

The Hamilton Amateur

The Hamilton Amateur Radio Club Newsletter – 75 Years of Amateur Radio 1932-2007

The Hamilton Amateur Radio Club
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Next Meeting

Meeting room opens at 7:00 p.m.
 Meetings begin at 7:30 p.m.

Wednesday May 21st.

This is the annual Home Brew competition for the Crawford Trophy along with Show-And-Tell night. In addition, starting at 7:00 P.M. there will be an early Field Day meeting for

participants and band captains. Lets talk about each of these segments.

Firstly, the Field Day meeting. There will be some changes this year due to attempts by the RBG to encourage some of their unique vegetation at the Rock Chapel Site. Details will be discussed at the meeting. We need to plan ahead where tents, antennas, and generators will be placed. Also we will need to decide how many generators to rent. There are many small details to nail down to reduce the last minute scramble leading up to Field Day. If you want to volunteer to do publicity, or copy the news bulletin, or run a special demonstration station like a demo of Solar power, etc. (anything to earn extra points) now is the time to get a project in gear. The field day rules are on the ARRL site on the internet, <www.arrl.org/contests/fd-2008-packet.pdf>. Download the rules and see where we can score some extra points.

Secondly the Home Brew Competition. The competition is designed to encourage home design and building of amateur radio equipment useful in or around the shack. If you have completed a piece of equipment within the past year, April 2007 to April 2008, you can enter it in the Home Brew competition. Items will be examined and judged by a committee and the winner awarded the Crawford Trophy for the year.

Thirdly is the Show and Tell section. After seeing and hearing about the home brew entries, and while the

judges are deliberating to pick a winner, members would like to see and hear about anything related to amateur radio that you might wish to bring forward. Any idea, technique, piece of equipment etc. which amateurs might benefit from learning about is welcome. This is the time to talk to the group and pass along that great idea. Get something ready for show and tell. (If we have a lot of submissions and run out of time we can always arrange to continue at a subsequent meeting in June or in the Fall.)

This should be a good meeting. Hope to see you on Wednesday May 21st.

Minutes of the General Meeting April 16, 2008

by Secretary Roger Pimm VE3UFZ

The meeting was called to order by President Lorraine at 7:30pm. Motion by Roger VE3UFZ, seconded by Joe VE3OCD, that the minutes as published in the March newsletter be adopted. Voted and carried.



Lorraine introduced our guest speaker, Officer Bob McKinley VE3GIV, who made an very professional presentation on the role of the Auxiliary Police Unit and the role that HAM's may have in assisting

Club meetings – 3rd Wednesday each month – 7:30 pm (except July and August) at Hamilton District Christian High School, 92 Glancaster Road corner of Rymal Road (Hwy. #53) and Glancaster Road. Parking on location. Complimentary refreshments.

the police in emergency situations. Officer McKinley brought the new command van for us to peruse during the coffee break.

Announcements. Emergency Preparedness Day – May 10, 2008. Setup at 8:00am at Bayfront Park (S/ W corner). The HAMs will have a large display tent and equipment to demonstrate HF, VHF, UHF, and packet capability. Come and pay a visit or, if you wish to participate talk to Lorraine.

CANWARN - AIVA3AM introduced the two repeaters that will be used for the net:

VE3RFI - 443.250MHz – tone
151.4KHz
VE3TVI - 146.805MHz – tone
151.4KHz
ECHOLINK node 149477

It is a good idea to set up your radios ahead of time so you will be able to contact these repeaters if the need arises. To test your equipment and verify it is working there is a weekly check-in net on Tuesdays at 8:30 P.M.

Field Day – June 28/29 – Royal Botanical Gardens (Rock Chapel). There will be an organizational meeting at 7:00pm, immediately preceding our May General Meeting.

Show and Tell – Don't forget that show and tell items are welcome at our May Home Brew meeting.

Membership – Sherry VE3ZQV announced that we now have 71 full and 8 family members making our total membership 79.

Awards – Casey VE3CVP – Presented the Order of Merit to Mardy VE3QEE in recognition of Mardy's distinguished service to the promotion of Amateur Radio. Mardy has been President, Newsletter publisher, Education Chairman and basic course instructor, Flea Market organizer just to mention a few of the responsibilities he has taken on.

Contest – Rick VE3BK promoted the Ontario QSO Party to encourage members to take part in this fun contest. Those contesters were

encouraged to use the current version of the logging software "CT". Updates for this software are available on line.

Adjournment: Moved by Mardy VE3QEE and seconded by Alan VA3AM, the meeting was adjourned at 9:15pm.

News About Town

by Mardy Eedson, VE3QEE

Lorraine VA3NZ reports a successful CANWARN training session took place on April 12 at Nash Auditorium, with many of our members

present. She sends along pictures of the event. Thank you Lorraine, Al, and Jerry, for your leadership and efforts to involve the local HAM community in the CANWARN system.

Geoff Coulson Warning Preparedness Meteorologist for Environment Canada e-mailed CANWARN registrants of the 2007 training program. In the note he summarized the 2007 storm season as follows:

"The 2007 season itself was an interesting one with 9 confirmed or probable tornadoes just two fewer than the long term average of 11 in Ontario. Of note was that 5 of these tornadoes were associated with a massive supercell thunderstorm that moved through portions of Grey, Bruce, Huron, Perth and Waterloo-Wellington counties on July 8th, 2007. In addition to spawning a number of tornadoes, large hail was reported with this event as well. Fortunately, no major structural damage was done from this impressive storm. Also interesting was that all of the tornadoes last year were ranked at the lowest end of the Fujita damage scale...as either an F0 (winds up to 115 km/h) or F1 (winds between 120 and 170 km/h). We continue to be long overdue for an F3 or larger



HARC 2007-2008 Executive

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tornado with the last F3 being confirmed in the Violet Hill area in April of 1996.

2007 also reminded us than anywhere in the Province can experience severe thunderstorms and tornadoes with a damaging wind event occurring in Northwestern Ontario in the Ignace area on the morning of June 26th, a confirmed F1 tornado occurring later that same day about 60 km to the west of Thunder Bay and a damaging wind event taking place on August 1st at the Kashechewan First Nation near James Bay."

Geoff's summary highlights the need for CANWARN.

Offset Matching of Yagi-Uda Beams

by Robert Zimmerman, VE3RKZ



Introduction

Everyone in the club knows the impedance of a center-fed half-wave dipole is 73 Ω. Does anyone know the impedance of the driven element dipole in a Yagi-Uda beam? It is surprisingly low, between 18 and 24 Ω, depending on the degree of coupling and the number of parasitic elements. For this reason, some form of matching is always used for coaxial cable, usually a Gamma match.

With this article, I would like to popularize an alternative simpler matching technique: offset feeding.

How It Works

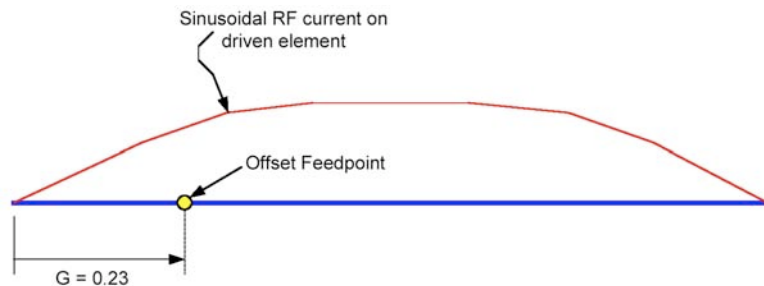
Usually (even without thinking) we reference the impedance of a dipole at the center of the dipole. This is where the sinusoidal current is highest, resulting in the lowest possible impedance. If we place the feedpoint somewhat offcenter, then for the same applied power, the current will be less, meaning a higher impedance.

Suppose Z_{center} is the center impedance. If we specify the offset position as G (between 0.1-0.5), as in Figure 1, then the impedance at position G is

$$Z_{offset} = Z_{center} / [\sin(G \ 180)]^2$$

Note that for the center feed position, $G = 0.5$, and the formula yields simply Z_{center} as it must.

Figure 1



Modeling with EZNEC

As a demonstration of this method, I modeled the K1KO 2-meter beam dimensions¹ for a 144.2 MHz Yagi-Uda beam on EZNEC². The first 4 element lengths & spacings are given in Table I. EZNEC gave the center impedance of the driven-element as $Z_{center} = 23 \Omega$. Then I moved the position of the feedpoint from $G = 0.5$ to 0.23. The impedance was then $Z_{offset} = 50.8 \Omega$. We can check EZNEC by using the above equation: Entering Z_{center} and G , we have

$$Z_{offset} = 23 \Omega / [\sin(0.23 \times 180)]^2 = 52 \Omega$$

which is a confirmation. The EZNEC modeled gain was 8.7 dBi.

Table I – Positions and lengths of the 4 elements in the K1KO beam.

	Position (mm)	Length (mm)
Reflector	0	1044
Driven Element	312	955
Director 1	447	962
Director 2	699	938

HARC 2006-2007 Chairs

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Building the Beam

I had some galvanized metal spanners which looked good for use as element material. Generally, I don't use galvanized metal, as it has a surface resistance twice that of aluminum. But never say never! The galvanized spanners were easy to cut to length, and soldered nicely. Figures 2 through 6 document the construction of the offset feedpoint, using a banana plug & jack and a small piece of polyethylene tubing. Figure 7 shows the driven-element attached to the boom with a #10-24 machine screw and wingnut (allowing easy disassembly for storage and transport). The complete 4-element beam is shown in Figure 8.

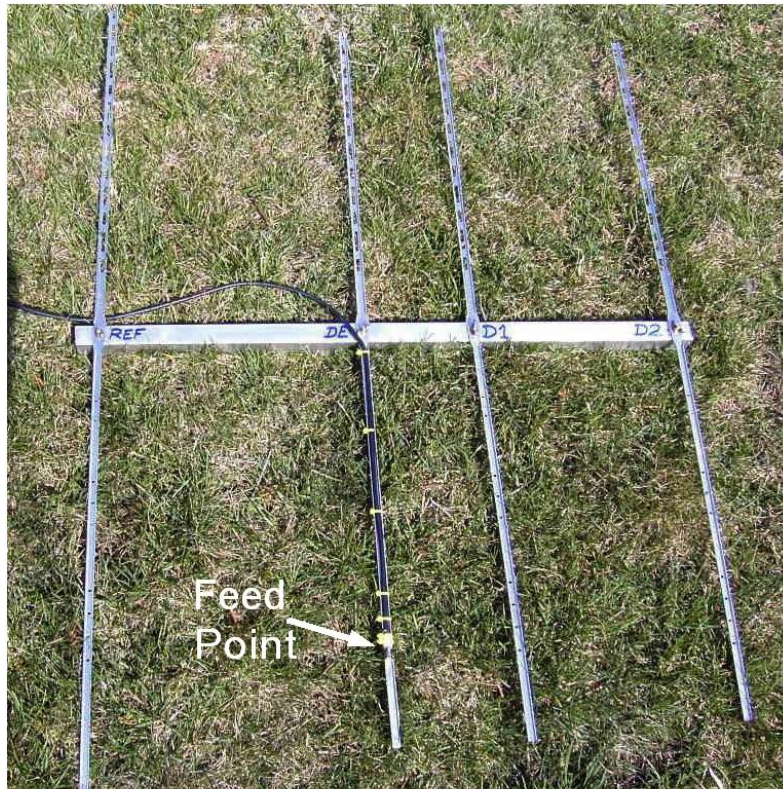


Figure 8

Testing

The beam was tested at a height of 8 feet above ground. The SWR was 1.1:1 at 144.2 MHz, as shown in Figure 9.

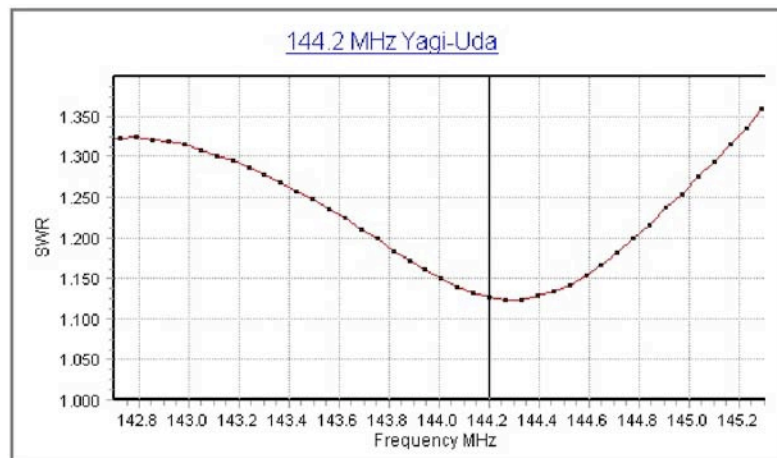


Figure 9

Important Points

Executive Meetings

HARC Executive committee meets each month, except July and August. Members are invited to attend and participate. The meetings are on the Wednesday following the club General Meeting each month. Ask an executive member for the location.

VE3NCF 146.760 - & 444.075 +

HARC operates VE3NCF repeater, located atop the Niagara Escarpment. It's open for use by all Amateurs. Special features are a privilege of membership.

Nets

HARC "check-in net" is held every Tuesday evening at 7:30 p.m. HARC "swap net" follows at 8 p.m. All contacts are welcome.

Examinations

Amateur radio license examinations are conducted the second Wednesday of each month, except July and August. Contact the voluntary examiners to make an appointment. There will be a fee for each examination.

Membership Information

Club membership, including all privileges, is \$25 per person, per year, Sept 1 to Aug 31. Additional membership, for immediate family living in the same home, is \$1 per person. One newsletter sent to each address.

The Hamilton Amateur

The Hamilton Amateur is published ten times each year (not in July or August). Deadline for article submission is the last Saturday of the month for the next month's issue. Preferred format is .txt file. Articles will be checked for spelling and grammar, but the author is responsible for factual content. E-mail submissions to Editor, John Hudak VE3CXB, <hudakjm@mcmaster.ca>

Summary

A simple matching technique for VHF & UHF Yagi-Uda beams has been presented and tested. For its simplicity, I prefer it over a Gamma match. For those wishing to build such a beam, I have plenty of banana plugs & jacks and polyethylene tubing.

Step-By-Step

Figure 1 (above on page 3)– G is the fractional distance along the driven element to where the feedpoint is located. For 50 Ω, use $G = 0.23$.

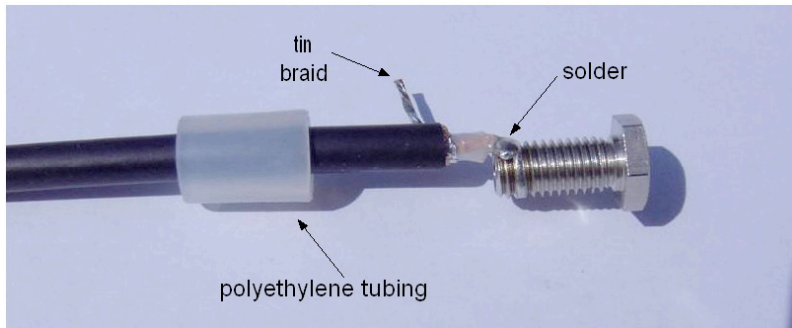


Figure 2 – First solder the coax center conductor to the banana jack. The braid is pulled aside and tinned. Note the small segment of polyethylene tubing placed on the coax.



Figure 3 – Slide the polyethylene tubing insulation over the jack.

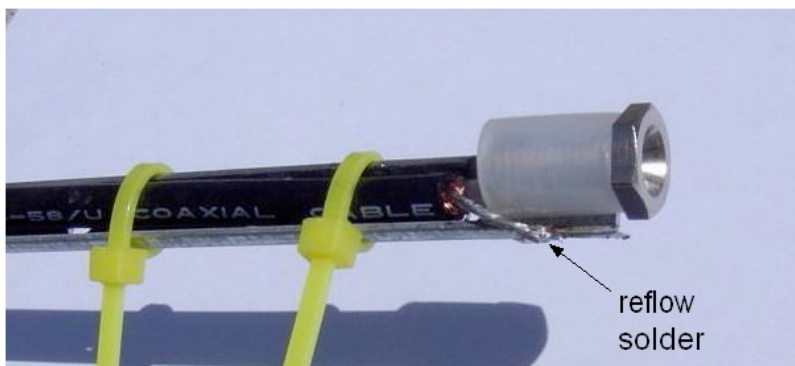


Figure 4 – Solder the braid to the end of the element by tinning both elements first with a 250 Watt soldering gun. Then quickly attach the braid by using reflow soldering.

News About Town, from page 3 ...

Special thanks to all those radio amateurs who check into the CANWARN nets weekly and are standing by when severe weather strikes. The CANWARN net takes place Tuesday nights at 8:30 P.M. following the HARC Swapnet, but you'll have to change frequency. The CANWARN net meets on VE3RFI - 443.250MHz – tone 151.4KHz, also on VE3TVI - 146.805MHz – tone 151.4KHz or if you prefer on ECHOLINK node 149477.

Doug Last VE3NBL, sent along a clipping from the CWHM Newsletter that goes out to all members of the Warplane Heritage Museum. The clipping shows a picture of Lorraine VA3NZ, Doug VE3NBL and Frank VA3FWL presenting a \$1000 cheque from HARC to Canadian Warplane Heritage Controller, Mr. Richard Guidolin. The article goes on to explain our club's involvement staffing the VA3CWM station and thanks us for supporting the work of the Museum. Thank you Doug for passing this information along. It is nice to learn about HARC receiving recognition. I understand the clipping will be on display at the HARC meeting on Wednesday May 21st.

Plans are forging ahead for Field Day. According to the latest news we have permission, once again, to use the Rock Chapel site. It appears likely the grass will be cut making set-up for FD that much easier.

Dis & Dat

by Bernie Granby, VE3EKY, VA3XJ

Winston Churchill the great leader who led Britain through the second world war said this "A fanatic is one who cannot change his mind and refuses to let me change the subject." Who cannot change his mind? I change my mind often. This happens in Ham Radio. Consider this



Figure 5 – Here the matching section is ready to mate with the banana jack.

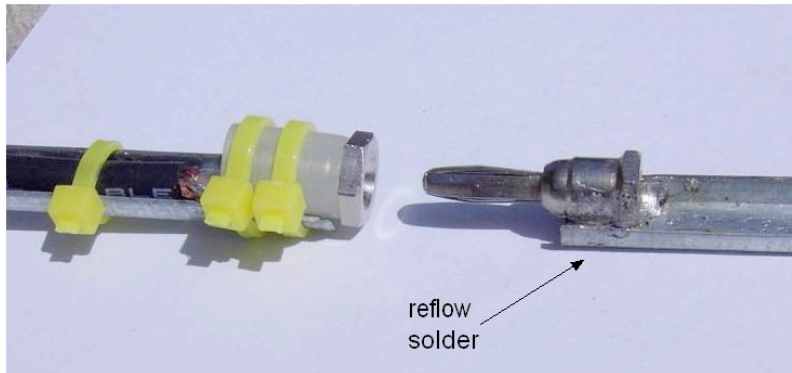


Figure 6 – The complete matching section.



Figure 7 – The Driven Element is attached to the boom with a #10-24 machine screw with a wingnut. Note that the coax cable is tied wrapped to the driven element right up to the boom, where the RF voltage is zero.

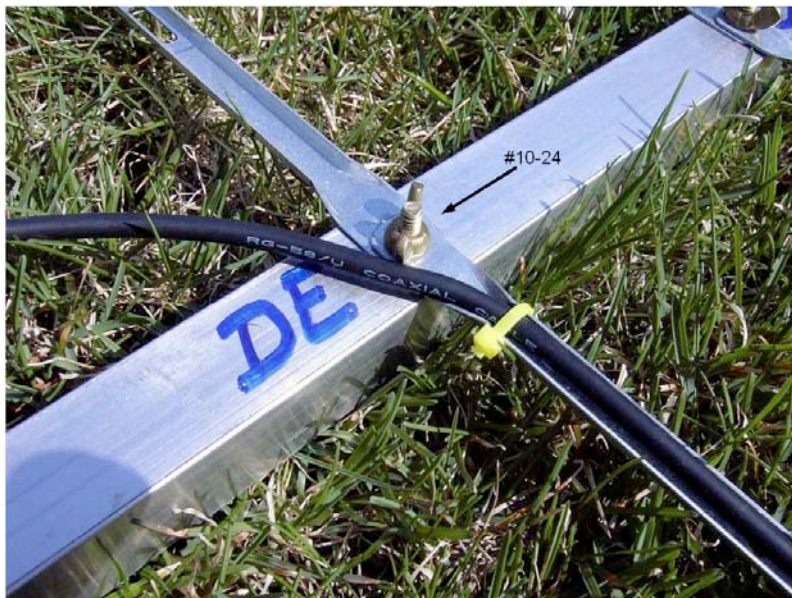


Figure 8 (above on page 4) – Complete 2-meter Yagi-Uda beam.

Figure 9 (also on page 4)– Measured SWR plot of beam. SWR @ 144.2 = 1.12:1.

letter published in *The Canadian Amateur* in 1985 written by a HAM named Dudley.

" I just finished working a Ham on 20 metre CW (14.064 MHz.) I think you will be glad to hear about. His call is K3TO, Bob, and he lives near Philadelphia. He does not have use of his arms or legs, yet he sends Morse better than most of us, he uses a tube that he sucks on for dashes and blows for dots. He copies in his head completely. Now if that's not something special, I've never heard anything in my 25 years in Ham radio.

I've been off CW for 23 years and the last few months I've been trying to relearn it with not very much progress. I told Bob that I was discouraged and about ready to give up and get the old mike back out. However hearing what Bob told me (and good copy too!), I'm reminded of something my Dad used to say. " I used to complain about having no shoes until one day I met a man who had no feet."

I'm 68 years old and was thinking that this code for me to upgrade was too hard. NOW you bet WIAW will have this old HAM on every day.....73 Dudley K5ZOZ."

Last month I got my old? T7H Handi Talki out, charged the battery and stuck it on my belt. It was Tuesday so I set up a mobile ant. on the van out in the driveway. I was copying everyone but I was ignored by all. The rig was listening but it would not transmit. I asked John VE3DVV if it was possible to program it to not transmit. He didn't think so. I reread the manual until I came to the topic about re-initializing the rig to factory default. It worked like a charm. To test if it would transmit I got out my old Yaesu and rigged it up in the van on 146.520 with no ant. Then I tried to transmit and heard my voice coming out of the old Yaesu. The next day Ruth and I went up to her dentist who is very close to the repeater. Again I was not tripping the repeater. I couldn't believe it until Ron VE3RMA came on and told me he could hear me as I was transmitting on the input of the repeater and he was getting me on direct. After a bit

he said you need a tone to hit VE3NCF. Now how did I miss that? The Icom has a tone scan. So that's easy I'll just push the button and wait for someone to bring up VE3NCF. Well I sat there in the car for about 2 hours. VE3NCF was silent for all that time (around noon). Later I waited for several hours at home. Just silence. A couple of times VE3NCF was kerchunked but went silent again before I could see the tone. Finally someone started to talk on the air and I caught the sub audible tone 131.8. Neat. However I realized I couldn't program the HT to transmit that tone. Great!! RANT RANT. Finally Mardy came to pick me up for the meeting and I took the HT along. Maybe you saw John working on it. That radio is way over the warranty and still is as new. I didn't take it to Fla. this year. Why bother. The CB in my van did work a few times, but it's very hard to understand what them fellers are saying. I guess the problem is I don't really understand the tone business. I think my radio has tone squelch activated so you can't talk to me unless you have yours activated. How did Ron hear me? Would it be better if I did not have tone squelch on??? Now my next task is to try IRLP. Tell me again John. I have still not heard anyone else make a contact. This continues and maybe I will talk to Antarctica yet. Stay tuned.

Stop the press! News! Bill Connolly's obituary appeared in the Spectator. As I was reading it, a line from Shakespear's "Henry the Fifth" kept running through my head it was "We few, we a happy few, we band of brothers..." Henry was speaking to his troops before the battle of Agincourt. What is the relevance? 56 yrs ago almost to the day April 29/1944 in the English channel; very close to the enemy controlled French shore, the tribal class destroyer Athabaskan which along with Haida (now in Hamilton harbour.) were fighting the mighty battles that went on out there, with enemy ships that snuck out under cover of darkness. Preparations for the invasion of Europe by the Allies were well underway. A couple of enemy torpedo boats slipped in and

torpedoed the Athabaskan. Her boiler and magazine blew up; she sank with heavy loss of life. The Captain and 127 of his crew were lost. The Haida searched the waters for several hours and rescued 44, some 83 were plucked from the frigid waters by a German minesweeper, Bill was picked up and spent the rest of the war in an internment camp. The enemy (probably Gestapo) thought so much of Bill that they interned him in solitary confinement for 61 days because he would not tell them what he knew about the invasion plans. He was a Royal Canadian Signalman. Almost certainly he was a Morse code operator. Thanks Bill....SK

Band of brothers? Well in Henry the fifth's time there were no "sisters", but in the second world war there were many woman radio operators, all over the world. Most of them in very secret operations.

To get back to fanatics I harken back to the March meeting where I said our score on Field day was the worst ever. Rick VE3BK responded by reading the results properly. I let someone change the subject. WHAT WAS I THINKING? That night I re read the results in TCA. I must have been distracted by the score of VE3QDR. They were competing in a different category and posted some 8000 pts. They are the QRP club. featured in a TCA article *The Mouse that Roared*. Since then I always check their scores which make makes me envious of them.

Now its time to get ready for FD again. I don't know for how much longer but this year will be tuff for 40M CW. Most of my gear is old and not working very well. Even my old PC is gone to the graveyard. However Rick has given me on permanent loan a PC tower that he thinks will do. I have a monitor for it and maybe a mouse (not needed ???). A keyboard maybe. I still have my van for the time being anyway. I sure could use some offers of ops. A good typist to put in some hrs wud help. Don't be afraid children its easy and fun . There is usually lots of nourishment available. I'm hoping

our secret weapon Steve VE3OZO can be coaxed to come out again this year. I'll be phoning you Steve.

DIS DAT feels like deja vous all over again but oh well. Some time ago Ruth and I had dinner at a place called RUBY TUESDAY The sign said awesome food, terrific salad bar. Its a franchise establishment. I asked the young waitress what the significance of Ruby Tuesday was. She raised one shoulder the way young people often do (or maybe she meant DUH!) and said she had no idea. Ah how fleeting fame. Later my curiosity and ignorance led me to the WWW, where I found that it was a hit song written by Mick Jagger, of the Rolling Stones, or K. Richards or again maybe by Brian Jones. Pick one and run with it. It was played by many artists and recorded by a few. What has this to do with Ham Radio you ask? Well it was on an album originally entitled " Over the Rhine" and later retitled as "Amateur Shortwave Radio " Small world eh?

The Stones Rated the song as #300 on a list of their best 500. So I know my ignorance is showing. I hope someone will pull it off the WWW so I can hear it. Dis is not a Dis cuz I kid u not.

If you know a former member of HARC who no longer comes out urge him to come back. Tell this person about the great meetings we have been having and how groups like the A.R.E S., the contest group are breathing new life into the local scene. Above all, the good fellowship at the meetings is very enjoyable.

I worked about 14 stns in the first 2 hrs of the Ont. Qso Party. I got VE3DC on 20CW followed by 20 again CW. I got several bad signal reports and later Rick passed the news that Steve VE3OZO told him my signals were bad. Probably 40CW will need a rig for Field Day.

DATS enuf of DIS for now. I hope I haven't dissed anyone with this DIS & DAT. Please remember these are my ramblings they may not always agree with how you saw it. 73 BERNIE VE3EKY/VA3XJ ?VA3MCM

Bob McKinlay VE3GIV: Role of the Auxiliary Police Unit and how HAMs may assist.

