



News from

The GLORIOUS SOCIETY OF THE WORMHOLE

January 2023

Hello Worms

Here we are in 2023. I trust all had a wonderful holiday season. We stayed home for all of it. A neighbor had lots of fireworks so we had no shortage of that for New Years. I guess none of the rocket or cannon debris set anything on fire or landed on the car so all is well.

I had an interesting problem over the last few weeks. Well interesting as in the Chinese curse “may you live in interesting times” sort of interesting. I work mostly HF digital and mostly PSK. Several weeks ago, any signal stopped appearing on the waterfall. My troubleshooting was sporadic and never for long periods. That and the fact it seemed to be different every time I started working on it made for a long troubleshooting period. The short answer is that I had a triple failure and two were intermittent. The one that caused the most confusion was the computer itself. I have a 20 foot run of USB cable from my computer to the inside of the radio bench. Inside the bench is a USB powered splitter with three outputs used. Turns out one of the ports of the splitter went dead or probably intermittent. Also four of the six USB ports on the back of the computer went dead, no output, zilch. Of course I didn’t pay much attention to which one I plugged into when I was troubleshooting so some times it was in a working port and sometimes not. I went directly from the radio to my go-kit laptop and it worked ... the first two short times I tried it. But when I finally figured out the computer USB problem and the USB splitter problem I discovered the radio output was intermittent but mostly off. On New Years day I got all working again. Using my TS-590 now as my digital station until the TS-2000 gets repaired. The USB splitter is replaced and I installed a USB panel on the computer. I tried new drivers and such for the computer USB ports including a BIOS update but nothing worked so I am plugging the USB ports so I don’t accidentally try to use one of them again. I don’t know what happened but it is rather suspicious that it all happened at about the same time. Lightning is the obvious first thought but rather hard to understand how it was so selective, two USB devices and the output of the radio plugged into a USB device. The Signalink was in the middle of the whole thing and it works fine. Just another of those life’s mysteries. I am thinking of replacing all of the USB cables but it is working now so no hurry.

Most of you have probably heard Yaesu has announced the end of production of the FT-818 and FTM-400 due to lack of parts. See the official announcement video here:

<https://qrper.com/2022/12/end-of-an-era-the-yaesu-ft-818nd-is-being-discontinued/>

In January we will meet face to face for those who wish to do so. Last month everyone was inside when I got there. We will discuss if we want to meet inside all the time so there is no question for those who arrive early.

If Alan is in attendance or we meet inside, we will broadcast the meeting on the repeater and Zoom video. We will meet at the regular meeting time of 1100 on Saturday morning at the Lurie Civic Building on the St Petersburg College campus in Seminole. Turn west at the light at 113th St N and about 92nd Ave N. It's the first building on the north side. Here is a link to a Google map : [Google Maps](#) . There are a few parking spots in front the Chamber building but if you go another 100 yards past you can park in the college parking lot which is a lot closer to the outside meeting area. Double parking is fine since we will be able to find the owner to move his vehicle if necessary. Below is the Zoom information, same as last month.

Topic: Bill Williams' Zoom Meeting
Time: This is a recurring meeting Meet anytime

Join Zoom Meeting
<https://zoom.us/j/2737114584?pwd=d1BETHVOQ21vWWZXZ0lYQ0FIWWtldz09>

Meeting ID: 273 711 4584
Passcode: worm

BRING YOUR CHAIR, your coffee and lunch! There are a few picnic benches if you do not have a folding chair but they are not comfortable for most of us. We will not be cooking but we have access to the Chamber of Commerce building which has a microwave and a toaster oven so you can heat up/cook what you bring. We will meet inside if the weather is or looks like it will be bad.

We could use a few more net controls. If you are interested in being a net control station for once or twice a month let me or Dee or George know. You can talk to them on the weekly net.

We also need a Vice President. And while I am asking if anyone would like to be the webmaster I am sure Mike would love to give it away ... he does not like WordPress.

USE OF AN AMPLIFER PART 2

Ralph WD0EJA

The October article described some basics of a solid state RF amplifier. This time, a few facts about tube amplifiers.

Tube amplifiers are still in common use. It appears that the preference for tube amplifiers will be with us for a while.

Several of the tubes used are very rugged and durable devices. The life of many of these lasts for years even decades. This of course is if you operate it within its limits.

The tubes are mostly operated in a "grounded grid" configuration. What is a grid? The grid would correspond to the gate on the MOSFET described in the last article. It turns the tube on, off or somewhere in between. It is the most delicate part of the tube. The current going through the grid should be monitored so it does not exceed its limits. Most amplifiers have a grid current meter, but not all.

The grounded grid amplifiers have the input at the cathode. This is normally the bottom of the tube and is closest to ground potential. This corresponds to the Source on a MOSFET. Biasing is usually at the cathode. There are other variations.

Bias is a set voltage that turn the tube partially on. When biased, there is normally a small current flow through the tube that can be seen on the Plate current meter. In standby, this current is off.

The RF from your transmitter is applied to the cathode through a matching circuit. Therefore, the power from the transmitter is added to the power of the amplifier. The plate is where the high voltage is applied. This is a lethal voltage source. Extreme caution should be exercised when working on this part of the tube. The range of voltage is from 1200 volts and up. Common voltages are 2400 to 3500 volts and can deliver 1 amp. It can be fatal. This part of the tube corresponds to the Drain on a MOSFET.

From the Plate, the RF is sent through a matching circuit and then to the antenna. The impedance of the tube is high, therefore the matching circuit is used for the 50 ohms needed for the antenna.

If it a glass tube, it glows in the dark. Tubes need a heater called a filament to work. The filament can be also the cathode or it can heat the cathode independently. The current through a tube is much lower than that of a MOSFET. The voltage is much higher. Therefore the tube is considered a voltage amplifier and the MOSFET a current amplifier. Tube amplifiers are usually a bigger piece of equipment than a solid state amplifier. A tube amplifier is more forgiving to operator error. Especially when over driven or SWR is not real low. The tuned input and output circuits help.

It is personal choice which type of amplifier to use. Both types, solid state or tube, have advantages and disadvantages.

73,

Ralph

Bilal Company wd0eja@isotronantennas.com

LASTPASS DATA BREACH JUST GOT WORSE ... AGAIN

reviewgeek by Andrew Heinzman

After getting hacked in August, LastPass promised that customer data was safe. Later, the company admitted that customer data was compromised, but claimed that user passwords were not part of the data breach. Unfortunately, LastPass was completely and totally wrong.

According to a new LastPass press release, hackers obtained a “backup of customer vault data” during the big security breach earlier this year. The information stored in this vault data is encrypted, but a hacker can decrypt it using your master password—that’s the password you use to log into LastPass.

If your LastPass master password is something simple, like “password1234” or “guitarhero1984,” you’re probably screwed. Hackers can easily guess these simple passwords using brute force. For security’s sake, please change your password on every website immediately. (A rival password manager that hasn’t been hacked, such as 1Password, can help you get the job done.)

Users who created a strong master password might be in the clear. At least, that’s what LastPass says. The company claims that it would be “extremely difficult” to guess master passwords for customers who followed the company’s “best practices” guidelines.

Even if you use a strong master password, there’s a chance that hackers will try to phish some information out of you. LastPass warns that it “will never call, email, or text you and ask you to click on a link to verify your personal information.”

To be clear, LastPass is still investigating this data breach. And after four months of “sorry, it’s worse than we thought,” customers are rightfully worried that LastPass doesn’t have all the details. For all we know, things could get even worse.

We asked our readers to stop using LastPass in July of 2020. And we still implore you to avoid this service. LastPass has a long record of data breaches, two of which occurred this year!

MICRO BATTERIES

EDITOR: From the ITEN website. These are surface mount batteries. Maybe this is old news to everyone but it is a new product to me. Bill

ITEN micro-batteries are all rechargeable 3D solid-state batteries operating on a broad operating temperature range (up to -40°C $+85^{\circ}\text{C}$) and featuring lifespan from 10 to 20 years.

Their high energy storage density is ideal for applications where very small footprints are required; in addition, their disruptive technology enables storing energy but also delivering high power and peak currents (e.g. a $500\mu\text{A.h}$ micro-battery can deliver peak currents up to 200mA) required to power up RF transmissions under various protocols (BluetoothTM, ZigbeeTM, LoRATTM, SigfoxTM, NB-IoTTM or LTE-MTM) for data delivered by autonomous wireless sensors. All that in a footprint of a few mm^2 and a volume of around 12mm^3 .

For specific applications, the micro-battery thickness can even be cut down to $330\mu\text{m}$. The same technology enables very fast recharging of the micro-battery at constant voltage: the time to recharge the micro-battery to a SOC of 50% is less than 60 seconds. Designers of electronic systems shall also like the low self-discharge rate and their ability to withstand more than 2000 charge/discharge cycles at 75% DOD (@room temperature).

One other significant advantage is that ITEN micro-batteries are designed to operate at high temperature and are not sensitive to short circuits specially during assembly: they can indeed be handled by any automatic PCB assembly line, like any other SMD component.

In addition, solid-state micro-batteries are safe, not flammable (neither Lithium metal, nor organic electrolytes) and are recyclable like any other SMD component. Evaluation kits are available for most of the micro-batteries of ITEN portfolio.

Since ITEN micro-batteries are manufactured by stacking elementary cells, the sizes and capacities of the micro-batteries can be easily customized and tailored to meet your use cases. In case you would not find in the following table the ideal micro-battery meeting all your requirements, please feel free to contact us and discuss your bespoke micro-battery at sales@iten.com.

* RUSSIAN SOFTWARE DISGUISED AS AMERICAN IN U.S. APPS*

REUTERS By James Pearson and Marisa Taylor

LONDON/WASHINGTON, Nov 14 - Thousands of smartphone applications in Apple (AAPL.O) and Google's (GOOGL.O) online stores contain computer code developed by a technology company, Pushwoosh, that presents itself as based in the United States, but is actually Russian, Reuters has found.

The Centers for Disease Control and Prevention (CDC), the United States' main agency for fighting major health threats, said it had been deceived into believing Pushwoosh was based in the U.S. capital. After learning about its Russian roots from Reuters, it removed Pushwoosh software from seven public-facing apps, citing security concerns.

The U.S. Army said it had removed an app containing Pushwoosh code in March because of the same concerns. That app was used by soldiers at one of the country's main combat training bases.

According to company documents publicly filed in Russia and reviewed by Reuters, Pushwoosh is headquartered in the Siberian town of Novosibirsk, where it is registered as a software company that also carries out data processing. It employs around 40 people and reported revenue of 143,270,000 rubles (\$2.4 mln) last year. Pushwoosh is registered with the Russian government to pay taxes in Russia.

On social media and in U.S. regulatory filings, however, it presents itself as a U.S. company, based at various times in California, Maryland and Washington, D.C., Reuters found.

Pushwoosh provides code and data processing support for software developers, enabling them to profile the online activity of smartphone app users and send tailor-made push notifications from Pushwoosh servers.

On its website, Pushwoosh says it does not collect sensitive information, and Reuters found no evidence Pushwoosh mishandled user data. Russian authorities, however, have compelled local companies to hand over user data to domestic security agencies.

Pushwoosh's founder, Max Konev, told Reuters in a September email that the company had not tried to mask its Russian origins. "I am proud to be Russian and I would never hide this." Pushwoosh published a blog post after the Reuters article was issued, which said: "Pushwoosh Inc. is a privately held C-Corp company incorporated under the state laws of Delaware, USA. Pushwoosh Inc. was never owned by any company registered in the Russian Federation."

The company also said in the post, "Pushwoosh Inc. used to outsource development parts of the product to the Russian company in Novosibirsk, mentioned in the article. However, in February 2022, Pushwoosh Inc. terminated the contract."

After Pushwoosh published its post, Reuters asked Pushwoosh to provide evidence for its assertions, but the news agency's requests went unanswered.

Konev said the company "has no connection with the Russian government of any kind" and stores its data in the United States and Germany.

Cybersecurity experts said storing data overseas would not prevent Russian intelligence agencies from compelling a Russian firm to cede access to that data, however.

Russia, whose ties with the West have deteriorated since its takeover of the Crimean Peninsula in 2014 and its invasion of Ukraine this year, is a global leader in hacking and cyber-espionage, spying on foreign governments and industries to seek competitive advantage, according to Western officials.

For more information and the complete article go to :

<https://www.reuters.com/technology/exclusive-russian-software-disguised-american-finds-its-way-into-us-army-cdc-2022-11-14/>

*** TEST FLIGHT FOR PASSENGER HYDROGEN-ELECTRIC PLANE***

KEMBLE, United Kingdom, Dec. 23, 2022 /PRNewswire/ --

The UK's Civil Aviation Authority (CAA) has granted a permit to fly for ZeroAvia's Dornier 228 aircraft, which has been retrofitted with its prototype hydrogen-electric powertrain. ZeroAvia secured the permit to fly following an extensive ground testing campaign and a rigorous review of the full development program.

It means that ZeroAvia, the leader in zero-emission aviation, can now begin the first test flights of its 600kW hydrogen-electric powertrain. The 19-seat twin-engine aircraft has been retrofitted in an engineering testbed configuration to incorporate ZeroAvia's hydrogen-electric engine powering the propeller on its left wing, operating alongside a single Honeywell TPE-331 stock engine on the right for appropriate redundancy to allow the safe testing of the novel propulsion technology.

For this testing program, ZeroAvia has worked with the CAA in meeting a far more stringent set of requirements when compared to the E-Conditions framework ZeroAvia had used for its 6-

seat prototype in 2020. Part 21 is an industry-standard term used to describe the regulatory approval of aircraft design and production organizations, and the certification of products, parts, and appliances for aircraft. Securing this permit to fly is a significant milestone in ZeroAvia's path towards commercialization.

Val Miftakhov, Founder & CEO of ZeroAvia said: "Earning our full Part 21 permit to fly with the CAA is a critical milestone as we develop a zero-emission aviation propulsion system that will be the most environmental and economical solution to the industry's climate impact. We're going to be starting 2023 in the best way possible, by demonstrating through flight that true zero-emission commercial flight is much closer than many think."

It will pave the way for a commercially certifiable configuration for ZA600 to be submitted by the end of 2023, ahead of delivering powertrains for the first commercial routes for 9-19 seat aircraft to commence by 2025. With 1,500 engines under pre-order, partnerships with seven aircraft manufacturers and multiple fuel and airport partnerships, ZeroAvia is well positioned to lead the industry's transformation to a clean future.

When test flights begin in January, ZeroAvia's Dornier 228 testbed is expected to become the largest aircraft to ever fly using a hydrogen-electric powertrain.

ZeroAvia is a leader in zero-emission aviation, focused on hydrogen-electric aviation solutions to address a variety of markets, initially targeting a 300-mile range in 9–19 seat aircraft by 2025, and up to 700-mile range in 40–80 seat aircraft by 2027. Based in the UK and USA, ZeroAvia has already secured experimental certificates for its two-prototype aircraft from the CAA and FAA, passed significant flight test milestones, secured a number of key partnerships with major aircraft OEMs and major global airlines, and is on track for commercial operations in 2025. The company's expanding UK operations are supported by grants from UK's Aerospace Technology Institute and Innovate UK, and ZeroAvia is part of the UK Government's Jet Zero Council. For more, please visit ZeroAvia.com, follow @ZeroAvia on Twitter, Instagram, and LinkedIn

The HyFlyer II project will see ZeroAvia develop a certifiable hydrogen-electric powertrain that can power airframes carrying up to 19 passengers. To do this, it will collaborate with two partners, the European Marine Energy Centre and Aeristech. The HyFlyer II project will conclude with another world's first hydrogen-electric flight by ZeroAvia in a 19-seat aircraft, with a 300 nautical mile flight in 2023. The HyFlyer II project is part-funded by the UK Government's Aerospace Technology Institute's (ATI) programme, supported by the Department for Business, Energy and Industrial Strategy and Innovate UK.

* F-150 LIGHTNING POWERS HOME FOR 2 FROZEN DAYS*

reviewgeek by Cory Gunther

Massive winter storms smothered most central U.S. states, northeastern areas, and Canada over the holiday season. Thankfully, one Ontario homeowner had an F-150 Lightning EV and used Ford's truck to keep his home powered up and the lights on for two days while the power was out.

If you were wondering if an EV could power a house, the answer is yes. While we're already well aware of Ford's bidirectional charging technology, which allows the F-150 Lightning EV battery packs to send or receive power, this is an excellent example of a real-world usage scenario.

Interestingly enough, Reddit user RapsFanLJ doesn't have Ford's "Home Integration System" or the correct wiring connected to their home electric panel and grid, but that didn't stop the user from taking advantage of the F-150 Lightning's massive battery cells.

According to a post on Reddit, once the power went out in their neighborhood, the F-150 Lightning EV owner sprung into action. Even without a proper bidirectional charging system, this owner used both power outlets in bed of the truck. He ran two extension cords and splitters to power the needed items.

The user stated that the F-150 Lightning ran ***"ran our fridges, freezers and our wifi, select lights and the TV for close to 2 full days. AND the battery was only down to 65%."***

This family could safely keep food cool, the lights on, and entertainment from the TV for 44 hours while the city worked on restoring power. And after all that, the truck still had more than enough juice left. Those running Ford's official home connection system may experience different results, potentially drawing more from the truck battery and running an entire home.

It's worth mentioning that the F-150 Lightning isn't the only EV with bidirectional charging or AC outlets in the truck bed, but with a big battery of up to 131 kWh in size, it has more than enough power to keep your lights on in an emergency.

Electric cars aren't a danger in [winter traffic jams](#), and if you're stuck inside during a winter storm and the power goes out, get creative and take advantage of those fully-charged battery packs.

CLUB MEETING

We will again have a face to face club meeting in January. We will try to keep up on the 2M and also video concurrent on a video service. The meeting will be held at the Lurie Civic Building which is the new Greater Seminole Area Chamber of Commerce. It is located on the St Petersburg College campus in Seminole. Turn west at the light at 113th St N and about 92nd Ave N.

CLUB NETS

Check in on the club net Thursdays at 1930 and 2000 (or at the end of the 2M net). 2M at 146.850 – with a tone of 146.2. Our 6M net runs after our regular 2M net on 53.150 – 1MHz offset 146.2 tone.

LOCAL NETS

MONDAY

1830 147.060+ no tone	St Pete ARC daily net	St Petersburg
1900 144.210 USB	CARS, vertical polarization	Clearwater
1900 147.135 +146.2	Zephyrhills ARC	Zephyrhills
2000 147.165+ 136.5	Brandon ARS	from Brandon
2000 50.135	Pinellas ARK	Pinellas County
2030 NI4CE system	EAGLE Net, NTS traffic net,	NI4CE system
2030 145.450	Pinellas ARK	Pinellas County

TUESDAY

1830 147.060 no tone	St Pete ARC daily net	from St Petersburg
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1900 50.200 USB	6M net	Brandon ARS
1900 28.365 USB	10M Net	Clearwater
1900 NI4CE system	WCF Section VHF ARES	NI4CE system
1930 145.170 & 442.4 both pl 156.7	Pinellas ACS net	Clearwater
1930 444.900 +141.3	Sheriff's Tactical ARC	Tampa
2000 NI4CE system	WCF Skywarn net	NI4CE system
2000 147.105+ 146.2	Tampa ARC net	from Tampa
2000 28.365 USB	simplex	Brandon ARS
2030 NI4CE system	EAGLE Net, NTS traffic net	NI4CE system
2100 28.465 USB	10/10 net	from Orlando
1900 146.490 simplex	3 RD Tuesday monthly, Hillsborough Co ARES simplex Net	

WEDNESDAY

1830 147.060 no tone	St Pete ARC daily net	from St Petersburg
1900 147.165 + 136.5	Humpday Net	from Brandon
1930 52.020 simplex	Suncoast 6'ers	from St Petersburg
1930 NI4CE system	WCF Section Digital Info Ne	NI4CE system
2000 147.105 146.2	Greater Tampa CERT net	from Tampa
2000 146.97- 146.2	Clearwater ARS	from Clearwater
2030 NI4CE system	EAGLE Net, NTS traffic net	NI4CE system
2100 NI4CE system	Tampa Bay Traders Net	non-affiliated
0000-2359 HF Winlink	Winlink Wednesday Net https://winlinkwednesday.net/reminder.html	

THURSDAY

1800 146.52 simplex	Hillsborough ARES/RACES	North Tampa
1830 147.060 no tone	St Pete ARC daily net	from St Petersburg
1900 444.750 +146.2	Fusion net	from Tampa

1915 224.660- no tone	St Pete ARC	from St Petersburg
1930 146.6385 -127.3	Lakeland ARC	from Lakeland
1930 444.225 + 146.2	Hillsborough ARES/RACES	from Tampa
1930 146.850- 146.2	Wormhole	from Pinellas Co
2000 53.150 -1MHz 146.2	Wormhole	from Pinellas Co
2030 NI4CE system	EAGLE Net, NTS traffic net	NI4CE system
FRIDAY		
1830 147.060 no tone	St Pete ARC daily net	from St Petersburg
1900 3.830 LSB	Brandon 80M Net	from Brandon
2030 NI4CE system	EAGLE Net, NTS traffic net	NI4CE system
SATURDAY		
0730 3.940 (7.281 Alt.)+/- QRM	WCF Section HF Net	from WCF
1830 147.060 no tone	St Pete ARC daily net	from St Petersburg
2030 NI4CE system	EAGLE Net, NTS traffic net	NI4CE system
SUNDAY		
0800 3.933	Florida Traders Net	non-affiliated
1830 147.060 no tone	St Pete ARC daily net	from St Petersburg
1930 NI4CE system	WCF Section Net	NI4CE system
2000 147.550 simplex	550 Simplex Net	Pinellas County
2030 NI4CE system	EAGLE Net, NTS traffic net	NI4CE system
2100 144.210 USB	Clearwater ARS	vertical orientation

FOR SALE / WANTED

Anyone having something for sale or who might be looking for an item let me know. I will not print phone numbers or email addresses unless specifically told to since this newsletter might end up on the web. The exception is when I get the information off the web. If you are a member of the Wormhole then you can ask club members for the persons contact information. If you are not a member ... why not? OK, if you are not a member you can contact me at the email address at the end of this newsletter, I will give you the information to contact the person involved. If you want to see anything here and you are coming to the meeting let the seller know, maybe he can bring it.

FOR SALE,

See Bill AG4QX for the following: most from SK estate, make me an offer.

- *Yaesu-Musen FRG-7 Receiver \$100 looks rough
- *Heathkit HW-101 Transceiver \$150 was his primary radio, looks rough
- *Heathkit HD-1215 Phone patch \$15 looks ok
- *Drake WV-5 wattmeter \$100 looks ok
- *EICO 482 scope \$25 works (looks good)
- *Heath Cantenna dummy load, 1 gal oil can, \$50

This stuff is from Ray KD4HUW

- *Yaesu ft-1000MP (100 watt) \$775.00
- * Icom AH-4 antenna tuner \$175.00
- *MFJ-616 Speech Intelligibility Enhancer \$90.00

Dean W8IM wants to make room in his closet.

352-255-1431 or w8im @arrl.net or the Wormhole and SPA*RC nets

*Meade 2080AT -LNT refracting telescope, little used original owner, original box, tripod, manual, some extra lenses, complete. \$100.00.

Captain Jack W4GRJ has a 10kw Generator.

This is a brute of a generator weighs 200 lbs on wheels, electric start, runs about 9.5 hours on 6 gals gas, includes large power cable and outdoor cover included

Cost \$1200 w/tax

https://www.ojcommerce.com/green-power-gasoline-powered-electric-start-portable-generator-420cc-15hp-lct-engine-gpg10000ew?utm_source=google&utm_medium=cpc&utm_campaign=PMax_Smart_m6_m7&utm_content=1305789&gclid=Cj0KCQjw166aBhDEARIsAMEyZh6tGAauSJT0Dth0kllm0zflifFwxtSBKfYmKF1VQ4tzZhs9W8067MaAojREALw_wcB

2 yrs old in excellent condition very well maintained and stored properly

\$700 worm special

HAMFESTS

2023

- January 14** **TARCFest** TARC Clubhouse, 22nd St at the river, \$5 entry including tailgate, a few inside tables reserved in advance \$15, talkin on 147.105 +146.2, license testing after, more info at <http://hamclub.org/>
- January 20-21** **Fort Myers, South Florida Section Convention**, Florida SouthWestern State College, 8099 College Parkway, \$10, n tailgate price given, talk-in 145.170-136.5, see <https://swflhamfest.info/> ,no contact info given
- January 28** **Arcadia**, Desoto County Turner Center Exhibit Hall, 2250 NE Roan St. Arcadia, Talk-in on 147.075 +100, no price given, for more info contact Doug Christ at kn4yt@yahoo.com or 863-990-2507
- February 10-12** **Orlando Hamcation**, Central Florida Fairgrounds, 4603 West Colonial Drive, Tickets \$20 in advance, \$25 at door. Talk-in 146.760 - PL 103.5 analog or Fusion. Also D-Star is on 146.820 -, all the information at www.hamcation.com or call 407-841-0874. There is also an AM low power Information Station on AM 610.
- February 24** **Friday only**, Hillsborough County PSOC, **9th Annual TECHCON Convention**, Hillsborough County Public Safety Operations Complex, 9450 E. Columbus Drive, Tampa 33619, for more information: <http://arrlwcf.org/wcf-special-events/wcftechconference/>
- April 15** **TARCFest** TARC Clubhouse, 22nd St at the river, \$5 entry including tailgate, a few inside tables reserved in advance, talkin on 147.105 +146.2, license testing after, more info at <http://hamclub.org/>
- August 19** **TARCFest** TARC Clubhouse, 22nd St at the river, \$5 entry including tailgate, a few inside tables reserved in advance, talkin on 147.105 +146.2, license testing after, more info at <http://hamclub.org/>
- May 19-21** **Xenia, Ohio, Dayton Hamfest**, tickets \$30 at the door, tailgate \$30, 10x10 booth \$705
- December 8 & 9** **Plant City, the 2023 Tampa Bay Hamfest and West Central Florida Section Convention**, Friday and Saturday, **at the Strawberry Festival**

grounds, admission \$10, 16x40ft tailgate space \$10, electric \$10, for information contact Bill Williams AG4QX, chairman@fgcarc.org or go to <http://www.tampabayhamfest.org> or you can just ask me, Jim or Dee at a meeting ;-)



Mid January	Adventure Run, Honeymoon Island
Last full weekend January	Winter Field Day https://www.winterfieldday.com/
Late January	Gasparilla celebration
Late February	West Central Florida Tech Conference http://arrlwcf.org/wcf-special-events/wcftechconference/
March	MS 150 Citrus Tour bike ride http://www.citrustour.org/register.php
March/April	MS Walks
March/April	Mass Casualty Exercises
Late April	Southeastern VHF Society Conference, http://www.svhfs.org
Late April	Florida QSO Party
Mid May	March For Babies (was March of Dimes) https://www.marchforbabies.org/Registration/Events
Mid May	Annual Armed Forces Crossband Test
Mid-May	Florida Hurricane Exercise
Late May	Dayton Hamfest
May, Memorial Day Weekend	Wormfest
First weekend in June	Museum Ships on the Air
Fourth weekend in June	Field Day http://www.arrl.org/contests/announcements/fd/
July 3/4	Midnight Run in Largo http://www.kiwanismidnightrun.com/
Third weekend in August	International Lighthouse/Lightship Week https://illw.net/
September	Run for All Children's
October, 3 rd weekend	JOTA, Scout Jamboree-on-the-AIR (around 14.280MHz)
Early December	ALS bike ride in Walsingham Park

YOUR WORMHOLE OFFICERS

Bill AG4QX is President and editor of this newsletter, the Vice President position is open, Treasurer is Jim KD4MZL, Paul KA4IOX is the Secretary, Dee N4GD is the Repeater Trustee and Mike KV0OOM is our webmaster.

YOUR WORMHOLE REPEATERS

53.150 -1Mz PL 146.2

442.625 +5Mz PL 146.2

146.850 - 600Kz PL 146.2

The Wormhole 2M and 440 repeaters are both now dual mode Yaesu DR-1X. FM analog as always and Yaesu Fusion, a C4FM digital mode.

The Wormhole website is at: <http://www.TheWormholeSociety.org>.

West Central Florida Section website: <http://www.arrlwcf.org/>.

The ARRL website is at: <http://www.arrl.org/>

This newsletter is written for The Glorious Society of the Wormhole, an ARRL affiliated amateur radio club located around the Seminole section of Pinellas County Florida. Anyone wishing to be added or removed from The Glorious Society of the Wormhole mailings please write to me at the address below and thy will be done.

73,
Bill Williams
AG4QX
[ag4qx AT arrl DOT net](mailto:ag4qx@arrl.net)