

We'll be ZOOMing our next Meeting

Time 6:30 for socializing with program at 7:00 PDST (Wednesday)

ZOOM:

There's a direct link to ZOOM posted on [http:](http://www.redxa.com/)

www.redxa.com/

Check your email for the "Meeting ID" and password. You should have received an email with this information. If not, contact one of the club officers.

SUNSPOTS



REDWOOD EMPIRE DX ASSOCIATION

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This is your editor writing a slightly late second quarterly issue of "Sunspots". Age, inertia, and COVID have dramatically altered how our club is functioning these days. But we are still meeting and maintaining as much cohesion as possible.

To that end, we will be having a July meeting via ZOOM on July 12 at 6:30 for socializing and 7:00 for Ned Stearns, AA7A's program "The road to 3,000 DXCC Challenge". This is quite an achievement. The DXCC challenge numbers represent the total band-countries worked and confirmed on 160 through 6 meters. The top of the list is W4DR with 3203. Way down the list is yours truly with 2212 (which still includes a nine band DXCC).



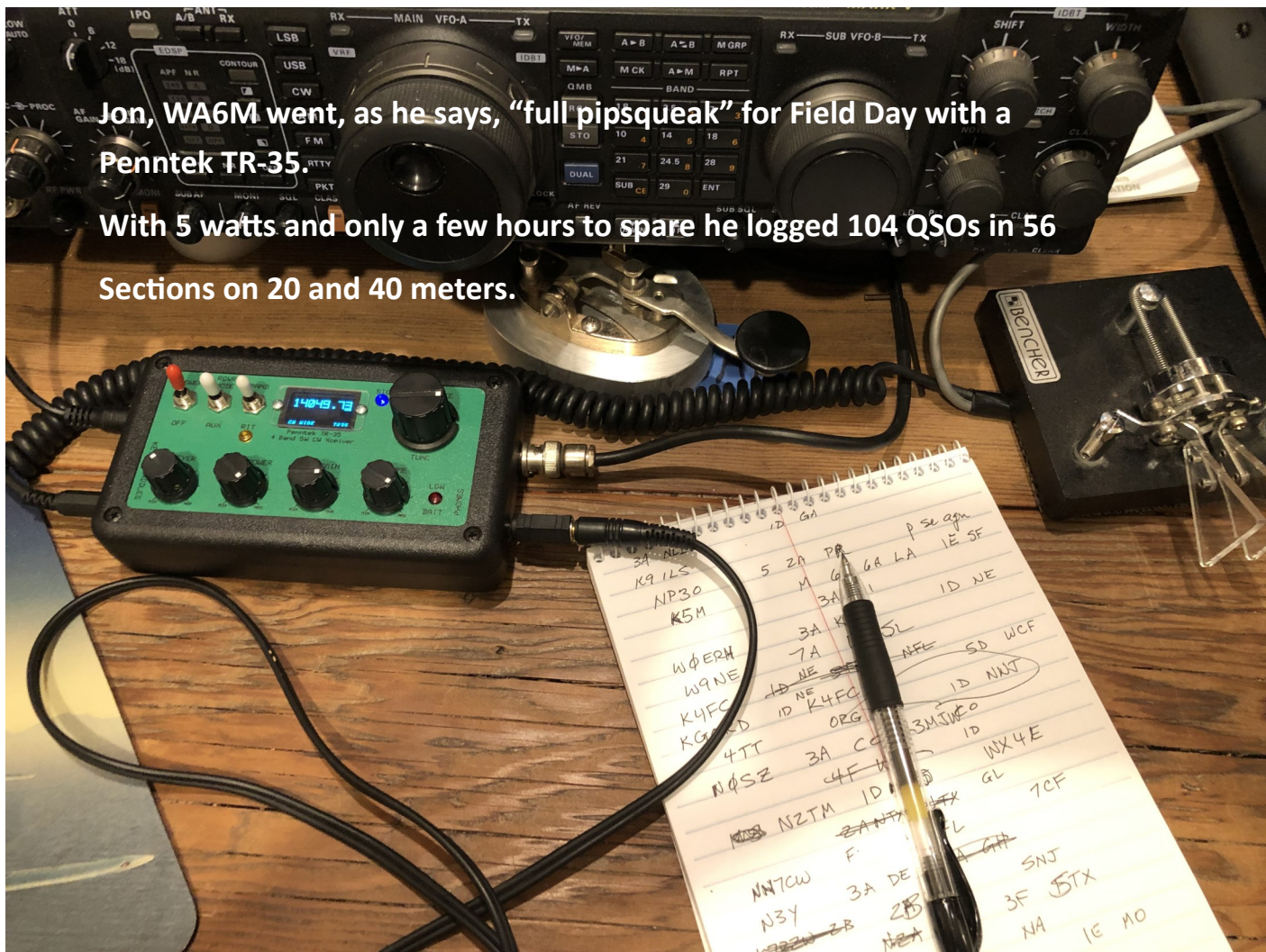
Jerry, WA6BXV's, radio command trailer at the MARS Field Day site at Stafford Lake (Novato)



Unknown (to me) MARS member taking it easy at the Stafford Lake FD site

Jon, WA6M went, as he says, "full pipsqueak" for Field Day with a Penntek TR-35.

With 5 watts and only a few hours to spare he logged 104 QSOs in 56 Sections on 20 and 40 meters.



Handwritten QSO log on a spiral notebook:

3A NE	5 2A PA	P se apx
K9 ILS	M G	GA LA IE SF
NP30	3A I	ID NE
K5M	3A K	SL
W0ERH	7A	NFE SD WCF
W9NE	ID NE	ID NNT
K4FC	ID K4FC	3M JVE 0
KG SD	ORG	ID
4TT	3A CC	WX4E
N0SZ	4F	GL
NZTM	ID	7CF
NNTCW	F.	SNJ
N3Y	3A DE	3F BTX
W3ZB	ZB	NA
N2A	N2A	IE MO

Treasurer's Report for June
2023

As of 30 June 2023 the REDXA bank balance is:
\$2,626.78
Income was \$35.00 (dues)
No expenses were accrued.
Respectfully submitted,
Fred Leoni N6YEU- Treasurer



Ducie Island Radio in a Box

Ducie Island Wrapup Report:from N1DG

In 2018, on Baker Island in scorching heat, exhausted operators spent a day dismantling 11 tents, 12 antennas, 5 generators, radios, computers, Ethernet stretching hundreds of feet, desks, chairs and trash and hauled it all back to the boat.

On the voyage back to Fiji we wondered if there wasn't a better way.

With funding from the Northern California DX Foundation George Wallner, AA7JV, put together a team to create that new way. Welcome to the RIB (Radio in a Box). VP6A was the first full deployment of the RIB on a rare location.

On 24 July at 16:00 UTC, VP6A went QRT after making just under 62,000 QSOs of which 24%, 15,000 were unique calls. DXCC was obtained on 6 bands.

There were 4 stations on the island. One used by AA7JV, W6IZT and KN4EEI on the boat and 3 others operated by 34 remote operators from 11 countries. Those operators were: 9V1YC, AA1V, AA7A, CT1BOH, CT1EEB, CT1ILT, DJ4MX, F6EXV, JN1THL, KC1KUG, KY7M, KD4Z, KL7YL, KO8SCA, K1DG, K4NHW, K6GFJ, K6TD, K6UFO, KL2A, K6MM, ND2T, N1DG, N2IC, OH2BH, PB8DX, PY5EG, VE4EA, VE5MX, VK3GK, W0GJ, W1RM, W1VE, and W8HC.

Some stats:

Set Up Time: Radios 1, 2 and RIB2 4 hours. Radio 3 on the third day.

Tear Down: 1 hr 50 min to off the island. [continued next page]

Total Op Time: 13 1/2 days.

Total Fuel Used: 80 gallons = 0.0013 gallons / QSO (5 ml/QSO)

Mother Nature and satellite latency threw us curve balls but we are extremely happy with the final result.

We hope our audience is too.

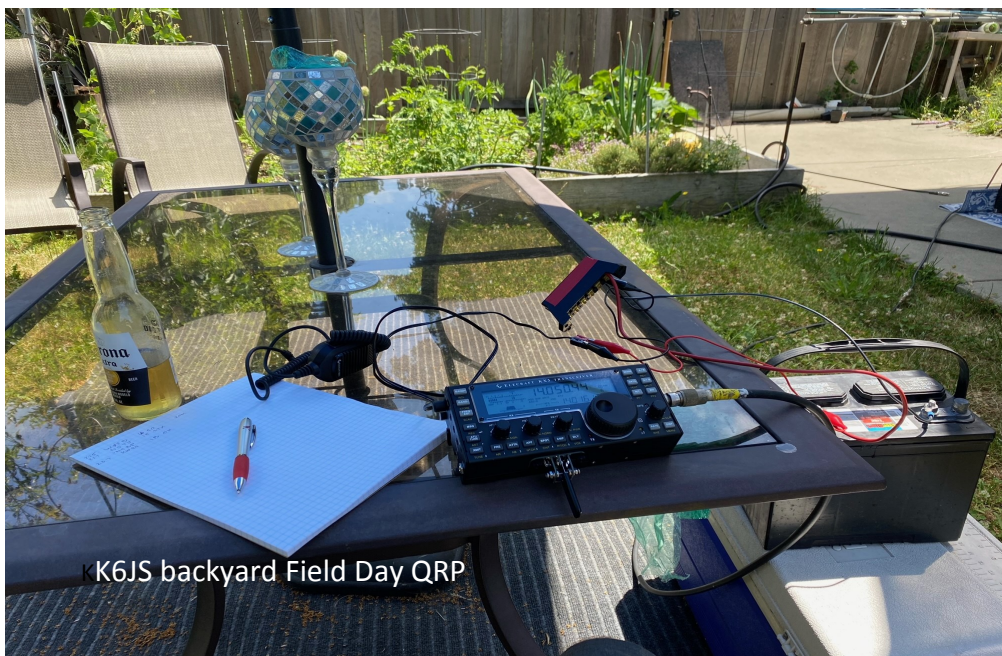
See you from our next location.

The VP6A Team

{VP6A radio-in-a-box report continued}

K6RIM worked the VP6A expedition for 32 band-mode possibilities; WX6B was close behind with 29

K6JS has been working QRP lately, including Class 1E for Field Day and the RAC Canada Day contest. 13 of his QSOs were by SSB!



K6JS backyard Field Day QRP



Do it yourself?

Lots of talk lately about the ChatGPT app. This is a free artificial intelligence program that responds to just about every question put to it.

At a recent breakfast meeting with some other REDXA members the thought came up that we should see what Chat/GPT knew about ham radio and REDXA.

I (your editor) asked about the future of ham radio and how to maintain enthusiasm for our club. The answers were pretty bland and generic so I'll skip them here.

Ron, N6IE, posed some interesting questions about vacuum tubes to probe the app's responses. I've shown them below—ed.

N6IE: What did ham radio operators use for vacuum tubes in the early years of the hobby?

ChatGPT: *In the early years of the ham radio hobby, which gained popularity in the early 20th century, vacuum tubes were indeed a critical component of radio equipment. Ham radio operators, like other early radio enthusiasts, used various types of vacuum tubes for transmitting and receiving signals.*

The specific types of vacuum tubes used by ham radio operators varied over time as technology advanced. Here are a few examples of vacuum tubes commonly used in the early years of the hobby:

Triodes: Triodes were the earliest type of vacuum tube used in radio technology. They consist of three elements: a heated filament, a plate, and a grid. Triodes were used as both amplifiers and oscillators in early radio equipment, including ham radio stations.

Tetrodes: Tetrodes were an improvement over triodes and featured an additional element called a screen grid. The screen grid helped to improve the performance and efficiency of the tube. Tetrodes were commonly used in transmitters and high-power amplifiers.

Pentodes: Pentodes, as the name suggests, had five elements: a filament, a plate, a control grid, a screen grid, and a suppressor grid. The addition of the suppressor grid helped to reduce the unwanted feedback and improve the linearity of the tube. Pentodes were widely used in radio receivers and low-power amplifiers.

These vacuum tubes were used in various configurations depending on the specific application, and different manufacturers produced their own versions of these tubes with slight variations in design and performance characteristics. As technology progressed, more advanced types of vacuum tubes, such as beam tetrodes and power pentodes, were developed and utilized by ham radio operators.

It's worth noting that with the advent of solid-state technology, vacuum tubes were gradually replaced by transistors and integrated circuits in most electronic devices, including ham radio equipment. However, vacuum tube technology still holds a special place among some enthusiasts, and vintage ham radio equipment using vacuum tubes remains popular in certain circles.

N6IE: How did early amateur radio operators build their own vacuum tubes?

In the early days of amateur radio, building your own vacuum tubes was a complex and challenging task that required a deep understanding of electronics and vacuum tube technology. While it was possible for skilled amateurs to construct their own tubes, it was not a common practice due to the difficulty and specialized equipment required.

Building a vacuum tube involves creating a vacuum-sealed glass envelope and carefully constructing the internal elements. Here's a general overview of the process:

Glassblowing: The first step in building a vacuum tube is to create the glass envelope. This required glassblowing skills and access to a glassblowing setup. The glassblower would shape the glass into the desired form, leaving one or more openings for the tube's leads.

Evacuation: Once the glass envelope was formed, it needed to be evacuated to create a vacuum inside. This involved attaching the leads to the envelope, sealing it, and connecting it to a vacuum pump. The pump would remove the air from the envelope, creating a vacuum.

Filament and Other Elements: After achieving a vacuum, the internal elements of the tube needed to be constructed. This included the filament (heater), control grid, screen grid (if applicable), plate, and any other necessary electrodes. The construction of these elements required precise placement and electrical connections within the tube.

Sealing and Testing: Once the internal elements were in place, the tube needed to be

sealed. The glassblower would carefully seal the openings and ensure the integrity of the vacuum inside. After sealing, the tube would undergo testing to check for any leaks or defects.

Building a functional vacuum tube required not only glassblowing skills but also knowledge of electronics, metallurgy, and chemistry. Additionally, specialized equipment such as vacuum pumps, high-temperature furnaces, and electrode fabrication tools were necessary. As a result, the construction of vacuum tubes was usually undertaken by professionals in dedicated manufacturing facilities rather than individual amateur radio operators.

N6IE: What was the Russian woodpecker?

Chat/GPT: The Russian Woodpecker, also known as Duga-3, was a massive over-the-horizon radar (OTH) system operated by the Soviet Union during the Cold War era. It was named the "Woodpecker" due to the repetitive tapping sound it emitted, which sounded similar to a woodpecker pecking at a tree.

The Duga-3 system was designed to detect and track ballistic missile launches from the United States. It was part of the Soviet early warning network, intended to provide the USSR with advanced notice of potential nuclear attacks.

The radar system consisted of two large arrays, one for transmitting and one for receiving, located near Chernobyl, Ukraine. The transmitting antenna was approximately 150 meters tall and over 750 meters wide, making it one of the largest man-made structures at the time.

However, the Woodpecker signal created significant interference for radio operators worldwide due to its high power and wide bandwidth. It caused disruptions in shortwave radio communications, ham radio transmissions, and even aviation and maritime communications. The repetitive tapping noise was heard on various frequencies, earning it the nickname "The Russian Woodpecker."

The exact purpose and capabilities of the Duga-3 system were shrouded in secrecy during its operation. It remained a subject of speculation and conspiracy theories, leading to rumors of mind control experiments, weather manipulation, or even a signal for Soviet submarines. However, it was primarily an early warning radar system.

Following the Chernobyl nuclear disaster in 1986, the Duga-3 system was decommissioned and abandoned. Today, the remaining structures of the radar system can still be found near the Chernobyl Exclusion Zone, attracting interest from urban explorers and tourists.

So, give it a try. The best and the funniest Chat/GPT responses to questions from REDXA members will surely be featured in the next issue of “Sunpots”.

From WX6B:

here’s a link to the Summer 2023 issue of the INDEXA Newsletter (Issue #139). Highlights include: 2023 3Y0J Bouvet DXpedition Report; Message from our president; Celebrating 40 Years of Magic: The INDEXA Worldwide QSO Party and much more...

[--- Summer 2023 Newsletter #139 ---](#)

From K6ANP:

While the space agencies predicted a maximum monthly number of sunspots during the 25th solar cycle's maximum to reach a modest 125, the star is now on a trajectory to peak at just under 200 monthly sunspots, and some scientists think [this peak may arrive in just one year](#).

"Highest monthly average sunspot number since September 2002!" solar physicist Keith Strong [shared on Twitter](#) on Sunday. "The June 2023 [sunspot number] was 163.4, the highest value for over 20 years."

-ed: Sunspot cycle and propagation predictions generally fall into 4 categories (1) it'll be worse than the last cycle (2) it'll be the same as the last cycle (3) it'll be better than the last cycle or (4) it'll never be as good as Cycle 19



Dragon, KU6F's new pup engaging in recycling operations

