FEEDBACK

The Official Newsletter of the Georgian Bay Amateur Radio Club

May 2024

President's Message

Marvin VE3VCG

Presidents Message Solar Storms and HAM Radio
May 2024

Solar storms have been big news this month. Those who had a chance to see or possibly photograph the aurora's which resulted from the numerous CME's were fortunate.

These recent storms were, according to news reports, the strongest in the last 20 years. Pictures from solar observation satellites provided spectacular and dramatic images which visually confirmed the massive size of the filaments breaking free from the sun and blasting into space.

These storms proved to be disruptive to Amateur Radio communications on HF bands, but not entirely. I've heard that 10 meters continued to be usable in some locations. This may be attributed to variables with antenna's, ground wave propagation and also given the uneven impact of such geomagnetic storms across the globe.

I have not had time to do a lot of research on the overall impact of this series of storms but I am aware that there were other effects to internet and cell services in some places but the impacts were not large enough to cause concern.

I think that putting these recent solar storms in context is important. There are lots of myths and general misinformation on the internet which can be confusing and create undue or misplaced concern. If I have a single message to deliver, it is important to have the best information driven by "data" and actual research and not opinions, conjecture, hype or simply marketing.

The context to which I refer is a point of reference called the "Carrington Event". The massive solar event took place September 1 1859, during Solar Cycle 10. This infamous CME takes its name from an amateur "sky watcher" named Richard Carrington from Redhill, a small town new London England.

This Month

2023/ 2024 Executive

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

Club Constitution

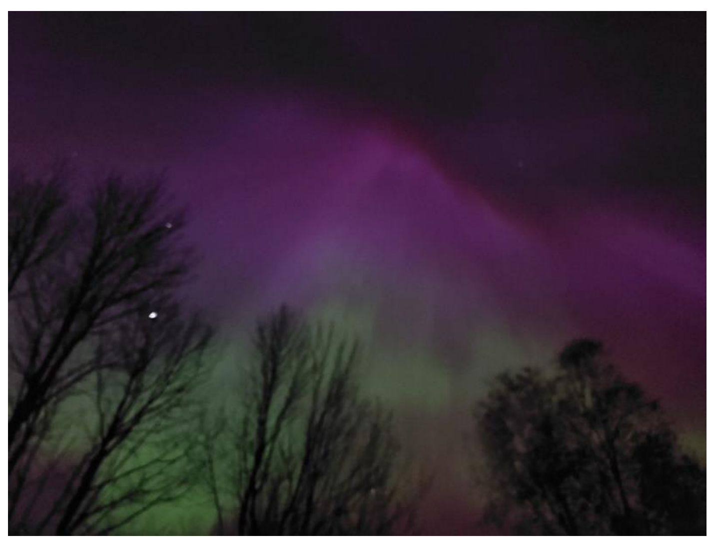
By-Laws

Carrington was sketching the growing number of sunspots on that date when he was blinded by a sudden intense flash if white light from the sun. The event, according to Carrington lasted a full 5 minutes. It continues to be cited as the largest solar storm ever recorded. It is perhaps noteworthy that the Carrington Event happened roughly one year before the sun reached solar maximum in 1860.

Once again, putting things in context, according to estimates I've seen the recent series of storms produced effects which ranged from 5% to 15% as intense of the Carrington event.

I think it fair to assume that, as the sun nears it's solar maximum next year we will have more and perhaps larger solar flares and CME's.

There are important distinctions between CME's and EMP's both of which create large, potentially damaging pulses of EM radiation. If you have an interest in learning more about such events there are some good resources which offer accurate information from professional sources. One of these is a NASA scientist and electrical engineer specializing in CME/EMP research. You can find him by simply searching for EMP Doctor.



There are of course other sources as well. The better informed we are the better we can be prepared should the "big one" actually does hit us.

Photo's by Bernie VE3BQM

Trap Dipoles

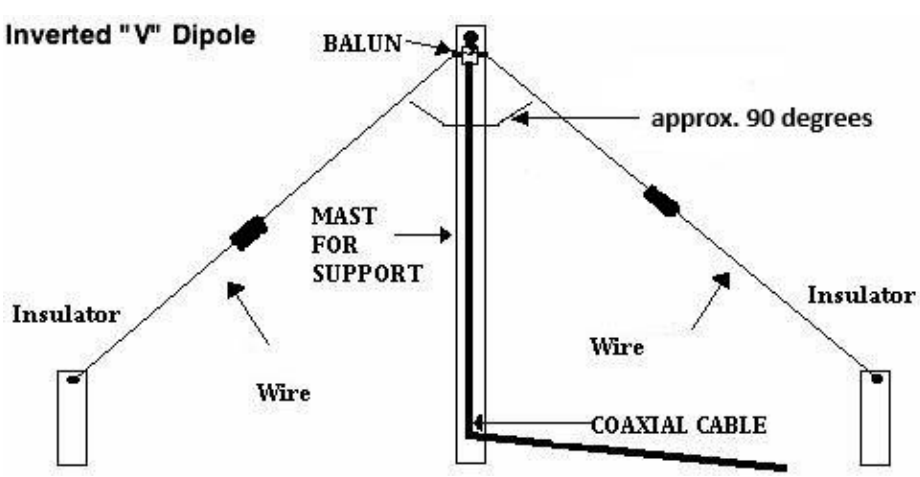
I have had trap dipoles for the majority of my 35 years in amateur radio. The trap dipole is easy to build, and works very well as is testatment to many hams who have worked the world on these antennas.

The traps pictured here are the well known unadilla/reyco traps manufactured for many years. Sadly, production has ended due to issues in the foreign country where manufacturing was transferred. But, they are still sometimes available at hamfests or fleam markets. You can see from the picture that the trap is merely a coil/capacitor combination to make a tuned circuit. For example, these 40meter traps are a short circuit to any frequency other than 40m. At 40mr frequencies it looks like a open circuit to the transmitter. The coil is easy to see but if you look closely, you will notice that aluminum tube on one end is larger than the other. A simple capacitor is obtained by positioning the smaller tube inside the larger one to the point where the desired capacitance is obtained. The documentation that follows illustrates the design parameters. The links also describe DIY traps using actual capacitors and anothert using coax cable to make the coil/capacitor combination.

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

Coax Trap Design
https://www.k7mem.com/Ant_Trap_Antenna.html

I have a trapped antenna in my go-box for field day or emergency comm’s usage. Like most other dipoles these are set up as an inverted vee, the critical dimension is the apex and should be close to 90 degrees as reasonable. If you set this up and use an antenna analyzer to test it, you will notice that you can set the impedance to exactly 50 ohms simply by moving the legs to adjust the apex angle.



Once you have something explained, it's no longer a mystery. KG5B takes the time to explain just what it is that a lot of us use.

Exploring The Vagaries Of Traps

BY CORNELIO NOUEL*, KG5B

At one time or another most of us have used traps in our antenna systems. A trap is simply a resonant circuit consisting of a capacitor in parallel with an inductor. Series resonant traps are sometimes used to reduce or eliminate undesired responses from oscillators or amplifiers. This article, however, will deal only with parallel resonant circuits as they are used in multiband antennas. In the old days parallel tuned traps, or "wave traps" as they were then called, were used in series with the receiver antenna lead-in to reduce blocking from strong nearby stations or perhaps to decrease the strength of second or third harmonic emissions from the transmitter (fig. 1). More recently, however, traps have become quite popular in the design of multiband antennas, since they provide economical and automatic band-selection capability (fig. 2).

The idea of multiband antennas using traps is based on the principle that parallel resonant circuits offer a very high impedance path at their resonant frequency, thus acting as isolators. As the frequency is lowered, they essentially become inductive, acting as loading coils for the next lower bands.

The simplest trap is a single-layer close-wound coil or solenoid that by virtue of its inherent distributed capacitance is self-resonant to a desired frequency. This type of trap will show various series and parallel resonances through a great range of frequencies, so its behavior may be hard to predict. It has been used in at least one known design (fig. 3). Unfortunately, because of its very high L/C ratio it tends to develop very

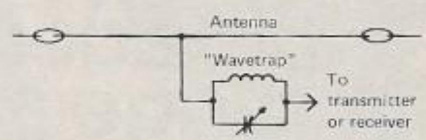


Fig. 1– An old-time "wave-trap."

high voltages, causing corona-discharge problems in high-power applications. It also tends to be "lossy" because of the large amount of r.f. resistance inherent in large inductors, and it is very susceptible to detuning from nearby conducting objects.

Large-value components, whether they are inductors or capacitors, are bulky and heavy, and their relative electrical values affect the efficiency of tuned circuits in different ways. When the L/C ratio is high, the "Q" of the circuit tends to be low, because most of the losses are due to the resistance in the coil. This, however, provides a greater bandwidth. On the other hand, if the L/C ratio is low, the "Q" factor or efficiency of the circuit is high, and then its bandwidth is less. Therefore, a compromise has to be found which will give the most desirable characteristics both mechanically and electrically. The most popular inductors used with traps in multiband wire antennas are the air-core space-wound coils with a relatively large diameter. Their inductance should be such that they resonate at the desired frequency with about 1 to 2.5 pF per meter of wavelength. Beam antennas and verticals use shielded, grooved coil forms which are difficult to make and rather expensive. They work on the same

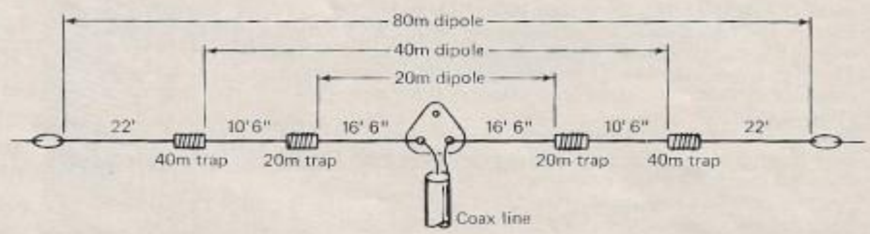


Fig. 2– A typical multiband trap antenna.

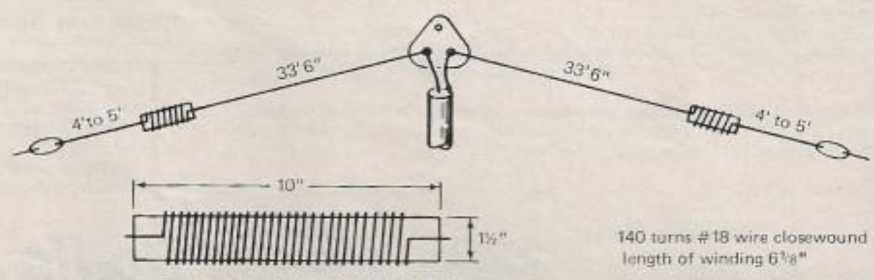
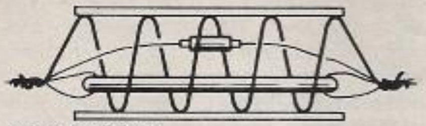


Fig. 3– A 40–80 meter antenna.

*1445 W. Saint Francis, Brownsville, TX 78520



Inductance 8.2µH
Capacitance 60pF (5Kv or more)
Resonance frequency approximately 7.15MHz
For 20m use half of the values given for C and L

Fig. 4– A "classic" trap using a transmitting ceramic capacitor and machine-wound commercial inductors. Egg-type insulators are not recommended; use long insulators for this purpose.

principle as other traps and are very sturdy and mechanically stable, but their construction is beyond the scope of this article. Some of the radio handbooks, however, describe the construction of similar traps which can be used in those applications.

Perhaps the easiest way to design a trap is to start with the capacitor, since this can be purchased or made to the exact value desired. The best capacitor seems to be the ceramic NPO transmitting type, sometimes called the "doorknob" type because of its shape. For up to 1 kw the voltage rating should be no less than 5 kv. For 200 watts or less a rating of 2.5 kv is suitable. These ratings will provide at least a 100 percent safety factor. Receiving-type capacitors should not be used even if their voltage rating is appropriate, because they do not have a good current-handling capability and they may not stand up in use, except perhaps with very low power. Transmitting mica capacitors are also suitable, but they are usually heavier and more vulnerable to the environment.

Fig. 4 shows a classic trap using a ceramic capacitor and an air-core inductor. The values given are for the 40 meter band. The next best choice is the coaxial cable capacitor. This is not only cheaper than most transmitting-type capacitors, but it has the advantage that it can be trimmed to an exact value. However, after the trap is built, the ends should be sealed to avoid changes due to humidity. The size can be calculated by the formula given in the appendix. It is always wise to start with a piece a little longer than necessary and then trim a quarter of an inch at a time until resonance is achieved at mid-band. Fig. 5 shows the recommended way to build a trap using a coaxial cable capacitor. RG58-type cable can be used for powers up to 200 watts or so; for higher powers RG8 should be used. As shown in fig. 5, the cable should be clamped or strapped to the antenna wire. Part of it, however, can be slipped inside the coil form. It is not a good idea to let the coax hang from the coil, since the wind will make it sway, and eventually it will break away.

Another way of building a suitable capacitor is by using a double-sided, copper-clad, fiberglass printed circuit board. A sample (preferably a square or rectangle) of known area should be measured with an accurate capacitance meter, and the capacitance per square inch should be determined. The required area in inches can then be obtained easily by dividing the required capacitance by the pF per inch, which was previously determined. Of course, the shape of the capacitor is unimportant as long as the area (and the capacitance) are correct. Measurements on a 3/64 inch (1 mm) thick pc board have been determined to have about 20 pF per square inch.

No voltage rating is available, but a set of traps using this construction has been used with 100 watts without any problems. It may be a good idea to bevel the board at least on one side to avoid corona discharge. Capacitors made this way are very lightweight and can easily be installed inside the coil form. They should be sprayed with a suitable plastic coating to help preserve them (see fig. 6).

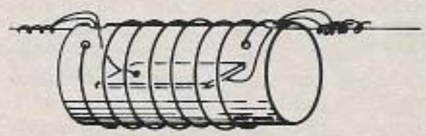


Fig. 6– A trap using a double-sided pc board capacitor.

Commercial "machine-wound" inductors can be used to build traps. They are made by several manufacturers and are not expensive. A coil diameter of at least 1½ inch should be used to keep losses down. The current amateur radio handbooks have extensive data on these inductors. Choose a stock that uses a No. 12 or 14 wire for best results. Cut it to the required length or slightly longer using the data in the handbook or the manufacturer's specifications. If the data is not available, the inductance can be calcu-

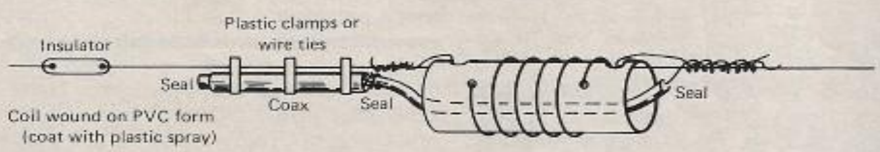


Fig. 5– A trap tuned with a coaxial cable capacitor.

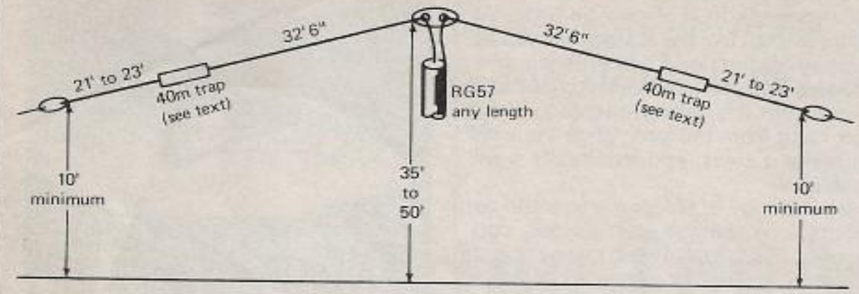


Fig. 7– An "all band" (10–80) trap antenna.

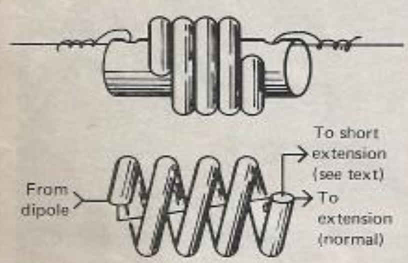


Fig. 8– A coaxial-cable trap.

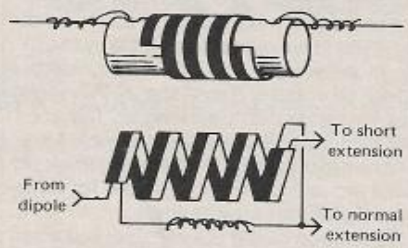


Fig. 9– A speaker-wire trap.

lated by means of the standard solenoid formula shown in the appendix. With this value and the capacitor value the theoretical resonance can easily be estimated. It should fall in about the middle of the desired band. However, when the trap is assembled, it can be checked with a grid-dip meter while disconnected from the antenna. Any adjustments then can be made to the inductor if ceramic capacitors are used, or to the capacitor if coaxial-cable or pc-board types are used.

Inductors can be homemade with relative ease. One of the simplest ways is to use a length of plastic tubing (water-pipe PVC will do a fairly good job). Cut the form 2 or 3 inches longer than required for the winding. A winding length of about 2½ inches should be about right for a 40 meter band trap. Using a 1½ inch diameter form and 21½ turns of No. 14 wire spaced about one wire diameter will create an inductance of about 8.2 microHenry. This coil used in conjunction with a 60 pF capacitor will resonate in the middle of the 40 meter band. Fig. 7 shows an antenna using two of these traps. The antenna is usable on all bands from 80 to 10 meters (except the WARC bands) because of the inherent harmonic relationships.

Band (meters)	Turns	Coax length (inches)	Winding Length (inches)
15	4¾	22.5	1
20	6½	30.5	1¼
30	8¾	41.2	1¾
40	12	56.5	2½

Table I– The winding data for coaxial traps. Tightly close-wound on a 1½ inch form RG58U solid dielectric, 28.5 pF/foot. Allow about 3 inches of extra coax for connection.

A new development that shows some merit is using coaxial cable simultaneously as inductor and capacitor.[1] This is accomplished by winding the coaxial cable on a suitable form and then connecting the inner conductor to the outer conductor at the opposite end of the coil. The outer conductor or shield can now be used as a trap and loading coil as with other types. These traps are easy to make when using small-size cables (RG58/59), but require considerable dexterity with the larger cables, which also produce rather bulky and heavy units. The L/C ratio of these coaxial traps is very small, so they tend to have a rather high "Q," causing the antenna to have a narrow bandwidth. Table I shows some representative values that can be used as guides in their construction. Fig. 8 shows how they are connected. Connecting the extension arm to the unused end of the inner conductor will cause a considerable reduction in the extension length (approximately equal to the length of the cable) with some loss of efficiency. A low-priced substitute, using the same principle, that can be used with powers of 100 watts or so is the bi-filar, clear-plastic "speaker wire."[2] It is very lightweight and flexible, so making traps with it results in a very simple operation. This wire has about one half the capacitance of RG58. Therefore, the L/C ratio is higher, showing better bandwidth, although presumably with higher losses—a normal trade-off in any case. Traps made with this material seem to stand up quite well outdoors. Winding data is shown in Table II and fig. 9.

Band (meters)	Turns	Wire length (inches)	Winding Length (inches)
10	4¾	22.5	⅞
15	5¾	27.2	1⅛
20	8	38.0	1½
30	11	52.0	2⅜
40	14½	68.5	2⅞

Table II– Winding data for speaker wire traps. Tightly close-wound on a 1½ inch diameter form. Radio Shack wire No. 278-1602 or equivalent, 13.5 pF/foot. Allow about 3 inches extra for connection.

Perhaps it is fair to say that any type of trap or loading coil will consume some power, reducing the overall efficiency. However, the reduction, whatever it may be, is certainly justified by the flexibility and convenience provided by these devices, allowing most of us to operate on the various available bands without having to own an antenna farm. CQ

Appendix

The approximate inductance of a single-layer air-core coil can be found by the following formula:

$$L \text{ (in microHenries)} = \frac{R^2N^2}{9R + 10S}$$

where R is the radius of the coil in inches, N is the number of turns, and S is the length of the winding in inches.

By transposing the terms, the required number of turns can be determined by this formula:

$$N = \frac{\sqrt{L(9R + 10S)}}{R}$$

Required capacitance for a given inductance and frequency can be found by

$$C = \frac{25330}{f^2L}$$

where C is in picoFarads, f is in MHz, and L is in microHenries.

If C is known and L is required, then

$$L = \frac{25330}{f^2C}$$

The length of a coaxial capacitor can be found by

$$l \text{ (in inches)} = \frac{C_{reg}12}{C_{coax}}$$

where l is the length of the coax in inches, C_{coax} is the capacitance of the coax in pF/foot shown in the coax specs, and C_{reg} is the capacitance required to resonate the inductor at the desired frequency.

The area of the double-sided board can be found by

$$A \text{ (in sq. inches)} = \frac{C_{reg}}{C_b}$$

where C_{reg} is the required capacitance in pF, and C_b is the measured capacitance per square inch.

[1] Johns, "Coaxial Cable Antenna Traps," QST, May 1981. O'Neil, "Trapping the Mysteries of Trapped Antennas," Ham Radio, Oct. 1981.

[2] Radio Shack No. 278-1602.

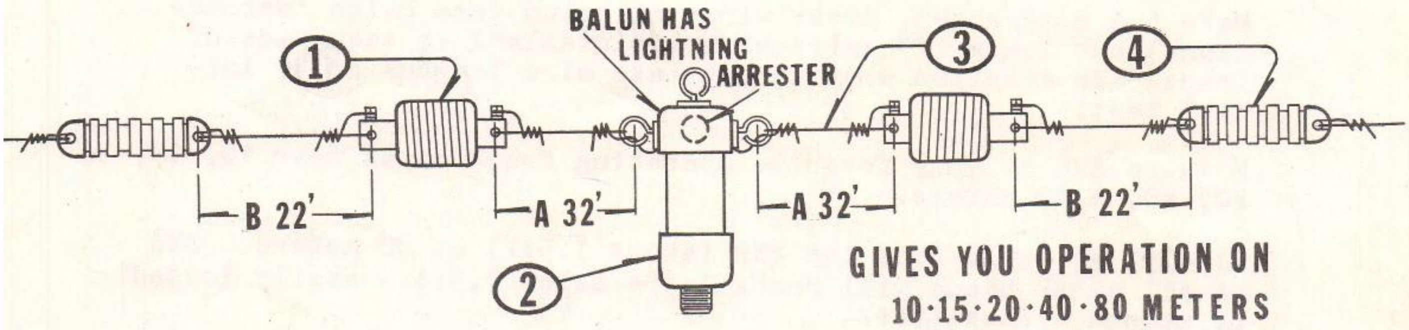
5 BAND

W2AU/W2VS

10/80 METER ANTENNA KIT

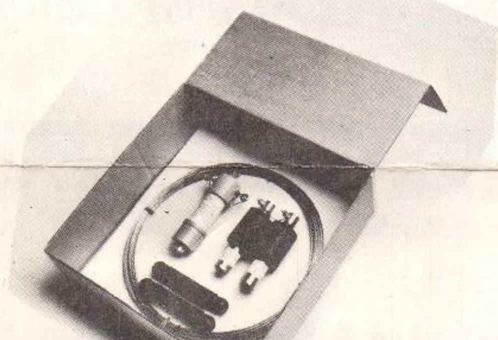
by

UNADILLA/REYCO



GIVES YOU OPERATION ON
10·15·20·40·80 METERS

(DESIGNED CLOSELY TO 5 BAND TRAP DIPOLE PARAMETERS PER A.R.R.L. HANDBOOK, HF ANTENNA CHAPTER (21)– 'A MULTIBAND TRAP ANTENNA')



COMPLETE KIT [Nothing else needed]

1. 2 ea. W2VS REYCO KW-40 TRAPS
2. 1 ea. W2AU 'BIG SIGNAL' BALUN 1:1
3. 120 Ft. RUGGED #14-7 Strand Copper Wire
4. 2 ea. W2AU SHATTERPROOF END-sulators
5. INSTRUCTIONS
   (With our TOLL-FREE WATS LINE Number For Any Questions Or Assistance !)

The 'FOREVER' KIT

Every Component of This Kit is a Highly Crafted, old Line UNADILLA/REYCO Product Time Tested by HAMS, COMMERCIAL & ARMED FORCES FACILITIES – AROUND THE WORLD – FOR OVER 10 YEARS !

MICROWAVE FILTER COMPANY, INC.
6743 KINNE STREET, EAST SYRACUSE, NEW YORK 13057

UNADILLA/REYCO DIVISION

BALUNS – TRAPS – QUAD HARDWARE
ANTENNA KITS – CENTER INSULATORS
END INSULATORS – WHIP STRETCHERS
FILTERS – CONNECTORS
WRITE FOR COMPLETE CATALOG

(1) LOCATION AND HEIGHT

5 For best results, locate in the clear - away from structures with long, horizontal metal members which are parallel to the antenna wire. As to height - the higher the better. However, heights of 30 feet or greater will give satisfactory SWR.

(2) INITIAL WIRE LENGTH AND TEST

Make A & B as shown, dress wires at balun (see balun instructions) but leave 12" extra wire ("pigtails") at each side of traps - in case you want to increase wire lengths after initial test.

Measure SWR at your favorite operating frequencies near 10, 15, 20, 40, & 80 meters.

Likely, you will find low SWR (about 1.5:1) at 80 meters. SWR on all other bands will probably be below 2.5:1 - easily loaded by modern transmitters.

(3) FINE SWR ADJUST FOR 40/80 METERS

If you wish to optimize 40/80 meters for lowest SWR - at some penalty to 10, 15, 20 meters - proceed as in steps (4) & (5). *

(4) FINE ADJUST 40 METERS FIRST

Near 40 meters, find frequency of lowest SWR by changing transmitter frequency and making a chart. Then change wire A length accordingly. For example, if lowest SWR frequency is below your desired frequency by, say 5%, then shorten wire A by 5%, etc.

(5) NOW FINE ADJUST 80 METERS

Proceed as in step (4) to find final wire B length, by changing transmitter frequency near 80 meters to find the frequency of lowest SWR. Then change wire B length accordingly.

(6) WIRE DRESSING TO COMPONENTS

Make final wire dressing to KW-40 traps per details given in the attached instruction sheet for Reyco Antenna Coils.

* If "perfect dipole" (low SWR) operation is desired on 10, 15, or 20 meters (or all of them) in addition to "perfect dipole" performance on 40 & 80 meters (per steps 4 & 5 above), this can be accomplished by adding pairs of other Reyco Antenna Traps:

KW-10	10 Meters
KW-15	15 Meters
KW-20	20 Meters

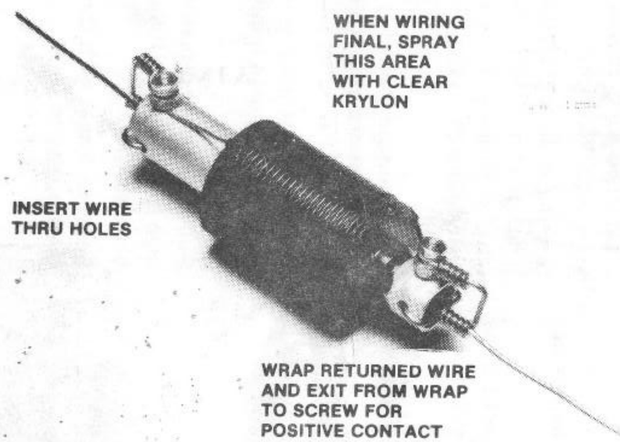
These, and their installation, are described in the attached Reyco Antenna Coil sheet.

If you need any advice or assistance - call Hugh Gunnison, WA2ZOT, TOLL-FREE:

U.S. 1-800-448-1666
N.Y. 1-800-962-7965 AFTER 9/1/78 NY 1-315-437-3953 CALL COLLEC

INSTALLATION OF REYCO COILS

Use wire lengths given in sketches as starting points and allow a little extra wire so that final adjustments may be made. Insert wire thru holes and serve back on itself as you would with an insulator. Connect wire to screw for electrical contact. After all wire lengths have been determined we suggest that each connection be given a coat of clear Krylon to prevent corrosion. Coils may be installed in either direction.



STANDARD WARRANTY:

Every REYCO Antenna Coil is thoroughly tested electrically and mechanically before shipment. They are completely waterproofed and NO OTHER TREATMENT SHOULD BE ATTEMPTED.

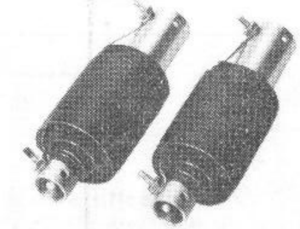
We will replace any pair of coils which under normal installation use and service disclose any mechanical or electrical defects provided BOTH coils are returned to us intact for our examination; with all transportation charges prepaid to our factory within ninety (90) days of sale to original purchaser, and provided that such examination discloses in our judgment that they are defective.

Immediately upon receipt we will ship new coil replacements (if found within warranty) or we will state the cost of restoration to original condition.

MFc-F-709-8

"the OLD™ reliable"

REYCO



MULTIBAND ANTENNA COILS

MODEL #	RESONANCE
KW-40	40M (7 MHz)
KW-20	20M (14 MHz)
KW-15	15M (21 MHz)
KW-10	10M (28 MHz)

SUGGESTED RETAIL

$21.95/pair

SPECIFICATIONS

POWER	2KW PEP (minimum)
WEIGHT	6 ounces (max) PER COIL
SIZE	1.8" dia (max) x 5.5" long (max)
ABSORPTION	WATERPROOF COATING
STRENGTH	300# (min) TENSILE STRENGTH
CORROSION	ALL metals aluminum, including screws, nuts, washers, to resist interface corrosion
HI-Q	OPTIMUM FORM FACTOR ON POLY

KW-40 These Coils are the standard five band coils to provide operation on 10-15-20-40- and 80 with an approx. length of 108 feet.

KW-10 15 20 Coils resonant in designated bands to provide perfect dipoles in each band. Using these coils together with a pair of KW-40 coils five band operation can be obtained with a total length between 85 and 95 feet.

UNADILLA / REYCO DIVISION
MICROWAVE FILTER COMPANY, INC.
6743 KINNE STREET, EAST SYRACUSE, NEW YORK 13057

TELEPHONE: (315) 437-3953
TWX: 710-541-0493
CABLE: MICROFILCO

What They Are

REYCO Coils are actually parallel coil-condenser combinations designed to resonate in the various Amateur bands. The condensers are made of aluminum tubing and polystyrene, completely sealed against moisture. The moisture-proofing process together with the close fit of the parts, insure high tensile strength.

Coils are wound with aluminum wire on threaded polystyrene forms. Ratio of length to diameter plus low loss material results in a High Q assembly. Because of the high Q and impedance at resonance the coils act as effective insulators in the band in which they are resonant.

USING THE KW-40 COILS AS A FIVE BAND ANTENNA

APPROXIMATE ANTENNA DIMENSIONS

Dimensions Given Are Wire Lengths. X—Denotes Insulator

On 40 meters the two 32 foot lengths provide a conventional dipole with the resonant coils acting as insulators.

On 75 meters the coils act as loading inductance and with the extra 22 foot lengths form a dipole on 75 meters.

On the higher frequencies, with the values chosen the antenna is 3/2 waves on 20, 5/2 waves on 15 and 7/2 waves on 10.

METHOD OF FEEDING ANTENNA USING KW-40 COILS

For transmitters with link coupling, the twin lead may be fed directly to the link.

For transmitters with unbalanced output, twin lead from antenna to a balun, coax from balun to transmitter is recommended.

Excellent results are being obtained feeding this antenna directly with 72 or 52 ohm coax.

Operation on 75 and 40 has been satisfactory with random feed line lengths. However on the high frequency bands it appears that certain lengths will improve operation.

For Coax use: 40, 83, 109 or 130 feet

For Twin Lead use: 70, 96, 108 or 128 feet.
(Use 70 ft. if possible)

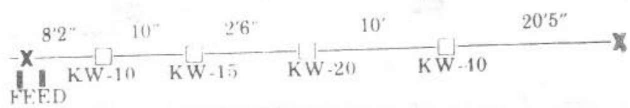
USING SEPARATE COILS FOR EACH BAND

While the KW-40 coils function as a five band antenna, we recognize that they are sometimes a compromise on 10-15 and 20 meters. Adjusting wire lengths for optimum operation on 40 and 75 may make one or more of the high frequency bands unsatisfactory.

By adding three additional sets of traps resonant at 10-15 and 20 meters, it is possible to have a perfect dipole on each band. It is not necessary of course to use four sets of traps. For example, if you do not care to operate 10 meters, the KW-10 coils may be left out and the center section cut for 15 meters. Another example: if operation on 75 is not required, insulators may be used in place of the KW-40 coils, in which case the antenna will provide dipoles for 10-15-20 and 40 meters.

Recognizing that the coils act as insulators on the band in which they are resonant and as loading coils for the next lower frequency bands, you will see that a number of combinations are possible.

ANTENNA DIMENSIONS



One Half of Antenna Shown. Other Half Same Dimensions. Dimensions Shown Are Wire Lengths. X Denotes Insulator.

The figures given above are as used at our Rochester location with the antenna approx. 35 feet high and in the clear. Resonant frequencies were at 28.8, 21.3, 14.25, 7.2 and 3.8 mc.

Final dimensions should be determined at your location using an SWR bridge.

Starting at the highest frequency band, measure to find the point of min. SWR which will indicate the resonant frequency. If this point is at or near your favorite operating spot, follow the same procedure on the next lower frequency band.

If the resonant frequency is too high, increase length of the center section a little at a time until the minimum SWR is at the desired operating point.

If the resonant point is too low, decrease the length of the center section until minimum SWR comes at the required point.

Follow the same procedure on each band working from the high toward the low frequency bands, adjusting wire lengths between coils.

Feedline length with this antenna is not critical. Random lengths may be used.

Tech Talk

Each month at our club meeting we start off with a Tech Talk. Members are encouraged to offer their presentations. Subject can be anything of interest in Ham radio, maybe you installed a new radio or antenna, or discovered something new on you-tube. Don't assume that what you have isn't good enough. Bring it along for discussion.

Upcoming "Beyond CanWarn" Workshops and Q&A Event

https://www.rac.ca/canwarn/

Radio Amateurs of Canada (RAC), the national association for Amateur Radio in Canada, is pleased to present two upcoming **CANWARN Weather Spotter Workshops** for Amateurs and non-Amateurs. In addition, a special **Q&A Live Event** will also be held to close off this year's training session.

Canadian Weather Amateur Radio Network (CANWARN), Radio Amateurs of Canada's national severe weather preparedness program, is an important initiative. It equips volunteers with free storm spotter training, empowering them to protect Canadians from severe weather. It also educates citizens on recognizing and reporting severe weather, a vital contribution to keeping our communities safe.

Weather Spotter Workshops: May 23 and June 20

The Weather Spotter Workshops events will be hosted by RAC Community Services Officer Jason Tremblay, VE3JXT, and will once again feature special guest Warning Preparedness Meteorologist Geoff Coulson who has been a Meteorologist for 37 years, including with Environment Canada for 35 years as an Operational Forecaster, Trainer, Outreach Officer and Warning Preparedness Meteorologist (WPM).

Both events will be held online via Zoom and are identical so you can just pick the one that works best for you. There is no need to pre-register for the event and you can log in via Zoom just prior to the events.

Dates: Thursday, May 23 and Thursday, June 20

Time: 7 pm Eastern Time (US and Canada)

Cost: There is no fee for this event.

Q&A Live Event: Tuesday June 25

In this special one-on-one session, Jason Tremblay, VE3JXT, RAC Community Services Officer, and Geoff Coulson, Warning Preparedness Meteorologist, will discuss the past, present and future of CANWARN, which has been affected by global climate change and its impact on Canadians.

Date: Tuesday, June 25

Time: 7 pm Eastern Time (US and Canada)

Cost: There is no fee for this event.

Please visit the CanWarn webpage for more information: https://www.rac.ca/canwarn/

Trillium Venture 2024

At the beginning of June, I was contacted by John David VA3JHD, First Assistant Chairman of the Hamilton Amateur Radio Club. At that point in time John had been working closely with members of the 31st (Reserve) Signal Brigade to organize Amateur Radio participation in the upcoming Trillium Venture 2024 exercise.

The Trillium Venture exercise was planned as a means of simulating a military response to a large blackout event caused by heat. It is important to note that, such a military response would only be needed if local emergency resources were overwhelmed and provincial resources were also not adequate.

The Trillium Venture event was very ambitious, and originally involving eight locations over Huron and Bruce Counties. This large scale, created a number of organizational and logistical challenges for the military planners. Operational locations were changed as planning progressed and eventually were eventually reduced from eight to seven.

After I became involved in this event it became apparent that the complexity of fielding 800 reservists and coordinating with municipal authorities to secure suitable locations, was daunting for military organizers. They deserve well earned credit for moving the operation forward even when faced with many unexpected problems.

The amateur radio portion of Trillium Venture finally came together in the last few days of planning. Covering three shifts, over two days, across the final seven sites proved to be challenging. In the last day of planning the overnight shift was dropped for all sites and this made it easier to carry on with a just a morning and afternoon shift.

As with all things in Amateur Radio, nature tends to dictate how and when we operate. This is especially true for HF operating. The original plan was to use both 2 meter repeaters as well as HF on 40 meters to communicate between various stations. However, the disruptive effect of a solar flare prevented the use of 40 meters for phone communication for most of Saturday.

Eventually Janet and I, operating from our assigned position at the Mildmay Community Centre, had a brief contact with Bobby, VE3PAV and Larry VE3WDF at their location in Wiarton via 40 meters. This was possible once the 40 meter band became more usable and Bobby and Larry began to use a different antenna.

In summary the event was a success within the context of its original intention, a broadly defined learning experience. However, I must add that, in my opinion, the success of the event must “qualified”.

As noted, Trillium Venture was intended to simulate a military deployment in the aftermath of a wide area blackout resulting from heat. During the event we used 2 meter repeaters in the area for the HAM radio component of the exercise. It is my opinion that, while some repeaters, with battery backup power may be initially available during a such a wide area blackout.

Assuming the batteries on the repeaters used are recharged by a generator on site, they would continue to operate. However, much about repeater function has been assumed and so can not be taken as factual in an emergency plan.

I feel that any kind of Amateur Radio 2 meter emergency communications plan should assume repeaters will not be functional if grid power is not available. If repeaters are functional on batteries, or even with recharging from generators, eventually they will go down. This then leaves Simplex as the only real option for 2 meters.

Because Simplex is line of site dependent emergency communications plans need to be built around this limitation. Naturally then, to cover our area, which a plan would rely on using 2 meter relays or a greater dependence on 80 or 40 meter NVIS communications and information sharing via Winlink, JS8Call and other digital modes.

If Trillium Venture did nothing else, it demonstrated the real value of having a workable emccomm plan based on the PACE (Primary, Alternative, Contingency, Emergency) concept. I will have more to say about EmComm planning and PACE in future newsletters.

My 2024 field day set up. 73 Doug VE3DGY

Huron Shores Run Saturday June 1st 2024

Volunteers Needed

Now that the Trillium Venture Exercise is finished it's time to look ahead to the other events GBARC supports every year. I was approached by the head race marshal and asked if GBARC would once again support this important event.

This charity event, is sponsored by the Rotary Club, and raises money for the Southampton Hospital.

This is a half marathon leaves Southampton at the north end of the course then travels south to Port Elgin where runners and walkers then turn around and return to the start finish line in Southampton.

The race commences about 8:00 AM Saturday morning and is normally completed by 12:00 noon. There is both a long course and shorter courses. It also involves runners, walkers of all ages and often family groups. This year the overall course has been changed and part of the long course involves running a loop of streets inside a residential neighbourhood in Port Elgin.

Ideally, I need six volunteers to ensure proper coverage of the event. We normally used the Port Elgin a meter repeater. This repeater can be reached with an HT across the race venue, however a 50 watt mobile is preferred.

If you are free and willing to support this event, please send an email reply to Marvin VE3VCG at my personal gmail account mdoublester@gmail.com. You can also email me via Winlink from any account to ve3vcg@winlink.org I will be checking all accounts daily.

This is a fun event, and usually a nice morning out in support of a good cause.

Minutes of Meeting

By Dan VA3DNY
GEORGIAN BAY AMATEUR RADIO CLUB

23th of April 2024

Call to order by Marvin VE3VCG at 7:00 PM

ATTENDANCE

Executive:
Dan Mills VA3DNY Secretary, Tex Brown VE3USI Vice President, Marvin Double VE3VCG President, Doug McDougall VE3DGY Treasurer

Members:
Tom St. Amand VA3TS, Philip deKat VE3DPB, Dave Newcombe VE3WI, Jim Reeves VE3JMD, Greg Laroque VE3RQY, Larry Price VE3WDF, Janet Double VA3EAC, Adam Karasinski VE3FP, Bobby Pavlovic VE3PAV, Bernie Monderie VE3BQM, Richard Osborne VE3OZW, Don Richards VE3IDS, Aubrey Alderdice VE3TUQ, Terry Darling VE3CAB, Mary Watson VA3ILT (Guest)

QUORUM: Yes

TECH TALK:

Adam Karasinski (VE3FP) Hexbeam Antenna.
Adam gave a presentation about a hexbeam antenna that he built a few years ago and used with great results during one of our Summer Field Days. The original design was from K4KIO and then it was improved to a broadband hexbeam by G3TXQ. Adam used an aluminum hub and fiberglass spreaders as the framework (resembles an upside down umbrella) for his antenna. This design of hexbeam allows 5 band operation with low SWR on each band, while having low weight and low wind loading. It is equivalent in operation to a 2 element beam with gain and directivity, and presents 50 Ohms at the termination point.

PREVIOUS MINUTES:

Minutes of the March Meeting were published in the newsletter and on the GBARC website. The minutes were accepted as written.
(motion: Tex VE3USI, second: Richard VE3OZW)

TREASURER'S REPORT:

Doug VE3DGY presented the finance report.
Members:36, Transactions: 50/50 draw ($xxxx) and Donations for equipment sale ($xxxx), and service charges ($xxx), Balance: $xxxx
The treasurer's report was accepted. (motion: Richard VA3OZW, second: Adam VE3FP)

OLD BUSINESS:

A request was made for a volunteer to be the co-ordinator for this year's Field Day event. Doug VE3DGY offered to take charge and make sure everything will be well organized.

A discussion followed about a location for this event and it was narrowed down to 2 preferred places. The Grey Sauble Conservation headquarters and a park in Paisley. Doug will look into availability and report any updates on the forum.

Adam VE3FP has agreed to be in charge of the N1MM configurations and wifi links for the various stations. Dave VE3WI has offered to use his trailer to pick up the club's Yagi and tower again this year.

More details will be finalized on the forum and during next month's meeting.

Frank VA3GUF emailed a report indicating that there are still spots available for the upcoming Basic Amateur Radio Course if anyone is interested.

NEW BUSINESS:

Marvin VE3VCG presented details about the upcoming planned Military/Civilian simulated emergency training response. He is looking for volunteers to operate radios and pass traffic during the simulation. There are 4 different locations involved: Lion's Head, Wiarton, Walkerton, and Mildmay.

Terry VE3CAB spoke about the passing of Carl (VE3APY SK) and shared several stories from their friendship over many years.

50/50 Draw won by Dave VE3WI $36.50 to him and the same amount to the club.

Meeting Adjourned at 8:30 PM (motion: Phil VE3DPB, second: Bernie VE3BQM)

Interesting Websites

PRACTICAL IDEAS FOR PORTABLE MAGNETIC LOOP ANTENNAS
https://www.nutsvolts.com/magazine/article/practical-ideas-for-portable-magnetic-loop-antennas#content-extras

Canadian Winlink Operations Team
https://rac-acs-winlink-net.groups.io/g/main

Battery Auctions
https://batteryhookup.com/

Help WANTED at the qth of Tom VA3TS

I need a kind soul to go up my tower and secure my coax's. They have dropped down and this prevents turning the beam. A few ty-raps to hold the coax's steady should fix the issue. I also noted that the beam has slipped a bit on the mast. So, to fix that, all that is needed is to loosen the mast clamps on the rotor and re-position the beam…any takers?

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 us a an email with https://gbarc.ca/contact.php, and we will get back to you.

Help US Out *Would you like to receive email notifications when this newsletter is posted? Sign up for our mailing list. No ads and no personal information, your email address is never shared with anyone else. Subscribe*

Membership for details regarding membership in the club click here: *Membership*

Join the Radio Amateurs of Canada

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

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.