News from

The GLORIOUS SOCIETY OF THE WORMHOLE

August 2024

Hello Worms

After the article in last months Newsletter about 0Patch (zero Patch) doing free security updates to Windows 10 for at least five years after Microsoft stops I did some digging. I don't understand why it took so long for me to find this place. They have free security patches for Windows 7! and have been offering free patches for zero day patches for Win 7, 10 and 11 when it takes Microsoft sometimes weeks to make it available and it is not installed until the next Patch Tuesday. Not only that but no reboots during the install process. Limited to security update patches but who wants all the crap that Microsoft is loading on computers anyway. https://0patch.com/index.html

Spending a lot of time in front of the TV for the Olympics. I enjoy watching the less popular events like shooting, archery, handball, squash, equestrian, women's rugby! It's the only time they have the big TV stage.

Before the meeting the radio will be on for information about and directions to the meeting but that will discontinue when the meeting starts. We will continue with Zoom when convenient but if the computer is being used Zoom cannot operate and the 40 minute limit does make it awkward at times. The Zoom information is the same as all the other meetings and is listed towards the end of this newsletter.

In the meeting we will have donuts, water and soft drinks (probably only root beer). Bring your drink and lunch if you want. We will not be cooking but we have access to the Chamber of Commerce kitchen which has a microwave and a toaster oven so you can heat up/cook what you bring.

NSA SAYS TO REBOOT YOU PHONE EVERY WEEK

How-To-Geek By Brad Morton

Outside the occasional software update, you probably don't reboot your phone very often unless you regularly run out of battery. Here's why the National Security Agency (the NSA, which is

responsible for protecting the US' communications and cybersecurity) says you should make a habit out of it.

In short, the NSA is asking you to reboot your mobile devices once a week. iPhone and Android phones (and iPads/tablets) should be regularly rebooted to wipe any malicious code that may have made its way onto the system.

This announcement shouldn't be a cause for concern: no new specific threat has been identified, but fully rebooting your devices by turning them off and back on is part of good digital hygiene, and one of the 13 mobile device best practices being promoted by the NSA to help protect you from phishing, malicious apps, and other attacks.

Other mobile security best practices the NSA are suggesting you follow include:

- Keeping your apps and software up to date to protect against known exploits.
- Only installing apps from official App stores to protect against malicious apps.
- Avoiding connecting to public Wi-Fi networks (like in hotels) that could intercept your data.
- Not clicking links or opening attachments in emails to prevent viruses.
- Keeping your devices locked with biometrics, PINs and passwords to prevent a lost device being used to get access to your accounts.

Modern mobile operating systems include measures that protect the core system from being modified by malicious code. However, this doesn't stop malicious code from actually being executed, either by user action (opening a virus-infected email attachment, for example), or without it (in the case of zero-click attacks). Restarting your device means that any malicious code that is potentially running is stopped, and as it (hopefully) wasn't able to modify the operating system on your device, it will not start again when the device boots.

Malware that records or interferes with your activity can also be stored in temporary files, which are usually cleared during a reboot. Your device's performance may also be improved by regularly turning it off and on again, as buggy applications that may be using increasing amounts of memory will be forced to release those resources and restart.

We all rely on our mobile devices in our day-to-day lives, so giving them up is out of the question. So how do you stop worrying and learn to love our connected present and future? The best you can do is follow best practices, and stay vigilant at home, at work, and even on holiday. Most attacks and scams happen because of user negligence, not due to sophisticated technical attacks like the ones in spy movies (unless you happen to be a spy).

If you do fall victim to a cybersecurity attack (and, realistically, most of us will at some stage, through our own fault or not), you can at least take comfort that you did your best to avoid it, and maybe even lessen the damage done.

SUPERSTORM TRIGGERED A MASS MIGRATION OF SATELLITES

spaceweather.com July 11, 2024

Earth just experienced the biggest mass migration of satellites in history. On May 10, 2024, approximately 5000 spacecraft had to maneuver to maintain altitude, resisting a geomagnetic storm that was trying to pull them down. The event is described in a research paper just accepted by the ***Journal of Spacecraft and Rockets***.

"Most were SpaceX Starlink satellites," says William Parker of MIT, the paper's lead author. "Each satellite has a GNSS receiver as well as autonomous station-keeping and collision-avoidance capabilities. When they sensed the effects of the storm, thousands of the satellites made the decision to maneuver."

The need to migrate upward was caused by a sudden increase in satellite drag. Earth's atmosphere absorbed a huge amount of energy from the solar storm, causing it to puff up like a marshmallow held over a campfire. Tendrils of heated air reached into space and started dragging the satellites down.

"The superstorm's peak power was 2.63 TeraWatts," says Martin Mlynczak, who retired from NASA's Langley Research Center a month after the storm. Before he left, he used infrared data from NASA's TIMED spacecraft to estimate the amount of thermal energy dumped into the upper atmosphere. "It deposited enough energy to run my house for 10 million years (I average about 510 kWh per month)," he says.

Earth's atmosphere has been heated this much before, most recently during the Halloween storms of 2003. In those days, however, the satellite population was relatively low (fewer than 1000) and there was no mass migration.

"The May 2024 geomagnetic storm was the first major storm to occur during a new paradigm in low Earth orbit satellite operations dominated by commercial small satellites," the authors wrote in their paper.

Thanks mainly to the advent of Starlink in 2019, Earth now has almost 10,000 active satellites--ten times the number in 2003. When a fraction of them unexpectedly decide to change course

all at once, satellite operators must scramble to track them, making sure they don't collide. This creates a new and unprecedented risk for all satellites, even ones that don't move.

It's a problem that will only get worse in the years ahead. "Major storms are more likely throughout 2024-2025 during the peak of Solar Cycle 25," says Parker, "and the satellite population continues to grow."

Want to learn more? Read the original research here.

* NUMBER STATIONS STILL AROUND*

From The Kim Komando Show by way of South Florida DX Assoc.

This is one of the coolest things I've learned recently: Foreign intelligence agencies *still* use good ol' radio to share top secrets. Even with all the powerful tech at their fingertips, radio use in espionage has actually gone *up* in popularity since the 2010s. Pretty wild.

Russia in particular loves this technique. Why? Intelligence agencies don't trust the internet. Makes sense.

Foreign agencies have been using shortwave radio frequencies to broadcast coded messages for decades.

Starting in the mid-1960s, if you tuned your radio to shortwave frequencies between 5.422 and 16.084 megahertz (MHz), you might hear music … or you might hear a woman's voice with an English accent reading number combinations.

The U.K.'s MI6 intelligence agency and other spy networks used these "number stations" until at least 2008 to talk to operatives in the field. Whoa.

This tactic is still very much alive and well. In 2020, the FBI discovered messages being sent to Russian deep-cover officers living in Massachusetts. Just this past March, researchers caught Russia's foreign intelligence agency, SVR, broadcasting a test transmission in French.

So what's the advantage of old-school radio? Even encrypted phones can be hacked. It's also easier than ever to plant spyware on an internet-connected device.

In each broadcast, the sender and receiver use what's called a "one-time pad" to encrypt and decrypt the message. It's basically a matching list of random numbers, no fancy spy gear required.

Of course, anyone listening could pick up on *other* patterns and blow up an agency's spot. For example, a broadcast pattern could reveal how many agents there are and when or where they're active.

When the FBI discovered the 2020 broadcasts, they realized the messages corresponded to the specific *rooms* active operatives were in!

The moral of the story: Sometimes old stuff is more reliable than the new. Even in today's AI-powered digital and internet age, spies trust radio!

If you *really* want to geek out and slide into the underground world of secret radio messages, check out **Priyom**, https://priyom.org/ a group of international radio enthusiasts who track number stations around the world. They have chatrooms to swap stories, and their website follows intelligence, military, and diplomatic communication via shortwave radio.
Happy listening!

RESEARCH LOOKING AT HARVESTING RF ENERGY

tom's HARDWARE NEWS By Roshan Ashraf Shaikh

Researchers at the National University of Singapore (NUS) have found a new type of energy harvesting module which extracts energy from radio frequencies (RF).
Typically called 'waste energy', these modules convert the RF signals into DC voltage which can be used by low-powered devices. The radio frequency energy harvesting modules could reduce the dependency on batteries for certain applications. Remote areas and certain situations where swapping batteries regularly is not possible.

This research is a collaboration with other researchers from Tohoku University in Japan and the University of Messina in Italy. In the press release we can see that the research team are clear that such technology helps to reduce our dependency on batteries. This would also reduce the environmental impact of batteries, extending device lifetimes and enabling new types of wireless sensor networks and IoT devices in situations where battery replacement is not pragmatic.

This technology also helps to extract from low RF power levels, implying its usefulness in many low-powered applications, such as temperature sensors. One of the researchers, Professor Yang Hyunsoo of the NUS said, "We optimized the spin-rectifiers to operate at low RF power levels available in the ambient, and integrated an array of such spin-rectifiers to an energy harvesting module for powering the LED and commercial sensor at RF power less than -20 dBm.

The technology does have limitations because of the traditional rectifiers currently used. Professor Yang explained that this is because the Schottky diode technology has remained saturated for decades because of thermodynamic restrictions at low power. Designing a rectifier needed for a wireless energy harvesting module poses a significant challenge. The solution looks to be a nanoscale spin rectifier (SR) that can offer better wireless-to-DC voltage conversion. This would enable optimized SR devices to harvest ambient radio frequency between -62 and -20dBm. An on-chip co-planar wavelength-based SR can be developed which will hard a large zero-bias sensitivity while having a high efficiency. It also should result in better on-chip operation and hence the NUS research team are exploring the integration of an on-chip antenna to boost its efficiency.

Dr Raghav Sharma, the first author of the paper, also concurs with this assessment and stresses the importance to resolve the issue relating to conventional rectifiers. Once overcome, it would lead to the design of next-generation ambient RF energy harvesters and sensors using the new rectifier technology.

Radio Frequency Energy Harvesting (RF-EH) technologies have been researched by many scientists who also published their findings- including those who have reviewed design, methodologies and potential applications. It indicates that energy harvesting is possible from frequencies used for LTE, DTV, GSM, WLAN, HIPERLAN and C-Band typically used in urban and semi-urban areas. While it couldn't solve issues created by larger applications, it plays a vital role in not using batteries for certain devices. But only time will tell what devices we could expect from such potential implementations.

Once its implementation is feasible and it can extract the waste energy efficiently, this innovation will enable new types of devices and uses that will be critical for commercial, scientific, medical and personal. Potentially enabling many sensors, devices and perhaps low-powered computing devices to be used for our betterment.

CLUB MEETING and ZOOM

The meeting time is 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 double parking is fine since we will be able to find the owner to move his vehicle if necessary. Alternately if you go another 100 yards past you can park in the college parking lot. Below is the Zoom information, same as

last month. The ZOOM meeting is limited to 40 minutes so I will start it early and restart it to cover the whole meeting.

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

Join Zoom Meeting
https://zoom.us/j/2737114584?pwd=d1BETHVOQ21vWWZXZ0lYQ0FlWWtIdz09
Meeting ID: 273 711 4584
Passcode: worm

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
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	3RD 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 Bandon
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	440.0 +162.2	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.

*Heathkit HD-1215 Phone patch $15 looks ok
*Drake WV-5 wattmeter $90 looks ok

HAMFESTS

2024

August 24 — **TARCFest** TARC Clubhouse, 22nd St at the river, 8AM-1PM, $5 entry including tailgate, a few inside tables must be reserved in advance, talkin on 147.105 +146.2, license testing after, more info at http://hamclub.org/

October 19 — Bradenton, Marcifest 2024, Bible Baptist Church of Bradenton
2113 Morgan Johnson Rd., talkin 146.850 -100.0, admission $5, tailgate $5, contact Michael Ryan at 941-376-6453, flyer here:
http://manateea.startlogic.com/WP/wp-content/uploads/2023/09/MARCIFEST-2023-1.pdf

December 13 & 14 — **Plant City, the 2024 Tampa Bay Hamfest and West Central Florida Section Convention,** Friday and Saturday**, at the Strawberry Festival grounds, admission $13, 16x40 ft 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 ;-)**

January 11 ?? — **TARCFest** TARC Clubhouse, 22nd St at the river, 8AM-1PM, $5 entry including tailgate, a few inside tables must be reserved in advance, talkin

on 147.105 +146.2, license testing after, more info at http://hamclub.org/ schedule not announced yet.

February 7-9 **Orlando Hamcation,** Central Florida Fairgrounds, 4603 West Colonial Drive, Tickets $20 in advance, $25 after Dec 21 and at the 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.

Fourth 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/April	MS Walks
April	MS bike now named Suncoast Challenge
http://www.citrustour.org/register.php	
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/	
Third weekend in August	International Lighthouse/Lightship Week
https://illw.net/	

September	Run for All Children's
October, 3rd weekend	JOTA, Scout Jamboree-on-the-AIR (around 14.280MHz)
Early December	ALS bike ride in Walsingham Park
December, Second weekend	Tampa Bay Hamfest http://www.fgcarc.org/

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-2X. 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
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