CQ de WA2LQO

Sixty Nine Years: 1944 -2013

The official voice of the Grumman Amateur Radio Club

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How I Became a Ham (continued from February 2013)

By Bob Wexelbaum, W2ILP

Synopsis: Last month I told about visiting the ham station of W2NSH, with my classmate Stanley Milgram and how 'NSH had suggested that we should get technical help from W2LTQ and code practice with Johnny, who was a janitor and steam fitter, if we wanted to prepare for ham exams.

Before I visited W2LTQ and Johnny, I have to include a caper that is documented in the book called "The Man Who Shocked the World'' by Thomas Blass. This part of the story was given to Blass by Milgram's brother, Joel Milgram. It mentions me by name (without having asked for permission). Does it have anything to do with Ham Radio? I think that it does because it did leave a lasting impression on me that altered forever my initial naive childhood conception about the "MAGIC of ham radio".

Weather permitting, I would often sit outdoors with Stanley Milgram and Bernard Fried, another honor-classmate, to read "Popular Science" and "Popular Mechanics" magazines, which we had borrowed from the Public Library. I can recall discussing how rockets and jet propelled aircraft could travel in space by the reaction to an internal force, which developed invisible inertia and about how Extra Sensory Perception (ESP) was being seriously studied by Dr. Rhine, who was an academically recognized psychologist, as well as other memorable modern *magical* magazine marvels. Some of the magazine articles were prophetic. Others, like ESP, turned out to be nothing but unrepeatable trivia. It is easy to appreciate that now, 60 years later.

Milgram was amazed by radio receivers. Initially he thought that they had to be plugged into a wall receptacle to get the signal from the power line, but when he saw portable radio receivers at the beach, as well as my crystal sets which required only an antenna and ground connection, that made him understand that invisible radio waves had to be involved. The radio wave concept got us thinking that perhaps ESP worked like radio. Could a person's brain waves be received by the brains of other people who resonated to them? To test this concept out Stanley and Bernard suggested that they would think of a two digit number and I should try to guess what the number was. I did that and I said, "39" and Stan and Bernie gave me the news that I had guessed the exact number 39 that they were thinking of! This test was repeated several times with different numbers and each time I was told that I had guessed the correct number. The guys were laughing and I was getting suspicious. I began to suspect they were kidding me by always saying that I had guessed correctly, no matter what number I guessed. Then we devised what Milgram believed would be a more precise test. Milgram would go home and think of a four digit number and write it down on a piece of paper and lock it into a little metal box that he had for locking up his spare cash. He would think of that number all night, even in his sleep, and would try to dream of the number. Meanwhile I would try to receive his brain waves using only my brain (somewhat like I had been able to receive "magic" radio signals using my crystal sets). I would try to receive the number all night and even try to dream of it, and I would write it down on a piece of paper. The following day I would meet with Milgram, who would unlock his little box and show me the number on his paper. If it was the same as the number on my paper it would be proof that I had ESP! Well.. I went to Milgram's apartment and read the number out loud in his living room, and then he unlocked the box and we compared the papers. The numbers were the same! To Milgram's credit he eventually debriefed me and told me how Joel was hiding under the bed where the box was kept, had listened to the number, wrote it on a paper, and put it into the box using a duplicate key. This made me understand that nothing worked by magic; There had to be a logical explanation for everything. I became a SKEPTIC from the experience!

This was not the only test that Milgram subjected me to. He once planted an envelope in my apartment building hallway. There was a five dollar bill in the envelope and a note saying that it was a tip for the building superintendent. Milgram was there when I found the envelope. He was presenting me with a dilemma. Would I bring the tip to the super?…or would I keep the five bucks for myself? Milgram later showed that it was his own $5 because he held its serial number on a piece of paper for proof. At this point I began to realize that Milgram wasn't really my friend, but rather that he thought of me primarily as a subject for his jokes or experiments. Milgram's parents both ran a bakery store and were constantly busy there. Stan, Joel, and their older sister were on their own with freedom to get involved with stuff that other kids were restricted from. There was another honors-classmate who I'll refer to as J.G. His parents owned a five and ten cent store, similar to Woolworth's or what now might be a Dollar Store. I refer to him as J.G. because he has been a FBI agent and he is still a lobbyist in Washington, D.C. Knowing that I was familiar with electricity, J.G. consulted with me about a war-surplus dynamotor he had bought on Canal Street and wondered why it wouldn't work as a perpetual motion machine. Another one of J.G's projects was an electric chair he had made in his apartment, with his younger brother as unwilling subject. He wanted to know how much voltage his chair needed to torture his brother without killing him. The variable transformer from a toy train set-up did not seem to be getting enough reaction from his brother, even at maximum. This certainly gave Milgram the seeds of the idea for his famous obedience to authority electric chair experiment that made him the "Man Who Shocked the World". I dunno if Tom Blass ever heard about J.G. There are other things that I will tell you about Milgram that Blass ignored. (To be continued).

PRESIDENT'S NOTE by ED GELLENDER, WB2EAV

Recently at work I got regular access to a fantastic piece of portable test equipment – a network analyzer. It is about 16 inches by 16 inches by four inches thick, and is quite impressive. It sells for $12,000 I believe. Anyway, it works up to 2 GHz and of course it covers the 2 Meter band. I used it to run some checks on the troublesome 146.745 MHz Bethpage Repeater.

First I checked the VSWR of the repeater antenna with the "S11" (return loss) function, and found that it was quite good at the allocated frequencies. More interesting is that the off-frequency VSWR never went above 4:1, which is actually a useful figure. Our coax line to the antenna is 120 feet of RG-213, which is supposed to have a 3dB loss at 2 Meters. When an antenna has a very high VSWR (like way-off frequency), the line loss causes the reflected signals to drop 6dB for a worst case VSWR of 4:1. This proves that the cable loss is right where it should be. This brings up a question – How much is it worth to replace the cable with a lower loss type? ...What is a fair price for another dB?

I then checked the repeater duplexer using the "S12" (insertion loss) function. The duplexer isolates the transmitter at 146.745 MHz from the receiver at 146.145 (-600 kHz) so that both can simultaneously use the same antenna without interference. To do so, the antenna is connected to two notch filters: (1) The filter at the transmitter, having a sharp rejection null at the receiver frequency and (2) the filter at the receiver, having a sharp rejection null at the transmit frequency.

By putting a dummy load on the receiver connector, I could see the insertion loss between the transmitter and antenna connectors over a range of frequencies. Then by swapping cables I repeated for the receiver side. I was pleased with what I saw. Both nulls were right on frequency and the desired signal had an insertion loss of 2 dB and the undesired frequency was down by -90 dB. (That portable analyzer is a really nice piece of gear.) I am pleased because -90 dB rejection is good. However, I was hoping for less than 2 dB insertion loss, since this adds right on to the 3 dB cable loss.

Meanwhile we were having issues with the repeater not working properly. Despite the diplexer measured performance, we still get some interference from the transmitter into the receiver. As a test I removed the 100 Watt amp, running barefoot with 10 W. Things got much better, so I am leaving it as-is for now to gather data and see what the next step is.

Ed, WB2EAV

GRUMMAN AMATEUR RADIO CLUB
MINUTES OF GENERAL MEETING 2/21/2013
By Karen, W2ABK

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

TREASURER'S REPORT – Ed, WB2EAV

Finances continue to be in good shape.

REPEATER REPORT – Gordon, KB2UB

We have a strange interference on 145.33.
!46.725 needs looking into.

NET REPORT – Karen, W2ABK

Thursday night net at 8:15 PM on 146.745 MHz had 0 check-ins.
Thursday night net at 8;30 PM on 145.330 MHz had 0 check-ins.
Sunday morning net at 7:30 AM on 7.289 MHz had 4 check-ins but it was difficult to copy Gene.

VE REPORT – Ed, WB2EAV

No applicants applied therefore the February VE Session was cancelled.

OLD BUSINESS

Ed renewed equipment insurance for 2013.

NEW BUSINESS

Jack applied to Marjorie Post Park for field Day 2013.

PROGRAM

We discussed various locations for the Summer Picnic and will pay the new fee for our preferred location at Marjorie Post Park in Massapequa.

GARC NETS: 40 Meters: 7.289 MHz at 7:30 AM EST Sundays
Net Controller: Eugene, W4JMX
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 third 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.

WEBSITE

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 it is about distributions. It is not about the distribution of random noise or the spectral density of some type of signal's RF energy. It is about the distribution of wealth in the USA. It is nonpartisan because it is recognized to be factual by both Democrats and Republicans. I believe that most Americans understand that something must be done about it simply because if nothing is done the distribution of wealth will become more and more inequitable as a function of time.

So here it is as it appeared on QRZ. It shows what Americans think the distribution is, what it ideally should be and what it actually is. When the distribution of 54 trillion dollars becomes distributed to 311 million Americans the distribution graph becomes more vivid. Those who are below the poverty level are off the charts but the multi-billionaires are also off the charts on the far right of the graph.

China is now suffering problems with wealth distribution that we may see in the USA's future if nothing is done to correct gross inequities. China has a much larger population than the US. It has had a larger percentage of people who are below the poverty level because of their Communistic government…BUT in the last decade China has had a rapid conversion to Capitalism which has made a very small percentage of Chinese billionaires who work in private industries making or using private investments. Some of their investments are not doing so well. The Capitalists have built modern apartment buildings with attached modern shopping malls. So far the apartments and shopping malls are empty because no Chinese people can afford to rent or buy them. In short there are not many middle class Chinese. What will the Chinese government do? At present they are loosening up on their one child policy. Their idea is to increase the population of China so that in the future there will be more workers living in poverty to support fewer billionaires…I think…

I would like to see what a graph of the distribution of wealth on Long Island would look like. It might look worse than the national graph

Here is the link:-

http://forums.qrz.com/showthread.php?382263-Anybody-else-see-this

Click on the triangle to start the video. Be sure to turn on your audio to hear the narration.
Be sure to turn on your audio

PUZZLE

Last month I again asked a question from the Amateur Extra Class Exam:-

Which is the only amateur band that does not permit the transmission of phone or image emissions?

A. 160 meters
B. 60 meters
C. 30 meters
D. 17 meters

The correct answer is B.

This month I will again ask a question from the Amateur Extra Class Exam.

What is the effective radiated power of a repeater station, with 200 watts transmitter power output, 4-dB feed line loss, 3.2-dB duplexer loss, 0.8-dB circulator loss and 10-dB antenna gain?

A. 317 watts
B. 2000 watts
C. 126 watts
D. 300 watts

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GARC 2013 Officers

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Newsletter

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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 are given at Briarcliffe College, 1055 Stewart Avenue, Bethpage, NY in room: Long Beach #5. Ham Exams are: Element 2 – Technician, Element 3 - General, Element 4 – Amateur Extra Class. All applicants must pre-register by contacting Ed Gellender WB2EAV. Time and location of exams are subject to change. If there are no applicants VE sessions will be cancelled. The fee for 2013 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.

There was no VE session in February because there were no applicants.

Editorial

I am continuing the story of how I became a ham and I hope that you won't think that I am now getting too far off topic. There were lots of helpful Elmers as well as discouraging critics involved with my early ham radio exam preparation and technical education as well as my introduction to amateur radio's unique international culture. You will see that is all a part of my story if you read the coming newsletters. Stay tuned.

There has not been much activity on the WAG HF or VHF nets lately, but I will continue to attempt to work them whenever possible in the hope that HF conditions improve and 2-Meter repeater problems get solved.

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NETWORK ANALYZERS

Ed's column on page 2 reminded me of something from many years ago when I worked as a technician for a company called General Microwave. All day I worked at a network analyzer work station, assembling and testing PIN diode attenuators for insertion loss and VSWR across the microwave frequencies that they were intended for. They were used anywhere voltage-controlled-attenuation would be required, such as to automatically simulate varying antenna gains or losses in flight simulators. Each was made up of several PIN diodes and several tiny RF choke cores. More often than not a unit would not meet the required spec, and the entire process would have to be repeated with different diodes. The PIN diodes themselves were almost as small as pepper flakes, had to be deftly handled with an air probe, and could easily get blown away by your breath. I think that that job may have been responsible for amplifying my hand tremor, which has grown worse as I have aged. The system was built by Hewlett Packard and consisted of a number of Microwave sweep generators for different bands, using large backward-wave-oscillator (BWO) vacuum tubes. The signal from a selected sweep generator was then fed to a leveler which made the RF output relatively level as it swept across a band. Then the signal went to a flexibly jointed hard arm transmission line which was screwed into to the input of the device being tested. Another such arm connected to the output of the device under test. It went to a VSWR bridge and an RF power meter, as well as an oscilloscope and a Brush recorder/printer that were controlled by the same sawtooth waveform that swept the frequency. Unlike Ed's, this network analyzer filled an entire console. I can still feel the pain of endlessly tightening and loosening coaxial connectors on those hard line arms, which left my fingers blistered and raw….the bane of all Microwave Technicians. –w2ilp-