



Happy Holidays! / Mike Riley, KN4OAK

How long has amateur radio been involved with the Christmas Holiday? This is an interesting question. On one hand, it would be an interesting exercise to uncover all the claims of who was first to acknowledge Santa on the amateur radio bands, never mind the religious aspects. On the other hand, what difference does it make?

I did Google "How long has amateur radio been involved with the Christmas Holiday?" just to see what was returned. I found a reference to a Wikipedia entry, https://en.wikipedia.org/wiki/Golden_Age_of_Radio where there's a reference to a 1906 Christmas Eve radio broadcast by Reginald Fessenden. Seems that the claim could be murky, but... it is just one of the interesting tidbits.

A few other search hits show that OF9X, The Finnish Amateur Radio League, is responsible for helping Santa out on the radio waves. Go see the QRZ page and get the rest of the story. Top right corner of the page banner displays a "FlexRadio" tag line. Does Santa use a FlexRadio?

Then there's the folks in Southern California who post they've been hooked since 1996 with helping kids at Children's Hospital, through the HDSCS, talk with Santa (<https://www.radioexperimenter.us/rm-1996-12/join-the-north-pole-network.html>) during their stay.

Or, maybe, the Santa Net on 3916 is where it may have originated? You can check this out on the web and on the air (<http://www.tailgatersnet.com/santa-net.html>) and see if you're able to get a QSO in. Or check out <https://www.cqsanta.com/> for another vantage point.

Regardless, Christmas is a holiday of religious origin and in my experience represents the goodwill commonalities between humanity worldwide. Traditionally a time for joy and celebration of a new beginning. Whatever your view is, make sure that you take time to be present with those around you, remember those who've passed, reach out to assist those in need, and be happy about your chances in the future.

President's Corner / John Norris, N4IHV

It is hard for me to believe we are already at Christmas. They say this happens more frequently as one ages. I guess I need to start wondering how long it will be before Christmas gets here. I know everyone is very excited about all of the radio gear you expect to get or have secretly ordered for yourself. Never forget it is better to give than receive. Let me know when you need my address.

We had a wonderful NFARL 2021 Christmas Party at Preston Ridge. The food was outstanding and the fellowship was equally as good. If you didn't get to come, don't forget next year. Put it on your calendar now. Thanks to everyone who worked to make this possible. I especially thank Sandra Johnson, Jim Paine, Cathy Moore, and Lee Norris for setting up everything at the meeting for us to have the party.

I want to congratulate Steve Randall, K04VW, as the NFARL 2021 Ham of the Year. Steve went beyond the call of duty every time he was asked to help. There are very few times a club is so privileged to have as many like Steve as we at NFARL have. Thank you Steve for all you do.

Please take a minute to read about the Savannah River Academy ARISS event. I was greatly impressed by how this type of event can stimulate the minds of youth and drive interest in STEM/STEAM related topics. It was a great demonstration of outreach through amateur radio and wonderful to witness in person.

Let's start 2022 by attending as many NFARL meetings and events as we can. The more we participate the more fun we have and the more we learn from each other.

I wish each of you a very Merry Christmas and wonderful New Year.

John, NFARL President

N4IHV

TechFest is Coming! / Steve Randall, K04VW

The Gwinnett Amateur Radio Society (GARS) has scheduled the 2022 TechFest event for January 15, 2022! This is a free & fun event. It's indoors. There's food available. There are presentations on various technical aspects associated with amateur radio. There are door prizes and raffle prizes. You should put this on your calendar and plan to attend!

NFARL will be participating once again in this great event. NFARL will hold a kit building "booth" that will focus on simple soldering skills and circuit schematic reading. There will be a choice of 3 kits; the NFARL CPO Kit, a simple LED desk clock, and a simple FM receiver. The event centers on youth participation, however adults can join as well!

The event is located at the Gwinnett Medical Resource Center, 665 Duluth Highway (GA-120), Lawrenceville, GA 30046. Public access to the event is from 9 AM -2 PM on Saturday, January 15, 2022. Go to the GARS website for more details. <http://www.techfest.info/>

NFARL needs volunteers to assist youth and adult participants in the kit soldering / assembly event. Soldering stations and safety glasses will be available for use. You should be capable of demonstrating safe soldering practices and helping participants follow assembly instructions and schematics for the simple kits. Please visit the NFARL club website to sign up as an assistant. <https://nfarl.org/techfest-signup/>. You can contact any NFARL club officer or Executive Committee member for more details if needed. <https://nfarl.org/contact-us/>

Savannah River Academy —ARISS QSO / Martha Muir, W4MSA

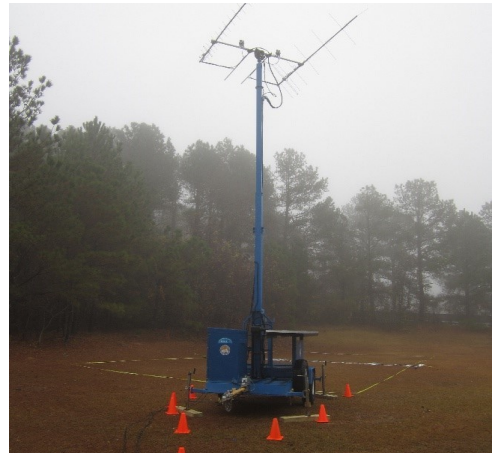
On December 10, students at the Savannah River Academy, located near Augusta, GA, talked with astronaut Dr. Thomas Marshburn while he soared over their school aboard the International Space Station. This was part of the ARISS (Amateur Radio on the International Space Station) program.

While the Amateur Radio Club of Columbia County was the primary club supporting this contact, five members of NFARL were there helping with the contact and the year of ham radio activities that led up to the actual contact. Assistant Section Manager David AG4ZR and NFARL President John N4IHV were there to speak to the students and parents present for the event. Martha W4MSA worked with the students who would be speaking on their choreography to and from the microphone and had them rehearse talking with an astronaut by talking with our stand in astronaut, Nathan K4NHW. As the ARISS Educational Ambassador for this contact, Martha has spent a year working with Rachel KO4HLC and her ham colleagues to support their educational efforts with the students. Daryl K4RGK led the ground station operations throughout the event.

Nathan also operated the backup radio to Daryl's main radio that was used for the contact. Nathan towed the NFARL trailer that held Daryl's antenna over to the school. Daryl, often with Nathan's assistance, spent 4 days setting up and testing all the equipment that would be used for the contact.

The heavy rain that came through Atlanta Thursday night into Friday morning arrived in Augusta just in time for the ARISS program – heavy, heavy rain. Nonetheless, Daryl made contact with the ISS just as it was rising above the horizon. His antenna successfully tracked it until it went below the other horizon. The students had time to ask all twenty of their questions and thanked Dr. Marshburn with a great round of applause.

Everyone left the school that day with a smile on their face.



The antenna and trailer in the rain.



Daryl K4RGK showing his equipment to the students after the contact.



David AG4ZR speaking with John N4IHV after the contact.

Around the Shack / Hal Kennedy, N4GG

Hal is taking a break to enjoy the Holiday season. Hal will be back next month, so look for him in "Around the Shack" then.

Strays/

Rudolph the Red-Nosed Reindeer is a fictional reindeer created by Robert Lewis May. Rudolph is usually depicted as the ninth and youngest of Santa Claus's reindeer, using his luminous red nose to lead the reindeer team and guide Santa's sleigh on Christmas Eve. Though he initially receives ridicule for his nose as a fawn, the brightness of his nose is so powerful that it illuminates the team's path through harsh winter weather. Ronald D. Lankford, Jr., described Rudolph's story as "the fantasy story made to order for American children: each child has the need to express and receive approval for his or her individuality and/or special qualities. Rudolph's story embodies the American Dream for the child, written large because of the cultural significance of Christmas." [1]

Rudolph first appeared in a 1939 booklet written by Robert L. May and published by Montgomery Ward, the department store.

https://en.wikipedia.org/wiki/Rudolph_the_Red-Nosed_Reindeer

P.S. – We've been informed there's a possibility that Rudolph's nose contains a "secret" APRS transmitter. If you have documented, tangible, validated proof of such a device, please consider keeping it a "secret" so children can continue to enjoy the magic.

January NFARL Meeting– KiCad! / Mike Riley, KN4OAK

Have you ever wondered how a design moves from a concept into a physical embodiment that might one day be available for you to either use or build? There are many tools that can be utilized by people to help accomplish design development. Some involve costs and specialized training far beyond the limits of resources available to the general population. Others are readily available and easy to use with little training or monetary investment.

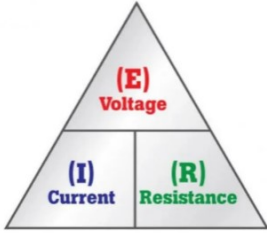
Most amateur radio participants have some common interest and capability in building, testing, and operating electronic or electro-mechanical devices as part of their involvement in the hobby. NFARL is fortunate to have a number of club members who are proficient in various aspects of RF and electrical design. One of those is Warren Merkel, KD4Z, who fits very well into the group of top performers given his background in electrical engineering and software development.

Warren has decided he can share some insight into circuit development and printed circuit board layout accomplished with KiCad. KiCad EDA is "A Cross Platform and Open Source Electronics Design Automation Suite," meaning it can be used at no cost on Mac and PC platforms to capture schematics and transform them into usable PC board layouts.¹ Let Warren tell you about it and demonstrate what can be done with it by joining us at the January 2022 NFARL club meeting. I'm absolutely positive he will provide you with an enjoyable and interesting presentation. I understand it may segue into another interesting topic as well. Come join us! We look forward to seeing you in person!

¹ <https://www.kicad.org/>

Series Circuits and (Xmas) String Theory/ Tony Santoro, WA3TRA

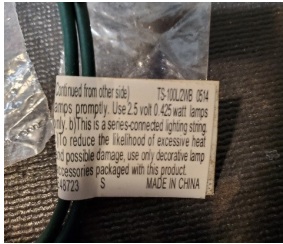
If you're thinking physics, you're in the wrong place. We're talking strings of Christmas tree lights, you know- the incandescent ones. One goes out, they all go out.



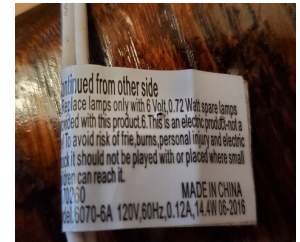
Setting up decorations, I went to use our 40 year old treetop. The treetop had a string of 10 incandescent lights that did not work. I had a box full of replacement bulbs, but none of them seemed to work. I had a feeling that 10 bulbs in a string means each bulb had to be rated around ~12.5 volts (series circuit). Searching the internet proved my assumption might be correct. Therefore: bulbs used in a 100 string assembly most likely won't work in a 10 string assembly.

Here are my findings:

# Bulbs	Voltage Spec Per Bulb	Watts Per Bulb	Current	Resistance Per Bulb
10	12.5	0.96	80ma	16
110	1.1	0.425	380ma	2.3
50	2.5	.42	170ma	?



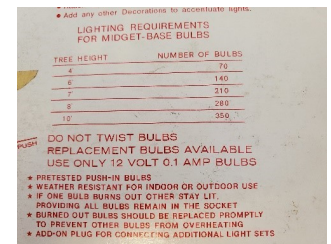
Using a multi-meter I measured a bulb from the treetop circuit which turned out as ~16 ohms. Almost every string of lights that I have researched included a bulb specification sticker. Once you know two values, you can easily calculate the third. Note: research assumes 125VAC.



Examples: If you search for replacement bulbs on the internet, you will get many pictures including specifications. Even the light strings have stickers, you just have to look for them.



Holiday Time
 Holiday Time Mini Replacement
 Christmas Bulbs, Clear, 12 Volt, 10-Pack



Are All Christmas tree light bulbs the same? Replacement bulbs are not all the same. They may vary in voltage and bulb type. For example, I found you cannot replace a 35 light-set bulb with a 50 light-set bulb because a 35 light set uses a 3.5 volt bulb while a 50 light set uses a 2.5 volt bulb.

Now you know all about (Xmas) string theory!

Quiz: Estimate the DC resistance per bulb for a series circuit string of 50 bulbs rated at 125 V and total current of 170ma. See last page of eNEWS for the answer

73s and Merry Christmas, WA3TRA

I hope you enjoyed the article! If you'd like to know more about why holiday lights behave the way they do, check out this link: <https://www.energy.gov/articles/how-do-holiday-lights-work>

VE Candidates Succeed Again!/ Wes Lamboley, W3WL

North Fulton Amateur Radio League held its monthly VE led radio license examination session on Saturday, December 8, 2021 at Slope's BBQ in Roswell, GA. Our thanks goes out again to the Volunteer Examiner team and Slope's for making this event a success!

In December 2021, five test candidates achieved their objective in their amateur radio license journey by passing exams for their target license levels. As NFARL club members, please reach out to these folks and congratulate them on their endeavor.

<u>Candidate Name</u>	<u>Test</u>	<u>Call (if applicable)</u>
Paul Hobbs	Technician	
William Leonard	Technician	
Steve Redekopp	Extra	KO4TFK
Hiram Seraphin	Technician	
John Hathcock	Extra	WE4AUB

Each month, members of the VE Team and Slope's BBQ volunteer time and effort to enable the examination session to occur. Please thank them the next time you see them, either at a club meeting, or by stopping by Slope's and partaking of their fine menu offerings and hospitality. Our weekly "Hungry Hams" lunch is a great opportunity to do this!

VE Examiners: Dale Frye KJ4C, Lane Watts KB4KHQ, Steve Randall KO4VW, Dave Biscotti KO4USA, Martha Muir W4MSA, Steve Knittel AB4TT and Steve Mays KS4KJ.



Full house of Steves and Johns



Extra Extra! / From the Extra Class Question Pool

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



E6B03

What type of bias is required for an LED to emit light?

- A) Reverse bias
- B) Forward bias
- C) Inductive bias
- D) Zero bias

See answer on the last page!

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

+ K1USN Slow Speed Test	2000Z-2100Z, Dec 24
	0000Z-0100Z, Dec 27
	0000Z-0100Z, Jan 3
	2000Z-2100Z, Jan 7
	0000Z-0100Z, Jan 10
	2000Z-2100Z, Jan 14
	2000Z-2100Z, Jan 21
+ YOTA Contest	1200Z-2359Z, Dec 30
+ ARRL Kids Day	1800Z-2359Z, Jan 1
	0000Z-0100Z, Jan 6 and
+ Walk for the Bacon QRP Contest	0200Z-0300Z, Jan 7
+ ARRL RTTY Roundup	1800Z, Jan 8 to 2400Z, Jan 9
+ North American QSO Party, CW	1800Z, Jan 15 to 0559Z, Jan 16
+ ARRL January VHF Contest	1900Z, Jan 15 to 0359Z, Jan 17
+ Winter Field Day	1900Z, Jan 29 to 1900Z, Jan 30

NFARL Upcoming Events and Dates

- **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 (Discord) but Internet is not required to join the net. Check [NFARL Nets](#) for more information and "how to". Here's the link to the NFARL server on Discord web app <https://discord.gg/spr2a9D>
- **Every Wednesday — Hungry Hams Lunch Bunch** - 11:15 AM
Location: Slope's BBQ, 34 East Crossville Road, Roswell, GA 30075
(770) 518-7000
Dining Room is OPEN. Get Take Out if you can't stay!
- **Every Thursday — YL 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 Wednesday — CW SIG** – 8:00 PM on ZOOM. Meeting ID is 815 5160 3634; password is CW-CHAT (all CAPS)
- **Every Saturday — Royal Order of the Olde Geezers "Breakfast"** - 8:45AM-10AM.
This informal breakfast group on Saturday mornings is NOW **AGAIN** meeting IN PERSON. **A notice that Lodge Number 1 of The Royal Order of the Olde Geezers, will convey its weekly soiree at Reveille Cafe, 2960 Shallowford Road, Marietta 30066 in the Kroger shopping center (Shallowford Rd and Sandy Plains). The festivities commence at 8:45 am on Saturday.**
- **Second Tuesday — NFARES Meeting - January 11, 2022** ***Presently- Online meetings only.*** Check NFARES.org for more information.
- **Second Saturday – VE Testing - NFARL January 8, 2022 session:**
By reservation only. See the "[Test Sessions](#)" web page for details & registration process. Contact Ian at nv4c.ian@gmail.com for questions / concerns / reservations.
- **GARS TechFest** – January 15, 2022 9:00 AM– 2:00 PM. Gwinnett Medical Resource Center, 665 Duluth Highway (GA-120), Lawrenceville, GA 30046. ***NFARL will be running a youth soldering workshop! See Page 2!***
- **Third Tuesday— NFARL Club Meeting** - NO December 2021 meeting!
Next meeting is on January 18, 2022, 7:30 PM
Live meeting! Preston Ridge Community Center - Zoom Included!
—January 2022 Meeting: KiCad - An Electronics Design Automation Suite for Schematic and Printed Circuit Board Layout
Door opens at 7 PM for Social Networking. Meeting begins at 7:30 PM
- **Fourth Tuesday – NFARL Executive Team Meeting** - January 28, 2022, 7:00 PM. ***Online meeting only*** — monitor website and NFARL Groups.io reflector for updates.



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North Fulton Amateur Radio League

P.O. Box 1741
Roswell, GA 30077

nfarl.org

eNEWS can be located online at:
<https://nfarl.org/enews-index/>

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 Call signs: NF4GA and K4JJ

String Theory Quiz answer:

$R = E/I$ or $125\text{v}/170\text{ma} = 735$ ohms.

735 ohms / 50 bulbs = **~ 14.7 ohms per bulb.**

Extra Extra answer: B (question E6B03)

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