

Mich-A-Con RF

Iron Mountain, Michigan

December 2004

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N8LT's Workbench

WHAT'S YOUR REAL SWR?

Measuring SWR at the transmitter is the most common, convenient, and sometimes the only feasible way. However, sometimes the reading can be quite inaccurate because of line loss. The higher the line loss and the higher the actual SWR the more inaccurate the reading will be. It is possible to correct the readings for line loss, though the resultant values will not be quite as accurate as reading the SWR at the antenna.

Finding Line Loss

To do so you need to know the transmission line loss. This can be measured with a dummy load and a wattmeter or, for new lines and lines in good condition, it can be easily estimated.

To measure the feed line loss using the dummy load/wattmeter method connect a dummy load to the feedline at the antenna end of the line and a wattmeter and transmitter to the other end. Key the transmitter and note the forward power into the line. Move the wattmeter to the dummy load

end of the line and again key the transmitter noting the forward power reading. Divide the power measured at the transmitter end of the line by the power read at the dummy load end of the line then take the Log' of that result and multiply by 10 to get the attenuation of the line in dB.

For new line and existing line in good condition, simply look up the cable attenuation in the manufacturer's catalog or use generic tables or charts published in numerous handbooks. These attenuation figures are based on 100 feet of line. To correct to your feedline length, simply multiply the published "dB per hundred feet of length" by the length of your line in feet and divide by 100 to get your line's attenuation in dB.

Determining Your Line Length

(1) The best method is to measure the length of your feed line when you install it.

(2) The second best method is to measure what's left (how much you cut off) from the known

(Continued on page 3)

Mich-A-Con ARC December 14th Meeting

The meeting was called to order by President Tom Martin, W8JWN, at 6:34 PM

Secretary Report:

The minutes of the November 9th meeting were read by Mike, K8DDB, and accepted.

Treasurer Report:

The Treasurer's Report was presented by Tom, W8JWN. As of this meeting we have \$71.20 in checking, \$2,085.22 in the savings account, \$1,512.38 in the repeater account and \$26 cash.

Repeater Report:

The 440 repeater hung up during a test of We

Energies' emergency generator. Lee, N8LT, cycled the power supply to restore it to operation.

Old Business:

Tom, W8JWN, reminded the attendees of Pete Trembl's Jersey DX-pedition presentation set for the January 11th meeting. The presentation will take place at 6:30 PM central time, followed by the business meeting. Let's have a good turn out.

Mike, K8DDB, contacted Melissa Lewis, KB8ETN, about the club tower. She will look for it and get back to him.

(Continued on page 8)

Words from the President

At this time I would like to wish all of the club members and prospective members a very merry and blessed Christmas and a healthy and safe 2005.

January Club Activities

Tnn (Tuesday night net) on the 4th, 18th and 25th at 6:30 PM on the 2-meter repeater. Dennis, KD8AIT, has been doing the honors of Net Control since September 28th. Please join us on 146.85 at the appointed time.

Club meeting on Tuesday the 11th in the Grace United Methodist Church, 721 Norway Street, Norway Michigan. The meeting room is upstairs next to the Sanctuary. Pete Trembl's presentation on his DX-pedition to Jersey will begin at 6:30 PM central time and the business meeting will follow.

Saturday Morning Breakfast, 9:00 AM on the 15th at the Holiday Kitchen in Iron Mountain. Breakfast's have been changed to the 3rd Saturday of the month to avoid holiday weekends, etc. Come alone, or bring your significant other and enjoy the food and friendly conversation.

Pete Trembl, K8PT, to Present January Program

On Tuesday, January 11, Pete Trembl, K8PT, will be presenting a Power Point program on his annual DX-pedition to Jersey, in the Channel Islands.

Pete, a community banker from Marquette, has been traveling to Jersey every March with his friend K3PLV, since 2000. Pete has also operated from HB, DL, F, G, KH6, and VE.

Since Pete is coming from Marquette, your attendance would be appreciated. His photos and commentary can be appreciated by non-hams as well.



Mich-A-Con ARC Activities for January 2005

SUN	MON	TUE	WED	THU	FRI	SAT
						1
2	3	4 Tnn	5	6	7	8
9	10	11 Meeting	12	13	14	15 Breakfast
16	17	18 Tnn	19	20	21	22
23	24	25 Tnn	26	27	28	29
30	31					

Contests

ARRL Straight Key Night
0000-2400 Jan 1

Kid's Day
1800-2400 Jan 2

ARRL RTTY Roundup
1800 Jan 8-2400 Jan 9

North American QSO Party (CW)
1800 Jan 8-0600 Jan 9

DARC 10-Meter Contest
0900-1059 Jan 9

HA DX Contest (CW)
1200 Jan 15-1200 Jan 16

North American QSO Party (Phone)
1800 Jan 15-0600 Jan 16

Michigan QRP Club
January CW Sprint
1200 Jan 15-2400 Jan 16

070 PSKFest
0000-2400 Jan 15

BARTG RTTY Sprint
1200 Jan 22-1200 Jan 23

ARRL January VHF
Sweepstakes
1900 Jan 22-0400 Jan 24

CQ WW 160-Meter Contest (CW)
0000 Jan 29-2359 Jan 30

UBA Contest (phone)
1300 Jan 29-1300 Jan 30

UK DX RTTY Contest
1200 Jan 29-1200 Jan 30

Contest dates are UTC see the ARRL web site Jan Contests or January QST for more information and for a complete listing of contests:
<http://www.arrl.org/contests/>

WHAT'S YOUR REAL SWR?

(Continued from page 1)

quantity you started with when you installed the line and subtract that amount.

(3) A third method is to measure it in place.

(4) Baring the above you can reasonably estimate the length piecewise and total the results. For example, suppose you have a beam antenna. Start at one end. Estimate the length of cable from the feed point to the supporting mast. Then the distance down the mast to the rotor, the length around the rotor, the distance down the tower, over to the building, through the wall into the building, etc. This method can get you surprisingly close if your careful doing it. For example, the beam assembly instructions will tell you how far it is from the feed point to the mast clamp. The length of the mast will tell you how far it is from the beam clamp to the rotor. Don't forget to subtract the overlap such as the distance the mast may extend above the beam's boom and the amount the mast extends down into the rotor. If the beam is supported by a tower, counting the tower sections can get you the distance down the tower but, again, don't forget the overlap. For example Rohn 25G tower comes in 10' sections but the overlap at the joints is 3-1/2", and the top section is 9' not 10'. If you cannot measure the overlap make a reasonable estimate. Don't forget the overlap in telescoping masts. It's usually about a foot and a half or so.

Once you get near ground level you can measure many of the remaining distances. Wall thickness can sometimes be measured through an open window. Don't forget the length from the entry point into the shack to the SWR bridge. Small amounts add up, your accuracy will be no better than your estimating job.

Once you have a line length use one of the above methods to determine the line loss.

Finding Your Actual SWR

Given the line loss from above, it then becomes easy to correct your SWR reading for actual SWR at the antenna. The table below provides the corrected SWR readings.

For example: If you're using 75 feet of a generic RG-8/U such as Belden 8237 on two meters the line loss per hundred feet is 2.35 dB. For 75 feet of line multiply the published 2.35 dB per 100 feet by the 75 foot length of your feed line and divide by 100 feet, getting a line loss of 1.7625 dB. Round this number to one decimal place getting 1.8 dB. Now suppose you measure an SWR of 1.5:1. Simply find 1.5 in the "Measured SWR" column along the left-hand side of the chart below, then follow that row across to the 1.8 dB column labeled "Line Loss in dB" and read the actual SWR at the antenna: 1.9:1. For this transmission line, the corrected SWR values will always be in the 1.8 dB column for this band. For example, by dropping down to the 2:1 "Measured SWR" row in this column we see

that an SWR reading of 2:1 gives a corrected value of 3:1 representing the actual SWR at the antenna. Notice how rapidly the corrected SWR readings climb with increased SWR. A reading of 2.7:1 SWR actually represents an SWR of 5.6:1 and a reading of 2.8:1 means an antenna SWR of over 6:1!

Here's another example: You're using 75 feet of Belden 9913 on 440 MHz. The attenuation for Belden RG-8/U type 9913 cable is given in the Belden catalog as 3.25 dB per hundred feet. Multiplying 3.25 dB by 75 feet and dividing by 100 feet we get 2.4375 dB, rounding gives us 2.4 dB. (If your cable is several years old you may choose to round up to 2.5 dB to correct a little for the increased attenuation that develops with age.) Using 2.4 dB we locate the 2.4 dB "Line Loss" column and slide down to the row opposite our measured SWR. Notice that the highest SWR reading for this column is 2.4:1. That's because any higher reading represents an actual SWR at the antenna of greater than 6:1. Note that a "Measured SWR" reading of 1.5:1 represents an actual antenna SWR of 2.1:1 and that a reading of 2:1 would mean an antenna SWR of 3.8:1.

Seventy five feet of RG-58/U (Belden 9201 for example) has 6.67 dB of attenuation (over 78% signal loss) on 440 MHz. You won't find a "Line Loss in dB" column for 6.6 or 6.7 dB in the table because this attenuation is so high that it is not a practical feedline at that length on the 440 MHz band. With about 60 feet of this line on 440MHz an SWR of only 1.5:1 measured at the transmitter would represent an SWR of about 6:1 at the antenna!

Note that a true 1:1 SWR will always give a measured reading at the transmitter of 1:1 regardless of the feed line loss. Be careful. Keep in mind that a high loss feed line can make any value of SWR look close to 1:1.

Any attempt to correct SWR readings for line loss will provide more accurate readings than uncorrected readings even when the line loss number is at best a poor approximation, unless the line loss is substantially over estimated, in which case the SWR results would be exaggerated.

SWR readings serve three main purposes. First, to determine if the SWR at the transmitter is within acceptable limits to the transmitter, in which case the uncorrected SWR reading taken at the transmitter should be used. Second, to determine whether the antenna is properly tuned and matched to the feed line for maximum efficiency and performance during installation. Third, to check the antenna system for degradation that can cause performance loss. In the case of the last two purposes, line loss corrected values should be used.

How does your antenna system stack up?

N8LT

Actual SWR
(given Measured SWR and Line Loss)

Measured SWR	Line Loss in dB									
	1	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
<u>1.0</u>	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
<u>1.1</u>	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2
<u>1.2</u>	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
<u>1.3</u>	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5
<u>1.4</u>	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7
<u>1.5</u>	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.9	1.9
<u>1.6</u>	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1
<u>1.7</u>	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.3	2.3
<u>1.8</u>	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.6
<u>1.9</u>	2.3	2.3	2.4	2.4	2.5	2.6	2.6	2.7	2.8	2.9
<u>2.0</u>	2.4	2.5	2.6	2.6	2.7	2.8	2.9	2.9	3.0	3.1
<u>2.1</u>	2.6	2.7	2.8	2.8	2.9	3.0	3.1	3.2	3.3	3.4
<u>2.2</u>	2.8	2.9	3.0	3.0	3.1	3.3	3.4	3.5	3.6	3.8
<u>2.3</u>	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.8	4.0	4.1
<u>2.4</u>	3.2	3.3	3.4	3.5	3.6	3.8	3.9	4.1	4.3	4.5
<u>2.5</u>	3.3	3.5	3.6	3.7	3.9	4.1	4.3	4.5	4.7	4.9
<u>2.6</u>	3.5	3.7	3.8	4.0	4.2	4.4	4.6	4.8	5.1	5.4
<u>2.7</u>	3.7	3.9	4.1	4.3	4.5	4.7	5.0	5.2	5.6	5.9
<u>2.8</u>	4.0	4.1	4.3	4.5	4.8	5.0	5.3	5.7		
<u>2.9</u>	4.2	4.4	4.6	4.8	5.1	5.4	5.8			
<u>3.0</u>	4.4	4.6	4.9	5.1	5.5	5.8				

Actual SWR
(given Measured SWR and Line Loss)

Measured SWR	Line Loss in dB									
	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9
<u>1.0</u>	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
<u>1.1</u>	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
<u>1.2</u>	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
<u>1.3</u>	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7
<u>1.4</u>	1.7	1.7	1.8	1.8	1.8	1.8	1.9	1.9	1.9	2.0
<u>1.5</u>	1.9	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.3
<u>1.6</u>	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.6	2.6
<u>1.7</u>	2.4	2.5	2.5	2.6	2.6	2.7	2.8	2.9	3.0	3.0
<u>1.8</u>	2.7	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5
<u>1.9</u>	2.9	3.0	3.1	3.2	3.3	3.5	3.6	3.7	3.9	4.1
<u>2.0</u>	3.2	3.4	3.5	3.6	3.8	3.9	4.1	4.3	4.5	4.7
<u>2.1</u>	3.6	3.7	3.9	4.0	4.2	4.4	4.6	4.9	5.2	5.5
<u>2.2</u>	3.9	4.1	4.3	4.5	4.7	5.0	5.3	5.6	6.0	
<u>2.3</u>	4.3	4.5	4.8	5.0	5.3	5.7				
<u>2.4</u>	4.8	5.0	5.3	5.7	6.0					
<u>2.5</u>	5.2	5.6	5.9							
<u>2.6</u>	5.8									

Actual SWR
(given Measured SWR and Line Loss)

Measured SWR	Line Loss in dB									
	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9
<u>1.0</u>	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
<u>1.1</u>	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3
<u>1.2</u>	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6
<u>1.3</u>	1.7	1.7	1.7	1.8	1.8	1.8	1.9	1.9	1.9	1.9
<u>1.4</u>	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.4
<u>1.5</u>	2.3	2.4	2.4	2.5	2.6	2.6	2.7	2.8	2.8	2.9
<u>1.6</u>	2.7	2.8	2.9	2.9	3.0	3.1	3.2	3.4	3.5	3.6
<u>1.7</u>	3.1	3.2	3.4	3.5	3.6	3.8	3.9	4.1	4.3	4.5
<u>1.8</u>	3.7	3.8	4.0	4.1	4.3	4.6	4.8	5.1	5.4	5.7
<u>1.9</u>	4.3	4.5	4.7	4.9	5.2	5.6	5.9			
<u>2.0</u>	5.0	5.3	5.6	6.0						
<u>2.1</u>	5.8									

Actual SWR
(given Measured SWR and Line Loss)

Measured SWR	Line Loss in dB									
	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9
<u>1.0</u>	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
<u>1.1</u>	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
<u>1.2</u>	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.8	1.8
<u>1.3</u>	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4
<u>1.4</u>	2.4	2.5	2.6	2.6	2.7	2.8	2.9	2.9	3.0	3.1
<u>1.5</u>	3.0	3.1	3.2	3.3	3.5	3.6	3.7	3.9	4.1	4.2
<u>1.6</u>	3.8	3.9	4.1	4.3	4.5	4.7	5.0	5.3	5.6	6.0
<u>1.7</u>	4.7	5.0	5.3	5.6						

Actual SWR
(given Measured SWR and Line Loss)

Measured SWR	Line Loss in dB									
	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9
<u>1.0</u>	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
<u>1.1</u>	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5
<u>1.2</u>	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1
<u>1.3</u>	2.4	2.5	2.5	2.6	2.7	2.7	2.8	2.9	3.0	3.1
<u>1.4</u>	3.2	3.3	3.5	3.6	3.7	3.9	4.1	4.3	4.5	4.7
<u>1.5</u>	4.4	4.7	4.9	5.2	5.5	5.9				

Guinness World Records Recognizes High-speed Telegraphy Achievement

Guinness World Records Ltd has recognized the high-speed telegraphy achievement of Andrei Bindasov, EU7KI. "On 6 May 2003 Andrei Bindasov (Belarus) transmitted 216 marks of mixed text per minute during the 5th International Amateur Radio Union World Championship in High Speed Telegraphy in Belarus," the Guinness database listing states. Witnessing the accomplishment in Minsk were HST International Referee Oscar Verbanck, ON5ME, Region 1 Executive Committee member Panayot Danev, LZ1US, and IARU Region 1 HST Coordinator Oliver Tabakovski, Z32TO. Bindasov says he received the official certificate from Guinness November 24.

Bindasov also sent 271 letters per minute and 230 figures per minute during those phases of the 2003 HST competition.
<http://www.qsl.net/yo4kca/hstrules.htm>

(Participants are permitted to use a straight key or electronic key for the transmitting test. Bindasov's speeds are approximately 43 wpm for the mixed text, 54 wpm for letters and 46 wpm for figures. Editor.)

Club Party

Members interested in attending a club party on Tuesday, February 8th are asked to contact Mike, K8DDB. If we have enough interest, the party will be held in lieu of the business meeting. The club will not subsidize the cost of the meal this year. If interested please call (906) 563-7020 or email mikebray@chartermi.net.

Metropolitan (Felch Mountain) Packet System

It is costing the club approximately \$260 per year to operate our packet system. The cost is associated with a \$22 per month We Energies electric bill. We are assessing whether there is enough use to warrant continued operation. Members interested in keeping our packet system in operation are asked to contact Mike, K8DDB. Please call 906 563-7020 or email mikebray@chartermi.net. When replying, please indicate approximately how many hours per month you use the Metropolitan system. Also, if the packet system was moved from Felch Mountain to our repeater site on Pine Mountain, would that suit your needs?

Jersey DXpedition Worked by Tom, W8JWN



TOM - It's Always special to QSO A Yeoper. Nice to meet you!

MJ/K8PT/p
 St. Berlade
 Jersey, Channel Islands
 Zone: CQ 14, ITU 27, IOTA EU-013

VIA	DATE			UTC	MHZ	RST	2-WAY
	D	M	Y				
TO RADIO	16.3.04			1616	14	599	RTTY
	W8JWN						

FRONT SIDE: Mont Orgueil Castle, Jersey Channel Islands. The island has it's own government, the State of Jersey, and is loyal to the British Crown but is not part of the United Kingdom or the European Community. Jersey is the largest & most southerly of the Channel Islands measuring 9 by 5 miles. The Q111 was a WWII German Signal Bunker which is now the home of the Jersey Amateur Radio Society (JARS). Many thanks to JARS & it's members for without their help this operation would not have occurred.

TOM *73/Pete/K8PT*

Pete, MJ/K8PT/p, Jersey. Worked by Tom, W8JWN, 20 meters RTTY March 16, 2004. W8JWN: Yaesu FT1000MP and Dentron MLA-2500 amp at 500 watts output to a 20 meter 5 element beam at 72 feet. A RigBlaster M8 interface and Logger32 software was used for the RTTY QSO.

Members Invited To Help Club, KC8VC, Attain WAS and DXCC Awards

All club members are invited to use the club callsign to help the club attain WAS and DXCC. As club callsign trustee, I have been keeping a computer log of all KC8VC QSOs, so if you use the club call please notify me as soon as possible so I can enter it into the log. Please give information required for the log such as: station worked, date and time (UTC), frequency, RST sent and received, mode and power. Also give me a description of the equipment you were using.

Club QSL cards are available from me. Send me an email or give me a call and I will get them to you.

KC8VC WAS and DXCC Status can be accessed from a link on the Membership page of the club web site: <http://www.qsl.net/ka1ddb/>

K8DDB

2005 CLUB DUES ARE DUE IN JANUARY

From the club Bylaws, Section 3—Dues: "Dues shall be payable at the first meeting of the year. Members not paid by the third regular meeting of the year shall be dropped from the membership. Persons who have not paid dues but partake of membership privileges or participate in member-exclusive activities shall be deemed delinquent members. Within the current year, delinquent members must pay back-dues from the time such activity took place to the present, and current dues to the end of the year in order to be reinstated as a member in good standing."

Please take the time now to complete the Membership Application/Renewal form on page 9 of the newsletter. Make your check payable to Mich-A-Con ARC and send it to Mike, K8DDB.

N8LT's WORKBENCH

This series, written by our resident expert on the technical side of things, focuses on technical topics that you, the reader, want him to write about. Lee wants your input. This is your chance to get those gnawing questions answered so that you can become more self-reliant when repairs are needed to your electronic gear.

What subjects would you like to see covered?

Please send your input to me and I will collate the responses and give them to Lee.

Send your input to: mikebray@chartermi.net (906) 563-7020

Mike Bray, K8DDB
W3821 Waucedah Road
Vulcan, MI 49892-8483

SCAMP ON-AIR TESTING COMMENCES

The Sound Card Amateur Message Protocol--or SCAMP--is not just a conference paper topic anymore. On-the-air testing of the digital communication protocol began in late November, and the first transcontinental communication using SCAMP occurred on December 4. SCAMP is designed to eliminate the need for pricey external hardware for passing e-mail traffic on relatively narrow-bandwidth channels. Rick Muething, KN6KB, prepared a presentation on SCAMP for the ARRL-TAPR Digital Communications Conference in September.

"SCAMP is an example of what is now possible with sound card, computer and software technology using cooperative amateur efforts," he says. "SCAMP and similar programs like DIGTRX for image transmission offer low-cost alternatives to dedicated or proprietary hardware."

As Muething explains, SCAMP is intended for transmitting messages--text with binary attachments--via 2-kHz bandwidth HF and VHF voice channels. The program is compatible with Winlink2000. SCAMP uses the Redundant Digital File Transfer (RDFT) transport layer, developed by Barry Sanderson, KB9VAK, with the addition of Automatic Repeat Request (ARQ)--the technique all "linked" modes use to ensure error-free transmission--and message layer protocols that Muething developed. He says SCAMP offers a moderate-throughput, error-free protocol that works using conventional sound cards and modestly powered computers.

The RDFT utilities and documentation for the Windows and Linux operating systems have been released under the GNU General Public License (GPL).

Muething says a dozen dedicated testers began initial on-air testing on HF and VHF November 27 using the alpha version of a Windows-based SCAMP client called Paclink SCD that he and Vic Poor, W5SMM, developed.

In addition to Muething and Poor, alpha testers included Scott Thile, K4SET; Bud Thompson, N0IA; Bill Hickey, AB7AA; Howard White, VE3GFW; Dave Wagner, WA2DXQ; Lor Kutchins, W3QA; Larry Trullinger, KB0EMB; Mike Burton, N6KZB; Bill Kearns, WB6JAR, and Steve Waterman, K4CJX. Primary testing was done on 40, 30 and 20 meters, and VHF testing was carried out on 2-meters using both FM

and SSB. Alpha testing will continue over the next several weeks, and beta testing is set to crank up in February, Muething says.

The first successful transcontinental exchange of Amateur Radio e-mail messages using SCAMP took place December 4 on 20 meters between N6KZB in Temecula, California, and W3QA in West Chester, Pennsylvania. Each station ran 70 W.

"Several other two-way exchanges were also made over the weekend as operational and protocol bugs were fixed in the alpha software," Muething reports. "The throughput of SCAMP adjusts to the channel quality, reaching a current net maximum of about 4800 bytes per minute before compression gains."

Muething says SCAMP doesn't require anything more than a 1-GHz class Pentium or Celeron processor with a minimum of 128 MB of memory to reach full throughput. Lesser systems may be used at reduced throughput.

The complete SCAMP specification is available and will be released under the GPL as a blueprint for client developers to insure compatibility across different implementations. Muething says further protocol optimization continues to up system throughput and improve its robustness in poor HF multipath channels.

He'd also like to see some band plan restructuring to "open up spectrum for digital modes and encourage new experimentation and development like SCAMP." The ARRL has sought comment from the amateur community on draft proposals <http://www.arrrl.org/announce/bandwidth.html> seeking to regulate subbands by emission bandwidth rather than by mode. At this point, the proposals remain a work in progress, and the ARRL has not petitioned the FCC for any changes.

Muething has more information on SCAMP. Contact him via e-mail kn6kb@arrrl.net. Information on RDFT is available on the Web <http://www.svs.net/wyman/examples/hdsstv/index.html>

Taken from The ARRL Letter December 10, 2004

December 14th Meeting

(Continued from page 1)

New Business:

Club expenses continue to exceed revenue. The following cost saving measures were approved by those in attendance:

- Discontinue long distance service for the repeater auto patches (a savings of approximately \$100 per year.)
- Change the local auto patch telephone service from SBC's unlimited calling to "Call Plan 50" (a savings of approximately \$18 per year.)
- Assess the packet radio system located at the old Metropolitan fire tower to see if it is feasible to move it to the repeater site on Pine Mountain. Relocation to Pine Mountain would save the club approximately \$260 per year in We Energies bills. The December newsletter will survey the readers about their use of the packet radio system to see if it is worth keeping.

The club Christmas Party is normally held in place of the February Meeting. Members will be surveyed in the December newsletter to ascertain their interest. The club will not subsidize the meal this year.

Melissa Lewis has given the wire, coax and hardline presently stored in her barn to the club.

Tom, W8JWN, suggested that we make an offer to Bill Lukes for his triband beam. The beam would be used for the club's Field Day.

Mike, K8DDB, presented a request for reimbursement for \$20 for September, October and November newsletter expenses and for the gift of money given to Ann Pacheco in remembrance of Al, NG0C. This was approved by those in attendance.

A donation of \$25 to the provider of the QSL.net website was approved. In addition to providing much needed funds for the maintenance and upgrade of the website hardware, the donation gives the club one chance toward an Icom 756pro3 transceiver.

A letter will be sent to Pete Schlitt, Dickinson County Emergency Services, in response to his request for a prioritized list of club needs should a grant become available from Homeland Security in 2005.

There were no volunteers to fill the office of

treasurer.

New member Phil Bekkala, KE8MX, introduced himself to the group. Raising a young family keeps him busy, but he likes to operate CW QRP when time permits.

Adjournment:

The meeting was adjourned at 8:15 PM

Submitted by: Mike Bray

Attendees:

Mike Bray, K8DDB (Secretary)
 Dennis Beurjey, KD8AIT
 Phil, Bekkala, KE8MX (new member)
 Skip Caswell, KE9L
 Tom Martin, W8JWN (President)
 Lee Michaud, N8LT
 Mike Boileau, N9NBN (Vice President)

Where is the Club's Tower?

Approximately ten years ago, the club received a light 40 foot tower from the Champion Paper Mill in Quinnesec. Bob Meyers had stored it on his property when he lived on Brickyard Road in Vulcan. Can anyone remember using the tower for Field Day, etc.? Please contact Mike, K8DDB, with any information you may have that would help us track it down. We would like to use it for Field Day next year and want to fabricate a base and make any needed repairs before then. Please call (906) 563-7020 or email mikebray@chartermi.net.

Tuesday Night Net

Tuesday Night Net Report, Dennis, KD8AIT, Net Control:

November 30th: One member checked into the Net.

December 7th: Five members and two visitors checked in. Randy, KB9ZES, notified Net Control of a stranded motorist on highway 141 at Beecher.

December 21st: Four members and two visitors checked in.

Club Apparel:

Our club apparel is supplied by:

Shirt Tails
 408 S Stephenson Ave.
 Iron Mountain, MI 49801

Phone: (906)774-3370
 or
finleyd@up.net

Prices:

Jacket with liner \$45
 (Tall add \$5, 2X or 3X add \$5,
 to add your name or call sign
 on the front is \$5)

T-Shirt - \$10
 (2X or 3X add \$1)
 Sweatshirt - \$16
 (2X or 3X add \$2)

If you wish to have the club logo printed on an item of clothing that you have purchased elsewhere, there is charge of \$6.

Club patches are available from:

Tom Martin, W8JWN
 812 West B Street
 Iron Mountain, MI 49801

They are 3 inches in diameter and sell for \$3.00 each. If ordering by mail, please include a SASE along with your payment.



Mich-A-Con Amateur Radio Club
Membership Application/Renewal Form

Please remit dues to club Treasurer (Pro Tem):
Mike Bray, K8DDB
W3821 Waucedah Road
Vulcan, MI 49892-8483

Name: _____
Address: _____
City, State, Zip: _____
Call Sign: _____
Email Address: _____
Phone: _____

ARRL Member? Yes _____ No _____

Single \$20 _____ * Family \$30 _____ *

If family membership, please list additional names and call signs:

* The dues for NEW members are prorated - you only pay for the remainder of the year! Please remit \$1.67 per month for a Single membership or \$2.50 per month for a Family membership.

Exam Schedule

City: Iron Mountain
Location: Dickinson County Library
Room: Conference Room
Time: 9:30 AM Central Time
Contact: Mark Lewis, N8UKD
Telephone: (906) 774-6598

Exam Date: Feb 5, 2005
Exam Date: May 7, 2005
Exam Date: Aug 6, 2005
Exam Date: Nov 5, 2005

Examinees should bring 2 pencils, a pen for the official paperwork, the originals AND copies of any previous credit that you have earned (Certificates of Successful Completion or current license), 1 photo id (usually a driver's license) and 1 other id. (usually a birth certificate or SS card), a calculator if needed (make sure your memories are cleaned out), and the test fee (2005 fee is \$14).

Mich-A-Con RF is published by the Mich-A-Con Amateur Radio Club of Iron Mountain.

Items for Mich-A-Con RF should be in the editor's hands by club meeting day (2nd Tuesday of the month) to be included in that month's edition.

Our newsletter needs contributions from the membership to help keep the information presented each month new, interesting and fun to read. Please consider writing an article related to Amateur Radio to share with your fellow members. Send the article in plain text and attach any photos, etc., don't worry about format, that's the editor's job.

Send to:
mikebray@chartermi.net
(906) 563-7020

Repeaters

The club maintains two repeaters, which are located on Pine Mountain in Iron Mountain, with tower and facilities provided by the Wisconsin Electric Power Co.

Identifier: WA8FXQ/R IMT

Output	Offset	PL Tone
146.850 MHz	minus	—
444.850 MHz	plus	100

Both repeaters have an auto patch with a toll restriction. The auto patch on the 2-meter repeater can be used with permission. The 440 auto patch is for club use only.

A club net is held on the 2-meter repeater every Tuesday at 6:30 PM except the 2nd Tuesday of the month, which is club meeting night.

Mich-A-Con RF

Mich-A-Con ARC
c/o Michael F. Bray
W3821 Waucedah Road
Vulcan, MI 49892-8483

Mich-A-Con RF

Club Meetings

The Mich-A-Con Amateur Radio Club meets on the second Tuesday of the month at 6:30 PM in the Grace United Methodist Church (upstairs in the room next to the sanctuary), 721 Norway Street in Norway, Michigan. Visitors and prospective members are always welcome!

The URL for the Mich-A-Con ARC web site is:

<http://www.qsl.net/ka1ddb/>

Previous editions of Mich-A-Con RF can be accessed by a link on the news page.

The ARRL DX Bulletin on the Upcoming Activities page is updated each Thursday and the contests section is updated on a monthly basis.

CLUB OFFICERS

President:

Tom Martin, W8JWN
(906) 774-5463
tmartin@chartermi.net

Vice President:

Mike Boileau, N9NBN
(715) 251-3137
n9nbn@netnet.net

Secretary:

Mike Bray, K8DDB
(906) 563-7020
mikebray@chartermi.net

Treasurer (Pro Tem):

Tom Martin, W8JWN
Mike Bray, K8DDB
(Shared responsibility)

Reminders

The 2005 club dues are due in January. Please take the time now to complete the Membership Application/Renewal form on page 9 of the newsletter. Make your check payable to Mich-A-Con ARC and send it to Mike, K8DDB.

The monthly meeting for January is on TUESDAY the 11th at 6:30 PM in the Grace United Methodist Church, 721 Norway Street, Norway, Michigan. (upstairs in the room next to the sanctuary.)

Saturday Morning Breakfasts have been changed to the THIRD Saturday of the month at the Holiday Kitchen in Iron Mountain (on Stephenson Avenue across from Econo Foods) – January 15th at 9:00 AM