

Crosstalk is published monthly by the
GLOUCESTER COUNTY AMATEUR RADIO CLUB

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CLUB NETS

2 M FM	78-19---Sunday, 8:00 PM Local Time
6 M AM	50.9----Sunday, 8:30 PM Local Time
10 M RAG CHEW	28.8----Friday, 9:30 PM Local Time
15 M SLOW NET	21.175--Friday, 7:30 PM Local Time

THERE WILL BE A MEETING IN SEPTEMBER 7TH AT NATIONAL PARK. THIS IS A NEW MEETING PLACE! BE THERE!

**DEADLINE FOR SUBMISSIONS FOR THE SEPTEMBER ISSUE IS SUNDAY, AUGUST 28, 1977
PLEASE MAIL ANY CONTRIBUTIONS TO RAY MARTIN, WB2LNR,

PRESIDENT'S CORNER:

Where has the time gone? Summer seems to be flying by! Seems like just yesterday all the members were planning for Field Day and, at this writing, Field Day was over a month ago and Labor Day is only a short month away.

I regret I was not able to participate in Field Day this year. Anyone with back problems can sympathize when they find mine acted-up on me just a few days before the big week-end. I was able to come out and make the round on Sunday morning. I was really impressed with the various installations, particularly the Novice station. And, they were rattlin' the key like old pro's - a sight I really enjoyed watching. Of course, I'm biased because I like CW operation. Always did prefer scraped knuckles to a sore larynx. Just something about CW that seems to be more relaxing for me after a long day at the salt mines.

At any rate, the reports I've received so far indicate Field Day was a success, if only in providing an opportunity for so many of our members get together and give their "all" in a team effort.

Thanks to the effort of CROSSTALK Editor, Ray Martin, WB2LNR, the Club has a new, temporary meeting place. The site is the Boro of National Park Municipal Building right in the center of the town at the corner of Hessian Avenue and Grove Street. Our first meeting at this new location will be on September 7, 1977 at 8:00 PM. Come out and look over your new meeting place. You'll be pleased with it. Only seven steps up from the street level and large enough to hold our almost 100 members, it is also air-conditioned if that is needed.

Our Club Picnic went down the drain due to lack of response by the members. That's a shame because Ray Martin and Wayne Wood did a lot of leg work to try to give the members a good activity. A lot of hands went up at the June meeting saying, yeah, I want to go to a picnic. But there was no money in those hands. So be it!

Seems nobody wants to participate in anything (except Field Day). Couldn't even get a quorum for the Board of Directors meetings in June or July. You members should think of this at the next election time, but that's another matter for another column sometime.

See you September 7 at 8:00 PM at the National Park Municipal Building.

Herb Schuler, K2HPV

NEW AMATEUR COMMUNICATOR LICENSE:

Data obtained from the Amateur Division Federal Communication Washington DC (602-632-7250). July 26, 1977

The new proposed Amateur Communicator's license was brought up for discussion Thursday July 21, 1977 at the Commission's meeting.

No decision was made at that time as to when it will be authorized. There are sure to be some revisions of the basic concept as now opted:

BASIC CONCEPT

1. Voice communication on 220-250 Mhz (shared with military) 420-450 Mhz. (Power restriction in certain locations limited to 50 watts)
2. Examination to be the Technical portion of the Novice license. Examination to be taken at the Commission's Field Offices.
3. Earliest possible authorization Winter of 1978-Early 1979.
4. Commission considering the problems that the new license will bring: Financial problems, frequency coordination, and regulatory enforcement.

K2JF

OFFICIAL BULLETIN NR 660 FROM ARRL HEADQUARTERS
NEWINGTON CT JULY 23, 1977 TO ALL RADIO AMATEURS

The ARRL Board of Directors at its second meeting in Hartford CT on July 21 and 22, 1977, approved an approach for the League's response to the fifth notice of inquiry on Docket 20271, the WARC proceeding which will determine the U.S. position on Future frequency allocation. A full time staff coordinator for Washing ARRL activities was approved. The Board endorsed retention of the Novice program and the present novice examination level and the general counsel was instructed to petition FCC to extend the 80-meter Novice band to cover 3675 to 3750 Mhz. The Board renewed its request for increased voice segments already on file in comments on Docket 20282. An ARRL Hall of Fame will be established under guideline to be drawn up by the Headquarters Awards Committee. The ARRL request to authorize Technician licensees on any part of 50 and 144 Mhz bands will be renewed. A four part program for League Representation by the President, First Vice-President, General Manager and General Counsel to congressional committees was adopted. A group insurance program for League members on a voluntary participation basis was approved. Matters committed to committee study include a program to encourage amateur microwave activity, confirmation requirements for single mode DXCC, rules for providing availability of ARRL member mailing lists, categories of club content participation, was mileage requirements, zero base budgeting of funds authorized by the Board of Directors and ARRL band plans for 50 Mhz. and above. Other actions included preparation of lists of stolen gear to be made available on request to amateurs and dealers for a trial period of one year; endorsement of a proposal to establish a code of ethics for advertisers; encouragement of expansion of amateur examination opportunities at conventions and hamfests; authorization of a request for special FCC temporary authorization for a study of narrow bandwidth television! on 10 meters; instruction to the General Manager to provide a legal guide for antenna problems; provision of home information in QST on low priced gear for novices; renewal of effort to permit use of ASCII by amateurs; urging of favorable FCC action on providing spanish language amateur exams; publication of a QST article on Woman's image in amateur radio; increase in auto travel rate to 17 cents per mile; request for more flexible hours for FCC amateur exams; dissemination to members of complete information on RFI legislation. Commendations were made of former director Albright for the EC Workbook and of the DX Advisory Committee for its exhaustive survey. The proposal to start DXCC over in 1980 was defeated. Complete minutes will be printed in September. QST. AR.

If you agree that the FCC should be adequately staffed to do its job, you could help ease their burden by writing letters to your Senators and Representatives. Your letters should express your desire to staff the FCC with the people they require. The Office of Management and Budget (OMB) has cut the FCC Gettysburg staff at a time when it needs to be increased. Most amateurs know that their local FCC examination offices and monitoring stations are also understaffed. Please take the time to write at least one letter to your Congressional Representatives. If you want a sample letter to modify for your own use, just send your request and SASE (self-addressed and stamped envelope) to Bill Welsh (W6DDB) at W6LS. (From LERC ARC Bulletin)

HAMFEST AND PICNIC: SUNDAY, SEPTEMBER 11TH. NICE PRIZES FOR ALL. IT WILL
IT WILL BE A MOLIA FARMS, MALAGA, N.J. LOCATED NEAR THE JUNCTION OF Rt. 40
AND 47. TALK-IN FREQUENCY 146.52 Mhz. SPONSORED BY SOUTH JERSEY RADIO ASSOC.

NEW PRODUCTS:

1. Digital VOM Model #2000: Sabtronics International, Inc. is advertising a VOM kit at a rather attractive price. The unit is portable, being battery operated on 4 "C" cells. This makes it easy to make tests out in the car, without having to run a long AC cord out the window. Voltage ranges run from 100 uv to 1000 volts AC and DC, while current readings can be taken up to 2 amps. Resistance in 6 ranges from 1 ohm to 20 million will cover just about all ham tests. Size of the 4 digit instrument is 8" wide by 6½" deep by 3" high. As of this writing, the kits are in such demand that there is a 4 week wait for delivery. Price Kit \$60.00. P.O. Box 64683, Dallas, TX 75206.
2. General Coverage Receiver: McKay Dymek Co. is selling a fully synthesized digital readout receiver that covers 50 Khz. to 29.7 Mhz. Frequencies are read on a 5 digit LED display. Crystal filters are used in the first and second IF amplifiers, while a ceramic filter is used in the third IF. The frequent is set using four rotatory switches and a fifth knob for fine tuning over a range of 5 Khz up or down. A front panel switch selects either 4 or 8 Khz bandwidth. Unit size is 17½" wide, 14½" deep by 5" high. Price \$995. 675 N. Park Ave., P.O. Box 2100, Pomona, CA. 91766.

THE AMATEUR'S BEST FRIEND:

from THE GROUNDWAVE, Ottawa, Canada

When it comes to interference problems, there is a simple device that most North American hams have overlooked. Thanks to our friends in the U. K. we have recently become aware of the use of ferrite rings which do a lot of neat things to reduce interference.

There is no doubt that the ferrite core is the most useful device available to amateurs in the never ending battle against breakthrough (Interference here is breakthrough there.). You might even call it "breakthrough on breakthrough".

A big advantage in using these ferrite donuts is that in the majority of cases, the leads to be filtered do not have to be cut and the filters are used external to the equipment affected. They are easily removable, and the resale value of the equipment is unchanged. This device is a wideband unit and is equally suitable for use on UHF, VHF, TV or radio, hi-fi, AC line filters, etc.

Most cases of interference to stereo systems can be traced to long unshielded speaker leads. Up to now, we have recommended shielded wire as a cure. A few turns of the unshielded leads around a ferrite ring (Amidon, Phillips, or Mullard Model No. FX 1588) will do the job. Usually about eight to ten turns is enough but neither the number of turns nor the grade of ferrite used is critical. They may be used for both receiving and transmitting purposes.

If rings are not suitable, transistor ferrite radio rods is a good second best in many cases. Also, ferrite cores can be scrapped from TV Fly-back transformers.

(From Amateur Radio News Service)

ARE YOUR SOMEBODY ELSE?

There's a clever person called Somebody Else. There is nothing that person can't do. Busy from morning 'til way late at night. Just substituting for YOU. You're asked to do this, you're asked to do that. And what is your ready reply? Get SOMEBODY ELSE, CHAIRMAN, They can do it better than I. There's so much to be done in our Club, So much and the workers are few, And SOMEBODY ELSE is getting tired and worn Just substituting for YOU. So, next time you're asked to do something Just give them this honest reply: If SOMEBODY ELSE can give time and support, You can bet your last dime, SO CAN I.

NEW MEETING PLACE: SEPTEMBER 1977:

Your new place of Hamming Workshop is now officially The Municipal Building of the town of National Park. It is located on Grove Avenue and Hessian Avenue, (Right behind the Post Office) (which is across the street from RPM Electronics) (which is located next to the National Park Fire Hall) If you are traveling south on Rt 130 or Rt. 295 look for the signs that say: Red Bank Battlefield and follow them, if by some strange and mystifying reason you miss all of these landmarks that I have heretofore stated in the above, and you wind up in front of the gates to this famous and beautiful monument, turn the hell around, and come back three streets and make a right hand turn it will be time to make another right hand turn into the parking lot. If you are coming from the south and are heading North on Rt. 295 or Rt. 130 follow sign to National Park. They will all lead to 'the same intersection; Hessian and Grove Avenues. If you are still lost and you have a 2 meter FM Transceiver handy tune up on the Barnesboro Repeater which is 78/18 and you will be sure to get the information that you so badly need. If all else fails ----- GO HOME!!!!!!

BY THE WAY -- The program for this first meeting in the new hall is to be about emergency communications. The guest speakers will be the Communications Director who ran everything at the Johnstown, PA Flood (WA3HGX-- Mr. Vince Quaresima) and another abeled body communicator who was his right hand man during the entire emergency (WA3RKM -- Mr. Steve Houck) ... Together they are going to describe the never-ending hours spent on such an emergency. Yes, you can ask them question. ...

One more thing you might be interested in (for all of us 6 meter nuts) WA3HGX--Vince is now in the process of erecting which will probably be the largest 6 meter antenna in history. It will be a 48 element 12 level horizontally polarized collinear stack. WOW ... Gain is 18 DB over Dipole, Horizontalabeamwidth is 65 Degrees, Elevation angle is less than 5 degrees, projected scatter range will be 1500 miles, fixed in a westerly direction. If this doasn't excite a 6 meter nut, nothing will. With any luck, Vince will have pictures of this location. Hope to see you-all there.

One more interesting thing about the new meeting place. YOU ONLY HAVE TO CLIMB S-E-V-E-N 1-2+3+4-5-6-7 (**7**) STEPS TO GET FROM THE GROUND, TO THE HALL ... So all of your members that couldn't get to the top before, can now come in and meet face-to-face the people you have been talking to for the last Ten Years. ...

Best Regards, WB2LNR
Raymond R. Martin.

A MULTIBAND ANTENNA SANS TRAPS:

This article is in response to inquires to me as to the type of multi-band antenna that I am presently using.

The decision to use a single wire multiband antenna is the result of a remark made by the XYL.

We were driving down the Schuylkill Expressway near Conshohocken when some friends in the back of the car noticed the TV "antenna farm". The XYL's friend made a mention of "Look at all those aerials." The XYL casually remarked, "Yes it looks like our back-yard." Enough said.

MULTIBAND ANTENNA (Cont'd.)

No antenna is really all-purpose or truly all band but this one comes close.

The harmonic relationship of the high frequency amateur bands has over the years generated a multitude of multi-band dipole design. This is, a dipole form which can be fed with a single or at the most two feed lines and operated on several or preferably all bands 80--10 meters, sans turning adjustments. "Trap" type dipoles have some major disadvantages. They are usually fairly sharp resonance within each band so that it is difficult to impossible to obtain optimum performance in both the CW and phone portion of each band and the physical loading of the antenna structure due to the trap components.

The following is a description of an antenna design which has proven popular and interesting. One may copy the design direct or it may provide some useful idea for individual experimentation with antenna design.

The antenna described herein is often call the G5RV antenna. G5RV is the amateur radio callsign of R.L. Varney of Sussex, England. He is credited with having developed the antenna although Collins Radio had a very similar one developed in 1930. However, Varney developed it primarily for the amateur bands.

The antenna design lends itself to various methods of mounting. My present mounting is a flat-top horizontal type. (Fig. 1) but, the use of this antenna as a inverted V (Fig. 2) has been proven in a number of cases. My antenna, flat-top, is made from No.12 AWG antenna copper wire. The overall length is 102 feet with each leg being 51 feet long. At the center of the flat-top is a standard glazed porcelain insulator that isolates the two legs of the flat-top from each other. Connector to the 2 legs is 30 feet of 1 KW 300 ohm TV type solid dielectric ""twin lead." If you decide to connect 300 ohm open wire feed line, connect 35 feet of open wire at this point. The difference in length takes into consideration the difference between the velocity of propagation of a radio signal along a two-wire "open" line spaced with air dielectric or along a two-wire line spaced with plastic dielectric material (Twin lead VP-.82).

The other end of this line is connected to a 1 KW 1:1 balun. The other side of the balun (the transmitter end) is attached to 50 ohm coaxial cable. In my case I am using RG8A/U. The coaxial cable connects to a PL259 coaxial male connector which in turns connects to the balun. It is important that the length of the cable should be at least 68 feet, but it may be longer if necessary.

The use of the balun is not absolutely necessary but it will help in keeping distortion down the surrounds a unsymmetrical line. The electrical; field surrounding a unsymmeterical line will tend to be large, and may even interact with the field of the antenna, distorting the pattern of the antenna. An example of such a line is the Amphenol Twin-lead, the 300 ohm line. The two wire line should not be used in the vicinity of metal objects or the ground because of the possibi lity of capacity unbalancing the system to ground. You will find as I did, that it is desirable to keep the feedline at least several inches away from any objects. I used the long TV standoff insulators to keep the 300 ohm line off my roof and side of the house.

If you are fortunate enough to have total clearance for 30 feet all the better. It is important to make sure that the feedline is at right angle to the antenna. As with any antenna, the feedline is preferably led away from the antenna at 90° and should not lie underneath either of the antenna's leg. Remember that balun for the connection (if you should use one) is a 1:1 and not a 1:4 balun.

The antenna is slightly "short" on 80 meters and the 300 ohm line section serves as a form of matching stub on this band and a combination of stub and/or impedance transformer on the other bands.

MULTIBAND ANTENNA (Cont'd.)

A VSWR maximum of 2:1 can be achieved across most bands with a minimum of about 1.3:; at the best frequency within the band. I was able to achieve 1.5:1 at 7.2 Mhz. sans tuner. If one does not use a Transmatch, you should take some time to properly trim the 300 ohm line section for the best VSWR, particularly on 20 and 15 meters bands. A few feet, plus or minus, depending upon the installation environment, can make a considerable difference in the VSWR on 20 and 15 meters. If you have an antenna tuner the adjustment of the 300 ohm line is not critical. I have been able to make 1:1 match from 3.5 to 29.7 Mhz using the transmatch.

An objection to the antenna may be that if used as an inverted V the polarization may be wrong. This can be dismissed on frequencies below 30 Mhz. Regardless of the plane of polarization, the high frequency wave returned to the earth from the ionosphere usually has random polarization as the wavefront is distorted by the action of reflection from a non homogeneous surface. Thus, the orientation of the antenna has little effect upon the received signal in most cases.

For frequencies above 30 Mhz. this antenna is NOT recommended. An important factor, therefore, in the choice of horizontal versus vertical polarization appears to be the condition of the ground in the vicinity of the antenna. Unless a good reflecting surface such as a salt marsh, a body of water, or a set of copper radial wires is at hand, horizontally polarized antenna is recommended for best performance.

After considerable searching and research, as far as cost of construction goes as related to performance, I found this antenna design is about the best design for multiband operation. No antenna is supposed to do everything well, and this one is no exception, it does however, represent a nice compromise between cost, space, and performance.

Some technical gob-legook for those who want it:

At 80 meters the twin lead 300 ohm line acts like a dipole matching stub for a $3/8$ wave antenna.

At 40 meters the center part of the antenna looks like 1800 ohms hence if one wishes to use 50 ohm coax a transformer is necessary. One that looks like 50 ohms at one end and 1800 ohms at the other. So

$$Z_{TRANS} = \sqrt{Z_{ANT} \times Z_{COAX}}$$

$$= \sqrt{1800 \times 50}$$

$$= \sqrt{90000}$$

$$Z_{TRAN} = 300 \Omega$$

The Northern Virginia Amateur Radio Council is sponsoring the 1977 ARRL Virginia State Convention, to be held September 16-17-18 at the Ramada Inn, Tysons Corner, VA. For Details write NOVARC, P.O. Box 682, McLean, Va. 22101.

The Mt. Airy VHF Radio Club, Inc. presents "Hamarama '77" and Mid-Atlantic States VHF Conference, to be held October 1-2, 1977.

The conference will be on Saturday, October 1, 1977--9 AM to 50 PM, Treadway Inn on Easton Road (Rt. 611--Exist 27--PA Turnpike) Willow Grove, PA 19090. Buffet dinner at 7:30 PM \$8.00.

The Flea Market will be on Sunday, October 2, 1977--8 AM to 4 PM-- Rain or shine, at Bucks County Drive-In Theatre, Easton Road (Rt. 611--4 miles north of Willow Grove, PA.) Warrington, Pa.

For further information, call WA2AXV, Ron Whitsel, Chairman,

KNIGHTS RAIDERS VHF CLUB K2DEL : AUCTION & FLEA MARKET AT St. Joseph's Church of East Rutherford, N.J., Saturday October 8, 1977. Free Admission Free parking. Talk-in on 146.53 Mhz.

CONGRADULATIONS; goes to WB2JXX who is now N2SI. Typist was the first to work the new call on 2 FM. Thanks, John, N2SI.

DON'T FORGET WE ARE NOW MEETING IN NATIONAL PARK, N.J. THE NEW MEETING PLACE WILL BE THE BORO HALL, IN NATIONAL PARK, N.J. BE SURE TO BE THERE.