The GARzette

The Official Newsletter of the Gwinnett Amateur Radio Society

August 2023 http://www.gars.org/ Volume 50, Issue 8

Inside

www.GARS.org

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

CELEBRATING 50 YEARS 1973 2023

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

GARS Meeting: Mobile Radio Installations – Alex Kowalchuk AK4AM
Tuesday August 8, 2023 at 7:00 PM

President's Message

From the President…

The "dog days of summer" are upon us. What are your summer time projects? Hanging a new antenna in your trees or sit by the pool with family and cold beverage? I tend to complete my chores and to-do lists early in the morning and hang out inside where the AC is cold and the other AC powers my rig for a little hunting and pecking for some radio activity. Now While I am inside, I am thinking about what project would I like to get ready for the GARS Show-n-Tell, Favorite Ham Projects program on October 10th. What will you bring and share with everyone??

Silent Key GARS Member, Dave Adanich, K8WDJ recently went Silent Key, so please send some thoughts and prayers for him and his loved ones, Dave will be missed.

Huntsville Hamfest is coming up on August 19. I do not need anything, but I am considering going to see acquaintances and any new products, and anything I feel I just cannot live without.

Just a three hour drive away is the **Shelby Hamfest**. Three days of perusing and acquiring ham radio treasures await starting September 1.

Stone Mountain Hamfest on November 4th and 5th. The planning committee is reporting that things are coming together nicely and are expecting a great turn out.

With a great turn out, comes the need to orchestrate a great deal of tasks that must be executed. Beforehand, during and afterwards there a things that need to be done. And many hands make short work of it all. To help us out, please see: http://gars.org for a sign up sheet.

Bylaws change proposal – We have created an additional policy to the Lifetime Membership purchase clause and need your help to enact it. See this proposal posted in this newsletter. Per the Bylaws, changes to our Bylaws must be posted here prior to a meeting to where the change proposed will be voted on by the membership. So, take a look at it, and come to the meeting on the 8th prepared cast your vote on this policy change.

Trailer project – It was proposed and decided upon by the Executive Team to acquire a mobile utility trailer for the purposes of transporting and storing some of the GAR'S equipment. We will be asking for input and volunteers to work on it and for configuring it for the best way to store and transport our equipment. To see the proposal: go to GARS group.io files

The 'NULL' of it – Have you ever put up an antenna with lesser than expected results? I did recently and jotted down a few notes about that experience. *See that article in this newsletter.*

73,

Joe Biddle, AD4PZ

Club President

GARS Repeaters and Other Communications

2 Meter Repeaters	6 Meter Repeater	
147.075(+) MHz Tone 82.5 147.255(+) MHz Tone 107.2	53.110 (-1 MHz) No Tone (Offline for Maintenance)	6M Currently down 147.075 Operational in Snellville 147.255 Operational in Snellville 224.580 Operational in Grayson 442.100 Operational at Goshen Springs 442.325 Operational in Buford 444.525 Operational in Snellville
1.25 Meter Repeater	**Other Resources:**	
224.580(-) MHz Tone 100.0, 1.6 MHz Offset	APRS	Link remote receivers being added
70 Cm Repeaters	144.390 -- 1200 Baud W4GR	
444.525(+) MHz Tone 82.5 442.100(+) MHz Tone 100 442.325(+) MHz Tone 100	D-STAR (WD4STR)	
	145.060 + (1.4 MHz) 440.550 + (5 MHz)	

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 at meetings, etc. and Dave Bruse, W4DTR, who distributes the newsletter electronically.

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

GARS Meetings & Workshops

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

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

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

- August 8, 2023 – Mobile Radio Installations – Alex Kowalchuk AK4AM
- September 12, 2023 – Favorite Websites
- October 10 2023 - Show-n-Tell, Favorite Ham Projects
- November 14, 2023 - **TBD**

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

- August 15, 2023 - Mobile Radio Installations - Alex Kowalchuk AK4AM
- September 19, 2023 - Favorite Websites
- October 17 2023 - Show-n-Tell, Favorite Ham Projects
- November 21, 2023 - **TBD**

GARS Meeting – August 8, 2023
Mobile Radio Installations

Alex, AK4AM, will be giving a tutorial about getting a radio into your vehicle, including antenna mounting ideas, radio mounting, radio power options, etc.

GARS Workshop – August 15, 2023

This is a GARS workshop for any Q&A for your Amateur Radio projects and adventures.

Besides answering any questions about your specific mobile radio installations, feel free to bring along your show-n-tell items and questions. We typically have 5 or more Elmers at each Workshop.

GARS would like to thank David Adcock, KA4KKF for his presentation given on July 11th on the GARS Repeaters. Also for bringing his expertise to our Workshop the following week.

GARS TECHNICIAN LICENSE HAM CRAM CLASS

WHEN: Saturday September 30th 2023 and Sunday October 1st. 2023; 8:00am to 4:00pm each day, exams start at 4:00pm Sunday (this is a CLOSED exam session, only open to registered students of the class).

WHERE: EAA 690 Hangar, Gwinnett County Airport – Briscoe Field, 690 Airport Rd, Lawrenceville, GA 30046

MORE INFO: To register for our 2-day HamCram Class, use our registration form below. Pre-registration is REQUIRED. No Walk-ins accepted. This fee is non-refundable. Our $25 fee covers the class and lunch both days, and the exam fee for the exam given Sunday at 4:00pm. Lunch will be brought in to save time. Click here for more info (on the GARS.org web site).

GARS Happenings

20 Years ago in the August 2003 GARzette:

- The 2003 Field Day was presented with pictures
- There is an article about doing Broadband over power lines
- Article about moving broadcasters out of 7100 to 7200 kHz in Regions 1 and 3
- An article about 60m additional channels beign available

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


The GARZETTE

The President's View

Health and Wellbeing – Sandy Jackson, KJ4DRO

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

Net Managers Corner

Monday Night 2 Meter "Want, Swap, Sell, and Information Net"

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.

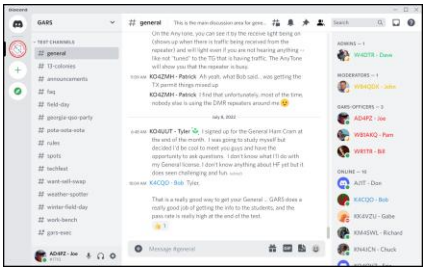
Out of almost 300 members, there are only seven operators who serve as the NCS for the GARS net every Monday night. In no particular order, they are:

Ray – N4GYN David – KA4KKF Kevin – W4KIB Fisher – W4LON Chuck – KK4TKJ

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 (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. →



GARS 2003 EAA Summer Camp Help

As mentioned in last month's President's Message about the 2023 EAA Summer Camp, GARS received a very nice thank you letter in the mail. Instructing the young folks in the ways we do is always rewarding.

Joe,

Thank you so much for your help with the code ocillator project for the Campers at our Summer Camp this year! The campers enjoyed learning soldering skills and making the oscillators.

With much appreciatation,

Gay Roberts
Administrative Coordinator

Summer Camp Staff

GARS SK Member Remerberance – Dave Adanich

Dave Adanich: August 9, 1946 ~ July 27, 2023

The following link will take you to the obituary for Dave. https://www.wagesandsons.com/obits/david-lee-adanich/?utm_content=button. Dave has been an active member of GARS for many years.

What is Ham Radio?

This is a post originally on IC-705.groups.io. It is published again here with permission from Jim, K6JM.

Ham radio is a very big tent, and we welcome in all kinds of hams with varied interests and skills. We range from experimenters who love to build stuff but don't actually communicate much, to EmComm[1] volunteers who use radio to help others, to CW experts, to ATV fans, to Digital Voice fans, to yes, HF fans.

We all have a place in this tent. That's what makes it such a great hobby.

And while I think what we all have in common is an interest in communication, the mode and frequency bands are indeed a personal choice. I came on board at the end of the 1950s, when hams on AM were still upset with that SSB squawking. I have loved the introduction of computers to assist in communications, but like you, I prefer there be RF involved.

And there still is nothing like HF when the bands are open.

Jim – K6JM

GARS Bylaw Change

From the GARS bylaws:

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

F.6. Lifetime Membership

A licensed radio amateur can become a lifetime member with a one time monetary payment of three hundred and fifty ($350.00) dollars.

REPLACE ABOVE WITH:

A licensed radio amateur can become a lifetime member with a one-time monetary payment. Licensed radio amateurs who are 65 years of age or older, can make a one-time payment of one hundred and fifty ($150.00) dollars. Proof of age required. Licensed radio amateurs who are younger than 65 years of age, can make a one-time payment of three hundred and fifty ($350.00) dollars.

[1] EmComm: short for Emergency Communications, refers to the communication systems, protocols, and practices used during times of emergencies, disasters, or crises. Amateur Radio's Highest Calling. The primary purpose of EmComm is to establish reliable and effective communication channels that remain operational when regular communication infrastructure may be disrupted or overloaded. The FCC especially appreciates those FCC Amateur Radio Licensees who provide volunteer emergency radio communications to the governments and residents of State and local governments and Volunteer Organizations Active in Disasters (VOADs).

Experiencing the 'NULL'

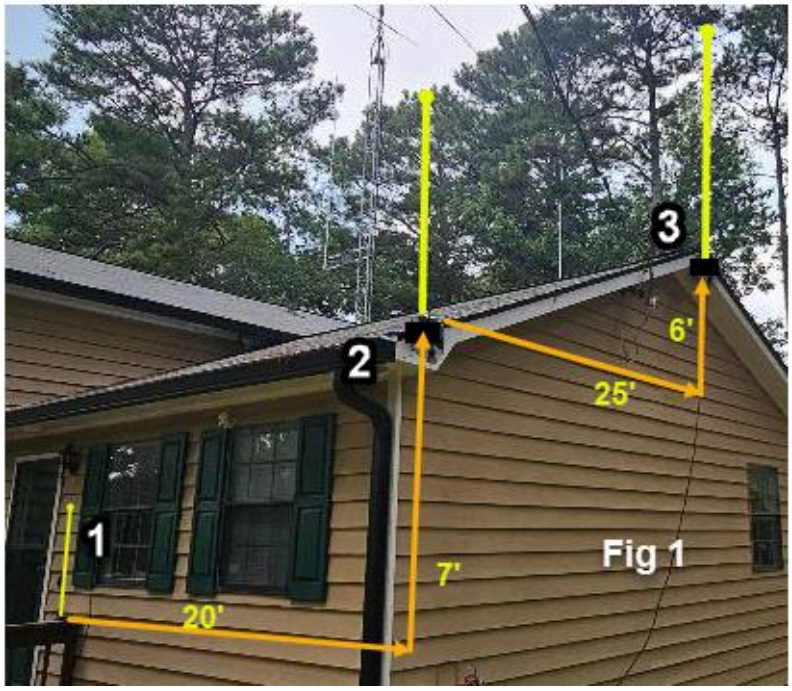
by Joe Biddle, AD4PZ

Have you ever put up an antenna with lesser than expected results? I recently experienced this and decided to document an experiment in an effort to improve these poorly unexpected results.

I recently acquired a new to me, used dual-band rig to put in my living room. I wanted to monitor activity on the 2m & 70cm band without running down to the shack.

So, I put up a Tram 1477-B Base antenna. This antenna has some gain at 3.5dB. Good for approximately one half 'S' unit on either end.

- **Position one** on figure 1, is a dual-band Larson mobile magnetic mount antenna on my front porch with a one square foot ground plane that yields a full-scale reception of the GARS 147.075 repeater for me.
- **Position 2** is the Tram 1477-B Base antenna I mounted expecting a good signal and overall better reception of the metro area than the Larson Mag mount antenna. It had a lesser than expected results yielding only an 'S' 5. See fig 2.
- **Position 3** is where I moved the Tram 1477 antenna to next, hoping for a better received signal. And I got one. This location provided for full-scale reception of the GARS 147.075 repeater for me. See fig 3.



You might guess ground wave or 'conditions' influencing this experiment, but all measurements on positions 1 and 2 were taken over a period of two days and positions 2 and 3 were created within 30 minutes of each other.

I don't imagine the 6-foot elevation increase from Position 2 to 3 was much of a factor, but more the move of 25 feet to the North to position 3 made the real difference.

Also, elevation wise, there is nothing geographically between my antenna and the Snellville 147.075 repeater antenna.

Like in a moving vehicle, you can hear a fringe signal 'picket fencing', but you would not necessarily expect to be able to communicate reliability with said signal. However, if you stop the vehicle while listening to this signal, you may stop in a position of a null. But, if you roll forward or backward, just a few feet, you may find the signal at full-scale in which you would then be able to have a reliable QSO.

So, if you find yourself, in the NULL, the opposite may be only a few feet away. 73.

The Kenwood TS-511S - The First USA Kenwood

Vintage Amateur Radio

de Bill Shadid, W9MXQ

A name in ham radio we all know is Kenwood. Today known as JVCKenwood after their corporate merger with JVC some years ago. In 1971, however, they were known in Japan as Trio Kenwood – Trio was the corporate name selling the Kenwood brand in some markets. In that same year, Trio Kenwood came into the North American amateur radio market as Kenwood, imported by Henry Electronics. At that time, Henry was the manufacturer of Linear Amplifiers and other high-power RF devices. Henry also owned three store front locations in the United States that sold and distributed amateur radio equipment. Known in this market as Kenwood, they began with one HF Transceiver, the TS-511S, an 80 to 10-meter SSB/CW Transceiver. Also offered were major accessories, including the PS-511S AC Power Supply/Speaker as well as the VFO-5SS Remote VFO. The TS-511S was the first of Kenwood's popular priced "500 series" transceivers (in the North American market) that exist with us today with the current TS-590SG model.

Left to Right

PS-511S Power Supply, TS-511S Transceiver, VFO-5SS Remote VFO

W9MXQ Photo

Kenwood always had market segment placement defined by model number – starting in 1970 and still existing today. Here is a rough analysis of the model levels . . .

- TS-100 Series – Mostly Entry-Level Transceivers
  - Examples are the TS-120S, TS-130S, TS-140S
- TS-400 Series – More Deluxe Entry Level Transceivers – added features
  - Examples are the TS-430S, TS-440S, TS-450S, TS-480SAT/HX
- TS-500 Series – Popular Priced Mass Market Transceivers
  - Examples are the TS-510, TS-511S, TS-515S, TS-520, TS-530S, TS-570S, TS-590S/SG
- TS-600 Series – Early on these were 100 or 400 series with Six-Meters added (with some adding six meters to only a few HF bands)
  - Examples are the TS-660, TS-670, TS-680S, TS-690S
- TS-800 Series – Higher echelon transceivers with added technology

  - Examples are the TS-820, TS-830S, TS-850S, TS-870S, TS-890S
- TS-900 Series – Top of the Line Kenwood Transceivers – the most Deluxe
  - Examples are TS-900, TS-930S, TS-940S, TS-950S, TS-990S

To be sure, there were exceptions to the above. The TS-50S and TS-2000 come to mind. And some transceivers seemed to be placed in areas that implied entry or lower level in a radio that obviously had design aspirations above its traditional place in the line. The TS-130S. TS-180S, and TS-590S/SG come to mind as examples.

The TS-511S was not what could be called a Hybrid Transceiver as we came to define that design. We tend to define "Hybrid" as a transceiver with a tube final amplifier section (usually – but not always – two vacuum tubes) and a vacuum tube driver[1]. The TS-511S used a 6GK6[3] driver tube and two 6LQ6[3] final amplifier tubes. It also included seven other tubes in various sections of the radio. Even the PS-511S Power Supply included a single vacuum tube, a 6BM8, in the low high voltage regulation circuit.

The TS-511S was a powerful transceiver making a good account of itself on the bands in competition with powerful American transceivers of the time. These included, but perhaps not limited to, the Swan 500c, National NCX-500, Drake TR-4 (at 300 watts), and the Galaxy GT-550. The TS-511S had an input of 500 watts PEP SSB and 300 watts CW. It could provide over 250 watts PEP SSB and 150 watts CW DC output. Unlike some of the others, there was no accommodation for AM receive or transmit.

W9MXQ Photo

Kenwood designed the interior of the TS-511S on individual small circuit boards, as shown to the left. In this picture, the front panel is at the bottom of the picture. You can see the crystal filters on the board at the upper-left part of the chassis. Shown is the optional 500 Hz CW Filter – the lower of the two filters. The power amplifier compartment is completely enclosed and is under the "DANGER" label at the upper right-hand corner. Microphone Gain and VOX controls are on the controls in the middle of the chassis. The VFO enclosure is just to the right of center mounted at the front panel.

W9MXQ Photo

In this rear panel view, note the exposed internal circuitry at the right center – an open area to the interior. While probably not a shock hazard at that location[4], it left circuitry exposed in an otherwise well enclosed cabinet design. Connections below the fan were for an external receiver. See connections for the PS-511S Power Supply and VFO-5SS Remove VFO. To the right of the fan is a connector that is used to get fan power from the PS-511S Power Supply.

One disadvantage of the open back area on the TS-511S – which certainly was not unique to Kenwood – was access by vermin during storage. While the radios in this article are in pristine condition, there is a second TS-511S and a PS-511S in this writer's inventory. Outwardly that second transceiver is perfect, but it has interior defects that render it never to be restorable. I am extremely fortunate to have this pair.

The circuit boards inside the TS-511S cabinet are mounted over open areas in the chassis top and are open to the bottom for access. Most board-to-board connections are handled with individually soldered leads to board terminals via a wiring harness. This is traditional manufacturing process at the time.

At the left, top picture, is a front panel view of the PS-511S AC Power Supply. The power supply cabinet also integrates a station speaker. Just to the lower left-hand corner of the speaker area, a small diameter neon pilot can be seen. This indicates presence of AC Power.

At the left, bottom picture, is a rear panel view of the power supply. You can see the “Cinch Jones” style 12-pin power connector for the transceiver, an AC socket for the 120 VAC fan. There is a final amplifier bias adjustment at the top center of the lower panel. The is a provision for the system AC fuse as well as a fixed AC power cord – a typical two-wire 120 VAC line cord of Kenwood at the time. Even much later Kenwood radios did not have a three-wire AC power cord.

W9MXQ Photos

PS-511S AC Power Supplies are extremely rare. If not included with the TS-511S Transceiver, it would be difficult, if not impossible to find one. The somewhat more plentiful Swan 117xc AC Power Supply (for virtually all Swan radios from the original 350 to the 500cx, and more) could perhaps be made to work with the TS-511S. This is just one of the several challenges faced by collectors of relatively rare old radios. I occasionally see TS-511S transceivers for sale without a power supply and wonder if they were ever put on the air. A home-brew alternative always existed with many hams in the 1960’s and 1970’s having made their own power supply units for transceivers of the day. Circuits used to appear in popular ham radio publications of the day[5].

An additional note about the PS-511S is that its high voltage rectifier diodes seem somewhat delicate. They are unforgiving and easily overloaded in situations with any excessive current drawn from the transceiver. To compare that with the comparatively simple design of the Swan 117xc AC Power Supply would indicate Swan supply as being of lower duty cycle than the Kenwood. But at the same time, the Swan power supply seems to be more tolerant of over current situations. Personally, I attribute that to better and more robust silicon power supply diodes from North America at time.

Certain long-term traits of Kenwood’s expertise in radio design are immediately apparent in the performance of the TS-511S. While a bit subjective[6], I find these items superior and still relevant to this day . . .

1. Kenwood radios have a critical advantage in signal to noise ratio in their receiver i-f design. I am not an RF Engineer – but know what I hear. Your ears can tell the difference even if instruments cannot.
2. The crystal i-f bandpass filters Kenwood was using were first rate – not something always evident in Japanese radios of the time. There was at the time (and still today) active discussions of the recovered audio performance of crystal filters that all but Collins used vs the mechanical filters used in the i-f of Collins radios beginning with the 75A-4 HF Receiver[2]. To my ear, only Kenwood was equal to the challenge of the performance of the mechanical filter. That last comment is quite subjective and perhaps open to some discussion.

3. Kenwood has a “smooth” performance to its transmitter tuning. In my opinion, this was the result of good driver and PA tank circuit design. Along with high quality meter instruments in the transceivers and good use of vernier controls, tuning a Kenwood PA was smooth and exacting – and, relatively easily performed. Missing was the rather erratic tuning of Swan, Drake, and Galaxy products. While the Collins products of the day were superior to their American cousins in many ways, the tuning process was different and complicated[7].

Like most of the competition of the time, the Kenwood TS-511S was offered with all the proper accessories. As shown in the opening picture herein, the TS-511S had a matching VFO-5SS Remote VFO. Here are some notes about the unit . . .

At the left, top picture, is a front panel view of the VFO-5SS Remote VFO. The VFO takes its power from the host TS-511S transceiver. Note there is a crystal socket at the upper right-hand corner and an associated crystal/VFO switch below it. The VFO-5SS could use a crystal for a single frequency location, such as a net. This was much more important in a day when free running VFO oscillators could not approach crystal stability like the PLL circuits of today.

W9MXQ Photo

At the left, bottom picture, is a rear panel view of the Remote VFO. The small, 9-pin connector at the right is the interconnect to the TS-511S and carried VFO power, switching signals, and VFO RF to/from the transceiver. The eight pin “octal” socket is not generally used but contained connections to an internal relay that could be used for linear amplifier, receiver preamplifier, or other accessories.

W9MXQ Photo

The FUNCTION switch on the VFO-5SS allowed for operation of the station on the Transceiver VFO (Exclusive), Split between the two, or from the Remote VFO (Exclusive). Rather unique was RIT on the External VFO – but not so pleasant was the RIT On/Off switch that required the user to rotate the RIT control to its extreme minus voltage rotation to turn on and off. In the top picture of the VFO-5SS, above, you can also see the OPERATION indicator lamp in the upper left-hand corner of the front panel. That lamp illuminates when the VFO-5SS is controlling station operating frequency.

If the PS-511S is rare then the VFO-5SS is nearly unobtainium[8]. As collecting goes, this is typical. Finding a historic transceiver can be difficult. Its matching power supply generally stays with the transceiver – even though it is in a separate cabinet[9]. So, it is generally rarer than the transceiver as a stand-alone purchase. Since only a small percentage (or relatively so) of initial transceiver buyers bought a Remote VFO, they have become rare. Cases in point are 312B-5 External VFO’s for Collins KWM-2, RV-4 and RV-4C for Drake TR-4, HA-20 for the Hallicrafters Cyclone (SR-400) and Hurricane (SR-2000), FV-101 and FV-101B for Yaesu FT-101 and FT-101B/E/F, to name a few.

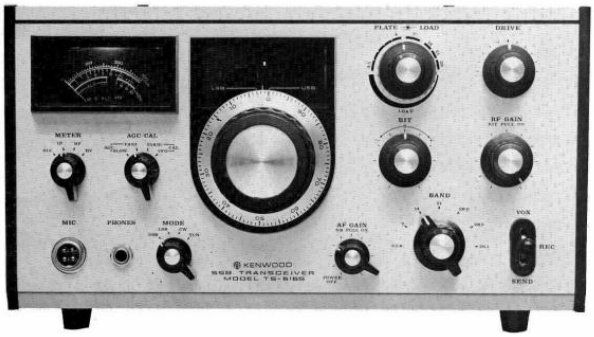
The TS-511S had a cousin in the North American market. That was the TS-511D. Differences were only in the final amplifier which contained 6146A tubes instead of the 6LQ6 tubes used in the TS-511S. While the TS-511D used the same VFO-5SS Remote VFO, it is unclear as to the power supply and how it might have differed from the PS-511S. Not that the PS-511S had an “S” in the model number. Did that mean there was a PS-511D[10]? Switching from 6LQ6 sweep tubes to 6146A tetrodes is not a

plug and play process.

Kenwood did not offer the TS-511S or TS-511D outside the United States. However, they did offer the identical TS-515S and apparently a TS-515D[10]. Here are the TS-511S and the TS-515S, side by side . . .

Kenwood TS-511S HF Transceiver

W9MXQ Photo



Kenwood TS-515S HF Transceiver

Kenwood Photo

Photo color differences are not present in actual units – they are identical except for the actual model number at the bottom center of the front panels. Well, maybe better called, “almost identical.” My own early TS-511S does not have a TUNE position on the MODE switch – the TS-515S, and the later builds of the TS-511S have that fourth MODE position. It is hard to see, above, but the MODE switch is to the lower left of the Main Tuning Knob on both radios – note three positions on the TS-511S and four on the TS-515S.[13]

Friend and fellow collector, Jan, N8CBX, and I have recently discussed the existence of both the TS-511S and the TS-515S and their similarities. We felt we found one difference in the MODE switch just mentioned. At first, we disagreed that the TS-515S was unique in having the TUNE position as a MODE selection. But we have found internet pictures (Bing™ or Google™ search of both models) showing thee and four mode versions of both radios. It is reasonable to assume that both went through a running design change that added the TUNE position in later production runs. In mentioning Jan, I would be remiss not also mentioning Dale, W4OP, who was involved in the same conversations. Dale is another friend and collector of vintage amateur radios. Dale introduced me to Jan.

It is logical that there would have been a TS-515V[10] model to market in Japan. Japan had (and still has) an entry level license with a 75-watt power limit. The radio probably would have used a single 6146A in its final amplifier[10]. Some of those lower powered (suffix “V”) radios made it to the USA – case in point being the Kenwood TS-130V version of the popular TS-130S. If that happened with the TS-511S, then perhaps there are a few TS-511V models somewhere in the USA[10].

For several personal reasons tied to using a TS-511S early in my ham radio career, I had been looking for one for years. Thanks to Mark Olson, KE9PQ[11], I found the one shown in this article (including the PS-511S and VFO-5SS) in the past few months. A ham friend in the area[12], put me in touch with a parts-only TS-511S and excellent looking and working PS-511S. These “extra” units support the working station.

It is interesting to see Kenwood’s two previous radios to the TS-511S in the USA and the TS-515S in the rest of the world. Branded as Trio, there were two radios that developed into what we know as the TS-511S . . .

Trio TS-500 HF Transceiver (Pre-1970)

Trio Photo

Trio TS-510 HF Transceiver (1970)

Trio Photo

These radios used a pair of S-2001 final amplifier tubes for an input of 160 watts PEP SSB and DC CW. The S-2001 is a Japanese specification 6146 or 6146A. These were primarily vacuum tube radios – not all that different from the TS-511S.

Also, for comparison to the Trio TS-510, above, was the Allied (Allied Radio Company[14]) A-2517 HF Transceiver made on contract with Trio . . .

Allied Radio A-2517 HF Transceiver from 1970. This perhaps is the first Trio-Kenwood radio to be marketed in the USA. Comparing this radio with the Trio TS-510 shows them to be similar, if not identical. There was also a very nice A-2516 Receiver that would have worked well as a partner with the A-2517 shown here. The A-2515 was not designed to transceive with the A-2517, to my knowledge. These date from about 1970.

Radio Shack Photo

I appreciate that you read my articles. A special thanks go to Bob, W9DYQ, for his proof reading. Also, for this article, I owe a debt of gratitude to Mark Olson, KE9PQ, Nationwide Radio[9], for his assistance with finding this TS-511S HF Transceiver Station. Remember that I am open to questions and comments at my email address, W9MXQ@TWC.com.

Notes:

[1] The Hybrid amateur radio transceiver in volume was pioneered by the American designed and manufactured, Sideband Engineers SB-33 Transceiver. It was introduced in 1963. An exceptionally low volume American transceiver, the Hallicrafters FPM-200, would qualify as well but it was never really produced in high volume. Hybrid came to be known in the amateur radio market as a transceiver (or receiver/transmitter separates) where the only tubes were the driver and final amplifier states in the transmitter.

[2] Subject for a future article. This includes the SB-33 and FPM-200, mentioned in Note 1, above.

[3] Kenwood used the 6LQ6/6JE6, the 6MJ6/6LQ6, or the 6ME6 – supposedly based on availability. Also, note that some 6LQ6 tubes are designated only as 6LQ6 without the 6JE6 or 6MJ6 sub-designation.

[4] Perhaps an unwarranted conclusion – always be careful - DO NOT TOUCH ANY EXPOSED CIRCUITRY!!! (Unless power is removed, and all voltages are proven to be completely discharged.)

[5] ***QST***, ***CQ***, ***Ham Radio***, ***73***, and other publications come to mind.

[6] I have been an active ham for 56 years, so I do not apologize for my version of "subjective!"

[7] Collins seem to have had an overly complicated tuning process. The S-Line transmitters could be extremely frustrating in terms of proper grid drive. While important in the Collins tuning process, grid drive was not even a measured parameter in Hallicrafters transmitters!

[8] "Unobtainium" is a term used in many collector fields – not just ham radio. It means something like, "I don't care how hard you look; you are not likely to ever find one!"

[9] Today's radios that typically run from 12 VDC power are not so reliant on an OEM Power Supply. Third-party 12 VDC power supplies are economical and readily available. However, more and more high-end transceivers run at 24 or even

48 VDC for their final amplifiers. Such power systems, however, are generally built into the transceiver.

[10] This references a conjecture on my part based on experience – but not a proven fact.

[11] Mark Olson, KE9PQ, is the owner of Nationwide Radio: <http://nationwide-radio--amp-amp-amp--eq-sales-llc.mybigcommerce.com/>.

[12] The parts only TS-511S and compete PS-511S come via the good graces of Richard Engel, K9RWE.

[13] The three and four MODE versions of the TS-511S and TS-515S looked as follows . . .

Three MODE Version

Mode Left to Right

USB-LSB-CW

Four-MODE Version

Mode Left to Right

TUNE-USB-CW-LSB

[14] Trio Corporation (Trio-Kenwood in the time of the TS-511S and now JVCKenwood) was involved with many retail operations making private label electronics – especially world band (short-wave) receivers, ham radio equipment, and other related items. Also, of interest to ham radio operators is that JVCKenwood is the corporate owner E. F. Johnson Company and their line of public service VHF/UHF RF equipment. Many of us remember E. F. Johnson and their extensive line of Viking Transmitters and Accessories. The Viking line of amateur radio equipment was sold to a company formed for that purpose – named Nye-Viking, part of the Wm. Nye Company.

W9MXQ ©2023

GARS Membership

New Members in July
Bill Cohron (KQ4ITN) Angela Cohron Doug Harrison (KQ4JUO) Taimur Mehmood (KQ4KCC)
New Members: 4
Total Members as of August 1, 2023 **373**

Join GARS members for our:

- weekly lunch bunch at 11:30 AM most Fridays
- weekly breakfast gathering at 8:00 AM most Saturdays

Both weekly gatherings are held at The 5 Spot at:

The 5 Spot restaurant
555 Progress Center Ave
Lawrenceville, GA 30043

Birthdays in August

Kyle Albritton (W4KDA)
Emory Albritton
Jim Barrett (KD4PDY)
Stephen Dearman (KI4IXR)
Ed Dionne (KM6UTC)
William Foster (WF1Q)
Philip Graham (N4PRG)
George Guerin (KM4BOS)
Jared Hawkins (KM4SSI)
Conor Huneycutt (KN4VNU)
Jason Johnson (KN6PIN)
Gary Jones (W4HX)
Robert Keeney (KN8RG)
Cheryl Kempster
Ron Langston (WE5O)
Samuel McClure (KM4AAO)
Lige Sims (AB4OK)
Robert Sloan (WA4DD)
Sahan Thanthiriwatte (KQ4BKE)
Connie Weathers
Earl Whatley (AF4FG)
Larry Whited (AB4NX)

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 – http://www.gars.org. To make changes to your GARS membership (moved, new e-mail address, new phone number, etc.), please contact the Membership Chair at Email (https://gars.org/contact/) with any changes to your Membership information.

Membership Chair: Karen Albritton, KI4HPP **Committee Members**: Dave Bruse, W4DTR

ARRL MEMBERSHIP

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

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.

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

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

GARS on Social Media

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

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

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

Follow GARS on Twitter:
http://gars.org/twitter

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

GARS Mail Address:

GARS
P.O. Box 492531
Lawrenceville, GA 30049

Officers

 Joe Biddle, President AD4PZ

 Alex Kowalchuk, Vice President AK4AM

 Bill Hawkins, Secretary WR1TR

 Pam Meridy, Treasurer WB1AKQ

 Kevin Scott, Program Manager K4GTR

Managers and Committee Chairs

 Karen Albritton, Membership Chair KI4HPP

 Dave Bruse, VE Team Leader W4DTR

 David Adcock, Webmaster, Field Day Chair, TechFest Chair KA4KKF

 Ralph Pickwick, Education Chair KJ4CNC

 Earl Whatley, Apparel Manager AF4FG

 Bob Hoffmann, GARzette Editor K4CQO

 Eddie Foust, Repeater Chair WD4JEM

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

 Chuck McCord, Net Manager KK4TKJ

 Steve Back, Technical / RFI Advisor WB2OGY

 Dallas Mellichamp, Workshop Leader N4DDM

 Sandy Jackson, Health and Wellbeing KJ4DRO

 Kevin Igarashi-Ball, Multimedia Chair W4KIB

 Dallas Mellichamp, Georgia QSO Chair N4DDM

Open Winter Field Day Chair
Open Elmer Manager

Directors and Trustees

 John Davis, WB4QDX

 Rick Cobb, N4XYY

 Kyle Albritton, W4KDA

 Bill Cherepy, WB4WTN W4GR Trustee

GARS Meeting Minutes

Gwinnett Amateur Radio Society – MEETING 7/11/2023

There were 38 in-person attendees

President Joe Biddle (AD4PZ) opened the meeting at 7:00 p.m. and closed the meeting at approximately 9:00 p.m.

New hams and visitors: Joe (AD4PZ)

- First time visitors recognized.

Treasurer Report: Joe (AD4PZ)

Education: Ralph (KJ4CNC)

- Nothing to report.

VE Team: Dave (W4DTR)

- This months exam had 3 applicants, 2 new techs and 1 upgrade to General

Programs: Joe (AD4PZ)

- August – Mobile Radio Installations – Alex Kowalchuck (AK4AM)
- September – Favorite Websites
- October – Show-n-Tell, Favorite Ham Projects
- The list of programs is on the GARS.org web site.

Workshop: Dallas (N4DDM)

- Workshops mirror the monthly program.

Apparel: Joe (AD4PZ)

- Earl is out, Ralph is sitting in for him.
- The Field Day T-shirt will be available for further orders. Check the GARS site.

Field Day Wrap Up: David (KA4KKF)

- Scores were posted for all to see.
- Pictures were shared.
- We had less interreference than years before.

Program: The GARS repeater system – David (KA4KKF)

Minutes prepared by club secretary Bill Hawkins (WR1TR).

Workshop Minutes - July 18th, 2023

Number in Attendance: 16

Workshop Topic: GARS Repeaters

Presenter: David Adcock KA4KKF

Brief Summary:

David KA4KKF was available to answer questions on GARS repeaters. We discussed the pros and cons of a new repeater site in the Northern part of the county. Joe AD4PZ and Steve WB2OGY discussed line of site obstacles between their QTHs and various repeater sites. Other topics were DMR, MagLoop antennas, and possible meeting topics.

Events – GARS and others

ARRL CONTESTING INFO

From ARRL Contest Calendar

> For more information click the links <

2023	**January**
1	Straight Key Night
7	Kid's Day
7-8	RTTY Roundup
21-23	January VHF Contest
	February
13-17	School Club Roundup
18-19	International DX – CW
	March
4-5	DX Contest -- SSB
	April
16	Rookie Roundup – Phone
	May
	No planned contests
	June
3-4	International Digital Contest
10-12	June VHF
17	Kid's Day
24-25	Field Day
	July
8-9	IARU HF World Championship
	August
5-6	222 MHz and Up Dis Contest
19-20	10 GHz & Up – Round 1
20	Rookie Roundup – RTTY
	EME - 2.3 GHz & Up
	September
9-11	September VHF
16-17	EME - 2.3 GHz & Up – Rnd 2
9-10	10 GHz & Up – Wknd 1
	October
29-29	EME - 50 to 1296 MHz
16-20	School Club Roundup
	EME - 50 to 1296 MHz
	November
4-6	Nov. Sweepstakes - CW
25-26	EME - 50 to 1296 MHz
18-20	Nov. Sweepstakes - Phone
	December
1-3	160 Meter
9-10	10 Meter
17	Rookie Roundup–CW

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

HAMFEST CALENDAR

[Please confirm the status of a Hamfest before making plans to attend]

08/19/2023 - 08/20/2023 Huntsville Hamfest, ARRL ALState Convention
Location: Huntsville, AL
Type: ARRL Convention
Sponsor: Huntsville Hamfest Association
Website: http://hamfest.org

08/19/2023 - TarcFest
Location: Tampa, FL
Type: ARRL Hamfest
Sponsor: Tampa Amateur Radio Club
Website: http://www.hamclub.org

10/13/2023 - 10/14/2023 Melbourne Hamfest - ARRL Florida State Convention
Location: Melbourne, FL
Type: ARRL Convention
Sponsor: Platinum Coast Amateur Radio Society
Website: http://www.pcars.org/

10/14/2023 - Flamingo Net Flea at U. of Miami
Location: Coral Gables, FL
Type: ARRL Hamfest
Sponsor: Flamingo Net ARC
Website: http://www. FlamingoNet.8m.net

10/14/2023 - NOARC (W4AAZ) Annual Hamfest
Location: Crestview, FL
Type: ARRL Hamfest
Sponsor: Live Oak Baptist Church, The City of Crestview Florida, Main Street Association Crestview
Website: https://w4aaz.org/noarc-hamfest/

10/21/2023 - MARCIFEST 2023
Location: Bradenton, FL
Type: ARRL Hamfest
Sponsor: Manatee Amateur Radio Club, Inc.
Website: https://www.manatee-arc.org/

10/28/2023 - Wiregrass ARC - Fall Tailgate
Location: Headland, AL
Type: ARRL Hamfest
Sponsor: Wiregrass ARC
Website: http://w4dhn.org

11/04/2023 - Bahia Shriner's Tailgate
Location: Apopka, FL
Type: ARRL Hamfest
Sponsor: Bahia Shrine Amateur Radio Unit

11/04/2023 - 11/05/2023 Stone Mountain Hamfest
Location: Lawrenceville, GA
Type: ARRL Convention
Sponsor: Alford Memorial Radio Club
Website: http://stonemountainhamfest.com/

11/11/2023 - Montgomery ARC Hamfest
Location: Montgomery, AL
Type: ARRL Hamfest
Sponsor: Montgomery, Alabama Amateur Radio Club
Website: https://w4ap.org/marc/index.php/hamfest/hamfest-2023

For more information: www.arrl.org/hamfests-and-conventions-calendar

When searching by division, remember some states adjacent to GA are in different divisions: Southeastern: GA, AL, FL Delta: TN Roanoke: NC, SC

GARS Events Calendar for 2023

TechFest	January 14 2023
Winter Field Day	January 28-29 2023
Spring Technician HamCram	March 25-26 2023
Dog Show Fundraiser	March 29-April 2 2023
Georgia QSO Party	April 8-9 2023
North metro area Fox Hunt	April 2023
Summer General HamCram	April 29-30 2023
Memorial Day Parade	May 29 2023
ARC/KARC Hamfest	June 3 2023
Field Day	June 24-25 2023
JOTA	October 2023
Fall Technician HamCram	September 30- October 1 2023
Stone Mt. Hamfest	November 4-5 2023
Holiday Party	December 2 2023

GARS Recurring Calendar

- 2nd Tuesday of the month at 7 pm (except December)
  Monthly Club Meeting
  690 Airport Rd, Lawrenceville, GA 30046
- 3rd Tuesday of the month at 7 pm (except December)
  Monthly Workshop
  690 Airport Rd, Lawrenceville, GA 30046
- 2nd Sunday of the Month at 2 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 Friday at 11:30 am, GARS Lunch at The 5 Spot
- Every Saturday at 8:00 am GARS Breakfast at The 5 Spot

GARS Calendar for August 2023

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1 **7:00 PM GARS Exec Meeting**	2	3	4 **11:30 AM Lunch at The 5 Spot**	5 **8:00 AM Breakfast at The 5 Spot**
6	7 **7:30 – 8:00 PM GARS 2M Net**	8 **7:00 PM GARS Meeting EAA 690 Hangar**	9	10	11 **11:30 AM Lunch at The 5 Spot**	12 **8:00 AM Breakfast at The 5 Spot**
13 **2:00 PM GARS Ham Radio Exams, EAA 690 Hangar**	14 **7:30 – 8:00 PM GARS 2M Net**	15 **7:00 PM GARS Workshop Meeting EAA 690 Hangar**	16	17	18 **11:30 AM Lunch at The 5 Spot**	19 **8:00 AM Breakfast at The 5 Spot**
20	21 **7:30 – 8:00 PM GARS 2M Net**	22	23	24	25 **11:30 AM Lunch at The 5 Spot**	26 **8:00 AM Breakfast at The 5 Spot**
27	28 **7:30 – 8:00 PM GARS 2M Net**	29	30	31		

Local Ham Radio Exams & Meetings

GARS Ham Radio Exams

Second Sunday of the month

Doors open at 1:45pm, exams start promptly by 2:00pm
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.

July 2023 Results

The GARS VE Team had a great exam session on 9 July.

2 New Technicians (if you hear them on the air – say "hello"):

- Doug E Harrison - KQ4JUO
- Devin E Roy - KQ4JTW

1 Upgraded to General

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

W4DTR - DAVID BRUSE
AF4FG - EARL WHATLEY
KM4SWL - RICHARD KITZ
K4CQO - BOB HOFFMANN
KM4FMW - DONNA MC CORD
NV4Q - BILL CARMICHAEL

Thanks & 73,

Chuck McCord, KK4TKJ (Co-CVE)

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.

Local Ham Radio Meetings

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

GARS Supporters

In order to have you're your ad included, contact editor@gars.org. Current ad prices are:

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