



MTARA NEWS



President Lorna's KJ6GFS Message

Hello, MTARA members ~~

Plans are in the works for the annual Blue Jay Parade, scheduled this year for Dec. 3. As in past years, MTARA members will be providing radio communications for the event. Some hams will be assigned to specific locations. Others will serve as shadows for various parade officials. It's always a fun event and a good training experience. Let Tracy know if you'd like to volunteer.

Quartzfest is on the (Eastern) horizon, taking place in Quartzite, Arizona, from Jan. 22 to Jan. 28. More on this in next month's newsletter.

I took Tracy's advice and visited the Bouvet Island DXpedition website. It was an exciting read. If you haven't done so yet, I highly encourage you to go to www.3y0j.no (that's a zero between the "y" and the "j"), and learn more about this incredible undertaking. I plan to go along to Bouvet Island vicariously, thanks to their frequently updated website.

Though winter is officially several weeks away, we're getting an unofficial preview with some cold weather and much-needed precipitation. Let's hope this priceless gift from above doesn't conflict with our upcoming MTARA activities.

Our next in-person meeting is Dec. 6, at 7 p.m. at the Lake Arrowhead Community Presbyterian Church.

Have a Happy Thanksgiving !

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 October Balance was

\$10,790

Income:

\$630

Expenses:

\$0

73, Nancy K6CUB

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

- November 19—November “Bug” Roundup, Sacramento, CA
14.045 MHz
- December 2—W2W Pearl Harbor Day Commemoration
7.041 MHz, 7.241 MHz, 14.041 MHz and 14.241 MHz
- December 3—Blue Jay Christmas Parade, Blue Jay, CA
- December 8—Final Moon Landing of Apollo 17 Commemoration
7.040 MHz, 7.190 MHz, 14.040 MHz, and 14.260 MHz
- January 22—28, 2023—Quartzfest 2023, Quartzsite, AZ

PACIFICON 2022 by WB6LVC

This year, Pacificon was held from October 14-16 in San Ramon, Ca. A number of our club members attended. They included Tina and Dave Bremer, Laurie and Paul Smietan and Gary and myself. Gary and I also had a special guest accompany us on our drive up to the event-Gordon West! What a great time we had, travelling with Gordo. We all shared stories about our activities in Ham Radio as well as events that occurred in our jobs and families. Gary, Gordon, and I arrived at the San Ramon Marriott on Thursday afternoon and headed to our rooms for a well-deserved rest.

Friday was the All-Day Antenna seminar. This year's speakers approached their topics differently than last year. The topics were not as much about the theory of antennas and the theorems behind how they worked; topics were more "down to earth" and basic rules and concepts for effective use of antennas. At noon, the attending members of the CRC (California Rescue Communications) net met up for lunch, an "eyeball" QSO and a great talk by Gordon. As always, he recognized the efforts of the Net Controllers, presenting awards to those who go above and beyond in their commitment to the CRC. Later that evening, Gary and I had a great dinner with a variety of people we had not seen since last year's Pacificon. It was great catching up with so many of them.

On to Saturday-The big day. As in the past, the day started with the traditional "Breakfast with Gordo". All of our MTARA club members were there to help out. Following that was the Instructor Academy. This year, Gordon had asked Gary to be a part of the presentation. Gordon wanted Gary to share about the new ability to test people "on-line"/remotely for their Ham license. It all well went very well. Many people stopped by and talked to Gary about it after the session ended. It was great to see so many people excited about this step forward in the area of testing and remote teaching. The rest of the day we spent wandering in the exhibit hall, checking out new items at the Vendor's booths and catching up with Hams.

Mid-afternoon was the YLRL (Young Ladies Radio League) Forum. A number of ladies came to share their backgrounds in the hobby. I spoke on how I went from just listening to becoming more involved in activities, even running sites during various events, being responsible for relays and all forms of traffic. It was so interesting to hear how many of the ladies had been doing community activities varying from local events to CERT training to involvement in the YLRL organization.

That evening, we all attended the banquet. Our main speaker was Dr. Seth Shostak, Senior Astronomer at the SETI (Search for Extraterrestrial Intelligence) Institute in Mountain View, Ca. From the age of 10, he began an interest in extraterrestrial life. That led to a degree in radio astronomy, writing college textbooks and giving talks annually on the subject as well as hosting SETI's weekly radio show "Big Picture Science". He has received the Carl Sagan Award for popularizing science as well as the Klumpke Roberts award for Astronomy Popularization. As you can imagine, his talk was very interesting, leading many of us to further discuss the possibility of extraterrestrial life.

Sunday morning arrived a bit too early, but many of us got up and headed out to the Swap Meet. Not as many sellers as in the past, but lots of fun stuff to look at. We packed up and headed out for the drive home, stopping at Harris Ranch, a spot Gary and I were unaware of. A big thanks to Gordon for our terrific lunch there! It definitely fueled us up for the rest of the drive home. A safe “home, sweet, home” was achieved by all who had attended. It was a great trip, a fun time at the convention and created many happy memories to be shared in the future.

Here are a few photos from the event so that you can get a feel for all that took place. Enjoy!!



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 Extra Class pool.

Question: *E9A06 – What is the effective radiated power relative to a dipole of a repeater station with 200 watts transmitter power output, 4 dB feed line loss, 3.2 dB duplexer loss, 0.8 dB circulator loss, and 10 dB antenna gain?*

Wow! That's a lot of numbers! Let's break it down. We all know nothing in life is perfect, and that goes for the equipment we build, as well. The question is asking us to find the effective radiated power (ERP) of this repeater station.

ERP is defined as the RMS power input in watts required to a lossless half-wave dipole antenna to give the same maximum power density far from the antenna as the actual transmitter. It is equal to the power input to the transmitter's antenna multiplied by the antenna gain relative to a half-wave dipole.

In power:

$$ERP = P_{in} G_d$$

In decibels:

$$ERP_{dBW} = G_{(dBd)} + P_{in(dBW)}$$

Where:

ERP = Effective Radiated Power in Decibel Watts. The **decibel watt (dBW)** is a unit for the measurement of the strength of a signal expressed in decibels relative to one watt.

$G_{(dBd)}$ = refers to the antenna gain with respect to a reference (perfect) dipole.

$P_{in(dBW)}$ = refers to the input to the transmitter's antenna expressed in dBW.

The transmitter is usually connected to the antenna through a transmission line. Since the transmission line may have significant losses (L), the power applied to the antenna is usually less than the output power of the transmitter (P_{TX}).

$$ERP_{dBW} = P_{TX(dBW)} - L_{dB} + G_{dBd}$$

So, as you see above there are a couple of ways to work this out. Let's do it the third way, in decibels, which includes our losses that appear in the question and, then we will prove our finding by finding the actual ERP. Ready? Here we go.

The first thing I like to do is get all our reference factors in the same terms. In this case decibels.

To get our transmitter power in dBW, we use this equation:

$$dBW = 10 \log_{10} Watts$$
 Watts is the power of the transmitter (200 Watts)

This is how we say this equation, "Decibel Watts equals 10 times the log base 10 of power in Watts."

This is how we set it up:

$$23.01 = 10 \log_{10} 200$$
 So, 200 Watts is 23.01 dBW

Now, let's look at the losses. We are losing power in 3 different places, the feed line, the duplexer, and the circulator. We know what the feed line is, that's our coax cable. The other two devices we'll worry about in another Ponder the Pool, but right now it's enough to know that we are losing power there. This part of the calculation is pretty easy. We just add up our losses. They are all in dB so there's no problem.

$$8 = 4.0 + 3.2 + 0.8$$
 We have 8 dB in losses.

Our antenna gain is 10 dB relative to a dipole.

Let's start equating; this is our equation from above:

$$ERP_{dBW} = P_{TX(dBW)} - L_{dB} + G_{dBd}$$
 Let's insert our factors:

Transmitter power $P_{TX} = 23.01_{dBW}$

Losses $L_{dB} = 8_{dB}$

Our Antenna Gain $G_{dBd} = 10_{dBd}$

$$25.01_{dBW} = 23.01_{dBW} - 8_{dB} + 10_{dBd}$$

Our math is fairly simple since all of our factors are in the same terms. We just add our gains and then subtract our losses. That comes out to be 25.01_{dBW} .

So great, now I have my answer in dBW. The question wants power. OK, no problem we just need to do another step. We must now convert dBW back into power. Here's how, yeah, there's another equation:

$$P_W = 10^{\frac{P_{dBW}}{10}}$$

P_W will be our final answer for ERP

The other side of the equation is, "10 to $\frac{P_{dBW}}{10}$ power." It is just a fancy exponential.

$$P_W = 10^{\frac{25.01}{10}}$$

$$316.96_W = 10^{2.501}$$
 There you have it.

The official answer to this question is:

E9A06 – 317 watts

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

P.S. Almost forgot our proof!

Here's another way to do it, and, by the way, this is the way Gordo did it in the book. This method uses power instead of dB. It's a proof for the decibels equation. The equation used is the first one in the article shown again below:

$$ERP = P_{in} G_d$$

$P_{in} = 200$ Watts (Transmitter power)

$G_d = 1.585$ (This figure is derived from subtracting the losses from the antenna gain from above. We end up with a net gain of 2 dB. ($10 - 4 - 3.2 - .8 = 2$))

Then we plug that (2) into P_{dBW} in the equation below to get a Gain of 1.585 Watts.

$$P_W = 10^{\frac{P_{dBW}}{10}}$$

$$P_W = 10^{\frac{2_{dBW}}{10}}$$

$$P_W = 10^{0.2}$$

$$P_W = 1.585$$

Then, multiply 200×1.585 .

$$ERP = 317$$

$$317 = 200 \times 1.585$$

Either way, we come up with the same answer!

Cheers Everyone!
Have a safe and
Happy Thanksgiving!!
GJ & LVC



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.

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 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>

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
- 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

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www.hurtink.com

