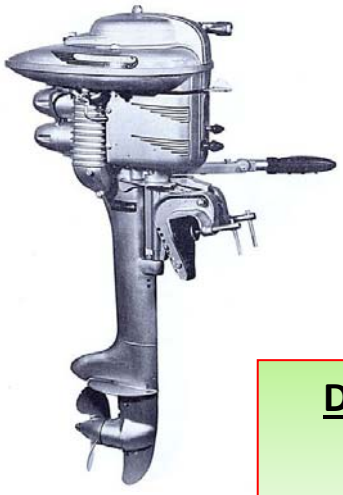
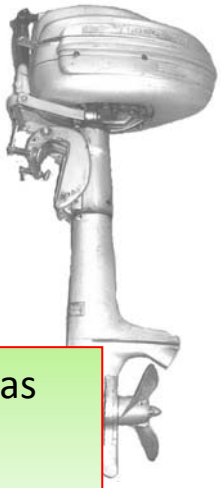


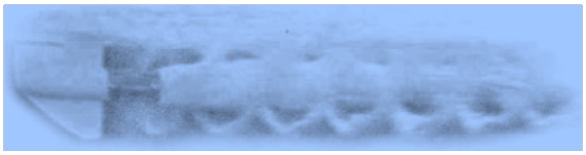


Date Change: The Annual General Meeting has been rescheduled to **October 20, 2012**

NEWSLETTER

September 30, 2012 Volume 20 Number 3

. PROP WASH



Hey… Can you believe it is already October!!! Summer has come and gone and I hope you all had a great one. I did manage to get out and prowl around a few yard sales and a dusty old marina or two in search of some neglected relics. I swear that half the fun of this hobby is in the search of "Old Iron" and you get to meet some interesting characters along the way!!! Looking back, our summer events were also a resounding success!!!

It was a great day in Gravenhurst for the ACBS event. The weather was perfect… not too muggy and the organizers had noticeably taken greater effort to ensure the crowds were made aware of all the displays "across the street". According to the guys, there definitely was a lot more traffic through our display than there has been in the past couple of years. Many thanks to Ron Stevenson and the Gravenhurst committee members for once again putting on a great display.

At the last minute we were invited to put on a display at the "Huntfest" in Orangeville. Peter Gamblin took on the challenge with help from Brian Kelley, Peter's son Geoff and Peter's wife, Heather, also pitched in with the setup. Peter reports that our display was well received, but it looked out of place with everything else that was in "cammo". If it wasn't cammo, it was orange and black with "Harley Davidson" written on it!!!

INSIDE THIS ISSUE

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Bill Paterson
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*Immediate Past President

In August, we had the Port Carling RACE Boat & Racing Outboard Show at MLA Hub-of-the-Lakes. It was a great day and a super friendly crowd. Thanks again to Ron Stevenson for a very well received display with lots of cool stuff you would never see at Gravenhurst.

The "Rock the Lock" show was scheduled for September 8 in the village of Buckhorn, right in the heart of the Trent Severn waterway. Unfortunately, we had to cancel due to a variety of unforeseen circumstances. The only consolation was that it had poured rain for the majority of the day, so I don't feel as bad for missing out on this one.

It was a rainy morning when my son Bryan and I lit out for the "Art Doling Memorial Wet Meet" at the Ski Pitz in Newmarket. The weather broke within a few kilometers of our destination and it was sunshine and blue skies for the rest of the day!!!. I was pleasantly surprised at the wonderful turn out by our members and we even had a few boats out there churning the waters. Of course, we all had the opportunity to sample Ron Gilpin's infamous "Motor Burgers". The Ski Pitz is always one of my favorite meets.

Our year will be wrapped up at the AGM coming up October 20th (Note the date change). I encourage all of you to come out for a fun morning of checking out each others junk… Wait…that didn't come out right!!... but you know what I mean!!! Don't forget to stick around and enjoy a bowl of Ron Gilpin's famous chili lunch and then catch up on some club business.

Another great year thanks to the hard work of our volunteers. I encourage our new members to come and participate at the various meets and shows. It is a great way to network with the other members and make contact with the public that are a great source for adding to our collections.

Let's not forget another great resource that we have at our fingertips but many of us seem to overlook. I encourage you all to join up with our parent organization at the AOMCI. This organization gives us access to a huge network of collectors and experts that are more than willing to share their help and expertise with you. I always enjoy getting my copy of the Antique Outboarder to read up on some of the technical challenges of working on "old iron". There are also lots of great pictures to inspire you to perfect your own efforts at restoring those "diamonds in the rough" lurking in the garage…

I look forward to seeing many of you at the AGM and as always, please feel free to share your thoughts and ideas on how to continue to make this club a success.

Keep on motorin'

Glenn Weigel
Your Friendly Neighbourhood President

Message from the AOMCI Executive council

Dear Maple Leaf Members,

In the interests of increasing membership in the AOMCI the National Executive has decided to offer one year introductory memberships; now for just $45 Canadians can try out the AOMCI for a year! The 2 year $63 membership is still available for Canadians (which is still the better deal of course). Introductory memberships for American addresses is $40 and when working out the rates we rounded the ratio down for new Canadian and international members.

Our Treasurer George Emmanuel did some number crunching as of late and has determined that American members at least are getting a good value for their memberships and that the benefits of membership, including the Antique Outboarder and each member's share of insurance costs, work out just about precisely to the current membership pricing. The cost of postage is higher for Canada and other international destinations and these prices are not fully reflected in the Canadian and international rates, so in essence our friends south of the border are in fact subsidizing the cost of memberships outside the USA.

Remember that according to the regulations governing the AOMCI in order for a chapter of the corporation to collect money from a person, that person must be a member in good standing with the parent organization. The Maple Leaf Chapter is just that - a chapter of the AOMCI - so all of us should be members in good standing with the AOMCI first and members of the Maple Leaf Chapter of the Antique Outboard Motor Club Inc. second. As of now, the MLC steering committee has taken the approach that with the proper encouragement all of us will voluntarily pay our dues to the AOMCI, an approach that in my opinion jeopardizes the legal standing of AOMCI, the status of the MLC as a chapter of the AOMCI and the essential insurance coverage for our meets and displays that is part of this arrangement.

If you have not done so already please visit www.aomci.org where you can follow the links to sign up with the AOMCI. Fees are payable through Pay Pal or by sending a cheque or money order (in US Funds) to:

PO Box 831
White Cloud , MI 49349

In my opinion your subscription to The Antique Outboarder, the Club's marquee publication alone is well worth the cost of membership. The Outboarder has come along way over the years and is now a full glossy 8x10 magazine running from around 60 to 90 pages an issue filled with chapter news from around the world, special interest topics and technical articles. Portions of the magazine are now in color and as editor of the Outboarder I have been working to ensure more Canadian and international content in the magazine. We are always looking for new contributors, so please consider getting involved!

Sincerely,

Richard L. Paquette
VP-Publications : The Antique Outboarder
The Antique Outboard Motor Club Inc.

Editor's Note:

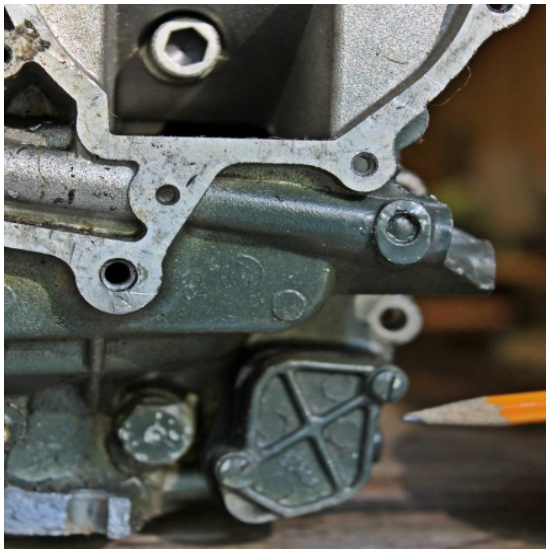
Again, thanks to all who contributed to the Newsletter!! Any ideas for future articles would be greatly appreciated. The next issue will be mailed / emailed as at December 31st along with the 2013 Member Directory – so the cutoff date for articles/submissions is December 15, 2011.

Rob Lambe

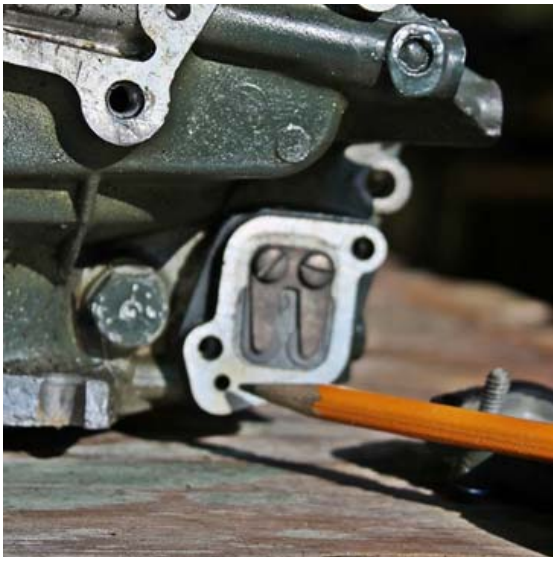
Over The Rainbow

One of the drawbacks of running these old outboards is the rainbow of gas that often emanates from them as you start them up. Assuming it isn't from a leaking fitting or a misfiring cylinder, most of this is from the crankcase bleeder system. Formerly atomized fuel and oil drawn into the crankcase that either condensed or dropped out pools at the low point in the crankcase. This is particularly evident when the engine is cold, on start-up, and at lower speeds, when the air/fuel mixture velocity inside the crankcase is lower. To prevent this pooled fuel from building up, or suddenly getting re-entrained into the flow entering the cylinder, on older outboards it is typically dumped directly, or indirectly via the exhaust leg, overboard.

On the larger classic OMC motors, a simple modification can be made that recovers this otherwise dumped fuel. A number of years ago, club member Don Husack wrote an article for this newsletter detailing this modification. I tried it on my 57 Big Twin, and after having run about 100 gallons of mix through the engine without any trouble, (and in the process recovering about 10 gallons of gas that would have otherwise been dumped to the lake) I thought it might be worthy of a repeat; this time with a few photos.



On the 50's and 60's era 25 hp and up OMC engines, there is is a small parallelogram shaped cover plate at the lower front of the engine. It's accessible with the lower engine pan on, but difficult to see, so for the purposes of photos, I've used a parts-donor 33 hp block.



Remove this cover plate and you will see the backside of two check valves and, at the lowest point, a small hole. With every power stroke, any fuel/oil pooled in the cylinder's crankcase is blown through these check valves and out the bleed hole in the block to the exhaust leg.

Plug the bleed hole. In my motor, I epoxied in an aluminum nail head. Opposite the bleed hole, drill and tap (or just epoxy) the cover plate for a hose fitting. Make sure your plug and hose fitting aren't going to interfere with the cover gasket seal.

Reinstall the cover plate, connect a hose to the fitting and run it to an approved gasoline container. At least that's what **you** should do. As you can see, I ran mine to an old oil bottle.

Since there are going to be pressure pulses of an explosive mix of fuel and air pumping the fuel into the container, it is imperative that the container be vented, but not into the bilge of the boat. I used an old piece of double line hose, venting the recovery container back to the engine hood near the air intake (see pencil in upper left corner of photo with motor on boat). This way, the fumes get drawn back to, and through, the engine. Just make sure the vent line is higher than the feed line to the container. Otherwise you could be sending slugs of fuel into the carburetor.

My experience has been, if I operate for extended periods at less than cruising speed, I collect almost a litre of fuel and oil per 20 litre tank of fuel burned. This I just simply pour back into the tank when I refill it. However, if I run predominately at cruising speed (well, being honest, wide open throttle) I'll collect only about a cup per tank.

For those of you operating those thirsty early V4 OMC's you'll definitely need a much larger container, as this crankcase bleed system is the primary reason for their high fuel consumption.

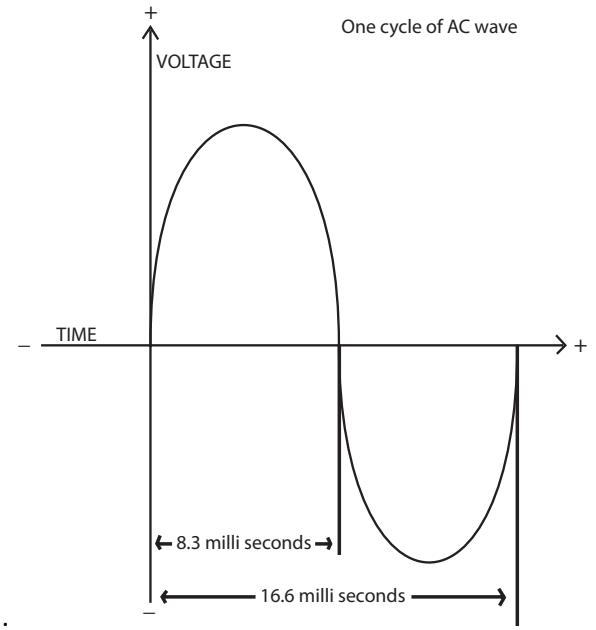
Now, does anyone need a busted 33 hp block?

Rob Abbott

Electricity 101 – Part 2

(Part 1 in the March 2012 Newsletter)

Electricity comes in two main flavors, AC and DC. In DC (Direct Current) the charges are always moving in the same direction. In AC (Alternating Current) the charges constantly change direction. In North America, the frequency of our AC supply is 60 Hz, or 60 cycles per



The above picture is of a single cycle of AC. Since there are 60 cycles in one second, the time for one cycle is 1 second/60 =.0166 seconds, or 16.6mS. A half cycle is 8.3mS. The charges flow in one direction for 8.3mS and

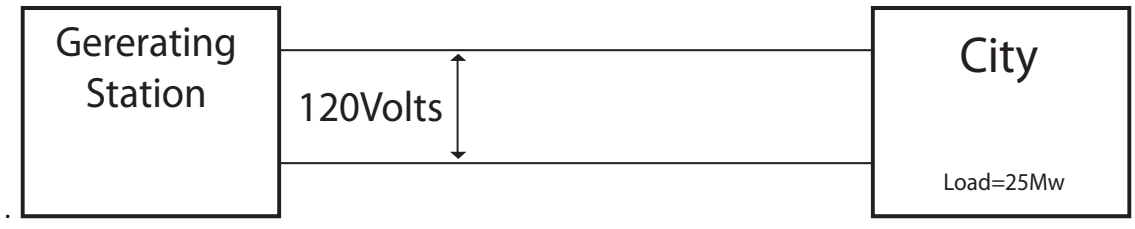
looks like it does. The rotating part (armature) of every generator on the planet produces AC. If you want the output of the generator to be DC you have to add a commutator to the armature. Whenever you transmit power over a distance you lose some of that power - it dissipates in the transmission lines. Given two identical setups, one with AC and one with DC, the DC will have a smaller "Line Loss" than the AC setup. I'm not sure of the exact numbers, just that the loss is less with DC.

Electrical power distribution & AC

So why do we use AC almost exclusively worldwide for the distribution of electrical power? Around 1882 Edison was heavily invested in and pushing DC. Westinghouse and Tesla realized that for the large scale distribution of power to be economical AC was the obvious choice (as I will explain below).

Edison instigated some very nasty shenanigans to try to promote DC. He even had an elephant electrocuted with AC to prove how dangerous it was. The truth is high voltage is dangerous, it matters very little if it's AC or DC. The elephant could just as easily have been killed with DC; Tesla and Westinghouse just had a little more class than Edison. The confrontation between the two sides was called "The War of Currents" (you can Google it), in the press of the day.

Let's look at how to send power to an imaginary city.



then switch direction for the next 8.3mS etc etc. The direction of flow for the charges changes every 8.3mS. Since the charge carriers actually move very slowly, (it depends on the level of current and the diameter of the wire) in an AC system the charges just sit in one place and vibrate back and forth.

We like AC because it can easily and efficiently be produced by rotating machines. It's because it is produced by rotating machines that the AC sine wave

So here is our city with an electrical load of 25MW. (25 million watts) On August 1st 2006, Ontario set a record for electrical load of 27,005MW, or just over 27 Billion watts. So our imaginary city is about 1/1000th of the size of the largest ever provincial load. We are going to feed our imaginary city with single phase (one pair of wires) at 120 Volts. Since Power=Current X Voltage, the formula can be re-arranged so that we get Current = Power/Voltage. So 25,000,000W/120V = 208,333 Amps. That's a lot of current. The largest cable made

is 2,000Kcmil (Kcmil = thousand circular mills). It means the cross sectional area of the cable is equivalent to 2 million circular mills. A mil is .001 inches, or 1/1000th of an inch diameter. A 2,000Kcmil cable is good for 1700 Amps. So 208,333Amps/1700 = 122.5 so we are going to need 123 cables for each of our wires. The copper in each 2000kcmil cable is about 1.6" in diameter.

Obviously the towers to hold the cables would be many and closely spaced along with needing to be built much stronger than existing towers are today. So add up the cost of that many cables, the number and size of the towers, and try to imagine what it would cost to run 1000 miles of cables.

Enter the transformer. Tesla and Westinghouse realized that if they used AC and transformers they could step up the voltage to a much higher level and transmit the same amount of power at a much lower current. Lower current = smaller wires. A step up transformer is used to take the power at whatever voltage it is generated and step it up to 230,000 Volts. At the other end, the voltage is stepped back down to 120 Volts. Let's redo the math. For our new setup, Current =25,000,000W/230,000V = 108.69 Amps. Much better, now a single #4 cable can replace the bundle of 123 - 2,000 Kcmil cables. The copper in a #4 cable is about 1/4" in diameter. So now a single cable 1/4" in diameter replaces 123 cables each of which was 1.6" in diameter. That represents a huge savings in the cost of cables and towers. The towers don't need to be as strong and you need less of them.

At the time the "War of Currents" was going on there was no economical way to step DC up and down. Your business or residence would have had to be within a mile or two of the generating station. Hundreds of thousands of generating stations all over North America would have been needed - and guess who would have profited from that? Right, Mr. Edison as he held all the patents and stood to receive all the royalties.

How electricity is measured

Everyone knows that the voltage at a standard receptacle in your house or business is 120 volts, Right? That's not the completely correct. It's 120 volts RMS. RMS means Root of the Mean Square. If you measured the voltage at that standard receptacle with an oscilloscope you would see that it is about 169 volts. If you have access to a scope, DO NOT attempt to measure the voltage at a receptacle unless you know the proper way to do it. If done incorrectly you can cause a dead short and it could blow up in your face.

Why do we measure AC Voltage and Current in RMS Volts and RMS Amps? The reason is power.

Look at Figure A below. In this circuit the supplied voltage is 100 Volts DC and the current is 10 Amps.

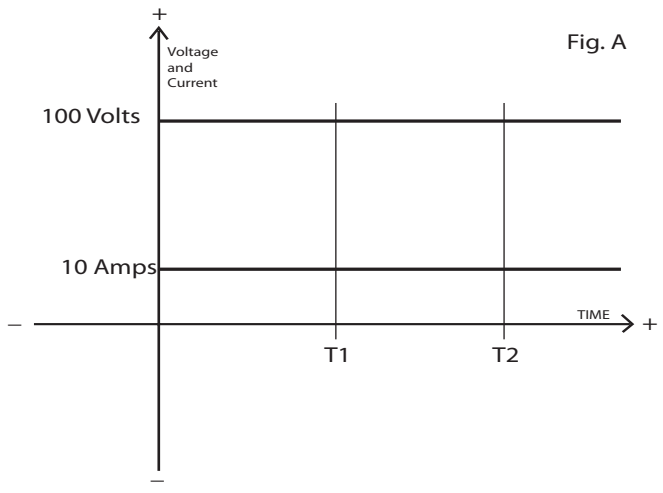
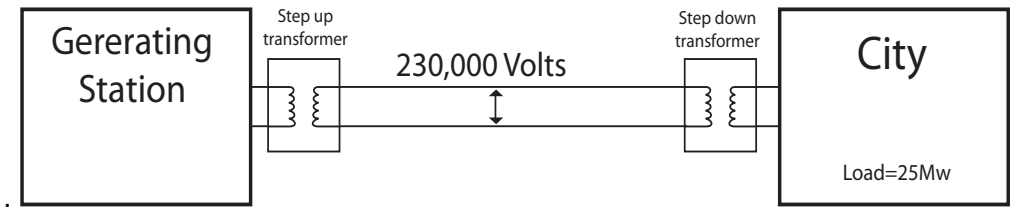


Fig. A



Since power is I x V, looking at T1, 10A x 100V = 1000Watts. At T2 power is also 10A x 100V = 1000Watts. It is apparent that since both the voltage and current are unchanging, the power at any time in this circuit is 1000Watts. Since the instantaneous power is always 1000Watts the average power over time will also be 1000Watts.

This is of course an over simplification of things but the principles are the same. There would not be one large transformer stepping down the 230KV to 120V. Local distribution would be 27,600V and 13,800V. Commercially, power enters buildings at these lower voltages and is stepped down to 600V and distributed that way throughout the building and then stepped down to 208V/120V within the building. The power running down most residential streets is probably in the neighborhood of 5,000V. It is stepped down to 240V from there for household use.

Now look at Figure B on the next page. We have an AC source voltage with a peak value of 100 Volts and the peak value of current is 10 Amps. The same levels as we had in Figure A with the DC source.

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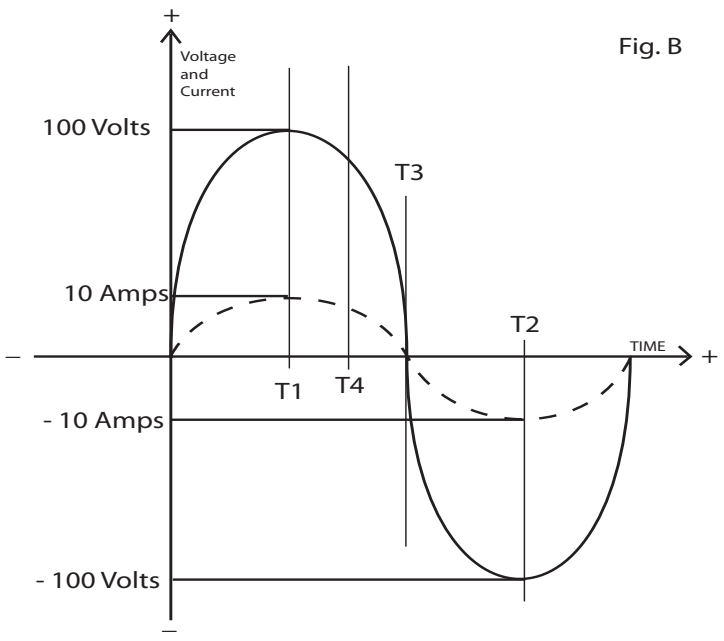

Fig. B

At T1, power = 10 A x 100 V = 1000Watts. At T2, power = -10A x -100V = 1000Watts. For those who have forgotten their high school math, a negative times a negative equals a positive. At T3, power = 0A x 0V = 0 Watts. At T4 power = 8 A x 80 V = 640Watts (approximately). So for an AC waveform with the same peak values of voltage and current as a DC circuit, you can see that the instantaneous power is not always 1000Watts as it was with the DC circuit. Obviously averaged over time the value would be less than 1000Watts. How much less? About 30% less. You cannot use the peak values of a sine wave in power calculations. The RMS value of sine waves is used in power calculations; it is how much work the circuit can do. Vrms = Vpeak x .7071. Your household voltage has a peak value of 169.7Volts and an RMS value of 120Volts. An RMS value of 120V means this circuit can do the same work as a DC source of 120V. So an AC source of 169V peak can do the same work as a DC source of 120V. It is called the "Effective" value. Some people call it the average value but it's not. The average value of a sine wave is .63 of the peak value, RMS is .7071 of peak.

RMS means **R**oot of the **M**ean **S**quare. Mathematically, a large number of points on one half of the sine wave are Squared, the Mean is taken (math speak for average) and then the square root of the average is taken. Hence Root of the Mean Square. Any meter that says AC Volts or AC Amps on a scale is calibrated to read in RMS Volts and RMS Amps. It doesn't say that, but if you are qualified to use the meter you are supposed to understand that. Looking at Figure C we have a DC Voltage fluctuating between 16V and 12V.

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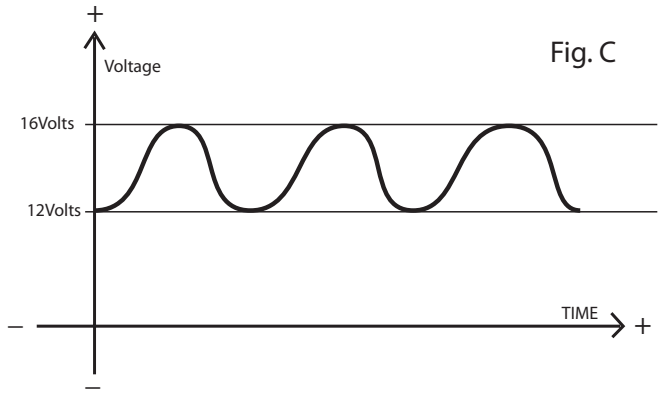

Fig. C

It looks like AC but since it always stays on the + side of the vertical axis it is DC. The charges are always flowing in the same direction, just not always at the same rate. As with the sine wave, we can't use the peak value for power calculations. For a fluctuating DC source the "Effective" value is it's average. DC meters are calibrated to read average. A DC meter connected to the above signal would read 14Volts.

To summarize: meter scales that say AC Volts or AC Amps, read in RMS Volts and RMS Amps. Meter scales that say DC Volts or DC Amps read in average Volts and average Amps. They are called collectively "Averaging Meters". You may have seen a meter that says "True RMS" on it. For a "symmetrical" sine wave the RMS value is the peak x .7071. If the sine wave becomes distorted the RMS value changes. Standard meters simply take the peak reading and multiply by .7071 and display the result. That is sufficiently accurate for most situations. However, depending on the degree of distortion of the sine wave, it can be off by an unacceptable degree. That's why the "True RMS" meter was built. It has a microprocessor that calculates the true RMS value of the waveform. It is of course more expensive but necessary in some situations.

There are also "Peak" reading meters. They say it right on the front of the meter, "Peak Reading Meter". I have a peak reading voltmeter and a peak reading kilovolt meter. The peak reading voltmeter is for working on the primary side of the ignition coil and the peak reading kilovolt meter is for working on the secondary (spark plug) side of the ignition coil. In almost all areas of the electrical and electronics industry we want to know the power available in a circuit. That is why meters read in RMS for AC and average for DC. The only exception I'm aware of is ignition systems. There may be others, I'm just not aware of them. Because of the nature of ignition systems, and the transformer (ignition coil) in particular, and the fact that the output voltage is the input voltage x the turns ratio of the transformer (I will go into this in greater detail in one of the following articles) the higher the input voltage, the higher the output

voltage and the "hotter" the spark. A hot spark (higher voltage) gives us better combustion. More power on the input does not necessarily lead to a higher output; it's a higher peak that's important.

Looking at the following diagram, compare waveform A with waveform B. You can see that A has a peak value of about 200Volts and B has a peak value of 350Volts. Averaged over the time period from T1 to T2, you can see that the average value for A would be something less than 200. Without measuring and calculating lets say it's approximately 175Volts. If you look at waveform B, you can see that even though it's peak is 350 it's zero most of the time and averaged over the same time period would probably be about 20Volts.

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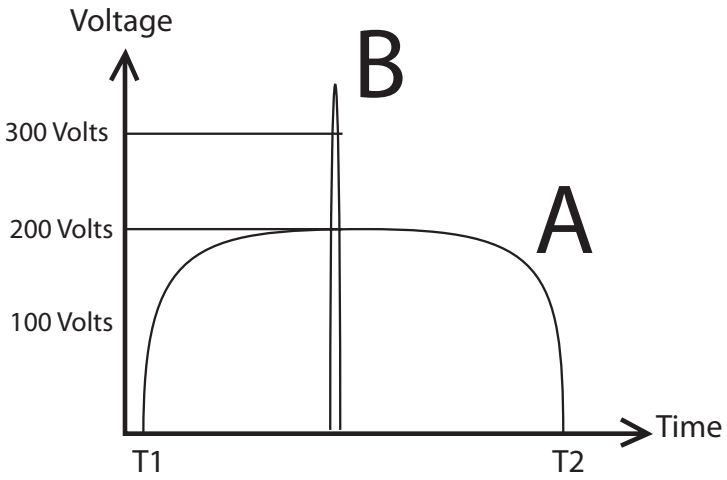

About ten years ago, I was at a local marina visiting a friend who was the head mechanic there. They were a Mercury dealer. The motor he was working on had ignition trouble. He had the service manual out and it said he required a "DVA" to service the ignition. He asked me if I knew what that was. I didn't. I did a little research and discovered that "DVA" means Direct Voltage Adapter. It is not industry standard terminology, Mercury made it up (knowing them it's not really surprising is it?). It is a Peak reading adapter. Rather than buying separate peak meters as OMC dealers had to do, Mercury made an adapter that plugged into a standard meter and converted it to peak reading.

Several years ago, this question came up on John's Old Mercury Website discussion board. "What is a DVA?" One guy piped in with the most incredible answer (I'm trying very hard to be nice). I printed it out and used to read it to my classes as a warning about the kind of crap you will come across on the internet. We always had a good laugh. Unfortunately I've since lost it. The gist of what he said was something like, "the electrons are moving at the speed of light through the wires (it just won't go away) and need to be displayed in real time". I fetched my hip waders and responded to his answer. I should have known better. I'm not sure if he really believed what he said was true or would just never admit to being wrong because of pride. I never responded to his response, there was no point.

Peter McDowell

Would You Like to Serve on the AOMC Maple Leaf Chapter Steering Committee?

If you would like to serve on the AOMC Maple Leaf Chapter Steering Committee or if you would like to nominate someone else to serve, here is how you do it.

Forward your nomination, in writing, by December 31, 2012

To: The Secretary, AOMC Maple Leaf Chapter

Ron Stevenson

333 St. Lawrence Street

Whitby, ON

L1N 1H2

Your nomination must contain the following information…..

1) The name and signature of the person being nominated.
2) The names and signatures of the nominator and the seconder.
3) The nomination can be to serve as a member of the Steering Committee, or for one of the Officer positions. (It is respectfully suggested that a person serve as a member of the Steering Committee prior to seeking to serve as an Officer.)
4) All of the above persons must currently be members in good standing of the AOMC Maple Leaf Chapter.

All nominations must be received by December 31, 2012. Elections will take place at the first Meet of the Maple Leaf Chapter in 2013.

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MARKETPLACE

DECALS: Vinyl, some “Made in Canada” www.ptecksweb.com/paterson/decals.html for price list and illustrations or send for prices and catalogue sheet. Bill Paterson, 20 Horsey Street, Bowmanville, L1C 1X7. Phone number 905-623-5501. Email <bill.paterson@hotmail.com>

Club wear for sale.

Golf Shirt with new logo Sizes- S,M,L,XL,XXL,XXXL. $30
Fleece Jacket with new logo Sizes- S,M,L,XL,XXL,XXXL. $50
Hat with new logo $10
Name Badge $5

Please print your name on the order and send order to Bill Paterson via email to bill.paterson@hotmail.com

Magazine Cover Courtesy of Sandy Kennedy

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UPCOMING EVENTS 2012

Oct 20 **Annual General Meeting** **Toronto Humber Bay Yacht Club**
Swap/display and and the Annual General Membership meeting. Directions: Take Queensway to Stephen Drive (runs north off Queensway between Kingsway and Parklawn, across from the Ontario Food Terminal). Turn north on Stephen, past Berry to Riverwood Parkway, left on Riverwood Parkway and then the first right onto Humber Valley Road (the entrance to Kingsmill Park). The meet is at the end of the road. Bring all your surplus parts, motors and your list; a great place to make room and stock up for your winter projects. Starts at 8 AM and we usually wrap up shortly after lunch, but arrive early for the best deals and stay for the chilli and meeting. Contact: Ron Gilpin 416-626-1671.

See the Maple Leaf Chapter website for up-to-date listings www.mapleleafchapter.org

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Membership Directory

The annual membership directory will be updated and issued with the December 31st issue of the Newsletter. If your contact information (phone number, email address) or address has changed, please call or email the our treasurer, Peter Gamblin, at 519-822-7229 or pergam@sympatico.ca

Annual Membership Dues

A reminder that the annual membership dues are still only $15. And if you wish to pay for two years (to save writing extra cheques!) you can certainly do so (simply 2 times the annual rate, or $30). Please send to our Treasurer, Peter Gamblin (address on page 2) along with any updates to your contact information.