



MTARA NEWS



| NOVEMBER 2020 | [Mountain Top Amateur Radio Association](#) |

President: Vic Marquez, KK6WKI

Secretary: Dave Esquer, K6WDE

Ed/Membership: Tracy Lenocker, WM6T

The Rim of the World ARES group is an ARRL affiliated organization and part of the Mountain Top Amateur Radio Association.

Vice President: Gary Johnson, AA6GJ

Treasurer: Patty Szychowski, KK6LWH

Past President: John Snedden, KT7P

President Vic's Message

Greetings from your President, Vic, KK6WKI. This is the sixth issue.

Here is a brief wrap-up of this year's **National Fire Prevention Week (FPW)**. It started October 4th and ran thru Saturday the 10th.

In 1871, on October 8th, it is said that Mrs. O'Leary's cow kicked over a lantern and started a fire that burned for 27 hours and resulted in the loss of over 300 lives, destroyed 17,000 buildings and left 100,000 people homeless. The great Chicago fire was one notable event that helped the campaign for fire safety and the reason that the week of October 4 is National Fire Prevention week.

Practicing good fire prevention measures is important no matter where you are but with so much of our community covered in woodlands, it is especially important to understand and follow outdoor fire safety guidelines. I'm sure I don't need to explain the importance to this group, especially those of us who live in the mountain communities.

The FPW Special Event Station theme for this year was "Serve Up Fire Safety in the Kitchen". There were 12 special event stations, N0F thru N9F and 2 wildcard stations, KF2IRE and VE3FIRE.

N6F is the station that I called CQ and I made a total of 97 contacts throughout the week.

Last year N6F's QSO count was 1,479, the second highest out of the 12 stations. With each QSO, we gave a Fire Safety Tip.

There are a couple of ways local hams participated, neither required you to be a Firefighter.

We had chasers hunting down any or all of the N*F stations and wildcards. We offered a Certificate of Achievement to those who worked any ten of the twelve stations.

The other way to participate was hands-on as some MTARA members (KM6UWI,) called CQ for Station N6F. They called "CQ, CQ, November Six Foxtrot, Fire Prevention Week Special Event Station, CQ, CQ" and gave a fire safety tip from a list of fire safety tips related to kitchen fires.

Hopefully, we will get several MTARA members to participate next year! Put the first week of October 2021 on your calendar!

We've received our first moisture, but fire season isn't over yet. Stay radio-active and as always, **if you see something, say something!**

73, Vic

Monthly Club Meetings

Our next monthly meeting is next **Tuesday, November 3** via Zoom. You will soon receive the login credentials.

The virtual meetings begin at 7:00 p.m. and last until about 8:00 p.m. Our meetings are open to everyone, licensed amateur radio or just interested parties. We provide educational opportunities, mentoring, radio communication training and providing radio communications for community events.

Interested parties, NOT members of the club will need to email tracy@lenocker.com with their name and callsign. The credentials for the meeting will then be emailed to that person.

See and hear you November 3!

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Remembering Jim Higginbotham, WA6UVQ - WM6T

I first met Jim and Carol Higginbotham at our first ECS (Emergency Communication Services) meeting in 2005. ECS had just been switched from the Sheriff's Department to County Fire. Jim and Carol looked so official in their uniforms. Our ECS Captain at the time was Marilyn Jordan. She and her husband, Fred, introduced us to Jim and Carol. I was very impressed with Jim's knowledge of communications and his desire to help us get all set up for participating in ECS.

A few months later Jim invited me to their home. Carol had it decorated for the holidays and it was just amazing. I asked Jim where his ham shack was. In total amazement he showed it to me. There is no way I can describe his ham shack and it would take many photos to see all of the current and former radios and equipment he had.



Then on July 15th, 2006 Jodi and I were assigned to the Sawtooth and Millard Canyon Fire later called the Sawtooth complex fire. I was so grateful that Jim had helped us get our radio gear all ready for our very first deployment.

I learned that he still was working and providing some of the agencies in the mountains with assistance in installing radios in vehicles and boats. After leaving the Air Force and a few jobs later, Jim was employed by the City of Alhambra Fire Department and was responsible for installing and maintaining radios in all of the city's vehicles. That is where he met Carol who was working in the City library.

He and Carol were consummate volunteers. They were working in the Fire Lookouts at Strawberry Peak and Keller Peak and were very active in Citizens on Patrol.

This was in addition to their work with ECS where he later became Section Captain. Jim was also an active member of the Twin Peaks Masonic Lodge and Carol helped with the treasurer duties.

Jim and I became very close friends as did Carol and Jodi. Jim and I began the process of installing radios and antennas in several of the fire stations and the Twin Peaks sheriff's station. Fortunately for both of us we had other members who would climb the towers and the wooden telephone pole antenna masts. Jim showed me how to solder a PL-259 in the dead of winter with it snowing and the clever way of putting connectors on LMR-400 coax. He had all of the tools from his former work at Alhambra. Jim was a "holy" man. Yes, he believed in putting "holes" in the top of your vehicle for antenna mounts. I was the "unholy" person.



The ham shack had every conceivable piece of test equipment you could imagine and Jim knew how to use them all. In his shack he mounted all of the older HT's that he had ever owned. He was so proud that he won every contest when someone asked "Who owns the most HT's".

Jim had a great personality and enjoyed being an Elmer to so many people, including Chet, AE6CO, and sharing his love and enjoyment of amateur radio. His call sign was WA6UVQ and

Carol, in memory of Jim, took his call sign after his passing.

Jim was diagnosed with cancer mid-2013 and passed on January 31, 2014. While he was battling his cancer we discussed the need to create a ham club on the mountain since we had taught and licensed so many members of the mountain's community. I told him I would work on that idea we shared. MTARA was created just 18 months later.

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Welcome to “Ponder the Pool” by AA6GJ

Ponder the Pool is my new column for the MTARA Newsletter. Every month, I will pick a point to ponder (question) from one of the three FCC question pools, and try to explain it more, and review the concepts because, “If you don’t use it, you lose it!”

This month’s talking point comes from the General Class pool. Question No. G2B05

When selecting an SSB transmitting frequency, what minimum separation should be used to minimize interference to stations on adjacent frequencies?

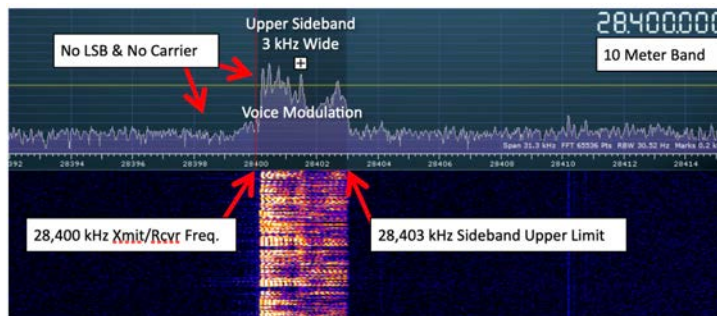
Before we answer this, let’s take some time to dissect it a bit. I always feel that one picture is worth a thousand words.

The photo below is showing a portion of the 10-meter band. My transmitter is “parked” at 28.4 MHz in the “phone” portion of the band. We are looking at the “spectral” view. This view displays the frequencies that the receiver “tunes in” to. So, my receiver is tuned in to 28.4 MHz. In this view, I can see how much bandwidth the signal is actually taking up; how wide it is.

As the question states, we have selected a SSB transmitting frequency. By convention, we use upper sideband (USB) on 10-meters. USB is a form of amplitude modulation (AM) but, we suppress the carrier and the lower sideband (LSB), so we don’t take up more bandwidth or use more power. If you look at the picture at the red arrows, you will see the parked frequency on the left. On the left, at the red arrow, you would see where the LSB would be, but you don’t because it is suppressed. The carrier is also suppressed. The only thing left now is the USB. The “wiggly lines” is me talking (modulation). We are not allowed by FCC rules to extend that modulation beyond 3 kHz (3,000 Hz.) So, if I take my parked frequency (28,400 kHz) and modulate with frequencies up to 3 kHz, I add that together ($28,400 + 3,000 = 28,403$ kHz) and come up with a bandwidth of 3 kHz which is the

legal limit for voice and data.

This means (and now we are answering the question) that I must allow my signal to extend that 3 kHz and no farther. If someone is transmitting at 28,402 kHz, my sideband would extend into their conversation, thus



causing interference, which we don’t want to do.

So, remember we want to stay at least 3 kHz away from any other station that is using an adjacent frequency. We use USB on all voice and data frequencies above 14 MHz, except for 30 Meters where voice frequencies are not allowed. This example shows us using USB, but 160, 40, and 80 meters is LSB. The same rule applies except in LSB, we subtract 3 kHz from the parked frequency instead of adding as we did here.

The official answer to the question is: *Approximately 3 kHz.*

There you have it, my first Ponder the Pool. I hope it was helpful. Stay tuned and we’ll do another one next month. – 73 – Gary

Treasurer’s Report - KK6LWH

Patty provided the bank balances. We had an opening balance as of October 6 for the amount of \$9,195.92. We had deposits on September 29 of \$121.00 with no new expenses. Our balance as of October 6 is now \$9,316.92

73, Patty

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Local Weekly Nets

	Repeater	Time	Activity	Purpose
Monday	MTARA-2	7:00 p.m.	Weekly Check-in	MTARA news
Monday	144.330 Mhz	8:00 p.m.	'Gordo' net	Simplex readiness
Tuesday	MTARA-5	7:00 p.m.	Weekly Check-in	Tech discussions
Wednesday	HF	7:30 p.m.	7.223 Mhz	Band(s) status
Friday	MTARA-5	5:00 p.m.	XYL Happy Hour!	It's Friday!
Daily	CBARC	7:00 a.m.	Technet	Elmer sessions

Membership Info

Membership in the Mountain Top Amateur Radio Association© is open to any person interested in learning more about Amateur Radio. Members do not have to be a licensed Amateur Radio Operator to be a member but licensure is recommended. Members must be active in club activities which includes trainings, events, club meetings and Field Day. Membership is on an annual basis and is from January 1 to December 31 of each year. There are no prorated memberships. The annual membership is \$20 for a single member or \$30 for an entire family. The membership form can be downloaded by [clicking here](#).

Echolink Update

For those who are away from their radios during our MTARA nets you can always check in using Echolink from your computer, smart phone or tablet. Setup is easy and fast but you must wait for confirmation of your call sign before you are enabled.

This verification makes sure only licensed amateur radio operators are using the system.

Echolink is always up on MTARA2 except for maintenance once a week for about 10 minutes. We can switch the MTARA Echolink to any 2-meter frequency if necessary in an emergency. The node is WM6T-L.

Online Zoom tech meetings

Our Zoom meetings are on Thursdays at 2:00 p.m. Check out the MTARA Website home page for a listing of what each of the presentations will be about. If you need help setting up Zoom on your laptop or smart phone please contact Tracy, WM6T, who will help you get set up and running.

Next Month's Newsletter . . .

A field test of the new [Icom IC-705](#) portable QRP radio from our own K6DDZ and K6KTH (Dede and Tom) operating POTA!



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Upcoming Calendar of Events

Activities that MTARA will be participating in or supporting during the upcoming months:


- ▶ November monthly meeting via Zoom - November 3 at 7:00 p.m.
- ▶ December monthly meeting - December 1 at 7:00 p.m.
- ▶ [Quartzfest \(Pause\)](#), January 17-23, 2021. Remember, social distancing out in the desert!
- ▶ [Winter Field Day](#), January 30-31. Come out and play radio, put on those hats and scarves!

Upcoming VHF/UHF and HF Ham Radio calendar of events

A few fun events that club members can participate in and/or sharpen their communication skills with!

- ▶ [Slow Speed Con\(Test\)](#) for CW operators, 00:00-01:00 UTC **EVERY Monday** (5:00 - 6:00 p.m., US PDT Sundays), a great learning tool for us new operators!
- ▶ [ARRL November Sweepstakes](#), CW - November 7-9
- ▶ [ARRL November Sweepstakes](#), SSB - November 21-23
- ▶ [CQ WW DX Contest](#), CW only - November 28-29

MTARA jackets - UPDATE!

 We have finally decided on our optional MTARA jackets. Two colors are available which are forest green or black (see our newest member). The forest green matches our polo shirts. Sizes available range from small to 6X. Here is a list of the sizes and prices that include the lettering and sales tax.

The Port Authority jackets without the \$6.00 name, call sign and MTARA logo are approximately \$6.47 less.

If interested, you need place your order with Mary at Classic Images in Crestline. Her number is 909-338-2281. She is there Tuesday through Friday and the address is 23723 Rocky Dell Drive, Crestline, CA 92325.



Size	S	M	L	XL	2X	3X	4X	5X	6X
Price	\$45.23	\$45.23	\$45.23	\$45.23	\$46.31	\$48.47	\$49.54	\$51.70	\$52.78

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The Octopus Hub Hamstick Antenna - AJ6FN



Building an Octopus hub for hamstick antennas is a fun and easy project. It is much less expensive to build than to buy the [MFJ](#) or [Chameleon](#) versions. I would suggest working with a friend or two in order to split the cost of parts that come in 25 or 50 packs and to enjoy the social aspect of ham radio. The parts list items and prices on the last page are for 3 hubs. Dave, K6WDE and I each built a hub together in 4-5 hours or so the first time.

The third hub will be raffled off as a major fundraiser at our first MTARA monthly physical meeting, let's hope it's SOON! All you will need to do is add your own mast, hamsticks and coax. All fabrication and drilling will be completed for you. All the hardware (nuts and bolts) necessary (even the SO-239) will be included!

The hub is designed to accommodate up to four pairs of hamsticks in horizontal dipole configurations. Each dipole allows operation on a different band. For example, you may use 40 meters, 20 meters, 17 meters and 10 meter hamsticks.

Our experimentation continues, a higher mast (20 foot or so) and higher frequencies seem to work better than a lower height mast and lower frequency hamsticks.

Construction is straight forward. There are four basic steps:

1. Fabricate a simple mounting bracket
2. Mount the SO-239 connector
3. Drill holes and mount the shaft couplers for the hamsticks
4. Connect the wiring.



The hub can be built with simple hand tools and an electric drill or drill press. We used a 12" x 3" x 1/8" piece of aluminum for the mount. Bend the aluminum at a right angle about 2½" from one end in order to mount the aluminum bracket to the bottom of the octagon box with four 10-32 machine screws, lock washers, and nuts. See this video on annealing and bending aluminum: <https://www.youtube.com/watch?v=mM20eoxyVhA> .

Once bent, the bracket and SO-239 connector can be placed on the bottom of the box and positioned so they do not interfere with each other. The connector will be positioned on the bottom of the box between the edge of the mounting bracket and centered on one of the vertices rather than centering it on a side. It may be best to choose a vertex that does not have a cover mounting screw post on the

inside of the box. This way, the cover screw mounting post will not interfere with the connector mounting screw closest to the edge of the box.

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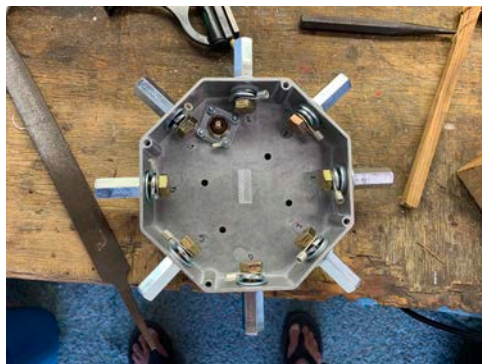
The holes can be drilled in the bracket and the bottom of the box. To complete the mounting bracket, the U-bolts are used to mark the locations of the U-bolt mounting holes and the holes are drilled through the mounting bracket. Check the location of the holes for the U-bolts on the pole you wish to use to insure a good fit to the pole.

A step drill is used to drill the center hole for the SO-239 connector. A regular drill bit can be used and the hole can be filed to size. If you end up filing the hole and it comes out other than round, you may wish to mount the SO-239 connector on the outside of the hole so that the flange covers the hole. It is a good idea to mount the connector at this point.



Next, drill the holes to mount the shaft couplers. Caution: four of the holes will be 3/8" and the holes opposite them will be 1/2". Using the location of the SO-239 connector as a reference, drill four successive holes using a 3/8" drill bit. The remaining holes (opposite the 3/8" holes) should be 1/2". The lugs on the bolts in the 3/8" holes will be connected to the shield side of the coax while the lugs opposite these will be connected to the center conductor of the coax and insulated from the hub.

The edges of the half-inch holes should be deburred, chamfered or filed slightly larger, so that the insulating shoulder washers will fit. Place a shoulder washer on each side (inside and outside) of the four 1/2" holes. If the part of the washer that extends into the hole is too tall, it may need to be sanded, ground down, or very carefully trimmed with a hobby knife in order to fit the thickness of the octagon enclosure.



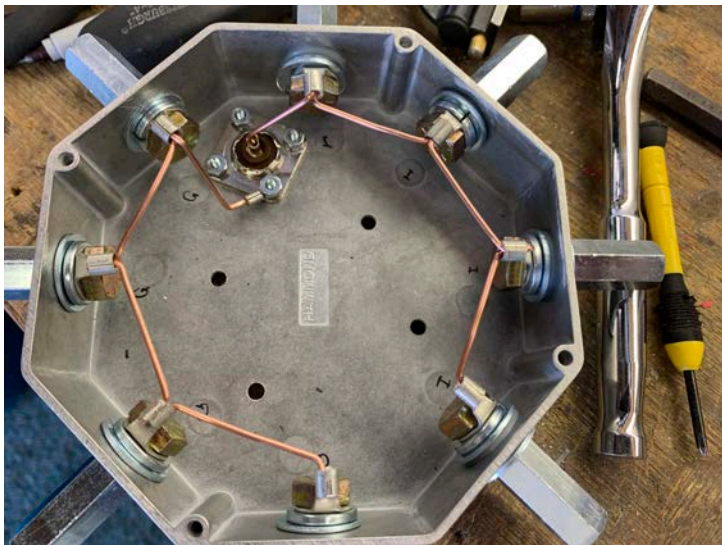
Hardware assembly is the same for all holes both with and without shoulder washers. Slide a 3/8" ring terminal onto the bolt (flat side first), a lock washer, then a flat washer. Place the bolt through the hole or insulating shoulder washers in the hub from the inside. It may seem like the ring terminal is being placed onto the bolt backwards but this will allow the ring terminal to be bent back over the bolt head at a right angle. On the outside of the box, slide a flat washer and then the shaft coupler onto the bolt and hand tighten. Position the ring terminals at the top of each bolt and bend them over at a right angle. Be sure the hub cover will not make contact with the ring terminals. If you find the terminals will not bend over all the way, you may need to turn them around on the bolt or rotate them slightly so they will not short circuit against the hub cover. Notice the letters "G" for ground and "I" for insulated written below each bolt in the photo.

Next, connect the four insulated lugs, "I" on one side of the SO-239 connector together and connect them to the center connector of the SO-239 connector. Likewise, connect the four grounded lugs, "G", together and connect them to a lug under one of the connector mounting screws. Use a large soldering iron or soldering gun to solder the wires to each terminal lug. We used an 80 watt pencil type soldering iron. Since the bolts will sink much of the heat, a large iron is required. Be sure to solder the ground wire to the lug at the SO-239 connector.

Finally, make a good visual inspection of your hub to be sure that none of the wiring will touch the cover once installed. When mounting hamsticks, you will screw them into opposite positions so that one will be internally connected to the center of the coax and one to the ground.

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Below is the completed hub with 20m and 40m hamsticks mounted on an Ace Hardware fiberglass painter's pole. **Warning**, if using a painter's pole, it may take a little searching to find an all fiberglass version. Aluminum top section versions may interact with the hub and the hamsticks.

TUNING and TESTING UPDATE: The Octopus antenna design is a horizontal version of a traditional vertical fan dipole. As such, you tune it just as you do any dipole, lengthening or shortening the length of each pair of hamsticks. With the hamstick whips, it is easy to move the wire 'stinger' in an out for resonance. The use of an antenna analyzer will make the tuning much easier.

We have taken the Octopus antenna out in the field. With the hamsticks picked up at the September Swap and Shop, we had to lengthen the 40 meter hamsticks beyond their set-screw/ferrule length limit. We added additional wire with

alligator clips and pigtails added. Your mileage may vary depending on antenna height, hamstick brand, length of stingers, soil makeup, solar sunspot activities and blind luck. After tuning this antenna system, with a height of 12', we made contacts from New Hampshire to Japan one afternoon running 100 watts at one of our favorite locations on the rim.

Build it, save some money and have fun! [Click here](#) for a printable, easy to follow, stand-alone pdf article, complete with a hardware build list.

Have fun homebrewing,

Greg, AJ6FN

