Flying Pigs QRP Club
Bacon Bits Quarterly

Flying Pigs QRP Club International, W8PIG
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FPQRP membership is open to all licensed QRP operators who reside within 12,000 nautical miles of Cincinnati, Ohio.

July 2025

From the Editor

Welcome to the July 2025 issue of the ***Bacon Bits Quarterly Newsletter***!
I want to thank everyone who contributed articles, photos, and reports for this issue of our quarterly newsletter. Your input is greatly appreciated!

Our contributor's for this quarter are:

K8ZT – Anthony Luscre
VE3IDS - Don
W0EB – Jim Sheldon
KB9BVN – Brian Murrey
W5AWS – Andrew Shead

73 and OO,
O. Alan Jones
N8WQ
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editor@fpqrp.org

Life is NOT Too Short for QRP, If You Know a Few Tricks

Anthony Luscre, K8ZT (k8zt73@gmail.com & k8zt.com)

Many QRP articles focus on building QRP Radios, accessories, and portable antennas, among other topics. This presentation focuses on using all of this hardware to make radio contacts. Included in the links below is a presentation I created for HAM-CON 2025, which was part of the Vermont Ham Radio Convention in February.

Slideshow - *tiny.cc/qrptips*
Video Recording- *https://youtu.be/4fGOv9pZboA*

For a more general introduction to QRP, you can view my presentation for the 2024 RSGB Tonight@8 presentation series.

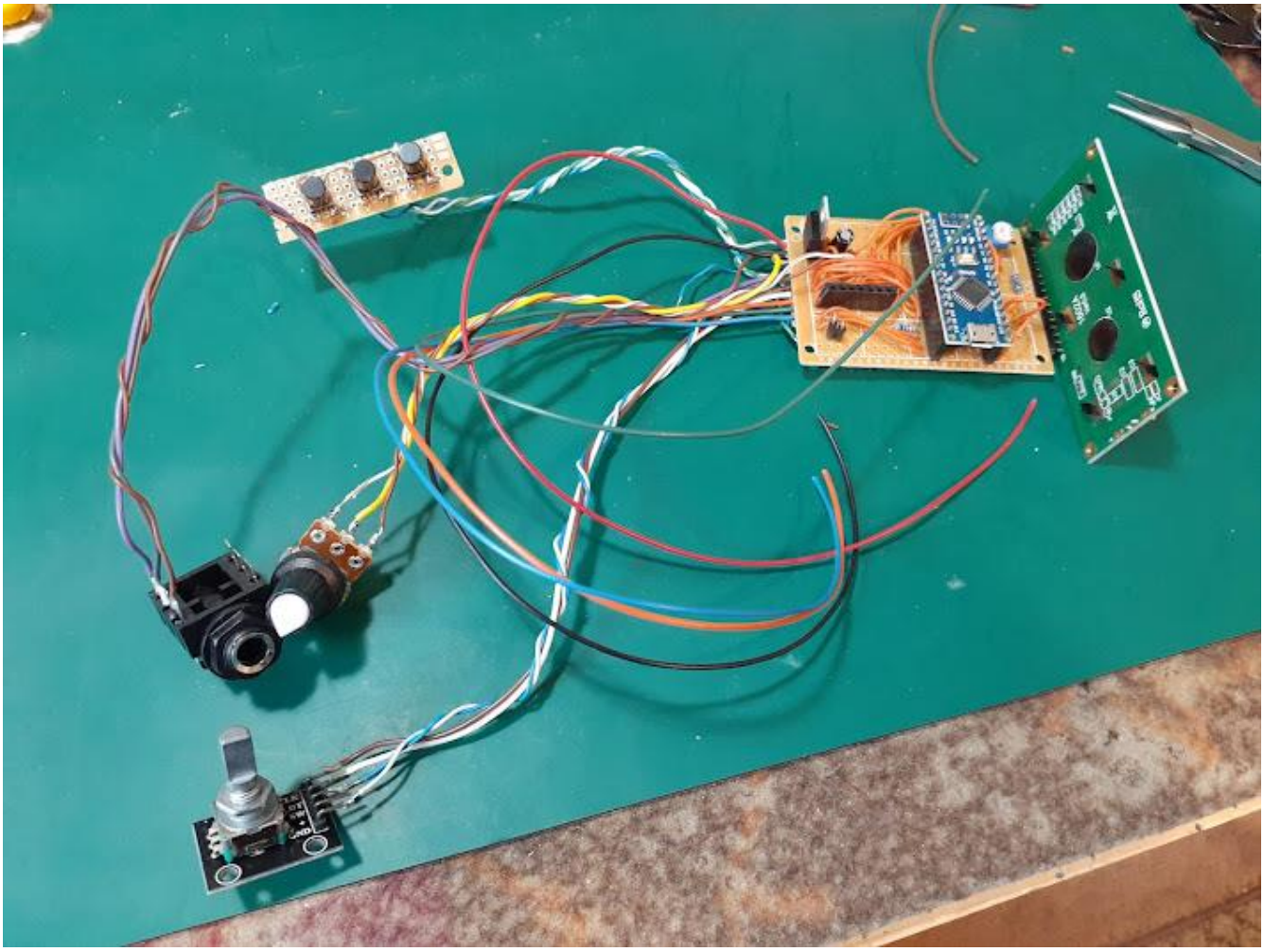
Slideshow - *tiny.cc/qrsgb*
Video Recording- *https://youtu.be/fjaB3r-TXuU?t=342*

New life for the HW-8

I happened across a Heathkit HW-8 that had a damaged vfo air variable capacitor. This is not uncommon in these rigs. The air variable is operated by a reduction drive behind the vfo knob which has a high torque and there is no stop limit on the rotation of the capacitor. If you keep turning past the limits of the end of the dial, you can peel the moving vanes right off the shaft of the capacitor. A replacement capacitor is available but the cost of the assembly is more than the rig's value these days. I didn't want to scrap this one, so I replaced the vfo with a digital replacement.

Nick Kennedy WA5BDU, has written an excellent vfo sketch for the Arduino. In consultation with Nick, he graciously added to his sketch to customize it for the HW-8. The new vfo tunes the whole band now and you can select either upper or lower side band. This is handy with a direct conversion receiver to get away from potential QRM. It also has RIT and split frequency capability so you can chase that DX. The tuning rate can be set to 10 Hz, 100 Hz or 1 kHz with the push of a button. Nick's sketch also includes a keyer with three memories. Here is the original format and the following picture is the updated rig.

The new vfo uses an Arduino Nano and a SI5351a module with a common 1602 LCD display and digital encoder. These parts are commonly available on AliExpress, Amazon and Ebay for a low cost. I removed the air variable and plastic dial and used this same location for the new vfo. I cut the curved dial window cutout to a rectangular shape for the new LCD and mounted the encoder with a home-brew bracket so I could still use the original knob with the encoder. You will also need to cutout the front chassis behind the front panel for clearance for the display. I removed the front panel and covered it with duct tape and clamped my handheld jigsaw upside down in a vise. This allows careful and precise cutting of the front panel without scratching the paint and the cut stroke is down so you don't get burred edges at the display rectangular hole. I mounted twin push buttons on either side of the tuning knob and used the encoder push button as button#2. I added a 10K pot in a previously drilled hole in the front panel for the keyer speed control. The Nano etc are wired on a small perf board that is supported by the display.



You need to add a stereo 1/4” jack on the rear apron for the keyer paddles. Add a 5 volt relay and wire the N/O contact to the wire that was on the original HW-8 key jack. Take the common of the relay to ground. The 5 volt coil of the relay is wired to D10 on the Nano. To disconnect the original vfo output and feed your new DDS vfo into the rig, unsolder one end of C56 in the HW-8. Lift the end that is connected to R35 and feed this free end of C56 with CLK0 on the SI5351a board. Add a 7805 three terminal regulator to power the new DDS VFO board and run this from the switched 12 volt power in the HW-8.

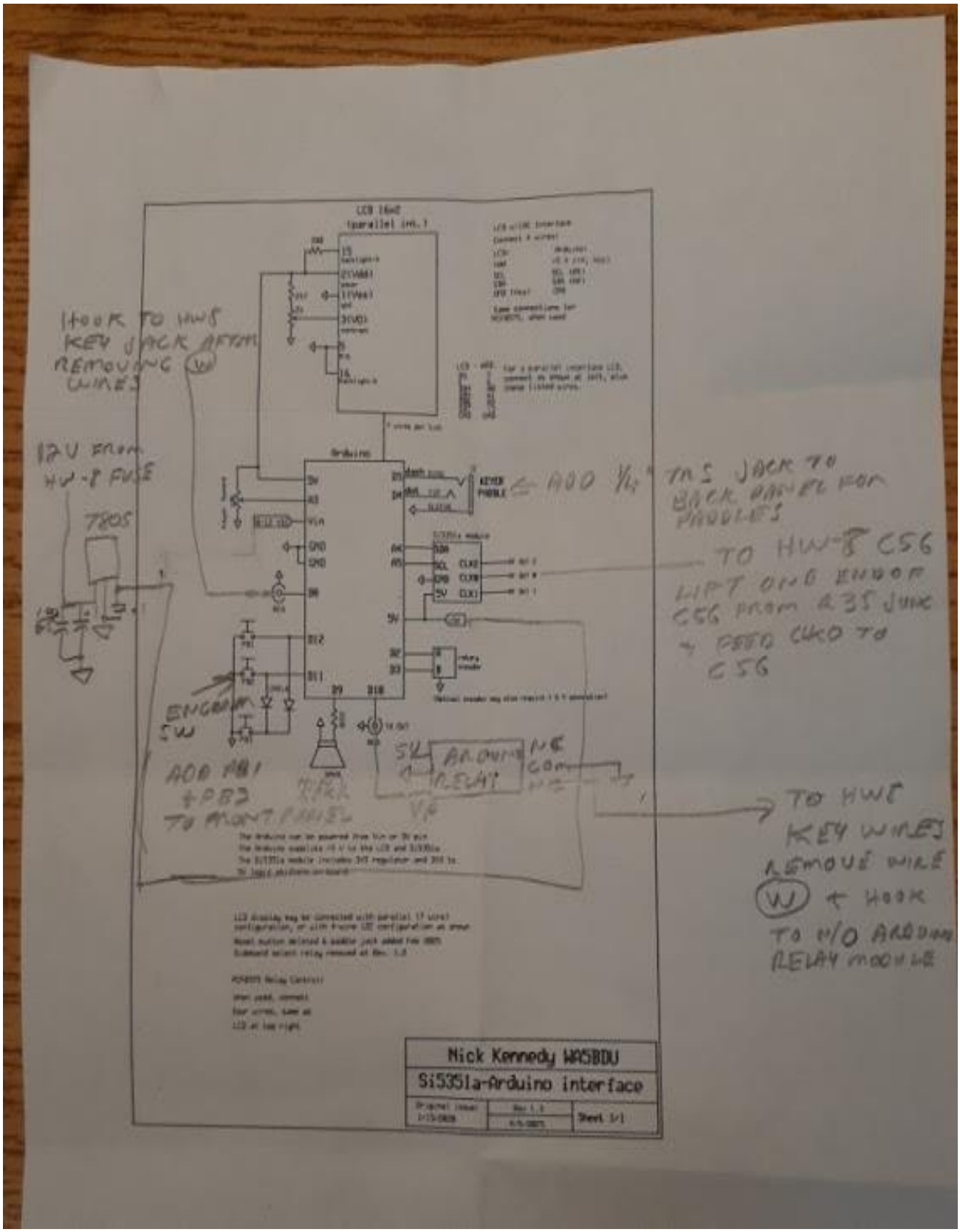
The Arduino sketch and manual for the vfo project are on Nick's GitHub page.

https://github.com/nick6502/Si5351a_quad

This vfo can also be used in other projects. I have one built to replace crystals for various boat anchor transmitters. It is very stable and accurate and has a huge advantage in that it mutes the output when the key is up. Most other vfo projects run all the time and swamp the receiver at your station with the vfo output during receive.

Have fun and keep the iron warm!

73, Don VE3IDS



Here are my napkin notes for the project.

Flying Pigs Electric Tricycle
Jim Sheldon, W0EB

Even though as we get older and we have health issues, and other things crop up to interfere with our endeavors, Jim reminds us that we can never be too busy to have fun.

Such is the case with his new **Flying Pigs Electric Tricycle!** Jim sent me come pictures of his latest project, which is a really neat piece of transportation for him when his wife has the car ☺

I used a picture of Jim's Electric Tricycle for our cover of the BBQ.

Here are some more pictures of Jim's creation.

O. Alan Jones
N8WQ

From Contest Admin Secret HQ:
Brian Murrey KB9BVN
FP-57

Calling all Flying Pigs!! Calling all Flying Pigs!!

Gang, the monthly Run for the Bacon Sprint is so much fun, and the band conditions are PERFECT for QRP, so why not join the flock and have a blast with us? It's easy! Here is a list of upcoming events through September 2025

Run for the Bacon Dates (3rd Sunday)
July 20th - Run for the Bacon CW Sprint (2 Hours) 23:00Z to 01:00Z – Use the Auto logger.
August 17th - Run for the Bacon CW Sprint (2 Hours) 23:00Z to 01:00Z – Use the Auto logger.
September 21st - Run for the Bacon CW Sprint (2 Hours) 23:00Z to 01:00Z – Use the Auto logger.

RFTB Autologger is at https://qrpcontest.com/pigrun/

ALSO…for you Flying Pigs new to CW, or old to CW and want to participate in a slow code sprint event, we have the 40m Walk for the Bacon Slow Code CW Sprint. The WFTB sprints are 1 hour each night.

40m WFTB runs on the first back to back Wednesday and Thursday of every month. The Wednesday night sprint begins at 00:00Z Wednesday evening for 1 hour from 00:00Z to 01:00Z, then it continues Thursday night from 02:00Z to 03:00Z. All logging is done on the autologger.

Evening of Wednesday July 2nd at 00:00Z to 01:00Z on 40m 7050 Khz to 7065 Khz.
Evening of Thursday July 3rd at 02:00Z to 03:00Z on 40m. 7110 to 7115 Khz

Evening of Wednesday August 6th at 00:00Z to 01:00Z on 40m 7050 Khz to 7065 Khz.
Evening of Thursday August 7th at 02:00Z to 03:00Z on 40m 7110 to 7115 Khz .

Evening of Wednesday September 3rd at 00:00Z to 01:00Z on 40m 7050 Khz to 7065 Khz.
Evening of Thursday September 4th at 02:00Z to 03:00Z on 40m 7110 to 7115 Khz.

WFTB 40m logger is at: https://qrpcontest.com/pigwalk40/

20m WFTB runs on the third Wednesday and Thursday of every month. The Wednesday night sprint begins at 00:00Z Wednesday evening for 1 hour from 00:00Z to 01:00Z, then it continues Thursday night from 02:00Z to 03:00Z. All logging is done on the autologger.

Evening of Wednesday July 16th at 00:00Z to 01:00Z on 20m 14061 Khz to 14065 Khz.
Evening of Thursday July 17th at 02:00Z to 03:00Z on 20m 14061Khz to 14065 Khz.

Evening of Wednesday August 20th at 00:00Z to 01:00Z on 20m 14061 Khz to 14065 Khz.
Evening of Thursday August 21st at 02:00Z to 03:00Z on 20m 14061 Khz to 14065 Khz.

Evening of Wednesday September 17th at 00:00Z to 01:00Z on 20m 14061 Khz to 14065 Khz.
Evening of Thursday September 18th at 02:00Z to 03:00Z on 20m 14061 Khz to 14065 Khz.

WFTB Autologger is at: https://qrpcontest.com/pigwalk20/

Good luck and we hope to hear from everyone on the air!!

Sprint Statistics for January through June 2025

DATE	EVENT	LOGS SUBMITTED	TOP SCORE	TOP FLYING PIG
01/19/25	RFTB	10	370	NQ2W - Will
02/16/25	RFTB	9	430	KA2KGP - Tom
03/16/25	RFTB	14	448	NQ2W - Will
04/20/25	RFTB – BAD CONDX	7	72	NQ2W - Will
05/18/25	RFTB	13	290	NQ2W- Will
06/15/25	RFTB	10	252	NQ2W- Will
01/01/25	WFTB40	9	36	WB0CJB - Paul
02/05/25	WFTB40	20	53	WB9HFK - Mark
03/05/25	WFTB40	18	67	WB9HFK - Mark
04/02/25	WFTB40	10	24	WB0CJN - Paul
05/07/25	WFTB40	12	28	WB9HFK – Mark
06/04/25	WFTB40	10	32	WB9HFK - Mark
01/15/25	WFTB20	8	12	KT4WA - Izzy
02/19/25	WFTB20	16	37	WB8HFK - Mark
03/19/25	WFTB20	9	24	WB0CJB – Paul
04/16/25	WFTB20	15	14	WB8HFK - Mark
05/21/25	WFTB20	10	10	WB8HFK – Mark
06/18/25	WFTB20	5	6	WX4RN/WB8HFK

The spotting site at https://qrpspots.com is no longer online.

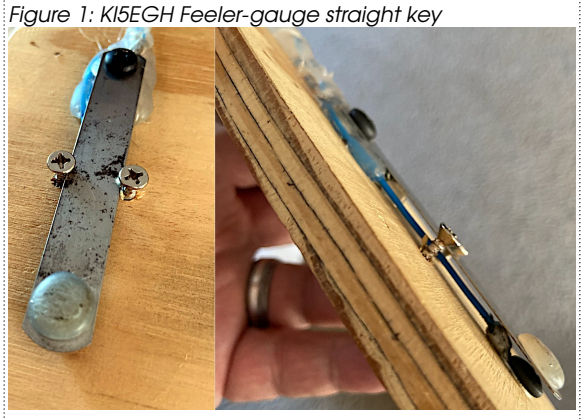
An Alternative spotting site could be https://qrpcluster.com

1 Motivation

As Hamsters, we are always on the lookout for a better mousetrap. Specifically, a better way of sending CW. About the only way to find out what works best is to try operating with various keys, consequently I suspect that CW aficionados have several keys in their collection as I have.

While riding along with Mike, KI5EGH, during the 2022 Tour de Tulsa bicycling event, when we were one unit of nine with the Tulsa Amateur Radio Club who provided SAG radio coverage of the various routes, our conversation turned to CW operation. I was intrigued by Mike's mention of a straight key that he made from the blade of a feeler gauge, see Figure 1.

Figure 1: KI5EGH Feeler-gauge straight key



Attraction of this idea is the thought that the operator can rest the arm relaxed on the desk while merely lifting the finger. KI5EGH said that he found that he preferred operating with this key in the field.

In general, we stand on the shoulders of others. The pictures of the feeler-gauge straight key provided by KI5EGH are the inspiration for my version of this good idea. Here I explain my production process.

2 W5AWS Implementation

KI5EGH determined that the best feeler for the job is a 0.016″ (0.40 mm) gauge. Not having a set of gauges, I found an inexpensive model on Amazon made of stainless steel; this set is shorter than shown in Figure 1.

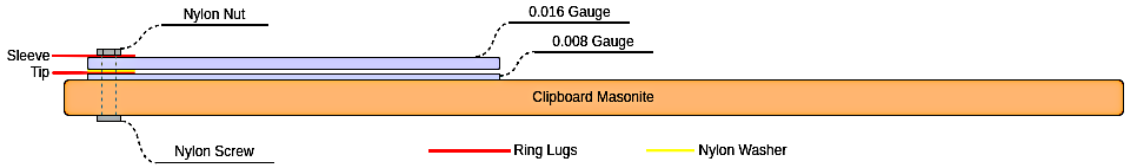
2.1 Baseboard

Instead of plywood, I thought a 6×9″ clipboard would provide a good base that can be comfortably held down by the hand.

2.2 Feeler Gauges

Looking at the picture and mulling the idea, I decided that I could get this to work with the connections entirely at one end, using a second gauge as the lower contact separated by a nylon washer, held together by a nylon screw and nut, with ring lugs making connection with the feeler gauges, as shown in Figure 2.

Figure 2: Side view of the W5AWS Feeler gauge straight key



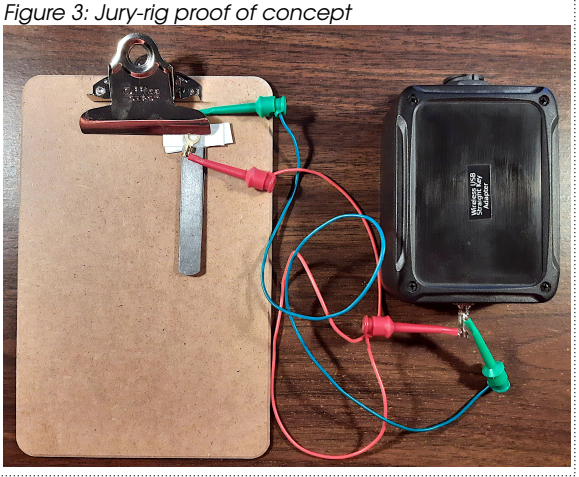
For the lower contact the 0.008″ (0.20 mm) gauge is an arbitrary choice, half the thickness of the upper gauge yet still stiff enough to lie flat on the clipboard; if necessary it could be glued to the board.

2.3 Connections

The nylon washer on top of the ring lug electrically separates the lower gauge from the upper. Both washer and lug serve to create a gap between the two gauges. The lug makes electrical contact with the lower gauge, wired to the tip of the ⅛″ (3.5 mm) audio plug.

The nylon nut secures the ring lug to the upper gauge where it makes electrical contact, wired to the sleeve of the ⅛″ (3.5 mm) plug. Holding the whole assembly together is the nylon screw.

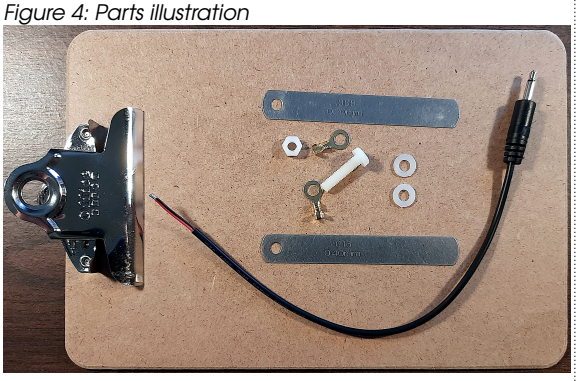
Figure 3: Jury-rig proof of concept



2.3.1 Warning

My operations are QRP with modern equipment, so I'm not expecting high voltage or RF energy to appear on the key. Usually, a straight key provides a ground to signal circuitry internal to the radio when it is active. Usually the sleeve of a barrel plug is ground, so I deliberately connected the upper feeler gauge to the sleeve for safety of operation.

Figure 4: Parts illustration



2.4 Jury-rig Proof of Concept

Figure 3 shows a jury-rig that proved my intention will work as planned. Four small pieces of index card separate the two feeler gauges.

2.5 Parts

Figure 4 shows a view of the parts ready for assembly.

2.6 Final Assembly

Figure 5 shows the assembled clipboard straight key.

Figure 5: W5AWS Feeler gauge CW key complete

2.6.1 Clipboard Clip

Removing and discarding the clipboard clip was a simple matter of drilling out the rivets.

2.6.2 Securing Screw

A 10 ×5 mm nylon-screw instead of 20 ×5 mm provided an exact fit.

2.6.3 Ring Terminal Clearance

To give sufficient clearance between the ring lugs, I used two nylon washers one on top of the other.

2.6.4 Identification & Insulation

Before assembly, I added a label to the top gauge of the key, which provides both identification and insulation for the finger.

2.6.5 Strain Relief

To relieve pull-strain on the connecting cable, I bored four ⅛″ holes, two on each side of the cable placement, then used black waxed lacing tape to lash the cable to the clipboard.

2.6.6 Connecting Cable

The connecting cable is deliberately short to make stowage easier, and to reduce clutter on the operating surface. Usually my FT-818ND transceiver or laptop computer is near at hand, which makes long cables a nuisance. When needed, the cable can be lengthened easily with an extension cable as shown coiled in Figure 5.

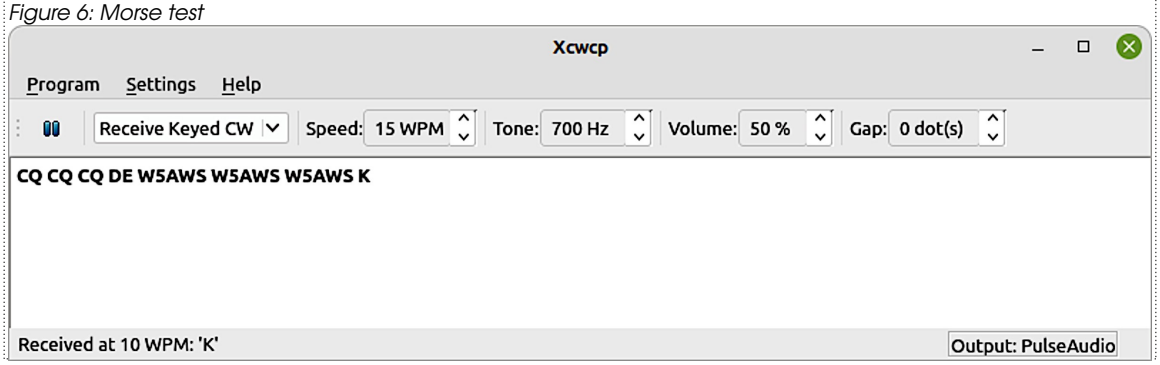
2.7 Contact Cleaning

Pulling a piece of paper kitchen towel through the pressed feeler-gauge is enough to clean the contact surfaces of any accumulated dust or dirt.

2.8 Operation

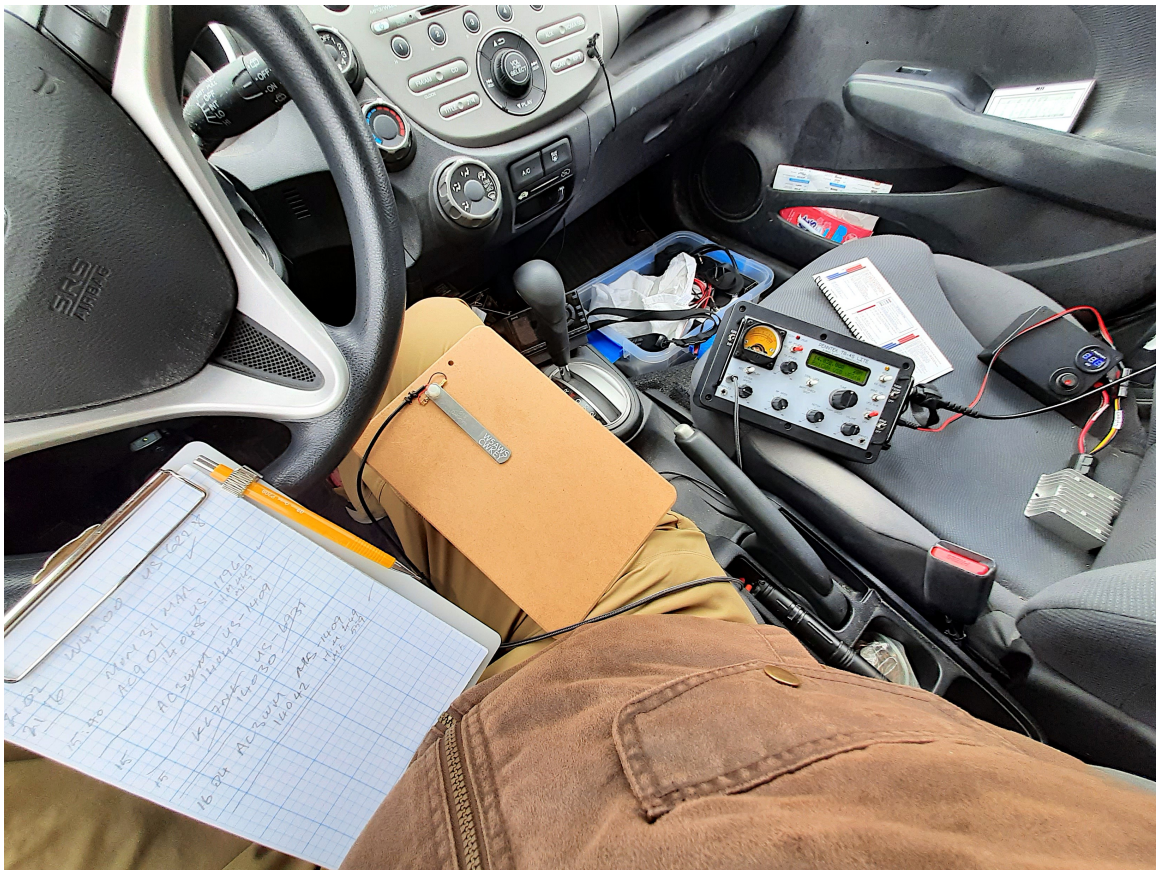
Figure 6 shows the results of a test using *xcwcp*, the X Window-based Morse tutor program.

Figure 6: Morse test



Operation is smooth with the palm of the right-hand resting relaxed on the clipboard, with the index finger raised above the end of the feeler-gauge while the thumb and tips of the remaining fingers rest on the surface of the clipboard. Only the index finger moves while keying CW. This key should work equally well under the left-hand.

2.8.1 Field Operation



I use my vehicle as a shack.

3 Bill of Material

For those who are reading this as a paper copy, there are QR-Codes of the live URL links in the electronic version. Obscure the adjacent QR-Codes with your fingers then scan the code of interest with your mobile phone.

i.	Stainless Steel Feeler Gauge	https://www.amazon.com/dp/B07XPD9L1C	
ii.	Nylon Screw, Nut, Washer Assortment	https://www.amazon.com/dp/B0744MMJ9V	
iii.	Mono TS 3.5mm Male Plug to Bare Wire Open End Audio Cable	https://www.amazon.com/dp/B082VVPTN6	
iv.	Non-insulated Ring Lugs	https://www.amazon.com/gp/product/B07RDDB42G	
v.	Memo Size Clipboard, 6×9″	https://www.officedepot.com/a/products/982134	
vi.	Waxed Lacing Tape, Black	https://www.amazon.com/gp/product/B005PQRLYC	
vii.	3.5 mm Mono Extension Cable	https://www.amazon.com/gp/product/B07SBRC4SY	

4 Glossary

CW.....Continuous Wave, synonymous with operation via Morse code
PEP.....Peak Envelope Power
QRP.....Reduce Power, or operations at 5W or less PEP
RF.....Radio Frequency
SAG.....Safety And Gear

OUR MISSION:
1. Have Fun.
2. No Rules
3. Be a friendly group which enjoys ham radio and sharing skills with their fellow hams.

CLUB MEMBERSHIP:
To join the Flying Pigs QRP Club, visit https://fpqrp.org/join.php

CLUB DISCORD SERVER:
https://discord.gg/6G9z9grDx6

CLUB EMAIL POLICY:

To subscribe to the club email reflector, send a message to fpqrp+subscribe@groups.io with the subject "subscribe" or go to the Flying Pigs groups.io page at https://groups.io/g/fpqrp and click on the "Join" button. Don't forget that all upcoming Flying Pigs related contests are advertised on our email reflector!

These are not rules—just common sense. Club email is not moderated, as we are not a stuffy group. You can send off topic messages about most subjects but please keep conversations clean and in good taste. We do like good-natured-ribbing and joking with each other, but we will not tolerate flaming other members of spamming the group. We will remove offenders who abuse our open policy. The word eBay is allowed.

CLUB WEB PAGE:
The club web page is our forum for sharing projects, and information about us. You are encouraged to submit your ideas and projects to be added to the web page https://fpqrp.org/

CONTEST RESOURCES:
https://qrpcontest.com
http://qrpspots.com

FPQRP OFFICIAL FREQUENCIES:

160m – 1.814MHz 80m – 3.564MHz 40m – 7.044MHz 30m – 10.110MHz
20m - 14.062MHz 17m – 18.100MHz 15m – 21.064MHz 12m – 24.910MHz
10m – 28.064MHz 2m Hamfest Frequency – 145.72 Simplex

PROBLEM REPORTING:
If you are having problems with email, the web pages, or a fellow club member, please report this to either:
Dan, N8IE at dann8ie@gmail.com
Jim, W0EB at W0EB@cox.net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