



PCARA Update



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Break the cycle

Things were quiet for the summer break. We had our July and August PCARA Breakfasts at Downing Park in Yorktown Heights, NY, and as usual turnouts were spectacular and the discussions engrossing. At the Saturday August 13th breakfast, Verle W2VJ brought along his Icom IC-7300 and operated HF with a magnetic mount antenna on his car. What better breakfast than coffee, bacon, eggs, and HAM Radio?

In relation to breakfasts, the new 45,000 square foot Uncle Giuseppe's Marketplace at 329 Downing Drive in Yorktown Heights had its Grand Opening on August 26, 2022, featuring a full coffee and espresso bar. Keep in mind that Uncle G's is an alternative location for PCARA Breakfasts when the weather is less than ideal. Can't wait to try it out.

Moving forward, our next **PCARA Membership Meeting** is scheduled for Saturday September 10, 2022 at 3:00 p.m. at the Putnam Valley Free Library, 30 Oscawana Lake Road in Putnam Valley NY. The meeting will include a presentation on Vertical Antennas courtesy of Jay NE2Q. The PCARA Membership Meeting will be followed by a **PCARA LAUREL V.E. Test Session**



Mike N2EAB and Rob AD2CT watch as Verle W2VJ operates his Icom IC-7300 from a lithium-ion battery during the August 13 PCARA Breakfast in Downing Park.

at 4:30 p.m. If you know someone who's interested in taking an exam, please let them know. ALL are welcome!

On Saturday September 17, 2022, there will be a **PCARA SOTA/POTA Activation** from either Hook Mountain State Park or Bear Mountain State Park. The event is being planned by Verle W2VJ who can be contacted for details. Please consider joining us for this unique 2-for-1 event. Check the PCARA website or PCARA Google Group mail for updates.

The next **PCARA Breakfast** is scheduled for Saturday September 24, 2022 at 9:00 a.m. at Downing Park Pavilion, 2881 Crompond Road in Yorktown Heights, NY. Please remember to bring along your own breakfast and topics for conversation! *Continued on page 2* ⇨

Graphic for September 10 presentation and meeting courtesy Lou, KD2ITZ.

Contents

Break the cycle - KB2CQE	1
KB2CQE repeater	2
Magnetic Loop Workshop.....	2
Adventures in DXing - N2KZ	3
Just one screwdriver? - NM9J	6
Copper foil antenna - K2DMV	8
Bargain basement notebook - NM9J	9
V.E. Test Session	11
Goodies for sale	11
BOGES unboxing.....	12
Sales tax.....	12

PCARA will be participating in the 42nd Annual **Harry Chapin Memorial Run Against Hunger** on Sunday October 16, 2022, from 8:00 a.m. at Croton-Harmon High School in Croton-on-Hudson, NY. We will be offering communications support along with our friends



from WECA. *Please* consider joining us for a few hours to support this most worthy and meaningful cause. Volunteers are eligible for FREE breakfast and T-Shirt. I would really like to see a significant turnout this year. Maybe we could do lunch after the event? Thank you.

I look forward to seeing you on Saturday September 10, 2022.

- 73 de Greg, KB2CQE

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Net night

Peekskill/Cortlandt Amateur Radio Association holds a roundtable net on Tuesday evenings at 8:00 p.m. and a directed 'Old Goats' net on Thursday evenings at 8:00 p.m. Both events take place on the 146.67 MHz W2NYW repeater, offset -0.600, PL 156.7 Hz.

Join the roundtable to find out what members have been doing or join the Old Goats with net control Karl N2KZ for news and neighborly information.

KB2CQE repeater

On August 12, Greg reported that the KB2CQE UHF repeater on 449.925 MHz had gone off the air. Bob N2CBH visited the repeater site where he discovered that the power supply had failed. As a temporary measure, Bob substituted a Motorola power supply to bring the repeater back on air.

Greg's Icom IC-RP4020 repeater has been in continuous operation on 449.925 MHz for thirty years. In consultation with Greg, Bob began preparing one of the club's Motorola repeaters to take its place at the site.

On August 21, Bob and Greg were able to substitute the Motorola repeater for the older Icom. One aspect of the new arrangement is that while PL tone of 179.9 Hz is still required for incoming signals, the same 179.9 Hz tone is now **encoded** on the repeater's outgoing carrier.



Bob N2CBH stands alongside the KB2CQE/R cabinet that now houses a Motorola repeater. [KB2CQE pic.]

If you have an FM transceiver with tone encoding and decoding, it is possible to set up an extra memory channel on 449.925 MHz using "Tone Squelch" (encode and decode). Your receiver will only activate for a signal carrying 179.9 Hz CTCSS tone — this can be helpful to block out the digital buzz from Connecticut ARES' DMR repeater KB1TTN in West Haven that is co-channel with the KB2CQE repeater on 449.925 MHz.

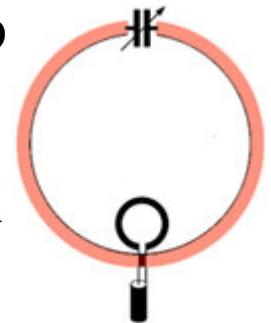
Take a listen to the KB2CQE repeater and see if coverage has improved. Greg and Bob will be interested in your report.

- NM9J

Magnetic Loop Workshop

October 10

Put a mark in your diary — PCARA has reserved the CUE Room at Cortlandt Town Center for the evening of Monday October 10, 2022 (Columbus Day). Starting at 7:00 p.m., Jonathan W2JVO will have the parts necessary to assemble a **Magnetic Loop Antenna** and with members' assistance it should be possible to get it on the air that same evening. [Tnx Lou, KD2ITZ.]



Adventures in DXing

- N2KZ

Summer Entertainment

What makes a good ham? Does it have anything to do with fixing a barbecue grill? Well... maybe!

Life is filled with little annoyances and I had encountered one. My family had bought a very expensive Weber grill for their summer home. It was nearly brand new but it had already been dealt a death blow. The push-button igniter that fires up the propane gas to begin a grill session had stopped working. Karl to the rescue!



Weber Spirit grill.

Of course, this problem came to the forefront just a day before my wife and I were leaving for home. I had proved that the grill could be lit if you carefully placed a lit match or used a fire starter wand when you first turned on the gas. This seemed like a quite workable solution and a good quick fix.

I had to shake my head as I began in-depth trouble-shooting. All the simple propane grills I had met before used a simple mechanical spark creator to fire things up — much like spinning a wheel against a flint on an old-fashioned cigarette lighter. Usually a thorough cleaning to remove grease from the igniter's electrode would be all you had to do to return the button to duty. Alas, this is the year 2022 and the solution now was high tech!

Weber's method of ignition was much more complex. This "Spirit" model features a battery powered igniter module. When you press the front bay control panel's SPST momentary switch ignition button, you immediately hear a tick-tick-tick pulsing spark attempting to light the gas. This is produced by a module below the grill that is powered by a single AA battery. Really? All of this to light a grill?



Battery powered igniter for Weber Spirit grill.

Suddenly, I was back to the days of being a field engineer — a 'roady' — and tried to come up with a solution in a flash. I had actually squirreled away an inexpensive multi-meter I had once bought at the local hardware store with pocket change. Once again, it had a new chance to shine. I discovered right away what the problem was.

Using just one of the supplied test leads, I could jump the switch and instantly make the igniter module tick. I then used the ohmmeter for a continuity check and found that the push-button no longer made a connection. This was a very simple inexpensive push-button that had a rubber cover over the button to weatherproof it from the elements. The designers forgot to calculate the effects of basic human behavior. What do you do when a push-button doesn't immediately work? Of course! You press it harder and often!



Faulty press-button switch removed from Weber grill [N2KZ pic.].

Obviously, it did not take a lot of time for the rubber cover to age in the sun, crack and lose its ability to be waterproof. The connection deteriorated and the hard pressing routine began. It eventually did not work at all. Fast forward ahead to today and now it needed immediate repair.

It took me some hours of thought to calculate a quick fix. I called several hardware stores, including the place of purchase, and found no one stocked a replacement switch. I was told that Weber actually has a ten year warranty on their products. You can get replacement parts for free if your grill is registered. "We can do this!" I happily thought.

Well, it was not that easy. I first had to find the model and serial number of the grill, half legible on a label inside the tank holding compartment. I patiently found my way through Weber's online registry process. I then had to discover a part number to order a replacement part. Downloading two or three Adobe Acrobat files from Weber's website, I finally found a pictorial showing all that could be ordered. Careful examination and interpretation led me to a part number.

The bot-operated online chat box was too basic and simple for my kind of detail. I dialed their support number and eventually reached a real live human being. I led the help person to what I had already discovered. The first answer was that to replace the button you had to obtain the entire igniter kit including the wiring and the battery-powered module. This just can't be!

Eventually, we learned together that there was a part number for just the push-button. One would be sent to me free-of-charge but there was a backlog of requests and I shouldn't expect to see it for 10 to 14 days. I had to send Weber a picture of the switch to be eligible for a replacement! I quickly agreed to this free offer and felt just a little bit of immediate accomplishment.

10 to 14 days is a long time during an active summer season. There were steaks, chicken, hot dogs and ribs to be cooked. Most family members were not ready to touch greasy grill parts and flick matches to light the

grill. I still needed an instant answer! What to do?

As part of my duties as the family's assigned fix-it man, I cover many domains: painting, plumbing, carpentry, locksmithing, window and outside wall cleaning and electrical skills. I had just replaced a very old and ugly kitchen light switch (complete with rusty face-plate) with a modern bright white Decora® switch to bring our kitchen closer to the 21st century.

Aha! I did still have the old switch and plate... and an idea! A light switch serves the same function as a push-button switch electrically. I just had to hook it up! I used a small length of left-over lamp cord to make the connection to the switch. I discovered the connection to the module was done using very typical spade lugs. I ran down to Ace Hardware in Bad Axe (ask for Sheila) and actually found a small bubble pack of mating lugs.

The lugs had plastic insulating covers over them. I used a diagonal cutter and snipped off the blue plastic to create two bare metal lugs. No proper crimp tool was nearby, so I found my trusty soldering iron (another squirreled away artifact) and with a touch of solder on each lug I had a viable connection. The lugs fit the existing wiring harness perfectly and I was all set! One of my brothers-in-law watched me construct this jury-rig and nicknamed me "Grill Master!" (Oh, brother!)



Karl substituted an old light switch for the faulty press-button igniter on the Weber grill. [N2KZ pic.]

The crazy switch rig did the trick very nicely. Tick-tick-tick was available with a quick flick of the switch and we were all set. Some Brother P-touch labels made its identity official. Of course, I received the comments of 'it's inconvenient,' 'it's not pretty' and 'it's goofy' but, hey!, it works.

Fear not! A nice new replacement switch has been sent to Michigan and I should be able to make a professional repair as soon as I return. Added benefit: I will now have a back-up switch solution ready to return to duty should the switch fail once more. Old light switches really have purpose!

I told my story to my ham radio buddies on the

daily (original) Old Goats Net just so I could hear some applause. Everyone enjoyed the belabored story! We always like to celebrate our collective victories. My good friend, Terry WB8RWI, summed it up so well: "It just proves how good a ham you are. You made it work with just the items you had around the house. Great!" I couldn't agree more! Thanks, Terry.

Homemade Fox Hunt

Everyone should have passions in life. Being a dyed-in-the-wool amateur, my life has a large and strong RF component! Having time to sit and contemplate my many idle thoughts, I wondered where the local National Weather Service broadcast originated. I know most of the local towers well: The local radio station, WLEW, is obvious with its two towers right along South Van Dyke Road (M-53) a main street in town. The City of Bad Axe communications tower is close by just down the street — the site of our local repeater (N8LFR/R 145.470 -600 110.9 PL). Where was WNG-701 on 162.525 broadcasting weather from?

One morning, after the Old Goats Net ended, I set off to look for WNG-701's home. One of my best buddies, Chris KC8ZMN, suggested that maybe it was co-located with the local airport just southeast of town: the Huron County Memorial Airport, KBAX. (You can hear their ATIS automated aviation weather broadcast on 118.6 MHz AM.) Chris was close!

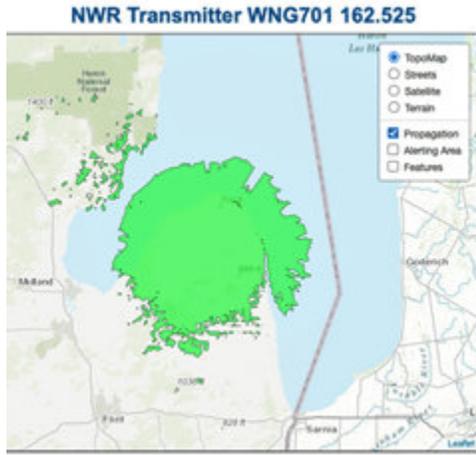
My mini-foxhunt had begun! All I had with me was my Yaesu FT-60 HT, so I had to improvise a way to attenuate the strong NWS signal. That was easy! I removed the antenna. It provides an immediate 60 dB pad. I roamed around for a few minutes and found that the signal became quite obvious just a block or two from the Huron County Fairground near the airport.

The signal became so strong that I had to revert to offset tuning for the final stage of the hunt. I tried manually entering 162.520 (still too strong) and settled on 162.515 MHz to home in on the exact location. I found a medium sized unmarked building with two towers outside. The taller tower actually had a four bay vertical dipole array which I have decided must be it! WNG-701 broadcasts a big 300 watt



The taller tower had a four-bay vertical array. [N2KZ pic.]

signal that covers quite a large area all across Michigan's Thumb region. I later discovered an online map that actually mentioned this as being the site of WNG-701. Drive to the intersection of Davis Street and Sopher Road to see it for yourself. Fox caught!



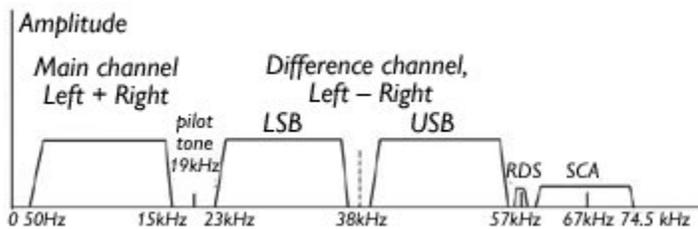
Do You RDS?

It's an old analog technology dating back to the mid 1980s. Radio Data System was originally promoted by Britain's British Broadcasting Corporation (BBC) and European broadcasters as a method of creating smart FM radios that could display the network station name and automatically re-tune the radio to the station of your choice wherever you might go.



Another feature allowed you to follow a format as you traveled from place to place. If you tuned to 'Easy Listening' and your station faded away, the radio would then look for more 'Easy Listening' stations now within range and tune to them. A whole range of other format categories are available. You could also actively seek 'Weather,' 'Travel' and 'Alarm' information on some radio models. A great idea!

The RDS system receives data from radio stations that employ a 57 kHz subcarrier (much like the 'stereo' pilot signal often found at 19 kHz on most broadcast FM radio stations.)



Modulation applied to an FM transmitter showing the 57 kHz RDS subcarrier and 67 kHz SCA signal.

RDS is a clever and useful idea that was never fully embraced in North America and is now nearly forgotten. Of course, when used on our side of the pond, RDS has a North American variant that is different than the European version. No standard is our standard!

Over the summer, I spent some quality time driving my 2009 Toyota Prius fitted with a radio capable of RDS reception. Surprisingly, RDS lives on with many,

many stations still tagged with format and program messages available to this day. I experimented with it in Central Michigan on vacation in a quest to log a variety of CBC Radio 1 outlets from across Lake Huron in Ontario. CBC Radio 1 is keyed as "INFORM" for 'information.' The same key is used for many National Public Radio stations stateside. Press 'Type Seek' on my touchscreen and the radio will scan and stop at every station it can hear sporting that tag.



Prius car radio receiving CBC Radio 1 with RDS program type "INFORM". [N2KZ pic.]

I actually found the RDS feature to be a useful DX tool. Not only does the RDS carrier supply format identity tags, it also conveys station ID and a variety of messages like song titles and station catch-phrases. (Example: "94.5 The MOOSE"). Your DX-ability becomes quite streamlined when you can resolve instant IDs.

During my experiments, I had one experience that was very, very interesting. My car's radio user display is arranged so you can load six frequencies on one page. I entered six CBC Radio 1 frequencies and tuned to the strongest one in our area — 98.7 MHz from Owen Sound, Ontario. It usually comes in without much trouble and it locked right in showing "CBC" immediately on screen.

I scanned several times for more 'INFORM' stations and then noted that 93.5 FM loaded up automatically with the same "CBC" moniker. Did it actually load a RDS tag while I was still listening to 98.7? Very fun! Very interesting!

There is a group of FM DXers in the WTFDA group that uses and relies on RDS' PI codes — individual station ID numbers — for positive identity checks, especially for fleeting catches like E-skip.

I took some time and actually read a white paper on the North American RDS standard to understand fully what it was capable of. My Prius radio is only fitted for some of the most basic RDS features but it is still fun to play with.

It's only about 35 or more years since RDS was first launched. Why did it take so long for me to fully investigate such things? Better late than never!

Until next month, 73 es dit dit de N2KZ "The Old Goat."



[For more about the European RDS and USA RBDS systems, see PCARA Update for March 2004, "RDS arrives a little late" -Ed.]

Just one screwdriver?

Just one goat

'Question of the week' for the Old Goats Net on Thursday July 7, 2022 was all about crosshead screws and included the following question.

4. What is the significance of a little dot indented onto the head of a crosshead screw?

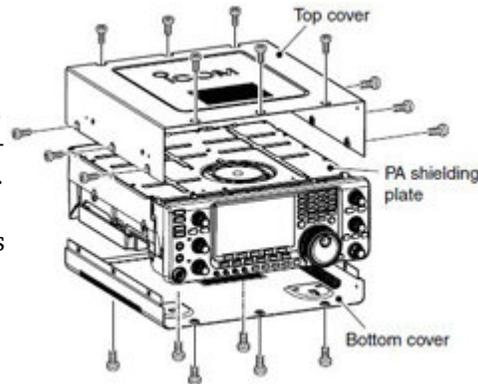
- (a) The screw has a left-hand thread.
- (b) The screw has a right-hand thread
- (c) The screw is a Pozidriv design
- (d) The screw is a Japanese Industry Standard (JIS) design.



Only one participant had the correct answer — which was (D), that the screw is a **Japanese Industry Standard (JIS)** design. Well done!

Where they are

You will find crosshead screws with a little dot or dimple stamped into the head in a variety of Japanese equipment. Examples include amateur radio transceivers from Icom, Yaesu, Kenwood and Alinco. If you ever need to take the covers off to add an option or make an adjustment, you will almost certainly need to remove several JIS crosshead screws.



"Remove the six screws from the top of the transceiver and the six screws from the sides." [Icom Instruction Manual.]

You might also find this type of fastener in Japanese Hi-Fi equipment, game consoles, cameras, motorcycles and power equipment from the likes of Honda and Yamaha.

I have found crosshead screws marked with a dot on equipment all around the radio room. You may also come across some JIS-standard screws that do not have a dot.



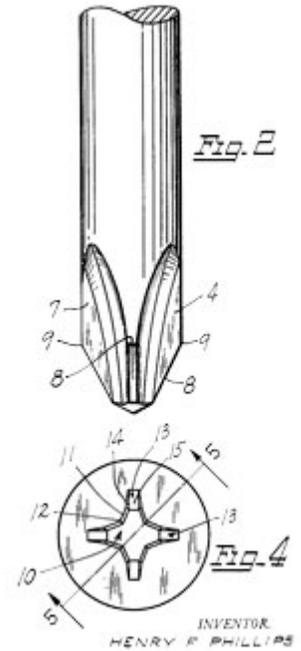
Kenwood TS-870 screw.

A little history

The Phillips® crosshead screw was mentioned in the article "Essential₂ driving", *PCARA Update*, June 2011.

"The story of the Phillips screw begins with Oregon inventor J.P. Thompson who received a patent in 1933 for a

crosshead-recessed screw that self-centers the screwdriver with the screw head. Thompson approached many screw manufacturers who said his screw was impossible to reproduce because the punch needed to create the recess would destroy the screw head. Thompson then showed his idea to an engineer acquaintance named Henry F. Phillips who offered to buy the patent. Henry Phillips founded the Phillips Screw Company in 1934 and patented an improved design for the crosshead screw and matching screwdriver in the mid-1930s. The wedge-shaped Phillips screwdriver head is designed to mate more accurately with the recess in the screw head, preventing the tool from slipping and allowing the screw to be carried to the work. These ideas were adopted by the USA's largest screw manufacturer, American Screw Company in Providence, RI."



Drawing from Henry Phillips' 1936 U.S. Patent 2,046,837 "Means for uniting a screw with a driver".

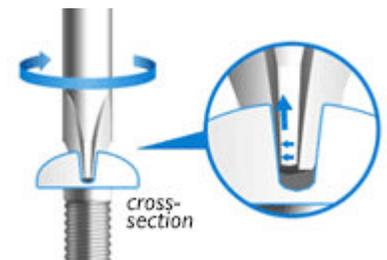
Jumping out

One disadvantage of the original Phillips screw design is that when used with power-tools — as found on industrial assembly lines — the tool would tighten the screw to the point where torque rapidly increases, then slip out of the screw head, possibly damaging the crosshead recess in the process.



Damaged recess in Phillips screw.

This phenomenon is known as "cam-out" and is caused by the rapidly-rotating screwdriver being pushed back out of the stopped screw by the angled contact surfaces of its wedge-shaped head.



Cam-out occurs when lateral force turning the screwdriver is converted to upward force along the wedge-shaped surfaces.

Staying in

Screws made according to Japanese Industrial Standard JIS B 1012 are designed to avoid cam-out. They were intended for precision equipment, assembled by hand where the torque is under manual control — or using modern power tools such as a torque-limiting screwdriver, where the tip stops turning once a specific torque is reached.

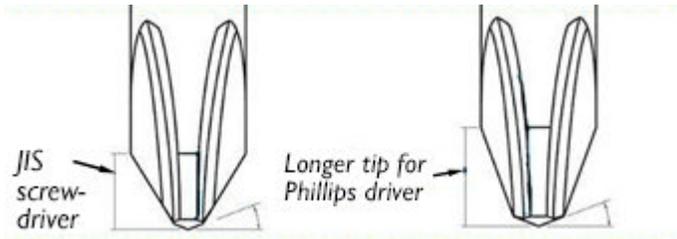
The appearance of a JIS screw is very similar to a Phillips screw until examined very closely. The following differences may then become apparent.

- (a) the slots in the screw head are narrower and less wedge-shaped than a Phillips to reduce the tendency to cam-out.

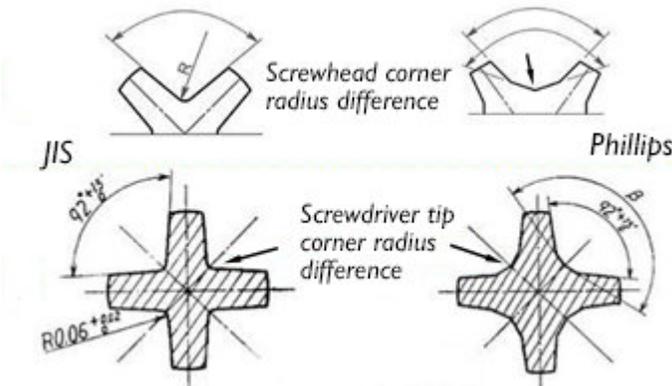


Slots in the JIS screw (left) are narrower than the Phillips.

- (b) the recess in a JIS screw head is not as deep as for a Phillips screw. The matching JIS screwdriver has a shorter tip.



- (c) the corner radius at the cross-section of a JIS screw head is smaller than that of a Phillips. The matching JIS screwdriver tip also has a smaller radius.



A Phillips screwdriver with its longer tip will not fully seat into a JIS screw and will not grip the sides properly. (Some mechanics grind down the tip of a Phillips screwdriver to improve the fit!)

If you insert a Phillips screwdriver into a JIS screw, then gently rotate the Phillips screwdriver back and forth, you will experience significant play or ‘wobble room’. Using a Phillips screwdriver in these circumstances will result in cam-out and damage to the JIS screw head when high torque is applied.



A #2 JIS screwdriver (left) fits precisely into a JIS screw, while a #2 Phillips screwdriver (right) does not fully seat.

A correctly designed JIS-specifica-

tion screwdriver will fit snugly into a JIS screw with little or no play. Plenty of torque can then be applied without damaging the screw head. An additional clue — if vertical, the JIS screwdriver can stand up in the screw, unsupported.

The right tool

If you work on *any equipment* made in Japan or from an Asian manufacturer and you see a cross-head screw, please proceed with caution! In addition to amateur radio, you might come across these screws in audio equipment, VCRs, cameras, televisions, game consoles, fishing reels, office equipment, automobiles, motorcycles and generators.

Take a very close look at the screw head. If it has a little dot in one corner, then it is a JIS B 1012 screw and *not* a Phillips. Even if it does *not* have a little dot, it might *still* be a JIS design. You can check by inserting the appropriate sized Phillips screwdriver and rocking gently back and forth. If there is any play, put your Phillips screwdrivers away and bring out your JIS screwdriver set.

Where to go

Perhaps you don't have a set of JIS screwdrivers? I suggest an immediate visit to the Amazon web site or to McMaster-Carr online, then search for “JIS screwdriver”. Another site to check is JDV Products Inc., which specializes in screwdrivers from the Japanese manufacturer Vessel. See <https://www.vesseltools.com/>.



JIS-specification screwdrivers from Vessel and Hozan.

Look for Japanese-manufactured brands such as “Vessel” and “Hozan”. A set of JIS screwdrivers covering sizes from #00 to #2 should cover most amateur radio requirements.

Pozidriv® postscript

Readers in Europe may know about a different type of crosshead screw used in place of the standard Phillips. You may come across the Pozidriv design, patented in 1962 by U.K. company Guest, Keen and Nettlefolds (GKN). Their design features a blunt tip and additional smaller ribs at 45° to the main slots to reduce cam-out. Pozidriv screws can be identified by a second cross marked on the screw head at 45° to the main cross recess. A further development is the GKN Supadriv® screw with a single identifying line between the main slots.



Copper foil antenna

- K2DMV

Video inspiration

I came across a YouTube video with a presentation on using metal foil tape for antennas by John Portune W6NBC. [See: <https://youtu.be/7MA4dIlapyA?t=550>, starts 9 minutes in -Ed.]

I quickly carried out a few Google and YouTube searches for more on the topic. It became apparent that work by others was inspired by the efforts of W6NBC.



Foiled again

I decided to give it a try and looked for some additional information on soldering foil tapes. In a discussion with Lou

Copper foil tape can be purchased online and from garden centers as a snail/slug repellent. It is easier to solder than aluminum tape. [K2DMV pics.]

KD2ITZ I felt it would be more effective to start with



Al K2DMV was able to solder tinned braid wires to the copper foil tape.

copper foil, it seemed likely to be easier to solder. The best method I found was to create a puddle on the end of the foil tape as a pad to tack to. I tinned the wire braid connections and then managed to successfully at-

tach them. I can't say it is pretty but I did make a solid connection and did not scorch the foil.

I then attached the stripped ends of a coaxial cable and connected my analyzer. With a methodical bit of snipping with scissors I reduced the SWR down to 1.0:1 on 146 MHz.



Al adjusted lengths of the copper foil dipole elements for an SWR of 1.0:1 in the 2 meter band.

Testing time

Next, I moved on to testing, I was concerned about how much power I could apply and not have the antenna burst into flames. I decided to begin with low power tests then take the antenna outdoors and crank up the power.

Day Two

I needed to get a better selection of coaxial cable as the original cable used for testing did not work out. I joined the Old Goats Net and ran the power up to 40 watts without issues. (I need that much power to reach from Crugers, NY to the PCARA Repeater in Philipstown.)

The new antenna worked well and did not go up in flames — hooray!

- 73 de Al K2DMV



Copper foil dipole for 2 meters taped to window frame. [K2DMV video.]

Bargain basement notebook

Field Day thoughts

During Field Day 2022 PCARA missed a lot of contacts by not having Digital and CW capabilities at all three stations. This was especially true for 6 meters, where much activity has shifted to FT8.

One suggestion for future events might be for each transceiver to have a notebook computer equipped with **Fldigi** and **WSJT-X** software — with all rig configuration taken care of beforehand. (Contests would also need appropriate N3FJP logging software.)

Not so long ago, this might have been a lot to ask... capable notebook computers were expensive and owners might have been unwilling to haul them up a mountain or leave them overnight under a leaky Field Day tarpaulin.



Computer logging at PCARA Field Day.

Low end notebooks

There has been growing demand for inexpensive notebook computers suitable for remote working, home education and Zoom-style video meetings. They require reasonably fast processors and disk drives but no high speed 3D graphics — their intended purpose is for two-dimensional work rather than for 3D gaming.

Capabilities of inexpensive notebooks have been improving and suitable models can now be found for around \$350 - \$400. This is not quite as cheap as a BaoFeng handi-talkie, but it is around the cost of a decent dual-band mobile transceiver — and a lot less than the capable notebooks of a decade ago.

Suitable specification

I was on the look-out for an inexpensive notebook to replace the nine-year old HP convertible that has supported computer logging at previous Field Days. Here are some of the models I considered.

- Acer Aspire 5 A514-54-501Z, Intel Core i5, 8GB Memory, 256 GB PCIe SSD, 14" display, \$389;
- HP 14-fq1074, AMD Ryzen 3 5300U, 8 GB memory, 256 GB SSD, 14" display, \$370;
- Lenovo IdeaPad 3 81X800ENUS-N, Intel Core i3, 8GB Memory, 256 GB SSD, 15" display, \$380.

My minimum specification was for a *quad*-core processor so the dual-core Lenovo IdeaPad was taken out of consideration. The 14 inch HP notebook was on sale at a local warehouse store, so that's the model I chose.



Bargain beastie

When you buy a bargain basement notebook, you have to be prepared for a few compromises. On my HP notebook, the weakest point is the liquid crystal display — it is not very bright and the colors shift depending on screen angle. It might be difficult to view in bright sunlight. Although the case is all plastic, it is shielded by metallization on the inside — I have not heard any spurious emissions.

I decided on two inexpensive upgrades – a \$20 Bluetooth mouse (so as not to waste a USB port) and an additional 8 GB of memory, costing \$33. I found a YouTube video showing how to remove the bottom cover in order to install the memory... Hint — it involves five hidden screws and use of a 'spudger'.



Bargain basement HP notebook with bottom cover removed and slot for additional memory arrowed. Spudger at right.

Eleven's annoying

Nowadays, most new Windows computers are sold with Microsoft **Windows 11**. First introduced in October 2021, this operating system is similar to Windows 10, with added security features and some highly annoying differences. A couple of points to be aware of are that Windows 11 makes it *extra* difficult to set up with a local account rather than a Microsoft account, and the computer may well have an *encrypted* hard drive.

My HP notebook came with Windows 11 "**Home edition**" in **S-mode**, meaning it can only install software ("apps") from the Microsoft Store. Fortunately S-mode can be switched off through 'Settings' at no ex-

tra charge, though this is a one-way process. Upgrading from Home edition to Pro adds a number of features but at additional cost.

Performance

I ran the “Windows Assessment Tool” on the new notebook with its AMD Ryzen™ 3 5300U processor, AMD Radeon™ graphics and Samsung M.2 solid state drive. This tool rates CPU, disk, memory and graphics speed. Apart from graphics, the new computer was equal to or *better* than my older notebook with its Intel® Core™ i7 processor.

With regard to price/performance, Advanced Micro Devices Inc. appears to be eating Intel’s lunch at present.

```
PS C:\windows\system32> winsat formal
Windows System Assessment Tool
> Running the Formal Assessment

PS C:\windows\system32> Get-WmiObject -
class Win32_WinSAT
CPUscore           : 9.1
D3DScore           : 9.9
DiskScore          : 8.8
GraphicsScore      : 8
MemoryScore        : 9.1
TimeTaken          : MostRecentAssessment
WinSATAssessmentState : 1
WinSPRLevel        : 8
```

Results from running the Windows Assessment Tool on the HP 14" notebook.

Setup

I spent a few days setting up the new notebook to my liking. Windows 11 is just sufficiently new and different that I had to hunt for various settings and policies that would make the computer perform the way I wanted. I had to disable a good deal of Microsoft and HP cr*ppware that was eating memory and slowing performance. I could then install my choice of Internet browser, CPU monitor and antivirus software.



HP 14" bargain basement computer, setup with extra memory and Windows 11.

Amateur Radio software

I began by installing the ARRL Contest Log software by N3FJP. I made sure this program could communicate with the file server used on Field Day so that contacts were logged into the central database. My new HP notebook has no wired Ethernet connector (unless I plug in a USB adapter) so the test had to be carried out

using Wi-Fi.

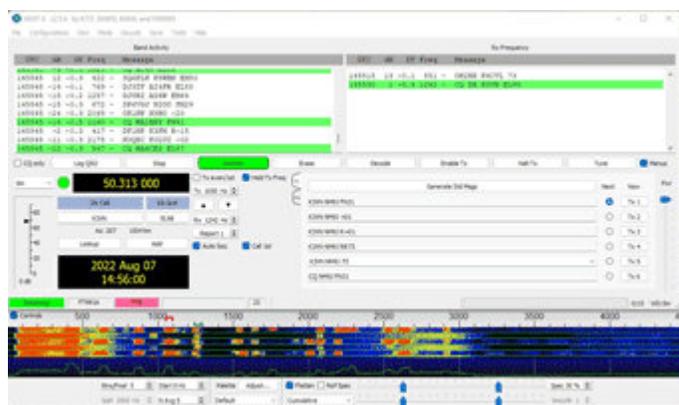
The next task was to install Fldigi (Fast light digital) software for digital modes. I downloaded the setup file from <http://www.w1hkj.com>. Before starting the software and connecting the transceiver, I had already loaded Icom’s USB driver for connecting to the IC-7410 sound card and rig-control COM port. I could then setup Fldigi for use with the Icom IC-7410. Once this first radio was working correctly, I followed instructions by Harry W3YJ to setup *multiple* Fldigi configurations, first for the Yaesu FT-991A, then for the Signalink™ USB adapter used with my standby IC-706MkIIIG.

The third item of amateur radio software was WSJT-X, downloaded from <http://www.physics.princeton.edu/pulsar/k1jt/wsjt.html>. I checked operation with my two main transceivers, then left the combination running FT8 on 6 meters, 50.313 MHz and on 15 meters, 21.074 MHz. I was keeping an eye on CPU



FT-991A receiving FT8 transmissions.

utilization while the software was decoding lots of transmissions — on the new notebook utilization peaks at 22%, average 3%. This compares favorably with my older notebook with core i7 processor, which peaks at 29%, average 3% while decoding FT8 on the same band.



WSJT-X software decoding FT8 transmissions on 6 meters.

Conclusion

A modern “bargain basement” notebook computer with quad-core processor and solid state drive is quite suitable for digital modes operation as well as computer logging. If you operate POTA/SOTA or bring your transceiver to a future PCARA event, why not include a low-end notebook configured with suitable digital modes software, all ready to go on the day?

- NM9J

V.E. Test Session

PCARA's previous Volunteer Examiner Test Session scheduled for Saturday August 13th had to be canceled as no candidates registered in time.

PCARA's next V.E. Test Session is scheduled for Saturday September 10th, 2022 at the Putnam Valley Library, 30 Oscawana Lake Road, Putnam Valley, NY. This session will follow the 3:00 p.m. membership meeting which includes a presentation on Vertical Antennas by Jay NE2Q. The test session is scheduled to start at 4:30 p.m.



**Test Session for
FCC Amateur
Radio License**

**Saturday
September 10th
4:30pm**

**Free Study Guide
Available**

Get your amateur radio license and discover...
Camaraderie – Community Service
Emergency Preparedness – Fun
Science – Technology

Laurel Volunteer Examiners – No Testing Fee
There are no Morse Code requirements
Must RSVP - daveharper@vivaldi.net 914-432-2639



[Graphic courtesy of Lou KD2ITZ.]

The September 10 event is a Laurel VEC Test Session, with no charge for anyone wishing to take an examination. Candidates must contact Dave KF2BD before September 10 on (914) 432-2639 or using daveharper@vivaldi.net.

Goodies for sale

[George N2LJO sends details of the following items which he offers for sale to readers. -Ed.]

FT-101EE
Project Radio needs love and attention from someone who knows these rigs. Rig is complete with all boards, good tubes, INRAD



Yaesu FT-101EE transceiver for 160-10m.

AM filter, and power cord. Issue on TX. Asking \$300. Email for more info.

VERY nice Johnson Viking Ranger II AM/CW transmitter. Minor mods only. VERY clean inside. Tested and working. Asking \$325.



Johnson Viking Ranger II transmitter covers 160 - 6 meters on AM/CW.

Lafayette HA-230 tube receiver. Plays nice. Internal T-R relay added for convenient connection of transmitter. \$150.



Lafayette HA-230 general coverage receiver for 0.5 to 30 MHz.

Send e-mail to: GeorgeN2LJO@gmail.com for more information.

BOCES unboxing

On Thursday July 14 several PCARA members paid a visit to Putnam | Northern Westchester BOCES Tech Center, located at 200 BOCES Drive, Yorktown Heights. The Board of Cooperative Educational Services provides technical education for area teenagers in subjects such as microcomputer technology, computer graphics, construction electricity, digital film and sound, auto mechanics, carpentry and welding.

The reason for our visit was arrival of a brand new multi-band transceiver and power supply recently purchased by BOCES for use by licensed students in connection with their technical studies. Purchase had been arranged by Career and Technical Education Instructor Joseph DeCicco KD2YVY as a result of equipment suggestions from PCARA.



David KD2EVI watches as Joseph DeCicco KD2YVY un-packs the equipment acquired by PNW BOCES.

Purchased items included a Yaesu FT-991A multi-band transceiver, Alinco DM-330MV power supply, Diamond VHF/UHF antenna and coaxial cable. During the visit, transceiver and power supply were wired together



Joe KD2YVY was pleased when the Yaesu FT-991A and power supply were operational in the BOCES Computer Lab.

then tested on dummy load and on temporary antennas erected outside the computer lab.

Thanks go to David KD2EVI, Greg KB2CQE and Lou KD2ITZ plus NM9J who assisted with equipment setup and provided suggestions to Joe KD2YVY for permanent mounting of antennas when the school re-opens in September.

- NM9J

Sales tax

On a recent invoice from Ham Radio Outlet of Woodbridge, VA I noticed there was an additional charge of

8.375% for New York State sales tax. This came as a surprise — previous pur-

	Pick Up	Ship	Total
Sales	\$0.00	\$3.99	\$3.99
Tax	\$0.00	\$0.34	\$0.34
Shipped: NY 8.375%			
			Total \$4.33

chases from out-of-state vendors had not included any New York sales tax, provided the vendor has no physical presence in New York. Instead, I had to remember that payment would be required on the next NY State tax return.

Apparently the change has been brought about by the 2018 U.S. Supreme Court decision in “South Dakota v. Wayfair, Inc.” which eliminated the physical presence requirement, opening up the possibility for states to require out-of-state retailers to tax their customers. It was up to states to put into effect laws to make that happen. (Wayfair Inc. is a company based in Boston, MA that sells furniture and home goods online.)

In January 2019, New York state tax department published guidance on collection of sales tax by out-of-state vendors. A person or business was required to register and collect this tax if in the previous four sales tax quarters...

- the cumulative total of the person’s gross receipts from sales of tangible personal property delivered into the state exceeded \$300,000, and
- such person made more than 100 sales of tangible personal property delivered in the state.

These limits must have been exceeded by Ham Radio Outlet — and by several other amateur radio vendors, I would imagine.

Will this change in the law make it more attractive for radio dealers to open a store *within* New York State? We have not had a ‘local’ store since “Ham Central” of Poughkeepsie closed in 2003. (See PCARA Update, December 2011 “What’s in store?”)

-NM9J

Peekskill / Cortlandt Amateur Radio Association

Mail: PCARA, PO Box 146, Crompond, NY 10517

E-Mail: mail 'at' pcara.org

Web site: <http://www.pcara.org>

PCARA on Facebook: <https://www.facebook.com/pcararadio>

PCARA Update Editor: Malcolm Pritchard, NM9J

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Newsletter contributions are always very welcome!

Archive: <http://nm9j.com/pcara/newslett.htm>

PCARA Information

PCARA is a **Non-Profit Community Service**

Organization. PCARA meetings take place every month (apart from July/August break). See <http://www.pcara.org> for current details.

PCARA Repeaters

W2NYW: 146.67 MHz -0.6, PL 156.7Hz

KB2CQE: 449.925MHz -5.0, PL 179.9Hz

N2CBH: 448.725MHz -5.0, PL 107.2Hz

PCARA Calendar

Masks and Social Distancing may be required.

Sat Sept 10: PCARA meeting, 3:00 p.m. Putnam Valley Library, 30 Oscawana Lake Rd, Putnam Valley, NY. **Presentation:** Simple vertical antenna construction by Jay NE2Q.

Sat Sept 10: PCARA V.E. Test Session, 4:30 p.m. Putnam Valley Library, 30 Oscawana Lake Rd, Putnam Valley, NY. See below.

Sat Sept 17: SOTA/POTA activation. Check web for details.

Sat Sept 24: PCARA Breakfast, 9:00 a.m., Downing Park Pavilion, Rt 202, Yorktown. Bring your own breakfast.

Mon Oct 10: Magnetic Loop Ant. Workshop, CUE Room, 7 p.m.

Hamfests

Sun Sept 11: Candlewood ARA Western CT Hamfest, Police Athletic League, 35 Hayestown Rd, Danbury, CT. 8:00 a.m.

Sun Sept 18: Mt Beacon ARC Fall Hamfest, Slater Chemical Fire Co., 76 Old Glenham Rd, Beacon, NY. 8:00 a.m.

VE Test Sessions

Check with the contact before leaving.

Sep 3, 10, 17, 24, 29: Westchester ARC, 19 Hunts Bridge Rd, Yonkers NY. 11:00 a.m. Must contact VE, (914) 237-5589.

Sep 3, 10, 17, 24, 29: NYC-Westchester ARC, 43 Hart Ave, Yonkers NY. 12:00 noon. Must contact VE, k2ltm'at'aol.com.

Sep 8: WECA, Westchester Cnty Fire Trg Cntr, 4 Dana Rd, Valhalla NY. 7:00 p.m. Must contact VE, robert.casino'at'verizon.net

Sep 10: PCARA, Putnam Valley Library, 30 Oscawana Lake Rd, Putnam Valley, NY. 4:30 p.m. Laurel VEC. Must contact Dave Harper. (914) 432-2639, daveharper'at'vivaldi.net.

Sep 16: Orange County ARC, Munger Cottage, 183 Main St, Cornwall NY. 6:00 p.m. Contact Joseph J. DeLorenzo, (845) 534-3146, w2bcc'at'arrl.net

Sep 24: PEARL, Putnam County Emergency Services, 112 Old Route 6, Carmel NY. 10:00 a.m. Contact Michael F. Troy, (845) 225-4650



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