

THE MONITOR

January 2014

Published Monthly for members of the Amateur Radio Clubs in Virginia's Central Shenandoah Valley

MARA Meeting: Wood Grille, Harrisonburg

The **Massanutten Amateur Radio Association, Inc.**, will hold its monthly meeting on **Thursday, January 2nd** at the normal location: the **Wood Grill** at 1711 Reservoir Street in Harrisonburg. Dinner starts at 6:30 pm. All hams and their families are invited and welcome. After dinner, a short business meeting will be held.

PVARC Meeting: Page County Sheriff's Department, Luray

The **Page Valley Amateur Radio Club** will hold its regular meeting on **Friday, January 3rd**. The meeting will be held at the Page County Sheriff's Department at the former Page County ARES meeting place. If you have not been there, full directions will be given in the upcoming meeting announcement prior to our next meeting. The meeting begins at 1830 Hrs. A program on frequency synthesis will be presented by Gary Fischer, K6OZ. All are welcome to attend.



VARA Meeting: Country Cookin, Staunton

The **Valley Amateur Radio Association** will hold its monthly club meeting on Tuesday, January 7th at the **Country Cookin in Staunton, 1015 Richmond Rd. on the first Tuesday of the month. Directions: I-81 to Exit 222, Richmond Rd & Rt. 250 turn West, Country Cookin is on your right in the Martin's Shopping Center.** The meal begins at 6:00 PM, the business meeting starts at 7:00 PM.

Congratulations to the new line up of Officers in the VARA Club. We now have a new President: Greg Czerniak, W4GRC, and a new Treasurer, Wayne Bowyer, N4EYZ. No other changes were made.

Congratulations to all.

VARA Friday Luncheon: Hometown Grille & Buffet, Staunton

The Friday **WEEKLY** luncheons are at Hometown Grill & Buffet (Old Shoney's) at 30 Sanger Lane, Staunton, VA at 11:00am. Directions: I-81 to Exit 222, Richmond Rd & Rt. 250 turn East, Hometown Grill & Buffet will be on the left across the street from Mrs. Rowe's. All that can attend are welcome.



We have two new members in the MARA Club! Brenda, KK4UNK and Zach, KK4RUZ. And two new members arrived in the Page Valley club, Paul, KK4IRS and Brian, W5YQ. Lets make these new member welcome!

Don't forget to renew your club membership!

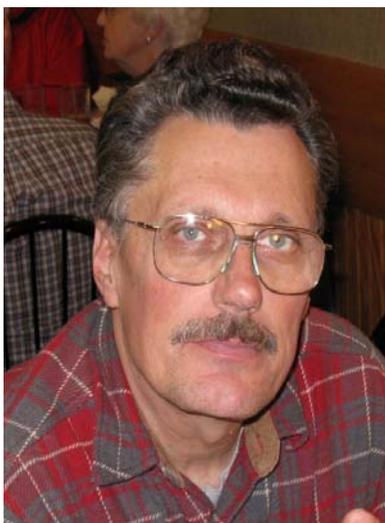
Use the renewal form on the last page of the Monitor this month to send in your dues!

As promised in the November issue of *The Monitor*, the new MARA "reign of terror" has started. Seriously folks, I truly hope nobody is terrorized, other than myself, at the prospect of once again serving as your president. At the present time I'm not sure what will happen this year, but I hope that the usual events are opportunities to get together with old friends and to welcome new ones to our group. Some of the events we have to look forward to are Field Day in June and several public service events, mainly in the fall. Speaking of Field Day, it is time to start thinking and planning for that event. Please consider volunteering to serve on the committee. It seems that every year the same people are involved in these events, and while we appreciate what each participant does, there is always room for new blood and the extra hands would be greatly appreciated. If you haven't taken part in any of these events, 2014 will be a good time to start.



I hope to see everyone at the meeting at the Wood Grill Buffet in Harrisonburg on Thursday, January 2 .

73 for now, Gerald, KN4FM



Out with old and in with the new is what they say. I don't know how new I am, but this is my fifth time as president in 15 years or so. Maybe this time I will get right! First, I want to thank John, W4ZAO for the great job he has done for the past three years. John was a new ham when we asked him to be our president. We throw him into the fire and lo and behold, he came out just fine. Filling his shoes will be hard, but with the help of all the members of VARA, everything should work out fine. The key is working together!

I am looking forward to working with Jeff, W4PJW our Vice President, David, AD4TJ our Secretary, and Wayne N4EYZ our Treasurer in 2014. To be sure, we have our work cut out for us and one of the biggest challenges is finding a way to increase our membership, not just with old folks, but finding ways to attract younger people to Amateur Radio.

Although the ARRL reports that Amateur Radio continues to gain in numbers overall, the ARRL does not know that age groups that account for most of the growth. I attempted some research on the subject, but failed to find the answer. We in the Valley tend to think that Amateur Radio is dying because we do not see a lot of young people getting licensed. I think we may be a bit narrow focused. In other words we assume that the rest of the county is like we are. But when I read QST, I see a lot of young people involved in Amateur Radio. So, let's not give up and throw in the towel, but instead let's look for ways to reach the young. Let's be optimistic!

My first order of business will have already taken place by the time you read this. I met with our officers for 2014 in December to lay out our plans for 2014 and to do a little brain storming on how to improve our club and make it attractive to other hams. The fact is that we have a lot of hams in the area who do not belong to the club and it would be wonderful to get them involved. Each year it seems like there are less hams available for the various public events we help with. We need to change that. That should be one of our goals.

Well, that's it, a short and sweet report for January. I am looking forward to seeing each of you at our first meeting in January at County Cooking located in the Martin's Plaza on Richmond Road in Staunton.

73, Greg, W4GRC, President of the Valley Amateur Radio Association

Subject: From the Metropolitan Police service.....

Are you travelling? Grab a refrigerator magnet on your way out the door!

Always take a small magnet on your vacation , they come in handy at the end of every stop.

This is pretty good info. Never even thought about key cards containing anything other than an access code for the room!

HOTEL KEY CARDS

Ever wonder what is on your magnetic key card?

Answer:

- a. Customer's name**
- b. Customer's partial home address**
- c. Hotel room number**
- d. Check-in date and out dates**
- e. Customer's credit card number and expiration date!**

When you turn them in to the front desk your personal information is there for any employee to access by simply scanning the card in the hotel scanner.. An employee can take a hand full of cards home and using a scanning device, access the information onto a laptop computer and go shopping at your expense.

Simply put, hotels do not erase the information on these cards until an employee reissues the card to the next hotel guest. At that time, the new guest's information is electronically 'overwritten' on the card and the previous guest's information is erased in the overwriting process.

But until the card is rewritten for the next guest, it usually is kept in a drawer at the front desk with YOUR INFORMATION ON IT!

The bottom line is: Keep the cards, take them home with you, or destroy them. NEVER leave them behind in the room or room wastebasket, and NEVER turn them into the front desk when you check out of a room. They will not charge you for the card (it's illegal) and you'll be sure you are not leaving a lot of valuable personal information on it that could be easily lifted off with any simple scanning device card reader.

For the same reason, if you arrive at the airport and discover you still have the card key in your pocket, do not toss it in an airport trash basket. Take it home and destroy it by cutting it up, especially through the electronic information strip!

If you have a small magnet, pass it across the magnetic strip several times. Then try it in the door, it will not work. It erases everything on the card.

Information courtesy of: Metropolitan Police Service.

Thanks Gayle, KU4XN



The VARA and MARA clubs held a joint Christmas Dinner at the Harrisonburg Wood Grill Buffet on December 5th, 2013, at 6:30 pm. After the meal, John Keller W4ZAO, out-going President, welcomed the new officers to the club, and thanked the club for supporting him during his 3 years as President.

There was a good turnout of VARA members, and they enjoyed the meal and the fellowship with the MARA club members, finally getting to put a face with the voice that they had heard on the repeaters and nets but never meeting them before.

Respectfully submitted, with many thanks to Ray Colvin KE4HVR for taking notes, as I was out of town at the time.

David Tanks, AD4TJ, VARA Secretary

MARA Treasurer's Report

MARA Treasurer's Report November 21, 2013 – December 20, 2013

Beginning Balance November 20, 2013 (Last Report)		\$ 3,009.28
Add: Donation – 2013 Bike Festival	200.00	
New Member (1)	12.00	
Membership Renewals (35)	<u>420.00</u>	
Total Deposits		\$ 632.00
Less: Sept – Dec Monitor Printing/Mailing	\$ -200.61	
MARA.ws Domain Renewal (5 yr)	-82.45	
Service Award Plaque	-56.39	
2013 Field Day (Settle w/ VARA)	-23.77	
SVEC (October)	<u>-22.64</u>	
Total Disbursements		\$ -385.86
Ending Balance as of December 20, 2013		\$ 3,255.42



Submitted by Sheryl Tonini, KJ4DOC, MARA Treasurer

"Ode to the Spell Checker!"

Eye halve a spelling chequer It came with my pea sea
 It plainly marques four my revue Miss steaks eye kin knot sea.
 Eye strike a key and type a word And weight four it two say
 Weather eye am wrong oar write It shows me strait a weigh.
 As soon as a mist ache is maid It nose bee fore two long
 And eye can put the error rite Its rare lea ever wrong.
 Eye have run this poem threw it I am shore your pleased two no
 Its letter perfect awl the weigh My chequer tolled me sew.

Larry, KOHNM

YOU MIGHT BE A HAM IF...

1. YOUR WIFE SAID "LETS GO SEE AUNT ANNA" AND YOU THOUGHT SHE SAID ANTENNA!
2. YOUR WIFE SAID "COULD YOU CUT THE GRASS?" AND YOU THOUGHT SHE SAID POUND THE BRASS!
3. YOUR WIFE SAID "WE'VE BEEN INVITED TO BREAKFAST" AND YOU THOUGHT SHE SAID HAM FEST!
4. YOUR WIFE SAID "SOMETHING IS WRONG WITH THE CHECK BOOK" AND YOU THOUGHT SHE SAID LOG BOOK!
5. YOUR WIFE SAID "IS MY SEAM STRAIGHT?" AND YOU THOUGHT SHE SAID, " IS MY BEAM STRAIGHT?"
6. YOUR WIFE SAID " TURN ON THE FAN AND YOU SHOUGHT SHE SAID CHANGE THE BANDS.

Kc9rcx

You might be hard of hearing too!!

PVARC Summary Minutes for December 6th, 2013

The Page Valley Amateur Radio Club was called to order at the Lord Fairfax Community College (Luray-Page County Center) by Bob Forrest/WO4MI, PVARC President at 1830. 13 Members were in attendance. With 13 of 25 members attending a quorum was present to conduct business. There were no visitors.

Announcements: Kudos to John/KT4CB for the nice article and photograph in the local newspaper (Page News & Courier, Thursday, December 5, 2013) on the ARRL Field Day scores earned by PVARC. Great publicity!!

Reports: Secretary reported the Summary Minutes of the November 1st business meeting were published in The Monitor and asked that they be accepted for the record as published. A motion was made, seconded and passed unanimously.

Carol/KA4LAF reported that the current balance at Pioneer Bank is \$1,262.56. No change from last month. A motion to accept the report was made, seconded and passed unanimously.

Bob/WO4MI asked for abbreviated committee reports, to provide time for the technical program.

Widow's Assistance Committee: Chair - Morgan/K4RHD - Nothing pending.

Website Subcommittee: Chair - Geoffrey/WD4LYO & Carol/KA4LAF - No update.

Education/Training Committee: Chair - Morgan/K4RHD - Nothing to report.

Emergency Preparedness Committee & EOC Training Subcommittee still need volunteers to chair!

New Business: Bob/WO4MI opened a discussion on the Valley Health Service antenna issue. Earlier he had been called upon to remove antenna's and a tower thought to be associated with our co-located radio equipment from the hospital roof. After an onsite inspection, he determined that none of the antenna's were ours. While there he informed the hospital staff member that the ham radio equipment at this facility, and the other regional hospitals, were provided through Federal grants and accountability must be maintained until a new communications center (or other suitable space) is obtained and the equipment re-installed. He has been attempting to get in touch with a hospital employee authorized to discuss plans for future re-installation and PVARC support of any regional hospital exercises. Given the regional nature of the hospital system he will coordinate with other clubs.

Old Business:

O Discussion of new meeting place for next month & beyond. (Tabled last month)

Members were informed that an agreement has been made with the Page County Sheriffs Department allowing PVARC to meet for the next 12 months at the former Page County EOC (where we've been doing our monthly ARES training). If you've not been there, full directions will be given in the upcoming meeting announcement prior to our next meeting.

O Discussion of PVARC Incorporation issue. Approved in principle at the September 6th meeting and referred to the PVARC Board for further consideration & recommendation. The Board has considered the issue and recommends making application, noting that such action will result in the expenditure of approximately \$600 in filing fees as outlined in the handout; and, minor modification to our By-Laws as required by IRS and the Commonwealth of Virginia. A motion was made and seconded to: "Move forward with the plan for incorporation; and, expend up to \$600.00 for filing fees." Following a short discussion the motion carried with 12 members voting Aye and one member voting Nay. Carol/KA4LAF and Sparky/KD4KL will follow-up and keep the members updated periodically.

New Business:

Morgan/K4RHD, currently serving on the PVARC Board of Directors, is up for re-election next month. This will be a 2-year term. If anyone is interested in running for this position, they should "throw their hat in the ring" at this meeting. This being the 30 day notification as required in the By-Laws, the vote will be taken next month. {Sec'y Note: No one else stepped forward.}

There being no further business, the business meeting was adjourned at 1910. **Bob/WO4MI** introduced **Brian/W5YQ** who gave a technical presentation on the basics of antenna modeling using the EZ-NEC program; and, associated EXCEL spread sheets he devised to simplify data entry and analysis. The program was very well received and Brian agreed to summarize the talk, and share his spread-sheets with members. {The Secretary will forward them when received.} **Bob/WO4MI** reminded the members that the next meeting will be held at the Page County Sheriffs EOC/Training Facility in Luray on Friday, January 3rd at 1830.

Submitted by: **Sparky Terry/KD4KL**, PVARC Secretary



A2 Thursday, December 5, 2013

PAGE NEWS & COURIER

On the Agenda

Monday, Dec. 9

- **Page County School Board**, 7 p.m., School Board Office, 743-6533.
- **Luray Council**, 7 p.m., Luray Town Hall, 743-5511.

Tuesday, Dec. 10

- **Page County Planning Commission**, 7 p.m., General District Courtroom, Page County Courthouse, 743-4142.
- **Shenandoah Council**, 7 p.m., Shenandoah Town Hall, 652-8164.

Local HAM Radio Club earns state honors

The Page Valley Amateur Radio Club took top honors among "ham" radio clubs that participated in Virginia's 2013 Field Day.

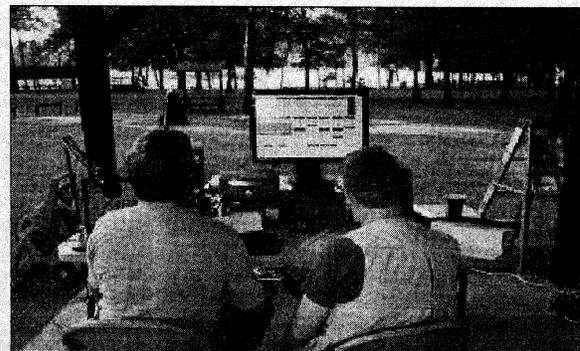
"The 'hamsters' of [the local club] spent ... the last full weekend in June braving mosquitoes, bugs and other insects to gather enough points to win first place in the state, second place in the Roanoke division and No. 15 nationally, he said the group's vice president Mark Hensley in a newsletter.

On June 29 and 30, the Page Valley club participated in the nationwide amateur radio event. The 25 members spent 24 hours operating their stations under emergency-like conditions. Using portable generators and field antennas, the operators were tasked with contacting other amateur stations in the U.S. and beyond.

Each club earned points based on the number and type of radio contacts made, such as voice, morse code or through digital means.

In addition to earning state honors, the local ham club took second place in the American Radio Relay League's Roanoke Division, which covers states in the mid-Atlantic region. The local club came in 15th among amateur clubs nationwide. The American Radio Relay League is the nationwide association of ham radio operators representing local affiliate amateur radio clubs and more than 800,000 licensed radio amateurs in the United States.

The Page Valley Amateur Radio Club meets at 6:30 p.m. on the first



Contributed photo

Friday of each month at Lord Fairfax Community College's Luray-Page County Center. Local radio amateurs interested in joining the

club or anyone interested in becoming an amateur radio operator can contact the club president, Bob Forrest, at (540) 743-0617.

National park implementing night closures during Virginia hunting season

LURAY — Shenandoah of Virginia hunting season The central portion of the said, "Closing portions of the conviction of any person

Synopsis of the EZNEC Discussion at PVARC, 6 December 2013

Brian B. Turner, W5YQ

W5YQ (ex-K2SJM) has used EZNEC for antenna modeling and for field strength projections for about 15 years for both amateur modeling and for his employment in companies supporting the federal government. He has also used some of the earlier versions of NEC and more recently HFSS, but they are not relevant here. EZNEC is a Method-of-Moments (MoM) application developed by Roy Lewallen, W7EL. MoM theory involves computing the impedance of small segments of a wire or a mesh that conducts an RF current, evaluating the magnitude and phase of the current in each segment in order to calculate the power density of the radiated field, and then summing all of the power density vectors from all of the segments to create a composite field that we know as the radiation pattern. The greater the number of segments, the more refined the radiation pattern. However, a large number of segments increases computational time. Thus the affordable amateur versions of EZNEC are hard limited to 1500 segments and the Pro (professional) versions to 20,000 segments. W5YQ once modeled the conducting parts of a military HMMWV (Humvee) in order to evaluate its effect on radiation patterns of counter-IED antennas mounted on different parts of the vehicle. The vehicle took over 18,000 segments. It sometimes took 10-15 minutes to run one radiation pattern, but the effort was well worth while.

EZNEC is a very user-friendly application if you are familiar with 3-dimensional Cartesian coordinates, i.e. X, Y, and Z axes that are mutually perpendicular. In American usage, the Z-axis is always the vertical axis, and typically the +Y axis points north, and the +X axis points east. The coordinates for specific wires can be plotted in either the positive NE quadrant or in all quadrants where negative values are used for the ends of some of the wires.

When opening the EZNEC application, one should probably look first at the fields that are listed alongside the innermost part of the window. You will see: File, Frequency, Wavelength, Wires, Sources, Loads, Trans Lines, Transformers, L Networks, Ground Type, Ground Descrip, Wire Loss, Units, Plot Type, Step Size, Ref Level, Alt SWR ZO, and Desc Options. These windows are used to enter values and choose variables needed to model an antenna.

"File" simply shows the file name of the antenna being modeled, or the "Last .EZ" if no new antenna has been chosen. If it is a new creation, the user can make up a name.

Clicking on "Frequency" opens a window that lets you change the frequency, usually a mid-point frequency within some band or sub-band where you want to use the antenna.

The software calculates the free space wavelength in the field labeled "Wavelength" for the frequency entered above. Units (meters, feet, etc.) are chosen below.

Clicking on "Wires" opens an extremely important window where you have to enter the Cartesian coordinates (X, Y, Z) for End 1 and End 2 of each wire, as well as the diameter of the wire and the number of

segments into which you want to subdivide it, in a Wires Table. There are 8 columns where the rows are numbered as Wire 1, Wire 2, etc. A simple antenna like a dipole may be entered as one (1) wire, and a 3-element yagi as three (3) wires. A 3-element cubical quad would require 12 wires.

Clicking on "Sources" opens another critical window. This is where you describe the feed point for your antenna. For a center-fed dipole, you would enter "1" under the column labeled "wire #" and "50" under the column "% from E1" (percent of the distance from End 1). For a 3-element yagi, if the driven element is wire #2, you would enter "2" in the first column and "50" in the second column. At the right side of the window are columns asking for entry of amplitude and phase of either the current or voltage with which the antenna is fed. Enter "1" under Amplitude, "0" under Phase, and click in the field labeled "Type" for a drop-down menu showing "I, V, SI, SV". Choose "I" for a current-fed antenna like a dipole. HINT: For an antenna where the feed point is split like a dipole, either make the antenna one long element or else make two dipole halves connected by a third wire at the center and feed the small third wire with a single source.

"Loads" lets a modeler insert resistive, capacitive, and/or inductive loads at the feed point or at any other segment of the antenna to bring feed-point impedance (ZO) closer to transmission line impedance in order to reduce SWR.

"Trans Lines", "Transformers", and "L Networks" were not discussed in the interest of time and simplicity.

Selection of "Ground Type" was visited with special emphasis on either "Free Space" and "Real", since "Perfect" may not be realistic. Under "Real", there is a choice of either "MININEC" or "High Accuracy". W5YQ prefers "High Accuracy" since MININEC does not handle wires at ground level or in ground.

In the window for "Ground Description" one has the option of entering "Conductivity" and "Dielectric Constant" for the soil at the home QTH or else using the default values. Some reference manuals carry such information.

In the window for "Wire Loss" one can either choose from several types of metal commonly used in antennas or can enter Resistivity and Relative Permeability under "User Defined" wire.

Opening the window for "Units" lets the user choose units of length as meters, millimeters, feet, inches, or wavelengths.

Opening the window for "Plot Type" shows a choice between Azimuth, Elevation, and 3 Dimensional. W5YQ recommends choosing 3 Dimensional first because the window that opens lets you then proceed to see the 2 Dimensional elevation and azimuthal plots as well. These latter plots show gain, front-to-back ratio, -3 dB beam width, and maximum radiation angle as well.

Opening the window for "Step Size" lets the user enter the number of degrees between the intersection points of the 3-dimensional mesh formed by the azimuthal and elevation patterns. The default value is 5 degrees, but for a finer more detailed mesh, a smaller value can be

entered, or for a coarser mesh, a larger value can be entered. The trade-off is speed of computation.

“Ref Level” is the Reference Level for the outer circle of the 2-dimensional gain patterns. It is best left at 0 dBi.

The “Alt SWR ZO” window lets the user enter an alternate impedance value for transmission line other than 50-ohm line. For example, since an infinitely thin dipole will have an input impedance value close to 73 ohms, 75-ohm coax provides a better match than 50-ohm coax, thus resulting in a lower (V)SWR. Other transmission lines, e.g. 300-ohm and 450-ohm twin lead, may well provide a better match for some antennas.

The “Desc Options” window is somewhat advanced and was not discussed due to time constraints and goal of keeping things fairly simple.

This completes the typical selection and entry of variables needed for the modeling of an antenna in EZNEC. Then there are choices that provide information about the antenna you have just modeled in cyber space.

On the left side of the main window for EZNEC are the following fields. Clicking on a field will open a window with certain information. In descending order: Open, Save As, Ant Notes, Currents, Src Dat, Load Dat, FF tab, NF Tab, SWR, View Ant, and FF Plot.

One uses “Open” to open the directory of antenna descriptions that have been saved in .EZ format. The user can then select a previously saved antenna for further modeling.

“Save As” allows a user who has created a new antenna description to save that antenna to the directory in .EZ format. The user must supply a name for the antenna.

“Ant Notes” allows the user to read/write some notes about the antenna that is open.

“Currents” is a table showing the results on current computation on each segment. “Src Dat” is Source Data for the antenna at a specific frequency. “Load Dat” is Load Data for the antenna at a specific frequency. “FF Tab” is for a table of values computed for Far Field radiation patterns. “NF Tab” is for a table of values computed for Near Field radiation patterns. These have limited use for most antenna modeling, but are useful for determining power density patterns over small volumes of nearby space.

“SWR” is an important window for most antenna modeling output. Clicking on the field opens a window that prompts the user to enter a Start Frequency, a Stop Frequency, and Frequency Steps. If designing an antenna for a certain band, W5YQ usually enters a start frequency a little below the band, a stop frequency a little above, and frequency steps of about 0.1 MHz for a first look. After clicking on the “Run” field, within a few seconds (usually), a SWR chart pops up on the screen showing a curve of values across the selected spectrum. The user can instantly see if the antenna is resonant in the part of the band he intends to use, as well as the values of SWR. Clicking the

radio button for the Alt ZO value, shows the SWR for the alternate transmission line chosen earlier. If the antenna resonates above the desired frequency, the solution might be to add length to the wire, or to add an inductive load. If the antenna resonates below the desired frequency, the solution might be to shorten the length or wire or add a capacitive load. Going to the “Wires” window, described earlier, allows you to alter the length of the appropriate wire(s). The “Loads” window allows you to add or modify loads.

The “View Antenna” window is the first window to open after creating a virtual antenna because it generally will show any mistakes you might have made in entering the coordinates for the wires in the Wires table. Some mistakes will be obvious, others subtle. Often the needed correction will be obvious. By placing the cursor near either end of any given wire, a temporary window opens showing the wire #, which end the cursor is near (E1 or E2), the length of the wire, the length of each segment, and the Cartesian coordinates of that end. The window lets the user move the antenna around on the X-Y-Z axes and to enlarge or shrink the view.

Clicking the FF Plot field opens a window that shows the Plot Type previously chosen (3 dimensional, azimuth, elevation). As said above, choosing the 3 dimensional plot lets you look at the mesh rendition of the radiation pattern, and the window further lets one easily transition to the 2 dimensional azimuth and elevation patterns. The elevation and azimuth patterns also show maximum forward gain, the elevation angle of max gain, the azimuthal angle of max gain, front-to-back ratios, -3 dB beam width and azimuths thereof, as well as input impedance of the antenna in a couple of different formats.

In summary, the View Antenna, SWR, and FF Plot windows show the user the most important characteristics of the antenna as output of the computational process.

There are a number of other features and choices for input and output that have not been covered in order to keep this synopsis at a reasonable length. Additionally, the Wires table can be populated by importing a .txt file where the values for the 8 columns are space delimited. W5YQ wrote an article for QEX in 2007 (Microsoft Excel for Antenna Modeling under his former call sign, K2SJM) where he described his technique for creating coordinate generator spreadsheets in Excel format, then copying and pasting the 8 columns of values into a .txt file, which is then imported into the Wires table. The entire process is extremely fast, allowing him to process as many as 50 separate runs per hour. The runs involve systematic variation of antenna parameters such as wire lengths and element spacing. Systematic variation of each input parameter, while keeping the other parameters constant, lets the user see which parameters have the greatest impact on antenna characteristics that the modeler wants to optimize. Then, if warranted, the user can make a trade study where the two most important parameters are varied. Finally, the speed of making many runs lets the user focus on the most important input parameters for the optimized design of an antenna.

Mini Horse Yagi Coordinate Generator													
by Brian B. Turner, W5YQ													
10/25/13													
Enter center frequency of operation in MHz							28						
Read wavelength (l) in meters							10.707	10707	mm	422	inches	35.13	ft
Enter desired length of half element "A" in l (.15 to .20, .1715 default) (2A = element length)							0.182						
Read length of half element A in meters							1.949	1949	mm	76.7	inches	6.39	ft
Enter length of each director fold back wire "B" in l (.05 to .06, .055 default)							0.055						
Read length of each director fold back wire B in meters							0.589	589	mm	23.2	inches	1.93	ft
Enter length of each forward side wire "C" of driven element in l (.04 to .05, .045 default)							0.045						
Read length of each forward side wire C in meters							0.482	482	mm	19.0	inches	1.58	ft
Enter length of each rear side wire "D" of driven element in l (.018 to .028, .023 default)							0.023						
Read length of each rear side wire D in meters							0.246	246	mm	9.7	inches	0.81	ft
Enter length of each reflector fold back wire "E" in l (.081 to .091, .086 default)							0.086						
Read length of each reflector fold back wire E in meters							0.921	921	mm	36.3	inches	3.02	ft
Number of segments of A							4						
Enter number of segments of B, C, D, E desired (1 suggested)							1						
Enter diameter of wire in meters							0.001						
Read element spacing of antenna of SM0DTK							1.125	1125	mm	44.3	inches	3.69	ft
Read length of support rod for each quadrant of the antenna in meters							2.250	2250	mm	88.6	inches	7.38	ft
Enter the height of the antenna in meters							10	10000	mm	393.7	inches	32.81	ft
To shift Driven Element fwd/backward, enter per mil value of l for (+) or (-) (.001 to .020, 0 default)							0						
Read amount of DE shift in meters							0.000	0	mm	0.0	inches	0.00	ft
To change the angle between support rods, enter number of degrees desired (30 deg default)							30						
Read radians of arc for above angle							0.5236						
			End 1			End 2							
Wire #	X	Y	Z	X	Y	Z	Wire Diam	Segm ents					
1	-1.949	0.000	10	1.949	0.000	10	0.001	9					
2	-1.949	0.000	10	-1.949	0.482	10	0.001	1					
3	1.949	0.000	10	1.949	0.482	10	0.001	1					
4	-1.949	0.000	10	-1.949	-0.246	10	0.001	1					
5	1.949	0.000	10	1.949	-0.246	10	0.001	1					
6	-1.949	1.125	10	1.949	1.125	10	0.001	9					
7	-1.949	1.125	10	-1.439	0.831	10	0.001	2					
8	1.949	1.125	10	1.439	0.831	10	0.001	2					
9	-1.949	-1.125	10	1.949	-1.125	10	0.001	9					
10	-1.949	-1.125	10	-1.151	-0.665	10	0.001	2					
11	1.949	-1.125	10	1.151	-0.665	10	0.001	2					

Editor note: A companion PDF is included with the email version of the newsletter

Three (3) Element cubical quad antenna for VHF				
by Brian Turner, K2SJM				
Enter the operating frequency in MHz	28.5	10526.3	l in mm	
Enter the desired reflector length in l	1.07	11263.2	R in mm	
Enter the desired driven element length in l	1.03	10842.1	DE in mm	
Enter the desired director length in l	0.99	10421.1	D in mm	
Enter the spacing between reflector and DE in l	0.22	2315.8	R-DE in mm	
Enter the spacing between DE and director in l	0.16	1684.2	DE-D in mm	
Enter the wire diameter in meters	0.00205			
Enter number of segments per wire	5			
Enter height above ground for center of antenna (m)	10	10000	mm	

(five blank rows were deleted. ED)

wire #	End 1			End 2			diameter	segments
	X	Y	Z	X	Y	Z		
1	-1408	0	8592	1408	0	8592	0.00205	5
2	1408	0	8592	1408	0	11408	0.00205	5
3	1408	0	11408	-1408	0	11408	0.00205	5
4	-1408	0	11408	-1408	0	8592	0.00205	5
5	-1355	2316	8645	1355	2316	8645	0.00205	5
6	1355	2316	8645	1355	2316	11355	0.00205	5
7	1355	2316	11355	-1355	2316	11355	0.00205	5
8	-1355	2316	11355	-1355	2316	8645	0.00205	5
9	-1303	4000	8697	1303	4000	8697	0.00205	5
10	1303	4000	8697	1303	4000	11303	0.00205	5
11	1303	4000	11303	-1303	4000	11303	0.00205	5
12	-1303	4000	11303	-1303	4000	8697	0.00205	5

Getting It Right

Some people enjoy finding faults in the work of others. We want to please these people as much as we want to please anyone else!

To give these people the same pleasure we want for all readers of the Monitor, we make sure that each issue is chock full of mistakes, typos, and sometimes plain down wrong information.

How many errors can you find in this issue? We don't mind a count! Let us know what you find, and we'll either correct it or tell you to go jump in the lake!



Reminder from the Newsletter
Editor:
Club Dues are Now Due!

Meeting Called to Order at 7:30 PM by President David Fordham KD9LA

This was the Annual Christmas Banquet at the Wood grill and the VARA Club was invited to attend.

Attendance: A total of 62 people attended. There were 9 guests. Introduction were made all around.

New Members: The second reading for Brenda Hill KK4UNK was done and the vote was taken and she was elected to membership.

Secretary Minutes: Approved as printed in the November 2013 issue of The Monitor

Treasurer Report: Approved as printed in the November 2013 issue of The Monitor

Reports by Committees: Due to the Banquet and no pressing issues, there were no committee reports.

Old Business: None

New Business: None

Announcements: January the annual audit process will begin.

The Richmond Frost Fest Ham gathering is the 1st Saturday of February.

Motion to Adjourn: Seconded, passed.

Program:

President Fordham began with an explanation that MARA had invited the VARA club to the Christmas banquet with the agreement that they would provide the entertainment. He then read a good natured letter supposedly from VARA explaining why they could not provide the entertainment for the night. The "excuses" brought a good laugh. President Fordham followed up by giving VARA a "lump of coal", the traditional rebuke by Santa Clause for being bad.

Four "Thank you" award plaques were given by President Fordham to Gerald Nauman KN4FM, Ellsworth Neff K4LXG, Gayle Shull KU4XN, and Bryan Daniels K4RMY for service to the club and the community.

Vice President Gerald Brunk K4RBZ then presented the "73" Award to President David Fordham for his long service to the club. The award plaque is on a walnut mounting with brass lettering on a black background. It was graphically designed by Secretary Dennis Phillips to be symbolic and a conversation piece. The two towers represent the two-way nature of amateur radio. The MARA lettering is curved like a radio wave and the ionosphere. The Morse Code letters "7 and 3" are included. In phone operation, it is common to say the letters as plural in, "Many 73s". The ham expression "Elmer" or "Senior experienced helper" was included.

The closing Benediction was given by Paul Wyse W4PFM

Respectfully submitted,

Dennis Phillips, MARA Secretary





The award (pictured below) is presented to David Fordham , KD9LA (left) by Gerry Brunk K4RBZ (right), Vice-President of MARA in recognition of his two years of service as President and his nineteen years as editor of the Monitor during the annual Christmas banquet.

THE

MARA

'73'

AWARD

— — — — —

David Fordham KD9LA

We the members of the Massanutten Amateur Radio Association do hereby recognize your long and faithful service to us.

For being the Editor of our newsletter, *The Monitor*, for 19 years.

For 2 decades of service holding these offices: President, Vice President, Treasurer and Board member.

For being an Elmer and tireless supporter and promoter of Amateur Radio, as a positive hobby and for its public service role.

Your friends in MARA send you the classic and traditional Ham Radio expression of gratitude and good wishes.

‘Many ‘73s’

Given this day, December 5th 2013

From the members and board of the Massanutten Amateur Radio Association

When the [CW Skimmer](#) software was released by Alex VE3NEA, I remember thinking it had the potential to be a game-changer. As it turns out, "skimmers" are changing the game but in more ways than we had anticipated and in more games than we expected.

The most obvious change was simply the sheer speed advantage that it conferred compared to human operator. Even giving the human operator the best possible outcome in every situation, assuming perfect timing sync as a new signal was tuned in, and so forth, *CW Skimmer* could extract call signs from 100 kHz of band about 15 times faster. But that was thinking too small, only considering the software as an accessory for one operator.

The [Reverse Beacon Net](#) started out as a way for individual stations to see how they were being heard *there* instead of what they could hear *here*. Novel, indeed, but not really all that different from a regular QSO except that the RBN can give you *real* signal reports with resolution of 1 dB. As more and more skimmers are added to the network, something very interesting has begun to happen.

Multiple *CW Skimmer* stations around the world are now working together, listening to all the bands, all the time - 24/7/365. There are currently a few dozen around the world, mostly in North America and Europe but more are being added all the time and all continents are represented. While not calibrated to the accuracy of a laboratory instrument in most cases, we are now watching a worldwide propagation monitoring network come to life! In a couple of years, no matter where you are, one or two CQs or TEST transmissions will generate a snapshot of propagation from your location to every populated region on the planet...in about 10 seconds. This is simply unprecedented - consider the effects on just two areas of amateur technology.

First and most obviously, propagation can now be assessed in real-time to a degree completely unavailable before. Furthermore, the data is logged and available for analysis. This forms a crucial and previously-missing link between propagation models and propagation as it actually occurs. To be sure, HF propagation testing was done many years ago in academia and by the military but the breadth and depth of the RBN data is completely new. For example, in the K1TO-NP3A chart you can clearly see the 10 meter band opening to Europe from the two different areas as the world turns.

Coupled with validated QSO databases such as public contest logs and solar-geomagnetic data from NOAA databases, amateurs can begin to look for "interesting" propagation that models miss. Other propagation assessment tools, like K1JT's [WSPR](#) protocol and its companion network, WSPRNet, can be added to the mix. Perhaps someday, data from [Logbook Of the World](#) - the world's largest database of validated point to point communications data - will be available, as well.

Another great use of automated reception reports is in antenna and antenna system design. No longer limited to test range data (at best), hams can now ask and answer questions such as, "What is the right height for my antenna for the path to..." and "Does my new design perform better or worse than..." and a million other questions for which answers are rarely precise and usually completely unavailable. Who can look at the comparisons and not be struck by the different signal levels of the stations?

We have been given a gift, the power of which we are just being to sense. When new types of data become available for analysis and are combined with new forms of visualization, we know that good things happen. Unexpected things. Explanations of mysteries. Better still, new explanations for what we thought we understood. Best of all, we will ask new questions!

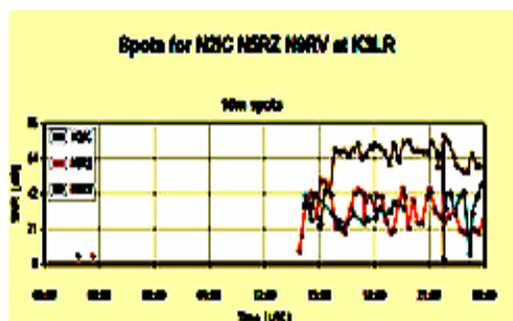
The world of Amateur Radio is changing, in part due to these new tools. I look forward to new science being "done" by amateurs, resulting in new understandings of the world in which live and an exciting future.

73, Ward NØAX

reprinted with permission, December 18, 2013 Contest Update. [ARRL]



K1TO is blue and NP3A is orange - clearly showing their different longitudes as 10 meters opens to Europe.



N2IC (blue), N5RZ (orange), and N9RV (gray) as heard by the CW Skimmer at K3LR in western Pennsylvania.



N9RV (blue), K1LZ (orange), and K8AZ (gray) at the RBN's African node, V51YJ in Namibia.

ARES Net Control Schedule for January - June, 2014

1/6	K4NRA	3/3	K4NRA	5/5	K4RMY	If you have a conflict on some night, please let me know or arrange to trade nights with someone else. Keep me informed, I'll try to send you a reminder on Saturday or Sunday before the net.
1/13	K4RBZ	3/10	KN4FM	5/12	KA4EEN	
1/20	KA4EEN	3/17	KA4EEN	5/19	KG4KUR	
1/27	KN4FM	3/24	WF4O	5/26	K4LXG	Attached is a copy of the script if you need one.
2/3	K4LXG	3/31	K4LXG	6/2	K4NRA	
2/10	WF4O	4/7	K4NRA	6/9	WF4O	Thanks for offering to help with the net.
2/17	K4RMY	4/14	KN4FM	6/16	KU4XN	Gerald, KN4FM
2/24	K4RBZ	4/21	K4RBZ	6/23	KG4KUR	
		4/28	KU4XN	6/30	K4RMY	

EDITOR NOTE: A PDF of script is also included in the email distributed newsletter.

Rockingham County ARES Net Script

(revised Oct. 2006)

Calling all radio amateurs, Calling all radio amateurs.

This is the ROCKINGHAM COUNTY AMATEUR RADIO EMERGENCY SERVICE NET. Sponsored by the MASSANUTTEN AMATEUR RADIO ASSOCIATION. This net is a directed net which meets every Monday night at 8:00 p.m. for the purpose of training radio amateurs to handle emergency communications and to give them an opportunity to test their equipment. Net control tonight is _(your callsign)_ My name is _(your name)_ My location is _(your location)_.

This is a directed net, so please follow the instructions of Net Control.

At this time is there any EMERGENCY or TIME VALUED TRAFFIC for the net. If so, call now. *(Recognize the stations and handle any traffic immediately)*

Do we have stations with ANNOUNCEMENTS for the net, if so your callsign ONLY please. *(Recognize the stations but hold the announcements until after the roll call)*

Do we have any liaisons to REGIONAL or SECTION NETS in the NTS, or any affiliated stations, such as MARS, CAP, other ARES or INDEPENDENT NETS. if so, your callsign ONLY. *(Recognize the stations and ask them to standby until after the roll call)*

Are there any mobile, portable, short time, or stations operating on emergency power wishing to check in. If so, call now. *(recognize the stations, ask them individually if they can hold traffic and comments until after the roll call and announcements)*

At this time we will take check-ins, by callsign suffix. If you have traffic, please state the nature of the traffic at the the time you check in. *(record your check-ins on your ARES Net log sheet)*

Stations with suffix ALPHA through GULF, call now.

Stations with suffix HOTEL through NOVEMBER, call now.

Stations with suffix OSCAR through TANGO, call now.

Stations with suffix UNIFORM through ZULU, call now.

Stations regardless of SUFFIX, call now.

At this time we will take stations with announcements or traffic only.

(Call the stations with announcements in order. At the end of each ask "Does any station need fills?" Recognize any stations asking for fills and direct them to contact the announcement station directly on the net.)

At this time we will secure the formal net and any mobile, portable, or short time stations needing to leave the net are now released.

Lets continue the informal portion of the net with a round of comments. *(Go to top of roll call list and ask for comments including any mobil, portable, or short time stations who have not left the net. Check periodically during the comments for late check-ins).*

Is there any other traffic for the net or any other late check ins? If not,

This concludes the Rockingham County ARES NET. Thanks to everyone for checking in. We would like to thank the trustees of the area repeaters for the use of their repeaters. At this time we will close the ROCKINGHAM COUNTY AMATEUR RADIO EMERGENCY SERVICE NET at _____ p.m. and return the frequency to normal amateur use. .This is _____ net control.

Samuel F. B. Morse

Attaches are two pics I took at the Samuel F. B. Morse home on the Hudson River in New York state. His home was sold to other families and the only thing illustrating Morse's work are a couple of exhibits, as seen in the attached pics! He made his living as an artist and photographer. Mathew Brady, the famous Civil War photographer studied under Morse. According to the 2014 ARRL calendar when the code portion of the Amateur exams was eliminated in 1907 CW use has increased on the ham bands! It may be argued that CW is still the most efficient form of communication (Yeah, even though CW doesn't love me back I sure love it!) Bob, W8HGH



Excuse my fond memories of the National Museum of American History, formerly the "History of Science and Technology" museum where I was a docent and one of the operators of NN3SI, its amateur radio station open to public view during its centennial exhibition in 1977-78. Thanks, Bob, for the nice report and pix of the SFB Morse exhibits (which I have visited). The pic showing various pieces of equipment and keys deserves a brief comment -- the key on a pedestal to the left is an early ca. 1840-45 key for which we at the Smithsonian had the original mechanical drawings. I tried to get permission to duplicate the drawings and get a copy of the key fabricated, but "no dice!" Also, on the right side, note the WW2 aircraft key for strapping onto a solo pilot's leg so he could send and fly at the same time... recon pilots (ours and Jap) such as flew at the Battle of Midway in 1942..

Hugh, K3EC

Since Samuel Morse is the topic here. I have some interesting items for everyone.

First while Morse lived along the Hudson, he actually perfected his instruments in Old Man Vail's shop, at Vail Iron Plantation, "Speedwell," in Morristown NJ.

Secondly this might be the perfect time to mention the MorseKOB program. As has been mentioned before there are really two types of Code. 'Morse' or American Morse Code and 'CW' or International Morse Code. International being what we use on radio, American being the telegraph code that was originally invented by Samuel. The MorseKOB program in an Internet Telegraph program, and on wire 112 you will find 'OS' Reports for trains traveling up and down the Valley. Here is the link: <https://home.comcast.net/~morsekob/> and for clarification—MorseKOB is a computer program. Internet Telegraph is just a virtual telegraph wire via MorseKOB. Wire 112 is one of the virtual wires.

Nate, KI4MSK

What town was that near, where Morse had his home? My (then) 12-year old son and I canoed and camped from Ft. Edwards (below Glens Falls, NY) through the locks to Troy, and then down the Hudson to Cornwall-on-the-Hudson back in 1981, so we must have passed that home without knowing it. No, we were not operating "maritime mobile", but that kid surely pulled his weight! He celebrated his 45th birthday a couple of days ago.

Herb Slade, AA2BF

Author Unknown; But rumor has it, that he has been demoted to 11 meters and is now a CBer, he can occasionally be heard Eastbound and Down!

CONDITIONAL:

Leaps short buildings with a running jump AND favorable winds...

Is almost as powerful as a switch engine;

Is faster than a speeding BB;

Walks on water in an indoor swimming pool;

Talks with GOD if special request is approved.

NOVICE:

Makes high marks on the wall when trying to leap small buildings;

Is run over by locomotive;

Can sometimes handle a gun without inflicting self-injury;

Talks to animals.

TECHNICIAN (Old):

Barely clears a Quonset hut;

Looses tug-of-war with a locomotive;

Can fire a speeding bullet;

Swims well;

Is occasionally addressed by GOD.

TECH:

Falls over doorsteps when entering buildings;

Says, "Look at the choo-choo";

Wets himself with a water pistol;

Plays in mud puddles;

Mumbles to himself.

TECH-PLUS:

Runs into buildings;

Recognizes locomotive two out of three times;

Is not issued ammunition;

Can stay afloat with a life preserver;

Talks to walls.

AMATEUR EXTRA:

Lifts buildings and walks under them;

Kicks locomotives off the track;

Catches speeding bullets in their teeth AND EATS

THEM;

Freezes water with a single glance;

THEY ARE GOD!

In addition...**NO CODE EXTRA:**

Flaunts honorary degree in "Tall Building Jumping";

Exhibits powerful ulterior "Loco Motives";

Attempts to avoid speeding bullets;

Is able to "Pass Water", usually without difficulty

Denys the existence of GOD; Cohort of CBers

Temporary Operating Suffixes

General - /AG

Advanced - /AA

Extra - /AE

No Code Extra - /AH

[from the internet]

Area Repeaters (as of December 2013)

REPEATER	SHIFT	CTCSS	LOCATION
145.110	-	107.5	Frost, WV, SW of Monterey VA
145.130	-	131.8	Massanutten Peak, east of Harrisonburg
145.170	-	151.4	Palmyra east of Charlottesville
145.190	-	118.8	Moorefield WV
145.490	-	136.5	Amherst north of Lynchburg
146.625	-	131.8	Big Mtn, east of New Market
146.670	-	114.8	Massanutten Mtn west of Luray
146.685	-	100.0	Apple Orch. Mtn east of Buena Vista
146.700	-	131.8	Downtown Staunton
146.715	-	146.2	Mount Jackson, north of New Market
146.730	-	151.4	Charlottesville
146.760	-	151.4	Charlottesville Pantops Mtn, link to 146.895
146.790	-	110.9	Buckingham County
146.805	-	118.8	Covington west of Lexington
146.850	-	131.8	Hermitage north of Wboro
146.895	-	151.4	Bucks Elbow Mtn, east of Waynesboro, link to 146.76
146.925	-	151.4	Heard Mtn Charlottesville
146.955	-	136.5	Farmville VA
147.045	+	131.8	Elliott Knob southwest of Churchville
147.075	+	none	Bear Den Mtn east of Waynesboro
147.090	+	162.2	Marlinton, Sharp Knob, west of Snowshoe WV
147.120	+	146.2	Culpeper
147.165	+	167.9	Warrenton
147.180	+	100.0	Monterey VA
147.225	+	131.8	Lairds Knob northeast of Harrisonburg
147.285	+	103.5	Spruce Knob WV
147.300	+	100.0	Bluemont east of Winchester
147.315	+	131.8	Harrisonburg, EMU campus
147.330	+	100.0	Rockbridge, east of Buena Vista, occasional tone
147.345	+	none	Franklin WV
147.360	+	none	Stuarts Draft south of Waynesboro
224.180	-	100.0	Apple Orchard Mtn east of Buena Vista
224.300	-	131.8	Elliott Knob southwest of Churchville
224.580	-	136.5	RockyTop Lexington
224.500	-	131.8	Little North Mtn west of Harrisonburg
224.600	-	151.4	Charlottesville linked to 224.58
224.680	-	131.8	Hermitage north of Waynesboro
224.760	-	151.4	Bucks Elbow Mtn east of Waynesboro
442.650	+	100.0	Bedford, west of Amherst, Apple Orchard Mtn
442.075	+	151.4	Charlottesville
443.150	+	131.8	Lairds Knob northeast of Harrisonburg
443.250	+	107.2	Culpeper
443.800	+	100.0	Buena Vista - Apple Orchard Mtn
444.000	+	151.4	Charlottesville
444.100	+	131.8	Elliott Knob southwest of Churchville
444.150	+	131.8	Rockytop, east of Lexington
444.550	+	136.6	Wintergreen, Devils Knob
444.600	+	131.8	Great North Mtn, west of Mt Jackson
444.775	+	151.4	Bear Den Mtn, link to Monterey 2m machine
447.325	-	103.5	Moorefield

"Please check over this repeater listing and give all corrections, updates, and changes to David Fordham, KD9LA, at fordhadr@jmu.edu Thanks."

At long last, the MARA web pages have been updated!

The calendar now includes all 2014 activities known as of December 21, including meeting dates, major contests, hamfests in the area, etc.

A separate page gives the schedule of the local nets. Please check out the nets schedule and notify **David Fordham KD9LA (fordhadr@jmu.edu)** of any changes that you are aware of.

All MARA members are asked to please check their entry on the membership roster (found under the Reference Material link) and notify the club secretary of any changes in telephone number, street address, email address, callsign, or any other information that is old or incorrect.

And while browsing the web pages if you notice anything else that is old or out-of-date, notify the new webmaster: **David Fordham KD9LA, at email fordhadr@jmu.edu** and he'll try to get it corrected ASAP.

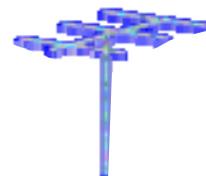
Radios Word Search

Tickle your memory!

Grab your crayons, pencils or pens [whatever they will allow you to draw with] and find twenty-one radios in the puzzle. Some are familiar, and some are obscure but valid companies that have produced Radio Equipment in the past. Some are still around.

H	L	C	B	T	O	M	D	U	I	H	S	Y	X	P
A	W	E	L	M	A	C	L	A	N	O	I	T	A	N
M	Q	X	O	R	J	P	B	F	C	P	L	O	Z	W
M	G	C	P	U	C	G	Z	E	R	S	T	F	C	U
A	I	R	E	A	L	I	S	T	I	C	R	N	A	O
R	H	E	A	T	H	K	I	T	R	B	O	C	Q	G
L	Q	Y	N	O	S	N	H	O	J	P	N	R	K	N
U	M	X	D	T	M	C	T	M	T	D	I	O	E	I
N	O	C	E	R	A	G	I	H	O	P	C	S	T	K
D	J	N	H	L	A	K	Y	O	T	T	S	L	N	E
U	Q	D	R	O	N	K	W	Q	E	I	O	E	E	B
S	G	A	X	I	D	N	E	S	D	I	N	Y	T	O
E	D	N	G	R	E	K	N	Y	B	M	C	E	U	L
A	I	H	Z	K	L	O	L	T	V	J	U	O	Z	G
Y	T	W	P	Y	G	R	C	O	L	L	I	N	S	M

- | | | | | | |
|---|------------|----|---------------|----|-----------|
| 1 | Kenwood | 8 | Hallicrafters | 15 | Globeking |
| 2 | Yaesu | 9 | National | 16 | TenTek |
| 3 | Heathkit | 10 | Realistic | 17 | Crosley |
| 4 | Icom | 11 | Knight | 18 | Zenith |
| 5 | Calrad | 12 | Gonset | 19 | Eico |
| 6 | Drake | 13 | Collins | 20 | Johnson |
| 7 | Hammarlund | 14 | Siltronics | 21 | Elmac |



THE BIG PICTURE... --> "The Big Picture of Expedition Operating and the Direct Relationship to Anti-Social Pileup Behavior" is a 43-minute presentation by Rick, K6VVA. It "describes the problems and also solutions to the dysfunctional behavior we unfortunately hear in DX & IOTA pileups on the Amateur Radio bands these days". It can be found at <http://youtu.be/svLlfrFA-1E> [TNX K6VVA]

4S - Peter, DC0KK will be active again as 4S7KKG from **Sri Lanka** (AS-003) from **17 November to 15 April 2014**. He will operate mainly CW and digital modes. QSL via DC0KK, direct or bureau. Logsearch on Club Log.

FK - FK8RO is the callsign issued to Freddy, F5IRO for his activity from **New Caledonia** [425DXN 1173]. He will remain there through **February 2014**. QSL via F5IRO, direct or bureau. Freddy, along with FK8DD and FK8IK, will participate in the CQ WW DX CW Contest as TX8B (QSL via FK8DD).

S5 - Special event stations S506SLG and S506PMC are active until **5 January** to promote the PMC Contest, sponsored by the Radio Club Slovenj Gradec (S59DCD). The International Association of Peace Messenger Cities was established in 1988 to recognize and encourage the role and responsibility cities have in creating a culture of peace. The PMC Contest, promoting contacts between stations located in the Peace Messenger Cities and the rest of the world, will be held from 12 UTC on **4 January 2014** until 12 UTC on the 5th. Complete details can be found at www.s59dcd.si/en10/

JD1, MINAMI TORISHIMA. Take, JG8NQJ, will once again be active as JG8NQJ/JD1 from Marcus Island in the Minami Torishima (**OC-073**, JCG 10007) group **between December 16th and March 18th (2014)**. He is usually there to work on the island's weather station. Activity will be limited to his spare time. He will be mainly on 17 meters but also on 15/12/10 meters CW. QSL via JA8CJY, by the Bureau or direct to: Susumu 'Sin' Sanada, 5-17, 5-4, Shin-Ei, Toyohira, Sapporo 004, Japan. Online log is available at: <http://dx.qsl.net/cgi-bin/logform.cgi?d1-jg8nqj>

4J, Azerbaijan: DARC's QSL bureau states that there is no functioning bureau service in Azerbaijan at the moment.

FT5Z, AMSTERDAM ISLAND (Update/Press Release - Our Equipment Has Arrived in New Zealand): Col, MM0NDX, posted on the FT5ZM Web page (November 26th) [edited]: "Our sea container loaded with our pallets of equipment has arrived in New Zealand. The container had been unloaded and its contents placed in a bonded customs warehouse. It is ready for transportation by truck to the port of Tauranga.

The Braveheart will return from a mission to Raoul Island on December 6th, and be prepared to load our cargo shortly thereafter. Between December 9th and 14th the ship will be provisioned, undergo routine maintenance, and a main engine oil change. The Braveheart staff will fill our shopping list and put all dry provisions aboard the vessel.

The ship's crew will have been at sea or working for a long time, so they will take a vacation during the week of the 15th to the 21st. On

JW, SVALBARD. Erik, LA2US, will once again be active as JW2US on Bear Island (EU-027) for a 6 months period between **December 2013 through May 2014**. He states, "Again, this is not a Dxpediton - I'll be on the air as time and work schedule permit. Last time I worked 80% SSB - this time I'll mostly work CW. Contact confirmation will be uploaded to eQSL and LoTW. QSL via Bureau will be answered after June 2014." Equipment is a FTDX5000MP into a Carolina Windom 80-10m antenna.

9L, SIERRA LEONE. Ivo, 9A3A, is now active as 9L1A from Sierra Leone for at least **until February**, but he informs OPDX "most likely I will extend my stay until end of May 2014". Activity will be **mainly CW, some SSB**, on 40-10 meters with wire verticals mounted on a Spiderbeam pole, but he will try to install a 5 band Spiderbeam if Ivo can find a suitable position and mast. His rig is a K3 plus RM 300w amplifier. QSL via 9A2AA. **CARIBBEAN TOUR (Update)**. As mentioned last week, Ted, SP3IPB, is once again active as VP2V/SP3IPB from British Virgin Islands (NA-023) and is traveling with his wife Agnieszka, SQ3WN, on a yacht for the next three weeks. He informs OPDX that his VP2V/SP3IPB is good for the next 3 years and has rented a Bitter End Saba Rock Virgin Gorda bungalow. Activity will be on 40/30/20 meters using CW and SSB. He is using a TS-50 into fishing rod GP wire antennas. He also tells OPDX that he will be back on Montserrat about January 15th, and active as VP2MTK. QSL via his home callsign.

December 23rd the Braveheart will take on fuel. On the 24th fresh produce (eggs, milk, fruits, vegetables) will be put aboard. The crew will spend Christmas day with their families.

On December 26th, at 1400 the Braveheart will depart Tauranga via New Zealand's North Cape, cross the Tasman Sea south of Tasmania, cross the Great Australian Bight past Albany, and then sail north up the western coast of Australia to Fremantle. This is a 3440 nautical mile voyage that will take 17 days.

The Braveheart is scheduled to enter the port of Fremantle on Monday, January 13th. The vessel will take on fuel and provisions on January 14th.

She will clear customs and depart for Amsterdam Island on January 15th with our 14 team members and lots of radio equipment aboard."

[From OPDX Bulletin 12-2-2013]

OPERATIONS APPROVED FOR DXCC CREDIT: Yemen, 7O2A, 2013 operation; **Afghanistan**, T6SM, Operations beginning August 14, 2012 to current. [TNX NC1L], T6MH (2012 and 2013), T6JR, K9W – **Wake Island**; 2013 Operation [TNX NC1L].

Calendar of Upcoming DXpeditions

Jan-Feb 2014	FT5ZM: Amsterdam Island (AF-002)	till 03/Feb/2014	9M2MRS: Penang Island (AS-015)
till Feb 2014	VK0JJJ: Mawson station (Antarctica)	till Feb 2014	ZS7V: SANAE IV station (Antarctica)
till 05/Jan/2014	J13DST/6: Kuchino-Island (AS-049)	till 05/Jan/2014	S506SLG and S506PMC: special event stations
till 31/Jan/2014	IA0MZ: Mario Zucchelli Station, Antarctica	till 01/Mar/2014	FK8RO: New Caledonia (OC-032)
Nov-Mar 2014	R11ANR: Novo Runway, Antarctica	till Aug 2014	ZD9G: Gough Island (AF-030)
till 31/Oct/2014	ZM90DX: special call sign (New Zealand)	till Dec 2014	5Z4/LA4GHA: Kenya
till Dec 2014	6O0LA: Somalia	till Feb 2015	R11ANT: Mirny Station, Antarctica
till 01/Feb/2015	R11ANC: Vostok Station, Antarctica		

Information derived in part from OPDX Bulletins, The Daily DX, 425CAL Bulletins, 425 DXN Bulletins, ARRL DX Bulletins and DXNL Bulletins, unless specifically stated otherwise.

Seems like cars always have had radios, but they didn't. Here's the true story:

One evening, in 1929, two young men named William Lear and Elmer Wavering drove their girlfriends to a lookout point high above the Mississippi River town of Quincy, Illinois, to watch the sunset. It was a romantic night to be sure, but one of the women observed that it would be even nicer if they could listen to music in the car. Lear and Wavering liked the idea. Both men had tinkered with radios (Lear had served as a radio operator in the U.S. Navy during World War I) and it wasn't long before they were taking apart a home radio and trying to get it to work in a car.

But it wasn't as easy as it sounds: automobiles have ignition switches, generators, spark plugs, and other electrical equipment that generate noisy static interference, making it nearly impossible to listen to the radio when the engine was running.

One by one, Lear and Wavering identified and eliminated each source of electrical interference. When they finally got their radio to work, they took it to a radio convention in Chicago. There they met Paul Galvin, owner of Galvin Manufacturing Corporation.

He made a product called a "battery eliminator" a device that allowed battery-powered radios to run on household AC current. But as more homes were wired for electricity, more radio manufacturers made AC-powered radios.

Galvin needed a new product to manufacture. When he met Lear and Wavering at the radio convention, he found it. He believed that mass-produced, affordable car radios had the potential to become a huge business. Lear and Wavering set up shop in Galvin's factory, and when they perfected their first radio, they installed it in his Studebaker. Then Galvin went to a local banker to apply for a loan. Thinking it might sweeten the deal, he had his men install a radio in the banker's Packard. Good idea, but it didn't work -- Half an hour after the installation, the banker's Packard caught on fire. (They didn't get the loan.) Galvin didn't give up. He drove his Studebaker nearly 800 miles to Atlantic City to show off the radio at the 1930 Radio Manufacturers Association convention. Too broke to afford a booth, he parked the car outside the convention hall and cranked up the radio so that passing conventioners could hear it. That idea worked -- He got enough orders to put the radio into production.

WHAT'S IN A NAME?

That first production model was called the 5T71. Galvin decided he needed to come up with something a little catchier. In those days many companies in the phonograph and radio businesses used the suffix "ola" for their names - Radiola, Columbiola, and Victrola were three of the biggest. Galvin decided to do the same thing, and since his radio was intended for use in a motor vehicle, he decided to call it the Motorola. But even with the name change, the radio still had problems: When Motorola went on sale in 1930, it cost about \$110 uninstalled, at a time when you could buy a brand-new car for \$650, and the country was sliding into the Great Depression. (By that measure, a radio for a new car would cost about \$3,000 today.) In 1930, it took two men several days to put in



a car radio -- the dashboard had to be taken apart so that the receiver and a single speaker could be installed, and the ceiling had to be cut open to install the antenna. These early radios ran on their own batteries, not on the car battery, so holes had to be cut into the floorboard to accommodate them. The installation manual had eight complete diagrams and 28 pages of instructions. Selling complicated car radios -- that cost 20 percent of the price of a brand-new car -- wouldn't have been easy in the best of times, let alone during the Great Depres-

sion. Galvin lost money in 1930 and struggled for a couple of years after that. But things picked up in 1933 when Ford began offering Motorola's pre-installed at the factory. In 1934 they got another boost when Galvin struck a deal with B.F. Goodrich tire company to sell and install them in its chain of tire stores. By then the price of the radio, installation included, had dropped to \$55. The Motorola car radio was off and running. (The name of the company would be officially changed from Galvin Manufacturing to "Motorola" in 1947.) In the meantime, Galvin continued to develop new uses for car radios. In 1936, the same year that it introduced push-button tuning, it also introduced the Motorola Police Cruiser, a standard car radio that was factory

preset to a single frequency to pick up police broadcasts. In 1940 he developed the first handheld two-way radio -- the Handie-Talkie -- for the U. S. Army. A lot of the communications technologies that we take for granted today were born in Motorola labs in the years that followed World War II. In 1947 they came out with the first television to sell under \$200. In 1956 the company introduced the world's first pager; in 1969 it supplied the radio and television equipment that was used to televise Neil Armstrong's first steps on the Moon. In 1973 it invented the world's first handheld cellular phone. Today Motorola is one of the largest cell phone manufacturer in the world --And it all started with the car radio.

WHATEVER HAPPENED TO.

The two men who installed the first radio in Paul Galvin's car? Elmer Wavering and William Lear ended up taking very different paths in life.

Wavering stayed with Motorola. In the 1950s, he helped change the automobile experience again when he developed the first automotive alternator, replacing inefficient and unreliable generators. The invention lead to such luxuries as power windows, power seats, and, eventually, air-conditioning.

Lear also continued inventing. He holds more than 150 patents. Remember eight-track tape players? Lear invented that. But what he's really famous for are his contributions to the field of aviation. He invented radio direction finders for planes, aided in the invention of the autopilot, designed the first fully automatic aircraft landing system and, in 1963, introduced his most famous invention of all, the Lear Jet, the world's first mass-produced, affordable business jet.

(Not bad for a guy who dropped out of school after the eighth grade.)

The article can be found at:

www.antiqueradiomuseum.org/thecarradio.htm

The 145.130 Repeater Has Been Given a New Voice

Gerry K4RBZ and I re-installed the 147.315 repeater this afternoon.

Thanks to John K14YNA and Sam Lilly N4SJR, the willing and able and benevolent and capable radio technicians who acquired and put in a new controller board -- no small job.

Thanks also to Paul Wyse, W4PFM, who has graciously volunteered to monitor the repeater when possible in case of problems.

The repeater is located at the Eastern Mennonite University astronomy observatory on top of the hill behind the EMU campus in northeast Harrisonburg.

The repeater transmit frequency is 147.315, the offset is up 600 kHz, and the required PL tone is 131.8 Hz. The antenna is 25 feet above ground level, which is about 1395 ASL.

Remember the positive offset and the 131.8 PL. Give it a try and see if you can work it. If so, program it into your radio memories. This repeater will work great for local Harrisonburg public service events such as the EMU field day, the Harrisonburg March of Dimes, and other local H-burg public service events.

Plus, the entire repeater is quite portable (the radios, controller and power supply are all built into a compact case about the size of a shoebox on its end, and the duplexer cans are mounted on a sturdy frame), so this repeater might be used for an emergency portable repeater if needed.

This repeater joins the 145.130 repeater (minus offset) and the 444.600 repeater (plus offset) as the three MARA repeaters carrying the K4MRA club callsign. All three repeaters use the 131.8 Hz PL tone.

Signal reports from your location are appreciated.

David Fordham, KD9LA

Waynesboro Repeater Association News

The Waynesboro Repeater Association of Virginia, sponsors of the 147.075/147.675 repeater on Bead Den mountain near Waynesboro had their annual business meeting on Thursday December 5, 2013. The following items may be of interest to hams here in the local area.

1. The back up battery system is now 8 years old and need to be replaced next spring. It consists of 8, 6 volt batteries in a series parallel configuration. Each battery will cost about \$72. The WRA of VA is open to receiving donations for this replacement project. Several attendees at the business meeting have agreed to fund one or more batteries.

2. The membership voted to implement CTSS tone activation. We will use 131.8 Hz when it can be implemented.

Further information can be found on the WRA web site at www.qsl.net/wray

73 Gordon Batey WA4FJC



On the Sick List

Bennie Cook, N4BCC is home but has to take it easy on that hip. He said to tell everyone hello but **PLEASE** hold e-mails until he can get down to the computer and radio.

He hopes to get back to his computer and radio by Tuesday night if all goes well.

Submitted by Ray, KE4HVR



Area SK's



Just to let you know a local ham passed away on 12/11/2013 due to complications from a car accident a few weeks ago. His call is N4WVY, he was active on 40 meters, he also work at the county bus garage, a good man going to be missed. Any questions drop me a line

Submitted by K4KLH

Plan Ahead

FROSTFEST

The Mid-Atlantic's
Largest Winter Hamfest!

Frostfest 2014 is approaching! It will be held on **Saturday, February 1, 2014** at the Richmond Raceway Complex, from 8:30AM until 3:30PM.

We are looking forward to a great hamfest with manufacturers' representatives, new radio dealers, accessory dealers, and many, many tables filled with amateur radio equipment of all descriptions. There will be VE Testing, forums and meetings, and much, much more.

Our **Grand Prize is \$1,000 in Frostfest Buck\$**. Also, Early Bird ticket holders will be able to enter at 8AM, 30 minutes before General Admission starts!

All the details can be found at <http://www.frostfest.com>.

Tickets and tables can be purchased online at <http://www.frostfest.com>.

Plan on joining us for **Frostfest 2014**.

Frostfest is sponsored by the **Richmond Amateur Telecommunications Society**



January

1-5 - S506SLG & S506PMC(Slovenia)S.E.
 1-30 - 4S7KKg (Sri Lanka)DX
 1-30 - FK8RO (New Caledonia)DX
 1—**New Years Day**
 1—Straight Key Night
 1—SARG New Year RTTY Contest
 1—AGCW Happy New Year Contest
 2—**MARA Club Meeting**
 2—NCCC Sprint Ladder
 3—**VARA Friday Luncheon**
 3—**PVARC Club Meeting**
 4-5—RTTY Roundup
 6—ARES Net [K4NRA]
 6—Kid's Day
 7—**VARA Club Meeting**
 10—**VARA Friday Luncheon**
 11-12—North American QSO Party-CW
 12—DARC 10 Meter Contest
 13—ARES Net [K4RBZ]
 17—**VARA Friday Luncheon**
 17-19—January VHF
 18-19—North American QSO Party—SSB
 20—ARES Net [KA4EEN]
 20—**Deadline for February submissions***
 24—**VARA Friday Luncheon**
 24-26—CQ 160-m Contest—CW
 27—ARES Net [KN4FM]
 31—**VARA Friday Luncheon**



February

1—**Richmond Frostfest**
 3—ARES Net [K4LXG]
 4—**VARA Club Meeting**
 6—**MARA Club Meeting**
 7—**PVARC Club Meeting**
 7—**VARA Luncheon Meeting**
 8—**VE Testing**
 8-9 —**CQ WPX RTTY Contest**
 10—ARES Net [WF4O]
 12—Lincoln's Birthday
 14—**VARA Luncheon Meeting**
 14—**Valentine's Day**
 15-16—ARRL CW DX Contest
 17—**President's Day**
 17—ARES Net [K4RMY]
 20—**Deadline for March submissions***
 21—**VARA Luncheon Meeting**
 21-23—**CQ WW SSB 160M Contest**
 22—Washington's Birthday
 24—ARES Net [K4RBZ]
 28—**VARA Luncheon Meeting**



It makes
 people
 wonder what
 you are up to.

VE Test Schedule: Consistency, Thou Art A Virtue

Thanks to those who helped with the test session Saturday the 14th. We had two show for the test and a General and Technician license were earned.

Brian Daniels, K4RMY

Jim Lehman, W4POL

EC Showalter, KG4KUR

Ray Richie, K4NRA

Gerald Nauman, KN4FM

The volunteers are the backbone of our testing. The credit goes to those who make this possible. The schedule for next year is the same as in the past. The second Saturday of each even month.

Gerald will have the session in February. I know the VE's will give him the same excellent support that they have given me. Looking forward to next year.

The next Volunteer Examiner Session is scheduled for **Saturday, February 8th**, at the Woodmen of the World building on Highway 42 (John Wayland Highway) just north of Dayton, Virginia. Sign-in starts at 9:00 am, followed immediately by testing. If you are an accredited VE and would like to help, contact Gayle Shull, KU4XN, at gshu74@gmail.net

Gayle Shull, KU4XN



The club newsletter, **the Monitor**, is provided free of charge monthly to all members of all three clubs via email distribution, in PDF format. However, it is the individual club members' responsibility to notify the newsletter editor directly of all changes in email address. Electronic back issues will be provided free to members on request.

Elderly, disabled, or special-needs members may make special arrangements with their respective club officers to receive a hardcopy of the Monitor via U.S. mail in lieu of the electronic PDF version. However, the hardcopy requires additional production and delivery time and is not guaranteed to arrive before the scheduled monthly club meeting dates.

Members not receiving the electronic Monitor in a timely fashion (e.g., before their monthly club meeting) should notify the newsletter editor promptly to investigate and resolve the problem with distribution.

Members who are using the latest update version of Adobe Reader and experience trouble opening the

MASSANUTTEN AMATEUR RADIO ASSOCIATION, Inc.

President: Gerald Nauman, KN4FM
 Vice President: Gerry Brunk, KB4RBZ
 Secretary: Dennis Phillips, NS4K
 Treasurer: Sheryl Tonini, KJ4DOC
 Board (exp 2014): Andrew Pearson, N4RCE
 Board (exp 2015): David Fordham, KD9LA

<http://mara.ws>

MARA meets the first Thursday of each month
 at Wood Grill Buffet on Reservoir Street
 in Harrisonburg, Virginia.

Dinner begins at 6:30 pm,
 the business meeting begins at 7:30 pm

Visitors are always welcome.

Dues (\$12 per year) should be mailed to:

MARA
 PO Box 1882
 Harrisonburg, VA 22801

VALLEY AMATEUR RADIO ASSOCIATION

President: Greg Czerniak, W4GRC
 Vice President: Jeff Rinehart, W4PJW
 Secretary: David Tanks, AD4TJ
 Treasurer: Wayne Bowyer, N4EYZ
 Program Manager: Al Bonck N3JB

<http://w4xd.com>

VARA meets the first Tuesday of each month
 at the Country Cookin on Richmond Road in Staunton, Virginia

Dinner starts at 6:00 pm,
 the business meeting starts at 7:00 pm

Visitors are welcome

Dues (\$15 per year) should be mailed to:

VARA, Wayne Bowyer
 802-B Randolph St.
 Staunton, VA 22401

PAGE VALLEY AMATEUR RADIO CLUB

President: Bob Forrest, WO4MI
 Vice President: Mark Hensley N4YSA
 Secretary: Mike "Sparky" Terry, KD4KL
 Treasurer: Carol Terry, KA4LAF
 Board Member: Morgan Phenix K4RHD
 Board Member: Geoffrey Phillips, WD4LYO

<http://www.k4pmh.org>

PVARC meets the first Friday of each month: at the Page County Sheriff's
 Department in Luray

The meeting begins at 18:30 pm

Visitors are welcome.

Dues (\$12 per year) should be mailed to:

Sparky Terry
 PO Box 649
 Luray VA 22835-0649

The Monitor is published monthly by MARA, Inc.
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 in the Central Shenandoah Valley.

Distribution is in Adobe PDF format via email attachment
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Clubs differ in their policies regarding paper copies.
 Contact the president of your respective club
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Back issues are freely available on the MARA website
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Since the clubs derive their revenue from memberships,
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Occasional complimentary current copies are
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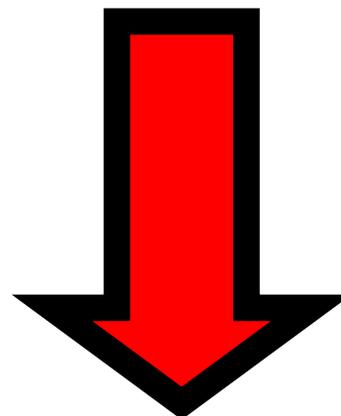
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RENEW

RENEW

RENEW

RENEW YOUR CLUB MEMEBERSHIP!



Membership Renewal Form

NAME: _____ CALLSIGN: _____ CLASS: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP CODE: _____

HOME PHONE: _____ WORK PHONE: _____

CELL PHONE (If you want it in club records for emergency purposes, not the roster!): _____

EMAIL ADDRESS: (print legibly!!) _____

MEMBER ARRL (Y/N)___ REGISTERED ARES (Y/N)_____ SKYWARN ID: _____

Are you available for Workday Daytime Emergency Call up? (Y/N) _____

Do you want to receive the Monitor via PDF Email? Yes/No/I already do _____

If yes, forward your email address to the editor at the email address on the back of the newsletter. Specify in the subject line: Please add me to the Monitor Mailing list

Make sure the editor has your current email address to avoid interruption of your copy of the Monitor.

MARA members mail with \$12 to: MARA, PO Box 1882, Harrisonburg, VA 22801

VARA members mail with \$15 to: VARA, Wayne Bowyer N4EYZ, 802B Randolph St., Staunton, VA 24401

PVARC members mail with \$12 to: Carol Terry, PO Box 649, Luray, VA 22835

MARA/VARA/PVARC

c/o John Spillman
168 Bosley Drive Ext.
Stanley, VA 22851
Phone: 540-778-1332
Email: kt4cbva@gmail.com

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