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Ole Virginia Times  
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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

NOVEMBER 1993

ED's NOTES

Another Month Gone and Nearly a Year

by J Edgar/NS5N

I can't believe that the time passes as quickly as it does. It must be a sign of aging. That and poor time management. The Holiday season is upon us and I would like to take this opportunity to wish all of you the very best. I continue to enjoy the support that you provide me in the production of the newsletter. After all, this is not a one or two person effort, but a joint effort that we can all be proud of. As usual, there is the open request for more material to place in the newsletter. A paragraph or a novel, it doesn't matter.

By the way, my better half is now KE4GSZ.. (17 YEARS, BUT WORTH THE EFFORT). I still need to complete the power installation for her mobile, but there just never seems to be enough time in the day. Weekends are filled now with school and appointments with friends and professionals. Time will come, when the snow will be deep enough and I will be able to slip under the car and route the DC cable for the radio. It is just like antenna work, it has to be the worst conditions before the time is right.

73 and have a Happy Thanksgiving.  
J Edgar & Maureen

MEETING OF Q.V.H.

18 OCT 93

Meeting was called to order at 2004 local by the President, Butch, N6NSM

Jim, WD4QJY, led the club in the Pledge of Allegiance.

Old Business:

It was brought forward that Ken, KM4UH, required a name to file with the ARRL as the HamFest chairman to make it official.

Tim, KB4NR, volunteered his name and call to be listed. Immediately following the break, Jim, N3ODZ and Jack, N4YIC, came forward to Chair and coChair the HamFest.

Finance Committee:

A committee meeting will be held next month on meeting night as there is no club meeting due to the room not being available that night.

As reported by Mke, W3H:

checking 2150.58  
hamfest 2110.22  
petty cash 33.39  
savings 39987.50  
repeater cd 2376.89

Technical Committee:

Jim, WA2QJY, has been advised by Tim, KB4NR, that the repeater is in need of a new controller. It was decided that the Finance Committee group and the Technical Committee would meet together to arrange the covering of the expense.

Packet Committee:

Mke, W3H, stated that no problems are evident at this time with the system. Interference (occasional packet bursts) on the 146.97 machine, appear to be due to users of the 145.77 DX cluster forgetting to disable their +600 offset. This places their burst on 146.37, the input to WA4FPM

Butch, WHJL, is now on packet!

Woody, KD4DEG, has been requested to locate the sensors and have them available for reactivation of the WX node.

Harry, W4PVA, had no verbal input, but did pass a notice which Butch, N6NSM read. It was a thank you for our participation in the Reenactment. It is hoped that we can take part again next year.

Education Committee:

John, N4YOB, was not present, but it was stated that there are three students in class at this time.

Scholarship Committee:

Pete, KB4RME, will research our status and give a full and formal report at the December meeting.

FAR Committee:

Alan, KD4KBX, has requested more input from the club. You can submit anything from photos to short items. All will be appreciated.

Newsletter:

J Edgar, NS5N, has similar requests for articles. The format is still changing somewhat and has not settled completely. It was noticed by a few that the type should not go smaller than 12 cpi. He will strive to keep that a minimum.

Dick, WD4AZG, mentioned that Dds Spitzen Sparken BBS is now running at speeds up to 14.2Kbaud.

Butch, WHJL, reported that a good time was had by all at the picnic. It got a little damp, but it was good food and friends.

JOTA Jamboree On The Air:

Butch, WHJL, says he got a little overworked with the number of scouts that passed through, but it went very well. Ron, NV3S, had his share also but was not present to comment. Next years plans are to share the wealth.

Membership Chairman:

Jim, WD4QJY, read in for acceptance:

Scott KE4HCT  
Steve WA3RKM  
Pat KE4FMY  
Calvin KD4TKH

Members voted on acceptance and it was passed.

There is no Club Meeting in November; the next meeting will be on the 20th of December.

Meeting was adjourned at 2101.

Respectfully submitted by:

J Edgar McDermott/NS5N

for

Ron Everett/NV3S

# More on Antenna Tuners

HOWARD LIEBMAN, W2QUV  
ARRL Technical Coordinator

taken from WORLDRADIO, November 1993

There has been much nonsense published in articles and books on the subject of antennas. Even antenna manufacturers publish outright lies about their products! This is the reason that the ARRL doesn't accept antenna advertisements in *QST* which include any gain claims. If the ARRL had to take this step, is any wonder that the average ham gets confused? It would take a large book to correct much of this misinformation, so this article will only deal with a small part of it, namely antenna tuners.

Whether it's called "Antenna Tuner," "Transmatch," or "ATU" (Antenna Tuning Unit), it means the same thing. We will refer to it as "antenna tuner," or simply "tuner", for the balance of this article. Briefly, what an antenna tuner does is cancel all reactances in the antenna and transmission line (resonance), and match the resistance of the system, enabling virtual 100% transfer of power. Simply stated, even with a mismatched system, you can deliver virtually all the RF power of your transceiver to your antenna.

In published literature on the subject, some authors (who don't understand the subject at all) have written that the antenna tuner only "fools" the transceiver into thinking that it is seeing a 1:1 SWR and thus only enables the transceiver to deliver full power, but it also tunes out all mismatches in the system, including transmission line to antenna mismatch, and also any non-resonance in the antenna itself.

In the real world, a well-meaning ham puts up a simple dipole, then goes through the agonizing procedure of pruning it to resonance at a certain frequency in the band of interest. If successful, he winds up with an antenna that works fine in only a portion of the band (phone, CW, or whatever). If he now gets a simple, inexpensive, antenna tuner, he can tune the entire band. He then realizes that he wasted much time and effort in the antenna pruning. If you have one simple antenna fed with coaxial cable and the transceiver in the 100-watt class, get an MFJ model 945D Mobile HF Antenna Tuner. The "Mobile" in the title just indicates that there are no antenna selection switches, which are un-

necessary when you only use one antenna.

Now that you know that your antenna can be tuned all across a band with an antenna tuner, try it on the other bands. A lot more versatility has been given to your antenna system. With the tuner, you can tune your rain-gutter, metal balcony fence, a random wire, an indoor antenna, or whatever.

If you've read this article thus far, you have probably come to the conclusion that an antenna need not be physically resonant at any particular frequency. Bravo! You now know more about antennas than the average ham. This knowledge enables you to realize that with the antenna tuner, you can easily put up a simple multi-band antenna without traps, coils, or stubs.

Now that you don't have to concern yourself with resonant antenna lengths, you're ready to put up an excellent simple and cheap multi-band antenna. It is a dipole look-alike fed with open-wire line. I say dipole look-alike because the legs are not cut for quarter or half-wave, and therefore not a true dipole. Perhaps "doublet" would be a better name, but call it a dipole anyway, since very few people know the difference. In my QSOs I simply refer to my antenna as a dipole, it keeps the conversations simple.

Since we're not concerned with resonant lengths, what should the dimensions be? Very simple: Make your antenna as long and as high as you can. The lowest frequency of your antenna will be the one where the total antenna length is at least a quarter wave long. All higher bands will work fine. For example, if you have room for only 70 feet, you have a very good 80 through 10 meter antenna. Longer would be better for 80 M tuning, but mine is only 64 feet and I use it on 80 meters as well as all the higher HF bands. For the transmission line, I favor 450 ohm open wire line., but heavy duty 300 ohm TV line could be used. However, in rainy weather the TV line characteristics change, so go for the 450 ohm open wire line.

Of course, with open-wire line, your antenna tuner must have a balun in order to match the line. If your tuner doesn't already have it built in, you can buy or make a suitable 4:1 balun. If you intend to buy a new tuner for

this type of antenna, I suggest the MFJ Model 962C Versa Tuner III. It costs about \$120 more than the 941E but it includes a much superior balun, and if you ever go to 1.5KW, you would already own a suitable tuner.

Even if you use beam antennas, a tuner could enable tuning the entire band. Whatever your HF antenna type, an antenna tuner will increase its bandwidth.

In the opening paragraphs, I made references to authors who should not write about antennas. On the other hand, there is excellent reading material available. For example: a) *The ARRL Antenna Book*, 16th Edition, ARRL, 1991. b) *Reflections* by M. Walter Maxwell, 1990, ARRL c) *Aerials II* by Kurt N. Sterba (whoever he is), 1993, **WORLDRADIO BOOKS**. d) Anything by Lew McCoy, W1CP, is always worth reading.

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## Comments on

"More on Antenna Tuners  
by Howard Liebman"

Having read the article, I disagree with some of the words used but fully agree with the gist of the test. However a number of comments are needed.

1) While it is true that any length of antenna can be used on multiple bands, one must not forget that any antenna used at a frequency where its length is not a half wave long will have a power distribution (pattern) that is *not* the same as a dipole. For example an antenna used at a frequency where its physical length is one wave length will have a null in the direction where it would be maximum when used at a frequency where it is physically a half wave length or shorter.

2) An antenna used at a frequency below that where it is a half wave long will have a *similar* (well nearly) *pattern* as it would have at the frequency where it is a half wave long.

3) The length of an antenna determines its feed point impedance which is further transformed to some other value by the length of the transmission line. The function of the antenna tuner is to further transform this cable input impedance to that of the

[continued next page]

transmitter and thus present the rig with a matching impedance for maximum power transfer to the antenna system.

There is much more to this and some future newsletter articles will take up some of them. I will attempt to remain reasonably understandable in these articles.

Questions and comments are welcome.

de  
Harry / W4PVA

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### CHECK THIS!

Craig, N4WUV, experienced a battery problem with his HT battery. It seems that this rig/battery was his spare unit used primarily for back up purposes. The battery went down and would not come up to full voltage. He took it apart and tested each cell of the battery. He found one cell that indicated short.

Craig then took an external power source and "flashed" the cell by momentarily touching the wires from the external power source to the battery in the direction to charge it (that is, he connected the positive wire to the positive end of the cell and the negative to the other end). After a couple of tries, the cell showed a bit of voltage. Then he put the battery pack together and gave the battery its rated charge.

IT WORKED..

We are not too sure how long this will continue, but it now works at no cost to him.

The estimated cause was what is called a DENDRITE between the two internal plates of the offending cell. Dendrites can occur in NiCad cells when a growth occurs internally between the two plates and connecting an external supply can destroy the dendrite in a manner similar to an electrical fuse.

The cell can then be reassembled into the HT battery and used for some time.

PS: A dendrite is similar to a stalactite in a cave growing to connect with a stalagmite, forming a single "pillar".

de Harry/W4PVA

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### FIELD DAY 1993

Well, the results are in, and the best that I can tell, the Ole Virginia Hams, using N4SN for the primary call and KD4AUJ for the Novice station, placed 173 in the 3A category. That placed us in the middle of the pack. Not too bad for the conditions that we were operating under. Bad weather aside, a good time was had by all and I learned that you really can cook on a barbecue using a screwdriver.

Thank you to one and all that were able to dedicate their time and effort. All assistance was greatly appreciated and we hope that we will see you next time along with those that were not able to participate this year do to schedule conflicts.

de  
J.Edgar / NS5N

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### VSWR PRIMER

There is a "problem" with modern HF rigs. Most of them have an internal circuit that causes the rig to reduce power when it is connected to a transmission line having a "high"

VSWR.

This is included to prevent a very high VSWR from causing the output transistors to exercise their characteristic of instantaneous burn out. The older tube type transistors were quite forgiving in that they would take a bit of time before burning out and thus allow one to tune the antenna matching device.

Today's transceivers are now including an automatic antenna tuner within them to try to overcome this problem.

If your rig does not have an automatic antenna tuner, you should take care to first test with low power and then measure the VSWR. Following that make any adjustments needed to lower the VSWR to the rig before increasing power, thus preventing damage.

You must present the transistorized rig with a reasonable VSWR to have it operate at full power.

de  
Harry / W4PVA

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What will NAFTA do for you?  
Has anyone fully understood what the future will be?  
Do we need more time to understand its implications?



Bill Clinton

## THE OVH CLASSIFIEDS

### Wanted:

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

### Contact:

Jim (WD4OJY) @  
703 369 3940 - evenings or on packet, either direct or via N4WJN.

### For Sale:

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

Price: \$100.00

### For Sale:

Panasonic KX-P2624 24 Pin Dot Matrix Printer. This is a wide carriage printer supplied with Adobe Type Manager Software for an unbelievable amount of Fonts and printing capability. Wife wants a laser printer so this one goes cheap. List is \$619.00; whole-sale is \$395.00.

Price: \$300.00

### 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

### Contact:

J Edgar (NS5N) @  
703 330 7333

### For Sale:

MFJ-931 MFJ Artificial Ground

\$55.00

2 Seagate ST-277 65Mbyte drives with RLL 1:1 controller (AT BUS)

\$325.00

Genoa EGA Card Super Hi-Res 800x-600

\$70.00

Central Point Software COPY II Board

\$25.00

Adaptec RLL Controller Interleave 3:1 w/floppy support. (for XT)

\$15.00

CGA PC Board

\$5.00

Sound Board (B.G. Micro)

\$20.00

4 port I/O board (82450 UARTS) w/adaptor cable)

\$20.00

Future Domain - TMC-850MEX SCSI Controller f/u/w CD-ROM only - no

floppy or HD support) \$20.00

286 Motherboard w/1Mbyte RAM and Coprocessor \$125.00

### Contact:

Mike (KC4ZNO) @  
703 335 5031 or on packet, direct (MBX KC4ZNO-1) or via KF4TE (145.07).

### FREE!

One box of Vacuum Cleaner Bags with spare NEW brush for a Bissel Electric Broom.

### Contact:

Harry (W4PVA) @  
703 368 6050

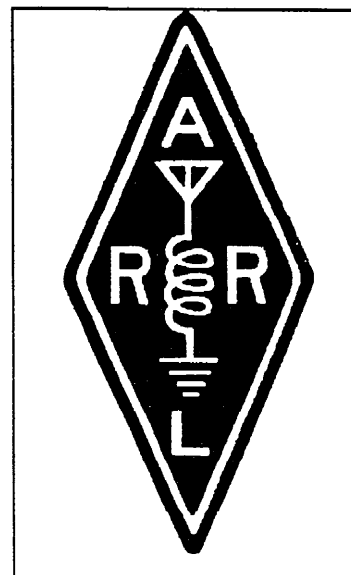
### For Sale:

Yaesu FT757 GX II HF Transceiver in mint condition with Box, Mobile Mount and Manual.

Firm Price: \$695.00

### Contact:

George (NVIXV) @  
703 368 2732



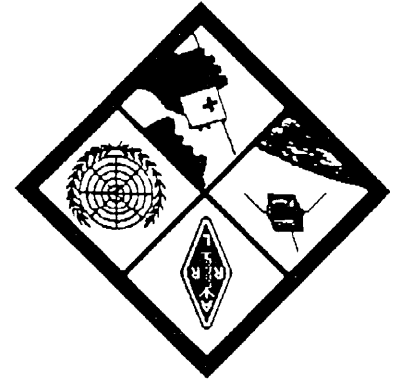


# OLE VIRGINIA HAMS METEOR RADIO CLUB

## November 14 - December 18, 1993



SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Nov 14 1300 10-10 NET (28.340)	Nov 15 2000 NET-WOODBRIDGE WIRELESS-147.84 MHz/ 223.18 MHz	Nov 16 MEETING-SPARK 0500 LEONID METEOR SHOWER	Nov 17 2000 NET-NVFMA-146.79 MHz 2000 NET-FARA-147.165 MHz	Nov 18 2000 NET-OVH-146.970 MHz/224.66 MHz	Nov 19	Nov 20 VEC-LAUREL, MD VEC-HAMPTON ROADS, VA VEC-HERNDON, VA
Nov 21 1300 10-10 NET (28.340)	Nov 22 2000 NET-WOODBRIDGE WIRELESS-147.84 MHz/ 223.18 MHz	Nov 23	Nov 24 2000 NET-NVFMA-146.79 MHz 2000 NET-FARA-147.165 MHz	Nov 25 1000 ANDROMEDID METEOR SHOWER 2000 NET-OVH-146.970 MHz/224.66 MHz	Nov 26 1000 ANDROMEDID METEOR SHOWER	Nov 27 1000 MEETING-MOOSE ARC 1000 ANDROMEDID METEOR SHOWER
Nov 28 1300 10-10 NET (28.340)	Nov 29 2000 NET-WOODBRIDGE WIRELESS-147.84 MHz/ 223.18 MHz	Nov 30	Dec 1 2000 NET-NVFMA-146.79 MHz 2000 NET-FARA-147.165 MHz	Dec 2 1930 MEETING-VA BEACH ARC 2000 NET-OVH-146.970 MHz/224.66 MHz	Dec 3	Dec 4 VEC-MIDDLETOWN, VA VEC-VIRGINIA BEACH, VA VEC-ROANOKE, VA VEC-COLLEGE PARK, MD
Dec 5 VEC-LANDOVER, MD 1300 10-10 NET (28.340)	Dec 6 2000 NET-WOODBRIDGE WIRELESS-147.84 MHz/ 223.18 MHz	Dec 7 MEETING-SPARK	Dec 8 <b>ARTICLE DEADLINE</b> 2000 NET-NVFMA-146.79 MHz 2000 NET-FARA-147.165 MHz	Dec 9 MEETING-AMRAD 1930 MEETING- WOODBRIDGE WIRELESS 2000 NET-OVH-146.970 MHz/224.66 MHz	Dec 10 VEC-CULPEPPER, VA	Dec 11 VEC-HARRISONBURG, VA VEC-CUMBERLAND, MD VEC-DAVIDSONVILLE, MD VEC-RICHMOND, VA VEC-ALEXANDRIA, VA
Dec 12 1300 10-10 NET (28.340)	Dec 13 0200 GEMINID METEOR SHOWER 2000 NET-WOODBRIDGE WIRELESS-147.84 MHz/ 223.18 MHz	Dec 14 1930 MEETING-FARA	Dec 15 2000 NET-NVFMA-146.79 MHz 2000 NET-FARA-147.165 MHz	Dec 16 VEC-TOWSON, MD 2000 NET-OVH-146.970 MHz/224.66 MHz	Dec 17	Dec 18



FIRST CLASS MAIL



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# THANKSGIVING 1993