

# The Dummy Load

Official Bulletin of The Cambridge Amateur Radio Club (SWARC Inc)  
*Serving the community since 1964*

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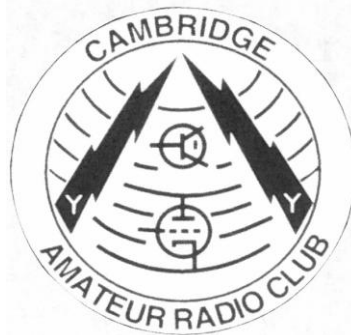
<http://www.cambridgeham.ca>

### Club Net

Every Wednesday on VE3SWR at  
9 pm. Local time.

All comers are welcome.

VE3SWR is an open repeater  
146.790 MHz -600 KHz offset



**VE3SWA**  
**DXCC HONOR ROLL**  
**(335/335)**  
**WAZ, WAC, WAS.**

## Next Meetings

Second Monday\* of the month  
Preston Arena Boardroom at

7:30pm

**\*October 17, 2016\***

November 14, 2016

December 12, 2016

January 9<sup>th</sup> 2017

February 13, 2017

**Visitors are always welcome**

## Editor's Column

As a reminder, club meetings for the remainder of 2016 will begin at **07:30** local time. Backing up by 30 minutes is intended to give us more time for some social time after the actual business portion of the meeting. As well, coffee is back. Since we did not discuss the cost per cup, coffee for the October meeting will be paid for by your editor.

Having missed the September meeting there is not much for me to comment on this month.

Vivian and I have been very busy here with most days running into the next. We are well into October already! The leaves are turning colour and we have seen several nights of frost although some nice sunny days in the double digits as well. (rain and wind the rest of the toime) See my accent is forming!

I hear/read from the E-vine (a high tech grape-vine) that many new initiatives are taking place within our club.

While I don't see anything in the minutes regarding Scott's initiative to reactivate ARES involvement; I'm sure an update is forthcoming.

It sounds like there will be an Advanced Amateur training course starting in the near future. It sounds like this offering by our club members is way overdue.

I didn't know that our secretary was a poetry fan – perhaps he could share some of his favourites with those of us who missed the meeting.

Remember – this is your bulletin – more articles please.

*Tom ve3mah@bell.net*

# Cambridge Amateur Radio Club Meeting 12th September 2016

Meeting opened at 7:30pm moved VE3PSV 2<sup>nd</sup> VE3ANT carried

Present : VE3IHM, VE3ESW, VA3CF, VE3ANT, VE3OU, VA3WIF, VE3BKK, VE3GGT, VE3NQM, VE3PSV, VE3JOI, VA3PDG

Visitor Mandy, a potential member, Friend of VE3GGT (Scott Mitchell)

Minutes of previous meeting accepted as read on a motion by VA3CF 2<sup>nd</sup> VE3PSV

Accounts:

\$

Out:

VE3OU paid his dues

Moved VE3PSV 2<sup>nd</sup> VA3WIF accounts be accepted carried

**Unfinished business:** None

**New Business:**

VE3PSV and VE3GGT spoke about the S.E.T. (Simulated Emergency Test). Part 1 is on October 5<sup>th</sup> Part 2 is on October 8<sup>th</sup>. Net Control Stations are required to operate 10am to 2pm and 7pm to 9pm. It was reported there had been a lack of response from the organizers of the SET to our coordinators.

A lengthy discussion ensued about Advance License Training. Scott suggested maybe self study, he was using Hamstudy.org. VA3WIF suggested the meeting night but we only meet once a month not weekly. It was asked if Brantford had any instructors doing courses. A one day training blitz was suggested but this was rejected. VE3GGT is to check availability of the Galt Library for classes.

VE3JOI spoke of "Hackers Quarterly" and an article which said hackers should get a "Ham radio" license. This magazine is available at book stores not the Library.

VE3IHM asked for dues to be paid in October or November please. It was also noted the dues structure is to be reviewed

Field day was spoken of and Norfolk County ran their Field Day from VA3PDG's front yard with 6 rigs. Generators were discussed and the price and size was mentioned but nothing concrete emerged from the discussion. It was suggested we talk to VA3PDG for info as to what they did in Norfolk County.

VA3PDG mentioned Norfolk County meeting night was Wednesday 14<sup>th</sup> at 7:30pm. VE3IHM said he was at Norfolk county Field day in June and had a good time.

The secretary read a poem and got his chocolate cake

Meeting closed at 8:40pm moved VA3CF 2<sup>nd</sup> VE3ANT

*As received from the secretary*

## Admiralty House Historic Site

by Tom VE3MAH/VO1

In the golden age of early radio, when spark gap transmission ruled the air waves, the naval fleet of most European countries including France, Germany, Russia and Britain relied extensively on this new technology to stay in contact with their fleet.

Prior to the First World War the British Admiralty had in excess of 20 transmitting stations spread throughout the British Isles, some spaced as close as 10 miles between stations. Early wireless stations include Marconi's now iconic station at Poldhu (Cornwall) and by 1908 the Navy completed stations in Gibraltar and Malta. Most of these stations were designed by the Vernon and Marconi partnership and had 100 kilowatt spark transmitters.

At the outbreak of WW1, the British government's War Office took control of these ship to shore stations because of their obvious strategic importance. British interception of enemy wireless traffic developed very rapidly from August 1914. The British government immediately took control of parts of the Marconi Company, including transatlantic stations in Wales and its factory in Chelmsford, and an ambitious training programme for wireless operators was put in place. The War Office created the Wireless Signal Company as a unit on 2 January 1915; their purpose to operate wireless sets in the field and to run the British stations. During the first months of the war spark transmitters and crystal receivers were used, however longer range transmissions were needed. This led to the development of the Poulsen arc transmitter, the better of the more than 35 different types of transmitters listed in use by the Royal Navy along with 28 different receivers.

In addition to transmitting messages to their fleet, the wireless stations had the capability to gather intelligence from the many transmissions received from enemy stations. In addition, the Marconi Company and others had developed direction finding (DF) equipment and could locate the positions of enemy transmitters. Each DF station was represented as a point with lines and scales radiating from it, if the readings from several stations coincided, then it was possible to locate trench wireless sets, and enemy troop positions could also be known, as well as Zeppelins and other hostile aircraft.

One major flaw however, was that while the British were intercepting enemy transmissions, so also were their enemies. This was termed 'wireless reconnaissance' and virtually negated the advantages gained. First to use secret codes were the Germans. What followed were great efforts by the British and French to generate codes that were unbreakable by their enemies.

*See the explanation at the end of this article that describes the advantages of the Poulsen transmitter in accomplishing this end.*

As the title points out; here is where the story starts.



Prior to the war, stations were very unreliable. The British Admiralty commissioned the Marconi Telegraph Company to establish a reliable network of stations around the world. As one of 11 'secret' stations built, H.M. Wireless Station, Mount Pearl in Newfoundland was built in 1915. Mount Pearl was a small community situated to the west of St. John's. So why build here? Of the many sites in the area, the Mount Pearl site most closely met the requirements set down by the engineers; namely that the site be secure from being bombarded by enemy shells fired from ships; the site should give the best coverage available in the east to south directions; the soil conditions were suitable for the greatest range of transmission and the supply of materials by the British Admiralty could be easily delivered to the site.



There is an unconfirmed story that during the building of this station, an armed guard noticed two lumps of snow near the station. When one of these lumps moved, he challenged the lumps of snow to identify themselves. Two German soldiers stood with hands up to surrender. Apparently, they had been dropped off by a U-boat at Bay Bulls some 30 km away and ordered to walk to Mount Pearl to destroy the station being built. This 30 kilowatt transmitting station – like the other 10 -- was designed to operate in the 5000 meter (60 kHz) to 600 meter (500 kHz) bands. The receiving room was constructed with five-pound lead lined walls, ceiling and floor. The reason for such a 'deadened' room would be to eliminate any and all stray electrical signals as well as acoustic noise from outside.

The most impressive part of each station was the three 305 foot antenna masts supporting two T-antennas that could be warmed electrically to melt winter ice and prevent damage. (*a T antenna is a vertically polarized wire antenna where the horizontal wires are suspended between two masts with a vertical wire connected at the centre and taken straight down to the transmitter/receiver.*) Each installation used 35,000 feet of 7/13 silicon bronze antenna wire and 25,000 feet of no. 14 copper ground wire connected between 90 galvanized iron ground plates measuring 6' x 2'6' x 24 gauge.



Each of the three 305 foot masts was an engineering challenge. The 305 feet was made up of 45 separate sections of iron pipe with a flange at each end weighing an average of 2 tons for an antenna mast tapering from 3'6" to 2'6" for a total weight of 90 tons.

This station saw much activity during the First World War and was in use for seven years. It was decommissioned in 1922 and became the first high power broadcast station (VONF) in the colony of Newfoundland.

During its use by the British Admiralty using the call sign BZM along with many thousands of messages passed, it made the first contact with the British rigid airship R34 on the first crossing of the Atlantic as well as receiving the S.O.S. call from the stricken S.S. Florizel, a passenger liner, and the flagship of the Bowring Brothers' Red Cross Line of steamships and one of the first ships in the world specifically designed to navigate icy waters. On a run from Halifax to St. John's it ran aground off the coast of Cape Race. Following the decommissioning in 1922, the station went through a number of owners until it was purchased by the city of Mount Pearl in 1995. The Society of Newfoundland Radio Amateurs (SONRA) partnered in the restoration of Admiralty House and operates VO1BZM Amateur Radio Station. On three visits to the museum over two months, VO1BZM was not active but I managed a few pictures of the station and its antennas for HF, VHF, UHF and satellite.



A very interesting historic site just a short distance away from the house Vivian and I rented in Mount Pearl NL.

Further information is available from:

Admiralty House website: <http://www.admiraltymuseum.ca/index.html>

SONRA website: <http://sonra.ca/en/home/>

## Spark Gap vs Poulsen Arc Transmitter

If you have not seen or heard an early spark transmitter, you must visit the Hammond museum and ask for a *quick* demonstration. I say quick because the use of spark gap transmitters was outlawed for amateur use in 1929.

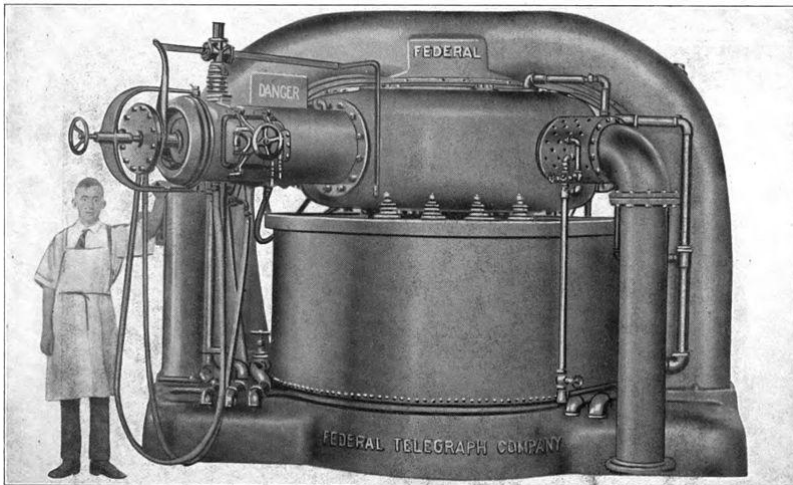
A basic spark gap transmitter which produced a continuous EM wave across the entire range of 30 kHz to above 30 MHz, consists of a DC power source (24 volts) controlled by the Morse key. This voltage is fed to an interrupter that directs an on/off pulse to the primary of a high voltage induction coil. If you remember basic inductors, a small DC voltage can charge the inductor to a very high value. When the DC voltage is removed, the inductor discharges through any load that is attached. The load in this case is a spark gap connected to an antenna. The voltage discharge across this gap could be 10,000 to 30,000 volts with a current in the range of 10 to 100 milliamps. The output EM wave is a continuous wave (CW) that decays (called ringing) over a short period of time. This limits the speed at which Morse characters can be sent. These voltages and currents equate to a power into the antenna of  $P=V \times I = 10,000V \times 100 \text{ mA} = 1000 \text{ watts}$ . With this sort of voltage on the antenna, I certainly would not want to be too near it while in operation!

For more complete information see:

<http://www.arrl.org/files/file/History/History%20of%20QST%20Volume%201%20-%20Technology/Kennedy%20N4GG.pdf>

Valdemar Poulsen discovered that the frequency of oscillation in a spark transmitter could be increased by letting the arc burn in hydrogen. This allowed a transmitter to be operated a specific frequency that was high enough to be considered RF. A disadvantage of the 'hydrogen burn' was that the start-up time of the arc was too slow and variable to be keyed on and off. His solution was to use a method to shift the frequency by inserting and removing an inductor from the antenna circuit – a crude form of FSK. A narrow bandwidth receiver then could detect the difference and produce an audio output only when the inductance was inserted into the antenna circuit at the transmitter.

Narrow band transmission and coded messages probably saved the British fleet from total destruction.



Shown here is a 1 Megawatt Poulsen Arc Transmitter used by the U.S. Navy around 1918 in shore radio stations to communicate with its fleet worldwide, one of the largest arc transmitters ever built.

From Wikipedia  
[https://en.wikipedia.org/wiki/Arc\\_converter](https://en.wikipedia.org/wiki/Arc_converter)

## Column – Looking inside the stations of our club members.

by Tom VE3MAH

No submissions this month.

### A Filler:

by Tom VE3MAH

I call these RF ticklers *(an idea stolen from an automotive publication I read regularly)*

Radios are objects one generation buys, the next generation ignores and the next generation restores.

One way regulators could improve operator quality is to require twice as much brain power behind the operator as there is RF power from the transmitter.

The trouble with an amateur with a kilowatt station who has the 'gift of the gab' is that they never wrap it up.

### Upcoming Events:

Mark your calendar in advance:

Sunday, October 16<sup>th</sup>, 2016; Peel ARC/Kingston ARC; 13:00 to 16:00 EDT; 40M, 60M, 80m bands, depending on conditions. Suggested frequencies for SSB are 3.700-750, 5.375, 7.060-070. CW: 3.550, 5.3465, and 7.030; An opportunity to practice NVIS communication techniques and test your station's abilities. No registration, logs or paperwork required. Just get on the air and find out what works for local HF communication. Suggested call: CQ NVIS Ontario "call sign". <http://goo.gl/3UDXH3>

Saturday, November 5th, 2016; York Region Hamfest; Coffee and snacks and a pancake breakfast at 7:30; Doors open at 9:00am  
Markham Fairgrounds, 10801 McCowan Road, Markham, ON  
Admission \$7.00; Vendor Tables are \$35  
VE3YRA 145.350 MHz(-): T:103.5 Hz; VE3YRC(V) 147.225 MHz (+):  
Tone 103.5Hz; VE3YRC(U)444.225 MHz(+): No tone

### DX News:

Rather than list some of the events coming, here are some sources that I find quite complete.

For DXpedition news: <http://www.dx-world.net/>

For special events: <http://www.ng3k.com/Misc/adxo.html>

Islands on the air: <https://www.rsqbiota.org/index.php>



## For Sale / Swap / Free

The intention of this section of the bulletin is to provide a space where **members** can advertise items of a ham related nature to other members of the club. It is not intended as competition to the many on air and internet based swap shops.

Free: I have several recent years of QST and RAC magazines for any one that wants them.  
Ernie VE3OU 653-9743

Free: (to club members) 440 ohm Ladder line. About 66 feet available – enough for 2 G5RV's. Tom VE3MAH

Free: (to club members) Cushcraft A3S TriBand beam. Needs new hardware. Tom VE3MAH

Free: (to club members) CDE AR-44 rotor unit only. Working when removed from VE3FC's tower.  
Tom VE3MAH

## Real Swap Sites:

KWARC Swap Shop -- one of the best around. <http://www.kwarc.org/swapshop/index.htm>

Maritime Swap Shop -- <http://www.ve1pjs.com/swap.html>

ONTARS Marketplace -- [http://www.ontars.com/cgi-bin/classifieds/classifieds.cgi?session\\_key=&search\\_and\\_display\\_db\\_button=on&results\\_format=headlines&query=browse](http://www.ontars.com/cgi-bin/classifieds/classifieds.cgi?session_key=&search_and_display_db_button=on&results_format=headlines&query=browse)

**Membership / Information update form:** Membership in the Cambridge Amateur Radio Club is \$20 per calendar year. Please help the Treasurer by printing this page, filling in your information and giving it to him. If mailing, please use the address listed.

**Cambridge Amateur Radio Club  
% Tom Franks Treasurer  
264 Fearnwood Street  
Cambridge, Ontario  
N3C 3W9**

\*First Name: \_\_\_\_\_ \*Last Name: \_\_\_\_\_ \* Call Sign: \_\_\_\_\_

\*Address: \_\_\_\_\_

\*Email Address: \_\_\_\_\_ Telephone Number: \_\_\_\_\_

**Full membership \$20     Renewal     New Member  
Associate member \$5     Renewal     New**

\*required – your information will not be shared with third parties.