



The Hamilton Amateur

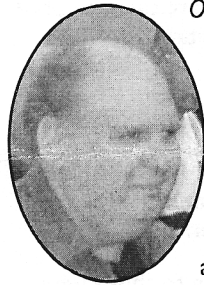
The Hamilton Amateur Radio Club Newsletter – 78 Years of Amateur Radio 1932 - 2010

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Est. 1932 Inc. 1956
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President's Remarks



On behalf of
President, Mike
Krebs, VA3WXS

As the new year begins it is traditional that people make resolutions aimed at improving things in the coming year. If

you are following this tradition it might be good to think about the Hamilton Amateur Radio Club. Our activities are based on fellowship and common interest. The emphasis is always on the people that we know and how we share and help one another in doing the things we do in the name of Amateur Radio. By this sharing and helping, our lives are enriched through Amateur Radio.

A good resolution would be to stay in touch with other members, sharing with them your fellowship and support.

This past year we said goodbye to several former and current members of our Club, remembering, as we did, the good times and fellowship they shared. This past year we also experienced change, as some active members were becoming sidelined for health reasons. In these situations it is important that other members step in and keep things going.

A good resolution would be to pitch in with ideas and help to fill in where a job needs doing, and to come up

with something new where there is an opportunity.

Generally, in the spring season we have a number of activities to involve members in "playing radio". A big one, of course is Field Day in June. The contest scene will be active with a couple of upcoming events. There is the Home Brew and Show and Tell Night in May, the Elections in June, and, if we do it again, the demonstration station at the Erland Lee Museum. There may be other activities in which local Hams are asked to participate like the ALS walkathon that we have done before. The local ARES and CANWARN groups have meetings and opportunities to participate as well. In addition we have a local repeater with good coverage to the surrounding area that could be used a lot more.

Another good resolution would be stay active and help this hobby achieve its potential to bring enjoyment and satisfaction to you and your fellow Hams.

I wish you all the very best in 2010. May you truly find improvement in the coming year.

Most of all, I hope our radio club, the Hamilton Amateur Radio Club, will have success, and grow, and get better, and provide good things for the community of radio amateurs where we live. I'll be doing what I can to help in this regard and I hope you will too. Happy new year!

Club meetings – 3rd Wednesday each month – 7:30 pm (except July and August) at Hamilton District Christian High School, 92 Glanaster Road, Ancaster, L9G 3K9, corner of Rymal Road (Hwy. #53) and Glanaster Road. Parking on location. Complimentary refreshments.

Shortened 160 Meter Dipole

by Rick Danby
VE3BK



Have you got room for an 80 meter dipole. This is an idea to get on Top Band, or the gentleman's band. Many people say they haven't got room for a 160 meter antenna. Believe me, once you have tried this band, you will like it. Just think about it, your wavelength is so long, that anyone you talk to locally is actually very close. I have talked to Dan VA3DJ in Stoney Creek, with 5 watts or less and even a bad SWR with a signal of 59 plus 20 s units. This is really the HF band to be on for local use, depending on the noise level at the time. Some call this a Winter band because of lower noise in the winter. You definitely can work DX at night on this band, with the right antenna.

The total length of a half-wave dipole for 80 meters or 75 meters if you prefer (what they usually call the phone section) is 124' 8". A quarter-wave is half of that, 62' 4". If you

have room for one of these antennas, then you have room for a 160 meter shortened antenna, whether it be the Dipole version or the 1/8 wave sloper. Regular full-size 160 meter dipole is 260' long.

WD8DSB, Don, wrote an article on the 1/8 wave 160m Shortened Sloper in QST, March 1998. You can find the link on our Website at:

<http://www.hamiltonarc.ca/index.php?name=News&file=article&sid=17&theme=Printer>

He has provided us with the link to his original article:

<http://sites.google.com/site/reducedsizehalfsloper/>

What I am suggesting to those who like to make their own antennas and have the room for an 80 meter dipole, is to double this unique antenna design of Don's and make it a shortened dipole, Figure 1.

Don's idea is to make a sloper using the tower as the other half or a ground wire from a tree (see his original article). The basic design is in Figure 3. Keep the windings in the same direction only on the opposite end of the 3/4" PCV pipe for the shortened dipole version. Don't forget the choke consisting of 16

HARC 2009-2010 Executive

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Shortened 160 meter Dipole

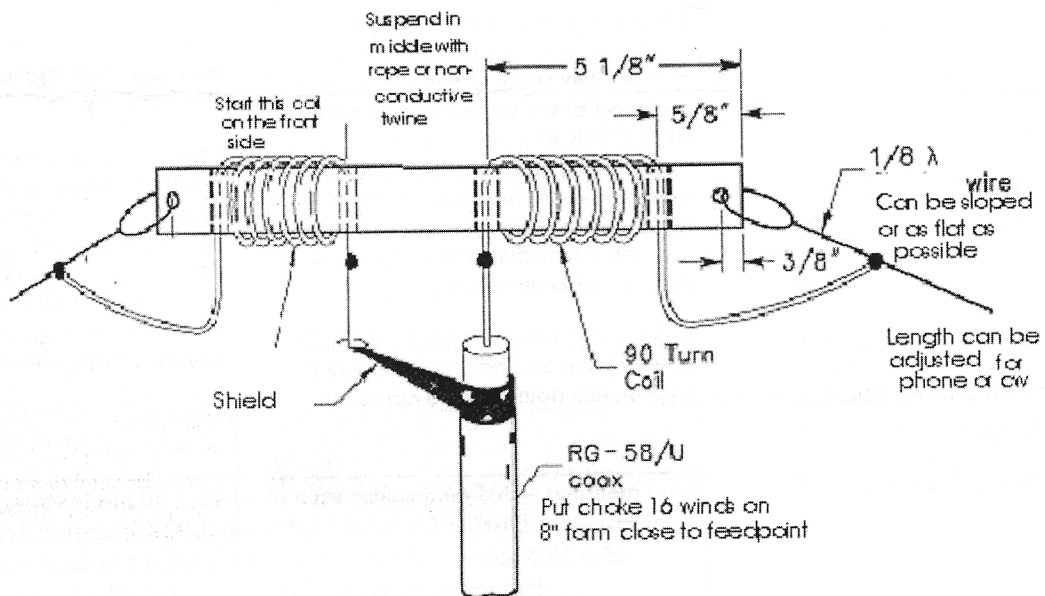


Figure 1

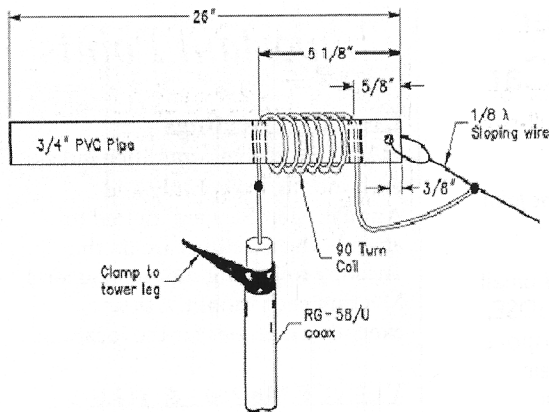


Figure 3—Construction details for the PVC mounting pipe and coil. For a tree installation, secure the coax to the PVC pipe behind the coil.

turns of coax on a 8" form, to stop RF going back on the feedline. Thin RG58u coaxial cable (rather inexpensive coax) can be used for the choke and for feeding the antenna because the losses at 1.85 Mhz are very low.

Figure 3 is a diagram of the 160m shortened sloper. The sloper design can be doubled to form a dipole and suspended horizontally or in an inverted "V" configuration, from the centre of the PVC pipe to make it fit into an even smaller area.

Windings are kept tight and can be wrapped with tape as shown in Figure 4. and should be about 5" long if you use shellaced wire. Insulated wire could be use as well.

Don suggests 16 gauge shellaced wire in his original article, but I notice he has said that 14 gauge would work as well too. The actual length of each half-wave section would be around 63' 3" Placing two of these sections together and considering the length of the coils would make the whole dipole approximately 128' 6" long with the coils at centre. Actual lengths will probably have to be adjusted slightly, but the basic dipole calculation of 468 divided by the frequency in Mhz, can still be used for calculating the length in feet. Have fun making you own "I made it myself" antennas.

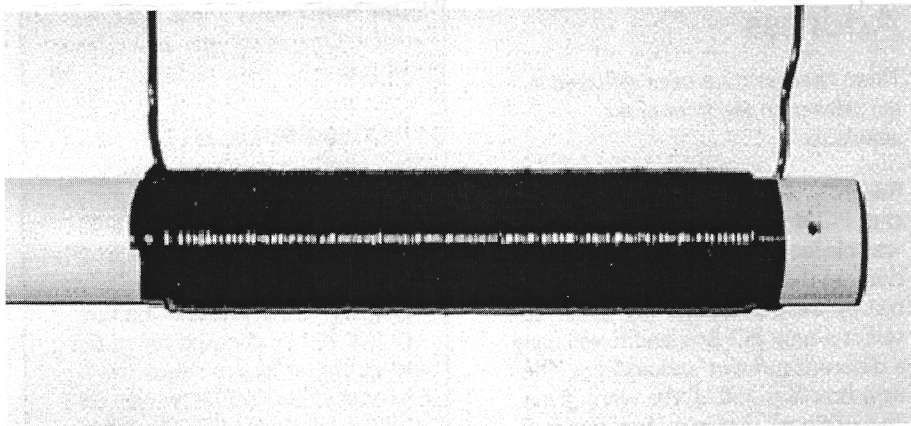


Figure 4—Wrap the coil in electrical tape.

HARC 2009-2010 Chairs

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Christmas Party 2009 at Warplane Heritage Museum

by Mardy Eedson VE3QEE

Our thanks to Anita Thomas and Janice Hudak for their efforts arranging and hosting the 2009 Christmas Party at Warplane Heritage Museum's Dofasco Dome.



The surroundings were delightful and really comfortable; the meal was delicious. Everyone who attended seemed to be having a good time.



During the social hour, a volunteer museum guide took a party around the museum explaining exhibits. His talk was very informative and interesting. If you have not taken a guided tour of the museum it is a well recommended activity.

Pictures courtesy of Rick Danby, VE3BK, John Kassay VE3FDK, and Mardy Eedson VE3QEE. See the pictorial on page 8.

Thanks to all who attended for sharing their fellowship and helping us celebrate Christmas as a group.



VE3NCF Repeater To Be Used For Car Rally

Announcement from Vice-President John Hudak, VE3CXB

Last year the club received an email from Dietmar Seelenmayer, VA3DSE, on behalf of the "Toronto Autosport Club" asking permission for their ham radio operators to use our repeater for communications during their "January Jaunt Car Rally. The car rally will run out of Waterdown and in and around the surrounding area. We felt this would not be a problem and granted them permission to use VE3NCF for emergency and coordination communications on an "as needed basis".

The rally will take place on Sat. Jan. 16, 2010 between 3 p.m. and 9 p.m.

They have not requested exclusive use of the repeater but this is to let you know that there might be higher than normal traffic. I would request that our members try to give this group a little leeway if possible in the use of the repeater. It is understood that any emergency or priority traffic on the part of HARC members will take priority over the rally communications.

Change of Mailing Address

These changes have been reflected in the sidebar on the front of the newsletter.

Recently the variety store where our club PO Box has been for many years was closed. The PO was moved next door in the same building and is now run by the pharmacy. I was asked to select a new PO Box and it will have a different number and address. The new box # is 75073. We were given "no options" in this matter but mail will be forwarded to the new box for a couple of months they said. However, this does force the club to

Important Points

Executive Meetings

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

VE3NCF 146.760 - & 444.075 + using tone 131.8

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, Mardy Eedson, VE3QEE, <ve3qee@hamiltonarc.ca>

change all instances of our address including letter head and QSL cards and banking and the government and the web-site and qrz.com and RAC plus of course, anyone else we may do business with. The annual renewal fee was due at this time so it has been paid for the current year (for 2010).

Please note the new club address and destroy any unused materials (like return address labels) using the old address, and make appropriate changes where necessary.

**Hamilton Amateur Radio Club,
117 - 350 King Street East,
P.O. Box 75073,
Hamilton, Ontario, L8N 4G6**

Are The Long Awaited Sunspots Returning?

After an unusually long period of very low sunspot numbers, over 2 years, we are seeing tiny indications that cycle 24 may be ready to begin. Here is an excerpt from the weekly ARRL propagation forecast by Tad Cook K7RA published on January 8th.

"The average daily sunspot number for 2009 was 5. The average for 2008 was 4.7. Not much difference in those numbers, but those are for calendar years, and the trend toward the end of 2009 was increasing sunspot activity. Average daily sunspot numbers for [the ten year period from] 1999-2009 were 136.3, 173, 170.3, 176.6, 109.2, 68.6, 48.9, 26.1, 12.8, 4.7 and 5".

"A few years ago we began recording a moving average of daily sunspot numbers based on three calendar months, to help us spot a sunspot cycle bottom. Perhaps this would give us a more immediate indication than smoothed sunspot numbers, which use a whole year of data."

"Because we now have all of the sunspot numbers for December, we can calculate the three month average

centered on November 2009, 10.16, which is the highest it has been since August 2007 when it was 10.17. We will know the average centered on December at the end of January."

"Over the past couple of years it looked like the moving average bottomed out several times. In late 2007 it appeared we hit bottom when the three-month average centered on October dropped to 3. Then the average rose, and was in the range of 8.23 to 8.89 centered on December 2007 through April 2008. The average declined again, and hit 1.1 in August 2008. In September through November it moved to 2.5, 4.52 and 4.39, then declined to a new minimum of 1.5 in March, 2009. From there it rose, stalled and rose dramatically when from April through November 2009 it was 2.01, 4.23, 5.2, 4, 4, 4.64, 7.1 and 10.163. The average daily sunspot number for just the month of December was 15.7, which is a good trend, 5.54 points higher than the 3-month average."

Wow! After almost two years in the valley between cycles 23 and 24 with hardly any to absolutely no sunspots week after week are we starting to see an increase in sunspot activity? I hope so. There have been many issues of *THA* since I have been able to relay any news about an upswing in sunspot activity. Keep your fingers crossed. It could be time for hams to start scanning again the 20 meter, and 15 meter bands.

Check This Out

A Video About Ham Radio

Here is the web address of a video called Amateur Radio Operators which is posted on U-Tube for the general public to see. There have been many hits on this item so if you have a connection to the internet check out the video for yourself at:

<http://www.youtube.com/watch?v=MfYX9cMUWIA&feature=related>

Thank you for the tip from Rick Danby VE3BK

Youngest Canadian Ham



Andrew Copeland, age 11, call VE3NOA, just became the youngest Ham Radio Op in Canada on Boxing Day, December 26 2009. His story, written by reporter Monte Sonnenberg, appeared in the *Simcoe Reformer*.

Andrew earned a Basic+ certificate so he can transmit with full band privileges. He was taught by his father, Gary Copeland, owner of Dover Antenna Service in nearby Port Dover and holder of an advanced licence. To read the full story see the archive at www.simcoereformer.ca/. Search for "youngest ham"

According some American Hams that Dan, YA3DJ, was talking to, named Ed, KG8CX and Jim KS8O, there are more young hams in the United States because the US Technician Class of license is not as hard as our Basic Class.

Congratulations Andrew! Some of our members report hearing you on the air. Thank you for the tip from Dan Martinak VA3DJ

Kit Building

a follow up article after the November 18th presentation by Mardy Eedson, VE3QEE, about the resurgence of kit building in amateur radio.

I promised to publish a list of places where amateur radio related kits are available. Because, there was not enough room in the December issue, the list was delayed a month. Finally, if you flip to the next page, there it is:

List of Kit Building Web Sites

<http://www.ramseyelectronics.com/>
<http://www.genesisradio.com>
<http://www.njqrp.org/>
<http://www.amqrp.org/>
<http://www.indianapolis.net/QRPP-1/QRPP-radios.html>
<http://www.smallwonderlabs.com/>
<http://www.kangaus.com/>
<http://www.midnightscience.com/>
<http://www.theheathkitshop.com/index.html>
<http://www.elecraft.com/>
<http://www.wb5rvz.com/sdr/>
<http://www.kb9yig.com>
<http://www.farcircuits.net/>
<http://www.tentec.com/>
<http://www.tapr.org/>
<http://www.wa0itp.com/ns40.html>
<http://www.amqrp.org/misc/links.html>
<http://www.fix.net/~jparker/wild.html>
<http://www.qrpkits.com/mmr40.html>
<http://www.aade.com/>
<http://www.velectronics.com/index.php>
<http://www.glowbugkits.com/>
<http://www.idiompress.com/>
<http://www.k1el.com/>
<http://www.kd1jv.qrpradio.com/>
<http://www.m3electronix.com/>
<http://www.mtechnologies.com/>
<http://www.norcalqrp.org/>
<http://www.nogaqrp.org/>
<http://www.partsandkits.com/>
<http://www.qrpme.com/>
<http://www.users.globalnet.co.uk/~walfor/>
<http://www.lvkits.be/>
http://home.kpn.nl/rw.engberts/sdr_kth.htm
<http://www.SDR-Kits.net>
<http://www.cliftonlaboratories.com/>
<http://www.ektor.com/>

Lists like this are changing all the time. I try to add to this list as I find things on the internet. Please send me any entries that you come across because they could be added too. Kits on these web sites are offered for a limited time, usually until all the parts that were ordered run out. If you are interested in something you see on a site, jump on it before it becomes "no longer available".

If you do build something, before the May 19th Club meeting, bring it in for Home Brew Night and let us have a look.

HARC Swap Shop Proposal

By Vice President, John Hudak, VE3CXB

I'm sure that most of you are aware that we no longer have a swapnet on 2m, or a swap shop page on the club's web site. After many years of excellent service by Don VE3DDQ, he has had to give up this post due to circumstances beyond his control. We owe a debt of gratitude to Don for his efforts.

This leaves a bit of a vacuum when it comes to selling or buying items within the club. Of course one can still use the resources of the Ontario Swap Shop Net and their web page. However I would hope that those of you who have something to sell might want to give first dibs to your fellow club members. Given that we could probably still use the services of a Swap Shop within the club I propose that we have a regular monthly column in our newsletter where we could post our wants and for sale items. I'm not suggesting that this column is to take the place of the 2m swap net or a web listing. It is a stop-gap measure. If at some point in the future someone steps up to take over the swap net on 2m then we can decide if we still need to have a swap shop in the newsletter. By having a "for sale" listing in the newsletter we are assured of 100% coverage as all of our members get the newsletter.

I suggest that we use the same format as our previous swap shop web page, or that of the Ontario Swap Shop. Keep your posts concise and informative. Give your callsign, your name, your location, contact info (phone number and/or email address), and a list of your wants/sale items. We'll keep your listing up for a few months or until sold. For now we'll just play things by ear as we go along and see how things work out. To get the ball rolling you can send your listings or comments/suggestions to me, John Hudak VE3CXB, ve3cxb@rac.ca.

The history of the Rubber Ducky Antenna.

From the website of the Southwest Museum of Engineering, Communications and Computation in Glendale Arizona, located at Coury House / SMECC, 5802 W. Palmaire Ave., Glendale AZ 85301.

The story comes from Richard B. Johnson, Project Engineer Analogic Corporation

I've read a lot about "Rubber Ducky" Antennas on the Web and it seems that nobody knows where they came from! It seems that many people think that they are just some natural outcome of a typical engineering design. In fact, if a Rubber Ducky Antenna did not already exist, and you put a bunch of Engineers, Mathematicians, and Physicists in a design conference and asked them to design one, they would properly claim that it couldn't possibly work.

When I was at the Lyman School in Westborough Massachusetts, a reform school for juvenile delinquents, I operated a Ham Radio Station on the 6-meter phone band. My call sign was K1KLR. Because space was a premium, I was unable to have an outside antenna. Therefore, I invented what became known as the "Rubber Ducky Antenna". It was first called a cantenna long before Heathkit borrowed the name for a dummy-load. It was published in QST Magazine sometime around 1958 by my mentor, Mr. Guido Sandini, who was the cottage master at Westview Cottage at Lyman. Mr. Sandini was a well-known "ham" who taught a "ham-radio" class at the Lyman School. This is the story about that invention.

I was kind of a privileged character at Lyman, having already "done my time" and awaiting out-placement. I became part of a successful program where such persons were allowed to attend "outside school" in Westborough.

After returning from outside school each afternoon, I was supposed to use a small room at the front of Lyman Hall for my homework studies. After I would barely complete my homework, I would set up my Ham Radio station and attempt to communicate with others in the Westborough area. I didn't have a place to install an antenna so I would connect the shield of a co-axial cable to the screen of a screen-door, poke the center conductor through a hole in the screen, then attach a 1/4 wave-length wire to that. This would dangle outside and sometimes work as an antenna. Some hams would refer to this makeshift antenna as "loading up a screen-door". At one time I thought I heard the words "screen-door spring". This made me think. The problems with the wire dangling through the screen were that it was too long and it wasn't properly oriented for a good antenna.

So, my first attempt at a rubber-ducky antenna was what I called the "cantenna". This consisted of a paint can which I filled with rocks for support. To the top of the can I soldered 4 radials of brazing rod. Their length was determined by the size of the floor of the closet where I would store this contraption. In the center of the can-lid I installed a coaxial connector so that the solder connection was oriented upward from the top of the can and outside the can. I punched a hole in the side of the can so that I could insert the coaxial cable from the transmitter and receiver T/R relay. I soldered a section of a screen-door spring to the center conductor of the coaxial connector.

I found that the spring needed to be only about 10 inches high after I had stretched it so that none of the turns touched each other. This was tuned, with the transmitter at low power, by adjusting the length so that a neon bulb would illuminate when brought near the top of the spring and an inductive loop coupled to a light-bulb would light the bulb when brought near the base of the spring.

After scratching my eye while taking my portable antenna down, Mr. Sandini suggested that the spring be put inside a piece of windshield-wiper hose. Since we didn't have "shrink-tubing" in those days, this was difficult to do until I threaded a wire through the spring and used it to pull the spring through the tubing from the bottom of the spring so it wouldn't distort and stretch out the antenna.

Mr. Sandini made some further experiments with my antenna, in fact making one that required no ground radials at all. It was just a spring in a rubber hose with a banana plug on one end. This would plug into the top-of-the-box antenna connector on the portable transceivers used by the Civil Defense, the Gonset Communicator III. He made several for both the six and two meter amateur radio bands.

After using this antenna successfully at a "Ham Fest" in Swamscot, Massachusetts, Mr. Sandini published an article about it in the QST magazine.

Now, neither Mr. Sandini nor myself knew why the spring worked as an antenna. My first thought for the design was that I needed a spring that, when stretched out, would be 1/4 wave-length long to emulate a 1/4 wave-length whip. I carefully calculated the stretched-out length of a spring from its circumference and wire diameter. Imagine my surprise when I found out that the thing would resonate, produce better than a 2:1 VSWR, and actually function as an antenna, when about 1/6 the calculated length! Then it was thought that it was the resonance alone that made it antenna-like. However, this wasn't true because good coils don't radiate very much energy (they are low-loss). Then it was thought that the thing just acted like a base-loaded whip. This turned out to be untrue as well.

Basically, the Rubber Ducky can't work as well as it does. A well-constructed Rubber Ducky has a base impedance near 50 ohms. This is dependent upon the ratio of the diameter to length. It also has about

10% bandwidth. This is dependent upon the spacing of the turns, the closer the spacing, the lower the bandwidth. It also has an aperture that is over twice its physical size. This is the real anomaly. No other antenna has an aperture greater than its size.

After I left Lyman School, I started a career that has spanned over 4 decades of successful Engineering Design. I have moved from Radio Transmitter design through medical Ultrasound design to Software Design for CAT Scanners and Airport Baggage Scanners. Every time I see somebody with a Cell-Phone, I remember those beginnings. Now, if I had only Patented the damn thing!

I read about the origin of the name "Rubber Ducky". It was originally called a cantenna and then a vertical helical, neither of which really defined the antenna. I think it was Caroline Kennedy who gave it its name when pointing to one on the top of a secret service security guard's transceiver.

Check out the Southwest Museum's web site at: www.smecc.org

Contest Corner



By Rick Danby, VE3BK. *This time it really is just a corner.*

The next contest is the CQ 160 Meter World Wide Sideband Contest which takes place

2200Z Feb. 26th to 2200Z Feb. 28th. That's 5:00 P.M. on Friday until 5:00 P.M. on Sunday, 48 hours. Put the date on your calendar.

For complete information including contest rules and sections see the web at <http://cq-amateur-radio.com/>. Our contest group will be activating VE3DC at the Haldimand site. If you can help with the contest, contact Rick Danby to set up a time. We'll need operators and loggers because this is a 48 hour effort.

Christmas Party 2009 at the Warplane Heritage Museum

