

The NEWSLETTER

NOVEMBER 2017 VOLUME 17, No. 10

Mercury Amateur Radio Association - MARA
North America - North East

CANADA

UNITED STATES OF AMERICA

*To our veterans,
on both sides of
the longest,
undefended
border in the
world,*

WE THANK YOU!

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Probably best viewed in Internet Explorer. Chrome and others may not display some of the graphics in the correct places.

E-mail your comments, ideas, or submissions to MARAnE@mara.net or to VE1VQ@eastlink.ca

Grandma Mara's RAMBLINGS...

Things have settled down in the shack, now that all of Walter's preventative maintenance work is complete. We hope it will survive the winter months. I don't want him having to don his heavy winter woolies in the middle of January, out there in the back yard attempting to fix the tri-bander, even if it is on a crank-up tilt-over tower. Now, when the days turn cold, and rainy or snowy, we can play radio, ignoring the outside elements. Being retired, we can stay in and watch the weather from the warmth of the shack. If and when *the big one* hits, and the power goes off, we can still enjoy all the comforts of home with our backup generator supplied power.



Grandma has always liked a good snow storm. If the roads are blocked and the authorities are telling everyone to stay home, it's like being a kid again and getting a snow day off from school, when the day had endless possibilities of freedom.

Another reason we stay inside when it snows is because of all the idiots on the highways who can't seem to figure out you have to slow down when the snow and ice on the road means tire traction isn't so good. Hopefully though (fingers crossed), snow around here is still a few months away.

Right now, as I write this, the weather is still nice, but the evenings are showing signs that fall is on the way. Walter and I have talked about a week long trip north to the New England states to see the changing leaves.¹ We're watching the leaf reports to see when the best



time will be. Can't seem to get this summer's wanderlust out of our systems!

Recently, Walter has been on the air with his QRP transceiver, following some of the Parks On The Air (POTA)² folks, as they activate locations around the country. Like my grandma used to say about my grandpa and his radios, "keeps him off the streets and out of the bars!" Not that Grandpa was a drinkin' man! I don't ever remember him sipping anything stronger than a sarsaparilla.³ Course, what with Grandma being a member of the WCTU (Women's Christian Temperance Union)⁴, I suspect that came easy for him.

Walter says that I don't have to join the WCTU to keep him off the streets, etc. As long as I keep his feet warm at night, keep him supplied with some of my chocolate cake now and then, and let him "play at radio" when he wants to, he'll be happy to oblige. I told him that none of those would be a hardship! I'd even throw in the root beer, free of charge.

¹ <http://www.discovernewengland.org/fall-foliage-maps>

² <https://wwff-kff.com/>

³ [https://en.wikipedia.org/wiki/Sarsaparilla_\(soft_drink\)](https://en.wikipedia.org/wiki/Sarsaparilla_(soft_drink))

⁴ https://en.wikipedia.org/wiki/Woman%27s_Christian_Temperance_Union

TECH AND OTHER STUFF

EVENT SENSOR OF SORTS

Looking at the undulating prairie land in western Canada, you would never suspect that in many places the water table sits only a few feet down. When we started construction on our home in southern Alberta, we happened to 'luck' in on one of those spots. Added to that source is an irrigation canal a couple of hundred yards to the east. "No problem, happens all the time", said the contractor, "we'll install a sump pump." And so we did. Except our piece of land must have been extra lucky, as the water never seemed to stop flowing into the sump reservoir. When the landscaping outfit did their thing, I made sure they sloped the

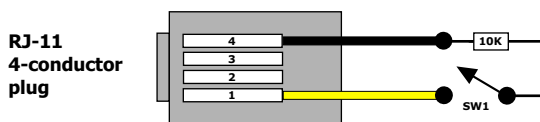
land away from the house, and that helped considerably. But still, it flows.

In order to make sure the water stays outside where it should, I replaced the original sump pump with a combination 120VAC pump and a 12VDC battery back-up pump. When the 12 volt pump activates, it causes a text message to be sent to my cell phone. There is also a float switch connected to the monitored house alarm system to let me know if both fail.

I wanted to know how often the sump pump switches on. I can listen and hear whenever it activates but I wanted something a little more scientific than that. I looked at using an ARDUINO or a RASPBERRY PI but those methods involved more work than I wanted to expend. I looked for event loggers on line, and eventually came across a company called **ONSET** in the USA. Their price wasn't too terrible and they even had free shipping to Canada, if I ordered through Amazon.

WD4HXG was aware of my plight and suggested using the D-Link DCH-S160. It was an easy fit for my immediate problem but what if I wanted a event logger for some other project. Could I remove the water probe and trigger it with a contact closure?

Turns out I can. Just use pins 1 and 4. To be on the safe side, I used a 10K ohm ¼ watt resistor between the two (in case the device didn't like a short). Pin one (on my cable) was yellow and pin 4 was black. Switch SW1 is the pair of contacts of whatever gets activated by an event.



The set-up part of the installation of the DCH-S160 was not an easy task. First, as suggested, I downloaded and installed the mobile app. The app is supposed to walk you through the install

procedure but that was a bit confusing as the screen shots in the installation video on D-Link's web site differed somewhat from the app. Finally, I downloaded the manual from <https://images-na.ssl-images-amazon.com/images/I/A1ZZ9jvyXQS.pdf> and used that in combination with everything else to figure it out. Comments on-line indicate I'm not the only one having problems. Others comment how easy the install was!

A Quick Install Card is supplied with the device. Printed on it is a QR Code. Instead of manually entering all the details, a scan by the built-in camera on your smart phone enters it automatically. Nice touch.

As a water detector, it works. Wetting my thumb and first finger with my tongue and pinching the sensor cable is sufficient to trigger it. The response to my cell phone is less than a second. The specs say the alarm can be triggered on water sensed (as in water level rising) or loss of water (water level dropping).

Now for the not-quite-so-good part. If you have to depend on the built-in buzzer you had better be in the same room (and have new batteries in your hearing aid). It's pretty anaemic. One review I looked at described it as "ear shattering". Not sure what they were hearing but it certainly wasn't this one. The time stamp display in the smart phone app is only to the minute. If you need a time stamp to the second, look for something else.

After about a week of operation, things began to go downhill. The buzzer would sound indicating the water had risen and would stop when the pump lowered the water level, however the phone app would not always signal an event. At times the app would tell me the DCH-S160 was off line even though the green LED was on solid indicating it was connected to my network. The D-Link was in the same small room (about twenty feet away) as the wireless router, so there shouldn't have been a problem with signal strength! Moments later it would connect without any intervention on my part. A reset and re-installation of the set-up failed to solve this

After about a week of operation, things began to go downhill.

problem.

I decided to try the “water no longer detected” setting in the app, as this would give me a more accurate time between pump activations. To test this, I lowered the detection cable further down in the sump area so that it would be below the water level except when the pump finished pumping (minimum water in the sump reservoir). As soon as the water touched the sensor cable the buzzer sounded, and continued to sound. My cell phone received an audible alarm and a time stamp. When the pump activated and lowered the water level below the sensor cable, the buzzer stopped and my phone received an audible alarm, but no time stamp! That wasn’t a whole lot of good!

In the end, it seems like it would signal you if you had a single water leak. Not sure it would do much else (even though it advertises it will!). Not sure I would trust it to reliably perform and notify me, even once.

“Not sure I would trust it to reliably perform and notify me, even once.”

ON THE ROAD AGAIN - HOPEFULLY!

When I fly west, I usually leave my car at the Holiday Inn Express near the Halifax International airport. They have been very good about it, even though sometimes it is there for a couple of months or more. Recently this spring, on returning after one of those extended stays, the battery didn’t have enough ‘life’ left in it to do more than one turn before it died. CAA ([Canadian Automobile Association](#)) to the rescue!

Talking to the service technician at the Honda dealership about the problem, it seems vehicles these days draw current from the battery even when switched off. The computer and its associated modules have to be ready for the turn of the key or the push of the button. He recommended starting the car at least once a month. If the temperature is low the effect is even worse. Compounding that is the age of the battery and the resistance of the terminal connector

“... it seems vehicles these days draw current from the battery even when switched off.”

to battery post junction. The number of times the battery has gone low and had to be ‘boosted’ is also a factor.

I looked at possible solutions. The dealership suggested a small solar panel laying on the dash to keep the battery trickle charged. They acknowledged that snow on the windshield would not be a good thing.

During a conversation about my problem, WD4HXG suggested a couple of devices; the first one that would disconnect the battery when the voltage dropped to a pre-set figure, reconnecting when the brake pedal was depressed, hopefully with sufficient energy to start the vehicle, and second, a device which required a remote starter and would automatically start the vehicle when the battery voltage fell below a certain level, and shut the vehicle off when the battery reached a previously determined voltage. The first is available under the brand name of [Priority Start 12 Volt Pro Max](#). The second, which was what I was leaning towards, was ‘frowned upon’ by the EPA (Environmental Protection Agency) and was discontinued.

A third option surfaced after further discussion; that of the small lithium-ion batteries designed for just such a problem. I picked up a [NOCO model GB70](#) at my local [Canadian Tire](#) store. There are smaller and larger versions made by this manufacturer but this one was on sale, and would more than handle my vehicle.

The documentation that came with it said it was shipped only partially charged and to make sure I fully charged it before using. I used an old spare



iPhone charger I had kicking around. I don't remember how long it took as I started it one evening and disconnected when I went to bed, (because the tiny iPhone charger got quite hot) and then plugged it back in again the next morning. Indicators on the face of the GB70 blink while it is charging to show the charging level at 25-50-75-100 per cent points. I could have also charged it from the 13.8 VDC accessory socket on the HF rig power supply in the shack or from the auxiliary (cigarette lighter) socket in the car. The directions said it



would take about two and a half to three hours with those methods.

The miniature paper booklet of instructions included with it was printed in a small sized font, and they were not the clearest and most organized I've ever seen. If you purchase one of these, make sure you read and comprehend how to connect this before you use it. Check out the web site for more information.

If you use it in the normal mode by simply connecting it to your vehicle battery and letting it slowly transfer energy over, you can even reverse it, or short the cable clips and nothing bad should happen. Don't do that in the manual override mode. This mode bypasses the safety and protection features giving you the maximum current available for a quicker jump start, and will likely result in serious consequences (like a very loud, unnerving, and undoubtedly dangerous Ka-BOOM!).

This device is physically small (8.8" x 6" x 2.8") and light enough (weighing about four pounds) so it could have easily been stored in the glove compartment, but I had one of those plastic ammo boxes left over from another project, so I used that and left it behind the rear seat next to the rear vehicle hatch. There is room for the manual and all of the accessory plugs and cables as well.

It has a built-in 400 lumen flash light that might be handy if I have to open the hood and find the battery terminals in the middle of the night.

Of course, being a ham, I have to wonder how long I can power an HF rig. At QRP levels, it should last quite a while. I believe some testing time is due next year when the weather warms up again. The nice thing is that the power level indicator will let me know when it is time to re-charge.

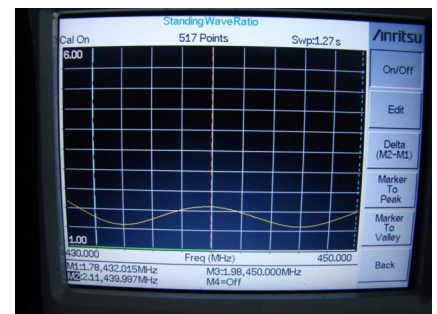
Now, this time when I return to the east coast near the end of December, I should be good to go. I really hope I never have to use it. But I don't plan on giving up my CAA membership either!

FEATURE ARTICLE

LOW PROFILE MOBILE VHF ANTENNA

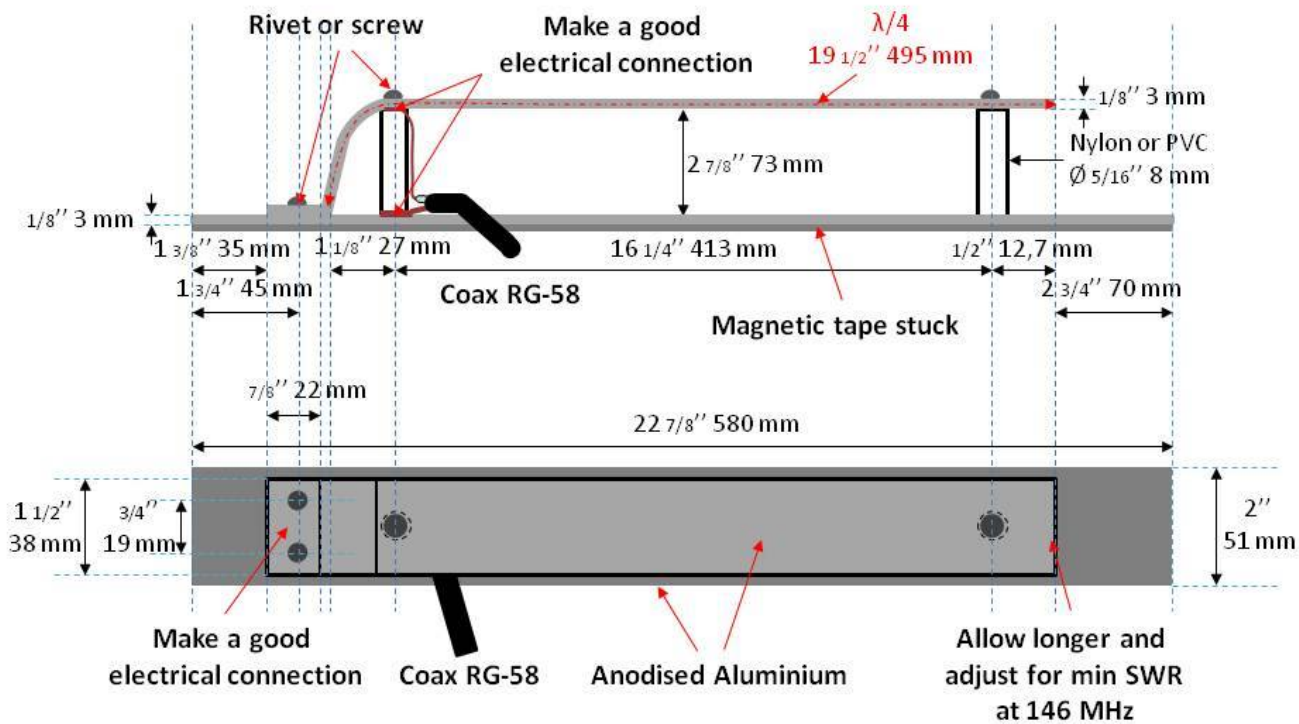
by Philippe Groux, VA2PHI

This antenna is used on locomotives in North America for VHF links at 220MHz for speech. It resembles a horizontal J-pole whose radiating element corresponds to about $\frac{1}{4}$ wavelength. So it has no gain, and is said to be omnidirectional, which I have not verified. The measurements that I made with the Anritsu S331D analyzer showed me that the SWR was not worse at 440MHz and allows one to use



Analyzer view centered on 440 MHz.

MAGNETIC LOW PROFILE VHF 2M ANTENNA

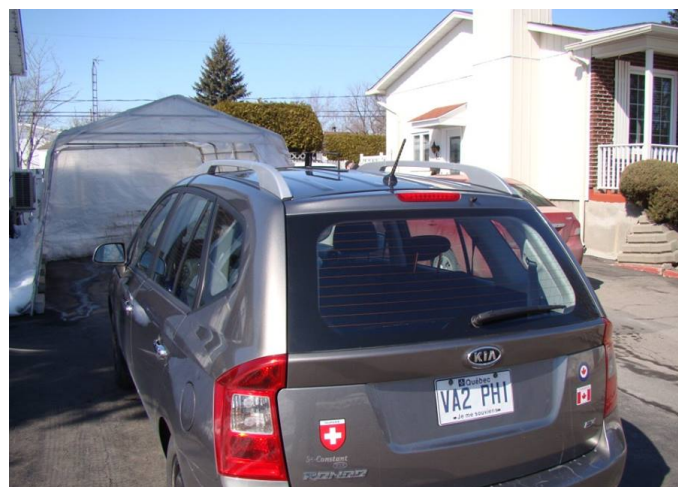


Philippe Groux, VA2PHI, Feb. 28th 2013

Plans for the Low Profile 2M Antenna



Completed antenna on the roof of my van



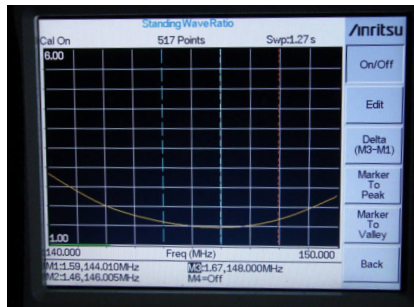
Rear view of the antenna on the van roof. The "Tempo Shelter" is in front of the van.

it also on this UHF band.

For my part, I built it to put on the roof of my car, because in winter in Quebec we have *Tempo shelters* to protect our car from the abundant snowfall, that do not allow us to to enter with a vertical magnetic antenna on the roof.

Shown on the plan is a note indicating that it is necessary to make the radiating element a little longer and to adjust it to have the best SWR at 146 MHz. I used

anodized aluminum and had to remove the surface layer between the base plate and the radiator to make a good (electrical) connection. I also glued



Analyzer view centered on 145 MHz.

magnetic tape under the base plate in order to be able to place it on the roof of my car.

It is important to seal the electrical connections of the coax to protect against moisture.

I also painted it in matt black to make it even more discreet.

Moreover, I was obliged to make the base plate a bit curved to follow the profile of the roof of my car so that it adheres well.

**The MARA NE Newsletter
is always looking for articles
of interest to LDS Hams.**

*If you have a radio related project,
or simply something you think
might interest the readers, please
contact Dave at VE1VQ@eastlink.ca*

ANNUAL MEETING

7 OCTOBER 2017 - 10:15 am Eastern

VIA SKYPE

In attendance

Bruce - N3IA
Steve - K2KEL
Chuck - WD4HXG
Charlie - WB4FLM
Norm - K4EBY
Dave H - N3GRH
Dave M - VE1VQ
Pat - KB8TME
Grant - KE8YG

Membership

Pat, KB8TME, and Grant, KE8YG, were accepted as members of MARA - North East.

It was proposed that all members of MARA Midwest join MARA Northeast. This will take a request for membership from each of them. This proposal will be posted to the MARA NE reflector.

Board of Director Positions

The following accepted positions to the Board of Directors:

1. Dave - N3GRH - term to expire in 2021
2. Charlie - WB4FLM - term to expire in 2023
3. Pat - KB8TME - term to expire in 2021
4. Steve - K2KEL - term to expire in 2023

A motion was made to accept these names as presented. Carried by voice vote.

Election of President

Chuck's - WD4HXG - name was advanced for the position of President.

No further names were presented.

A motion was made that Chuck, WD4HXG, be elected as President of MARA Northeast, with his term to expire in 2019. Carried by voice vote.

Date for next Annual Meeting

Tentative date and time of 29 September 2018 at 10 am.

Meeting adjourned at 10:49 am.

I'M GETTING RID OF IT
and
YOU CAN HAVE IT!

THE WAY IT WORKS IS THIS...

You have to be *a member of MARA NorthEast* to submit an item or items to give away - and it (or they) must be free (except for any shipping costs).

You must be a member of MARA Northeast to claim and receive an item or items.

The two of you will have to agree who is paying for the shipping, if you are not within driving distance to pick the stuff up in person.

Doesn't have to be amateur related. It can be anything you want to get rid of.

No getting it for free and then selling it on E-Bay. You (or a family member) have to personally have a use for it.

Submit your item or items to VE1VQ@eastlink.ca to be listed in the next newsletter.

Provide some text describing what it is and its condition (and a picture if you have one).

The item/s will stay listed for six newsletters (or less, if you notify us that it has been given away).

QUOTE OF THE MONTH

Don't count the days, make the days count!

Muhammad Ali

DI-DAH-DI-DAH!

The on-line reviews of the D-Link DCH-S160 Water Detector were mixed. Some said it was the best thing ever, while others proclaimed it to be a piece of junk. Hindsight says I should have heeded the naysayers and left it on the retailer's shelf. It's hard to know what to do when faced with a mix of reviews such as these. You hope for the best; that you will get one of the good working units. You like to think the poor reviews were done by people without any tech savvy, and that you will succeed where they didn't. In the case of this device, and after experimenting with it for some number of days, I'll have to assume the individuals who gave it low/poor reviews were at least as smart as I am, and it's the product that is at fault.

Sometimes it's the luck of the draw, and you get a defective device. Sometimes it's just a poorly designed piece of garbage and no matter how many times you replace it, it won't get any better.

You write it off to being a lesson learned, and perhaps you can use it in a church talk sometime. Or you do a product review write up and fill some inches of column space. Either way, in a situation such as this, you hopefully learn something from it all.

And it's a wasted day if you don't learn at least one new thing.

Until next month,
VE1VQ

MARA