
Ole Virginia Times

The OVH ARC Newsletter

"OLE VIRGINIA HAMS" AMATEUR RADIO CLUB, INC.
Post Office Box 1255, Manassas, VA 22110

Repeater -- WA4FPM -- 146.97/224.66
OVH Nodes -- 145.03/223.54
BBS -- BBSHRG/N4WJN

AUGUST 1993

PRESIDENT'S MESSAGE

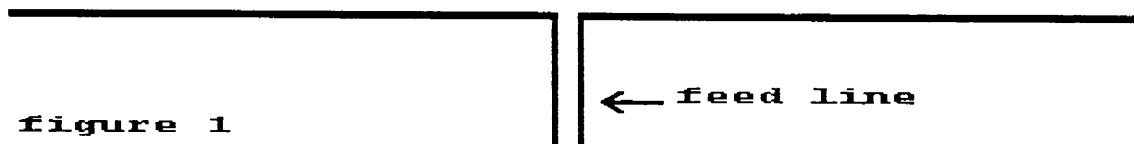
Due to my early departure for vacation and the non-availability of the usual input from the club president, this column will have a serious shortage of verbage this issue. It is hoped that Butch/N6NSM will be available for some exciting information when it comes time to put together the September issue.

The Folded Dipole

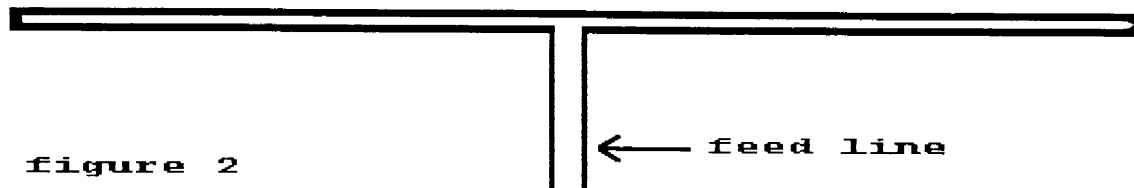
Some years ago, the FOLDED DIPOLE antenna (see figure 2) was all the rage. It works like an ordinary dipole (see figure 1), but is made of TV twin lead and is fed with TV twin lead. The input impedance of the folded dipole made in this manner is approximately 288 ohms and the 300 ohm twin lead is very nearly a perfect match. Using this antenna and feeding it from a rig with a 50 ohm coaxial output offers a problem that can be solved by use of a 4:1 step up balun. (A 1.5:1 VSWR will be had, but in this case, an antenna tuner will make things match).

de Harry/W4PVA

dipole antenna



folded dipole antenna



OLE VIRGINIA HAMS
AMATEUR RADIO CLUB, INC.
MINUTES OF MEETING
July 19, 1993

The OVH July, 1993 Meeting was called to order at 8:05 P.M. There were 32 members and 2 guests present for a total attendance of 35.

The Pledge of Allegiance by all members, oral roll call, and signing of the attendance list opened the meeting which was presided over by Jim, WD4OJY, Club Vice President. Mike, WV3H, Club Treasurer, reported the July 19th balances.

COMMITTEE REPORTS

FINANCE COMMITTEE

Tim, KB4NR, had no report other than the Club received our quarterly report from the accountant.

TECHNICAL COMMITTEE: NONE

PACKET COMMITTEE

Mike, WV3H, stated that the PC went down several times and had to be booted again. The 220Mhz side has had some problems with the coax. There could possibly be water in the line. Also, we have a desense problem on the 144Mhz side but could use mobile duplexers to remedy the problem. Each costs about \$70. A motion was made, and unanimously passed to purchase 75' of hard-line, two duplexers, and to not exceed \$500 to fix all of the Nodes current problems.

Harry, W4PVA, again mentioned that there will be a Civil War reenactment the last weekend of August (8-28 and 8-29). Hams are needed for safety reasons. Harry still needs someone to take-over this event, so if interested, call him right away.

PROGRAM CHAIRMAN

Joe, AB4QV, presented the program tonight. It was a video tape from

the ARRL on the latest Shuttle Amateur Radio EXperiment (SAREX) mission. It described all of the different modes that were operated and many of the hams from all over the world that contacted the shuttle. There will be no program at the next Club meeting.

The Club has a new newsletter editor. The lucky person is Jay, NS5N. He published the newsletter for July as well; Great job Jay!

COMPUTER COMMITTEE: NONE.

MEMBERSHIP CHAIRMAN

Jim, WD4OJY, read the following new membership applications for the first time: Anthony, no call and Dave, no call. There were no new membership applications.

EDUCATION COMMITTEE

John, N4YOB, said that they were still making plans for the fall classes at Stonewall Jackson High School. He mentioned that the league has a new Technician course out for \$99. The committee will looking at that course to see if it can be used.

FIELD DAY CHAIRMAN

Steve, N4OGR, provided a preliminary estimate of the scores from Field Day 93. (see special report & final tally in this issue, Ed.) Some comments were made by the lack of dupe sheets. Ron, NV3S, volunteered to be Field Day Chairman for 1994.

PICNIC COMMITTEE

They will begin looking into the possibility of having a Club picnic later this year.

FAR COMMITTEE

Allen, KD4KBX, gave report. He read the highlights of the minutes from the June meeting. They covered AUTOCALL problems and several new scholarships that FAR will be offering this year.

OLD BUSINESS

Bob, N4SCR, has been "promoted" to be the state of Virginia Emergency Coordinator for the ARRL ARES/RACES organization.

NEW BUSINESS: NONE

The 50-50 drawing was won by Mike, KD4GCX.

The meeting was adjourned at 9:10 P.M.

Respectfully submitted,
Ron Everett, NV3S
Club Secretary

FIELD DAY 1993

I would like to thank everyone that participated and brought equipment! I would like to especially thank Bob, N4SCK, for the use of his motor home.

We operated in the 3A Class and used Milt's call, N4SN as the primary and Jim's call KD4AUJ, for the novice station.

We had a packet station, UHF & VHF station, as well as multiple HF stations. We also made one satellite contact.

Next year we will concentrate a little more on VHF/UHF, packet and satellite, due to the low sun spot cycle and the effects on HF.

We had a total of :

33 contacts on packet
231 contacts on phone
219 contacts on cw
1 contact on satellite

Which comes to a point count of:

506 points on cw
231 points on phone
900 bonus points &
multipliers
2,374 total points!

The final tally will appear in QST's November issue.

de Steve/N4OGR

The Transmission Line

A transmission line is used between the rig and the antenna. At 2 meters, we almost always refer to it as a piece of coax.

Any transmission line has losses associated with its use. This is usually measured in DECIBELS. The manufacturer of the line generally says "x decibels per 100 ft".

From this, one would think that the lower your antenna, the lower your losses and thus the better you would get out. It is true that the lower your antenna (shorter the transmission line), the more power that reaches your antenna. BUT, at VHF, this lower antenna will have a very short range due to the nature of VHF. So we usually put the antenna up as high as we can and accept the losses because we gain more in range with this higher antenna than we lose in the transmission line. We also try to use a less transmission line with less loss to avoid some of the losses.

Several types of transmission line are available. They are designated by line impedance. Without going into the technicalities of the situation, the line impedance is determined by its conductor diameter to outer conductor ratio and the insulating material within the line.

50 ohm line is generally used for amateur radio installations but other types can be used if provisions are made for the difference. As a general rule, the larger the diameter of the transmission line, the lower the losses. It is also true, that the larger lines can handle more power (but one 2 meters, that is seldom a consideration).

Of the 50 ohm transmission lines commercially available, "hardline" is the best BUT, it is very expensive. A common line used is the RG8 size (about 1/2" in diameter). The RG58 size is sometimes used for mobile installations because the length of the cable run is short and this size

is easier to handle. There is an RG8X cable with lower loss insulation-thus lower line loss.

The RG8 has about 1/2 the loss of RG58 (for the same length line) and thus its popularity.

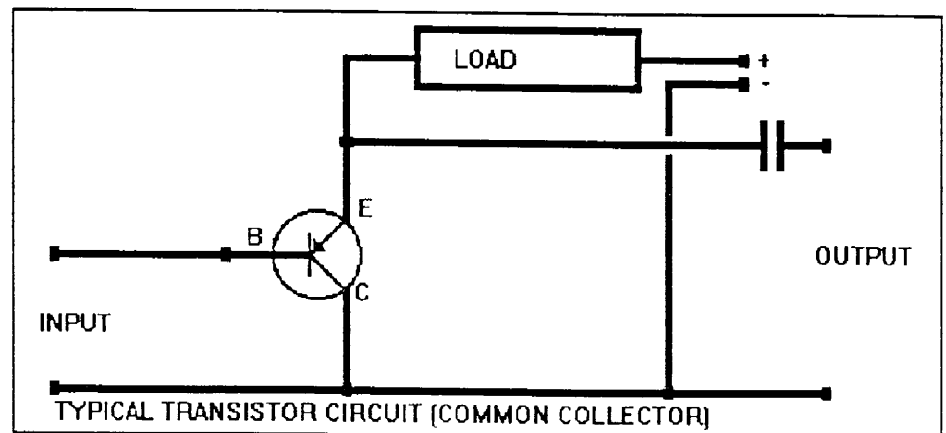
One point of interest, to those using the lower frequencies. At 40 meters, there is only about 2 dB difference between the two cables. And, if you consider what 2 dB is, about 1/3 of an S-Unit, the difference seems nearly inconsequential.

I am not prepared to discuss the meaning of a couple of dB at 2 meters, but it should translate into "quieting" at a given distance.

de Harry/W4PVA

TRANSISTORS

Many years ago, I recall reading an editor's discussion concerning the reliability of vacuum tubes. Amongst other things, he suggested that we needed a device that would do the tube's job and be made of something mechanically solid. He suggested a resistor that would vary at RF and audio frequencies.



By memory, this was Hugo Gernsbeck, editor of a magazine called Popular Science and this was in the 1930's. To my knowledge, nothing came of this. Again, by memory, I think it was a Dr. Shockley of Bell Labs that came up with a "transistor". This was around

about 1950. Early transistors had two very closely spaced "whiskers" contacting a "wafer" of germanium. While this is all quite interesting, most hams are interested in "HOW DO I USE THIS DUMB THING?".

As a practical thing, a transistor is a three terminal device. One connects a power supply through a load to one terminal, a signal source to another terminal and the third terminal to the ground return.

In a nut shell: A current through the base controls a second current through the emitter. (Both currents going through the collector).

The signal current to the input called "BASE" (see figure) causes the power supply to conduct through the load AND transistor terminal called "COLLECTOR" to the ground return. The current to the base is small compared to the collector current; thus amplification. Essentially, this is all there is to a transistor. Of course, there is a goodly bit of mathematics that describes the action. Also, one could go into the internal actions causing these things, but it remains that a smaller current controls a larger current.

Since transistors are quite small, it leads to the combination of more than one into a single package. In fact, the art has combined numerous transistors AND peripheral devices into a single package. We call these INTEGRATED CIRCUITS.

Back to the transistor: These have advantages in that they operate on small voltages, are nearly immune to physical shock, do not deteriorate with usage and are small. Also, they do not generate as much heat as vacuum tubes. A major disadvantage is that they burn out almost instantaneously when excessive current flows through them; thus the common statement, "they are not forgiving, (of overloads)".

Transistors have almost completely replaced vacuum tubes because of these characteristics. At this point, I add a statement "even though superseded, tubes will still work" and the heat they generate will warm the shack a bit on cold nights!

de Harry/W4PVA

Ed.'s Notes

Well, my first issue of the OVH Times was fielded and I appreciate all the warm and wonderful comments received. I must apologize though for some of the minor problems that crept into the typesetting. I have been using WordPerfect for perhaps five or six years, but I have never fully utilized some of its more powerful (or basic) properties. One of these being JUSTIFICATION. I explained to our WP/Typist at the office that I was using quite a bit of hyphenation to make things fit and Cindy was nice enough to show me how to use Full Justification to make it all better. I did, however, forget to pull out a lot of hyphenated words before doing this. Sorry about that.

This newsletter will mark another first for me. I am experimenting (on you) with a graphics package that I purchased and I hope that the results won't be unpleasant.

Please contact me via any of the usual means (phone, packet, or eyeball) and pass on to me any hints for what you would like to see on a regular basis in the columns.

You'll also note that this issue is prepared in a different type. If this creates a reading problem (I know my eyes aren't what they used to be) I will go back to the standard type for the next newsletter.

Before I go, I would like to pass along this one request. I have been receiving a lot of input on change of addresses. These should be going to Blaine, KB4RKL, who handles the mail list and roster for the club. This is not a problem for me to take it at this time as I am on packet and this is very expeditious. I will continue to pass along all requests to Blaine in a timely manner.

Once again, thanks for all your support and cooperation.

73 de J Edgar/NS5N

SWAP N SHOP

Wanted:

MFM Hard disk controller w/floppy drive controller for a Sea-gate drive Model #ST-251 -- A Sea-gate ST-22M is the recommended card. I would also be interested in a terminating resistor for a Seagate ST-251.

Contact:

Jim (WD4OJY) @ 369-3940 - evenings or on packet, either direct or via N4WJN.

Wanted:

Manual for Ten-Tec 252G HF Rig Power Supply. Having intermittent power problem and need manual & schematics to track it down.

Contact:

Jim (KD4AUJ) @ 369-0782.

For Sale:

Tandy DMP-132 Printer. Hard working utility dot matrix printer. Excellent for use as line printer on packet radio.

Price: \$100.00

(continued next colum)

For Sale:

MFJ-1278 Multimode TNC all Software and Documentation PLUS a homebrewed interface for any radio configuration. This interface provides DC isolation of the audio line for those rigs that have a control voltage on the audio line. Perfect for use with ICOMs and such.

Price: \$250.00 takes it all.

Contact:

J Edgar (NS5N) @ 330-7333

NEXT MEETING

The next meeting of the OLE VIRGINIA HAMS AMATEUR RADIO CLUB will be on August 16th, 1993, in the Basement Meeting Room of the Northern Virginia Electric Cooperative, 10323 Lomond Drive, Manassas, VA. The meeting starts at 8:00 PM and all are welcome to attend.

TECH-NOTES

If one has a two meter antenna mounted upon the top of a 50 foot tower and has a coax run of 100 feet so as to reach the antenna from the shack, losses in the coax will cause the measured VSWR at the shack to be different than the actual VSWR.

Let us suppose that the actual antenna VSWR is 10:1. If RF-8/U coax is being used, the measured VSWR will be approximately 2.5:1. A 1.4:1 VSWR translates to about 1.2:1 measured in the shack.

If RF-58/U is used, the VSWR of 10:1 would read approximately 1.5:1. While a VSWR of 2.5:1 would read about 1.25:1.

The point is: The coax losses tend to "hide" the actual VSWR from you. This is especially true of VHF freqs.

When one moves to the lower frequencies, the same is true. BU1 due to the lower coax losses at these lower frequencies, the effect is considerably less obvious.

An example: At 40 meters, the same cable would reduce the parent VSWR for a 10:1 VSWR to about 5:1, while 2.5:1 would be reduced to about 2.4:1.

THIS IS ALL DUE TO CABLE LOSSES ONLY. And it assumes that the cable losses are independent of VSWR.

It all boils down to: USE THE LEAST LOSS CABLE YOU CAN AFFORD.

It is true that for a given frequency, the larger the cable diameter used, the less the coax losses (This assumes the same type of insulation is used in the cable.

Using a tuner to "match" the antenna assembly at the transmitter end, DOES NOT REDUCE THE CABLE VSWR OR LOSSES.

Coax power handling capacity is determined by the cable diameter and insulation type.

The length of a coax line, as measured in wavelengths, differs from the actual, physical length due to the dielectric constant of the insulation material. The dielectric constant of the insulation changes the electrical length by a number called the velocity factor. The velocity factor for solid polyethylene is .66 while foamed polyethylene is .8.

The result is that a quarter wave stub of RF-8 would be 2/3 the length of a quarter wave in air.

This results in a problem when spacing two antennas 1/2 wavelength apart and feeding them 90 degrees out of phase. One cannot simply feed the rig to one and connect the other to the first with coax.

The electrical length of the coax could be too long. One would have to arrange the feeds to be the physical lengths to accomplish the required electrical lengths.

HAM BANDS

Generalities are discussed here and as generalities, they cannot possibly cover all situations. Moon bounce and satellite communications are not considered here.

A good deal of this information comes from years of "not so careful" observation, but it summarizes my feelings for the situations. It is assumed that an antenna is being used and that it works.

Commencing with 2 meters: This is basically a "line of sight" band. Useful radiation travels pretty much along the surface of the earth. About the only useful radiation for communications is propagated within the lower degree or so with respect to the local earth surface. The received signal strength is primarily determined by the distance between the two stations in communication (of course, more power gives more signal strength), but a range limit is reached where the earth curvature allows RF to go off into space. On 2 meters, under most conditions, all radiated energy above the "degree or so" goes off into space and is lost for ever.

On 80 meters: Daytime high angle will be useful for short range communications. Nighttime: The very high angle radiations become less useful, and an angle, in the order of 70 degrees vertical angle of radiation, allows medium range communications. DX is possible, generally early AM (early PM is usually subject to too much QRM). In general, any DX operation requires low angle radiation.

On 40 meters: Daytime high angle of radiation allows medium range communications contacts. Radiation above 40/45 degrees is generally lost in space. Nighttime communications is generally by skywave (between 0 and 30 degrees). DX is good/best at sundown or dawn.

On 20 meters: Daytime radiation

above 20/25 degrees is generally lost in space but radiation at about 10/15 degrees gives excellent DX. During nighttime, a good deal of all angles of radiation is lost into space. This is of course, subject to variations in the sun spot cycle.

10 meters: Nearly all of the useful radiation is 10 degrees or below. This is primarily a daylight path band and the low angle of useful radiation results in very long distance contacts.

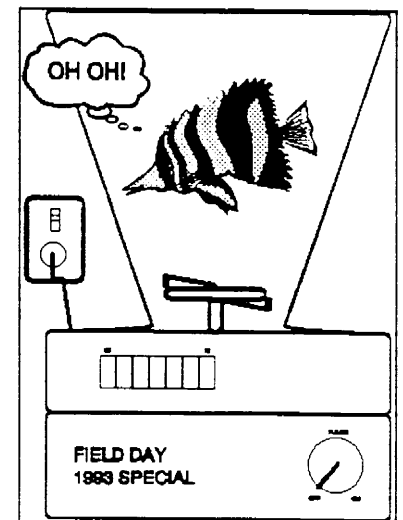
It must be pointed out that these are generalities and certainly do not apply in all circumstances, especially it does not apply to Ducting, Meteor Scatter, Temperature Inversions and the like.

Another general condition: The band "goes out" first on the higher frequencies. That means if 20 meters is "dead", usually 15 and 10 will be too. But, if 10 is "dead", 20 might be OK.

Of course, all of this is dependent upon the state of the sun spot situation at the time of operation.

de Harry/W4PVA

BRING BACK ANY MEMORIES FOR ANYONE?



THE CONTESTER'S COLUMN

This is the first of many articles on contesting. I do not claim to be the grand guru of contesting, but I have participated in more than a few and placed well in those; 1980 CQ World Wide WPX-SSB Contest, Single Operator, 1st Place in Oceania on 40 Meter Phone, All Time High Record; 1980 ARRL International DX Contest, 1st Place, 40 Meter Phone; 1980 IARU RadioSport, 3rd DX and 10th World Wide, Multi-operator, Multi-Band; 1981, IARU Radiosport Championship, Single Op, Phone, 1st Place, Country Winner.

Now that the credentials are out of the way, I can honestly say that I had some of the poorest contest practices in the annals of amateur radio.

What did help, was a good working knowledge of radio propagation, an operable radio system and having been part of a multi-operator attempt prior to going it on my own.

All I would like to touch on with this first article are the basics to set a solid foundation with which to work from. This is the most important aspect of participating in any contest.

#1 Select a contest that you would like to participate in from the some 250 that are held annually. A good place to start, is with Field Day. This will provide the opportunity to participate in a multi-operator effort and observe some of the various operating techniques for voice and CW (no, that isn't Country & Western).

#2 Get the information concerning the rules and regulations of the contest as early as possible so that you can become familiar with what is expected from you and what the station you contact should be providing you for a valid contact. You will run across more than one contact during a contest period that is not a participant and has no idea of what you need. If you have reviewed the rules well, you can provide him the necessary information to provide you with the correct exchange. Trust me. This is going to happen. It always does. Remember the 10% that never seems to get the word? You will more than likely find them and more on the bands during the contest.

#3 After having reviewed the rules and such, you should be able to make the decision as to whether or not you wish to run single-operator or multi-operator. Also, now is the time to start planning a band (or bands) of operation. The best advice here is to check the propagation reports 27 to 28 days prior to the contest date. Why? Because that is the period of rotation of the sun. If there was sunspot activity during the first time, it will more than likely be there on the next rotation. This can be done a number of ways. Packet is the easiest. If you are not on packet, ask one of the club members to download the latest available and hard copy it for you. Take a look at them and they can really help you determine what your optimum operating hours should be. Don't be one of those types that has to operate the whole 48 or 72 hours the contest is on. (Of course, if you are multi-operator, multi-band, then it is OK). Be advised though, some contests only allow a specific number of hours of operation. If you can only operate 36 maximum out of a 48 hour period, don't waste your time calling CQ Contest on 40 meters at high noon. You won't get a very high contact ratio. Listen to WWV on the receiver and check those A and K indices. I will try to cover those in a future article.

#4 Get out there and check those antennae. The worst thing that could happen is to discover your favorite inverted-vee, vertical or beam no longer resonates in the portion of the band where all the good DX is at. Personally, I ran on wire antennas for every contest I have worked. I also had a spare in case something happened to the first one. (Sea gulls are not user friendly when they come in contact with 18 gauge wire antennas).

\$5 Contact ratio. Now there is a term that you may not be familiar with. A wise man (N6OP, Bill Zachary) once told me, "If you work voice, you should be working between 8 and 12 contacts a minute for a good contact ratio and on CW, a minimum of 6 to be competitive". Good advice. Not practical for the beginner though. It takes time to get into the swing of things and contesting provides that time. The first hour is the most critical and the most frustrating.

You're trying to find a frequency to settle down on and call for extended periods and everything is QRM and QRN. Don't worry about it. All the QRM tends to drift of into the background after a while. You start to get into a rhythm of calling and answering. Before you know it, you have your first contact sheet filled out and on to your second, third, etc, etc.

This brings me to a natural breaking point for this article. In the follow on articles, I will introduce you to things like: contest logs, dupe sheets, some of the contest logging software that is out there, counting points and finally, filing the results.

Then comes the hard part. There is usually a four to five month wait for the adjudicating officials to release the results of the contest. Ever notice how the Field Day results come out in November or such? It takes time for them to go over the tens of thousands of contest logs that are submitted for each contest. Don't get discouraged though. Pretty soon, you'll see your call listed in with the others. It may be near the top or may be near the bottom, but one thing for sure. You know what you will do different the next time. Like anything, contesting is a learning experience. Each time you do it, you gain more knowledge and expertise.

If you have any specific requests for information on contests that are available, I have found that the easiest way to obtain the information is to contact the sponsors. ARRL sponsors a plethora of contests annually as do CQ and 73. I contacted them many years ago and requested information on their annual events. They provided me with all of the necessary paperwork to be part of every contest that they sponsored for the complete year. I want to tell you, that is a lot of paperwork. (My first contest was 265 logsheets).

I suggest that you take the time to contact them or send them a large SASE with lots of postage for the return if they request it and I am sure they will provide you with everything you desire.

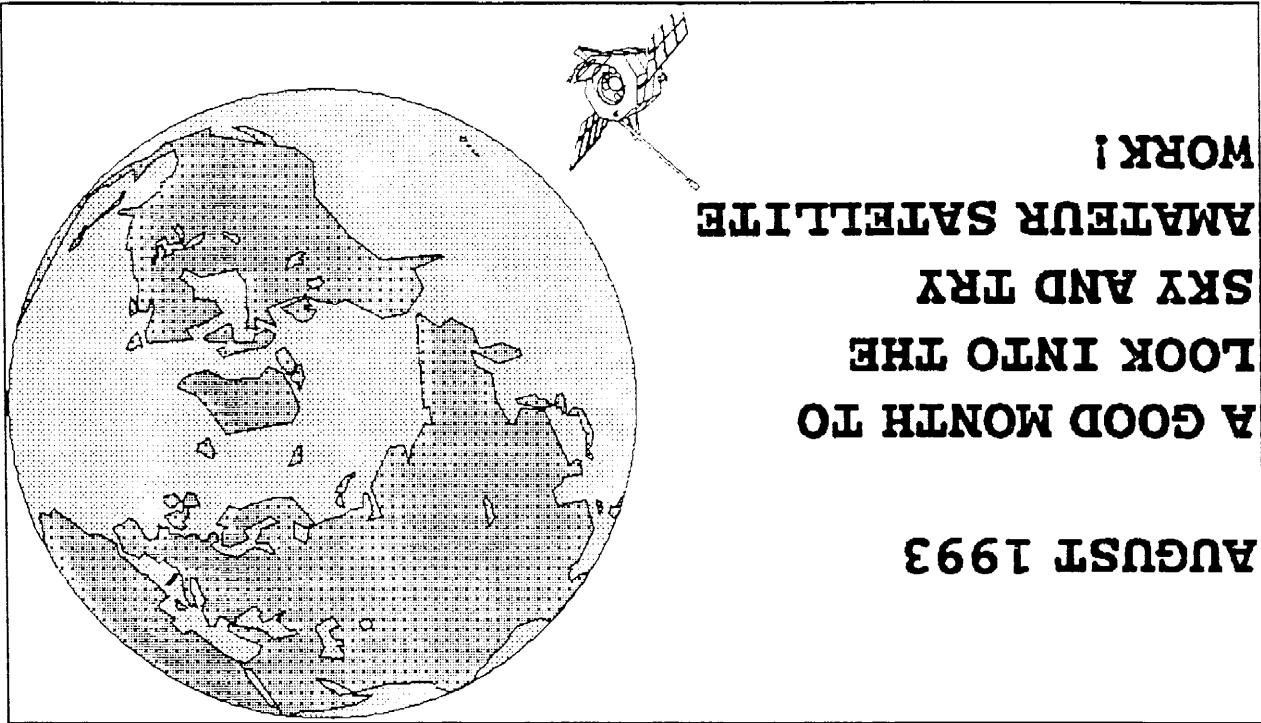
See you next month with some more tidbits.

OLE VIRGINIA HAMS AMATEUR RADIO CLUB

August 15 - September 18, 1993

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Aug 15 ARRL NATIONAL CONVENTION-HUNTSVILLE, AL	Aug 16 2000 NET-WOODBRIDGE WIRELESS-147.84 MHz/223.18 MHz 2000 MEETING-OVH	Aug 17 MEETING-SPARK	Aug 18 2000 NET-NVFMA-146.79 MHz 2100 NET-FARA-147.165 MHz	Aug 19 2000 NET-OVH-146.970 MHz/224.66 MHz VEC-BALTIMORE ARC-TOWSON, MD	Aug 20	Aug 21 VEC-HAMPTON ROADS,VA VEC-LAUREL ARC-LAUREL, MD
Aug 22 MOOSE ARC HAMFEST-TOWSON,MD	Aug 23 2000 NET-WOODBRIDGE WIRELESS-147.84 MHz/223.18 MHz	Aug 24	Aug 25 2000 NET-NVFMA-146.79 MHz 2100 NET-FARA-147.165 MHz	Aug 26 2000 NET-OVH-146.970 MHz/224.66 MHz	Aug 27	Aug 28 <small>2000 MEETING MOOSE ARC VEC-FREDERICKSBURG VS "SAM" FREDERICKSBURG,VA VEC-HERNDON REPEATER GROUP HERNDON,VA</small>
CIVIL WAR RE-ENACTMENT						
Aug 29 SOUTHERN PATUXENT HAMFEST-UPPER MARLBORO,MD	Aug 30 2000 NET-WOODBRIDGE WIRELESS-147.84 MHz/223.18 MHz	Aug 31 VEC-MARYLAND MOBILEERS ARC-LARUEL, MD	Sept 1 2000 NET-NVFMA-146.79 MHz 2100 NET-FARA-147.165 MHz	Sept 2 1930 MEETING-VA BEACH ARC 2000 NET-OVH-146.970 MHz/224.66 MHz	Sept 3	Sept 4
CIVIL WAR RE...						SHELBY HAM...
Sept 5	Sept 6 2000 NET-WOODBRIDGE WIRELESS-147.84 MHz/223.18 MHz	Sept 7 MEETING-SPARK	Sept 8 2000 NET-NVFMA-146.79 MHz 2100 NET-FARA-147.165 MHz ARTICLE DEADLINE	Sept 9 2000 NET-OVH-146.970 MHz/224.66 MHz MEETING-AMRAD	Sept 10	Sept 11 VEC-WILLIAMSBURG
SHELBY HAM...						
Sept 12 F.A.R.FEST 93-GAITHERSBURG,MD	Sept 13 2000 NET-WOODBRIDGE WIRELESS-147.84 MHz/223.18 MHz	Sept 14 1930 MEETING-FARA	Sept 15 2000 NET-NVFMA-146.79 MHz 2100 NET-FARA-147.165 MHz	Sept 16 2000 NET-OVH-146.970 MHz/224.66 MHz	Sept 17	Sept 18 BUFFALO HAMFEST-HAMBURG,PA

submit items for calendar to N55N. Tnx.



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FIRST CLASS MAIL

