

The WACOM HAM

FIELD DAY : WHAT'S NEEDED ? YOU!!!

WACOM 2023 Field Day will be held June 24-25 at the Washington County Public Safety Training location at Mingo Creek Park. ARRL Field Day starts at 2 pm on Saturday and we plan to operate the full 24 hours before starting tear down after 2 pm Sunday.

In a special nod to Field Day and in recognition of how Amateur Radio supports the community, the County Commissioners will officially proclaim the Week of June 19-25 as Amateur Radio Week in Washington County. Members of the WACOM board will be on hand to accept the proclamation on June 22 at 2PM.

Following are plans, what you need to know, and where your help is needed:

CAMPING: If planning on camping, you can set up anytime Friday or Saturday. Mingo Park is open from dawn to dusk unless you are participating in a special event like Field Day.

General Help Needed:

- **POTLUCK:** Be sure to sign up your dish on the Potluck thread
- **INFORMATION TENT:** We still need one or more people to field questions from the public and hang out at the information tent during the time the park is open to the public (dawn to dusk).
- **FOLDING TABLES:** We will have the county pop up tents for shade but could use extra folding tables
- **FOLDING CHAIR:** If coming, bring a folding chair for your own use, and whatever else you may need for operating - like headphones with 1/8" jack and speaker jack "Y" splitter if you have one.

FRIDAY PLANS / HOW YOU CAN HELP:

- **SETUP HELP NEEDED:**
 - Friday afternoon appx 4PM, Tom N3WS, will be at the site & will need help setting up the crank-up tower & the tri-band beam antenna.
 - Friday afternoon after lunch, Mike AB1A, will be onsite setting up antenna and other items for FD, and won't turn down any constructive help.
- Friday afternoon we expect to have Washington County's smaller radio emergency communication command truck
- Friday evening, if the skies are clear after the sun sets, Mike AB1A will give everyone an opportunity to go up to the AAAP Mingo Creek Park Observatory and view some objects through a 10" refractor telescope at the park's observatory.

SATURDAY PLANS / HOW YOU CAN HELP:

- Saturday at approx 4 PM one of the Washington County Commissioners, **Larry Maggi**, along with the media, will be showing up. **A representative from the Washington County Public Safety Emergency Management group** will also be on hand.
- **Operators** that have confirmed they are setting up in the log cabin on FD are:
 - K3AIR – SSB
 - N3XE – Digital
 - N3WS – CW – SBB
 - AB1A – SSB – Digital

(continued on next page)



A 501-C3 Tax Exempt Organization



Send your pictures and news to share with WACOM. Email Kathy WA3FXN.

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FIELD DAY : WHAT'S NEEDED ? YOU!!! (CONTINUED)

SATURDAY PLANS / HOW YOU CAN HELP:

- The **GOTA station** will be operating under the NY9H call sign & Bill will be the GOTA Coach. Expect to see Nate KC3VHD making many QSO from the GOTA station as he was not licensed at the time of the ARRL 2022 FD. All HF radio stations other than the GOTA, will be located in the log cabin.
- **WA3COM is planning to run as 4 Alpha** (only four HF stations on the air at the same time). This year we are actually going to control everyone's antenna placement to minimize inference with other HF stations.
- **See AB1A IF:**
 - If you're licensed but never operated at Field Day AB1A will teach you **how to log** first and **then get you on the air to make contacts, or you can just help log.**
 - If someone else wants to operate and bring their own HF radio
 - If you just want to operate and use the club's HF radio or another club member's radio
 - IF you just want to **help log QSO**, there is definitely a place for you.
- If you just want to help out or hang out there is a place for you at Field Day too.
- If you want to try doing some FT8 or learn about FT8 please come.
- **WE NEED 2 METER SIMPLEX OPERATORS:** If someone wants to bring their radio & antenna for 2 meters and above for listening/making simplex contacts that is something we are still in need of someone to do.

SUNDAY PLANS / HOW YOU CAN HELP

- Sunday we need HF operators
 - **Midnight to 7 am Operators Needed:** most of the operators take some sleep time and we need operators for that time slot or to keep AB1A from dozing off while doing FT8.
 - **Sunday morning 7 am to noon Operators Needed:** there will probably be open slots for operators
- **Clean Up / Take Down Help Needed:** At 2 pm we need help packing everything up and returning the space the way we found it or cleaner.

WACOM HAMFEST JULY 30th

WACOM Hamfest is getting close and almost here! On July 30th we'll be at the Washington Crowne Center Mall parking area. There is NO charge for admission or setup. Bring old radio equipment to sell or browse around for some good buys. The event is open to everyone. Hours are 8AM to 1PM. Tom N3WS is chair of the 2023 WACOM Hamfest and still in need of members to help out.



WACOM NETS

- **Washington & Greene County 2 Meter Net** - Tues 8PM on K3PSP Repeater System
- **10 Meter Net** - Tuesdays at 9:30PM on 28.340 MHz
- **NBEMS Digital Training Net** - Wed 8PM on K3PSP Repeater System
- **SKYWARN Net** As Necessary

K3PSP REPEATER SYSTEM

146.790 MHz (Central, - Shift, No Tone, Washington)
147.285 MHz (East, + Shift, 131.8 Hz Tone, Scenery Hill)
145.250 MHz (West, - Shift, 131.8 Hz Tone, West Alexander)
147.390 MHz (North, + Shift, 131.8 Hz Tone, Smith Twp)
147.315 MHz (South, + Shift, 131.8 Hz Tone, Waynesburg)
- **EchoLink** Node:
WA3COM-R, Node #4679

ALTERNATE COMMUNICATIONS

147.54 "TAC-4" - Washington County
145.53 "ALT-3" SW District (S1)

CONTINGENCY

3.983 LSB - Frequency used by Western PA ARES Net, Western PA ARRL Health & Wellness Net, and Western PA Phone Traffic

Join [WACOM on FACEBOOK](#)

WACOM HAMFEST

July 30
8am-1pm

FREE TO ENTER
FREE TO SELL
TAILGATING

*Ham radio or electronics related

Raffle

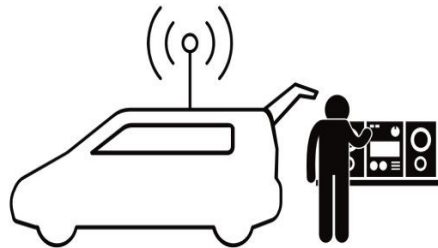
- | | |
|------------------------------|---------------|
| 1. Yaesu FT-710 - Base | \$2 each |
| 2. Yaesu FTM-300DR - Mobile | \$5 for 3 |
| 3. Yaesu FT5DR - Handheld | \$10 for 7 |
| * Drawing at Noon | \$20 for 15 |
| * Winner need not be present | \$50 for 40 |
| | \$100 for 100 |

Tune to 147.54 simplex for on-site announcements



Talk-In on the K3PSP Repeater System
146.790- No Tone, Washington
147.285+ 131.8 Tone, Scenery Hill
145.250- 131.8 Tone, West Alexander
147.390+ 131.8 Tone, Smith Twp
147.315+ 131.8 Tone, Waynesburg

Contact Info
Hamfest Chairman:
Tom Wright, N3WS;
tom.n3ws@protonmail.com



HAMFESTS & EVENTS

- ALL year long—VOTA
- June 17—18 — WV QSO party
- June 19-26—Washington County Amateur Radio Week
- June 24-25 - Field Day
- July 30 — WACOM Hamfest
- Aug 12 — Uniontown Gabfest
- Aug 26-27—Ohio QSO Party
- Sept (TBA) - Labor Day Run
- Sept 10 — Butler Swapfest
- Sept 24 — Cleveland Hamfest
- Oct (TBA) - S.E.T.
- Oct 14-15 - 67th PA QSO Party

Contests can be found at
ARRL at [2022-2023 Arrl Contest Calendar](#)

I still hear those voices
telling me:



BUY ANOTHER RADIO!

Designing an Off-Center-Fed Dipole Matchbox

Part I Impedance Transformers

- by Joe Caldwell N3XE

There are many multi-band antennas designs: fan dipoles, trap antennas, end-fed half-waves, etc. Another example of multi-band antenna is the off-center-fed dipole. Instead of being fed in the center like a traditional dipole, this antenna is fed such that one leg of the dipole is longer than the other. Most commonly the offset is chosen such that the impedance at the feedpoint is approximately 200 ohms. In order to match this 200 ohm impedance to 50 ohm coax an impedance transformer is used.

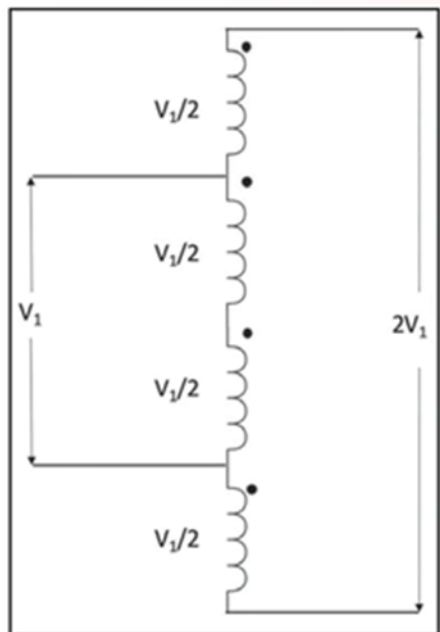


Figure 4. Schematic of 4:1 balun.

One of the most common designs for a 4:1 transmission line transformer is the *Guanella balun*. This design consists of two 1:1 chokes wired in series. This creates a 2:1 voltage ratio which translates to a 4:1 impedance transformation. This type of transformer can be assembled in two different ways: both chokes wound on the same cores or two individual single core chokes wired in series.

In order to compare the various designs, I wound multiple versions of the transformer using Type 43 ferrite toroids and 18AWG silicone insulated wire pairs. To test the transformers I placed a 200 ohm resistance across the secondary side to simulate the antenna and connected the primary side to Port 1 of a NanoVNA. I then performed complex impedance and SWR sweeps from 3.5 to 30 MHz. When comparing the data I found that they all performed similarly and did a good job of converting the 200 ohm load to approximately 50 ohms.



For the purposes of building a matchbox for use with an off-center-fed dipole I decided that a single core design using 10 Turns of wire for each 1:1 choke was the best option since it produced excellent transformation (49 - 54.4 Ohms), had the flattest SWR (1.15:1 maximum), and only uses one FT240-43 toroid. The primary limitation of this design is that it provides

very little common mode choking. Common mode choking is a requirement with any off-center-fed antenna due to the different antenna leg lengths which results in mismatched currents in each half of the antenna. To resolve this the matchbox will incorporate a separate common mode choke in series with the 4:1 transformer. Determining the best design for the choke will be discussed in part two of this article.

Wacom Club Antenna Build Event A Success

On June 9, WACOM members met in Tom's (N3WS) garage to get the inside info on how to put together an off-center-fed dipole antenna. Guided by Joe N3XE, the event turned out to



be not only a success but a good time for all! The weather more than cooperated with lots of sunshine, making the trek to the great outdoors of Cross Creek easier than some probably anticipated.



Joe's instructions were impeccable in detail and illustration. Each person was given a full kit with core components— most items bagged in specific groupings related to the build process. Joe even brought a few back-up items for anticipated mishaps as well as spare tools, although many brought their own (and unfortunately left some



behind!). All anyone needed was to bring their own chairs, listen as Joe detailed each step, chat away while working with those instructions, then, of course, ask for a check to ensure they counted the turns correctly, snipped off enough or too much, and a myriad other things that come up before proceeding. Each person was given time to complete each step so that no one was left behind.

Many thanks to Joe for not only an informational session but a great time, as well as to Tom who graciously offered the use of his place for the get together.

STEFFEY'S DESTINATION DAYTON 2023

- Bill Steffey NY9H



Saturday afternoon after the tent was packed, and several treasures liberated.

The 2023 Dayton Hamfest “is the largest gathering of Hams in the world”

was even a large contingent of Scots wearing Kilts, of course. In the flea market, we encountered many Japanese, VK/ZL Australians, and New Zealanders. It is a worldwide event. Throughout the Hamfest there are multiple forums /seminar choices from which to pick. I counted over 50 available subjects from SDR radio to many on antennas.

BUT WAIT; THERE'S MORE On Thursday, the day before Hamvention begins great learning is available. Our fellow Western Pennsylvanian, **Tim Duffy K3LR** is on his 15-plus years organizing “**Contest University**”, which is another day full of Contesting Propagation, station building, and other topics covered. *Contest U* had four rooms with different programs *every hour!!* UNBELIEVABLE!

You just keep learning how to do it (contesting & DXing) right...



A stream of one set of forums is now available. Since I went to the OTHER “convention” for POTA/SOTA KITBUILDING and new technologies and MUCH, MUCH MORE, after baking in the Sunshine on Friday’s flea market I retired to take a nap and watch part of the 8-hour stream on YouTube. I have attended the “other” convention which is FDIM (four days in May) for about 14 years, always learning a bunch as well as getting re-energized with ideas for my station. It truly invigorates the brain with new ways to improve your operating techniques and your station.

There is a reason, as the Brit had commented that OVER TWENTY THOUSAND HAMS.... YEP, 20,000+ COME TO DAYTON, like Lemmings to the sea. Yes, Lemmings can swim, probably better than the general Ham population.

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STEFFEY'S DESTINATION DAYTON 2023

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Did I fail to mention that every decent-sized Ham Radio dealer is present with everything Ham TO SELL at competitive prices, lower than any time during the year? There are 5 VERY large fair-ground-style buildings holding over 200 exhibitors, including your favorite manufacturer. ICOM, KENWOOD, FLEX, and ELECRAFT were represented - all of them with factory personnel explaining the features of their products. If they're not at Dayton, they may have gone out of business.

Along with the Japanese folks from ICOM, YAESU & Kenwood, my friends **Reinhard & Chris from my German amp compa-**

ny RFKIT were there. Also, friends Bruna & Robbie Begali were selling their **Begali** paddles and keys from Italy. All their keys were hooked up and CW was ringing thru that hall.

Martin Jue and his company MFJ were there with hundreds of different models. Martin now owns MFJ, Hy-Gain, Ameritron, Mirage, and Cushcraft... maybe I forgot some?? Martin makes and sells more antenna tuners than everyone else combined.

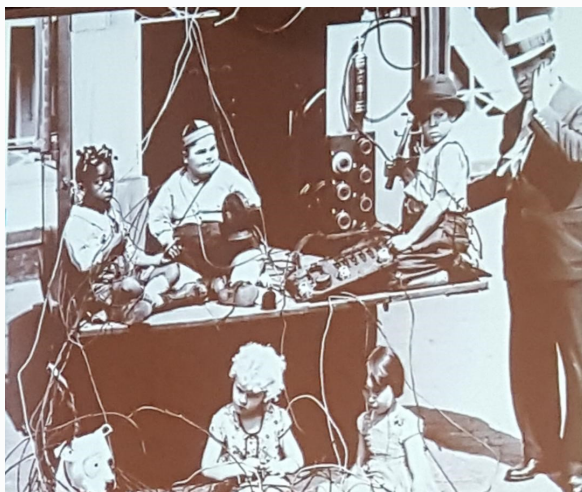
OK TIM!! DX Engineering was there in their splendor also...much more splendor than MFJ... with mucho products set up to demo for your listening enjoyment. They have also acquired many brand names over the years, rescuing them from oblivion: Butternut Antennas, Top Ten Devices, COMTEK, & Hi-Z Antennas. They also introduced the ultimate (MONSTER) rotor for your new tower. For us folks in Western PA DX Engineering is the obvious choice for a dealer for all things ham radio. Do keep buying some stuff from the other guys, we should keep them in business. If for no other reason than keeping TIM on his toes.

Even Bob Heil (my fav mic pitchman) was there.



At our WACOM meetings, I have tried my very best to encourage, motivate, convince the membership to make the journey (under 4 hours) to this Mecca for Amateur Radio

Personally, 2023 was my BEST flea effort ever! Moved off many of my 'treasures' to new lucky folks, reducing the piles of stuff on my "estate sale list".



Last Year's Booth at Dayton

RUN FOR ALEX 2023

The 18th Annual Run for Alex took place Saturday, June 3, in Bentleyville PA . WACOM members were stationed at critical locations to facilitate communication of information on the placement and condition of runners.

One runner, in first place through most of the race, unfortunately required medical assistance and was taken to the hospital. The importance of having adequate personnel in place and good communication was underscored by this event. It's especially necessary when considering the number of participants. Those organizing the event relied on WACOM.

Many thanks to Tom N3WS who coordinated the WACOM effort as well as the WACOM members who supported this and showed their commitment to providing professional and reliable communication support.





WACOM WINS 2022 BREEZESHOOTERS CLUB COMPETITION

WACOM took 1st place in the Breezeshooters Groundwave contest for the club with the highest QSO count. Mike K3AIR accepted the plaque on behalf of the club at the Breezeshooters Hamfest.

The contest was open to all Amateur radio operators licensed to use the 10 meter band and operating within Ground Wave distance of Pittsburgh PA (i.e. any contact between the following states: PA, NY, WV, OH, MD, DE, NJ only).

WACOM members taking part in the competition were Bill NY9H, Mike AB1A, and Mark KC3STZ

Breezeshooters Ground Wave Contest CLUB Results 2022

CLUB AFFILIATION

Total of all CONTACTS from individuals who marked down their club affiliation.
Individuals only. HIGHEST number of CONTACTS wins. (CONTACTS not points)

CLUB	Call	Digital Contacts	CW Contacts	Phone Contacts
WA3COM	NY9H	20	5	31
	AB1A	14		14
	KC3STZ			14
Total Contacts:				98

“The number of U.S. amateur licenses has held at an anemic 1 percent annual growth for the past few years, with about 7,000 new licensees added every year for a total of 755,430 in 2018.”

- spectrum.ieee.org/ham-radio

GET THE WORD OUT ABOUT AMATEUR RADIO



Recently, while trying to have notices of our *Field Day* and other events published on social media, I found my account locked out of one of the “*What’s Happening in Washington County*” sites and my postings deleted. The reason was because **the administrators never heard of amateur radio**

and thought it was an ad for a commercial station! I messaged a brief explanation of what it was and what we were,.. and was reinstated. This really hit home about how badly amateur radio is understood by the general public and in many cases not even heard of. With commercial enterprises vying for our bands, we may be a dying artform if we all don’t help in getting the word out!!



BUILDING YOUR SHACK

Part I

.. or how not to be relegated to the basement

- Bill Steffey NY9H

Many amateurs are willing to spend hundreds or thousands on their hobby, yet apparently make no effort to make it nice enough in appearance. It's no wonder many are relegated to the basement. My first shack, while situated in the relatively unfinished basement, did have a finished feel to it. This is a journey through my efforts to provide a custom-finished console for my station...



The total cost for several 2x4s and some shelving particle board was probably under 25\$...and the red rug was free!

I had very little space available, thus my "shack" was in-conveniently built up against the gas furnace. Looking carefully, you can see the green grill. Thankfully no furnace servicing was necessary!

(Overall, a poor design).

Considerations included trying to provide both proper shelf heights and a tilted shelf for the radios, providing a proper viewing angle. If radios are just sitting on a shelf, sometimes it provides a poor angle for both operating and knob turning

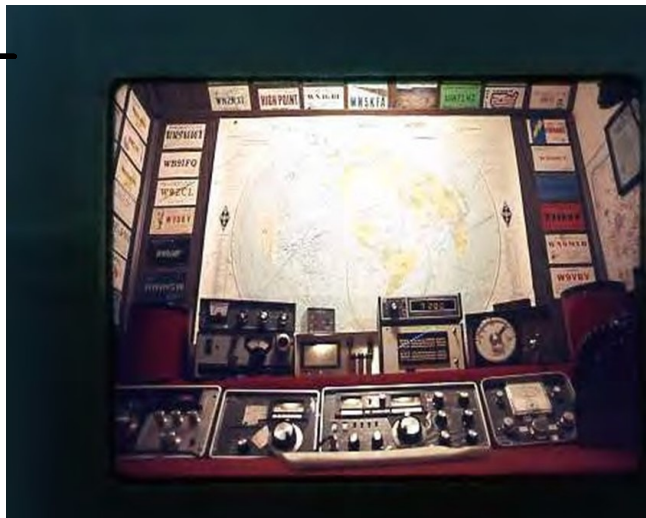
The height of the work surface must have your forearm just resting on the surface for easy tuning and adjusting radios as well as operating your CW paddle. In later iterations, I was unable to provide a tilted shelf, due to cabinet constraints, so I used ledges to prop the radio to the best angle.

It is imperative that your design needs to take into account the operator's ability to comfortably see and reach the equipment.

The red flocked wallpaper was "preexisting".

Note the use of the QSL cards surrounding the world map to cover the sheet of paneling.

On the right wall are several "Worked All States" maps, providing a visual of 'needed' states. Today this is accomplished by your computer-based logging program.



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BUILDING YOUR SHACK

Part I (Continued)

- Bill Steffey NY9H

I had **No technical advice on this first station, as I just hashed it all together, without any "Elmer" types around.** I had studied for Novice and General on my own and used W1AW for 5 and then 12 wpm Morse code.

Antennas started as **two wire dipoles** in the trees and later a 50ft Aluminum tower with **3 element triband CL-33 Mosely. (1974-79).**

On the right wall was a **National NC-125, a Hallicrafters CRX-2 "driftomatic" public service receiver, and my old Roberts (Akai) 1630 reel to reel tape recorder.** And a Scott 330b am-FM tuner. **MY Man Cave.** The 'rig' was a **Yaesu FT-101**, which used *TV "sweep tubes"* in the final amplifier, the balance of the radio was transistorized.



Left of center was the **'matching' VFO**, since in the 70s rigs did **NOT** have the capability of going 'split' without an external VFO. The **Allied AX-190** on the far left was configured to provide a second receiver, for chasing DX.

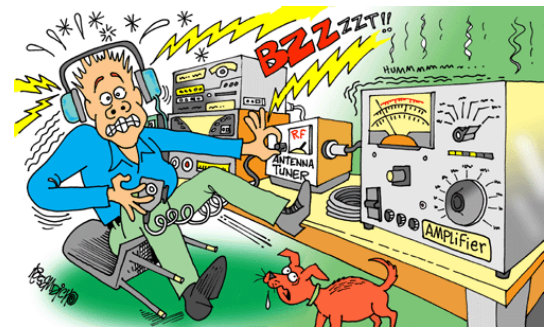
On the right is a **KW (British) combo ...antenna match(tuner)/ Dummy Load/SWR bridge.**

On the top shelf is the **QRP Heathkit HW-7**, with an autopatch telephone interface box on top, then my **antenna rotor controller, digital freq readout** for the Yaesu & a **front-facing speaker**, and **AC line voltage meter**. The microphone was a **Shure 444...** still a great microphone choice. Next is the **Regency HR-2 two-meter radio** & the very famous **GLB synthesizer** which not only provided all two-meter frequencies for the normal crystal radio set but provided a sort of 'spread spectrum' of noise across two meters.

A pair of 13-element 2-meter beams atop the tower added 13bd of gain. Less than 60 countries were confirmed from this station, but no effort had gone into chasing DX, YET!

And then I moved in 1979... and got to do it all over again, Rev 2 gets better and got upstairs!!!!

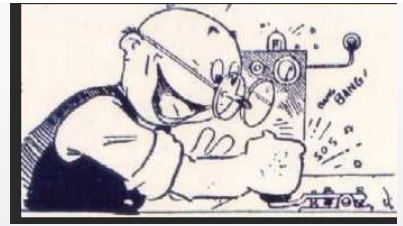
Tune in next time...



....Continued next month

QSL CARDS WE LIKE...!!!

Show off your favorite or unusual QSL cards that you received over the years. Scan them in and email to dhamu@hky.com so we can show them off in the next newsletter.



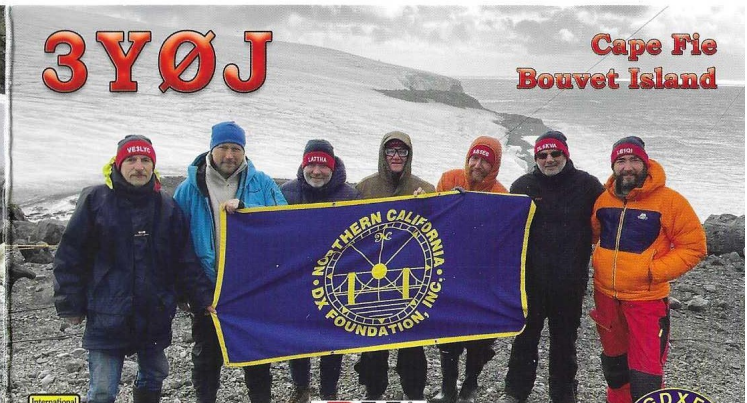
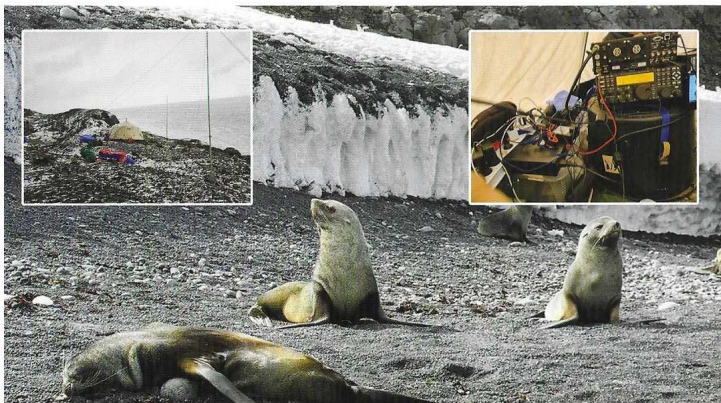
“My 9 year old son(also Bill) got licensed !!!!

The drawing is a sneak peak at the station as it was on the first floor setup. “

...Bill Steffey

NY9H

(The first floor setup will be featured in next month's Building Your Shack Part II.)



QTH:
Cape Fie, Bouvetøya
CQ Zone 38 ITU Zone 67
Loc: JD15qn IOTA AN-002

Operators:
LA7GIA, LA7THA, LB1QI, LB5GI,
K08SCA, VE3LYC, NP4G, K07SS,
N0FW, DL6KVA, AB5EB, WD5COV

An International team of 12 operators activated Bouvetøya between February 6th and February 13th 2023. The operation was highly affected by a storm that impacted the logistics of setting up the camp. During 15 days around the island the team thus experienced short weather windows that only allowed a small setup. 3Y0J was active on mainly 30/17/15m on CW/SSB and digital mode and made in total 19,000 QSOs, where 50% were unique callsigns. We would like to thank all organizations, clubs and individual sponsors that supported us and made this DXpedition possible.

73, 3Y0J team

To Radio : NY9H
3Y0J Confirms The Following QSO(s):

Date	UTC	Band	Mode	RST	Op
2023-02-10	07:33	30 m	CW	599	K08SCA

Tnx for the QSO 73 de 3Y0J