GOAT notes

Celebrating Amateur Radio!

https://gotahams.com

February—March 2024

WG6OTA RPT: 449.160 (-) PL 77.0 enc/dec

EchoLink node 106963, Allstar node 569430

The Editors' two bits...

Spring has sprung and we're in our rainy season, but at least we live in an area with plenty of sunny days!

So, what are your ham radio plans for 2024? Participate in Field Day? Try a new mode? Maybe build an antenna? Activate a POTA or SOTA site? Attend the new Mini HamCation in Big Bear? (https://bigbearminihamcation.com/)

Whatever you do, keep on participating in the club. Excellent fellowship and lots of resources here. Make sure to read the weekly email to keep informed of the latest and greatest news and events.

I also want to offer my humble thanks to those who've contributed to this issue of the newsletter. Thank you for your support of the best club in SoCal!!

Getting out or staying in, Lets all GOTA!

73 de N6PCD

RADIO ACTIVITIES

Monthly Club Meeting

GOTAhams Monthly Club Membership Meeting - the second Tuesday of the month, 7PM , Zoom and In-Person. If you would like to join the meeting in person, please join us at Casa Jimenez Mexican Restaurant in Claremont at 921 W Foothill Blvd. Please arrive an hour early (at least) at 6PM so that you can order your dinner and have it out of the way ahead of the meeting. (The restaurant does expect you to order a meal.) We'll be in the back room. See the weekly email for Zoom details.

GOTAHams Nightly Net

Nightly Round Table Net - Every Night at 7:30PM PT except 2nd Tuesday of the month (Club Meeting.) Held on the WG6OTA repeater. Also accessible via EchoLink Node #: 106963 & Allstar Node #: 569430. See the weekly email for a list of topics and other pertinent information.

Radio In The Park & Elmering in the Park

See the weekly email for days and times. These are fun events, so come on out and join the fun!

Monthly Simplex net

Hosted by Erik KN6NRQ on 146.580MHz. A great way to explore the reach of your 2 meter equipment without benefit of repeater, both receiving and transmitting. Fourth Wednesday of the month. See the weekly email for vital details.

V.E. Amateur Radio License testing

LAST SATURDAY EACH MONTH AT 1PM. Location is Brackett Field airport in La Verne. Sponsored by the GOTAhams. Frank Westphal and his experienced team of examiners are running in-person Amateur Radio License testing, *See the weekly email for testing requirements and other important details.*

Interested?

If you would like more information about Amateur Radio, GOTAhams Club Activities, or have any interest in joining the GOTAhams Amateur Radio Club please contact Dave Wilkie (K6EV) at K6EV@ARRL.NET. All are Welcome and no license is required to become a member.

JOIN US FOR FIELD DAY, ALL ARE WELCOME!

It's time to consider what YOUR plans will be for Field Day 2024. It will be here before you know it!

Jason Welday KJ6RTA

Please reach out to Jason, KJ6RTA, our Field day co-ordinator, and see what opportunities there are that you could fulfill. There are lots of things to do and a ton of fun to be had. See the weekly email for Jason's contact info.

EF Non-Resonant "Zepp" Antenna

By Marc Holzer, N6UNX

Preface

Marc N6UNX

As I look back through my "romance" with Radio, I recalled one reason why I got my license. I was messing around with Citizen's Band, and for some reason, I felt compelled to try my hand at building 11-Meter antennas. One of my CB buddies was also a HAM. It was he who told me that anyone who loves experimenting with antennas ought to get their HAM Radio license; and so I did.

Over the last year or so, I've been messing around with building UnUns to match end-fed half-wave (EFHW) antennas. EFHW antennas are brilliant as they offer broadband operation, with fairly good performance in their resonant subsets of the HAM Bands.

One thing I was missing was another type of end-fed antenna often called a "random wire", "non-resonant", or a "Zepp" antenna. What caught my attention was its original application providing a wire antenna that the dirigibles of the era could use to make radio contact. Thus, the antenna was named after the dirigibles and was called a Zeppelin or Zepp antenna.

The Antenna

Just connecting a non-resonant wire to the back of your radio won't work, as we need to match the high impedance of the radiating element with the low impedance of the radio. Since the characteristic impedance of the radiating element is around 450 ohms, we need to match that using a 9:1 UnUn, yielding approximately 50 ohms at the transmitter.

Build Notes

First, let's look at the UnUn build. I used an FT-240-43 toroid to make it a little easier to wind. The windings are called "trifilar" since there are three wires wrapped around the toroid together. After the build, I tested it by placing 450 ohms of resistance between the antenna lug and the ground lug. I connected my Nano VNA to sweep it and it came back with less than 1.3:1 VSWR across the entire ham spectrum.

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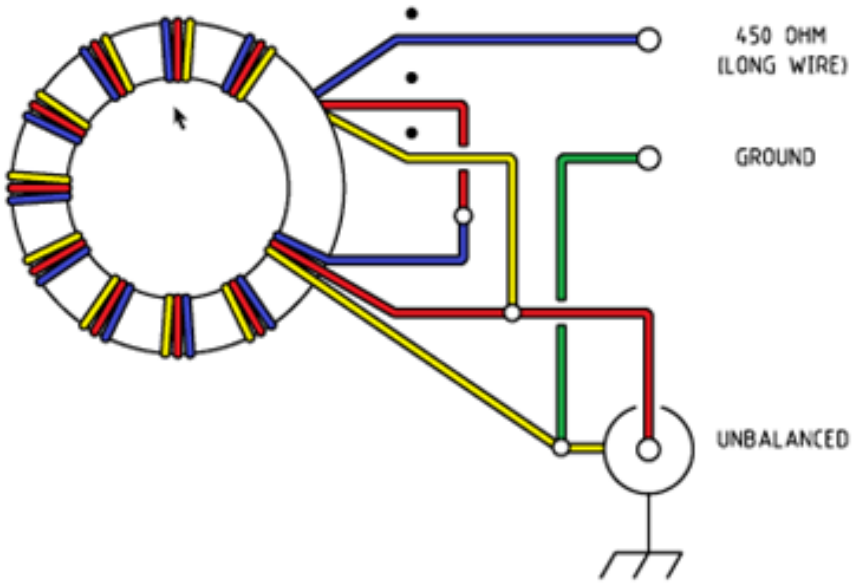
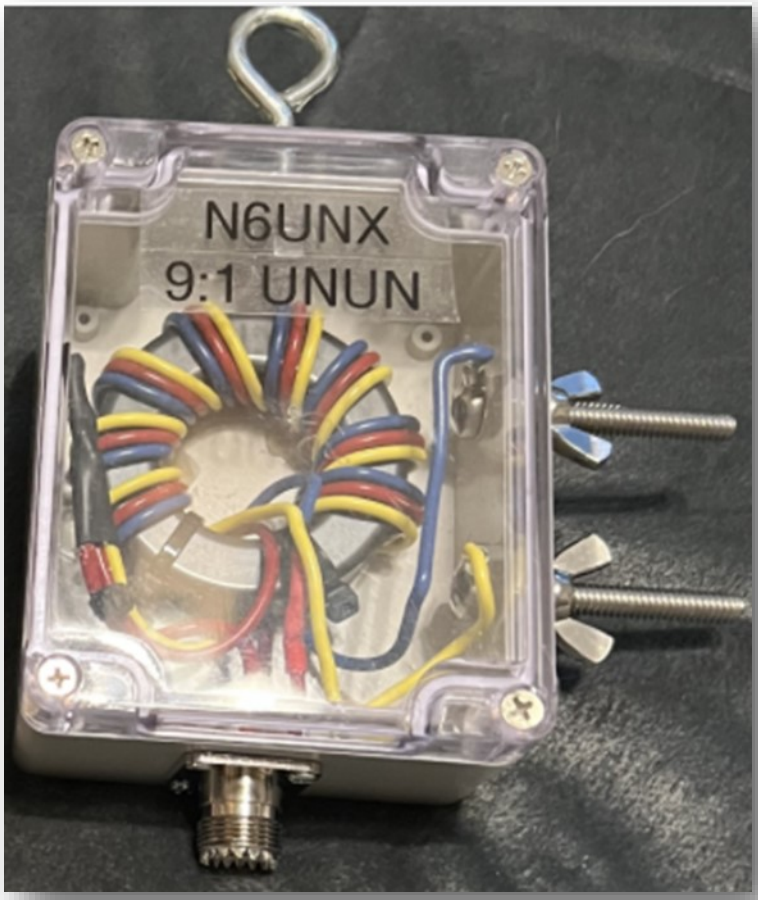


Diagram



Completed device

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The Antenna Wire:

I purchased some silicon insulated 20 AWG wire, as it is light and fairly strong. Perfect for Field Day, POTA or Radio in the Park events. The fun part follows, as it is critical to select a workable length. Remember that it is called Non-Resonant as it cannot have resonance for the frequencies you want to use. I engaged the Internet to get some information on which lengths work. Below is a table that shows safe lengths of wire for the radiating element.

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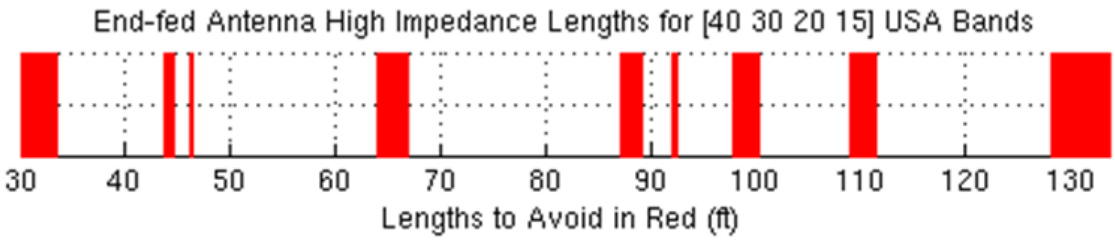


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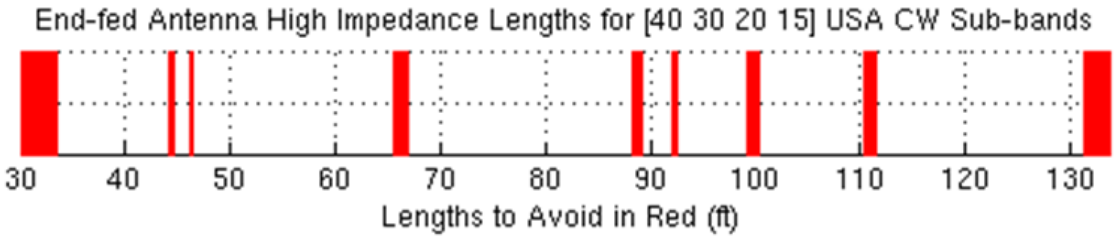


I opted to cut my antenna to 40 feet, which seemed to work well when I tested it in the back yard. There are plenty of articles that will give you am idea how long it needs to be in order to cover 80 and 160-Meters.

In reading about this antenna, it needs a counterpoise, and for 40-Meters (the lowest band for this cut) it should be a minimum of 17 feet (or longer). I gave it a little more oomph and cut it 20 feet long.

Continued on following page

Portability

For both wires, I cut up some super-thin plywood to make wire holders. They look like this:

Conclusion

This is not the hottest antenna you can build or buy, but boy it is useful when you consider that you can work the entire spectrum on one, relatively short antenna. Radio in the Park, anyone?

It was fun to build and even more fun when, on its maiden voyage, I made 3 contacts quickly, evoking a smile! See references on the following page.

73 de Marc N6UNX

References

Wire Length: https://udel.edu/~mm/ham/randomWire/

UnUn Build: https://vk6ysf.com/unun_9-1.htm

Element Wire: https://www.amazon.com/gp/product/B06Y2DMHMG/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8&th=1

FT-240-43 Toroid: https://www.amazon.com/dp/B07Y6NQRGF?psc=1&ref=ppx_yo2ov_dt_b_product_details

Toroid Wire: https://www.amazon.com/gp/product/B01N53QNPY/ref=ox_sc_act_title_1?smid=AITZO53LNBA1K&psc=1

Project Box: https://www.amazon.com/gp/product/B07BPPKF2C/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8&psc=1

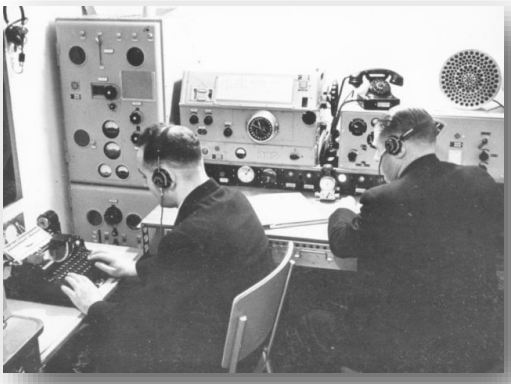
Connectors: https://www.amazon.com/gp/product/B08YDWF8B2/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8&psc=1

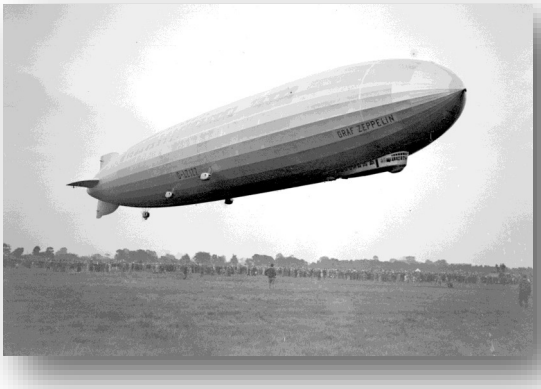
Lugs to connect to the SO239: https://www.amazon.com/gp/product/B0936DTRFL/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8&psc=1

Lugs for connecting the hookup screws: https://www.amazon.com/gp/product/B09BF5P3P4/ref=ppx_yo_dt_b_search_asin_image?ie=UTF8&psc=1

Screws and hardware:

All hardware purchased at Lowe's. ¼-20 screws and nuts are stainless steel. The optional hanger eyelet is also ¼-. Screws to hold the SO239 in place are Metric #3 screws and nuts.





In The News

Senators Roger Wicker and Richard Blumenthal Introduce S.3690 to Eliminate Private Land Use Restrictions on Amateur Radio.

On January 30, 2024, US Senators Roger Wicker (MS) and Richard Blumenthal (CT) introduced S.3690, the Senate companion bill to H.R.4006, introduced last June. Both bills reflect the Congressional campaign efforts by ARRL to eliminate homeowner association land use restrictions that prohibit, restrict, or impair the ability of an Amateur Radio Operator to install and operate amateur station antennas on residential properties they own.

US Senators Richard Blumenthal (CT) and Roger Wicker (MS) [right]

Amateur Radio Operators repeatedly are relied upon to provide essential communications when disaster strikes, but their ability to do so is being impaired by the exponential growth of residential private land use restrictions that hinder their ability to establish stations in their homes with which to train and provide emergency communications when called upon.

In announcing the introduction of S.3690, Senator Wicker said: "Because communication during natural disasters is often hindered, we should be making every attempt to give folks more options. Reliable access can make the difference between life and death in an emergency. Our legislation removes roadblocks for amateur radio operators looking to help their friends, families, and neighbors."

In a similar announcement, Senator Blumenthal stated: "Our measure will help clarify the rules so ham radio enthusiasts can successfully continue their communications.

In the face of emergency or crisis, they help provide vital, life-saving information that allow listeners to properly and safely respond, but prohibitive home association rules and confusing approval processes for installing antennas have been an unnecessary impediment. The Amateur Radio Emergency Preparedness Act resolves these bottlenecks and ensures that radio operators can function successfully."

ARRL President Rick Roderick, K5UR, and Director John Robert Stratton, N5AUS, Chair of the ARRL's Government Affairs Committee, both extended on behalf of ARRL, its Members, and the Amateur Radio community their thanks and appreciation for the leadership of Senator Wicker and Senator Blumenthal in their continuing efforts to support and protect the rights of all Amateur Radio Operators.

From The ARRL Letter, February 15, 2024

Fun Stuff You May Not Know...

The Eiffel Tower was meant to be brought down after twenty years. However, it survived because the military began to use it as a radio tower to intercept crucial military transmissions during World War I.

Do you know the answer to this question: What was the first audio processor ever used in broadcasting? It was the audio engineer, sitting in front of the console … turning the level up when was to low and turning it down when it was too loud!

The barcode was invented in 1951 by Norman Joseph Woodland and Bernard Silver. Their inspiration came from Morse code, extending dots and dashes into thick and thin bars.

NORTH AMERICA ADVENTURE FREQUENCY

Did you know that 146.58 MHz is the North American Adventure Frequency? The National Simplex Calling frequency of 146.52 MHz can get crowded, and POTA and SOTA operations can cause overloading and interference to other users. The NAAF is intended to be inclusive of other outdoor portable operations as well. It is in addition to, not a replacement for 146.52 MHz.

SOTA

POTA PARKS ON THE AIR

RADIO

In the park. February's RITP was held at Larkin Park in Claremont. The WX cooperated and we had eight stations on the air and about 32 members showed. All enjoyed a time of fellowship, radio activations, and good cheer.

RADIO

If you've not attended our monthly RITP event, please come out and join us. You will have a great time!

Lightning Protection for Amateur Radio Antennas

By Michael Martins KB9VBR

To protect yourself, home, and your radio equipment you need to install some basic lightning protections into your antenna system. Most lightning protection systems serve two purposes: to channel lightning's electrical energy to a suitable ground, and to keep lightning energy from entering your home.

Channel lightning's electrical energy to a suitable ground

Grounding your tower and antenna system is the first step for lightning protection. All antennas on a single tower or mast should go to a common ground point. If you have multiple towers or masts at your location, then each tower can have it's own ground system. The easiest is to ground your antennas and tower so that a lightning strike will go into the ground and away from your house. Antennas should be ground bonded to the tower and the tower bonded to an eight foot ground rod buried at the base of the tower. 10 gauge solid electrical wire is heavy enough for most antenna systems.

Keep lightning energy from entering your house

Since the lightning will also follow the coax into your radios, you need to also isolate the coax from the antenna. Lightning arrestors are small devices that are attached inline of your coax feedline. Like a fuse, they are designed to break the connection when a sudden burst of energy comes across them. There are many brands of arrestors on the market. One such, Polyphaser, makes lightning arrestors that can do just that job. In lieu of an arrestor, physically disconnecting your equipment from the feedline during the thunderstorm also helps. Lightning energy will follow the feedline, but combined with a proper ground system, damage will be minimal.

The ARRL has a great series of articles on lightning protection for amateur radio stations. I recommend that you read that information and follow their recommendations. Also check with your homeowners insurance carrier about protection levels and limits on lightning damage. Some companies don't automatically cover lightning damage or have certain limits on coverage.

Finally, if you must operate during a thunderstorm, I recommend using a protected antenna, maybe in your attic or located inside your home. Your house will act like a Faraday cage and provide natural protection from the lightning, allowing you to operate without fear of lightning hitting the antenna. *This article used with the permission of KB9VBR*

VITAL SHACK FACTS

The Shaq...

This is YOUR page! A place where you can show off your shack and antennas to the club membership.

If you have a world class setup or just a simple array of equipment, I invite all members to send me some station photos and I will share it with the readership.

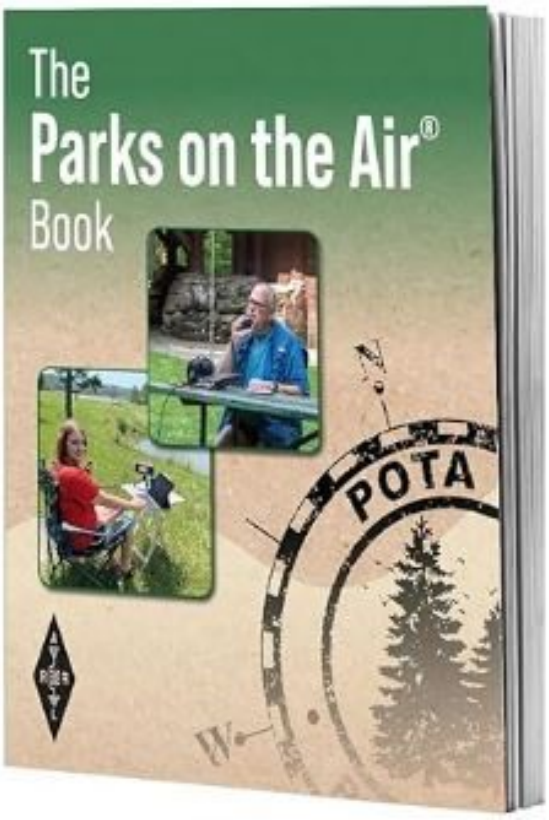
You worked hard to earn your license and equipment so give us a chance to share in your experience.

See the weekly email for my contact information.

73, and I hope to hear from you soon! De Ken N6PCD

The Book Report

By Ken Campbell N6PCD



Following the wonderful presentation by club member Neil Smith K6KWI introducing us to the Parks On The Air program, Milt N6MG presented me with a copy of the ARRL Parks On The Air book.

This publication is truly well done. It's interesting in that each chapter is written by a different author. I know, I know, we've all read anthologies on a given subject, and many times they do not hang together very well. This book is a bright exception!

The editors, Jason Johnson W3AAX and Rick Parent W0ZAP have pulled together some great articles by hams that share their experiences from many different angles.

The folks who wrote the articles have operated in different ways under many conditions and share their hard-eared experiences with us readers, from Jim Williams N4JAW who activates from a bicycle to Matt Heere N3NWV who carries a QRP radio, wire antenna, Li-ION battery, small keyer, and paper log that he keeps in a bag mounted to the tank of his motorcycle, to many automotive and portable stations for activations. Hunters are also well represented. Each author includes a sidebar that lists their equipment.

You will learn about how to join the POTA program (FREE!), how to set up a station, how to become an activator, and how to become a hunter. Courteous operating is covered, as put forth in the DX Code of Conduct. There's lots of advice on radios, antennas, accessories, and logging. There are several appendixes with more useful information.

POTA is an exciting way to GOTA, regardless of age or gender. Whether activating alone or with a group, while camping or traveling, there are myriad opportunities for everyone to participate! The book is available at most ham radio suppliers and from Amazon.com.

73 de N6PCD