

THE YCARS TRANSMITTER



Ham Radio News, Events and Information

YCARS Club House - 2051 Squire Rd. Rock Hill, SC 29732 – Mailing Address YCARS PO Box 4141 C.R.S., Rock Hill, SC 29732

Contents

- Pg.2 – Welcome, Contest and Hamfest Calendar
- Pg.3 – From NJ4Z’s Hamshack
- Pg.4 – Getting on Air
- Pg.8–YCARS in Action
- Pg.10 – The Workbench
- Pg.12 –YCARS Aware -Club News and Updates
- Pg.14 – K4DQP’s Bookshelf

August 2022 Club Activities

- Every Wednesday 18:00 local – Club open House
- Thursday, Aug. 4, Radio Room Operating Night / Contest Team 18:00-20:00
- Thursday, Aug. 11, Business Meeting – clubhouse and virtual 19:30
- Friday Aug. 12 – Monthly Simplex Net 146.580MHz – 21:15
- Sunday Aug. 14 – Support Your Parks Plaque Event Awards Watch Party – Clubhouse 19:30
- Thursday, Aug. 18, YC ARES Meeting – clubhouse and virtual 19:00
- Saturday Aug. 20 – VE testing at the clubhouse – 09:30
- Thursday, Aug. 25, August Presentation Meeting – K4DQP Darcy Pach – Clubhouse and Virtual 19:30

2022 YCARS Officers

- PRESIDENT – W3SPC
STEVE CZAIKOWSKI
- VICE PRESIDENT – AB1CD
HILLARY RAMSEY
- TREASURER – K4DQP
DARCY PACH
- SECRETARY – KG9V
SCOTT PUTNUM
- CUSTODIAN – KD4RNP
WAYNE REEVES
- TRUSTEE – NJ4Z
JOHN GENDRON

YCARS Net Schedule

- 2 Meter Morning Net
Weekdays Mon-Fri
11:00 K4Ytz Repeater
147.030MHz (-) pl 88.5
- 2 Meter Evening Net
Weekdays Mon-Sun
20:30 K4Ytz Repeater
147.030MHz (-) pl 88.5
- ARES 2 Meter Weekly
Net Mondays 19:30
K4Ytz Repeater
147.030MHz (-) pl 88.5
- Monthly Simplex Net –
2nd Friday of the month
21:15

Welcome to the YCARS TRANSMITTER

Vol.2 No.1 August 2022

Hello everyone,

First off, I know it has been quite a while since the Transmitter was published. We are hoping to remedy that going forward the second half of this year. We are excited to be able to publish this issue.

This month, in the transmitter, NJ4Z reflects on 2022 so far in the "From the Hamshack with NJ4Z" column.

Scott Putum, KG9V offers sound advice and instruction on completing an RF Suppressor Ground System to help new and seasoned Hams ground shacks in difficult locations in our Getting on the Air feature.

YCARS has had a busy, busy year in 2022. This month's "YCARS IN ACTION" feature details the club's participation in two very large events in July, 2022.

From being crazy busy to building a very useful Ham Radio Tool, Jim Warren KY4GJ details his build on a heavy duty foot pedal in this month's "On The Workbench" This footpedal is an amazing piece of kit, we gave it a workout during "Support Your Parks Weekend."

Darcy Pach, K4DQP also shares his bookshelf with the club.

And as always, we have YCARS AWARE, detailing all of the upcoming events and goings on with in the YCARS World.

Please consider writing and article for the newsletter, as the saying goes, "Many Hands Make Light Work,"

We would also like to thank those who contributed this month to the Transmitter.

Until next month, all the best and much DX....

73

The Transmitter Staff

AUG 2022 Contest Calendar

8/6 – ARRL NAQP- CW
Contest 18:00UTC

8/13 – Worked All
Europe -DX CW
00:00UTC

8/20 – ARRL NAQP-
SSB Contest 18:00UTC

8/27 – ARRL WW DX -
Digital Contest 12:00
UTC

Upcoming Local Hamfests

8/20 – W4CHR Chester
Tailgate/Hamfest 08:00-12:00
New Life Baptist Church -1044
Columbia Rd, Chester, SC
29706 – free admission

9/2-4/2022 – Shelby Hamfest
– Cleveland County
Fairgrounds – 1751 E. Marion
St. 28150

10/1 – 70th Annual Rock Hill
Hamfest / SC Section
Convention – Covenant
Presbyterian Church 1830
Celenese Rd Rock Hill , Sc
29732



From NJ4Z's Hamshack

Musings from the Editor

Here we are at the midway through 2022, "Wow! What a strange year it has been so far."

2022 has been a challenge for me, as much of my year has been so very busy and sometime difficult. I have had very little time to write and pursue this Hamlife in 2022. None the less, I am glad to be back writing and editing again. I want to extend my personal thank you to all of our club members for your patience this year and all of you who have helped me put this newsletter back together again.

As I write this, I am on my last day of Covid quarantine, the virus found me despite my best efforts to avoid it. By the Grace of God and modern medicine, the covid shots and antiviral treatments significantly reduced the severity of my infection. During the quarantine, I had plenty of time to put together this issue.

On to Ham Radio, as 2022 goes on, Solar Cycle 25 has kicked into high gear. It is much stronger than predicted and has led to some great conditions on the high bands. Propagation on 10, 12, 15, 17 and 20 meters has been amazing at times this year. I have worked many new DXCC entities and contacts on the high bands in 2022. I managed to knock-out one of my 2022 Ham Goals completing my DXCC for 15M. Still working on 10 and 80 for the 5B DXCC award. We still have about 24 months before we hit the peak of the cycle, conditions should be great going forward and I hopefully complete 5B DXCC in this cycle.

It never ceases to amaze me as to what this club has become over the last six years since I joined in 2016. The rebirth for the club and the rejuvenation of the clubhouse is just a flat-out great story and I had the opportunity earlier this year to document that story and submit it for publication. It was an honor to be asked to provide that submission to the ARRL's QST Magazine.

The club has accomplished so much this year and has some many bright spots yet to be seen this year. One huge accomplishment was the completion of the antenna refresh project. We completed the install of the new YAGI antennas and feedlines in April this year with the generous donation of manpower and equipment by Comporium Communications. It was very exciting to see the old worn-out antennas come down and the new aluminum go up in the air. The clubhouse towers now sport a 4 element Force 12, 17m YAGI, a Cushcraft A-3S, 3 element tri-bander with a 30/40M rotatable dipole kit, and an EAntenna 4 element loop-fed 6M YAGI.

I am also looking forward to see how the club has fared with its two major Grant Applications for the ARRL Club Grant Program, we should know by the publication of the September issue of the Transmitter.

So, until next month, Enjoy the Transmitter, stay healthy, safe and of course, passionate about Amateur Radio... 73 - NJ4Z out

John Gendron, NJ4Z - Editor, YCARS Transmitter

“Getting on the Air”

Helping New Hams Advance

The RF Suppressor Ground System

Scott Putnum, KG9V

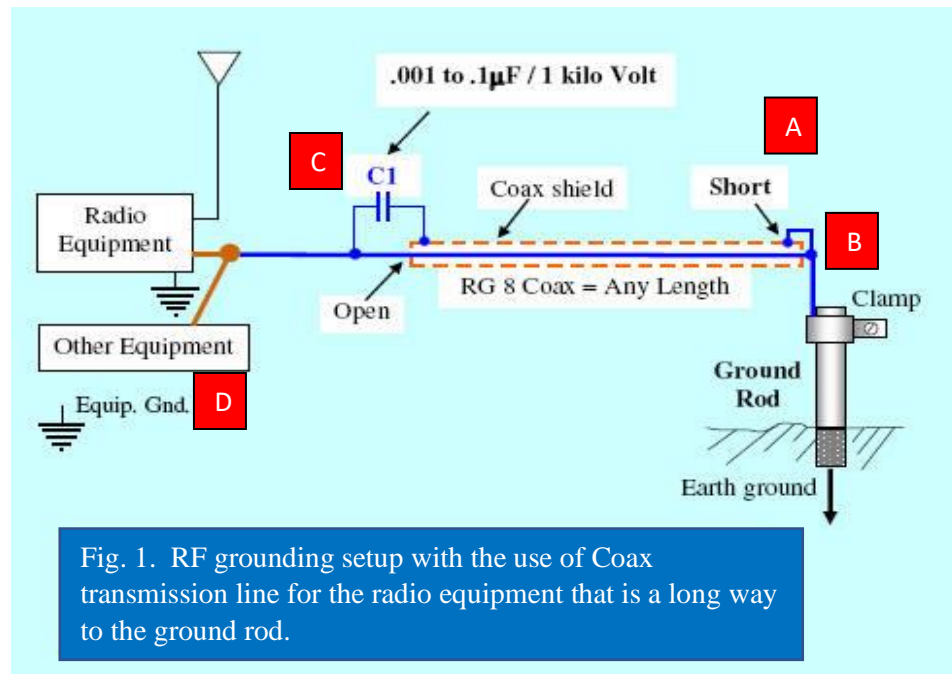
Finding an effective way to ground a second-floor shack or a shack that is distant from the common residential ground can be a great challenge for new and seasoned Hams alike. After much research, I was led to this design, which worked perfectly for my setup as my shack is almost one hundred feet away from the common residential ground rod.

This article covers the modern version of an ingenious device developed and introduced by several hams in recent years, notably by William Chesney/N8SA. The project deals with how to keep out the troublesome RF energy near our equipment as far as ground loops and RF un-grounded grounds.

The key features are:

- This grounding system addresses both the electrical ground and RF grounding requirements in Ham radio.
- The device is intended for long grounding wires. The grounding device utilizes a coaxial line where the ground wire is enclosed by a shielded coax transmission line (RG8 / RG8X), to prevent the buildup of high voltage standing wave near the station equipment.
- This ground line is not length sensitive and can be used at any length without concern. It will keep out RF away from the shack.

The wiring setup of this practical grounding system is shown in Fig. 1 below:



Installation of the RF suppressor –

- 1) Run your coax (eg RG-8) from your Ham Shack to the area where you will connect the cable to ground. Cut off approximately 18 inches of the coax on the ground end and save for later connection to the capacitor.
- 2) At distal end, short (solder) the coax shield to the center conductor of the Coax and the remaining pig tail to be connected (soldered) to a short heavy gauge solid copper wire to reach the ground rod (See Pictures A & B)
- 3) Use 18-inch coax pigtail as the coax piece that will function in the shack and connect to the existing coax cable running to the outside ground. Take the pigtail and strip the coax to reveal the center conductor and remove part of its shield.
- 4) Leave the coax shield open at this end but connect a ceramic disc capacitor (Marked as C1 = 0.001 to 0.1 μF / 1 Kilo Volt). One terminal of this capacitor is connected to the coax shield and the other terminal to the center conductor (See Fig. 1). The RF suppressor ground system is now complete. (Pic C)
- 5) Encase the capacitor connection in a single gang box if desired
- 6) Connect the wire to the bus bar and the PL259 connector to the coax using a Female/Female adapter (Pic D)

Of course, the capacitor value is selectable depending on the lowest operating frequency band and length of Coax. The correct value is selected until RF disappears in the shack (at the lowest band). **YOU MUST USE A HIGH VOLTAGE CAPACITOR RATING**, about 1KV minimum, but the higher the better. Otherwise, ZAPPP!!!, this capacitor will explode if a surge of high voltage standing wave will develop instantaneously at or above 500 volts at this terminal.

The circuit shown in Fig. 1 is an effective RF grounding setup.

Principle of the RF suppressed grounding system – By inspection (see Fig. 1), the ground wire is enclosed effectively by the coax shield so no high voltage standing wave can buildup in this wire. However, since the shield is exposed and floating, a high voltage standing wave will appear at the outer surface of the coax shield.

This voltage is Zero at the shorted end (ground rod terminal) and high at the open end. When you connect a capacitor between the high voltage end of the coax shield and the center conductor (See Fig. 1), the impedance of this capacitor is very low at the operating frequency, thus acting as a low impedance load (By virtue of its low reactance = Z , in Ohms) between the shield and center conductor. The RF current will flow easily through this capacitor and is diverted to the center conductor enclosed by the shield and finally to earth ground. The buildup of high voltage standing waves between the inside surface of external shield and the center conductor is suppressed because the characteristic impedance of the RG-8 is only 50-52 Ω .

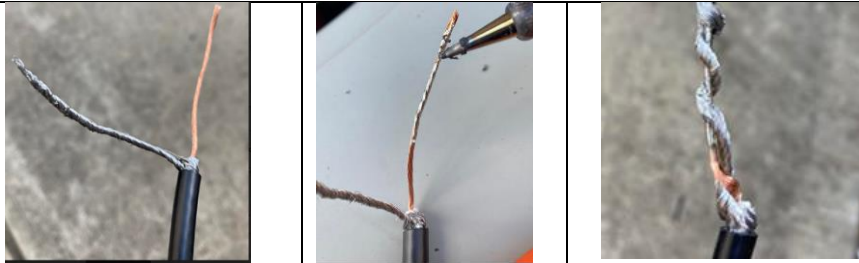
Further, because the center conductor of the coax line is connected directly to earth ground, it becomes automatically your electrical safety ground.

But how we will make a good and effective RF earth ground to work with the antenna system during transmitting and receiving (Your system needs it whether you like it or not!) is another matter. In order to have an effective propagation for DX work requires a good RF earth ground setup. Merely having improved your equipment ground to earth ground is not a guarantee that you have also an effective RF earth ground... Another fact!

First Step – After running your coax from the shack to the ground point, cut-off 18 inches of cable at distal end of coax. Save this pigtail for later.



A - Strip Cable on the distal end and short external braid to center wire

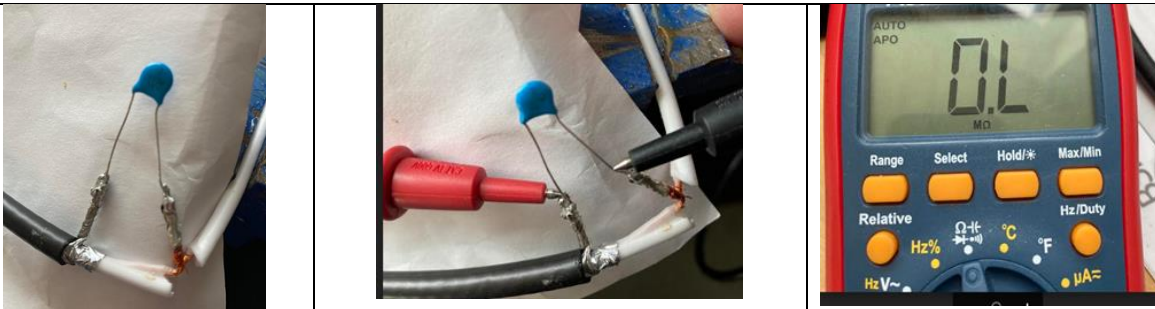


B - Solder, Trim & Insulate coax. Attach shorted end to ground connection

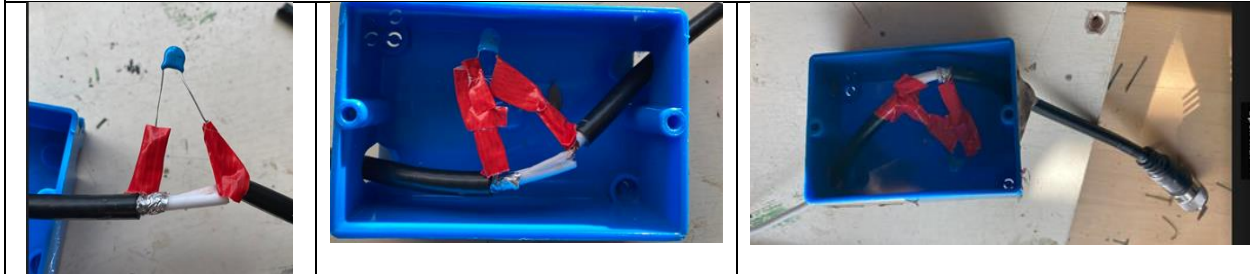


C – Using the 18-inch coax pigtail, at a point about 8 inches from the PL259 connector, add a capacitor between the braid and center wires. Test for null.

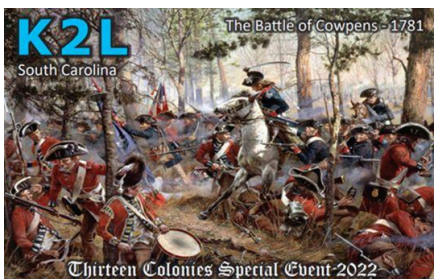
Then strip the remaining braided wire, leaving only the shielded center wires. This end will be connected to the bus bar for equipment grounding



D – Encase capacitor connection in plastic gang box housing.



Picture of the completed set up in the ham shack



YCARS members participate as part of K2L – SC team for 13 Colonies.

Eleven members of the York County Amateur Radio Society participated as operations for special event station K2L from July 1 through July 7, 2022. Team K2L was led by YCARS member, Scott Putnum, KG9V.

The 38 operators for K2L racked up 26,527 Q's over the week long event. That was 10,130 more Q's than 2021 for K2L. YCARS' operators posted 5,455 Q's. K2L posted the highest number of Q's for all the 13 Colonies' Special Event Stations, leading last years top team K2J (NC) by over 5,000 Q's.

TEAM K4Y TZ - Parks on the Air - 2022 Support Your Parks Summer Plaque Event

Team K4Y TZ operators activated 6 parks across 2 states for the Parks on the Air - Summer 2022 "Support Your Parks" Weekend Plaque Event. The club ran 2 callsigns to help differentiate the parks on the spotting clusters. Team K4Y TZ was led by club members Vicki Carnes, AD3I and Theo Moore, K4TTM from K-2889 Chester State Park and had several club members log contacts for total of 1,351 Q's. Sherri and Wade Parker KO4IVQ, KO4IVS helped Johnathan Panzica KF7BBU complete his first activation as K4Y TZ at Draper Wildlife. Vicki AD3I and Jason Faulhefer, K4HEF closed out the event by logging 185 contacts from K-2904 Landsford Canal.

Meanwhile Team N4Y TZ was busy at 3 parks in NC. Jim Warren, Ky4JG logged 33 Q's under some very difficult conditions atop Crowders Mtn. at K-3894. Jim climber to the top of the mountain and operated until the extreme heat sent him back down. Up at 5,000ft in the mountains of North Carolina, club members Steve Czaikowski, W3SPC, Darcy Pach, K4DQP and John Gendron, NJ4Z logged a total of 3,674 contacts from K-3378 Blue Ridge Parkway and K-4510 Pisgah National Forest.

The club total was 5,268 Q's more than doubling last years winning total of 2,051 contacts. All that's left to do is wait until the winners are announced 8/14/2022.

THE WORKBENCH

Ham Radio Projects, Tricks and Tips

An Inexpensive Heavy-Duty Footswitch Project – Jim Warren, KY4GJ

Hello Ham Radio Builders!

I have been getting more active in calling CQ from the field, mainly from POTA activations. That said, I tried to use the small compact foot pedal for PTT. This has been an issue that these are not generally large enough nor stable enough on uneven terrain and can move around. I found myself in the middle of a pileup and losing the PTT in mid-sentence due to the pedal! I then looked online at the pedals available and was shocked that a great foot pedal could cost over \$125! Now let's build it for about \$30.

In my day job, I am constantly researching how to buy components and build things that help our fabrication shop become more efficient. This usually involves metal fabrication, electronics and a little bit of American ingenuity. This led me to look for a decent foot switch that is typically used as an interlock or safety mechanism for operating a machine.

Within a few minutes, I discovered a reasonable foot switch available from Amazon for around \$20. I ordered it and as soon as it arrived, disassembled it and checked out the internals. The pedal is hearty and cast aluminum construction and internally has a sturdy switch that is operated by the pedal operation. Some cheaper switches simply have two metal plates that make contact, but this is not that type, and you should avoid this type of noisy switch as well.

I had some guitar cords around from my old sound days and Viola! It was done in minutes and works AWESOME!!

PARTS: To build one, first start by obtaining the following:

- 1 pcs. Twinedc/AC 380V 15A foot switch from Amazon \$20
- 1 pcs. Guitar cord with a good quality soldered end and strain relief OR a Switchcraft ¼" phone plug. Note the guitar cord makes 2 units. Guitar cord \$9 or Switchcraft plug \$4.
- 1 pcs. ½" threaded cable strain relief gland Pack of 12 \$9 This is optional but makes a better assembly. 2 pcs. 3/16 ring connectors that can be soldered.
- 4 pcs Stick on rubber bumpers.



ASSEMBLY: Remove cover and identify the NO connection to the switch. This means the switch is open when not activated and closed when activated. You will connect to NO and COM. Run the cord (provided with switch or the guitar cord) into the hole and tie a knot to prevent pull out. Add the gland if desired to the threaded hole in the back of the switch housing and leave loose for now. Strip and solder the wire contacts to the connectors and secure to the screw terminals COM and NO on the internal switch. Test for continuity checking that the circuit is open when the pedal is not pressed and closed when pressed. Add shrink tube to contacts if desired and re assemble. Tighten gland after re-assembly. You can also take it one step further by adding rubber feet to the holes on the bottom of the switch for use on a finished floor. This can be done by using cabinet door silencers stick to the bottom or with a little more tech knowledge, tap the holes on the pedal for threads and use three adjustable feet screwed into the bottom.



This article, while quite short, will share my discovery and hopefully allow you to create this project. I had my pedal recently at Field Day and the other club members in YCARS loved it. It was passed around like a show and tell. Foot switch from Amazon. The cost is \$20 and includes a piece of neoprene cable 2 conductor.

YCARS News and Updates

Be YCARS Aware



YCARS to be featured in the September issue of QST Magazine

The York County Amateur Radio Society will be the **first** radio club featured in the new "Club Station" column in the September 2022 issue of the ARRL's QST Magazine. The article titled "YCARS – Rebuilding an Amateur Radio Club for the Future," chronicles the club's journey of rebirth from 2017 to 2022. It provides ideas and solutions for other clubs looking to rebuild their organization. This article will further boost our club recognition on a national and international stage as QST is enjoyed by over 160,000 ARRL members worldwide.



YCARS – Livestream Watch Party - Parks on the Air "Summer Support Your Parks" Plaque Event Awards– Sunday August 14, 2022 19:00h

YCARS will be hosting a watch party at the clubhouse. Snacks and drinks will be provided by the club. Team K4YTZ and the YCARS family will open up the clubhouse to watch the livestream of the Parks on the Air – Summer Plaque Event Awards Show. The livestream begins at 20:00, but come out early to socialize and get the best seats.

YCARS is the defending champions for the Club Activation Category, and we put up another great effort in 2022. YCARS is also sponsoring the 2022 plaque for the overall most hunter contacts.





YCARS Supporting the Girl Scouts with Amateur Radio for the Annual "Girl Scouts Love State Parks Weekend" September 10 – 11, 2022

Every year, Girl Scouts explore the natural wonders found across our country during the Girl Scouts Love State Parks weekend. Girl Scouts nationwide, along with their troops, friends, and families, celebrate our shared love of the outdoors.

This year on September 10-11, 2022 YCARS (York County Amateur Radio Society) is coordinating with rangers from several of South Carolina's parks to perform amateur radio Parks on the Air activations. Confirmed sites are: Andrew Jackson State Park K-2883 and Lee State Park K-2905. There are tentative plans to do the same at Sesquicentennial SP K-2913 and Oconee SP K-2980.

The theme for the girls this year is: "Stewardship, Let's Show The **LOVE!**" YCARS will be provided the first shelter as you enter Andrew Jackson. The park is providing a large screen along with a projector. We'll have laminated maps on the walls, an oscillator for CW, a couple of rigs for the girls to 'Get on The Air'.

The ARRL has a Radio & Wireless Technology Patch Program for Girl Scouts from Brownies, Juniors, Cadets, Seniors, and Ambassadors. There are specific activities they are to complete. Check it out at www.ARRL.org/Girl-Scouts-Radio-Patch. Vicki Carnes, AD3I is closely working with Laura Ledford for a couple of simple slides illustrating the girl's requirements for the patch.

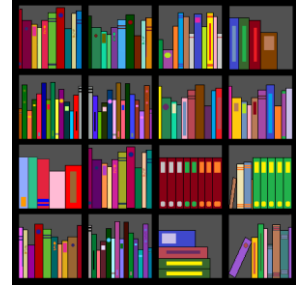
If you have any questions, reach out to Vicki at AD3i@ycars.org

YCARS – Welcomes 18 new club members in the first half of 2022 – continuing to grow.

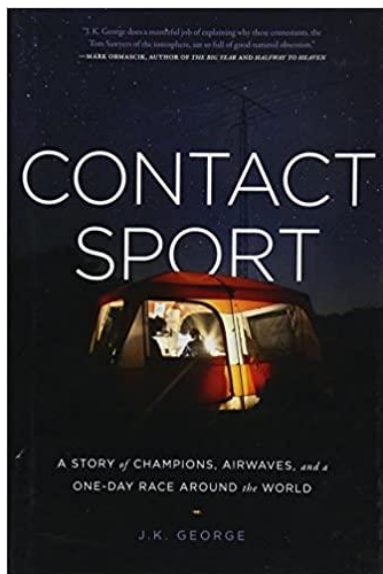
Please extend a very warm welcome to all of our new members for the first half of 2022

Name	Call Sign	Name	Call Sign
Ernie Holmes	WA4LGT	Nate Kline	W4NDX
Steve Anderson	KQ4BWZ	Don Sterba	W5KKT
Nick Lalaria	K4NSL	Frank Coarr	KO4NUG
Dennis Dudley	N2XHN	John Gore	KA5CYT
David Domia	NC4XL	Jack Armstrong	KJ4BKI
Carl Green	KO4ZWU	Andy Moran	AA0AM
John Wlaker	K4WRJ	Alex Chinn	KO4WIT
Craig Ramsey	KM5E	Randy Frankin	KO4USZ
Mitch Totherow	K4PIT	Andy Clinton	KO4VAL

K4DQP's Bookshelf – Three Recommended Reads on Radio, History and the Science that Changed the World



I like to read, especially this time of year when the days are long, hot and lazy. There are several books that I recommend on my qrz.com page and I'll share them with you. All of them either deal with amateur radio directly, or tell a story of how science and the pursuit of technology has played a pivotal role in history. Here's my top three recommended reading list;

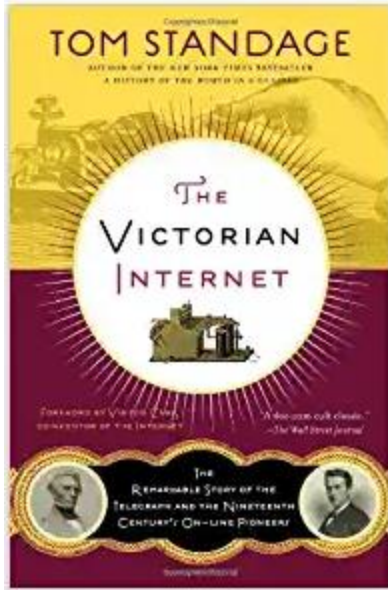


Contact Sport: A Story of Champions, Airwaves, and a One-Day Race around the World, J. K. George

This is a must read. It's an in-depth look of the 24-hr 2014 World Radiosport Team Championship (WRTC). If you like contesting, pileups and the ultimate competitive event in amateur radio, then this book is for you. Several of us at the club have read it and I know at least two of us read it in less than two days. It's a light read and follows a reporter who stumbles upon the WRTC event in action. There is also a YouTube documentary on the event, but do yourself a favor and read this book!

Coincidentally, the 2022 WRTC event is in Italy this year. For more information, check out <https://www.wrtc2022.it/>.

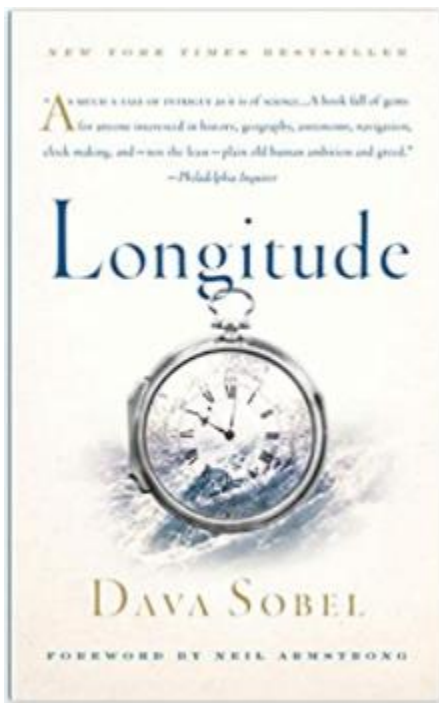
[Contact Sport: A Story of Champions, Airwaves, and a One-Day Race around the World: J. K. George: 9781626342361: AmazonSmile: Books](#)



The Victorian Internet: The Remarkable Story of the Telegraph and the Nineteenth Century's On-line Pioneers, Tom Standage

I saw this author making a comment on a documentary about the telegraph and how it changed warfare. As it turns out, his book is more than that. It's a history of the history and development of communications throughout history. It primarily focuses on the telegraph and later wireless communications. There are some amazing stories of how the idea of sharing information quickly has changed the world in innumerable ways. I highly recommend this one for any current, or budding cw operators, or anyone who likes history. I read it in a weekend, primarily because I could not put it down.

[The Victorian Internet: The Remarkable Story of the Telegraph and the Nineteenth Century's On-line Pioneers: Standage, Tom: 9781620405925: AmazonSmile: Books](https://www.amazon.com/dp/B000000000)



Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time, Dava Sobel

Longitude is the greatest story you've never heard. Look around, is there a clock in your room, a watch on your wrist, or ever used a GPS device? If so, I bet you've never heard the story of how those came to be.

This wonderful gem of a book tells the story of the invention of accurate time keeping, navigation, and politics surrounding the race to change the world.

I recommend this one for anyone who likes tinkering, clocks, navigation, ships and sailing, astronomy or 1800 century history.

[Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time: Sobel, Dava: 9780007790166: AmazonSmile: Books](https://www.amazon.com/dp/B000000000)

That should get you started. Do you have a favorite book that deals with amateur radio, communications, or general science that you would recommend to a club member? If so, drop me a line. I'm always looking for another good read.

All the best '73 de K4DQP

The York County Amateur Radio Society

www.YCARS.org

Follow us on Facebook

<https://www.facebook.com/YCARS.org>

Subscribe on YouTube

[York County Amateur Radio Society - YouTube](#)

[© 2022 – All Rights Reserved – The York County Amateur Radio Society, Inc.](#)