## NEXT MEETING

# OUR NEXT MEETING MARCH 9TH <br> AT THE RADDISON HOTEL IN ENFIELD CONNECTICUT A TALK BY AL GREENWOOD, N1EUX, ON HIS HYDROELECTRIC PLANTS 

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FOR SALE OR SWAP

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\begin{gathered}
\text { DON'T FORGET } \\
\text { THE NORTH EAST WEAK SIGNAL GROUP } \\
\text { 2 METER VHF AND ABOVE NET } \\
\text { EVERY THURSDAY NIGHT AT 8:30 p.m. LOCAL } 144.250 \\
\hline \text { W1COT, K1UHF OR K1PXE NET CONTROL }
\end{gathered}
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## FROM THE PRESIDENT

## March meeting

Our next meeting will be at the Radisson hotel on March 9th. I've heard a few new calls on the bands - invite these guys to the meeting if you talk to them.

Our program this month will be Al Greenwood, N1EUX, on his hydroelectric plants in New Hampshire. He will talk and show a short movie of his plants.

We will also have a short program on some simple accessories for the new FT-817 portable transceiver, like the one elsewhere in this issue. (The real reason for this part of the program is that a hydroelectric plant needs attention, so if we get a whole lot of rain or snow that week, Al may not be able to make it.)

## January Contest

I hope you all did well in the January contest. I was doing OK until Saturday evening when my neighbor called to tell me that I should be watching the Patriots game instead of messing up his TV! I told him I'd watch the game until they got hopelessly behind - and instead, they went in to overtime and went on to win the Super Bowl.

Don't forget to send in your scores. Make sure you list the club as North East Weak Signal Group - no abbreviations, no flexibility in Newington.

## VHF Conference and Microwave Update

The official announcement was in the last issue of the NEWSletter. October will be here soon, and there is lots to be done. If we all pitch in and each do a small job, we can make this joint conference a success without overburdening anyone.

Matt, KB1VC, has volunteered as chairperson for Microwave Update, and Bruce, N2LIV, will again chair the Eastern VHF/UHF Conference.

Matt has put together a list of opportunities for volunteers, which is in this issue. Please review the list and see where you could fit in. If you see that something has been forgotten, please speak up or send email to Matt: kb1vc@kb1vc.org

## Duct Tape Auction

Another duct tape auction, another opportunity to find a new home for some treasures, so tape two items together (one good, the other, uh, interesting) and bring them to the meeting. Someone will be unable to resist one of them!

## N.E.W.S. webpage

The NEWS group now has its own domain, with a new URL for the club webpage: www.newsvhf.com Ron is doing a great job as webmaster, so check it out.

Paul W1GHZ

## SECRETARY'S REPORT OF THE NEWS BOARD MEETING OF 5 JANUARY 2002.

The NEWS Board meeting was opened at 11:59 AM by President Paul Wade, W1GHZ. Paul outlined his agenda for the meeting. It included plans for the January ARRL contest, A new Worked All Bands award, Microwave Update 2002 plus anything else the Board might bring up.

Tom, WA1MBA, gave an outline of the proposed Worked All Bands award. It would be sponsored by NEWS and started as a Club activity. ARRL could take it over at some point in the future if they determine it fits within the scope of their Awards Program. It would be open to all amateurs, worldwide. The number of bands required would be a function of how many frequency bands were allocated by the country involved. Xerox copies of QSLs on each band would be required. It would be a onetime award and be issued by the NEWS Group. A subcommittee will be set up to determine details, finalize the rules and get out publicity.

Tom, K1KI, ARRL New England Division Director, contacted Ron, WZ1V, with a request for a list of the NEWS Group members. After some discussion between Ron and Fred, N1DPM, the information was provided.

The question of charging for ads in the NEWS Letter was brought up. Other clubs do charge for such ads. If the ads are kept small, NEWS will continue to do them for free. One page of the NEWS Letter will be devoted to ads. A motion was made and seconded to this effect and was passed by the Board. Members can continue to place swap ads in the NEWS Letter. Companies must send in a specific request to run an ad.

Electronic distribution of the NEWS Letter was discussed. Del, K1UHF, says we can do it if required. It could be downloaded from a central place. To start on the project, we need a list of e-mail addresses. We will start collecting this information on the sign-up sheet at the main meeting.

Art, W1RZF, was concerned about the lack of on-air activity on the VHF/UHF bands. It will be brought up at the main meeting.

A question was raised about NEWS sponsorship of a plaque for the June ARRL VHF Contest. It will be brought up at the main meeting.

Ron, WZ1V, will discuss the January 2002 ARRL VHF Contest at the main meeting.

The US end of the European Beacon project is in limbo at present.

The Board Meeting was adjourned at 12:23 PM.

## SECRETARY'S REPORT OF THE NEWS MEETING OF 5 JANUARY 2002.

The January 2002 meeting of the NEWS Group was called to order by President Paul Wade, W1GHZ, at 1:20 PM. Members were asked to indicate which bands they expect to operate in the ARRL January VHF Contest. The sign-in sheet was passed around and members were asked to include their e-mail address along with the ususal Name/Call Sign information. The new gavel, presented to the NEWS Group by ARRL, was received by President Wade. It was awarded to the NEWS Group for winning the Medium Club category competition in the 2001 ARRL January VHF Contest.

Ron, WZ1V, discussed the 2002 ARRL January VHF Contest and asked for all NEWS members to submit their entries for the club competition. He also had a handout of useful information for the contest.

Tom, WA1MBA, discussed the proposed Worked All Bands Award. The NEWS Group would be the initial sponsor and would pass out the initial awards at the 2002 Microwave Update Conference in October. He made thefollowing motion covering the subject:

Moved to have the NEWS Group form a committee to investigate, create rules for, promote and execute a "Worked All Bands" certificate. And further, to report back to the NEWS Group at the May ' 02 meeting. It is expected that the first certificate(s) will be awarded at MicrowaveUpdate 2002.

It was seconded and passed on a vote of the Club membership. A subcommittee of Club members including Tom, WA1MBA, Paul, W1GHZ, Stan, WA1ECF, and Mark, KA1OJ, was set up to work out the details of the award.

NEWS Group sponsorship of a plaque for the ARRL June VHF Contest was brought up and discussed. The cost would be $\$ 60$ per year. NEWS would present the money to the ARRL and they would provide the plaque and make the award every year. It was moved and seconded that the NEWS Group contribute this plaque to the ARRL awards program. The motion passed.

Art, W1RZF, started a discussion on increasing VHF/UHF activity. He suggested that everyone make an effort to get on 144.200 and call CQ as often as possible. The nominal meeting time would be 8 PM . You could then move off to other frequencies or bands as required. We will take it as a start and see how it goes in the months to come.

Paul, W1GHZ, reported on a proposal made at the ARRL Division Directors Meeting. The proposal covers local clubs working with local schools to increase Ham radio awareness among school age children. More later.

It was reported that the East Cork ARC in Ireland was setting up a 1000 watt beacon on 2 Meters to foster VHF contacts over the Atlantic path. The beacon will be operated on weekends during the coming summer.

A duct-tape auction was held next. President Paul Wade, W1GHZ, served as auctioneer. The usual lively comments were heard about various of the items up for auction. Paul followed the auction with some comments on the feed design information he placed in the most recent NEWS Letter. At this point, a short recess was called, prior to the featured presentation of the meeting.

Matt, KB1VC, gave a presentation on his version of the DSP10 Receiver that was first shown in three 1999 issues of QST. He had a working model set up. It was well received and provoked a lively discussion. From comments heard, it appears that other Club members are also constructing DSP-10 receivers.

The meeting was adjourned at 3:41 PM.

## QSL INFO LOOKUP PROGRAM

A QSL information lookup program and data file is available at www.n0oks.com . The program will lookup the name and address for any Canadian or US call. You may download the program and data and see how you like it. If you continue to use the program and data, then a $\$ 5.00$ contribution would be nice. Periodic updates to the data and updates to the lookup program and additional programs are included in the $\$ 5.00$ contribution.

Mark W. Kachel, NØOKS, n0oks@n0oks.com
Submitted by Ron, WZ1V

# BIAS TEE FOR REMOTE IRANSVERTER CONTROL PAUL WADE W1GHZ © 2002 W1GHZ@ARRL.NET 

A good way to minimize feedline loss and improve perfomance on the microwave bands is to mount the equipment close to the antenna. Even at lower frequencies, moving the preamp close to the antenna can make a difference. For portable operation, feedline length may be reduced by simply operating close to the antenna, but inclement weather can quickly make remote operation from a warm, dry place seem much more attractive.

Remote operation requires additional wiring to control the equipment. A typical transverter needs DC power wiring and at least one wire to for T-R switching in addition to the coax for RF signals - three cables for each band to tangle and trip over, if none were forgotten.

After a couple of years of microwave mountaintopping, I rea ized that the RF line to the IF transceiver was the least of the problems; coax cable is pretty robust and the connectors are pretty reliable. I solved the flaky power problems by replacing the power connectors with the Anderson Powerpole series (www.andersonpower.com), which provide solid connections with miniscule voltage drop. The final problem was the T-R switching line - never reliable. When I designed the "Foolresistant" sequencer1, I included RF sensing as a fail-safe so that I could continue operating when the switching line failed or got yanked loose.

The sequencer also included a path to sense the switchin voltage from the transceiver on the IF coax. Some radios already provide a voltage on transmit, while others need modification - a resistor with a ferrite bead on one lead and a bypass capa itor on the other was sufficient for an IC-202. I modified all my transverters to transmit with a positive voltage on the coax, and my IF rigs to provide this voltage. The unreliable wire was eliminated, leaving only two wires to trip over.

This system worked well until Yaesu released the FT-817 - it sure looked like a great portable IF radio, and several of the microwave gang couldn't resist. I looked over the schematic, but couldn't figure out a modification that would work on both RF output connectors and not affect operation on some other band; modifications to a single-band rig are much simpler and also easier to test.

An alternative solution is to add a small box in IF coax line to inject the switching voltage on the transverter side but not on the radio side; the box should be transparent for RF. In the microwave business, such a device is known as a "Bias Tee." I see no reason to invent a new name.

Digging through the junk box unearthed a find from some past flea market: some small Pomona boxes with a BNC connector at each end, and other parts inside. I stripped the parts and connectors, filed off some blue paint to make better RF connections, and replaced the connectors with grounding lugs under two screws of each. Then I cut a scrap of RG-141 semirigid coax to fit between the connectors, leaving room for a small capacitor at one end. The copper outer conducter is soldered to the ground lugs at both ends, and one end of the center conductor to a BNC center pin; the Teflon dielectric permits lots of heat for good solder flow. The other end of the center conductor connects to the other center pin through a blocking capacitor, and an RF choke connects the voltage to that pin. The schematic is very simple, and the assembly is shown in the photo.

A quick performance check showed low loss, perhaps $1 / 4 \mathrm{~dB}$, and low VSWR, excellent through 2 meters and still pretty good at 432 MHz .

The final problem was to provide the positive voltage for switching - the T-R switch output from the FT-817 grounds the line on transmit. Since I wanted compatibility with my other IF radios, I added the simple circuit shown in the schematic to do the switching. One cheap transistor and a few resistors do the job. The power is tapped off the FT-817 12volt power cord.

Your transverter and radio might be the other way around. Also shown in the schematic is a simple translation circuit to ground the output line when the radio provides a positive vol age. Of course, if the radio and transverter are compatible, just the direct connection through the RF choke is sufficient. In this case, an even simpler bias tee is shown in the photo - a BNC tee connector and with a male BNC on one side containing an RF choke inside. Just make sure the radio provides a blocking capacitor.

One final reminder: make sure the switching line is pulled in both directions. The FT-817, for instance, only pulls the line to ground on transmit - otherwise it is floating. If there is nothing to pull it back up, then it may not switch back. W1AIM found that the FT-817 would not switch his tran verter reliably, particularly in damp weather, until we added a pull-up resistor inside the transverter. A 10 K resistor from +12 volts to the switching line provides a small current to pull the line back up on receive.

A bias tee can also be used to power a remote preamp, or even a small power amp.

For higher power radios, the bias tee box could include an attenuator to reduce the power as needed. At IF frequencies, a good attenuator can be easily built with ordinary resistors2, and would fit in the box in place of the coax.

1. P. Wade, "Building VHF Power Attenuators," QEX, April 1994, p. 28.
2. P. Wade, "A 'Fool-Resistant' Sequenced Controller and IF Switch for Microwave Transverters," QEX , May 1996, p. 14.


TRANSVERTER BIAS TEE


Radio


## DONT FORGET

THE NORTH EAST WEAK SIGNAL GROUP 2 METER VHF AND ABOVE NET EVERY THURSDAY NIGHT AT 8:30 p.m. LOCAL 144.250 W1C0T, K1UHF OR K1PXE NET CONTR0L

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submitted by George Jones, N1GJ

## JANUARY VHF SWEEPSTAKES RUMORED SCORES DE KB1VC WEB PAGE CLUB TOTAL SCORE: $\mathbf{1 , 4 1 2 , 6 1 3}$



## VOLUNTEER OPPORTUNITIES FOR JOINT CONFERENCE EASTERN VHF/ CONFERENCE MICROWAVE UPDATE 2002

## Publicity Committee

Send out advanced notices to magazines, newsgroups, and mailing lists. Send out the call for papers/participation. Mail out registration forms to previous attendees?

## Registration

Process incoming advance registrations/meals. Run the registration table during the conference.

## Banquet Coordination

Handle banquet arrangements and tickets. The bar. The hospitality suites

## Door Prizes

Write to request door prizes. Make up prize list and arrange prizes at banquet. Have winners sign thankyou letter immediately and mail to donors.

## Vendor Coordination

Make sure the vendors get their rooms and spaces. Line up vendors for the in-hotel virtual surplus tour. Line up prizes from vendors for the banquet.

## Sunday Flea Market Coordination

Tape off area, collect money.

## Program committee/Session Coordinators

1. VHF Conference Saturday Morning session
2. VHF Conference Saturday Afternoon session
3. Microwave Friday morning session
4. Microwave Friday afternoon session
5. Microwave Saturday morning session
6. Microwave Saturday afternoon session
7. Band sessions

These folks help select the papers and arrange them in an agenda. The coordinator for a session introduces the speaker and keeps track of the time.

## ARRL Tour

Arrange the league headquarters tour, transportation, and victuals for Thursday.

## Significant Other Activities

Arrange tours/trips/shopping/food/guides/social for spouses of the attendees.

## Shipping and Travel Arrangements <br> Find local shipping service for acquired loot and make

arrangements so that attendees can ship stuff home on Saturday evening or Sunday morning. Also suggest airport transportation arrangements for out-of-town attendees. (Like figure out where to get the shuttle to the airports...)

## Audio Visual

Make sure the audio and visual equipment is setup and working for each session.

## Proceedings Committee

Assemble and publish the proceedings.

## Antenna Measuring

## Noise Figure and lab sessions

## Clean-up committee

Clean out meeting rooms, parking lot after flea market, drink leftover beer.

I'm sure I missed a few things. We'll figure more out as we go along.

Matt, KB1VC

# MT. TOM A.R.A. 17TH ANNUAL AMATEUR RADIO HAMFEST 

## SUNDAY, MARCH 10, 2002

LOCATED AT: Amherst Regional Middle School, 170 Chestnut St. Amherst MA

DOORS OPEN: 7:00 AM for Vendors, 9:00 AM for Bargain Hunters

ADMISSION: Adults: $\$ 5.00$, Children under 12 - FREE!<br>Tailgating: $\$ 5.00$, Tables ( 8 ft .) $\$ 15.00$

## DIRECTIONS

From Mass Pike Exit 4: take Rte 91 North to Exit 19, Rte 9. Take Rte 9 to Amherst Center. At light in Amherst Center take a LEFT. Proceed through the 2nd Traffic Light and look for Chestnut Street on RIGHT (just past bank). Turn RIGHT on Chestnut St. and proceed to Amherst Regional Middle School on LEFT.

For more info or Table and exam registrations contact:
Bob Meneguzzo - K1YO
(413) 569-0320, k1yo@arrl.net
http://www.mtara.org/hamfest/flea.html
Talk-In on the 146.940 MHz . MT.TOM REPEATER

## NEW ARRL CONTEST RULES

An item of interest to our membership (from March Cheesebits): (I had several new members express disappointment their scores were not included in our club score. This should explain and help next year) -73, Ron WZ1V

New ARRL Contest Rules
There are some new ARRL contest rules that I think are favorable to the PackRats! Here's the ARRL blurb on the changes: In accord ance with the advice of the ARRL Contest Advisory Committee, five specific affiliated Club competition changes will go into effect November 1.
Under the revised rules:

* The requirement that a member must attend at least two club meetings a year in order to be allowed to submit a score for a club in the unlimited and medium categories has been altered. The new rules will allow participation by "a member in good standing, as defined by the club."
* Medium and unlimited clubs now may define their club service area either as a 175 -mile radius circle or as an entire ARRL section. This change will allow clubs from larger states that encompass entire ARRL sections to compete with each other.
* The percentage of operators who must be members of a club in order for the club to claim a score from a multioperator station has been reduced from $66 \%$ to $50 \%$.
* A station owner no longer must be a member of a club in order for a guest operat or at the station to claim the score for that club.
* Canadian clubs that are full Radio Amateurs of Canada affiliates now may participate in the ARRL Affiliated Clubs Competition. These changes affect ARRL contests that include a club competition- January VHF Sweepstakes, the ARRL International DX Contest, t he September VHF Party, the ARRL November Sweepstakes, the ARRL 160-Meter Contest and the ARRL 10-Meter

Contest. 73, Roger Rehr W3SZ

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Commercial CATV quality 75 ohm traps tuned to 144.200 . These filters are weatherproof and temperature compensated with attenuation at the tuned frequency of $>100 \mathrm{~dB}$. Loss across the entire VHF and UHF television spectrum is typically under .5 dB . They have a male F connector on one end and a female on the other. They will solve your fundamental overload problems on the band frequency they are tuned for. They are $\$ 15.50$ each plus $\$ 5.00$ shipping and handling per order. I will bring them to the meeting so you can save the shipping.
Del Schier, K1UHF, 126 Old West Mountain Road, Ridgefield, CT 06877, (203) 431-423 or k1uhf@amsat.org

## FOR SALE OR SWAP

Free to good home: IEEE Transactions on Antennas and Propagation. just about all issues from early 1960s to 1999. A treasure of antenna articles., QST magazine. all issues 1975 to 1995. 73 Magazine. 1976 to 1980. First come, first served. May be picked up in Shirley, MA, or can be delivered to NEWS meeting by prior arrangement. W1GHZ w1ghz@arrl.net

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## THE NEXT MEETING

OUR NEXT MEETING MARCH 9TH
AT THE RADDISON HOTEL IN ENFIELD CONNECTICUT A TALK BY AL GREENWOOD, N1EUX, ON HIS HYDROELECTRIC PLANTS

## YOUR ATTENDANCE IS NEEDED FOR THE CLUB'S ARRL COMPETITION!!

## DONT FORGET

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2 METER VHF AND ABOVE NET
EVERY THURSDAY NIGHT AT 8:30 p.m. LOCAL 144.250
W1COT, K1UHF OR K1PXE NET CONTR0L

North East Weak Signal Group
c/o N1DPM
Fred Stefanik
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Feeding Hills, MA 01030


Check your membership expiration date on the mailing label!!

