

## The Marinette and Menominee Amateur Radio Club

# GROUND WAVE

Repeater Frequencies 147.00MHz & 444.075MHz

Club Net: Sunday 7PM 147.00MHz

Simplex DX Spotting and Ragchew Frequency 146.55

Web Page <http://w8pif.com>



### Officers:

President: Jim Callow K8IR

Vice President: Valerie Hallam KC8WAI

Treasurer: Paul Drees WC9E

Secretary: Mark Erickson KD8ESH

The MMARC Newsletter

November 2007

### CLUB CALENDAR...

November 8 Meeting  
December 9 Christmas Party

### NOVEMBER MEETING...

The November meeting of the M&M ARC will be held at 7pm Thursday November 8th at Spies Library in Menominee. The agenda is included in this newsletter. At the October meeting, we discussed some ideas for activities in the coming year. One of those was reviving club Fox Hunts. Eric, KG9GH, will teach us a bit about fox-hunting. He's included some material in this newsletter. We hope to see you there.

### CHRISTMAS PARTY...

Our Christmas Party will be held Sunday December 9<sup>th</sup> at Schusslers. The RSVP form is in this newsletter. Please get your reservations in by December 3<sup>rd</sup>.

### PAYING YOUR DUES...

A reminder it's time again to pay club dues. The single membership stays at \$18.00, and a family membership is \$27.00. You can pay the treasurer at a club meeting, or send your check to M&M ARC, P.O. Box 1082, Marinette, WI 54143. December 31<sup>st</sup> is the deadline for dues payment.

### ALEX MAKES PAGE 1...

The area's youngest ham and the DAR program got some great publicity when Alex, KC9MBY was featured on page one of the October 22<sup>nd</sup> Eagle-Herald, complete with a color picture. For those who missed it, try these links to the two halves of the story:

<http://tinyurl.com/35fg9p>

<http://tinyurl.com/2vprh3>

## **HAT TEAM PROJECTS IN MERRILL, OCONTO FALLS, AND ON THE 147.000 REPEATER...**

Sunday, October 7th, the M&M ARC Ham Assistance Team traveled to Irma, Wisconsin which is near Merrill, Wisconsin to install a Cellwave PD340 2m antenna for the Merrill Amateur Radio Group (KC9JVF) and Lincoln County ARES along with the associated hardware and feedline. In addition, the team also installed 2 DB212 antennas along associated hardware and feedlines for Northwoods Communications Resources, Inc.'s proposed 6m repeater (WI9NCR) at the same site. Lastly, a separate private repeater antenna was re-adjusted on the tower. Additionally, several individuals from the Merrill Amateur Radio Group and Lincoln County ARES worked with the team to accomplish all tasks associated with these projects.

Be sure to look for the new Merrill Amateur Radio Group's repeater (146.640- PL=114.8 encode & decode) which is expected to be on air very soon. The NCR proposed 6m repeater (53.530 tx / 51.830 rx PL=141.3) is expected to be on air by Thanksgiving. Also, check out the Merrill Amateur Radio Group's web site of <http://margdx.org/> when you have time.

### **Bill Becks, WA8WG, provides a comprehensive report on the HAT Team Activities on the weekend of November 3<sup>rd</sup> & 4<sup>th</sup> :**

The M&M H.A.T. successfully replaced the defective PD-340 VHF antenna at Oconto Falls this past weekend that corrected the severe desense problem that plagued the Linked Repeater System for much of our 2007 Skywarn season. Tri-County Skywarn is second to none among all of the weather spotter groups serving the NOAA WFO's in the State of Wisconsin. Having the 146.835 back on-line again goes a long way to ensure that our spotters

will again have the communications resources necessary to continue to provide this excellent public service.

I have personally thanked all of those H.A.T. members present for each of the three work sessions to relocate the 146.835 to Oconto Falls and to perform testing and to effect repairs to complete the move and to correct the technical deficiencies. The general membership of the M&M ARC should be very proud of the work done to support and promote amateur radio. I would like to ask that you communicate my deep appreciation and gratitude for a job well done of the H.A.T. to the general membership at your next regular monthly meeting.

Pete, AB9PJ asked if I would be willing to help out on a project to evaluate the recent noise and desense problems occurring with the 147.000 club repeater and to help make emergency repairs as needed

Noel, K8NB was unable to be there today so I assumed technical lead to evaluate the system and to look for possible causes of the intermittent noise problem. Unfortunately, the noise was not occurring today at the time of our visit to the site but we did go over the system and I would like to report our findings that you may share with the general membership.

The main LMR-400 jumper installed between the duplexer and Polyphaser was found to generate some degree of noise and desense when moved about or subjected to vibration with the system transmitting. This problem has been recently documented among amateurs and communications technicians that routinely service full duplex systems. We replaced the jumper with a new one fabricated on-site using 1/2" Andrew SuperFlex cable and fitted with quality Type-N Female connectors. This was probably not the root cause of the ongoing intermittent noise problem but was significant enough that I felt it should be replaced.

We were unable to inspect the antenna and transmission line on the tower as there were not enough climbers (Two) available to make the ascent up the tower while observing safety in numbers. So we switched our focus to the repeater and duplexer hardware and did measure at least 9 dB of desense with the duplexer terminated into my service monitor. The repeater and duplexer were touched up for best possible performance that resulted in a reduction of desense to a level of approximately 4 decibels.

The vintage Sinclair duplexer utilized with the GE Mastr-II has at best approximately 80 dB of isolation between the transmitter and the receiver and is just a few dB short of the filtering necessary to completely keep the transmitter from causing receiver degradation. These older type of Sinclair duplexers were designed for tube type repeaters that generally were several dB better in transmitter noise and thus were adequate for the job when use with these older transmitters. Unfortunately, the solid state PA's using low voltage bipolar transistors of the type used in the GE Mastr-II produce more noise than the older tube counterparts of years ago. In addition to the lack of proper isolation, these older duplexers also drift and require either strict temperature control or somewhat frequent optimization to keep them at peak efficiency.

I would recommend that the M&M ARC strongly consider upgrading the duplexer with a TX/RX Vari-Notch (4) Four Cavity type duplexer as club funds permit such expenditure. The TX/RX Vari-Notch duplexer has nearly 90 dB of isolation while maintaining only about 1.5 dB of insertion loss and would be more consistent for use with solid state finals. I have used TX/RX products for amateur and commercial projects for 25 years and have found them to be extremely stable with no real need to retune at all.

Finally, the GE-Mastr-II was not measured to determine if the transmitter noise was nominal or not as this type of test requires one or two notch cavities ahead of the spectrum analyzer to

attenuate the fundamental enough so that the analyzer has the dynamic range needed to look down to about -130 dBm for noise components that can and do contribute to desensitization. I am not suggesting the clubs repeater needs to be changed but like it's counterpart, the Motorola Micor, they are getting to be about 30 years old and are getting tired. It may be time to look for something newer.

Nothing found today explains the on-going intermittent problem and will require some vigilance to be in a position to get to the site while the noise is occurring in order to listen to the local speaker while the transmitter is disabled. This test will quickly help to determine if the noise is due to rectification from the antenna system or structural members in it's environment, perhaps the PA in the repeater itself could be at fault. These are very difficult to detect when they come and go infrequently.

Again, my tanks to the M&M H.A.T. for their excellent contributions to the amateur community! Keep up the good work. Thank you,

***Bill***

**William G. Becks, WA8WG**

**Technical Director, WeComm, LTD.**

**Technical ADC, Wisconsin ARES/RACES  
Northeast**

### **VOIP LINK WITH LP...**

Bill Becks WA8WG and Vince N9JCN of Gaylord have linked up their two repeaters via VOIP on a full time basis. The 147.120 Gaylord repeater and the 146.880/835 system are now connected. Very soon, the 146.700 at Manistique will be added giving the system a very large coverage area from NE Wisconsin, the central and eastern U.P. to the northern portion of Lower Michigan, with a small portion of Ontario added in for good measure. Future plans could also include an additional repeater or two.

AGENDA for M & M AMATEUR RADIO CLUB  
October 11, 2007

**1. Call meeting to order**

**2. Pledge of Allegiance**

**3. Recognize guests and/or new members**

Members introduce themselves with their call sign and talk about their HAM Radio activities in the past month. DX Stations worked, Antenna Projects, Contests worked, etc.

**4. Approve Secretary's report as printed in the Ground Wave**

**5. Treasurer's Report (Paul)**

**6. Communications to read (any club officer)**

**7. Net report (Ed)**

**8. DAR Project Report (Ed)**

**9. Quartermaster Report (Ed)**

**10. Repeater Committee Report (Pete)**

**11. HAT Report (Pete)**

**12. QCWA Report (Dave)**

**13. Old Business**

- County Board Presentation
- Christmas Party

**14. New Business...**

- License Classes
- Club Jackets (Ed)

**15. Announcements/Raffle**

**16. Adjournment**

**17. Program: FOX HUNTING**

## M&M Amateur Radio Club Meeting Minutes. Meeting October 11<sup>th</sup> 2007

7:00pm Pledge of allegiance

- 7:05pm. Meeting called to order.. A review of members activities during the past month took place.. Congratulations to KD8FUE on his upgrade to the General Class License..
  - Secretary's report was approved as printed..
  - Treasurer report; Donations were received from Vince & Christine Beckley in the amount of \$30.00.. Also from Donald R. Uecke, two checks for \$100.00 each...
  - Communications: The Green Bay Mike and Key Club is sponsoring Amateur Radio License classes to be held at St. Norbert College October 20<sup>th</sup>..
  - Net Report: 26 check-ins before the Packer game.. A discussion took place about doing something special for the two year anniversary of the DAR Radio room Project.
  - Quarter Master's Report; Current as printed in the Web page..
  - Repeater Report: 147.000 everything working.. 444.000 no issues A discussion followed about a borrowed antenna that was not in working Order.. Eric suggested that maybe this item could be repaired..
  - HAT Team Report: Eric talked about the 146.640 project North of Merrill, Wisconsin.
  - QCWA Report.. Dave said that the next meeting would be at the Old Country Buffet in Green Bay on November 10<sup>th</sup>..
  - Old Business: A request for a presentation to the Marinette County Board about how Amateur Radio can be of service during an emergency.. A discussion Followed.. The Board meets the last Tuesday of October.. Several members Talked about being able to attend... Information on the Christmas Party will be in the next Ground Wave.. A group discussion about the Scout Jamboree took place.. The membership Decided the it was to late to generate much interest this year.. The group thought that we should "talk it up" and generate interest in this event for next season...
  - New Business: Mr. Callow asked the membership what kind of activities Would be of interest in this new club year..
 

1. A Club swap fest.	2. Picnic/Swap/Ham Bingo	3. A Fox Hunt	4. QSL
card Training	5. Propagation Training	6. Regular Fish Fry	
meetings	7. Breakfasts/Meetings	8. Satellite operations	
9. ATV Slow scan.	10. Project Nights	11. Something	
for the DAR.	12.WECOM system	13. VOIP.	
14. Micro Processors used in radio	15. Software Defined Radio	16. Spread Spectrum Technology	
- All members were invited to attend a tour given by Mr. Callow of the Radio Station WAGN... The membership would like to thank Mr. Callow. The Tour Was Great!!! .

Members present at this meeting,

K8IR	KD8ESH	K9FQC	KC9LNT
W8DXX	K8ZLO	K7PAM	KD8FVE
N9OSF	KC9III	KC8WAI	N0AWH
KG9GH	W9JJC	AA9GZ	KCFKE
KG8CX	WC9E		

- Mr. Robert Schrader Moved for adjournment.. The motion was supported by Mr. Ed Engleman Meeting adjourned 8.00pm.

### October 31<sup>st</sup> Treasurers Report

Checking	\$1403.77	Repeater Fund	\$379.45
Savings	\$689.94	DAR	133.29
Total	\$2093.71	HAT	100.00

FROM ERIC, KG9GH:

## **HIDDEN TRANSMITTER HUNTING 101**

**Purpose:** to locate a source of Radiating RF Energy and get better at it. Learn about your Equipment, to Experiment & make equipment. Oh yea, to HAVE A GOOD TIME.

**Other uses:** Finding Repeater jammers, Stuck Microphones, Interference, Wild Game Tracking.

**Needed to hunt:** Plan, Receiver, RSSI, Antenna, Attenuator, Maps, Hunting Skills, a mind like a Fox, Extras, and Luck.

**Receivers** - HT (Handheld Transceiver), Mobile Radio, RF Signal Strength Meter.

**Antenna** - Rubber ducky, Tape Measure Yagi, Cubic Quad, Walking stick Beam, Doppler array, testing your antenna pattern.

**Attenuator** – Knock the signal down, ARRL switched, Rheostat, Loosing, rubber ducky.

**Maps** -

**Extras** - Doppler Direction finding unit. TOA (time of arrival). RF Signal strength meter, Compass, Laminated Map, Wax Pencil, another Radio to monitor the local repeater. Multi band Receiver. Headphones, receiver tuned to 3<sup>rd</sup> harmonic, Pencil & Paper, Clipboard, Protractor, Ruler. Driver, Navigator, Helpers,

### **Good Books/ WEB Sites**

**How to Hunt** – Antenna Patterns & hunting the nulls, Body Beaming, HF.

### **Needed to hide**

A copy of the rules, Pencil & Paper to log. Transmitter, Timing Device, Antenna, A good hiding place. A few pre-planned hints. A good place to eat after. A second Transmitter to give clues on and to monitor the local repeater, Decoys.

Other topics : Modes(CW, AM, FM), Other Bands, Beam Antenna patterns at say ELT frequencies. HF RDF Antennas

**COME TO THE NOVEMBER MEETING TO LEARN MORE ABOUT FOX HUNTING AND RECEIVE A COPY OF THE RULES.**



**M&M AMATEUR RADIO CLUB  
P.O. BOX 1082  
MARINETTE, WI 54143**