



November 2023 Newsletter

Seaway Valley Amateur Radio Club

The **Seaway Valley Amateur Radio Club** is a 'not for profit' organization incorporated in the Province of Ontario that promotes Amateur Radio and provides Auxiliary communication Services in Cornwall and surrounding area. The Club's mailing address is 4672 O'Keefe Road, St. Andrews West, ON. K0C 2A0.

The **Seaway Valley Amateur Radio Club** operates several repeaters in Cornwall and surrounding area. For a detailed list of repeaters operated by the club please visit our website at SVARC.ca.

- **President:** Earle DePass (VE3IMP)
- **Vice-President:** Joe Scott (VE3ADB)
- **Secretary:** Roger Bélanger (VA3GBV)
- **Treasurer:** Chris Lauzon (VA3CRR)
- **Technical Director:** Doug Pearson (VE3HTR)
- **Net Manager:** Earnest Vinson (VA3EWW)
- **ACS Coordinator:** Earle DePass (VE3IMP)
- **Newsletter:** Roger Bélanger (VA3GBV)

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**Earle
VE3IMP**

President's Message October 2023

Presidents Message - Years 2022-2024 in Review - December 2023

As I put pen to paper to reflect on the last two years makes me feel really good. There have been several times during the last two years when I realize that I have so much to be thankful for. However, Christmas is when I reflect on the many special gifts on which I cannot place a value. This year is no exception. As I think of Amateur Radio hobby in general, the SVARC and the members within it, I am so thankful for so much.

The relaxation of COVID restrictions in spring 2022 was the best early Christmas gift which Santa could have ever brought us this year.

The gift of such a great SVARC executive team is another gift which any President could have asked for! Roger (VA3GBV) has been such an efficient, effective and supportive Secretary that anyone would be delighted to have him on their team. His attendance record at so many club events has been stellar! It is only right that the club members also voted him to be the Amateur Radio Operator of the Year for 2022. Joe has been a great Vice President and a superb Net Manager. Chris has been a great Treasurer, keeping an eye on our finances and writing cheques when necessary. I have nothing but praise for this dream team!

Our club continues to have gifts of two Accredited Examiners: Steve Harvey (VE3EZB) and Earle DePass (VE3IMP), making access to the ISED examinations readily available.

We operate 8 repeaters using several modes. This includes EchoLink. Keeping all of our systems operating so well in addition to our website (SVARC.CA) are no easy feats. The gift of Doug (VE3HTR) being so

excellent at keeping all of them running so well is a wonderful gift. The interference issue with the VE3SVC repeater was solved quickly and efficiently.

Despite poor weather and sometimes poor turnouts, we held five Fox Hunts over the last two years. These have been a source of fun and enjoyment. We had the gift of two HAMS join us for a hands-on lesson on Fox Hunting. Sadly the Fox died a quick death during our most recent Hunt in November 2023.

The gifts of our hybrid monthly meetings which have been enjoyable, educational and fun have been priceless. Running these meetings in the hybrid format has been a very good way to conduct them. We have had many interesting and informative presentations. These include; Amateur Radio Satellite communications, a presentation from the Amateur Radio Operator of the Year (VA7LET), specialized antennae from Alphonse Penney (the main instructor for the RAC On-line course) and Fox Hunting to name a few. Joe's refreshments have helped to make the time spent during those meetings so enjoyable. Having such a nice facility as St. John Ambulance to meet in has been a true gift.

Our involvement in the Raisin River Canoe Races and our Summer BBQs hosted by Earnset and Sue Vinson were memorable gifts and were very enjoyable. The Field Day 2023 at the same location was a wonderful time.

Joe's facilitation of the SVARC winter and fall jackets and the production of bookmarks were wonderful additions to our club.

We were saddened to see Art (VE3AIH) who fell ill in 2022 became a Silent Key. We were fortunate to have him and he was fortunate to have Suzan by his side

Our club experienced an overall net growth during the two years with the SVARC ending 2023 with 49 members in good standing, including 43 voting members.

Our Coffee Klatches have been gifts whereby our members could socialize. In late 2022, the members made a decision to move the Coffee Klatches to *Spinners Restaurant* from *the Village Diner restaurant*. After the move in 2022 these Coffee Klatches have been a source of fun.

Thanks to the many gifts of several, including Murray (Formerly VE3XLJ) and Doug (VE3HTR), SD&G ARES saw the addition of a repeater at the Beaver Brook landfill site in mid 2022. During the two years we continued to provide SD&G ARES monthly updates to Mike Hickey.

Our Christmas Dinner 2022 saw a very well-attended dinner at *Quinn's Inn*. John Grow was so kind to financially support our Membership Recruitment program, donated books and a special keyer as our door prize for that Christmas Dinner. We were fortunate to have our Christmas Dinner 2023 at the same location. Few clubs were fortunate enough to have four Amateur Radio Operators who have enjoyed this hobby for over 60 years! I was thankful that four of our members; Ed Halliwell (VE3EAH), Art Horovitch (VE3AIH),

Rick Palmer (VA3EV) and Don Brownlee (VA3NC) were presented their specially designed 60-year acknowledgement certificates during our Christmas dinner 2022.

Last but by no means least, I was truly fortunate to have been the coordinator of so many good things within the SVARC. I thank you for the support you provided during my term of office. This is the best gift a club President could ever ask for.

During the two years, I have enjoyed working with Roger, Joe (VE3AB) and Chris.

I leave the club in good hands for 2024-2026 with; John Grow (VE2EQL) as President, Hunter Racine (VA3HWF) as Vice President, Roger Bélanger (VA3GBV) as returning Secretary and Chris Lauzon (VA3CRR) as returning Treasurer.

I hope that you are also fortunate enough to realize the good things you have. Please accept my very best wishes to each of you and your families for a very Merry Christmas and prosperous 2024.

Sincerely,

Earle (VE3IMP), President SVARC 2022-2024



**Roger
VA3GBV**

Note from the Editor

1. November edition.

Winter has arrived with a first storm, almost 20 cm but it is not all bad news.

On the last day of November, we had the strongest solar storm seen in years.

Indeed, we are approaching the maximum of the sun 11 year cycle. This is good news for amateurs surfing the HF spectrum. For those with HF Tx privileges, it's time for DXing to your heart's content. For the others, don't pass the opportunity to use you Short Wave equipment and search for the exotic QSO's with ZS call signs from South Africa or UA from Siberia and more... This winter will be a boon for Amateurs all over the world, enjoy it.

2. Fox hunt

Well, that didn't go so well...The Fox kept passing out during transmissions and finally died on Doug's bench 2 day's later.

Plans are underway to refurbish. Stay tuned

3. The Geek's Corner

The geek is taking a rest this month and letting Dave Goodwin (VE3KG) enlightening us on legal transmission power for licensed

operators. Dave's article is a reprint with his permission and RAC's. See page 10.

4. Election year

A new executive was elected during the November meeting.

Congratulations and many thanks to those who have accepted to serve for the next two years.

| | |
|--------------------------------|-----------------------|
| John Grow (VE2EQL) | President |
| Hunter Racine (VA3HWF) | Vice-President |
| Roger Bélanger (VA3GBV) | Secretary |
| Chris Lauzon (VA3CRR) | Treasurer |
| Earle DePass (VE3IMP) | Past President |

5. On a deeper note!





**Earle
VE3IMP**

ACS Report

The SD&G RAC Auxiliary Communications Service (ACS) Group [Formerly ARES]

EmComm Monthly Report For Oct. – Nov. 17, 2023

Seaway Valley Amateur Radio Club (SVARC) Inc.: The SD&G RAC Auxiliary Communications Service (ACS) Group, a subset of the Amateur Radio Emergency Services (ARES), is associated with the SVARC.

This club continues to hold its monthly “hybrid” (in-person and virtual) meetings, featuring interesting Guest Speakers. The SVARC held its most recent “hybrid” meeting on October 25, 2023, at the St. John Ambulance Headquarters in Cornwall.

Coffee Klatches where members can socialize with each other are held on the 2nd and 4th Saturdays of each month, starting at 08:30AM, at *Spinners Restaurant* in Cornwall.

The SVARC last held a Fox Hunt on October 15, 2023, near Alexandria Cornwall.

Repeater Checks: (Ongoing):

Our 8 repeater systems continue to function very well. The SVARC weekly Net is conducted on each Monday at 7:00PM (Local). The Net first starts on VE3SVC (147.180MHz.+). Checks are then made by switching the Net to the VE3PGC (UHF) repeater where an EchoLink check is performed. A check is also performed on VE3VSW, VA3FHA then DMR, TG 9. This process confirms the serviceability of nearby *Seaway Valley Amateur Radio Club* (SVARC) repeater systems at least once a week, should they be required by the RAC Auxiliary Communications Service (ACS).

On average there are 20 total check-ins. The weekly reporting system has been enhanced to show the names and callsigns as those who check in. This as opposed to just recording the number of weekly check-ins.

United Counties Emergency Management Training and Exercise – Nov. 02, 2023:

Earle DePass (VE3IMP) and Ed Halliwell (VE3EAH) attended this event where over 50 representatives from each of the Counties within SD&G participated. They simulated an exercise where a tornado hit the area.

Our AECs are:

1. Hal Green (VE3HWG), South Glengarry,
2. Stan Fortune (VA3JSF), South Stormont,
3. Ed Halliwell (VE3EAH), South Stormont,
4. Doug Pearson (VE3HTR), City of Cornwall, and,
5. Richard (Rick) Palmer (VA3EV), City of Cornwall.

City Of Cornwall:

Discussions with Leighton Woods (Deputy Fire Chief, Fire Services for the City of Cornwall) have not continued. While we had hoped to meet with the City of Cornwall in early 2023 this has not taken place.

South Glengarry ARES Projects:

The VA3FHA repeater (installed on Aug. 29, 2022) at the Beaver Brook landfill site, continues to function well.

Earle DePass, (VE3IMP)

Group Coordinator (GC), SD&G ARES
RAC Auxiliary Communications Service (ACS) Group.

Show and Tell

Coffee Klatches



November 11, 2023,



Clockwise: Roger B. (VA3GBV), Dan (VE2JMF), Jason (VE3PRY), Marshall (VE3SX), Earle (VE3IMP), Doug (VE3HTR), Earnest (VA3EWV), Dean (VA3BS), Rick VA3EV

November 25!

Christmas Dinner (December 5, 2023)

The Christmas dinner was held at Quinn's Inn again this year and again a great success. We owe this success in great part to Earnest (VA3EWV) who organized the event and to Earle who emceed the evening and, to the 31 participants who came to enjoy a dinner together.

The highlight of the evening was the presentation of the Tim Smith's Memorial Award to Earnest (VA3EWV) being celebrated as the SVARC Amateur of the year for his outstanding contribution to the Club for 2023. Many thanks Earnest for all the energy and positive thinking you brought to the club this year.

Don't miss this video from Earnest entitled: **Year at a Glance - SVARC 2023:**

<https://www.youtube.com/watch?v=UxtCi8HBA6Q>





RAC Regulatory Roundup

The following article is reproduced from the November/December edition of the **The Canadian Amateur** magazine with the permission of the editor and the author of the article.

by Dave Goodwin, VE3KG RAC

Regulatory Affairs Officer regulatory@rac.ca

<https://www.rac.ca/regulatory-advocacy/>

How Much Power Can We Run?

The regulations limiting the RF power Radio Amateurs may use can be a bit confusing. The limits and their interpretations can be found in two important regulatory documents:

- RBR-4 – Standards for the Operation of Radio Stations in the Amateur Radio Service, section 10
- RIC-3 – Information on the Amateur Radio Service, sections 4.3.1 and 4.4.1

Amateur power levels are capped at 1,000 watts DC input for Advanced Amateurs and 250 watts DC input for Amateurs holding a Basic, Basic with Honours or Basic with Morse certificate. If that was all that was written in the regulations and policy, it would be easy.

Power input is the DC power available at the Collector, Drain or Plate of the final amplifier stage of your transmitter. Power amplifier circuits that run in linear classes (Classes A, B or AB) are normally about 40 percent to 60 percent efficient. Those that run in non-linear classes – such as Class C – can be 75 percent efficient.

If you had 2,000 volts at 0.5 ampere (equal to 1 kilowatt input) available at the plate of your tube-type amplifier, and you were running that amplifier in Class AB – like most commercially-manufactured Amateur amplifiers – your 1,000 watts DC input might yield an RF output of 500 to 600 watts. If your amp ran in Class C, you might get a couple of hundred more watts of RF out of it.

Over 20 years ago, Industry Canada – our regulator at the time – added additional language that gives limits expressed as RF power output rather than DC power input. Your DC power input of 1,000 watts (for an Advanced Amateur) or 250 watts (for a Basic Amateur) is equal to an RF power output “measured across an impedance-matched load” of 750 watts (for an Advanced) or 190 watts (for a Basic).

It seems that our regulator – now called Innovation, Science and Economic Development Canada (ISED) – infers that Power Amplifier stage efficiencies of 75% are routinely possible. That’s optimistic and quite generous, so thank you ISED.

ISED’s apparent generosity didn’t stop there. They elaborated the definition further with a seemingly counter-intuitive definition of our power limits that distinguishes “carrier power” from “any type of single-sideband emission”. With “any type of single-sideband emission”, we can measure an RF output of 2,250 watts and, apparently, still be within the limits. For Basic Amateurs, their maximum measured power output with SSB could be 560 watts.

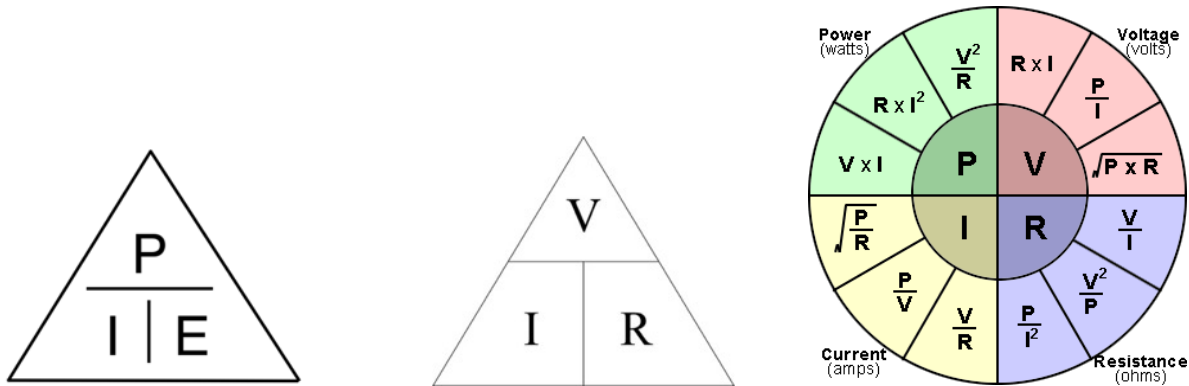


Figure 1: Ohm's Law Triangles.

Credit: https://grid.is/@mgri/ohm-s-law-power-law-RkhECq9aQdGDxHiGQIQ2_Q

How does 1kW input equal 2,250 watts output?

The answer lies in Ohm's Law. We all remember the Ohm's Law triangles (see Figure 1) which shows.

Left: Ohm's Law Triangle for Power. Power (P) = Current (I) x Voltage (E)

Middle: Ohm's Law Triangle for Voltage: Voltage (V) = Current (I) x Resistance (R)

Right: Ohm's Law wheel for various derivations of Ohm's Law

To measure power accurately, the best measurements are made with oscilloscopes measuring RF voltage. We use a derivation of Ohm's Law for power, and we must distinguish between Peak-to-Peak (P-P) voltage, Peak Voltage (PV) and RMS (Root Mean Square, or the effective heating value) voltage.

The formula we use for this is: $P = \frac{V^2}{R}$ where P means RF power, V means RMS Voltage and R means Load Resistance.

If you fed an RF carrier of 750 watts into a 50-ohm load and measured the voltage on an oscilloscope, you would see approximately 550 volts Peak-to-Peak. That is about 195 volts RMS. If you then Amplitude Modulate that carrier at 100%, the trace appearing on your oscilloscope would nearly double to approximately 950 volts Peak-to-Peak or approximately 335 volts RMS; and 335 volts RMS into a 50-ohm load is a Peak Envelope Power (PEP) output of approximately 2,250 watts. The calculations are similar and proportional at the Basic certificate holder's maximum power level.

"...Into a matched load"

If you measure power at the load, it allows us the latitude to compensate for feedline losses. All feedlines have loss. The longer your feedline, or the higher the frequency of operation, a greater share of your transmitter's power is consumed in warming up the conductors. This allows us to overcome some practical limitations.

What counts as a "Single-sideband emission?" Well, SSB voice is an obvious "yes". It is the dominant voice mode on the HF bands and for a significant amount of VHF, UHF, microwave and satellite operating. Slow-Scan Television (SSTV) is another obvious beneficiary of this generous interpretation. Although digital modes like RTTY and FT-8 are normally transmitted by inputting tones into the mic circuit of an SSB transmitter, they really are carrier-type emissions. CW, AM and FM are all self-evidently carrier-type emissions.

The "3dB" Rule

There is a limit to this generosity by our regulator. Section 10.1 of RBR-4 states: "The transmitting power of an amplifier installed at an amateur station shall not be capable of exceeding by more than 3 dB the transmitting power limits described in this section."

How do we interpret this? It is always wise to run your amplifier below its ratings. That extends tube life and avoids the possibility of a breakdown. So don't install an amplifier that can produce more power than twice the power you are allowed to run. However you decide to measure that – DC power input, Carrier RF output or PEP RF output – you have an obligation to play by the rules.

Three Bands on Which Power Limits are More Complicated On three Amateur bands, we have to make additional calculations, because our power levels are set differently. To put it simply, Effective Isotropically Radiated Power (EIRP) measures the power of a signal in the direction of an antenna's strongest beam, while Effective Radiated Power (ERP) measures the power radiated by an actual antenna relative to a half-wave dipole.

Amateurs have three frequency allocations where our power is additionally limited by the quality our antennas.

- 1) On the 135 kHz band, we are allowed 1-watt EIRP.
- 2) On 472 kHz, we are allowed 5 watts EIRP.
- 3) On the 5 MHz band, we are allowed 100 watts ERP (Effective Radiated Power).

These are the only bands where power is so limited and conditioned by our antennas.

On 135 kHz (2200 metres), efficiencies of most practical antennas are so low that most Amateurs are running much more power – up to 1 kW in some cases – in an effort to overcome the enormous losses in loading coils. The challenge is not quite so severe on 472 kHz (630 metres), but antenna efficiency is still a large limiting factor. In the unlikely circumstance that you operate on these two bands – and if you think you may be approaching that 1 watt or 5 watt EIRP limit – take the time to model your antenna with EZNEC or some other antenna modelling software.

The 5 MHz band (60 metres) is much less challenging. Effective Radiated Power (ERP) is a less-stringent limitation than EIRP. ERP uses a dipole as a reference, where EIRP uses that theoretical concept, the Isotropic Radiator. On 60 metres, if you can run 100 watts and put up a conventional dipole (only 88 feet long), you are running the legal limit on 60 metres.