



MAY 2025

Volume 14 Issue 5

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**

**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.**



A Manual Screw Driver Antenna dating back to the 1950's.

See page 9.



THE PREZ SEZ!

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

President's Update for May 2025

Don't forget to come to the

Central Ontario Hamfest

Hosted by the Guelph and

Kitchener-Waterloo Amateur Radio Clubs

The Date:

**SUNDAY June 1st, 2025 -
"Always the first Sunday
in June"**

Time:

Indoor vendors 7 am, Tail-

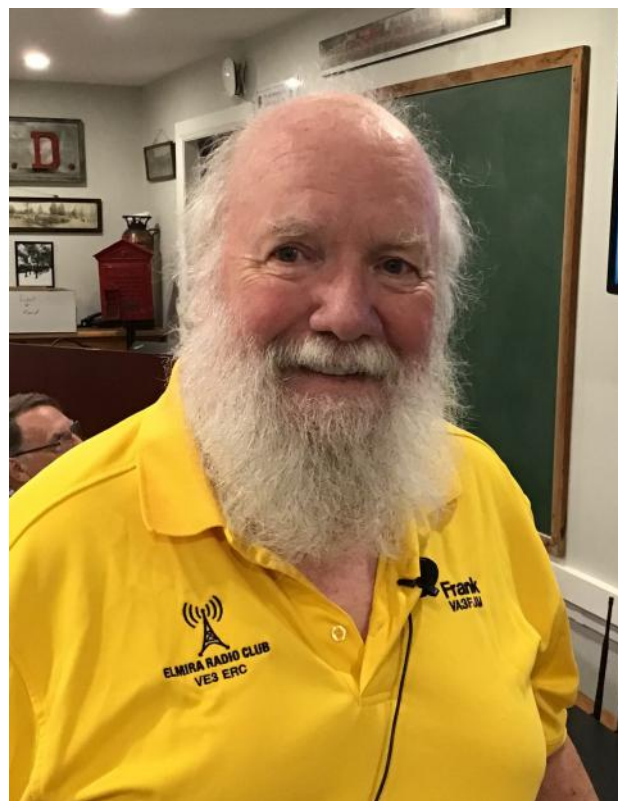


gate 8 am, Public 9 am to 12 noon.

GPS Details:

1128 Rife Rd., North Dumfries, ON
[43.345, -80.419](#) (decimal)
43°20'46"N, 80°25'6"W
[w3w ///rested.machine.halfway](http://w3w.rested.machine.halfway)

Admission: \$8.00 (Youths 12 & under are free)



Door prizes until 10:30am - early bird gets the worm!

Location:

Just west of Cambridge at the Waterloo Regional Police Association Recreation Park located just off the 401 between exit 275 (Homer Watson Dr) and exit 268 (Cedar Creek Rd)

Note that the Roseville Rd (RR46) bridge over the 401 is still closed. We recommend you enter via 401 exit 268 (RR 97, Cedar Creek Rd, The "Flying J")

[DuckDuckGo Map](#), or [Open StreetMap](#), or [Google Map](#) of the site, Beside Hwy 401, be-

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)**

IMPEDANCE MATCHING SPRAY PAINT™

RATTLE CAN EDITION - TUNE YOUR TOWER IN SECONDS!

"Don't fix your transmission line. Paint over the problem!"

FEATURES:

- Realigns coaxial chakras
- Reduces VSWR* by up to 112%
- Adds +3 dB of confidence
- Works on Yagi, dipole, or that bent coat hanger-you call an atena
- Now with Nano-Ferrite Polymerics™ for directional RF laminar flow!

INSTRUCTIONS FOR USE:

1. Shake can vigorously (to excite RF harmonics)
2. Spray liberally over mismatched surfaces
3. Chant "50 ohms... 50 ohms..." while grounding yourself
4. Enjoy crisp modulation and smug superiority



WEDNESDAY NITE NET CONTROLLERS

- MAY 7 - ROD VA3MZD**
- MAY 14 - TOM VE3DXQ**
- MAY 21 - HAGEN VE3QVY**
- MAY 28 - MEETING**
- JUNE 4 - ROD VA3MZD**
- JUNE 11 - TED VE3TRQ**
- JUNE 18 - TONY VE3DWI**
- JUNE 25 - MEETING**
- JULY 2 - JAY VE3CMN**
- JULY 9 - FRANK VA3FJM**
- JULY 16 - BOB VE3IXX**
- JULY 30 - TOM VE3DXQ**

CORRESPONDANCE

Last month John VE3KOT wrote about the "What 3 words" system and compared it to the "Maidenhead Grid" system. Tony VE3DWI wrote the following response:

In the April Club Newsletter, I read with interest the article "What 3 Words" by John VA3KOT. I can understand him laughing about the "DEPLORABLE-IRRITATING-FRAGRANCE" location indicator; they are, however, worthy of more attention. Both the OPP, and many Regional Police Dispatch Centres, are not only familiar with "What3Words" but they are fully aware of it and all dispatchers are using it as a tool to get very accurate location information from the general public.

Despite John's excellent and very detailed explanation of the Maidenhead grid system very few people, unless they are HAMS, know or even heard of the "Maidenhead grid system". Just using the customary six digit group, such as my grid EN93RK, is a way too large area. To use it on a cell phone is cumbersome and very few, if any, will give you a grid square with 10 characters. Even clarifying it with phonetics sounds cryptic and I'd much rather use standard, even unusual or funny, words to spell it out.

"What3Words uses locations of about 3 meters square and are very accurate. Use the cell phone application and you're instantly shown where you are. It does NOT depend on a cell phone connection as it makes use of the built-in GPS receiver that pretty well every modern cell phone has. One could be in the middle of nowhere and still know where you are. Of course, in the middle of nowhere you'll likely have no cell phone service to call 911, but for hams that's not necessarily a problem.

My what3words are "dean.securing.laptop". It's more descriptive than my 10 digit maidenhead locator "EN93RK72IP". The moral of my rambling is "don't shy away from what3words" it may save your, or someone's, life someday. BTW, there is a website where, on google maps, you can find your home location. Click on your house and the small window provides all your information. Or, you can, in the top right corner window of the screen, enter a 10 digit MH locator and the map will instantly take you there.

You can even type in two grids and you'll be shown the direction to/from and distance between the two locations. It will also give you the coordinates in Lat. and Long. and the elevation above sea level. This link is safe to click on.

<https://k7fry.com/grid/>



Enter my 10 digit grid in the little pop up window, click on "show" and it will instantly go to my location. Drag the little Yellow man, drop it on the street in front of our house and you can see my antenna system. It's a great tool.

73, Tony VE3DWI



Don't Forget! VHF Activity Day Will Ignite the Airwaves On June 15!

Celebrating 75 years of friendship, mentoring, and experimentation, the Ontario VHF Association is making as many simplex contacts as possible on Sunday, June 15.

Join in the fun!

Are you participating by:

Activating a park?

Participating in the ARRL June VHF Contest?

Making contacts from home?

All contacts count.

Make sure you have the common FM simplex frequencies programmed into your radio. They are:

-6 M: 52.525

-2 M: 146.520 (146.550 and 146.580 when 52 is busy)

-1.25 M: 223.500

-70 CM: 446.000 (Careful: Some radios insist on an offset. Make sure you are transmitting on 446.000)

If you have modes other than FM or bands above 70 CM, try those too.

Looking forward to a very radio active Sunday
73

Send any questions about this event to [Chris, VE3RWJ](#)

Thanks to Roger VE3RKS for passing this along.



CORRESPONDANCE

Mike VE3MKX sent the following site to download a great magazine:

Ham Radio Ireland

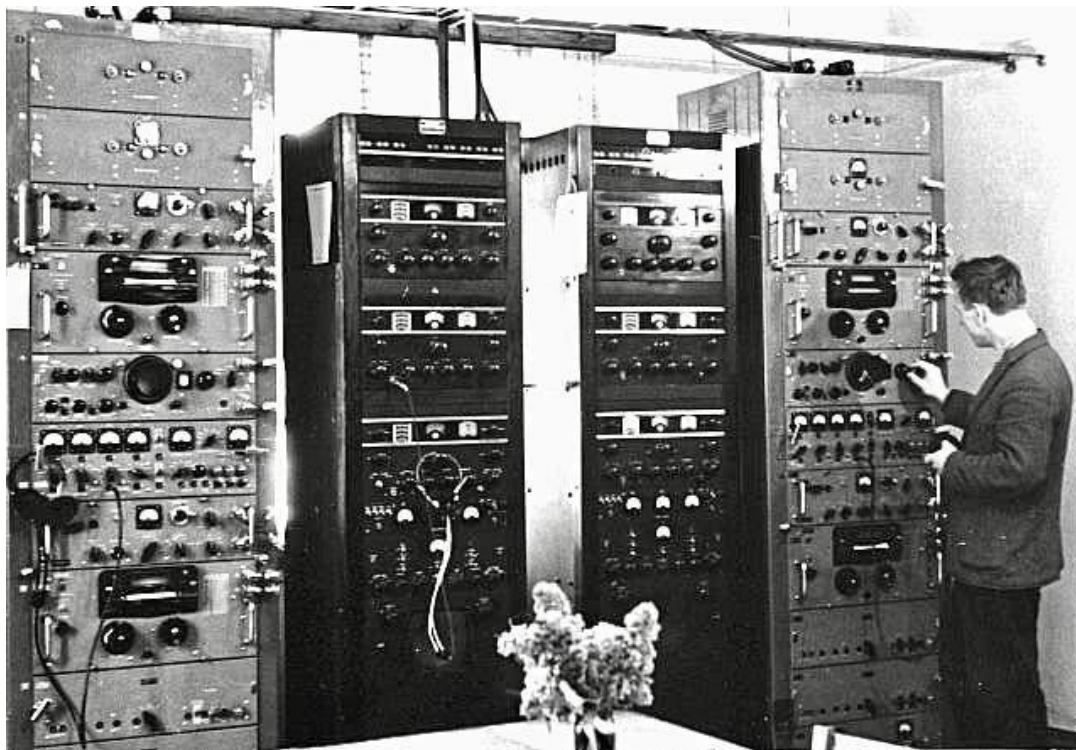
A great issue !

Ham Radio Ireland June Edition is hot off the press. This month we have included a link to the flip book Version which may be found here:

<https://heyzine.com/flip-book/f09d589dde.html>



From the PAST



Shortwave Radio Diversity Reception. Racks of RCA AR-88 receivers used for triple diversity reception during World War II. Receivers were connected to giant rhombic antennas mounted on 90 foot poles. These diamond shape antennas were aimed at Europe and covered 5-25 MHz.

SHORTWAVE RADIO DIVERSITY RECEPTION – CANADA'S BRITANNIA PARK LISTENING POST
In Canada, CBC engineers built a listening post just west of Ottawa in 1933. Britannia Park served the dual purpose of shortwave monitoring and providing the ears for foreign broadcasts on the national network. Receivers were connected to giant rhombic antennas mounted on 90 foot poles. These diamond shape antennas were aimed at Europe and covered 5-25 MHz. Operators used two sets of triple diversity receivers.

During the war, Britannia Park relied mostly on frequency diversity. Audio was sent to CBC in Ottawa, and from there to CBC's three networks: Eastern, Ontario and Western. In addition to news and leadership speeches, the BBC also relayed the voices of Canadian soldiers serving overseas.

Finally, to complement live BBC relays, this listening post also supported recording of foreign programs from many sources for archiving or later broadcast. Similar listening posts existed across the Commonwealth including Makara Receiving Station near Wellington, New Zealand.

Thanks to Tony VE3DWI

Chet Atkins W4CGP-SK

I'm sure that you've heard about the famous guitar player Chet Atkins, now a SK, who was a ham operator with the call W4CGP. This stood for (C)ertified (G)uitar (P)layer. Here is his life story.

Atkins was born on June 20, 1924, in Luttrell, Tennessee, near Clinch Mountain. His parents divorced when he was six years old, after which he was raised by his mother. He was the youngest of three boys and a girl. He started out on the ukulele, later moving on to the fiddle, but he made a swap with his brother Lowell when he was nine: an old pistol and some chores for a guitar. He stated in his 1974 autobiography, "We were so poor and everybody around us was so poor that it was the forties before anyone even knew there had been a depression." Forced to relocate to Fortson, Georgia, outside of Columbus to live with his father because of a critical asthma condition, Atkins was a sensitive youth who became obsessed with music. Because of his illness, he was forced to sleep in a straight-back chair to breathe comfortably. On those nights, he played his guitar until he fell asleep holding it, a habit that lasted his whole life. While living in Fortson, Atkins attended the historic Mountain Hill School. He returned in the 1990s to play a series of charity concerts to save the school from demolition. Stories have been told about the very young Chet who, when a friend or relative would come to visit and play guitar, crowded the musician and put his ear so close to the instrument that it became difficult for the visitor to play.



Atkins became an accomplished guitarist while he was in high school. He used the restroom in the school to practice, because it had good acoustics. His first guitar had a nail for a nut and was so bowed that only the first few frets could be used. He later purchased a semi-acoustic electric guitar and amplifier, but he had to travel many miles to find an electrical outlet, since his home didn't have electricity.

Later in life, he lightheartedly gave himself (along with John Knowles, Tommy Emmanuel, Steve Wariner, and Jerry Reed) the honorary degree CGP ("Certified Guitar Player"). In 2011, his daughter Merle Atkins Russell bestowed the CGP degree on his longtime sideman Paul Yandell. She then declared no more CGPs would be allowed by the Atkins estate.

His half-brother Jim was a successful guitarist who worked with the Les Paul Trio in New York.

Atkins did not have a strong style of his own until 1939 when (while still living in Georgia) he heard Merle Travis picking over WLW radio. This early influence dramatically shaped his unique playing style. Whereas Travis used his index finger on his right hand for the melody and his thumb for the bass notes, Atkins expanded his right-hand style to include picking with his first three fingers, with the thumb on bass. He also listened closely to the single-string playing of George Barnes and Les Paul.

Chet Atkins was an amateur radio general class licensee. Formerly using the call sign WA4CZD, he obtained the vanity call sign W4CGP in 1998 to include the CGP designation, which supposedly stood for "Certified Guitar Player". He was a member of the American Radio Relay League.

Thanks to Tony VE3DWI for this story.

Tech Tips

Tech Tips

Your headphones double as a mic



Need a microphone but don't have one nearby? Plug your headphones into the microphone port as a cheap and temporary alternative.

Grab any pair of headphones lying around, then plug them into the microphone jack, and start talking. This isn't exactly secret knowledge, but if you don't know about it, we think it'll blow your mind. Of course, the quality isn't amazing, but you can't have it all.

From: <https://www.pocket-lint.com/apps/news/135709-the-best-tech-life-hacks-ever/>

[52 best tech life hacks ever - Pocket-lint](https://www.pocket-lint.com/apps/news/135709-the-best-tech-life-hacks-ever/)

Reviving a Webster Band Spanner – a 1950s manual screwdriver antenna

By **John VA3KOT**

About 20 years ago I was approached by a neighbor who, knowing that I am a ham, asked if I might be interested in looking at some of the old ham junkie he had accumulated over many years. He was a fine gentleman, in his golden years, who was no longer active in the hobby. Hesitating for less than a microsecond I eagerly agreed. Among the treasures I acquired was a Signal Electric straight key. I believe it was an R48 model first introduced in 1920 when it sold for \$2.80. But my prized acquisition was a Webster Band Spanner antenna. (See front page.)

The Band Spanner was produced in the 1950s and 1960s by the Webster company in San Francisco. It is a center-loaded manual screwdriver antenna intended for mobile operation. Unlike modern screwdriver antennas, like the popular Tarheels, that use an electric motor to make band changes, the Band Spanner has to be manually adjusted for each band by sliding the whip up and down.

Two models were produced; the A-61 and the A-62. The A-61 (that I acquired) has an extended length of 93 inches and a collapsed length of 60 inches. The longer A-62 model has an extended length of 117 inches and a collapsed length of 63 inches. Both models support the 75-40-20-15 and 10 meter bands. There is a mark on the whip indicating the mid-point of each band. I suspect the WARC bands could also be tuned although it would be necessary to locate the correct whip length by trial and error. The antenna is rated for "100 watts or more".



Coil section (top), lower radiating section (bottom)

The Band Spanner is constructed from a fiberglass support column with a 24-inch long internal loading coil. At the base of the whip is a circular contactor that connects with the windings of the loading coil. As the whip is raised or lowered, the contactor connects to individual exposed turns of the loading coil inside the support column. This type of continuous adjustment permits exact resonance to be achieved anywhere within a band. It is a very high Q antenna - moving the whip just one click up or down (one turn of the loading coil) makes a significant difference to the tuning.

Would the vibration of a vehicle change the tuning?

You might expect that a bumper-mounted antenna would be subjected to a lot of stress as a vehicle crashed through pot-holes and other rough ground, but there is a very tight connection between the whip and the loading coil. The connection is so tight that it requires some force to adjust the whip length and it is quite possible to skip a turn if too much force is used. The tight connection has another positive benefit - it makes the connection point self-cleaning.



Whip connection contact

There is also a locking thumb screw at the base of the whip to help secure it in place.

Whip locking screw



Stationary mobile operation

I am not a mobile HF operator; there are enough distractions already to compromise driving safety, so I prefer to use the Band Spanner as a stationary mobile antenna. For those who do intend to use it as a mobile antenna, there is the H-200 ball mount (shown in picture).

I have tried several ways of mounting the Band Spanner as a temporarily fixed position portable antenna. The manufacturer suggests using a matching section of 21 feet of RG-8/U coax and grounding the shield of the coax to the vehicle body. I did once try using such a matching section with a Band Spanner

on a tripod, but it didn't seem to improve the tuning at all. Most recently I attached my Band Spanner to my "QROp" (5-100 watts) radio set. It is a Yaesu FT-891 mounted inside a mil surplus 50-cal ammo box. The Band Spanner was connected directly to the rear of the rugged steel case. My ham-made L-match tuner was used for fine adjustment of the SWR.



Bumper mount

Tuning was fairly easy. I set the radio to 20m and 5 watts power output. I threw a 17ft wire counterpoise on the ground behind the radio. A single wire counterpoise is not really sufficient ground for this antenna so additional inductance had to be added via the L-match. I would usually lay out at least 4 radials for a portable vertical antenna, but I was on a mission. I wanted to find out if the Band Spanner could be employed as the radiating element of a "POTA PERformer" type of antenna. Ham Radio Outside the Box will be exploring the "POTA PERformer" in more detail in an upcoming post. For now we can describe it as simply a raised quarter wave whip with raised tuned radials.

Now comes the surprise

Having tuned the antenna with one ground radial to less than 1.5:1 SWR I thought I was on a roll. Next step, I raised the radial so that it would not be detuned by contact with the ground. I now had the Band Spanner set for the 20m band, finely adjusted by means of the L-match to

give a good SWR. I expected some further adjustment might be necessary with a raised 17ft counterpoise, so imagine my dismay when the radio flashed its "high SWR" warning.



Ammo can radio set with FT-891 transceiver; ham-made L-match; CWMorse extruded aluminum paddles; Bioenno 12Ah LiFePO4 battery in canvas pouch (left of picture) and Webster Band Spanner antenna attached at rear.

The Band Spanner is intended to be used while mounted to a couple of tons of steel vehicle serving as its counterpoise. It is a very short, loaded vertical antenna with very high Q performance. A lesson I learned early in my ham career, but overlooked in this exercise, was that a short-loaded, high Q vertical whip requires a carefully tuned counterpoise - or a good ground. Simply using a raised 17ft wire isn't good enough. I would have had to precisely trim the raised radial wire to get a good SWR. To make this even more complicated, a precisely trimmed radial wire counterpoise for each band would be required. So the mission objective to examine the Band Spanner's suitability as a portable POTA PERformer was concluded. In future, the Band Spanner will be used with the best ground system I can erect during a temporary field installation.

Another thought ...

A Band Spanner (or even better - a motorized screwdriver antenna) could possibly be used in an HOA situation. If it were ground mounted, with a good system of buried radials, it could potentially be disguised to prevent detection by the HOA hounds.

And finally ...

I am not sure of the actual age of my Webster Band Spanner. They were produced in the 1950s and 1960s so I estimate it to be at least 60 and maybe as much as 75 years-old. The bumper mount has entirely lost its plating and is now a dull rust color. The fiberglass support column is equally dull and has lost its identifying markings. But, the antenna still functions as the Webster company intended all those years ago, which is more than can be said for its owner who is of the same vintage!

Elmira Radio Club VE3ERC Annual General Meeting Minutes Wednesday, May 28, 2025

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

7:00pm Virtual Eyeball QSO – Setup, Social time & Coffee, and delivery of items from Jim's VE3JLC (SK) Radio equipment collection coordinated by Frank VA3FJM.

1. Meeting Call to Order, Welcome - Frank VA3FJM Frank called the meeting to order at 7:34

2. Roll Call & Quorum – Rod VA3MZD - In attendance at the Fire Hall were: Graham VE3BYP, Curtis VE3EFI, Ken VE3KCY, Rich VE3DCC, Paul VA3PDC, Hagen VE3QVY, Bob VE3IXX, Tony VE3DWI, John VE3PT, Mark VA3AZH, Frank VA3FJM, Rod VA3MZD, Josh VE3BBU, Justin VE3JNP, Steve VE3BVS, Ted VE3TRQ, Roger VE3RKS, John VE3JXX, Dave VA3DAS, John VA3JNW, Mark VA3AZH, Stewart VE3HWS, Al VE3XAW, Simon VA3KOE. Online attendees: Mike VE3FE, VE3CZ Linda, Judd VE3WXU. 26 in attendance for Quorum.

3. Adopt Agenda - Rod VA3MZD • Motion to adopt Agenda of May meeting - 2nd Steve VE3BVS- Carried

4. Secretary's Report Rod VA3MZD • Motion to accept Minutes of April Meeting - Roger 2nd - Carried

5. Treasurer's Report Ted VE3TRQ • Monthly Financial Reports - Motion to accept Treasurer's Report - Bank Balance after dues and Bank Service Charge is \$11895.43 Ted requested payment of \$60 to ISED for the Repeater Call Sign VE3EUC. Moved by Ted 2nd by Tony for the funds transfer. Carried. Paul seconded the Financial Report. Carried.

6. President's Report Frank VA3FJM - Frank updated us on the Military Emergency operations in case of an emergency. Frank is the Club's Military's contact if we were called in to react to an Emergency such as a tornado. He explained how the Military/ERC operations would work in an emergency. There will be another training exercise in the Autumn.

7. AGM and Election - see below for slate of candidates

• Officer Elections - No nominations came from the floor for President. Frank VA3FJM agreed to remain as President. Hagen VE3QVY offered to stand as VP. Steve VE3BVS volunteered to be the Trustee. Rod VA3MZD volunteered to stay on as Secretary and Ted VE3TRQ agreed to stay on as Treasurer. John VA3JWN moved, Mark VA3AZH 2nd that the slate of nominees be acclaimed. Carried.

• Treasurer's Annual Report - Ted VE3TRQ
Wes VE3ML as Trustee examined the year end Financial Report. The opening balance was \$10784.37 on January 1st 2024, and year end balance on December 31, 2024 \$11098.64
Ted VE3TRQ moved that the Report be adopted as presented. Steve VE3BVS 2nd. Carried.

8. Committee Reports

• Repeater Technical Committee - Tony VE3DWI

When the weather is more agreeable, Tony will do a complete check on the Repeater site, complete any repairs and upgrades as needed. The new tower for Alma will be prepped for installation at Ken VE3KCY in Alma and a work crew organized for erection. The feed line should be long enough to reach the intended height of 60 feet. A new Diamond X-58 Dual Bander antenna will also be installed. Tony moved that a new diplexer be purchased for the new VE3EFH Fire Hall Repeater. 2nd Pau IVA3PDC. Carried. Ted VE3TRQ added that the Repeater, and RMS gateway will be moved to the Firehall when the computer and networking is ready and weather cooperates.

- EMCOMMS Group - John VE3JXX

John reported that we now have 10 members that have met online to read through the Draft EMCOMMS document that he has prepared and the second meeting to read through the Draft Go-Box Manual. John VE3JXX attended the CARE meeting and met with the Woolwich Emergency Coordinator, Avril Tanner, to determine whether we would have a role in local EMCOMMS and the discussion is ongoing. He encouraged Club members to attend Field Day to put on a quality demonstration of our Club capabilities. We can also be involved in the CARE day next year with other Emergency Preparedness organizations. The EMCOMMS Group meets every two weeks in the Google Meet room. Frank offered to work on ID Badges if the Township isn't prepared to do them. The group also has a new ve3erc emcomms Groups.io to share documents, information and resources. John is planning a mock emergency event in conjunction with Field Day during the morning.

9. Unfinished Business

- Hamfest - This Sunday, June 1, 2025 - Waterloo Regional Police Association Recreation Park, 1128 Rife Rd., North Dumfries, ON - Steve VE3BVS will be setting up the radio/antenna at 6am for ONTARS. Ted VE3TRQ will assist.
- Field Day - Steve VE3BVS - June 28-29, 2025 - Steve, Ken and Hagen have been in contact with the host at the airfield. Costs include \$150 for a portable toilet. An email will be sent to register for participation and for food ordering. Paul VA3PDC will manage frequencies during the event. Bob VE3IXX will not be attending and requests that lots of photos be taken and shared for the newsletter. Steve VE3BVS will contact the local Elmira paper to arrange media coverage.

10. New Business

- Club Call Signs- Alma, Firehall, and potential DMR repeater and new Club callsigns: VE3EUC, which belonged to a former club member (Ralph Brubaker SK) means we have 4 Club callsigns - VE3ERC, VA3TET, VA3EFH, and VE3EUC. JohnVE3JXX moved that the Club purchase the DMR Repeater from Tony VE3DWI. 2nd Ted. Discussion followed. JohnVE3JXX offered to have it on his tower if required. Ken KCY said could also be in Alma. Potential exists to have it on the pet food mill. Tony will add an antenna to the purchase. Carried. Hagen QVY moved that the repeater be installed on John VE3JXX, Paul 2nd. Carried.

Announcements

- Breakfast tomorrow at The Gorge in Elora at 10am
- Next meeting: June 25, 2025 7pm
- Wires-X Net - 4th Thursday of the month -Thursday, June 26, 2024! Net Controller is Rod VA3MZD

11. Adjournment ● Frank moved adjournment at 9:04 pm

Voting:

Voting shall be done during the AGM and in the case of an unopposed slate, in which a nominee is the single candidate nominated for a particular office, the nominee is elected by 'acclamation'.

Elmira Radio Club members nominated for executive positions, all unopposed:

- President Frank VA3FJM
 - Vice-President Hagen VE3QVY
 - Trustee Steve VE3BVS
 - Secretary Rod Murray VA3MZD
 - Treasurer Ted Rypma VE3TRQ
-

Em Comms Group

The Elmira EmComms group has formed and we have 11 members.

We held a meeting on May 12th to review the emergency manual and to make edits. The following week I had the opportunity to meet with the Emergency Coordinator for Woolwich Township and we agreed that we could add value to the emergency program with the help of the Elmira Amateur Radio club.

Tentatively the Emergency Coordinator will attend our "Field Day" event to see our equipment in action.

We may plan an exercise for the morning of field day as a practise run.

Please see our io. Group for further details

73"s

John VE3JXX



Nice day for some Antenna work.

By Hagen Kaye VE3QVY



These are not your regular HAM type antennas, these are MIMO LTE cellular antennas. I have 3, one each for Bell, Telus and Rogers.

And these 3 antennas go into box in the detached garage that has 3 cellular radios and can combine the bandwidth of each of the cell connections. (excuse the red/blue tinge, the grow lights for our plants are in this area :D)
And when you combine the 3 cell radios into one blended connection,



this is the upload/download speed (this is LTE, not 5G)

It's actually better than my Bell wired Internet connection. Anyways, this is the company I work for that makes this equipment and since I'm one of software developers I get to 'dog food' our technology while I add ~~extra bugs~~ more features and optimizations.

Blended Connection

Latency 125 ms <small>3 of 3 connections used</small>	Download Speed 258.87 Mb/s <small>3 of 3 connections used</small>	Upload Speed 133.63 Mb/s <small>3 of 3 connections used</small>
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Individual Connections

ROGERS			TELUS			BELL		
LATENCY	DOWNLOAD	UPLOAD	LATENCY	DOWNLOAD	UPLOAD	LATENCY	DOWNLOAD	UPLOAD
57 ms	96.69 Mb/s	39.44 Mb/s	61 ms	85.88 Mb/s	42.58 Mb/s	25 ms	86.63 Mb/s	43.23 Mb/s