



News from



## The GLORIOUS SOCIETY OF THE WORMHOLE

February 2018

### Hello Worms

The Wormhole Newsletter is written by me, your President. In the past I sent it out as an email but over time as the club got bigger several things made that method of distribution less desirable. A few times I was labeled as a spammer by AOL . Several members expressed a desire for a better format to read on their smart phone. Mike, our webmaster, suggested sending them out by using the website database and reformatting for multiple interfaces. That has generally worked well except I just recently realized that many who received the newsletter in the past were not members so they were unintentionally dropped from distribution. The newsletter had a distribution of about 50 when the club had a membership of about 20. Mike has a method to add those people back into the distribution without them being on member list. So if you stopped getting the newsletter and still want it and you are reading this then you are back on the distribution. As always if you do not want the newsletter just follow the directions on the last line of the newsletter, Talk-in is on the Wormhole repeater system. For those coming to the meeting who cannot hit the repeater we will also monitor the Honeywell club repeater on 443.050 +141.3. Bring a folding chair if you have one.

**\* THE DISCONE ANTENNA \***

By Ralph WDOEJA

Have you heard of it? It has been used for a long time.

There are many variations in shape to this type of antenna. The basic design is a cone with the little end up. Hovering above the point of the cone is a round disc. Some are two cones point to point. Some are two flat triangles point to point. However, the one that seems to be the most practical is the cone and disc style.

What is the advantage? VERY broad banded and a low angle of radiation.

For example, a Discone built for 144 Mhzs will cover all frequencies up to 450 Mhzs and stay within a 2:1 SWR. It may go much wider than that.

For VHF and higher, it is relatively easy to make. For the HF spectrum, it becomes extremely large. There are some built for HF. About 157 feet tall and a bottom diameter the same. The disc is 110 feet. What you get is a band width from 1.8 Mhz to 30 Mhzs and stay within a 2:1 SWR. No tuner used.

The discone is vertically polarized with a similar gain of a vertical one half wave dipole.

For VHF and UHF it is ideal for a base station and/or a scanner receiver.

**THE CONE.** It is like an up side down funnel. The angle is 60 degrees. At 60 degrees the length of the side of the cone is the same as the diameter.

The cone diameter is: 
$$\text{CONE DIAMETER (METERS)} = 86 / \text{MINIMUM FREQ IN MHZ}$$

It can be made from a light sheet aluminum such as roof flashing, wire mesh or even a series of rods like radial wires.

An SO-239 connector mounts in the point of the cone. Therefore, the point of the cone should come to 5/8 inch.

**THE DISC.** The diameter of the disc is: 
$$\text{DISK DIAMETER (METERS)} = 60.2 / \text{MINIMUM FREQ IN MHZ}$$

**DISC TO CONE SPACING (METERS)** 
$$0.3 \times \text{CONE TIP INNER DIAMETER}$$

The structure of this antenna is quite forgiving since the band width is so large. Also you can vary the shape of the cone to fit what you can build.

This design is ideal for a base station or an emergency set up. Give it a try. It is a great project with satisfying results.

73,  
Ralph WD0EJA  
[www.isotronantennas.com](http://www.isotronantennas.com)

### **\* MORSE CODE: A STAPLE IN THE NAVY IW TOOLKIT \***

Story Number: NNS160129-12 Release Date: 1/29/2016 By Carla M. McCarthy,  
Center for Information Dominance Public Affairs

PENSACOLA, Fla. (NNS) -- The cryptologic technician (collection) (CTR) student cohort in the first revised Basic Manual Morse Trainer (BMMT) course wrapped up, Jan. 28, at the Center for Information Dominance (CID) Unit Corry Station.

The update included the latest Manual Morse software used by the Department of Defense and was tested out in a nine-week pilot course that concluded in September.

The self-paced course provides basic instruction and practical application in the interception of Morse-type communications.

"Morse code continues to be an inexpensive and efficient means of communication for many states throughout the globe," said Senior Chief Cryptologic Technician (Collection) (IDW/NAC/SW/AW) Tony Gonzales, CTR rate training manager for CID headquarters. "Manual Morse operators here at Corry Station are learning a skill set that has stood the test of time. Many of our most senior CTRs began their careers as Manual Morse operators."

In the updated course, Sailors learn how to operate radio-receiving and associated computer-based equipment. From basic safeguards of security to communication procedures and systems theory to operation of communications equipment, the

course teaches how to intercept Morse communications, as well as copy and send Morse code.

"There is something special about learning a skill that Sailors have been performing since World War II," said Gonzales. "The connection between the past, present and future cryptologic technician (collection) is rarely seen in our line of work as technologies are forever changing."

Morse is just one tool that CTRs use as members of the Navy's Information Warfare (IW) community to perform collection, analysis and reporting on communication signals.

"Morse code is not only used in military operations but also in commercial navigation," said Cryptologic Technician (Collection) 1st Class (IDW/SW) Gabriel Albarran, the BMMT course supervisor. "Search and rescue, science navigations and weather status are frequently passed in automated Morse code."

Sailors can take the course immediately following CTR "A" school or can be assigned as fleet returnees to the course as part of their transfer. The course is now offered to about 40 CTRs each year in the pay grades of E-1 through E-5.

"It's a language," said Cryptologic Technician (Collection) Seaman Mary Kaitlin McKeeby, who beat the course record set during the pilot by two days, finishing the self-paced course in 39 days. "If you have a knack for languages, (Morse code) is going to be easier to pick up."

She stressed the importance of staying composed while learning Morse code and persisting through the lessons even when making a mistake.

Graduates receive NEC 9169 as a Morse code intercept operator and undergraduate college credit through the American Council on Education. They may also be eligible for selective re-enlistment bonuses in both zones A and B.

Morse code training has been taking place continuously at Naval Air Station Pensacola Corry Station since 2005, when the Navy moved the training back to Corry Station, in favor of cost and time savings by relocating the course with the cryptology "A" school. A long partnership with the Army providing the training came to an end at that time.

The Center for Information Dominance (CID) based at Corry Station in Pensacola,

Florida, is the Navy's learning center that leads, manages and delivers Navy and joint forces training in information operations, information warfare, information technology, cryptology and intelligence.

With nearly 1,300 military, civilian and contracted staff members, CID provides training for approximately 22,000 members of the U.S. armed services and allied forces each year. CID oversees the development and administration of more than 200 courses at four commands, two detachments and 12 learning sites throughout the United States and Japan.

For more information on the Center for Information Dominance, visit <http://www.netc.navy.mil/centers/ceninfodom/>; [facebook.com/CenterForInformationDominance/](https://www.facebook.com/CenterForInformationDominance/); and [twitter.com/CenterInfoDom/](https://twitter.com/CenterInfoDom/).

## **\* SAMSUNG UNVEILS 'THE WALL' – 146 " TV\***

*INFOPACKETS* by John Lister on January, 10 2018

Samsung has unveiled a massive 146" television, nicknamed "[The Wall](#)" (pic). While the size is clearly too large for most homes, it uses a new approach that could mean more choices about television set size in future.

Most TV sets these days use liquid-crystal displays (LCD). In simple terms, these TV's shine light through tiny crystals that - depending on their electric charge - either pass through and color the light, or simply show a black background that's behind the screen.

Samsung's new screen is currently a prototype only. It instead uses what calls a MicroLED display, in which each "pixel" in the picture is actually made up of a set of tiny colored LED lights. These each shine on or off, combining to make the required color for the pixel.

**Screen Is Like Mini-Billboard**

In effect, the system is the same that is used for giant video billboards that you might see in Las Vegas or Times Square. The difference is that each LED in the TV screen is around a millimeter square, meaning the picture is sharp even from a few feet away. There's also some clever technology that means that the LEDs don't emit excessive heat that would compromise the TV and waste energy. (Source: [cnet.com](http://cnet.com))

One of the keys to the screen is that it's not a continuous unit. Normally each layer of the various part of a TV set has to be made as a single sheet, which can become disproportionately expensive at larger sizes.

### **No Restriction On Size Or Shape**

Instead, the Samsung TV is made up of modules of LEDs that simply slot together like a jigsaw puzzle. That means that in theory the screen could be made as large as desired without costs getting out of control. Movie buffs could even get a screen that's in the same ratio as a movie theatre screen, rather than standard 16:9 widescreen. (Source: [samsung.com](http://samsung.com))

Alternatively, it could be possible to produce a set to a custom size that would take account both of the available space in a customer's home and the distance at which they sit from the screen. It could even mean repairs were more viable if a single LED failed.

### **The Wall: How Much Does it Cost; When Will it Ship?**

It's not yet clear when the behemoth 146" television may ship, however Samsung representatives suggested that similar units will debut later this year "in a range of various sizes," making them available to the public. Given Samsung's stellar reputation as a technology company which delivers quality products, it's a given that these television units likely won't be cheap. No official word has been given on price points.

**\* INTEL AND IBM DEMO QUANTUM COMPUTERS \***

*INFOPACKETS* by John Lister on January, 11 2018

It might seem as if that makes the computer twice as fast or powerful, but in reality it's much more significant. When an ordinary computer carries out complex or multiple tasks, it can only use a bit of data for one thing at a time. However, a quantum computer can use the same qubit in two different calculations simultaneously.

That benefit soon mounts up. In very simplified terms, you can think of a quantum computer using a single qubit as being twice as powerful as an ordinary computer using a single bit. However, two qubits can provide four times the computing power of two bits, three qubits provide eight times the power of three bits, and so on.

That process increases so rapidly that in theory a quantum computer could be hundreds of millions of times faster than a traditional computer, if not more. Even more useful is that a quantum computer can weigh up multiple options simultaneously. That's something where the human brain still has an advantage over the fastest computer; it also means quantum computers could combine human characteristics we'd call "intelligence," with the sheer speed of a computer.

Intel's latest demonstration of a quantum computer has 49 qubits (compared with 17 in its predecessor), with IBM reportedly topping that with 50 qubits. That's significant as previous forecasts have suggested 50 qubits is the threshold when a quantum computer could not only work faster than even the fastest traditional 'supercomputers', but would be able to tackle tasks that are simply beyond the scope of existing machines, regardless of speed.

The big limitation right now is temperature. Quantum computers need to run at exceptionally low temperatures to avoid wrecking the 'multi-state' characteristics of the components. For now at least, there's no simple solution as to how this would work in an ordinary business or home setting.

EDITOR: For the whole story go to

<http://www.sciencemag.org/news/2016/12/scientists-are-close-building-quantum-computer-can-beat-conventional-one> .

## \***ANDROID SNOOPING TOOL HAS REMARKABLE ABILITIES**\*

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ZDNet By [Danny Palmer](#)

A newly-uncovered form of Android spyware is one of the most advanced targeted surveillance tools ever seen on mobile devices, coming equipped with spying features never previously seen active in the wild.

Named Skygofree by researchers because the word was used in one of its domains, the multistage malware is designed for surveillance and puts the device in full remote control of the attackers, enabling them to perform advanced attacks including location-based sound recording, stealing communications including WhatsApp messages, and connecting to compromised networks controlled by the malware operators.

Researchers at Kaspersky Lab say those behind spyware have been active since 2014 and are targeting select individuals -- all in Italy. Those behind the mobile surveillance tool are also thought to be based in Italy.

"Given the artefacts we discovered in the malware code and our analysis of the infrastructure, we have a high level of confidence that the developer behind the Skygofree implants is an Italian IT company that offers surveillance solutions," said Alexey Firsh, malware analyst in targeted attacks research at Kaspersky Lab.

The malware was uncovered during a review of suspicious file feeds, with its capabilities uncovered after analysing the code.

Researchers say Skygofree has some of the most advanced features ever seen in mobile malware.

Still thought to be receiving updates from its authors, Skygofree offers attackers 48 different commands, allowing them flexibility to access almost all services and information on the infected device.

That includes the ability to secretly use the device's microphone eavesdrop on the user and their surroundings when they enter a specified location -- a surveillance feature which has never previously been seen in the wild.

Other previously unseen features bundled with Skygofree are the ability to use [Accessibility Services](#) to steal WhatsApp messages of victims and an ability to connect an infected device to wi-fi networks controlled by the attackers.

The malware is also equipped with all the features and root access privileges usually associated with trojan spyware, including capturing photos and videos, seizing call records and text messages, as well as monitoring the user's location via GPS, their calendar, and any information stored on the device.

If the user has chosen to run battery-saving measures, Skygofree is able to add itself to the list of 'protected apps' in order to ensure it can carry on its malicious activity, even when the screen is off or the phone isn't active.

It remains unclear if those targeted by Skygofree have anything in common outside of being based in Italy, but research suggests that those infected with the Android malware have been compromised after visiting fake websites which mimic those of leading mobile operators.

While researchers still don't know how the victims are lured onto these malicious sites, once there, they're asked to update or configure their device configuration, allowing the malware to be dropped in the process.

Most attacks appear to have taken place in 2015, but there's evidence that Skygofree is still active with evidence of attacks as recently as 31 October 2017. The attackers have gone out of their way to ensure that Skygofree remained under the radar without being detected.

"High-end mobile malware is very difficult to identify and block and the developers behind Skygofree have clearly used this to their advantage: creating and evolving an implant that can spy extensively on targets without arousing suspicion," said Firsh.

In addition to actively infecting Android devices, the attackers also appear to have an interest in Windows systems: researchers uncovered recently-developed modules to target the platform.

However, given the treasure trove of information a mobile device can provide to attackers, it's no surprise that those behind Skygofree put their main focus on Android -- especially given the chance it offers to track a user's movement and therefore activate attacks based on location.

"Mobile spyware is becoming more effective than PC variants, because victims keep their mobile phone close by them at all times, and such implants can exfiltrate a large amount of sensitive information," Vicente Diaz, deputy head of the global research and analysis team at Kaspersky Lab, told ZDNet. "Some of the never before seen-in-the-wild features of Skygofree are remarkable in their capability."

In order to protect against falling for these sorts of targeted cyber-attacks, mobile users are encouraged to use a security tool to help protect their device and to exercise caution when they receive emails from people or organizations they don't know, or with unexpected requests or attachments. <http://www.zdnet.com/>



### **\*CLUB MEETING\***

The next club meeting is February 3rd . We meet on the first Saturday every month at 11:00 Saturday morning at the Minnreg Building located at 6340 126th Ave N, Largo. Members are welcome to come in the rear area through the fence gate on the southeast corner of the property. Talk-in is on the Wormhole repeater system. For those coming to the meeting who cannot hit the repeater we will be monitoring the Honeywell club repeater on 443.050 +141.3. We will keep an eye

peeled for you. We will take advantage of the cooking facilities with an after-the-meeting Social and Wormdog picnic.



### **\*CLUB NETS\***

Check in on the club net Thursdays at 1930. 442.625 + with a 146.2 tone or the 2M side at 146.850 – also with a tone of 146.2. We are always looking for volunteers to be the net control operator. Anyone interested, talk to one your club officers.



### **\*LOCAL NETS\***

#### **MONDAY**

1730 147.030 + Receiver sites and tone info <http://www.qsl.net/wd4scd/>

St Pete Yacht Club ARC                      St Petersburg

1830 147.060+ no tone                      St Pete ARC daily net                      St  
Petersburg

1900 144.210 USB Clearwater	CARS, vertical polarization	
1900 147.135 +146.2 Zephyrhills	Zephyrhills ARC	
2000 147.165+ 136.5 Brandon	Brandon ARS	from
2000 50.135 Pinellas County	Pinellas ARK	
2030 NI4CE system system	EAGLE Net, NTS traffic net,	NI4CE
2030 145.450 Pinellas County	Pinellas ARK	

## TUESDAY

1830 147.060 no tone Petersburg	St Pete ARC daily net	from St
1900 50.200 USB Brandon ARS	6M net	
1900 28.450 Clearwater	WCF section net	
1900 NI4CE system system	WCF Section VHF ARES	NI4CE
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 system	WCF Skywarn net	NI4CE
2000 147.105+ 146.2 Tampa	Tampa ARC net	from

2000 28.365 USB ARS	simplex	Brandon
2030 NI4CE system system	EAGLE Net, NTS traffic net	NI4CE
2100 28.465 USB	10/10 net	from Orlando

### **WEDNESDAY**

1930 146.30 simplex net from Tampa	Hillsborough ARES/RACES	
1830 147.060 no tone Petersburg	St Pete ARC daily net	from St
1930 52.020 simplex Petersburg	Suncoast 6'ers	from St
1930 NI4CE system system	WCF Section Digital Info Ne	NI4CE
2000 147.105 146.2 Tampa	Greater Tampa CERT net	from
2000 146.97- 146.2 Clearwater	Clearwater ARS	from
2030 NI4CE system system	EAGLE Net, NTS traffic net	NI4CE
2100 NI4CE system	Tampa Bay Traders Net	non-affiliated

### **THURSDAY**

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

1900 444.750 +146.2 Fusion net from  
Tampa

1930 146.850- & 442.625+ both pl 146.2 Wormhole from St  
Petersburg

1930 146.6385 -127.3 Lakeland ARC from  
Lakeland

1915 224.660- no tone St Pete ARC from St  
Petersburg

2030 NI4CE system EAGLE Net, NTS traffic net NI4CE  
system

### **FRIDAY**

1830 147.060 no tone St Pete ARC daily net from St  
Petersburg

2030 NI4CE system EAGLE Net, NTS traffic net NI4CE  
system

### **SATURDAY**

0830 3.911 (7.281 Alt.)+/- QRM WCF Section HF Net from  
Pinellas County

1830 147.060 no tone St Pete ARC daily net from St  
Petersburg

2030 NI4CE system EAGLE Net, NTS traffic net NI4CE  
system

### **SUNDAY**

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 Pinellas County	550 Simplex Net	
2030 NI4CE system system	EAGLE Net, NTS traffic net	NI4CE
2100 144.210 USB orientation	Clearwater ARS	vertical

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**\*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 have all the information you need on a club roster and 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.

**FOR SALE**, Mosley TA-33M 10-15-20M beam with the 40M add on kit. Antenna is on the ground and in good shape. There are several parts that need replacement. The 40M kit is new in box. Antenna is broken down into six or seven feet sections so easy to handle. Asking \$400, talk to me, Bill AG4QX at arrl dot net or see me at the meeting.

**FOR SALE**, Cushcraft A4S 10-15-20M beam, on the ground. There are several parts that need replacement. Asking \$300, talk to me, Bill AG4QX at arrl dot net or see me at the meeting.

**FOR SALE**, 13 element, 14.5 ft 220 beam. Wormhole property, \$20, contact Bill AG4QX or any other officer. **Free to any Wormhole member or other club.** Pickup at Bill's house.

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**\*HAMFESTS\***

**February 9-11**     **Orlando Hamcation and State Convention**, Central Florida Fairgrounds, 4603 West Colonial Drive, Tickets \$13 in advance, \$15 at door. Talkin 146.4760 - no PL or D-Star 146.850 -, all the information at [www.hamcation.com](http://www.hamcation.com) or call 407-841-0874

**February 24**     **West Central Florida Section Technical Conference (3rd Annual TECHCON)**, Winter Haven, Polk County Emergency Operations Center  
1890 Jim Keene Blvd. **Looking for presentations and displays.** **Talk-In** 146.985, 444.625, 443.900 or 444.950, Pl for all 127.3. For info see <http://www.arrlwcf.org/> or contact Darrell Davis KT4WX at kt4wx@arrrl.net

**May 26**     **WormFest 2017, Pinellas Park, FREE, Freedom Lake Park, 9990 46th St N, southeast corner of US 19 and 49<sup>th</sup> Street, 33782. Park opens at sunrise for vendor setup, hamfest starts at 0800. Talk-in on 442.625 + or 146.850 – both with a tone of 146.2. For a map and directions see <http://www.TheWormholeSociety.org> .**

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Mid January	Frogman swim in Tampa Bay. <a href="http://www.tampabayfrogman.com/">http://www.tampabayfrogman.com/</a>
Last full weekend January	Winter Field Day, <a href="http://www.sparhams.org/index.php">http://www.sparhams.org/index.php</a>
Late January	Gasparilla celebration
March/April	MS Walks
March/April	Mass Casualty Exercises
Late April	Southeastern VHF Society Conference, <a href="http://www.svhfs.org">http://www.svhfs.org</a>
Late April	March For Babies (was March of Dimes) <a href="https://www.marchforbabies.org/Registration/Events">https://www.marchforbabies.org/Registration/Events</a>

Late April	Florida QSO Party
Mid-May	Annual Armed Forces Crossband Test
Early to Mid May	MS 150 bike ride <a href="http://bikeflc.nationalmssociety.org/site/TR?fr_id=28207&amp;pg=entry">http://bikeflc.nationalmssociety.org/site/TR?fr_id=28207&amp;pg=entry</a>
Mid-May	Florida Hurricane Exercise
Late May	Wormfest
Early June	Museum Ships on the Air
Fourth weekend in June	Field Day <a href="http://www.arrl.org/contests/announcements/fd/">http://www.arrl.org/contests/announcements/fd/</a>
July 3/4	Midnight Run in Largo <a href="http://www.kiwanismidnightrun.com/">http://www.kiwanismidnightrun.com/</a>
August	International Lighthouse/Lightship Week <a href="https://illw.net/">https://illw.net/</a>
October, 3 <sup>rd</sup> weekend	JOTA, Scout Jamboree-on-the-AIR (around 14.280MHz)
Early December	ALS bike ride in Walsingham Park
December, first full weekend	Ride & Run With The Stars in Fort DeSoto Park
December, Second weekend	Tampa Bay Hamfest <a href="http://www.fgcarc.org/">http://www.fgcarc.org/</a>

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### **\*YOUR WORMHOLE OFFICERS\***

Bill AG4QX is President and editor of this newsletter, Treasurer is Jim KD4MZL, Paul KA4IOX is the Secretary, Dee N4GD is the Repeater Trustee and Mike K4ZPE is both our club Vice President and webmaster.

### **\*YOUR WORMHOLE REPEATERS\***

442.625 + PL 146.2

146.850 - PL 146.2

The Wormhole repeaters are both now dual mode Yaesu DR-1X. FM analog as always and now Yaesu Fusion, a C4FM/FM digital mode. The repeater crew updated the software on May 3, 2016.

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