



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 early in 2027

GARS GENERAL LICENSE HAM CRAM CLASS

WHEN: Saturday July 25th and Sunday July 26th 2026; 8:00 am to 4:00 pm each day, exams start at 4:00 pm Sunday (this is a CLOSED exam session, only open to registered students of the class).

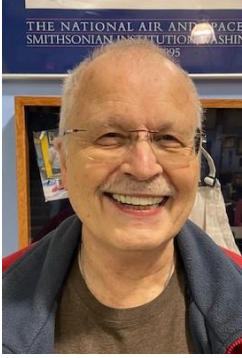
Please visit <https://gars.org> for more information, and to register.

**GARS Meeting: Ice Cream Social at Harbins Park
Tuesday June 9, 2026 at 7:00 PM**



President's Message

From the President...



First off, if you have contacts from our Meet the Members contest, don't forget to submit them. I did not participate this time – well I did a single contact when browsing the repeaters, and figured 1 is not a submittable number.

The Ice Cream Social is GARS substitute for our general meeting. We will have a short meeting and I promise not to talk too long so the lines for the ice cream can commence. The social part is getting to know the location of the GARS Field Day event and also to just get to know some of the other members outside of our normal meetings. Bring your family to enjoy the Harbins Park location – my wife and I will be there early to have a brown bag supper, have a short meeting and then enjoy more socializing.

The organizers for Field Day will be there to answer any questions you have about it and there is still our workshop at the EAA Hangar the following week to do final prep work for Field Day. The Workshop is also a good place to just come and find an Elmer to help with any questions your may have about GARS or about ham radio. In July, we will be back to our normal meeting places and meetings with a presentation.

I want to thank Michael Stewart KI4FPR who put together GARS help for the Dacula Memorial Day Parade. I was there to get the antique cars in line.



The early morning was a little misty and the rain went away as the morning progressed. The GARS group made everything go smoothly and it was a good to spend some time talking to the parade participants and I learned the antique cars also use the non-ethanol gas like the gas generators do GARS uses for Field Day.

I spent the morning at the Tucker Swap Fest – didn't purchase anything but enjoyed walking around and socializing with the other hams. Attending the local events is a good way to not only support the clubs but also to meet and other hams.

The GARS 440 net Buford repeater is getting better – however, my barefoot Icom 705 is just able to get to it. I decided I needed to get an amp for the 440 band. I already have an amp for HF and another one for 2M – a must for me to be able to use the 705 as a base station. With the amp the 705 as a base station will be complete and able to put out more than QRP levels on all of the bands. The amp is coming from China and when it gets here I am temped to give a short review. It is supposed to support DMR along with CW and FM and has an SMA input connector and a SO-239 output connector so it would make a good HT amp.

I would like to welcome two new volunteers helping out on the GARS websites. Keeping the GARS websites current will be getting better as we move forward. Welcome

- * Chris, W8CCF
- * Mario, KR4CUK

Hams are being recognized in Georgia! Governor Kemp has declared June 22 thru 29 as Ham Radio Week – coinciding with the Field Day weekend. Enjoy, and be on the air.

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</p> <p>147.075 Operational in Snellville</p> <p>147.255 Operational in Snellville</p> <p>224.580 Operational in Grayson</p> <p>442.100 Operational at Goshen Springs Rd, Norcross</p> <p>442.325 Operational in Buford</p> <p>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, they can be found 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)

- 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)

- June 16th – Field Day prep
- July 21st – CubeSat follow-up

GARS Meeting – June 9, 2026 Ice Cream Social at Harbins Park

Harbins Park is located at 2995 Luke Edwards Rd, Dacula, GA 30019. Bring a brown bag lunch to enjoy the facility before a brief meeting and then ice cream.



GARS Workshop – June 16, 2026 Final Field Day Prep

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 Steve WB2OGY, Tom KT4XN and Harold KI4FPR for their multi-band antenna presentation at the May GARS meeting.

GARS Happenings

20 Years ago in the GARS, ham radio, newsletter, Gwinnett 2006 June GARzette:

- Read about the plans for the 2006 Field Day
- There is a picture of the GARS helpers at the Dacula Memorial Parade – a much smaller group then this year
- There is a ARRL NEWSLETTER From Dayton Forum talking about what I would call ham radio etiquette



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: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:

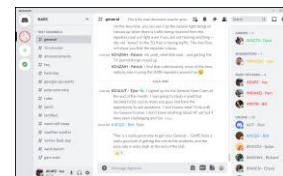
Ray – N4GYN David – KA4KKF Kevin – W4KIB Bill - WD4AMC Chuck – KK4TKJ Ed – W4BSR

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: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. →





Dacula Parade May 2026

I want to personally thank each and every one of you for once again volunteering to stage and lineup the Memorial Day parade in Dacula. Thank you for taking the time out of your holiday to support this event.

Hope to see you next year!

Regards

Marvin Atherton

Thanks to all that came out and volunteered. It turned out to be another very good day in Dacula for this special day and event. The GARS volunteers help make it a success.

Jim

KQ4RNA / WSAZ662



Dave's Computer Tips

By Dave Bruse, W4DTR (with a little help from ChatGPT)

Ten Windows Keyboard Shortcuts Every User Should Know

Most computer users spend a lot of time moving their hand back and forth between the keyboard and mouse. Learning just a few keyboard shortcuts can make everyday computer tasks faster and easier.

A Brief History

Keyboard shortcuts have been around almost as long as personal computers themselves. Long before graphical interfaces and mice became common, users relied on keyboard commands to control software. Programs such as WordPerfect and Lotus 1-2-3 popularized shortcut keys in the 1980s, and Microsoft Windows expanded the concept with familiar combinations such as **Ctrl+C** (Copy) and **Ctrl+V** (Paste).

Today, Windows 11 includes dozens of shortcuts that can help users work more efficiently.

The Top 10

Shortcut	Function
Ctrl + C	Copy text, files, or images
Ctrl + V	Paste copied items
Ctrl + Z	Undo mistakes
Ctrl + S	Save your work
Alt + Tab	Switch between open applications
Windows + V	Open Clipboard History
F11	Toggle Full-Screen Mode in most web browsers
Ctrl + Plus (+)	Increase page zoom
Ctrl + Minus (-)	Decrease page zoom
Ctrl + 0	Reset zoom to 100%

Clipboard History

One of the most useful Windows features is **Clipboard History**. Instead of remembering only the last item you copied, Windows can store multiple copied items and let you choose which one to paste.

Press **Windows + V** to view your clipboard history. If prompted, enable the feature the first time you use it.

Final Thoughts

If you only learn ten keyboard shortcuts, make them these. They work in many different programs, are easy to remember, and can save hundreds of mouse clicks every week. Start with one or two shortcuts and add more as they become second nature. Before long, you'll wonder how you ever worked without them.

The Basics by Bob Schmid, WA9FBO

Velocity Factor

de: Bob Schmid, WA9FBO



When discussing antennas and transmission lines, the term *velocity factor* (VF) sometimes comes up. What is it?

It takes a certain amount of time for electrons to transfer energy down a wire. Even in free space electromagnetic waves do not travel instantaneously, but at the speed of light—300,000,000 meters per second.

If the two conductors in a transmission line are separated by air, waves travel down the line at very nearly the speed of light. But if the conductors are separated by some other insulating material, the speed is reduced. Velocity factor is the ratio of the actual velocity along the line to the velocity in free space. It's expressed as a decimal fraction or as a percentage. The lower the VF, the slower the propagation through the medium.

Wait. Did we say that the *insulation* is responsible for the slower velocity? Yes, because insulation is a dielectric (as in a capacitor) and a dielectric stores energy in an electric field. Since capacitance slows down the wave, a material with high dielectric constant has a low velocity factor. Here are some transmission lines and their velocity factors:

- RG-8 solid polyethylene (PE): 0.66
- RG-142 Teflon (PTFE): 0.70
- RG-8 foamed polyethylene (FPE): 0.80
- 300 Ω TV twin lead: 0.82
- 450 Ω ladder line: 0.95
- 600 Ω open-wire line: 0.95-0.99

The last two have a high velocity factor because they don't use a lot of insulating material.

OK, so the dielectric causes wave propagation to slow down. Why do we care? Because if the speed of a wave slows, its wavelength shortens – and that changes our antenna and transmission line length measurements.

Why does decreasing the speed cause the wavelength to shorten? Recall the wave equation, which says wavelength equals the speed of light divided by the frequency ($\lambda = c / f$). If the frequency is held constant but the speed is reduced, the wavelength is also reduced.

Fig. 1 depicts a wave encountering a denser medium, slowing its speed. More waves are present in a given length of the medium, so their wavelength has decreased.

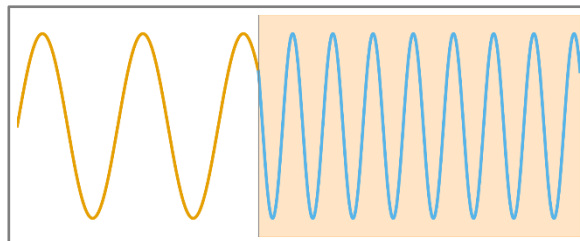


FIGURE 1 – A DENSER MEDIUM SHORTENS

Let's do a practical example and calculate the length of a 40-meter half-wave dipole made of bare wire. There's no insulation to slow down the wave, so the VF is very close to 1 and can be ignored. For wavelength in feet, we divide 983.6 by the frequency in MHz. At 7.1 MHz, one wavelength is 138.5 feet, making the length of each leg of the dipole one-fourth of that, or 34.6 feet.

Now let's use insulated wire with a VF of 0.95. The wavelength will be shortened by 5% and so should the wire: At 7.1 MHz, one wavelength is 131.6 feet and each leg is 32.9 feet. The insulated wire should be cut 1.7 feet shorter than the bare wire. If we don't shorten it, the antenna's resonant frequency will be lower.

Protecting the aluminum elements of an antenna with shrink tubing has a similar effect.

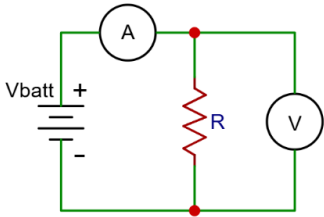
Admittedly, antennas are affected by multiple things, so we usually start with excess length and prune for the best results. But as we go shorter in wavelength, dimensions get smaller and more exacting.

Velocity factor figures into measurements for microwave and millimeter-wave antennas, transmission lines for impedance matching, phase correction in phased array antennas, filters and couplers for microwave circuits, timing for radar and navigation, propagation delay in Ethernet cables, and fault location using Time Domain Reflectometry (TDR).

The Wheatstone Bridge

How do we make a precision resistance measurement? There are several methods, each with different accuracy and limitations. Let's investigate.

The voltmeter/ammeter method



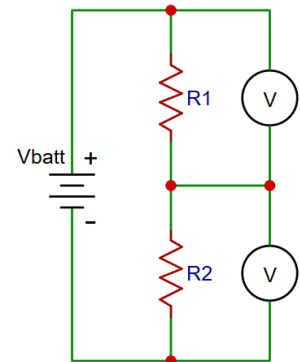
**FIGURE 2 -
VOLTMETER/AMMETER
METHOD**

We can place an unknown resistor R across a voltage source and measure the voltage and current (Fig. 1); $R = V / I$. It works, but it's not very accurate unless you use good equipment. Low-ohm resistors draw lots of current, creating voltage drops. High-ohm resistors draw tiny currents, making accurate ammeter measurements difficult.

The voltage divider method

A better way is to use a voltage divider (Fig. 2). Assume R_1 is known and R_2 is unknown: $R_2 = R_1 \cdot (V_{R2} / V_{R1})$. No current measurement is needed; you

only measure voltages, and there are very good voltmeters available. Other advantages include not having to know the exact value of V_{BATT} —only the ratio of the divider voltage matters—and the ability to select R_1 so the resulting current falls in a range that measures well.



**FIGURE 3 - VOLTAGE
DIVIDER METHOD**

Depending on the method used, there can be errors from V_{BATT} droop, the nonzero resistance of an ammeter, the (very small) current drawn by a voltmeter, and the calibration, temperature drift, and linearity of the meters themselves.

The bridge method

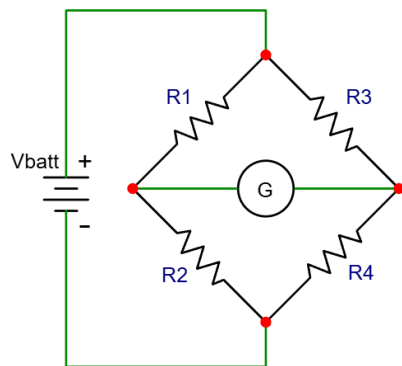


FIGURE 4 - BRIDGE METHOD

Enter the Wheatstone Bridge, an improved method traditionally drawn in a diamond shape to emphasize its symmetry (Fig. 3).

How does it work? If we redraw it slightly (Fig. 4) we see that it's actually two voltage dividers, R_1 - R_2 and R_3 - R_4 . A sensitive current meter (galvanometer G) *bridges* between the outputs of the two dividers and serves as a null detector. A null detector reads zero current when the bridge is balanced, which happens when the ratios are equal: $R_1 / R_2 = R_3 / R_4$. Let's say R_1 and R_3 are known, R_2 is a calibrated variable resistor, and R_4 is the unknown resistance. At

balance, $R_4 = R_3 \cdot (R_2 / R_1)$, and we can read R_4 's resistance on R_2 's calibrated dial. The result is a direct-reading resistance meter. R_3 could serve as a range multiplier by making it a rotary switch selecting precision resistors.

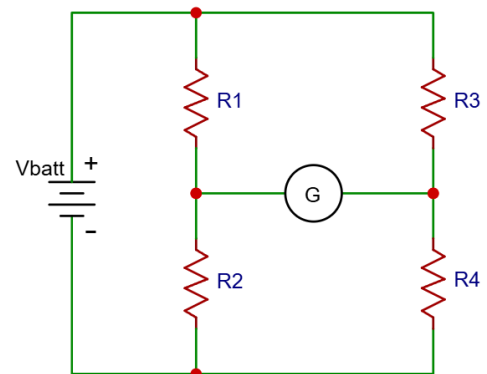


FIGURE 5 - REDRAWN BRIDGE

What are the advantages of using the bridge?

- We get high-precision resistance measurements using basic parts.
- The accuracy depends on resistors, not meters, and we can get resistors that are matched to very accurate ratios and temperature tracking.
- We balance the ratios of resistances, so variations in the supply voltage don't affect the null point.
- Looking for zero current is often easier and more accurate than making absolute voltage or current measurements. The detector only indicates "zero" or "not zero", and we don't need to know its gain or calibration.
- If we need to detect very small changes (microamperes or less), we can amplify the bridge's output—the voltage at G.
- A bridge can measure extremely small resistance changes, which makes it useful for sensing temperature (RTDs or thermistors), mechanical strain or pressure (strain gauges), light level (photoresistors), and even small variations in wire resistance.
- Reactances can be added to the balancing arms for AC impedance measurements.

What about today?

Why care about a 19th-century curiosity in the age of digital multimeters? Because the SWR bridge, the antenna analyzer, the impedance bridge, and many other modern instruments are direct descendants of it.

For example, an SWR meter doesn't look much like the classic Wheatstone bridge often drawn as four resistors in a diamond, but electrically it works the same way: it compares the balance among four arms.

Looking at Fig. 4, assume R1 and R3 are fixed resistors, which set the reference ratio of the bridge. The transmission line (forward power) and the antenna (reflected power) form the effective resistances of R2 and R4. The operation is like a Wheatstone bridge: the detector compares the voltages at the R1-R2 and R3-R4 junctions. When the antenna impedance matches the transmission line, those voltages are equal and the reflected-power indication goes to zero; when they are not, reflected power indication appears.

As with the original Wheatstone bridge, the instrument is not measuring absolute voltage or power. It's detecting how far the system is from balance—an old idea that remains extremely useful.

Who Was Wheatstone?

Sir Charles Wheatstone (1802–1875) was a pioneer who helped turn electricity from a curiosity into science. A trained musical instrument maker, Wheatstone had a lifelong fascination with how sound and electricity behave. He invented the English concertina, co-developed one of the first practical electric telegraphs, and even built a stereoscopic viewer that gave people their first taste of 3-D images.

The famous Wheatstone bridge that bears his name was actually invented a decade earlier by **Samuel Hunter Christie**. But Wheatstone improved and popularized it in 1843, turning it into a precision tool for measuring resistance long before digital meters existed.

The Heathkit SB-401 Transmitter

Vintage Amateur Radio
de Bill Shadid, W9MXQ



Following the previous article about the Heathkit SB-300 HF Receiver, it is appropriate to follow along with the matching Transmitter, the SB-400. However, we are going to skip the original 1964 SB-400 version of this Transmitter and move to the 1966 refresh of the product, the SB-401. Reasons for this will become apparent in this review.

Heathkit had arrived on the market with products to compete with the game changing Collins S-Line (which included the KWM-2 Series Transceivers) by about 1963. Heathkit and Drake went on to provide directly competitive products to Collins, Model by Model. Hallicrafters was there too, but was more selective with where they did, and did not compete with every product that Collins offered.

Here is a picture of the SB-401 Transmitter at W9MXQ . . .



Heathkit SB-401 HF CW-SSB Transmitter¹

W9MXQ Photo

Shown in the following chart are the field of main competitors as amateur radio moved out of the 1950's and into the 1960's. With the addition of Swan and Galaxy, we are looking at the dominant players in the domestic amateur radio market of the time.

Competition to the Collins S-Line/KWM-2				
Device	Collins	Heathkit	Hallicrafters	Drake
Receiver	75S-1	SB-300	SX-117	R-4
	75S-3	SB-301		R-4B
	75S-3B	SB-303		R-4C
Transmitter	32S-1	SB-400	HT-44	T-4X
	32S-3	SB-401		T-4XB/T-4XC
Transceiver	KWM-2	SB-100/101/102	SR-150	TR-3/TR-4
Remote VFO	312B-5	SB-604	n/a	RV-3/RV-4
Linear Amplifier	30L-1	SB-200	HT-45	L-4/L-4B
	30S-1	SB-220		
Transverter	62S-1	SB-500	n/a	CC-4/TC-2/TC-6

Both Heathkit, Hallicrafters, and Drake went on to produce later generation transceivers that are not mentioned here. The chart primarily shows what was happening in the 1960's. Others competed with Collins in their own way. For instance, National, Swan, and Galaxy (and others) produced transceivers only. Hallicrafters, too, went away from the separate receiver and transmitter concept and moved to larger footprint transceivers still in the 1960's with the SR-400 series and the SR-2000. The Hallicrafters products shown above were not upgraded (except for the SR-150) to newer versions and were gone before 1970. Swan, a market leader at the time, did try to take on the Collins line separates with the 600 Series Receivers and matching Transmitter, but they were very late coming to the market, not a commercial success, and are somewhat hard to find, today.

I would be remiss by not mentioning Hammarlund – a market leader entering the 1960's. In a flawed view of the market, they felt no need to produce small footprint radios like the Collins S-Line and KWM-2 until it was too late – and they left the market and shortly after that went out of business altogether.

We need to look at the field of transmitters available to the amateur radio operator at the time the SB-400 was released to the marketplace. Collins led the market at the time. Not to be outdone, the other major players came to the table with worthy, sometimes superior, products.



Collins 32S-1 (1958) (Collins S-Line)

The first of a new generation of compact transmitters using i-f mechanical or crystal filters. Plus, a new capability to Transceive with an equally new generation of Transmitters, like the model 32S-1.



Drake T-4X (1964)

Drake T-4X, T-4XB, and T-4XC matched its line of Receivers, the R-4, R-4A, R-4B, and the final R-4C in the line. The R-4 Series works with the Drake T-4X Series Transmitters.

Hallicrafters HT-44 (1964)



The HT-44 arrived later than its stable mate, the SX-117. It used phasing SSB Generation, which had been popular, but many had abandoned the process by this time. It did transceive very capably with the matching SX-117 Receiver.

Heathkit SB-400 (1964)



(SB-401 is the subject of this article.)

The SB-401 solved functionality issues of the initial SB-400 but was otherwise almost identical. For transceiving Heathkit offered the SB-300 Series Receivers.

All Pictures – W9MXQ

A major feature of the SB-400 and SB-401 compared to the Collins 32S-1 or 32S-3, or offerings from Hallicrafters and Drake is its integrated AC Power Supply. Collins, for instance, required the use of the 516F-2 AC Power Supply to provide power for the circuitry in the 32S-1 or 32S-3 Transmitters. Heathkit, like its competition, DOES require an external AC Power Supply (the ubiquitous HP-23 series) when using its transceivers. Like with the HP-23, the power amplifier high voltage, the lower-level circuitry high voltage, bias circuit voltage, and filament voltage are all generated internally with the SB-401 and SB-401.

A word here about the differences between the SB-400 and SB-401 is appropriate. These two models are mostly identical but do have differences that mostly are not noticed in general operation. The SB-400 lacked convenient switching to allow transceiving with the matching Heathkit Receiver (SB-300, SB-301, SB-303). One had to open the hinged top-cover and exchange some coaxial cable connections. This was accomplished with a convenient front panel switch on the SB-401 added to the MIC CW CAR Level Control as a concentric switch.

The LMO (Linear Master Oscillator) changed from using a 6AU6 tube on the SB-400 to a 6BZ6 on the SB-401. Over time the LMO changed yet another time with the last version also using the 6BZ6. This change was not apparent to the user.

A major change – which allowed a reduction in the price of the SB-401 compared to its predecessor SB-400 was based on most SB-400 series transmitters found to be running with SB-300 series receivers. When interconnected, the SB-300 series receiver and SB-400 series transmitter could use the same LSB and USB carrier oscillator as well as then same frequency range heterodyne oscillator crystals present in the receiver. This was true if the units were operating in transceive (off the receiver LMO) or separately (receive using receiver LMO and transmitter using transmitter LMO). That saved the cost of a total of ten crystals. If the SB-401 was to be used with a non-Heathkit, or earlier Heathkit, receiver, then the crystals could be purchased as the SBA-401-1 Crystal Pack.

A small point here relates to CW operation. The SB-401 Transmitter did come from the factory with a CW carrier oscillator crystal. This was required because without that the transmitter and receiver would be on the same frequency when transceiving. That would cause the listener to hear nothing when

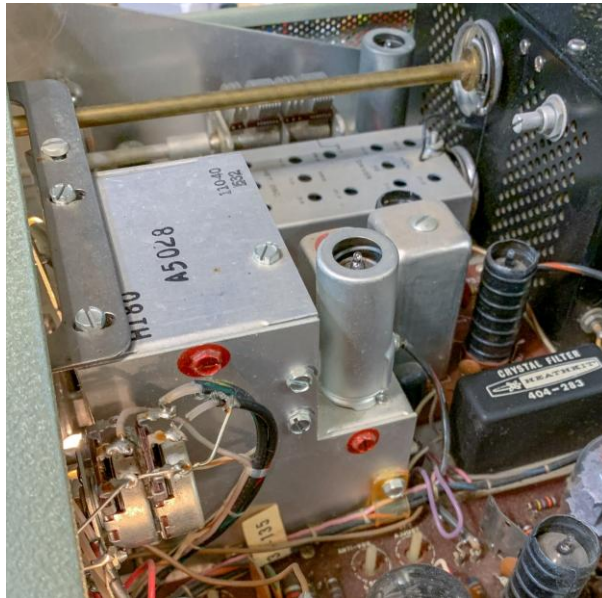
transceiving. In the case of the SB-400 series design, the difference in the carrier oscillator crystals was 1 kHz. That allowed the user to hear a 1 kHz tone when the other station is transmitting. A small but particularly critical point!

Focusing on the SB-400/401 and its target Collins product, look at a selected group of feature comparisons:

Feature Comparisons – Collins 32S-3 and Heathkit SB-400/401²		
	Collins 32S-1/32S-3	Heathkit SB-400/401
Frequency Coverage	3.5-30 MHz with fourteen 200 kHz Segments	80-10-meter ham bands only in eight selectable 500 kHz segments
RF Power (SSB)	175 Watts PEP Input (100 watts Output) (Less on 10-meters)	180 Watts PEP Input (100 watts Output) (Less on 10-meters)
RF Power (CW)	160 Watts PEP Input (90-100 watts Output) (Less on 10-meters)	180 Watts PEP Input (100 watts Output) (Less on 10-meters)
Frequency Stability	After warmup, stable to 100 Hz	<100 Hz per hour after 20-minute warmup. Less than 100 Hz for 10%-line voltage variation.
Transceive Engagement	Front Panel Switch	Internal Swap of Injection Cables was Required ³
Modes of Operation	LSB, USB, CW	LSB, USB, CW
AC Power	Separate Collins 516F-2 AC Power Supply	Internal

These SB Series receivers and transmitters, like their competition from Collins, Hallicrafters, and Drake, excel as being closely related to the coming amateur radio preference to transceiving. Unlike the competition, however, the Heathkit radios lacked the interference fighting controls in the receivers that all the others shared (except for the very first Collins S-Line receiver, the 75S-1. In the case of the Heathkit SB-300 series and SB-400 series together – functionality was almost identical to the SB-100 series transceivers. And, with the addition of the Remote VFO (SB-640) the functionality was identical within any one band.

Like in all the SB Series Receivers, Transmitters, and Transceivers, the LMO came fully assembled and calibrated . . .



**SB-401 LMO – installed in place. Note red paint to indicate “Factory Sealed.”
(Front Panel is to the left.)**

W9MXQ Photo

Note in the above picture that careful diligence and neatness in wiring. The quality of the wiring is witness to a well assembled kit – something that must be evaluated when buying any used Heathkit. It is only as good as the original builder made it!

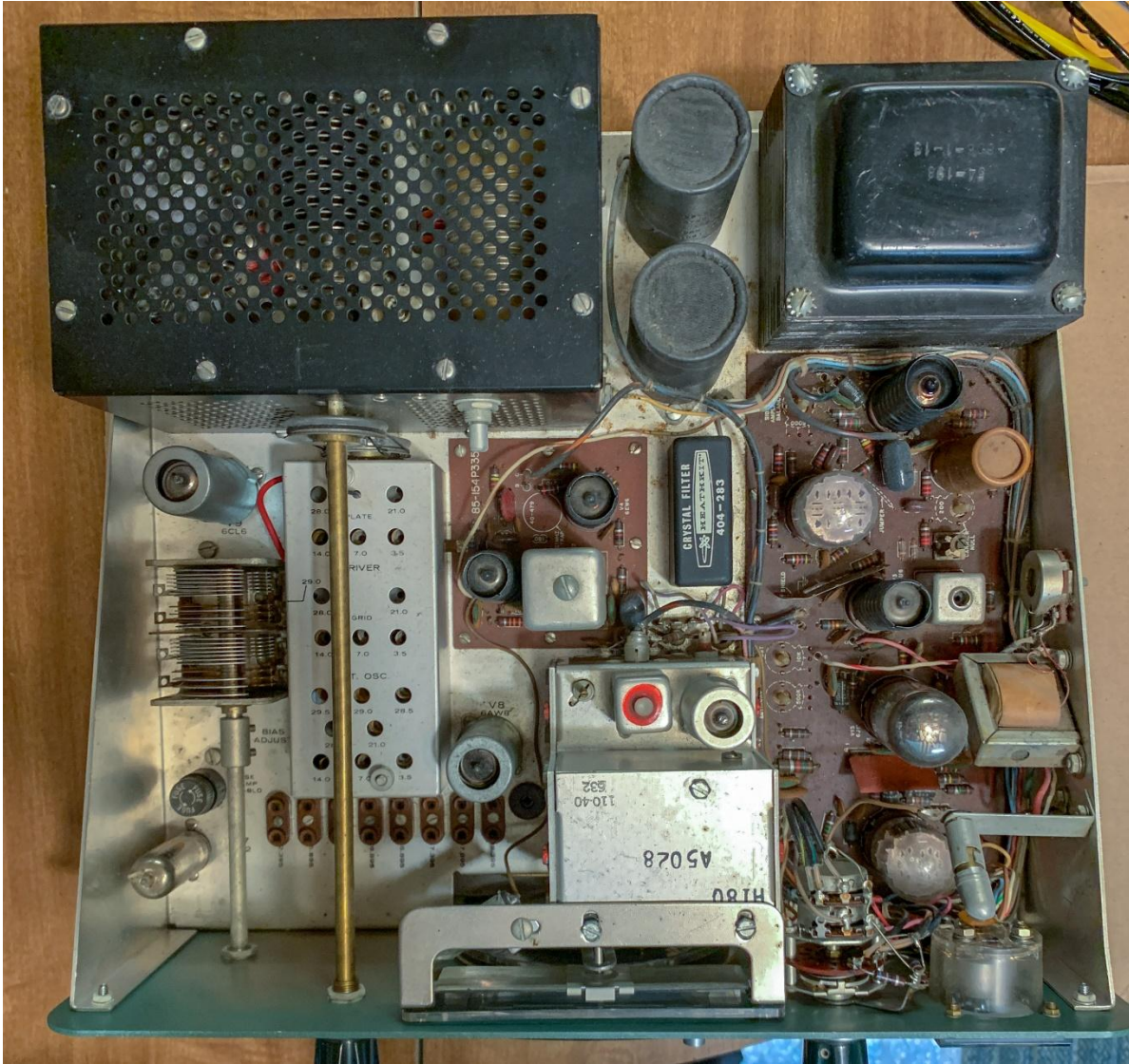
Here is the power amplifier compartment. Like most power amplifiers in radio transmitters the amplifier tubes and tank circuit are completely enclosed. The top cover has been removed in this picture . . .



**Power Amplifier Compartment in the back left corner of the top chassis.
(Front Panel is to the left.)**

W9MXQ Photo

Note, above, the 6146 Power Amplifier Tubes to the top of the picture. The Plate Tune Control Capacitor is at the center. The Plate Load Capacitor is directly below the Plate Tune Control Capacitor and therefore not visible in this picture. At the bottom you can see the 80-15-meter tank coil. At a near 90-degree angle to that coil you can see the larger wire gauge, open wound 10-meter tank coil. On the left, just below center, see the Neutralizing capacitor. The protective cover has been removed – be careful as there is 800 or more Volts DC exposed inside this compartment. That is 800, as in DEAD!!



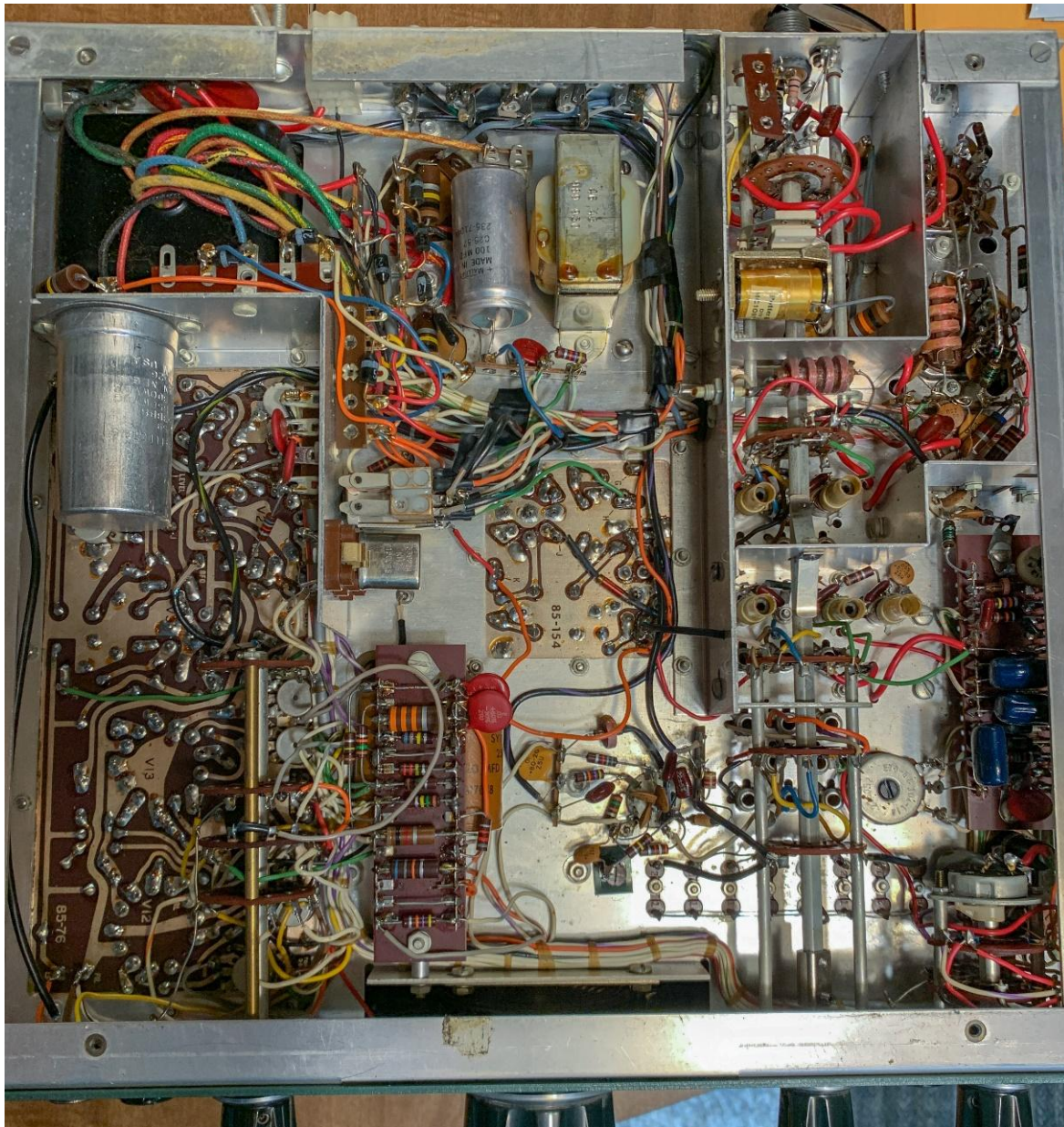
**Top Chassis View of the SB-401 Transmitter – Outer Cabinet Removed.
(Front of Transmitter is at the bottom of this picture.)**

W9MXQ Photo

Above you can see the chassis top – radio removed from the outer cabinet. PA Compartment is at the left rear with the Power Transformer at the right rear. The Drive Control (driver tank circuit) is at the left center with the 6CL6 Driver tube just to the rear of that variable capacitor. Just to the right of the Driver capacitor can see the Plate and Load Tune concentric control shafts heading back to the PA Compartment. At the lower front center is the preassembled LMO chassis. Just to the left you can see eight empty crystal sockets. Those are for the heterodyne crystals – mentioned earlier – not yet installed at the time I am drafting this article. Under the Plate and Load concentric control shaft you can see the

shield cover over the transmitter i-f tuned circuits – lettered for alignment. Close to the center, you can see the transmitter’s crystal filter. That filter is part of the SSB/CW generator that is the large circuit board to the right. Straight below that board, you can see the meter. To the left of the meter is the SSB CW LEVEL control that is concentric with the switching circuitry for choosing which LMO is in use to transmit.

Now let us look at the chassis bottom . . .



**Bottom Chassis View of the SB-401 Transmitter – Outer Cabinet Removed.
(Front of Transmitter is at the bottom of this picture,)**

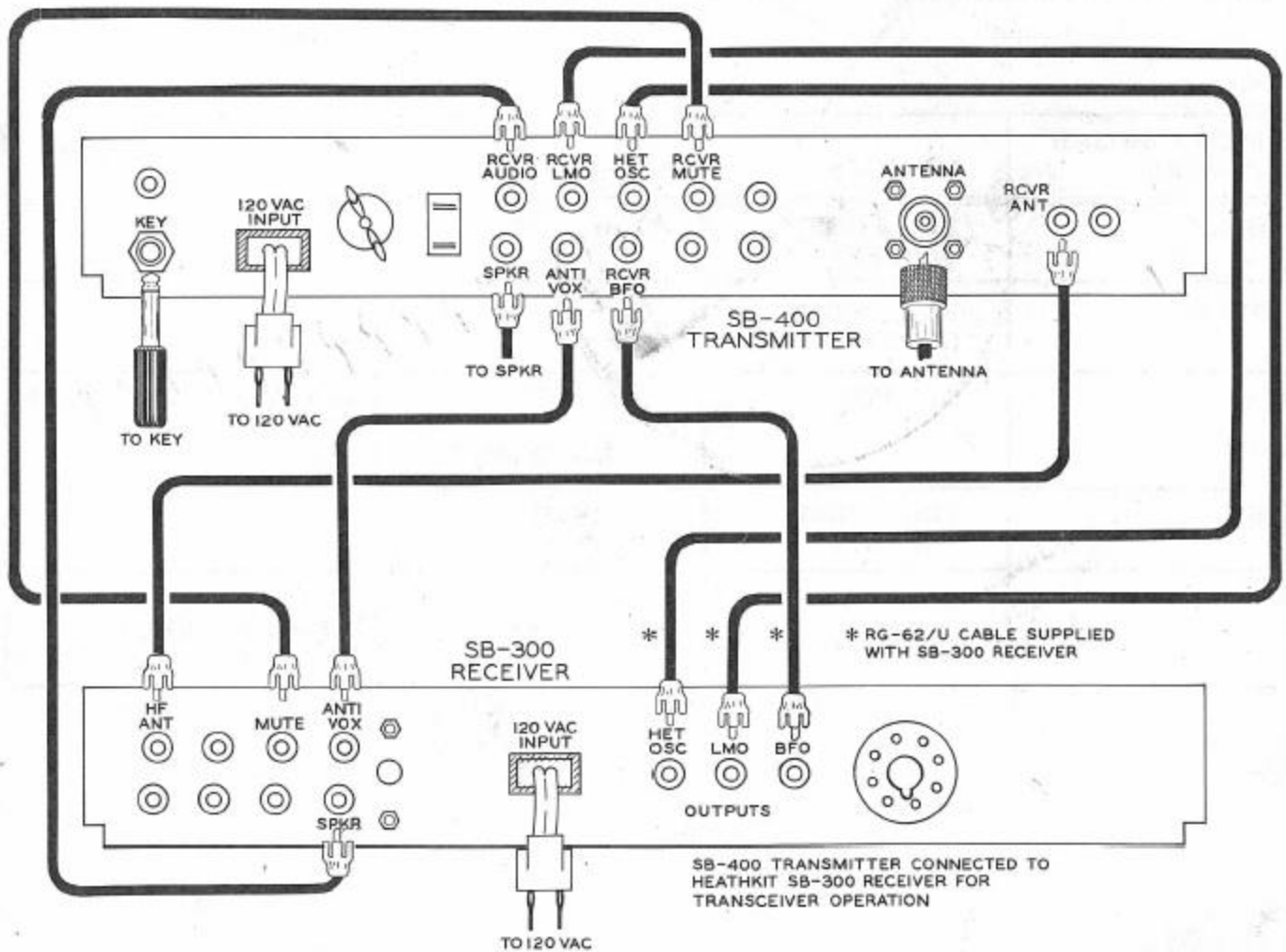
W9MXQ Photo

Above you see the bottom chassis view of the SB-401 Transmitter. The rear left two-thirds of the chassis houses the under-chassis parts for the transmitter’s power supply. Those parts are directly under the Power Transformer that is visible in the Top Chassis view. This circuitry closely follows that of the Heathkit HP-23 AC Power Supply. Later versions of this transmitter went from the 120 VAC

primary Power Transformer used in the SB-400 and early SB-401 to a dual 120 VAC (120-0-120) primary for use internationally and for 240 Volt Service, domestically.

Just to the left of the very center you can see a single crystal for the Transmitter's CW carrier oscillator, mentioned earlier. Careful study will show the sockets for the LSB and USB carrier oscillator crystals not installed at the time of this writing. Right above the crystal you can see the transmit/receive control relay. The parallel wired antenna relay (that sends signal to the receiver, when receiving), is toward the upper right of the picture. The bandswitch is visible to the right in the picture – attached to the front panel.

Today's hams are not so familiar with using separate receivers and transmitters. Here is an excerpt from the SB-401 Operating Manual showing the interconnection of the SB-401 Transmitter to the SB-300 Receiver . . .



**Heathkit SB-300 Receiver and SB-400 Transmitter
 Interconnection for Transceive and Separate Operation
 Page 94, Heathkit™ SB-401 Assembly and Operating Manual**

There are seven cables, as follows:

SB-300 to SB-400 Interconnection Details				
Cable	Cable	Length	Connector	Application
1	RG-62/U	24 Inches	Phono Plug	Heterodyne Oscillator
2				LMO
3				BFO
4	Audio Cable	36 Inches		Mute Line
5				Anti-VOX Line
6				Speaker Audio Lione
7	RG-58/U	36 Inches		Receiver Antenna Cable

Cables 1 through 3 are critical as to length while Cables 4 through 7 are not critical, within reason. Premade RG-62/U cables for this application are available, custom made from eBay sellers. I used a Composite Connection TV Triple Cable for my cables 4, 5, and 6 and made my own cable 7 from some surplus RG-8X. RG-62/U is a 90-ohm cable. Use of other cable impedances may be problematic.

The model numbers of the SB-300 and SB-400 Series can be confusing so let us look at them one more time . . .

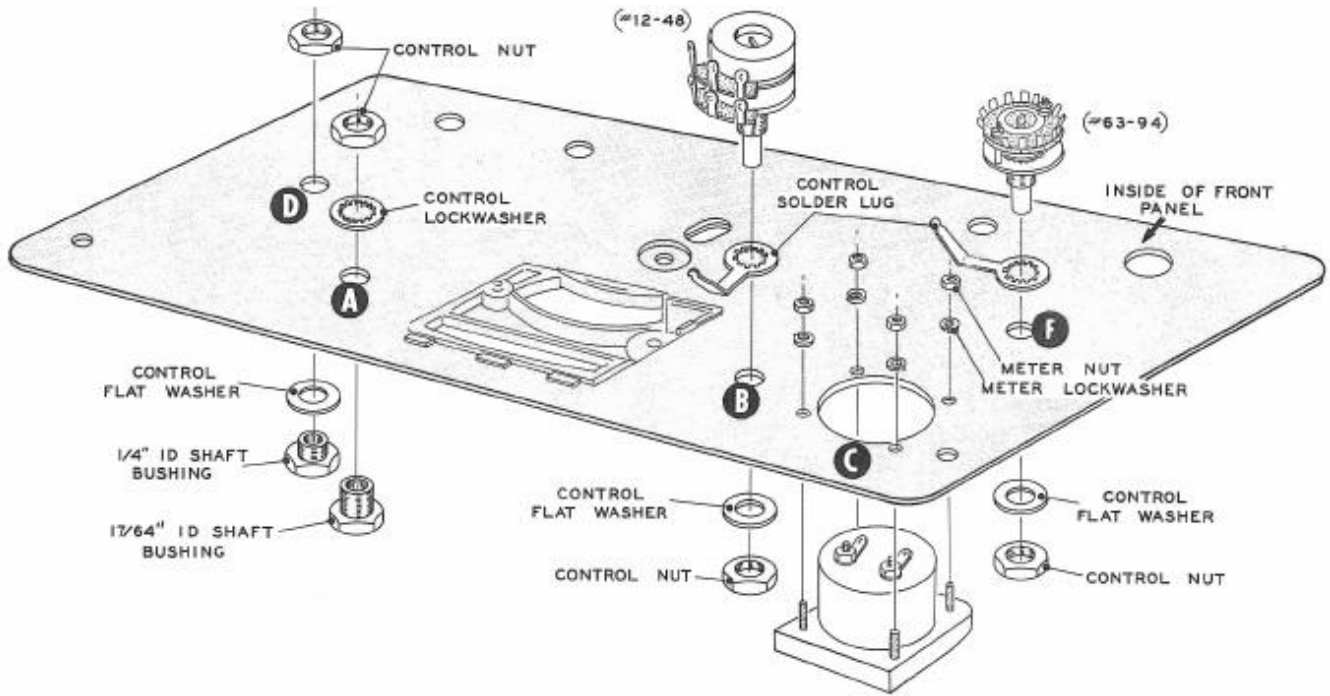
Receivers	Transmitters
SB-300	SB-400
SB-301	SB-401
SB-303	

Any Radio in the Receiver Column will operate as separate units or transceive with any Radio in the Transmitter Column. The Cable Set is the same. Just be careful of the back panel layout because the connectors are not all arranged on the back panel in the same way on every model. For instance, the back panel of the SB-303 is completely different from the back panel of the SB-300.

Do remember the shortcomings of the SB-400 (not SB-401) for separate vs transceive operation. The transmitter is excellent in performance but loses significant marks in convenience. Somehow, the "Hams at Heath" got that one wrong. They did recover in the SB-401, however. Hams being hams, many field modifications made by individuals and published widely provided excellent work arounds for the SB-400.

All the SB Series Receivers and Transmitters shared a complex design main tuning dial mechanism. I am fortunate in that my own SB-300 and SB-401 are expertly assembled and work silky smooth. I also have two SB-303 Receivers wherein one operates just as well as the SB-300 and SB-401 but the other one has all the sounds of a howling cat as it squeaks and growls with every movement of the dial! Thank goodness that is covered in a two-page process in the Heathkit Assembly and Operation Manual for the radio. It is repairable and eventually will yield to my efforts.

Speaking of the Heathkit Assembly and Operation Manual, I am thinking that most of the readers here have never assembled a Heathkit. To that end, here is an excerpt from the SB-401 Assembly Manual . . .

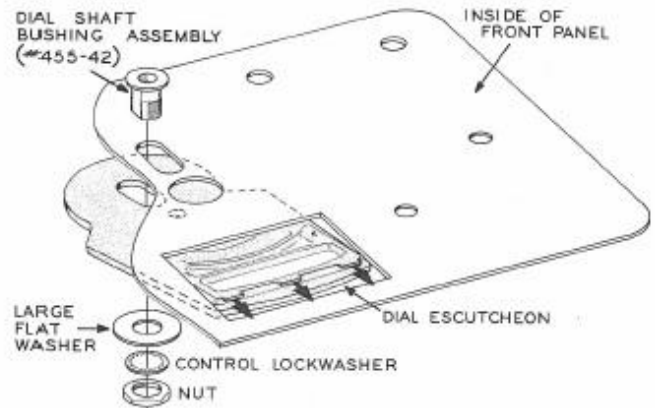


PARTS MOUNTING-FRONT PANEL

Refer to Pictorial 19 for the following steps.

- () Place a soft cloth on the work area to prevent scratching the front panel.
- () Referring to Detail 19A, install the dial escutcheon to the front panel with drive shaft bushing assembly (#455-42). Position the tabs at the top of the escutcheon inside the front panel. Do not tighten the nut at this time. Be sure the bushing is inserted from inside the front panel. It may be necessary to sand off any excess paint from the top inside edge of the panel to allow installation of the escutcheon.
- () Install a 17/64" ID shaft bushing at A, using a control lockwasher and a control nut. Do not tighten at this time.
- () Install a 1/4" ID shaft bushing at location D, using a control flat washer and a control nut.

PICTORIAL 19



Detail 19A

- () Install the 1-section, 2-pole, 5-position switch (#63-94) at F, using a control solder lug, control flat washer, and a control nut. Position the switch lugs and solder lug as shown.

Partial Assembly Detail – SB-401 Front Panel Assembly

Page 75, Heathkit™ SB-401 Assembly and Operating Manual

Another area of useful design on Heathkit's SB-Line major components was the excellent top accessible (opening) outer cabinet. Collins and Hallicrafters have very nicely designed, fully opening tops on their outer cabinets but I think that Heathkit was a bit more elegant than their competition. Look for yourself . . .



Closed Cabinet – Corner View



**Partially Open Cabinet – Corner View
W9MXQ Photos**

You can see the fitting design – note that removing the closure screw is not required to open the cabinet.



W9MXQ Photo

The hardware involved here is an 8-32 UNF Oval Head Chrome Plated Screw. These are difficult to find – and while Flat Head designs work, they just do not look right –

“Flat Head Screws Get No Cigar!!”

These Oval Head Heathkit Cabinet Screws are available from eBay sellers supporting vintage Heathkit equipment.

In closing, here is the SB-401 with the SB-300 from the previous installment . . .



Left to Right (All Heathkit)

**SB-401 Transmitter, SB-600 Speaker, SB-300 Receiver,
HDP-121 Microphone, & HA-1410 Electronic Keyer**

W9MXQ Photo

The “Green Machines.”

A reminder from the SB-300 installment, if you have any of the SB series radios (or any Heathkit Amateur Radio Equipment), I urge you to locate and purchase an excellent book by Chuck Penson, WA7ZZE, entitled “Heathkit Guide to the Amateur Radio Products,” Third Edition. The earlier editions are good (great, actually), but the Third Edition adds an incredible amount of detail about this fine equipment⁴.

I appreciate that you read my articles. A 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 This is my first SB-401 Transmitter and comes from fellow collector, W9DYQ. I have a bit of fascination for this series of radios – with an SB-300, two SB-303’s, the SB-401 in this article, and an SB-200 Linear Amplifier in my collection. I have never had the middle model receiver, the SB-301. Like many hams, even today, I have a variety of Heathkit Accessories and several Heathkit pieces of Test Equipment in my shack.

² From the Specifications in the respective Operating Manuals of the noted models.

³ This is covered in the text of the article – and was corrected with the later SB-401.

⁴ Chuck Penson’s Heathkit related books are available from his website, <https://wa7zze.com/>. I also recommend his other Heathkit related books, “Heathkit Test Equipment Products,” and Heathkit H-Fi and Stereo Products.” I have all three, plus early editions of the “Heathkit, A Guide to the Amateur Radio Products” books.

W9MXQ ©2023

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.

- ❖ 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
 4. GARS QSL card handler

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.

Marketing Chair Information

The Gwinnett Amateur Radio Society (GARS) is seeking a volunteer to serve as Marketing Committee Chairman. This position is responsible for helping promote the club, its activities, and the benefits of amateur radio to current and prospective members.

Responsibilities include developing and coordinating marketing efforts for club events, membership recruitment, and special activities; assisting with social media and website promotion; and working closely with the Public Information Officer (PIO) to ensure consistent messaging and outreach.

The ideal candidate should have good communication skills, enjoy working with others, and have an interest in helping GARS grow and thrive. No professional marketing experience is required – just enthusiasm, creativity, and a willingness to help.

GARS Membership Pricing

New Membership: (Licensed Adults and Seniors who have never been a GARS member)	First Year Free	Youth Membership: (Licensed Youth ≤ 21) (Proof of age required)	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+) (Proof of age required)	\$15 / 1-Year \$25 / 2-Years (\$5 savings) \$30 / 3-Years (\$15 savings) \$150 / Lifetime (One-Time Fee)
Join Link: https://gars.org/join Renew Link: https://gars.org/renew			



GARS Membership

New Members in May

Lehman Johnson (N4WYE)
 Jeff Lanier (KZ4TJ)
 Julie Lanier
 Randall Lineberry (KR4LOL)
 Bryan McGrath (KO4ZUJ)
 Fnu Mihit Shubham (KR4MKQ)
 Ryno Morris (KR4GWB)
 Gregory Ridderbusch (KR4MIE)
 Gary Siepser (KR4LUL)
 Kevin Vazquez Cruz (KZ4ZD)

New Members: 10

**Total Members as of
May 31, 2026
374**

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 June

Gavin Bacchus (KQ4SKO)
 Mark Bell (N7GRB)
 Harold Brown (KI4FPR)
 William Carmichael (NV4Q)
 Hope Collier (KO4PVM)
 John Davis (WB4QDX)
 Christopher Fowler (K4FH)
 Kia Glenn (KI4KIA)
 Cara Guidry (KR4CTV)
 Bettina Harris (KR4LKM)
 James Hinkle (AG4ON)
 Randall Lineberry (KR4LOL)
 Fisher Londono (W4LON)
 JD Masters (KQ4ELD)
 Olivia McMahan (KO4UIB)
 Richard Miller (KR4LQV)
 Rick Morris (KD4VOJ)
 Nasser Nasab (K4NCC)
 Brian Page (N4TRB)
 David Ritchie (N4DJS)
 Charles Roberts (K4HFO)
 Ron Rogers (WW8RR)
 Ken Schroder (KC4SR)
 Donald Seder (K9ROV)
 Barry Sharp (N4CS)
 Evelina Silva (KO4FQI)
 Bill Van Duynhoven (KE4TVA)

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

Membership Chair: Dave Bruse, W4DTR

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

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.





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://gars.org/x>



Join GARS on YouTube:

<https://gars.org/youtube>

GARS Mail Address:

GARS
P.O. Box 492531
Lawrenceville, GA 30049
<https://gars.org>

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-Chair KR4CVF



Mario Stewart, Public Information Officer KR4CUK



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 May 12, 2026

Attendees

Vice President - Glen Wendt, W3WWT
Treasurer - Ralph Pickwick, KJ4CNC
Secretary - Michael Stewart, KR4CVF
Program Manager - Kevin Scott, K4GTR
Total Meeting Attendees: 59 (3 New Hams)

Agenda

Opening Time: 7:00pm
Closing Time: 8:51pm
Membership Report: 369 as of (4/07/26)

Programs: Field Day - Kevin Scott, K4GTR

Steve WB2OGY - Portable Vertical Antenna
Tom KT4XN - Portable Vertical Antenna
Harold KI4FPR - Super Stick
Kevin K4GTR - 10/80m End Fed Half Wave
Antenna & Inverted L 30m & Doublet 40m

Notes

New Ariss Contact
New QSL Manager Has Been Added
Question Poll For Tech Will Reset
(May 17 - 23) Meet the Members
(June 27 - 28th) Field Day

Workshop Minutes - May 19, 2026

Workshop: Field Day Preps and Smith Chart VNA Demo

Presenter: Various

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

There were various discussions about the upcoming Field Day along with the DMR crowd (Walt KQ5KAO, Bob K4CQO, and Mark KN2TOD) along with Lynn W4VNA who brought in his VNA and showed what it can do along with what a Smith Chart is all about. Dave W4DTR brought in his Power Pole kit and demonstrated how and why we use Power Pole connectors. Plus, there were items on the free table, and we had cookies, sodas, and coffee.

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
<p>TechFest February 21 2026</p> <p>Winter Field Day January 24-25 2026</p> <p>Dog Show Fundraiser March 25-29, 2026</p> <p>Spring Technician HamCram April 11&12 2026</p> <p>Georgia QSO Party April 11-12 2026</p> <p>North metro area Fox Hunt April 2026</p> <p>Memorial Day Parade May 25 2026</p> <p>ARC/KARC Hamfest June 2027</p> <p>Field Day June 27-28 2026</p> <p>Summer General HamCram July 25-26 2026</p> <p>Fall Technician HamCram October 2026</p> <p>JOTA October 2026</p> <p>Stone Mt. Hamfest October 30-31 2026</p> <p>Holiday Party December 2026</p>	<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 Chili's Every Saturday at 8:00 am GARS Breakfast at Cracker Barrel

GARS Calendar for June 2026

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



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

07/10/2026 - 07/11/2026 [Milton ARC Hamfest](#)

Location: Milton, FL
Type: ARRL Hamfest
Sponsor: Milton Amateur Radio Club
Website: <http://miltonarc.org>

07/11/2026 - [Cullman Amateur Radio Hamfest](#)

Location: South Vinemont, AL
Type: ARRL Hamfest
Sponsor: Cullman Amateur Radio Club
Website: <http://cullmanarc.com>

07/11/2026 - [Cullman Amateur Radio Hamfest](#)

Location: South Vinemont, AL
Type: ARRL Hamfest
Sponsor: Cullman Amateur Radio Club
Website: <http://cullmanarc.com>

08/22/2026 - 08/23/2026 [Huntsville Hamfest, ARRL Nation 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>

10/09/2026 - 10/10/2026 - [Melbourne Hamfest](#)

Location: Melbourne, FL
Type: ARRL Hamfest
Sponsor: Platinum Coast Amateur Radio Club
Website: <http://hamfest@pcars.org>

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 2:45 pm, 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.



May 2026 Results

The GARS VE Team exam session results from May 17th:

8 new Technicians:

- Lee Bembry KR4MJO
- Rachel Bembry KR4MJP
- Rob Blanchette KR4MIL
- Wayward H Gay KR4MIJ
- Tia Milton KR4MIM
- Micah A Osuri KR4MID
- Andrew Pratt KR4MKF
- Gregory L Ridderbusch KR4MIE

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

W4DTR - Dave Bruse

K4BYE – Jim Cheshire

W4VNA - Lynn Hatker

KM4SWL – Richard Kitz

WS3V - Bill Rudd

K4CQO - Bob Hoffmann

Thanks & 73, Bill Rudd (Co-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

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