



MTARA NEWS



President Lorna's KJ6GFS Message

Hello, MTARA members ~~

Life is getting back to normal for mountain residents who were challenged by the collapse of Highway 18 **about a mile below Highway 138** in late December. CalTrans did an incredible job of repairing the highway to allow for, at first, escorted one-way traffic through the damaged area, to full two-way traffic flow, within just weeks of the storm that caused the damage. Original estimates of the time to repair the roadway had been **possibly** months. Thank you, CalTrans!

January and February have been busy months for many MTARA members. Last month's Quartzfest was attended by several members of our club, who enjoyed roughing it on BLM land to enjoy numerous seminars organized by our own Tracy (WM6T). February brings the Yuma Hamfest, the ARRL-sanctioned confab (it's been called a trade show) for amateur radio enthusiasts. In addition to displays of the latest radio equipment, it also offers to the general public important information regarding all facets of disaster prep, including communications. This Hamfest is a little more "genteel" than Quartzfest, in that it is held on the Yuma County Fairgrounds, offering indoor displays and paved parking. But it's still fun!

Speaking of fun, former President Vic (KK6WKI) has consented, at Secretary Debbie's (WB6LVC) insistence, to train me in the rain dances that Vic very successfully performed over the winter to bring so much needed precipitation to our Southland. Vic's trainer (his grandson) may be involved in my instruction. Watch for video evidence of the talent being lent to this important effort.

Our monthly MTARA meetings will continue to be conducted via Zoom until further notice. Hope to "see" you all on Zoom.

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. Meeting begin at 7:00 p.m. and last 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.

Until further notice, all meetings will be held on Zoom. When this changes you will be notified of the location.

See you on Zoom!

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 January Balance was

\$11,874.27

73, Nancy N6CUB

Winter Field Day—2022 by K6WDE

Winter Field Day (winterfieldday.com), while similar to the June Field Day, gave me a chance to exercise my portable equipment on Saturday and Sunday, January 29 and 30 in Bullhead City AZ. I played as K6WDE/7. This year, the maximum power was 100 watts for all participants, helping to level the playing field throughout the United States and Canada.

I built a 40-10 meter delta (triangular) loop just for the event. It was located about 12 feet high, 26 gage wire (for stealth HOA mode) and fed with 450Ω ladder line. It was held up with 16 foot crappie poles from Bass Pro shop. My portable propane heaters and table were in place, my intention was to run as "1 oscar - AZ" (a 1 radio station operating "outside") on battery power for as much of the 24 hour period as possible. My Renogy 100 watt solar panel, GenaSun GV-10-Li solar panel controller and Bioenno 30Ah LiFePo battery were in place as well.

Well, mother nature did not cooperate and with the winds projected to gust to 50+ mph (they did), I was forced to become a "1 hotel - AZ" station (a one radio "home" station) and I played from the warmth of my heated garage, but still with the battery and solar panel. The antenna switched to my go-to homebrew stealth 40 - 10 meter end-fed half wave in a sloper configuration with the tip end about 21 feet above the ground and the transformer about 2 feet off the ground. This antenna is fed with 50' of RG8x coax. The ICOM IC-7300 internal tuner handled the SWR trimming.

My 7300 ran at its full 100 watts in SSB mode. I periodically moved the solar panel pointed at the sun, but with a cloudy Saturday, my charging rate was reduced. Sunday I ran without the solar panel.

In addition to making contacts, another purpose of this activity was to gather new data on my power consumption with the use of the full 100 watts. QRP batteries, I have, the question was how long can I last at full power with just the Bioenno 30 Ah battery. I played on the 15, 20 and 40 meter bands throughout the event. To stress the system, I spend about 80 of the time calling CQ and about 20% chasing other operators. On Saturday, I started at 11 am and stopped at 6 pm for dinner. I resumed about 7:45 pm and played for another 1/2 hour. My total time for Saturday was 7.5 hour and my Hobby King HK-010 power analyzer showed I consumed 23.88 Ah. The WF rules state that you can recharge your batteries on house power, but not during radio transmission use. I recharged it overnight. On Sunday, I played from 6:30 am to 11 am and consumed 14.11 Ah for that 4.5 hour period.

In summary, Saturday: 23.9Ah/7.5 hr \approx 3.19 Ah/hr Sunday: 14.11 Ah/4.5 hr \approx 3.13 Ah/hr Total: 38.0 Ah/12 hr \approx 3.16 Ah/hr

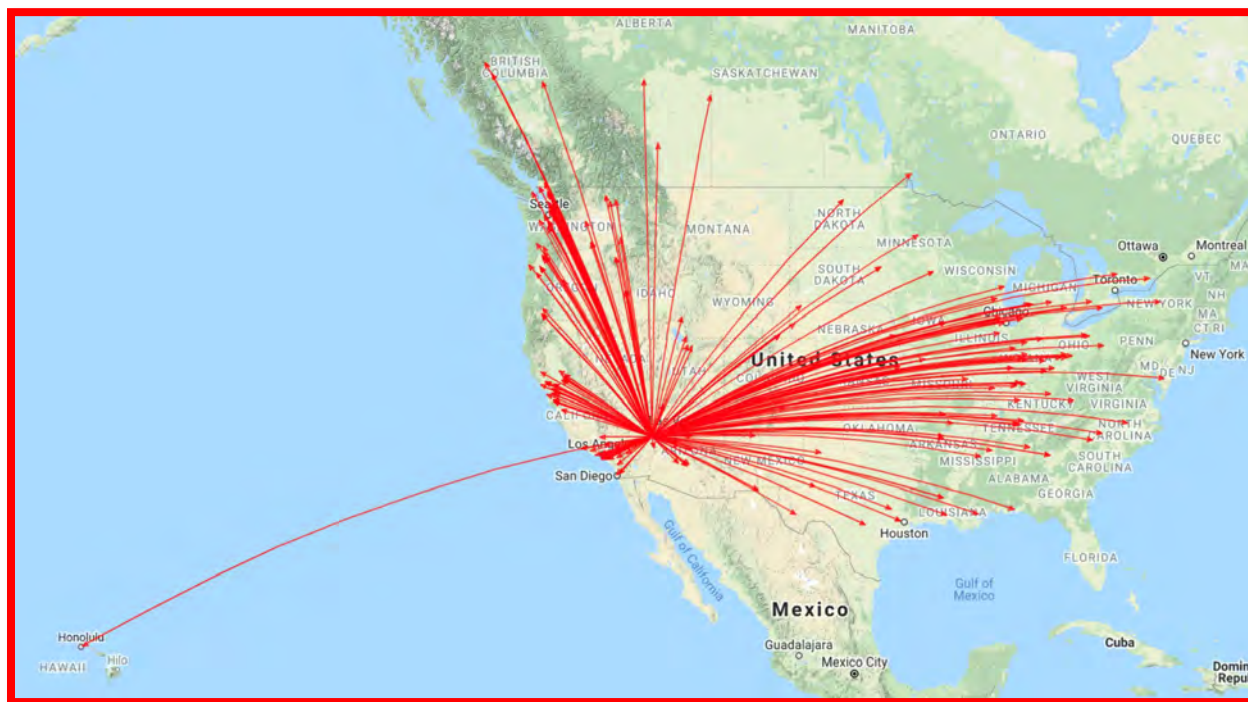
The battery is rated at 30Ah, so $30\text{Ah}/3.16\text{Ah/hr} = 9.5$ hours

I made 210 SSB contacts throughout my 12 operational hour period. The go-to band for me was 15 meters, next was 40 meters and finally 20 meters. My QSOMAP.org is show below.

I had a blast. My calling "CQCQ" QSO pacing was just right. Chaser responses were not too fast, not too slow! In conclusion, for my operating style and given 30Ah battery source, I can easily run at 100 watts for 9 hours or so!

Get out there and get radio-active!

Dave, K6WDE



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.	"Debbie Net"	Educational Topics
Wednesday	HF	7:30 p.m. First Wednesday	7.223 MHz	Band(s) Status
Friday	MTARA—5	5:00 p.m.	YL Happy Hour	It's Friday
Daily	CBARC	7:00 a.m.	Tech. Net	Elmer Sessions

Upcoming Calendar Of Events

- February 18th-19th—ARRL Southwestern Division Convention, Yuma, AZ
- February 19-20th—ARRL International DX Contest (CW)
- March 1st—Club Meeting on Zoom @ 7PM
- March 12-13th—QSO Today Virtual Ham Expo
- March 13th—Daylight Savings Time starts
- April 9-10th Baker to Vegas Challenge Cup Run

YL Contest for 2022 by WB6LVC

Throughout the year there are numerous contesting events in our hobby. Hams participate in POTA, SOTA, CW and so many more events held all around the world. The YLRL organization holds a yearly contest for their club members exclusively. Each year they pick a theme such as favorite flower, favorite bird, and the like. This year, the contest is "Favorite Vacation Spot." The rules are simple: pick a favorite vacation spot and share it with 15 YLs on the air. The contest runs from January 1st through December 31st. Contacts can be made on any band or Echolink. A log must be kept and submitted to YLRL/Certificate Manager no later than January 31, 2023. A log is available on the YLRL website which is ylr.net. Along with the yearlong contest, they also offer other events that can be found on the same site. Having fun contesting! 33, one and all.

Debbie—WB6LVC



Making a Difference by KJ6FQP

Amateur radio operators have been voluntarily supporting emergency communications for a long time, since at least 1912. The primary reason I became a licensed General operator in 2010 was for the purpose of being able to help provide emergency communications. Repeater networks are essential to those communications. So, upon learning of a federal plan to assess \$1400 fees to owner-operators for repeaters located on National Forest Service land, I was compelled to learn more about it.

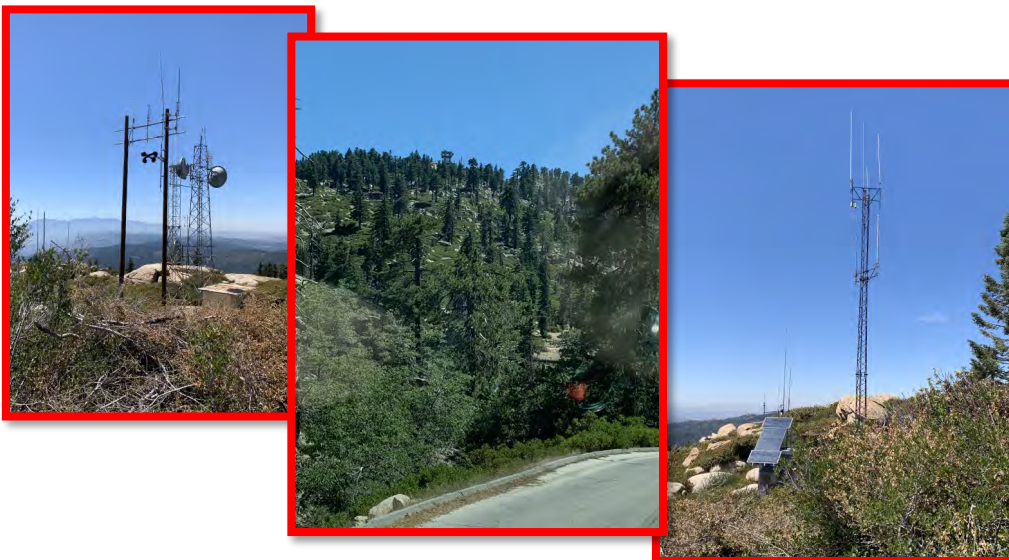
My public health nursing education taught me that it is not difficult to have an effect on public policy. In the past I twice travelled to Sacramento during my tenure as a Public Health Nurse-II, to address lawmakers on behalf of bills that would affect the patient populations that I was concerned about. It wasn't hard to do, and it was a great satisfaction to be part of making a difference. *And I did!*

When I found out that public commentary is being solicited regarding the NFS proposed fees, I wanted to participate. I read as much as I could about it. Then I decided to put together a letter to oppose the fees. I shared and submitted it in my hope to have an impact that might discourage the proposed fees.

If others wish to write their own commentary or letter, an easy link is provided here to help make it easy to locate the exact place to do so online. We have nothing but a little time to lose by sending in a few of our own sentences in support of our repeater network community, which supports emergency communications. At least we might have the satisfaction of knowing that we did what we could.

The reference ID for the proposed fees is RIN 0596-AD44, which must be included with any correspondence. This Link goes directly to the comment page for the issue: <https://www.regulations.gov/search?filter=0596-ad44>. The submission window remains open until February 22nd.

73, Assunta Maria Vickers, KJ6FQP



Ponder the Pool by AA6GJ

Ponder the Pool is my column for the MTARA Newsletter. Every month I pick a point to ponder (a 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 time, we will ponder a question from the Technician Class pool:
Question No. T0C06 (Pg. 198 in Gordo’s Technician Book)

T0C06 – Which of the following is an acceptable method to determine that your station complies with FCC RF exposure regulations?

There is a lot of information about this question on the internet. One of the better locations to get all of the information you will ever need is here <https://www.arrl.org/fcc-rf-exposure-regulations-the-station-evaluation> from the ARRL.

I am not going to try to reinvent the wheel about this in the article; rather I will point you to the fact that it isn’t usually a problem for most of us. If you really want to get technical, and I know you don’t, you could always download Bulletin 65 from the FCC here <https://www.fcc.gov/general/oet-bulletins-line> and go through all of that red tape, or you could buy some expensive and highly involved antenna modeling software and go through all of those calculations if you want. But really all the Commission wants is for us to be safe and to keep our neighbors safe by not being too close to our antennas while we are transmitting. The quickest and easiest way to check for Maximum Permissible Exposure (MPE) is to use the following chart that you can find in Gordon’s Technician Class and General Class Manuals.

Technician Class

Amateur Radio operators should also be aware that the FCC radio-frequency safety regulations address exposure to people — and not the strength of the signal. Amateurs may exceed the Maximum Permissible Exposure (MPE) limits as long as no one is exposed to the radiation.

How to read the chart: If you are radiating 500 watts from your 10 meter dipole (about a 3 dB gain), there must be at least 4.5 meters (about 15 feet) between you (and your family) and the antenna — and a distance of 10 meters (about 33 feet) between the antenna and your neighbors.

Medium and High Frequency Amateur Bands

All distances are in meters

Freq. (MHz/Band)	Antenna Gain (dBi)	Peak Envelope Power (watts)							
		100 watts		500 watts		1000 watts		1500 watts	
		Con.	Unc.	Con.	Unc.	Con.	Unc.	Con.	Unc.
2.0 (160m)	0	0.1	0.2	0.3	0.5	0.5	0.7	0.8	0.8
2.0 (160m)	3	0.2	0.3	0.5	0.7	0.6	1.06	0.8	1.2
4.0 (75/80m)	0	0.2	0.4	0.4	1.0	0.6	1.3	0.7	1.6
4.0 (75/80m)	3	0.3	0.6	0.6	1.3	0.9	1.9	1.0	2.3
7.3 (40m)	0	0.3	0.8	0.8	1.7	1.1	2.5	1.3	3.0
7.3 (40m)	3	0.5	1.1	1.1	2.5	1.6	3.5	1.9	4.2
7.3 (40m)	6	0.7	1.5	1.5	3.5	2.2	4.9	2.7	6.0
10.15 (30m)	0	0.5	1.1	1.1	2.4	1.5	3.4	1.9	4.2
10.15 (30m)	3	0.7	1.5	1.5	3.4	2.2	4.8	2.6	5.9
10.15 (30m)	6	1.0	2.2	2.2	4.8	3.0	6.8	3.7	8.3
14.35 (20m)	0	0.7	1.5	1.5	3.4	2.2	4.8	2.6	5.9
14.35 (20m)	3	1.0	2.2	2.2	4.8	3.0	6.8	3.7	8.4
14.35 (20m)	6	1.4	3.0	3.0	6.8	4.3	9.6	5.3	11.8
14.35 (20m)	9	1.9	4.3	4.3	9.6	6.1	13.6	7.5	16.7
18.168 (17m)	0	0.9	1.9	1.9	4.3	2.7	5.1	3.3	7.5
18.168 (17m)	3	1.2	2.7	2.7	6.1	3.9	6.6	4.7	10.8
18.168 (17m)	6	1.7	3.9	3.9	8.6	5.5	12.2	6.7	14.9
18.168 (17m)	9	2.4	5.4	5.4	12.3	7.7	17.2	9.4	21.1
21.145 (15m)	0	1.0	2.3	2.3	5.1	3.2	7.2	4.0	8.8
21.145 (15m)	3	1.4	3.2	3.2	7.2	4.6	10.2	5.6	12.5
21.145 (15m)	6	2.0	4.6	4.6	10.2	6.4	14.4	7.9	17.6
21.145 (15m)	9	2.9	6.4	6.4	14.4	9.1	20.3	11.1	24.9
24.99 (12m)	0	1.2	2.7	2.7	5.9	3.6	8.4	4.6	10.3
24.99 (12m)	3	1.7	3.8	3.8	8.4	5.3	11.9	6.5	14.5
24.99 (12m)	6	2.4	5.3	5.3	11.9	7.5	16.8	9.2	20.5
24.99 (12m)	9	3.4	7.5	7.5	16.8	10.6	23.7	13.0	29.0
29.7 (10m)	0	1.4	3.2	3.2	7.1	4.5	10.0	5.5	12.2
29.7 (10m)	3	2.0	4.5	4.5	10.0	6.3	14.1	7.7	17.3
29.7 (10m)	6	2.8	6.3	6.3	14.1	8.9	19.9	10.9	24.4
29.7 (10m)	9	4.0	8.9	8.9	19.9	12.6	28.2	15.4	34.5

Appendix

VHF/UHF Amateur Bands

All distances are in meters

Freq. (MHz/Band)	Antenna Gain (dBi)	Peak Envelope Power (watts)							
		50 watts		100 watts		500 watts		1000 watts	
		Con.	Unc.	Con.	Unc.	Con.	Unc.	Con.	Unc.
144 (2m)	0	1.0	2.3	1.4	3.2	3.2	7.1	4.5	10.1
144 (2m)	3	1.4	3.2	2.0	4.5	4.5	10.1	6.4	14.3
144 (2m)	6	2.0	4.5	2.8	6.4	6.4	14.2	9.0	20.1
144 (2m)	9	2.8	6.4	4.0	9.0	9.0	20.1	12.7	28.4
144 (2m)	12	4.0	9.0	5.7	12.7	12.7	28.4	18.0	40.2
144 (2m)	15	5.7	12.7	8.0	18.0	18.0	40.2	25.4	56.8
222 (1.25m)	0	1.0	2.3	1.4	3.2	3.2	7.1	4.5	10.1
222 (1.25m)	3	1.4	3.2	2.0	4.5	4.5	10.1	6.4	14.3
222 (1.25m)	6	2.0	4.5	2.8	6.4	6.4	14.2	9.0	20.1
222 (1.25m)	9	2.8	6.4	4.0	9.0	9.0	20.1	12.7	28.4
222 (1.25m)	12	4.0	9.0	5.7	12.7	12.7	28.4	18.0	40.2
222 (1.25m)	15	5.7	12.7	8.0	18.0	18.0	40.2	25.4	56.8
450 (70cm)	0	0.8	1.8	1.2	2.6	2.6	5.8	3.7	8.2
450 (70cm)	3	1.2	2.6	1.6	3.7	3.7	8.2	5.2	11.6
450 (70cm)	6	1.6	3.7	2.3	5.2	5.2	11.6	7.4	16.4
450 (70cm)	9	2.3	5.2	3.3	7.3	7.3	16.4	10.4	23.2
450 (70cm)	12	3.3	7.3	4.6	10.4	10.4	23.2	14.7	32.8
902 (33cm)	0	0.6	1.3	0.8	1.8	1.8	4.1	2.6	5.8
902 (33cm)	3	0.8	1.8	1.2	2.6	2.6	5.8	3.7	8.2
902 (33cm)	6	1.2	2.6	1.6	3.7	3.7	8.2	5.2	11.6
902 (33cm)	9	1.6	3.7	2.3	5.2	5.2	11.6	7.3	16.4
902 (33cm)	12	2.3	5.2	3.3	7.3	7.3	16.4	10.4	23.2
1240 (23cm)	0	0.5	1.1	0.7	1.6	1.6	3.5	2.2	5.0
1240 (23cm)	3	0.7	1.6	1.0	2.2	2.2	5.0	3.1	7.0
1240 (23cm)	6	1.0	2.2	1.4	3.1	3.1	7.0	4.4	9.9
1240 (23cm)	9	1.4	3.1	2.0	4.4	4.4	9.9	6.3	14.0
1240 (23cm)	12	2.0	4.4	2.8	6.2	6.2	14.0	8.8	19.6

All distances are in meters. To convert from meters to feet multiply meters by 3.28. Distance indicated is shortest line-of-sight distance to point where MPE limit for appropriate exposure level is predicted to occur.

Here's how to use this chart (I know it is explained in the chart, but I just like typing.)

For Example: If you are radiating 500 Watts from your 10-meter dipole (about 3 dB of gain), there must be 4.5 meters (about 15 feet) between you (and your family) and the antenna – and a distance of 10 meters (about 33 feet) between the antenna and your neighbors. (The red rectangle above.)

“Con.” = Controlled area. This is the area where you have control over the antenna and the radiating pattern like your backyard or roof.

“Unc.” = Uncontrolled area. This is the area like your neighbor's yard where they or anyone else has no control over your antenna and may not even know that it is there.

Another example would be for your 50 Watt mobile or base station.

The second blue rectangle at the top of the opposite page, gives us our 144 MHz or 2-meter distances. We will assume that you are radiating 50 Watts from your vertical antenna, and, for the sake of argument, your antenna has at least 3 dB of gain. (Many vertical antennas have more gain. Check the spec. sheet for your antenna.) In this case, in the controlled area, you should keep a distance of 1.4 meters (approx. 4.6 feet). In the uncontrolled area, the distance should be 3.2 meters (approx. 10.5 feet)

So, what if I'm not in compliance? Well, there are a couple of things you might want to try to remedy the problem. You might (1) lower your power or (2) move your antenna. In my case, I have a ground mounted vertical antenna which I mostly use on 40 meters with 100 Watts. It, too, has a gain of about 3 dB. Therefore, in my backyard, the controlled area, while I'm transmitting, is 0.5 meter (1.6 feet), and in the uncontrolled area, 1.1 meters (3.6 feet) So, therefore, humans would need to stay outside of those distances.

Notice something especially important here. The higher the frequency, and depending on antenna gain and power, the farther you have to stay away from the antenna. Something to think about.

To review, with respect to the Technician Class License Exam, there are three acceptable methods to determine that your station complies with FCC RF exposure regulations, 1) by calculation based on FCC OET Bulletin 65, 2) by calculation based on computer modeling or, 3) By measurement of field strength using calibrated equipment. This method, by the way, is the most expensive and time consuming of all the methods. The method we are using is not mentioned, but many or most of the above-mentioned methods was used to compile the chart we are using. So, we are good to go, and there's no need to panic about complying with the rules. I'm sure we are all just fine.

So, there you have it, the official answer to this question is:

T0C06 – All of these choices are correct.

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@arrl.net .

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 community.

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
- Mouse Pads—Check with Jodi, WA6JL
- Polo Shirts—Port Authority K420P Dark Green, L420 Dark Green, K100LS Dark Green. To order, contact Mary at Classic Images, (909) 338-2281, Tuesday through Friday. She will take your information and Callsign to be embroidered on the shirt. When completed, order must be picked at the business located at 23723 Rocky Dell Drive, Crestline, CA 92325
- Jackets—Forest Green or Black. Sizes Small to 6X For pricing and embroidery contact Mary at Classic Images same information as above.



RADIO