

# CQ de WA2LQO

Seventy Years: 1944 -2014

*The official voice of the Grumman Amateur Radio Club*

**AUGUST 2014 VOLUME 87 NUMBER 8**

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**PICNIC DINNER MEETING ON AUGUST 20th**

*See Page 3 for Details*

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## **A PART of GRUMMAN LUNAR MODULE HISTORY**

**By Ed Whitman, K2MFY**

Things were looking up for me in October 1964. It was a couple of weeks after I went to a Grumman Open House Saturday Recruitment in Bethpage. I spoke to a few engineers and handed in my resume. I was told that I would be mailed a firm employment offer. The offer arrived with ample time for me to give notice to the company that I was leaving. I was excited about Grumman. I heard that they had lots of work, including government contracts for fighter planes and work with NASA on the Apollo Program Lunar Module.

I was told to report to the engineering area on the 3<sup>rd</sup> floor of Plant 25, the hub of the Apollo Program, at 8 AM. Plant 25 was a building facing the east side of South Oyster Bay Road, south of the Grumman airstrip and the LIRR tracks. I arrived at Grumman at 7:30 AM and showed the gate guard my temporary badge. I was told to park in the lot behind the plant, where there were already hundreds of cars parked at that early hour. Most of the cars were parked with their front wheels facing forward. Days later I realized that because so many cars left at once at shift quitting times that you had to be prepared to race out as fast as possible to avoid getting caught in a gigantic traffic jam. Nassau Police had to direct the heavy traffic on South Oyster Bay Rd. All of this made the road very busy during the shift starts and ends, multiple times every 24 hour day.

I was amazed at what I observed when I got to the 3<sup>rd</sup> floor of PL25. It was like standing at the far end of a gigantic warehouse with a 30-foot ceiling. The floor was filled with rows and rows of desks where there were hundreds of personnel wearing white shirts with pocket protectors and ties. Many of the pocket protectors contained Grumman ID badges. Some had pins with the insignias of various Grumman programs. In the front rows were the glass enclosed offices of the managers. There were multi-colored lights on the ceiling which flashed when telephone extensions in their areas were ringing. The phone ringing was subdued and mixed with a background level of voices and conversations. The most amazing structure was at the far end of the floor. It was a schedule chart; 25 by 100 ft., which had numerous slots and triangular icons. On the vertical axis there were 8 menus; one for each of the 8 Lunar Excursion Modules (LEMs) that Grumman was contracted to build. The horizontal axis displayed dates from 1962 through 1972; 10 years of events that were to be LEM missions. Wow! How could 10 years be planned for and followed on time? Almost every day someone would climb up a rolling ladder and take a long stick to move various triangles back and forth to indicate important milestone events that were completed on time or delayed.

Gradually I got used to the hubbub and background noise. Occasionally I would go to work in a quieter area on another floor or walk to the Grumman technical library, which was better than the one in my graduate school at the Farmingdale Polytechnic Institute. My work assignments varied. They involved studies about communication between the LEM, the vehicle that would bring two astronauts down to the surface of the Moon and return them to the Command Service Module (CSM) where there was one lonely astronaut waiting for them in lunar orbit. The three astronauts would then return to Earth.

There was a mockup of the LEM in plant 2 that would be dropped from various heights into soils of different densities to test for landing on any possible simulated Moon surfaces. I had the opportunity once to climb into a full scale LEM. It reminded me of my mother-in-law's refrigerator, where many things were covered with tin foil, only on the LEM everything was covered with gold foil.

From 1963 to 1966 Grumman Bethpage hired hundreds of engineers, scientists, and mathematicians. "Programmers" was not yet an official job title. Detailed analysis of the LEM's structure, thermal balance, environmental control, and life support had to be conducted. At the peak of the space program in 1968 about 7,000 employees worked on the LEM. Considering all subcontractors and NASA personnel, almost 34,000 people were employed on the space program.

I found out that Grumman had an amateur radio club in 1965. The GARC met in the Plant 2 cafeteria. I attended a meeting and filled out an application for membership. I met a large group of friendly hams. Although I had been licensed for 10 years I was still using my Novice equipment running 50 Watts CW. I explored the club station on the 2<sup>nd</sup> floor, of the Grumman garage on Scherer Street, off Central Avenue. The GARC president was Warren Olson, K2IYK (sk). The Vice President was Irwin Solomon, WB2EJU (now in Florida). They invited me to operate the club station which consisted of a Collins 75S-3 receiver, a Collins 32S-3 transmitter, and a large console housing the Collins 30L-1 kilowatt amplifier. I called CQ and was shocked when DX stations replied! This never happened at my home QTH! My memories of the GARC would fill another article, so back to the LEM program.

After 6 months in Plant 25, I was transferred to Plant 14 which was the R&D arm of the engineering group. Because of my antenna experience I was assigned to work on a microwave antenna that would be used for communication between the LEM and the CSM. I assisted a senior engineer, Aare Kivi, in running measurements, "tweaks", and documentation that were required for the antenna. Aare was from Estonia, and it was difficult for me to understand his bass voice and thick accent, which reminded me of Henry Kissinger. We worked in an anechoic chamber where black cones lined the walls to absorb RF and prevent it from reflecting. They also made the area very quiet compared to the Plant 25 bull pen. The transponder antenna was only about a foot long, and about half of its Y-shaped structure was split or bifurcated to radiate RF in a somewhat hemispherical antenna pattern. The waveguide openings were covered by a dimpled, shaped radome – forming a shell transparent to RF while protecting the antenna from the space environment. It extended several inches above the skin of the LEM. When everything was measured, confirmed and documented I had to bring all the paper records to the records department. We joked that if all the LEM program papers were stacked end-to-end you could simply climb them to the Moon! When my assignment was completed, I was transferred to the EA6B ECM aircraft program and subsequently I moved on to another Long Island company.

I later recalled my LEM efforts on July 20<sup>th</sup> 1969, when the Apollo 11 mission LEM #5, landed astronauts onto the surface of the Moon.. I looked at the photographs for the transponder antenna that I had helped to develop. The 40<sup>th</sup> anniversary of this mission was commemorated in 2009 when I participated as a club member in a week-long ham radio event from my home QTH, signing WA2LQO/K2MFY.

I once contacted a station in Scotland and the operator on the other end, who was a young boy in 1969, was extolling the fantastic lunar landing and what it had meant for mankind. He recalled that about 8 PM local time his family started walking to the town pub to watch the moon landing on a large TV screen. Many of the town's people crowded into the pub because few owned a TV set. About 6 hours later when Neil Armstrong took his first steps on the Moon the townspeople all shouted, "Today we are all Americans!" They passed around a brew to celebrate the accomplishments of the USA. It was during my brief QSO with Scotland that I was again grateful that I had contributed a tiny piece of engineering to that mission, which held a universal legacy that would last for all eternity. I only hope that future generations of Americans will once again be on the forefront of inventions and discoveries from our great country.

## **PRESIDENT'S NOTE by ED GELLENDER, WB2EAV**

**Picnic:** With the changes instigated by Northrop Grumman, we have decided that the long term viability of the club is in some question, and we will start slowly spending down the club finances. Along those lines, we have decided that instead of a picnic we will have a nice dinner out. See all details below.

**Field Day Results:** Ray, W2DKM sent in the following results for Field Day QSOs:

75M: 95 SSB; 40M 123 SSB, 92 CW; 20M 93 SSB; 15M 16 SSB, 48 CW; 10M 2 CW. Grand total; 327 SSB and 142 CW. Pretty good if I may say so myself.

**Hudson Division Awards Dinner:** On Saturday afternoon November 5 the annual Hudson Division Awards dinner will take place at North Shore Towers on the Queens-Nassau line. It is the first time in many years that it has been held on Long Island, so if it doesn't feel familiar there is a reason. Full details to follow soon.

Ed, WB2EAV

## **GARC ANNUAL PICNIC DINNER**

Date: Wednesday August 20, 2014

Time: 5:00 PM for attitude adjustment

6:00 PM sit down dinner with appetizer and open salad bar

8:00 PM move to terrace and patio for conversation

Place: La Casa Café, 445 Waterside Avenue, Northport, NY 11768 (631) 757-7720

Cost: \$10 for paid-up GARC members; \$20 for guests

\$30 for non-paid GARC members (\$10 for dinner plus \$20 for GARC dues).

Menu: Appetizer – Mozzarella Sticks, Open Salad Bar

Main Course – Select one:- Chicken Marsala, Penne al Vodka, Stuffed Flounder

Dessert with Coffee, Decaf or Tea

**Directions:** Easiest way is Sunken Meadow Pkwy to last exit, SM5W – Rt25A west Proceed 4 miles to Waterside Rd. Turn right and take Waterside Rd 2 miles to the end at the beach. Alternately, take Larkfield Rd. all the way north as it becomes Vernon Valley Road then Waterside Rd.

## **GRUMMAN AMATEUR RADIO CLUB MINUTES OF GENERAL MEETING 7/16/2014**

**By Karen, W2ABK**

The meeting was opened by Karen, W2ABK.

### **TREASURER'S REPORT – Ed, WB2EAV**

Finances continue to be in good shape.

### **REPEATER REPORT – Gordon, KB2UB**

Both repeaters are working.

### **NET REPORT – Karen, W2ABK**

Thursday night net at 8:15 PM on 146.745 MHz had 1 check-in

Thursday night net at 8:30 PM on 145.330 MHz had 1 check-in

The Sunday morning net at 7:30 AM on 7.289 MHz had 1 check-in.

### **VE REPORT – Ed, WB2EAV**

Three applicants applied; two for the Technician exam and one for the General exam. They all passed; One then tried to upgrade to General and failed.

Three VEs were present: Ed, WB2EAV, Bill, WB2QGZ, and Karen, W2ABK.

## OLD BUSINESS

Bill, N2SFT had repaired the 40 Meter bazooka antenna for Field Day.

Ray W2DKM discussed Field Day results, as listed in president's message.

## NEW BUSINESS

Our picnic/dinner is our August 20<sup>th</sup> General Meeting. It is set for the LaCasa Café at Club Meadow Beach in Northport. *Please See President's message for details..*

## PROGRAM

Ray, W2DKM presented this Field Day Report:

Our efforts in Class 2A produced a score of 1222 before bonus points (we expect 150 to be added by ARRL). *Please see president's message for details.*

## GARC NETS: 40 Meters: 7.289 MHz at 7:30 AM EST Sundays

GARC Net Controller Karen, W2ABK

**2 Meters (repeaters) Thursdays: 146.745 MHz (-600 kHz) at 8:15 PM**

**145.330 MHz (-600 kHz) at 8:30 PM. Tone for both repeaters: 136.5 Hz.**

GARC Net Controller Karen, W2ABK      **ARES/RACES NETS: Mondays.**

## MEETINGS

General Meetings of the GARC are held on the 3rd Wednesday of each month, starting at 5:30 PM, at the Ellsworth Allen Park in Farmingdale. Driving directions and map 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 a week before the General Meeting at the Bethpage Skating Rink. *Meetings may be cancelled or relocated. Check the website.*

## WEB SITE

The GARC web site 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

The Internet link for this month is:- [www.hamtestonline.com](http://www.hamtestonline.com) No! You can't take official Ham tests on line. You have to go to VE sessions. However, you can take free practice exams on this site and you can learn lots of interesting facts and statistics about how Ham tests and the question pools are constructed. If you know anyone who wants to get licensed or upgraded, this organization can sell them very complete preparation courses.

## PUZZLE

*Lasts month's question was:-*

Nikola Tesla was unable to finish his project (including the tower at Wardenclyffe, Long Island). Tesla was bankrupted and J.P. Morgan had refused to lend any more money to continue the project. The question is: What would have happened if Tesla was permitted to complete his project?

*Answer:*

I urge all who may be interested to read: Wizard; The Life and Times of Nicola Tesla by Marc S. Seifer.

Tesla believed that radio communication would have to be generated by electro-STATIC propagation, rather than electro-magnetic radiation, which all other radio experimenters were using. The best spark transmitters were using synchronous rotary spark gaps that produced continuous waves at desired RF frequencies. CW RF was later generated by rotary alternators, similar to electrical power line generators, but alternating at LF or MF radio frequencies, (before high power vacuum tubes were developed.) Tesla did not reveal details of his entire project, but from what was learned from the equipment that had been originally installed, if the transmitting tower had been completed, and code keyed "lightning" generated, it would have set back, rather than advanced, the progress of radio communication by jamming all other radio signals.

*This month's question is:-*

Who was the first man to successfully transmit and receive amplitude modulated audio (sound) by radio at distances greater than a mile?

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### **GARC 2013 Officers**

President: Ed Gellender, WB2EAV M/S:X08-14 516-575-0013 edward.gellender@ngc.com  
or wb2eav@yahoo.com

Vice President: Gordon Sammis, KB2UB Retiree 631-666-7463

Secretary: Karen Cefalo, W2ABK 631-754-0974

Treasurer: Ed Gellender, WB2EAV (see above)

WA2LQO Trustee: Ray Schubnel, W2DKM Retiree

2 Yr. Board Member: Jack Cottrell, WA2PYK Retiree 516-249-0979

1 Yr. Board Member: Dave Ledo, AB2EF

1 Yr. Board Member: Jack Hayne, WB2BED

1 Yr. Board Member: George Sullivan, WB2IKT

### **Newsletter**

CQ de WA2LQO is published monthly by the Grumman Amateur Radio Club for its members and friends.

Editor: W2ILP 631-499-2214 W2ILP.RADIO@gmail.com

Contributing writers: All GARC members (we hope). To submit articles or ham equipment advertisements contact the editor. Articles will only be edited when permission is granted by the author.

### **GARC Webmaster**

Pat Masterson, KE2LJ Retiree 813-938-4614 Pat-Masterson@tampabay.rr.com

### **GARC VE Exams**

We normally proctor exams for all classes of ham licenses on the second Tuesday of each month, starting at 5:30 PM. The exams may be given at various locations. Ham Exams are: Element 2 – Technician, Element 3 - General, Element 4 – Amateur Extra Class. All applicants must pre-register to determine the location of a VE session by contacting Ed Gellender WB2EAV. Time and location of exams are subject to change. If there are no applicants VE sessions will be canceled. The fee is \$14 for all exams taken at one sitting. New first time applicants should be aware that their Social Security Number will be required on the application form unless they register with the FCC for an FRN. Applicants for an upgrade should bring their present license and a photocopy of it. All applicants should bring picture ID such as a driver's license. Study material may be bought from the ARRL-VEC or W5YI-VEC <http://www.arrl.org> or <http://www.w5yi.org>. All VECs use the same Q & A pools.

### **Editorial**

This newsletter differs from previous ones, mainly because the featured article by Ed Whitman replaced my usual article about how I, a curious urchin and SWL, became a Ham. The Grumman LEM program certainly is something well worth remembering. My historical serial saga started in the January 2013 issue and will continue next month unless trumped by a more appropriate one. Although it might seem more relevant to write about my work experiences at Grumman and other companies, I have resisted doing so for many proprietary reasons, and thus have written only about my Ham experiences prior to my military, commercial and professional work. Due to the recent use of a Surface to Air Missile (SAM) system in eastern Ukraine that downed an airliner, I can't resist telling you that while I was employed by Loral. I worked on a Radar Warning Receiver that was intended for use on the original F-111 and other aircraft, specifically to detect SAM sites and alert countermeasure actions. I managed the construction of a portable test set that simulated the SAM sites; [both the track while scan (TWS) acquisition radar and the associated missile guidance radar]. Generic knowledge of these SAM sites is old technology and no longer classified. One is believed to have been captured by Israel during the 1967 war. Others were found in Vietnam. Now there is a talk of providing updated Electronic Countermeasures (ECM) technology for both military and commercial aircraft which might fly into combat zones. The possible use of modern weapons calls for much more sophisticated equipment, and software for it will probably come from today's computer game hackers and geeks, but the threat of the very old equipment still remains.

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FIRST CLASS MAIL

*Do Not Delay*

**ARRL CENTENNIAL CONVENTION - HARTFORD, CT - JULY 17–19, 2014**      **By Bob, W2ILP**

GARC was represented at the convention by Karen W2ABK and myself, accompanied by Karen's OM Bruce and my XYL Ethel, by way of the ferry out of Port Jefferson. We did not attend the banquet but learned that 600 hams did. The keynote speaker was ARRL President Kay Craigie N3KN (who spoke at HRU in Bethpage not long ago), recollecting the start of the ARRL in 1914. The only Forum I attended was "RFI Myths and Misconceptions", presented by Ed Hare W1RFI and Mike Grubber W1MG. I got a chance to speak briefly with Ed, and he still insists that the pulse packet noise that came from the Commack Branch of the Huntington Library was not BPL. (If not, what was it?) At any rate it is now history thanks to FCC enforcement.

Attendance on the convention floor seemed similar to the Dayton, Orlando and Hudson Conventions that I had attended in the past, despite the large crowd at the banquet. The crowd was mostly old-timers, with relatively few youngsters, who themselves were often relatives of the old-timers. I was pleased to meet Harry Dannals W2HD, former Hudson Division Director who often spoke at our meetings and attended our picnics while working for Sperry in Lake Success. He now lives in Virginia and needs a wheel chair but is as sharp as ever; I was pleased he remembered me and the GARC. We also met recent Hudson Director Frank Fallon, as well as the famous Gordon West KB6NOA and representatives of the W5YI Group. I am still a dues-paying member of QCWA, although there is no longer a Long Island Chapter. I signed in with them and was told that I could start a local chapter if I could get five or more members to join me, but I cannot take on that kind of responsibility. I met with MARS people who also wanted me to rejoin their nets but I declined for similar reasons. I chatted with members of the Japanese Amateur Radio League (JARL) recalling my visit to Tokyo in 1953 and I was given a QSL card by JA0AD.

Always looking for bargains, I bought a Baofeng (Chinese) 5 Watt 2M/70cm dual-band HT for \$49.95 plus tax. Although it speaks audibly in both Chinese and English, programming it is difficult and continues to be a work in progress. On the return trip July 19 we celebrated 100 years of the ARRL, 70 Years of GARC, 50 Years of my ARRL membership, 40 years from the Lunar Landing, and my 81<sup>st</sup> birthday. Karen and Bruce provided several surprises, including presenting me with a birthday cake on the returning ferry, although we couldn't light any candles there. -w2ilp--