



# N.E.W.S. LETTER



The Publication of the North East Weak Signal Group

MAY 1998

VOLUME SIX

ISSUE THREE

President: N2MSS Hank Lopez  
Vice President: AF1T Dale Clement

## CURRENT OFFICERS

Secretary: K1MAP Mark Casey  
Treasurer: N1DPM Fred Stefanik

## NEXT MEETING

**THE NEXT MEETING IS ON MAY 23RD, 1:00 PM AT THE HARLEY INN  
ALL ARE WELCOME TO THE DIRECTORS MEETING AT 11:00 AM  
GUEST SPEAKER STAN, WA1ECF WILL TALK ABOUT  
ELECTRO MAGNETIC COMPATIBILITY (EMC)**

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## N.E.W.S. GROUP NET EVERY THURSDAY 8:30 PM LOCAL 144.250

**KD1DU NET CONTROL, WZ1V ALTERNATE**

**STARTS EAST THROUGH NORTH THEN SOUTH FOR DIRECTIONAL CHECKINS  
THEN BACK AROUND AGAIN FOR COMMENTS AND GRID HUNTING**

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/~newswhf>

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## **FROM THE PRESIDENT'S SHACK**

Our March meeting again had a great turnout even with the crazy snow showers that were taking place. This was good news since we had a full agenda of interesting material presented to the club. Ed Hare, W1RFI from the ARRL gave his talk on FCC RF Exposure Regulations, Maarten, KD1DZ offered a brief demo on High Speed CW Meteor Scatter, and Mark, K1MAP capped off the meeting with recent news surrounding Spectrum Management on our bands.

I would like to thank Jim, N1HOV and Jay, N1RWY for supporting me in the talk I gave at the ARRL Maine State Convention in March; an Introduction to VHF. If anyone is planning on presenting the VHF/UHF talk at club meetings and need any help or advice on modifying it, please feel free to contact me since I have given the talk to many clubs already.

Congratulations to Bill, N1KAT in his new role of Maine Section Manager. He just happens to be a VHF/UHF weak signal enthusiast, active on the lower four bands with 1296 on the way. We need more hams dedicated to the VHF/UHF aspect of the hobby to get involved with the ARRL.

Spring is almost half-gone and it's time to complete those outdoor projects. After the winter in the Northeast, it is going to require a lot of hard work for some of us. Hope all who participated in the Sprints enjoyed the activity. It's also time to gear up for the Big One, the ARRL VHF June contest, June 13-15. Good Luck to all for a safe and fun event. By the time you read this, the six-meter spring sprint would have taken place May 16. Though held on a Saturday night between 7 P.M. and 11 P.M., not a very wise time for a Sprint operating event (hi) but, it has still been known to generate much DX activity as the Es season begins.

It's never too late to start thinking about what you will bring to share with the club at the July 19th show and tell outdoor meeting. I would like to remind all of you now because by the time the July newsletter arrives in your mailbox it may be too late to round up your goodies. At this time the plan is to test complete 10 GHz rigs for system performance based upon the world famous Sun Noise Measurements scheme. This has been very successful in the past and I urge you to contact Bruce, N2LIV, Paul, N1BWT, or myself, to "get on" the informal agenda! Even I am trying to prepare a nice dish for this meeting.

HAMFEST season is about to enter its peak! As I write this column on the eve of Rochester, NH, I look forward to seeing many of our members there. The following week brings the Dayton Hamvention and all those attending are sure to have a great time. While there, don't forget to stop by the VHF WEAK SIGNAL GROUP get together that Tom - WA8WZG, Tony - WA8RJF and many others have been kind enough to coordinate for our VHF/UHF enthusiasts. Finally, it's off to Rochester, NY where once again; several of the VHF/UHF weak signal crowd

and goodies tend to show up!

One more PLUG for the 24th Annual Eastern States VHF/UHF Conference that will be taking place in Enfield, CT, August 21-23, 1998. WE STILL NEED YOUR HELP! If you can spare some time to volunteer for some aspect of the conference, please contact Stan, KA1ZE or Bruce, N2LIV. Your help will be greatly appreciated to make this Conference the very best it has ever been. Please submit your nominations for the Tom Kirby, W1EJ award and papers for the proceedings. Once again we will have test equipment available for the laboratory workshop.

The scheduled speaker for the May meeting will be our very own Stan, WA1ECF. His talk will be about Electro Magnetic Compatibility (EMC), a very interesting aspect of EMI, which impacts everyone in one way or another.

Don't forget to read Part II of my Gel Cell Batteries series found in this newsletter.

73,  
Hank - N2MSS

## **ON THE BANDS**

### **BY RON KLIMAS WZ1V, FN31MP**

Saturday morning March 28th produced 1998's first 2M Florida opening up to NJ, EPA, and coastal CT. I could hear WB3JYO FN20 working Florida stations around 1300Z on 144.200, but nothing here. AA2UK FM29 worked WD4MGB and KD4ESV EL87, KF4JJN EL88, KE4MUN EM90, and KQ4PI EL99, wow! Jeff WA2TEO (now K1TEO) FN31 worked W4VHH EM95, WD4MGB EL87, W4UE EM90, W4OWA EM93, KF4JZH EM92, and K4IRT EM94 before the band faded at 1340Z. Congrats, Jeff! All I managed to snag was K4IRT EM94 at 1338Z, oh well.

April was a good month for fools, the IRS, and the ARRL Spring Sprints. Dale AF1T FN43 reported working French station F0OL on 6 meters on 4/1. The IRS reported working WZ1V FN31 for \$1700 on 4/15 (big opening). On the 2M Sprint, Del KD1DU and WA2TEO (now K1TEO) both FN31 were top guns in this area. I thought conditions and activity were decent for the 222 Sprint this year. Del KD1DU FN31 and I both managed to catch Tom WA8WZG EN81 on random CW (about 500 miles). The 432 Sprint was another matter. I thought activity was way down from last year although you couldn't guess that from K1FO's (FN31) score. Congrats, Steve! Check the score listings elsewhere in this issue.

On Saturday May 2 1342Z, a massive Coronal Mass Ejection (CME) produced one of the largest X-class solar flares in 10 years. The resulting proton event and CME impact produced one of the biggest Au and Auroral E openings in recent memory. Starting the same day around 2100Z, I started working stations like WD8BKM EN82, VE3IEY FN14, VE2PEP FN46, and

VE9PA FN65 on Aurora. By Sunday night, the K index was up to 9 at Ottawa! Here's some reports of what others worked: K7XD CN85 reported 6m Auroral E to VE3/W1 on 5-4-98 0415. N7DB CN85: WOW. This was one of those openings to get into the log. This was one of those rare transcontinental AU-E to talk about. This was the second or third one I have seen since '72. Around 0345Z I could hear the warble on WWV and by the top of the hour there was the good stuff. K1RQG FN54 5/4 @ 0406Z, VE1IW FN84 5/4 @ 0407Z, W2FE FN13 5/5 @ 0416Z and VE3SRE FN03 5/4 @ 0417Z. Steve K4RF (EX WS4F) EM84 reported working WA8RJF in EN91 on 222 Au plus strong AU signals from 1's, 3's, 8's and 9's on 6m and 2m on 5/4.

In between all the buzz, N1RZC went on a grid expedition to FN56 May 2nd, bringing along 6 and 2 Meters. I managed to catch him around 2315Z on 144.200 SSB RST 5/3. It's really great to have someone put on such a rare grid like this. Congrats to all who caught this.

Support your local activity nets: Roger K2SMN FN20 runs a Sunday morning net 10:30 A.M. EST on 144.250. And don't forget to check into our N.E.W.S. Group Thursday night net on 144.250 starting around 8:30 PM EST, KD1DU net control (WZ1V alt.)

OK gang, keep checking the bands and looking for those openings. See you at the May 23rd N.E.W.S. meeting and on the bands! And Please Send reports of DX or Expeditions to me, Ron Klimas, 458 Allentown Rd., Bristol, CT 06010 or call 860-589-0528 if you have something you'd like to share about an unusual contact, etc. Looking for Ham/Engineering software or tech info?

Try our Internet Webpage at <http://qsl.net/vhfnews> or subscribe to our NEWS VHF E-mail Reflector at [newsvhf@qth.net](mailto:newsvhf@qth.net) by Emailing [majordomo@qth.net](mailto:majordomo@qth.net) with the message subscribe newsvhf

73 and good DX, Ron WZ1V, internet email: [wz1v@ntplx.net](mailto:wz1v@ntplx.net) 50 through 3456 MHz.

## **SECRETARY'S REPORT, NEWS GROUP** **BOARD MEETING 3-14-98**

The NEWS Board meeting was brought to order at 11:30 Am by president Hank Lopez, N2MSS.

The agenda for the general meeting was discussed and Ed W1RFI, with an RF Standards talk, and Martin KD1DZ, with a High Speed Meteor Scatter demonstration, were our two speakers.

It was suggested that NEWS have a booth at Boxboro this year, and that Lew Collins, W1GXT, may be able to help us with this. Bruce, N2LIV, will be the proceedings Editor for the VHF Conference.

The 1998 June Contest Plaque sponsorship for the Limited Multi-Operator Award was renewed at a cost to the club of only \$50.

Del, KD1DU, suggested a club logo comprised of a compass rose with an antenna.

Fred, N1DPM, our Treasurer, totaled club funds at about \$1800. The Board meeting was adjourned for lunch at 11:55 AM.

## **SECRETARY'S REPORT, NEWS GROUP** **GENERAL MEETING 3-14-98**

President Hank Lopez, N2MSS asked members and guests present to introduce themselves at the opening of the meeting at 1:20 PM.

Treasurer Fred Stefanik, N1DPM, announced the club has about \$1800, and that the club had renewed sponsorship of a plaque for the June VHF contest at a cost of \$50.

Bruce, N2LIV, needs articles for the conference proceedings. He also mentioned conference flyers at hamfests this spring and summer.

Ron, WZ1V noted the increased use and popularity of the NEWS Group reflector and thanked Matt, KB1VC, for the great job he did keeping track of recent contest scores on his web page.

NEWS had 49 entries and an estimated 1.5 million points in the medium category for the January VHF Contest, even with the ice storm that restricted, or shut down, operating for many members in New England and Upstate New York.

Vice President, Dale Clement, AF1T, brought up the subject of fire tower preservation, and how closely their preservation is tied to VHF and especially Microwave operating. A few NEWS members are now getting active in this area.

A short break was taken before our main presenters took the floor. After the break, Ed Hare, W1RFI, from the League, gave a very enlightening presentation on the new RF Exposure requirements. He gave worst case scenarios and even under these, it was pointed out that hardly any of us would have problems. EME at the horizon, and high power close to the ground and close to other homes would be the main areas of concern. Next, Martin, KD1RZ set up a very interesting demonstration of High Speed Meteor Scatter recordings and operating techniques. Martin's presentation was well received by many in our group. Thanks to both Ed and Martin for making this a most interesting meeting. In the wake of proposed movement toward weak signal areas by digital users, Mark, K1MAP, introduced a measure to support an APRS move, but asked APRS to chose a frequency in the 145.500-.780 segment, and not to move to 144.390, for several reasons outlined in the measure, which passed without opposition. Although attendance felt the effects of a nearby snow and ice storm, we still had 34 members and guest present for another great meeting!

See you all Sat., May 23.

Respectfully Submitted,  
Mark Casey, K1MAP, Secretary, NEWS

## **REVIEW OF THE DEM 50-28 6 METER HIGH PERFORMANCE TRANSVERTER BY: FRED STEFANIK N1DPM**

I recently completed building one of the new Down East Microwave high performance 6 Meter transverters. This is a "second generation" transverter that Steve, N2CEI has designed. These transverters are available in 3 different ways. The model 50-28, is the full 20 watt unit completely built and tested, the 50-28CK is the kit form of the full featured unit (you supply the built and tested part), or the 50-28K is the kit form for the inner PC board only. I received the 50-28CK full transverter kit.

The kit is very well organized with the parts being "pre-sorted" into individual baggies. This allows you to easily identify the parts. The first part of the building process is the assembly of the printed circuit board. The board has components on two sides, and the "back side" gets assembled first. Following the manual, the assembly goes smoothly. Once the back side of the board is complete it's on to the front side. There are some "pre assembled" components on the front side that make up the two 50 MHz bandpass filters. These are factory assembled and tuned. This allows for proper assembly and operation without a pile of test equipment. The first section that is assembled per the instructions is the GaAs FET front end of the transverter. This is comprised of surface mount components, and goes together easily. Steve has included an "Assembly Tips" section in the front of the manual that gives some good advice on working with surface mount and leaded components. After the front end section is built the rest of the board can be assembled following the manual. A highlighter is a handy tool to allow a cross check of the parts list and assembly drawing on a component by component basis as you go. It is a good idea once you've assembled the board to re-check the assembly for any errors or assembly problems that may have slipped past during the assembly process.

The next step is to assemble your newly finished PC board into the enclosure. I deviated from this process here slightly by spending some extra time and money. I "cleaned up" the enclosure box to cover seam with a fine file. Then I took the box and the heatsink to the local plating house to apply a "finish" to the metal. I chose a black anodize for the heatsink, and gold irridite for the box and cover. These finishes were chosen for esthetics mostly. Be careful when choosing finishes though. Anodize type finishes are non-conductive and will not provide a good ground. They are, however a very good durable hard coat finish for aluminum, black is a good heat radiator, and it looks good too. The gold irridite finish is a good conductor and helps prevent the aluminum from oxidizing. It makes a nice contrast to the black. It cost me \$90 for the plating as these places have "minimum charges" for a lot. The Iriridite charge was \$35 and the Anodize was \$55. I suppose I could have saved \$55 and gone for the "all gold" look. You can finish this unit the way you like or leave it natural aluminum too. Once the PC board is in the box some initial tests can be done to insure that it will work correctly. Once you've passed those tests then the output module can be installed. This completes the assembly. The final tests can be done and you are ready to run on 6 meters.

Some of the nice features of this unit are a choice of output connector style, either UHF or type N. The keying can be accomplished by either a line to ground or supplying a plus voltage to the circuit. Along with the internal adjustable attenuators, and a built in T/R relay, this transverter has the flexibility to connect to any station set up.

In the performance department I ran a few tests on this new box and was quite pleased with the performance. Looking at the transmitter output on the spectrum analyzer, the fundamental signal is really clean and spurious free. Second harmonic I measured at -66dBc (dB below carrier), and third was -73dBc, with others nowhere to be found. I then checked the two tone IMD performance of the transmit section. At 10 watts PEP output 3rd order products were measured at -30dB, and at 20 watts PEP output they were measured at -24db. I thought these were a bit high. With some further investigation, I found the bias for the transistor that drives the output module was "sagging" as the drive was increased. This could be a reason for the good but not great IMD performance. The bias is comprised of a resistor divider of R2 (5.6K) and R4 (470 ohm). I changed the divider in my unit to R2 (1.5K) and R4 (100 ohm) lowering the bias supply impedance dramatically and as a result stiffening it under load conditions, while keeping the quiescent current of the driver stage the same. I then re-tested the two tone IMD performance and found at 10 watts PEP the third order products were down at -33dB and at 20 watts PEP they were now down at -28dB. After performing these tests and modifications, I sent the information to Steve at DEMI and he said "Thanks, I'll make that change to the kit". When's the last time you called one of the big ham companies with a suggestion and got a response like that??? My unit puts out 22 watts fully saturated as specified and 20 watts at the -1dB compression point (rated linear output power).

On the receive side one of the main goals of the high performance receive converter is it's ability to handle strong signals or many of them. Keep in mind that as the number of strong signals increase the actual level that the receive converter and then your IF radio has to handle becomes tremendous due to the vector voltage addition of the various signals. To make a "crunch proof" receiver requires the components to be able to handle very big or many big signals at once. This also includes those signals we're not interested in listening to when the band is open such as your local television channel 2 or 3. These 100kW rock crushers never go away, are located on a hill, a big tower, or tall building that is line of site to most of their viewing audience, and you too. So the other part of making a good crunch proof receiver is filtering. You really only want to listen to the band you are interested in and not have receiver gain that is as broad as a barn door.

First let's look at the big signal handling aspect of the unit. The receive converter is linear to its -1dB compression point of -25dBm or 12.8mV or .003mW input at the antenna connector. Considering that -100dBm / 2.25uV / .1pW into this transverter gives a S9 signal level on my trustee old' Drake R-4C, this means that a signal 75dB stronger is approaching the point of converter non-linearity! This shows the ability of the transverter to handle BIG SIGNALS! In other words between a S9 signal and converter overload the signal has to get roughly 35 million times larger! The next test is the transverters ability to reject those HUGHMUNGOUS out of band signals. By measuring with the signal generator / spectrum analyzer combination when a signal on the visual carrier of TV channel 2, 55.250 MHz was introduced to the front end the converted signal that would appear at your IF receivers antenna terminal had 11dB of attenuation, and channel 3 visual carrier, 61.250 MHz was attenuated by 26dB.

The next step was to look at the system noise figure. Using a HP8970A noise figure meter with a 346A noise source, I tested the unit after tuning it using a signal generator and my R-4C S meter for best gain. I figured that Joe Ham may only have a signal generator at best or he'll ask his buddy across town to give him a signal on the air to peak it up. I felt these were "real world" kit builders conditions. When put on the

meter it measured 19.75dB conversion gain (with the attenuator set to minimum) and a 1.23 noise figure. When tweaked for best noise figure the results were 19.09dB gain and .84 dB noise figure. I then experimented with the coil in the GaAs FET tuned circuit. By adding a turn, from 12 to 13 turns, when peaked for gain it now measured 20.46dB gain and a .98dB noise figure. When tweaked for best noise figure it then measured 18.66dB gain and a .83dB noise figure. With the natural noise that is present on the 6 meter band, anything less than about a 5dB system noise figure (feedline, filters, relays, etc.) is pretty much overkill. This unit more than meets the requirements. Next lets see just what it takes to knock this thing for a loop. The signal level that was required to drop the gain by 1dB through the receive converter when placed 500 khz away (to eliminate the phase noise effects from the signal generator was -23dBm. This was just beginning to de-sense the receiver.

Looking into the units operation a little deeper I noticed the front end GaAs FET was biased for best noise figure and not for most power (that's right Tim....OOH, OOH MOST POWER!). After discussing this with Steve, he suggested that I may want to try the following. Change the voltage regulator VR2 from a 5 volt to a 9 volt, changing R9 from 150 ohms to 100 ohms, and changing R7 & 8 to 24 ohms each (12 ohms so urce to ground) the ATF10135 GaAs FET was now biased for power. So I did! After an ever so slight tweak of the trimmer capacitors the system now measured 20.44 dB gain and .85 dB noise figure. When tuned " by ear" it was still at just about 1 dB noise figure. This improved the -1dB compression point and 1dB blocking point by 3dB. With the dynamic range being as good as it is, the extra 3dB is a nice plus. Now the first thing into compression is the MAV-11 MMIC (IC-3) that follows the front end GaAs FET and the DBM is only 1dB behind that. When you play the numbers in cascade analysis it looks something like this...

**Receive Converter Cascade Analysis**

Stage	Frequency	Gain dB	Noise Figure	-1dB Comp.	Power Input	Power Output
ATF10135	50 MHz	26	.8	18 dBm	-22 dBm	+4 dBm
MAV - 11	50 MHz	12	3	17 dBm	+4 dBm	+16 dBm
B.P.Filter	50 MHz	approx. -4	4	N / A	+16 dBm	+12 dBm
Mixer	50 Mhz	-8	8	14 dBm (input)	+12 dBm	+4dBm
Diplexer Filter	28 MHz	approx. -4	4	N / A	+4 dBm	0 dBm
IF Attenuator	28 MHz	-2	2	N / A	0 dBm	-2 dBm

These figures result in a calculated gain of 20 dB with a calculated noise figure of .831 dB. That's pretty close to the measured 20.44 and .85dB. I suggested to Steve that he may want to consider shipping them with the GaAs FET biased for power and not lowest noise.

My overall impressions of this transverter is it's a ton of performance in a nice neat package. The transmitter is nice and clean and the receive converter will bring out the best in any IF radio that's used especially some of the modern high performance ones. This transverter coupled to a good HF - IF radio is a tough combination to beat!

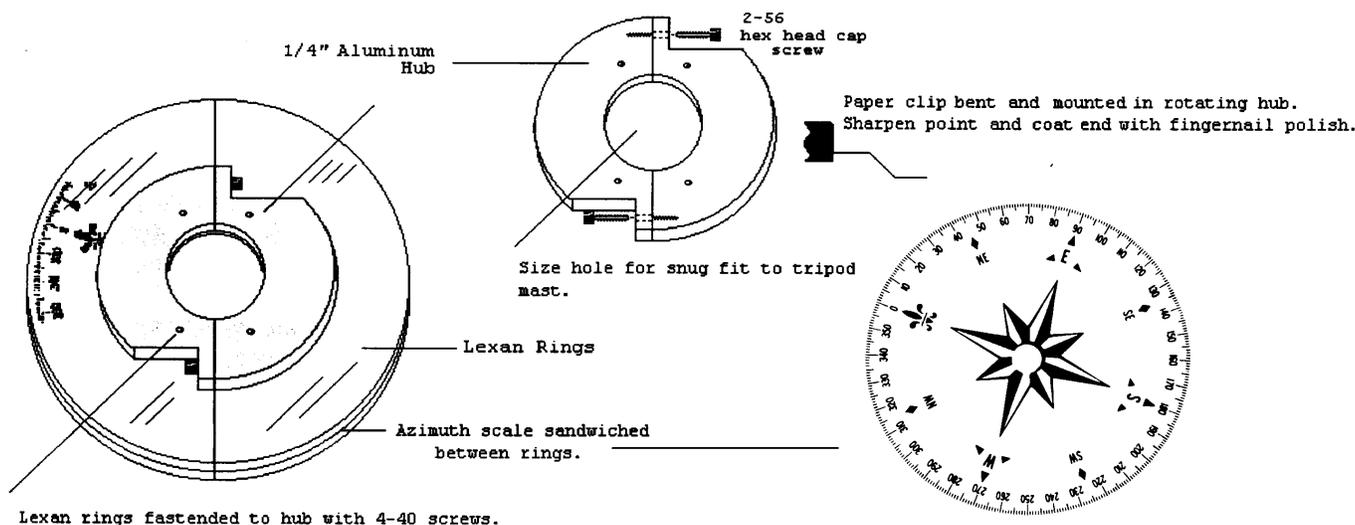
**Measured Specifications**

O/P Power	O/P Harm.	O/P IMD	I/P -1dB Comp	RX Blocking	RX Gain	N.F.	RX Reject
20 W (-1 dB)	2 FO = -66dBc	10 W = -33dB	-25 dBm (LN)	-23 dBm	-2 to 18dB	.83 dB	CH 2 = -11 dB
22 W Sat.	3 FO = -73dBc	20 W = -28dB	-22 dBm (Pwr)	-20 dBm	0 to 20dB	.85 dB	CH 3 = -26 dB

Thanks to Stan, KA1ZE for the use of his HP8970. Jay, W1VD for the instruction on how to get it out of the calibration loop it was stuck in. And Steve, N2CEI for his true professionalism in making, and continuing to improve the Down East Microwave Inc. product line to meet the needs of all of us fussy weak signal enthusiasts.

By: Fred Stefanik N1DPM

**AZIMUTH READOUT FOR CAMERA AND OTHER TRIPODS W1RIL 5/2/98**



1. Take azimuth scale to your favorite copy center and copy to the size you require.
2. Cut aluminum from scrap panel stock.
3. Make two cutouts on opposite sides for mounting screws.
4. Locate and drill pilot holes for 2-56 hex head cap screws.
5. Cut hub exactly in half, tap pilot holes and open clearance holes in shoulders.
6. Make tow rings out of plastic window material, Plexiglas, Lexan ect. - sized to your azimuth scale.
7. Center the plastic rings on the assembled hub and clamp together.
8. Locate drill and tap 4 holes to mount plastic rings to hub.
9. Scribe a line on each ring to coincide with the split line of the hub.
10. Disassemble and scribe rings on opposite side - clamp each between two boards and snap in half.
11. Place azimuth scale on hard surface and using a sharp exacto knife and straight edge cut in half. I cut mine on the North - South line but the choice is yours.
12. Sandwich the plastic and azimuth pieces and assemble on the hub. Trim excess paper from center.
13. Remove one of the 2-56 hub mounting screws and loosen the other. Twist the assembly around the tripod mast and reinstall the mounting screw - slide upward against the tripod mast hub and snug the screws.
14. Fashion a pointer from a paper clip wire and install in undersized hole drilled in rotating collar just above tripod mast hub. Coat the pointer end with fingernail polish. I used red but the choices today are staggering!
15. On site calibration is done by loosening the hub mounting screws and rotating the azimuth assembly to a known azimuth.

Ken, W1RIL

Editors note: You can obtain nice aluminum degree wheels from high performance auto supply places. They come in different sizes and I found them for under \$10.00. One thing to be aware of that Paul, N1BWT pointed out, make sure West is 270 degrees, they may be labeled counter clockwise.

**NORTH EAST WEAK SIGNAL GROUP**  
**(NEWS) POSITION STATEMENT ON THE**  
**(PROPOSED) APRS MOVE TO 144.390**  
**3-14-98**

The NEWS group supports the creation of a National Frequency for APRS in the 145.500 to .780 region and its inclusion in the ARRL 2 Meter Band Plan. The NEWS group asks that automatic packet and APRS operators to refrain from use of any frequency below 144.500 for the following reasons:

1. Interference with the 2 Meter TransAtlantic Beacon project between Europe and the East Coast of the US and Canada from

- 144.250 to .325 and from 144.375 to .435.
2. AM Calling Frequency on 144.400
3. FM & FM ATV Liason use on 144.320, .340, .360 and .380
4. FM Simplex use for liason and distance (DX) on 144.420, .440 and .460
5. Microwave FM Liason Frequency on 144.460

The NEWS Group asks that 1. through 6. above and "Digital, Packet, FM Simplex, Experimental and Miscellaneous on 145.500- .800", and "Digital, Packet, FM Simplex, Experimental and Miscellaneous on 144.900-145.100", be included in the ARRL 2 Meter Band Plan

The foregoing was passed by and unopposed majority of members present at the NEWS Group meeting in Enfield, CT., on March 14, 1998.

**NEW N.E.W.S. GROUP CLUB CALL**  
**W1RJA**

Well, after 2 years and 4 months of BS with the FCC, we finally obtained W1RJA as the official club memorial callsign for the N.E.W.S. Group.

This is to honor the memory of avid VHF'er Ed Bristol W1RJA who joined our Board of Directors in November 1995, only to pass away unexpectedly in December 1995. You may recall Ed had one of the LOUDEST 6 and 2 Meter signals on the whole East Coast. I'll never forget the last big 2 meter opening to Florida that Ed caught. No sooner than Bill AA2UK had just installed a new M2 5WL yagi at 90 feet for Ed, than the band opened and Ed was getting 20dB/S9 reports all over Florida while highly-jealous yours truly was struggling to get 5/2's. Needless to say, Ed was delighted in more ways than one! Ed is survived by Rae Bristol K1LXD, our Conference Registration chairwoman and active Board of Directors member for the past three years.

Frank NC1I has wisely suggested to me that we set some guidelines for use of the call, and we'll discuss these at our next Board of Directors meeting. In the meantime, I've created an Email address, w1rja@qsl.net as well as a webpage, <http://www.qsl.net/w1rja> to help coordinate future club sponsored events using the callsign. Oh yeah, by the way, K1YX is history. I'd like to apologize to anyone who needed a QSL card for K1YX/R. You should contact it's operator KA1ZE who never gave me his logs, or the N.E.W.S. Group treasurer, who never gave me anything with which to buy club QSL cards. This is why I couldn't QSL.

73, Ron WZ1V, clubcall trustee

## 1998 ARRL SPRINT RUMORED SCORES BY RON WZ1V:

### 144MHZ

CALL	GRID	Q's	GRIDS	SCORE
K3MM	FM19	255	52	13260
WA2TEO	FN31	211	37	7807
KD1DU	FN31	201	34	6834
KE8FD	EM89	109	50	5450
K2SMN	FN20	135	34	4590
KB2ZVP	FN22	139	33	4587
K8TQK	EM89	92	48	4416
N2HLT	FN12	94	34	3196
WZ1V	FN31	123	25	3075
KA2RDO	FN12	80	34	2720
KC8AGW	EN90	81	31	2511
N2NEP	FN13	76	29	2204
N3OPM	FM19	74	23	1702
AF1T	FN43	84	19	1596
ND3F	FM19	66	22	1452
N1MUW	FN32	84	17	1428
N1BWT	FN42	86	16	1376
NO3I	EN90	51	26	1326
W3SE	DM04	90	14	1260
N2JMH	FN13	56	22	1232
W4AD	FM08	62	19	1178
K4RF	EM84	4	24	1152
W1COT	FN31	66	16	1056
N1QVE	FN31	72	14	1008
VE3VRQ	FN13	49	20	980
N6AJ	DM06	60	16	960
WA2ZFH	FN30	61	13	793
W1Pm	FN41	45	15	675
K3LIC	FN20	56	12	672
N0UK	EN34	44	15	660
AA3GN	FN20	46	14	644
KA6VQV	CM98	44	13	572
W1TDS	FN32	40	14	560
KA1OTP	FN41	41	13	533
W6OAL	DM79	40	12	480
KO0U	FN42	36	13	468
KC8CSD	EN81	25	17	425
N1QDQ	FN31	41	10	410
N1RWY	FN54	31	11	341
N7EPD	CN87	32	10	320
N3KKM	EM28	21	15	315
NC4SA	EM95	23	12	276
N6IFW	CM98	31	8	248
N8ZJN	EM79	20	12	240
K1TR	FN30	26	9	236
N1SFE	FN31	21	6	126
W9SZ	EN50	10	8	80

### 222MHZ

CALL	GRID	Q's	GRIDS	SCORE
AA2UK	FM29	76	27	2052
W2TTT	FN20	63	28	1764
WA2FGK	FN21	57	27	1539
KE8FD	EM89	48	31	1488
WZ1V	FN31	62	21	1302
K8TQK	EM89	37	26	962
K1TR	FN42	53	18	954
KA2RDO	FN12	45	20	900
N2HLT	FN12	42	21	882
KD1DU	FN31	45	16	720
N1BWT	FN42	44	15	660
AF1T	FN43	43	15	645
W1COT	FN31	42	15	630
K1RZ	FM19	32	17	544
WA2BPE	FN12	26	20	520
K4ZOO	FM08	28	15	420
N6AJ	DM06	29	13	377
W3SE	DM04	41	9	369
N1DPM	FN32	32	11	352
N0HJZ	EN34	28	12	336
W2FCA	FN22	24	13	312
NI6G	DM06	26	11	286
N1QVE	FN31	29	9	261
N1MUW	FN32	25	9	225
K6CYS	DM12	28	7	196
N6ZE/6	DM04	28	7	196
KA6VQV	CM98	19	8	152
N2JH	FN02	13	10	130
W1PM	FN41	20	6	120
KC8CSD	EN81	13	9	117
N4MW	FM17	16	7	112
	W4WMW	op.		
K4RF	EM84	13	8	104
N2JMH	FN13	12	8	96
N2KG	FN13	11	8	88
KD4K	EM74	10	7	70
NS9E	FN13	11	6	66
KB2HQ	FN32	13	5	65
WA1CUH	FN41	15	4	60
NO3I	EN90	7	7	49
W6OAL	DM79	8	6	48
AA3GN	FN20	13	3	39
WA1MKE	EN70	7	4	28
K1DY	FN54	6	4	24
N8ZJN	EM79	5	4	20
WA3DRC	FN20	10	2	20
	indoor antenna			
W5UWB	EL17	5	3	15
WA2ZFH	FN30	7	2	14
	223.5 FM only			
K1WVX	FN31	5	2	10
K6FV	CM87	5	1	5
VE2SWL	DO21	1	1	1
K2SPO	FN13	0	0	0
	called CQ 20 min. no reply			
VE6TA	DO31	0	0	0
	called CQ 2 hrs. no reply			

### 432MHZ

CALL	GRID	Q's	GRIDS	SCORE
K1FO	FN31	118	29	3422
WA2FGK	FN21	70	29	2030
AA2UK	FM29	73	26	1898
WZ1V	FN31	78	21	1638
K8TQK	EM89	46	32	1472
KA2RDO	FN12	51	23	1173
KE8FD	EM89	39	25	975
K2SMN	FN20	52	17	884
N2HLT	FN12	42	18	756
W9FZ/R	EN33	41	18	738
W2AAA	FN03	35	19	665
AA3GN	FN20	46	14	644
K1TR	FN42	44	14	616
WA3DRC	FN20	44	14	616
AF1T	FN43	42	14	588
N6KBX	CM98	41	14	576
WA2BPE	FN12	34	16	544
K6TSK	DM03	49	11	539
KA6VQV	CM98	38	14	532
W1COT	FN31	38	14	532
K4ZOO	FM08	27	18	486
W3SE	DM04	53	9	477
N6AJ	DM06	36	12	432
N2JMH	FN13	30	13	390
WA2ZFH	FN30	42	9	378
NI6G	DM06	31	12	372
KO0U/1	FN42	33	11	363
W2TTT	FN30	36	10	360
	QRP			
WB8AUK	EN80	27	13	351
N6HKF	DM13	38	9	342
N1QVE	FN31	34	9	306
K2SIX	FN20	32	8	256
NC1I	FN32	30	8	240
N8ZJN	EM79	19	12	228
N0UK	EN34	25	9	225
KB8O	EN82	20	10	200
KQ6QW	DM04	40	5	200
N6ZE	DM04	30	6	180
W1NWE	FN32	18	8	144
W1PM	FN41	17	7	119
KD4K	EM74	14	8	112
WA2AEY	FN23	14	7	98
N7EPD	CN87	16	6	96
W6GYD	CM87	16	6	96
W1TDS	FN32	15	6	90
W6OAL	DM79	15	6	90
KH2CY	FM18	13	6	78
N1DGF	FN43	11	7	77
AA3GN	FN20	15	5	75
W2ZQ	FN20	19	4	74
K6SIX	CM97	14	5	70
KA2CKI	FN13	10	7	70
K4TO	EM77	11	6	66
NS9E	FN13	8	6	48
N0KE	DM69	9	5	45
N4MW	FM17	7	6	42
K6YK	CM97	12	3	36
K6FV	CM87	6	2	12
N3KKM	EM28	5	2	10
W0TM	DM69	1	1	1

Send additions/corrections to: Ron WZ1V,  
wz1v@ntplx.net

## **GEL CELL BATTERIES: PART II** **"BASIC CARE"** **BY HANK LOPEZ, N2MSS**

This article is part two in a series of Gel Cell battery topics. I hope that you find these suggestions to be practical and helpful.

Now, you have just arrived at the Boat Anchor ARC hamfest. One of your purchases will be a gel cell battery. You have a copy of my earlier column in hand, and you refer to it constantly while assessing the various batteries you see, driving the sellers nuts in the process. You examine, test, negotiate, and finally purchase your very own gel cell battery. That's it, right? WRONG!

What precautions must you take to insure that your new battery arrives at your shack safe and sound and functions when you need it?

**SAFETY TIPS:** When it comes to safety, expect the unexpected! You may think the battery is safe where you have placed it, and nothing can come in contact with it, or happen to it, but I have had my share of surprises with just that attitude.

First of all, the minute you purchase the battery, make sure the contacts are covered. Use electrical tape, masking tape, cardboard, plastic bags and string, or whatever. Just be sure you do it! Why? Because battery contacts have an amazing attraction for other metal objects, and there is no easier way to have a Fourth of July celebration in April than to allow the terminals on your battery to short together.

Next, when you decide to use the battery to power a radio, be sure that the wire gauge is the correct size for the application and amperage rating of the radio and the battery. Alligator clips and test leads are asking for trouble. Why? Alligator clips can slip off, and if the wire size is too small, the battery will not power the radio adequately.

Put an in-line fuse on each power lead, as close to the battery terminal as possible. Why? Safety. Better to burn up a fuse than to burn up your battery, your radio, your car, your shack, or your house. These batteries will discharge a tremendous amount of current, which can make a short-circuit get very hot!

Cover the battery terminals. This can be done with a plastic insulator that will match the type of connector on the battery, or you can simply cover the battery terminals and power leads with epoxy after soldering them in place (assuming you are using the proper size wire, and will not need to change it in the future). Why? Do you want your nickname to be "Sparky"?

**CARE OF YOUR BATTERY:** You can't just throw your battery into the back of a closet in your shack and expect it to be ready and waiting for your next outing.

This is a gel cell battery, not an alkaline cell with a three-year

shelf-life. There are certain charging protocols that must be followed in order to keep your battery in good shape.

There is a shelf-life to the charge in your battery. Every month the battery sits in the closet, the voltage will decline by a measurable amount. You must keep an eye on your investment. A paper log and a calendar of charging cycles is a good idea and will insure that your battery is ready for that important moment in the future.

Periodically simulate how the battery is going to be used. This applies to contest, emergency uses as well as casual back-up use. Turn off the commercial power, connect the battery and see what happens. Just how long did the battery last? You may be surprised, pleasantly or otherwise, but you will know how long you can expect the battery to last for your application. It sure would be a tremendous disappointment to arrive on that mountain top with all the gear and miles of trekking to find out you never took care of your battery!

Remember, you should have purchased a battery with a capacity equal to, or greater than, your expected load/usage. In any event, the battery should be cycled periodically to be sure it will still meet its objective.

If your battery was purchased for emergency use, I hope you will never have to use it. But, if you do, following these simple common-sense guidelines will give you peace of mind and insure that your battery will be ready, willing, and able to fulfill its mission when you need it.

### **NEW URL, EMAIL FOR WZ1V:**

Effective immediately, all webpages under the domain <http://www.connix.com/~wz1v/> are moving to <http://www.ntplx.net/~wz1v/>

My new Email address is [wz1v@ntplx.net](mailto:wz1v@ntplx.net)

This affects the N.E.W.S. page mirror and all other pages that were under my connix domain. Note that the donated University of Hartford webspace for the N.E.W.S. Group's main webpage remains at <http://uhavax.hartford.edu/~newsvhf>

-73, Ron WZ1V

### **AU REPORT DE W1FIG**

Some info for the NEWS letter. Results of 5-2-98 and 5-3-98 Aurora opening. Saturday opening lasted here from 21:00z-03:00z Sunday opening started at 20:00z until 00:30z Mostly North East stations Saturday, and Sunday. Best opening was on Sunday. Best DX on Sunday was NR8S in EN83 and KE8FD in EM89. Heard stations from EN91 and EN75. QTF went never more west than 330 degrees.

73 Maarten, W1FIG  
FN41gv, Rhode Island  
ex PE1FIG, KD1DZ

## FOR SALE OR SWAP

I have some rigid brass waveguide for sale or trade. It was in a 11 GHz Collins Rockwell Digital radio system. I have lengths that vary from a few inches in length, to a couple of pieces over a foot. Inside waveguide dimensions are as follows: 24/32" by 12/32. I also have a number of circulators, Bandpass filters and terminators, waveguide type labeled 10.7 GHz to 11.7 GHz. I really would like to trade for other 10 GHz stuff I need. Or I am open to offers. SMA dBm. SMA relay, 10 GHz preamp etc. I will have some Frequency West brick oscillators as soon as I check them out.

PaulC@snet.net KB1RP

Directive Systems DSFO144-12 12 Element 2 Meter K1FO type Yagi. Good Condition \$100

Antennaco (W1JR) 11 element 222MHz Yagi \$75

Contact John, N1MUW at 413-572-9072

JPS NIR10 Outboard DSP Best Offer

Original Rutland Arrays FO 144 - 12 12 Element K1FO Yagi. \$100

Cushcraft 20 Element Colinear Array Good Condition Best Offer

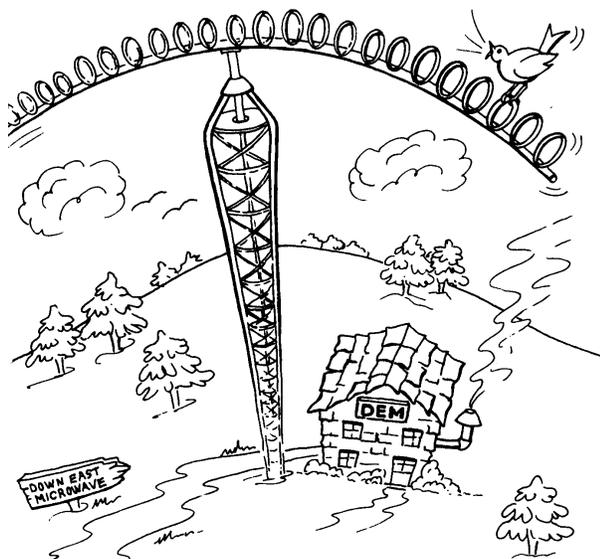
KLM 6M-7LD 7 element 20 foot boom light duty yagi. \$100

Contact Fred, N1DPM at 413-786-7943 or FREDDPM@JUNO.COM

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**CHECK YOUR 2 METER RANGE, WORK NEW GRID SQUARES**  
**NET CONTROL WILL COORDINATE MICROWAVE QSO'S**  
**CHECK IN TO PROMOTE BAND ACTIVITY AND OUR CLUB**

**NEXT N.E.W.S. GROUP MEETING MAY 23RD AT THE HARLEY HOTEL**  
**GUEST SPEAKER STAN, WA1ECF WILL TALK ABOUT**  
**ELECTRO MAGNETIC COMPATIBILITY (EMC)**

**BOARD MEETING** - From 11 AM to noon - open to all.  
**LUNCH BUFFET** - At noon in the hotel restaurant.  
**MEETING** - From 1 PM to 4 PM.

**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**

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