



CQ
de WA2LQO

NOVEMBER 2008

VOL 81, No. 11

HIRAM STEVENS MAXIM

By Bob Wexelbaum, W2ILP

As Hams, most of us know about Hiram Percy Maxim, who was a founder of the ARRL. As I researched H.P. Maxim, I found much information about his father, H.S. Maxim. Both were innovators and inventors. Surprisingly both have left their marks on developments that have led to products that are now used worldwide. This month I'll write only about H.S. Maxim and next month I hope to write about H.P. Maxim. H.S. Maxim, who was born in Maine on February 5th, 1840, was most known for his invention of the machine gun, but I was surprised to learn that Maxim had competed with Thomas Edison, when they both were striving to develop an incandescing lamp bulb. Their competition intensified in 1877, when Edison, who was trying to beat Alexander Graham Bell in gaining telephone patents, entered the lamp bulb field. After inventing the carbon microphone, Edison's lab took six months to perfect the phonograph, which was initially intended to only record Morse code messages. Finally Edison returned to experimenting with hermetically sealed lamp bulbs in 1878. U.S. Patent office records show that Maxim applied for his first lamp bulb patent on October 4th, 1878 and Edison applied for a lamp bulb patent the next day! Because of this, a life time rivalry developed, because the courts upheld Edison's claim based only on a few differences in details. In a previous article I told how Edison had stolen Lewis Latimer, who invented the carbon impregnated filament, from Maxim. Not to be undone, Maxim stole an expert glass blower from Edison's lab. The truth was that Edison understood Ohm's law better than Maxim, although Maxim had some experience with dynamos for arc lamps and he had developed a gas light that was being used for most of American railroad locomotive headlights of that time. Maxim, however, understood chemistry better than Edison. He developed a flashing process by heating the carbon or platinum filament in hydrocarbon vapor in order to standardize the filament to a uniform diameter as well as to act as a getter for remaining oxygen. Edison had to copy this method. Maxim was the first to use phosphoric anhydride for absorbing any vapors remaining in the lamp bulbs before they were sealed. When Edison bought up all of this chemical compound that was available, Maxim succeeded in developing a cheap production method to make his own. Edison began to consider higher voltages for his lighting system (about 100 Volts DC), while Maxim worked with lower voltages (about 6 Volts DC) and higher currents. Thus you might say that Maxim's bulbs were more like the bulbs that were later intended for automobiles. After bad experiences with arc lamps, which were then used for outdoor street lamps, Americans feared using high voltages, perhaps more so than the British who eventually built 220 Volt AC power grids. Pictures of the Maxim lamp bulb show that it had a filament that was in the shape of a four leaf clover, or Maltese cross. We now know that this was a first order fractal design. I doubt if Maxim knew that. [If you haven't heard about fractals, I intend to write an article about them next year.] In spite of the early limitations Maxim's company lit the first building in the U.S., the Equitable Insurance Company of New York, while the Edison Light Company was lighting the steamship *Columbia*. Maxim was also selected to light the new Brooklyn Bridge. Both Maxim and Edison were credited for the lamp bulb invention and given the Legion of Honor in Paris, France. Were it not for Maxim's invention of the

HIRAM STEVEN MAXIM [Continued]

machine gun, which was then getting known as “The Killing Machine”, perhaps Maxim would have been so honored in the U.S. Few may know that Maxim had built a heavier than air “aeroplane” before the Wright brothers. Maxim understood the basics about thrust, lift, weight and drag. For thrust he developed the pitch, shape and size of efficient propellers, and drove them with two heavy steam engines. His bi-plane wings provided lift. Weight and drag were well supplied because his “aeroplane” weighed three and one-half tons. He mounted his invention on two sets of parallel rail road tracks; the center pair of tracks, holding up the fuselage, while the outer pair of tracks supported the wing structures. The final trial took place on July 31, 1894, with Maxim and two passengers on board. The wooden biplane body was 126 feet long, with wing spans of 104 feet. Its modified boilers and oil burning steam engines sped it down the tracks at 30 mph. The aircraft body rose four feet off the ground after about 400 feet, until one of the outer restraining wheels snagged. The crash left shattered props and airframe, although Maxim and his passengers were unharmed. Maxim thus claimed his experiment was a success, although he admitted that had to use the rails because he did not know how he would be able to control the airplane after it lifted. Maxim claimed that the idea for the machine gun had originated with his father (H.P. Maxim’s grandfather) but he said at other times it was his own realization that the energy of recoil could be used to load the next bullet when he was a youngster hunting in the Maine woods. Although he had only a fifth grade education, when he was a young man Maxim invented a chronometer, a spoked wheel for a tricycle and a mousetrap! Maxim never served in the U.S. military. He was exempt because two of his brothers had died in the Civil War. Although a genius inventor, Maxim was a poor business man and manager. The directors of his U.S. Lighting Company brought in a new manager, named Charles Flint. Flint’s first step was to join with the company of Edward Weston so as to secure Weston’s dynamos. He did this because he realized that Maxim alone was in no position to offer a complete lighting system that could compete with Edison. Maxim’s personal vendetta with Edison disabled him from sanely conducting a practical business. Because of this, in 1880 Flint sent Maxim to Europe, most probably to get rid of him. Maxim never returned to the U.S. In the spring of 1887 Maxim had successfully demonstrated his machine gun to Franz Joseph of Austria. The machine gun had been rejected by the U.S Army. This was because the Americans thought that it would be a weapon of inhumane destruction, and aside from that they didn’t believe that they could supply enough ammunition to feed it. Rival weapons like the American Gatling (1862), The French Mitrailuse (1867) and the Anglo-Swedish Nordenfelt (1877) were no match for Maxim’s killing machine. They were heavier and crank-driven, and since they were gravity feed they required more than one man to fire and feed them. They provided relatively slower rates of fire. The Boers used Maxim’s gun to kill thousands of South African Blacks, who named the killing machine “Pom Pom”. Turks who bought the Maxim machines killed thousands of British troops. Russians killed thousands of Japanese in the Russo-Japanese war with the machine guns. Maxim teamed with Vickers, forming Vickers, Sons and Maxim of England, which was later changed simply to Vickers, Ltd. Maxim was knighted by Queen Victoria and became a British citizen. He became very wealthy. He brought his brother, Hudson Maxim, who was a skilled machinist, to help him manufacture the precision parts of his guns, but he soon disagreed with his brother and Hudson returned to the U.S. never to speak to him again. The Spitfire was built by Vickers in WW2 and it carried a version of the Maxim gun. Maxim must have become haunted by his failure to get credit for his light bulb and airplane. He was laughed at when his airplane invention was further developed only to become an amusement park ride. Perhaps he felt guilty for inventing the killing machine. Always an agnostic, he published in 1913 an attack on establish religion that charged clerics with promoting belief in ghosts. A few months later, when he was arrested for pelting Salvation Army workers with a peashooter, his friends tried to hush up the matter. As he aged he had become a cantankerous curmudgeon. When Maxim died in 1916, only a few British and American newspapers carried his obituary. There were then millions of deaths to report, many of them caused by Sir Maxim’s machine gun.

PRESIDENT'S NOTE by ED GELLENDER, WB2EAV
October 2008

Not a lot to report this month. The only thing that really comes to mind is that we have a guest speaker lined up for the November meeting. For years "Lenny the Lawyer" has been an amateur meteorologist who called in the local weather from his home on Long Island to the National Weather Service and local broadcasting radio stations. He will talk about what kind of weather monitoring equipment can be set up in the home, as well as anything else he feels like telling about. I hear that he is very well spoken and that anything he feels like sharing with us will be more interesting than anything that I or the other club officers could possibly come up with. In accordance with the club charter, we are supposed to have nominations and elections for club positions soon. If anyone feels like that they want to follow the pattern from election day of throwing the incumbent bums out, feel free to announce your intentions. Just beware of what you ask for; you may get it before you think it through. We have to plan for the Christmas party. I assume that we will discuss it at the November meeting. We may not have any plans yet, but we do have the date...Since it is the December meeting, we know it will be on Wednesday, Dec. 17th.

GRUMMAN AMATEUR RADIO CLUB
MINUTES OF GENERAL MEETING 10/15/08
By Karen, KC2OPX, secretary.

The meeting was called to order by Ed at 5:50 PM.

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

REPEATER REPORT Gordon, KB2UB
Repeaters are unchanged.

VE REPORT – Bob, W2ILP
There was one applicant.. He passed the Extra exam. VEs were AB2NT, KC2OPX and W2ILP

NET REPORT- Zack, WB2PUE
Sunday morning net 4 people checked in.
Thursday night net needs more check ins.

OLD BUSINESS

The October newsletter was too late for the board meeting. Jack, WA2PYK put the newsletters together and mailed them on the following Friday. Lenny the meteorologist will be the speaker at the November meeting.

NEW BUSINESS

The GARC Election will be held at the November General Meeting.

PROGRAM

We need more VEs. Bob, W2ILP has passed out applications for VE certification. Dave AB2EF passed out copies of an article in Business Week about "Dangerous Fakes – counterfeit computer parts." Dave also put together a video which showed the MFJ factory in Mississippi. It showed some of the units which MFJ manufactures, including automatic keyers and 16 element UHF antennas. MFJ also manufactures electronic components including RF inductors and capacitors for its own antenna tuners.

NEW BUSINESS

Elections will be held next month.

The meeting was adjointed at 6:20 PM

GARC NETS:

40 Meters: 7.289 MHz at 7:30 AM EST Sundays.

2 Meters (via repeaters): 146.745 MHz (-.600 kHz) at 8:30 PM EST Thursdays.

145.330 MHz (-600 kHz) at 8:15 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

I've been able to get links to many interesting sites. I thank Dave, AB2EF for some good ones that he recently sent to me, but I do have one for this month and I'll get to Dave's in future months. Sometimes good links go away, so we have to use them while they are still there. You have to see this video. It is a Public Service Message about DTV. Enjoy! The link is:-

<http://www.hulu.com/watch/36608/talkshow-with-spike-feresten-cable-psa>

PUZZLE

Here is another cryptogram:

XF BV DTQDCV PBRXO QXN VVVUFYOV OXDO XF SDMFV SBVODMFV.

--VUDZBVX UPNGFPK--

Answer to September's cryptogram:

MEN USE THOUGHT TO JUSTIFY THEIR WRONGDOINGS AND SPEECH TO CONCEAL THEIR THOUGHTS. -VOLTAIRE—

CQ de WA2LQO
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VOL. 81, NO. 11

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CONTRIBUTING WRITERS

All the members of GARC (we hope!)

CQ de WA2LQO is published monthly by the Grumman Amateur Radio Club for its members and friends. Send articles and amateur equipment advertisements to: W2ILP. Articles may be sent by e-mail or postal mail. They can be in MS Word format or simply in plain text. Articles will only be edited when permission is granted by the author.

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

I couldn't talk about the election before and now that it is over I guess that I still can't talk about it. It's too political! Anyway I did talk about it to my British grand cousin via e-mail. He asked me why the president elect must now wait until January to be inaugurated as President. I had to explain that was because in the old days it took about a month for the news of who won the election to be tallied for all of the colonies (states). There were no paved roads (no Jersey Turnpike), so John Adams had to travel on horseback on dirt roads from Boston to the capital, which I think was then in Philadelphia. Our second president elect was an inn keeper and a bar tender by trade. It is said that he celebrated so completely, when he learned that he was elected, that he got lost and was late for his own inauguration! It is difficult to change the old rules that allowed so much time for travel, as well as the undemocratic Electoral College voting system....but many politicians want to keep the status quo. Regulations don't change quickly...It took about 90 years for the FCC to eliminate the CW exams....and as many for motorists to be required to wear seat belts. In spite of it all, many of us may now be in for a rough ride...because some quick changes will now have to be made. Enuf sed 73, w2ilp (Increase Logical Policies).

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

Please Note:- **THE EXTRA CLASS Q & A WAS CHANGED AS OF JULY 1, 2008.**

The fee for 2008 is \$14.00 for all exams taken in one sitting.

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
Vice President	Gordon Sammis	KB2UB	Retiree	631-666-7463
Secretary	Karen Cefalo	KC2OPX		631-754-0974
Treasurer	Ed Gellender	WB2EAV	X02-14	516-575-0013
1Yr Board Member	Zack Zilavy	WB2PUE	Retiree	631-667-4628
1Yr Board Member	Dave Ledo	AB2EF		
1Yr Board Member	Bob Christen	W2FPF		
2 Yr Board Member	Bob Wexelbaum	W2ILP	Retiree	631-499-2214
2 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

HRU 2009

On October 15th I attended a meeting of a committee that is developing the plans for Ham Radio University 2009. This is the second such meeting that I have attended and there will be a third committee meeting on November 18th. As of this time I am the only member of the GARC who has volunteered to become an HRU2009 committee member and/or a Forum Moderator. There will be at least 20 Forums on technical, practical, and historical ham radio subjects. As of the meeting, the keynote speaker had not been determined, but invitations were being sent out so that a prominent speaker could be selected. The committee chairman is Neil Heft, KC2KY, who is also president of the Radio Central Amateur Radio Club. Past chairmen of HRUs were Phil Lewis, N2MUN and George Tranos, N2GA. Neil has arranged for the required insurance and

been in contact with Pat McAuliffe of Briarcliffe and the Briarcliffe cafeteria people who will be there to serve food at the event.

Mark your calendars for Sunday January 11th, which will be HRU 2009 Day! This will be a special HRU because it is the tenth HRU anniversary of all HRUs. If you have attended HRUs before or if you have never attended an HRU be sure not to miss this one. The HRU will be considered a special ARRL event, and will use a special call sign, W2V. Something new for this event will be a QSO PARTY. Those who participate will be eligible for an HRU Tenth Anniversary Recognition Award, which will, I assume, be at least a certificate. The QSO Party will run from now to January 11, 2009 on all bands in all modes. You can earn 2 points for working W2V and one point for working any one of the HRU volunteers (including me, W2ILP). You must exchange Name and Call and log date, time, name, call, band, and mode. The list of eligible contacts is posted on

the HRU web site. You can get credit for working any listed station once per band, similar to Field Day. The e-mail address for submission is on the HRU web site. The deadline for submission of your logs will be March 1, 2009. More detailed information will be found on the HRU web site:-

<http://www.hamradiouniversity.org>
Stations on the list for contact points may be using a "/10" suffix after their call sign to aid in identifying them. HRU 2009 is a Long Island – New York ARRL Section Convention. It is your convention. Please participate. As always the theme of the HRU is: Fellowship, Knowledge and Service. For those who may not have Internet access I will also provide more information in the December "CQ de WA2LQO".

73,
DE W2ILP/10