



# MTARA NEWS



## President Lorna's KJ6GFS Message

Hello, MTARA members ~~

Well, July has certainly been and continues to be a busy month for the club. Field Day, Fourth of July Fireworks, our first in-person meeting in months, and the Association of Mountain Volunteer Organizations recruiting day have given our members plenty to do. August promises to be just as busy, with our monthly meeting, Mountain Top Days Parade, Tour de Big Bear, and the two-day Kodiak 100.

A reminder ~~ there are several nets throughout the week that we encourage all members to participate in. In addition to assuring yourself that your radio is ready to handle emergency communications (one of MTARA's primary reasons for being) it's a good means of staying in touch with fellow hams. The local weekly nets are listed elsewhere in this newsletter. Please take a look.

I hope to see many of you at the upcoming events. They're always fun, as well as being great learning experiences for many of us.

Seven-Three, Everyone ~~ Lorna



### Officers

- **President:**  
Lorna Polley, KJ6GFS
- **Vice-President:**  
Chet Olson, AE6CO
- **Treasurer:**  
Nancy Karlson, K6CUB
- **Secretary/Newsletter**  
Debbie Johnson, WB6LVC
- **Ed/Membership:**  
Tracy Lenocker, WM6T
- **Past Presidents:**  
John Snedden, KT7P  
Vic Marquez, KK6WKI

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

## Monthly Club Meetings

Club meetings are held on the first Tuesday of each month. The meeting begins at 7:00 p.m. and lasts until approximately 9:00 p.m.

Our meetings are open to everyone; so bring a friend, and keep the hobby growing. There is always a presentation that will pique your interest and add to your knowledge.

All upcoming meetings, beginning with July 5, 2022, will be held at the Lake Arrowhead Community Presbyterian Church, 351 South State Highway 173, Lake Arrowhead, CA 92352

## Membership

Membership in MTARA is open to any individual interested in learning more about Amateur Radio. An FCC issued license is not required, but is encouraged. Membership is on an annual basis, running for the calendar year. There are no prorated membership fees. Club fees are \$20.00 for a single membership and \$30.00 for a family membership. The necessary forms can be found on the club's home page @ MTARA.club. Current members only need to send in their dues to MTARA, PO Box 2441, Lake Arrowhead, Ca. New members will need to download and send in their forms and payment to the same address.



## TREASURER'S REPORT

Our ending June Balance was

\$9,295.00

73, Nancy K6CUB

# Local Weekly Nets

	Repeater	Time	Activity	Purpose
<b>Monday</b>	MTARA—2	7:00 p.m.	Weekly Check-In	MTARA News
<b>Monday</b>	144.330 MHz	8:00 p.m.	“Gordo Net”	Simplex Readiness
<b>Tuesday</b>	MTARA—5	7:00 p.m.	“Debbie Net”	Educational Topics
<b>Wednesday</b>	HF	7:30 p.m. First Wednesday	7.223 MHz	Band(s) Status
<b>Friday</b>	MTARA—5	5:00 p.m.	YL Happy Hour	It’s Friday
<b>Daily</b>	CBARC	7:00 a.m.	Tech. Net	Elmer Sessions

## Upcoming Calendar Of Events

- July 23-28—YOTA Contest (CW and Phone)
- August 5—Mountain Top Days Parade
- August 6—Tour de Big Bear
- August 19-20— (Friday and Saturday) - Kodiak 100
- October 8—Big Bear Gran Fondo
- October 14-16—Pacificon Amateur Radio Convention, San Ramon, CA

## Tour de Big Bear 2022 by WM6T

2022 is starting off with plenty of planned events requiring radio communications. We already supported the Arrowhead Lake Association (ALA) 4<sup>th</sup> of July fireworks (on July 3<sup>rd</sup>) and in a few weeks on August 6<sup>th</sup> is one of our largest events the Tour de Big Bear bicycle ride (TdBB).

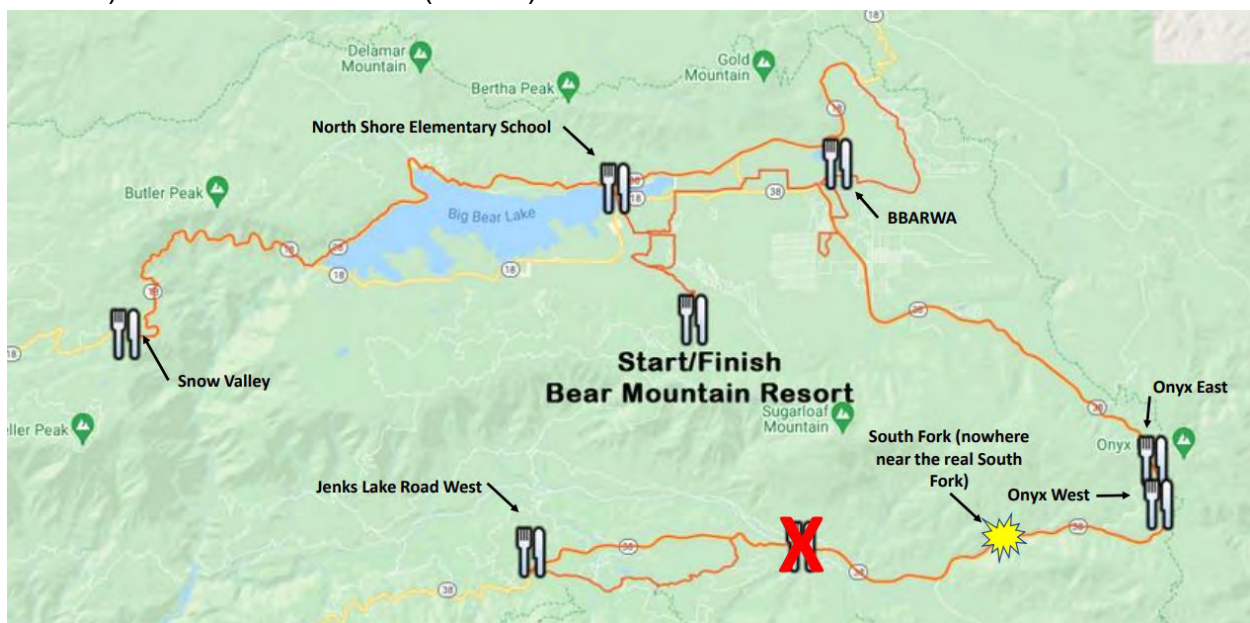
This year they expect around 1500 riders on 25, 50, 70 or 100 mile courses. A copy of the map of the 100-mile ride is in this newsletter to give you an idea of the distances and hill climbs like up Onyx Summit twice on Highway 38. There are Aid Stations along the way with water refills and other nourishing refreshments and of course a chance to rest a bit.

There will be 35 radio operators on the course this year. 34 are from MTARA and we have one who is from the County's SAR team. There will be 2 or 3 radio operators (RADO) at each of the radio posts at the Aid Station locations. The command post will be at Bear Mountain Ski Resort where Dede, K6DDZ will be our Incident Commander In-Training. We will be doing a lot of training for other club members at that location as well.

We will have 5 radio operators one in each the five SAG vehicles and another 2 radio operators in the two Transport vehicles. Four of the vehicles will have APRS units. We will have one operator as a shadow for the event manager and another radio operator at the start/finish line.

These events are our opportunity to practice setting up radio communications in case of emergency. Setting up in the mountains is different than in the valley or desert because you must have compact equipment to be easily deployed and be cognizant of weather and elevation conditions. This is our training as well as helping the community and providing safety to the volunteers and participants.

There will be more opportunities for MTARA members to help with radio communications and get training at Mountain Top Days (Aug 5), the Kodiak 100 (Aug 19&20) and the Gran Fondo (Oct 5<sup>th</sup>).



# Amateur Radio Exams Now Online or In-Person!

## No Paper! All Electronic! Very Cool!

with K6DDZ & AA6GJ

Now that MTARA is back in-person for meetings, amateur radio testing will be offered before each meeting. Testing will cover all three elements (Technician, General and Amateur Extra). Remote (online) testing is also available by appointment.

Registration should be completed online so we can plan for our session. Walk-ins may be accepted if time permits. Space is limited.

### To Register:

**\*Go to HamStudy.org to “Find a Session.”**

**\*Choose the MTARA Monthly Meeting by Choosing Your Location or Zip Code.**

**\*Register: Please make certain that your address matches the information in the FCC website. A photo ID will be required for testing.**

**\*Payment of \$14.00 CASH will be collected during the test session.**

Testing will be on tablets which will be provided. There will be no paper tests. Anyone may also test on their own tablet, laptop or phone. Calculators are permitted. Results will be immediate.

If you have any questions about testing or problems setting up your FCC Registration Number, please contact [DedeK6DDZ@gmail.com](mailto:DedeK6DDZ@gmail.com).

### And if you are DTH (Down the Hill)

You can test all classes of license with the

West End Amateur Radio  
Group



That's my team AA6GJ and the Group

If you are interested drop me an email at [AA6GJ@arrl.net](mailto:AA6GJ@arrl.net) to set a time, either online or in-person or to just get information. We can help you with your FRN, too.

73,

Gary

<https://GaryRJohnson.org>



## Field Day 2022 by WB6LVC

This year, Field Day was held on Saturday, June 25<sup>th</sup>. at The Masonic Lodge in Twin Peaks. As in past years, there was a Welcome Tent in the parking lot where members and guests checked in to receive information, raffle tickets and their Adventure Pass. The point of the Pass was to help people maneuver from one location to the next. It also entitled them to another raffle ticket! There were 11 stations to visit. They included: Morse Code, Circuits, Emergency Communication, Solar Power, soldering, Anderson Power Poles, SOTA and POTA operations, setting up Antennas, FT8 operations in the Field and taking part in operating stations that were on the air. All the stations were very busy throughout the day. Along with these Elmer sessions, there was the "Free" and "For Sale" table to check out. Always a popular stop!

Of course, you can't have a Field Day without food. The morning set-up team was treated to breakfast burritos and beverages. At lunch, everyone present had a great lunch of various sandwiches, chips, soda, cookies, and lots of excellent sides. When the day came to a close, those remaining to clean up, had an excellent meal of Mexican food from the same group that we have used in the past. This time, it was set up as a buffet inside the lodge. It was all so yummy! And there was dessert...so good. Flan and terrific ice cream sundaes. What more could you ask for!

Beside all the activities, it was just so nice to see so many people in person. The comradery of our hobby is strong. Field Day gives us another day to prepare for emergencies, learn more about Ham Radio, the equipment and operations and build more interest within the surrounding locations. Thanks so much to all who did preparations, set-up, presentations and closing for this awesome day. Looking forward to what will occur in 2023.



73, all!



## Ponder the Pool by AA6GJ

**Ponder the Pool** is a way for us as Amateur Radio Enthusiasts to dive into selected questions more deeply from each of the current FCC pool of questions used to create the randomly generated Examinations for the Technician, General, and Amateur Extra License. Ponder the Pool is helpful to individuals who are studying for an exam or simply to review concepts that we have already learned.

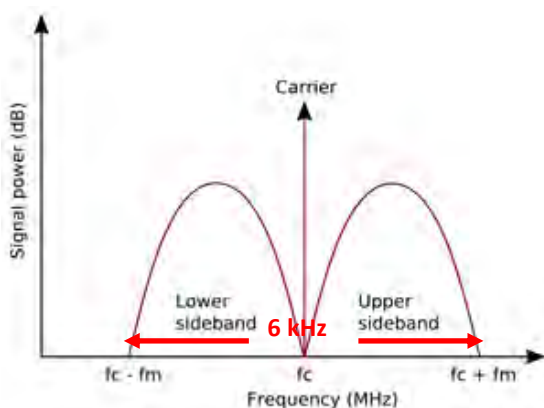
**Because, as we know, if we don't use it, we lose it.**

The question we will ponder today comes from the current General Class pool.

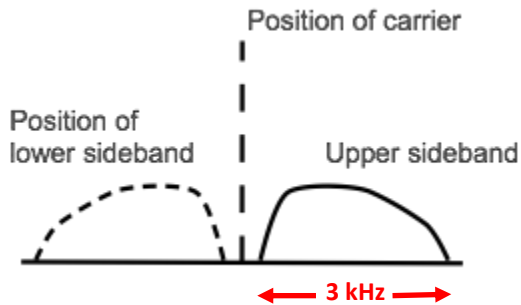
Question: [G2A09 – Why do most amateur stations use lower sideband on the 160-meter, 75-meter, and 40-meter bands?](#)

This is a great question. Why do we have to use lower sideband on 160, 75, and 40, while all the rest is upper sideband, except, of course for 60-meters which is upper sideband. Who came up with this idea in the first place? As we know, most modern HF amateur equipment allows us to select LSB and USB, and more often than not, the rig changes the sideband automatically for us when we select the band we want to operate. After some research, I discovered a very interesting historical event that may have been the seminal event that started this “gentleman’s agreement.”

Up until the 1930's we had wideband spark-gap transmitters. Vacuum tubes came along which allowed hams to operate Morse code over CW on specific allocated frequencies. Other hams started experimenting with transmitting voice (AM) over the airwaves, too. Single sideband operation created minor interest in the 1930's. During World War II, all amateur activities halted in Europe as well as Canada. In 1940, the United States government issued an order prohibiting U.S. hams from communicating with any foreign stations. They were allowed operations above 56 MHz. After the attack on Pearl Harbor, all amateur activity in the U.S. was no longer allowed. Interestingly enough, VHF operations on 112 MHz was allowed by hams that were operating under the authority of the War Emergency Radio Service. During wartime there were about 60,000 hams. It was estimated that 25,000 of those operators were serving in the armed forces. After the war in the late 40's and early 50's, the ban on hams was lifted. The ham bands became very crowded with AM (Amplitude Modulation) signals. Remember, AM is double sideband with a carrier. It takes up 6kHz of bandwidth. Both the upper and lower sidebands are 3 kHz wide each.



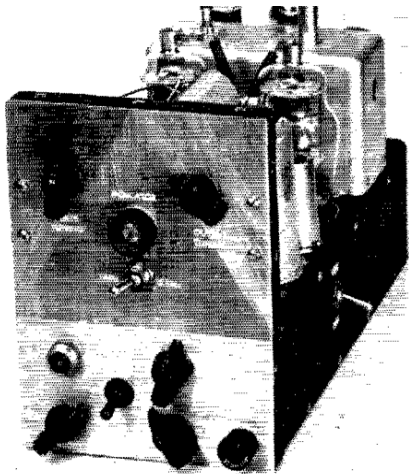
The illustration to the left represents a typical AM signal with the carrier frequency and the upper and lower sidebands displayed in the frequency domain. Wouldn't it be great if we could figure out how to just transmit one of those sidebands without the carrier? That would only be 3 kHz wide and no carrier to eat up the power. It would sure save a lot of space on the band and allow more operators to be on the air. That's how we came up with Single Sideband transmission. The carrier and one of the sidebands would be suppressed.



The illustration on the left shows us transmitting the upper sideband (solid line) while suppressing the carrier and the lower sideband (dashed lines).

But why did we choose to use the lower sideband on only 40, 75, and 160 meters?

Hold on, the story gets better.



This two-band mobile s.s.b. transmitter is capable of up to 100 watts peak output, depending upon the power supply. Built on the chassis of a BC-458 transmitter, it uses the original VFO portion and the two output tubes. The phasing type of s.s.b. generation is used, and the audio amplifier has adequate gain for use with a crystal microphone.

On the panel, the upper knobs control output stage tuning and loading. The indicator light is used instead of a plate milliammeter, and the upper toggle switch is one of the two band switches. (The other bandswitch can be seen on the right-hand side of the chassis.) The lower left-hand knob is for the audio gain control, the toggle switch selects the sideband, and the two pointer knobs next to the switch are for carrier balance adjustments of the balanced modulator. The remaining knob tunes the VFO.



## Cheap and Easy S.S.B.

*Sideband Exciter Built Around the BC-458*

BY ANTHONY VITALE,\* W2EWL

In the March 1956 QST, a gentleman named Anthony Vitale, W2EWL SK, published an article entitled "Cheap and Easy S.S.B." He describes how he took a military surplus CW, AM radio (BC-458 predecessor to the ARC-5 Command Set) and made some interesting changes to it. These radios were comparatively

small and were deployed in Navy and Army aircraft and were used to communicate from aircraft to aircraft and ground control. As we all know, hams are very frugal. These radios were ubiquitous after WWII and could be picked up for around \$8.00. That was a great price even in 1956!

In his technical article he describes how he redesigned and modified this radio to create a Single Sideband Transmitter. Hold on, this gets a little technical. I'm going to describe the how in relatively simple terms. The "how" really isn't as important as the "why", so here goes. He took a 9 MHz upper sideband phasing generator, tweaked for optimum suppression on the lower sideband. He used a 9 MHz crystal oscillator. The BC-458 Radio had a 5 MHz VFO. The idea was to sum the 9 MHz USB signal and 5-5.5 MHz VFO to work on 20 meters. ( $9 + 5 = 14$  MHz thus 20 meters.)

Sum mixing does **not** invert the USB signal. It used difference mixing to work on 75 meters, causing the USB signal to be inverted to LSB. ( $9 - 5 = 4$ , the high end of 75 meters and  $9 - 5.5 = 3.5$ , the low end of 80 meters) The upper sideband stayed upper sideband (stayed on 20 meters), but because of the difference mixing, the upper sideband flopped over to the lower sideband, thus 75/80 meters became lower sideband.



So, the bottom line here is since, at this point in history, commercial SSB rigs were virtually nonexistent, the scheme in his article took off, and many hams built these early SSB rigs. Many hams were using this scheme and therefore were kind of stuck with these two bands. In later years, when more sophisticated designs were implemented, USB and LSB became switchable on any band, but in order to communicate to the die-hard hams that had the ARC-5 conversion SSB Radio, they had to comply and meet them on their ground. A “gentleman’s agreement” was established that all hams communicating on 75 meters would switch to lower sideband and all hams communicating of 20 meters would switch to upper sideband in order to have the ability to communicate with the converted equipment. Later on, to simplify matters more, it was decided to agree that all frequencies below 10 MHz would be LSB and all frequencies above 10 MHz would be USB. The exception to this, of course, is 60 meters, the 5 channelized frequencies that are basically around 5 MHz. We are secondary on this band. The military is primary, and since the military operates mostly upper sideband, 60 meters is upper sideband.

The story doesn’t really end here. We haven’t discussed how we receive a SSB signal. Remember most receivers of the day received only AM signals. AM signals still have a carrier, so it was easy for the receiver to locate and tune in the frequency and then demodulate the audio. But with SSB there is no carrier. The carrier is reinserted using a device know as a Beat Frequency Oscillator (BFO), Basically, this oscillator reinserts the carrier back in on the receiver side. We will talk more about a BFO in a later Ponder the pool. Without the BFO, all you would hear from a SSB signal is a bunch of mush or, as some said, it sounded like a bunch of “Donald Ducks”.

So, there you have it, how a “gentleman’s agreement” turned in a standard operating procedure, or as we now call it “good amateur practice”.

That is why the official answer to this question is:

*G2A09 – It is good amateur practice.*

That’s *Ponder the Pool* for another month. I hope it was helpful. Stay tuned, next month we will come up with another question to ponder. 73 – Gary  
If you have any questions or comments, drop me an email at [AA6GJ@arri.net](mailto:AA6GJ@arri.net)

This is an R-23A/ARC 5 Transmitter part of an ARC-5 Command Set which would have had a matching receiver. Notice the Dynamotor on the back of the transmitter. It was a compact “generator” that brought the 12 volt aircraft voltage up to 28 volts required for the transmitter. ARC is an acronym for Aircraft Radio Corporation.



## Mountain Top Amateur Radio Association

### The Amateur's Code 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 clubs 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 commu-

## MTARA Shirts, Jackets, and More

We have many items available with our club logo.

The information for ordering is as follows:

- Name Tags—Harlan Technologies, Name Tags by Gene (715) 340-1299, [www.hampubs.com](http://www.hampubs.com)
- Mouse Pads—Check with Jodi, WA6JL
- Polo Shirts—Port Authority K420P Dark Green, L420 Dark Green, K100LS Dark Green.
- Jackets—Forest Green or Black. Sizes Small to 6X
- Contact:

Hurt Ink

2651 Coleen Lane

San Bernardino, CA 92407

(909) 815-6852

[hurtink815@gmail.com](mailto:hurtink815@gmail.com)

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

