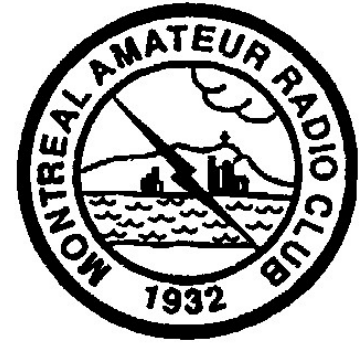


# marcOgram

Official Publication of The Montreal Amateur Radio Club Inc.  
Box 53047 - RPO Dorval, Dorval Quebec H9S 5W4



Volume 66, Number 8

May 2020

## NEXT MEETING

Tuesday 26 May 2020

**CANCELLED**

See the President's announcement  
and VE2RED net information  
page 4.

### FROM THE EDITOR'S DESK

This COVID-19 "shelter in place" thing is becoming a serious interruption to normal events. For the first time in I don't know when, the MARC-WIARC Field Day event has been cancelled. Added to that momentous non-event are the many cancelled hamfests and meetings - pretty soon we'll forget what another person looks like!

Rumours of a better, faster testing process, and of an effective vaccine keep circulating but as yet, nobody has a test or vaccine that works dependably.

In the meantime, as I wrote last month, things could be worse. This is a war, but it doesn't involve bombs, ICBMs, and offensive weapons. All we are asked to do is remain at home, veg out and wait. **We can do this, folks!**

73 de Nora, VA2NH

- . . . -



### New! Discussion Group

Following last month's announcement of the new MARC discussion group, about half the membership joined this group. This is great, but I would like to see the rest of our membership on this group so we can use it more efficiently. It's a great way for the club to inform its members in-between newsletters, and for members to discuss all things radio, upload photos, share ideas. You can find the group here:

<https://groups.io/g/VE2ARC/>

If you fear receiving too many emails from this group, you can set your preference to Daily Digest, or Special Notice, and read it on groups.io instead.

Email invitations will be sent to all members who have not yet joined. Keep an eye for it in your inbox.

Looking forward to seeing you in the group.  
If you have any questions, please let me know.

Marc-Andre Gingras, VE2EVN  
President - Montreal Amateur Radio Club

The MARCogram is published nine times per year on the second to last Wednesday of September through June, excepting December by the Montreal Amateur Radio Club. Advertising and copy deadline is one week prior to publication.

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General Members	...	...	\$30.00
Family Members (per family)	...	...	\$35.00
Postal delivery of MARCogram	...	...	\$ 5.00

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### Directors

President: Marc-André Gingras, VE2EVN... [vc2evn@marc.ca](mailto:vc2evn@marc.ca)  
 Vice President: Leo Nikkinen, VE2SI..... [vc2si@marc.ca](mailto:vc2si@marc.ca)  
 Secretary-Treasurer: James R. Hay, VE2VE..... [vc2ve@marc.ca](mailto:vc2ve@marc.ca)  
 Directors: Sheldon Werner, VA2SH..... [va2sh@marc.ca](mailto:va2sh@marc.ca)  
 Nora Hague, VA2NH..... [va2nh@marc.ca](mailto:va2nh@marc.ca)  
 George Hedrei, VE2NGH  
 Eamon Egan, VE2EGN..... [vc2egn@marc.ca](mailto:vc2egn@marc.ca)  
 Mario Piacitelli, VA2TMP..... [va2tmp@marc.ca](mailto:va2tmp@marc.ca)

Club Call Sign: VE2ARC

Club Website: <http://www.marc.ca>

### Repeaters

**VE2BG** 147.06 MHz (+)

Owned and operated by the Montreal Amateur Radio Club. **Currently OFF AIR**, looking for a new location..

**VE2RED** 147.27 MHz (+) 103.5

On the air from Ridgewood Ave. in Montreal; CTCSS tone of 103.5 Hz for access. Thanks to Claude Everton, the VE2RMP group and Metrocom for making this possible.

The repeaters are open to all amateurs.

### Meetings of the Board of Directors

Meetings of the Board of Directors are open to any member to attend. Board meetings are held on the first Tuesday of the month (Aug to June) at 19:30 in the Wardens' Room, St. Ignatius of Loyola Parish, 4455 West Broadway. Should you wish to attend one of the meetings you are welcome; just speak to one of the directors before-hand to make certain that the meeting has neither been cancelled, nor the location changed.

## Club Activities

### Monthly Meetings

(last Tuesday of the month)

Every Tuesday, @ 19:30 (23:30Z), go to the net on VE2RED.

See page 7.

May 26 - **Cancelled** (Show and Tell)

### Radio Classes

A basic level course is held starting in January of each year. If you know of anyone interested in taking the course they should send a message to: [classes@marc.ca](mailto:classes@marc.ca)

### MARC Hamfest

**The 2020 MARC flea market has been cancelled.**

It will be back next year but we still need a good location. Any ideas? Please contact any of the board members.

**Ideas are welcome!**

Go to <http://www.marc.ca/fest/fest.html> for more information as it happens.

### Incoming QSL card service

As has been mentioned in previous MARCograms, we are resuming the club's service of having incoming QSL cards sent to the club for members to pick up at meetings. This is a service which we are offering to our members which both saves the individual members money as well as makes more efficient use of our collective resources.

If you would like to avail yourself of this service please send an e-mail to [qsl@marc.ca](mailto:qsl@marc.ca) and we will add you to the list of cards that the incoming bureau sends to the club and bring them to the monthly meetings.

### CW CLASSES

By Leo VE2SI

Some members have expressed an interest in learning what is now called the International Morse Code and adding CW to their operating capabilities.

If you're interested send an email to [VE2ARC@marc.ca](mailto:VE2ARC@marc.ca) and indicate your level of interest.

## SolderSpot

Group build Power Supply Project - By Leo VE2SI

If you're interested and even if you've spoken with me before, please send an email to [VE2ARC@marc.ca](mailto:VE2ARC@marc.ca) and indicate your level of interest.

Participation is open to everyone and MARC membership is not a requirement. .



## UPCOMING FLEAS/EVENTS

### 2020

**What:** 38th Quebec Hamfest 2020

**Who:** VE2CBS

**When:** **CANCELLED**

(31 May, 2020)

**Where:** Sorel-Tracy QC

**What:** Rochester NY Hamfest

**Who:** Rochester Amateur Radio Ass.

**When:** **CANCELLED**

(06 Jun 2020)

**Where:** Hilton, NY USA

**What:** Central ON Hamfest/Fleamarket

**Who:** Guelph/Kitchener-Waterloo  
ARCs

**When:** **CANCELLED**

(07 Jun, 2020)

**Where:** Cambridge, ON

**What:** Tail Gate Treasure

**Who:** Hamilton Amateur Radio Club

**When:** **CANCELLED**

(20 Jun, 2020)

**Where:** Hamilton, ON

**What:** Ontario Hamfest Milton

**Who:** Burlington Amateur Radio Club

**When:** **CANCELLED**

(11 Jul, 2020)

**Where:** Milton, ON

**What:** Carp 24th Annual Hamfest

**Who:** Ottawa Amateur Radio Club, Inc.

**When:** **CANCELLED**

(12 Sep, 2020)

**Where:** Carp, ON

**What:** HARC Hamfest 2020

**Who:** Hamilton Amateur Radio Club

**When:** Saturday, 03 Oct, 2020

**Where:** Ancaster Fair Grounds,  
Ancaster, ON

## DISTRACTED DRIVING REGULATIONS IN CANADA: AN OVERVIEW

By Richard Ferch, VE3KI, RAC Regulatory Affairs Officer.

In light of the recent decision by the Ontario Ministry of Transportation to make permanent the exemption for two-way radios for commercial drivers and Amateur Radio operators, we have reviewed the regulations in Canada and, to the best of our knowledge, the exemptions in all other provinces and territories are "permanent" (i.e., with no defined end date). The one exception is Nunavut where there is apparently no exemption.

These regulations are made and enforced by Provincial and Territorial governments and can vary considerably from province/territory to province/territory and over time and are subject to change. In addition, in some cases the text of the exemption may be somewhat ambiguous and open to interpretation. In some provinces, including Ontario, the exemption may apply only to mobile radios and not to handheld radios (unless the handheld radio is used with a separate hand microphone).

### Alberta:

Section 3(1): Pursuant to section 115.1(1) of the Act, an individual who holds a radio operator certificate issued under the Radiocommunication Act (Canada) may drive or operate a vehicle on a highway while holding, viewing or manipulating a 2-way radio communication device.

### British Columbia:

Section 9 ("hand microphone" is defined in section 3(2)):

9. A person may use a hand microphone while driving or operating a motor vehicle on a highway if

- (a) the device is within easy reach of the driver's seat, and
- (b) is securely fixed to the motor vehicle or worn securely on the person's body in a manner that does not obstruct the person's view of the front or sides of the motor vehicle or interfere with the safety or operating equipment of the motor vehicle.

### Manitoba:

Section 215.1(5): Subsection (2) does not apply to the use of

(a) a radio apparatus, as defined in section 2 of the Radiocommunication Act (Canada), that

(i) is operated under the authority of a radio operator certificate issued under that Act,

### Newfoundland and Labrador:

Section 176.1(4)(b):

176.1 (4) Subsection (1) does not apply in respect of the use of

(b) a device that is linked to a non-public shortwave radio communication system.

(Continued on page 4)

# VE2RED TUESDAY NET REPORT

Any discrepancies, please inform Leo, VE2SI

2020-04-28 Net commenced 20:00 local, 01:00Z

Net control Pawel, VE2ARC (VE2ZPZ)

VE2EVN, Marc-André

VE2DF, Duncan

VE2SI, Leo, St-Lazare

VA2XS, Mike, Ville St-Laurent

VA2NH, Nora, St-Lazare

VE2KFC, Norm, St-Constant

VE3MSZ?, Mike?

VA2LEQ, Lee, Laval

VE2TOR, Frank

VE2LJV, Sam

VE2WRH, Wayne

VA2WF, Martin

VE2AWC, Noel

VE2VE, Jim, Pointe-Claire

20:42 Net closed.

15 check-ins.

---

2020-05-05 Net commenced 20:00 local, 01:00Z

Net control Pawel, VE2ARC (VE2ZPZ)

VE2SI, Leo, St-Lazare

VA2XS, Mike, Ville St-Laurent

VA2NH, Nora, St-Lazare

VE2WRH, Wayne

VA2LEQ, Lee, Laval

VE2KFC, Norm, St-Constant

VE2EVN, Marc-André

VE2EGN, Eamon, NDG

VE2FXO, Charles

20:53 Net closed.

10 check-ins.

Discussion: portable HF rigs, FT-817/818, FT-891, FT-857.

---

2020-05-12 Net commenced 19:30 local, 23:30Z

Net control Pawel, VE2ARC (VE2ZPZ)

VE2SI, Leo, St-Lazare

VA2NH, Nora, St-Lazare

VE2WRH, Wayne

VA2LEQ, Lee, Laval

VA2XS, Mike, Ville St-Laurent

VE2XHL, Jong

VE2KFC, Norm, St-Constant

VE2YI, Claude

20:23 Net closed.

9 check-ins.

Discussion: CW, surface mount technology, repeater care, repeater de-sensing, replacement repeater.

---

2020-05-19 Net commenced 19:30 local, 23:30Z

Net control Pawel, VE2ARC (VE2ZPZ)

VE2SI, Leo, St-Lazare

VA2XS, Mike, Ville St-Laurent

VA2NH, Nora, St-Lazare

VA2LEQ, Lee, Laval

VE2WRH, Wayne

VE2KFC, Norm, St-Constant

VE2XHL, Jong

VE2BAB, Mitch, Cote-St-Luc

VE2JL, Jan

VE2EGN, Eamon, NDG

VE2EVN, Marc-André

20:15 Net closed.

12 check-ins.

Discussion: Audio plugs, HF radio (mono) vs. car AUX (stereo), impedance mismatch; Icom, mike to radio; CW mobile methods; mobile installation post to MARC groups.io discussion group.

*(Continued from page 3)*

## **New Brunswick:**

Section 265.03(e):

265.03 Section 265.02 does not apply to a person

(e) who uses a two-way radio while operating a motor vehicle on a highway if that person is the holder of a radio operator certificate issued under the Radiocommunication Act (Canada),

## **Northwest Territories:**

Schedule B, item 6:

May be used on any road as long as the transceiver is mounted to the motor vehicle and the user is lawfully authorized to use the transceiver (for all services including commercial services, the General Radio Service (GRS), General Mobile Radio Service (GMRS) and Amateur Radio Service).

## **Nova Scotia:**

Section 100D(1) (two-way radios not included):

100D (1) It is an offence for a person to use a hand-held cellular telephone or engage in text messaging on any communications device while operating a vehicle on a highway or operating a personal transporter on a roadway or a sidewalk.

## **Nunavut:**

Section 239.1: No exemption found

## **Ontario:**

Section (13)1:

(1) Drivers who hold a valid radio operator certificate issued under the Radiocommunication Act (Canada) may drive a motor vehicle on a highway while holding or using a two-way radio.

## **Prince Edward Island:**

Section 291.1(4)(b):

291.1 Hand-held devices holding or use prohibited while driving

(4) Subsection (1) does not apply in respect of the use of (b) a device that is linked to a non-public shortwave radio

*(Continued on page 5)*

(Continued from page 4)  
communication system.

### **Quebec:**

The official online document, "What the Law says", states under the heading "Exceptions", second bullet:

The prohibition from holding a hand-held device that includes a telephone function does not apply: in the case of a two-way radio, that is, a device that does not allow the parties to speak simultaneously – also known as a walkie-talkie, mobile transceiver, two-way portable radio or two-way transceiver

### **Saskatchewan:**

The third column of the PDF document states: two-way radios are not included in the definition of "electronic communications equipment" in the Traffic Safety Act.

### **Yukon:**

Section 88.2(2):

A person who is a fully licensed driver may, despite subsection 210.1(2) of the Act, use a two-way radio that is an electronic device while operating a motor vehicle on a highway, provided that the person does not use it in a telephone function or for transmitting or receiving electronic mail or other text-based messages.

- . . . -

## **TEST EQUIPMENT: THE BASICS AND BEYOND**

By Leo Nikkinen, VE2SI  
[leo49@videotron.ca](mailto:leo49@videotron.ca)

Part 3, Section 2 of 2:

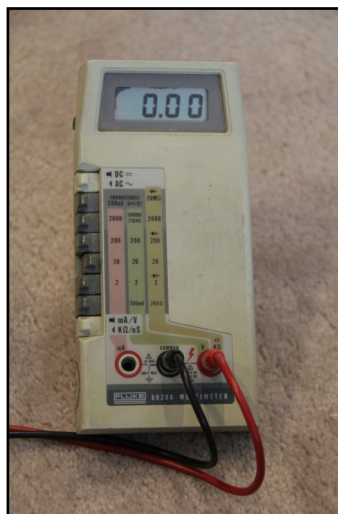
Minimum Basic Test Equipment: **The Multimeter.**

### **What's next?**

In Part 1 we looked at analogue multimeters. Now, we'll look at the practical modern replacement for the traditional multimeter that would have been found in almost every amateur's shack and on most electronics hobbyist's workbench 20 or 30+ years ago.

### **Handheld Digital Multimeter**

While many applications do not require measuring a voltage, current or resistance to better than  $\pm 1\%$  or  $\pm 2\%$ , digital technology opened up the possibility of much greater precision and accuracy (the difference between precision and accuracy will be discussed in a later installment). Advances in microelectronics and circuit integration enabled digital meters with a resolution of 1 part in 2000 (0.05%) and



Fluke 8020A

greater to be produced, and at a cost that is competitive with analogue meters.

The key component in a digital multi-meter (DMM) or digital voltmeter (DVM) is an analogue-to-digital converter (ADC) or A/D converter which converts a voltage to a numerical value. Advances in integrated circuits allowed ADCs to be built more easily and at a steadily decreasing cost. With the widespread adoption of DMMs and digital oscilloscopes, it is now possible to purchase digital multimeters with a resolution of 1 part in 2000 to 1 part in 20,000 for a reasonable price (\$50 to \$1000). These represent full-scale resolutions of 0.05% and 0.005%, although overall ADC and DMM accuracy will be lower because of other factors.

Earlier literature referred to 3-1/2, 4-1/2 or 4-3/4 digit multimeters but this description became problematic when meters with 5000 and 6000 count (3-5/6 digits) capability appeared. Modern nomenclature usually includes both the DMM's resolution, say a 20,000 count meter, and the number of digits, 4-1/2 digits for a 20,000 count multimeter. The overall accuracy of the DMM will however be less than implied by the numerical resolution. While a 20,000 count meter on the 2 volt scale can in principle resolve a voltage down to 0.1mV, calibration issues, ADC linearity and component stability (variation with time and temperature) will degrade that accuracy. For example, a Fluke model 115 handheld 6000 count DMM on the 6 volt scale will resolve down to 1mV, however the meter accuracy (on the 6 volt scale) is specified as  $\pm 0.5\% + 2$  counts (or digits). The "2 counts" means that the least significant digit, the rightmost, could be in error by 2. That means that a 1 volt measurement could be in error by as much as:

$$0.5\% \times 1V + 2 \text{ counts} = 5mV + 2 \text{ counts} \times 1mV/\text{digit} = 7mV.$$

(Continued on page 6)



(Continued from page 5)

The resolution of the Fluke 115 on the 6 volt scale is an impressive 1mV, but the accuracy when making a 1V measurement is 7mV.

By way of contrast, the older 2000 count (3-1/2 digit, 1mV resolution on the 2 volt scale) Fluke 8020A has a specified accuracy of  $\pm 0.25\% + 1 \text{ digit (count)}$ . The measurement of a 1 volt DC voltage would be accurate to:

$$0.25\% \times 1V + 1 \text{ digit} = 2.5mV + 1 \text{ digit} \times 1mV/\text{digit} = 3.5mV.$$

The resolution of the 8020A on the 2V scale is also 1mV, and the accuracy for a 1 volt measurement is 3.5mV.

In its day, the (2000 count) 8020A was a more expensive meter and designed to be more accurate even though it's only a 3-1/2 digit meter, compared to the more modern (6000 count) 115. As always, it's necessary to check the specifications carefully if high accuracy is required.

The input impedance of a typical handheld DMM is  $10M\Omega$  for both DC and AC measurements. While a higher input impedance is necessary for measurements in high-impedance circuits,  $10M\Omega$  is high enough for most requirements. Lower cost DMMS employ a diode to convert the peak value of an AC signal into DC and display the resulting value as an RMS voltage. That peak-AC-to-DC conversion assumes a sinusoidal waveform and the DMM's displayed, so-called, RMS value will not be correct for anything other than a sine wave. However, many DMMs now include additional circuitry that provides true-RMS (TRMS) conversion and more meaningful measurements of complex AC waveforms. Look for a meter that specifies TRMS AC measurement.

### **Benchtop Digital Multimeter**

Benchtop DMMs usually provide additional precision and accuracy over handheld DMMs and sometimes additional low voltage or low current scales. Benchtop DMMs often



HP3468A

have a higher input impedance than their handheld counterparts. For example, the HP 3468A & B have an input impedance of  $10G\Omega$  on the 0.3 and 3V ranges and  $10M\Omega$  on the higher voltage ranges. Most benchtop DMMs also provide TRMS measurement of AC signals.

Used, working, 200,000 count (5-1/2 digit) to 300,000 count bench multimeters such as the HP 3468A can be found at amateur radio fleamarkets for \$100 to \$200.

How does a somewhat older HP 3468A compare with the Fluke meters discussed above? It has a specified accuracy (1 year after calibration) of  $\pm 0.018\% + 2 \text{ digits}$  and a resolution of 0.010mV when operating in 5-1/2 digit mode on the 3 volt scale. When measuring 1V DC, it would have an accuracy of:

$$0.018\% \times 1V + 2 \text{ digit} = 0.18mV + 2 \text{ digit} \times 0.01mV/\text{digit} = 0.20mV.$$

In 3-1/2 digit mode and on the 3 volt scale, the accuracy is still  $\pm 0.018\% + 2 \text{ counts}$  and the resolution is 1mV. When measuring 1 V the accuracy would be:

$$0.018\% \times 1V + 2 \text{ counts} = 0.18mV + 2 \text{ digit} \times 1mV/\text{digit} = 2.18mV.$$

For comparison, the Simpson 260-5 analogue voltmeter has a specified accuracy of 2% of full scale. On the 2.5V scale, the measurement would be accurate to  $2.5V \times 2\% = 50mV$ .

Let's summarize the accuracy of the above multimeters when measuring 1V DC.

Modern Fluke 115: 7mV

Older Fluke 8020A: 3.5mV

Older HP 3468A: 0.20mV (5-1/2 digit mode)

Older HP 3468A: 2.18mV (3-1/2 digit mode)

Owon B35T+: 7mV (0.5%+2 counts)

Analogue Simpson 260: 50mV

The 3468A bench DMM is clearly more accurate than either of the above handheld DMMs, even when operating in 3-1/2 digit (2000 count mode) and all of the DMMs are more accurate than the Simpson 260-5.

What's the best that's available? Currently 2,000,000 count, or 6-1/2 digit multimeters are readily available and the limit for bench DMMs is somewhere around 8-1/2 digits (approx. \$15k).

### **Other Functions**

Multimeters are more frequently used for measuring voltages, and that's the specification and capability that we've looked at more closely. DMMs also measure AC and DC current

(Continued on page 7)

*(Continued from page 6)*

and resistance, and some can display AC and even DC voltages in decibels. The accuracy for current and resistance measurements are usually significantly less than for voltage measurements, but more than adequate for all applications that will be encountered at an amateur radio station.

Current measurement involves the use of a shunt resistor through which the unknown current passes and the measurement of the voltage across the shunt. The basic method is the same whether the current is AC or DC. This method works well for low value current, say below 1 or 2 amps, but the measurement of higher currents, in the 10 to 20 amp range or higher, requires the use of low-value shunt resistors. The value of the shunt resistor is tied to the input voltage range of the ADC, usually around 200 or 300mV. The voltage across the shunt resistor should equal the full-scale voltage range of the ADC at the maximum current to be measured. Let's say that we have a DMM with a 200mV range, which is the lowest scale (most sensitive range) on a typical handheld DMM. If we wish to include a 0 to 2 amp range on the DMM, we would need to have a shunt resistance of  $R = V / I = 0.2V / 2A = 0.1 \Omega$ , or 100 m $\Omega$ . Contact and wiring resistances within the DMM can be in the few milliohm range which makes the measurement of the voltage across the 100 milliohm shunt resistor problematic. Providing higher current measurement capability, say a 10 or 20 amp range, would require shunt resistors of 20 and 10 milliohms, respectively. It is difficult to produce low-value resistors and defining the exact physical section of the resistor that constitutes the shunt resistance can be challenging. Measurements done with low value resistors typically use a 4-terminal measurement technique, also known as a Kelvin connection. This might be the subject of a future installment.

Implicit in the measurement of a current using the above technique, is the "voltage burden" of the DMM, or the voltage drop across the shunt resistor. For a DMM with, say, a 200mV most sensitive scale, that voltage burden will be 200mV and the power supply voltage delivered to the load will be reduced by 200mV when current at the DMM's maximum limit is measured. The shunt is a resistor, so the voltage burden will be proportionally lower for currents below the range maximum.

It must also be realized that measuring a 20 amp current with a DMM that has a 200mV full-scale ADC will result in the dissipation of  $20A \times 0.2V = 4$  watts of heat in the shunt resistor. Dissipating that amount of heat inside the enclosure of a small handheld meter can be difficult, and the heat will raise the temperature of the shunt resistor and can change its value. Earlier DMMs included current measurement up to a maximum of 2 amps, which kept the power dissipated in the

shunt resistor down to a more manageable 0.4 watts. If an AC current is being measured, the shunt resistor AC voltage is first converted to a DC voltage.

Many modern handheld DMMs usually include other useful functions, such as capacitance, transistor gain and temperature measurement, plus a diode test function and the ability to measure frequencies in the audio range. More advanced models include logging functions that will make it easy to, say, monitor voltage or current during a battery charge/discharge test. Some, such as the Owon B35T+, provide Bluetooth connectivity to Android and Apple devices.

The one application in which an analogue display is preferred is in peaking or nulling adjustments. It is far easier to peak or null an adjustment using an analogue display than it is to look at numbers. However, most DMMs, particularly handheld DMMs, provide a bar-graph display that makes it easy to perform peaking or nulling adjustments.

### Safety Issues

Before purchasing a multimeter, consider the applications in which it will be used, possible overvoltage situations, and determine the applicable safety category. Modern electrical test equipment is categorized as to its use and ability to survive a rated possible overvoltage without an electrical shock risk to the user. Modern handheld meters are usually CAT II, or maybe CAT III, devices but that rating depends on the voltage being measured and its supply. Fluke has a very good Application Note that explains the issues. Just Google "fluke abcs of multimeter safety" and you should get a link to their 1263690 A-EN-N Rev I Note.

### Purchase Options



Owon B35T+

*(Continued on page 8)*

(Continued from page 7)

What should you buy? The functionality, accuracy, reliability and safety provided by a modern DMM has resulted in the almost complete disappearance of analogue multimeters. However, the Simpson 260 (\$400 CDN) and Triplett 630 (approx. \$600 CDN) are still being manufactured and sold, although at a cost greater than that of a good DMM (\$240 CDN, Fluke 115 DMM with TRMS). Look for a meter that will cover the full range of voltages and currents that you wish to measure and a meter with true RMS measurement capability (the meter usually says TRMS somewhere and it will be mentioned in the specifications). If you wish to measure currents in the 10 to 20 amp range, make sure that the meter includes that capability. If you find a multimeter that's attractive but doesn't include the high-current ranges you need, an external shunt resistor can be used. Check the electrical category of the meter; a 600 volt or 1000 volt CAT II or CAT III meter will be suitable for most measurements in an amateur radio station, although smaller and cheaper DMMs would be okay for working on low-voltage equipment.

Over the years I have purchased several handheld DMMs, the most recent is an Owon B35T+ bought new for around \$150 from a local supplier. Although it is an "import", I have found it to be accurate for most work, reliable and it appears to be reasonably rugged. I also have an 5-1/2 digit HP benchtop meter that has the benefits (higher accuracy) of a benchtop DMM.

### Summary

While an analogue multimeter (Simpson 260) has some nostalgic appeal, it has a poor tolerance for electrical surges, can be easily damaged by rough handling and doesn't provide the accuracy and precision of a DMM. A DMM, preferably with TRMS measurement capability, is an essential tool for any amateur radio station. Handheld units can be purchased new at a reasonable cost and used handheld and benchtop models can be found at many of the regional amateur radio fleamarkets (once COVID-19-induced isolation has disappeared). Fluke manufactures a wide range of good quality handheld and bench DMMs. Google "Fluke multimeters" for a listing of local suppliers. ITM Instruments on the West Island stocks Fluke and many other recognized industry standard brands. The Owon B35T+ is available from Abra Electronics in Montreal.

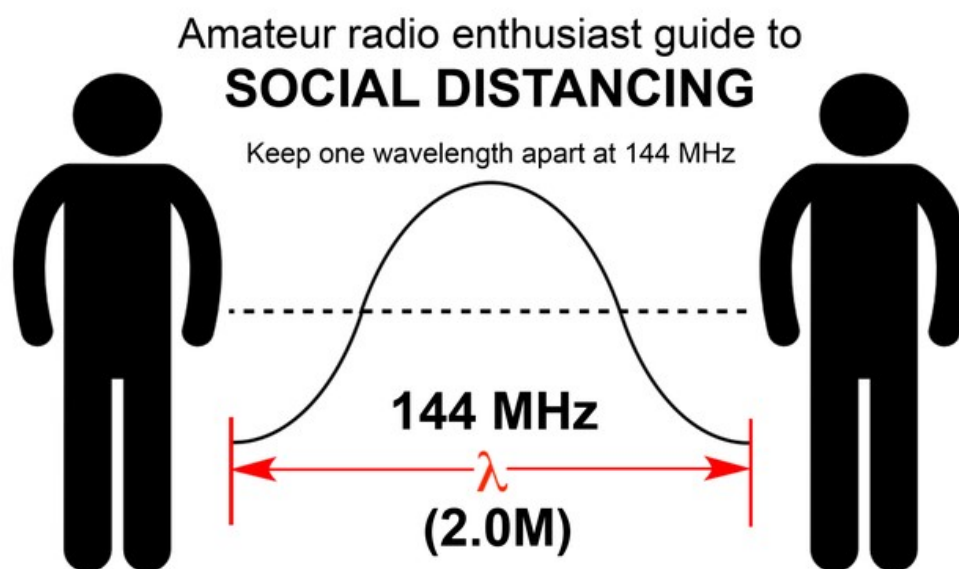
Leo, VE2SI  
[Leo49@Videotron.ca](mailto:Leo49@Videotron.ca)

**Production Manager**

**Edward Wielgus**  
D.C.S., B.Eng., M.Eng., VE3VMF

Montréal, Quebec, H2K1J2, Canada

Fax.: (514) 360-2956  
ed\_die.2@hotmail.com  
Facebook, LinkedIn, Twitter





## MESSAGE FROM THE PRESIDENT

Since there have been no changes to the directives from the Quebec government regarding COVID-19, the MARC has taken the decision to **CANCEL** the May Show & Tell meeting scheduled for 26 May 2020.

Instead of the meetings, we are holding a weekly net on the VE2RED repeater every Tuesday, at 19:30 local.

Regular net operator is Pawel, VE2ZPZ, for the evening. Everyone is welcome.

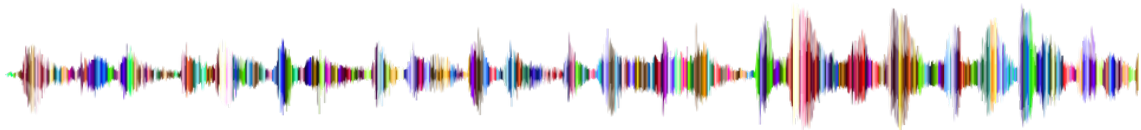
Please join us every Tuesday on VE2RED on 2m output frequency of 147.270 MHz (+600 kHz input offset).

**Note 1:** the repeater uses a CTCSS tone of 103.5 Hz for access.

**Note 2:** due to the use of a replacement repeater, please leave a few seconds after a transmission before picking up the mike, in order to cool the amplifier and avoid a lowering of output power.

Please be safe, and stay healthy.

Marc-Andre, VE2EVN  
President - Montreal Amateur Radio Club



## Creative Approaches to Field Day 2020

-Paul Bourque, ARRL Contest Program Manager

This year, Field Day promises to be a unique iteration of this annual event, with many individuals and groups coming up with new and interesting ways to adjust their approach. As an event, Field Day is structured to be versatile and can be adapted for any situation.



Many groups have asked how they can adjust their Field Day planning to address social-distancing guidelines that may be in effect in many areas of the country, as gathering at their traditional FD site may not be feasible or safe. Instead of participating in a group event this year, consider operating as a Class B, C, D, or E station, utilizing your own call sign.

We will be including club names for all participating stations in the published results, so the efforts of your club's members can be acknowledged. While we will not publish an aggregate club score, seeing the name of your club associated with various individual member's results is certainly a way to highlight your club's activity.

Consider having an intra-club competition among members, seeing who can make the most contacts during the event. You can award prizes or distribute certificates at a club meeting. This can be a fun way to bolster the activities of individual club members, even though they cannot all gather together at the same location this year.

Try setting up a Field Day Challenge with rival clubs in neighboring communities. See how many members of each club get on the air from their own stations and participate in the event. In addition to "bragging rights," perhaps certificates to the top-scoring individual entry in each category can be presented as part of this inter-club camaraderie. Myriad opportunities are possible in this year's Field Day setting.

One club is planning to conduct their Field Day as a four-transmitter Class A club group, with participants spaced to comply with social distancing guidelines within the 1,000-foot diameter circle and operating individual stations. This club also plans to set up a Get-on-the-Air (GOTA) station. The club's plan is to have the GOTA coach at the Field Day site, while having GOTA operators participate via remote link.

Another club is planning to set up a remote-controlled station at their usual Field Day site, with club members taking turns controlling the station from their own homes. The club is creating a schedule outlining when each member of the club will be at the control of the transmitter via the remote link.

Whatever approach you take to this year's Field Day, keep up to date with the current guidelines issued by local and state health agencies that may impact your proposed operation.

ARRL invites your stories about the interesting and creative ways you're planning to use to adapt your Field Day operation. Share these on the ARRL Field Day Facebook page at <https://www.facebook.com/groups/1966096706830030/>

We will be posting updates on the Field Day webpage as they become available.