

One snowy evening in December, the 8th to be exact, Ken and Pat Musson hosted our 3rd annual Christmas party. More than forty couples gathered at the Elk's Lodge club rooms to enjoy an evening of amateur fellowship, amid sparkling decorations, mountainous plates of barbecued beef ribs, exciting and useful gifts, vocalizing a partridge up your antenna tree and Silent Night, and even slides of some bikini clad bounteous beauties from Barbados. Certainly our 3rd annual Christmas party was the bestest!!

Did you hear Lou, W8CLY, telling the other day on the TC repeater how much he enjoys these self-service gas stations. Lou sez you pay a little less per gallon and get to clean your pant legs free with what you spill.

The January board meeting of the CARC was held at John and Edna Widman's QTH, and all members were presented. Prior to the meeting John and Edna demonstrated the techniques of a silent auction. Hohn indicated that Edna had twisted his arm to clean out the garage with the resulting donations of such items as power strips, 300 ohm twinlead, antenna changeover switch and other items. Within 25 minutes, and after some rather heated and even vicious bidding, a sum of \$28.20 was raised and contributed to the repeater fund. It was indicated that this might be a way whereby the club could profit from somebodies junk!!

Considerable discussion was devoted to the TC repeater, it's expenses and how the club should finance this expenditure. A committee was finally appointed by Jack whose responsibility will be to formulate an annual budget for operational and capital expense, develop plans to obtain the funds, and to study legal aspects of repeater operation as defined by the FCC.

The treasurers report was given as of January 13th:

General fund	\$267.15
Repeater fund	(98.20)
Savings account	606.08

Joe reported that at that time we had 39 paid up members. Joe also reported that 16 people had contributed to the repeater expense, and the negative balance showing was covered by our general fund. Besides the expenses involved with the building of the repeater house and necessary parts for the machine, we have also had the following expenses:

Telephone installation	\$23.50
First month's telephone charge	14.80
First month's electric charge	10.37

Just before Christmas a great voice was heard on the TC repeater frequency of 146.25 - 146.85 --- and what beautiful sound it was. In round dulcet tones (the gals say this is a sexy voice) the voice was heard to say --- "This is WR8AEN -- the voice of Cherryland". Prez Jack made good his promise that the TC repeater would be operational this year. And operational it is, with the entire Traverse Bay area being covered with solid communications. Even the outlying areas like Cadillac, Charlevoix, Gaylord, Kalkaska, Empire being serviced. Thanks go to Jack for finally putting our machine on the air.

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It is proposed that a change in the constitution, Article IV, section 7, which presently reads:

"Two thirds members of the Board of Directors at a Board meeting shall constitute a quorum".

be changed to read:

"Five members of the Board of Directors at a Board meeting shall constitute a quorum".

The reason for this proposal is that there are presently 8 members of the Board and $2/3$ of 8 = $5 \frac{1}{3}$ members, obviously a physical impossibility. Therefore this requires 6 members of the Board to be present, which occasionally does not occur. It is believed that the proposed change will improve the effectiveness of the Board.

'THE PREZ SEZ'

The success of a radio club depends upon members participating in club ~~XXXXXXXX~~ functions. In order to insure continued interest these functions must appeal to the active majority. I would like to solicit your personal Ideas for club activities such as social functions, technical sessions, construction projects, civic affairs or whatever. If you have a idea that may stimulate club interest, would you please pass it on to a club official so we may plan appropriate action. Our club sponsored nets have proven to be very popular as more and more members are checking in. Repeater interest is high as I'm sure this is adding continuity to our group. The next scheduled event is our 3rd Annual Swap and Shop, February 14th. Please help promote our only present money making activity of the year. More on this at our next meeting. Activity is the key ----- Let's get some fresh ideas rolling for '76.

73
Jack, K8YZW

Vic and Mary received a nice letter from Walt, W8JVI, from his winter home at Yuma, Airzonia, and they were kind enough to want to share some of his remarks which would be of interest to our club. Walt mentions that uranium mining is making the headlines out there -- but he didn't mention whether he was out with his geiger counter or not. He also talks about one of our members, and I quote: "One of my contacts here on two meters stopped in to see me and read the Cherry Juice and he saw the name of Wells Chapin, and he said, there could be only one Wells Chapin on Ham Radio. He said, years ago he was in or near St. Louis, his call was W9DUD? I hope we find this is true". Walt also mentions Denny Chapman, one of Ed's (K8CWR) boys, and that he is now on the air with the novice call of WN7BEB from Provo, Utah.

~~XXXXXXXX~~ After observing his new dog for some time, Prez Jack philosophizes that another thing that man can do that lower animals can not do is stand up right in front of a crowd and put both feet in his mouth!!!!

Up coming dates for your notebook:

- February 10 - CARC Board meeting - place to be announced
February 14 - CARC 3rd Annual Swap and Shop
Northwestern Michigan College Tech CENTER
From 9:00AM to 4:00 PM
Prizes will be awarded - \$1.00 donation
Talk-in on 3935 Khz - 52 simplex - 25-85 TC repeater
- February 24: Monthly meeting of CARC, N.M.C. Tech Center, 7:30 PM
March 20 - Muskegon Hamfest
May 1 - Cadillac Swap and Shop

ITEMS FOR SALE:

Two complete sets of golf clubs , one men's and one ladies. The price is right! John and Edna Widman.

Hallicrafters Receiver, SX-140, 80 thru 6 meters, AM-SSB-CW. Ideal for novice use. \$45.00. Vic Devlin, W8KPO, 267-5294

Hallicrafters receiver, SX-110, general coverage 540 to 30,000 Khz, with amateur bandspread. Good condition. \$90.00. Also, National HRO-5R-A1, 4 coils and speaker, no power supply, incexcellent condition. Make offer Wells Chapin, W8GI, Kingsley, 263-5411.

Complete Collins station: KMM-2, 312B5, Power supply, 75S3B, Mobile mount, 30S-1. Sell allor part. Bill Martinek, W8JUY.

THE HEARING AID

by K8DVV

Working DX on 80 meters offers a challenge unequalled on the higher amateur frequency bands. Let's face it; anybody can work DX on 20 or 15 if the band is open, but working DX on 80 can only be thē result of much time and effort. With the sunspact cycle now at it's minimum this is the time for the exper-iments to turn their efforts toward the 80 meter band.

Assuming you have a good efficient transmitting system (more on this later) the biggest problem in working DX is an effective receiving system. Signal levels (even DX) on 80 meters are very strong as anyone who has tuned the band at night and witnessed their S meter just hang at the S9 + 20 db level knows. The trick in receiving DX signals under these conditions is not to increase the signal level of the DX station but rather to decrease the signal level of the QRM and QRN, thereby improving the S/N (signal to noise) ratio. E. G.: It would be impossible to copy an S9 DX signal through QRM and QRN running 20 db over. However, if we could reduce the noise by 40db and the DX signal by only 6 db, the result would be a desired signal level of S8, with the QRN and QRM running a bit less than S7. Obviously, the DX signal would now be Q5 even though we actually reduced it in strength by 6 db (one S unit). We improved the S/N ration!

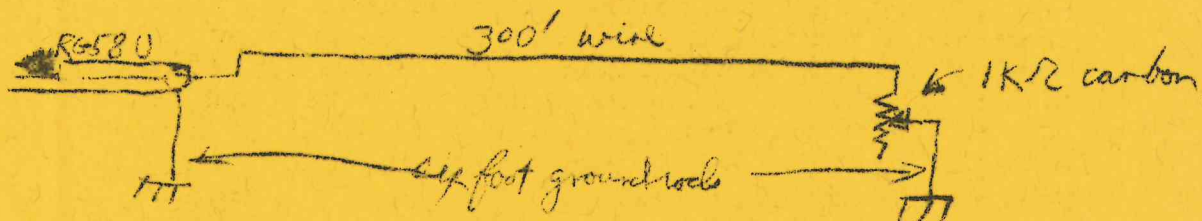
Okay, you say, this looks great but how do we accomplish this? The answer is simple; WITH A BEVERAGE!! (No, Edna, this is not something you drink) It is a simple, effective listening antenna. The DX signals are arriving at the receiving antenna at very low vertical angles, while most of the noise is arriving at high angles. The receiving antenna then, to improve the S/N ratio, must discriminate against the high angle signal. There are several ways to accomplish this type of discrimination. A horizontal antenna in order to achieve these low angles must be placed at least $\frac{1}{2}$ wavelength (125 feet) above ground, which is not practical for most of us. The vertical antenna will do (?) the job nicely, mounted right on the ground but only over an effective (low-loss) ground. A poor ground with this type of antenna results in a notch in the vertical lobe at the lower angles. In places such as the Bahama Islands, one can achieve a good ground connection, merely by driving a ground rod down a few feet into the salt water table. Unfortunately, here in the Grand Traverse Region our ground is made up mostly of sand and gravel, which is about the poorest conducting earth known. A good ground connection can be achieved as born out by Bob Durrett, W8AK, but only after burying 120 radials, 4 chemical pots, numerous ground rods, and a chicken wire mesh under the antenna, all silver soldered together. Bob's antenna worked very well for dx, as his many friends will attest. On a recent visit he showed me a QSL card from a maritime mobile station in the middle of the Indian Ocean, which he worked long path on 80 CW. That's what I call DX!! This contact was no accident thought, it came as the result of much time and effort.

While Bob's vertical works well at low angles it still, as do all vertical antennae, has one major drawback in that it is omnidirectional. If the antennae were made directive it would further enhance the S/N ratio by reducing the level of low angle signals arriving from directions other than that of the DX signal. The Beveridge Antenna described in this article adheres to the following criteria:

1. Discriminates greatly against high angle signals
2. Provides directivity
3. The poorer the ground conductivity, the better it works!
4. Low cost and ease of construction.
5. Works on all frequencies and all bands without tuning.

A detailed discussion concerning the theory of operation of the Beveridge antenna is beyond the scope of this article. Let me just say that it is a wave antenna, functioning as a lossy transmission line, such as a rhombic. It takes advantage of the slower propagation of a wave front through poor earth (tilted wave front). Because it is a transmission line type antenna it, like the rhombic, must be terminated in its characteristic impedance.

The diagram shows a Beveridge antenna constructed by K8YZW and myself, in about one hour time.



The mean height of the antenna is about 8 feet. Directivity is obtained in the direction of the terminating resistor (in this case towards Europe). The terminating resistor was tuned by having W8ZTJ/ mobile transmit a carrier from a distance of several wavelengths behind the antenna and simply adjusting the pot for minimum S meter reading on his carrier (a pair of CB walkie-talkie and 2 meter FM really helped here). The termination resistance we arrived at was approximately 700 ohms so a 680 ohm 1 watt carbon resistor was installed in place of the pot. I suspect this value of terminating resistance would hold for similar installations. The length of wire is not critical, however it should be straight and at least 200 feet for good results and will improve with longer lengths. (like 600 or 700 feet for you guys with acreage).

The results obtained with this antenna were phenomenal. Having experimented with high dipoles, sloping dipoles, verticals, phased verticals, verticals with parasitic elements, quad loops, delta loops, and a 3000 foot rhombic, I can honestly say that the Beveridge receiving antenna shows the most promise here in the sand of Grand Traverse. Experiments have shown that signals barely perceptible on the dipole or full sized delta loop (both antennas were used for comparison through a switching network) were Q5 on the Beveridge. The front to back ratio seems to be in the neighborhood of 30 to 40 dB, and the frontal lobe around 45 degrees. Results reported by others experimenting with this type of antenna do not seem as good as the results obtained here, due I believe, to our extremely poor earth. Further experimenting is certainly in order. For example how about burying the whole antenna a few inches under the sand??? You can't work 'em 'till you can hear 'em!!!!!!

John T. Binsfield, K8DVV

Encloses our January Cherry Juice. Thanks to all the contributors for their efforts in supplying material to be used in the paper. If you have any particular information you would like published please keep me in mind.

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