

*North Fulton
Amateur Radio League
NFARL eNEWS*

May 2020

*Over 40 Years Promoting
Service | Friendship | Education | Fun*

www.nfarl.org



President's Corner / John Norris, N4IHV

I am sure that everyone, just like me, thought that the Covid-19 Virus lock down would be over by now. Little did any of us know how much our patience would be tested. There have been some benefits that I had not anticipated. Hams like new adventures in technical communications and we have been exposed to one that has been fascinating named Zoom.

When I first heard of this process I wondered how well it would work. It has been a very good experience and has given all of us a new avenue of communication. We have had to fellowship in a totally different way. It has allowed Hams from across the country to participate in our meetings. This spreads a very positive message about NFARL in many other areas. Good things can come out of difficult situations.

We have had the privilege of hearing from many presenters on Zoom and it surely has had our undivided attention. Every person is up close and personal and this gives us a new perspective of our members and presenters. It appears now that we will be utilizing Zoom again for our June meeting. I guess we will have to give a grand prize for in person meeting attendance when all returns to normal. Hams are innovators and survivors. We will build and talk our way to the finish line.

Little did I know how this more than pesky little virus would add a ton of challenges to my tenure as president of this club. Fortunately, many members have stepped up to help me make the adjustments to keep this club at its premier level.

Have a wonderful month of successful completions in knowledge, antenna building, DX'ing, and soldering.

Thanks for being a part of our dynamic club.

John Norris, President

Name This Ham

How well do you know your fellow members of NFARL?

Wow! Is this ham *singing* his on air response to you as he's surveying the water surrounding his radio station? Well, the good news is that he has a wonderfully melodic voice. The better news is that this ham is a long time member of NFARL.

This ham has lived north Fulton County, specifically in Alpharetta, nearly all of his life. He graduated from North Fulton High School and Georgia State College (now GA State University). With his degree in Marketing, he went to work as a Manufacturer's Rep selling two way radio communications equipment. Despite his knowledge of the technical aspects and attributes of the equipment he was selling, he didn't become a ham until he retired from that profession, when, he says "he had time to do it."

This ham did not stay retired. Living in Alpharetta, he noticed that there were no city parks in the area, only a few county ones, so he ran for City Council on a 'parks and recreation' platform. He served 16 years on the Council and helped develop 3 big parks in Alpharetta and several smaller 'pocket parks.'

Not surprisingly, this ham friend of ours states that his main interest in ham radio is meeting and talking (and singing?) with people in person and on the air. He enjoys interacting with club members at various activities. He is actively involved in NFARES and is our ARES Liaison.

Normally, you wouldn't want to be in a position of having your radio equipment surrounded by water but this is a common occurrence for this ham. For the last couple of years, this ham has been highly involved in the US Islands Award program where he gets to combine two favorite activities of his – ham radio and boating. He also enjoys that he gets to share these interests and activities with his good friend W4YBV and others who drop by to join them.

Who is this great member of NFARL whose name is on a plaque in the lobby of the Alpharetta Adult Activity Center, where we usually have our club meetings? Confirm your answer on page 9 of this newsletter.

My Choice of Rig / Jim Kauffman, W4IU

As with most new hams, I started my collection of radios with a hand-held transceiver (HT). ICOM had recently released the IC-W2A, dual-band HT that ushered me into the wonderful world of amateur radio back in 1991. It took me a while to figure out how to make use of all the bells and whistles, but eventually, I became proficient with my 2m/70cm radio. I soon realized, though, that there was more to amateur radio than VHF and UHF FM frequencies.

My next rig was a 25 watts Radio Shack HTX-100, which was more than enough power given that solar cycle 22 was at its peak. I built a copper pipe horizontal dipole antenna that I placed above my single-story dwelling located in Bremerton, Washington. That simple combination introduced me to the fantastic world of DX. One memorable contact a New Zealand Station - ZK1AT, on North Cook Island. That contact turned out to be a whopping 7,000-mile QSO on 10m at 25 watts of power! Wow, after that contact, I was hooked on the magic of radio.

The enchantment of DX contacts propelled me to upgrade my license. The ARRL License study guides helped me earn an Advanced Class Ticket. That feat necessitat-

(Continued on page 8)

My Choice of Rig (continued)

ed an upgraded rig. It so happened that I came across a pair of radios, a dedicated 10 watt, 6m rig (ICOM IC-551), and an IC-701, which covered 160m through 10m and delivered 100 watts of power. Now I was cooking with gas!

After transferring to San Diego, my next rig was a Kenwood TS-690 that replaced the IC-551 and IC-701 in one excellent package. It had 50 watts of output on a dedicated 6m antenna jack in addition to 100 watts on HF through a separate jack. That radio and a G5RV antenna helped me appreciate the magic band (6m). In addition to a boat-load of US and Canadian stations, I worked Cayman Island - ZF1DC, Costa Rica - TE8DX, and Hawaii - NH6ZE.

Concurrent with the TS-690S, I owned an IC-275A, 25 watts, 2m all-mode transceiver. It introduced me to another fascinating aspect of amateur radio, VHF SSB. With that rig, I worked numerous stateside and Canadian stations, including a Hawaiian stations KH6HME on 2m SSB and NH6YH on 2m FM, both at 50 watts!

Unfortunately, the magic smoke somehow got out of the Kenwood TS-690 enclosure, and it was no more. By now, my radio wants were pretty much defined. I wanted something that had the versatility to do everything that I had done with my previous rigs and more. It had to be able to cover HF, VHF, and UHF, and maybe 1.2 GHz bands. In addition to the capability, I found that I had a 'feel' for the programming style associated with ICOM radios. So, with that in mind, I looked at the specs related to the ICOM IC-9100.

I must admit the radio has more features than what I know what to do with, but I'm having lots of fun learning what they do and how to use them all. A key feature I was looking for when I purchased this rig was the ability to support satellite communications. In addition to satellite communications, I also wanted to be able to participate in VHF/UHF SSB/FM simplex activities.

I'm pretty happy with this rig. It does everything I wanted it to do. There are radios with better performance specs, but for all-around radio activities and its cost, it fits the bill nicely. What I have found challenging is the interface between the radio and my computer, but I think that has more to do with me than the radio. My biggest problem is finding time to get on the radio!

73, Jim W4IU

Proposed Bylaws Revisions —IMPORTANT

Our Board has revised the NFARL bylaws. They are posted [here](#) for a 30 day review period that begins **5/7/2020**. After the review period, club members will be asked to approve them. Please take a few minutes to review them and be prepared to make an informed vote.

Antenna Polarization— What do you know about yours?

Polarization of antennas is important to all Amateur Radio Operators. A better understanding of polarization will produce better results in your communications. The following will give you a basic understanding of Antenna Polarization and why it matters.

There are three major properties that have an effect on antennas. These are:

- Impedance,
- Radiation pattern,
- Polarization. (This discussion will be on polarization)

Polarization comes in different forms. Horizontal, vertical, circular (right hand and left hand), and elliptical. I am only going to discuss the vertical and horizontal polarization in this article. Vertical and horizontal polarization are considered to be linear. A simple way to understand polarization is to think about polarized sunglasses. If you hold the lens up to the light, the light gets brighter and dimmer as you rotate the lens. The lens is allowing more or less reflective light through. Think of this as radio waves and antenna orientation. See the attached example of polarization types.

An example of horizontal polarization is a dipole mounted above and parallel to the earth. It will have its maximum electric field perpendicular to the wire and horizontal to the ground. This means it is horizontally polarized. A horizontally mounted dipole does have both horizontal and vertical components. The vertical portion comes at the end of the wire and has much less effect. The end points on the antenna are not considered a major factor in polarization. A horizontally polarized antenna performs with the signals bouncing off the ionosphere. The horizontal polarization performs best in long distance communications only when it gets a good bounce off the ionosphere and is usually better at shorter distances.

A vertically polarized antenna is mounted perpendicularly to the earth. A vertically polarized antenna's radio waves travel across the curvature of the earth and its signals radiate in all directions at a lower incidence angle. The radiation pattern looks like a doughnut lying flat. The signal can travel a considerable distance across the ground with minimal attenuation. It works better than a horizontal antenna for close in communications and works very well for DX. Vertical antennas are used in mobile applications because they radiate in all directions at lower incidence angles and that is why mobile antennas (can be made smaller) are typically vertically polarized.

Horizontal and vertical antennas have differing angles of maximum radiation. Typically vertical antennas have stronger radiation at lower angles of incidence to the ionosphere than horizontal antennas.

Both horizontal and vertically polarized antennas are affected by obstructions near the ground or in the ionosphere which can vary the polarization. When a station with a vertically polarized antenna is communicating with a station having a horizontally polarized antenna the results are similar to polarized sunglasses. They are not as efficient as both antennas having the same polarization. You will still receive a signal, however; it will not have the best strength.

The actual comparisons mathematically are a lot more involved and this is a simplistic explanation of polarization.

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Antenna Polarization (continued)

A good document to review about antenna patterns was written by L.B. Cebik, W4RNL. It can be found at www.antentop.org/w4rnl.001/p.html.

In conclusion one can readily see the difference polarization makes with antennas. There are many other factors that affect the polarization of antennas and what I have described are the basics. The best way to determine what is best for you is to use different antennas at your station and determine what is best for your distinct location. Try as many as you can and have fun in the process.

Thanks for reading,

John Norris, N4IHV, NFARL President

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Types of Polarization

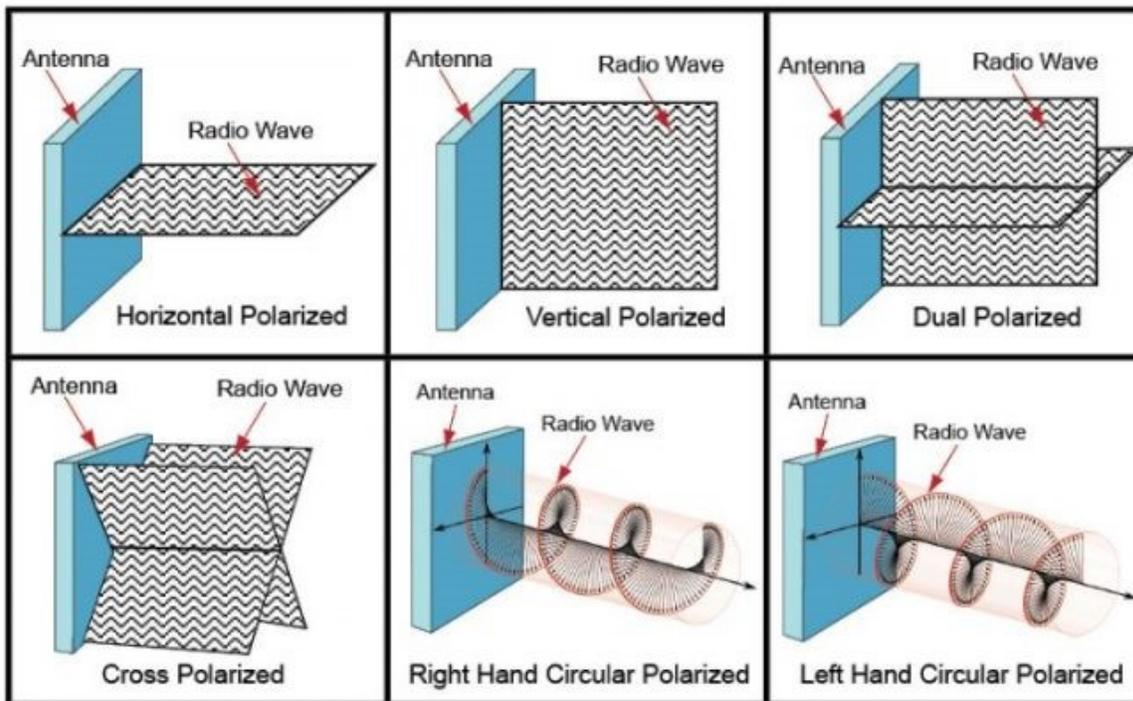


Figure 1: Antenna Polarization (McNeil, 2018)

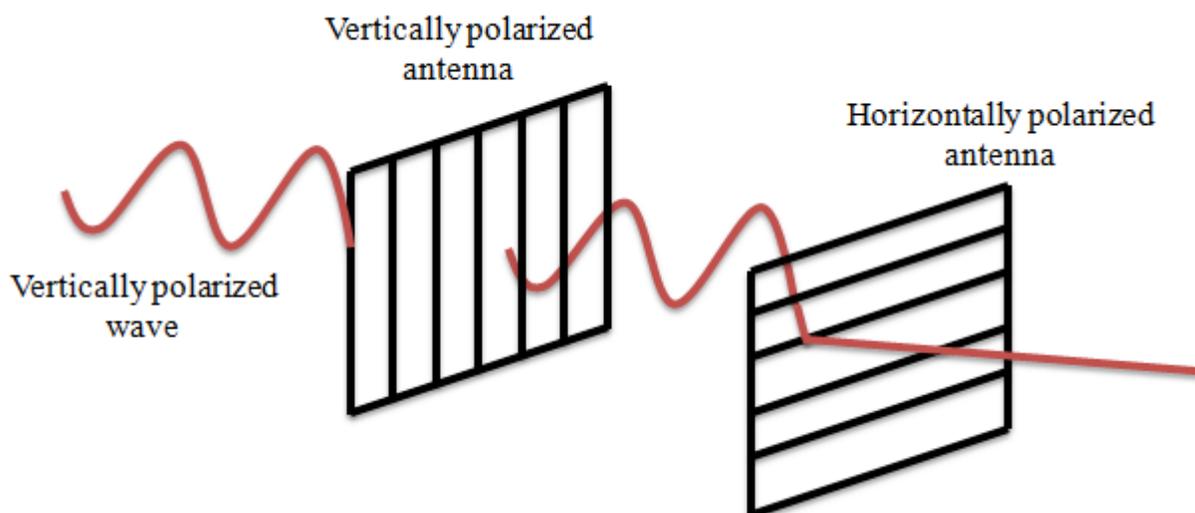


Figure 2: Polarization Filters (Henderson, 1996)

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Antenna Polarization (continued)

These patterns of a dipole are known as Horizontal pattern and Vertical pattern respectively.

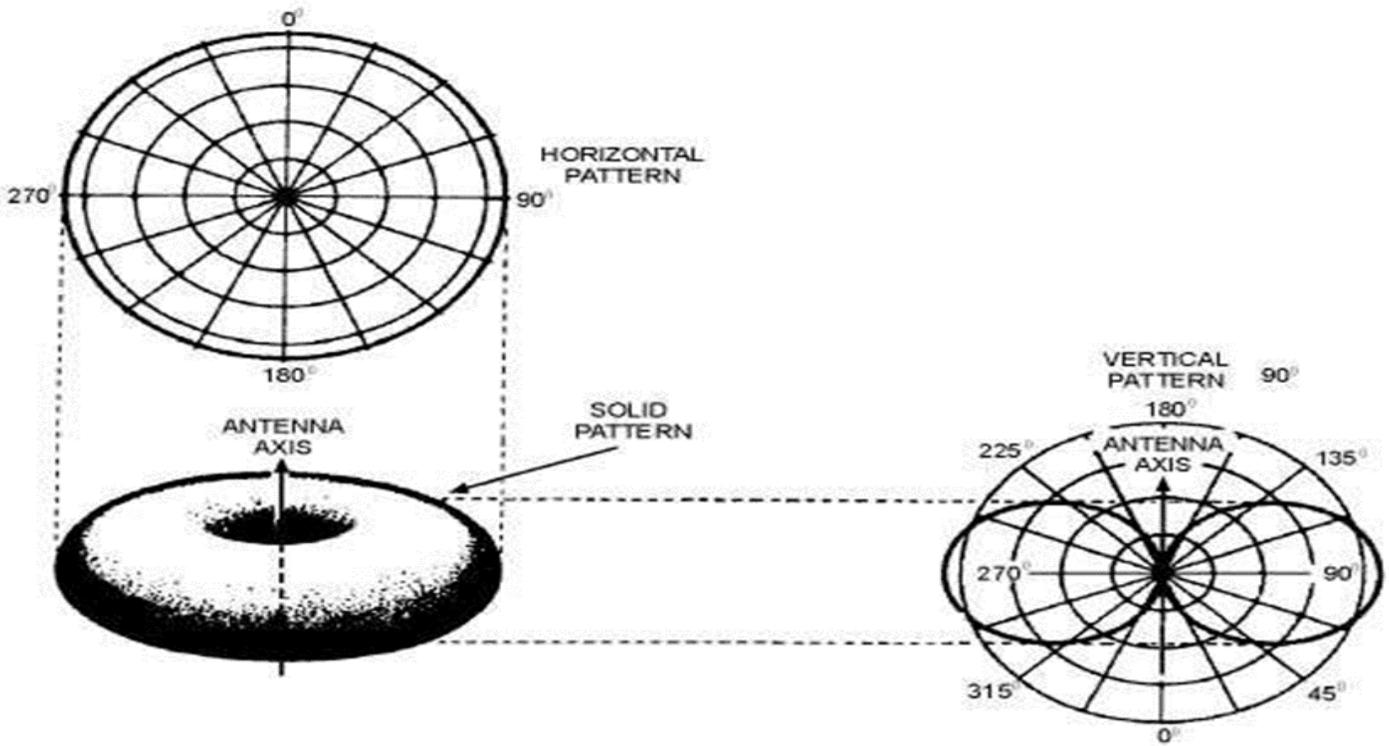


Figure 3: Radiation Pattern of Dipole – Radiation Patterns-185.htm

The verticals, despite their lower maximum gains, act as natural filters, being less sensitive by at least 2 S-units to high-angle radiation.

Elevation patterns for 3 antennas

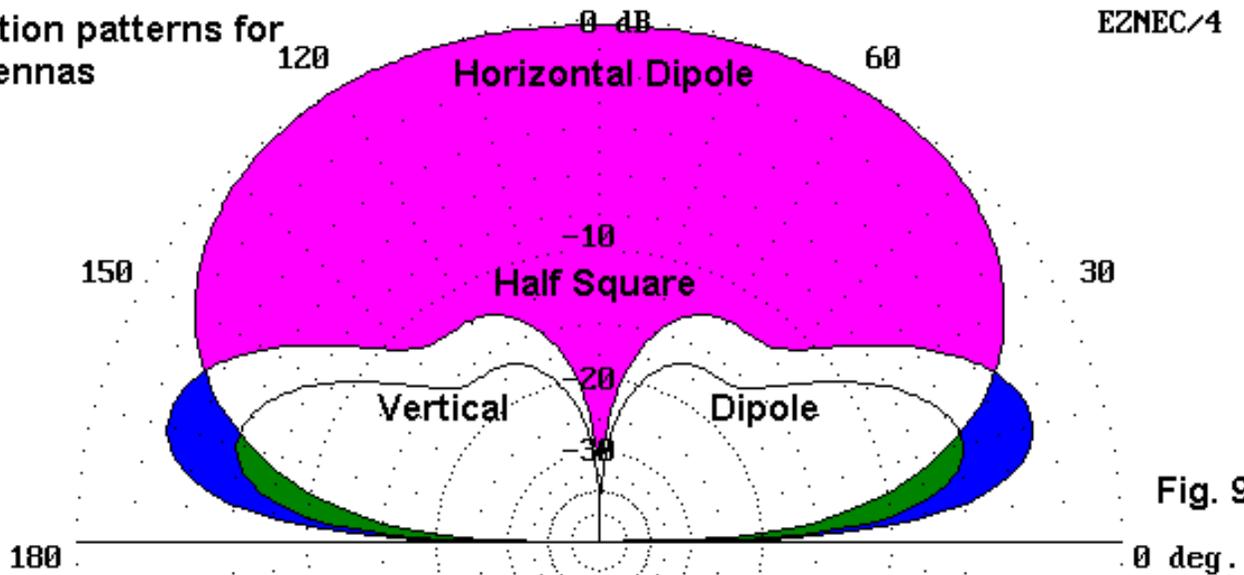


Figure 4: Elevation Patterns for 3 Antenna, w4rnl.001/gup8.htm

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Antenna Polarization(continued)

Radiation Pattern of a dipole. Arrows represent the direction of radiation.

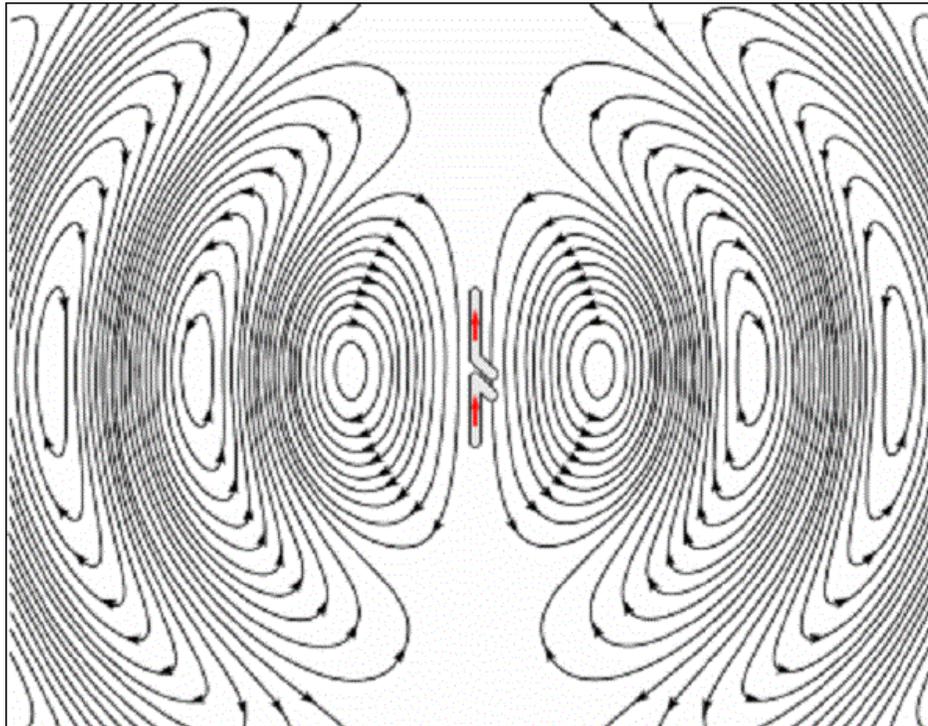


Figure 5: Radiation Pattern of a dipole – Antenna Theory, Tutorialspoint, 2006

Included as basic information (calculating antenna length)

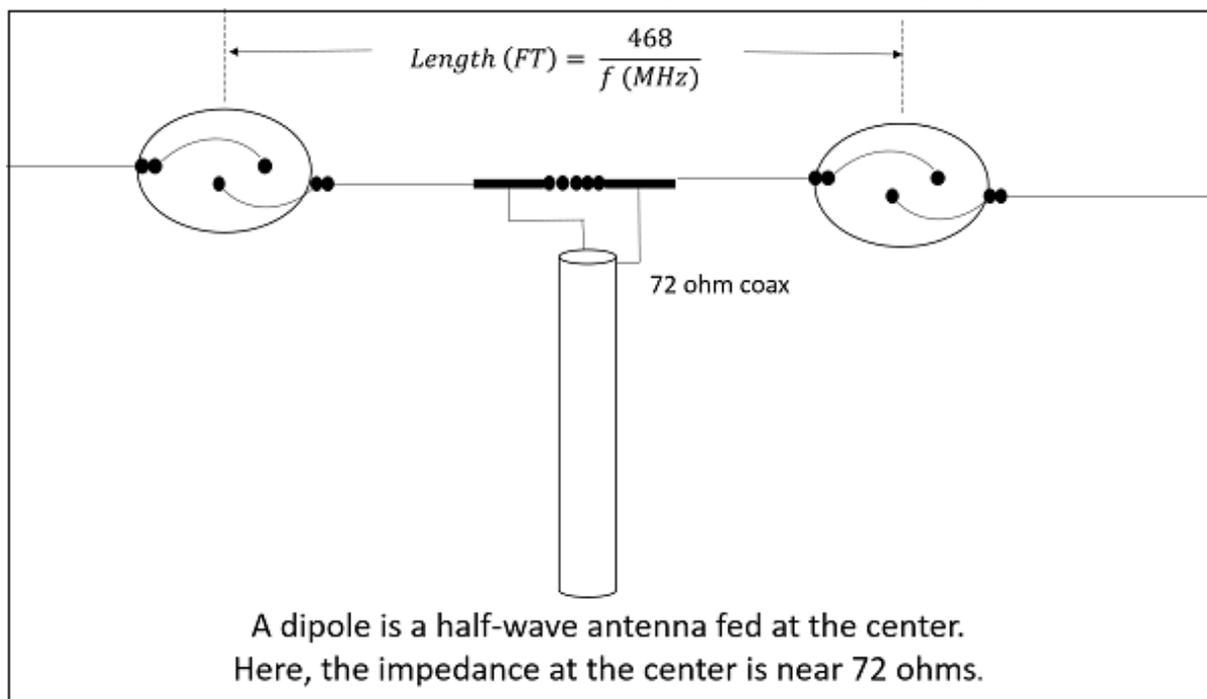


Figure 6: Half Wave Dipole --ARRL Antenna Handbook

STRAY/ (August 1971 QST)

Did you know that—

3.5 MHz is not 80 meters but 85.71 meters.

7.0 MHz is not 40 meters but 42.85 meters.

14.0 MHz is 20 meters but 21.43 meters.

21.0 MHz is not 15 meters but 14.28 meters.

28.0 MHz is not 10 meters but 10.71 meters.

144.0 MHz is not 2 meters but 2.08 meters.

50 MHz is 6 meters—the only frequency that is correctly designated as such.

Georgia QSO Party / John Tramontanis, N4TOL



New Look Georgia QSO Party for 2020 - High Activity - New Marks Set With "Shelter In Place" and "Social Distancing" Constraints in Force, NFARL Reaches All-Time High Score for the Event

The 2020 Georgia QSO Party is now in the books. Although the GQP was only a one day (12 hour) event this year, scoring records were set by the "NFARL Challenge" team, with increased activity and participation.

Each year, before the GQP, the goal of attaining a total score of 1 million points is discussed as an incentive for increasing our activity and scoring in the event. The good news is that the initial tally of points for NFARL in the 2020 GQP came in at 1,124,087. This amount eclipsed the club's previous high of 837,616 set in 2018. While this is impressive as the GQP was only a one day event this year, we do recognize that some scoring rules were altered for the abbreviated contest allowing for higher scores for some of the multi category stations. On the other hand, breaking the million point goal was achieved in only 12 hours of operating. One can only wonder what score may have been achieved by the team, even under the conventional scoring system used in the traditional two day (20 hour) event.

Additionally, the following records were set:

This year we also put a record 35 stations on the air, exceeding our previous high of 30 stations in 2019.

28 - the number of total stations earning the "Spell NFARL" certificate !!

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Georgia QSO Party (continued)

21 - the number of non-GA stations earning the "Spell NFARL" certificate !!

4 - the number of non-GA stations completing a "Clean Sweep" contacting all ten NFARL 1x1 stations - including 1 DX station



Other significant achievements:

7 - the number of NFARL members earning the "Spell NFARL" certificate - matching last year!!!

1 - NFARL member completing a "Clean Sweep" contacting all ten NFARL 1x1 stations

Achieved by Neil Foster, N4FN

4 - the number of "Rookie" participants in the "NFARL Challenge" !!!

The club would like to recognize Daryl Young, K4RGK, for managing the QRZ pages for the special 1x1 calls, facilitating the "Spell NFARL" award program.

Kudos go to Bill Cobb, K4YJJ, for maintaining the info on the NFARL website related to the GQP and his most timely responsiveness to our requests..

Also thanks to Jim Stafford, W4QO, Mike Roden, W5JR, and Chuck Catledge, AE4CW for their promotion of the GQP and aiding in the planning.

NFARL would also like to thank all those who participated in the Georgia QSO Party and for their efforts in enhancing the fun for all in the contest.

Also, for those who participated in the "NFARL Challenge", scores are being reviewed and compiled for certificate awards to be presented May at a future meeting, or perhaps at a virtual time and place.

73 John N4TOL

STRAY/ (May 1920 QST)

New book received: "Electric Oscillations and Electric Waves", by Geo. W. Pierce, Ph. D., Professor of Physics at Harvard University. Published by McGraw-Hill. An elaborate mathematical treatment of electric oscillations and waves. Of little value to the average amateur but an authoritative work for the research engineer and student. QST Book Department has it— \$5.00 postpaid.

ARRL Field Day Update / Mike Riley, KN4OAK

ARRL Field Day 2020 is June 26-28, 2020. We're only 40 days away!!

ARRL Field Day 2020 will not be like previous Field Day events. The present nCoV-19 situation and the importance of public safety have led the NFARL Field Day Team to consider alternatives to the traditional event. Social isolation guidelines remain in place for segments of the general population. The City of Roswell has cancelled large scale events until the end of June. Given the present situation we're having to adapt. This year we will use a format that separates the community / social aspects of the event from the baseline radio operations. This will:

- help keep club members safe,
- practice skills related to emergency operations at our QTH,
- and get some enjoyment in performing as a club

while conforming to social isolation guidelines by adapting to the situation.

On or about May 22nd, the NFARL Field Day Steering Team will be reviewing updated plan alternatives to achieve this. Here are some of the ideas being developed.

- Community Leadership recognition celebration at a later date in 2020
- Scouting Merit Badge Training in small groups and / or in conjunction with JOTA
- ARES based communication skill workshop / skill contest
- GQP / 13 Colonies style club scoring in conjunction with some rules based on ARRL Field Day rule set

As the plan options and details get refined, the Steering Team will narrow the selection of plan choices by combining feasible alternatives and weighing the choices against the performance measure categories of Safety, Conformance, Capability, and Expense. We're working to complete a decision by the beginning of June.

More updates will be provided as details develop and plan structure become clear.

Name This Ham / From page 7 above



Jim Paine, N4SEC

Extra Extra! / From the Extra Class Question Pool

New info for Technicians and Generals and a refresher for Extra Class Licensees!



E6C12– What is BiCMOS logic?

- A) A logic device with two CMOS circuits per package
- B) A FET logic family based on bimetallic semiconductors
- C) An integrated circuit logic family using both bipolar and CMOS transistors
- D) A logic family based on bismuth CMOS devices

See answer on the last page!

Studying for your Amateur Extra-class license?
The [current question pool](#) is effective through June 30, 2020.

The new Amateur Extra-class license examination question pool, effective from July 1, 2020, through June 30, 2024, has been released and is available at the National Conference of Volunteer Coordinators (NCVEC) [website](#).

Ian NV4C and his team hold license test sessions on the second Saturday of each month. For more information including upcoming test dates, [click here](#).

Contest Corner

- Day of the YLs Contest May 24 -25, 2020 <https://ka1uln.blogspot.com/p/the-day-of-yls.html>
- Kentucky QSO Party June 6 to June 7, 2020 <http://www.kyqsoparty.org/rules/>
- ARRL June VHF Contest June 13 to June 15, 2020 <http://www.arrl.org/june-vhf>
- ARRL Kids Day June 20, 2020 <http://www.arrl.org/kids-day>

NFARL Upcoming Events and Dates

- **Previous NFARL Club Meeting Meeting (Tuesday, May 19, 2020) – *Online Meeting via Zoom***
Our May Meeting main topic was “Importance of Speech Articulation”, presented by Dr. Bob Heil. A fantastic event! Thanks to Daryl K4RGK for setting this up.
 - **Every Sunday — NFARES net** - 8:30 PM - 147.06 MHz (+) PL 100
All licensed hams are welcome, you do not need to be an ARES member!
Check NFARES.org for more information.
 - **Every Monday — Tech Talk** - 8:30 PM - 145.47 MHz (-) PL 100
NFARL’s flagship technical based “non check-in” net. The net is always better when using the web based chat room but Internet is not required to join the net.
Check NFARL Nets for more information and “how to”.
 - **Every Wednesday — Hungry Hams Lunch Bunch** - 11:15 AM
Location: Slope’s BBQ, 34 East Crossville Road, Roswell, GA 30075
(770) 518-7000 *Call to verify operations*
Take out orders only during COVID-19 Restrictions.
- 
- **Every Thursday — YL OP Net** – 8:00 PM - 9:30 PM - 145.47 MHz (-) PL 100
Check NFARL Nets website for “how to.” This is a great opportunity for YL’s to get on the radio with other YL’s! OM’s (guys) are welcome to listen in to this YL net.
 - **Every Saturday — Royal Order of the Olde Geezers Breakfast** - 9 AM
Location: Reveille Café, 2960 Shallowford Road, Marietta, GA 30066
(770) 971-6800 *Call to verify operations*
Take out orders only during COVID-19 Restrictions.
 - **Second Tuesday — NFARES Meeting** - May 12, 2020 ***Online meetings only until COVID-19 Restrictions Lifted.*** Check NFARES.org for more information.
 - **Second Saturday – VE Testing** - NFARL June 2020 session: Waiting to hear from Alpharetta re: opening indoor facilities for test session.
 - **Kennehoochee Amateur Radio Club** Holding session May 25_ <https://groups.io/g/karc/message/5754>
 - **Stephens County Amateur Radio Society** Holding Session May 30, 2020. PLEASE notify them at kr4cw1@gmail.com
 - **Spalding Amateur Radio Club Video Supervised Virtual VE Exam**- Go Here and Review Info <https://k4cxs-scarc.wixsite.com/k4cxs>
 - **Third Tuesday — NFARL Club Meeting** - June 16, 2020, 7:30 PM
Online meetings only until COVID-19 Restrictions Lifted
— monitor website and NFARL GroupsIO reflector for updates.
 - **Fourth Tuesday – NFARL Executive Team Meeting** - May 26, 2020, 7:00 PM
Online meetings only until COVID-19 Restrictions Lifted
— monitor website and NFARL GroupsIO reflector for updates.
 - **June 27-28, 2020 – Field Day!**

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North Fulton Amateur Radio League

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eNews can be located online at:
<https://www.nfarl.org/enews/eNewsIndex.html>

Club Repeaters

Frequency—Description	P.L. Tone	Location
145.470 (-) EchoLink Node 560686 NF4GA-R	100 Hz	Morgan Falls
147.060 (+) Primary ARES Repeater	100 Hz	Roswell Water Tower
* 224.620 (-) Joint Venture with MATPARC	100 Hz	TBD
443.150 (+)	100 Hz	Roswell Water Tower
444.475 (+)	100 Hz	Morgan Falls
* 927.0125 (-)	146.2 Hz	TBD

* Currently off the air

Club Callsigns: NF4GA and K4JJ

Extra Extra answer: C (question E6C12)

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