



SEPTEMBER 2025

Volume 14 Issue 9

# VE3ERC-LUB

- President:** Frank VA3FJM
- Vice-President:** Hagen VE3QVY
- Secretary:** Rod VA3MZD
- Treasurer:** Ted VE3TRQ
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- Repeater Trustee:** Wes VE3ML
- Website Admin:** Ted VE3TRQ
- Lighthouse:**
- Maple Syrup Display:**
- Newsletter:** Bob VE3IXX
- ERC Website:** <https://ve3erc.ca>

## ERC REPEATERS

- UHF 444.700 + TONE: 131.8**
- UHF 444.700 + TONE: 123.0**
- VHF 147.390 + TONE: 123.0**
- VHF 147.255 + TONE: 131.8**
- EMERGENCY SIMPLEX: 146.550**
- UHF-IRLP node 2404,ECHOLINK VE3ERC-L**
- VHF- IRLP node 2403,ECHOLINK VE3ERC-R**



**Alma Repeater gets a Facelift.  
See page 12 for full story.**

**In an emergency, tune  
Into our repeaters,  
UHF 444.700 or  
VHF 147.390 or  
HF 3.755 LSB or  
Simplex 146.550  
For coordination and  
assignments.**



# THE PREZ SEZ!

This club is Radio-ACTIVE  
This club is Radio-ACTIVE

## President's Update for September 2025

Firstly, congratulations to our new executive who begin their office this month.

Secondly many thanks to all the ERC members who spent time and effort in helping to improve the club repeater in Alma. This encourages a real positive spirit of camaraderie for our Club.

Thanks also to Reg VE3RVH for donating his 60 foot tower to the Elmira Club.

Check out the article on page 12.



**CONTRIBUTIONS TO VE3ERC-CLUB NEWSLETTER**

Do you have an article you'd like to submit? Or photos? Do you have any comments you'd like to make?

Perhaps you'd like to share a photo of your shack, a special project you are working on or a special

interest!

**SEND THEM TO:**

**Bob [bobve3ixx@gmail.com](mailto:bobve3ixx@gmail.com)**

**(519-787-2279)**



**WEDNESDAY NITE NET CONTROLLERS**

**OCTOBER 1 - HAGEN VE3QVY**

**OCTOBER 8 - TED VE3TRQ**

**OCTOBER 15 - ROD VA3MZD**

**OCTOBER 22 - MEETING**

**OCTOBER 29 - TONY VE3DWI \***

**NOVEMBER 5 - JAY VE3CMN**

**NOVEMBER 12 - FRANK VA3FJM**

**NOVEMBER 19 - BOB VE3IXX**

**NOVEMBER 26 - MEETING**

**DECEMBER 3 - TOM VE3DXQ**

**\*Tony will run the net on UHF Simplex 446.000 MHz**

**On October 29**



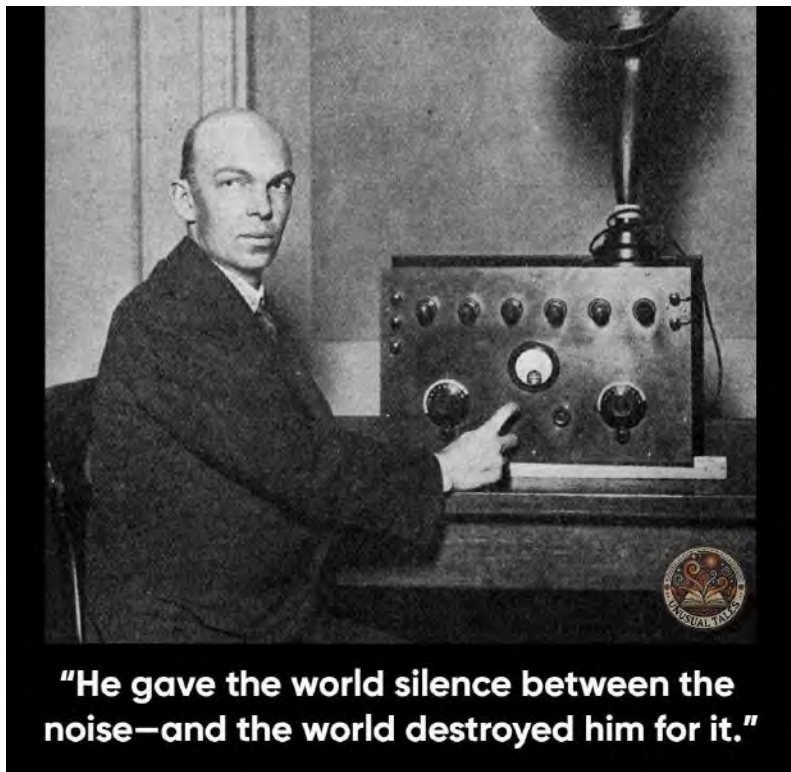
## From the PAST

On November 6, 1935, an engineer named Edwin Howard Armstrong stood before the Institute of Radio Engineers in New York. His paper carried a plain title: "A method of reducing radio disturbance through a frequency modulation system."

What he unveiled was anything but plain. Armstrong had invented FM radio—a way to deliver sound without the crackle and static of AM. For the first time, voices and music could be heard with breathtaking clarity.

It should have been his triumph. Instead, it became his undoing.

Armstrong was no stranger to invention. He had already given the world the regenerative circuit and the superheterodyne receiver, technologies that made radio practical and reliable. But every breakthrough brought him into conflict with powerful corporations—AT&T, Westinghouse, and above all, RCA.



**"He gave the world silence between the noise—and the world destroyed him for it."**

FM threatened RCA's empire. They had poured fortunes into AM and weren't about to see it eclipsed. Armstrong built his own FM network on frequencies between 42 and 49 MHz—a revolution in the making. But in 1945, after heavy lobbying, the FCC reassigned the FM band to 88–108 MHz, instantly making Armstrong's system obsolete. Years of work were erased with the stroke of a pen.

Worse followed. FM stations were restricted to lower power, crippling their reach. RCA pushed television instead, while Armstrong was dragged through endless, ruinous lawsuits. His brilliance was buried under corporate pressure and legal battles.

On January 31, 1954, at 63 years old, Armstrong—exhausted and broken—penned a farewell letter to his wife, Marion. Then he stepped from the 13th floor of his New York apartment. Yet every time we tune in to FM, we hear his legacy. The clear notes of a song, the clean tone of a human voice without static—that was Armstrong's gift. He gave us silence between the noise.

History may have tried to silence him, but his invention speaks for him still

Thanks to Tony VE3DWI.

# Two Resonant Simple Wire Antennas for POTA

By John VA3KOT

One antenna that has garnered a significant following among POTA operators is the POTA PERformer designed by Greg Mihran KJ6ER. In essence it is a raised quarter wavelength vertical with 2 above ground radials. A simple idea that Greg has engineered into a rapid deployment, highly efficient, multiband, portable antenna. Greg has backed up his design with a detailed analysis supporting the claimed high performance characteristics. Many operators, including myself, have built and used the POTA PERformer and can verify that it is indeed a very good antenna.

**NB:** I have already covered the POTA PERformer in a recent post and concluded that just a single raised radial was sufficient. However, after reading Greg KJ6ER's analysis in more detail I am now convinced that using 2 radials raises the antenna's efficiency.

There are three innovative antenna designs in KJ6ER's kit bag. The other two are both half-wave designs. The POTA Challenger is an off-center fed half-wave that supports 20m and up; the Dominator is an end-fed half-wave that supports 17m and up. I have not tried to build a Dominator (yet) since most of my own POTA operations are on 20m, but the Challenger caught my attention so much that I had to build my own version.

When I first looked at the design I was completely bewildered. It comprises a 25ft telescopic vertical whip with a wire counterpoise, part of which lies directly on the ground. Does that look like a typical half-wave antenna, I thought to myself? I had never seen

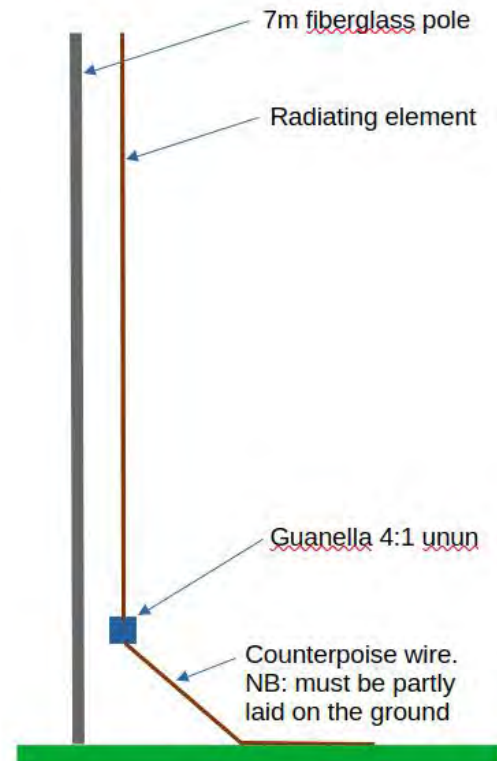
anything like it before so my skepticism was aroused. After exchanging a couple of emails with Greg I was encouraged to go right ahead and build one in the hope that actually using it to fire RF up to the edge of space and back would bring about a better understanding of this strange new electromagnetic beast.

Well, I did build my own version of the Challenger, massaged the design a few times and came up an antenna that got me some very encouraging signal reports from the land of far, far away. Of course, this blog is called "Ham Radio Outside the Box" so, just like Frank Sinatra, I "did it my way". To learn more please read on.

## The Ham Radio Outside the Box version of KJ6ER's Challenger

It wouldn't be fair to even refer to my own version as a "Challenger". Instead I will just say that it is inspired by KJ6ER's Challenger. It follows the same ideas but implemented in a different way. I don't own a 25ft telescoping whip and didn't really want to have to buy one, so I decided to incorporate a wire radiating element, supported by my 7-meter Spiderbeam telescoping fiberglass pole.

Spiderbeam with wire radiator loosely coiled around it



Ham Radio Outside the Box interpretation of KJ6ER's Challenger antenna

Then, whereas the Challenger is a multiband (one band at a time) antenna supporting every HF band from 20m and up, I looked at my own POTA activations and realized that I rarely stray from the 20m band. Maybe a monoband antenna is all I need. That keeps the design sweet and simple. I like sweet and simple when I am out in the Big Blue Sky Shack. I did wake up one morning with an urgent need to rush down to my basement shack and sketch out an idea for a multiband version that still uses wire elements. More information on that idea later in this post.

I took the dimensions of the radiating element and counterpoise wires directly from KJ6ER's document. Of course, a wire - in this case teflon covered 20awg multi strand wire from BNTECHGO almost certainly has a slightly different velocity factor from a tapered stainless steel telescoping whip as I discovered when the antenna was erected. It was necessary to shorten both wires a little to bring the antenna into resonance in the CW portion of the band.

Another gotcha is the height of the feedpoint. It has a quite dramatic effect on the tuning. The first iteration of the Ham Radio Outside the Box version used a taller pole. The wires were trimmed to obtain a 1.07 SWR, but when I substituted the shorter pole and re-erected the antenna with the feedpoint only 12 inches above the ground, the SWR shot up into the stratosphere.

**NB:** KJ6ER built a "backpack" version of his Challenger in which the feedpoint is lowered to 12-inches above ground. I found this height allows me to use my 7m Spiderbeam pole and also makes it easier to orient the counterpoise so that it makes good contact with the ground.

After further adjustments of the wire length a low SWR was restored. I ended up with 22ft/6.7m for the radiating element length and 5.5ft/1.7m for the counterpoise. If you were to reproduce this design your own dimensions might be different; an antenna analyzer is a very useful tool to have.



**A multiband version?**

The original Challenger uses a telescopic whip so switching bands is quick and easy by simply adjusting the length of the whip. The counterpoise length must also be adjusted, but this is accomplished by means of a linked wire.

I have not built a multiband version of the Ham Radio Outside the Box interpretation of the Challenger but I have entertained two ideas for how to accomplish this goal. First, simply using links in the radiating element wire might be the simplest and easiest way to do it. There is a second possible way and that is to employ parallel radiating element wires in the manner employed by the DX Commander vertical antenna. If you are not familiar with the DX Commander, do a web search on the name and you will see what I mean.

I am so impressed with the portability, efficiency and small footprint of this antenna that it is going to replace some of the other SWAs (Simple Wire Antennas) in my field operations kit bag.

**Same Pole, Different Wire**

The title of this post is "Two Resonant Simple Wire Antennas for POTA" so what is the second one? I had built my first version of the POTA PERformer using an MFJ-1979 telescoping 17ft/5m whip mounted on a tripod.

Ham Radio Outside the Box POTA PERformer wire variant supported on a Spiderbeam pole

If I wanted to do a field outing carrying both this and my own Challenger variant I would have to carry my Spiderbeam pole and the tripod. Since I often stray far from my truck when operating out in the Big Blue Sky Shack I need to economize on the amount of gear I have to carry. Maybe I could build a wire version of the POTA PERformer that could be supported by the 7m Spiderbeam pole.

I realized I already had such a beast - a super light QRP version I built many years ago. Now I needed to copy that idea and build it for QRP or QROp (20-30 watts). So, the new SWA Ham Radio Outside the Box version of the POTA PERformer was born, and again it is a monoband 20m antenna.

As we can see from these images, the simple wire version of the POTA PERformer adapts very well to being supported by the compact, lightweight Spiderbeam pole.

The vertical radiating wire is attached to a standard 3/8x24tpi to SO-239 adapter. The two radial wires connect to the adapter via a 2mm banana connector so they can be separated for storage. The female 2mm connector is crimped and soldered to a 3/8 inch ring connector.

The image also shows the ham-brewed-by-me common mode current choke made from an FT240-43 ferrite toroid core wound with several turns of RG-58 and tested with a nanoVNA to ensure it is doing its job.

Now I only have to carry the Spiderbeam pole and two small freezer bags containing the wire elements for both the PERformer and Challenger variants and I have choices when I get to my operating site. Which to choose? I highly recommend reading KJ6ER's documents, linked below, especially Greg's "Antenna Primer". Greg explains everything you need to know so much better than I ever could.



**[Cloud Drive File Links \(KJ6ER\):](#)**  
**[YouTube™ Interview with Michael Martens, KB9VBR – youtube.com/watch?v=cCImWBYzNaE](#)**

**ARRL™ QST 2024 Antenna Design Competition –**  
**[bit.ly/AntennaDesignCompetition](#)**

**ARRL™ QST September 2025 PERformer Article (First Page) –**  
**[bit.ly/QSTSeptember2025FirstPage](#)**

**KJ6ER Antennas Primer –**  
**[bit.ly/KJ6ERAntennasPrimer](#)**

PERformer 40M-6M Quarterwave Vertical –  
**[bit.ly/KJ6ERPERformer](#)**

PERformer 40M-6M Quarterwave (*Assembled, Etsy*) –  
**[bit.ly/KJ6ERPERformerKit](#)**

Challenger 20M-6M OCF Halfwave Vertical –  
**[bit.ly/KJ6ERChallenger](#)**

Dominator 17M-10M EF Halfwave Vertical –  
**[bit.ly/KJ6ERDominator](#)**

Dominator 17M-10M EF Halfwave 2-Element Vertical Beam –  
**[bit.ly/KJ6ERDominatorBeam](#)**



## CORRESPONDENCE

In regard to the last issue article about using "Top Hats" on vertical antennas Paul Birke VE3PVB wrote the following:

### **The real reason the top hat works is NEVER reported anywhere!!**

The diameter of the top hat reduces the vertical bending arc of the electric field line shape from top high voltage at the top terminus looking to the horizontal ground plane. The top hat has the effect of straightening the electric field profile field to near vertical line.

The Poynting Vector radiation  $S = E \times H$  is therefore made more parallel to the ground plane.

### **THE TAKEOFF ANGLE IS MADE LESS.....MORE HORIZONTAL.**

**Also the top hat should be made with 8 radials and maximum engineered diameter with respect to weight and wind drag constraints.**

**73**

**Paul VE3PVB**

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Rod VA3MZD sent the following link to a nine minute documentary on how hams helped during WWII. Rod says:

Great short documentary on the UK hams recruited to decode pages of CW that helped break the enigma. sent to me by a non-ham friend. enjoy!

<https://youtu.be/EL1aRpNBA2I?si=BHOsYLQBF-laYxMx>



The Secret Ham Radio Operators Who Helped Crack Enigma

Thanks to Tony VE3DWI for sending the following **Solar Report from the ARRL.**

SB PROP @ ARL \$ARLP036  
ARLP036 The ARRL Solar Report

ZCZC AP36  
QST de W1AW  
Propagation Forecast Bulletin 36 ARLP036  
From ARRL Headquarters  
Newington CT, September 26, 2025  
To all radio amateurs

SB PROP ARL ARLP036  
ARLP036 The ARRL Solar Report

Solar activity reached moderate levels this past week. An impulsive M1.0 flare was observed on September 24 from Region AR4217. Slight growth was observed in Region AR4226 with an increase in spots near the leader. New Regions AR4229 and AR4230 were numbered this period. All other regions were either stable or in decay. No Earth-directed CMEs were observed. Solar activity is expected to return to low activity.

Solar wind parameters were indicative of the arrival of a negative polarity Coronal Hole High Speed Stream (CH HSS). Solar wind speed increased from approximately 310 km/s to near 530 km/s. Total field showed an increase beginning on September 22. The CH HSS influence persisted through September 23 and diminished to background levels on September 25. A trend towards nominal solar wind conditions is expected through September 26 as Earth moves out of a geoeffective position with the CH HSS.

Weekly Commentary on the Sun, the Magnetosphere, and the Earth's Ionosphere, September 25, 2025, by F. K. Janda, OK1HH:

"A study published on September 8 in the Astrophysical Journal Letters states that solar activity will increase after approximately sixty years of decline (following the high Solar Cycle No. 19). The next solar cycles should be even higher than the current one and, in particular, higher than the previous one (i.e., than Solar Cycles 24 and 25).

"Short-term developments in the second half of September are in line with forecasts. Overall, solar activity has increased, although eruptive activity is slightly lower than expected. In line with the forecast, on September 21, the Earth's magnetic field entered the common rotation interaction (CIR) region, and the solar wind intensified. After a two-day increase that began on September 24, geomagnetic field activity declined again. Although the forecasts are based primarily on the expected increase in the speed of the solar wind flowing from the edges of coronal holes, which should therefore be less accurate than forecasts based on observed eruptions and CMEs, they are still relatively reliable.

"Most sunspot groups are now on the solar disk (the visible part of the Sun), but they will gradually begin to set. Solar activity should therefore decline by the end of September, with the decline likely to stop in mid-October. In the Earth's ionosphere, the decline in maximum usable frequencies (MUF) will begin with a slight delay, similar to the expected rise in the sec-

ond half of the month."

There is a chance for isolated R1-R2 (Minor-Moderate) radio blackouts until September 28. Unsettled to active levels are likely on September 29 and 30, October 3 to 7, October 11 to 13, and on October 18 due to recurrent CH HSS influences. Quiet to unsettled levels are likely for the remaining days in this outlook period.

The geomagnetic field is expected to be quiet to unsettled levels on September 27, and quiet to active levels on September 28.

The latest video report from Dr. Tamitha Skov, WX6SWW, can be found on YouTube at <https://www.youtube.com/watch?v=xzoxXGTDLyM>.

The Predicted Planetary A Index for September 27 to October 3 is 5, 5, 15, 8, 5, 5, 5, and 15, with a mean of 8.3. Predicted Planetary K Index is 2, 2, 5, 3, 2, 2, and 5, with a mean of 3. 10.7 centimeter flux is 175, 170, 170, 170, 160, 150, and 140, with a mean of 162.1.

For more information concerning shortwave radio propagation, see [www.arrl.org/propagation](http://www.arrl.org/propagation) and the ARRL Technical Information Service web page at [www.arrl.org/propagation-of-rf-signals](http://www.arrl.org/propagation-of-rf-signals). For an explanation of numbers used in this bulletin, see [www.arrl.org/the-sun-the-earth-the-ionosphere](http://www.arrl.org/the-sun-the-earth-the-ionosphere). Information and tutorials on propagation can be found at <http://k9la.us>.

Also, check this: "Understanding Solar Indices" from September 2002 QST. <https://bit.ly/3Rc8Njt>

NNNN

/EX



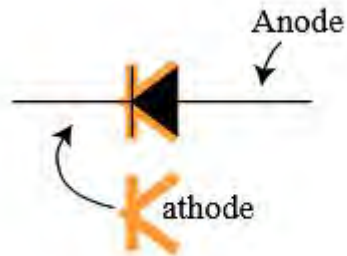
# Tech Tips

## Tech Tips

### How can I remember the anode and cathode?

For the longest time I could not remember which end of the diode was called the anode and which was the cathode, I looked it up every time.

**I finally came up with this memory aid. The German word for cathode is *Kathode*. The big K kind of looks like a diode symbol.**



**Thanks to Rick Danby VE3BK for this. He wrote:**

#### **Diode symbol study aid**

Thank you Khan Academy, for this tidbit and I share here for anyone who has trouble remembering which side of the diode is the cathode vs anode.

# New Tower Project at the Alma Repeater Site

## By Tony Lelieveld VE3DWI



Last Year October as Reg VE3RVH was planning to move in a Seniors Home, he was looking to take his 64' tower down. He received a quote from a company for about \$3,200 which, needlessly to say, was outrageous. After I contacted Reg and discussed the matter Reg generously agreed to donate the tower to the Elmira Radio Club for the Alma repeater site. On behalf of the membership, thank you very much Reg.

Later that month a group of club members got together to take the tower down. John VE3JXX was the tower climber. Other assistants were Reg VE3RVH, Ken VE3KCY, Paul VA3PDC, John VA3PT and Tony VE3DW. Ted VE3TRQ showed up later to give moral support. If I forgot anyone, be sure your help was appreciated too. Unfortunately, no pictures were taken but it went well and the tower was transported to Alma at Ken's VE3KCY compound where it was stored for the winter.



On Saturday July 5<sup>th</sup> 2025 a large crew got together in Alma to dig the 4X4X4 foot hole for the new tower behind Ken's VE3KCY transmission shop. It was hard slugging as the ground was hard packed, full of rocks and it was even necessary to use a "Pick Ax" to loosen up the soil. On top of this, it was a stinking hot day too. I can't emphasize enough the hard work of slugging and digging the guys did. I'll make a list of all participants later. It took about 6 hours to dig the hole.



On Tuesday July 8<sup>th</sup>, Ken VE3KCY, Al VE3XAW and myself VE3DWI came together and got the concrete poured. On Aug. 11 Ken and I cut off the plywood form so that the concrete base was level with the ground. On Aug. 23 a crew got together to paint the tower and install the three ground rods, one for each tower leg.

On Wednesday Sept 10 a crew got together to install the new tower. First all materials were arranged, John VE3JXX got his climbing gear arranged and inspected. The rope, pulley system and the Gin Pole were put into service and the first section got



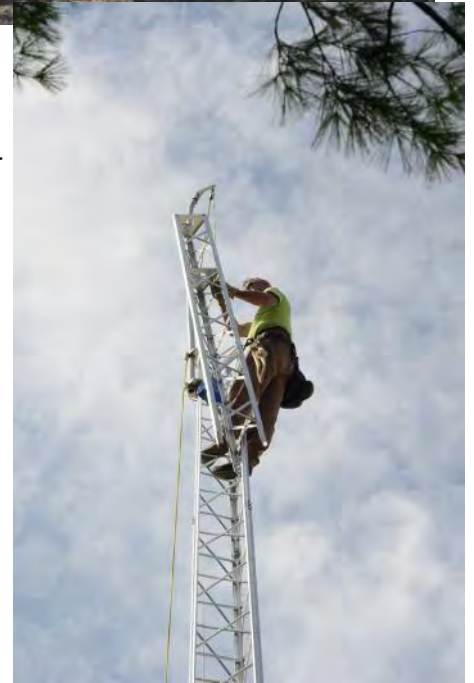
hoisted up. Once we had a sequence going, one tower section at the time was installed until the last top section got hoisted up. We didn't raise a flag but just imagined it. We all went for a well-deserved lunch.

After lunch the old antenna and the 7/8" feed line were lowered from the small tower and hoisted up to the new tower. After this a site clean-up was done. Everybody went home with the knowledge that a good job was done. At one of the club meetings, I'll be doing a slide show of the 130 some pictures that were taken by Ted VE3TRQ. A big thank you to all the participants who attended the various sections of progress.



VE3VEG Reg, VE3JXX John, VE3KCY Ken, VA3PDC Paul, VA3PT John, VE3XAW Al, VE3HWS Steward, VE3JNP Justin, VA3MZD Rod, VA3AZH Mark, VE3TRQ Ted, VE3EFI Curtis, VE3DWI Tony and I hope I didn't forget anyone.

Note: See more of a collage of pictures on the next page.





# Elmira Radio Club VE3ERC Meeting

## Minutes

**Wednesday, September 24, 2025**

VENUE Elmira Fire Hall – 44 Howard Ave, Elmira, Ontario

### Minutes

7:00pm Virtual Eyeball QSO – Setup, Social time & Coffee

7:30pm

1. Meeting Call to Order, Welcome - Frank VA3FJM - Frank called the meeting to order at 7:30pm

2. Roll Call & Quorum – Hagen VE3QVY - Members in attendance at the meeting were: VE3FJM Frank, VE3QVY Hagen, VE3CZ Linda, VE3FE Mike, VE3DCC Rich, VE3DWI Tony, VE3TRQ Ted, VE3BBU Josh, VE3JNP Josh, VA3DXK Brian, VA3PDC Paul, VE3JXX John, VA3JNW John, VE3KCY Ken, VA3AZH Mark, VA3KUD Kurt, VE3CDF Andy, VA3WXW Bob, VE3EFI Curtis, VE3XAW Al, VE3BYP Graham, VE3JMU Jim (online), VE3BVS Steve. 23 members out of 54. Quorum reached.

3. Adopt Agenda - Hagen VE3QVY • Motion to adopt Agenda of June meeting - Mike VE3FE 2nd. Carried.

4. Presentations/Speakers/Workshop • Show and Tell. Hagen VE3QVY - Brought in samples of objects that were printed with his new 3D printer to show the capabilities of the latest 3D printers. Ted VE3TRQ showcased his new POTA antenna system, which he had built himself. The antenna mast attaches to the trailer hitch and features a spider beam pole that can be quickly extended. Additionally, he brought in a great Amazon find - a large fishing line hand-winder spool that can be used for rapidly reeling in Antenna wire. Mark, VA3AZH, brought in his VHF tube amplifier, which he designed and built himself using parts from his lab and a tube from Tony, VE3DWI. The amplifier is capable of amplifying the 5W output of his HT to 60W. He uses it every morning to participate in the ERC morning FM net. Ken VE3KCY brought in a 3D printed CW paddle that he made himself. As it was passed around, we remarked at how well it felt, being sturdy and well-weighted. We are sure he will make plenty of QSOs with this paddle.

5. Secretary's Report Hagen VE3QVY • Motion to accept Minutes of June Meeting. Errors or Omissions: None. Ted VE3TRQ 2nd. Carried.

6. Treasurer's Report Ted VE3TRQ • Monthly Financial Reports - Motion to accept Treasurer's Report. 2nd Steve VE3BVS. Carried.

7. President's Report Frank VA3FJM - Not much to report as communications with the military have slowed down, and will re-establish communications with them.

8. Committee Reports

• Repeater Technical Committee Tony VE3DWI - All repeaters operating normally. Tony thanked the multitude of volunteers who dug the hole, painted and erected the tower over the course of several days of work. The Alma repeater is now operational with its new tower.

- EMCOMMS Group - John VE3JXX - last event was field day, where the EMCOMMS members practiced the phone tree. The exercise went well with some on-the-spot thinking by VE3EFI Curtis acting as a relay via Simplex. Meetings will be held to discuss next steps and revisit current procedures, such as WinLink. Still haven't heard from the Township emergency coordinator, John will plan an in-person visit to see if the township wants to include the club in their emergency preparedness plans.

- Field Day - Steve VE3BVS - No report, will provide one for the next meeting.

#### 9. Unfinished Business

- Club Call Signs - Ted VE3TRQ reported that ISED has no costs for moving the club call signs to trustee Steve VE3BVS. Steve will report on the relocation of the call signs at the next meeting.

#### 10. New Business

- VE3QVY announced that the club has 10 net controllers available for the Wednesday night net, which is fantastic and keeps the nets vibrant. Additionally, anyone interested in trying out for NCS should contact him. There is always a need for new net controllers.

- John VE3JXX asked about the youth initiative and the \$500 allocation of funds at the last meeting in June. Stewart VE3HWS was not in attendance to provide a report to the club. Ted VE3TRQ reported that there have been no youth memberships or expenses filed regarding this. John, VA3JNW, had concerns about the allocation of funds without a budget or a plan for how the funds would be utilized. After some discussion, the consensus was that there should be accountability now that the club is meeting regularly every month, following the summer recess.

Rich VE3DCC proposed a motion that the club asserts that all project plans and expenditures by club members need to be approved by the club at a General meeting first. 2nd Mark VE3AZH, carried.

#### Announcements

- Next meeting: October 22, 2025 7pm Elmira Firehall - Presentation Flex Radios - Mike

