



The Wireless

September 2025

The Garden City

Amateur Radio Club

PO Box 482 • Garden City, MI 48135-9998



Next Meeting:

Tuesday, October 21, 2025
7:00pm
Garden City Presbyterian Church
1841 Middlebelt Road
Garden City, MI 48135

Nominations open for 2026 Club Officers:

It's that time of year again. At our next meeting, nominations will be opened for 2026 club officers. This is your chance to get involved in a more hands-on level with our club as we continue to move



Wow, That's Cool! How Do I Get a License Plate With My Call Sign?



It's actually pretty easy to get a customized Amateur Radio License Plate.

Federal law provides that every state must offer a custom license plate for Licensed Amateur Radio Operators at a nominal cost. Just go to your local Secretary of State office and ask for a form MV-74, OR you can:

1. Download form MV-74 at www.michigan.gov/SOS,
2. Ask me to send you a .pdf of the form that can be filled in on-screen and printed,
3. See Rich, AC8FJ, who has promised to bring a supply of blank forms to our next meeting.

Once you've completed the form, you can take it back to the Sec. of State office, or mail it in (the address is right there on the form). You'll need your driver's license, current registration, proof of insurance, and a copy of your current amateur license. *[Editor's Note, if you mail it in, Do NOT send your original documents]*

The cost is, as I said above, minimal. The Amateur Radio plate itself is only \$2.00, plus a \$5.00 plate replacement fee (essentially for transferring the registration and such). Of course, if you're renewing your registration at the same time, your normal fees for that will also be applied. Give it a couple of weeks, and your cool new place will arrive in the mail.

Thanks to Rich, AC8FJ, for contributing to this article, and to Scott, KC8LDO for the image of his plate (courtesy State of Michigan).



HF CW



Band	WOSM Calling Frequencies	Suggested Band Segment for US Stations	Notes
80 m	3.570 (3)	3.560 – 3.570 (3)	(3) Includes Novices & Techs
40 m	7.030 (3)	7.030 – 7.040 (3)	(3) Includes Novices & Techs
20 m	14.060	14.050 – 14.060	
17 m	18.080	18.070 – 18.080	
15 m	21.140 (3)	21.130 – 21.140 (3)	(3) Includes Novices & Techs
12 m	24.910	24.900 – 24.910	
10 m	28.180 (3)	28.170 – 28.180 (3)	(3) Includes Novices & Techs
6 m	50.160	50.150 – 50.160	

HF PSK-31

<http://bpsk31.com>

Call CQ JOTA. The chart below shows the commonly used frequencies for PSK-31.

Band	Frequency	Notes
80 m	3.580	
40 m	7.080 (4)	(4) Region 2 (USA). 7.040 to 7.060 for Regions 1 & 3
30 m	10.142	
20 m	14.070 (5)	(5) Most activity for JOTA will be on 20 m
17 m	18.100	
15 m	21.080 (6)	(6) Most activity can be found at 21.070
12 m	24.920	
10 m	28.120	

2 Meter FM Simplex

147.450, 147.480, 147.510, 147.540* * Use 147.540 as Calling Channel. Always listen first to avoid interfering with another QSO or auxiliary or control link. Avoid 146.520, the National FM Simplex Calling Frequency, as well as 146.550, which is commonly used by mobiles and RVers.

70 CM FM Simplex

446.000*, 445.950, 446.050, 446.100, 446.150 * Use 446.000 as Calling Channel. Always listen first to avoid interfering with another QSO or auxiliary or control link.

D-STAR

REF033A has been allocated as a full-time JOTA/Radio Scouting D-STAR Reflector. After contact is established, stations should disconnect from REF033A and connect to one or other repeater or migrate to an unused Reflector.

SIMPLEX Channels: 145.670*, 145.640, 145.610, 438.010. * 145.670 and 438.010 are commonly used as the National D-STAR Simplex Channels and should be used only as Calling Channels for JOTA. Always listen first to avoid interfering with another QSO.

DMR

<http://www.dmr-marc.net>

All wide area talkgroups are permitted for use for JOTA for establishing contacts. After contact is established, stations should utilize as few resources as possible. For international, national, and regional QSO's, stations should move their transmissions to one of the DMR-MARC UA talkgroups or to the DCI TAC-310 talkgroup.

EchoLink

<http://www.echolink.org>

Software or apps available for Windows, Mac, iPhone/iPad, and Android. Dedicated Conference Node *JOTA-365* (node 480809). When contact is made on a Conference Node, it is recommended the two parties establish direct contact with each other to free up the Conference Node.

APRS

144.39

<http://aprs.org>

<http://aprs.org/cqsrvt.html>



Mat-Matics # 123 - FT-980 Relay Repair

M. Breton, N8TW

As most of you know by now, my daily driver rig is a 1983 Yaesu FT-980. I originally bought it in August 2012 because it was an inexpensive solid-state upgrade over my previous Yaesu FT-101ZD station (which had tube finals in it, requiring lots of re-tuning to cover bands). In time I grew to appreciate how easy it is to operate, to repair, and to modify. This is a story of a recent repair I needed to do ...

The problem: I attached my Henry 2K-Classic linear amplifier T/R relay directly to the FT-980 as I was trying to speed up transition timing for a potential upgrade to QSK operation. I had looked up the Henry T/R relays (two total) and verified that the calculated current (at 97mA each) would be under the 200mA that the FT-980 was rated to handle. I also verified via the schematic that the Henry had the required diode across the relay coil to recirculate the kickback current.

When a linear amplifier is used with the FT-980, check the current required to control the T/R relay in the linear amplifier. If less than 200 mA, the T/R control line can be directly connected to TX GND and GND on ACC-2 jack. However, also be sure that a BACK PULSE cancelling diode is installed across the T/R relay in your linear amplifier. If this diode is not present, install a general purpose rectifier diode as shown in Figure 1.

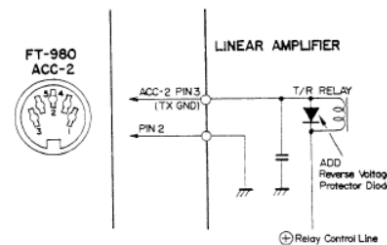
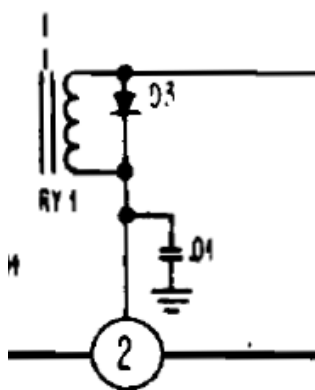


Figure 1

Yaesu Interface Requirements

What I did not do was to actually open up the Henry and verify with my own eyes if the diode was present. It was not. Shortly after this the FT-980 kept the Henry in transmit mode, even when I powered the rig off. My first-response diagnosis was that the relay in the FT-980 had likely welded shut.

I immediately tried to figure out why it would weld shut. I put a current meter on the Henry T/R input and measure the current at 280mA (greater than the 194mA I had calculated, but likely not enough to cause the relay to weld so quickly). I noted when I manually pulled the meter leads from the input connector that there was a good sized spark. This was a surprise, as I had verified via the schematic the diode that is supposed to suppress this. I immediately took the Henry apart and verified that there was no diode across either relay:

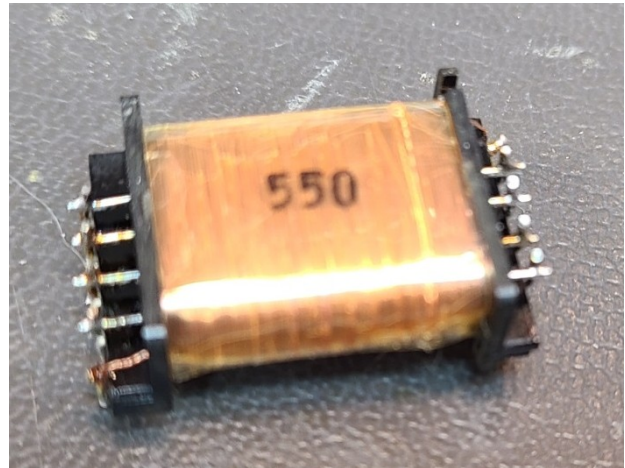


Henry Schematic (left), relays with no diodes (right)

So at least I now had the likely culprit (root cause) for what had happened. I added diodes to the relays to prevent reoccurrence, and moved on to the next step ... repair.

The relay was obviously not made to be repaired: the contacts had been inserted inside of the coil and the ends then soldered to pins. Before trying to remove the contacts, I gently tapped the relay along its various axis. I then verified that the welded pole had become unstuck ... saving me a lot of additional problems. To be sure I hooked the relay to a power source and activated it many times to ensure that the pole wouldn't get stuck again in short order

As Lee Scott (KC8LDO) pointed out, that pole is likely permanently damaged and will probably eventually fail again (either intermittent closing, or it could potentially get stuck again). Many times these "open-frame/open-air" relays have plated contacts that are kept clean by a natural wiping motion when the contacts close. If that plating is damaged (by the arcing), the contacts can become oxidized or grow intermetallics that are more likely to weld. If the relay fails again my options might be limited: I could take an off-the-shelf modern relay and use an interface PCB to make the pinout look like the NEC URK-3. Or I could try to find a replacement REG PCB online (eBay or similar).



Relay with case (left), guts removed (right)

Note the May-1985 date code on the relay, which give a good approximation of my rig's manufacturing date (probably late 1983). I reassembled the relay, soldered it to the REG PCB again, put the PCB back into the FT-980, and put the bottom cover back on. The repair was successful and the FT-980 was fully functional again.

Summary: I was fortunate to be able to repair this issue without any out-of-pocket costs. Although the root cause was a missing diode in the Henry Linear Amplifier, I should have checked this before directly connecting the FT-980 to it without an interface relay.



So, What Is This?



We did get some interesting guesses about what this object is that appears at the end of every one of Mat’s articles. Someone speculated that it was an antique soldering iron; yet another said it looked like a tool that his grandmother used to frost her cakes. Congratulations to Tom, KE8DOTp, who correctly guessed it is a ReddySnitch; a tool (allegedly) developed by Hiram Maxim to enforce on-air decency and good practice among early Amateur Radio operators, along with it’s companion tool, the Woof-Huff. When Mat, N8TW first started writing articles for The Wireless, he originally titled his column “ReddySnitch Corner”. Over time, Mat changed the name of his column to MatMatics, but his signature image remains.

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Be sure to visit and use our repeater:

KK8GC
146.860 MHz
-600Hz offset (input on 146.260)
100 Hz PL tone





October 13, 2025

Dear Radio Club Leaders,

We need your club's voice now more than ever.

As part of ARRL's nationwide grassroots campaign, we asked all hams to send letters to Congress urging support for the Amateur Radio Emergency Preparedness Act -- **but we need more radio clubs to stand up to be counted too.**

Why your club matters:

Your radio club isn't just a group of hams. Your club is a resource that serves your local community. You've built trust, provided public service and emergency communications, and trained new generations of hams. A letter from your club carries the weight of all that community goodwill -- and when lawmakers see that clubs like yours are behind this bill, it makes a difference.

What we're asking:

We're asking every ARRL Affiliated Club to prepare formal letters to your Congressional representatives in support of the bill. Your letters show collective support from an organized, respected local group -- not just individuals. That's powerful.

We've made it easy:

Use the following, simple, step-by-step guide to help your club draft and send your letters:

<https://send-a-letter.org/club>

You'll find everything you need -- including a sample letter in WORD format -- on our dedicated campaign page at <https://send-a-letter.org/club>.

Please take a moment to review the instructions to create your club's 3 letters: one for your US Representative, and two for your Senators. Follow all of the instructions closely, and email your letters to the address provided on the site. The process is quick -- but the impact is lasting.

If you have any questions or need help, please contact ARRL HQ or Director John Robert Stratton, N5AUS (N5AUS@n5aus.com or 512-445-6262).

Let's get all radio clubs to help us PASS THE BILL.

73

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Trail to Eagle (TTE) Program Recap

Richard Zarczynski, AC8FJ

You may have read from a previous GCARC Newsletter about Scott Dykes (WT8S) and myself attending a yearly scheduled summer camp held at D-Bar-A Scout Ranch in Metamora, MI. It is and run by an amazing and dedicated volunteer staff, many who return year after year and continue to set the bar high. We have nearly 60 staff members who have been with the program for ten years or more. Scott has been involved many more years than I have. There is a ratio of one staff member for every two youth.

It is an opportunity for Scouts of First-Class rank and at least 13 years old to earn additional unique merit badges not necessarily made available within their local troop geographical area, before they turn 18 years of age. Once one turns 18, are considered an adult and not able to earn Scouts highest honor, the Eagle Scout.

Statistically, over 64% of our candidates have attained the rank of Eagle Scout and even more are currently working on achieving this lofty goal.

Scott could be seen during the week scooting around different locations in camp with his golf cart as he was teaching five different merit badges. He is a registered merit badge counselor for Search and Rescue, Plumbing, Public Speaking, Weather and Communications. He also served as a Co-Scoutmasters to Red troop. His schedule was full and I mostly ran into him during meals at the dining hall.

As for me, my station was located in the Tall Timbers cabin, which has one of the higher elevations with an open area around trees in the rear, for my HF 6-80 Alpha Vertical Portable Sr. Antenna takeoff angle. It is fed with 150ft. flexible RG-213 coax. Closer to the cabin is an Efactor Dual-band 144-432 MHz antenna on a rotatable Mastwerks tripod pointing at the Lapeer club repeater. The club operators (previously contacted) were a backup in case propagation on HF during the day wasn't optimal. Out scout motto is to "Be Prepared".

I am registered for the Radio merit badge. In addition, our Garden City Amateur Radio club (GCARC), had sponsors a special event station during that week. We monitor specific frequencies on 2, 20, 40 and 80 meters. This year's event was listed in the July 2025 issue of QST magazine using the Boy Scouts of America call K2BSA/8. We're also listed on the ARRL website. One of the requirements of this merit badge is for the scouter to have a QSO with some operator on the air. Also, Scouts will learn about propagation and how signals travel all over the world.

During that weekend, I had participated in the yearly **Canadian Province Amateur Radio Contest**, making contacts with as many Radio Amateurs of Canada licensed operators in the country as possible. Propagation that weekend was quite advantageous. Coincidentally, occurring the entire week was the 13 Colonies special event. When time allowed, I had made contact with many of the states involved.

It was a great week working with the scouters and enjoying casual time on the radio. It's always sad when it comes time to tear down your station and go home.

