



FEEDBACK

The Official Newsletter of the Georgian Bay Amateur Radio Club



January 2024
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President's Message



Marvin VE3VCG

As we ease into 2024, I hope everyone had, and continues to have a Happy New Year. The holidays can be fun but stressful at the same time, I know that many, like me, are happy to see the chaos of the holidays behind us.

I am also very pleased to see 2023 behind us. Regrettably the year past is one which will be remembered for international tensions, war, terrorism and human suffering. If you are one who managed to avoid the news you were fortunate. However, most of are bathed daily in a flood of concerning, often negative news about the state of the world.

Predicting the future is sometimes called a "fools errand." However, looking ahead to 2024 I think it fair to say we can expect more of the same. Tensions have not lessened, conflicts continue and have deepened, become more complicated, threatening to expand, regionally or internationally and impact our lives here.

Finding ways to counteract negativity can be a challenge. Staying informed and standing ready to meet challenges is, in my opinion being positive and proactive. This is why I continue to support the development of the new Auxiliary Communication Service. I also support programs like CERT (Community Emergency Response Team).

If you have not already done so, please read the article by Jason Tremblay on page 37 of the January/February 2024 edition of The Canadian Amateur magazine. The article features another article written by Grant Durfey– Emergency Management Program Specialist. The article by Durfey was originally published as a two-part article in Avert magazine.

This Month

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2023/ 2024 Executive

President Marvin VE3VCG
Vice-President..... Tex VE3USI
Treasurer.....Doug VE3DGY
Secretary..... Dan VA3DNY

[Club Constitution](#)

[By-Laws](#)



"Community resiliency," is a concept I support. When the news is filled with so many negative stories about war, terrorism and potential financial problems, I think it is valuable for amateur radio clubs be a positive force in our respective communities.

Promoting community resiliency is one way of being a positive force in our communities, while also promoting the amateur radio hobby. After all, radio is about more than the, physical components and technical bits that make a radio work, amateur radio is about people.

Club Apparel

T-shirts, Golf Shirts, Ball Caps

The Club has contacted a supplier of T-shirts and hats and made arrangements for us to use our club logo on the items. The contact details are listed below. Some links to their website have also been included below. Just type in the ITEM# into the webpage search bar. Safety Green is a nice background for the embroidered club crest. In the past we have gone with either a navy blue or safety green for colours.

[RAM Promotional](#)

1580 20th St. E
Owen Sound, Ont.
N4K 5P3
519-371-0096

DESCRIPTION ITEM # SUPPLIER UNIT PRICE

T-Shirt Pro-spun ATC3600 SANMAR	\$15.00 up to & includes XL
Golf Shirt 88181 Alphabroder	\$29.00 up to & includes XL
Golf Shirt 78181 Alphabroder	\$29.00 up to & includes XL
Ball Cap Mesh 8E019M	\$13.00
Ball Cap Cotton	\$11.00

GBARC Logo Transfer 3 1/2" - 4"	\$9.00
GBARC Logo Embroidered 3 1/2" - 4"	\$9.00

Check with RAM for current prices

T-Shirts

<https://www.sanmarcanada.com/>

Golf Shirt

<https://www.alphabroder.ca/home>

Ball Cap

<https://www.ajmintl.com/AJM-advance-search/search/8e019m>

This is a link to a Hoodie, warmer than a t-shirt and can have a crest as well.

Hoodie

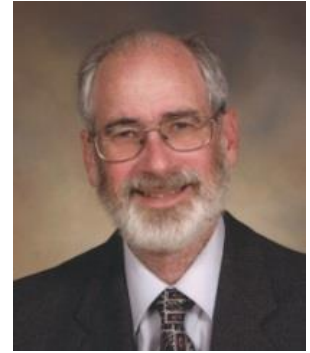
<https://www.sanmarcanada.com/1850.html?colour=Safety%20Green^>



Carl Wall VE3APY Silent Key

We are sad to report the passing of Carl VE3APY of Durham, On. at the age of 77 years. A GBARC club member, Carl was interested in fox hunts and passing his knowledge on to newcomers.

[OBIT](#)



VE3BQM Weather

Check out my [Weather Station](#).



My Weather Station is a National Geographic Radio Controller similar to the pictures below.



This station is designed to be connected to a computer with the supplied software to allow weather related data collection, that said software really was not well written and basically useless. I soon discovered that many were of the same opinion which led me to Cumulus

My weather station is connected to a Headless Raspberry PI3 running CumulusMX 3.28.0

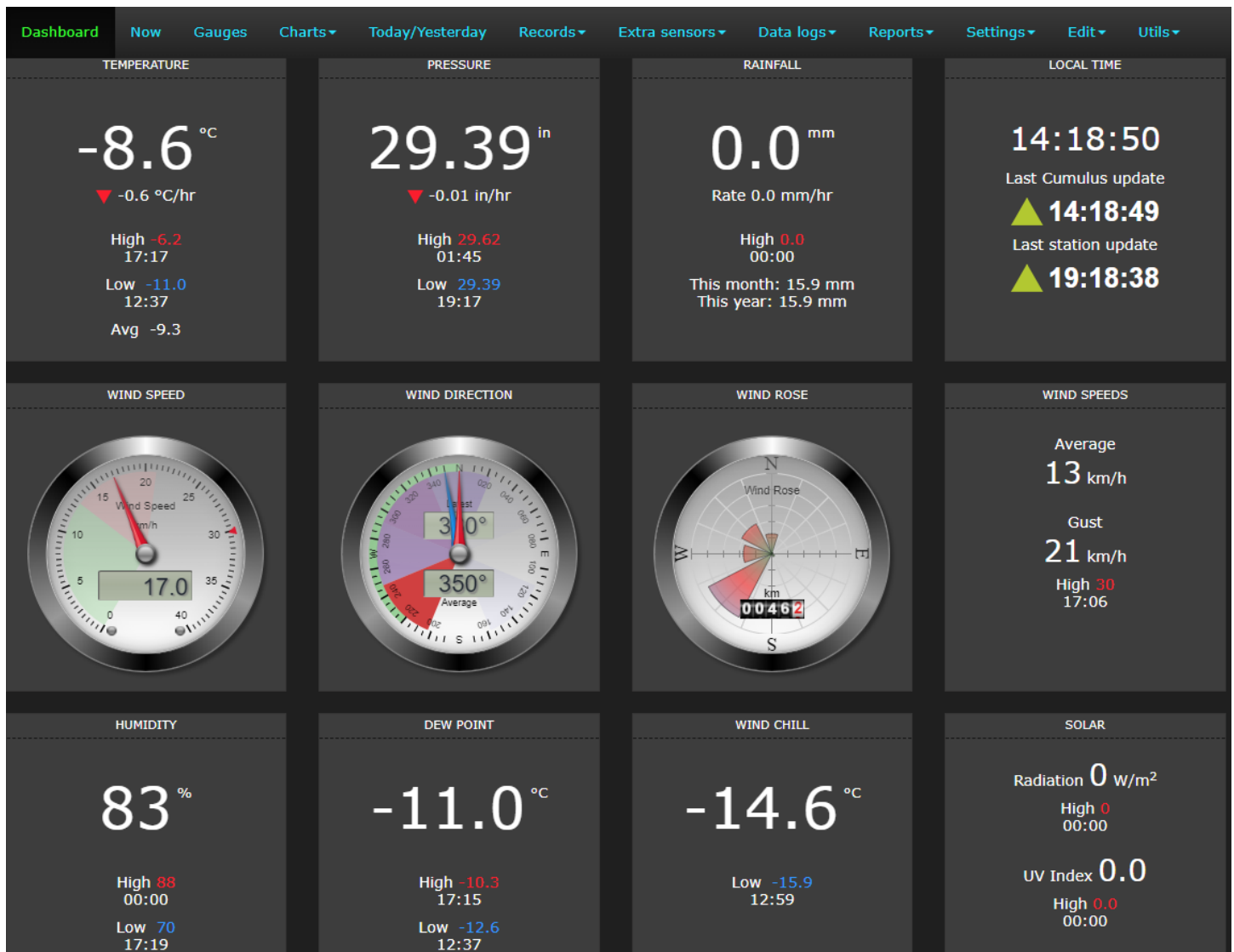
This software has evolved since I began using the service, on my own home page, I was able to provide live statistics and archived data collected, The software also allowed me to view it from anywhere on any device.

This software also allows for 3rd Party Uploads, like **Weather Underground**, Windy.com, PWS Weather, Met Office WOW, **APRS/CWOP**, AEKAS, **Weather Cloud**, OpenWeatherMap, Windguru, and Custom HTTP. The 3 Bold on the list are what I currently upload my data for outside access.

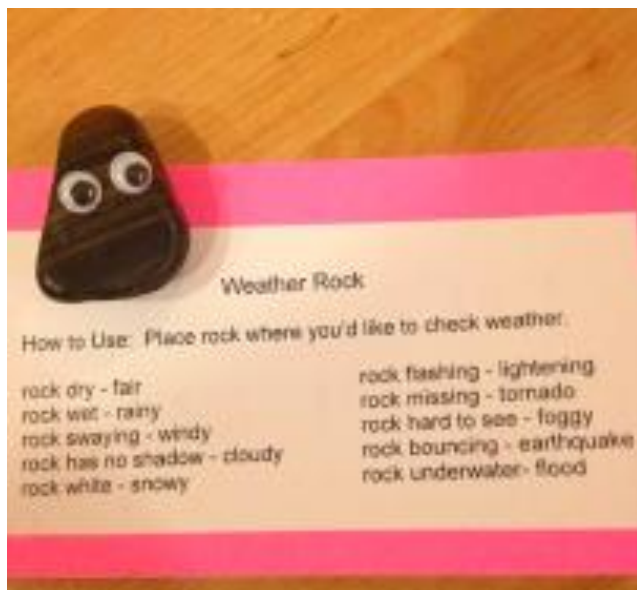
<https://cumulus.hosiene.co.uk/> Support forum for Cumulus weather station software.



Local access Dashboard screenshot



The CumulusMX software accommodated the most weather station made today.





Go-Box for portable HF operation. By VA3TS

I have pondered the go-box for some time now, maybe the procrastinator in me came up with too many good ideas for doing nothing, but I decided to put words into action this year. This being January and snow season is a good time for me to work on those projects that I would rather not do during the summer months.

Design considerations: I decided the goal would be to make a go box that was reasonable easy to move around, has the ability to be used without actually removing the radio from the box, should have a power supply in the box as well and finally include a computer of sorts to use N1MM+, WSTJ and other modes like packet radio. As well, the goal includes using up the bits and pieces that I have here on hand and buy new items a little as possible.



I had a metal case to use that seems to be large enough to contain all the gear. It has a sturdy handle, latches to keep the cover closed and a device which keeps the cover from opening too far. All in all, a good choice.



I made a small platform for the radio and fixed it on a pair of drawer slides so the radio could be raised somewhat to the edge of the box.



This photo shows the radio on the platform and sitting on the edge of the box, the black feet at



the front serve to keep the radio platform from falling back into the box and also, once in the box, with the use of a catch mounted on the box floor, keeps the radio and platform from moving when the case is closed and is sitting on its bottom edge. I did the same sort of catch for the power supply. The handle on the radio was made by bending a piece of 3/8" aluminum tubing. The hardest part is finding machine screws with a metric thread.





Here is a shot of the Alinco power supply mounted on the bottom on the case right hand side. The radio power supply cord is stored under the radio platform so that I didn't have to cut it held in place with self adhesive cable



mounts. The radio hand mic sits in a cloth bag in front of the power supply. Some aluminum angle pieces make a platform for the accessories box. This houses everything else like the computer power supply, mouse, various cords, rig accessories, pencil and paper and anything else that may be needed.



The last parts of the go-box deal with connecting it to the outside world.



First off, power in.... I added a 120vac socket and receptacle to power up the radio power supply and also the computer. The cord sits in the case when not in use. I also connected the radio's I/O to the outside of the case also such as the antenna, CW key, microphone and USB for the 7300.





I happened to have a cover for the antenna connector and it turns out the same cap fits a mic socket. There are no wires or cables hanging out when the go-box is in transit.



The bulkhead connectors certainly make for a nice neat job of it, are fairly easy to install, thankfully I have some hole punches which make that an easy task.

On the radio itself I had to buy some 90 degree connectors like the key jack, and the USB cable so the radio can be set back in the box without stressing the connectors. All cables mounted and kept from moving around.

So there we have it, a complete portable HF station in a box....well maybe 2, the 2nd box holds a trap dipole and feedline.





2024 Membership

as of January 14, 2024

Total 22

Callsign	Name	Location
VE3FP	Adam Karasinski	West Grey
VE3BQM	Bernie Monderie	Georgian Bluffs
VE3MPG	Bob Baillargeon	Sauble Beach
VE3LKD	Bob Droine	Owen Sound
VE3PAV	Bobby Pavlovic	Lions Head
VA3DNY	Dan Mills	Owen Sound
VE3WI	David Newcombe	Port Elgin
VE3BAK	David Rosenfeld	Owen Sound
Assoc	Dennis Knott	Meaford
VA3NBP	Don Hall	Lions Head
VE3DGY	Doug McDougall	Owen Sound
VA3GUF	Frank Gufler	Owen Sound
VA3STG	Fred Lorch	Teeswater
VE3RQY	Greg Larocque	Brooke
VA3EAC	Janet Double	Paisley
VA3KOT	John Corby	Owen Sound
VE3VCG	Marvin Double	Paisley
VA3FIN	Mark Lindstrom	Chatsworth
VE3QVC	Phillip De Kat	Owen Sound
VE3OZW	Richard Osborne	Otter Creek
VE3RWY	Rob Walker	Owen Sound
VA3TS	Tom St.Amand	Shallow Lake

I am gunna tell my kids...



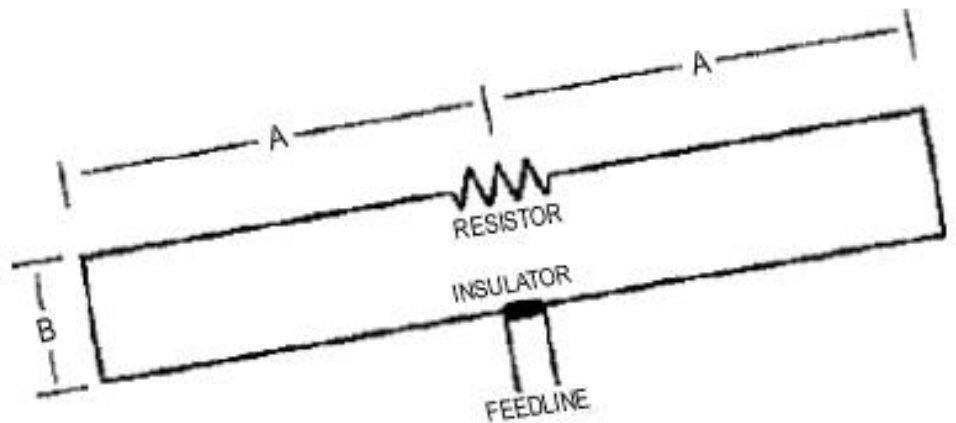
...these wires went to the fridge, for the ketchup, mayonnaise, and mustard dispenser.

JOIN GBARC TODAY

T2FD -- The Forgotten Antenna By Guy Atkins

If a survey were taken of all shortwave DXers to find the antennas they use, I suspect the majority would be found using the random wire. Next in popularity would likely be the commercially available sloper antennas and trap dipole.

However, an antenna's popularity does not necessarily reflect excellent performance.



While being simple and inexpensive to erect, the randomwire is susceptible to electrical noise, and presents a wide range of impedance to the receiver, depending on received frequency.

The terminated, tilted, folded dipole (T2FD) is a little known antenna that performs excellently. Compact in size compared to a half-wave dipole (approx. 67 feet long at 60 meters), the T2FD provides signal gain, wide frequency coverage, and exceptionally low noise characteristics.

An early discussion of the T2FD appeared in the June 1949 issue of QST, a popular magazine for radio amateurs. A more recent article on the T2FD appeared in the May 1984 73 Magazine.

The World Radio Television Handbook for 1988 gave a brief description and diagram of the T2FD, and that year's WRTH Newsletter provided additional construction information. Further details were given in the 1989 WRTH. However, some misleading and incomplete information is given in these WRTH sources, which this article will later clarify.

DESIGN

Some have called the T2FD a "squashed rhombic" antenna. It does bear some design similarities to the non-resonant rhombic, but theoretically it is admittedly inferior. However, the T2FD performs well in a modest amount of space, while a rhombic antenna can be immense - virtually impractical - at all but the highest SWBC bands.

The T2FD is essentially a closed loop design with the element ends folded back and joined by a non-inductive resistor (see figure below). The feed line can be 300 to 600 ohm twinlead or open line.

Because twinlead and open line can be affected by nearby metallic objects (downspouts, metal window frames etc.), a better feed line is coaxial cable connected to an impedance transformer (balun).

The T2FD has a characteristic 5 or 6 to 1 frequency ratio, which means that it works effectively from its low-end design frequency up to 5 or 6 times that frequency. For instance, the T2FD which I use is designed for optimum performance at 4.9 MHz, but can operate up to the 25-29 MHz range. In practice this antenna also works satisfactorily down to the 75 - 90 meter tropical bands, but not as well as a dipole or delta loop designed for 75 or 90 meters.

PERFORMANCE

The United States Navy conducted extensive transmitting and receiving tests of a single T2FD antenna in the late 1940s at Long Beach, California. They employed a Model TCC Navy 1 kW transmitter, with a frequency range from 2.0 to 18.0 MHz. After a year of use on all frequencies the T2FD was found to be superior to individual antennas on the various bands. The other antennas were removed from the Long Beach site after the tests.

Similar results during the same period were experienced by the Kyushu Electric Communications Bureau of Japan. Their experiments indicated that the terminated tilted folded dipole was superior to the "zepp" and halfwave dipole types previously used. They noted wideband characteristics, and the T2FD gave a 4 to 8 dB signal increase at their various receiver sites.



My experience has shown the T2FD to be a fine performer when only a single shortwave receiving antenna can be erected, due to its wideband nature. It also has the advantage of electrical noise rejection (to a degree) compared to a random wire or even a dipole.

THE TERMINATING RESISTOR

According to the QST articles mentioned, the value of the terminating resistor is rather critical. Its value depends on the feedpoint impedance, and is normally above it. For instance, if 300 ohm feed line is used (or 75 ohm coax into a 4:1 balun) the correct termination value is 390 ohms. For 600 ohm feed line, a 650 ohm value is best. If a 450 ohm feed line is in use, the correct resistor would be in the vicinity of 500 ohms. I have not discovered why the optimum terminating resistance is higher than the feedpoint impedance, nor do I know of a formula for calculating this relationship.

The terminating resistance becomes more critical as the feedpoint impedance is lowered. With lines of lower impedance (including a directly connected 50 ohm coaxial cable), the value is critical within about 5 ohms. (The QST articles did not state an exact recommended value when using a low impedance line.)

The WRTH editions give the erroneous impression that T2FD antennas require a 500 ohm resistor and a 10:1 balun transformer, used with 50 ohm coax cable. This is not the case, although these values will work fine if you have the 10:1 balun available (normally hard to come by). A T2FD built with 75 ohm coax (RG-59 or RG-6), a common 4:1 balun, and a 390 ohm terminating resistor is recommended.

The resistor used must not be a wire-wound type, its inductance would affect performance to a substantial degree. A carbon resistor of 1/2 to 1 watt in size is perfect (for a receive only T2FD). The WRTH Newsletter in 1988 said that the wire for a T2FD must be made of pure copper between 3mm and 5mm thick. In reality, the exact thickness and type of wire have very little bearing on the T2FDs performance for receiving. Your main consideration will be wire strength, regardless of diameter.

CONSTRUCTION TIPS

A T2FD takes more hardware to construct than a typical dipole. Maintaining a uniform spacing between the parallel wires, as well as sturdiness, are the primary considerations. My first attempt at a T2FD self-destructed when the antenna was hoisted into the air. I underestimated the strain the wires would be under. My current T2FD has been in use for over 1-1/2 years, and was built with 14 gauge stranded, cold-drawn copper-wire.

The spacers or spreader bars can be fashioned from 5/8" (minimum) diameter wood dowels, or even acrylic rod if available. Drill appropriately sized holes at each end of the spreader bar for the wire to pass through. The spreaders should be secured to the wires so that they do not slide; one method is to "jumper" each spreader end with a short piece of stiff wire and solder to the antenna wire.

It is essential that you encase the terminating resistor inside a plastic cylinder or other support, and weatherproof the assembly. Be positive that the resistor will not receive the strain from the wires.



I prefer to use eyelet bolts on the end spreader bars for the antenna wire to pass through. An alternative would be some type of rod or strong, small diameter tubing cut to the length of dimension "B". The wire would simply thread through the rod.

Most amateur radio supply stores sell 4:1 baluns that only need a wrap of "Coax Seal" around the connections to be totally waterproof. The type with a coax connector that will accept a PL259 plug is perfect.

The diagram on the following page illustrates this type of construction, using the commonly available 4:1 balun, 390 ohm resistor, and 75 ohm RG59 coaxial cable.

On the following page is a comparison of a 60 meter band T2FD, a 500 ft. long wire and a 50 ft. random wire antenna. © Copyright worldwide by Proceedings and author.

<http://www.dxing.info/about/dxers/atkins.dx>

<https://www.hard-core-dx.com/nordicdx/antenna/wire/t2fd.html>

https://en.wikipedia.org/wiki/T2FD_antenna

<https://gegc calculators.com/terminated-folded-dipole-calculator/>

Interesting Websites

Ylab's Free Canadian Amateur Radio (Ham) License Training Class

<https://www.ylab.ca/radioclass/>

The database for radio hams

<https://www.qrzcg.com/>

DX Summit

<http://dxsummit.fi>

Security in a box

<https://securityinabox.org/en/>

SARC Communicator

<https://drive.google.com/file/d/1uxpQtRKBnI9ZoYTx4thFaRx-pRVaZe2r/view?pli=1>

World of SDR Receivers and Transmitters

https://rx-tx.info/table-sdr-points?type=All&country=All&order=field_country_name&sort=asc&band=All&page=2



The Last Word

A few words of appreciation to those that contribute to this newsletter by submitting news stories or interesting web links or ideas. If you have something then send it to webmaster@gbarc.ca, any format, any size, anytime, but if you want it to appear in the current month's newsletter, then send it by the 3rd Tuesday of the month.

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Our National Voice <https://www.rac.ca/>



JOIN GBARC TODAY

**Join us for our weekly get together
"On the Air"**

The club meets each Wednesday evening on VE3OSR 146.940 T97.4 hz at 7:30 pm local time, and on 3.783 Mhz +/- immediately following.

