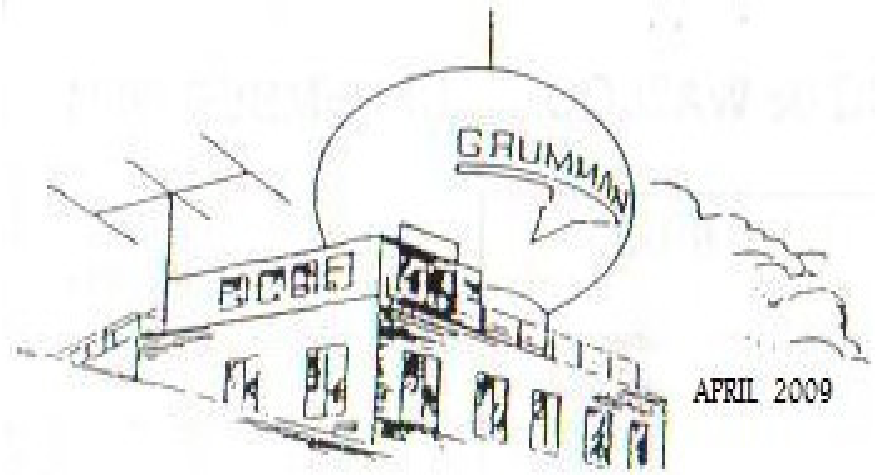

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The Rest of the Story

By Bob Wexelbaum, W2ILP

A famous radio commentator passed away recently. He was not a Ham or a "silent key" but he now leaves a "silent microphone". He was Paul Harvey, and he always finalized his broadcasts by telling us something unexpected or ironic to end his narrative with "…the rest of the story." I always enjoyed listening to Paul Harvey, so let me say with due respect; 'May he …rest of the stories… in peace.'

In previous articles I wrote about Hiram Percy Maxim (1869-1936), his father Hiram Stevens Maxim (1840-1903), and his uncle Hudson Maxim (1853-1927). To conclude anything about the Maxims, we must also research their friends and foes and the general history of the times that they lived. We may be unable to fairly judge their contributions to the world unless we do so.

When I mentioned the fact that Hiram Stevens Maxim's machine gun was superior to the Gatling gun, which was invented by Dr. Richard Jordan Gatling (1818-1903), an American inventor, I was rebuffed by a ham who had read a recent book about Gatling and had concluded that Maxim's machine guns couldn't have been as good as I believed them to be. Gatling was a machinist, whose first inventions included a horse driven seed drill. Gatling was born in the south but sold his guns to the northern (Union) army during the Civil War. H.S. Maxim's guns came later. They and the Royal Navy's ships enabled the British to control an Empire upon which the Sun never set. Aside from the British Vickers types there were versions of Maxim's gun that were sold or licensed to nearly every army of the world. The weapons of both WW1 and WW2 were derived from many machine gun models that were based on the original Maxim prototypes. Space does not permit me to go into the details of the gun specs or how Maxim was able to demonstrate his guns at various ranges and prove their superiority to the heads of all European states and the Japanese as well. I am normally not interested in guns but I had to read a book on this subject for verification.. The book is "From 1860 to the Present Day – The World's Great Machine Guns" (1999) by Richard Ford. I will quote from the flap on its book jacket: - "<This book> traces the development of this revolutionary device from its raw beginnings in the 1860s, as the manually operated machine guns produced by Gatling, Gardner, and Nordenfeld became an established part of every technically advanced army's arsenal. The book then examines how they were rendered obsolete overnight by the inventive genius of one man – Hiram Stevens Maxim – who produced the true automatic gun." As far as we can read from his writings, H.S. Maxim never showed any sympathy for those who were killed by his weapons. He was an atheist who attacked superstitions and organized religions but unlike many atheists he was not a Humanist.

Next I'll go on to Hudson Maxim, and better yet, since I mentioned Gatling, who made guns before Maxim, let me now mention Alfred Nobel who invented dynamite before Hudson Maxim got into the similar business of inventing explosive devices. I may be wandering too far off the subject of Amateur Radio when I get into the subject of explosive inventors but in order to develop the background of Hiram Percy Maxim, I have to tell about his father and his uncle.

Alfred Nobel (1833-1896) was born in Sweden. When his father, an armorer, went bankrupt, his family moved to St. Petersburg, Russia. His father sold naval mines to the Czar, which were used to protect harbors from British warships. Nobel was privately tutored by teachers who were qualified college professors. His early education was not just in the sciences. He learned to speak Swedish, Russian, English, French, German and Italian with astonishing fluency. He was well educated in world literature and poetry. I was wrong when I said that Hudson Maxim was the only man who could bridge the gaps between science and the liberal arts. Nobel was also such a man. [Continued on next page.]

THE REST OF THE STORY [continued]

The truth is now evident to me that Hudson Maxim wanted to show the world that he was very much like Nobel. Nobel's own brother, Emil, was killed during an explosives experiment. Some of his assistants were also killed. Hudson lost a number of his assistants as well his left hand. Hudson recounts in his book that we don't feel a great deal of sympathy when many people who we don't know die in a terrible disaster in a far away land - He offered the 1883 Krakatoa eruption as an example. We do feel responsibility, pain and sympathy when deaths or injuries are caused by our own inventions to people we know. Nobel and Hudson both felt that they had to tell the world that they were not just heartless scientists. By contrast, H.S. Maxim seemed to care very little about the carnage that his machine guns would cause. Although Nobel had spent some time in the United States there is no record of him ever having met with Hudson Maxim.

Nobel was not just an inventor, but his genius went beyond his own ideas. He was a poet. One of his mentors was Ascario Sobrero, an Italian, who taught him more than the basics about explosive chemistry. Nobel's genius was that he was an efficient industrialist, economist and a perfectionalist who oversaw the entire operation of his explosive factories in many nations. He ran most of his business on his own and he kept his own logs of it all. There was however one time that he needed some help. He advertised for a secretary in a newspaper. She would have to be fluent in all the languages that he had mastered and she would have to help him communicate with his workers, his bankers, his associates and his customers. He found such a woman in Countess Bertha Krinsky. They became romantically linked, but Bertha left Alfred and she married Baron von Suttner. She could not live very long with an inventor of explosives that could be used for warfare, as she had become an anti-war activist. There were always those who feared that weapons of war (WMDs) would destroy the world and those who hoped that the same weapons would put an end to all wars by encouraging sane leaders to negotiate. In spite of her anti-war activities, Bertha and Alfred continued to communicate with each other for many years. Their letters are in the public domain. We all know that Alfred Nobel left a philanthropic legacy to the world in the form of the Nobel Prizes. We all know that Amateur Radio, a hobby of international good will, was founded by Hiram Percy Maxim…and now let me tell you that the first winner of the Nobel Peace Prize was Bertha von Suttner and that is… the rest of the story.

PRESIDENT'S NOTE by ED GELLENDER, WB2EAV
April 2009

At the March meeting we had the pleasure of the company of the new NLI section manager, Mike Lisenco N2YBB, who gave a very interesting talk. Thanks for coming out Mike.

Ray, W2DKM is working with Huntington Town Parks to get the same Field Day site that we had last year. Everybody agreed that it was great. We hope to start with the serious planning soon.

Those of you who get the mailed newsletter may have noticed that we have been doing some stamp collectors a favor, buying excess stamps with reproductions of some classical paintings. And you didn't realize how cultured we are.

I have made some very nice progress with the Bethpage repeater. We installed a quarter-wave ground-plane vertical on the top of Building 14. For the moment we are using the original coax. The coverage is not great, but it is pretty good considering the elevation. It probably is as good as we were getting for the last year or so with a really good antenna that was mounted very poorly by company facilities people.

We removed the old antenna and noticed something interesting – when you look at the RF connector from the bottom, you can see clearly through the hole where the center conductor pin should be. Since the antenna is in a fiberglass housing which is translucent, you can see the loose parts rattling around inside. When I said that the antenna was dead, it was actually an understatement.

I came across a new Cushcraft ARX-2 Ringo Ranger to replace the quarter-wave. The way I fell over it was so fortuitous that I took it as a message from God and bought it on the spot. It is about 9 feet overall and has some decent gain. With its light weight and small wind profile it is perfect for the pipe that serves as its mast. With a couple of plumbing parts from the new Lowe's down the street, it fits perfectly. Today we took advantage of the large anechoic chamber in the antenna lab (20 foot ceiling) and did a serious check of the SWR of the antenna mounted on the mast and it is magnificent – under 1.1:1. As soon as the weather and schedules permit we will mount it on the roof. Once that is done I will focus on replacing the coax before it realizes just how corroded it really is.

I also noticed another problem with the repeater. It seems to have a slow variation in output power; and occurs about once a second or so. Since the amplifier takes about 15 seconds from turn-on until full power output, the amp is naturally the prime suspect, but I have to run tests to make sure…..Wonder if it's time for a new amp. Meanwhile, my to-do list for that repeater just keeps growing.

GRUMMAN AMATEUR RADIO CLUB
MINUTES OF GENERAL MEETING 3/18/09
By Karen, KC2OPX, secretary.

The meeting was called to order by Ray at 5:30 PM.

TREASURERS REPORT – Ed, WB2EAV
Finances continue to be in good shape.

VE REPORT – Bob, W2ILP
GARC members, KC2OPX and K2IFB upgraded to Extra Class. Another applicant passed Commercial Element 1.
VEs were AB2NT, AB2ZW and W2ILP.

REPEATER REPORT - Gordon, KB2UB
The present plan is to replace the Bethpage repeater antenna with a new Ringo Ranger.

NET REPORT- Zack, WB2PUE
The Thursday night net on 330 had a decent turnout.

OLD BUSINESS
Ray, W2DKM is checking out the possibility of again using the Dix Hills Golf Course for our FD site.

NEW BUSINESS
Our April meeting will have a presentation by Ray, W2DKM about Ebay and Ham Radio. Expect to hear about buying and selling Amateur Radio Equipment on Ebay, and share your own tips and tricks when dealing with Ebay.

PROGRAM Mike Lisenco, N2YBB, NYLI ARRL Section Manager spoke about the state of our Long Island area. In an informal chat, he listened to the GARC members. He told us about his own Ham career. He explained what volunteer services he believes that hams should be responsible for, and those where they should not. There are now only 30 active radio clubs on Long Island. He told us how schools have been getting kids interested in Ham Radio by arranging for contacts with the space station, and DX stations. He explained the importance of search and rescue preparation. He gave us the news that the foreign commercial broadcasting stations that have plagued 40 Meters for many years, have agreed to move out of that ham band.

The meeting was adjoined at 6:55 PM

GARC NETS:
40 Meters: 7.289 MHz at 7:30 AM EST Sundays.
2 Meters (via repeaters): 146.745 MHz (-.600 kHz) at 8:15 PM EST Thursdays.
145.330 MHz (-600 kHz) at 8:30 PM EST Thursdays
[Tone for both repeaters is 136.5 Hz] (ARES/RACES) Mondays

MEETINGS

General Meetings of the GARC are held on the third Wednesday of each month, starting at 5:30 PM. The meetings are usually held at the Ellsworth Allen Park in Farmingdale. Driving directions and maps can be obtained from http://www.mapquest.com It is suggested that the GARC Web Site be checked to be certain of meeting location, which may change after this newsletter is distributed. Board meetings are held eight days before the General Meeting.

GARC WEB SITE

The web site of the GARC can be found at http://www.qsl.net/wa2lqo/ Webmaster is Pat Masterson, KE2LJ. Pictures of GARC activities, archives of newsletters, roster of members, and other information about the GARC may be found there.

INTERNET LINK OF THE MONTH FOR INTERNERDS

Here is another video for the nostalgia buffs. We have seen a French video that showed how a vacuum tube was made. This month let me show you a YouTube video that shows how both receiving and transmitting tubes were made by RCA in the 1940s. It also shows what vacuum tubes could be used for…including Amateur Radio. The hams of the QRZ ragchew group enjoyed this video documentary. Its audio was impressive but the video itself didn't have modern resolution and it was fuzzy black and white. One of the younger hams didn't know that there were metal vacuum tubes. The metal tunes were always painted black. He asked what they were for. The Russians did not make metal tubes. They painted glass tubes with red iron oxide paint in order to provide RF shielding. Generally metal tubes were used so that the tubes wouldn't need external metal RF shields. I dunno if many of you know that a 6L6 was a metal tube, a 6L6-GT was a compact glass tube, and a 6L6-G was a glass tube with a larger envelope than the GT type. All were octal based beam power pentodes with similar specifications that could be used as audio output amplifiers or as oscillators or buffers in ham radio exciters.
Anyway here is the URL :-

http://blog.makezine.com/archive/2009/03/tube_manufacturing_in_the_40s.html?CMP=OTC-0D6B48984890

Better still; If you can't get the above link to work, or even before you try
Google up: RCA vacuum tube manufacturing in the 1930s. Then click on the appropriate descriptive link.

PUZZLE

Here is another Cryptogram: H DMQE, PSJ PJXCW PQEU UJ CHNM HE Q ICQAM

PSMBM USM JECK AXCUXBQC QWNQEUQOM HG USQU KJX AQE UXBE BHOSU JE Q

BMW CHOSU?

--PJJWK QCCME--

Solution to the February Cryptogram: WHEN ONE DOOR CLOSES, ANOTHER OPENS; BUT WE OFTEN LOOK SO LONG AND SO REGRETFULLY UPON THE CLOSED DOOR THAT WE DO NOT SEE THE ONE WHICH HAS OPENED FOR US.
--ALEXANDER GRAHAM BELL--

Solution to the March Cryptogram: IF WE BUILD WITH WISDOM, AND WITH COURAGE, AND WITH PATIENCE, THOSE THAT COME AFTER US WILL BE HELPED BY OUR WORK.
--DWIGHT MORROW--

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CONTRIBUTING WRITERS
All the members of GARC (we hope!)

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ELECTRONIC SUBMISSIONS
For insertion to the WA2LQO website, information may be sent to Pat Masterson.
Pat Masterson's e-mail address: Pat-Masterson@tampabay.rr.com
Ed Gellender's e-mail address: Edward.Gellender@ngc.com or wb2eav@yahoo.com

EDITORIAL

As I write this it is April first, which is known as April Fool's Day. Generally speaking, we fools don't need a special day to be foolish. Everyday we hear about foolish thing that people do. I can only take some pleasure in knowing that I am an AMATEUR FOOL and not a political or professional fool. Amateurs generally are not expected to be as serious as professionals, but in the case of RADIO AMATEURS there remains the exception. Ignorance of FCC Rules and Regulations or Ohm's Law is no excuse to be foolish. High voltages, high temperatures or high radiation levels don't care if we are amateurs or professional. We can be foolish if we touch stuff when it is too hot to handle. If you must do that, carefully use only one hand and keep the other in your pocket. This can prevent a dangerous circuit path from forming. I've been warned that there might be a new mal-ware threat today, that may open our computers to being controlled by rogues, who want to read our mail, make us zombies and sell us bogus security software. Nobody seems to know what to expect…but the manufacturers of the security software have named it "Conficker C." It seems that the fools know what to call it, because of their foolish experience, being fooled by Conficker B.
73,
w2ilp (Insulation Lined Pockets?)

GARC VE EXAMS

We are continuing to proctor exams for all classes of ham licenses on the second Tuesday of each month, starting at 5:00 PM.
The present exams are:-
The Element 1 CW exam is no longer required.
Element 2: Technician
Element 3: General
Element 4: Amateur Extra Class

The fee for 2009 is $14.00 for all exams taken in one sitting. The ARRL-VEC now charges $15 but W5YI-VEC has decided not to change the required fee.

Applicants for upgrades should bring their present license and a photocopy of it and know their FRN number.

New, first time applicants should be aware that their Social Security number will be required on their application form, unless they register with the FCC for an FRN.

All applicants should bring picture ID such as driver's licenses.

Until further notice exams will be given at:-
Briarcliffe College
1055 Stewart Avenue
Room: Long Beach #5
Bethpage, NY
Briarcliffe, Bethpage is located in a building that was formerly part of the Grumman complex.

All applicants should contact W2ILP to register, so as to confirm location. If no applicants apply, the exam session will be cancelled.

For any information e-mail w2ilp@optonline.net or phone-
(631) 499-2214

Study material is available at the web sites of the ARRL
http://www.arrl.org
or W5YI
http://www.w5yi.org
All VECs use the same Q &A pools.

Since the beginning of the VE program the GARC has provided opportunities to take the ham exams monthly, during all 12 months of every year.

Bob Wexelbaum, W2ILP and the GARC VE team.

GRUMMAN AMATEUR RADIO CLUB OFFICERS FOR 2008

President	Ed Gellender	WA2EAV	X02-14	516-575-0013
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Secretary	Karen Cefalo	KC2OPX		631-754-0974
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2YrBoard Member	Dave Ledo	AB2EF		
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1 Yr Board Member	Bob Wexelbaum	W2ILP	Retiree	631-499-2214
1 Yr Board Member	Jack Cottrell	WA2PYK	Retiree	516-249-0979
Trustee WA2LQO	Ray Schubnel	W2DKM	Retiree	

STANDING COMMITTEE CHAIRMEN

Contact VE:	Bob Wexelbaum	W2ILP	Retiree	631-499-2214
Webmaster	Pat Masterson	KE2LJ	Retiree	813-938-4614

GRUMMAN AMATEUR RADIO CLUB
Sixty Four Years 1944 -2008
P.O. Box 0644
Bethpage, NY 11714-0644

FIRST CLASS

DO NOT DELAY

IMPEDANCE OF COAX

Most of our amateur radio equipment is designed to be used with coaxial transmission lines which have a characteristic impedance that is close to 50 Ohms. Coaxial cable for TV or data lines is normally about 75 Ohms; however 50 Ohm coax has been used for some Etherlink data lines. The characteristic impedance of a transmission line is determined strictly by the dimensions of its center conductor and its dielectric. Impedance is independent of the length of the line or the conductivity of the coax shield. The latter two properties are relevant to the loss of the line, but can not change its impedance.
A single center conductor coaxial line impedance (Zo) is determined by the following formula:
Zo= (138/e^1/2) log base 10 (D/d)
Or
Zo= (60/e^1/2) log base E (D/d)
Where D = the diameter of the dielectric, d = the diameter of the center conductor, and e = the dielectric constant of the dielectric material. The center conductor may be either solid or stranded wire; usually copper. The dielectric constant of air or space is 1, but the insulating material used in flexible coax may be either foam or solid polyethylene. Polyethylene has a dielectric constant of 2.26, which is constant for all radio frequencies. For most amateur work solid polyethylene is preferred. Air dielectric (which requires insulating beads) and foam dielectric may be subject to damage if water enters and usually is limited in its radius of bend. Solid polyethylene cable does not have these problems. The only way that solid dielectric cable may have damaged characteristic impedance would be if the cable was severely pinched. This is because the impedance of coaxial cable is determined only by its cross sectional dimensions.
The Impedance of coax is not a function of the radio frequencies that it will be used at, but the RF loss per foot is. It is easy to check at the frequencies where it will be used and graphs in various handbooks predict what it should be for each type of cable. The more strands of wire in the shield and the larger the center conductor cross section, the lower the RF loss. Power is lost by heating the conductors and the dielectric. Another parameter is the velocity factor of the line, which is the ratio of the RF velocity along the line to that of free space.

--w2ilp--