



MARCH 2025

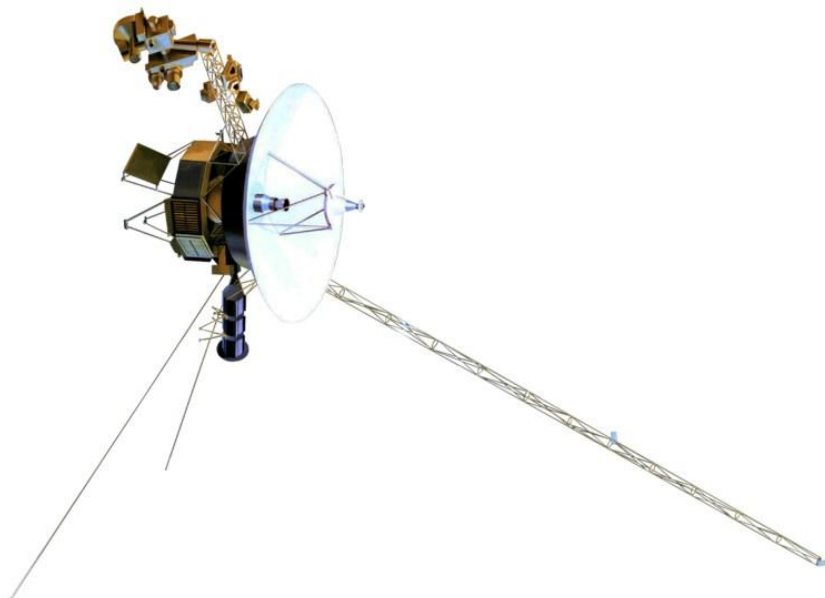
Volume 14 Issue 3

VE3ERC-LUB

President: Frank VA3FJM
Vice-President: Tom VE3DXQ
Secretary: Rod VA3MZD
Treasurer: Ted VE3TRQ
Trustee: Wes VE3ML
QSL Manager: Kirk VA3KXS
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



Artist's rendering, from [NASA](#), of the design employed by the twin [Voyager 1](#) and [Voyager 2](#) spacecraft, in mission configuration. Sent into the outer solar system for the purpose of embarking on the "grand tour" of the [Gas giants](#), [Voyager 1](#) made successful reconnaissance flybys of the planet [Jupiter](#) and [Saturn](#) in 1979 and 1980. [Voyager 2](#) also performed flybys of Jupiter and Saturn in 1979 and 1981, along with the very first, and so far only, visits of the planets [Uranus](#) and [Neptune](#) in 1986 and 1989. (Wikipedia)

See Page 12 for the article.

**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
The club is Radio-ACTIVE

President's Update for March 2025

As was discussed at our last meeting and recorded in the minutes, our club Emergency Coordinators (John VE3JXX and Rich VE3DCC) put out the following request to our club members.

Please consider helping out!

As a club are we willing to organize the Emergency Communications Group?

We need ERC club members in this group

Committed to do this. The call for assistance could come day or night, the emergency could be a number of hours or a number of days.

We need the capability to respond any time with "Go Boxes" and portable equipment and antennas to a location of need, set up and operate. We need people who can pass traffic from home bases and we need people who can operate portable (Go Boxes) or "take the next shift" if the emergency is longer than a day.

Before we speak to the Fire Department/Township **or anyone** about our ability to provide any emergency communications, we need 8-10 people who will commit and be available for the above mentioned.

We will discuss this at an upcoming meeting, as something for everyone to consider. If you are interested we need to know your information.

NAME and CALL.

ADDRESS and PHONE.

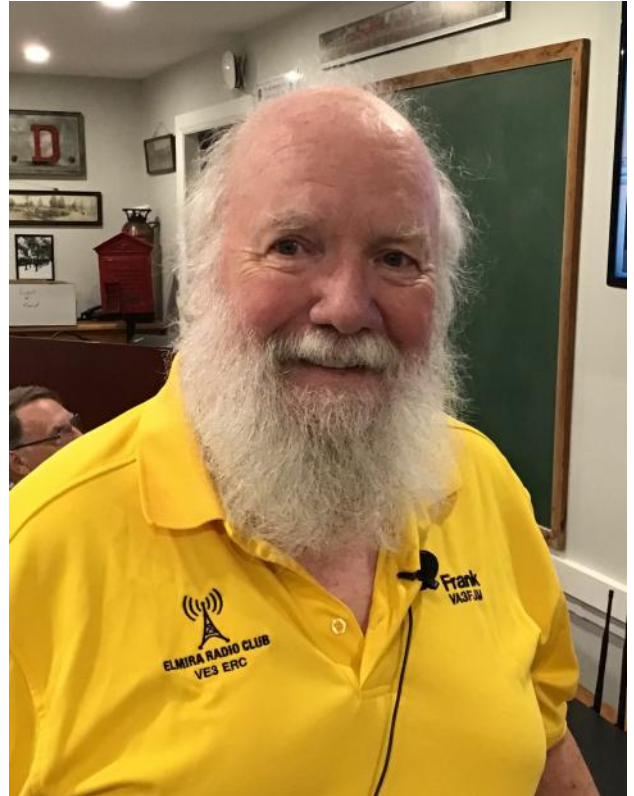
EQUIPMENT. Base station VHF UHF HF 80-10 meter

Mobile station VHF UHF HF 80-10 meter

Portable antenna(s) VHF UHF HF 80-10 meter

Digital capable Base Portable Winlink Computer

Thank you from Rich VE3DCC and John VE3JXX
(Emergency Coordinators)



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

(519-787-2279)



WEDNESDAY NITE NET CONTROLLERS

JANUARY 8 - BRIAN VA3DXK

MARCH 12 - HAGEN VE3QVY

MARCH 19 - ROD VA3MZD

MARCH 26 - MEETING

APRIL 2 - TED VE3TRQ

APRIL 9 - TONY VE3DWI

APRIL 16 - FRANK VA3FJM

APRIL 23 - MEETING

APRIL 30 - BOB VE3IXX

MAY 7 - ROD VA3MZD

MAY 14 - TOM VE3DXQ

MAY 21 - HAGEN VE3QVY

MAY 28 - MEETING

Repairing a 50W RF Power Amplifier

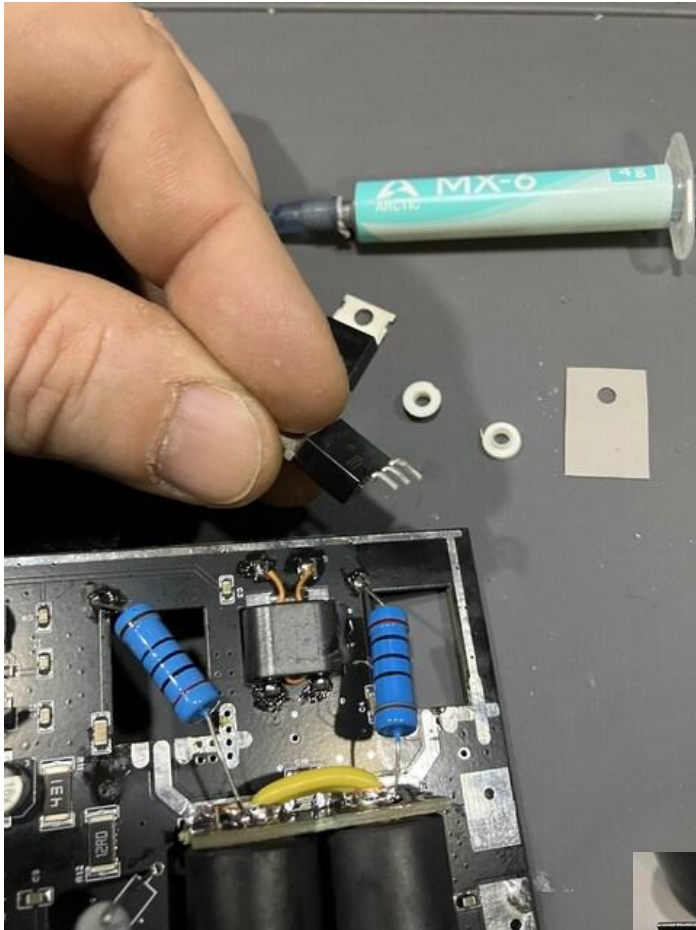
Hagen Kaye VE3QVY

So this little power amplifier from VE3JLC (Jim) stopped working and I'll attempt to repair it. This amp is a common design built around the IRF series of power MOSFETs - I've built a few of these power amps from scratch, but this will be the first I'm going to repair. These power amps take a few watts from a QRP type transceiver and amplify it to around ~50 watts. The design is simple and contains no protection for the MOSFETs against a high SWR (bad connection to Antenna or no connection at all). The MOSFETs themselves are under a \$1 so adding protection circuitry would probably cost way too much. Anyways first step is to remove the MOSFETs and test them with my handy transistor tester - pictured beside the power amp.



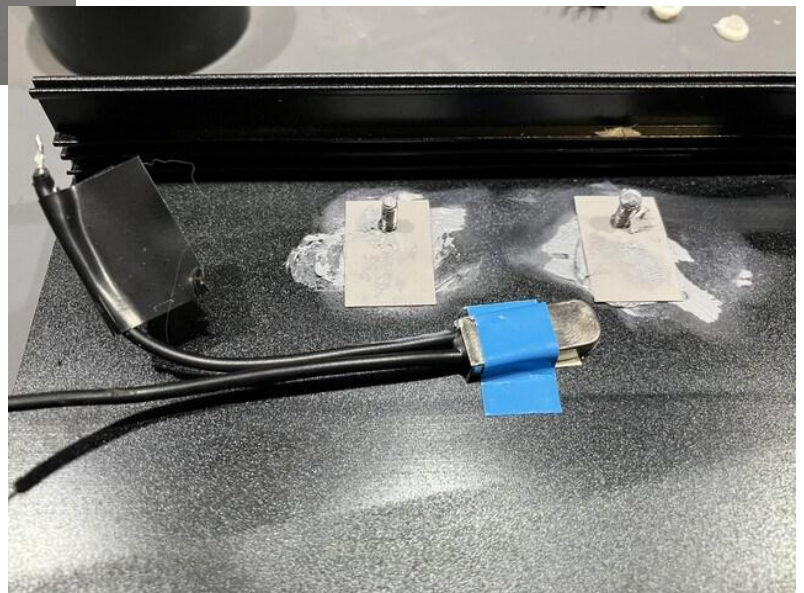
Remove both transistors. One of them is still good - the tester shows this-

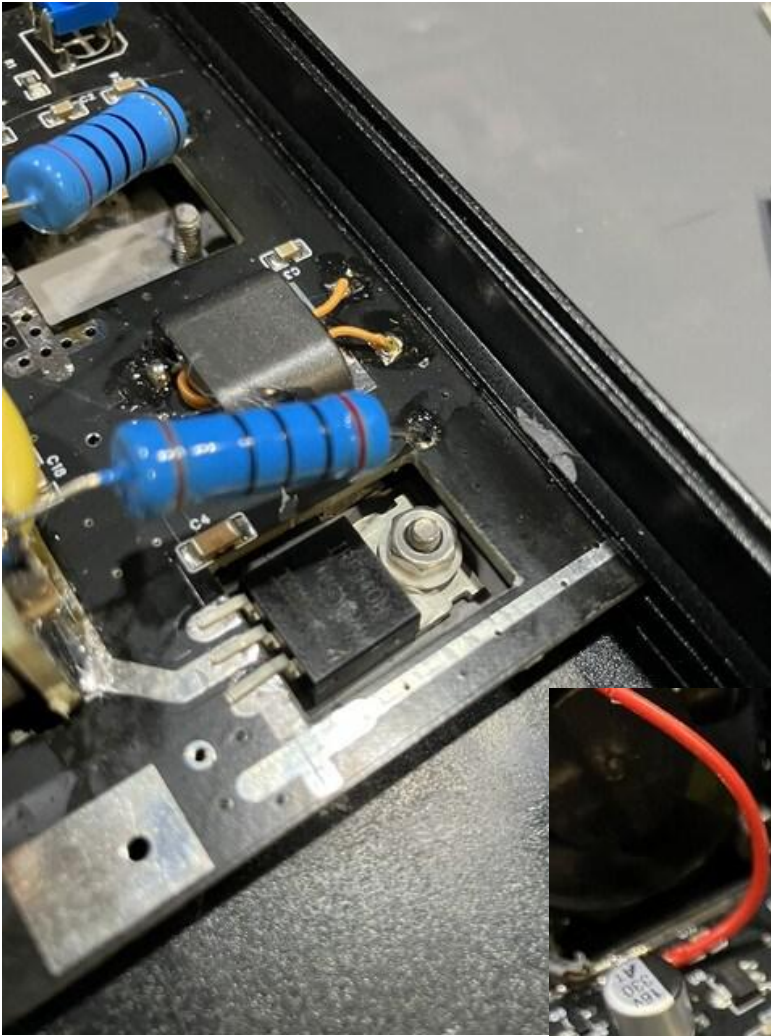
The other one, well, the tester thinks it's just a resistor, not going to do much amplification!



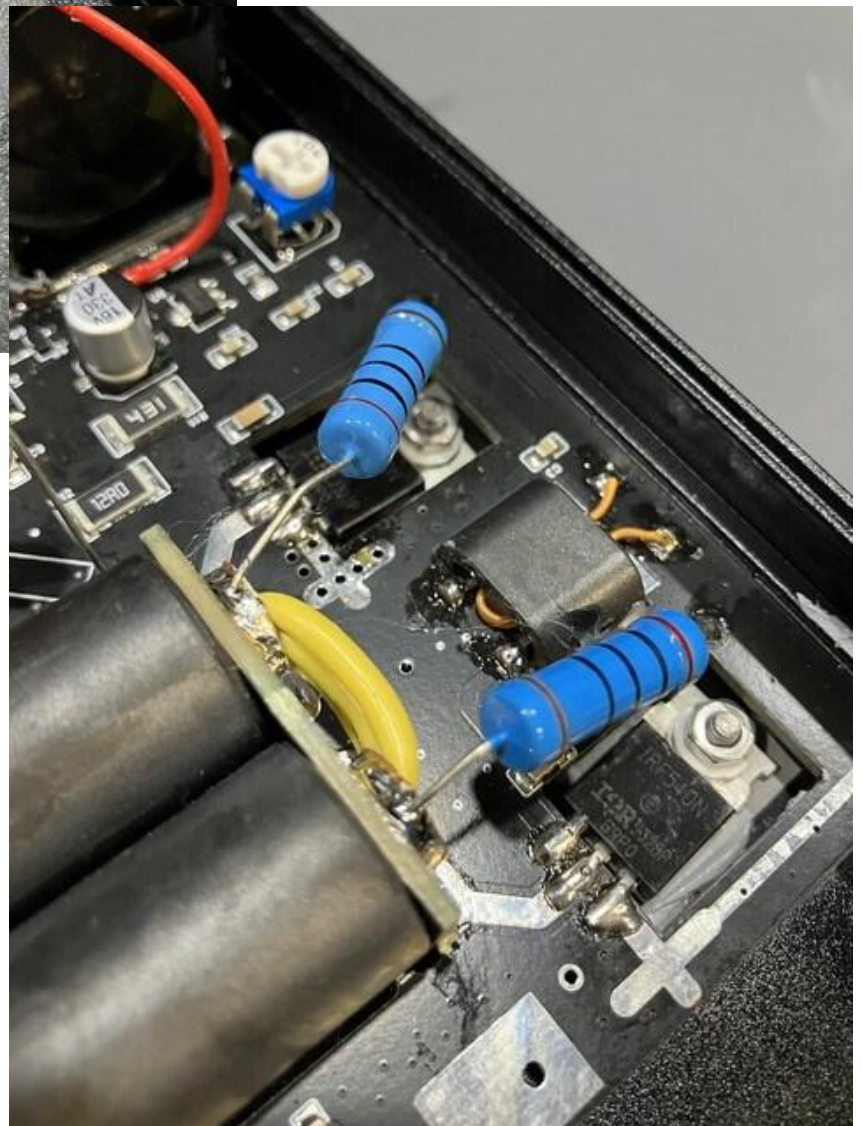
Of course, putting everything back together is more challenging than just taking it apart. First the MOSFET transistor legs need to be bent to fit on the board and be able to be attached to the case (which acts as a heat sink). I think I bent them close enough, we'll find out soon...

Next we need to insulate the transistors electrically from the case, but not thermally. The big difference between these cheap MOSFETs and RF Power MOSFETs is the case is attached to the drain pin and we can't have the drains of the MOSFETs electrically attached. With a RF MOSFET the case is attached to the source pin which are electrically connected together. I put the thermal paste and new isolation pads on the case in prep for attaching the new MOSFETs. That silver thing with black wires is some sort of thermal switch that turns on the fan when the MOSFETs start to get warm.





Here is the tricky part and the reason I have magnifying glasses and several different types of tweezers. I have to physically attach the MOSFETs to the case while making sure they are aligned on the PCB to solder the legs. Got one aligned, to solder...

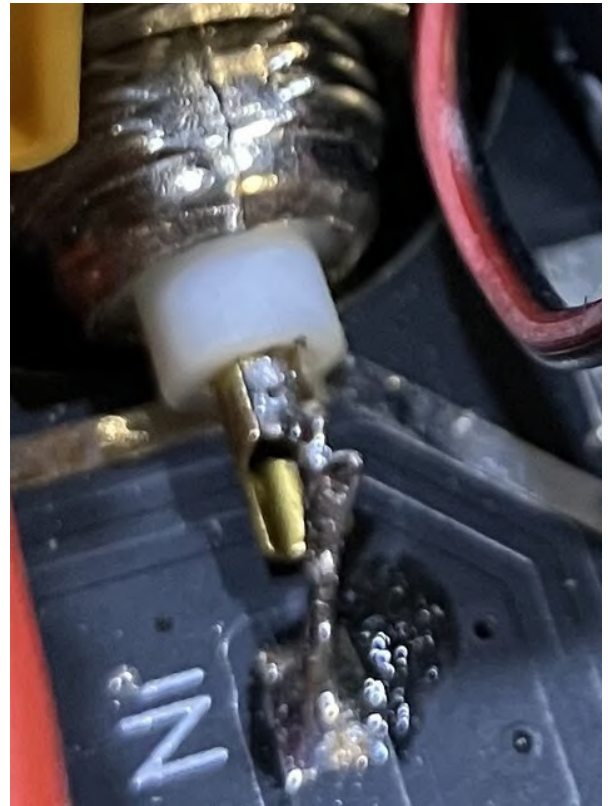


And rinse and repeat both MOSFETs are now soldered and ready for the big moment to test the power amp.

Next steps is to take this amp through the steps of bringing it up and testing it. First testing in DC mode and then put some RF through it and make sure the input impedance is correct (don't want to much SWR from the QRP transceiver and the input of the power amp). And finally measuring harmonic distortion and amplification.

So I started testing this amp and had some 'flaky' results that didn't make sense. Turns out the manufacturing and quality control is not good. There are a lot of cold solder joints. Here is one, and there are plenty of them. Will resolder all the joints and re-inspect it again before continuing. Most likely the failure was due to one of these cold or bad solder joints.

So first thing is powering this up. I have 2 programmable power supplies where I can set the voltage and maximum current as well. I set it to 13.8V and max 100ma - that way if something was going to cause these new MOSFETs to draw too much current my power supply would cut off the voltage before bad things happened.



Powered it up and it's drawing only 10mA - good stuff. Now it's time to set the bias voltage on the MOSFETs. Since there is no service manual stating what it should be set to, I just turned up the bias voltage until the amp was drawing about 150mA - this would mean the MOSFETs are now turned up just a little bit and ready to amplify.

Next step is to use my VNA to measure the SWR on the input of the amp. SWR is under 1.5 - so I should be able to connect

up my transceiver to this amp to see how many watts of power I can get. Here is my setup-

I set my transceiver (the IC-7100) to minimum output power. Connected it to the SWR meter, connected the SWR meter output to the power amp, the output of the power amp to the silver box which is a -20db sampler, connected the sampler output to another 20db attenuator and then to the input of the spectrum analyzer.

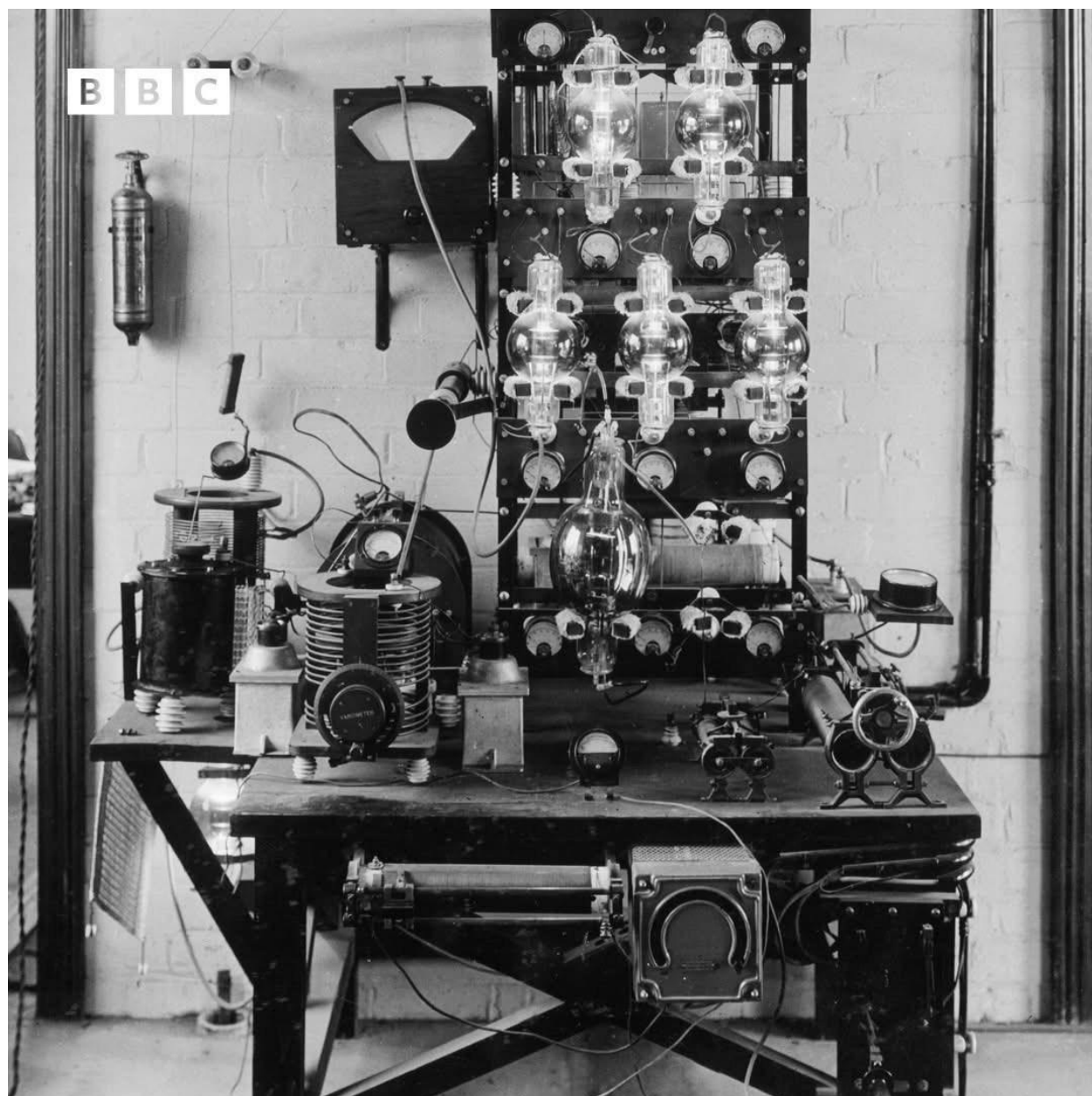
With this setup I can see what the output power of the IC-7100 is and if there is a high SWR to the power amp and then safely sample the output on the spectrum analyzer. A quick keying of the mic to avoid the smoke and everything looked good. Time to key up the MIC and see how much power the amp puts out. Here are the results-

With 2W of output from the IC-7100, the SWR was 1.4 going into the power amp. Output power was 47dBm or 50 watts! However, looking at the spectrum analyzer there are a lot of odd harmonics. This power amp will need a low pass filter - for sure. Otherwise, it works pretty well. The efficiency is not that great, but heck I didn't design the amp, just repaired it.

I'll probably run some more tests and maybe try a few tweaks, but I'm pretty happy about my first repair and learning experience!



From the PAST



The radio craze took hold a century ago in 1925 when the BBC opened the world's first high-power transmitter in Daventry, Northamptonshire. Pictured is the BBC Daventry Empire (Short Wave) Transmitting Station (5XGB), in 1926. **73 Tony VE3DWI**

Tech Tips

A temporary solution for this type of mike hang up clip.



If you have a microphone with a button on the back like this.



And you don't have a Mike clip like this



Get a a shower Cur-tin clip like this.



Mount it with the top of the big loop on any surface so that it can swivel a bit back and forth. Like this.



Than you can use it like this.

And this will help you out in a pinch.

73, Tony VE3DWI

A Quick and Easy QRP Emergency Field Antenna

By John VA3KOT

I once drove to a park about 45 minutes away from home to do a POTA activation then realized I had left my antenna at home. <<Panic>>. I improvised by digging a 33ft wire out of my pack, cutting it in half and hastily erecting a V-dipole with its ends only about 10ft above the ground. The propagation gods must have been in a benevolent mood that day because I completed the activation and even logged some DX with what was probably the craziest antenna I have ever used.

The next day I constructed a proper dipole that I always carry in an emergency bag in my truck. I have never had to use it. Then, just a few days ago I watched a [YouTube video by N7KOM](#) in which he performs a SOTA activation using a very simple wire antenna called the TinyAntenna. It comprised an inductively loaded 8ft radiator and a 13ft counterpoise. A tuner is required but it worked very well on the higher bands. Of course, a wet noodle would often work up on the top of a mountain. A commercial version of the TinyAntenna is available from [N6ARA](#).

I was very interested in the idea and wondered whether I could successfully adapt the idea for my own needs. I wanted a single band, tunerless antenna that could be carried in a shirt pocket and kept for emergency use. This is what I came up with, and - spoiler alert - it works. The original TinyAntenna uses a T50-6 toroid wound with 20 turns of wire for a loading coil. I didn't have a suitable toroid. I thought about substituting what I thought was a T50-2. Unfortunately that toroid, purchased from a reputable Canadian electronics retailer, was definitely not made from type 2 powdered iron material, as I discovered when I wound a few turns of wire on it and measured the inductance. The required inductance was around 1.8 microhenries, so why use a toroid at all? In its place I substituted about 35 turns of enameled copper wire around a short piece of 1/4-inch diameter fiberglass driveway marker material.

For readers who don't live in snowy regions: a driveway marker is a short pole with reflective coating used to mark the edge of your driveway when the snow lies deep and crisp and even. They are sold in lengths from 3 to 5 feet. I have a pair marking the end of my driveway; maybe I'll rediscover them in a couple of months if the towering snow banks (almost tall enough to qualify for SOTA) eventually thaw.

Using a driveway marker core for the coil presented some challenges. It was easy enough to wind but when I tested it out on the barren, frozen wasteland that was once my deck I found big variations in SWR as I made minor changes to the spacing of the coil turns. The fix involved delicately drilling a small hole in the core at each end of the coil to hold the wire ends and keep the coil turns tightly compressed. Even fine gauge enameled copper wire can be surprisingly springy. A layer of shrink wrap was added to ensure the mischievous coil did not conspire to devise a way to change its inductance.



The Emergency Field Antenna for 20m. Note the radiator wire (top) uses a simple BNC center pin to connect to the radio. The blue component is the loading coil. The bottom wire is the counterpoise. Both 26awg wires are 13ft long.

The TinyAntenna uses an 8ft radiating element and requires a tuner. It is designed to be usable on all the high bands. I lengthened the radiating element to 13ft and, with the addition of the loading coil (measured at 1.7 microhenries), my Emergency Field Antenna can be used without a tuner on 20m.

The original TinyAntenna has a feature that I found very interesting. It directly connects to a radio using only the center pin of a BNC connector. That probably shaves a couple of grams from the weight if you are striving to minimize the load you have to carry up a mountain. The closest mountain to my home base is called Kemble Mountain on the Niagara Escarpment. It soars at least a couple of hundred feet above the surrounding terrain. The ascent takes about 30 seconds in my truck. Needless to say, weight is not a priority.

I tested my Emergency Field Antenna using just the BNC center pin as a connector. I was pleasantly surprised at how securely it mated and remained in place. However, the antenna could be disconnected by a simple light pull on the wire. If that were to happen while transmitting the radio would suddenly see infinite impedance and - pop go the finals! So, I added a BNC shell (without the crimp-on sleeve, since there is no coax braid involved) and secured the assembly with shrink wrap.

Out on the barren, frozen, ice-covered deck, another "learning opportunity" presented itself. Using the QMX's SWR measuring tool the antenna presented a 3.5:1 reading on first power-up. That was definitely double plus ungood. The issue was that I was using a 13ft counterpoise on 20m - too short! Now, 13ft would be just fine if laid directly on the ground, but it was laying on top of random patches of ice and snow where I had cleared just enough space to operate. That was not a good ground. Moving the counterpoise around changed the SWR considerably. I found a patch of ice that satisfied the SWR meter and obtained a 1.64:1 reading. Not perfect, but good enough to risk transmitting.



Usable SWR with the tunerless Emergency Field Antenna for 20m hooked up to a QMX

The proof of the pudding ...

Of course we all know that a low SWR does not a good antenna make, otherwise we could all happily use a dummy load for an antenna. Is this Emergency Field Antenna a dummy load? Despite the cold I had to find out. I called K4NYM who was activating a park in Florida 1100 miles (1770km) away. He was busy with a constant flow of hunters so I had to wait for my opportunity to pounce with my 4.5 watts into a decidedly compromised antenna. Patience prevailed and we QSOd. I gave him a 559 and he gave me a 449 report.

What next?

I realize this is meant to be a super-light pocket antenna for emergency use only and we can conclude that it is indeed fit for purpose. But, all the same, it probably has a use in a case when a rapid deployment in a public space is called for. I am thinking of activities like RaDAR (Rapid Deployment Amateur Radio) which is a form of radio sport in which the object is to make 5 contacts then move on a specified distance then repeat up to four times within a 4-hour time window.

The Ham Radio Outside the Box Emergency Field Antenna can be supported on a lightweight fishing pole and erected very quickly indeed. It seems ideal for RaDAR type activities but maybe with one small improvement. Instead of a single counterpoise wire, a set of ground radials would improve the efficiency. I carry a set of 4x13ft radials in my outdoor radio pack that can be deployed almost as quickly as a single counterpoise. In the spring - when I can see the green, green grass of home again I will give it a try.

VOYAGER 1

Signals from Earth now take 23 hours and 9 minutes to reach Voyager 1, with the same duration required for a response.

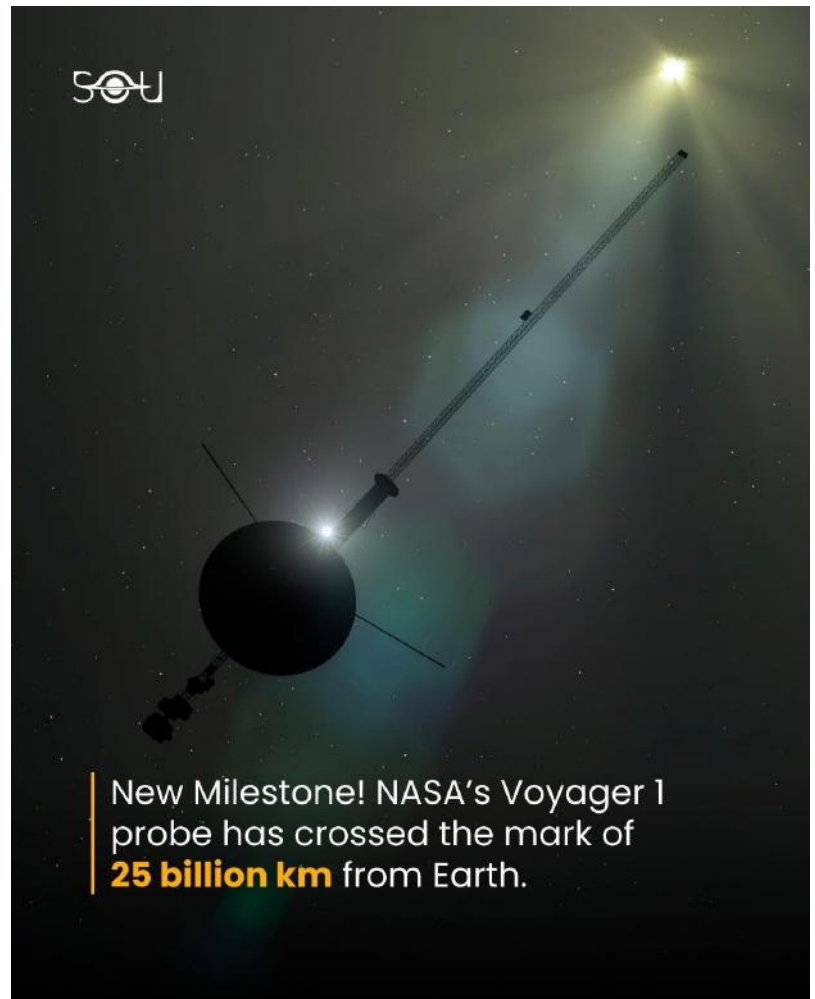
Looking ahead, Voyager 1's next significant milestone will be reaching a distance of one light day (approximately 25.9 billion kilometers) from the Sun, projected for January 2027—coinciding with the fiftieth anniversary of its launch.

While it is anticipated that Voyager 1 will still be operational at that time, engineers may need to deactivate some scientific instruments as its radioisotope power sources deplete.

Despite the vast distances involved, these achievements highlight the incredible journey of Voyager 1.

For context, Proxima Centauri, the closest star to our solar system, is about 4.24 light-years away, which would take Voyager 1 approximately 74,000 years to reach at its current speed.

Thanks to Tony VE3DWI for this article.



A Night at the Movies

It is often surprising to see “radio” play a part in the movies.

For any of you movie buffs, you might enjoy “Vertical Limit”, which came out in 2000. It is the story of a daring rescue of three climbers who fell into a large cavern while climbing in the mountains of Pakistan.

Surrounded by rock walls and closed in by an avalanche of snow, they are unable to use their radios, but guess what? Pressing the mike key, does produced a hiss at the base camp.

As you might guess, it is “morse code” to the rescue. It was a thrilling flic which will keep you on the edge of your seat.

73, Bob VE3IXX



Morse signal prevents disaster

— by Jan van As.

On Friday, 13th February, 1942, the M/T OSCILLA was nearing a base in the Hebrides, after a tense crossing from Halifax to the Scottish islands. For 24 hours there had been much signal traffic between convoy and escort, and now, at 0730 hours, the convoy had ended. The last miles lay ahead of us, as if we were a normal merchant ship sailing in peacetime. We had a good captain, who was well liked by the crew.

The past 24 hours had not been without danger. The previous afternoon a German U—boat had been destroyed by the RAF, as she followed us at periscope depth. During the night, many signals had been exchanged, using the blue Aldis lamp, and I handled many of these. In between times, I copied radio messages, some of which were intended for us, and were immediately deciphered.

After a turn on the compass deck, that was a welcome break, but having to go on the bridge with the lamp afterwards was like a cold shower. You had some adjusting to do, after the fierce light of the radio-room, and the comfort of decoding the messages in the warm accommodation above.

After a long and tiring watch, the signal "all-clear" came in, and the escort ended. The coast was not far away. Gunners and look-outs could pack their things. The captain left the bridge after giving the right course.

Just as I went to leave, the relieving mate came on the bridge and called, "Where is everybody? Are you going too? What has been said? What's going on?" and so on and so forth.

The course was clearly indicated in the wheel-house. I told him we were no longer a warship, but a normal merchant ship, with a normal third mate on the bridge. I said I would like to have a normal breakfast and go to sleep, just like everyone else who had just finished a long and cold watch.

He continued complaining that he was alone, and that I should keep him company until half past eight. As he was a nice fellow, and had such a way with words, I agreed I would stay till 0825, and then — finish!

A moment later he called, "They are signaling us on the horizon. What are they saying?" Sure enough, a point on the horizon was signaling A's with a searchlight. I told the mate I was exhausted, and the escort was over... Then the signaling started again. Reluctantly, I manned our searchlight and sent the long answering signal. Slowly, they signaled MINE.

"What's that?"

"Mine", I told him. "What does it mean?" I was definitely not in good form, and the mate began,

"mine, yours, his, ours... mine what?" The coast signalled MINE again, and we sensed something was wrong.. and at the same moment said to each other,

"Pufffli! A minel!"

In panic we looked out to sea, and immediately the mate saw it.

"There it is. Keep an eye on it!" He ran to the wheelhouse, gave the helmsman an order, and the ship turned sharply to port. We had been headed straight at the mine, but



when we turned it passed to starboard. I looked at the mate, and understood from his look that there was more to be done. By continuing to port with the mine now midships, there was a danger it could hit the stern. I raised my hand and shouted, "Hard starboard!" The ship turned immediately, and the mine swept by parallel to us.

The motion of the ship brought the captain running to the bridge. "What's going on here?"

There was a short exchange, and it was soon explained that in such a dangerous situation there had been no time to tell him what was happening.

The captain commended our actions, and all three of us were greatly relieved at the outcome. Later, we realized just how lucky we had been... with a tanker filled with hot oil!

Morse signals, this time with a searchlight, had once again saved human lives.... that was a nice thought!

J. van As. (ex radio op)

Footnote. We lost our ship a month later, on 16th March, by torpedo and gun—fire, 145 miles north—east of Antigua, in the Atlantic. JvA

This Article was taken from **MORSUM MAGNIFICAT (Magazine for Morse Telegraphy)** from Winter 1986 and is available online for free.

Elmira Radio Club VE3ERC Meeting Agenda Wednesday, March 26, 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 - President Frank VA3FJM - Frank called the meeting to order at 7:32pm

2.

Roll Call & Quorum – Rod VA3MZD - Secretary •In person and online attendance - 20 in attendance, 1 online: Graham VE3BYP, Jay VE3CMN (online), Ken VE3KCY, Rich VE3DCC, Paul VA3PDC, Reg VE3RVH, Hagen VE3QVY, Bob VE3IXX, Tony VE3DWI, John VA3PT, Frank VA3FJM, Rod VA3MZD, Steve VE3BVS, John VE3JXX, John VA3JNW, Josh VE3BBU, Justin VE3JNP, Rene VE3RRP, CurtisVE3EFI, Al Wilson

3.

Adopt Agenda - Rod VA3MZD • Motion to adopt Agenda of March meeting - Moved by Rod MZD, 2nd Steve BVS. Carried

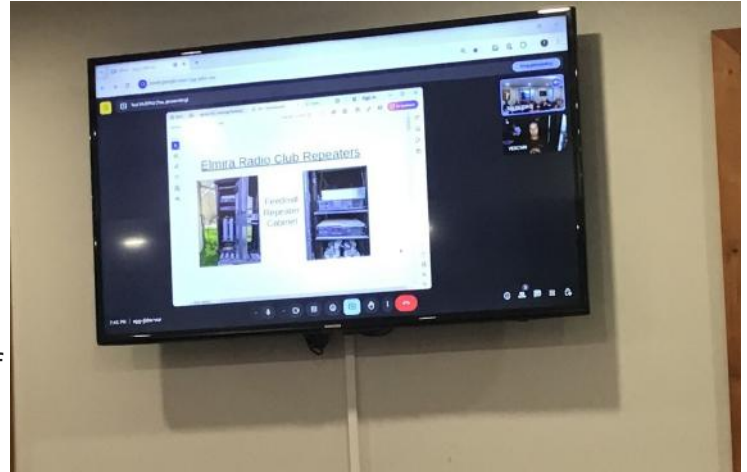
4.

Presentations/Speakers/Workshop

- EmComm Committee - Preparedness and feedback form - John VE3JXX asked mem-

bers to provide info about their radio capabilities and their availability for EMCOMMs for the Township Emergency Preparedness plan. Please fill in and return the sheets to John JXX

- Review of ERC Radio Services - Ted VE3TRQ - Ted gave a review of the Club's Repeaters: 4 Repeaters - All Yaesu C4FM - 1 UHF, 3 VHF, RMS Gateway via VaraFM or Packet. Repeater Locations: Alma - WiresX, 1 Elmira Fire Hall, 2 on the Elmira Feedmill. Ted's slide deck summarized the locations, frequencies, capabilities, activities and connections for each repeater and the ongoing development of the Club's network of Repeaters. The deck will be available on the ERC website.



- Frank VA3FJM spoke about the Canadian Armed Forces EMCOMMs training exercise on April 25-27, 2025. Contact Frank if interested. There is information to suggest that Provincial initiative will be integrated with the Military initiative.

5.

Secretary's Report Rod VA3MZD • Motion to accept Minutes of February 2024 Meeting - moved by Rod MZD to accept the minutes from February 26, 2025. 2nd Tony. Carried.

6.

Treasurer's Report Ted VE3TRQ • Monthly Financial Report as submitted - Motion to accept Treasurer's Report - No change to the funds in the bank \$10601.43. As we have considerable \$\$ in the bank we need to spend some or reduce dues. Moved by Ted VE3TRQ 2nd John VE3JXX. Discussion: Tony VE3DWI asked if there is a penalty for having too much in the bank and suggested we make submissions about how we can spend some of our dollars. Frank asked about Club insurance. Motion Carried.

- Annual Dues are to be paid this month - REMINDER! Send etransfer to
- Paul moved that we sanction the Military exercise as a club event. 2nd Ted. Carried.

7.

President's Report - Frank VA3FJM - Frank spoke about the use of MARS (Military Amateur Radio Service). The Military exercise will authorize its use under their supervision. KWARC is also doing EMCOMM development and they are working on similar initiatives and John JXX will be at their meeting next week.

8.

Committee Reports

- Repeater Technical Committee - Tony VE3DWI - Tony will address the issues with crackling on the VHF/UHF repeaters when the weather permits

9.

Unfinished Business

- Field Day 2025 - Steve BVS Chair - Committee to be formed. Volunteers: Hagen QVY - Food, Ken KCY. Steve BVS moved that \$500 be allocated from the club funds for FD. 2nd John JXX. Steve will contact Bill VA3QB about details, including the owner at the airfield.

10.

New Business -

- John JXX - tower installation in Alma - with Spring weather we need to plan for the installation of the tower at Ken's KCY. Tony has info about the Delhi tower legs that are

required. The antenna is available at Ted's TRQ. Ground rods are also needed. Ted moved a budget of up to \$2K. 2nd John JXX. Carried. Tony, Ken and John will be overseeing the tower installation. A work bee will be formed.

11.

Announcements

- Next Meeting- Wednesday, April 23, 2025 @ 7pm Elmira Fire Hall
- Wires-X Net- Thursday, March 27, 2025 8pm TOMORROW on VA3TET Repeater/Room 90561 - Net Control - Rod
- Future GH AuxComService Training Workshops- Next Workshop: **GO KITS & PREPAREDNESS MAY 21 2025 19:00 - 20:00 HRS.** Presented By **Jason Tremblay VE3JXT, RAC Community Services Officer** May 4-10 2025 is National Emergency Preparedness Week. Register with Rosemarie Upfield reupva3rie@gmail **Register before May 20 2025**

12.

Adjournment - Frank VA3FJM - Frank adjourned the meeting at 8:42pm

**Connect Black wire
on pin 17**



**and connect red wire
together with the Black one !!!**