The GARzette

The Official Newsletter of the Gwinnett Amateur Radio Society

March 2026 https://www.gars.org/ Volume 53, Issue 3

Inside

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TechFest
Gwinnett Amateur Radio Society

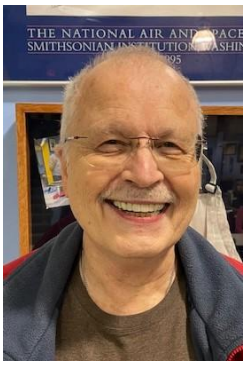
GARS January Exhibition of the Technical aspects of Amateur Radio
Held at the Gwinnett County Fairgrounds

The next TechFest is January 30, 2027

GARS Meeting: Starter Antennas for HF – Various Speakers
Tuesday March 10, 2026 at 7:00 PM

President's Message

From the President…



I would like to congratulate the new officers that joined the officer group – Ralph Pickwick KJ4CNC and Michael Stewart KR4CVF. Glen switches from Treasurer to VP with Ralph taking over (again – he was GARS Treasurer before) as Treasurer and Michael as our new Secretary. Richard Kitz and Harold Brown helped last year be memorable and I thank them for volunteering as GARS officers for a year.

March contains our best income benefit with the Lanier Dog Show being held at the Gwinnett Fairgrounds. It lasts 5 days and needs members to help with the entry gate and parking. I hear it is a lot of fun and an easy way to spend the day. I have to admit I have never been to it – but this year I am signing up and hope that others do to!

We just completed our yearly TechFest and it was successful; I hope that others got to take in all of the displays and forums present there. I was only able to just stop by the various tables and say "hi" without delving into their details – being involved with the exam session and then having my own table with Mark KN2TOD on DMR is it hard to just take in all of the exhibits – let alone being able to see any of the forums.

In November we had a Meet the Members contest and there is going to be another one on May. It is going to be a week long this time and there was a lot of traffic on the repeaters for the weekend it ran. I managed to get a hat prize during the last one – but the real joy was being able to get to talk on the GARS repeaters and being sure my equipment was able to reach them. If you have not had a QSO on one of the 440 repeaters – it is a real treat to use them. The audio is as clear as a bell (like DMR connections) and at least from my location, and with complete quieting from the ones I heard. GARS has a net on Thursday evenings (7:30 PM) on the 442.325 repeater. Try to make it to that net to keep it going and enjoy the clarity the 442.325 repeater provides. I myself need to set a reminder to remember to join it too!

In April is the GA QSO party and Dallas N4DDM is organizing it. Think of it as a mini-Field Day and a good way to get on the radio with the group or even at home. It can be way to see how a POTA set-up could work. The rules limit the number of stations a single call sign can use and the bands – and having multiple call sign groups at the GARS GA QSO location can work and be a way to see if you go-box is up to being used and test it out – bringing a friend to help.

In April, GARS is having another Technician HamCram. It is already filled with 20 participants. Ham radio is building its ranks thanks to Ralph KJ4CNC and John WB4QDX for running all of our HamCrams.

Ralph – our Education Chair – is going to be busy at the end of this month with the Walnut Grove Elementary School ARISS taking place during the last week of March. The actual date has not been set yet and if you saw their table at TechFest you would also know they made it to the national competition of LEGO robotics competition. It is being held at Georgia Tech and Ralph has been the GARS interface for the school and 3 of the school faculty have become member of GARS.

It is springtime and ham radio is booming along with the start of my lawn maintenance tasks to look forward to in the coming months.

Please take note there is a proposed GARS by-law change to allow the first year of GARS membership to be free. We see people taking their ham exam at our sessions and giving them a free membership for a year will entice them to see what GARS all has to offer. The changes to the by-laws are listing in this GARzette and will be voted on at the March meeting.

73,

Bob – K4CQO

Club President / GARZette Editor

GARS Repeaters and Other Communications

2 Meter Repeaters	6 Meter Repeater	
147.075(+) MHz Tone 82.5 147.255(+) MHz Tone 107.2	53.110 (-1 MHz) No Tone	6M Operational in Buford 147.075 Operational in Snellville 147.255 Operational in Snellville 224.580 Operational in Grayson 442.100 Operational at Goshen Springs Rd, Norcross 442.325 Operational in Buford 444.525 Operational in Snellville
1.25 Meter Repeater	**Other Resources:**	
224.580(-) MHz Tone 100.0, 1.6 MHz Offset	APRS	
70 Cm Repeaters	144.390 -- 1200 Baud W4GR	
444.525(+) MHz Tone 82.5 442.100(+) MHz Tone 100 442.325(+) MHz Tone 100		Link remote receivers being added

Notable Web Links

Ham Radio Glossary: https://noji.com/hamradio/glossary.php a very comprehensive listing provided by Noji Ratzlaff KNØJI. On his site there is also a lot of information about getting started in ham radio.

Need Help – Let GARS Elmers answer your questions

Send an email to elmers@gars.org with the subject listing the area (like Antennas, Repeaters, Digital, DMR etc.) of your query to get to GARS Elmer volunteers.

About the GARzette

The *GARzette* is the official monthly newsletter of the Gwinnett Amateur Radio Society, serving its members and other persons interested in the advancement of the Amateur Radio art.

Original articles, art, and photos are invited and encouraged. Previously copyrighted submissions cannot be accepted for reprinting unless permission from the appropriate publisher is provided in writing along with the information being submitted. If reprints are from publications allowing their unrestricted use, please include a copy of the printed permission contained in the publication.

If possible, bring your articles to the monthly meeting in Microsoft Word or rich text (.rtf) or text or HTML format or by e-mail to editor@gars.org. Artwork can be accepted in most any graphics format and can be submitted via e-mail to the same address. Alternate means of submittal can be arranged when necessary.

In keeping with the Amateur Radio spirit, permission is hereby granted for the reproduction of The *GARzette* articles by other Amateur Radio club newsletters provided that proper credit is given to the individual author and *The GARzette*.

The GARzette is published each month with the assistance of Karen KI4HPP and Kyle W4KDA who print copies for distribution, etc., Dave Bruse, W4DTR, who distributes the newsletter electronically, and Mark Prichard KN2TOD who delivers the GARZette to our local HRO store.

Deadline for submissions is the 28th of each month for inclusion in the following month's issue.
For additional information view our Website at: http://www.gars.org [PS— Articles to publish in the GARzette, either written by GARS members or published elsewhere, are always welcome. —Ed.]
Newsletter Email: editor@gars.org Editor: Bob Hoffmann, K4CQO

GARS Meetings & Workshops

GARS Meetings and Workshops are held in-person at the EAA 690 Hangar, 690 Airport Rd, Lawrenceville, GA 30046.

Meetings and Workshops are OPEN to all, feel free to share your invite with others.

When GARS meetings are available on **Zoom** the **login** info will be posted to http://www.gars.org prior to the meeting. Members are able to attend the GARS Executive Zoom Meeting on the 1st Tuesday of the month – send an email to the GARS President (president@gars.org) for information to attend.

GARS Meetings Schedule (second Tuesday @ 7:00 PM): (these are the presentations)

- March 10th – Starter Antennas for HF – Various Speakers led by Kevin Scott K4GTR
- April 14th – Multiband Antennas for HF – Various Speakers led by Kevin Scott K4GTR

Workshop Schedule (third Tuesday @ 7:00 PM): (these are the Hands-on Workshops)

- March 17th – Starter Antennas for HF
  - Dog Show March 25-29th - Glen W3WWT
  - GA QSO Party April 11-12 - Dallas N4DDM
  - Dacula Memorial Day parade preps - Michael KR4CVF
- April 21st – Multiband Antennas for HF
  - Dog Show After-Action Review - Glen W3WWT
  - GA QSO Party After-Action Review - Dallas N4DDM
  - Dacula Memorial Day parade preps - Michael KR4CVF

GARS Meeting – March 10, 2026
Starter Antennas for HF

There will be various demonstrations about building a single band antenna for HF. Various speakers will give their designs for an HF antenna and will answer questions about their HF antenna.

GARS Workshop – March 17, 2026

GARS workshops provide further information about the presentation given the week before on a one-on-one basis with the various presenters and there are also Elmers present on a variety of subjects to help with any questions you may have about ham radio – including help you're your equipment that you can bring in.

Elmers are always present at the GARS Workshops. Feel free to bring your questions to the Workshop. If your project is small enough to bring to the meeting, let us know in advance so we can bring tools, test gear, etc.

GARS would like to thank Kevin K4GTR, Ed W4BSR, Neil WD4NET, John WB4QDX, and Dallas N4DDM for bringing in their radios and giving talks about what they provide and how they can be used.

GARS Happenings

20 Years ago in the March 2006 GARzette:


The GARZETTE

President's Notes

- Like now, the new officers were installed and WA4ZXV Norm Schklar gave his first thoughts on the upcoming 2006 year of events
- There was a good article on the outlook of the current solar cycle

You can always browse the GARzette archive at http://www.gars.org/newsletters. 73, Bob, K4CQO, GARzette Editor

Health and Wellbeing – Sandy Jackson, KJ4DRO

Look for this resource on Email (https://gars.org/contact/) and use it as a means to convey information about a GARS family member or Silent Key notification.

Net Managers Corner

Monday Night 2 Meter "Want, Swap, Sell, and Information Net"
Thursday Night 440 Buford Repeater Net

GARS NEEDS MEMBERS
TO SERVE AS NET CONTROL STATIONS!

GARS is a great Amateur Radio service club with the membership and awards to prove it. Our club is very busy and active, and we use the Monday night net to get timely information out to our members. Weekly participation is needed to make our net function well. There is only a small group of very dedicated people who make the net happen each week, and we need more members to volunteer to serve as Net Control Stations (NCS) on a rotating basis.

Out of almost 300 members, there are only five operators who serve as the NCS for the GARS net every Monday night. In no particular order, they are:

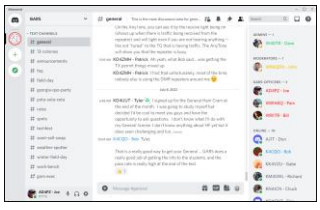
Ray – N4GYN David – KA4KKF Kevin – W4KIB Bill - WD4AMC Chuck – KK4TKJ Ed – W4BSR

To volunteer to help as a NCS for the 440 Net contact Jim O'Brien KQ4RNA.

As GARS Net Manager (Chuck KK4TKJ), I would like to have more volunteers to fill NCS positions. I do plan and post the schedule months in advance. Any conditions will be accommodated that you as a rotating NCS need to place on the scheduling of your duties. If your plans change, I can make adjustments for the schedule to work, and I will make those changes happen as soon as I am notified of a problem. As Net Manager, I also send out reminders each week to let the NCS scheduled know he or she is NCS for the next Monday night net. In short, serving as a rotating NCS is a small duty but a great contribution to the club. The "Want, Swap, Sell Information Net" begins promptly at 19:30 every Monday night and runs about 30 minutes. As a scheduled NCS, you will request the assistance of a volunteer alternate NCS each time you have Net Control. Your simple duties will be to tune in to the GARS repeater, read the script, take a few notes and forward the information to me for record keeping.

Please lend a hand and contact (Chuck) via Email (Click Here to Email our Net Manager) to help support the effort that makes GARS the great club that it is. See you on the Nets!

Don't forget about our Discord utility for GARS announcements, news, activity spotting and more. See http://www.gars.org top of the home page. This is a sample of Discord. →

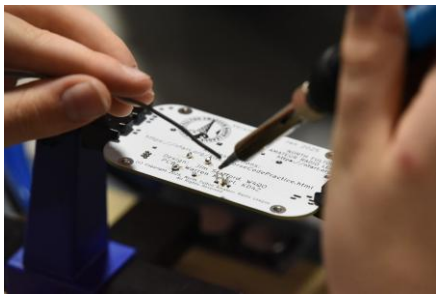


GARS TechFest February 21, 2026

Pictures from the 2026 TechFest – from Eddie Foust



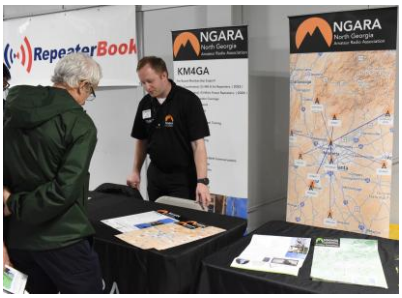








This year's TechFest was a success with over 25% increase in attendance and raffle ticket sales. During TechFest, the exam testing had 22 taking their test and 17 passed with one receiving a new Beofeng handheld courtesy of Ed Henderson W4BSR.

Thanks go out to all that helped put on TechFest, the ones providing tables, the forum presenters, the food servers and organizers, the one who helped set-up and tear down, and especially to Ed Henderson W4BSR for being the chairman of this year's TechFest.

Special congratulations to the "winners":

1st place Chilli Cookoff – **Stacy Henderson**
2nd place Chilli Cookoff – **Ernie Johnston**
3rd place Chilli Cookoff – **Tee Stewart**
People's Choice Chilli Cookoff – **Jen Faust**
Best Radio Voice – **Ray Bagley N4GYN**
Took home the Icom 7300MK2 – **Hank Blake Jr N4HYB**
Took home the Yaesu FTM-150RASP – **David Mitchell N4XHJ**

GARS Meet the Members Contest – May 17-23

The GARS Meet the Members contest is coming again in May. This time it will be a week-long along with the extra points given for the face-QSL at the GARS June Ice Cream Social being held at our Field Day at Harbins Park.

Dog Show – March 25th – 29th

This is a fun and rewarding annual fundraising event for both GARS and Gwinnett ARES. We have been doing this event for 28 years. Our duties include collecting entrance fees, giving directions, answering questions, directing traffic inside the park, and keeping the unloading zones clear. For our efforts, GARS and Gwinnett ARES receive a nice donation to fund events with food, gear, and training.

SIGN UP SHEET: Note that the sign-up sheet is a multi-tab spreadsheet with tabs on what to bring and fairground maps.

Georgia POTA Event Returns for Fourth Year

The Annual Georgia Parks on the Air event returns this year April 18-19. This annual event seeks to have individual hams, clubs, and ARES groups fan out across the state to activate all 52 Georgia state parks over the course of one weekend. Last year, all 52 parks were activated by a collective group of 65 individuals and 10 clubs. Participants activated anywhere from 1 to 14 parks (!) over the course of weekend, making as many as 1200 contacts (for an individual) to 2200 contacts (for a club).

Although the event remains basically the same as in previous years, a few changes have been made to make the event even more accessible.

First, the date was changed to April 18-19 to avoid Easter Sunday and to align the event with the national “Support Your Parks” weekend, meaning that participating in the Georgia POTA event will automatically make you a participant in the SYP event.

Second, a new category of operators, a “team” category, has been added. The purpose of this new category is to allow twosomes (husband-wife, best buddies, old hand + new operator, whatever) to have a fun time operating together. As noted in the rules, “A team is two persons operating physically next to each other at a single park sharing a single transceiver.” Each operator tracks his contacts individually, and the team score will be the sum of each operator’s individual score. Normally, both operators will have identical sets of contacts (such as when doing the standard POTA “Stand by for second operator”). But this is not necessarily the case; two operators may take turns at the transceiver without sharing the mic, or one may do phone and then take a break to let the other do CW or digital, or they may take turns doing digital. No matter. As long as the two operators are sharing one transceiver for the entire event, it’ll work.

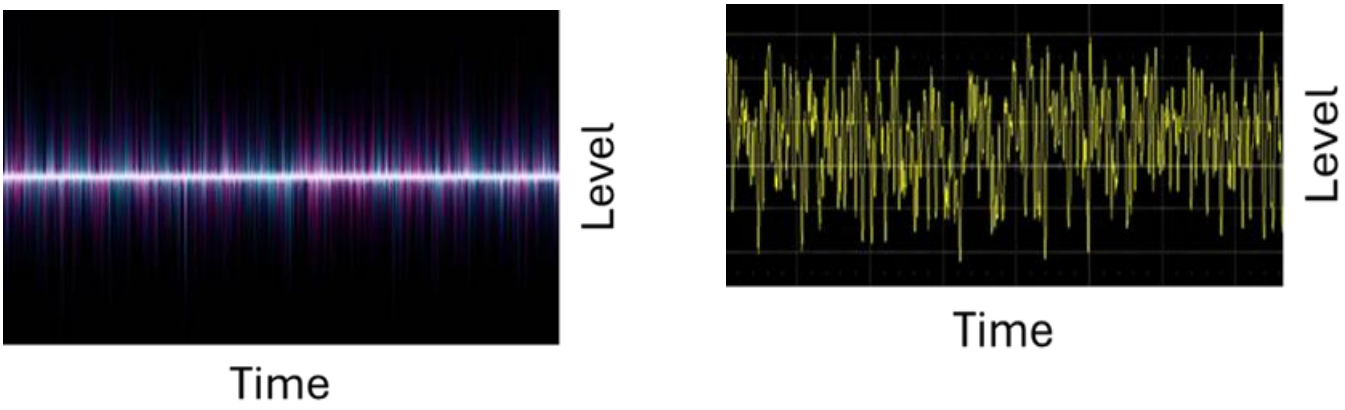
Everyone who has participated in the event, whether just for an hour or two or by camping for the entire weekend, has said it was great fun and one of the highlights of the year.

More information, rules, and the registration link are all available on the event website: https://gaparks.org/. And note that, while there’s no limit on how many hams can operate at any given park (subject only to courtesy and good operating practices), there are still parks for which no one has signed up. So look over the list, find a park close by, make plans to activate the park, form a team, or assemble a club group, and head on out. For further information, see the website or email info@gaparks.org.

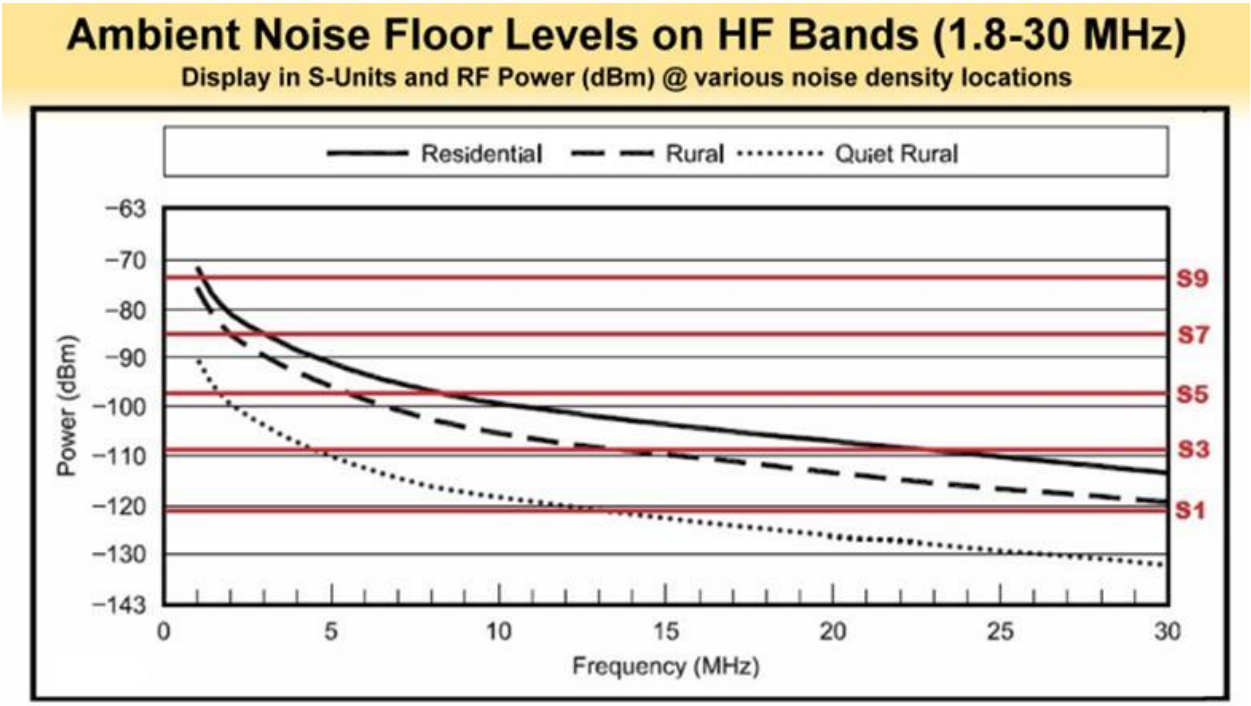
Noise Explained

By Steve Back WB2OGY

During the last workshop I was asked about a noise problem. In today's world we all have noise problems, especially at HF. The first figure below shows noise level vs time on an oscilloscope and the second shows noise level vs frequency on a spectrum analyzer.



All hot objects cause noise because of moving atoms. Hotter objects create more noise. At room temperature a resistor generates about $4*10^{-21}$ Watts per Hz = -174 dBm/Hz. Over a typical 3 kHz HF signal this is $1.2*10^{-17}$ Watts = -139.2 dBm. These values are more likely to be seen at VHF and above. At lower frequencies there is significant atmospheric and manmade noise. In general, the noise level at 160 meters will be much higher than at 10 meters. By definition an S1 signal is -121 dBm and each additional S unit adds 6 dB. The following graph from vu2nsb.com provides some typical HF noise levels. We live in a high-noise residential area which has gotten worse over the years. In the past most power supplies used transformers to change voltage levels but today we use switching power supplies that change the input 60 Hz sin wave by switching it on and off over time. Without going into great detail each of these power supplies adds HF noise and the noise from each of these adds to the total noise level.



Noise at my location is similar to that in the graph. If I remove the antenna from my ICOM 7610 the S meter drops to 0. Attaching my long wire to my rig causes an S3 – S 4 noise level on 20 meters. If I run off of battery and turn off all power to the house the level drops by under 1 S unit. Ny neighbors and the atmosphere are still there.

The FCC in Part 15 limits radiation from devices not designed as transmitters to 30 * 10^{-6} volts/m at 30 meters over 1.705–30 MHz. This is not much but every wall wart and LED light Bulb adds up. There are 10 small power supplies plus six LED bulbs just within my shack and many more in the rest of my house. There are multiple homes close together in my sub division and some Chinese power supplies do not really meet the FCC requirements.

If your noise level is significantly above those above, try the following.

- Disconnect your antenna. If the noise does not drop to near 0 you have a nearby problem.
- Power your radio from a battery and kill all power to your house. If the level does not drop to the level above your problem is external. If the power does drop you can try to isolate the internal noise source. You can turn back on the main breaker, turn off all individual breakers and then turn them on one on at a time. This can help isolate the problem to a specific electrical circuit. You can then unplug wall warts or turn off lights until the problem is isolated.

Tracking down a specific noise source especially external can have varying levels of difficulty. My first step is to use a handheld AM radio on an unused channel. As you get closer to the noise source the noise level will increase. If the noise increases as you approach a specific power pole or house, you can try to work with the owner. The power company has to work with you, but your neighbor could be more of a problem.

Some problems can be solved by replacing noisy power supplies or adding ferrite chocks to the leads of the power supplies. It is nearly impossible to eliminate all noise, but modern computer technology can help greatly. An old friend NN2X told me about this free software that uses AI to magically remove noise. https://ournetplace.com/rm-noise/. It can help copy stations that are at or even below the noise.

Georgia QSO Party –April 11&12

GA QSO Party Rules & Dates/Times

- All bands above 6m are excluded...
- Only CW and SSB... FM or other Phone modes are not allowed
- 2026 Dates are April 11th – April 12th
- Saturday – 2:00 PM EDST until midnight
- Sunday – 10:00 AM EDST until 7:59 PM EDST
- GARS call sign will be used

Dave's Computer Tips

By Dave Bruse, W4DTR (with help from ChatGPT)

Email Safety Checklist – Avoid Phishing Scams

Before clicking anything in an email, ask yourself these questions:

1. Was I expecting this email?

If not, **be cautious**.

2. Does the email create urgency?

Scammers try to make you **panic and act quickly**. Examples:

- "Immediate action required"
- "Your account will be closed"
- "Payment failed"

3. Is the sender's email address correct?

Look carefully at the **actual email address**, not just the name. Example
✓ support@paypal.com
✕ support@paypal-security-alert.com

4. Never click login links in emails

If an email asks you to log in:

✓ Open your browser
✓ Go to the website yourself (using a bookmark if possible)

Do **not click the email link**.

5. Do not open unexpected attachments

Especially files ending in:

- .zip
- .html
- .exe
- .docm

If you were **not expecting it, delete it**.

6. Never send passwords or codes by email

No legitimate company will ask for:

- your password
- verification codes
- security questions

7. When in doubt, do nothing

Delete the email or verify another way.

Golden Rule

If an email asks for money, passwords, or personal information — stop and verify first.

Education Committee Follow-up

Last month I reported that the Walnut Grove Elementary School was entering the state's Lego League Robotics Competition. The good news was they came in 4th place qualifying them for the Nationals. The bad news was they had to raise the $2,000 registration fee. I'll let Shawnee Palmeri, KR4HPC take it from here:

"At the Gwinnett Amateur Radio Society (GARS) Tech Fest held on February 21, 2026, our Walnut Grove Elementary FLL Challenge Robotics Team was overwhelmed with support from the amateur radio community! We received a $1,000 check from GARS, a $500 donation from the North Fulton Amateur Radio League, and an incredible $534 raised by a wonderful patron Becky Bentley, who walked the Tech Fest selling rubber ducks.

With a registration fee of $2,000 for the GA Tech US Invitational First LEGO League Challenge Competition, our team met the goal in just one day thanks to this amazing generosity. Our school and team are deeply grateful to be welcomed into such a supportive and inspiring community!" Shawnee KR4HPC

Ralph Pickwick KJ4CNC
Committee Chairman

Education

The Basics by Bob Schmid, WA9FBO

"Q"

de: Bob Schmid, WA9FBO

What is "Q"? What makes a component "high Q"? Is it always a case of the higher, the better? Let's check it out.

When you buy an inductor, you're buying the ability to store power in a magnetic field (Fig. 1). You want minimum power loss.

FIGURE 1 - INDUCTOR

And when you buy a capacitor, you're buying the ability to store power in an electric field (Fig. 2). Again, you want minimum power loss.

Q, or *quality factor*, is a figure of merit for an energy-storing device or circuit.

Q compares the energy stored to the energy lost, per cycle. It's dimensionless because it's a ratio: $Q = P_{STORED}/P_{DISSIPATED}$. Since $P_{STORED} = I^2Z$ and $P_{DISSIPATED} = I^2R$, Q is also Z/R. In other words, a high-Q component has high reactance and low resistance. Because reactance is frequency dependent, Q tells us how well an inductor or capacitor does its job *at a certain frequency*.

FIGURE 2 - CAPACITOR

Inductors usually have higher power losses than capacitors and thus lower Q. If we want to increase the Q of an inductor, we could use larger diameter wire. Skin effect (the tendency of AC to flow in the outer portion of the wire) adds loss; we can reduce it by silver-coating the wire so that more current is carried by the better conductor. And since inductor core material acts like additional resistance (some of the energy stored in the core is turned into heat), we should choose the material most appropriate for the frequency. For instance, we don't use iron-core audio transformers at radio frequencies.

Capacitors have losses, too. One is the resistance of the leads and plates. Another is heating of the dielectric material; we should choose the right material for the job. For example, we can get away with tantalum pentoxide or aluminum oxide as a dielectric at low frequencies, but plastic films are better for audio, and ceramic and porcelain for RF.

Let's say we have a high-Q inductor and a high-Q capacitor. What can we build with them? One item is a high-Q **tuned circuit**.

In an LC tuned circuit, we can define Q as the ratio of frequency to bandwidth. For example, if a tuned circuit has a resonant frequency of 1 MHz and a bandwidth of 10 kHz, it has a Q of 100. High Q components let us build highly selective narrow-bandwidth circuits for oscillators and filters (Fig. 3). High power LC "tank" circuits, which get the name from their storage ability, need high Q components because the heat from losses can be significant.

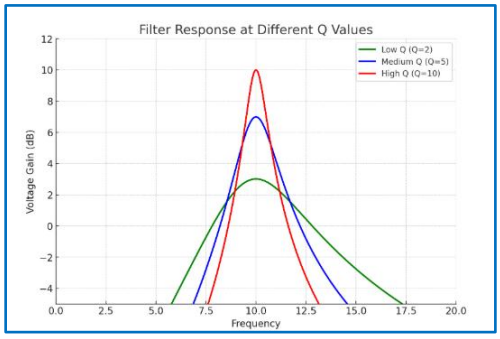


FIGURE 3 – HIGHER Q = NARROWER

Do other parts have Q factors? Yes. A quartz crystal, for example, has a very small bandwidth compared to its operating frequency and may have a Q of >10,000.

Does an antenna have Q? Yes, and it's defined as the energy stored in the fields around the antenna divided by the power it radiates. The higher an antenna's Q, the narrower its SWR bandwidth will be –

just as a tuned circuit's bandwidth gets narrower as Q increases. To widen the bandwidth of an 80 M antenna, we may lower its Q by making the elements thicker or by using a bowtie, fan, or cage configuration.

Is there such a thing as too much Q? Yes, sometimes. The higher the Q, the less willing the circuit is to "give back" energy, resulting in ringing. The inductance of traces on a PC board can combine with bypass capacitors to inadvertently make resonant circuits that affect circuit performance. We "de-Q" these circuits by adding loss, often in the form of low-value resistors.

In power supply and signal processing filtering, we might purposely lower the Q to flatten the frequency response.

The Western Telegraph

When the telegraph came West, it was both a technical marvel and a lifeline. The wire carried everything from rail dispatches to war news to personal notes—but keeping it going took constant work.

Engineering

Engineers carefully chose wire gauges, battery voltages, and station spacing, "tuning" each stretch of line for clear dots and dashes. Iron wire was strong and cheap but had high resistance, corroded quickly, and changed behavior with rain, snow, dust, or ice. Resistance, inductance, and capacitance along the line affected the rise and fall of current in the sounder, blurring dots and dashes.

The Battery Room

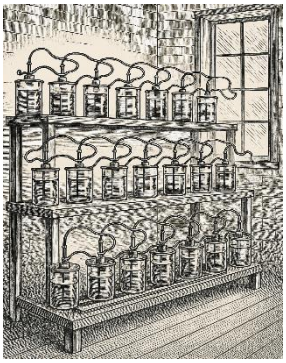


FIGURE 4 – BATTERY

Every station had a battery room (Fig. 1)—the most important (and messiest) part of the operation. Lines typically operated on 80 to 120 volts DC, though short loops could use as little as 20 to 40 volts. Power came from racks of series-connected Daniell or gravity cells, each a heavy glass jar supplying about one volt from zinc and copper electrodes in sulfate solutions. The high voltage was needed to overcome line resistance, compensate for leakage, and give sounders a good "snap" so operators could copy Morse in noisy rooms.

Daily chores included topping off copper sulfate, checking zinc wear, adding water, and cleaning off crystals. Full rebuilds came every few months. Operators added cells in series to boost voltage or in parallel for busy lines, but too much power burned contacts and ate away wire.

Never Silent

After finishing a message, the operator would throw the 'circuit closer' switch, restoring the line to its normal state with a steady loop current. To begin another transmission, either end could open the switch, producing a click in the far sounder—a signal that a message was about to start. In this way, both operators could summon each other and decide who would take the lead. Keeping the line continuously energized also served as a built-in monitor: any unexpected silence meant a broken wire, a downed pole, or a dead battery.

Many Hands

Working a station was no desk job. Frontier telegraph operators were part electrician, part chemist, part lineman, and part survivalist.

Stations were 15 to 25 miles apart, sometimes less in rough country. Each was a human repeater: the operator listened on one circuit and re-sent the message on another. A message might pass through half a dozen hands before reaching its destination, so accuracy and a clean "fist" were prized.

Distance had hard limits. Using a single-wire, earth-return circuit, telegraph lines were typically strung

on 60 to 70 poles per mile. The wire was often #9- or #8-gauge iron. Over long runs, wire resistance and leakage (especially in rain or dust storms) weakened the signal. Even with strong batteries and electromagnets, there was a point where the sounder's click became faint. In dry weather with good wire and poles, you might reach 40–60 miles, but in storms or with poor maintenance, even 10–15 miles could fail.

One advantage of placing stations close together was that repairs could be made more quickly. Operators doubled as linemen, climbing iced poles, splicing broken wire, and chasing livestock off fallen lines. Each post stocked spare parts, chemicals for batteries, and basic supplies. Many also provided food, water, and shelter for staff, and at rail or Pony Express stops, for horses and trains as well.

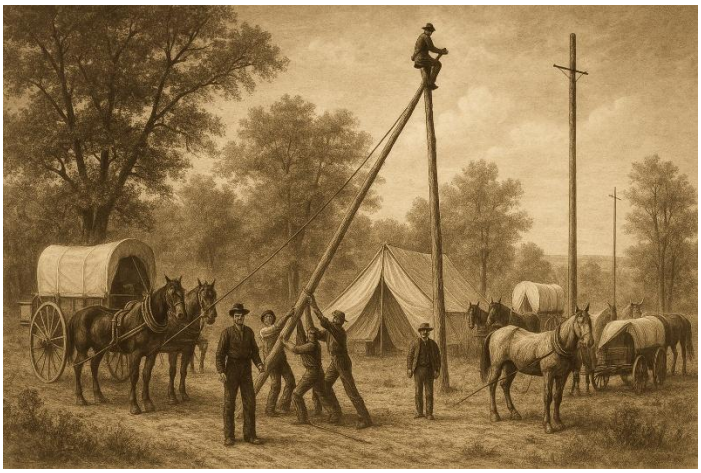


FIGURE 5 – BUILDING A TELEGRAPH LINE

Enemies of the Wire

Nature was relentless. Lightning strikes carbonized poles, and rain and snow bled current through wet insulators. Dust storms left conductive grit, and winter ice snapped wires. Summer heat stretched them until they sagged. Buffalo rubbed against poles until they leaned or toppled.

Telegraph lines could be targets of attack—sometimes by Native groups resisting westward expansion, sometimes by outlaws, and sometimes by Civil War raiders. A Wyoming repair crew once discovered every pole for half a mile had been burned during the night.

Lineman With a Gun Belt

Repair crews rode out in pairs, carrying climbing spurs, splicing tools, insulators, and often a revolver or rifle. The work meant long rides, pole climbs in bad weather, and delicate splicing while watching the horizon for trouble. On the plains, a lineman was as much a scout as technician.

Ears and Hands

Inside the station, springs, pivots, and contacts needed constant adjustment.

Operators recognized each other's "fist" and knew who was sending without ever seeing a name. Between official traffic they swapped gossip, relayed news, or sent "attention" calls to rouse a sleepy partner down the line. Long night shifts in isolated depots meant the sounder was the only company.

Life was hard—modest pay, dangerous work, unpredictable hours. Still, the telegraph was the 19th-century internet, linking distant towns in seconds. Skilled operators took pride in keeping that lifeline running.

The Kenwood TS-900S Update Article

Vintage Amateur Radio

de Bill Shadid, W9MXQ

Previously, we covered the first of Kenwood's long (and continuing) line of TS-900 series top line transceivers. In the beginning, that model was the TS-900 that came out in 1971, covered in an earlier article. It was part of Trio-Kenwood's entry into the North American market under the auspices of Henry Radio, of Butler, Missouri. Kenwood products were distributed by Henry Radio via the major amateur radio dealers in the United States and Canada at that time.

In the first article on the TS-900, we discussed four distinct models of the transceiver. The Japanese always had at least two versions of a radio – that being a 100-watt output, or more, version accompanied by a lower power version for entry level license holders in the Japanese market. We saw those low power versions only in rare cases.

Here is the excellent TS-900 HF Transceiver and its accessories as is "lives" its life here at W9MXQ. It is, a TS-900 (no suffix) radio:

Left to Right

PS-900 Power Supply, TS-900 Transceiver, VFO-900 Remote VFO

Shown with – Left to Right
Kenwood MC-50 Microphone, Kenwood HS-6 Headphones, Johnson Key
W9MXQ Photo

As clearly noted in the earlier article, below is a listing of the four known variants of the TS-900 that have come from my reviews of old articles and Operating Manuals. Here I have added more specifics not mentioned in the earlier article.

- TS-900 – Finals are a pair of 6LQ6/6JE6 vacuum tubes.
  - North American Market Version.
  - This radio is in the picture, just above – and is the one I own and the subject of an earlier article on the TS-900 Transceivers.

- TS-900S – Final is a single 4X150 vacuum tube.
  - Trio branded so not made for North America
  - This radio is the main subject of this Update Article.
  - Rusty Cline, N9DRC, of Rio, Wisconsin owns the TS-900S in this article. It was refurbished by Jan Servaites, N8CBX, of Kettering, Ohio, specifically for Rusty.
- TS-900X – Final is a single 6146A/B vacuum tube. (See picture, near the end of this article.)
  - Japanese home market radio for entry level licensees (or QRP use).
  - I have never seen an example of this model.
- TS-900D – Finals are a pair of 6146A/B vacuum tubes.
  - Unknown market location focus. But did exist in the USA.
  - I once had one of these in my possession. It was covered in detail in an earlier article.

With my recently acquired data format (PDF) Japanese language Trio Operating Manual covering the TS-900S, TS-900X, and TS-900D plus my original English language TS-900 Operating Manual, I can show the power capability of the transceivers (plus other specifications for all versions. These are Trio-Kenwood published numbers.

Power Input by TS-900 Version:

Version[1]	Final Amplifier Tube(s)	Power Input		
		SSB	CW	FSK
TS-900	(2x) 6LQ6/6JE6	300	200	100
TS-900S	(1x) 4X150	240	240	100
TS-900X	(1x) 6146B	20	20	20
TS-900D	(2x) 6146B	160	160	80

It is interesting to note that even in the early days of Kenwood and its TS-9xx series radios, they went after the best possible signal for SSB – that is spectral quality. Kenwood in later versions of the TS-9xx line (TS-930 was next, followed by the TS-940) they were early believers in using a higher collector voltage on the solid-state finals. In those two radios and their near identical solid-state amplifiers used 24-VDC instead of the usual 12-VDC. That has progressed today to Icom, Kenwood, and Yaesu using 48-volts in that same application for their 200-watt output premium radios.

In the case of the TS-900, comparing it to the lower cost TS-511S model, marketed at the same time, Kenwood showed significantly different expectations of the same 6LQ6 final amplifier tubes:

Version[1]	Final Amplifier Tube(s)	Power Input		
		SSB	CW	FSK
TS-900	(2x) 6LQ6	300	200	100
TS-511S	(2x) 6LQ6	500	300	Not Shown

So, what triggered this update article on the TS-900 Series Transceivers? Well, it is an interesting story, with good friends, and a universally admired Kenwood product.

Rusty Cline, N9DRC, is a somewhat regular participant in the Drake Technical Net on Sunday afternoons (go to http://www.wb4hfn.com/DRAKE/DrakePageHome.htm for details of the net schedule). On the net, Rusty mentioned he had a Kenwood TS-900S that needed work to get on the air properly. As I recall, it worked but had developed problems. With Rusty on the Drake Technical Net

that day, fellow friend and collector, Jan Servaites, N8CBX, and I talked to Rusty about the problems. The three of us decided that a trip to N8CBX for review was in order. Subsequently, the radio was sent, repaired, aligned, and then returned to N9DRC. The repairs by N8CBX are obvious in contacts with N9DRC and his beautiful sounding TS-900S!!

Jan is adept in refurbishing a wide variety of radios, including a complete set of the Kenwood TS-900 Transceiver, VFO-900 Remote VFO, and PS-900 Power Supply that I sold to him for his refurbishing and use. That set duplicated the complete TS-900 station at W9MXQ right now – a result of my own refurbishing project. When I bought the TS-900 station that is still here, I also bought a complete second set that now is with Jan. Jan and I talked on the air with our respective TS-900 stations via the Kenwood Hybrid Net. (See http://www.wb4hfn.com/KENWOOD/KenwoodHomePage.htm for details of the schedule of the two different Kenwood Hybrid Nets.) Jan, N8CBX, contributed pictures used in this article – and those are credited to him. I inserted my own text for the pictures.

It would appear, from personal experience, that there are at least three TS-900 Series Operating Manuals available:

- Kenwood TS-900 Operating Manual
  - Source: Kenwood USA Website
  - https://manual.kenwood.com/en_contents/search/
  - English Language – Only TS-900 Covered
  - I have a reprint manual and an original manual.
- Kenwood TS-900S/TS-900X/TS-900D Operating Manual
  - Japanese Language – Covers TS-900S/TS-900X/TS-900D.
  - I have a full copy from the personal collection of Jan Servaites, N8CBX
- Kenwood TS-900D/TS-900X Operating Manual
  - Japanese Language – Covers TS-900D/TS-900X.
  - I have seen one in an eBay advertisement for a TS-900D Transceiver.

I also have a reprint Service Manual for the TS-900 (plus the VFO-900, PS-900, DS-900). It is very handy for servicing and refurbishing these radios. Since the circuitry for all models is the same right up to the Driver stage, this Service Manual suffices.

There may be versions in more languages in print. If any reader knows where one can be found, please let me know. (W9MXQ@TWC.com) Beware when looking for reprint manuals for the TS-900 – at least in North America the resellers sell excellent copies of the TS-900 Operating and the TS-900 Service Manuals. While some are described as “TS-900S.” They are not – all I have seen are TS-900 only. This is tied to Kenwood’s lack of consistency at the time in the way the suffix was assigned to model numbers.

While the premier version of the TS-900 to Americans was the TS-900 – with 6LQ6 finals, the premier version in Japan was the TS-900S, with a single 4X150 Radial Beam Tetrode. The other versions, especially the dual 6146B version (TS-950D) that appeared in North America were brought home because of the ease of getting and using the 6146-format tube.

Japanese home market versions exist here in the USA for reasons that include:

1. An American stationed in the Armed Forces in Japan brings a local market radio home when he returns.
2. A Japanese ham is assigned to work in the USA and brings his radio.
3. Gray market purchase – rare in the time of this radio but tied to an American or Canadian buying a Japan home market radio through a third party.

Here is a picture of the TS-900S model in operation at N9DRC, in Rio, Wisconsin:

Trio (Kenwood) TS-900S Transceiver HF Station at N9DRC

Left to Right: Heathkit SB-200, Kenwood VFO-900, PS-900S, and TS-900S. Also note Heathkit HD-1418 Audio Filter and Kenwood DG-5 Digital Readout for TS-900S.

N9DRC Photo

The TS-900S model has a vertical brushed bronze color as compared to the TS-900 on the first page of this article that is vertical bushed silver in color. The radios differ in the final amplifier circuits. The PS-900 and PS-900S differ in voltage requirements for the tubes in the final amplifier o f their respective radios. The VFO-900 and VFO-900S would differ only in front panel color. I suspect that in all versions of the VFO-900, the electronics would be identical with only cabinet markings and color to differentiate them.

The difference in the models is in the final amplifiers. Here are pictures to show those differences . . .

Trio (Kenwood) TS-900S HF Transceiver PA Compartment

Outer Compartment Shields Removed – Front Panel to the Left

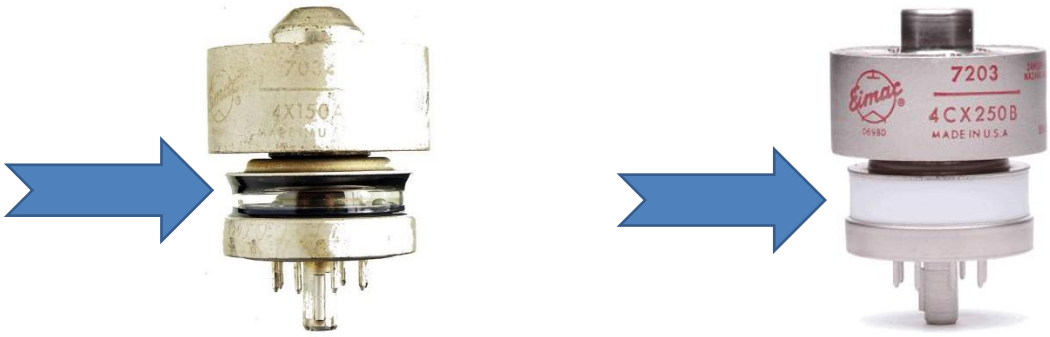
The 4CX250R final amplifier tube (almost invisible in this view) is clamped into the Eimac Air Systems Socket with the pressurized blower housing shown under the chassis, below the socket. See also the sheet metal cover, below the blower housing that allows the entry of air in from the bottom. That cover seals the bottom area of the pressurized air compartment. See the temperature sensor switch – glass tube – just above the tube. This is Rusty, N9DRC's, radio after Jan, N8CBX, did his work.

N8CBX Picture

When Jan, N8CBX, did his refurbishing of the radio, he discovered that the 4X150 final was weak – needing replacement. It is common to replace the no longer available glass seal 4X150 with the more modern, and available, ceramic 4CX250B or 4CX250R Tetrode. They are pin for pin and physical size interchangeable devices. They are plug-in equivalents, electronically – with the benefit of the 4CX250B/R having close to double the plate dissipation of the 4X150 (250-watts vs 150 watts, respectively).

Another case in point supporting this replacement was done in the Collins Gold Dust Twins. The KWS-1 Transmitter in those twins used a pair of 4X150 Tetrodes when Collins introduced the radio in 1955. When replacement became necessary, it was always done with a pair of 4CX250B's. To be fair to Collins, the 4CX250B was not available when the KWS-1 was initially released. Indeed, KWS-1 Transmitters are running to this day with their original 4X150 final amplifier tubes. Of the three KWS-1 Transmitters I have owned, only my current one has 4CX250B finals. So, while both are good tubes, the extra dissipation, the more durable ceramic seal, and availability made the move to the 4CX250B (or the 4CX250R) very desirable.

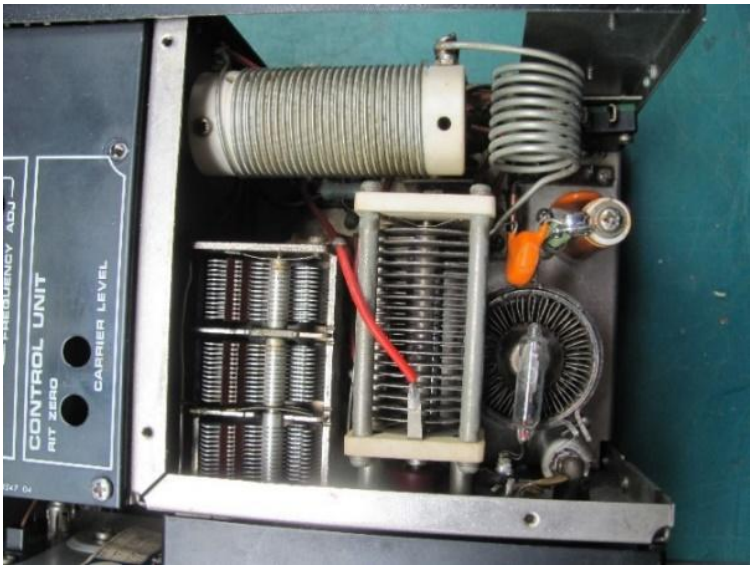
Eimac 4X150 and 4CX250 Tetrode Tubes Compared



Eimac 4X150 Tetrode (4X150A shown)
Blue Arrow shows Glass Seal

Eimac 4CX250B or 4CX250R Tetrode
Blue Arrow shows Ceramic Seal

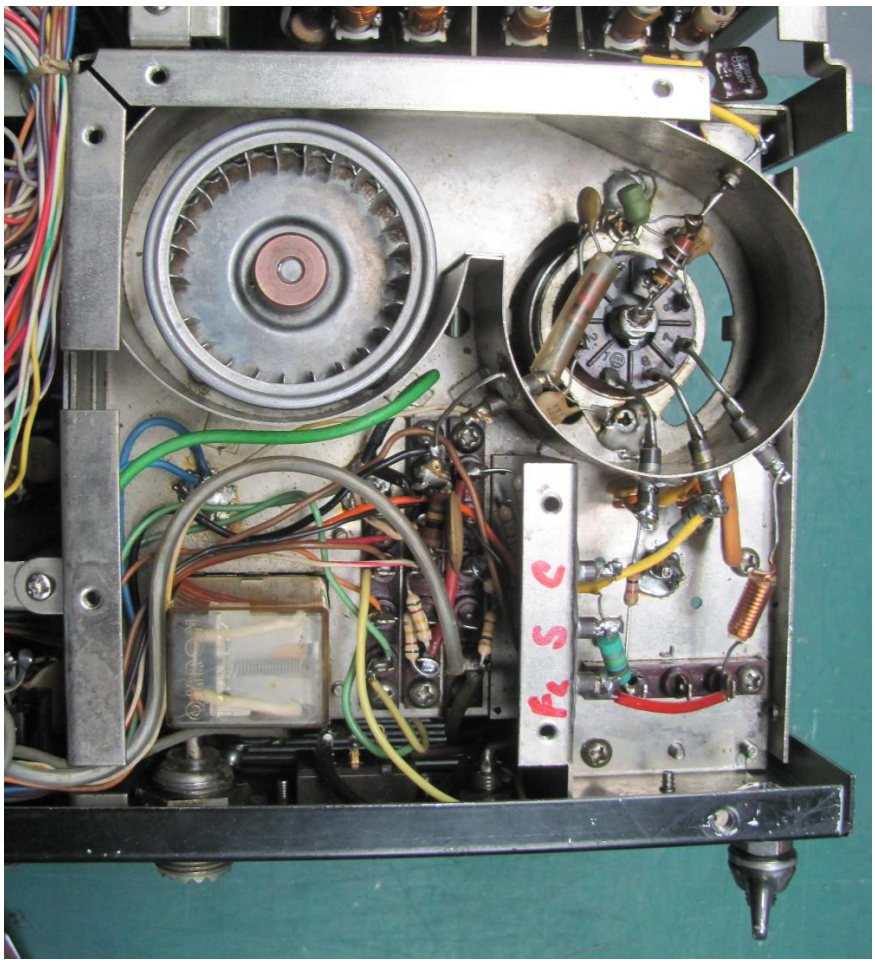
Often, the glass seal 4X150 is replaced with the more modern ceramic 4CX250B or 4CX250R Tetrode. This was a common replacement for radios of the time. The glass (meaning fragile!!) 4X150 was easily damaged. The ceramic 4CX250B and 4CX250R are economical, available, and much more durable.



Trio (Kenwood) TS-900S HF Transceiver PA Compartment. This is a top view with the Front Panel toward the bottom of the picture. Compare this to the side view – above. Note the glass sensor above the tube, also visible in the above picture. This shows another view of the heat sensor, above the tube.

N8CBX Picture

Now, another view of the power amplifier area, this time from the bottom.



Trio (Kenwood) TS-900S HF Transceiver PA Compartment Bottom View

Bottom Cover Removed – Front Panel to the Top of the Picture

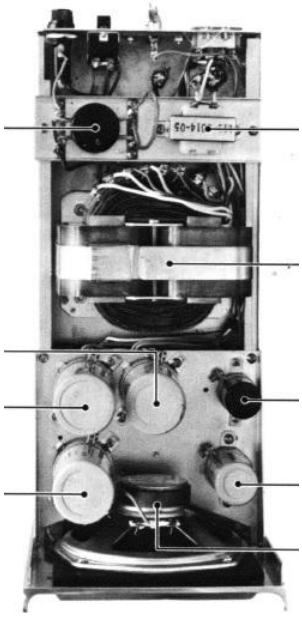
N8CBX Picture

See the shaped, curved, enclosed area toward the top of the picture. On the left is the squirrel cage fan. Air is drawn in from the bottom of the fan blade enclosure via an opening in the bottom cover. The bottom cover seals the air flow compartment. Air flows through the Air System Socket at the upper right and out through the fins in the final amplifier tube. Air must be running whenever the tube filament is powered. If the fan is not running, then power must be removed from the radio to avoid destroying the tube.

One difference between models of this radio is in the individual power supplies. There is a considerable difference in the plate voltage between the TS-900 (6LQ6 Finals) and the TS-900S (4X150 final). Those voltages are 800 VDC and 1450 VDC, respectively.

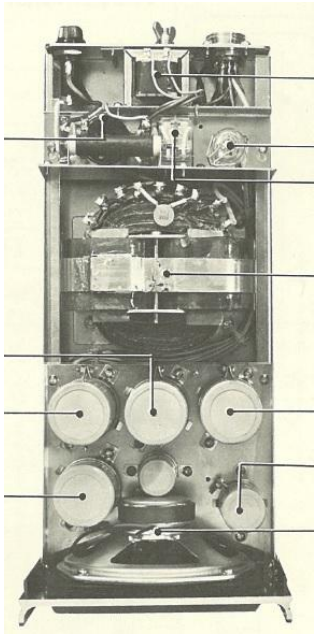
> Note: The TS-900D and TS-900X plate voltages for their 6146B finals would be the same as each other – but may be different again from the TS-900 and TS-900S. I do not have that information on the PS-900D at this time.

Here are physical details on the PS-900 and PS-900S AC Power Supply and Speaker Consoles:



PS-900D Top View – Cover Removed Speaker Toward the Bottom

Kenwood PS-900D Operating Manual



PS-900S Top View – Cover Removed Speaker Toward the Bottom

Trio PS-900S Operating Manual

A consideration between these power supplies is an added electrolytic capacitor on the HV filter to accommodate the higher plate voltage developed in the PS-900S over the PS-900D. Also, the PS-900S adds thermal timer circuitry to prevent DC Plate Voltage being available until the final filament is warmed up properly.

The complexity necessary here for using traditional transmitting tubes, like the 4X150, must have concerned Kenwood for export markets. The sweep tube and 6146 based tube designs removed the need for plate voltage application timing, critical cooling even in stand-by, tube and ventilation costs, led this to a one-off experiment – never to be repeated.

Here is the layout of the final amplifier compartment for the TS-900 (2x 6LQ6 finals) and for the TS-900D (2x 6146B finals) – these installations look identical from the perspective shown in these pictures:

Trio (Kenwood) TS-900 HF Transceiver PA Compartment. This is a top view with the Front Panel toward the bottom of the picture.

W9MXQ Photo

Compare this picture with the top view of the TS-900S PA Compartment, earlier in this article. Now look at the pictures below showing the Cooling Fan typical of the TS-900 and TS-900D models on the left. On the right, see the rear panel view of the TS-900S showing the area where the Cooling Fan is placed on the TS-900 and TS-900D.

Recall that the cooling fan in the TS-900S is in the chassis – not on the rear panel. The TS-900S uses the forced air cooling through the Eimac™ Air Systems Socket as shown in pictures above. It is important to understand that tubes such as the 4X150, 4X150A (which was mostly likely the tube originally in the TS-900S), the 4CX250B, or the 4CX250R must have the air-cooling system working even when just the filament is energized. These miniature tubes cannot have any operating voltage present without cooling. If you turn on power in the TS-900S, you must hear the fan running. If you do not, you must immediately remove all power.

Rear Left View of the TS-900X
Shows air escape grill from blower.
Schulman Auction Photo

Rear Left View of the TS-900
Shows fan on the rear of the cabinet.
W9MXQ Photo

The restriction for applying power does not apply to the glass envelope 6LQ6 or 6146B tubes present in the other TS-900 models (TS-900, TS-900D, or TS-900X).

Now for some additional pictures . . .

Kenwood Photo

Left to Right
Trio TS-900X Transceiver shown with PS-900 Power Supply.
(Note "Trio[4]" branding – these were not for the USA Market)

Above is a picture of the home market TS-900X – the Trio branded 20-watt input radio for the low power HF licensees in Japan. Like the TS-900S, this radio appears in the vertically brushed bronze finish. As referenced above, this radio has a single 6146B final amplifier tube. The PS-900 is intended for both the TS-900D and the TS-900X. However, as also mentioned earlier, I cannot confirm that at this time.

It is my understanding that this radio could be field upgradable to add the second 6146B and thereby have the same power specifications of the TS-900D. This is not confirmed and only provided by word of mouth.

Finally, here is a picture of the TS-900 station of my friend, Jan Servaites, N8CBX, who is mentioned earlier as repairing this radio. This is, I believe, Jan's original TS-900 – not the one that I sold to him. This is a nice setup, Jan, with that also nice Kenwood TS-940S. Jan and I have become friends over the air, telephone, and email. We have never met in person – but hope to rectify that in the future!

The Kenwood TS-900 and TS-940S Radios at N8CBX

Left to Right:
Kenwood PS-900 Power Supply, VFO-900 Remove VFO, TS-900 HF Transceiver
Shown with Shure 444D Microphone and Kenwood TS-940S HF Transceiver

N8CBX Photo

This does not end the saga of the TS-900S Transceiver or of the maintenance and restoration of other TS-900 versions. Stay tuned for Part 3 of this series on the TS-900, TS-900S, TS-900D, and TS-900X next month when we will talk about:

- My work with a frequent problem shared many of the TS-900 radios, several versions, which must be corrected before alignment can be safely completed.
- A step-by-step checklist review of the things that Jan Servaites, N8CBX, completed in his work to restore the proper operation of the Rusty Cline, N9DRC, Kenwood TS-900S Transceiver.

So, to my friends reading this article, look for Jan, N8CBX, Rusty, N9DRC, and me, W9MXQ, on the bands and see if we happen to be running our Kenwood TS-900 Transceivers of one flavor or another. The communication with Rusty, N9DRC, happened just after the closure of the Drake Technical Net, on 18 December 2022. Net control that day was Mark Gilger, WBØIQK, of Doylestown, Ohio.

This article would seem to move between brand names "Trio" and "Kenwood." This mirrors the confusion Kenwood's marketing seemed to wrestle with at the time. For the most part and for the sake of discussion, I use them interchangeably according to how the radio's panel is labeled. At the time, Trio was the marketing name in Japan and Kenwood was the marketing name in the rest of the world. Simple? Well, not so much. Variations in that exist through time. For a while, Kenwood USA, when it was first formed, showed reference to "Trio-Kenwood" as the company's name.

I appreciate that you read my articles. As mentioned above special thanks go to Bob, W9DYQ, for his proof reading. Remember that I am open to questions and comments at my email address, W9MXQ@TWC.com.

Notes:

[1] From Specifications in the Trio-Kenwood Operating Manuals of the noted models.

[2] The adhesive was sourced from:
https://www.amazon.com/Anticlog-Adhesive-superglue-Cyanoacrylate-Plastics/dp/B0BCL2KT5Y/ref=sr_1_2?keywords=GH1200&qid=1682470278&sr=8-2

W9MXQ ©2023

Kenwood Hybrid (Solid State with Vacuum Tube Power Amplifier) Transceivers in the North America Amateur Radio Market . . .

Kenwood TS-511S
First Marketed: 1971

Kenwood TS-520(x)
First Marketed: 1973

TS-530S
First Marketed: 1981

Kenwood TS-820(x)
First Marketed: 1976

Kenwood TS-830(x)
First Marketed: 1980

TS-900(x)
First Marketed: 1973

The TS-511 (and is international – outside USA sister, the TS-515) were what we today call, "honorary hybrids." Actually, they had ten vacuum tubes. Still, it was a major step in the solid-state revolution of the 1970's in amateur radio equipment.

GARS Open Positions – Help Wanted

These are some of the positions that are available. If you have a background in any of these positions or want to learn them, they are available for you to fill.

- Public Information Officer
- Marketing Chair
- Activities Chair – includes the following types of activities that can be sponsored by GARS

1. Fox Hunt
2. GARS Operating Contests
3. Winter Field Day
4. GARS Hamfest Volunteers

- Non-Chair Activities needed:

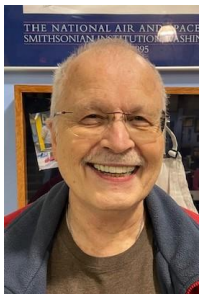
1. Meeting Drink handler
2. "X" discussion handler
3. Raffle product coordinator (given a budget to get raffle items)
4. Holiday Party activities

In order to offer your help with any of these, send an email to president@gars.org or contact the President (Bob K4CQO) at one of our meetings.

GARS Officers for 2026

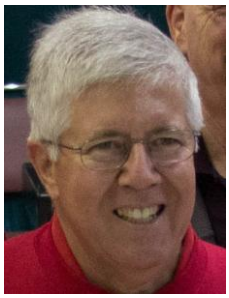
February each year, GARS has its officer elections. These are the GARS officers for 2026.

President – Bob Hoffmann, K4CQO



Vice President – Glen Wendt, W3WWT

Treasurer – Ralph Pickwick, KJ4CNC



Secretary – Michael Stewart, KR4CVF

Program Manager – Kevin Scott, K4GTR

GARS Membership

New Members in February

Frederic Grant (N2FG)
Mary Kosier (KR4JIJ)
James Kosier
Philip Miller (KR4JWW)
Jackie Newsome (KR4JCS)
Suzanne Wilbanks (KR4JZK)

New Members: 6

Total Members as of February 1, 2026
355

Join GARS members for our:

- weekly lunch bunch at 11:00 AM most Fridays
- weekly breakfast gathering at 8:00 AM most Saturdays

Friday weekly gatherings are held at the Chilli's at:

947 Lawrenceville Suwanee Rd
Lawrenceville, GA 30043

Saturday weekly gatherings are held at the Cracker Barrel at:

75 Celebration Dr
Suwanee, GA 30024

Birthdays in March

Rick Baker (KO4RWY)
Buel Baugh (KI4UNI)
James Baxter (KQ4TLC)
John Bojack (N0HRM)
Dave Bruse (W4DTR)
Keith Davis (KT4KTD)
Neil Derryberry (WD4NET)
Lynn Hatker (W4VNA)
Jim Hawkins (KF4RX)
Jimmy Hendricks (KR4IMC)
Suzanna Hoefler
Jerry Hundley (K4IT)
Kevin Igarashi-Ball (W4KIB)
Don Martini (KM4BWT)
Philip Miller (KR4JWW)
Kyle Scott (KN4UWV)
Mike Smith (KK4KHS)
Tom Tcimpidis (K6TGT)
Joseph Tollison (KQ4YBT)
Suzanne Wilbanks (KR4JZK)
Brent Woodman (N2BAB)

GARS MEMBERSHIP

Your current GARS membership status is shown in the monthly newsletter e-mail towards the bottom of the message. To become a GARS member, or to renew your GARS membership, please visit our website – www.gars.org/gars/membership/. To make changes to your GARS membership (moved, new e-mail address, new phone number, etc.), please contact the Membership Chair at Email (https://gars.org/contact/) with any changes to your Membership information.

Membership Chair: Dave Bruse, W4DTR
Committee Members: Pam Brown, KJ4RYV, John Aguirre, KQ4EJV

ARRL MEMBERSHIP

To update your ARRL membership information, please visit their website - http://www.arrl.org.

Local Ham Radio Meetings

In order to find a local Ham Radio Club meeting near you, please visit http://www.arrl.org/find-a-club. Contact the club for meeting information.

GARS Membership Pricing Join Link: https://gars.org/join Renew Link: https://gars.org/renew	
Newly Licensed Membership: (Adults and Seniors first licensed within the past 120 days)	**First Year Free**
Youth Membership (age 21 and younger)	**Free (until age 22)**
Adult Membership	**$30 / 1-Year $50 / 2-Years ($10 savings) $60 / 3-Years ($30 savings) $350 / Lifetime (One-Time Fee)**
Senior Membership (age 65+ with Proof of age)	**$15 / 1-Year $25 / 2-Years ($5 savings) $30 / 3-Years ($15 savings) $150 / Lifetime (One-Time Fee)**

GARS By-Laws Proposed Change

Replace this:

F.3. All newly licensed Amateurs may apply for a free one year membership. Proof of new Amateur license must be shown to the membership chairman. The burden of proof is on the applicant.

1. Membership must be applied for within 120 days of obtaining a new Amateur license.
2. The applicant shall be subject to Section B.2, except the clause pertaining to dues.
3. Membership will end on the first of the following month, one year later after acceptance of the applicant for membership.
4. Membership may be continued in accordance with Section F.1 above.

With this:

F.3. All licensed Amateur Radio operators who have not previously been members of the GARS may apply for a free one-year membership.

1. The applicant shall be subject to Section B.2, except the clauses pertaining to dues.
2. Membership shall end on the first day of the month following one year later after acceptance of the applicant for membership.
3. Membership may be continued in accordance with Section F.1 above.

The process to change our Bylaws is:

G.1. These bylaws may be amended by a majority vote of the GARS membership, or by a two-thirds (2/3) vote of those present at any meeting. The proposed amendment(s) is to be published in the newsletter and voted on at the next regular meeting. Proposals for amendments shall be submitted in writing and shall be read word for word by the secretary just prior to the voting

Donating to GARS

Your GARS donation can be used for a certain purpose by donating to one of these funds:

- GARS SK Memorial Fund for Education (to remember and honor Silent Keys);
- GARS Scholarship Fund (Administered by the ARRL for awarding scholarships);
- GARS General Fund (any club purpose).

GARS has joined these rewards programs (a portion of every purchase you make through these merchants may be donated to GARS):

- Kroger Community Rewards program.

For more information on how to sign up for these rewards programs, or to donate to GARS, visit

https://gars.org/gars/donations-to-the-club

GARS on Social Media

Discord Request:
https://gars.org/discord

Groups.io:
https://gars.org/groups.io

Visit GARS on Facebook:
https://gars.org/facebook

Follow GARS on X:
https://x.com/GARS_Hams

Join GARS on YouTube:
https://gars.org/youtube

GARS Mail Address:

GARS
P.O. Box 492531
Lawrenceville, GA 30049

Officers

 Bob Hoffmann, President K4CQO

 Glen Wendt, Vice President W3WWT

 Ralph Pickwick, Treasurer KJ4CNC

 Michael Stewart, Secretary KI4FPR

 Kevin Scott, Program Manager K4GTR

Managers and Committee Chairs

 Dave Bruse, VE Team Leader , Membership Chair W4DTR

 David Adcock, Webmaster KA4KKF

 Ralph Pickwick, Education Chair KJ4CNC

 Earl Whatley, Apparel Manager & Dacula Parade Co-Chair AF4FG

 Michael Stewart, Activities – Dacula Parade Co-ChairKR4CVF

 Bob Hoffmann, GARzette Editor K4CQO

 Eddie Foust, Repeater Chair K4AIH

 Mike Weathers, WAS / DXCC QSL Card Checker & Historian ND4V

 Chuck McCord, Net Manager KK4TKJ

 Steve Back, Technical / RFI Advisor WB2OGY

 Dallas Mellichamp, Workshop Leader, Field Day Chair N4DDM

 Sandy Jackson, Health and Wellbeing KJ4DRO

 Edwin Henderson, Multimedia Chair W4BSR

 Dallas Mellichamp, Georgia QSO Chair N4DDM

 Neil Derryberry, Elmer Manager & IT Chair WD4NET

 Edwin Henderson, TechFest Chair W4BSR

Open Winter Field Day Chair

Directors and Trustees

 Joe Biddle, AD4PZ

 Kyle Albritton, W4KDA

 John Davis, WB4QDX

 Bill Cherepy, WB4WTN W4GR Trustee

GARS Meeting Minutes

GARs General Meeting Minutes
February 10, 2026

Opening Meeting: February 10. 2026. Meeting open at 7 PM or 1900hrs by President Bob Hoffmann. General meeting information as to emergency exit and including exit procedures to leave hanger and avoid aircraft which have priority.

Birthday Acknowledge: As published on GARS website.

Treasurer Report: Was given by our President Bob Hoffman to those present at the meeting.
Membership Report:
Member Present at Meeting:36 + 4 Zoom

Programs: HF Riggs covered various radio and their capabilities. Presenters were Neil, Glenn, John, and Kevin
Education: Technician Ham Cram April 11-22, 2026.

Repeater: David Adcock said it works.
VE Status: None reported.
Upcoming Events: Tech Fest February 21, 2026, QSO Party April 11-12, 2026, Dog Show March 25-29, 2026 and Memorial Day Parade in Dacula, Ga May 25, 2026,
New Business: Elections of Officers
By Unanimous Vote for Bob Hoffmann as President, Glenn Wendt as Vice President, Michael Stewart as Secretary, Ralph Pickwick as Treasurer and Kevin Scott as Program Manager.
Closing: At 8:09 PM (2009**)**

Workshop Minutes - February 17th, 2026

Attendance: 16
Workshop Follow-up Basic HF Radios
Presenter: Various

Brief Summary: This Workshop followed the GARS presentation of the same title

Mark N7GRB did a show-n-tell of his Icom IC-705 HF rig. We had discussions about TechFest set up and to be at the Fairgrounds at noon on Friday. Glen W3WWT and Ralph KJ4CNC worked on their treasure pass down. A small handful of folks talked about Meshtastic, and the DMR crowd met. William KR4EAY asked Steve WB2OGY for help with RF interference issues.

Elmers are always present at the GARS Workshops. Feel free to bring your questions to the Workshop. If your project is small enough to bring to the meeting, please let us know in advance so we can gather the necessary tools, test equipment, etc.

73 Dallas N4DDM
Workshop Chair

Events – GARS and others

ARRL CONTESTING INFO

From ARRL Contest Calendar
> For more information click the links <

January 2026
1 Straight Key Night
3 Kids Day
3-4 RTTY Roundup
17-19 January VHF

February 2026
9-13 School Club Roundup
21-22 International DX – CW

March 2026
7-8 International DX– Phone

April 2026
19 Rookie Roundup – Phone

May 2026 (no ARRL Contests)

June 2026
6-7 International Digital Contest
13-15 June VHF
20 Kids Day
27-28 Field Day

July 2026
11-12 IARU HF World Championship

August 2026
1-2 222 MHz and Up Distance Contest
15-17 10 GHz & Up – Round 1
8-9 EME - 2.3 GHz & Up
16 Rookie Roundup – RTTY

September 2026
12-14 September VHF
5-6 EME - 2.3 GHz & Up
19-21 10 GHz & Up - Round 2

October 2026
TBD Collegiate QSO Party
31-Nov 1 EME - 50 to 1296 MHz
19-23 School Club Roundup

November 2026
7-9 Nov Sweepstakes–CW
28-29 EME - 50 to 1296 MHz
21-23 Nov Sweepstakes–Phone

December 2026
4-6 160 Meter
12-13 10 Meter
20 Rookie Roundup–CW

For more information:
http://www.arrl.org/contest-calendar

HAMFEST CALENDAR

[Please confirm the status of a Hamfest before making plans

03/14/2026 - MARCIFest
Location: Bradenton, FL
Type: ARRL Hamfest
Sponsor: Manatee Amateur Radio Club, Inc.
Website: http://manatee-arc.org

03/06/2026 - 03/07/2026
BirmingHAMfest, ARRL Alabama Section Convention
Location: Trussville, AL, AL
Type: ARRL Convention
Sponsor: Birmingham Amateur Radio Club
Website: http://birminghamfest.org

03/07/2026 - Flamingo Net Flea at U. of Miami
Location: Coral Gables, FL
Type: ARRL Hamfest
Sponsor: Flamingo Net ARC
Website: http://FlamingoNet.8m.net

03/14/2026 - MARCIFest
Location: Bradenton, FL
Type: ARRL Hamfest
Sponsor: Manatee Amateur Radio Club, Inc.
Website: http://manatee-arc.org

03/20/2026 - 03/21/2026
56th Playground Amateur Radio Club Hamfest
Location: Fort Walton Beach , FL
Type: ARRL Hamfest
Sponsor: Playground Amateur Radio Club
Website: https://w4zbb.org/parc-hamfest-march-2026/

03/21/2026 - Stuart Hamfest
Location: Stuart, FL
Type: ARRL Hamfest
Sponsor: Martin County Amateur Radio Association
Website: http://www.mcaraweb.com

03/21/2026 - Zephyrhills ARC Tailgate
Location: Zephyrhills, FL
Type: ARRL Hamfest
Sponsor: ZAARC
Website: http://zaarc.org

03/28/2026 - DeKalb County Amateur Radio Swap Meet / Hamfest
Location: Fort Payne, AL
Type: ARRL Hamfest
Sponsor: DeKalb County Amateur Radio Club
Website: http://w4dgh.org/tailgate.htm

04/25/2026 - Savannah Hamfest and Swapmeet
Location: Pooler, GA
Type: ARRL Hamfest
Sponsor: Coastal Amateur Radio Society
Website: https://coastalamateurradiosociety.net/

04/25/2026 - TARCFest
Location: Tampa, FL
Type: ARRL Hamfest
Sponsor: Tampa Amateur Radio Club
Website: http://www.hamclub.org

For more information: www.arrl.org/hamfests-and-conventions-calendar. When searching by division, use Southeastern: GA, AL, FL Delta: TN Roanoke: NC, SC

GARS Events Calendar for 2026

TechFest	February 21 2026
Winter Field Day	January 24-25 2026
Dog Show Fundraiser	March 25-29, 2026
Spring Technician HamCram	April 11&12 2026
Georgia QSO Party	April 11-12 2026
North metro area Fox Hunt	April 2026
Memorial Day Parade	May 25 2026
ARC/KARC Hamfest	June 6 2026
Field Day	June 27-28 2026
Summer General HamCram	August 2026
Fall Technician HamCram	October 2026
JOTA	October 2026
Stone Mt. Hamfest	November 6-7 2026
Holiday Party	December 2026

GARS Recurring Calendar

- 2nd Tuesday of the month at 7 pm (except December)
  Monthly Club Meeting
  690 Airport Rd, Lawrenceville, GA 30046
- 3rd Tuesday of the month at 7 pm (except December)
  Monthly Workshop
  690 Airport Rd, Lawrenceville, GA 30046
- 3rd Sunday of the Month at 3 pm
  GARS Ham Exam Session
  690 Airport Rd
  Lawrenceville, GA 30046
- Every Monday at 7:30 pm: GARS Want, Swap, Sell, and Information Net on the GARS 147.075 MHz repeater
- Every Monday at 8:30 pm: ARES Training on the GARS 147.075 MHz repeater
- Every Thursday at 7:30 pm: GARS 440 Net on the GARS 442.325 MHz repeater
- Every Friday at 11:30 am, GARS Lunch at Chilli's
- Every Saturday at 8:00 am GARS Breakfast at Cracker Barrell

GARS Calendar for March 2026

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 **7:30 PM 2M Net 147.075(+) MHz Tone 82.5**	3 **7:00 PM Exec Meeting**	4	5 **7:30 PM 70cm Net 442.325(+) MHz Tone 100**	6 **11:30 AM Lunch at Chili's**	7 **8:00 AM Breakfast at Cracker Barrel**
8	9 **7:30 PM 2M Net 147.075(+) MHz Tone 82.5**	10 **7:00 PM Meeting EAA 690 Hangar**	11	12 **7:30 PM 70cm Net 442.325(+) MHz Tone 100**	13 **11:30 AM Lunch at Chili's**	14 **8:00 AM Breakfast at Cracker Barrel**
15 **3:00 PM Ham Radio Exams, EAA 690 Hangar**	16 **7:30 PM 2M Net 147.075(+) MHz Tone 82.5**	17 **7:00 PM Workshop Meeting EAA 690 Hangar**	18	19 **7:30 PM 70cm Net 442.325(+) MHz Tone 100**	20 **11:30 AM Lunch at Chili's**	21 **8:00 AM Breakfast at Cracker Barrel**
22	23 **7:30 PM 2M Net 147.075(+) MHz Tone 82.5**	24	25	26 **7:30 PM 70cm Net 442.325(+) MHz Tone 100**	27 **11:30 AM Lunch at Chili's**	28 **8:00 AM Breakfast at Cracker Barrel**
29	30 **0**	31				

GARS Ham Radio Exams & Results

GARS Ham Radio Exams

GARS Exam Sessions are held the 3rd Sunday of the month

Preregistration is REQUIRED, Doors open at 2:45pm, exams start promptly by 3:00pm. For more information and to preregister, please visit https://gars.org/exams/

GARS VE-Team
VEC: W5YI-VEC
EAA 690 Hangar
690 Airport Rd
Lawrenceville, GA 30046

GARS VE Team Leaders
E-mail: exams@gars.org.

February 2026 Results

The GARS VE Team exam session results from February 15th:

2 new Technicians:
- Philip B Miller KR4JWW
- Carl A Morawetz KR4JUS

1 new General (who passed both General and Technician):
- Justin McCannon KR4JUR

3 new Extras:
- Donnell W Howse KQ4EHW
- Jackie O Newsome Jr KR4JCS
- Tyler A Waldrop KJ4ESU

Special thanks to the Volunteer Examiners who made this exam session possible:

W4DTR - Dave Bruse
KM4SWL - Richard Kitz
W4VNA - Lynn Hatker
NG4H - Bill Beguhn
K4CQO - Bob Hoffmann
N4MPC – John de Loe

Thanks & 73, Bob Hoffmann K4CQO (Team Lead)

TechFest results from February 21st

9 new Technicians

6 new Generals (1 who passed both Tech and Gen)

2 new Extras (1 who passed both Gen and Extra)

Special thanks to the Volunteer Examiners who made this exam session possible:

KK4TKJ - CHARLES MC CORD
NG4H - WILLIAM BEGUHN
KM4SWL - RICHARD KITZ
W4VNA - Lynn Hatker
WS3V - WILLIAM RUDD
K4CQO - ROBERT HOFFMANN
NV4Q - William Carmichael
KQ4DWZ - Douglas Hooper
N4MPC - JOHN DE LOE
WR1TR - WILLIAM HAWKINS
KA4KBX - GARY PIKE
KD4PCU - Anna Pike

Thanks & 73, Chuck McCord KK4TKJ (Team Lead)

Local Ham Radio Exams

In order to find an exam session near you, please visit http://www.arrl.org/exam_sessions/. Contact the information in the listing for further information.

MAINTAIN YOUR LICENSE

You can update your Amateur Radio license information with the FCC at their website for free - https://www.fcc.gov/wireless/universal-licensing-system. License renewal is subject to the $35 FCC fee.

GARS Supporters

In order to have your ad included, contact editor@gars.org. Current ad prices per year are:

Business Card	$50
1/4 page	$125
1/2 page	$150
Full page	$200

For swap items, post and see items on GARS groups.io (https://groups.io/g/GARS).

Ready to take your Ham Radio Exam?

Go to https://GARS.org/exams/ to learn more, and to register for an upcoming exam session.