



FOOTPRINTS

Newsletter of the Wanderers Amateur Radio Club

Vol. 4 No. 4 Dec 2020

<http://www.neighborhoodlink.com/GECO>

wanderersarc@gmail.com


Using HAM radio for international friendship and understanding.

Merry Christmas

2020 has been a very tough year for just about everyone we know. Some HAM friends have lost family members to COVID. A few of our friends have also passed due to COVID. We can only be heartened by the fact they were able to be a part of our lives. We are enriched by knowing them.

There are so many challenges, different for each person. For this holiday season, we send our best wishes for the continued safety, good health, and happiness for everyone. All of us are hoping 2021 will bring a better future for all.

The holiday season is a time for giving, caring, and sharing. With that in mind, our apologies for making an appeal that is not HAM radio related. This Christmas is a struggle especially for a very dear friend of ours. She is a Nurse, educator, and a single mom fighting cancer who has a 3-year-old. Her cancer was in remission for a while. When it returned, she was undergoing treatment, yet would still volunteer at night at a homeless youth shelter after work even after COVID started to make the rounds in March. The cancer got overly aggressive earlier this year and the treatment costs began to grow astronomically. A tight circle of friends pooled their resources to help cover medical and living expenses. As resources dwindled, they launched a [Go-Fund-Me](#) effort as a last-ditch effort to cover the cost of a bone marrow transplant that could give her another 5+ years of life. [Note: They didn't feel right asking others for money if they weren't willing to exhaust their own resources first.] The goal is \$100,000 which is huge. No amount is too small. All small donations add up. The power of numbers can help to overcome great odds. Please give what you can. If you've already given, thank you for your kindness. If you can't donate now, please share the link with at least 10 other folks and get them to share it 10 times.

The doctors are willing to work with us. They recently told us an initial \$35,000 enables them to get started, and they can arrange installments for the balance. But the clock is ticking, and we must reach a \$35,000 goal in the next 2-3 weeks. Please help us with a big push to reach this intermediate goal. It will be a big step to help build a future for a 3-year-old child. [Note: If we are successful, and with your help, I pledge to do all I can to encourage this child to become a licensed HAM! This includes the folks close to the family as a gesture of appreciation for the combined help of all of you.] Please do all you can as HAManitarians. 

Help Save an Angel on Earth



Even while fighting her cancer, she would volunteer at homeless youth shelters using her Nursing / Teaching skills to try to make the world a better place. Please do all you can to [help save an angel on Earth](#).

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Drive-in Licensing Exam

COVID-19 put a halt to many group activities, especially those indoors. Many HAM licensing exams and tests, like school classes, faced the COVID challenge. We've heard of many online licensing exam alternatives, but a drive-in licensing exam was new to us.

We saw this item in the [Dec 17, 2020 ARRL Newsletter](#) and got the permission of [Steve K7AA](#) to share it here. This is an example of thinking outside the box combined with determination to serve their community. I contacted Steve and asked him for details. He replied, "It was pretty easy to set up...well actually it wasn't !!!!"



Anyone who has helped organize any HAM event knows there's a lot of unsung heroes behind the scenes making it work. Even the most basic licensing exam set up is a logistical challenge to coordinate the space, paperwork, and getting the right number of [ARRL VECs](#) together. You can get the story from the [ARRL Newsletter](#). Steve mentioned pulling together folks from the Grant County ARC, a local ARES unit, and Grant County Emergency Radio Infrastructure Coalition. The event was for the Technician and General class license exams.

If you haven't helped with holding a licensing exam, there's a fair amount of effort involved in preparing the exams and supporting paperwork. This is in addition to the general set up for the test site. Just think about the times you went to attend a meeting at an unfamiliar site. Imagine the confusion without adequate signs pointing the way. Think about the helping hands setting up tables, chairs, registering/checking in, payments, checking IDs, etc. And then, there's the cleanup. All that behind-the-scenes hard work is easy to overlook when folks show up and things go so smoothly.

I emailed Steve to get an "after action" report. There are always lessons learned from any event. In his email response to me, he spelled out what he did.

Materials Prep: This is what Steve did BEFORE the exam:

- Gave candidates the link to get an FRN number and use on their candidate information form.
- Get candidate information. Emailed a form for candidates to complete and return. This enables you to print up forms ahead of time of Pass/Fail results. [Note: It was not easy to get folks to comply.]
- Clipboards with all forms and a colored ID sign" for each candidate to put in their front windshield.
- Checklist for exam monitors to secure the vehicle for the exam (e.g., clear front and back seats of study materials, phones, calculators, etc.).
- QC Check list: Exam monitors would use this to be sure all candidate submitted papers are complete before leaving the exam site.

Space: They got permission to use a County Roads Dept. parking lot.

- Parking for all vehicles: They needed space to park vehicles for the folks taking the exam and the

Key After Action Points

Here's what Steve shared with me:

- Collect candidate data via a web site form rather than emailing a form.
- Get Min. VECs needed = 3. He used 4 but says 5 would have been better.
- Have more space for grading and QC.
- Make a "Finish Exam Checklist" to complete before candidates depart the exam site.



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helping HAMs. They had 5 candidates sitting for the exam. If you have more, you'll need to have more space and additional help as well.

- Grading the exams: Ronda Metler (KB5LAX) and Steve K7AA offered their vehicles for use in grading the exams and processing paperwork.

Operations: The weather was cold adding to the challenge for the HAMs and helpers. The examinees were in their vehicles with the heat going.

- Monitoring the exam involved two HAMs as rovers to keep an eye on the candidates taking the exam. If you have a larger crowd sitting for the exam, you will need more rovers. Steve didn't have a ratio of rovers to examinees. Just use your discretion. The goal is to maintain the integrity and credibility of the ARRL VEC process.
- Exam Grading: As previously mentioned, grading took place in two vehicles. During the grading, Steve saw more helpers were needed. He could have used more rovers as the VE's were needed to do the scoring.



Steve mentioned a common problem was folks not signing in all the places needed on the forms. This is a good reason to have more helpers (not necessarily VEs). On past jobs where critical field measurements were being collected, we required multiple "sign offs" to verify instruments were calibrated in the field, the data were collected, and all pertinent data were recorded. In the spirit of Christmas, the watch word is "making a list and checking it twice."

While online exams certainly reduce the risk of exposure to COVID-19, we feel a need to make the case for people to have direct contact (following all public health protocols ala COVID). It is important for new HAMs to have a strong start. For many folks, the first hurdle to get into HAM radio is the exam. Meeting other HAMs helps build and keep the momentum going. Making personal contact is the first step for new HAMs to find an Elmer. This can make all the difference for new HAMs.

All we can say is "Hats off to Steve and the collaborators of the Grant County ARC, a the ARES unit, and Grant County Emergency Radio Infrastructure Coalition for a job well done. All 5 examinees passed, resulting in 3 new Technician level HAMs and two General upgrades! 🎉"

FFI: Feel free to contact [Steve, K7AA](#).



The Importance of SWR

This brief report is from a chat between Moshin Siddique of the Amateur Radio Society of Bangladesh, and Greg Lee K16GIG of the Wanderers ARC. Moshin got two non-working radios (from Anup S21TV) and was trying to get one to work.

Moshin: Recently I have been working on VHF/UHF base set [Kenwood TK-730] which has been destroyed. I am recycling them to use.

Greg: How was it destroyed? [I was thinking a lightning strike.]

Moshin: Over voltage and mismatch transmission line. One of the major problems for the radio is mismatch of the radio transmission power and the antenna. Basically, 50 Ω impedance is needed for the match. So, the construction of an antenna should be perfect. When the antenna isn't tuned to the desired frequency resonant, a mismatch occurs. If a radio has 50 watts, the radio sends 50 watts to the antenna. But if the antenna is mismatched the power will be returned to the power stage of a radio and a radio gets damaged.

Greg: I was thinking it might have been a lightning strike. Most new HAMs here (US) buy a radio, antenna and coax and assume it is all plug and play. They get this habit from their first HT which comes in one small box with a rubber duck antenna. They put it all together and get on the air. When they buy their first mobile, they just connect everything and go on the air without checking SWR because they didn't have to do it before. This also happens when they build their first antenna or buy coax. They assume everything is good because its new. I try to tell them not to assume, but to measure and check BEFORE transmitting the first time.

Moshin: So, to prevent radio one should have a SWR meter.

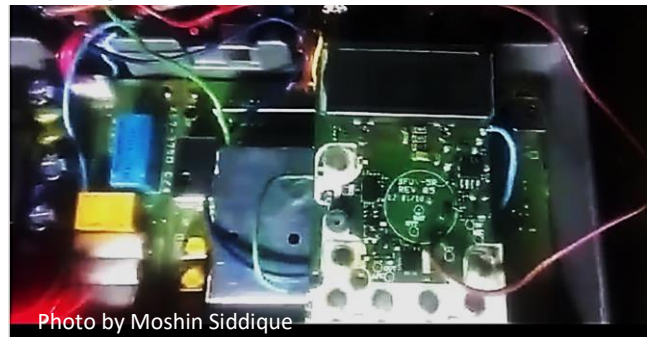
Greg: How much damage did the radio suffer?

Moshin: Totally destroyed. Firstly, when the mismatch line is detected the power stage is destroyed then controller circuit. There are lots of radios that got damaged around me. You know Anup Kumar? He has collected lots them. Thankfully, he has given two radio base sets to recycle.

I thought long and hard about when I first got licensed in Fall 2006. My big advantage was Mark N7YLA got me interested and Elmered me from the start. But I also know many new HAMs who didn't have an "instant" Elmer. And years later, they seemed to lack some of the "basics" that I got from Mark and thought were "common knowledge."

Many new HAMs are of the "plug 'n play" generation. Once licensed, many of them buy an HT (e.g., Bao Feng). Everything is right there, all in one box. Charge the battery, assemble everything, and get on the air. Couldn't be much easier, right?

Have you ever seen a newly licensed HAM test the SWR of their HT and rubber duck? I haven't, but then, this assumes they know about SWR and how to check it. Or, do



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they even know to ask, let alone have someone to ask?

This is what they might see. An entry level HT costs about \$26.99. An SWR meter might cost from \$38.99 or \$49.99 on up. If money is a barrier, most would just get the radio and get on the air.



\$26.99



\$49.99



\$38.99

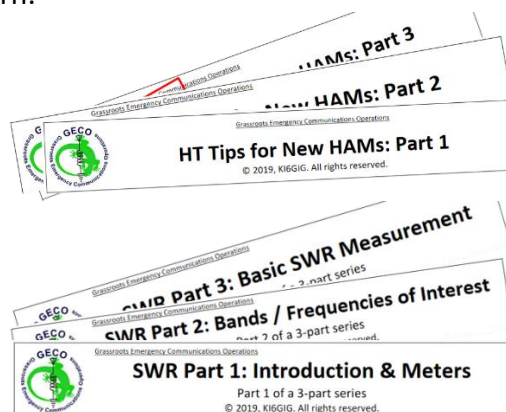
Let's say they decided to get a meter. For a new HAM, it is bewildering. Chances are they'll see a meter with SO-239 fittings. If they buy it, there's the hurdle of how to connect the HT radio and antenna to the SO-239 fittings? Now they venture into the realm of connectors. I don't know how long it will take them to figure out all the different types and names of the [SMA connectors](#) on HTs, antennas, jumper cables, and adapters. And would they know anything about dummy loads? (We did find one meter with SMA fittings that connect directly to an HT. It comes with various SMA adapters, and a dummy load.) The costs begin to add up. The meter, jumpers, dummy load, and adapters can easily add up costing more than the radio. When I was younger, the functional definition of a boat was a hole in the water surrounded by wood into which you poured an infinite amount of money. You can readily modify this definition for HAM radio.

One way for new HAMs to minimize the start up costs is to join a club. Each club is organized and run differently. But some clubs pool funds to buy test equipment. Experienced members teach others to use and care for the gear. Club dues are a primary source of funds for purchasing equipment. In other clubs, senior members have test equipment and allow club members to use it.

This is a good time to loop back to the story of the Drive-in License Exam. The Internet and online life, like so many things in this world, have pluses and minuses. Doing things online has advantages in the current pandemic. But one downside is many people become isolated and don't develop or experience the social skills of meeting real people in the real world.

When people show up to take a license exam, they have a good opportunity to meet other HAMs. At the exams I attended, it was a great opportunity to congratulate new HAMs and invite them to the world of HAM radio. This is a great time to plant "Elmer seeds" that can help nurture new HAMs. If you have an open mind, any HAM, new or seasoned, can learn.

For example, in appreciation for Mark's Elmering, I have taken time to share what I learned with others. When Mark moved to WA state, he helped his son Matt KI7QVM hold a Technician licensing class. They got a group of 15 new HAMs. To help their cause, I wrote a 3-part series on HT Tips for New HAMS [Part [1](#), [2](#), [3](#)]. This was followed by another 3-part series on SWR Testing [Part [1](#), [2](#), [3](#)]. I make no claim of expertise on any of these matters. But it is important to share information with new HAMs to help them grow and improve.



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Proceeds from all sales will be sent to the Go-Fund-
Me to help [Save an Angel on Earth](#)

New designs and products being added, so check the shop often.



Donkey up your
mic without
thinking.

GERC Net Update

The Glendora Emergency Response Communications (GERC) Net underwent a few changes in 2020:

- They changed their weekly simplex net frequency to 145.675 MHz to be comply with the local 2m band plan for linking stations. This change keeps the KM6DBN-L EchoLink gateway to the net up and running. The previous simplex net frequency did not allow use of links.
- Mark N7YLA invited Steve WA6FEJ to join the GERC Net. He recently moved to Monrovia. The question came up about LOS from his new QTH. As a welcome note, we ran some estimated LOS terrain profiles from his QTH to the GERC Net Control locations and to the KM6DBN-L EchoLink gateway. This also provided an opportunity to update the layout of these GERC Net operating sites.
- GERC Net operating locations vary with the Net Control operator. (See the diagram below.) Jim KG6TQT is the primary Net Control. In the past, he had access to an empty lot. Now its being developed. When the construction began, he had to find another location. When Jim is not available, there are two alternate control operators: Rob KE6YGF is the first alternate Net Control operator. Jim and Rob tend to operate mobile when doing the net. Dennis KI6NQG used to operate mobile, but has since gotten access to 30-ft antenna, so operates from that site.

G.E.R.C. Net
Glendora Emergency Response Communications

Starting 03 Sep 2020

GERC Net Control
Simplex 145.675
EchoLink 869843 145.675

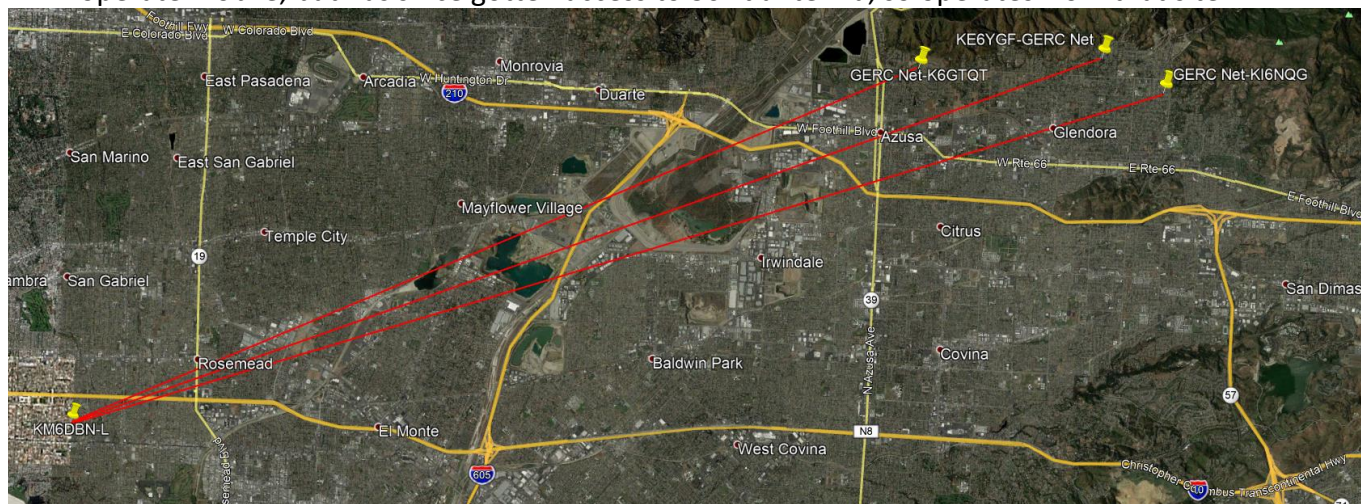
Visitors Welcome!

Glendora Emergency Response Communications
New GERC Net Freq
Simplex 145.675 MHz
Thursdays 20:30 Hrs. Pacific
Except 1st Thu of each month
UTC -8 DM14bd CQ 3 ITU 6
DST starts 2nd Sunday in Mar & ends
1st Sunday in Nov. at 0200 local time!

GERC EmComm Freq
remain as
Y1 Y2 Y3 Y4 Y5
FFI: KG6TQT

The purpose of the Glendora Emergency Response Communications Net is to prepare HAMs for an emergency and to share information relevant to that purpose. All HAMs are welcomed!

SCIRA, Inc. Check-in Net 2nd Thursday of each month, About 21:00 pm after G.E.R.C. Net
At the SCIRA, Inc., Pleasant's Peak Repeater 445.940 MHz (-) PL 100.0 (non-linked PL)
EchoLink #379885 W6CTR-R Allstar node 48383



Mark N7YLA founded GERC and began a weekly net several years ago. Joe N6WZK set up an EchoLink gateway for Mark's GERC Net. This enabled stations out of local RF range to check-in and added EchoLink capability to GERC's Field Day and JOTA events as well as demonstrations for license training classes. When Mark moved to Washington state, Jim KG6TQT took over the Net. Joe N6WZK set up a temporary GERC EchoLink gateway at his QTH. Juan KM6DBN-L recently took over the EchoLink gateway function from Joe. This frees up Joe to work on several other projects.

The directed GERC Net welcomes all HAMs to check-in. If you are in the Glendora area, tune to 145.675 MHz simplex. You can also join by EchoLink via KM6DBN-L node #869843.