Alarm systems.

# VE TEAM

The next **ALWAYS FREE** testing session:

Saturday June 1st

## RARA HAMFEST

Hilton Exempt Club  
137 South Ave  
Hilton, NY 14468

Registration at 9:45AM

Testing from 10:00AM till 12PM (noon)

You do not have to preregister.

To avoid giving your SSN go to:

<http://wireless.fcc.gov/uls/index.htm?job=home>

Register and bring the resultant FRN.

For more info:

<https://www.laurelvec.com/?team=RARA>

Don Kiser - AC2EV

RARA Board member

VE Team Leader

585-613-1035

<b>Jan van Edig</b>	KD2SBK	T	<b>Frederick Kimmel</b>	KD2SBL	T
Michael Raichel Sr	N2VLN	G	<b>Jeffery Kaplan</b>	KD2SBM	T
David Doptis	KD2RXU	G			

New licensees names are in BOLD

## CW ELMERS

Name	Call	Area	Email
Ned Asam	W2NED	Pittsford	<a href="mailto:w2ned@frontiernet.net">w2ned@frontiernet.net</a>
Tim Brown	WB2PAY	Ogden	<a href="mailto:tjbrown@rochester.rr.com">tjbrown@rochester.rr.com</a>
Pete Fournia	W2SKY	Penfield	<a href="mailto:pfournia@gmail.com">pfournia@gmail.com</a>
Bill Hopkins	AA2YV	Brighton	<a href="mailto:whopkin4@naz.edu">whopkin4@naz.edu</a>
Bob Karz	K2OID	Webster	<a href="mailto:rkarz@rochester.rr.com">rkarz@rochester.rr.com</a>
Larry Lavery	WW2J	Fairport	<a href="mailto:ww2j@arrl.net">ww2j@arrl.net</a>
Joe Rowe	AG2Y	Webster	<a href="mailto:ag2y@rochester.rr.com">ag2y@rochester.rr.com</a>

## RADIO ELMERS

Name	Call	Area	Email
Tim Brown	WB2PAY	Ogden	<a href="mailto:tjbrown@rochester.rr.com">tjbrown@rochester.rr.com</a>
Dave Carlson	N2OA	Batavia	<a href="mailto:kdcarloso@gmail.com">kdcarloso@gmail.com</a>
Lawrence Hill	N2AJX	Henrietta	<a href="mailto:lawrence.hill@rit.edu">lawrence.hill@rit.edu</a>
Bill Kasperkoski	WB2SXY	Pittsford	<a href="mailto:wb2sxy@arrl.net">wb2sxy@arrl.net</a>
Don Kiser	AC2EV	N Greece	<a href="mailto:dkiser100@gmail.com">dkiser100@gmail.com</a>
Karl Heinz Kremer	K5KHK	Chili	<a href="mailto:k5khk@khk.net">k5khk@khk.net</a>
Tim Magee	WB2KAO	Greece	585-704-5747
Peter Schuch	WB2UAQ	Perinton	<a href="mailto:pschuch@rochester.rr.com">pschuch@rochester.rr.com</a>
Forest Shick	WA2MZG	Webster	<a href="mailto:fshick3@gmail.com">fshick3@gmail.com</a>
Dave Timmons	W2DST	N Greece	<a href="mailto:dstimmons@gmail.com">dstimmons@gmail.com</a>
Dan Waterstraat	W2DEW	Henrietta	<a href="mailto:higreen@rochester.rr.com">higreen@rochester.rr.com</a>

# RaRa CALENDAR

TIM BARRETT, K9VB, MEMBERSHIP SECRETARY

June 2019						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
						<b>1</b> RaRa HAMFEST 6am – 2pm Hilton Exempt Club, 137 South Ave, Hilton, NY AWA Museum Open 1pm - 5pm PVRC Reunion RSGB Field Day IARU Reg 1 Field Day (CW) Dutch Kingdom Contest Kentucky QSO Party
<b>2</b> RSGB Field Day IARU Reg 1 Field Day (CW) Dutch Kingdom Contest	<b>3</b>	<b>4</b>	<b>5</b> ** NO RaRa Monthly Mtg **  ROC City Net 8:00pm 3.826 MHz CWOps Mini-CWT Test NRAU 10M Contest	<b>6</b> RaRa BoD Meeting 5:45pm Nova-works 333 Metro Park Rochester 14623 ARES Net 146.61 MHz 7pm NCCC Sprint	<b>7</b>	<b>8</b> AWA Museum Open 1pm - 5pm Tour de Cure Asia Pacific Sprint (SSB) Portugal Day Contest SKCC Sprintathon GACW WWSA CW Contest ARRL VHF Contest
<b>9</b> Portugal Day Contest SKCC Sprintathon GACW WWSA CW Contest ARRL VHF Contest	<b>10</b>	<b>11</b> Phone Fray	<b>12</b> ROC City Net 8:00pm 3.826 MHz SIARC 7.30pm CWOps Mini-CWT Test	<b>13</b> ARES Net 146.61 MHz 7pm NCCC Sprint	<b>14</b>	<b>15</b> AWA Museum Open 1pm - 5pm All Asia DX Contest, CW SMIRK Contest Ukrainian DX Contest IARU Region 1 50MHz Contest Stew Perry Top Band Challenge WV QSO Party ARRL Kids Day
<b>16</b> All Asia DX Contest, CW SMIRK Contest Ukrainian DX Contest IARU Region 1 50MHz Contest Stew Perry Top Band Challenge WV QSO Party	<b>17</b>	<b>18</b> Phone Fray	<b>19</b> ROC City Net 8:00pm 3.826 MHz CWOps Mini-CWT Test RSGB 80M Club Contest, CW	<b>20</b> ARES Net 146.61 MHz 7pm NCCC Sprint	<b>21</b>	<b>22</b> AWA Museum Open 1pm - 5pm King of Spain Contest, SSB Ukrainian DX Contest (Digi) QCX Challenge ARRL Field Day
<b>23</b> King of Spain Contest, SSB Ukrainian DX Contest (Digi) QCX Challenge ARRL Field Day	<b>24</b>	<b>25</b> Phone Fray SKCC Sprint	<b>26</b> ROC City Net 8:00pm 3.826 MHz CWOps Mini-CWT Test	<b>27</b> Monroe Cty ARES 6pm, Red Cross Center, Prince St NCCC Sprint RSGB 80M Club Contest, SSB	<b>28</b>	<b>29</b> AWA Museum Open 1pm - 5pm Battle of Carabobo Contest Feld Hell Sprint UFT QRP Contest
<b>30</b>						

# NEWS FROM AREA CLUBS

## MONROE COUNTY ARES / RACES NEWS

The Monroe County Amateur Radio Emergency Service, Inc. holds its meetings on the fourth Thursday of each month. Anyone interested, members and non-members, are welcome to attend.

The next ARES Meeting will be held on: **Thursday, June 27, 2019, at 6:00 PM.**

Meetings are held at the **Greater Rochester Chapter of the American Red Cross HQ, 50 Prince Street, Rochester, NY 14607.** (Located behind the Rochester Auditorium Theatre, 885 Main St. E.)



**ARES NET:** Monroe County ARES/RACES meets on the air every Thursday of the month at 7:00 pm, on the 146.61 MHz (-) 110.9 Hz PL repeater. The only exception to that are nights when we hold our regular meeting, generally on the 4th Thursday of the month.

**WEB:** [www.monroecountymcomm.org](http://www.monroecountymcomm.org)

### Severe Weather Alerts:

Winter brings severe weather in the form of heavy snow and strong winds. If you experience severe weather, especially when accompanied by damage to property in your area, listen to your local ARES/RACES repeaters for information. While official ARES/RACES activation could be a possibility, it is more important that we open a spontaneous net simply to share information about weather conditions in your immediate area. Don't wait for someone else to do it. Pick up the microphone and start a net. Have each check-in station give you a situational awareness report and emergency power report. If you don't have a copy of the directed net protocol, you can find one at the WEB address listed above. (Activities/ARES Net/ Net Script/ Downloads)

## ROCHESTER DX ASSOCIATION, RDXA

RDXA meets the 3rd Tuesday of every month (September through June) except for December, which is the Annual Holiday Banquet. Meetings are open to everyone and all are encouraged to attend.

The next meeting is Tuesday June 18, 2019 and the topic is RDXA FD Preparation.

Meetings are held at the Monroe County EOC 1190 Scottsville Rd. (second floor), Rochester, NY 14624 at 7:30PM.



## ROCHESTER RADIO REPEATER ASSOCIATION

The Rochester Radio Repeater Association, RRRRA invites you to attend its June 21, 2019 meeting. Meetings are held on the 3rd Friday of the month in the Pittsford Town Hall Basement starting at 7:30 PM.

June is our month for more nominations and the elections to become an officer of RRRRA. There will be another open forum if any one wants to state why they would like to be an officer. The positions open will be for Secretary, Treasurer, and Vice President. Bob Shewell will be ascending from Vice President to President. Besides the election of officers, we will discuss the last two hamfests and tell what we plan to do over our two month hiatus. We will also talk about our upcoming RRRRA VE Testing to be held at our regular meeting time and place July 19th. Remember, regular meetings won't be held for July and August. Enjoy the Summer.

The RRRRA officers are Bob ODell, N2BZX President, Bob Shewell, N2HJD Vice President, ED Wilkonski, KC2WM Secretary, and Bob Smith, NS2B-Treasurer / Membership Chairman. RRRRA also accepts donations to the club. If you are not currently a member and want to support RRRRA, you can join at our monthly meeting or on our web site [www.k2rra.org](http://www.k2rra.org)

## ROCHESTER VHF GROUP

The Rochester VHF Group sponsors an informal On-Air Net every Monday at 2100 local time on 144.260 MHz USB and a 6 Meter Net every Thursday at 2100 local on 50.200 MHz USB.

More club information can be found by visiting [www.rvhfg.org](http://www.rvhfg.org) or just calling in any Monday or Thursday night. All are welcome to check in to these nets.

## XRX AMATEUR RADIO CLUB

The XRX Amateur Radio Club meets the 2nd Thursday of each month. The meetings are 6PM at the Webster Recreation Center. Look for details on our website <http://xarc.us>

## DRUMLINS AMATEUR RADIO CLUB

The Drumlins Amateur Radio Club meets every third Wednesday of the month at 7:30 PM at the Wayne County EMO/Sheriff's Office 7376 State Hwy 31 #1000, Lyons, NY 14489. Doors open at 7 pm, meeting starts at 7:30 pm. Announcements will be made on the 146.685 repeater. The Drumlins ARC website address is <http://drumlinsarc.us/>

## AMATEUR RADIO ASSOCIATION OF THE SOUTHERN TIER, ARAST

ARAST meets the third Thursday of every month at the Town and Country Fire Department on Gardner Rd in Horseheads New York. Chemung County ARES (CCARES) meets the first Tuesday of the month except February at Harris Hill. See [www.ccares.info](http://www.ccares.info) for details. CCARES covers the entire area in Chemung, Schuyler and Steuben counties and all are welcome.

Field Days will be held at both Cabin 5 and the H3(House next to National Soaring Museum). Come on up and check us out.

Communicators are needed to help out with the 2019 Wineglass Marathon October 6, 2019 ( one week following the Hamfest) . If you would like to help out, contact the emergency coordinator: [emergencycoordinator@stny.rr.com](mailto:emergencycoordinator@stny.rr.com) .

The Paypal feature for this years hamfest is still off line and will be restored as soon as tickets are available. I've been told that the tickets are at the printers and should be available soon.

2019 Hamfest will be the last Saturday of September 2019. Stay tuned for more details

Our website is still under construction. It is anticipated that construction will continue well into the year. Until that is finished check us out at [www.arast.info](http://www.arast.info) .

Don't forget to check out our repeaters when you visit the area. The N3AQ 147.36(+) and the 146.70(-) are the principal 2 meter repeaters. Also Echolink is available using the call sign KA2BED-R. Check it out. A full list of available repeaters that can be heard in the twin tiers area surrounding Chemung County can be found at [www.arst.info/arast\\_website/public/repeaters.php](http://www.arst.info/arast_website/public/repeaters.php) .

## COMMUNITY AMATEUR RADIO CLUB, CARC

If you are interested in being a part of this forward thinking and active club, visit us at a meeting or join us on one of our weekly nets. We meet at the Hoag Library (134 S. Main St. Albion, NY) on the first Saturday of each month at 7PM. Each meeting has a brief training/refresher period with upcoming topics including: net protocol, repeater set-up/maintenance, and digital signaling. The club holds a net every Sunday evening at 8pm (winter) and 9PM (summer) - 0100 UTC Monday - on 147.585 simplex, and we host the Thursday Night Social Net, Thursday at 8:30PM on 147.285+. We'd love to hear you check-in! Take a look at the club website for more info: [www.k2srv.org](http://www.k2srv.org)

## DIGITAL COMMUNICATIONS ASSOCIATION OF PERINTON, DCAP

DCAP members continue to experiment with leading edge digital communications modes. We were formed in 1994 to foster the development of local and regional packet radio networks using AX25 and TCP/IP. Today we have members using the club sponsored DSTAR repeater (KB2VZS on 444.8MHz), several personal and public [DSTAR hotspots](#) (using the dvrptr board), Yaesu fusion systems on non-club repeaters and DMR. The last mode is being enjoyed locally through a [DV-Mega-Raspberry PI](#) combination. DCAP meets for breakfast at 7AM nearly every Saturday morning at [Rikki's Family Restaurant](#) in Fairport and everyone is welcome to join us. Talk in is on the KB2VZS analog repeater on 146.715 MHz with a PL of 110.9 Hz.

## KEUKA LAKE AMATEUR RADIO ASSOCIATION, KLARA

The purpose of our association is to:

- promote interest in Amateur Radio communication and advancement of the radio art.
- conduct programs, training, and exercises that enhance the skills of the members, and educate the community.
- develop ties with other services and establish relationships with community organizations.
- provide emergency communication services.
- promote enjoyable Amateur Radio related events.

The association was incorporated in 1991 and has been a vibrant part of the community ever since. We have a very active VE testing program. We also participate in numerous public events (the Wineglass Marathon and the Wine Country Classic Boat Regatta are two of the largest).

We operate a system of three repeaters (which are linked), providing a large area footprint for two meter FM amateur use. Please see our website for details. ([www.klara.us](http://www.klara.us))

Our meetings are held on the second Wednesday of each month at the Civil Defense and Fire Training Center on Route 54 in Bath, NY.

## SQUAW ISLAND AMATEUR RADIO CLUB, SIARC

The Squaw Island Amateur Radio Club (SIARC) meets every second Wednesday of the month at 7:30PM at the Ontario County Safety Training Facility, 2914 County Road 48, Town of Hopewell. The program this month will be on 3D Printers. We have License Exam Testing every other month which begins at 6:30PM. The next meeting will Wednesday, June 12th . There will not be license Exams this month. <http://siarc.us/> 73's Steve Benton VP SIARC WB2VMR

## WESTSIDE AMATEUR RADIO CLUB

The mission of the Westside Amateur Radio Club is to provide emergency com-

Day	Date	Event	Location	Contact
Friday	July 12-14	Musselman Triathlon	Geneva	<a href="mailto:kb2nci@arrl.net">kb2nci@arrl.net</a>
Sunday	September 8	Finger Lakes Triathlon	Canandaigua	<a href="mailto:kb2nci@arrl.net">kb2nci@arrl.net</a>
Sunday	October 6	Wine Glass Marathon	Steuben County	<a href="mailto:kb2nci@arrl.net">kb2nci@arrl.net</a>

munications services to the community, to assist other civic organizations, to promote the technical craft of amateur radio through class training and testing, to mentor new members, and enhance fellowship among radio amateurs.

The Westside Amateur Radio Club meets on the first Tuesday of the month, 7PM, at the Prudential Kares Realty, 3313 Chili Ave., Rochester, NY 14624. Park / enter on the left side of the building and meet in the lobby.

The talk in repeater for all meetings is the WR2AHL Repeater 146.760MHz - 110.9. AllStar, Echolink, and web streaming connections are available. Website: <http://WestsideAmateurRadio.club>

## INTERLOCK ROCHESTER - K2HAX - ROCHESTER'S HACKERSPACE

Visit our website at <http://www.interlockroc.org/>, contact us at [info@interlockroc.org](mailto:info@interlockroc.org), or find us in #interlock on Freenode IRC.

## ROCHESTER MAKERSPACE

For more information visit <https://www.makerspacerochester.org/hamradio>

## GENESEE VALLEY AMATEUR RADIO ASSOCIATION

Email [n3dsp@lafireline.net](mailto:n3dsp@lafireline.net) for details.

## ASTRONOMY SECTION ROCHESTER ACADEMY OF SCIENCE

For more information visit <http://www.rochesterastronomy.org/>

## THE AMATEUR'S CODE

Originally written by Paul M. Segal, W9EEA (1928)

### THE RADIO AMATEUR IS:

- CONSIDERATE** Never knowingly operating in such a way as to lessen the pleasure of others.
- LOYAL** Offering loyalty, encouragement and support to other amateurs, local club, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.
- PROGRESSIVE** With knowledge abreast of science, a well built and efficient station and operation beyond reproach.
- FRIENDLY** With slow and patient operation when requested, friendly advice and counsel to the beginner, kindly assistance, co-operation and consideration for the interests of others. These are the hallmarks of the amateur spirit.
- BALANCED** Radio is an avocation, never interfering with duties owed to family, job, school or community.
- PATRIOTIC** With station and skill always ready for service to country and community.

QRP Quarterly

QRP Amateur Radio Club International

[www.qrparci.org](http://www.qrparci.org)



<https://chameleonantenna.godaddysites.com/>



[www.dxengineering.com](http://www.dxengineering.com)



[www.westmountainradio.com](http://www.westmountainradio.com)

Maxcon Antennas

[www.maxconus.com](http://www.maxconus.com)

MFJ

[www.mfjenterprises.com](http://www.mfjenterprises.com)

HAM RADIO DELUXE



[www.hamradiodeluxe.com](http://www.hamradiodeluxe.com)



[www.tigertronics.com](http://www.tigertronics.com)

NUTS AND VOLTS

[www.nutsvolts.com](http://www.nutsvolts.com)



[www.hobbypcb.com](http://www.hobbypcb.com)



[www.servomagazine.com](http://www.servomagazine.com)



[www.birdrf.com](http://www.birdrf.com)



[www.n3fjp.com](http://www.n3fjp.com)



[Melabs.com](http://Melabs.com)



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[www.universal-radio.com](http://www.universal-radio.com)

### Radio Society of Great Britain



<https://rsgb.org>



[Circuitcellar.com](http://Circuitcellar.com)



[www.audioexpress.com](http://www.audioexpress.com)

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## RARA MARKETPLACE

Michele A. Jamison, MD  
Office Hours  
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1/4 page: 5.1 x 3.8      \$300

Your advertisement will be seen by amateurs in Rochester, Monroe County, New York State, the United States and even the rest of the world. RAG circulation is approx. 4,500.

Contact us for details at  
[editor@rochesterham.org](mailto:editor@rochesterham.org).

# RARA OFFICERS, DIRECTORS AND COORDINATORS

## OFFICERS

<b>President:</b> Tim Guyot, KB1POP	(585) 406-3163	<a href="mailto:timguyot@gmail.com">timguyot@gmail.com</a>	<b>Treasurer:</b> Brian O'Connor, KA2CGB	(585) 721-2346	<a href="mailto:ka2cgb@arrl.net">ka2cgb@arrl.net</a>
<b>Vice-President:</b> Scott Theis, W2LW	(845) 774-9809	<a href="mailto:sa_theis@hotmail.com">sa_theis@hotmail.com</a>	<b>Secretary:</b> Mike Moore, KC2NM	(585) 721-0011	<a href="mailto:mikemoore@ieee.org">mikemoore@ieee.org</a>

## DIRECTORS

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Tim Brown, WB2PAY	(585) 750-2087	<a href="mailto:tjbrown@rochester.rr.com">tjbrown@rochester.rr.com</a>	Karl Heinz Kremer, K5KHK	(585) 503-7214	<a href="mailto:k5khk@khk.net">k5khk@khk.net</a>

## ACTIVITY COORDINATORS

<b>Club Historian</b>	Ed Gable, K2MP	<a href="mailto:egable@rochester.rr.com">egable@rochester.rr.com</a>	<b>Public Service</b>	Mike Moore, KC2NM	<a href="mailto:mikemoore@ieee.org">mikemoore@ieee.org</a>
<b>Club Station Trustee</b>	Jim DiTucci, N2IXD	<a href="mailto:n2ixd@arrl.net">n2ixd@arrl.net</a>	<b>Raffle Administrator</b>	Forest Shick, WA2MZG	<a href="mailto:wa2mzg@arrl.net">wa2mzg@arrl.net</a>
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<b>Hamfest Co-Producers</b>	Tim Guyot, KB1POP Mike Moore, KC2NM Dave Mitchell, KD2RAF George Lama, KC2OXJ	<a href="mailto:timguyot@gmail.com">timguyot@gmail.com</a> <a href="mailto:mikemoore@ieee.org">mikemoore@ieee.org</a> <a href="mailto:mitchellbds@gmail.com">mitchellbds@gmail.com</a> <a href="mailto:kc2oxj@gmail.com">kc2oxj@gmail.com</a>	<b>RARA RAG Editor</b>	Forest Shick, WA2MZG	<a href="mailto:editor@rochesterham.org">editor@rochesterham.org</a>
<b>VE Team</b>	Don Kiser, AC2EV	<a href="mailto:dkiser100@gmail.com">dkiser100@gmail.com</a>	<b>Refreshments</b>	<b>Volunteers Needed</b>	
<b>Media Communications</b>	Tim Guyot, KB1POP	<a href="mailto:timguyot@gmail.com">timguyot@gmail.com</a>	<b>Reward Points Administrator</b>	Tim Barrett, K9VB	<a href="mailto:tim.k9vb@gmail.com">tim.k9vb@gmail.com</a>
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### XRX Amateur Radio Club

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## JULY RAG DEADLINE

### JUNE 15, 2019

**NO RARA GENERAL MEETING IN JUNE  
MEMBERS MAY VOLUNTEER FOR THE  
HAMFEST  
AND  
TOUR DE CURE**

**RARA meets at 7PM on the first  
Wednesday of each month. Join us at:**

Seneca Waterways Council, BSA Headquarters  
2320 Brighton Henrietta Town Line Rd  
Rochester, New York 14623

### GET DIRECTIONS

### Rochester Area Repeater Listing

### *THE RARA RAG*

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