HAM DATES:

INDIAN RIVER CO.

July 4,11,18,25 & Aug 1,8,15,22,29 Treasure Coast Ragchew / Traders Net 8:00pm 146.775 (-) (107.2)

July 5,12,19,26 & Aug 2,9,16,23,30 Emergency Net 7:30pm 146.640 (-) (107.2)

July 6,13,20,27 & Aug 3,10,17,24,31 Indian River Co. ARES NET 7:30pm, 145.130 (-) (107.2)

July 8, 2021 & August 12, 2021) Vero Beach ARC Meeting, 7:30pm Indian River Emergency Services 4225 43rd Ave, Vero Beach

July 22, 2021 & August 26, 2021 Indian River Co. ARES, meeting 7:00pm 145.130 (-) (107.2)

ST LUCIE CO.

July 7, 2021 & August 4, 2021 St. Lucie Co. ARES NET, 7:30pm, 147.240 MHz (+) (107.2)

July 21, 2021 & August 18, 2021 St. Lucie Co. ARES, 7:30 pm SLC EOC, 15305 Midway Rd, Ft. Pierce.

July 6,13,20,27 & Aug 3,10,17,24,31 Ft. Pierce ARC Rag chew, Tech, Traders NET 8pm, 147.345 (+) (107.2), Echolink: 2004 (W4AKH-R)

July 14, 2021 & August 11, 2021 Ft. Pierce ARC Meeting, 7:30pm, IRSC, Building R, Room 124

July 1,8,15,22,29 & Aug 5,12,19,26 Port St. Lucie ARA Rag chew, Traders, Tech NET 7:30pm, 146.955 (-) (107.2)

July 28, 2021 & August 25, 2021 Port St. Lucie ARA meeting 7:30pm (ZOOM Meeting) (request login)

MARTIN CO.

July 5,12,19,26 & Aug 2,9,16,23,30 MCARA Rag chew net 8:00pm, 145.150 MHz (-) (107.2)

July 8, 2021 & August 12, 2021 MCARA ARES, 7:00pm MC EOC 800 SE Monterey Rd, Stuart

July 22, 2021 & August 26, 2021 MCARA Meeting, 7:00pm, Stuart PD, 830 SE Martin Luther King Jr Blvd, Stuart

(GREEN underlined text are links to club / organization websites)

Treasure Coast Ham News

VOLUME 2, ISSUE 7 JULY-AUGUST 2021

July 4th, 1776

The Birth of Our Great Democracy

SPIRIT OF 76 BY ARCHIBALD M. WILLARD

INSIDE THIS ISSUE:

TCHAMNEWS@GMAIL.COM

From the Publishers

Tuning around the HF bands recently I was reminded of the song *"Where have all the flowers gone"* written by Pete Seeger in 1955. Some of you may remember the song as many groups recorded it during the 50s, 60s, 70s, and beyond. Seeger wrote the lyrics and borrowed the melody from an old Irish folk song. It is a classic.

Thinking about Seeger's original lyrics:

Where have all the flowers gone, long time passing?
Where have all the flowers gone, long, long time ago?
Where have all the flowers gone?
Gone to young girls, every one!
When will they ever learn, when will they ever learn?

I began to mentally replace the song's lyrics:

Where has all the sideband gone, long time passing?
Where has all the morse code gone, long, long time ago?
Where have all these old modes gone?
Gone to WSJT, every one!
When will they ever return, when will they ever return?

Now don't get me wrong there is SSB and CW activity on the bands. During a contest, activity can pick up, but it drops soon after. Since introduction, WSJT has gradually become the top dog of HF ham radio. The application has encouraged vendors to add sound cards to radios. The amount of computer audio interfaces and digitally enabled technology is astounding. Sales of rigs with digital capability have skyrocketed. The new digital marketplace has made many vendors happy & their wallets fatter.

Of course digital communications technology is not relegated only to ham radio. Our homes, appliances, exercise machines, cars, etc. all have computer processors and Internet connectivity. Cell phones ,once thought of as an extension of our home telephones, have become something I doubt even the Motorola designers fathomed.

Going back to Seeger's words:
When will they ever return, when will they ever return?

Probably never, but that is the future. We either embrace the digital world now or become *"rev-locked"* to our past. What's your opinion?

* * * * *

TCHamNews publishes topical articles and information of interest to the local ham community. A lot of time and effort goes into the writing and publication. We know we can't be everything to everybody, but if you enjoy reading the articles, especially from our authors, please let them know. If you have article suggestions tell us. If something is not clear in the article, tell them. No matter what your opinion, we and our authors want to hear from you.

73, The Publishers

The Amateur Radio Emergency Service (ARES) is an ARRL public service program.

The most important role amateur radio plays in hurricanes is to gather and relay information to the National Hurricane Center's Amateur Radio Station WX4NHC.

You could be the only station in the impacted area and your eye witness reports, or measured data if you have a weather station, could be critical to the forecasters. You could be the only station hearing another ham calling with a report or in a dangerous situation and in need of assistance. Also, you could play an important role by translating a ham's report from a foreign language into English so we can all understand it. So as you can see, everyone has a part they can play.

WX4NHC on 14.325 MHz is a frequency that you should always monitor during a hurricane. More information can be found at www.wx4nhc.org. This frequency is maintained for hurricanes by the Hurricane Watch Net www.hwn.org.

The VoIP Hurricane Net uses Echolink and IRLP to link stations together over the internet. When HF propagation is not good, internet may be the only way information reaches WX4NHC. The EchoLink Conference Room is WX-Talk (Node 7203) and the IRLP Node is 9219.

More information can be found at www.voipwx.net

Treasure Coast ARES Emergency Coordinators

Martin County
Steve Marshall, WW4RX

St Lucie County
Paul Horner, W4ISZ

Indian River County
Bud Holman, WA4ASJ

Get involved, volunteer, and be a part of your county ARES.

VE License Testing Update

If your club is testing, please let us know the location, date and examination results

Next License Exam Session Scheduled

The next St. Lucie County license exam session will be held on August 14, 2021 at 9:00 AM in conjunction with the Fort Pierce Ham Fest.

The Ham Fest and exam session will be held at Indian River State College, 3509 Virginia Ave, Fort Pierce, FL 34953. Check on site for the room where the session will be held.

Important Reminder

Don't forget, as of May 20, 2021, all license exam candidates are required to include an FCC Registration Number (FRN) on the license application form 605. Social Security numbers will no longer be accepted.

You must obtain your FRN prior to arriving at an examination session.

An FCC video provides instructions on obtaining an FRN. You can view it here.

Question Pool Updates

If you are studying to take the General Class or Amateur Extra license exams, then please take note of the following updates to the license exam question pools. The National Council of Volunteer Examination Coordinators (NCVEC) has made your study a bit easier by withdrawing several questions.

General Class Question Pool - Question G1E11 has been withdrawn and will no longer show up on examinations.

Extra Class Question Pool - Questions E1C05 and E6B06 have been withdrawn and will no longer show up on license exams.

Email Address Required by FCC

Effective June 29, 2021, all applications filed with the FCC by licensees or new license candidates must include an email address where the applicant can receive FCC correspondence.

The FCC will use email to send a link to the official copy of an applicant's license whenever a new license is issued or an existing license is changed.

Should a licensee or license applicant not have an email address, ARRL suggests using the email address of a relative or friend.

Revocation of the license may result when correspondence from the FCC is returned as undeliverable because the licensee failed to provide a valid email address. More info is available on the ARRL webpage.

Local License Exam Contacts

Vero Beach ARC
Bud L. Holman
(772) 559-3342
budholman@earthlink.net

Ft. Pierce ARC
Jess Porter
w4dns@arrl.net

Port St. Lucie ARA
Robert Brown
(772) 201-5485
brownpsl@comcast.net

Attention Club VE Teams

Please keep us updated on your VE activities. Notify us when your club schedules a session, and keep us apprised of the results of your sessions. Send your information to tchamnews@gmail.com.

2 X 4 DX GROUP

Have an interest in contacting hams in remote lands? Want to sharpen your DX operating skills? Unsure about HF propagation? Not sure about QSLing and LoTW confirmations? Do you want to earn a DXCC, WAC, CQ, or one of a multitude of other awards and need help?

Treasure Coast Ham News has received emails from hams around the region asking about the 2x4 DX Group and when meetings might resume. Because of COVID-19 the group suspended in-person meetings early in 2020.

The group was previously meeting on the 2nd and 4th Wednesday of each month at St. Andrew Lutheran Church in Port St. Lucie. Unfortunately, that venue is no longer available. The group is asking for your input and help in finding a new location where the group can meet on a monthly basis? We are also interested in your opinion as to the best time and day of week to hold in-person meetings?

Please share your ideas, thoughts and opinions by emailing us at tchamnews@gmail.com.

With Solar Cycle 25 starting to come alive, we could very well have interesting worldwide propagation in the coming months and years.

Help us get the 2x4 DX Group reactivated!

Please consider joining the group. All are always welcome. No one is ever considered a visitor.

Russian Robinson Club Announces Activation of Rare IOTA Aleutian Islands

[In 1972 the US Navy afforded me an opportunity to live on Adak for almost a year. The Aleutians are a very rugged place. An excellent book about the Aleutians and WW2 is the Thousand Mile War. John Ford's movie is also a worthy view.]

The Russian Robinson Club (RRC) has resumed its plans to activate rare Kiska Island (IOTA NA-070) and Adak Island (IOTA NA-039) in Alaska's Aleutian Islands chain in July for Islands On The Air (IOTA) enthusiasts. A plan to activate these islands in 2020 was called off because of COVID-19 concerns.

The uninhabited Kiska Island (52.06° N, 177.57° E) lies in the North Pacific's treacherous Bering Sea, which RRC calls one of the most intense patches of ocean on earth, where strong winds, freezing temperatures, and icy water are the norm. The island also features the prominent conical Kiska volcano. Kiska Island is a National Historic Landmark and part of the Aleutian Islands World War II National Monument, and the Alaska Maritime National Wildlife Refuge (AMNWR). Permission to visit is required from both Alaska's Maritime National Wildlife Refuge and the US Fish and Wildlife Service.

The KL7RRC team plans to have a minimum of two stations on the air on 40 - 6 meters, SSB, CW, and FT8. Operators will place special emphasis on the difficult transpolar path to Europe.

The 56-foot aluminum sailing vessel *Seal* will make the 1,000-mile journey along the Aleutians to Kiska with a stop at Dutch Harbor to pick up Tim, NL8F, and the gear sent in advance to his location. The group will continue sailing west to Adak Island, where some team members will activate Adak Island from June 30 - July 3. The remaining crew, having flown into Adak, will be picked up by SV *Seal* and depart for Kiska. They hope to arrive at Kiska and be on the air as KL7RCC from July 7 - 12, before the return sail to Adak and flights home. Additional KL7RRC activity may take place from Adak July 14 - 16.

Donations are welcome. QSLs for KL7RRC (Kiska Island NA-070) and KL7RRC (Adak Island NA-039) are via N7RO. All donors will receive direct QSLs.

Updates will be posted on the Russian Robinson Club website.

A slot is open for a fifth operator. Contact team leader Yuri, N3QQ, if interested.

(Thanks to Hal Turley, W8HC, via The Daily DX)

Alert: Solar Magnetic "Termination Event"... by Bruce, W8HW

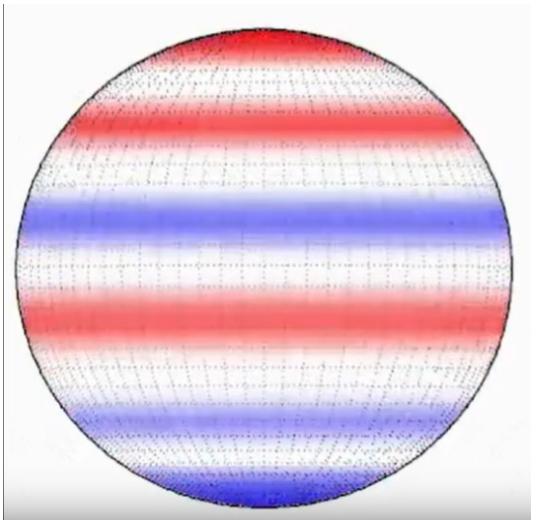
What's that? Will the sun go dark? It's a question asked by many. Not likely, as this is not an anti-matter event, but rather a magnetic terminating event. If you've never heard of a Termination Event, you're not alone. Many researchers have not heard of it either, until now.

Let's be clear, the event is NOT new. But the understanding of the event is very new and far reaching. It happens every so often and is about to happen again. The last time it happened was about 11 years ago.

Something is very different this time. The name is new. Top experts are still trying to decide just what it means and what harm it may cause. The term refers to Magnetic Oppositely Charged bands that collide at the sun's equator and ***terminate*** (see graphic below). By terminate, we mean gone. Going back through records suggests there may be a deeper meaning. The issue is the timing of the event. Could this event be similar to the event that happened in 1859? (Read about the 1859 event here.)

Implications are both good and bad, ranging from communications improvements on HF to large climate variations. Additionally, CME (coronal mass ejection) and EMP (electro-magnetic pulse) events are suggested, and much more.

There are on-going discussions about solar cycle 25 and the world's top experts are split. Many point to facts and claim it will be a huge event, while others expect small improvements, much like cycle 24. I find it funny that few, if any, of the expert opinions take the middle ground.



(Red and blue bands are oppositely charged)

This is really big stuff that we are finding out right now. I do not want to be an alarmist as the meaning is not clear as of yet. Having said that, perhaps ham radio operators should be talking more about natural EMP events, similar to the event in 1859. Are we hams truly ready to handle this kind of event? I think not.

A quote from Spaceweather.com. "These ideas may be controversial, but they have a virtue that all scientists can appreciate: They are ***testable*** should the Termination Event happen soon and result in solar cycle 25 skyrocketing." I would like to emphasize the key word ***testable***. If something is not testable under actual "worst-case-scenario" conditions, then it cannot be fully relied upon.

Testable is of major importance. Why? Because without being able to test and observe an idea it can not be a fact, it is only a theory. A scientific fact is an idea that can be proven and repeatedly observed to be true. Theories or opinions can be interesting, but can not be trusted or relied upon.

What is at stake? Considering that an EMP event in 1859 sparked and burnt hardware telegraph stations, today's software and solid state internet systems will not stand a chance of surviving. Any communication system that relies on the internet will become inoperative. We must depend only on ***testable*** and ***provable*** modes of communication for our Emergency stations. Theories that can not be tested in actual "worst-case-scenario" conditions should never be trusted for real emergencies. Many agree that internet systems are not testable under actual worst-case-scenario conditions because a real test would require a full shut down of the internet.

Final word - The only modes I know of that have been tested under actual real world worst-case-scenario conditions when internet did not exist are CW and SSB, and perhaps RTTY using HF bands. Beyond that, nothing using man-made relay systems has been tested under internet blackout conditions.

73, Bruce, W8HW

Link to 1859 EMP event: https://www.history.com/news/a-perfect-solar-superstorm-the-1859-carrington-event

White paper on Termination Event: https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2020EA001223

A great video from the show Nova on PBS:
How Solar Storms Could Knock Out Our Power Grid

Upcoming 2021 Florida Hamfests

08/14/2021 - Ft Pierce Hamfest
Location: Indian River State College, 3209 Virginia Avenue Fort Pierce, FL 34945
Sponsor: Ft. Pierce Amateur Radio Club. Website: https://fparc.org

10/8-9/2021 - 56th Annual Melbourne Hamfest
Location: Melbourne, FL
Sponsor: Platinum Coast Amateur Radio Society (PCARS)

12/10/2021 - Tampa Bay Hamfest, ARRL West Central Florida Section Convention
Location: Plant City, FL
Type: ARRL Convention
Sponsor: Florida Gulf Coast Amateur Radio Council
Website: http://www.fgcarc.org/

Don't forget Hamcation 2022
https://www.hamcation.com

BOUVET Island DXpedition Update

We regret to inform you of the following news: The global pandemic has impacted the expedition charter vessel business very hard. This includes the venerable ***RV Braveheart,*** which has provided outstanding safety and service to many DXpeditions. As you know, we had signed a contract with ***Braveheart*** for 3Y0J.

Today, we were informed that ***Braveheart*** will be sold. As a result, owner Nigel Jolly will no longer be associated with the ship. Our contract with the ship has been cancelled and our deposit is to be refunded. This is a very disappointing development for all involved.

At this time, we are officially cancelling the 3Y0J Dxpedition. We have ceased accepting donations and we will begin refunding 100% of the donations already received using the same method as they were received, i.e., PayPal, cash or check. This process will take several weeks to sort out, so please be patient.

We wish to thank our team for putting their trust in us. We wish to thank all of the donors and sponsors who gave generously to this project. We will continue to research other ships and possibly find another suitable vessel for a future project.

73, Paul Ewing, N6PSE and Kenneth Opskar, LA7GIA

[Editor's note: We've heard negotiations may be underway with the new owners of RV Braveheart. Watch for future updates.]

Ham Radio Trivia

Answer to last month's question:

Last month we challenged you with a question from the Amateur Extra Class License question pool. In addition to answering the question, we challenged you to figure our why this question was dropped from the question pool.

Question E6B06:
Which of the following is a common use of a Schottky diode?
A. As a rectifier in high current power supplies
B. As a variable capacitance in an automatic frequency control circuit
C. As a constant voltage reference in a power supply
D. As a VHF/UHF mixer or detector

Answer: The answer is "D." Or is it? This question was dropped from the Extra Class license exam question pool because there are actually two correct answers. We will leave it to you to figure out the other correct answer.

July-August Trivia Question

Summer is here. It's vacation time. So let's change subjects and go with an easier question.

Question:
We know North Korea (P5) and Bouvet Island (3Y/B) are at the top of the DXCC most wanted list. The United States is at the bottom of the list, making it the most popular DXCC entity? Which country is the second most popular after the United States?

A. France
B. Venezuela
C. Canada
D. Italy

We will reveal the answer in the September newsletter.

(Have a good trivia question? Send it to us at: tchamnews@gmail.com.)

"Brush up on your radio knowledge, skills and trivia."

FORT PIERCE

*** HAMFEST ***

SATURDAY, AUGUST 14th 2021

Indian River State College • 3209 Virginia Ave.
Fort Pierce, FL 34981 - 8 am - 1 pm (6 am setup)
Talk-in: 147.345, +.6 PL tone 107.2

VE Testing 9AM * Forums * Food
* Prizes Hourly * Grand Prize *
DXCC Card Check * ARRL Forum
All Indoors * No Tailgating
Air Conditioned

Click here for TICKETS

General Admission $7 includes prize drawing Ticket

Tables must be purchased with one Admission charge

Table with electric and Admission $22 ($15+$7)
Table without electric and Admission $17 ($10 +$7)
2 Tables w/Electric and Admission $37.00 ($15+$15+$7)
2 Tables w/o Electric and Admission $27.00 USD ($10+$10+$7)
Additional Table with electric $15
Additional Table without electric $10
Table locations are on a first come first serve basis.
Electric table sections are separate from non-electric tables.
Cut off date to purchase on-line is August 8th.
Limited number of tables available.
Questions call: Pete KD4SPW 772-475-4548 or Joe KD4BTD 772-214-7718

Fort Pierce Amateur Radio Club is a general-purpose amateur radio club with over 50 members. We are involved in all aspects of amateur radio and ECOMM (emergency radio communications). We are active in the community by providing communications support for public service events, field day and serving as Volunteer Examiners as part of the ARRL VEC program.

Club Nets: Tuesday night at 8:00 PM EST 147.345 (PL 107.2 ,TSQL ~ CTCSS, code decode)) Echo-Link Node #2004
D-Star Net Tuesday at 8:30 pm W4AKH B, 444.5 +5. Reflector 78C. D-star set-up files and help available on club web site.

Our Club meets: on the second Wednesday of the month on the Main Campus of Indian River State College in Fort Pierce.
Our Club Web site is: FPARC.org, W4AKH.com, FPARC.net.

Ham Radio Word Search

One hundred radio words and phrases are hidden in the grid. See if you can find them. When finished, search for three famous last names that are familiar to hams, but do not appear on the word list.

C	N	B	O	R	S	R	O	T	C	U	D	N	I	U	Y	D	A	O	L	Y	M	M	U	D
P	L	R	I	E	T	G	N	R	E	B	V	T	E	C	P	C	I	T	A	T	S	O	E	O
T	X	R	O	T	A	L	L	I	C	S	O	Y	S	I	Y	L	G	R	T	E	S	R	N	V
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C	V	T	P	I	I	I	S	S	N	Y	O	A	F	E	K	G	E	N	C	Y	N	C	T	R
A	O	Y	M	F	O	C	A	R	R	I	E	R	R	N	T	T	A	A	K	R	S	O	L	V
P	D	U	A	C	N	R	A	T	S	D	F	O	E	O	N	D	R	Y	A	G	I	A	N	O
A	N	N	E	T	N	A	T	S	U	S	T	M	T	H	E	R	J	W	A	Y	T	X	E	L
C	A	G	B	A	S	C	I	I	F	A	S	O	E	P	L	V	Y	I	D	O	I	I	S	T
I	B	N	R	X	G	M	M	E	L	A	Y	C	M	F	I	K	N	C	W	A	V	A	I	M
T	E	I	E	Y	E	R	X	O	M	A	D	I	T	O	S	U	N	E	D	K	I	L	O	E
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L	A	O	M	A	G	P	N	I	I	P	D	R	O	C	E	H	T	E	N	S	P	O	K	N
Y	M	T	U	P	C	A	V	O	I	P	L	I	A	M	Y	A	I	S	H	C	O	T	C	M
N	V	I	S	N	B	C	U	D	W	L	O	L	F	C	L	W	C	H	P	A	L	C	A	E
L	G	R	E	X	D	Q	F	E	U	E	L	L	L	H	C	I	N	O	M	R	A	H	H	R
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AMPERE
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CAPACITOR
CARRIER
CHIRP
COAXIAL
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SHACK
SIDEBAND
SILENT KEY
SKYWARN
SSTV
STATIC
STATION
SWR
TEST
TICKET
TOWER
TUNE
UHF
UPLINK
USB
VFO
VOIP
VOLTMETER
VOX
WATT
XMIT
YAGI
ZENER

DIGITAL RADIO MODES REVIEW

In the public safety world radio interoperability (the ability to communicate with each other) has been a major problem. Since September 11, 2001 much has been done by governments to overcome the issue. With the help of federal and state partners, many local governments have done a good job building infrastructure to support interoperability. Radio vendors and public safety groups wishing to participate in the interoperability inrush have developed radio communication protocols such as P25, DMR, NDXN, NEXEDGE, TETRA, etc. Many hams have ventured into these commercial protocols, with DMR probably the most common.

DMR is used extensively by hams; but another protocol, D-STAR, is increasing in popularity. Is D-STAR better than DMR? And what about System Fusion? Let's look at the strengths and weaknesses of each.

Digital Mobile Radio (DMR) - Digital Mobile Radio was developed by the European Telecommunications Standard Institute for commercial two-way radio communication. DMR lets devices from various manufacturers connect to the same network as long as their functions abide by the standard. Introduction of the DMR radio standard resulted in significant manufacturing cost efficiencies. China successfully entered the DMR market with inexpensive radios, to the delight of many hams. The standard is open to any vendor who wishes to compete. DMR receives regular operational updates to extend its capabilities.

D-Star - D-Star is a digital radio standard developed in the late 1990s by the Japan Amateur Radio League. It allows local and distance communication using digital voice, control data, and data messaging. In terms of spectrum efficiency, D-Star repeaters perform very well using low-speed digital voice and data transfer. This is made possible because it requires only a 6 kHz channel. D-STAR compatible radios are manufactured Icom, Kenwood, and Flex Radio Systems.

System Fusion – Fusion was developed by Yaesu, but it is not an open standard. System Fusion radios are relatively easy to program. System Fusion uses true multi-mode repeaters designed to work with both analog and digital modes. Using a WiRES-X internet-connected repeater you can connect to different "reflectors" (virtual chat rooms created by linking multiple repeaters together via the internet). Fusion's downside can be its availability. Locally, Port St. Lucie and Vero Beach have Fusion repeaters, but it is unknown if they are fully active at this time.

Communications - D-STAR is very suitable for most users. DMR has extensive capabilities to communicate long distances, but relies on Internet communications to do so. System Fusion via WiRES-X offers local and long range communication capabilities. Many D-STAR and DMR radios come with a pre-installed list of all known repeaters, worldwide. Most digital radios also support analog mode.

Cost - With D-STAR's ham only user base, the typical commercial sector's drive down of radio system costs is not present. Some D-STAR handhelds can cost as much as an entry level SDR HF transceiver. DMR has benefited from its use by the commercial sector. Handheld Chinese DMR capable radios start at a little under a $100. Mobiles start in the $200 range. Yaesu System Fusion radios are also competitively priced for the ham market.

Demand - Hams considering DMR, D-STAR, or Fusion may initially lean toward DMR because of its lower cost and wide range communications capability. While DMR is very capable and cost effective, D-Star is gaining in popularity and may become the dominant ham digital mode in the near future.

Ease Of Use - Digital radios and modes are fairly easy to use, but may take some time to learn as their operation and terminology are not exactly the same as analog.

Ease Of Programming - Programming varies by radio type and mode. You will need to learn new concepts to program a digital radio. In the beginning DMR programming meant that you had to develop a "code plug" which included a variety of information such as talk groups, time slots, etc. Of late, DMR vendors have been preprogramming their radios to alleviate the difficulty of using DMR software to build code plugs and load into a radio. System Fusion programming is not as difficult, more like analog. The real power of System Fusion lies in the WiRES-X repeater programming.

Flexibility - All digital radios offer some degree of flexibility. D-STAR and Fusion were developed for hams and offer the most. DMR offers less as commercial radio systems on which it is based are not designed to have flexibility. You just pick a channel and talk. No doubt dedicated hams will find ways to create more DMR flexibility. We are never satisfied with our radio's capabilities.

Survivability - D-STAR uses the Internet DNS (domain

DIGITAL RADIO MODES REVIEW
(continued)

name system), a kind of phone directory, to connect its' nodes. If one node goes down, it does not affect your ability to connect to another one. D-STAR is probably the most survivable mode. DMR requires connection to a C-bridge (a central controller) to function. All communication must go through the C-bridge. If the C-bridge becomes unavailable the DMR repeater will only work locally. That is something to think about with our ever increasing man-made and natural disasters.

Brandmeister, a type of DMR, does not use C-bridge architecture. It employs more safeguards to ensure the connected repeaters still function. But if we have a significant interruption, even this DMR flavor will revert to standalone operation. Fusion's survivability is also not too good. WiRES-X looks for directory servers in Japan and the U.S. WiRES-X is a peer-to-peer system. Therefore it does not rely on the central servers for voice data. If directory servers go down after a node has downloaded the lists it most likely will not have any effect, unless the node is restarted or requests updated directory lists.

Extendibility - All digital modes provide some degree of extendibility that goes beyond radio-to-repeater. D-STAR may be best.

Field Programmable - Most digital mode radios can be field programmed, but do you want to do this? That is up to you. When I bought my DMR handheld, I could not find a code plug for my model of radio. If it were not for Craig, KK4CID and Michael, W4PPM giving me copies of their radio's code plugs and descriptions, I would have struggled. Even though their code plugs were for a different brand, I was able to figure out how to create my own. Digital radios made for hams will have a much easier approach for programming, whether in the shack or in the field. That moves these radios way up on the ladder.

So what radio is best for you? That depends. Analog radios are a proven mode, but can have limitations when tasked with more than just communicating. Digital radios offer vastly improved capabilities but need connected technology to make full use of those capabilities. For me, I think of VHF/UHF radios as tools for emergency disaster use. So I don't want a radio that is too complicated or too reliant upon connected technology. The best thing to do is study the modes in more detail. Talk to fellow hams to determine the digital modes supported in your area. You will also want to consider your budget. *73 TCHN*

The $4.00 Ham Radio Satellite Antenna

Last year before COVID-19 made attending in-person ham radio club meetings impossible, David, KG4ORQ, of FPARC demonstrated a ham radio satellite antenna he built and used for satellite communication. I had never tried satellite communication, but David's presentation intrigued me.

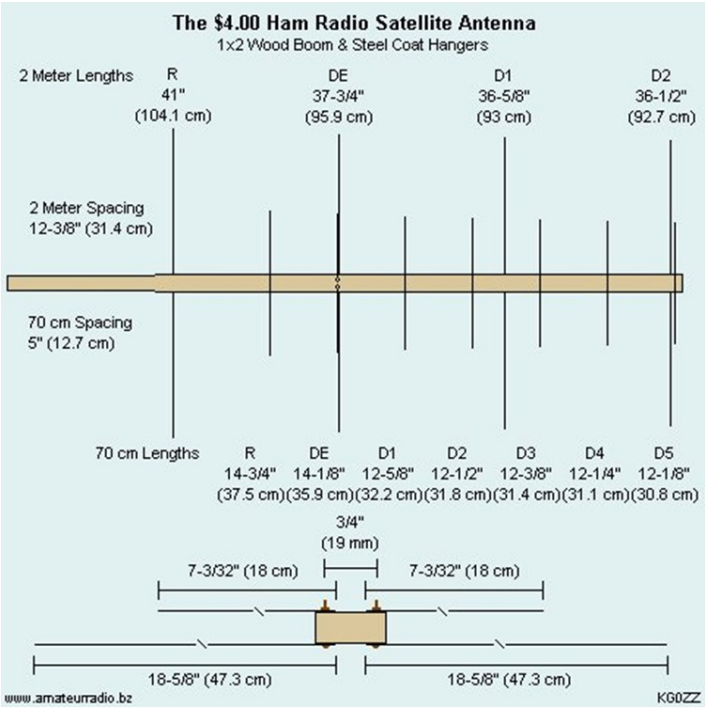
Recently, I ran across an article on the Internet about a $4.00 satellite antenna. The design is simple enough. Most of us probably have the parts in our workshops and junk boxes.

* * * * *

(From the amateurradio.bz web site)

Simple, inexpensive and lots of fun! Here is an easy to make home brew antenna that can get you on the air working satellites or be uses as a portable hand held antenna to extend the range of your HT.

It's a dual band 2m/70 cm YAGI antenna made with common materials and costing very little to build. Also, the antenna is fed with only one coaxial cable and does not require a duplexer.



Here is a YouTube video you can watch.

The Frugal Ham Radio Operator

Noise seems to be everywhere. No, I don't mean traffic, mega sound systems, Fido howling at the moon or our politicians. I'm talking about is atmospheric, power grid, and electronic noise.

Some noise is out of our hands. When Mother Sol sends a CME (coronal mass ejection) our way or Florida's notorious summer lightning storms are about, we have no choice but to live with the associated noise.

The electrical power grid can be a significant noise issue for hams. The ARRL has an excellent free article on power line noise. The section on incidental, unintentional, and intentional emitters is a worthy read. FPL also has a webpage, but doing your own investigation to identify noise sources can help make the resolution process much easier. This time of year FPL is very busy getting ready for hurricane season. You may not get a quick response. It goes without saying that grounding and bonding are things every ham should understand and practice. ARRL has an excellent book on grounding and bonding. The Internet also has much information on the subject.

Our radio world is awash with electronic noise caused by RF signals emitting from nearby consumer appliances, computers, routers, LED bulbs, etc. Electronic noise often has a specific signature. Knowing the different noise signatures can be an important aid in diagnosis.

When investigating electronic noise first look around your shack. Last year we helped a local ham with an electronic noise issue. After looking at his rig and antenna and not finding any significant issues, we spied a home computer router in his shack, just feet away from his rig. Temporarily turning off the router resulted in his noise issue going away. That electronic noise was easy to resolve, but what if it's not so simple? We have tools, some old and some new, that can be employed to help you.

Being a frugalist, I always look to see what I have for electronic noise investigation. Many of us grew up with a portable AM radio and they can be a good tool. What they typically lack is the ability to do direction finding. Your old trusty analog VHF handheld with a simple half-wave dipole antenna can help find pesky noise sources.

Another device is an inexpensive SDR dongle. The software available for dongles is very robust. RTL-SDR has excellent information where to buy and how to use an SDR dongle. Check it out. Lots of good information.

The TinySA is a handheld spectrum analyzer. Mine came from R & L Electronics and cost less than $60 delivered. (That's music to my frugalist ears!) Not only can you identify the electronic noise, you can see its frequency and much more, all with a device that fits in your palm.

73, The Frugal Ham

Short Takes

Antenna Articles, L. B. Cebik, W4RNL
http://www.antentop.org/w4rnl.001/radio.html

RFI Interference
https://www.nutsvolts.com/magazine/article/September2015_HamWorkbench

EMI Interference
https://www.nutsvolts.com/magazine/article/electromagnetic-interference-emi

RSSG: Useful Practical Skills
https://www.youtube.com/user/TheRSGB/videos

Excellent talk by Don Field, G3XTT, (editor of *Practical Wireless*) on "The Magic Band"
https://www.youtube.com/watch?v=TVJDWJwOmhQ

Here's a handy link for DXCC chasers listing announced DX operations in 2021
https://www.ng3k.com/Misc/adxod.html

2021 RTTY Roundup:
https://contests.arrl.org/ContestResults/2021/RTTY-RU-2021-FinalFullResults

VOACAP is Voice of America's Coverage Analysis Program that predicts propagation. View and download it here:
https://www.voacap.com/

See an interesting web site? Share it. Send links to: tchamnews@gmail.com

Announcement From the Publishers

Summer is here. Schools are closed and everyone is heading out on vacation.

The *Treasure Coast Ham News* team is also taking a vacation. This month's newsletter is a joint July-August issue. Our next issue will appear in September.

We wish everyone a safe, healthy and prosperous summer.

73, TCHN team

Treasure Coast Ham Doctors

FT8 / FT4 Similarities

Question: I use WSJT-X for operating FT8. For a beginner I'm having reasonable success, making a number of domestic and DX contacts. Exploring the WSJT-X application, I notice that the mode menu has picks for a variety of operating modes. FT4 is one of the choices. I know nothing about this mode, but its name intrigues me. What help can you offer to get me started with FT4?

Answer: If you are having success with FT8, then you understand FT4. Operating procedures are identical. All the buttons on the main WSJT-X operating screen remain the same.

Differences etween the two modes include:

- Frequencies - FT4 and FT8 operate on different frequencies. If not using CAT control, be sure to change your rig's frequency when switching to FT4.
- FT4 signal bandwidth is wider. This is easy to see on the waterfall display. For transmitting, pick a frequency at least 100 Hz away from surrounding signals.
- FT4 message duration is half that of FT8. The standard 6-message sequence (CQ, Grid reply, signal report, signal reply, RR73, 73) happens rapidly, taking just 45 seconds compared to 90 seconds for an FT8 sequence.

FT4 bands are less crowded than FT8 bands, especially on 20 and 17 meters, making for more leisurely operation. So what are you waiting for, give FT4 a try! 73, *The Doctors*

The 13 Colonies Special Event is a not for profit event. All donations are used to fund the next years event, and to defray any expenses incurred. All donations are used for operating costs, supplies, equipment, and 13 Colony Group initiatives. Donation is voluntary. If you have difficulty with a donation, tell us on your log sheet, and we will send you the certificate earned - No Questions Asked!.

You do not need all 13 colonies to get the certificate. You do need the 2 bonus stations for a clean sweep.

Spotting: If you work a colony station, you are encouraged to spot it for others. We suggest DX Summit.

FT8 / WSJT-X Operating Tip

We've seen much discussion on various FT8-related reflectors recently concerning abbreviations seen in FT8 CQ calls. Let's summarize a few:

CQ QRP - Caller is operating low power
CQ W1AAA/QRP - Caller is operating low power
CQ POTA - Caller is operating from a park on the air
CQ IOTA - Caller is operating from an island on the air

Sometimes CQs include a state or country abbreviation:
CQ EU - Caller is looking for a Europe contact
CQ JA - Caller is looking for a Japan contact
CQ ND - Caller is looking for a North Dakota contact
CQ NS - Caller wants Nova Scotia, Canada
CQ ZL - Caller wants New Zealand

And here are a couple tougher ones that combine names:
CQ HIME - Caller wants Hawaii or Maine contacts
CQ KSRI - Caller want Kansas or Rhode Island contacts

Have you encountered a strange CQ call? Don't fret. With a little thought most are easy to figure out.

Have an Operating Tip to share with the ham community? Send it to tchamnews@gmail.com.

Ramblings of an Antenna Alchemist

*The GAP antenna was created by George Henf, KK4CW (SK). A lot of information has been published about Gap antennas. The NJQRP Club's "**Perspective on GAP Antennas** " is an excellent source of info.*

*Another source is GAP's US Patent, **US5592183A**. The patent documentation is very well written and understandable.*

Weather and climate can be significant enemies for hams. This is especially so with outside antennas. They will take their toll, eventually. Nothing lasts forever. In South Florida we have our humid rainy season and salt air. Wind is also an issue. It can turn even the most robust antenna into mush.

We use stainless steel hardware to inhibit rust, but when stainless comes in contact with aluminum, galvanic corrosion occurs. Preventers such a Penetrox or Noalox are a must. To protect exposed wires or coaxial connectors we use coax seal.

My old GAP Challenger antenna most likely had multiple owners when I bought it in 2000. The manual had "new 1989" written on the cover. The $20 price made its purchase a no brainer. The ham who owned it gave me a brief summary. Hit by lighting (the capacitor had a huge hole). The bottom section had a sight curve, no doubt from not guying the 31 foot antenna. And that was only on the outside. Once I got it home, I found other issues (old RG-8x coax, coaxial seal was peeling off the inside "gap" wires, and crimped jumper wire connectors that were corroded.

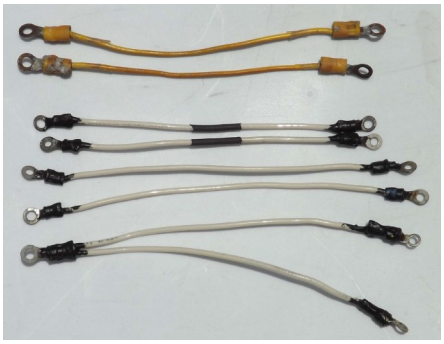
I cleaned the aluminum tubing with a Scotch-Brite™ pad (steel wool is a no-no), wire brushed the connectors, reapplied the coax seal, and replaced the tuning capacitor. I temporarily put up the antenna and guess what? It worked! Took it to the Blue Ridge mountains of Virginia when we moved in 2002 and used it for several years until Delta Loops became my antennas of choice.

In 2017 I semi-retired. My wife wanted to come back to Florida. In Virginia we had plenty of hardwood trees and a large lot. In Florida we had a pine tree and a palm tree in the front yard and a small lot. I debated whether to bring the GAP back to Florida, but in the end it was on the truck.

Harold, N3UY, helped me get a used tower and TA-33. I studied PSL's permitting process, contacted the tower manufacturer and began to gather the items PSL wanted. However, the tower and YAGI got put on hold as a long bucket list of home projects took priority.

Itching to get on the air I put up a 40-meter 12-foot vertical dipole and a Hamstick for the upper bands. Performance was okay, but working rare DX was hit-and-miss. Then I remembered my old GAP Challenger in the garage.

Another cleaning of the aluminum ensued and I changed out the RG-8X coax (2nd time). The original wire jumper cables had run their course. The connectors were corroded and the wire had reached end of life. I built new jumper cables, and soldered and crimped the connectors. Finally, I sealed everything with liquid electrician's tape.



* * *

I recently checked ham radio vendor websites to see if GAP antennas were still being sold. Most we either special order or not available. Did not find a single Challenger for sale. This makes me wonder if GAP, like so many ham radio vendors, has run its course. I hope not. They have been a Treasure Coast vendor for a long time and would be sorely missed.

If you have a GAP antenna and it needs a rebuild take heart. It is an easily rebuild. Many parts (PVC standoffs, connectors, clamps, and wire) can be found at your local home improvement store. DX Engineering sells tubing and coax. During the summer TCHN hiatus I plan to get the GAP back on the air and will let you know how it operates.

73, The Antenna Alchemist

DXing: The Science, Art and Mystery of HF... by Bruce, W8HW

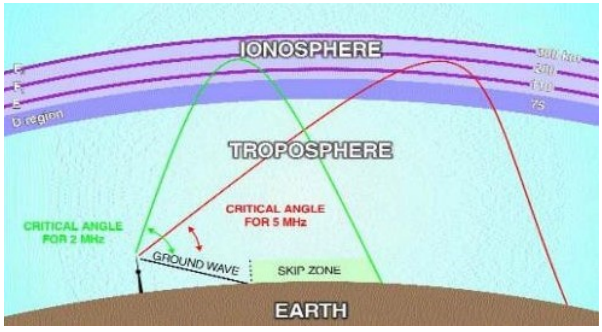
[Editor's note: In part 6 of a series Bruce, W8HW, our DXpert offers tips to improve your HF antenna's performance.]

Let's start with a question… What is better? Which is better for improving DX performance and Emergency station reliability? Your choices are: 1) Investing at minimal cost to reduce antenna vertical angle of radiation; or, 2) Investing $5,000 or more to purchase a high power amplifier? If not apparent now, the answer should become obvious as we get into our discussion.

Before we start, here's a little joke - with a point. How far can a ham radio transmit? The answer is only halfway around the world. Why not all the way around the world? Because once you pass halfway, the distance becomes less from the opposite direction. (*The point is that radio waves can take a variety of paths to reach a distant station. In a future article we will discuss the various paths, including long, short and skewed.)* For this discussion we will assume halfway is 13,000 miles and will answer three of the infamous "W" questions (**W**hat, ho**W**, and **W**hy) concerning antenna performance.

Can you change propagation? The answer is YES and NO. NO, you can't change the world's propagation or the world's ionosphere. But YES, you can change how your antenna interfaces with the Ionosphere, thus changing how your signal propagates.

I call that "Mission accomplished," and it is simple. It is done by addressing antenna vertical angle of radiation issues. It's all about understanding the world's geometry and what we do with our antennas to maximize its effect. It's about physics, science and geometry, all putting you in control. Sounds complicated? It is not. I promise to keep it simple with very little math. To begin, let's explore the basics.

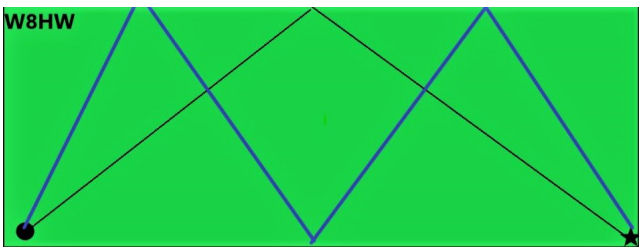


What is a Hop? The graphic above (by G4UCJ) gives you a great view of signal hopping. It shows both red (low angle of radiation) and green (high angle of radiation). Note the "Skip" zone, which is the area where your signal can not be received; thus, the term "Skip." **Multi-hop** describes the action of a radio wave bouncing back into the ionosphere and subsequently being returned to earth more than once.

How far can my signal go before it must hop? It is widely accepted that ground wave on HF bands is 20–100 miles and sometimes a bit more. Sky-wave distance can be between 1,000 miles and 2,500 miles. This is important. The distance of a single hop is largely controlled by your antenna choices, vertical angle of radiation and the frequency / band you choose. (Band choices were discussed in an earlier article.)

Why are fewer hops best? As the joke pointed out, the distance to the other side of the earth is around 13,000 miles. If our angle of radiation is low we can get around 2,500 miles per hop. That means a total of 5 or 6 hops are needed to reach the other side. On the other hand, if our angle of radiation is high we get only about 1,000 miles per hop. Thus, it would take 12 or 13 hops to reach the other side; and most likely our signal would not arrive strong enough to be copied well, if at all.

The additional signal loss, thus weaker signal, is due to multiple propagation hops that result from an antenna with a high angle of radiation. While the world is ellipsoid and not flat, the simple pool table image below will help to visualize this affect. In the graphic note the two possible paths your signal (the pool ball) can take to arrive at the DX station (the pocket). The black path takes one hop to get to the DX station, while the blue path takes two hops to get to the same DX station. Clearly the black (single hop) path will provide the strongest signal. The lower the antenna vertical angle of radiation, the fewer hops will be required to reach the desired **DX** or **Emergency** station.



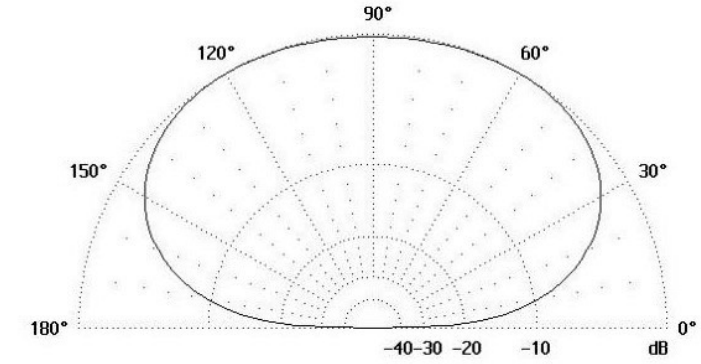
(continued on page 15)

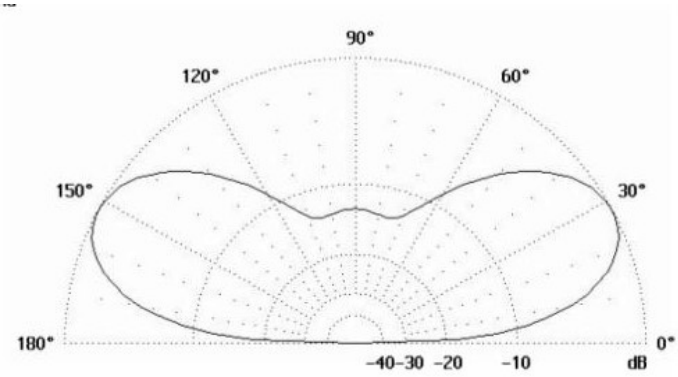
DXing: The Science, Art and Mystery of HF (continued)

How much signal do we lose due to hops? We know that our signal will lose an additional 12db to 20db per hop. 20db is a 100 power-fold loss. Thus, if we start with 100 watts erp, after just one hop our signal could be reduced to about 1 watt. This example shows rather dramatically how proper choice of an antenna with a low vertical angle of radiation can significantly improve our signal by reducing hops.

To put the above in a simple perspective, consider that in low to moderate noise conditions a modern day receiver can easily process signals at S3 (-109dbm) and sometimes even lower. That tells us that a good receiver can easily process a signal that has hopped 7 times in poor conditions, or as much as 15 or more times under very good band conditions. The potential hop count for your signal is dependent on both your antenna choice and propagation conditions. Armed with this knowledge, antenna performance is now under your direct control.

Let's compare two 40-meter dipole antennas. It is important to realize the antennas are identical and let's assume a perfect SWR. But when charted, they give different results. Why? Let's review the two radiation charts below.





The top antenna will provide acceptable short range communications (a few states or so), but will not provide good overseas coverage. The antenna on the bottom has an angle of radiation or around 28 degrees, making it a good antenna for overseas communications.

For DX purposes, the difference between the two antennas is huge. If SWR is not the answer, then what is? Antenna vertical angle of radiation is one answer. There are others. In future columns we will discuss additional science that will put you in control of your DX destiny.

Now let's answer the question we asked at the beginning of this article. Which is better: purchasing the highest power amplifier you can afford, or reducing your antenna's angle of radiation? The answer is easy. The antenna wins. Reducing the signal path by only one hop can improve your signal by 20db (100 power-fold), while installing the largest legal amplifier to increase your power output from 100 to 1500 watts results in only a 15x increase.

And there are bonuses to improving your antenna's angle of radiation! Bonus #1: Improving your antenna improves the signal both ways (RX & TX). Bonus #2: Improving your antenna can cost little or nothing compared to the cost of an amplifier.

Conclusion… By now, it should be obvious that controlling your antenna's vertical angle of radiation improves reception and results in a stronger signal for the **DX** or **Emergency** station.

(Another related topic is NVIS (Near Vertical Incidence Skywave). More about that in a future column.)

73, Bruce, W8HW

- Exploring the ***Science, mystery*** & ***mystique*** of Sky-wave using HF.

- Understanding the important difference between Ground-Wave and Sky-Wave bands.

- When "Man Made" relays fail… HF still works for you.

You can contact Bruce directly at w8hw@comcast.net.

Comments about this story? Send to: tchamnews@gmail.com

From the weekly ***ARRL DX Bulletin*** and other sources. (bulletin archive)

DX OPPORTUNITIES

AZERBAIJAN, 4K. Boris, 4K4K and members of the 4J0SFR Safari club are QRV with event call sign 4K880NZM to commemorate the 880 years since the birth of poet Nizami Ganjavi. QSL via 4K4K.

NIGERIA, 5N. Jean-Louis, ZS6AAG is QRV as 5N7MSF while working with Doctors Without Borders in Abuja until September 2021. Activity is in his spare time currently on 20 and 15 meters using SSB. QSL via operator's instructions.

MADAGASCAR, 5R. Daniel, 6W7RP is QRV as 5R8RP from Nosy Be, IOTA AF-057. Activity is on 40 to 6 meters. QSL to 5R8RP.

KINGDOM OF ESWATINI, 3DA0. Hans, 3DA0AQ is QRV on 20 to 6 meters using CW. QSL via EA5GL.

CYPRUS, 5B. Phil, G0FVM will be QRV as 5B4APP starting the end of June. He plans to start being active on 20 meters. QSL via operator's instructions.

KENYA, 5Z. Sila, AK0SK is QRV as 5Z4/AK0SK from Nairobi. Activity is on 40 to 10 meters using mostly FT8. His length of stay is unknown. QSL via LoTW.

DJIBOUTI, J2. Jeje, F8FKJ is QRV as J20EE from Djibouti City until mid July. Activity is on 20 and 17 meters using CW, SSB and FT8. QSL via LoTW.

ST. HELENA ISLAND, ZD7. Gerry, G3WIP is QRV as ZD7GB until September 30 while working here. Activity is in his spare time. QSL to home call.

TURKS AND CAICOS ISLANDS, VP5. Mario, W4HBW is QRV as VP5MA from Providenciales Island, IOTA NA-002, until October. Activity is on 20 and 15 meters using FT8. QSL direct to home call.

VANUATU, YJ. Rod, YJ8RN, will be operating from Emae Island in the Shepherd Islands, IOTA OC-111, grid RH42ex50 from July 22-26 Vanuatu time.

DX SPECIAL EVENT STATIONS

EUROPEAN RUSSIA, UA. Special event station R800ANL is QRV to commemorate the 800th anniversary of the birth of Grand Prince Alexander Nevsky, who lived from 1221 to 1263. QSL via RV1AQ.

VENEZUELA, YV. Special event station YW200BC is QRV during 2021 to commemorate the Battle of Carabobo 200 years ago, which paved the way for Venezuela's independence. Activity is on 80 to 10 meters using CW, SSB and various digital modes. QSL via YV4KW.

CANARY ISLANDS, EA8. Special event station EG8VCAN is QRV until July 18 to support the Volcanes de Canarias award. QSL via EA8URA.

EUROPEAN RUSSIA, UA. Special event station RG60ANT is QRV to celebrate the 60th anniversary of the Antarctic Treaty Signature that took place in 1961. QSL via operators' instructions.

UKRAINE, UR. Special event station EN30UKR is active to celebrate the 30th anniversary of Ukraine's Independence. QSL via UT4ULP.

ALAND ISLANDS, OH0. Special event station OH0100AX is QRV until June 9, 2022 to celebrate the 100th anniversary of the Aland Islands' self-government from Finland. QSL via operators' instructions.

FRANCE, F. TM53TDF, TM66TDF, TM84MV and TM84TDF will be on the air during the 2021 Tour de France.

(Know of a coming DX station or Special Event? Please submit info to: tchamnews@gmail.com)

Special Event Stations

John Glenn's 100th Birthday Celebration July18, 1300Z-2100Z, KY8C, New Concord, OH.

14.290, 14.275, 7.275, 7.240. QSL: Cambridge Area Maker Group, Robert M. Howell, N8WJ, 69081 Mount Hermon Rd., Cambridge, OH 43725-9469. Operating from John Glenn's childhood home (John Glenn Museum) in New Concord, OHIO **Museum web site**

Sponsor: **www.cambridgeareamakers.org**

From ***ARRL*** and other sources.)

Colonial Williamsburg Special Event

Jul 3, 1400Z-2000Z, K4RC, 7.265, 14.265. Certificate & QSL: QSL Manager, P.O. Box 1470, Williamsburg, VA 23187. 245th anniversary signing Declaration of Independence in 1776. www.k4rc.net

S. Carolina Peach Festival Anniversary

Jul 9-Jul 11, 2000Z-0400Z, W4W, Gaffney, SC. Cherokee County Coroner's Office. 145.250, 147.240, 145.190, 442.500. QSL: Dennis Fowler, P.O. Box 1210, Gaffney, SC 29342. Info: dfowler@cherokeecountycoroner.com

Charleston ARC 50th Anniversary

Jul 10, 1000Z-1600Z, WA4USN, Hanahan, SC. Charleston Amateur Radio Society (CARS). 7.190, 14.265. QSL: Bill Dean, 30 Lombardi Lane, Hanahan, SC 29410. All contacts in General Class Frequencies, 20m & 40m. https://www.wa4usn.org

96th Anniversary Dedication of the Bladensburg Maryland Peace Cross

Jul 11, 1600Z-2000Z, N3TAL, Lanham, MD. 7.275 MHz. QSL: American Legion Post 275 Amateur Radio Team, 8201 Martin Luther King Jr. Highway, Lanham, MD 20706. Recognizing dedication of Bladensburg MD WW1 Memorial. N3TAL@outlook.com. https://www.qrz.com/db/n3tal

US Coast Guard 231st Birthday

Aug 4, 1400Z-2300Z, K1CG, Port Angeles, WA. CG CW Operators Association. 21.052, 14.052, 7.052, 3.552. QSL: Fred Goodwin , 424 N. Bagley Creek Rd, Port Angeles, WA 98362. www.qrz.com/db/k1cg

Pluto - Countdown to the 100th Anniversary of the Discovery of Pluto

Aug 6-Aug 8, 0000Z-2359Z, W7P and W7P/0, Flagstaff, AZ. NADXA - Northern Arizona DX Association. 14.290, 14.090, 21.290, 7.290. Certificate & QSL: Bob Wertz, NF7E, 6315 Townsend/Winona Rd., Flagstaff, AZ 86004. See our web site NADXA.com for Certificate and QSL information.

Missouri Bicentennial 1821 - 2021

Aug 7-Aug 15, 0001Z-2359Z, K0B, Saint Charles, MO. 14.215, 7.215, 7.105. All bands, all modes as conditions permit. Certificate & QSL: Special Event Station K0B, SCARC, PO Box 658, Saint Charles, MO 63302. Operating all modes/bands as possible from home QTH's. https://wb0hsi.org

The Brickyard 400 - Race Three

Aug 9-Aug 15, 0000Z-2359Z, W9IMS, Indianapolis, IN. The Indianapolis Motor Speedway Amateur Radio Club. 18.140, 14.245, 7.245, 3.840. Certificate: W9IMS, P.O. Box 30954, Indianapolis, IN 46230. See the website for information. w9ims.org

Navajo Code Talkers

Aug 10-Aug 14, 0000Z-0000Z, N7C, Chinle, AZ. N7HG. 14.265, 21.265, 7.265, 18.133. Certificate & QSL: Herbert Goodluck, PO Box 06, Lukachukai, AZ 86507. A group of WW2 Native American US Marines pass messages in own native tongue to help end the war. n7hgster@gmail.com

Hedy Lamarr, the Inventor

Aug 13-Aug 27, 1400Z-1400Z, K4H, Dallas, GA. W4IBM Amateur Radio Club. 80m - 3.945; 40m - 7.245; 20m - 14.245; 10m - 28.345. FT8 as conditions permit. Certificate & QSL: Ruth Leber, 598 Trace Rd, Dallas, GA 30157. w4ibm.club/joomla30/index.php/club-activities/18-special-event-hedy-lamarr-inventor

1st RR Train Dispatch Telegraph 1851

Aug 21-Aug 22, 1400Z-0200Z, K2T, Cornwall, NY. Orange County Amateur Radio Club NY. 14.250, 14.074, 14.040, 7.255, 7.074, 7.040, 3.920, 3.573, 3.540. Certificate: OCARC, P.O. Box 624, Cornwall, NY 12518. Certificate downloadable from website. W2HO@ocarcny.org, or www.ocarcny.org

Please tell us about your special event QSOs. We will publish in a future edition.

(Know of an upcoming Special Event? Please submit info to: tchamnews@gmail.com).

CW: Actually Getting on the Air (part 2)... by Bruce, W8HW

[Editor's note: In part 2 of a 3 part series, Bruce explains CW shortcuts, a.k.a. "Code within the code."]

An exception to normal rules applies when passing formal traffic using CW. Never use what is known as **"Short CW"** or **"Cut CW"** in formal message text.

"Short CW" refers to abbreviations. In formal message traffic only use abbreviations that are authorized by the net and net controller. "Q codes" are not considered **"shorts"** and are often used in traffic nets, regardless of mode of transmission. **"Cut CW"** refers to a short cut method of transmitting numbers. Again, never use **"Cut CW"** when processing formal traffic.

In a CW rag-chew, or when contesting or DXing, both **"Short CW"** and limited **"Cut CW"** are often used. CW does not use upper case, only lower case. If you are new to CW and not familiar with the ***"Code within the Code"*** as **"Short CW"** and **"Cut CW"**are often called, then go ahead and send plain English. However, as time passes you will soon learn both flavors of the ***"Code within the Code"*** and become a better CW operator.

Let's take a look at an example of a typical CW rag chew where the operators use both **"Short CW"** and **"Cut CW."** See if you can follow it. We will discuss it at the end.

(start of CW message)

Ham 1: cq cq cq de w1abc w1abc w1abc ar

Ham 2: w1abc w1abc w1abc de w2abc w2abc w2abc ar

Ham 1: w2abc de w1abc tnx om fer qso gud cpy on ur sig ur 5nn op dave dave in ohio rig hr 1ttw into dipole up 15m wx 75f es clear so hw cpy? w1abc de w2abc ar

Ham 2: w1abc de w2abc fb dave tnx fer fb rpt ur 57n in detroit op is sam sam gud cpy dave have gud fist no left ft cw hi hi wx is 71f cldy es oc rig hr flex5ttt amp is 15ttw to 3el up 50ft so hw cpy? bk

Ham 1: bk fb cpy sam all the way. mst qrt as xyl just called me for dinner. 73 es mny dx w2abc de w1abc 73 e e

Ham 2: 73 tu e e

(end of CW message)

Did you follow the conversation? I am sure you understood most of it. In case you did not, let's break it down. Then go back to the example above and read it again. It should be much clearer on re-read.

First, "Cut CW" refers mostly, but not totally, to numbers. Because numbers are the longest CW charters, over time "**Cut CW**" has emerged. While all numbers have a **Cut** designation, most operators only use **Cut** for the numbers of 9 and 0, with 9 becoming **n** and 0 becoming **t**. Example: sending RST of 599 becomes **5nn** and 579 becomes**57n**. Wattage information such as 100 watts becomes **1ttw** and 1500 watts becomes **15ttw**. Flex5000 becomes **Flex5ttt**. Cutting shortens your CW transmission considerably.

Short CW refers mainly to abbreviations. There are many "**shorts**" in the sample QSO. For example, **de** = from and **ar** = invitation to transmit. **fb** = fine business (all is good); **tnx** = Thanks, and **om** = Old Man. (This is not a "put down" in ham radio; rather it is showing respect for the hams long service and wisdom.)

fer = for (example of a letter cut) and **qso** = transmission exchange or contact. **gud** = good; **cpy** = copy; **yr** = your; **sig** = signal; **op** = operator name; **hr** = here. **15m** = 15 meters high (meters for international); **50f** = 50 feet (feet for U.S. to U.S. contacts). **wx** = weather; **75f** = 75 Fahrenheit. For international use **c** = Celsius. **es** = and or is, depending on where and how it is used.

(continued on page 19)

CW: Actually Getting on the Air (part 2) (continued)

3el = three element directional antenna. **bk** = break in transmission (because both stations already affirmed the other's call sign, now they shorten up by only sending **bk** instead of the "call de call" exchange. **qrt**= quit (more on q-signals in part 3). **xyl** = wife. **73** = best regards. (Never send best 73, just send **73**.)

fist refers to the operator's ability to send CW (good or bad). **no left ftcw hi hi** = Left foot CW means poor CW operator. If you get a left foot CW award, it is not a good award. Because he says **no left ft**, he is using a double negative to indicate a good operator with a good fist. **hihi** = a laugh. In this case he is making sure that it is understood this to be a complement. **tu** = thank you.

Now re-read the CW QSO above. Use the **Short CW** explanations to fill in the gaps. The QSO should now make sense. More **Short CW** abbreviations exist, but what we just covered are the most common and most widely used ones. You should get the hang of this very quickly.

Now, for the funny part of the story (and some history to go along with it). What is "**e e**"? It makes no sense. A long time ago there was a popular tune or ditty, *"Shave and a haircut."* Someone would say or sing **"Shave and a Haircut,"** – then someone else chime in and say **"2 bits."**

Many years ago in early ham radio this became popular on CW. One ham would send "**e s e**" (shave and a hair cut) and the other ham would return **"e e"** (2 bits).

Try sending both parts and you can see why it caught on. It is catchy. This was used as both a final ack (acknowledgement) and a final fair well to each other. Over time, the first part was dropped and now both sides just send the last part **"e e"**. Most operators do not know the history and why it is sent. The **"e e"** gets sent after identification and is the very last thing sent. Listen for it.

Believe it or not, (as told to me in my youth by many different OT's), at one time it even replaced (sort of) calling CQ. One ham would send **"e s e"** and someone hearing this would reply **"e e".** Both would then send call signs and start the QSO. Was this legal? Who knows? I guess it is history that is now lost forever. ***"And now you know the rest of the story."*** **"e e"**

73 es tu e e, Bruce, W8HW

--... ...-- . ... -- .- -. -.-- -.. -..-

CWOPS # 958 (Life member and former instructor): https://cwops.org

CW Academy for better CW learning: https://cwops.org/cw-academy/

Ham Humor

"Harold!!! What are you doing wasting money on more USELESS radio equipment!!!"

* * * * *

You Know You're a Ham When…

- The only time you get up at 6am is for a hamfest.

- Someone in a music shop asks you what bands you like and you answer two meters and seventy centimeters.

- The schoolteacher calls you on the phone to ask why your child identifies countries on the world map as JA, ZL, VE, G, UA and XE.

(From rfcafe.com)

Question: How does a Ham Radio operator send a break-up message?
Answer: By remorse code.

* * * * *

Question: Can radio become an addiction?
Answer: It depends on the frequency.

* * * * *

Said the comedian, "I used to tell a lot of jokes about radio, but the reception was always poor.

TREASURE COAST HAM NEWS

The editors like to reserve the last couple of pages of ***Treasure Coast Ham News*** for you, the readers. With your help these pages will include:

For Sale Section – Have something to sell or trade? Send us a description and/or picture to have it listed in this section. Looking to buy something? Provide a description and we will print it.

QSL Card Section – Many hams enjoy viewing QSL cards, especially those with colorful pictures. Send us scans of your favorite QSL cards. Maybe the first card you ever received. Or perhaps your favorite card, or your personal card. We will include some in each issue as space permits.

The last few newsletter pages are yours. Help make them a success by submitting your photos, For Sale listings and QSL cards to tchamnews@gmail.com.

Want to be published? Treasure Coast Ham News invites you to write about your ham radio activities, kit building, DX operations, or any other amateur radio subject. You don't need to be a polished writer, or a writer at all for that matter. We will help you edit your work. While we don't pay for articles, you will receive a full byline. Please contact us at: tchamnews@gmail.com.

Coming in Future Newsletters

Articles tentatively planned for coming issues of *Treasure Coast Ham News* include:

- *Hurricane season update*
- *Tools to help find RFI*
- *Pneumatic antenna launchers*
- *Polarizing your power cables using Power Poles*
- *FT-8 DXing with Hamstick style mobile antennas*
- *More on DX propagation*
- *All about Fox & Hound operation in FT8 mode*

And in September look for part 3 of W8HW's discussion about getting on the air with CW. Bruce will answer the question: **How does a new CW operator handle a CW QSO when the other party does not speak English?**

For a rookie CW operator, QSOing with a non-English speaking party can be intimidating. In part 3 of "*CW: Actually Getting on the Air,"* Bruce, W8HW, will explain how the use of the RST (signal report) and Q-codes help overcome the language barrier and makes CW QSOs with non-English speaking hams easy.

* * * * *

Help Needed - Tony Wagner, W3TWZ, W3TWZ@Yahoo.com wants to talk to someone familiar with DMR, ANYTONE and PI-STAR. We know there are some experts among our readers. **Please help him.** You can give Tony a call at 252-714-5917.

Port Saint Lucie ARA Notes

Good news! The Port Saint Lucie Amateur Radio Association (PSLARA) reports their 443.650 MHz UHF repeater is back on the air.

The cause of the outage was determined to be scrambled settings associated with the operating frequency. The trigger event that caused the setting change remains unknown. Fortunately, the problem was easily resolved. Thanks to the club's repeater trustee, Greg, KB4VVE, for promptly tending to this matter.

Even though a repeater replacement is not necessary at this time, PSLARA is still interested in hearing input from members and other repeater users concerning the communication modes / protocols that should be supported if, and when, either repeater is replaced in the future.

The club's current Yaesu repeaters support analog and System Fusion operation; but System Fusion rarely sees usage. Newer digital protocols are available including DMR and D-Star.

Do you, the repeater users, have an opinion on the protocol(s) a replacement repeater should support?

Please share your preferences and thoughts with the board in an email to info@pslara.com. Tell them if you prefer Analog, System Fusion, DMR, D-Star or something else.

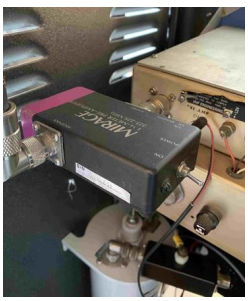
HAM RADIO EQUIPMENT FOR SALE

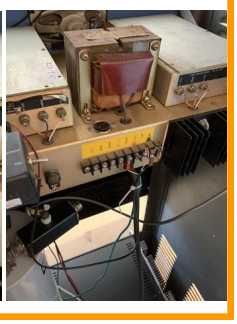
ORIGINAL OWNER - Create Extra Heavy Duty Antenna Rotator – Model RC5A-3 and preset control box. Includes mounting hardware and factory manual. Rated for antenna up to 20 sq. ft. Test/Demo cable included. See EHAM.NET Reviews for info. $495.00 or OBO.

For both items, contact BOB, W7MAE, (772) 444-5845, or email w7mae@aol.com

* * * * *

REPEATER — 220 Mhz. repeater system, rack mounted. Consists of VHF Engineering repeater, Mirage amplifier, microwave cavity and 50 amp power supply. Asking $1,200 OBO. For details contact Andrew Jarrett, phone 305-505-5461, email: serrano_51@icloud.com.



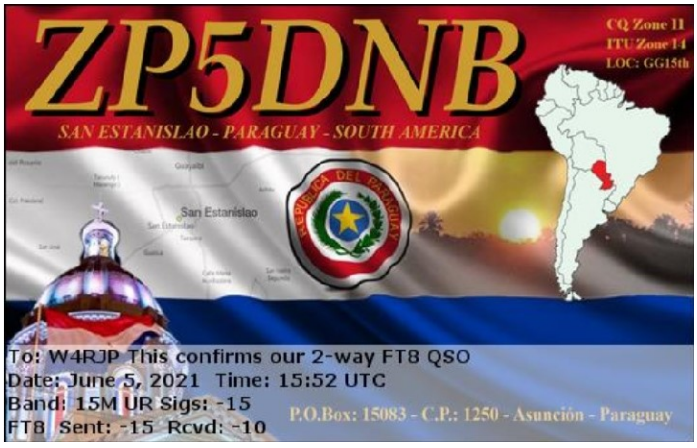


QSL Cards

TCHamNews wants to publish QSL cards received by our local amateur radio community. If you have an interesting QSL card to share with your fellow hams, please send a scanned image (jpeg) to TCHamNews@gmail.com and we will include it in an upcoming issue. *(If you send us a paper card, we will scan it and send the original back to you.)*

(Courtesy of Jeff, WA4AW)

(Courtesy of Bruce, W8HW)



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