W2GSA
AUGUST 2019

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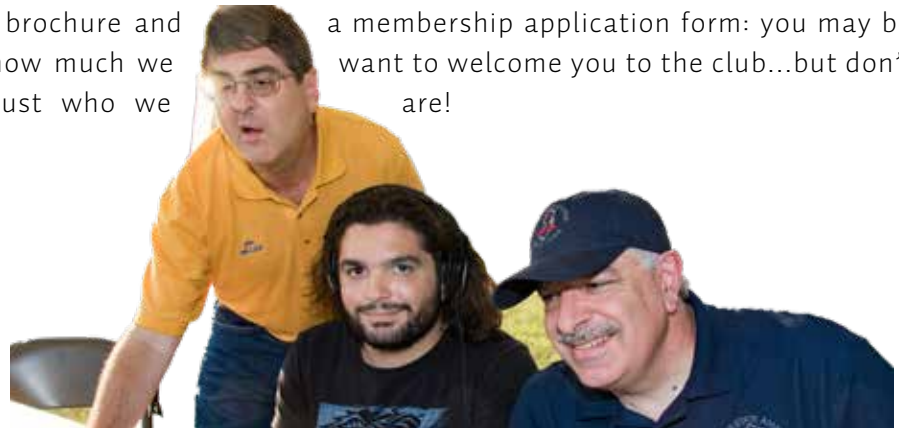
www.gsara.club
www.w2gsa.org

Please visit the club website and feel free to use our open repeater.
(Analog FM) 147.045 +.600 -
(C4FM) Node 43360 PL 67 Hz

THE summer is chugging along and we are off of an incredibly successful Field Day. But that was in June and now it is August. And, with August there are some things to look forward to. Check out Art's column on the next page and see how many events are coming up. And even though it is hot outside from the summer heat, we are awaiting the cooler Autumn temperatures. And they will come. And, with them, the Autumn Hamfest. Look in this month's Propagator for details and sign up to help with this important club fund-raising event. Of course you can go directly to the page to sign up at this link. Or go to www.gsara.club and click on the link in the 'Fall Hamfest Needs Your Help' article to do directly to the sign up sheet.

Whatever your interest in the club, there is something for you. All you have to do it get involved. There are contests that are club-centered even though they may be national contests! The meetings are great opportunities to share an idea or to get a question answered. And, any of the social events are fun and low-stress. Ham Radio is our hobby and we ought to enjoy every bit of it, no matter where our interest lies. The GSARA is the perfect place for that to happen. For us, Ham Radio is always a hobby.

If you are interested in joining us for a meeting, do! We love meeting new people. Interested in joining us for an event? Do! We love welcoming people to be a part of the most dynamic club on the Jersey Shore. But don't be surprised if you are handed a brochure and a membership application form: you may be surprised at how much we want to welcome you to the club...but don't be. That's just who we are!



GARDEN STATE
AMATEUR RADIO ASSOCIATION

HAMFEST

Saturday September 28, 2019
8 a.m. to 12 p.m.

MOESC Parking Lot
100 Tornillo Way (off Shafto Road)
Tinton Falls, NJ 07712

ADMISSION:

VENDORS 7 a.m.

$5 admission fee
first parking space FREE with admission
$10.00 each additional space

BUYERS 8 a.m.

$5.00 admission fee per person

- VE session starts at 11:00AM
- QSL card checking
- Food and hot and cold beverages
- Door prizes
- Talk-in—W2GSA REPEATER: 147.045 + PL 67

GSARA HamFest Sponsors:

KJI Electronics
SERVING AMATEUR RADIO SINCE 1978

CheapHam

Email to: HAMFEST@GardenStateARA.org
http:// www.gsara.club

FROM THE PRESIDENT

ART OLSON, N2AJO

DOG DAYS OF SUMMER

Well looks like summer and August have arrived. I think the beginning of summer has proven the old adage that the dog days of summer are the hot, sultry days. They were historically the period following the helical rising of the star system Sirius, which Greek and Roman astrology connected with heat, drought, sudden thunderstorms, lethargy, fever, mad dogs, and bad luck. They are now taken to be the hottest, most uncomfortable part of summer in the Northern Hemisphere. Welcome to summer.

Club activities

Even though the weather may be on everyone's mind, and a successful Field Day is behind us, we have a few things to look forward to despite the heat:

> ***Even though the weather may be on everyone's mind, and a successful Field Day is behind us, we have a few things to look forward to despite the heat...***

The month of August features the International Lighthouse Lightship weekend on 17-18 August. Plans are underway to participate on Saturday, 17 August at the Sea Girt Lighthouse.

The following month is our annual club Hamfest on September 28. We will be at our usual location MOESC facility. This is the clubs' single event to raise funds that are used to cover operating expenses and events like field day. Hamfest has always been a great opportunity for mingling, trading stories and getting acquainted with hams from other parts of New Jersey and New York. Details can be found for both on the website. http://www.gsara.club and you can sign up to help at this link:

https://docs.google.com/spreadsheets/d/11pdU8b9PWEHdkF0ejoYKvQRJMxv7OYJn7fg4dk2AKds/edit#gid=0

August Contests

Don't forget to check out the numerous contests occurring in the month of August. The latest information can be found at **http://www.arrl.org/files/file/Contest%20Corral/2019/August%202019%20Corral.pdf.**

Here are a few highlights
Aug 3 1800 to Aug 4 0559 1.8-28 North American QSO Party, CW, www.ncjweb.com

Aug 10 1400 to Aug 11 0400 1.8-432 Maryland-DC QSO Party
CW Ph Dig Entry class, county or SPC
www.w3vpr.org/mdcqsoparty

Aug 17 1800 to Aug 18 0559 1.8-28 North American QSO Party, SSB Ph
Name, SPC (if North America)
www.ncjweb.com

Community Awareness and Support

Looking forward, here are some community events we will be asked to support. Please put a mark on your calendar to support these events with details passed on as they become finalized.

- ***Twin Light Bike Tour - September***
- ***Red Bank CROP Walk – October***
- ***JDRF (Juvenile Diabetes) – October***
- ***Boy Scout JOTA – October***

I would like to hear from the membership on your thoughts and ideas. The leadership team works for you the members and together we can continue to move our hobby forward.

Respectfully
Art – N2AJO

OMARC HAMFEST SATURDAY, SEP. 7

The OMARC Hamfest is Saturday, September 7 at the Spring Lake Heights Firehouse at 700 Sixth Avenue in Spring Lake Heights. Doors open for vendors at 7 am and buyers start at 7:30 until about noon. Admission is only $5 with kids 12 and under free. There is a VE test session at 10 am. Food and Drinks will be available as are door prizes. For more information, contact Joe Kruszewski, KC2SVS at 732-618-5328 or joekru1@hotmail.com.

Congratulations Joe and Mike!

Congratulations to Joe, KB2FSH, on being award the very first GSARA 'Nightbird Award.' This award acknowledges Joe's work during Field Day 2019 as he came to the site at 1 AM and operated all the way through 5 AM keeping the site alive all through the night. Congratulations!

And...Congratulations to Mike, N2MEP on being awarded the 'Best Score in Club' for the 2019 13 Colonies contest. Mike worked 42 of the 1 x1 colony special event stations during the contest week. There were more than 10 members of GSARA who participated and all had a good time. This intramural contest will be repeated and we will be sharing the NJ QSO Party intramural contest idea in the coming days.

Congratulations Mike and Joe!

THE APOLLO UNIFIED S BAND SYSTEM

August 7 Programme

Blair Heath

With all the attention being paid this month on the 50th anniversary of Apollo 11, little has been said of the radios used. It is easily imagined that without radio, the words, "Tranquillity Base here; the Eagle has landed," would never have become part of common speech. Television images of Neil Armstrong's first steps on the moon are known by people throughout our planet. But largely unacknowledged, is the fact that without reliable radio, the mission could not have taken place.

On August 7, I'll present, "The Fourth Astronaut: the Apollo Unified S-Band System," a mini-documentary that I made about the communication system that helped make the Apollo missions possible. In this presentation, I'll show the part that hams played in the mission, the New Jersey electronics companies that made many of the system's components, and the importance of the 1950's-era moon bounce experiments made at nearby Camp Evans. I'll outline the way that mission segments provided rationales for the combinations of radios used on the Lunar Excursion and the Command Service Modules. I'll also explain why NASA chose to use both frequency and phase forms of modulation. We'll also see why the astronauts learned CW although none of the three were hams.

We'll review the communication problems experienced during the flight, why they occurred and what the astronauts did to improve gain and reduce signal to noise ratios. We'll also look into steps that the government took to discourage reception of NASA broadcasts, something that an intrepid ham from Louisville, Kentucky achieved nonetheless. Was he arrested or honored for doing so? We'll find out.

Bob Boulle, W2OKM, SK

Sadlly we have to report the death of Robert N. Boulle, 94, of Middletown, NJ, who died on July 17, 2019 at Riverview Medical Center in Red Bank. Robert was interested in radios and electronics from his teen years. He obtained his amateur radio license shortly before Pearl Harbor so his station was shut down shortly after he had gotten on the air. When drafted into the US Army Air Corps in 1943, he served as a radioman on various bombers and transport aircraft in the Pacific theater during WWII. Robert not only served honorably during this time, he was also awarded the Air Medal for Meritorious Achievement in Flight when he and his crew mates landed their transport plane into an unsecured Tokyo shortly following the signing of the surrender.

Robert met his future wife Irene in college. They got married soon thereafter. Robert took a job as the station engineer of a small radio station, WTBO, in Cumberland, MD. Robert then went on to become an Electronics Engineer for the US Army CECOM at Ft. Monmouth in the early 50's and retired from the Fort in 1980.

His favorite hobby was as a Ham radio operator, call-sign W2OKM. Fluent in Morse code, he would contact other hams in all areas of the world by Morse code or voice. For the last several years, he has been on the top of the DXCC Honor Roll with 394 different countries confirmed. Up until the last year of his life, he was on the air every day making contacts regardless of propagation conditions. He was guest speaker at one of our GSARA meetings talking about working DX and showed some of his most interesting QSL cards collected over the years.

Surviving are his two sons, Robert M. Boulle of Tinton Falls, NJ, and John R. Boulle and his wife, Patricia, of Greenfield, NH. Robert was preceded in death by his beloved wife of 69 years, Irene Boulle in 2018.
Burial was at Pleasant View Cemetery, Pleasant Mount, PA.

In lieu of flowers, please consider a contribution in Robert's name to the Alzheimer's Association. For more information or to send condolences please visit www.pflegerfuneralhome.com.

Editor's Note - I first met Bob in early 1990 while attending the first Tuesday of each month luncheon held at the old Howard Johnson's restaurant in Middletown. When the restaurant closed (and was replaced by the Outback Steak House), we moved the monthly luncheon to the Middletown Pancake House. Bob was a regular attendee at this luncheon until his health failed him about a year ago. At that time, the only attendees still alive were Bob and me. Alas, the monthly luncheons are no more but I have many happy memories of attending them for over 25 years. May my dear fiend Bob, W2OKM, Rest in Peace.

I'm so embarrassed!

I forgot to include Marlo's picture in his article from last month. The caption was there but not the picture! Sorry, Marlo! De K2CYS

Pictured is our main Field Day antennas with the three remaining towers of the Deal Test Site in the background. Our repeater antenna is on the furthest tower. A modern cell tower is also in the distance on the right.

EDWIN ARMSTRONG AND FM RADIO

By Bob Buus, W2OD

The first application of frequency modulation (FM) to radio occurred with the arc transmitter invented by Danish engineer Valdemar Poulsen in 1903. The Poulsen arc produced a continuous wave (CW) signal by passing a DC current through two closely spaced electrodes in the presence of a strong magnetic field. Although the Poulsen arc could be and was modulated by the human voice, it could not be used to send Morse code because the arc took too much time to be struck and stabilized. To keep the arc running continuously, the key was used to short out a few turns of the antenna coil (which determined the frequency) and shift the transmitted frequency up by 1 to 5 per cent. If a selective receiver was tuned to the lower mark frequency and could not hear the space frequency (called the compensation wave), the code could be received. The problem with this method of frequency shift keying was that it took up a lot of bandwidth and thus caused interference. As a result, it was banned around 1920 and arc transmitters were keyed by switching the transmitter output to a dummy load during key up and to the antenna during key down.

The next proposed application of FM to radio occurred in the broadcasting boom of the early 1920s when it was proposed that more stations could be crowded into the limited broadcast band by using very small frequency deviations and cramming these narrow band FM stations very close together in frequency.

These hopes were dashed when John Carson, a theoretical mathematician at AT&T, wrote a paper for the IRE in February 1922 that proved that very narrow band FM would not work. His paper concluded, "This type of modulation inherently distorts without any compensating advantages whatsoever." This stopped further experimentation with FM for everyone except Edwin Armstrong who thought that lightning was a AM wave and by going to FM, static crashes could be eliminated. In October 1927, Armstrong presented a paper to the IRE describing an FM system for sending Morse code that he observed worked better than on-off keying of the code although noise was still present. Many in the audience were skeptical of the

enhanced performance of the FM. John Carson, now of Bell Laboratories, did a detailed analysis of Armstrong's circuit and found that Armstrong's use of FM offered no performance improvement. He concluded his April 1928 paper with the statement: "Static, like the poor, will always be with us." Stubbornly, Armstrong plodded on, intuitively convinced that FM should give a noise advantage over AM. Unfortunately, all of Armstrong's experiments were failures – maybe Carson was right.

Then in 1931, Armstrong had an epiphany. What if he moved his transmitter frequency to the "ultras" (frequencies above 30 MHz) where wide bandwidths were available and made large deviations in the frequency (called wide-band FM today)? His experiments with a 50 MHz transmitter showed dramatic improvement in static suppression as long as he put a limiting circuit before his discriminator detector.

By the end of 1933, Armstrong had a complete set of patents covering his wide band FM system. Since his contract with RCA gave RCA the right of first refusal for any of Armstrong's new patents, a meeting was arranged between Armstrong and Sarnoff in December 1933 where the FM system would be demonstrated. All who witnessed the demonstration were astounded. Sarnoff feared that this revolutionary system could be dangerous for RCA. Sales of AM radios were going well and provided most of the income for RCA. Sarnoff feared that FM could kill this cash cow. Furthermore, Sarnoff's vision was that TV would be the next revolution in broadcasting and didn't want FM to upset his long-term plans. However, Sarnoff didn't want to reject the system because he knew that Armstrong would have no trouble selling it to one of his competitors.

To buy time, Sarnoff offered the let Armstrong use the experimental transmitter at the top of the Empire State Building to run further tests of FM. Armstrong set up his latest receiver in Westhampton Beach, Long Island and modified the Empire State building transmitter so it could be switched between AM and FM quite easily. On June 9, 1934 the first FM transmission was made and the results were spectacular! The quality difference between AM and FM was huge. RCA then asked Armstrong to run a test at a much longer distance and suggested setting up the receiver 80 miles away in Haddonfield, NJ, near the RCA Camden plant. The results were even more successful – even Armstrong was surprised and could see that he could multiplex another carrier with different data on the FM signal. Many RCA engineers were enthused and thought RCA should go into FM broadcasting. Armstrong started pushing for a decision from RCA but RCA refused to commit either way.

In July 1935, Armstrong was told to remove his FM equipment from the Empire State Building as RCA wanted to use the facilities for TV experiments. Armstrong filed suit against RCA for preventing him from negotiating with other companies regarding his FM system. The FCC allocated the band of 42 to 50 MHz for experimental FM broadcasting.

Armstrong proceeded to build his own 35 kilowatt FM transmitting station, W2XMN in Alpine, NJ (the tower still

stands). Smaller stations were built throughout the northeast to form the Yankee Network. The broadcast quality was so good that programs could be relayed from one station to the next with negligible loss of fidelity. In July, 1940, GE introduced commercial FM receivers starting at $70 for their FM-only receiver. While testing the receivers coming off the production line, GE discovered the capture effect whereby if two stations on the same frequency are picked up in an FM receiver, the stronger station "captures" the channel and the weaker station is not heard at all.

A group of aficionados interested in High Fidelity reproduction of music pushed for quality improvements in the microphones and loudspeakers being used in the FM system. All was going well until World War II broke out. Armstrong offered his full-time services to aid the military. He turned all of his patents over to the U.S. Government royalty-free. RCA stopped development of TV and signed multi-million dollar contracts for producing military communications equipment.

When the war ended, RCA was ready to launch their TV system. The engineers had convinced Sarnoff that they could use FM for the TV sound without paying royalties to Armstrong because they had "invented" and patented a Ratio Detector to replace the Armstrong limiter and discriminator. It was a renamed copy of Armstrong's circuits. Armstrong filed another lawsuit against RCA.

Worse, RCA had convinced the FCC to grant 72 MHz of the VHF spectrum exclusively for TV and move the FM allocation from 42-50 MHZ to the present 88 to 108 MHz spectrum. This made all of Armstrong's prewar FM systems worthless! And there wasn't much that Armstrong could do about it.

If that wasn't bad enough, many other companies followed RCA's example and ignored Armstrong's 1933 patents knowing that they would expire in 1950. This resulted in more lawsuits by Armstrong. By 1950, there were 23 lawsuits filed by Armstrong against RCA and other companies that were very slowly going through the court system. Legal expenses were slowly driving Armstrong toward bankruptcy. His wife, Marion saw this coming and begged him to try to settle these cases but he stubbornly refused because he knew he was right. She separated from him and Armstrong moved into a 13th floor room in Manhattan's East side.

January 31, 1954 found Armstrong alone in his room. It was the 40th anniversary of that memorable occasion at the Belmar Marconi station where he showed Sarnoff the outstanding performance obtained by his regenerative circuit. That evening, he penned a note to his wife on a yellow legal pad. He then removed the air conditioner from his bedroom window and jumped out. A doorman found Armstrong's dead body dressed in a suit, overcoat, scarf and gloves at 10:30 the next morning on the roof of the three-story River Club adjacent to his apartment tower.

When Sarnoff learned of Armstrong's death, he said "I did not kill Armstrong." Armstrong's lawyers tried to convince his widow, Marion to settle the court cases quickly to stem the haemorrhaging legal expenses. Marion replied, "The best thing you can do for a person who has passed from this world is to carry on in the way he would have wanted." In the next few years, all 23 cases were resolved in favor of Armstrong. Marion became a widow because of the development of FM but she also became a wealthy widow for the same reason. Justice was finally served!

So now you know!

FROM THE EDITOR

BOB BUUS, W2OD

I'm really looking forward to Blair's talk at out August 7 meeting about the Apollo 11 communications system. I was working in communications at that time and vividly remember watching the first moonwalk on TV. What still sticks with me after 50 years was how impressed I was with how clearly we could hear the astronauts talking while walking on the moon. That seemed to impress me more than the actual landing and walking on the moon! Blair's program will tell us how they did it. Don't miss it!

The International Lighthouse Lightship Weekend is August 17 and 18 this year. GSARA will be at the Sea Girt Lighthouse on Saturday to participate in this event. This is not a competitive, cutthroat contest but instead an opportunity to enjoy the beach from the comfort of the shaded porch of the lighthouse while making a few contacts on the radio and enjoying the companionship of fellow GSARA members. Sign up to join us with Marlo, KA2IRQ or Jeff, KZ2G. I hope to see a lot of you there.

It's not too early to start thinking of our upcoming Hamfest on September 28. Running a Hamfest is a lot of work but it is easy if the work is spread among many workers. We have a sign-up sheet on our website. Visit it and decide where you would like to help. It is only through the efforts of many members that our Hamfest can be a success.
Three weeks before our Hamfest, OMARC is holding their Hamfest on Saturday, September 7 at the Spring Lake Heights Firehouse at 700 Sixth Avenue from 7:30 to noon. Many OMARC members attend our Hamfest and I encourage you to support theirs. Who knows, you may pick up the bargain of a lifetime there.

As always, I appreciate feedback or material for The Propagator. The deadline for the September issue is August 15.
73 de Bob, w2od@arrl.net

LIGHTHOUSE WEEKEND

GSARA members will be operating station W2GSA on Saturday, August 17 from 9 am to 2 pm for the International Lighthouse Lightship Weekend. This event was organized by Jeff Lambert, KZ2G and Marlo Montanaro, KA2IRQ. All are welcome to attend and participate at whatever level you want. However, for planning purposes, please notify either of the above planners if you will be attending.

MEETING TIMES

The next GSARA meeting will be on Wednesday, August 7 at 7:30 pm at the Red Cross. This will be a program meeting featuring our own Blair Hearth, KD2EPA who will talk about the communications system used on the Apollo moon program 50 years ago. Don't miss this fascinating talk. Guests are welcome and light refreshments will be served.

The next meeting in August will be held on Wednesday, August 21 at 7:30 PM at the Red Cross. This will be a regular business meeting and will include a review of our Sea Girt lighthouse operation. Be there! Guests are always welcome and refreshments will be served.

VE SESSION

The GSARA monthly test session will be held at the Red Cross Regional Headquarters in Tinton Falls on Saturday, August 24 at 11 am. The fee is $15 and you should bring the original and a copy of any amateur license presently held and the original and one copy of any credit (CSCE) forms that you have (copies will be sent in with your test results). Also bring 2 forms of ID with one being a photo ID. For more information, contact Rich Bilon, N3RB at 732-567-4396 or n3rb@arrl.net.

Get your ham radio license this month!

ANTENNA AND TOWER SAFETY

By Marlo Montanaro, KA2IRQ

Much has been written about antenna and tower safety, but I guess accidents still happen. Sadly, on June 14, 2019, 62-year old Leland L. "Lee" Parsons, III, N3LPJ was killed when his tower installation project went wrong. Evidently, he was attempting to attach a guy wire to the bottom section of the tower when the whole thing fell over. Lee was an experienced tower climber.

This is a stark reminder that antennas, and especially towers, can be very dangerous, even to people who are very experienced around them. Every year radio amateurs are killed or injured in tower and antenna mishaps. Here are some tips to get you started thinking about safety around this common ham radio hardware:

However tall your tower or antenna is, double that height. This is the "safe radius" around which there should be no power lines that the structure can fall on.

Install no structure without proper instructions from the manufacturer, proper permits from the town, and at least a design review by a qualified engineer.

Towers that can be purchased for the cost of "taking it down and hauling it away" are a bad idea... If it was too unwieldy to safely bring down by the original owner, there's a good chance it was not maintained properly in the last few years and will be a very dangerous climb. At a MINIMUM, have the tower inspected by a qualified engineer and tower company before climbing to remove old antennas and bring the structure down safely.

When climbing any tower, make sure you have new safety harnesses, or at least harnesses that YOU purchased new and are still in good to excellent shape. When in doubt, throw it out... buy a new harness. The life you save will be your own. NEVER purchase a used climbing harness or belt. EVER. You just don't know its history. Good climbing harnesses can be $1000. What is your life worth to you?

When climbing a tower, you should always have two attachment points to the structure. As you move, one or the other is ALWAYS attached. Remember, climbing is slow, but dying is fast. You will not get a second chance to realize you were completely unconnected from the tower. Take your time.

Never climb alone. EVER.

Tower climbs should be planned out, even rehearsed. As modest as it was, the 30-foot crank-up pole that GSARA used for Field Day was assembled at least three times before the day of the event. The structure was measured and drawn out on paper. Guy wires were calculated and planned out, then pre-cut. When we assembled it the first time, we discovered that the lower guy wires were just too flimsy to support the mass of the pole. So we went with stronger straps instead- it made all the difference. We had several strong gusts of wind on Field Day that nearly took down the tents, but the pole barely moved in the wind. That's the result of planning!

Don't forget about your wire antenna structures! Dipoles need two. They need to be planned out the same way a major tower installation is planned. Can it come down? On who? Are power lines far enough away?

If you install a tower, you should have your insurance company reassess your liability and risk. Make sure you are adequately insured. Hiding the fact that you have this structure on your property from your insurance company is asking for legal and financial trouble in the future.

Anything that is guyed should follow the 80% rule... the guy wire should be anchored 80% of the height away from the base of the tower or antenna. So if a guy wire is 30-feet up the tower or pole, it needs to be anchored in the ground at LEAST 24-feet away from the base. I prefer the 100% rule- which gives you a 45-degree angle between the guy and the tower. A guy wire that is too close to the structure will only serve to compress the structure and provide less than optimum support should the tower lean... in fact, it may even help to pull it down!

Towers and antennas have surface area. Find out yours. The pressure exerted on a structure due to wind loading goes up by the square of the wind velocity. Yeah, that's engineer-speak for it goes up fast! Wind at 20 MPH cre-

ates four times the pressure of wind at 10 MPH. The pressure is part of the calculation of the force on your tower, guy wires, or antenna. It is downright scary how much force your guy wires must hold in a storm. (If you have a tower, in concrete, don't cheap-out on the concrete or the guy anchors!) Guy wires should be rated at least double the force they must hold. Too much to figure out? Good- hire a qualified engineer.

While you have that engineer, have him do a professional CAD drawing of the tower, the base, and the rebar in the base. It will serve as documentation that the tower is installed correctly when, years from now, the town or a neighbor challenges the tower's safety and is also something you can provide to your insurance company to show you have a professional installation.

Consider others. If the structure comes down, and your kids are playing in the yard... For that matter, if you have a tower, have you done something to prevent kids from climbing it? There are safety systems that can be attached near the base of a tower to prevent climbing by unauthorized people.

Check guy wires and structures every few months for wear, fraying, rusting, stretching, bending, loosening, etc. Follow the manufacturer's guidelines for maintenance and when in doubt, replace. Have structural elements replaced by a qualified tower maintenance company. Once the tower is up, with antennas, it is much more dangerous to replace guy wires than when nothing was on it.

Let's not forget electrical safety... is the system protected from lightning? Two myths we can dispel right now...

Lightning does strike the same place twice.

An antenna system CAN survive a direct strike.

Cell towers and broadcast towers are hit by lightning multiple times during their life. Sometimes they don't even drop a phone call. It is amazing what can be accomplished when you understand how lightning works and engineer the correct lightning protection system.

Know your high voltage points. Exposed dipole ends, the point opposite the feed of a loop antenna, these are high voltage points. They need to be kept far enough away that people and pets cannot come in contact with them while you are transmitting. Remember- even running low power can generate high voltages!

Do an antenna assessment- it is required as part of FCC regulations. It will tell you if the power you are running into your antenna is creating dangerous RF exposure to you, your family, or your neighbors. The written assessment needs to be done any time something changes (including feed line) and it should be included in your system documentation.

The cost of your tower is more than just the hardware. An engineering assessment, printed plans customized for your installation, insurance, regular maintenance, etc. If you can't afford all the extras, you can't afford the tower. Make sure you know these costs before you purchase anything, otherwise you will wind up with an unsafe installation years from now and you will invariably wind up begging for someone to take the hardware down and haul it away "for free."

Remember: you are NOT Wile E. Coyote... if you fall off the tower, you will not have time to hold up a sign that says... "Uh Oh!"

Done correctly, a tower or sophisticated antenna system can be a fun and worthwhile addition to any ham shack. Just remember to do it safely so it is there for years of enjoyment!

73, Marlo Montanaro, KA2IRQ

Bulletin Board

ARES/RACES NET

Did you know that there is an ARES/RACES net on the W2GSA repeater on the first and third Mondays of each month at 8 PM local time? You don't have to be a member of ARES or RACES to check into the net. We all should be comfortable with checking into a formal net as we never know when we might be called upon to help with communications in an emergency. All are welcome. Check it out!

GSARA Swag

GSARA Patches

We have GSARA patches available at all meetings and they are $3. Show your GSARA pride!

GSARA Hats and Shirts

Cost is $21 for Hats and $25 for Shirts, in your choice of Blue or Stone color.
To place your order, send Art artgold@verizon.net an email with your name, call sign, size (for shirts) and color. Payment will be due when hats and shirts are delivered.

Blue Swan Lunches

A number of local radio amateurs meet each Friday at the Blue Swan Diner on Highway 35 south in Ocean Township at noon. Anyone interested in amateur radio is welcome to join us in the back left corner of the diner.

The GSARA Propagator is designed in
InDesign CC 2019
Editor: Bob Buus, W2OD
Layout: Cy Stanway, K2CYS

You are invited to submit articles and ideas

Tuesday Net Report

In the five sessions in July, we had 74 check-ins for an average of 14.8 per session. The following 25 members checked into this net (number of check-ins in parenthesis): K2MFS (5), W2OD (5), KD2PYO (5), WB2RPW (5), N2MEP (4), W2MJP (4), K2NPT (4), KD2OXR (4), N2AJO (3), KA2F (3), KZ2G (3), N2HGI (3), AD7I (3), W2NAZ (3), KC2YNL (3), N2BCS (2), N2BMK (2), KD2EPA (2), N2FSB (2), NA2J (2), AC2MB (2), K2RLF (2), K2CYS (1), KD2NAD (1), and KG2NV (1).

Mark your calendar so you remember to participate. The more participation, the more fun!

Trying the Digital Modes

If anyone is looking for help with getting operational with digital modes (FT-8, PSK-31, Olivia, RTTY, etc.) please feel free to call on Paul, AD7I, if you would like some assistance. The best way to reach Paul is via email, ad7i@ad7i.net

Do you have a picture of your much younger self (25+ years ago) in your shack. Send it to Cy, K2CYS at k2cys@arrl.net and share that picture with the club!

Club Benefits

W2GSA CLUB NET

The GSARA weekly net meets each Tuesday evening at 8:30 on the GSARA repeater. Everyone is welcome to hear news of upcoming club events and activities, reports of the latest club news and everyone can share what they have been up to. Please join us. The more participation, the more fun!

QSL BUREAU

If any GSARA members wish to combine their QSL cards that are going through the outgoing ARRL Bureau, please bring them to the next GSARA meeting along with the label from a recent QST Magazine (you must be an ARRL member to participate in this program). Either John, KA2F or Len, WA1PCY will then send them on to ARRL at no charge to GSARA members. It couldn't be much easier than that to QSL. You are registered at the W2 incoming bureau, aren't you?

GSARA.CLUB/W2GSA.ORG

Have you seen the GSARA website lately at https://www.gsara.club/? Check it out often for updates, news, announcements and general club information. If you have not yet done so, send us a picture of your shack and a selfie for the Members; Shacks and Our Members page. There is a Members Only Page which will contain important links viewable by GSARA members only including the most current roster and the previous month's minutes from the meeting. Send your selfies to Cy, K2CYS at k2cys@arrl.org. Do you have any other great ideas for the site? Let Cy know.

The Latest Episode of ARRL Audio News is Available

07/26/2019

Listen to the new episode of ARRL Audio News on your iOS or Android podcast app, or online at http://www.blubrry.com/arrlaudionews/. Audio News is also retransmitted on a number of FM repeaters. Click here and then scroll down to see the list.

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From the Archives

FIVE YEARS AGO

From the August 2014 Propagator: GSARA member Jim McEowen became a silent key at age 81. Jeff Harshman, N2LXM was made president of OMARC. We had an outstanding Field Day running 3F with 4952 QSO points (80% on CW) and 940 bonus points for a total of 5862. Participation by 34 members paid off handsomely. John King, KA2F suggested to the ARRL that an amateur radio grave medallion be designed and available for the graves of silent keys.

TEN YEARS AGO

From the August 2009 Propagator: Aaron Pingitore, KC2RRP and Michael Pingitore, KC2VIN joined GSARA. They are the sons of Don Pingitore, KG2NV. The August program meeting will feature Dave Burgess, WA2TVS and his wife Margaret, KB2BRR who will talk about the battleship New Jersey. Walter Cronkite, KB2GSD became a silent key at age 92. W1AW is replacing its AMTOR transmissions with PSK31 and its ASCII transmissions with MFSK16.

FIFTEEN YEARS AGO

From the August 2004 Propagator: Two famous amateurs became silent keys. They were Marlon Brando (actually Brandeaux), KE6PZH/FO8GJ on July 1 at the age of 80 and John Kraus, W8JK (of antenna fame) on July 18 at the age of 94. The ARRL Board recommended adopting Winlink 2000 as an emergency communications network. A BPL trial in Iowa was cut short due to interference problems to local radio amateurs.

TWENTY YEARS AGO

From the August 1999 Propagator: Early GSARA member Sam Yatter, W2ENM died on July 18 at the age of 89. Phil Petersen, W2DME moved from Middletown to Seabrook Village. The FCC Universal Licensing System (ULS) goes in effect for amateurs on August 16. The venerable 610 form is being replaced by form 605.

TWENTY-FIVE YEARS AGO

From the August, 1994 Propagator: Ham Radio Outlet (HRO) has opened a new store in Wilmington, Delaware. The Shore Area Hamfest is coming on October 9 and will be held at Brookdale College for the first time.

THIRTY YEARS AGO

I have no Propagator in my file from August 1989. If anyone has it, I would appreciate obtaining a copy – Ed.

NOTES ON CALENDAR (see next page)

Large Call letters denote birthdays e.g. **KC2FZG** on August 11. All times are in EDST. Contests are listed in the August QST, p. 84.

August 1 – **Holiday City ARC Meeting** at 7 pm at Holiday City South Clubhouse in Toms River.

August 2 and every Friday – **Lunch at the Blue Swan Diner** in Ocean at noon. Table at back left.

August 2-4 – **10-10 Summer SSB Contest** from 8:01 pm Friday to 7:59 pm Sunday. See http://www.ten-ten.org

August 3 – **OMARC Meeting** at 9:00 am at the Firehouse on 600 Sixth Ave. in Spring Lake Heights. Guests are always welcome.

August 3-4 – **North American QSO Party, CW** from 2 pm Sat. to 1:59 am Sunday. See http://www.ncjweb.com

August 5 - **Monmouth County ARES/RACES Net** meets on 147.045 +600, PL=67.0 at 8:00 pm

August 6 – **Old Barney VE Test Session** at 6:30 pm in Manahawkin. Contact Urb Le Jeune, W1UL at 609-296-5856 or urb@w2dec.com

August 6 – **Old Barney ARC Meeting** at 7:30 pm in Manahawkin, NJ. See http://www.obarc.org

August 6 and every following Tuesday – **GSARA Net** on 147.045 PL=67 at 8:30 pm.

August 6 and every following Tuesday – **QCWA News Net** on 147.045 PL=67 at 9:00 pm.

August 7 – **GSARA Program Meeting** at the Red Cross at 7:30 pm. The program will feature Blair Hearth, KD2EPA talking about the communications system used on the Apollo moon program 50 years ago and the role played by amateurs. Don't miss this interesting talk. Light refreshments will be served.

August 7 - **W1AW Qualifying Run** at 10 pm (10-40 wpm). See August 2019 QST page 98 and www.arrl.org/qualifying-run-schedule

August 8 – **JSARS meeting** in Riverwood Park Rec. Building, Rt. 527 and Riverwood Drive at 7:30 pm.

August 14 – **Holiday City VE Session** at 7 pm in Toms River. Contact is Larry Puccio, K2QDY at 732-349-2950 or e-mail at lpuccio1@comcast.net

August 15 – **JSARS VE Test Session** at 7:00 pm Riverview Park Recreation Bldg., Rt. 527 and Riverwood Drive in Toms River. Contact Ed Genoino, WA2NDA at 609-971-2792 or wa2nda@comcast.net.

August 16-18 – **International Lighthouse Lightship Weekend** from 8:01 pm Friday to 8 pm Sunday. See https://illw.net/. Note that GSARA will be at the Sea Girt Lighthouse on Saturday from 9 am to 2 pm.

August 17-18 - **North American QSO Party, SSB** from 2 pm Sat. to 1:59 am Sunday. See http://www.ncjweb.com

August 18 – **Rookie Roundup, RTTY** from 2 pm to 7:59 pm. See http://www.arrl.org/rookie-roundup

August 19 - **Monmouth County ARES/RACES Net** meets on 147.045 +600, PL=67.0 at 8:00 pm

August 21 – **GSARA Meeting** at 7:30 pm at the Red Cross in Tinton Falls. Regular business meeting. Refreshments will be served.

August 22 – **W1AW Qualifying Run** at 4 pm (10-40 wpm). See August 2019 QST page 98 and http://www.arrl.org/qualifying-run-schedule

August 24 – **GSARA VE Test Session** at 11 am at the Red Cross in Tinton Falls. See page 1.

August 24-25 – **Hawaii QSO Party,** all modes from midnight Friday to midnight Sunday. See http://www.hawaiiqsoparty.org

August 24 – **W/VE Islands QSO Party,** all modes from 8 am to 11 pm. See http://usislands.org

AUGUST 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 HCARC Mtg	2 Blue Swan lunch	3 OMARC Mtg. NA QSO CW
4 NA QSO CW	5 ARES/RACES 8 pm	6 Old Barney GSARA Net 8:30 QCWA News 9 PM	7 GSARA Mtg CW Qual. Run	8 JSARS Mtg	9 Blue Swan lunch	10
11 KC2FZG	12	13 Old Barney GSARA Net 8:30 QCWA News 9 PM	14 K3ZZZ Hol. City VE	15 JSARS VE	16 Blue Swan lunch ILLW	17 K2EI NA QSO SSB ILLW
18 NA QSO SSB Rookie Ronndup RTTY ILLW	19 KD2LPN ARES/RACES 8 pm	20 CW Qual. Run Old Barney GSARA Net 8:30 QCWA News 9 PM	21 GSARA Mtg	22 AC2MB CW Qual. Run	23 NA2J Blue Swan lunch	24 K2CYS GSARA VE Hawaii QSO W/VE Islands
25 Hawaii QSO	26	27 GSARA Net 8:30 QCWA News 9 PM	28	29	30 KC2SSU Blue Swan lunch	31

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First Class