The GARzette

The Official Newsletter of the Gwinnett Amateur Radio Society

May 2023 http://www.gars.org/ Volume 50, Issue 5

Inside

www.GARS.org

CELEBRATING 50 YEARS 1973 2023

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

GARS Meeting: Fox Hunt presentation – Jim Sorenson KA4IIA & Joe Biddle AD4PZ
Tuesday May 9, 2023 at 7:00 PM

President's Message

From the President…

Many thanks to the HamCram Team for creating another fine group of *'General Class'* licensed Operators. Ralph Pickwick (KN4CNC) and John Davis (WB4QDX) put on a great experience for this full class. And let us not forget those Volunteer Examiners who provide this special testing session on a Sunday. **Please Thank a VE Today!**

Fox Hunt in May – I hope to see a good crowd for this week's program on Radio Direction Finding or aka Fox Hunting. We will have lots of information and equipment examples to share with you for this facet of our amateur radio service. And we will give a little more information out about the Fox Hunt that will be held on the following **Saturday May 13th, starting at 9 am in GWINNETT County at our Field Day Site (Harbins Park).** See you at the GARS General Meeting.

At the following week's GARS Workshop, we'll discuss some of the equipment and techniques that were used in the fox hunt and review some of the challenges of, and any fox hunting improvements that can be made.

See the full Gwinnett County Fox Hunt flyer in this newsletter edition.

Next on our GARS activities list, is the **Dacula Memorial Day Parade, May 29th. This year marks the 30th year** of this beloved parade in Dacula. And this year our GARS volunteers will receive a very nice commemorative SURPRISE. No, not a GARS Orange hat, but rather, a..., well you will just have to attend the meeting to hear about that from our parade Chairman, Earl Whatley (AF4FG), who will reveal that and other information pertaining to the operations of the parade as well.

This is always a fun and rewarding event and an important one as well as we honor the men and women who made the ultimate sacrifice so that we can enjoy the freedom we have today. Please sign up to volunteer at the below link, or go to gars.org.

Please volunteer by signing up at: https://docs.google.com/spreadsheets/d/1XVUGryXiQLy2-ddky_NAUvTU-7E7f8Q590rz_gfDp8o/edit#gid=1512576878

The ARRL is asking its members to take a short survey that opened on **May 1st.** I encourage you to take this survey to let the league know where you (its members) stand with current issues. See that request and the link to the survey in this newsletter.

Speaking of Anniversaries & Harbins Park, don't forget to make plans to attend our June Meeting at Harbins Park where we will be celebrating the 50th Anniversary of the Gwinnett Amateur Radio Society. We'll hear from our Field Day Chairman, David Adcock, KA4KKF about this year's Field Day operations and some of the enhancements planned. And of course, we will have **Ice Cream and an Anniversary Cake.** Also, look for a little bit more to be thrown onto the door prize table.

See you at the events!

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)

- May 9, 2023 – Fox Hunt presentation – Jim Sorenson KA4IIA & Joe Biddle AD4PZ
- June 13, 2023 – Ice Cream Social – Harbins Park
- July 11, 2023 – GARS Repeaters – David Adcock KA4KKF
- August 8, 2023 -- **TBD**

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

- May 16, 2023 – Fox Hunt – After the Hunt Review
- June 20, 2023 – Field Day – Check cables, antennas, network logging laptops, etc. All Hands
- July 18, 2023 – GARS Repeaters – David Adcock KA4KKF
- August 15, 2023 -- **TBD**

GARS Meeting – May 9, 2023
Fox Hune Presentation

This will b a presentation about the doing a Fox Hunt and discussing the upcoming Gwinnett County Fox Hunt further described here in this GARzette and occurring on Saturday, May 13th.

GARS Workshop – May 16, 2023
Fox Hunt Recap

This is a follow up workshop to discuss what happened during the Fox Hunt and any discussions

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In addition to the planned GARS Workshop topic we also include Q&A time for your Amateur Radio projects and adventures. 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 Mark Prichard, KN2TOD, for his April presentation on 'PiStar', which acts as a DMR repeater on your desk. Also for bringing his expertise to our Workshop the following week for help getting member's DMR Hotspots working and also helping getting member's DMR HTs working with their Hotspots.

GARS Happenings

20 Years ago in the May 2003 GARzette:

- Upcoming events GARS helps with: Buford 5K run, GA Special Olympics, Dacula Parade
- The GARS helped and did a review of the March of Dimes walk helping with an incident
- GARS Field Day planning started with David KA4KKF (our current Chairman) doing it 20 years ago
- GARS Field Day will have a Russian visitor

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


The GARZETTE

The President's Key

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.

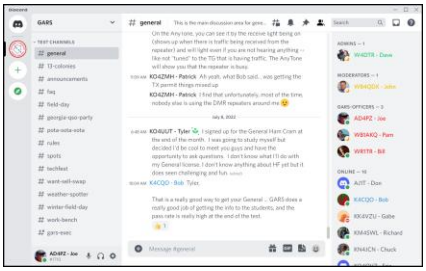
Out of almost 300 members, there are only seven operators who serve as the NCS for the GARS net every Monday night. In no particular order, they are:

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

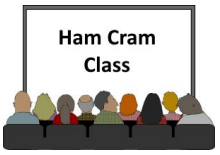
As GARS Net Manager (Chuck KK4TKJ), I would like to have more volunteers to fill NCS positions. I do plan and post the schedule months in advance. Any conditions will be accommodated that you as a rotating NCS need to place on the scheduling of your duties. If your plans change, I can make adjustments 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 General HamCram



We had a great exam session on 4/29/23. Thanks to Ralph KJ4CNC and John WB4QDX for teaching this Ham Cram class.

➔ 15 upgraded to General

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

W4DTR -- Dave (CVE)
NV4Q -- Bill
KK4TKJ -- Chuck (Co-CVE)
KM4SWL -- Richard
K4CQO -- Bob
WB4QDX -- John
KJ4CNC -- Ralph

Thanks & 73,

Dave Bruse, W4DTR (CVE)
GARS VE Team Leader
Email: exams@gars.org

Gwinnett County Fox Hunt

GWINNETT COUNTY FOX HUNT

MAY 13, 2023 at 09:00

What: Radio Direction Finding Fox Hunt
Where: Harbins Park, 2995 Luke Edwards Road, Dacula, GA, 33.91010, -83.85313
When: May 13, 2023 @ 9:00am.

We'll start at Harbins Park (the FOX DEN) where we'll gather initially to mingle, exchange stories and make some announcements about the hunt.

We'll have folks on-site to give instructions for those desiring an introduction by learning with some basics first, or for those just wishing to participate on a smaller scale. After that, you can seek out a second hidden training transmitter to test your skills.

For those after a greater challenging, MAMA **FOX** is out there, miles away looking for her lost pup. Please help her first by locating her yourself. Once you find her, she'll instruct you as to where she last saw Junior. Help find her lost PUP, re-uniting this family.

At about 9:15, we'll announce the **MAMA FOX Frequency,** and those wishing to take on that challenge, can go ahead and start your horses...ah, giddy up for the hunt.

At this time, we'll start the instructions for those staying in the park, after which, we'll set you out to find an additional transmitter for you to find on your own.

Our hopes are that hunts like this will inspire others to hold their own hunts around the metro area in various counties.

We hope to have a great turn out where everyone can see old friends, check & test your skills. And above all, have a great time with the Ham Community.

73,
Joe Biddle - AD4PZ (Gwinnett)
Jim Sorenson - KA4IIA (Rockdale)
Tim Lemmon - WK4U (Fulton)

Minimal equipment:

- An HT with a signal strength meter and detachable antenna for in-park hunting.
- A directional antenna (with some gain) and an HT with a signal strength meter for outside the park hunting.

Suggested equipment:

- 4 MHz Offset Attenuator – this can allow you to get really close to the source by attenuating the signal enough to make the various techniques work better.
- See: https://www.arrowantennas.com/main/4ofha.html

Hams on the Upcoming Moon Mission

Artemis 2 astronauts flying to the moon could phone home with ham radio

By Elizabeth Howell

An illustration of the Orion spacecraft in orbit around the moon. (Image credit: Lockheed Martin)

It's been 40 years since the first astronaut called an amateur radio operator on Earth. Now the moon is in the community's sights.

Most of the astronauts aboard the Artemis 2 mission, which will send a quartet of people around the moon in late 2024, are certified ham radio (amateur radio) operators. There's high hopes in the community that the astronauts may call home from deep space, the president of Radio Amateurs of Canada told Space.com.

"We feel it's important that anyone, especially kids as they determine what they want to do with their life, have that opportunity" to talk with astronauts, Phil A. McBride said in a recent interview. After four decades of communication with low Earth orbit, he added, the hope is ham radio will reach further out with the moon.

For the complete article: https://www.space.com/nasa-artemis-2-moon-mission-ham-radio.

Swan 600 Twins

Vintage Amateur Radio

de Bill Shadid, W9MXQ

In the 1970's, ham radio was still progressing from a totally separate receiver and transmitter station to what we see today in the modern transceiver. But several manufacturers like Kenwood and Drake[1] held on to older concept, separate Receivers and Transmitters. That was in addition to offering successful ham band Transceivers. One manufacturer that had practically defined the transceiver concept – while not inventing it – was Swan Electronics. By the 1970's, Swan was a wholly owned subsidiary of the communication and technology conglomerate, Cubic Corporation.

Things were developing in the market with Kenwood and Yaesu (and sold by American distributors we knew as amateur radio sales outlets). CIR Industries, in the 1970's introduced the PLL main oscillator equipped transceiver, the CIR Astro 200. That Astro name would come back again at the end of the 1970's decade as a product and trade name of another manufacturer[2].

Both Kenwood and Swan introduced Receiver and Transmitter separates in 1970 and 1971, respectively, in the form of the Kenwood R-599 Receiver and T-599 Transmitter and the subject of this article, the Swan 600-R Standard / 600-R Custom Receiver and the Swan 600-T Transmitter. Drake was established in the "separates" or "twins" market starting with their Drake R-4 Receiver and T-4X Transmitter in 1964. The rather remarkable Drake R-4C and T-4XC version pair came along toward the end of the 1970's. These Swan "twins" were late to this market started in 1958 by Collins with what were the 75S-3B Receiver and 32S-3 Transmitter by 1964. (That market was for separate receivers and transmitters that could be connected to transceive.)

Swan's "twins" were large in desktop space requirements and unique at least in their frequency control system. They pretty much dwarfed their stable mates, the Swan 500cx and 270B Transceivers of the same vintage.

Swan 600 Twins
Swan 600-T Transmitter and Swan 600-R Custom Receiver
W9MXQ

The 600-R Receiver came in two forms . . .

- The 600-R Standard Receiver
- The 600-R Custom Receiver

The receiver in the above picture is a Custom model. The Custom version included both a Dual Mode i-f Noise Blanker and an ICAF Audio Filter. (ICAF strands for "Integrated Circuit Audio Filter"). The two receivers were different in appearance – showing the absence of certain Custom version features. The Standard unit could not be converted into the Custom by addition of options – at least not in the same form.

Swan 600-R Standard Receiver

KE9PQ

Swan 600-R Custom Receiver

W9MXQ

On the Standard Receiver (left), note the missing ICAS Controls (under the S-Meter) and missing Noise Blanker control just to the right of the frequency readout window.

The receiver characteristics are ruled by its excellent 5.5 MHz i-f, 8-pole crystal bandwidth filter. This i-f design carried over (except for a change in 1968 to the final 5.5 MHz center frequency from approximately 5.2 MHz) from the original five band, Swan 350 Transceiver[3]. The 2.7 kHz filter bandwidth of the filter allowed for a full, rich audio bandwidth and comfortable listening. If anything, this filter limited the ability of the receiver to reject very close-in interference. However, the very steep slope factor (1.7:1 at 6 to 60 dB down) of the filter made the most of its design.

Both the Receiver and Transmitter are self-contained with internal power supplies. This was like similar separate receiver and transmitter products from Kenwood but unlike Collins and Drake where power supplies were separate.

While extremely rare to find, today, even installed in a radio, Swan offered optional bandwidth filters for the 600-R Receivers. These included a 600Hz CW Filter and a 6.0 kHz filter for AM. To my knowledge, none of the aftermarket filter manufacturers (INRAD, Sherwood, Fox-Tango, etc.) ever offered retro-fit filters for Swan or Cubic products. Optional receiver bandwidth slots in Swan radios were limited to the 600 series “twins” and the later Astro 103BXA and 103 Transceivers – none of which had significant volume.

Some options for the 600 series radios were offered at the time from Swan. These included . . .

- External Swan NB500 Noise Blanker for the 600-R Standard Receiver. (Receiver modification was required – the NB500 was built into the 600-R Custom Receiver.)
- External Swan ICAF Audio Filter for the 600-R Standard Receiver. (Receiver modification was required – the ICAS was built into the 600-R Custom Receiver.)
- Swan SS-16B i-f Filter for either 600-R Receiver[4]. This replaced the standard SSB i-f filter in the receiver and offered a steeper Slope Factor.
- Swan 600-S Matching Speaker for use with either 600-R Receiver.
- Swan 600-SP Matching Speaker and Phone Patch for use with either 600-R Receiver. The Phone Patch was also offered as an external package and marketed as the Swan FP-1
- Swan Model 330 External General Coverage Adapter for the 600-R Receivers[4].
- Selectable Swan 600 Hz Narrow CW Filter for either 600-R Receiver[4].
- Selectable Swan 6.0 kHz AM Filter for either 600-R Receiver[4].
- Transceive Cable – Swan 500cx[4,5] Transceiver with either 600-R Receiver.
- Transceive Cable – Swan 270B[4,5] Transceiver with either 600-R Receiver.

As a comparison of power levels, the chart below shows the power specifications of the various Swan Transceivers and the Swan 600-T Transmitter in 1971 – the year the Swan 600 Receiver and Transmitter were introduced:

	Swan Radio in 1971			
	600-T	**500cx**	**270B**	**350c**
SSB Input	600w	550w	260w	520w
CW Input	500w	360w	180w	360w
AM Input	125w (Carrier)	125w (Carrier)	N/A	125w (Carrier)
SSB Output	360w	330w	150w	310w
CW Output	300w	200w	110w	200w
PA Tube(s)	2x 6KD6	2x 6LQ6	1x 6LQ6	2x 6LQ6

Power input levels are as posted in Swan literature of the time. Power output is based on about 60% efficiency and/or personal experience (Swan 600-T, 500cx, and 350c). In actual experience, the 600-T seems to operate smoothly to 400 watts output on SSB with good waveform showing on a monitor scope. Holding the output to no more than the above chart seems to be best for tube life. As a case in point – to reference tube life, the 500cx in the chart above was operated daily from its purchase in 1971 until three years ago – and now about monthly. It still produces more than 330 watts output from its original 6LQ6 tubes. The 600-T shown above will easily produce a clean signal on the monitor scope at over 400 watts, if allowed to do so.

Any mention of the 600's would be incomplete without some mention of the rather unique method of frequency determination. It is unique – and even may explain the rarity of the units.

The Frequency Determination Controls on the Swan 600-R Custom Receiver – Typical if the 600-T, 600-R Standard, and the 600-R Custom.

W9MXQ

The picture above is showing the Frequency Determination Controls that includes the tuning window with the Dial Set and Main Tuning disks, the Dial Set Knob, the Main Tuning Knob, and the Band Switch. This is the front panel of the 600-R Custom Receiver, but it could be just as well any of the models (Receivers and Transmitter). The process follows:

- Set the bandswitch to the desired band – noting the bandswitch indication of the bottom frequency. In the above picture, the bandswitch is set for 40 meters at 7.1 (for 7.1 MHz).
- Noting that the VFO dial has a range of 200 kHz tuning (identical, by the way, to the tuning range on the Collins S-Line VFO's). Set the VFO Dial to "0." (The 600's have a 500 kHz tuning range on 10-meters.)
- Noting whether I want the VFO to tune from 7.000 to 7.200 MHz or 7.100 to 7.300 MHz, I set the Dial Set control for a starting point of "0" (to run 7.100 to 7.300 MHz) or at -100 if I want to run the VFO from 7.000 to 7.200 MHz. Engaging the 100 kHz Crystal Calibrator (and with the VFO at "0," carefully tune the Dial Set knob for zero beat with the calibrator in the small range for the -100 setting.

- Similarly, this procedure is followed for each band – using the bandswitch reading as the starting point and making the Band Set setting for the proper 100 kHz offset of the starting point, as desired.
- I will leave it to the user to handle a slightly different system on 10-meters (due to a 500 kHz range on the VFO for that band). It is covered nicely in the Operating Manual for both the Transmitter and Receiver. The procedure for both is identical.

I kind of find the system intriguing and fun to do, but I have friends today that would feel ill-used if their transceiver is not controlled by their computer and if their linear amplifier does not change bands at the command of the transceiver. I am just not an appliance operator!! But, I will also admit that this procedure is not conducive to quickly checking the 10-meter phone band while operating on 40-meter CW.

Another interesting phenomenon of today's transceiver-based operator is the concept of using a separate receiver and transmitter. While the 600-T and 600-R radios will transceive using either one's VFO, they are completely at home running separate. After initially getting the two working but not yet having the interconnection cable designed and built, I made an attempt at getting on the air when I was not totally sure of the ability to get the Transmitter and Receiver on the same frequency. Several attempts never netted the other station zero beating my transmitter signal and letting me follow with my receiver. They were hung up on their own digital readout and kept telling me to, for instance, "move to 7156!!" Enough said, that trait is gone and lost on most of today's operators. A thanks and a tip of the hat" to WØAH, W9DYQ, and K9DJT – old timers who knew exactly what to do. Thank you, fellows.

If the 600-T Transmitter user is a CW operator, there is a shortcoming in the standard 600-T Transmitter that can be addressed. Out of the box, Swan required the rotation of the Function switch from PTT to TRANS position to send CW. Or, a foot switch could be wired to the PTT line to connect to a foot switch to go from receive to transmit. For many this is effective but for some, semi-break-in is more to their liking. Swan offers a VOX (for voice) that includes semi-break-in CW circuitry that integrates itself into the radio. This is the VX-2 VOX unit for which there is a dedicated socket on the rear of the 600-T.

The 600-T Transmitter and 600-R Series Receivers are rare – and difficult to find in good condition. The one pictured at the beginning of this article is the result of a search that has gone on more than 25 years. It came from an estate that included two operating 600 stations – the one acquired and one that included the 600-R Standard Receiver and in less desirable condition, overall. They both were sold almost immediately. In my searches for the radios I find that many comments are made that the 600-T sold better than the 600-R Receivers. Best guess is that only 500 to 600 of the transmitters were made and under 500 of the 600-R Receivers. The split between 600-R Standard and Custom versions seems to indicate more Standard receivers were made than Custom. Anything is a guess – but suffice it to say that a search for a Swan 350 or 500 series Transceiver would net a find in minutes while a search for a 600 series pair could take years.

The rarest of all accessory item is the Swan Model 330 General Coverage Adapter. This device, that closely matched the appearance of the 600-R Receivers, sold in small quantities. Perhaps it is conjecture on my part, but the 600-R Receivers had an optional AM filter – essentially for pleasant international shortwave listening. But, at the same time, it seems well known that Swan had problems in supplying that AM filter – for reasons unknown now. That was also true of the narrow CW filter. I feel it was possible that the lack of a readily available AM filter limited the viability of a General Coverage Adapter.

This is the Swan Model 330 General Coverage Tuning Adapter. It is shown here with a Swan 600-R Custom Receiver. The picture is scanned from the 1972 Swan General Catalog.

I have no idea how many (or how few!) of these Model 330 Adapters were produced. I have seen the unit in personal videos but have never seen one for sale.

Here is pricing for the units listed in this article – in 1972 dollars from the 1972 Swan General Catalog, plus its equivalent in 2020[6]:

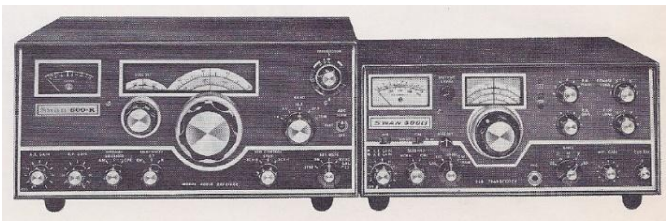
Swan Item	Price in 1972	2020 Dollars
600-R Receiver Standard	$395.00	$2,500.00
600-R Receiver Custom	$495.00	$3,100.00
600-T Transmitter	$535.00	$3,350.00
330 General Coverage Adapter	$129.00	$800.00
600-S Speaker	$18.00	$115.00
600-SP Speaker / Phone Patch	$59.00	$370.00
AM Filter for 600-R	$29.00	$180.00
CW Filter for 600-R	$22.00	$140.00
VX-2 SSB/CW VOX for 600-T	$35.00	$220.00
NB500 Noise Blanker for 600-R Standard	$89.00	$560.00
ICAF Filter for 600-R Standard	$59.00	$370.00
500cx Transceiver w/117xc Power Supply	$588.00	$3,700.00
270B Transceiver	$429.00	$2,700.00

Swan did more than others to encourage the use of the separate 600 Series receivers with the rest of their product line. Drake encouraged using their separate receivers (the 2-Line and the 4-Line) with the TR-4 series transceivers. Much later they did the same thing with the TR7 Transceiver and the use of their matching R7 Receiver. In the case of the R7, it would transceive with the TR7.

Per the 1972 Swan General Product Catalog, the 600-R Standard Receiver is shown running with a Swan 270B and 500cx Transceiver. Reference these pictures from page 6 of that catalog:

Swan 270B Transceiver (left)
With Swan 600-R Standard Receiver
in Transceive Setup

1972 Swan General Catalog



Swan 500cx Transceiver (right)
With Swan 600-R Standard Receiver
in Transceive Setup

1972 Swan General Catalog

And, here is the picture of a similar tie up of radios at W9MXQ, wired for transceive operation on 40-meters:

Swan 500cx Transceiver with Swan 600-R Custom Receiver
(with 117XC Power Supply/Speaker and 600-SP Speaker/Phone Patch)

W9MXQ

In transceiver mode with the 600-R Receiver, the receiver sets which VFO is running the transceiver. There are three selections – Transceive with the Receiver VFO, Separate (Receive on Receiver VFO, Transmit on the Transceiver VFO) and Transceive with the Transceiver VFO.

Separate receivers and transmitters are a throwback to our historical roots. I admit to being more inclined to want a table full of apparatus – all contributing to the QSO at hand.

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

Notes:

[1] Kenwood marketed the R-599 Receiver and T-599 Transmitter pair (last version was the R-599D and T-599D. Drake early on marketed the R-4 Receiver and T-4X Transmitter (last version was the R-4C and T-4XC) with the R-4C being technically very different, and much higher performance than the R-4, R-4A, and R-4B.

[2] In 1978, Cubic Corporation bought CIR Industries and incorporated the Astro 200's conceptual designs into later Swan products. They continued to use the "Astro" name as a model version of the radio – such as the Swan Astro 150 Transceiver. The "Astro" name lived on as Swan dropped their original Swan brand and moved to the parent, Cubic, brand name in later years in the amateur radio business.

[3] Swan collectors and users today must be careful with this change of i-f frequencies. While Swan, unlike Drake, but like Collins and Heathkit, typically used the same i-f frequency throughout the product line, there was one Swan i-f frequency change in 1968 that causes today's users a bit of a problem. One simple example is buying an External VFO for a Swan 350 or a post 1968 Swan 350c. The External VFO to match the 350 and 500 Transceivers was the Swan 410. But the External VFO for the Swan 350c, 500c, and 500cx (and later) Transceivers is the Swan 410c. For a few years, Swan added that "c" to the model number to designate the later i-f frequency. However, that did not last. The final External VFO offered by Swan was also designed for the 350c, 500c, 500cx, and later transceivers. It was the Swan 508. At that point, Swan dropped the use of the "c" in the model number. Confusing? It sure is!! So, what happens if you plug in the wrong VFO? Nothing destructive but the frequency of the radio's output is about 300 kHz off the dial frequency. Beware!!

[4] Swan accessory items such as the SS-16B or the Transceiver Interconnect Cables or the Model 330 General Coverage Adapter are nearly impossible to find today. I have never even found schematics of the Transceiver cables and had to design one myself to try the use with my Swan 500cx and Swan 600-R Custom. Even the 600-R to 600-T Interconnect Cable – that was standard with the 600-T but mostly missing when the transmitter is found, today – is rare and, again, not described in Swan Operations and Service Manuals. For my installation, I had to determine necessary connections and make my own cable.

[5] Swan 500c Transceive Cable also worked with the same transceive cable as the 500cx – and with the 350c if the 350c was modified to accept external frequency control (the addition of a rear panel connector – covered in the 350c Operating Manual). The 270B Transceive Cable presumable would work with the later Swan transceivers that succeeded the 270B. (I cannot confirm that use of the 270B Transceive Cable.)

[6] Reference: https://www.dollartimes.com/inflation/inflation.php?amount=1&year=1972

W9MXQ

GARS Membership

New Members List in April

Dan Bosler (KQ4GXM)
Tom Brack (KQ4HHV)
Susan Brack
Nancy Curdy (KQ4EBZ)
Dan Curdy

New Members: 5

Total Members as of May 1, 2023
385

Join GARS members for our weekly breakfast gathering at
8:00 AM most Saturdays at
The 5 Spot restaurant
555 Progress Center Ave
Lawrenceville, GA 30043

Birthdays in May

Timothy Atkin
Vincent Bazain (KA4WAY)
Bill Bentley (KJ4MXM)
Caryn Brant
Maggie Colley (KM4PTW)
Matt Collins (N4KRI)
Tom Crowley (KT4XN)
Steve Garrison (N4TTY)
Bob Gerzoff (WK2Y)
Bill Grimes (WG9NUW)
David Griscavage (W3GZS)
Bill Hawkins (WR1TR)
Harry Heath (KO4FGK)
Sachiko Londono
Frederick Love (KK4VEP)
Brandon Massengill (W4HDX)
David Mattison (KD4PCK)
Dallas Mellichamp (N4DDM)
Anita Morris (KG4AJX)
Robert Prisant (KN4GZG)
Ade Shamblin (KJ4CUY)
Nathan Smith (W4GOP)
Larry Thill (W4LJT)

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 4/11/2023

There were 43 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)

- No first time visitors or new hams or upgrades
- The mic was passed for introductions all around.

Treasurer Report: Pam (WB1AKQ)

Membership: Joe (AD4PZ) - 385 current members

Education: Ralph (KJ4CNC)

- 21 are signed up for the April 29-30 General Ham Cram. Registration is closed with a full class.
- A record 4 new kids were licensed at McConnell Middle School's exam session.

VE Team: Dave (W4DTR)

- This months exam session was empty due to Easter.

Programs: Kevin (K4GTR)

- May – Fox hunt
- June – Ice cream social. Pre-Field Day prep meeting.
- July – GARS repeater system with David (KA4KKF)
- August – To be determined
- September – Favorite web sites
- October – Show and Tell.
- Check the web site for all scheduled programs.

Workshop: Dallas (N4DDM)

- Workshops mirror the monthly program.

Dog Show: David (KA4KKF)

- March 29 – April 2nd.
- Went well. Only one rain day. Raised $2000 for GARS and $2000 for ARES.
- We were shorthanded a few days. The job is easy. Join us next year.
- The Kennel Club president came to the meeting and thanked us personally.

Other: Joe (AD4PZ)

- Fox hunt coming up May 13, Jim KA4AAI and Joe AD4PZ will instruct.

Program: Pi-Star (KN2TOD) Mark Pritchard

Minutes prepared by club secretary Bill Hawkins (WR1TR)

Workshop Minutes - April 18, 2023

Number in Attendance: 14

Workshop Topic: Pi-Star: A Digital Repeater on your Desktop

Presenter: Mark Prichard KN2TOD

Brief Summary: Of the 14 that attended the Workshop; 8 owned a least 1 DMR hotspot and a DMR radio, 1 other just owned a DMR radio, and 3 others showed interest in getting into DMR. Mark and Bob K4CQO held the record for the number of DMR/Pi-Star hotspots owned. Mark and Bob helped a few get their Pi-Star hotspots and DMR radios configured. All in all, this was a very successful and informative Workshop.

In addition to the planned GARS Workshop topic we also include Q&A time for Amateur Radio projects and adventures. Feel free to bring along your show-n-tell items and questions. We typically have 5 or more Elmers at each Workshop.

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]

05/13/2023 - Flamingo Net Flea at U. of Miami
Location: Coral Gables , FL
Type: ARRL Hamfest
Sponsor: Flamingo Net ARC
Website: http://www. FlamingoNet.8m.net

05/13/2023 - Forsyth Georgia Tailgate/Swap Meet
Location: Forsyth, GA
Type: ARRL Hamfest
Sponsor: None
Website: http://barnesvillega.net

05/27/2023 - WormFest 2023
Location: Pinellas Park, FL
Type: ARRL Hamfest
Sponsor: The Glorious Society of The Wormhole
Website: https://w4orm.org/

06/03/2023 - Atlanta Hamfest - ARRL Georgia Section Convention
Location: Marietta, GA
Type: ARRL Convention
Sponsor: Atlanta Radio Club W4DOC & Kennehoochee ARC W4BTI
Website: http://www.atlantahamfest.org

06/17/2023 - Black Warrior Hamfest
Location: Northport, AL
Type: ARRL Hamfest
Sponsor: Black Warrior Hamfest
Website: http://BlackWarriorHamfest.org

07/07/2023 - 07/08/2023 - 2023 Milton Hamfest
Location: Milton, FL
Type: ARRL Hamfest
Sponsor: Milton Amateur Radio Club
Website: http://miltonarc.org

07/08/2023 - K4KDI Summer Tailgate 2023
Location: Orlando, FL
Type: ARRL Hamfest
Sponsor: Conway Baptist Church
Website: http://k4kdi.square.site

07/22/2023 - Cullman Amateur Radio Club Hamfest
Location: Cullman, AL
Type: ARRL Hamfest
Sponsor: Cullman Amateur Radio Club

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

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	October 2023
Maker Faire	TBD
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 May 2023

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

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

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

April 2023 Results

The GARS VE Team had another great exam session.

No one failed!

(unfortunately, we didn't have any applicants today due to Easter, Passover, Spring Break, and probably the phase of the moon)

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

W4DTR - Dave (CVE)
WB4WTN - Bill
AF4FG - Earl
KM4SWL - Richard
NV4Q - Bill

Thanks & 73,

Dave Bruse, W4DTR (CVE)
GARS VE Team Leader
https://gars.org/exams/

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.

Upcoming Events / ARRL Survey

CQ de W1AW/4 Georgia

The use your call the event began on January 1st and ends on December 31st and is already underway, see the ARRL site for details.

- For us in Georgia to use the W1AW/4 call they are:
    - Oct 11th at 0000Z until 2359 on the 17th of Oct

For more info here is a link to the Google Sheet that has a tab for every day of the 7-day event. You can quickly see what time slots have been taken and which ones are open.

YEAR of the VOLUNTEERS

Survey for ARRL Members

Making a Big ARRL Decision -- Together

On Monday, May 1, ARRL launched a survey for members, and **asking for all ARRL members** to participate as ARRL considers a dues increase.

The survey will include some short questions about raising dues and modifying the way some membership benefits are bundled. The survey will also include an opportunity for members to share their feedback.

The participation of every member is important. Please encourage all the ARRL members in your radio club to complete the survey in May.

The survey will open on May 1 at www.arrl.org/take-dues-survey. This is a member-only page. Members need to be logged into the ARRL website to take the survey. Members who are not logged in may select the Login button on the top of the web page, and they will be prompted to enter their ARRL website username and password. If they have not logged in since April 2022, they should use these **Login Instructions**.

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