



# N.E.W.S. LETTER



The Publication of the North East Weak Signal Group

JAN 2001

VOLUME NINE

ISSUE ONE

President: W1GHZ Paul Wade  
V P: WA1MBA, Thomas Williams

CURRENT OFFICERS

Secretary: N1GJ George Jones  
Treasurer: N1DPM Fred Stefanik

## NEXT MEETING

THE NEXT MEETING IS ON SATURDAY JAN 6TH, 1:00 PM  
AT THE HARLEY HOTEL IN ENFIELD  
THERE WILL BE A DUCT TAPE AUCTION

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## 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**  
**W1COT, K1UHF OR K1PXE NET CONTROL**

MEMBERSHIP in the N.E.W.S. Group is \$10 per year. Apply to Fred Stefanik, N1DPM, 50 Witheridge St., Feeding Hills , MA 01030 (413) 786-7943 You may download an application from our web page <http://uhavax.hartford.edu/~newsvhf>

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## **FROM THE PRESIDENT**

### **PAUL WADE W1GHZ**

First, I'd like to thank all the N.E.W.S. members for choosing me in a close race!

Seriously, thanks to Matt for a job well done as President for the past two years.

January meeting

We aren't planning any inclement weather for January 6, so come out to the next N.E.W.S. meeting and help make it a success. We plan to have a demonstration of some free printed-circuit board layout software, and the board I made using it. The deal is that you design your board, go to the web page and upload it, and get three boards back four days later - for \$59 total. I did the layout of a small transverter in a couple of hours and had the board back to start putting it together within a week.

There will be another Duct tape auction at the meeting, so bring something to auction off - remember, tape one good item to a less-good item to auction together.

Club project?

It's been a while since we did a club project. Would you like to have one? Bring some ideas to the next meeting, and see if any of them has wide enough appeal. One possibility is a simple homebrew project - perhaps the PCB design demo at the meeting will trigger an idea for which we could make PC boards. Another possibility would be a group order of kits to get on a new band; I keep thinking about 3456 MHz, but haven't done anything yet. What about antennas, or software?

Contest

The VHF Sweepstakes is January 20 and 21, and N.E.W.S. will again be entering the club competition. Get on as much as you can, and be sure to send in your logs with N.E.W.S. marked on the club line. Let's try to work as many club members as possible, since, when we work each other, the club gets twice as many points. I'm going to suggest some normally slow times to get together and work any members you might have missed:

6 meters	50.250	2 PM EST Sunday
2 meters	144.250	3 PM EST Sunday
222	222.250	4 PM EST Sunday
432	432.250	5 PM EST Sunday

higher -- move up from any of the above

In the event of any opening, work DX instead!

I believe that all electronic logs must be in the new Cabrillo format. We will not be debating the stupidity of this decision at the meeting! However, since I like the logging program I currently use and don't plan to upgrade, I will be writing a Perl script to convert from the old ARRL format to the new Cabrillo format. I'll make it available on my website ([www.w1ghz.cx](http://www.w1ghz.cx)). If you don't have internet access, bring a blank floppy to the meeting.

Aurora beacon

Mike, W9IP, had a very useful aurora beacon in northern NY state, pointed north. It has apparently died, and Mike has inquired whether N.E.W.S. is interested in providing a replacement.

A happy new year to all

Paul W1GHZ

## **SECRETARY'S REPORT OF THE NEWS**

### **BOARD MEETING OF 4 NOVEMBER**

#### **2000**

The Board Meeting was called to order by President Matt Reilly, KB1VC, at 11:35 AM. All of the Board members except John, N1MUW, were in attendance.

Meeting dates for the year 2001 were discussed. The following dates were picked as possibles for the new year:

January 6, 13, March 10, 17, 24, May 5, 19, July 14, 21, 28, August/October ?, November 3, 17. No dates were selected for August since Bruce, N2LIV, was not at the Board Meeting to provide his inputs. Final dates will be selected at the regular NEWS meeting. If Bruce, N2LIV, does not arrive for the main NEWS meeting, we will put off finalizing dates until the January meeting.

Officers for the year 2001 were discussed. The following names were discussed for the offices of:

Treasurer: Fred, N1DPM  
Secretary: George, N1GJ  
Vice President: Tom, WA1MBA  
Board Members: Art, W1TDS  
Tom, WA1MBA  
Bob, W1COT  
Mark, K1MAP

NEWS Letter Editor: Del, K1UHF

No names were selected for the office of President. A candidate will have to be found at the main meeting.

Discussed problems with the software used to make up the NEWS Letter. Del, K1UHF reports that the current software no longer does the job. A new software package or appropriate update, will cost approximately \$175. The Board voted to approve Del purchasing the software/ mod required.

The meeting was adjourned at 11:50 AM.

## **SECRETARY'S REPORT OF THE NEWS** **MEETING OF 4 NOVEMBER 2000.**

The general meeting of the NEWS Group was called to order by President Matt Reilly, KB1VC at 1:145 PM. The roster sheet was passed around for all to sign.

The first item for discussion was the meeting dates for the year 2001. After going over the possible dates discussed by the Board, the following dates were selected:

6 January, 17 March, 5 May, 21 July.

The final meeting dates for the remaining two meetings will be selected at the January meeting. It was moved and seconded by the NEWS Group membership that the above dates be selected. The vote was favorable.

A duct tape auction was held and lots of good stuff exchanged hands. The auction was very efficiently run by Paul, W1GHZ.

Microwave Update will be coming to the New England area in 2002. It will be held in northern California in 2001. The NEWS Group would like to bid to hold the 2002 meeting in connection with our annual Conference. A very good meeting could be expected with an estimated attendance of 150 or more. It would be held in late September, so our Conference would have to be changed. A motion was made, seconded and passed that the NEWS Group sponsor the 2002 Microwave Update and that a committee be formed to pursue this goal. We will need quite a few helping hands. A show of hands indicated that there should be enough help available. The site will be somewhere between Enfield, CT and Lowell, MA.

At this point, a break was called by Matt, KB1VC while he scouted around for other possible names for the club election of officers.

The following names were entered by the Board of Directors for consideration as club officers for 2001:

Treasurer: Fred Stefanik, N1DPM  
Secretary: George Jones, N1GJ  
Board of Directors: Art Needham, W1TDS  
Bob Leiper, W1COT

Mark Casey, K1MAP

NEWS Letter Editor: Del Shier, K1UHF

Hearing no other nominations from the floor, the Secretary was instructed to cast one vote for each of the above named persons.

Next, names were solicited from the floor for the remaining offices of the club. The following names were put in nomination from the floor and each of the persons agreed to serve as a club officer.

President: Paul Wade, W1GHZ

Vice President: Tom Williams, WA1MBA

Board of Directors: Matt Reilly, KB1VC

Hearing no other nominations, the Secretary was instructed to cast one vote for each of the three nominees. Because they are replacements, K1MAP and KB1VC will serve one year terms on the Board. W1TDS and W1COT will serve two year terms. The club thanked Dennis, WA1HOG for his service as Vice President during the past year.

A discussion was held on placing a 10 GHz beacon on top of Mt Graylock. It would be operated in conjunction with some existing equipment being used there by K1FFK and would be operated under that call. Del, K1UHF has a machine that he can donate to the NEWS Group for use there. A motion was made, seconded and passed to take on this project. Art, W1TDS will look into it.

The business portion of the meeting was adjourned at 2:40 PM.

Show and tell was conducted by Paul, W1GHZ, our new President. Ron, WZ1V, gave a talk on some propagation model software being provided by VE2DBE. It gave expected distances you could work in any direction from a specific QTH once you gave it a list of station parameters. Zack, W1VT, gave a brief talk on happenings at the 2000 Microwave Update Conference.

## **DON'T 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 CONTROL**

## **QUALITY DC POWER - CHEAP** **PAUL WADE W1GHZ ©2000**

Most of our ham electronic devices are powered from "12 volts," (in reality, more like 13.6 volts for best operation). This is ideal for automotive use, but keeping a big 12-volt battery in the shack is inconvenient. Instead, we use power supplies, but never seem to have enough of them - I know one ham who powers his whole station from several nice Astron 35-amp power supplies, but has nothing available over at his workbench. Also, we often need other voltages - as we try to use surplus microwave equipment, +28 volts and ?12 volts common, while telephone equipment often requires ?24 or ?48 volts. New power supplies are rather expensive, so we could build our own, but there are alternatives which are often cheaper than the parts we'd end up buying.

When an equipment manufacturer needs an odd voltage in a rack of equipment, he often adds a "rack power supply" - usually a metal box with a few terminals but no lights or meters. Tons of these have been used, and lots of them show up at surplus dealers and swap meets. I've never paid more than \$20. My favorite brand is Lambda, because they put the voltage and current right on the box, instead of just a cryptic model number found on some brands. I'm sure you've seen these: a grey metal brick with ventilating holes all over. Most of them have a screwdriver adjustment marked "XX volts  $\pm$  5%." You can probably figure out the code! I've seen them for anywhere from 5 volts to 48 volts, and most of them will adjust more than 5% - both 12 and 15 volt models will adjust to 13.6 volts. The output voltage is floating, so it can be either positive or negative.

The current is usually listed as a function of temperature: some Amps at 40°C, then lower currents at higher temperatures up to 75 °C. Most of us don't much enjoy operating when the shack temperature is upwards of 40°C, so the highest current would be available, but higher temperatures could be found in remote operations, for instance, at a beacon location.

Hookup is pretty simple: on one end is a barrier strip with screw terminals, marked like this:

The AC line cord goes to terminals 1 and 2, and the green wire goes to ground, terminal 5. The +S and ?S terminals are for remote sensing, and possibly for connecting supplies in parallel, but for simple operation, just connect +S to +V and ?S to -V. Then +V, terminal 6, is the positive side of the output, and -V, terminal 4, is the negative side. Spade terminals from your local auto store are neater than twisting the wires around the screws.

I usually add a few small enhancements, like rubber feet on the bottom, to improve airflow, and a bit of plastic over the barrier strip to keep fingers clear. The case has a number of tapped holes to make these easy to add. I also add disc capacitors from the output terminals to ground, to keep RF out, and an LED on the output (use a series resistor of about 100 ohms per volt) so I can tell at a glance if I have power. Troubleshooting is so much easier with visual indicators!

Occasionally I find one of these supplies with an overvoltage protection module - a small attachment with two wires attached to the output voltage terminals and a small adjustment pot. If the output voltage gets too high, the module simply shorts the output and keeps it shorted until power is removed, then resets itself. Adjust it to fire a few volts above the desired output voltage. If you don't have an LED indicator to tell you that the voltage is gone, your only warning that the module has fired will be the aroma of hot electronics!

### **Performance**

I have perhaps a dozen Lambda power supplies in my shack powering various things, with available output currents from 1 to 16 amps. Another went into "temporary" use in someone's 10 GHz rig about 6 years ago, driven by an inverter for battery operation. All have been reliable - the only failure was when a hookup wire slipped out of my hand and flew cleanly through one of the vent holes to hit one of the terminals on the big filter capacitor. Another supply was sensitive to RF sitting next to the 6-meter amplifier, so I swapped it for a different model and use it further away.

Before I actually use a power supply, I test it for a while at full load current, then switch the current on and off several times quickly to simulate CW keying, looking for voltage transients with an oscilloscope. Transients from the Lambda supplies are small, typically under 100 millivolts. (Astron supplies are also pretty good, but some brands aren't). A good load for testing is an automotive headlight bulb - usually the low-beam filament fails but not the high beam, so the bad bulb is still good for testing. A typical bulb draws about 5 amps at 12 volts, but a cold bulb draws much more current until it heats up, so it provides a stringent test for a power supply.

### **Repair and modification**

These are simple linear power supplies with fine 1970's technology. Most of the parts are on a single-sided PC board with transistors and diodes (no ICs), and many models use the same board with slightly different resistor values. I was able to repair the one I damaged by comparing voltages and resistances with another supply of different ratings - replacing two 15-cent transistors did the trick. Another supply had low output voltage; one of the zener diodes had lower voltage than the comparison supply, and replacing it cured the problem.

### **Summary**

Don't just walk past that pile of grey bricks at the next flea market - one of them might be just what you need to get some other surplus treasure going. For a small price and not much work, you can have all the DC power you need.

Ed Note: I saw a supply sitting on the floor at the end of a hamfest, everyone else walked by. I offered \$20 and got it. It is adjustable, regulated and crowbar protected and has these separate outputs: 48V @ 14A, 28V @ 22A, 12V @ 15A and 6.3V @ 45A. It is the size of a shoebox! Switched mode and quiet, Del, K1UHF

## **MILLENNIAL CUMULATIVE** **MICROWAVE CONTEST**

The entry form for the Millennial Cumulative Microwave Contest, sponsored by N.E.W.S., is now available. Go back through your logs for 2000 and add up all the microwave contacts, then go to the online entry form at:

<http://www.tiac.net/users/reilly/millennial-form.html>

to enter your score. Entries will be accepted until 28 February, so you can spend the cold winter nights going through the logs. The winner will receive a gaudy trophy, and top 10 scores will receive a plaque or certificate.

### **Rules:**

Millennial Cumulative Microwave Contest  
Sponsored by N.E.W.S.

**Purpose** - to encourage microwave activity year round.

**Goal** - to work as many stations in as many grids as possible, and to encourage new microwave operators.

**Period** - January 1, 2000 to December 31, 2000

### **Rules:**

1. A station may be worked once in each 4-digit grid square on each band above 900 MHz from any 4-digit grid square in any calendar month. In subsequent calendar months, station X may again contact station Y in the same 4-digit grid squares as long as at least one of the two stations has moved 10 miles or more from any previous location. For example if W1GHZ logs a contact from FN42 with N1SAI in FN33 in January, then in February, W1GHZ may again log a contact from FN42 to N1SAI in FN33 as long as one or both stations have moved 10 miles or more from the location used in January.
2. Either station may move to another 4-digit grid square for additional contacts.
3. Exchange is 6-digit grid square, or 4-digit grid square with penalty. If an operator doesn't know what planet he is on, it doesn't count.
4. All contacts must be at least one kilometer and between different 6-digit grid squares, with the exception of a station's initial contact on a band, which may be any distance. All modes are permissible.
5. Grid circling and other manufactured contacts are prohibited. If it feels like a manufactured contact, don't do it.
6. There is no rule 6.
7. Any form of liason is acceptable: lower frequencies, internet, telephone, cell phone, semaphore, or whatever.

8. Equipment may only be used for one callsign per calendar month, except for members of immediate family. Thus a spare rig may be loaned out to different operators, but only one operator per month. (A new vanity or upgraded callsign is the same operator.)

9. Cooperation and amateur spirit are encouraged. This ain't a DX contest.

10. Any mode that allows exchange of information is permitted, within rules of FCC or other licensing authority.

11. Have fun!

### **Scoring:**

1. Each contact scores one distance point for each kilometer distance between the 6?digit grid squares, as calculated by the BD program.
2. If only 4-digit grid square is exchanged, then distance is calculated to the corner 6-digit square which produce the smallest distance.
3. EME contacts use terrestrial distance if grid squares are exchanged, as above. If only TMO reports are exchanged, then the contact is scored as 500 distance points.
4. Multiplier: Each unique combination of 4-digit grid squares between which a contact is made is a multiplier of one for each band below 24 GHz, and a multiplier of two for bands at 24 GHz and up. All colors of light count as one band.
5. Bonus points: Each new callsign worked scores 100 bonus points. If a station changes callsign during the year, each may be counted. (This relieves other stations of keeping track of all the vanity changes.)
6. New band bonus: Any contact made on a band where the operator has never ever made a contact before scores an additional 1000 bonus points. This means once in a lifetime for each band.
7. TOTAL SCORE = distance points X multipliers + bonus points.

**LOGS:** should be submitted by 31 January 2001 to N.E.W.S. Summaries will be posted on the internet as received so you know the logs aren't lost. The internet site will allow interim results to be posted during the year to encourage activity.

**AWARDS:** The highest total score in North America will receive a gaudy trophy. If there is a higher score in the rest of the world, a second trophy will be awarded. Second thru fifth place entries will receive a plaque, and sixth thru tenth places will receive a certificate (unless more plaques are sponsored). All entrants will be listed on the internet.

## **THE NEW YAESU FT-817** **PRELIMINARY OBSERVATIONS** **DE W1AIM**

The new Yaesu FT-817 is yet another in the growing line of HF/VHF/UHF all mode transceivers flooding the market these days. But this model has some features that may be of particular interest not just to VHFers but to the microwave crowd as well. Yaesu plugs this model as, "The Ultimate Backpacker", and that certainly fits: It's a QRP rig that is smaller than the IC-706, lighter at two pounds, and best of all draws less than half an amp on receive and no more than two amps on transmit. Now this sounds like an ideal IF rig for those of us who like to take our microwave gear into the field and up mountains.

In my case it's particularly handy, as my various microwave transceivers use IFs of 28, 144, and 432MHz. Best of all the output is adjustable in steps of 5, 2.5, 1, and 0.5 watts. This should cover just about every transceiver input required. No need to come up with a scheme to drop the power of the IF rig, or carry a heavy rig with a bulky heat sink.

Like all of the newer transceivers out now, there are more bells and whistles than you can imagine. There's a built in keyer of course, data output for packet, capability for external computer control, even a varying voltage output which changes depending on what band you are on. Don't like the amber screen? You can change it to blue. Don't like the 6M BNC antenna jack on the front? You can change it to the UHF connector on the back. You can run off an external 12V battery, optional 9.6V Ni-Cad pack, or 8 AA cells. And a nice feature is that when you first power up, the screen shows the actual battery voltage for a couple of seconds- no need to dig out that volt meter to see if your battery is still working. Another surprise was a real genuine schematic (plus a block diagram) folded neatly in the back of the Operating Manual. The only thing not included is a good strong magnifying glass!

For those of you who might consider a use other than as a microwave IF, I can tell you that 5 watts is nothing to laugh at: On 6M I worked K1GUN on the coast of Maine, and he gave me a 5-9 report. On 75M mid-day I got a 5-4 report from AF1T. And it certainly seems to hear every bit as well as my IC-746. There are optional Collins filters available (room for only one in this little rig), and I think the CW one might be a good investment.

Now a few caveats: Mid December is no time to climb Mt. Washington, so I can't comment on how bullet proof this rig will be in strong RF fields. The buttons/knobs on the front panel are VERY tiny (and the display isn't that large either). Plus like the IC-706, there are myriad menus to work your

way through. Probably the best bet for most of us would be to program in various frequencies and modes ahead of time to avoid frantic flipping through the operating manual while standing on some mountain top. There is no 222MHz of course (just like ALL of these rigs on the market), and for those of you contemplating WBFM on 28MHz for a Gunplexer forget it- there's no wideband capability on HF. (Maybe some brave soul will want to dig into this rig and see what can be done- but I'll not volunteer MY FT-817 for this...)

For what this little rig will do, the \$770 price tag seems pretty reasonable. Not much more than a set of old Icom or Yaesu rigs for various bands, and a lot more features. And compared to the IC-706 class of radios, it's a lot less power hungry and even smaller. I can't quite get it into a pants pocket, but it's a nice fit in the pocket of my winter parka. (HMMMM, maybe I will try it on a mountaintop this winter....)

de W1AIM

## **AO-40 TELEMETRY** **TRANSMISSIONS STOP** **DEVELOPMENT TEAM INVESTIGATING**

Early Wednesday, December 13th, telemetry transmissions from AO-40 stopped while work on the 400 N propulsion system was in progress. An investigation by the AO-40 development team has begun. They are now waiting for certain on-board software events to occur on Saturday afternoon, December 16th. These are programmed to start a spacecraft emergency routine called 'command-assist' which attempts to re-establish communications. This offers the best chance of recovering evidence of the incident which made the telemetry transmissions stop.

When more information becomes available, we will pass it along.

<http://www.amsat.org>

Signed,

Dr. Karl Meinzer, DJ4ZC  
(and)  
Robin Haighton, VE3FRH  
President AMSAT-DL  
President AMSAT-NA

## FOR SALE OR SWAP

### **GLEN MARTIN ENGINEERING, INC.**

When you order any product from Glen Martin Engineering, Inc., use the special Club Code number assigned to your organization, and receive a cash donation for your club. (Your Club Code #NOR010) You can also find this number in the package that you will be receiving in the mail shortly which will contain 15 product catalogs.

Here is what each member gets: The purchaser will receive a 5% discount\* off all merchandise.

Here is what your Amateur Radio Club gets: The Amateur Radio Association receives a donation of \$25\* for every \$1000 dollars worth of products purchased from Glen Martin Engineering between every member of your association.

For example, if you purchased one of our quality aluminum tower packages, here's how it would break out:

**M-1850: List Price \$ 2410.00**

**Purchaser's (5% Discount) - \$ 120.50**

**Your Total = \$ 2289.50**

**Your Club gets a donation of \$50!**

**Benefit both your own wallet, and your Amateur Radio Club at the same time!**

**\*Please Note that this promotion ends: February 4th, 2001**

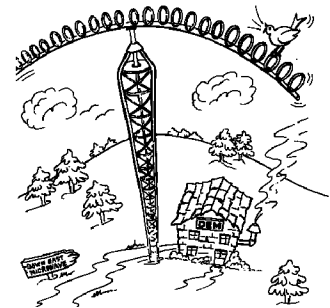
### **ULTIMATE TVI FILTERS FOR WEAK SIGNAL OPERATORS IN STOCK!**

Commercial CATV quality 75 ohm traps tuned to 50.125 and 144.200. These filters are weatherproof and temperature compensated with attenuation at the tuned frequency of >100 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.

## **DOWN EAST MICROWAVE**

**VHF/UHF/SHF EQUIPMENT AND PARTS 50 TO 10,368 MHZ**

**MICROWAVE LOOP YAGIS, VHF/UHF YAGIS  
NO-TUNE LINEAR TRANSVERTERS,  
LINEAR POWER AMPLIFIERS  
LOW NOISE PREAMPS  
COAX RELAYS  
COAX CABLE CONNECTORS  
CRYSTALS  
CHIP COMPONENTS, MMIC'S, TRANSISTORS, RF MODULES**



**SAY YOU SAW IT IN THE NEWSLETTER**

**STEVE KOSTRO, N2CEI, 954 RT. 519, FRENCHTOWN, NJ. 08825 PHONE: 908-996-3584, FAX: 908-996-3702  
WEB PAGE: <http://www.downeastmicrowave.com/>**

## **DIRECTIVE SYSTEMS**

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**NOW FEATURING THE K1FO 17' BOOM YAGIS FOR 144, 222, & 432 MHZ!**

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PHONE: 207-658-7758 <http://www.directivesystems.com>**



**THE NEXT N.E.W.S. MEETING SATURDAY JAN 6TH, 1:00 PM**  
**ALL ARE WELCOME TO THE DIRECTORS MEETING AT 11:30 AM**  
**AT THE HARLEY HOTEL**

**BRING A BOAT ANCHOR AND TAPE IT TO SOMETHING  
GOOD FOR THE DUCT TAPE AUCTION**

**DON'T FORGET YOU NEED TO ATTEND MEETINGS  
FOR THE CLUB ARRL COMPETITION!!**

**Harley Hotel of Enfield, CT (FN31qx) (15 miles north of Hartford, I-91 to exit 49, if  
Southbound left off exit - 1st right / if Northbound right off exit - 1st right).**

**North East Weak Signal Group**

**c/o N1DPM  
Fred Stefanik  
50 Witheridge St.  
Feeding Hills, MA 01030**



**Check your membership expiration date  
on the mailing label!!**



