



JANUARY 2020

Volume 9 Issue 1

VE3ERC-LUB

Happy 2020

- President:** Brian VA3DXK
- Vice-President:** Ted VE3TRQ
- Secretary:** Tom VE3DXQ
- Treasurer:** Paul VA3PDC
- Trustee:** Wes VE3ML
- QSL Manager:** Tom VE3DXQ
- Repeater Trustee:** Wes VE3ML
- Website Admin:** Ted VE3TRQ
- Lighthouse:** Al VA3TET
- Maple Syrup Display:** Al VA3TET
- Newsletter:** Bob VE3IXX

ERC REPEATERS

- UHF 444.700 TONE: 131.8**
- UHF 444.700 TONE: 123.0**
- VHF 147.390 + TONE: 123.0**
- EMERGENCY SIMPLEX: 147.51**
- UHF- IRLP node 2404**
- VHF- IRLP node 2403, ECHOLINK node VE3ERC-R**

**In an emergency, tune
 Into our repeaters,
 UHF 444.700 or
 VHF 147.390 or
 HF 3.755 LSB or
 Simplex 147.510
 For coordination and
 assignments.**



The J-Pole vs The Slim Jim
See page 7.



THE PREZ SEZ!

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



President's Update for January 2020

Every new year the newspaper, radio and TV media talk about New Year Resolutions. Every year many respond with wonderful resolution ideas that are often abandoned within a week or two. While intentions are often sincere, the resolutions are often too overwhelming and people just lose heart.

Perhaps, using our 20-20 vision we can simplify our own resolves for this New Year 2020.

Amateur Radio is a vast hobby. Last month's newsletter listed 100 suggestions for ham radio activities. We can all probably add many more and still not cover all the possible facets. What other hobbies can make that boast?

So, for a humble suggestion at a sustainable resolution for 2020, perhaps we could pick ONE new area of interest to try – something we have not done before. Try out ONE new activity in this new year.

Perhaps it might be to make a contact using morse code. Maybe it might be to build, not buy, an antenna. Or you might try a digital mode you have never used. What about making a contact through one of the many satellites? The possibilities are endless!

If everyone aimed to try ONE different activity during 2020, that would mean that our club of 40 or so members would have achieved 40 or so new activities – a pretty awesome achievement! It might even add new life to our already interesting hobby and may lead to lots of new fun ideas for discussion.

Happy New Year resolutions to all in 2020!

73 Brian VA3DXK

Digital Radio Today

By Ted VE3TRQ

Digital Radio Bits - JS8Call

Last time, I introduced some basics of Digital Radio, without referring to any of the modes or details of the software used to implement those modes. I intend to now start discussing some of the common modes and what they can do for you. In this article, I will introduce my current favourite mode: JS8. This mode is implemented with the software program JS8Call, created by Jordan, KN4CRD.

JS8, the protocol, was inspired by FT8, that current 800 lb Gorilla of the amateur radio modes. As you may know, FT8 is one of those modes designed for the "drive-by" QSO - you exchange callsign, location, and signal strength, nothing else. I guess that does define a QSO, but some of us want more - we actually want to communicate, have a conversation. Enter JS8. This mode retains the ability of FT8 to get through in times of lousy propagation, with an ability to be decoded down to a SNR of -20 dB or better. Also, being able to see 20 or 30 individual signals in a normal SSB passband allows one to pick and choose from multiple QSO partners (much as you can with PSK31). The signal strength (and potentially, location) of a CQ call can be used to choose a signal.

Technical Details

JS8, like FT8, is an MFSK (multi-frequency shift key) mode, approximately 50 Hz wide, and made up of 8 tones (see the JS8Call User Guide at groups.io <https://groups.io/g/js8call>). The basic ("Normal") mode is made up of 15 second segments, each sent at 15 second boundaries, exactly like FT8. This means that just like with WSJT-X and FT8, you will need an accurate computer clock, with an error no more than a second or two (sub-second is best). All transmissions are USB, and should be considered 100% transmitter duty cycle for the "on" time.

There are four modes: normal, slow, fast, and turbo. Slow is 25 Hz wide and 30 seconds, normal is 50 Hz and 15 seconds, fast is 80 Hz and 10 seconds, turbo is 160 Hz and 6 seconds per frame. Nominal SNR to decode is -28 dB for slow, -24 dB for normal, -20 dB for fast, and -18 dB for turbo. In my experience, the above is optimistic; I have found normal will decode down to -20 dB, fast down to -12 dB, and turbo down to -10 dB. I have seen slow decode to -28 dB, but rarely. Standard operating procedure is to start normal, then switch modes/speeds as conditions dictate. Normal has a transmission speed of approximately 50 cps (characters per second), with the other modes scaling speed with signal width (the more the bandwidth, the higher the speed).

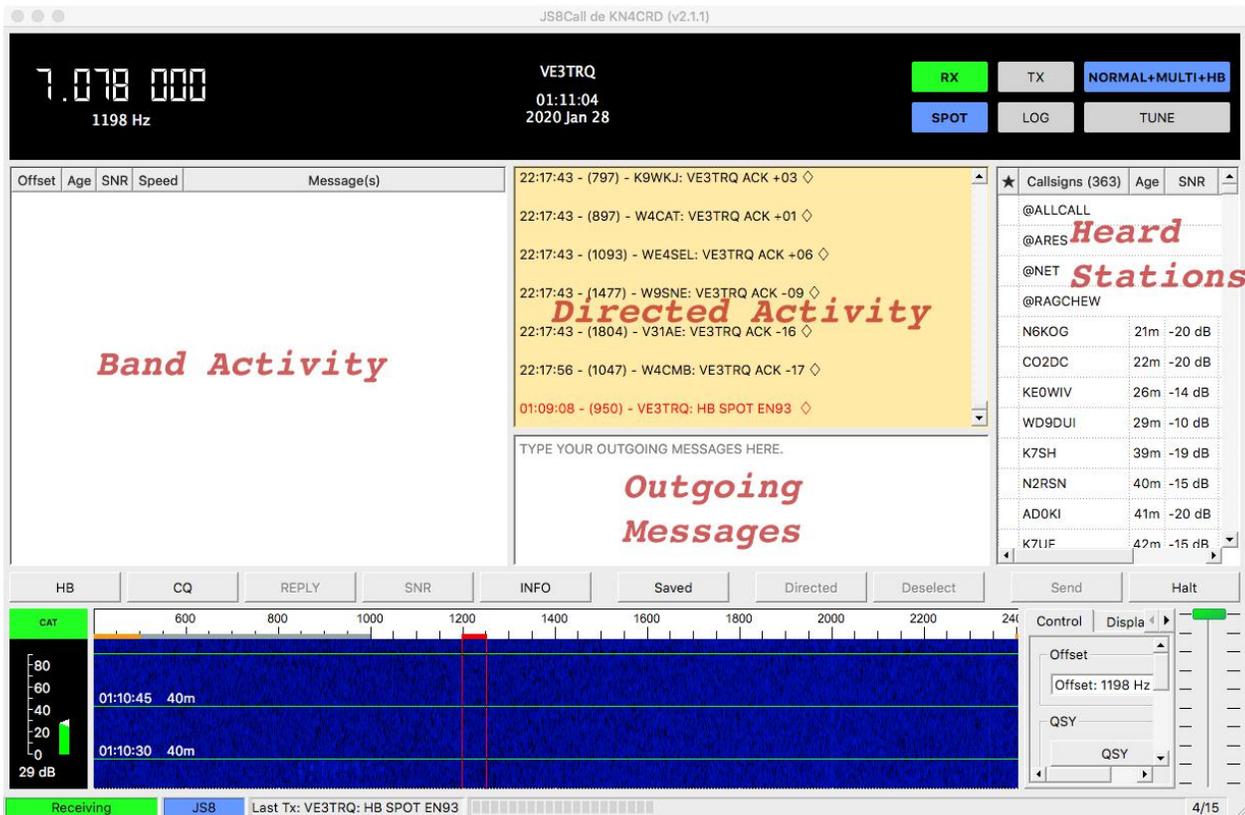
Setting Up JS8Call

JS8Call is based on WSJT-X, and retains much of the configuration details and radio / PC requirements. An audio interface is an absolute requirement, and CAT control, although not strictly required, should be available to use the built-in band and frequency tuning capability of the application. Having the program do the QSY means everyone uses the same set of frequencies (or, mode "watering hole"). Any radio and sound interface supported by WSJT-X will also be supported by JS8Call - they use the same radio libraries - if you do FT8/FT4, you can do JS8. The clock accuracy requirements are identical, although JS8Call has a built-in clock sync capability (time drift tool) to simply sync to the transmitting station. JS8, like FT8, uses USB and has a 100% transmit duty cycle, so set TX power according to your transceiver's documentation (usually 33% to 50% of full power, max). Audio levels are set up the same as for WSJT-X - transmit audio output should be just below ALC action, and receive audio levels should

drive the JS8Call receive level indicator to 30 dB when there is only noise in the receive bandwidth (usually available after the 13 second TX phase, and before the 15 second TX cycle ends). AGC is best left off (or "fast" if you cannot turn it off). All audio processing should also be turned off. Transmit power output is usually from 5 to 25 watts, BUT use whatever power you need to complete a QSO - this is NOT a low power mode - it is a low signal (to the receiver), not a QRP mode. That said, many operators are very successful completing QRP QSOs with JS8Call.

Operating JS8Call

JS8Call is based on the functionality of Fldigi, FSQCall, and WSJT-X. If you have used any of these, JS8Call should feel quite familiar. Below is a picture of the user interface window (unfortunately, propagation at this time on 40m was abysmal, so no signals visible):



The "Band Activity" area on the left captures all decoded messages in the bandpass and displays the tx and rx callsigns, plus a portion of the message at each decoded frequency. The "Heard Stations" area on the right displays all callsigns decoded, together with SNR and time since received. The "Directed Activity" area in top middle shows all traffic directed to your callsign, or any group (@group) you are monitoring. The "Outgoing Messages" area in the bottom middle holds anything you type in to be transmitted - it is cleared when transmission is complete. A "Return" or "Enter" (CR) will start transmission of any text here, in blocks of a size determined by the mode (Normal, Fast, etc). Once transmission of free form text begins, you may add to the text or modify text not yet transmitted. Message or relay text may not be altered (more on that later).

The "Mode" menu allows you to select the type of transmission (Slow / Normal / Fast / Turbo) and whether "Auto Acknowledge" and "Send Heart Beat" are enabled.

The waterfall area allows you to see the spectrum of received signals, and allows you to set your transmit frequency. You should choose a transmit frequency that is clear of other signals. Note that by convention, heartbeat transmissions and their replies are below 1000 Hz on the waterfall.

Heartbeat and Nets

JS8Call has the ability to send periodic beacons called "heartbeats" - they include the transmitting station's callsign, status, and location. The status sent broadcasts whether the sending station will automatically acknowledge and respond to messages, plus whether it will be spotting stations to sites like pskreporter or hamspots.

If a station is set to ACK messages automatically, it will both store and possibly relay (forward) received messages if requested. Message storage is very handy when the intended receiving station currently has no operator at the keyboard - a positive acknowledgement will be sent to the transmitting station by the receiver. Instead of storing a message, a station can be asked to forward a message to another station. This is very useful when the intended recipient cannot hear the transmitting station - an intermediate station which can hear both source station and destination station can then act as a relay. A message can make several relay hops. Since a receiving station retains a list of all heard stations, and another station can request that list of heard stations, it is possible to find out what stations that you can hear are able to hear your intended destination (sounds complicated, but it really isn't).

The combination of beacons, message storage, and @group destination addressing makes for a powerful emergency communications and radio net tool. The net control station simply requests any stations wishing to check in to transmit on a clear frequency to the @group callsign, and collects all stations seen in the "Directed Activity" area. This becomes the check-in list. There is always a chance that some stations will collide, but there is a lot of space with 50 Hz per station, so all participants can usually transmit simultaneously.

Summary

JS8Call is a robust, fun-to-use, conversational tool for amateur operators, and works very well in this time of poor propagation. It has all the advantages of FT8, while still allowing us to actually talk to each other. And it has the ability to be a useful amateur radio net tool.

More information is available by going to <http://js8call.com/>

Ted VE3TRQ

CORRESPONDENCE

Mike VE3MKX sent the following websites to check out:

Some interesting radio stuff !

<https://www.youtube.com/watch?v=f6Z4Am4It3k&feature=youtu.be>

<http://www.n5dux.com/ham/files/pdf/>

http://arsi.info/wp-content/uploads/2018/01/hrn_2018_q1.pdf

<https://player.fm/podcasts/Amateur-Radio>

<https://www.amateurradio.com/here-are-8-great-ham-radio-podcasts/>

CORRESPONDENCE

On January 8, ONTARS celebrated it's 48th birthday. For that entire day starting at 7 am a different controller came on at every half hour until closing at 6 pm. Barry (VE3ISX), the net manager wrote the following summary of the incredible day.

Good morning all:

An exciting day yesterday with the final tally of 1010 check-ins during the busy net activity.

Congratulations and thank you to our 22 controllers who proved that our net is still viable and will survive.....

An outstanding effort!

As your net manager, I will continue this position with pleasure, given the cooperation show yesterday.

Thanks for your time

73 and 88

Barry
VE3ISX
ONTARS net manager

1010 check-ins in the year 2020 works out to an average of about one check-in every 39 seconds. Congratulations!

The ONTARS website is at :

www.ontars.com

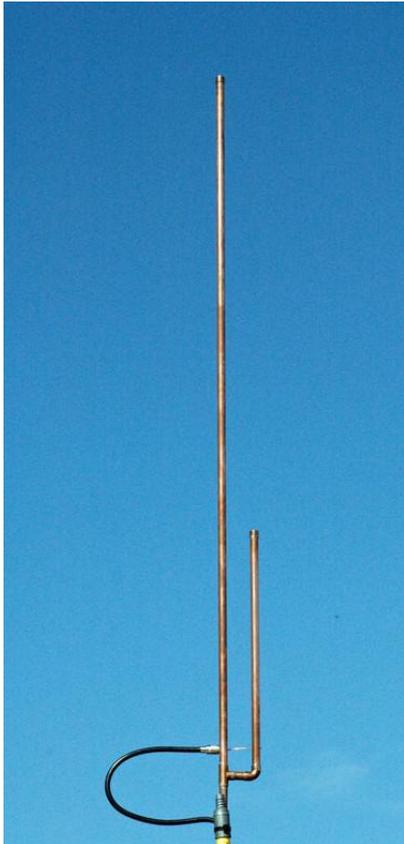
Tom, VE3DXQ has a:

48 ft tower free to anyone who can take it down safely. Antennas not included. This will have to be done once the ground thaws out. Probably April or May. Contact Tom Mahony 519-742-4101. Email tom-mah0456@hotmail.com



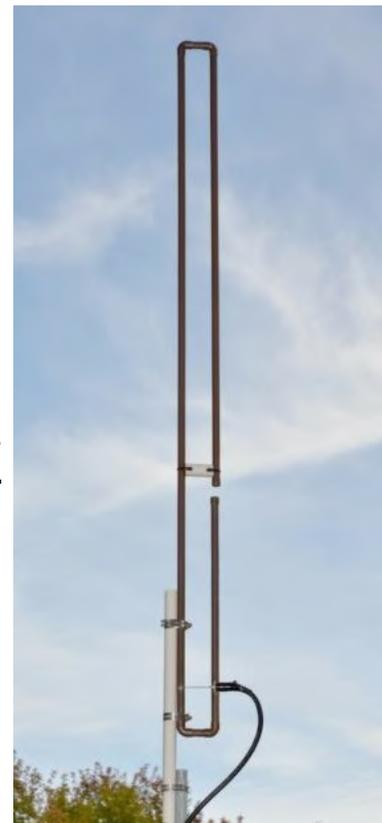
The J-Pole vs The Slim Jim

By Bob Koechl VE3IXX



I was reading a blog by Michael Martens KB9VBR comparing J-Poles with the Slim Jim. This brought back a lot of good memories. The J-Pole is a very simple antenna to build and is far superior to a quarter wave vertical antenna. I have constructed a number of them over the years. They can easily be assembled with readily available half inch copper pipes. They do not require radials. I have even built a portable J-Pole using ordinary ladder line and hung it from trees when I was away from home. A 2 metre version also has the added advantage of working on 70 cm as well. Although, for more serious dual band operation, there is a dual band adaptation that can easily be built.

Now I have never built the Slim Jim, a variation on the original J-Pole, but I have often read about them. So when I saw Michael's comparison of the two antennas, my interest was piqued.



In summary, here is Michael's comparison.

Both antennas have an omni-directional pattern and both have a one quarter wave J style matching system. But this is where the similarities end.

The J-Pole is a half-wave vertical while the Slim Jim is an end-fed antenna.

The J-Pole has an overall length of 69 inches while the Slim Jim is shorter at 58 inches.

The J-Pole has a 3Dbi gain with 4 Mhz bandwidth. The Slim Jim is 6Dbi with 7+ Mhz bandwidth.

The J-Pole has a radiation take-off angle of 20 degrees. The Slim Jim is an 8 degree angle.

The J-Pole has DC grounding so does not require any special grounding or isolation from the mast or any metal attachments. The Slim Jim must be isolated from the mast system or any metal attachments.

Michael concludes that both antennas perform very well. However, because of the lower radiation angle of the Slim Jim, it should be placed higher up in the air and may not perform as well around tall buildings. The J-Pole does not have to be placed as high and may perform better when there are many obstructions, as in urban areas.

So you "pay your money and make your choice!"

Michael's website is : <https://www.jpole-antenna.com/author/admin/>

Want to build a J-Pole? Here is a website, one of very many:

<https://medium.com/@OpenQnl/homebrew-1-2-wavelength-2m-j-pole-antenna-build-part-1-of-2-3c426d76361a>

Here is a website, also one of many, of how to build a Slim Jim:

https://www.qsl.net/n1ea/slimjim_du1anv.pdf

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)



He asked, "Does my radio interfere with any of your electronics when I transmit?"

WEDNESDAY NITE NET CONTROLLERS

JANUARY 1 - BILL VA3QB

JANUARY 8 - WES VE3ML

JANUARY 15 - PAUL VE3PVB

JANUARY 22 - M E E T I N G

JANUARY 29 - BRIAN VA3DXK

FEBRUARY 5 - BOB VE3IXX

FEBRUARY 12 - TED VE3TRQ

FEBRUARY 19 - AL VA3TET

FEBRUARY 26 - M E E T I N G

MARCH 4 - REG VE3RVH

MARCH 11 - FRANK VA3FJM

MARCH 18 - TOM VE3DXQ

MARCH 25 - M E E T I N G

Everything should be made as simple as possible, but not simpler

By Dan Romanchik, KB6NU

"Everything should be made as simple as possible, but not simpler" is a quote attributed to Albert Einstein (<https://quotationcelebration.wordpress.com/2017/01/07/everything-should-be-made-as-simple-as-possible-but-not-simpler-albert-einstein/comment-page-1/>). Here's one way to apply this principle in amateur radio, specifically to code practice oscillators.

A week ago, my friend, Paul emailed me:

"I am planning on teaching a two-hour introduction to Morse code to 14 girls ages 8 to 9 *[[Paul's granddaughter is a Girl Scout.]]*. I plan on having the girls build a code practice device. I need your help in selecting a low cost buzzer and battery holder. Please take a look around and see would you can find. I would like to limit the power to one or two AA batteries."

I replied that I'd be happy to help him with the demonstration, and offered the following advice:

"A while back, I built the QRPGuys' K7QO Code Practice Oscillator (<https://qrpguys.com/k7qo-code-practice-oscillator>). It uses a CR2032 coin battery.

"Unfortunately, they don't sell it anymore, but the assembly manual is still online (https://qrpguys.com/wp-content/uploads/2017/03/cpo_assy_012616.pdf). The assembly manual doesn't call out specific parts, but here are some Amazon SKUs:

- B00J4BK0NS, Black 3V Electromagnetic Type Piezo Buzzer, 20 pcs/\$6.58
- B06XF3K4NP, Coin Cell Button Battery Holder, 30 pcs/\$9
- B008SNZUYC, 3 Pin PCB Mount Female 3.5mm Stereo Jack, 10 pcs/\$5.40
- B071RMD6FD, 1/8" 3.5mm Stereo Male Connector, 10 pcs/\$7

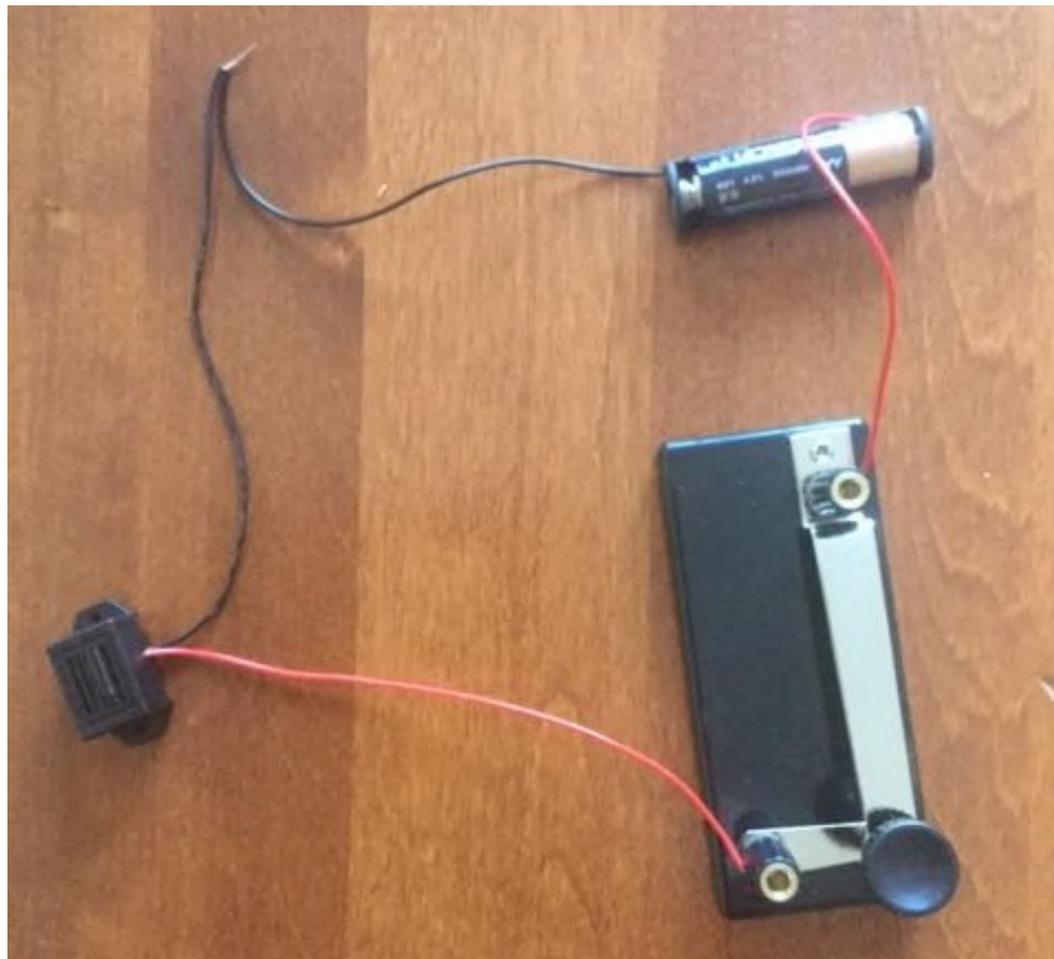
"Batteries are available at the dollar store for about 30 cents each. So, you could do the whole thing for less than \$5 for sure, even with a printed circuit board, which I would suggest that we do. Heck, if you ask nicely, the QRPGuys might even give us the artwork, or even better, have some boards still in stock. Even if they have neither, you should be able to get the boards in plenty of time."

Later that day, Paul replied:

Thanks, Dan, for the information and making yourself available to help. I am just going to use a buzzer, key, and battery. The buzzer has a frequency of 400 Hz.

- <https://www.xump.com/science/Buzzer-Leads15V.cfm>
- <https://www.xump.com/science/ContactKeySwitch.cfm>
- <https://www.xump.com/science/Single-AA-Battery-Holder.cfm>

And this morning, he sent me this photo, noting, "FYI. Also sounds great."



I think that this is as good an example of "Everything should be made as simple as possible, but not simpler" as there can be. I've volunteered to help Paul with his class. That will be fun, too.

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Dan Romanchik, KB6NU, is the author of the KB6NU amateur radio blog (KB6NU.Com), the "No Nonsense" amateur radio license study guides (KB6NU.Com/study-guides/), and often appears on the ICQPodcast (icqpodcast.com). When he's not trying to keep things as simple as possible, but not simpler, he likes to build stuff and operate CW on the HF bands.

VE3ERC Elmira Radio Club Inc.

Minutes from Jan22, 2020

1. Call to Order & Welcome

The meeting was open at 7:30 pm by our Club president Brian VA3DXK

2. Roll Call: VE3DXQ Tom, VE3DCC Rich, VE3DWI Tony, VA3FJM Frank, VE3JMU JIM, VA3DXK Brian, Kirk VA3KXS, , VA3DZZ Al, VA3VRA Tom, VE3IXX Bob, VA3WPJ Jack, VA3TET Al, VE3KCY Ken, VE3IXX Bob, VE3JLC Jim, VE3RVH Reg.

3. Adopt Agenda : Brian VA3DXK showed the Agenda on the flat screen tv and Agenda was accepted.

4. Secretary's Report: Tom VE3DXQ asked if there were any errors or omissions from the Nov, 2019 minutes. None were mentioned. Tom made a motion to have Nov. minutes accepted, seconded Bob VE3IXX. Carried.

5. Treasurer's Report: Paul VA3PDC was not present, but provided a report to Brian VA3DXK for Nov. and December. Nov. reports showed only a few small service charges. Brian made a motion for Nov. treasurer's report to be accepted. Seconded by Bob VE3IXX. Carried. Brian also showed the Dec. report on the Flat screen TV, and it showed that the main expense was the Christmas Party. Brian asked for a motion to have the December report accepted, seconded by Reg VE3RVH and carried. Brian said he has the Club Year end and income tax for 2019, but we will have to wait for Wes VE3ML our Trustee to go over it before we approve it in Feb., as Wes is away presently.

6. President's Report: Brian VA3DXK – Brian wished everyone present a belated Happy New Year. He also gave highlights of 2019 club activities. Some of those were the daily morning net on VHF, UHF, and Echo Link and the Elmira Maple Syrup Festival in April. In May we revised and updated the Club constitution and By-laws. We also participated in the CAER Emergency Response Day in Elmira. Some club members also participated in the St John Ambulance Marathon communications. We also Installed a repeater up in Alma - thanks to Tony VE3DWI, Bill VA3QB, Ken VE3KCY. In June we also participated in the Central Ontario Hamfest. We did not have field day last year due to no location available. This year we will have a location at Hwy 86 & Northfield Drive thanks to Bill VA3QB. In August we had the Point Clark Lighthouse event. In September we had our Hamtech event—thanks to all involved and Frank VE3FJM took the lead on this with help and guidance from Al VA3TET, Rich VE3DCC, and Bob VE3IXX. In October we had our silent key memorial dinner. In November we have made in-roads at the feed mill to move the repeaters to ground level. In December we had our Christmas lunch for the coffee group at the Mandarin as well as the Christmas party at the Elmira Legion. So a very Active year!

Brian reminded all present about our Annual membership dues \$40.00 per RAC members and \$50.00 for non-RAC members which are due in March. Brian also asked members present to help keep the club roster updated by letting the Executive know of any change of address or phone number.

7. Committee Reports:

Safety Officer (Tom VE3DXQ). Tom said he still has safety vests, traffic cones, and safety glasses in his Garage. However He may be moving in the spring and not sure if he will have room for them then. Brian VA3DXK said the club will find a place for them in that case.

Nominations Committee- Brian said our nomination meetings will be coming up in the May AGM, and we need to strike up a nomination committee. Brian asked those present if they were interested in getting on the nomination committee. No takers at this point. He mentioned the importance of rotation of leadership.

8. Unfinished Business: none

9. New Business: -Brian VA3DXK asked if everyone was happy with the Christmas Lunch and the Christmas party. There was general approval.

Brian asked if there was any involvement with the winter field day this coming weekend Jan 25, and 26 and none was mentioned.

Elmira Maple Syrup Festival April 4th 2020- Al VA3TET mentioned we should find new ways to attract people to this venue. Reg VE3RVH said a poster outside the Lions Hall may attract more people. Al VA3TET mentioned that EchoLink may be a good way to attract people, as people could talk around the world with it. Rich VE3DCC mentioned that with a Kitchener Library card you can sign out an LTE modem to provide a wireless connection to the internet. Reg VE3RVH said we can hand flyers out to people passing by. Frank VA3FJM said he would look into getting the LTE modem at KPL.

Ham Tech Committee. Frank VA3FJM said that he is not in Ham Teck mode yet. Rich VE3DCC said 4 speakers seems to be the magic number for speakers. Discussion followed with suggestions of what speakers we might bring in. Al VA3DZZ said we need to get other clubs involved. Rich VE3DCC said we should get the flyers out for Ham Tech before May. Even if we do not have speakers lined up we can still put them out with TBA (To Be Announced) for the speakers. There was some discussion on whether to have the Ham Tech in September or October. Brian VA3DXK left it with Frank VA3FJM to decide the date.

Joint Christmas dinner or Lunch with KWARC?- Brian VA3DXK said to keep our Christmas Party as is. We should however keep it on the back burner regarding having a Christmas Lunch with KWARC.

Brian VA3DXK brought up the topic of speaker compensation for speakers coming to our club. Brian made a suggestion of a \$20.00 expenditure. Tom VA3VRA said the going rate for speakers for example CWL (Catholic Women's League is \$75.00). After much discussion Reg VE3RVH made a motion to pay a token of appreciation to the speaker ranging from \$25.00 to \$50.00 depending on circumstances. Seconded by Tom VE3DXQ. Carried.

10. Presentations/Speakers/Workshop: nothing scheduled this month

11. ANNOUNCEMENTS: Next Meeting: Wed Feb 26, 2020

12. Adjournment – meeting adjourned at 8:50 pm.

