



The **Blurb**



Newsletter of The Phil-Mont Mobile Radio Club

71 Years of Public Service, 1949-2020

Volume 71 Number 7

www.phil-mont.org

July 2020

No Meetings or VE tests Due to Coronavirus



Happy Birthday USA! Looking good for 244!

<p><i>The Blurb</i> is published monthly by and for the members of The PHIL-MONT MOBILE RADIO CLUB, Inc., whose purpose is to promote Amateur Radio in general, and Mobile Radio in particular. Copying and quoting is permitted with a credit line. We gladly exchange publications with other amateur radio clubs.</p> <p>Requests should be sent to the Editor: Rick DeVigiliis ND3B@ARRL.net</p> <p>Subscriptions are available to non-members for \$12, addressed to the Treasurer.</p> <p>Labels and mailing: KB3IV</p> <p>Submissions deadline: All copy must be in the hands of the Editor by the 20th of the previous month.</p>	<p>Directors: N3QV (22) K3RON (22) K2RSJ (22) WA3DSP (20) WU3I (20) KB2ERL (20) NC3U (A) W3RM (EMERITUS)</p>	<p>Contact Phil-Mont: P.O. Box 404 Warminster, PA 18974 http://www.phil-mont.org Website: Eric N3QV & Andrew KC2PMW</p> <p>For club information: Contact any club officer, or the repeaters listed below. Address or club directory changes and articles for the membership e-mail list should be sent to: KB3IV</p>	
<p>Sunday Morning Net Schedules</p> <ul style="list-style-type: none"> • 2 Meter/ 70cm Net..... at 0930L on W3QV repeater • 10-on-10 Net at 1030L 28.393 MHz USB (±QRM) • 75 meter Net at 1000L 3.993 MHz LSB • ARES at 2100L on the W3QV repeater 			
<p>Committees</p> <p>Blurb folding: KB3IV & N3GLU Directory: KB3IV Field Day: KC2PMW Fusion Coord: NC3U</p>	<p>Internet: N3QV & KC2PMW Membership: KB3IV Net Control: KB3IV</p>	<p>Program: W3AOK Refreshments: W3AOK Repeater: W3AOK</p>	<p>Scholarship: KB3IV Sunshine: N3GLU VE Program: NS3K Welcome: N3UBY Youth: KC2PMW</p>

All visitors are welcome!

The club meets at 7:00 PM on the *second* non-holiday Wednesday each month except July and August at Giant Supermarket, 315 York Rd, Willow Grove, PA
 Maps and directions are available at www.phil-mont.org.

License Examinations are held on the fourth **non-holiday Thursday** each month at **Community Ambulance Association, 1414 E. Butler Pike, Ambler PA 19002**
 Registration begins at 7:00 P.M. Applicants should contact Jim McCloskey NS3K at 215-275-2979 or jmccloskey@msn.com for the latest information.

Club Stations W3QV/R: The Jim Spencer Memorial Repeater System
 Ridge & Port Royal Avenues, Philadelphia, PA **Trustee: N3QV**
147.03 MHz + PL 91.5 Hz 444.80 MHz + PL 186.2 Hz C4FM Fusion digital
 Reach us on EchoLink through W3QV-R AllStar Node 47970
W3AA Trustee: N3QV
W3EM: Field Day/special event station Trustee: N3QV

The Officers

President: Greg Malone WA3GM Greg Malone wa3gm@yahoo.com
Vice President: Jim Fisher AJ3DI kc3bra@gmail.com
Treas: WB3DZZ George Gianios ggianios@verizon.net
Secretary: W3AFV Chuck Farrell chuckfarrell@comcast.net

The Prez Sez ...



Hello Phil-Mont

AS we head into month # 5 of the Covid-19 Pandemic I hope all of our members are doing well. As usual we are now off for the summer and hopefully we will resume out normal (whatever that is today) activities in September but I am not confident that we will be in the clear by then and only time can tell.

This is usually the time for vacations and fun with the family but I urge all members to re think their usual plans like the shore and boardwalks and do something that does not involve being around large groups of people. Remember most of our members are in the senior citizen category and we are more vulnerable than most to become infected especially if you have any underlying conditions. Be Smart and be safe.

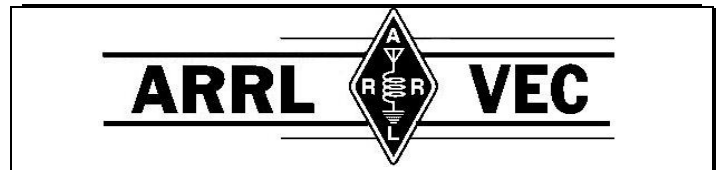
As I am writing this Field Day will be in just 2 days. Our usual field day site at Ft Washington State Park is due to open tomorrow but we have decided not to have our usual field day program there as it is just too early to be in a large group. It is my understanding that there will be a few people who are going to go to the site to operate and I urge them to take all the proper precautions necessary for a safe operation. Most of us will operate from our respective home QTH's and follow the guidelines set forth by the ARRL. You can check out all the rules changes on the links provided on the PMRC web site.

I am sure some of you have noticed some issues with the 147.03 repeater lately. Our technical group is working on this problem. I believe they have switched to our other antenna on the tower and they are looking deeper into some other issues. We will report any progress on the club Web Site so please check there often.

That is about all for now. Everyone have a great field day from home if you are going to operate. **REMEMBER** and this is very important. When you send in your scores for field day make sure you indicate that your log is for the Phil-Mont Mobile Radio Club. **DO NOT PUT PMRC AS THIS WILL NOT BE RECOGNIZED.**

Everybody have a great and safe summer and hopefully we will see you in person in September.

73, Greg WA3GM



*The VE session is
Canceled this month*

As always, many thanks to our VE team!

Phil-Mont Birthdays & Tidbytes

JULY BIRTHDAYS

- 02 Alice Popovic (XYL-W3AOK)
Ted Katz N3OWM
- 03 Nicole Bohlander-(XYL WA3KLR)
- 10 Natalie Gordon WB3KOH
- 16 Michael Davis KB1JEY
- 18 Jay Hammonds W3JAH

- 23 Arthur Weiner WX3PHI
- 25 Virginia Haring W3IIN
- 26 Mai-Lin Simmons (XYL N3BKR)
- 29 James Larkin KA2FFP
- 31 Steve Hoch WU3I

MEMBERSHIP STATS

- At press time P.M.R.C. has:
- 113 FULL PAID MEMBERS
 - 10 FAMILY MEMBERS
 - 1 YOUTH MEMBER
 - 2 HONORARY MEMBERS

Hy-Power Antenna Company

Antenna Products Review

Woody – K3YV

The Hy-Power Antenna Company is based in Bethlehem, PA and manufactures a line of HF wire antenna and balun products for amateur radio service. The company was founded in 1998 and is owned and run by Barry Kery, KU3X.

Hy-Power makes HF wire antennas in almost any configuration you could want. These include various kinds of dipoles: mono band, multi band, OCF, trap, fan, G5RV, and half square types. As the name implies, Hy-Power antennas are rated at full legal power. Although the company name is Hy-Power, they also make antennas for QRP, portable, and stealth operation. In addition, they have a full line of current baluns and line isolators. You can also purchase coils and traps if you want to make your own antennas. If you need an HF wire antenna, then Hy-Power probably has one for you.

I have evaluated two Hy-Power antennas and found them to be of excellent quality: one is a trap dipole and the other is a fan dipole. The antennas come pre-assembled and are cut for the lower frequency portion of the covered frequency band. When you install the antenna, you trim it to whatever portion of the frequency band you desire to operate. Instructions are provided on how to do so. Both antennas that I tested were made of insulated

number twelve wire. Glazed ceramic insulators were pre-installed but were easily repositioned to tune the frequency range. I obtained both antennas with high power current baluns installed as a combination center insulator and center support. The balun is built in a grey utility box and has a steel I-bolt for attaching a support rope. A standard UHF coaxial connector is mounted to the bottom of the box for attaching coaxial feedline. The antennas are available with a simple center insulator or with a center support balun. Hy-Power will install the center support balun free of charge if you order the balun at the same time as the antenna.

Both Hy-Power dipole antennas that I purchased were completely pre-assembled. They were ready to go right out of the box. The first antenna was a 40/80 meter trap dipole, model 2B4080L. I had it made with a 5kW current balun as the center support element, balun model GU 6-160-5KW. (The balun is good from 160 through 6 meters.) The second antenna was a 40/80 meter fan dipole, model 2BFS4080FAN. This antenna also had a 5kW balun. The fan dipole is simply a 40m and an 80m full sized dipole, connected in parallel to the same center insulator. Both the trap dipole and the fan dipole were installed in an inverted-V configuration with an angle of 110 degrees and with the vertex at 50 feet.

The fan dipole is intended to be installed with its two separate dipoles placed orthogonal (at 90 degrees) to each other. However, I installed both the 40m and the 80m dipoles to be in the same vertical plane with them running parallel and being separated by 8 inches. Barry supplied me with 22 insulating spacers with holes drilled to accommodate 8 inch spacing. As expected, there is some interaction between the two dipoles, but other than a slight narrowing of the bandwidth, I did not find it objectionable.

Both of these antennas, the trap dipole and the fan dipole, are halfwave dipoles. And regardless of what many hams think, a dipole is a dipole. To that end, I am not going to discuss antenna patterns or make testimonial claims as to how far I transmitted on the first contact. Check your handbook for what a halfwave dipole will do for you. However, I will

discuss the useful bandwidths I obtained with the described installations.

Trap dipole

The 40/80m trap dipole is a single wire center-fed dipole that has an overall length of 90 feet. Each side of the dipole has a coil of wire inserted in series along its length that is located about 33 feet out from the center. The coils are approximately 5 inches long and 1.5 inches in diameter. The two coils are what are known as traps. Simply put, the trap blocks the 40m signal from traveling any farther along the wire. As far as the 40m signals are concerned, the dipole is only as long as length of wire out to the traps. Thus, the overall length of the dipole for 40 meters is the length of a regular 40m dipole – about 65 feet. The 80m signals work a little different. On 80 meters the entire length of the dipole is in operation. However, the trap coils add inductance in series with the dipole wires. The overall effect is that the traps act like loading coils, which shorten the overall length of the antenna on 80 meters. Thus, the physical length of the antenna for 80m is only 90 feet, whereas a full-size dipole for 80 meters is approximately 130 feet. The upside is that you get 40 and 80 meters in one antenna. The downside is that the bandwidth is narrower than a single band antenna. The bandwidth on 80 meters is especially narrow because of the trap inductance. That is the price you pay for having a single dipole for two bands.

Since the bandwidth is very narrow on 80 meters, trap dipoles have an unexpected problem with SWR when it rains or snows. Any antenna will drift lower in frequency when it gets wet or icy. An 80m dipole will lower about 25 kHz when it gets wet and will lower more than 100 kHz when it gets icy. This is not a problem when the antenna has a broad bandwidth. Unfortunately, the trap antenna has a very narrow bandwidth on 80 meters. Usually, a dipole will be adjusted for best SWR at the desired operating frequency when it is dry. However, during bad weather a trap dipole may drift far enough off frequency to have a bad SWR. The good news is that it will drift back to rights when it dries out. Beware the SWR with trap dipoles.

I measured the 2:1 and 3:1 SWR bandwidth on both 40 and 80 meters. Note that the 80m bandwidth

could drift far enough in bad weather to cause an SWR problem.

SWR Bandwidth of Trap Dipole

40/80m Trap Dipole	80m	40m
2:1 SWR Bandwidth	55 kHz	196 kHz
3:1 SWR Bandwidth	87 kHz	424 kHz

The trap dipole is a good antenna for 40 meters. It covers almost the entire band with useful SWR bandwidth. It will cover the entire 40m band using the built-in tuner in a modern radio. An old tube type radio with a pi section output should have no problem. On 80 meters, it is a different story. The bandwidth is so narrow that you will have to pick out what part of the band you want to use and pretty much stick to that. Be aware that weather conditions will cause the SWR to drift down the band. Although the trap dipole is a one-wire antenna that is easy to install, 80 meters is temperamental. Trap dipoles are good for quick portable temporary antennas.

Fan dipole

The 40/80m fan dipole is a double dipole; it has two full sized dipoles connected to a common center insulator. The 80m dipole is 130 feet long, and the 40m dipole is 65 feet long. Although the two antennas are connected in parallel, only the 40m signal finds its way to the 40m dipole, and only the 80m signal finds its way to the 80m dipole. Consider this to be the miracle of electronics. Fan dipoles can be made for more than two bands. You can connect three or four full sized dipoles together in parallel for multi-band operation. The antennas tend to have de-tuning effects on each other, so during the initial SWR tuning there is a lot of going back and forth from one antenna to another. Getting the SWR in alignment on all the dipoles can be a bit of a challenge. That is because what you adjust on one antenna effects all the others. But eventually with patience, you will get all the bands tuned-in and working well.

The fan dipole is a rather good choice for anyone that has limitations on the number of separate

antennas and feedlines you can bring into the house. You only need one feedline and one common center insulator for a fan dipole. As far as each separate antenna is concerned, it is best to try to physically separate them as much as possible. The ideal situation for this 40/80m dipole is to place the two dipoles orthogonal (at 90 degrees) to each other. However, I did not do this. I had two other dipoles in the same area, so the sky was getting a bit crowded. I elected to run the short 40m dipole together with the 80m dipole. The two dipoles were in parallel and separated by 8 inches. I held the two wires in place with 22 separating insulators spread along the 40m wire. The spacing insulators were made from half inch PVC pipe, were roughly three feet apart, and had holes drilled to accommodate 8 inch spacing between the two dipole wires. There was a little interaction between the 40 and 80m antennas due to the close spacing, but it was not a problem.

The fan dipole did not have the extreme narrow bandwidth problem that the trap dipole had. There was some bandwidth narrowing, but it was minimal. I measured the 2:1 and the 3:1 SWR bandwidth for both bands of this antenna with the antenna installed as described above.

SWR Bandwidth of Fan Dipole

40/80 Fan Dipole	80m	40m
2:1 SWR Bandwidth	160 kHz	110 kHz
3:1 SWR Bandwidth	268 kHz	230 kHz

The fan dipole is a good multi-band antenna for anyone that wants multiple HF bands but does not want the clutter of entirely separate antennas and feedlines. The performance is similar to separate full-size dipole antennas with a small reduction in bandwidth.

An unanticipated bonus in my installation

I have three dipoles in the air in my back yard. One is a full size 75m dipole. Another is a 140-foot general purpose doublet (140 ft dipole with parallel transmission line). And the third is the 40/80m fan dipole that I just described. The doublet crosses under the 80m leg of the fan dipole at an angle of 60

degrees, and they come within 4 feet of each other. There is coupling on 80m between the doublet and the fan antenna. When antennas couple to each other, it usually causes problems with the SWR. In this case the coupling was beneficial. The small amount of coupling caused the SWR curve to widen out, which caused the 2:1 SWR bandwidth to improve. The 3:1 bandwidth improved a little but not as much as the 2:1 bandwidth. The effect here was similar to a sleeve dipole with a parasitic element. There was no effect on 40 meters.

SWR Bandwidth of Fan Dipole with coupling to 140 ft Doublet

40/80m Fan Dipole w/ coupling	80m	40m
2:1 SWR Bandwidth	209 kHz	110 kHz
3:1 SWR Bandwidth	284 kHz	230 kHz

Summery

The Hy-Power Antenna Company manufacturers high-quality HF wire-antenna and balun products. Barry is a joy to deal with. His service is not just lip service, rather he is genuinely committed to satisfying his customers with high quality products and genuinely great service. I was very favorably impressed with Barry and his products, and I recommend Hy-Power Antennas to all hams. Simply put, Barry makes his money the old-fashioned way. He earns it.

Contact information:

Hy-power Antenna Company
610-317-9779
www.hypowerantenna.com

Hi fellow Phil-Monters,

If any of you have a multi-band dipole (including 80 meters) and/or 30-50' of low-loss coax that you aren't using, I would be interested in borrowing or buying/trading for it after the Covid-19 crisis is over.

By the way, I am also interested in acquiring a deep cycle battery and trickle charger.

I also have the following to sell or trade:

- AmComm Clear Speech base noise reduction unit.
- Icom IC-V82, 2 Meter handi-talkie with two hand mikes, AC charger, extra battery, & battery case.
- Radio Shack Pro-2050, VHF/UHF, 300 channel programmable scanner.
- Icom AT-500 HF Auto Tuner - untested.
- Vintage Kenwood KR-3130 Analog Stereo Receiver. Works well; needs two replacement light bulbs.
- Vintage Sansui AU-101 Solid State Stereo Amplified. Low Power, works great, some veneer missing on trim.
- Vintage Pair Bose 2.2 Bookshelf speakers.
- Pair Sound Lab bookshelf stereo speakers.
- Pair JBL Northridge Series N26 stereo speakers.

Many thanks to Steve, WU3I for making two trips over here to fix my antenna. I was waiting to have a tree trimmed with lots of dead branches which were in the path of antenna. He really did a great job!

73,

Frank
W3MHP
(267) 303-8819
frank.j.kohn@gmail.com

For Sale

1/8" (290#) & 3/16" (380#) Dark Olive Drab Braided Cord · 100% Polyester/Dacron Knit Braided. Nice stuff! Tough and long lasting · UV Resistant and Low Stretch Proudly Made in the U.S.A.! Contact Steve WU3I at wu3i@arrl.net or 215-605-6074

July at Phil-Mont

Don't forget the ARES net on Sunday nights and the Digital net on Tuesday night

*4 Sat Independence Day
5 Sun WA3GTL
12 Sun W3MHP
19 Sun KC3DII
26 Sun K2RSJ*