



# MTARA NEWS



| DECEMBER 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

**G**reetings from your President, Vic, KK6WKI. **Merry Christmas** and **Happy New Year!** Wow, the year 2020 is almost in our rear-view mirror.

As president, I do have a few privileges, one of those being a pipeline to the man with the **BIG RED SUIT!**

We know that some club members have been VERY good this year and would like to ask Santa for a few favors. Without further ado ...

Stan, KI6YLG - Free access to all RT Systems software.

Jodi, WA6JL - My own HF radio and antenna.

Ryan, WA6ERA - Use of Santa's sleigh and reindeer with a 100 watt radio and a trailing 132 foot wire antenna.

Robert, KJ4SR - A hidden antenna, 80M - 440MHz so I can use my radios in my HOA.

Assunta, KJ6FQP - I'd just like to have a dependable VHF radio and adequate power supply so I can give and get help when needed like Penny did on the old tv show Sky King (not planning on playing)

Bill and Nancy, KJ6LJF - A safe, happy and healthy year for all.

Dede, K6DDZ - Warm sunshine and views of water and draw bridges

Ted, KK6LWK - The clarity of vision to enable seeing the future so I can plan where to build my own "earth station" (aka shack).

John, WA6PJ - 600ft tower to get RF signals in and out of the hole I live in.

Carol, WA6UVQ - A bigger tri-band radio.

Rebecca, W6CYS - A ham shack at the new house (I think Santa already has plans)!

Kris, N3FH - I wish for a Maunder "Maximum" (Santa is going to have to 'google' that one, he told me)!

Jo, N6NTJ - An Amateur Radio that is compatible with laptop and a Laptop that has all the amateur radio software/programs and more Antennas for more bands.

David, KK6LWQ - I wish for an HT that talks to my ELMER, so I do not touch the wrong buttons.

Raffi, N5NIA - HF radio antenna and a Kenwood THD74A.

Tracy, WM6T - I wish Santa would give all jammers a lump of coal and cut their coax as he flies by.

Gary, AA6GJ - I would like a lovely new Elecraft KXPA100-AT-F

Amplifier. I hope that's OK. Oh, yeah, and of course, Peace, Health and Happiness for the whole world, too. I'm so bad!

Debbie, WB6LVC - I would like a surprise bonus check to buy Gary his amplifier. Happiness and health to all!

Gail, KM6GBN - To be able to have our MTARA meetings safely in person. Miss seeing everyone.

Mike, KN6BYH - Large pizza (I am so tired of my diet.) With a Twinkle in the eye, I remain yours Santacerely, Santa Michael Alexander.

**Santa gave me a BIG tip - he will be on the air starting November 27!** He



begins at 5:15 PST and you can even do an early check-in with family members.

He will be live-streaming on YouTube as well. Santa will be on 3.916MHz, so make sure that your 80 meter antenna is tuned—up and ready for your friends and family members. Click here for more information on the [2020 Santa Net!](#)

Stay radio-active and as always, **if you see something, say something!**

73, Vic

# MTARA NEWS

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

## Monthly Club Meetings

Our next monthly meeting is tonight **Tuesday, December 1**, 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.



**Tonight's special guest elmer, Chip Margelli, K7JA**, has been licensed since

1963, and an Extra Class licensee since 1968. Chip and his wife Janet, KL7MF live in Garden Grove, California. Chip is a Life Member of ARRL, AMSAT, and Quarter Century Wireless Association, and he works for Ham Radio Outlet as an I.T. Specialist.

For over fifty years, Chip has been active in DXing and, especially, international radiosport competition and goodwill activities. Among his accomplishments are twelve First-Place finishes nationally in the ARRL November Sweepstakes, and a number of world-high or national

wins in the CQ World-Wide DX Contest, ARRL DX Contest, and CQ WPX Contest. Chip's DXpedition activities include operations from St. Lucia, Dominica, Antigua, the U.S. Virgin Islands, Puerto Rico, Saipan, Micronesia, Aruba, Bonaire, Curaçao, Martinique, Cuba, and Barbados.

In 1984, Chip and Janet were invited by the Chinese Radio Sport Association to travel to Beijing for operation from BY1PK and help train the new Chinese operators during the early phases of the rebirth of Amateur Radio in China.

In 1989, Chip was honored by being selected to be the American representative in the first-ever Finnish-Soviet-American DXpedition to Malyj-Vysotskij Island as 4J1FS. The following year, Chip and his teammate Mike Wetzel, W9RE, won a Silver Medal at the World Radiosport Team Championship held in conjunction with the Goodwill Games in Seattle.

And in the Fall of 1991, Chip was a member of the Instructor/Operator team in the IARU Albania Project (ZA1A), led by Martti Laine, OH2BH, which brought about the rebirth of Amateur Radio in Albania after many decades of radio silence.

In May of 2005, Chip and partner Ken Miller, K6CTW, made an appearance on [The Tonight Show](#) with Jay Leno on NBC, utilizing "ancient" Morse Code to compete with (and defeat) the U.S. champion cell-phone text messenger in a message-completion speed

contest. Chip is a 2018 inductee into the First Class CW Operators' Club (FOC).

Articles by Chip have been published in QST, CQ VHF, Popular Communications, CQ, and FOCUS magazines, and in several books. Outside of Amateur Radio, Chip enjoys photography, astronomy, and is a marathon runner.

In May of 2008, Chip was inducted into CQ Magazine's Amateur Radio Hall of Fame.

Don't miss this elmer session! Interested parties, NOT members of the club will need to email [tracy@lenocker.com](mailto:tracy@lenocker.com) with their name and callsign. The credentials for the meeting will then be emailed to that person. See and hear you tonight!

## *New iFOG Manual Available for Smart Phones*

The State of California and all agencies and counties have coordinated frequencies that might be of interest to those wishing to monitor them. The iFOG manual lists all of these frequencies. The iFOG manual is available for all smart phones. The

app to search for is "CA iFOG" and of course do not include the quotation marks The space between "CA" and "iFOG" is necessary. - Tracy



# MTARA NEWS

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

## Winter Field Day - 1/30-31

**P**urpose: To foster Ham camaraderie, field operation, emergency operating preparedness, and just plain on the air, outdoor fun in the midst of winter for American, Canadian, and DX Hams. Get out and play some radio!!

WFD will run for 24 hours during the last full weekend in January 2021 from 11:00 a.m. Saturday to 11:00 a.m. Sunday PST.

Bands: All Amateur bands, HF, VHF, & UHF except 12, 17, 30 and 60 meters. Modes: Any mode that can faithfully transmit the exchange intact without a conversion table... CW, SSB, AM, FM, DStar, C4FM, DMR, Packet, PSK, SSTV, RTTY, Olivia, Satellite, etc... [Click here](#) for more information and rules.

## What's Going on with Quartzfest 2021? - WM6T

**T**he Quartzfest organizers have decided to take a historical pause due to the current and forecasted COVID-19 conditions in Arizona and elsewhere.

So we are calling the **January 17-23, 2021 event 'Quartz-Pause'**. It will be much like it was 25+ years ago where a bunch of hams in RV's congregated in the desert on BLM land and just talked about amateur radio and shared ideas and stories.



So this year here is what will be different: Nothing will be organized. There will not be a welcome center and there is no registration. No dedicated list of seminars and speakers. No tents for any presentations. No port-a-poties which will be tough for those tenting. No raffles and therefore no raffle prizes. There will not be a special event station but we are working on some type of alternative.



Here is what will be there: Lots of open desert parking space to keep socially distanced. Meet and talk to friends at a distance or on your radio. Spontaneous events like a guided and narrated off-road ride, yard sale of ham gear, hootenanny, rock hounding, geocaching, T-Hunting, and metal detecting are likely to occur. Consider taking your portable gear and activating a POTA or SOTA or WWFF site at a nearby location. There will be plenty of time to do whatever you want.

We are looking for people who would like to lead either a solar walkabout or antenna walkabout.

We should be able to do these with correct distancing and masks. If not, then just hike by yourself around the camp site and see what others have done.

The Amateur TV system (ATV) might be set up and in that case you can be in your cozy RV and watch a presentation from another ham.

The giant RV Show is currently a go. However, there are some significant changes and you should review these before heading out to the big white tent. [Here is a link to the show](#), click on and read about the COVID-19 event information. The rock and gem show is planned as well in town.

Morning (8:00 a.m.) and evening announcements will be on 146.550 MHz so if you are planning on doing something you can announce it to the entire group.

So this is the plan – or really a lack of any plan - for Quartz-Pause from the Un-organizing Committee.



For more information, check out the [Quartzfest website](#).



# MTARA NEWS

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

## *A Field Report with the new Icom IC-705 - K6DDZ*

Tom K6KTH and I had a delightful week on the Central Coast in October. We stayed in Avila and did little day trips out from there, while socially distancing, of course. On two days, we decided to do POTA activations. The first was actually a two-fer at Oceano Dunes State Recreational Area and Pismo State Beach. The second was at Morro Bay State Park.

The Ranger at Pismo was very helpful and told us that if we were in the parking lot on the asphalt, that was considered state beach. If we were across the barrier into the sand, then we were at Oceano SRA. Well, what to do????!! We were able to park on the front row with a beautiful view of the water. We set up our antennas on the barrier, the table with the radios and “my purse” with the Bioenno 20 Ah battery on the sand, and our chairs in front of the car. Asphalt and sand...worked for us! Several people came by to see if we were tracking whales or if we were spies talking to China. Well we heard Japan loud and clear, but they didn't hear us.



This was a first activation for Pismo and a 2nd activation at Oceano Dunes, however that activation was all CW and we were working phone (2m, 70 cm, 40m and 20m). Tom was working the [ICOM IC-705](#) with the Tarheel antenna and I had the Icom 7300 with the Super Antenna. No competition. What we did find out was that the receive on the 705 was amazing, so we would find a station on the 10w 705 and reach out on the 7300 when we were chasing. No Park to Parks

that day, but we sure had fun!

We were the fifth team to successfully activate Morro Bay State Park. We set up by the campground, which made the restrooms accessible. This can sometimes a necessity during an activation when we don't take the RV. My daughter Lauren KM6DTJ joined us on her first POTA outing. Early on, Henry W6REK pulled up to check out what we were doing. He was visiting from San Jose and was not familiar with POTA. He certainly is now! He hung with us for most of the day and said he will be bringing his HF radio back when he returns in a few weeks. He's hooked too. So, between the 4 of us and tri-band radios, an activation was simple.

We are considering camping at Death Valley over Thanksgiving, so we'll let you know how that goes.

Oh, and we are the absolute WORST at taking photos. I only got one with the grandkids! We never remember until we have already torn everything down. We'll try to do better next time.

Dede and Tom, K6DDZ and K6KTH

## *Treasurer's Report - KK6LWH*

Patty provided the bank balances. We had an opening balance as of September 30 for the amount of \$9,316.92. We had deposits on October 16 of \$20.00 with no new expenses. Our balance as of October 31 is now \$9,336.92

73, Patty



# MTARA NEWS

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

## 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	<a href="#">CBARC</a>	7:00 a.m.	Technet	Elmer sessions

## Membership Info - PAY NOW, please!

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.

Current members do not need to fill out the renewal application form for 2021. You can just mail your check

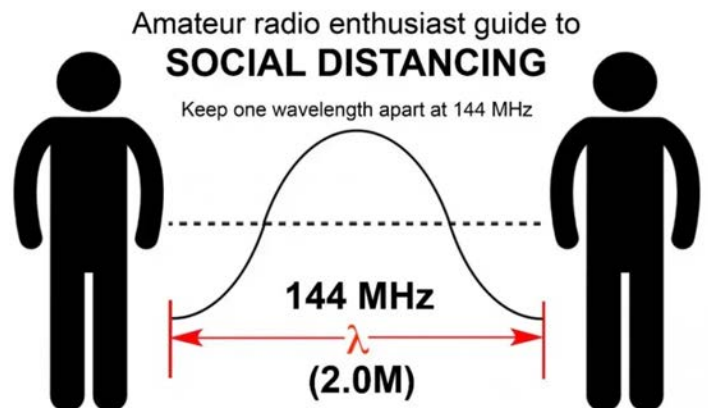
to MTARA, PO Box 2441, Lake Arrowhead, CA 92352-2441. We already know who you are. Those who joined in November or December of this year are already paid for 2021. The membership form can be downloaded by [clicking here](#).

## Echolink Update

We now have Echolink capability on two of our repeaters. These are MTARA2 (Channel 12) and MTARA5 (Channel 15) which are 2-meters and 1.25-meters respectively. The Echolink on MTARA2 is still the same and the call sign is WM6T-L. The newest Echolink capability is on our MTARA5 channel which is our private 220 repeater. The call sign is WA6MTN-R. It is now fully functional but might get a few tweaks over the next month or two which should not affect any use. This capability on MTARA5 will allow more members to participate in the Tuesday night discussion nets and for the ladies in the Friday YL Happy Hour net. Both Echolink systems are available 24/7.

## 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.



# MTARA NEWS

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

## Upcoming Calendar of Events

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

- ▶ 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 contests or special 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!
- ▶ [Weekly Phone Fray](#) by NW2K. A great way to get your feet wet for 30 minutes. It is **weekly on Tuesday** nights from 6:30 p.m. to 7:00 p.m. PST on SSB. The rapid-fire exchange is OP name and location ('Dave CA', e.g.). Folks start on 15 meters and then migrate to 20, 40, 80 and even 160 meters, its fun to watch the bands change as seasonal propagation does!
- ▶ [ARRL 10 meter ONLY contest](#), SSB and CW, December 12-13
- ▶ [2020 North American QSO Party](#) (CW/ SSB), CW: 1800 UTC January 11 to 0600 UTC January 12, 2020; SSB: 1800 UTC January 18 to 0600 UTC January 19, 2020

## MTARA jackets - Great Christmas Gifts!

**W**e 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

# MTARA NEWS

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

Welcome to “Ponder the Pool” by AA6GJ

**P**onder the Pool is my continuing column for the MTARA Newsletter. Every month, I will pick a question to ponder from one of the three FCC question pools, I’ll try to explain it more, and review the concepts because,

“If you don’t use it, you lose it!”

This month we will ponder this question from the General Class pool: Question No. G5B06

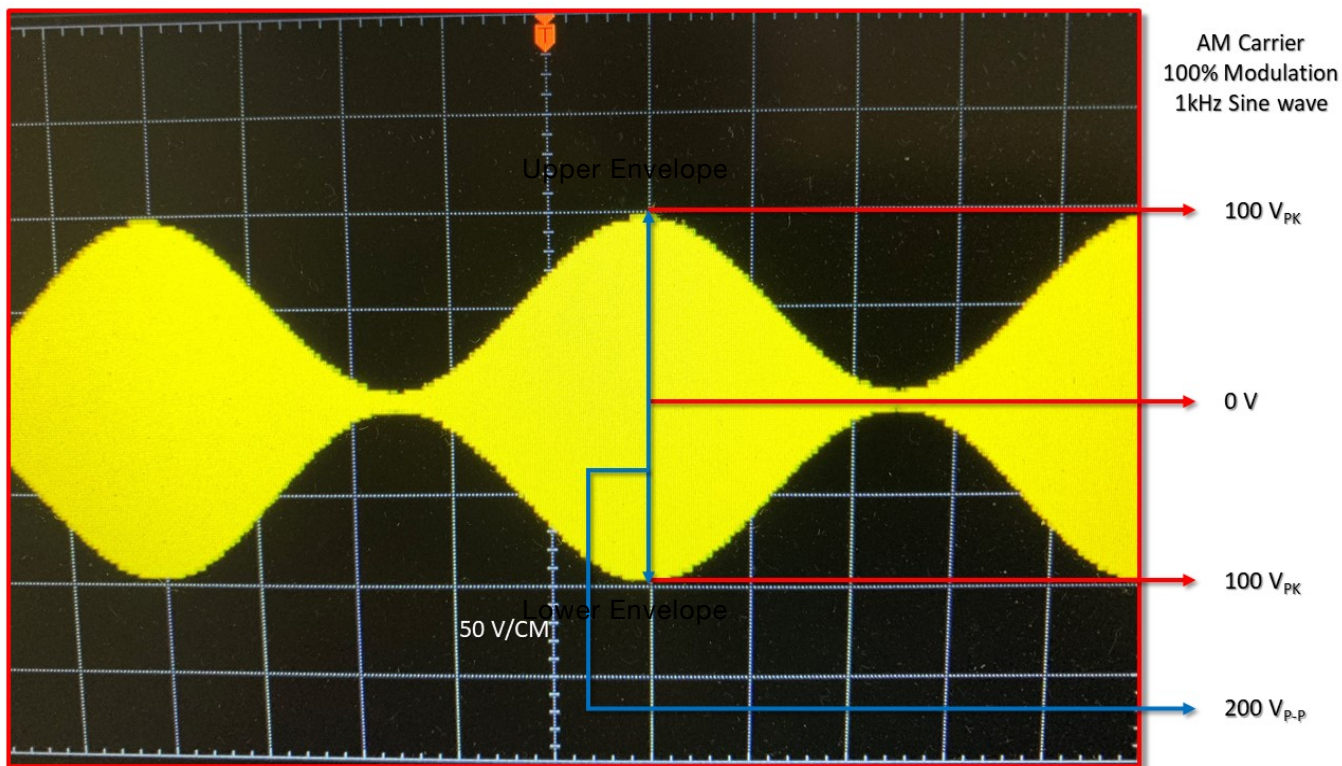
**What is the output PEP from a transmitter if an oscilloscope measures 200 volts peak-to-peak across a 50 Ohm dummy load connected to the transmitter output?**

So, what exactly are they talking about? What is PEP? The quick answer is Peak Envelope Power. Yeah right, so, does that mean that if I put more postage on my letter’s envelope that will somehow make it more powerful? (This is where the laugh track comes in.) Seriously folks, Peak Envelope Power is defined as:

**Peak envelope power (PEP)** is the highest envelope power supplied to the antenna transmission line by a transmitter during any full undistorted RF cycle or series of complete radio frequency cycles. PEP is normally considered the occasional or continuously repeating crest of the modulation envelope under normal operating conditions. The United States Federal Communications Commission uses PEP to set maximum power standards for amateur radio transmitters. \*

\*R. Dean Straw, ed. ARRL Handbook For Radio Amateurs. Newington, Connecticut: American Radio Relay League, 1999, p. 6.7

Well, that’s as clear as mud! Let’s dissect this a bit.



The envelope of an oscillating signal is the smooth curve outlining its extremes.



# MTARA NEWS

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

In the photo, you see an amplitude modulated wave that consists of the radio frequency carrier wave (7.250 MHz), and the audio frequency wave (1,000 Hz) that is modulating the carrier. The carrier wave is shown as the “filled in” yellow portion. It looks like a solid color because the wave itself is much higher in frequency (7,250,000 Hz.) The 1,000 Hz. outer wave that creates the upper and lower edge (crest) surrounding the carrier wave is called the “envelope” because it envelops the carrier wave. If I were to go to my HF receiver, and switch it to AM, I would see the carrier on my S Meter. I would tune the receiver, so I had maximum signal strength. Out of my speaker, I would hear a 1 kHz tone. I could replace my sine wave generator that’s connected to my transmitter with my microphone, and then I would be modulating the carrier with my voice, and I would hear that on the receiver.

OK, so, now we know what the waveform looks like and what it does. What does this have to do with PEP?

Well, this is where a little math comes in. You may have noticed that I was doing a little measuring as I created that beautiful waveform.

Remember this??

**$P = I \times E$**  That’s our friend Watt’s Law where P = Power in Watts, I = Current in Amperes, and E = Voltage in Volts. Oh, wait, can I use this formula to determine PEP (Peak Envelope Power)? The question is asking for power, right? The answer is partially, yes. We also have to borrow some from Ohm’s Law  **$E = I \times R$** , where E = Voltage in Volts, I = Current in Amperes, and R = Resistance in Ohms. We just have to rearrange some of the letters.

In order to get peak envelope power, I need to borrow from each formula. We have to remember that PEP is power that is consumed by a load; that load is our antenna (in this case, our 50Ω dummy load). In ham radio, the characteristic impedance of our antenna is 50Ω, and after we get inductive reactance and capacitive reactance to zero out, (don’t worry about reactance right now, that’s another Ponder) all we have left is 50Ω of resistance.

So, what do we have from our oscilloscope measurements that we can use to figure this out?? In the photo we have a peak-to-peak voltage of 200 volts, and positive and negative peak voltages of 100 volts each. Now what? Well, we know from Watt’s Law that Power equals Voltage times Current. We have an AC voltage in the form of peak-to-peak and peak voltage, but no current  $P = I \times E$ . So far, we only have E, and we don’t know which one of *them* to use. We’ll have to go back to our DC equations and start from there. Don’t worry about AC for the moment.

$P = I \times E$  and  $E = I \times R$ . We need something from each of them. The question is asking for Power. We will begin with  $P = I \times E$ . Look at the “I” part of that equation. From Ohm’s law we know that  $E = I \times R$ . We need the I part of that formula to fit into Watt’s Law. Here’s how we get it. We divide R into R to cancel it out. What we do to one side of the equation, we must do to

the other side. Next, divide R *into* E. The equation will look like this:  $\frac{E}{R} = I \times \frac{R}{R}$ . R cancels, and we’re left with

$\frac{E}{R} = I$  or  $I = \frac{E}{R}$ . So, now we know that  $\frac{E}{R}$  is mathematically the same as I. We can work with that!

Let’s start building our equation  $P = \frac{E}{R} \times E$  because  $\frac{E}{R} = I$ . Right? But now I’ve got two E’s. What do I do about

that? Don’t panic!! We just do a little fifth grade math to fix that. We can multiply the fraction. (Remember this?) Don’t forget that in order to multiply top times top and bottom times bottom, we must make the right side of the equation a fraction by

dividing it by one  $P = \frac{E}{R} \times \frac{E}{1}$ . Now we multiply the numerator times the numerator and the denominator times the



# MTARA NEWS

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

denominator ( $E \times E = E^2$ ) and ( $R \times 1 = R$ ). Then we put it back together as a fraction like this:  $P = \frac{E^2}{R}$ . Ok, so now what? We now know that our R is the 50Ω antenna (dummy load), but which Voltage do I use for  $E^2$ ?

We need a little more information here. Remember, this is not a DC circuit. It is an AC circuit. Because the voltage is varying in time from zero to a positive peak, back to zero, and then to a negative peak, and then back to zero again, there are instantaneous amounts of voltage on that sine wave as it completes one full cycle; both positive and negative. Therefore, we have to pick the voltage that is most effective to do the work we need. As we learned with DC voltages, once we turn on the DC power supply or use a battery, the voltage will be whatever the supply delivers, and it will never go through a zero crossing. If it's twelve volts, it stays twelve volts until we turn it off, and then it drops to zero. It never goes negative like AC does.

In the late 1800's, a physicist named James Prescott Joule did experiments where he used DC voltages to see how much heat could be derived from a heating element (resistance). Very basically, he placed this element into water and then measured the temperature of the water. He did a lot more than that, but for our purposes here, we just need to know that he used DC batteries to heat that element. Later in history, as AC was coming into vogue, experiments were made to find out the amount of AC voltage that was needed to heat that same element to the same temperature as the DC voltage did. It turns out that it wasn't the peak voltage or the peak-to-peak voltage. It was something in between.

The suspense is killing me! So, what is it?? What voltage do we use? Well, I'll tell you. It's called the RMS Voltage (RMS means Root Mean Square. That's a topic for another *Ponder*). The voltage we use is 70.7% of the Peak Voltage. There you have it! There's the secret! Now we can use our equation. Oh, but wait!

Remember the question? That was sooo long ago. The question said, "...200 Volts **peak-to-peak** across a **50 Ohm dummy load** connected to the transmitter output?" Oh, the humanity! Does it ever end?! Actually, this isn't that bad. The formula wants RMS voltage of the Peak Voltage. So, we divide the peak-to-peak voltage in half:

$$V_{PK} = \frac{V_{P-P}}{2} \qquad 100_{PK} = \frac{200 V_{P-P}}{2}$$

Now, we know that the equation needs 70.7% of **100 V<sub>PK</sub>**. The voltage we need is **70.7 V<sub>RMS</sub>**. So, let's build our equation, and answer our question. Here's what it looks like:

$$PEP = \frac{E_{RMS}^2}{R_L} \qquad \text{(Close enough to 100 W) } 99.97 \text{ W} = \frac{(0.707 \times 100 V_{PK})^2}{50 \Omega}$$

The official answer to the question is: **100 Watts**.

There you have it, another *Ponder the Pool*. But Wait! We're not done! We will continue with more to ponder on this point next time. So, stay tuned, and we'll do some more next month. – 73 – Gary