

THE AERO AERIAL



The newsletter of the Aero Amateur Radio Club

Volume 6 Issue 7
July 2009

Editor Frank Stone AC3P

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ABOUT THE AERO AMATUER RADIO CLUB

Meetings: First and Third Wednesdays at 7:30 pm at Coffman's Diner
(Middle River and Orem's Rd.)

Nets: See Local Area Net Schedule

Repeaters: W3PGA (147.24 MHz - / 449.575 MHz -)

WEBSITE: <http://mywebpages.comcast.net/w3pga/>

Net Reports

2 Meters: WB3FMT(NCS) W3JEH W3VRD KB3JVP KB3KRV AI3G AC3P KB3JDE
KA3SNY

10 Meters: AC3P (NCS) K3ROJ W3VRD WA3TAD AI3G KB3JVP W3JEH

6 Meters: AC3P(NCS) K3ROJ AI3G W3JEH (cross-band) AC3F KA3SNY

LOCAL AREA NETS

Day	Time	Frequency (MHz)	NET NAME
Daily	9 – 10 am	147.03	ORIOLE Net
Daily	6 – 6:30 pm	3.820	Maryland Emergency Phone Net
Daily	6:30 – 7 pm	146.670	Baltimore Traffic Net
Daily	7 pm and 10 pm	3.643	Maryland/DC/Delaware Traffic Net
1 st Tues	7:30 pm	145.330	Baltimore ARES Net
2 nd Tues	7:30 pm	146.670	Baltimore County <u>RACES</u> Net
2 nd Wed.	8 pm	28.445	AERO ARC Net
4 th Wed	8 pm	147.240	AERO ARC Net
5 th Wed.	8 pm	449.575	AERO ARC Net

Station Activities

K3ROJ AI3G and **AC3P** were active for the June VHF Contest.

AC3F was heard on 6 meters. **W3JDF** made an appearance on the .24 machine.

Back to the Old Format

This issue of the *Aerial* marks a return to the original format. Although it may not be as pretty as the *Microsoft Publisher* product. It is much easier to produce this way and to make changes. The Editor found the *Microsoft Publisher* version cumbersome due to the word count limitations for the various columns and often space would be empty in some articles or overflow to other pages with longer ones. Sometimes plain can be better.

VE Testing *by AC3F*

A test session was held on Saturday May 30th at White Marsh. Six applicants took exams. Five successfully passed their Tech exams. Congratulations to new op's ; Dan Benfield, KB3SZU, Kristopher Shaw, KB3SZV, Miguel Quiles, Jr. KB3SZW and Thomas Pepper, KF7CZC.

Thanks to VE's WB3FMT, KB3KRV, ND3D, AI3G and AC3P for helping with this session.

A special thanks and farewell goes to Doug Emer, AI3G, who is leaving the AERO VE team to move to Milford Delaware. Doug has been one of the stalwarts of our VE program. He returned to ham radio after many years absence through our test sessions and upon reaching Amateur Extra joined the team.

We will miss Doug at the coming sessions and extend a standing offer that if he should decide to open a test session in Delaware the Aero VE's will make trip to help him out, especially if those sessions are near HRO.

Farewell To Channel 2

As many an old timer knows one of the reasons the Six Meter Band was sparsely populated in the Baltimore area was the presence on WMAR-TV on the 54 – 60 MHz band also known as channel 2. The close proximity of this channel to the 50 – 54 MHz amateur band made front-end overload to local receivers from 6 meter transmitter a curse to many who tried to ply the “magic band”. Additionally second harmonics from 10 meter transmitters also had a detrimental effect.

But everything changed on June 12, 2009 with the implementation of Digital TV. Television stations that occupied channels 2 through 6 were re-allocated to UHF.

To celebrate the move the Aero Amateur Radio Club held a “Farewell to Channel 2 Net on 50.24 MHz. At 8 pm. on June 12th. Aero members AC3P AC3F AI3G W3JEH K3ROJ and KA3SNY swapped their six meter stories and saluted the move of WMAR-TV. The net ran for over one hour and makes us wonder if more six meter nets maybe in the future.

Public Service

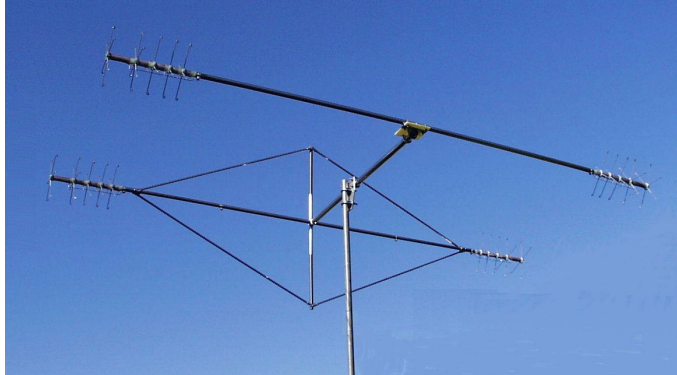
On the Weekend of June 12-13 Bob Landis, WA3SWA, assisted with communications for the MS Bike Tour that was held in Chestertown, Md. Bob said that the Bike Tour was coordinated by BRATS while MS Challenge Walk was coordinated by the Kent ARS which held a separate net on another repeater

Bob also reports that BRATS will not be doing the July 4 Parade in Towson this year..

Product Review

TGM Communications

MQ-2 Hybrid Quad *by AC3P*



During the early '60's through 80's there was a small antenna company in Pennsylvania called Mini-Products. This company specialized in compact antennas for amateur radio. The company had 3 mail products, a 12 foot Vertical for 20, 15, and 10 meters, a 2 element short driven element/director beam for 20, 15, 10 and 6 meters and a 2 element mini-quad which consisted a driven element and diamond-shaped reflector also for 20, 15,10 and 6 meters.

During the mid '70s this author used the 2 element mini-beam with great success but it was damaged during a move and sold.

In the 1990's Mini-products went out of business and a Canadian company T.G.M. bought the rights to the "mini-quad" design. The antenna which is sold by mail order out of Canada is now called the Hybrid Quad. There are several model offered, but the focus of this review is the MQ-2.

The MQ-2 Hybrid Quad is a two element beam antenna. It consists of a driven element and an enhanced reflector on a four foot boom. On both elements are a series of loading coils and capacitance spokes for 20, 17, 15, 15, and 10 meters. The antenna is also capable of operating on 6 meters.

Each element is 11 feet in length. The diamond reflector spans 4 feet, top to bottom. With these dimensions, the hybrid quad has a turning radius of a little over 7 feet, making it an ideal antenna for amateurs with limited space.

Assembly is fairly straight forward with only a screwdriver and wrenches needed. Fitting the aluminum boom to the boom-to-mast plate was no problem. The trickier parts came with putting the diamond together matching the metal to PVC insulators. Also requiring care was connecting the two halves of the driven element to the center insulator bakelite board and attaching the assembly to the boom.



Driven Element Feed-point

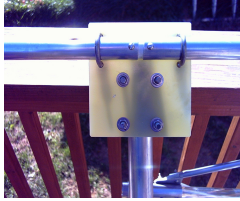


Diamond Reflector



End of Diamond

After completing those steps was fastening the spokes for the capacitance hat to each of the coil rings. Helping with this process was the fact that the primary spokes were marked for each band. Probably the most difficult part was attaching each of the four tuned circuit assemblies to the elements on the antenna.



Completed DE to Mast



Loading Coils

Once the assembly was completed came the challenge of adjusting the antenna's operating frequency. As with all shortened antennas the MQ-2 has a narrow S.W.R. curve. Tuning the antenna is accomplished by shortening the spokes on each of the tuned circuits for each band.

Fortunately I discovered that for operating C.W. No tuning was necessary. Using antenna analyzer test results showed that the antenna resonance was close to or in the intended range of operation. Any other frequencies could be handled with an antenna tuner.

The S.W.R. frequency ranges looked like this:

20 meters - 2:1

17 meters - 1.7:1

15 meters - 1.5 :1

12 meters - 1.8:1

10 Meters - 1.5:1

6 Meters – 3:1.

The MQ-2 is small enough to be mounted with standard TV antenna hardware. So with the help of several younger guys (actually they did all the work). The antenna was mounted on a TV antenna tripod using 5 foot lengths of aluminum mast. The hf antenna was accompanied by a VHF/UHF beam and topped off with a 2 meter/440 vertical on a Yaesu G450A rotators.



Installing the array

The true test on any antenna in operating on the bands. The antenna specs claim the following gain for each band:

- 20 meters – 4.4 db
- 17 meters – 5 db
- 15 meters – 5.5 db
- 12 meters – 5.8 db
- 10 meters - 6 db
- 6 meters - 6.5 db

The front to back ration is claimed to be 12 to 17 db.

While these figures are not as good as mono-banders for for each of the bands they do represent an improvement over a simple dipole or vertical antenna.

While the only measuring device available was the S-meter on an ICOM IC-706, the writer can report a noticeable improvement in overall operation when compared to the 160 through 10 meter vertical mounted on the ground. The first thing the operator noticed was that the noise level dropped from an S7 on the vertical to an S3 on the hybrid quad and that signals that could not previously be heard were now loud and clear. Also when turning the hybrid quad, signal broadside would actually null out. Signals coming from the back of the beam were about 5 S units lower than when the antenna was pointed in the direction of a transmitting station.

On the transmit side almost all the signal reports ranged from S 5 to several db over S9 when running 100 watts output.

Among stations worked were OZ5DX on 20 meter cw, ZS6CCY on 20 meter phone, MM0ABB on 20 meter PSK31, 9Z4CT on 17 meter phone, YV5KAJ on 17 meter PSK31, and KD0CIU on 10 meter phone.

On 6 meters, in spite of a relatively high S.W.R. the operator made 59 contacts on the “Magic” Band .

To sum it up, this operator found the T.G.M. Hybrid Quad to be a good compromise antenna for an amateur operator with limited space. However for anyone considering this antenna, keep in mind that it must be ordered direct from Canada and the price fluctuates based on the monetary exchange rate. Fortunately for the author this antenna was on e-bay new in the box for half the price.

July 2009

SUN	MON	TUE	WED	THU	FRI	SAT
			Meeting Coffman's 7:30 p.m. 1	2	3	4
5	6	7	10 Meter Net 28.445 Mhz 8 p.m. 8	9	10	IARU DX Contest 11
IARU DX Contest 12	13	14	Meeting Coffman's 7:30 p.m. 15	16	17	18
BRATS Hamfest Howard Co. Fairgrounds 19	20	21	2 Meter Net 147.24 Mhz 8 p.m. 22	23	24	25
26	27	28	70 Cm. Net 449.575 Mhz. 8 p.m. 29	30	31	

Ham Tags A Police Magnet?



Has anyone else had this problem?

Beginning about a year and a half ago, AC3F and AC3P started being pulled over by law enforcement officers while driving. Most of the time the stops occur in Baltimore County, but it has happened in other jurisdiction.

When these stops occur the officer invariably says that he or she was doing a routing check on the license plate number and gets a “Not Registered” returned. This despite the fact that the registration card and stickers are up to date.

After several of these stops the MVA was contacted. When an MVA clerk did a check, the tag information came back correct.

The problem seems to occur in how the MVA system is queried for Ham Tags. On the registration card is a Class Code. For Amateur Radio plates this code is “**HMM**”. When keying in the information, the Class Code should precede the Call Sign. For example Md. Tag **W3PGA** should be keyed in as “**HMMW3PGA**”.

So if you have Amateur Radio plates and one of the County's Finest or a State Trooper tells you your tags are not registered, asked that he or she include that class code when doing a registration search.