



The

GARzette



The Official Newsletter of the Gwinnett Amateur Radio Society

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www.GARS.org

**Don't forget to support our
advertisers at the back of the
GARzette.**



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

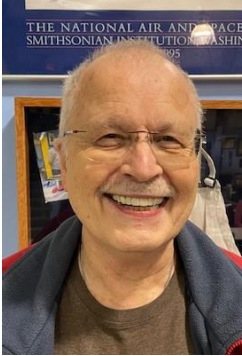
**GARS Meeting: Field Day Presentation – Kevin Scott K4GTR & Dallas Mellencamp
N4DDM**

Tuesday April 14, 2026 at 7:00 PM



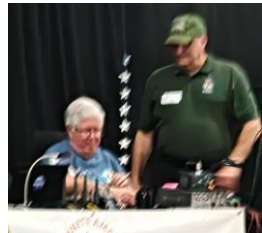
President's Message

From the President...



It is springtime with warmer temperatures and time to start GARS warm weather activities – or at least start getting ready for the ones soon to be part of our summertime ham radio fun.

I was able to attend the Walnut Grove Elementary School ARISS and after also listening to some of the previous ARISS via Zoom – being there is a real treat and getting to experience the excitement of the school students and the GARS member teachers who worked to put it all together – I was in augh of the work they did and how well they put it all together. I also want to thank Ralph Pickwick KJ4CNC for being the GARS connection to the school and instrumental in helping getting it started, setup and completed.



In March GARS also did the communications, gate and ticket handling, and parking for the Lanier Dog show held at the Gwinnett Fairgrounds. There is a wrap-up and pictures article later on in this month's GARzette.

On April 11, GARS went to Bowman's Island West to do a double take – activate the park (POTA) and participate in the GA QSO. It was set up in the morning to activate the park and then have 2 stations using the GARS call sign for the GA QSO in the afternoon. Thanks to Dallas N4DDM for putting this together. I was able to attend for a few hours enjoying the activities before I had to run to Atlanta – pickup the spring break family from their trip to FL.

On April 11 & 12 GARS also held our spring Technician HamCram. It was a full cast of students and put on by Ralph Pickwick KJ4CNC and John Davis WB4QDX along with the GARS VE team providing the exams at the end of the HamCram. This is one-way GARS promotes ham radio to new operators.

Now on to the upcoming events GARS is planning. In May there is going to be another Meet the Members contest. It is going to be a week-long this time and hope to hear a lot of members on our repeaters and get an additional point for a face-to-face QSO by coming to the June Ice Cream Social held this year back to Harbins Park where GARS will hold our Field Day activities.

In May GARS is also doing the Dacula Memorial Parade. I missed last year's parade due to a cast and the possibility of rain (I got a lot of kidding for not showing up with a garbage bag over the cast) and plan to attend and enjoy the comradery of working with the other GARS members and also helping and talking to the people who are going to be in the parade. If you haven't been there – it is a great way to spend the morning and try out your HT.

In June is ham radio's big event – Field Day. GARS is back again at Harbins Park and the planning is starting with our Field Day Chair Dallas N4DDM. There are a lot of ways to help with GARS Field Day and every help is appreciated.

Finally, I wish to welcome Mario Stewart KR4CUK as our Public Information Officer and along with Tee Stewart KR4GKY to bring the meeting drinks.

73,

Bob – K4CQO

Club President / GARZette Editor

GARS Repeaters and Other Communications

<p><u>2 Meter Repeaters</u></p> <p>147.075(+) MHz Tone 82.5 147.255(+) MHz Tone 107.2</p> <p><u>1.25 Meter Repeater</u></p> <p>224.580(-) MHz Tone 100.0, 1.6 MHz Offset</p> <p><u>70 Cm Repeaters</u></p> <p>444.525(+) MHz Tone 82.5 442.100(+) MHz Tone 100 442.325(+) MHz Tone 100</p>	<p><u>6 Meter Repeater</u></p> <p>53.110 (-1 MHz) No Tone</p> <p>Other Resources:</p> <p><u>APRS</u></p> <p>144.390 -- 1200 Baud W4GR</p>	<p>6M</p> <p>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</p> <p>Link remote receivers being added</p>
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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 Upcoming 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 [YouTubeLive](#) each month on the second Tuesday at 7:00 PM Eastern (information also available on <http://www.gars.org>). Members are able to attend the GARS Executive Meeting (via Microsoft Teams) 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)

- April 14th – Field Day Presentation – Kevin Scott K4GTR & Dallas Mellencamp N4DDM
- May 12th – Multiband Antennas for HF – Various Speakers led by Kevin Scott K4GTR
- June 9th – GARS Ice Cream Social at Harbins Park
- July 14th – CubeSat Presentation by Annie Mehta KQ4NJC

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

- April 21st – Field Day Presentation – Volunteer Sign-up
 - Dacula Memorial Day parade preps - Michael KR4CVF
 - Field Day Volunteers - Dallas N4DDM
 - SWR Meter Calibration - Dallas N4DDM
- May 19th – Multiband Antennas for HF
- June 16th – Field Day prep
- July 21st – CubeSat follow-up

GARS Meeting – April 14, 2026 Field Day Presentation

Kevin Scott K4GTR and Dallas N4DDM will present Field Day – what it is and what volunteers can do to help GARS. There will be short video presentation and floor plans of the Harbins Park area where antennas are put up and the stations with the setups for logging.

GARS Workshop – April 21, 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 for putting together the antenna presentation along with Alan K5AKG & Tom KT4XN showing examples of their antennas.

GARS Happenings

20 Years ago in the April 2006 GARzette:

- ARRL “Hello” Campaign to get more ham radio operators and what Amateur Operators do and their support for the communities – a really nice goal all should be doing
- Th GARzette published the W1AW code practice schedule – wonder how many used it 20 years ago

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 \(https://gars.org/contact/\)](mailto: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:

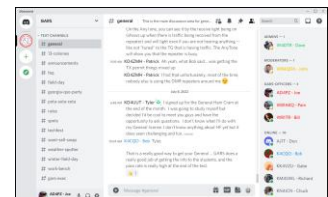
Ray – N4GYN David – KA4KKF Kevin – W4KIB Bill - WD4AMC Chuck – KK4TKJ Ed – W4BSR

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](mailto:https://gars.org/contact/)) 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. →



Dog Show – Recap

By Glenn Wendt W3WWT

Another dog show is in the doggie bag. I would like to thank my co-chairman, Dallas N4DDM, for his outstanding work during the five days of the dog show. He set a personal best "Bearclaw" record this year.

I would also like to thank the 27 members of GARS and ARES who volunteered to work the event.

KJ4CNC Ralph, KI4FPR Harold, KR4CUN Deon, N4DDM Dallas, KA4KKF David, W4LON Fisher, K4CQO Bob, W4IGE Hal, KJ4RYV Pam, K5AKG Alan, N7GRB Mark, KM4BWT Don, K4GTR Kevin, W4VNA Lynn H, KE4ESV Larry McD, AB4HF Jeff C, KN4DY Randy T, WB2OGY Steve KR4JIJ Mary KQ4LWU Don KR5EAY William, KO4NZB Zachary, KR4CUK Mario, KR4CVF Michael, KR4CVF Tee, KQ4NUQ Drew

I would like to give special thanks to KJ4RYV Pam, W4LOM Fisher, and N7GRB Mark for working the dog show despite their mobility issues, which they are currently fighting. They are showing the true Amateur Radio Operator spirit of putting others before themselves.

The team raised over \$4,000 for GARS and ARES to support their operational programs this year. We guided over 1,500 dogs to their correct locations, consumed over 160 donuts and donut holes, drank over 10 gallons of coffee, ate various buffet lunches, and suffered only 1 bruised knee, 1 gastrointestinal disorder, 3 chapped-lip incidents, and 2 chilly early mornings. No significant sunburn injuries were reported this year!



Georgia POTA Event Returns for Fourth Year

This is a reprint from last Month's GARzette

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.

GARS Meet the Members Contest – May 17-23

This is a GARS contest aimed at using the GARS repeaters and getting GARS members to make contacts with other members. Below are the specifics and rules for the contest (A contest for GARS members only).

1. Contest begins May 17th at 6:00 PM and ends May 23rd at 11:59 PM
2. Only GARS members may participate
3. Bands
 - 2 Meters / 1.25 Meters / 70 cm / 33 cm / 23 cm / Any amateur GHz frequency
 - Any HF frequency where Tech class license is allowed to operate
4. Modes
 - SSB (voice)
 - FM
 - Digital (CW is a digital mode)
 - D-Star & DMR (counted as a voice mode)
5. Contacts may be simplex or repeater / Any simplex frequency is allowed
6. Any station can be worked once per band per mode (Once on simplex or repeater. These are not two separate modes)
7. Exchange
 - Call Sign. Old GARS member or New member - add OM or NM (ie. AF4FG/OM or KI4QCI/NM on CW)
8. Personal Greeting.
 - Since one purpose of this contest is for members to get to know each other, a face to face greeting after the contact is made should be attempted
9. Scoring
 - 1 point for each voice contact; 1 point for each digital contact; 1 bonus point for successful Personal Greeting added to each contact
 - * New members are those who have joined GARS since 10/1/24. Anyone who was a member in the past but has not been a dues paying member for at least 10 years prior to rejoining after 10/1/24 is considered a new member for purposes of this contest. (Since a new member cannot contact himself he automatically receives 1 bonus point)
10. Awards
 - Top Ten scores receive a GARS hat unique to this year's contest
 - All participants who turn in a log receive a GARS patch or decal
11. Logging
 - Log Call Sign of station contacted, NM or OM, Frequency, Mode, date of contact and Personal Greeting (yes or no). Logs must be submitted electronically by midnight October 31, 2025 to af4fg@arrl.net
12. Arranged Contacts
 - Times for contacts and frequencies to be used may be arranged
13. Visual Rule
 - Individuals cannot be within sight of each other except in the case where one or both are in a moving vehicle. Both cannot be in the same vehicle
14. Net Rule
 - The net control for any net may not count each check in as a contact nor may each check in count the net control as a contact

GARS GA QSO / POTA / ARES Deployment

GARS GA QSO Party / Parks on the Air / Gwinnett ARES Deployment Day April 11, 2026

I feel this event was a huge success. We had a few hiccups, and we will hold a formal After Action Review in a few days to improve for our next outdoor adventure.

Between GARS and Gwinnett ARES we had 11 members attend.

One of the first glitches was that the Corps of Engineers Park we settled on was technically outside of the official Parks on the Air playground. So a few set up at Bowmans Island Trail and activated Park to Park. They were about 800 feet from where we set up.

For the GA QSO Party, we ended up with only one station and camped out on 40 meters. Most of the time, Dallas N4DDM and Randy KN4DY camped out on 7.181MHz and let folks find us. Randy also did a little Hunt-n-Pounce and made dozens of contacts while I took a break to check on the other stations. We had a few short pile-ups. We worked a lot of GA counties and stations from NY to FL.

Zachery KO4NZB set up his QRP station and tried various antenna configurations and made a few contacts once he resolved his SWR issues.

Michael KR4CVF and Tee KR4GKY, with help from others, set up a pop-up tent, tables, chairs, and gear for both VHF and HF. Michael made a handful of POTA contacts. Mario KR4CUK showed up after all the heavy lifting was done.

Dion KR4CUN set up a truck full of gear and a pop-up tent. From the shaded tailgate of his makeshift command center, he set up Starlink, VHF/UHF, HF, Winlink, Meshtastic, and BlueDV.

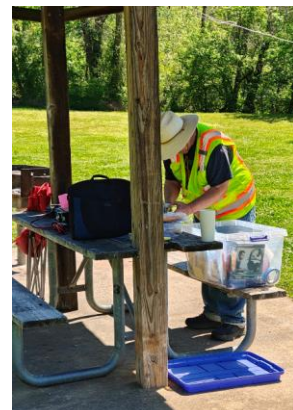
Glen W3WWT set up VHF/UHF and HF gear and made Parks on the Air contacts.

Jeff AB4HF set up his HF station and worked Parks on the Air stations.

Hal brought the Gwinnett ARES Comm Trailer and trained a dozen or so on how to set it up.

Bob K4CQO and Steve WB4OGY stopped by and checked things out.

73 Dallas N4DDM
GARS GA QSO Party Chairman



Dave's Computer Tips

By Dave Bruse, W4DTR (with help from ChatGPT)

Where's My Mouse???

Computer Tip: Make Your Mouse Pointer Easier to See

Many people don't realize that **Windows has built-in accessibility features** that can make your computer easier to use. One of the most helpful options is the ability to **increase the size and change the color of your mouse pointer** so it's easier to find on the screen.

If you've ever said "Where did my mouse go?", this tip is for you!

Change the Mouse Pointer Size and Color (Windows 10 / Windows 11)

1. Click the **Start menu**.
2. Open **Settings** (the gear icon).
3. Click **Accessibility**.
4. Select **Mouse pointer and touch**.
5. Under **Mouse pointer style**, choose a pointer color:
 - White
 - Black
 - Inverted (changes based on background)
 - Custom color (I use Yellow)
6. Use the **Size slider** to make the pointer larger.

As you move the slider, the pointer will grow so you can pick a size that's easy for you to see.

Helpful Tip: Highlight the Pointer

Windows can also show a **circle around the mouse pointer when you press the Ctrl key**, making it easy to locate.

To enable this:

1. Go to **Settings**
2. Click **Bluetooth & Devices**
3. Select **Mouse**
4. Click **Additional mouse settings**
5. Choose the **Pointer Options** tab
6. Check "**Show location of pointer when I press the CTRL key.**"

Now whenever you press **Ctrl**, Windows will briefly highlight the mouse pointer.

Why This Helps

Larger or colored mouse pointers can be helpful if you:

- Use a **large monitor**
- Have **multiple screens**
- Have **vision challenges**
- Simply want the cursor easier to find

Many experienced computer users enable these settings because they **reduce eye strain and make navigation faster**.

✓ **GARS Computer Tip:** If you often lose track of your mouse pointer, try a **larger pointer with a bright color like yellow or red**.

The Basics by Bob Schmid, WA9FBO

Skin Affect

de: Bob Schmid, WA9FBO



AC current tends to flow near the surface of a conductor—a phenomenon called skin effect. Here's a quick overview.

Why it occurs

Current in a conductor creates a magnetic field within the conductor. With DC, this magnetic field is constant and the current is spread evenly—no skin effect. But with AC, the changing magnetic field creates opposing forces that tend to drive the current away from the center and toward the outer portion. In fact, in some applications a hollow tube can replace a solid conductor to save cost and weight.

The numbers

By convention, *skin depth* (symbol δ , lowercase delta) is the distance below a conductor's surface where the current density has dropped to $1/e$ of its surface value (e is Euler's number, about 2.718). That corresponds to about 37%, meaning roughly 63% of the current flows within the skin depth region. This concentration of current near the surface effectively increases the conductor's resistance (Fig. 1).

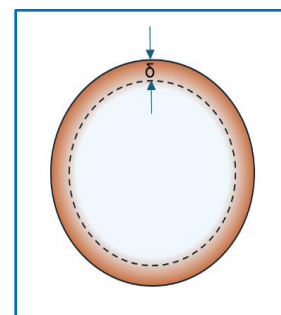


FIGURE 1 - SKIN DEPTH

What determines skin depth

Skin depth depends on:

- **Frequency:** δ is thinner at higher frequencies
- **Resistivity:** δ is thinner in lower-resistance materials
- **Permeability:** δ is thinner in materials that magnetize easily

For example, copper has lower resistance than iron so we might assume it has less skin depth. But iron's permeability is 10,000 times greater, so its skin depth is far shallower than copper. That makes iron and steel useless for things like high frequency welding rods, or for power transmission cable even at the low frequency of 60 Hz. (The steel core seen in aluminum cable is used for reinforcement, not for carrying current.)

The best conductors

At 1 MHz, the skin depth for silver, copper, gold and aluminum is about 0.003 inches (the width of a human hair). It decreases to less than 0.0001 inches at 1 GHz. Silver plating is easily made thicker than skin depth at RF, so one reason we silver-plate RF connectors, components, waveguide surfaces, and coaxial cable braid is to inexpensively reduce the loss presented by the base metal (usually stainless steel or brass in connectors). Gold plating, despite its higher price and slightly higher resistance than copper and silver, is used when tarnishing is an issue.

Ham radio examples

Skin depth defines how far a radio wave penetrates into a conductor. While formulas and charts are readily available online, a useful rule of thumb is that 15 skin depths provide about 130 dB of shielding. That is, each skin depth contributes about 8.7 dB of attenuation.

Vertical antenna experimenters in particular are interested in skin depths associated with different kinds of soil (a narrow skin depth means less loss and better reflection). For example, at 1.8 MHz, the skin depth for sea water is 16 cm. It's 5 m for wet soil and 15 m for poor soil.

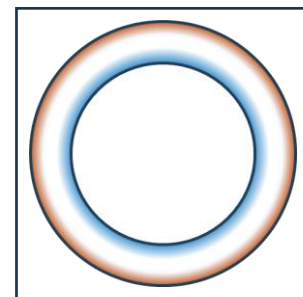


FIGURE 2 – TWO CURRENTS IN COAX

And speaking of antennas: because skin depth is so thin at radio frequencies, it's easy to see how a coaxial braid can carry two entirely independent currents at once—one flowing on the inside surface and the other on the outside surface (Fig. 2).

The inside-surface current is the one we want, since it delivers power to the antenna. But the outside-surface current isn't shielded at all; it can radiate and make the feedline behave like part of the antenna. We usually cure this by adding a choke balun at the antenna feedpoint to block the unwanted outside currents.

Gain Staging

When more is too much

We can think of many examples of systems being overdriven: Overexposing a photo loses fine detail. Writing in ALL CAPS overwhelms the reader. Adding too much spice masks subtle food flavors. Overpressurizing plumbing makes it leak. Blowing a trumpet too hard produces harsh harmonics. Pushing an engine past redline doesn't add power. Pedaling a bicycle too fast in a low gear doesn't add speed.

There are parallels in electronics, where too much signal causes distortion, loss of information, or outright failure: Overexposing night-vision goggles makes them bloom in bright light. Shouting into a mic distorts the audio. Overloading a strain gauge decreases accuracy. Saturating an oscilloscope input clips the waveform. Driving an A/D converter past its range trashes the data.

When turning it down doesn't help

Once the first stage distorts, everything downstream just passes along a bad signal. No amount of filtering, equalization, or digital processing can restore what's gone. Lowering the volume or gain somewhere else in the chain doesn't restore the missing peaks of a clipped waveform.

The real answer

The cure is called **gain staging**, and it means we use attenuation and amplification so every stage in the chain operates comfortably within its linear range. The principle is simple:

Attenuation comes first. Strong signals are reduced so they can't overload the first active device. **Variable gain comes second.** Weak signals are boosted so they make full use of your A/D converter's input range or show properly on your meter's scale.

You'll see this same strategy everywhere:

Receivers put the attenuator before the low-noise amplifier, so strong signals don't drive the front end into distortion and intermodulation.

Audio mixers include a "pad" button to put an attenuator in front of the mic preamp, preventing hot signals from clipping.

Test equipment such as oscilloscopes and spectrum analyzers use switched attenuators ahead of the gain stage and A/D, so the signal is always scaled into the linear zone.

Broadcast engineers carefully stage gain through every transmitter stage to keep signals clean and avoid splatter.

Musicians set levels across pedalboards so each effect processes the right input and output, keeping the chain musical instead of noisy.

Not just protection

Many people assume attenuators exist to keep the front end from being damaged. In reality, their bigger job is preserving linearity and accuracy. If the first stage clips, the measurement is wrong—even if nothing is physically damaged. An A/D can digitize a clipped waveform with 24 bits of resolution, but

it's still 24 bits of bad data.

This isn't just a modern problem—power supply rails set the rules.

Old audio gear = more headroom

Attenuation wasn't always such a concern in audio gear. For example, old-school mixers often ran on ± 15 V supplies so that signals could swing nearly 30 V peak-to-peak before clipping. With that much headroom, a loud mic or line-level signal wasn't much worry.

Modern gear = low-voltage rails

As opposed to old gear, modern circuitry often runs on 5 V or even 3.3 V power supply rails. To keep performance clean, careful gain staging is essential.

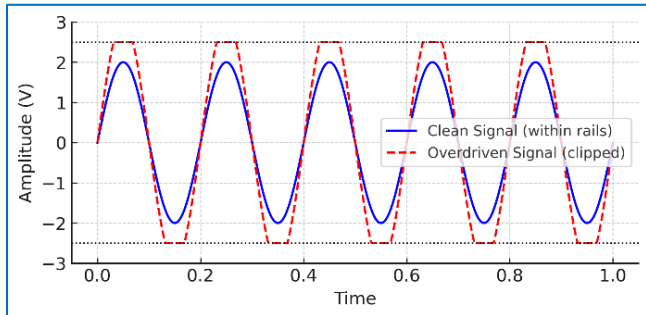


FIGURE 3 - SUPPLY RAILS DEFINE THE LIMITS FOR SIGNAL

See Fig. 1. Suppose a device such as a digital potentiometer is powered from ± 2.5 V supplies. In that case, the input signal cannot exceed 5 V peak-to-peak (± 2.5 V). A 4 V p-p signal (± 2 V) stays within the limits and passes through undistorted (blue trace). But a 6 V p-p signal (± 3 V) exceeds the rails and is clipped (red trace).

The issue arises even when the digital pot is wired as a volume control to attenuate the input. Why? Because the entire signal is still present across the resistive ladder. If that signal exceeds the supply rails, the internal switches and protection diodes are still forced beyond their limits.

Which parts are vulnerable?

A wide range of active components can misbehave when overdriven. Common examples include op amps, A/D converters, digital potentiometers, and analog switches.

Fixes and workarounds

One way to fix the digital pot clipping problem is to create more headroom by powering it from higher supply rails—if the part allows it. Another option is to choose a volume-control IC designed for line-level audio, many of which run comfortably on ± 9 V or even ± 15 V rails.

A case for passive front ends

An alternative is to attenuate the signal before it ever reaches a low-voltage device. As the saying goes, *attenuation first, gain second*. A simple passive divider—resistors, voltage dividers, or even a mechanical pot—can handle the incoming signal without complaint. Passive components don't distort; they just reduce signal amplitude. You can always add clean gain later, but you can't remove distortion once it's baked in.

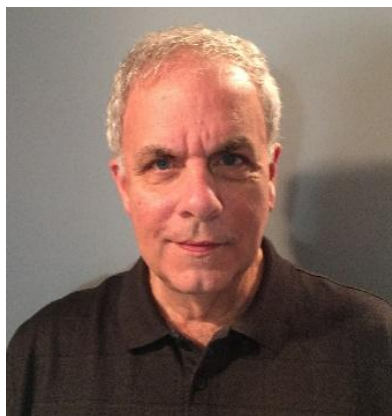
Summary

Engage the RF attenuator on your receiver when strong signals crowd the front end. With mixers and mics, if the sound is harsh or fuzzy, switch in the pad. On scopes and analyzers, pick the input range that keeps your waveform inside the scale. And when you're building gear, either design the first stage with plenty of headroom—or let a passive attenuator absorb the excess, followed by clean gain.

Drake TR5 Rescue and Comments

Vintage Amateur Radio

de Bill Shadid, W9MXQ



For the most part, articles in this series have been about radios I have collected in the past and/or exist within my current collection. Occasionally, however, I have written on a particular unit that has been the object of a restoration or odd and sundry rescue from a fate that could have led to its ultimate destruction.

I need to be clear in my feeling about vintage radios. To me, altering or changing a vintage radio is something just not done. At the very least, every effort should be made to provide for reversal of the process. These old radios are, to my way of thinking, a window on radio history in terms of physical appearance and electrical design. It is always a shame when examples are lost – especially those as rare as the Drake TR5.

Back in the 1980's, the R. L. Drake Company introduced their Drake TR5 HF Transceiver. While carrying the appearance of the late 1970's Drake TR7 HF Transceiver, the looks and size of the TR5 only resembled the TR7 in very minor ways.



**Restored and Repaired Drake TR5
Subject of This Article
W9MXQ Picture**

This radio came to W9MXQ from a friend in the western United States who bought it, along with a matching Drake PS7 AC Power Supply in a configuration built like a go-box¹. I do not have a picture of how the “Go-Box” arrived at my friend’s QTH, but he had a good description and a picture of one that was sold years ago on eBay. I will show a picture of that one here with the note that, according to my friend this is exactly what his looked like. He bought this assembly for “under \$200.00 on the off chance it could again be made into a proper TR5 and PS7.” As of this writing, good TR5 Transceivers are valued at close to \$800.00² and good PS7 Power Supplies are valued at around \$170.00².

Likely due to their very limited production life – only about 500 units³ – the value of a very nice TR5 exceeds the value of a similar condition TR7 – but this can be variable, depending on the condition of each.

Drake TR5 HF Transceivers were an attempt to cost reduce the feature-set of the TR7 HF Transceiver (Actually, the TR7A by that time.) The TR5 resembles a solid-state version of the TR-4CW-RIT

Transceiver as far as included design features. Most likely, however, it closely resembled the ill-fated⁴ Drake TR-5 Hybrid Transceiver that supposedly was designed to replace the TR-4 series.

Some months ago, my friend bought the previously mentioned “Go-Box” set that included the TR5 and PS7. While I had no regrets at the time (and only a few now that I decided to author this article), no pictures were taken of the unit at receipt, and I took no pictures of the separate units when I received them. However, my friend did find a picture of a nearly identical unit for sale sometime in the past on eBay. Check this picture:



This is the “Go-Box” configuration as shown in an eBay ad from the past. It is no longer on the closed sale ads on eBay so it must be older than they keep on their database. This is NOT the package that supplied the pieces that I received. However, I believe that I know the location of this unit. It is not a part of this discussion.

W9MXQ – taken from eBay

Some notes on what I found at receipt of the units.

On the TR5 Transceiver:

- The Outer Wrapper (Drake’s term for the wrap around top and sides you see on a complete radio) was missing.
- The feet were missing. (But the owner provided me with four generic feet.)
- The radio included the following Drake options:
 - Optional SL1500 Drake Narrow SSB I-F Filter.
 - Optional NB5 Noise Blanker
 - Optional FA7 Cooling Fan
- The exposed extruded aluminum areas were spray painted a color that was a somewhat lightly tinted Olive Drab color.
- The Name Strip appeared missing. See the radio picture on the first page of the article – the Name Strip has the wording TR5 TRANSCEIVER and the DRAKE name and logo. The strip was painted the lightly tinted Olive Drab color of the extrusion and was covered by the original equipment clear plastic strip. There was some lettering between the meter and the readout that later turned out to be applied from press-on lettering. See details of that lettering, later.

On the PS7 Power Supply:

- The Top Cover for the Power Supply was missing. But my friend did supply a Top Cover. I think he may have received it from the original seller – not sure. The Top Cover supplied was bent and had paint missing in several areas.
- The stock AC Power, High Current DC, and Low Current DC/Control cables were full length and supplied still hard wired to the PS7 – and were in good condition.
- The feet were missing. (But the owner provided me with four generic feet.)

- The power supply included the following Drake options:
 - Optional FA7 Cooling Fan
- The exposed extruded aluminum areas were spray painted a color that was a somewhat lightly tinted Olive Drab color. In addition, the entire front panel of the power supply was also painted the same color – as evidences by the picture.
- The handle was in good condition – not distorted like the picture.

The outer surround was 0.125” cold rolled steel, bent to fit tightly around the TR5 as it sat very close to the PS7 (TR5 over PS7). It was painted the same lightly tinted Olive Drab finish. That cover, along with some bracketing to hold the radios in place, were scrapped by the owner. He said that the cover had been repurposed from another use. It has been used as a sign with the original lettering left painted on the inside of the fabricated cover. The same was true of the thinner gauge brackets – they had been cut up from a previously printed (on one side) steel item. I can relate to that process in making home brew gear.

I first had to take stock of what was needed and get the agreement from the owner about what could be bought on the market and/or sold to him from personal inventory. Here is a list of what parts were needed and how they were sourced:

- Wrapper for TR5 – completely missing. These are now nearly “unobtainium.” I sold the owner one of my two NOS spares.
 - TR5 and TR7/TR7A Wrappers are nearly identical. The TR7/TR7A Wrapper has slots on the left side to accommodate the side mounted speaker in the radios. The speaker in the TR5 is on the bottom of the radio so a true TR5 Wrapper has no holes in the side.
- Feet for the TR5 and the PS7 were completely missing. The feet supplied by the owner were completely incorrect – so much so that the difference was noticeable. With his agreement, I supplied feet, bumper inserts, and mounting screws that were in my inventory and correct to Drake OEM specifications.
- The knobs on the TR5 to control VOX ON/OFF/GAIN and DELAY were incorrect. They were larger 0.250” shaft knobs that were yellow (UGH!!). Since they were 0.250” knobs on an 0.125”shaft, they wobbled and were never quite tight. I replaced them with OEM Drake knobs with the agreement of the owner.
 - This occurred on one of my two personal TR5 Transceivers. In that case, the mounting of the larger knobs involved replacing the pots with 0.250” shaft units. While the appearance was fine – larger matching Drake knobs were used – the result was non-standard, so I returned the design to original Drake specification.

The critical task was to reverse the non-standard color. The picture below (a larger version of the one shown above) shows the accent exposed satin brushed aluminum strips that appear between areas on the front panels with blue arrows. Then, with the orange arrows you can see the areas where there were black (TR5) areas and dark gray (PS7) areas.

Picture here and get an idea of what I saw when opening the shipping boxes. (Remember, I only saw the individual TR5 and PS7 – the outer housing was gone.



Areas with Color Damage

That is, non-standard paint – off shade Olive Drab in the owners case.

W9MXQ – edited from eBay

Paint removal has not typically been a main task for me in recent years. Right or wrong – and unlike many of my fellow collectors – I have graduated to finding very good condition vintage radios that do not need paint or paint removal. I just do not do that anymore. That is much more evidence of my age than it is anything else. My hat is off to those of you that do that kind of work.

My plan and initial tests with removing paint was on the bottom (out of view) part of the front panel extrusion of the TR5 Transceiver. Just so you know, the original modifier of the equipment did not just paint the exposed areas of the extrusions – he/she removed and painted the whole extrusion – front, back, top, and bottom – on both the TR5 and PS7. My first tests were done using a gel, non-toxic paint remover, “Smart 'n Easy™ Citrus Paint & Varnish Remover Gel.” I found this at a local hardware store sometime ago and had it here for various projects. Read on, however, as it was not my final choice.

I made sure the area on the bottom of the panel was clean – actually, I carefully cleaned the entire panel with Fantastic™ Spray Cleaner before starting any work. I let the panel sit and dry for about an hour after cleaning.

Applying a small amount of the gel across the bottom edge of the extrusion and letting it sit for about five minutes produced excellent results – the paint was gone onto my wiping cloth and the extrusion looked brand new. I liked the results with the Smart 'n Easy™ product but it scared me, and I did not like the smell – even out of doors where I used it. At the suggestion of my long-time friend, fellow radio collector and restorer, and article proofreader, Bob, W9DYQ, I next tried a popular cleaner product we both use, Goof Off™ Cleaner – available at your local hardware store. Bob suggested that Goof Off™ might remove the paint from the extrusion. He was right – and a lot cheaper alternative as well.

I applied my process to both the TR5 and the PS7 Extrusions with no problem. I even removed the paint that would be covered by trim panels and/or be otherwise invisible. I would know that darned olive drab was in there somewhere. I advanced to the point of spraying the Goof Off™ on the panel then standing them on end for about ten minutes before wiping them off. I then cleaned them with clear water and finally a round of Fantastic™ cleaning. Following that (which totally removed the sight odor left by the Goof Off™) I again rinsed the panels with clear water and then towel dried them.

Be very careful with this process on aluminum. I was afraid that it might just turn the aluminum black – a point supported when I first had talked to customer service for the “Smart ‘n Easy™ chemical. In my case, it did not – but your experience may not be the same. Test and re-test in an inconspicuous area before going further. Do the same when you shift to another part – you do not know when some allow change could have been made by the part’s supplier that may be more, or less, susceptible to the chemicals.

Below are examples of the two chemicals as they come packaged. I actually have Goof Off™ in a container like the Smart ‘n Easy and keep re-filling the first spray bottle I bought (like the one illustrated, above).



After all of the above we still had not completed the refurbishing of the Name Strip on the TR5 and the Front Panel on the PS7. The Name Strip was a worry, so I left myself some time by doing the PS7 Front Panel, first.

Since now we were working with the painted front panel of the PS7 Power Supply – and not an extruded part, it meant that we were removing a layer of paint – but did not want to remove the correct dark gray Drake paint. I had already removed the handle and the panel from the front of the power supply in preparation for removing paint from the front extrusion. As I started to plan my process, I remembered that the Smart ‘n Easy™ product proudly says it can “remove up to 12 layers of paint.” Well, this is not a goal since I only want to remove one layer!! So, I decided to use the less aggressive Goof Off™ chemical. Initial tries with using a cotton swab to apply Goof-Off™ was pretty successful, if slow.

The olive drab paint mostly came off after letting the chemical sit for about two minutes. I decided that discretion is the better part of valor, as we say, and continued the process in one small area after another. planned then to go back over the panel when the small areas were completed and make sure the panel was completely free of the olive drab paint. But wait – there was more – not good!! In removing the olive drab paint with no damage, I had also removed most of the product model information from the upper right-hand corner of the panel. Major parts are still there, and I believe I can match the colors and repair the voids. A story for another day.



Drake PS7 Power Supply and Logo callout. Upper right-hand corner of the front panel. Gone but not forgotten!!

W9MXQ

I replaced the PS7 Front Panel with a spare in my inventory. In the end, however, the original owner said that he plans to put the PS7 on the floor – as I always do with them. He said that he was more than happy leaving the panel as it is.



Drake PS7 Power Supply – Restored and Back Together

W9MXQ

The rather poor condition Top Cover for the PS7 was corrected by removing the paint first with the Smart 'n Easy™ product – since this was factory paint and more difficult to remove. It took a soaking of about 15 minutes but then it was easily removed, outdoors, I repainted it with Black Wrinkle Spray Paint. It was a no longer available Krylon™ product that has been used out of the same spray can for years. It looks just like the original.

The remaining issue is the Name Strip on the TR5 – not a lot of room for compromise solutions here but not outwardly looking too good. The name strip is very thin (0.012" thick) aluminum that is punched out to see the frequency readout – to the right of center – and another punch out to allow viewing of the meter. That Name Strip is a critical appearance item:



Notice that the strip is black with a silk-screened surround encircling the frequency readout window and a two-color silk-screened area to the right of the frequency readout calling out the radio's model number and the Drake name and logo. This appeared all to be covered with olive drab paint. This is critical here

because I had already discovered on the PS7 panel that the silk-screened area was vulnerable to the paint remover.

Actually, to end the suspense here, I have to say that when I was removing that strip and the plastic strip that is in front of it I pulled it straight out and then put it out of sight for a while during my paint removal process on the main extrusion. I had not noticed that the guy doing the modification in the first place had merely turned the strip over and painted the backside green and put on the white lettering you can just see in the pictures. I never turned the part over and noticed that the original part face was staring right at me in perfect condition! What a stroke of luck. Unlike the TR7 Name Strip, the one on the TR5 has all features on the center line – so flipping it over leaves an identical part.

But not being happy with such a great turnout, I decided to go after the darned green paint on the back of the panel. Besides, the paint was almost as thick as the strip, and it made the Name Strip and clear strip over it a tight fit in the extrusion. It had already scraped the Name Strip just a bit. I decided to use the gel chemical Smart 'n Easy™ product since I felt I could control the flow of the gel better than the watery Goof Off™ product. I put the Name Strip with the screened side down on a layer of paper towels and slowly removed the paint on the back with a cotton swab – and then another swab to remove it about a minute behind. It worked perfectly. That was the last of the olive drab!!

Note: When removing the green paint from the back side of the clear strip, the lettering placed there at modification came off as complete single letters and number. This confirmed to me that they were hand lettered using a press-on vinyl letters. Those letters were not damaged by the paint remover. Silk screen lettering would have dissolved along with the green paint.

Finally, after the radios looked like proper representatives of Bob Drake's expertise, it was time to take care of a few alignment issues. The radio received well and checking into MidCARS and eCARS netted excellent reports. QSO's with local hams confirmed that I sounded like myself when using the radio, I felt pretty good about it. I had returned all the crystals to their proper locations and tested all bands for proper operation. The TR5, as Drake marketed it, shipped without the crystals for 160, 17, 12, and only had the 28.5 to 29.0 position on the 10-meter band. The 30-meter band – already open to hams by the time the radio was marketed – was included.

In spite of good operation, I checked receiver alignment and found it bit off here and there, but likely not enough to notice on the air. I did re-calibrate the frequency readout, which was a tad low. One item, RF output power, was a problem. The PA was putting out well over 100 watts. My two TR5's strain to get to 90, let alone the 150 watts this radio put out. I adjusted that back into reality. Beware of the TR5 – it does NOT share its PA with the TR7, and such high power will eventually take out the PA transistors. Think of the TR5 as a 50 to 80-watt output radio and you will be in the right territory to allow the radio to live a long life.

Two things are a shame in the TR5 original power amplifier design concept:

1. Drake was in error (hindsight is always 20-20!!) in not supplying a 100-watt output power amplifier in the radio. Today's hams will complain at length about one particular Japanese manufacturer who's 100-watt nominal power amplifier produces only 95 watts on some bands. Think then how they reacted to the TR5.
2. The error was further aggravated by Drake using a lower power amplifier but using the same unique heat sink as used by the much higher powered TR7 and TR7A⁵. This fooled "golden screwdriver hams"⁶ into thinking it was the same power amplifier circuit as the more powerful radio. It wasn't.

In closing, I want to emphasize one caution in my process outlined here to remove paint. Read what comments already made, above. Your experience most certainly can vary from mine. A lot of repainting uses cheap "rattle can" paints and a lack of surface preparation. Those two things lead to the paint

being easy to remove. If the surface work uses even minimal preparation, the removal may be more difficult. I was perhaps fortunate in what I found with this TR5 and PS7. I recommend that you have alternatives in mind for any step you take in the areas that I have described. As an alternative – which I would do only in an extreme situation – is to use the system used by Ten-Tec in the Omni V, VI, and VI+ Transceivers (and accessories) that used an identical design. They painted the exposed areas in a metallic looking light gray paint.



Drake TR7 sitting atop a Ten-Tec Omni VI at W9MXQ

Note the same exposed extrusion area on both radios. On the Drake, the exposed area is that of anodized satin brush finished aluminum. The Ten-Tec is anodized aluminum but is painted a light metallic looking gray.

As you can see, this can look just fine⁷.

W9MXQ

I appreciate that you read my articles. I add a special note of thanks to Bob, W9DYQ, for his proof reading. Bob is much more than a proof-reader and is actively involved in the history of the radios that are the subject of my articles. Remember that I am open to questions and comments at my email address, W9MXQ@TWC.com.

Notes:

¹ The concept of a “Go-Box” as it relates to ham radio is an enclosure that can be easily moved from place to place and carries all necessary radios, antenna metering, speakers, and supplies – and sometimes even power supplies or batteries – for setting up emergency or portable operations.

² The prices shown are eBay and Nationwide Radio & Eq. Sales LLC, respectively. Prices certainly can vary by a wide margin.

- ³ The widely respected <http://www.wb4hfn.com> website acknowledges around 514 TR5 Transceivers and over 12,000 TR7 and TR7A models.
- ⁴ The TR-5, admittedly, may have been a myth but it seems widely documented. At the time of the TR-4 and the supposed TR-5, Drake used a dash ("-") in the model numbers. That changed with the TR7 and the later TR5 as we saw it, did not have the dash in the product nomenclature.
- ⁵ The TR7A was mentioned several times in this article. The TR7 and TR7A were identical except that the TR7A added the NB7 Noise Blanker and the SL500 CW Filter as standard equipment. Also, the TR7A included a bypass of the AM filter position (in the absence of the optional SL4000 or SL6000 AM filter) to allow AM reception using the Roofing Filter for relatively wide (9000 Hz) bandwidth control – ideal for Shortwave and Broadcast Band Listening. Other added features included the addition of front-end surge protection for the receiver circuitry and an added rear panel connector for microphone audio input. It should be noted that a very early TR7 and the very latest TR7A differed only in minor ways. The TR7 line was a very stable design
- ⁶ The concept of a “golden screwdriver hams” is used often in reference to undocumented modifications of circuits or settings that may be in defiance to what the original engineer intended. In days past, this was many times quite innovative – and in rare occasions it still can be, today. However, as a collector, I find many times such modifications are not in the best interests of the radios. One of these – excessive drive and output from the final amplifier – not only produces stress on the circuit, but also tends to produce distortion and otherwise poor output. Other alignment “adjustments” or modifications in my experience have led to key clicks, poor i-f filter response on receive, and/or receive audio distortion.
- ⁷ The Ten-Tec Omni VI shown here has shiny surface electrical tape on the outer edges of the front panel assembly. I had been working on the Omni VI when this picture was taken – and when doing so I always tape that area to prevent damage to the extruded (and this case, painted) aluminum trim.

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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.

- ❖ 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. “X” discussion handler
 2. Raffle product coordinator (given a budget to get raffle items)
 3. 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.

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GARS Membership

New Members in March

Christopher Franz (W8CCF)
Shonna McKenna (KR4KSI)
Rhuberta Prosser (KZ4YV)

New Members: 3

**Total Members as of
March 31, 2026
362**

Birthdays in April

John Aguirre (KQ4EJV)
Angelo Bione (WB9RWL)
Deirdre Burn (KR4HLS)
Charles Burts (K4CHB)
Jeanne Carson
Johana Cuello
Scott Deitchman (WB8ICQ)
Ana Luz Dominguez (KF4UOC)
Heyward Grainger (WA4HTR)
Emma Guidry (K4ECG)
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Friday weekly gatherings are held at the [Chilli's](#) at:

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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 \(https://gars.org/contact/\)](mailto:membership@gars.org) with any changes to your Membership information.

Membership Chair: Dave Bruse, W4DTR

I would like to welcome Tee Stewart, KR4GKY to the GARS Membership Committee. Tee will be helping Pam Brown, KJ4RYV process membership applications, and answering your membership related questions. [Thanks Tee](#) for joining the Membership Committee and volunteering!

Committee Members: Pam Brown KJ4RYV, John Aguirre KQ4EJV, Tee Stewart KR4GKY

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

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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.





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- GARS General Fund (any club purpose).

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

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John Davis, WB4QDX



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GARS Meeting Minutes

GARS General Meeting Minutes March 10, 2026

Attendees

President - Bob Hoffmann, K4CQO
Vice President - Glen Wendt, W3WWT
Treasurer - Ralph Pickwick, KJ4CNC
Secretary - Michael Stewart, KR4CVF
Program Manager - Kevin Scott, K4GTR
Total Meeting Attendees: 51 (2 new hams)

Agenda

Opening Time: 7:01pm
Closing Time: 8:58pm
Membership Report: 363 as of (2/28/26)

Programs: Antennas for New Hams

David[KA4KKF]-Wired Antenne, Alan [K5AKG]-
Dipole antennas, Tom [KT4XN], Kevin
[K4GTR] MW/HF & VHF/UHF

Next Meeting: Cube Sats (University of Georgia)

Activities

Sunday Monthly Ham Test (3/15/26), Dave
[W4DTR]

Upcoming Events

Dog Show (3/25/26-3/29/26), Glen [W3WWT]
ISS Contact (3/30/26)-Ralph [KJ4CNC]
Georgia QSO Party(4/11/26&4/12/26),
Dallas[N4DDM]
Meet the Members (5/17/26-5/23/26),
Earl[AF4FG]
Dacula Memorial Day Parade (5/25/26), Michael
[KR4CVF]
Ice cream Social (June), Dallas[N4DDM]

General Information

Last GARS Zoom Meeting on (3/10/26).
YouTube LIVE will be used from now on. - We
will be going to Microsoft instead of Google

Workshop Minutes - March 17th, 2026

Attendance: 16

Workshop: Follow-up on Antennas for New Hams

Presenter: Various

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

We had general discussions of various HF antennas, single-band dipoles, End Fed, Fan Dipoles, and the use of Ham Sticks. We discussed the use of trees to hoist antennas and how to launch a string over the trees/through the branches. The best time is in the winter when you can see the branches without all the leaves blocking your view. We discussed coax cable losses and how those losses count twice as those losses affect both transmit and receive.

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



GARS Calendar Events

GARS Events Calendar for 2026	GARS Recurring Calendar
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 October 30-31 2026 Holiday Party December 2026	<ul style="list-style-type: none"> • 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 Barrel

GARS Calendar for April 2026

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



Events – ARRL Contests / Hamfests

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

04/25/2026 - [TARCFest](#)

Location: Tampa, FL
 Type: ARRL Hamfest
 Sponsor: Tampa Amateur Radio Club
 Website: <http://www.hamclub.org>

04/25/2026 - [TARCFest](#)

Location: Tampa, FL
 Type: ARRL Hamfest
 Sponsor: Tampa Amateur Radio Club
 Website: <http://www.hamclub.org>

04/25/2026 - [Wiregrass ARC - Spring Tailgate](#)

Location: Headland, AL
 Type: ARRL Hamfest
 Sponsor: Wiregrass Amateur Radio Club
 Website: <http://w4dhn.org>

05/09/2026 - [EPARS Spring Hamfest](#)

Location: Dade City, FL
 Type: ARRL Hamfest
 Sponsor: East Pasco Amateur Radio Society
 Website: <http://k4ex.org>

08/22/2026 - 08/23/2026

[Huntsville Hamfest, ARRL National Convention](#)

Location: Huntsville, AL
 Type: ARRL Convention
 Sponsor: Huntsville Hamfest, Inc.
 Website: <http://hamfest.org>

08/22/2026 - [TarcFest](#)

Location: Tampa, FL
 Type: ARRL Hamfest
 Sponsor: Tampa Amateur Radio Club
 Website: <http://www.hamclub.org>

09/19/2026 - [Gadsden Hamfest 2026](#)

Location: Gadsden, AL
 Type: ARRL Hamfest
 Sponsor: Gadsden Amateur Radio Club
 Website: <http://k4jmc.com>

10/10/2026 - [NOARC Annual Hamfest](#)

Location: Crestview, FL
 Type: ARRL Hamfest
 Sponsor: North Okaloosa Amateur Radio Club
 Website: <https://w4aaz.org/noarc/>

10/25/2026 - [Wiregrass ARC - Fall Tailgate](#)

Location: Headland, AL
 Type: ARRL Hamfest
 Sponsor: Wiregrass Amateur Radio Club
 Website: <http://w4dhn.org>

11/07/2026 - [EPARS Fall Hamfest](#)

Location: Dade City, FL
 Type: ARRL Hamfest
 Sponsor: East Pasco Amateur Radio Society
 Website: <http://k4ex.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 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.



March 2026 Results

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

2 new Technicians:

- Joel L Galt KR4KQX
- Shonna A McKenna KR4KSI

1 new General:

- Philip B Miller KR4JWW

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

- W4DTR - Dave Bruse
- KM4SWL - Richard Kitz
- W4VNA - Lynn Hatker
- NG4H - Bill Beguhn
- WS3V - Bill Rudd
- K4CQO - Bob Hoffmann
- WB2OGY - Steve Back

Thanks & 73, Bill Rudd WS3V (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.

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Quarter Century Wireless Association Inc.
W2MM - W2CVF



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Chapter 49 - Atlanta, GA
Chartered April 29, 1970

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Size Comparison: 11 oz, 15 oz

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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.

Have an idea for entry into the GARzette?

Send the article to editor@gars.org and be published in next month's GARzette.