



October Halloween Edition



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MICHAEL'S IMPACT
"HAM RADIO" OPERATORS ASSISTING IN STORM RECOVERY

From the Technical Coordinator

Jeff Kopcak – K8JTK TC

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Hey gang,

Digital mode access points, often called hotspots, have been in the news lately. Those are the 10mW personal devices used by digital operators to cover a relatively small area like a house, car, or hotel room. Instead of tying up a gateway repeater, which largely connects local users to the Internet, many have opted for these low-powered devices to provide similar functionality. Advantages over a repeater are the hotspot owner has complete control over which reflector, repeater, or talkgroup their hotspot is connected to. They are not beholden to the preferences of the repeater owner and have the flexibility to use their hotspot however they'd like. Many use them mobile in the car or take them on a trip allowing them to enjoy their favorite digital modes where there may not be repeater coverage.



Hotspot devices in general are about the size of a deck or two of cards and require an Internet connection, computer to run the software, application or web browser for configuration, and a radio capable of operating each mode. An Internet connection can be your home WiFi or cellphone hotspot (as in WiFi-hotspot). The original OpenSpot was the only device that required a wired Ethernet connection. A PC computer may serve as the Internet connection for USB access points. The computer could be a Raspberry Pi in many cases or might be completely self-contained. A web browser or application is needed to make configuration changes and adjustments such as call sign, transmit frequency, mode, or network. These hotspots are the RF gateway to the internet which means a radio capable of transmitting and receiving that mode is also required. Few hotspots today are single mode like the D-STAR DVAP. Nearly all on the market are capable of operating multi-mode and connecting to associated networks. To operate DMR the user would need a capable DMR radio, a capable Fusion radio for the Fusion networks, and so-on.

Hotspots can utilize the many available modes & networks:

- DMR: BrandMeister, DMRplus, XLX
- D-STAR: DCS, DPlus, XRF, XLX
- Fusion: FCS, YSFReflector
- NXDN: NXDNReflector
- P25: P25Reflector

A keen eye might ask about Wires-X, P25net, or DMR-MARC. Those networks cater to a specific manufacturer of equipment and are often closed to other vendors. You might be able to reach resources on those networks because someone has cross-linked a closed network with an open network, usually at the point where digital signals turn into analog audio. This is how a user can be on Wires-X America Link and talk with a DMR user.

Hotspots and satellites

Not the Dave Matthews Band song Satellite either. A major issue for other hams has been caused by hotspot users. Every hotspot user and repeater owner reading this needs to verify your operating frequencies and take corrective action, if required.

Under Part 97, hotspot devices are considered an auxiliary station. Auxiliary stations cannot operate within the satellite sub bands. Many hotspots are operating there illegally. Satellite sub bands for 2 & 440 are:

- 2 m: 145.800 – 146.000
- 70 cm: 435.000 – 438.000

If your hotspot is operating within those frequencies or near the edges, within the weak-signal sub bands, or any other sub band likely to cause issues, you need to take corrective action now!

In general, advice would be to ‘check with the local frequency coordinator’ but experience with the coordinating group indicates they won’t be of any help. **What should you do?** *Note: this advice only applies to the U.S. band plan.* Every band plan I’ve seen has the satellite sub bands defined. I do like the [ARRL’s Band Plan](#) because it spells out many details not included in graphical representations. The band plan has allowances in the following frequency ranges for simplex, auxiliary stations and control links:

- 146.400 – 146.580. Usable (at 12.5 kHz spacing): 146.4125 – 146.5675
- 433.000 – 435.000. Usable (at 12.5 kHz spacing): 433.0125 – 434.9875
- 445.000 – 447.000. Usable (at 12.5 kHz spacing): 445.0125 – 446.9875

“Usable” indicates the lower and upper frequency limits that can be used with a digital hotspot. Don’t forget to stay away from the national calling frequencies of 146.520 and 446.000. Some of these ranges are shared with repeater links so remember: **it is your responsibility to ensure correct operation of your equipment and find a frequency not already in use before using it!** There is **NO** excuse for not adjusting frequency to eliminate interference with other operators and equipment! Listen to the desired frequency by setting up a radio or scanner with the volume turned up. If you hear any kind of obvious traffic, data bursts, or digital screeching, pick another frequency then rinse and repeat. Your cooperation is greatly appreciated!



OpenSPOT2

Right after Dayton I started hearing rumors that the OpenSPOT was discontinued. Not the news you want to hear if you just purchased one at Dayton. The website eventually confirmed the rumors and that another device was to be announced “soon,” which turned into months. Finally, the SharkRF OpenSPOT2 was announced. This replacement addresses many issues of the now legacy device including the need for a wired Ethernet connection, limited portability, and lack of newer digital modes.

Feature-wise it is nearly the same but includes a much-needed internal WiFi antenna and support for NXDN and P25 (two up-and-coming digital modes in ham radio). It includes POCSAG which I’m not familiar but told is a paging standard. *Those under 35 have no idea what a pager is.* The device operates off a USB-C cable (included) and looks to be about the size of a computer mouse. It will still have cross-mode support for DMR and Fusion radios and networks. As with the previous, you will not be able to use your D-STAR, NXDN, or P25 radio in cross-mode. Release date is expected before the end of 2018. Stay tuned to their [website](#) and social media portals for exact date.

ZUMspot review

At Dayton I added to my hotspot collection. On my shopping list was a ZUMspot or something I could use with the Pi-Star software. I picked up a ZUMspot kit and case from HRO. The kit lists for \$130, \$110 without the Pi board. The case adds \$15. The kit came with the amazingly small Raspberry Pi Zero W (W for Wireless) and the ZUMspot modem board from KI6ZUM.



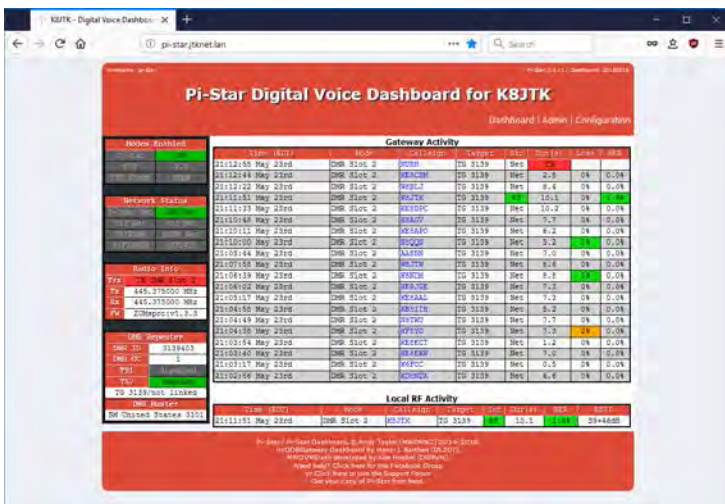
ZUMspot

You'll need to provide a Micro-USB cable which powers both devices. I've seen demos and received feedback saying Pi-Star was a great application to use – and is stable. Many had issues with the DVMEGA (in particular) getting a good distribution that worked reliably with that device. [Pi-Star](#) is software written by Andy - MW0MWZ. It is distributed as a Raspberry Pi image for use with Digital Voice modems.

All configurable options are available through the web interface. It's convenient and you don't have to mess around with multiple interfaces or carrying around a screen for the device. Services like SSH are available but generally not needed.

Before I tried to use the image, I knew I had an issue. Since this was my first Pi device without a wired connection, I couldn't edit the WiFi settings by wiring it to my network. Instead I mounted the SD on a Linux system and edited the /etc/wpa_supplicant/wpa_supplicant.conf to include my WiFi information. Booted the ZUMspot and it connected to my wireless auto-magically.

The Pi-Star site has a utility to [help create the wpa_supplicant.conf file](#).



Pi-Star Dashboard

I've primarily used the ZUMspot on D-STAR and DMR but it supports all modes and networks mentioned earlier in the article. It doesn't do as well as the OpenSPOT when D-STAR stations are marginal into their gateway. There's more "R2D2" on the ZUMspot in that respect but it's a minor issue. Pi-Star can enable multiple digital modes at one time. This is a great selling point and works great if conversations happen at different times on different networks. It is a "first wins" scenario. If a D-STAR transmission ends and one on the DMR network starts, nothing will be heard on the D-STAR radio until the DMR transmission ends.

In other words, parts of an otherwise interesting conversation maybe missed. The case is a bit of a jigsaw puzzle but it's fairly easy to figure out from the picture that was provided. The ZUMspot is an excellent little device and I'm happy with it.

Technical Specialists report

Dave – KD8TWG has been very busy recently. He was again in charge of the communications and networking for the Great Geauga County Fair where they run APRS tracking of their golf carts, setup a phone system and IP cameras to cover the fair. At the Cleveland Hamfest he gave his presentation on Digital Modes. He compared and contrasted modes available to ham radio operators, including quality and radio options. Updated for this year was information on digital scanners and receiving the MARCS statewide digital system. Coming up on October 30, he and a few buddies will be putting on a "Test and tune" night for LEARA. It's a great opportunity to check operation of radio equipment and make sure it is not transmitting spurs and harmonics (*cough* *cough* Baofengs *cough* *cough*). Contact Dave if you're in the Cleveland area, or myself for the rest of the section, to have a similar program at a club meeting or hamfest.

If you were involved with the State Emergency Test, Black Swan exercise the weekend of October 6 & 7, you likely received bulletins from The Ohio Digital Emergency Network (OHDEN). Eldon – W5UHQ and crew gave up a good portion of their weekend to help with this event.

They did a fine job of handling bulletins from the EOC and those stations that came through on the wrong communication channels. Join them for the [OHDEN](#) net on 3584.500 USB using Olivia 8-500 set to 1500 Hz on the waterfall each Tuesday at 7:45 PM eastern.

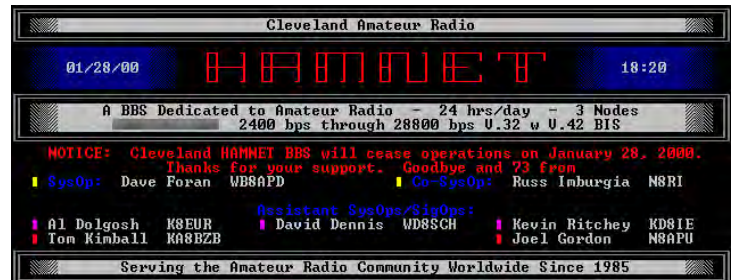
WB8APD, SK



Cleveland Hamfest – 1999,
hac.org

I received word that Trustee Emeritus and past long-time Treasurer for LEARA, Dave Foran – WB8APD became a Silent Key on October 10, 2018. I knew Dave for about 10 years as a member of the LEARA board and mentor but knew the impact he made on the Ham Radio community long before I was a ham. In the time I knew him, Dave was always a behind the scenes guy – rarely getting on the radio. He was instrumental in getting repeater sites and maintaining equipment for LEARA including having an input for one of the repeaters at his house. Stories have been told that his basement was the print shop for the club’s newsletter when the club had 400+ members no-less. Dave was incredibly smart with technology and the Internet before most of us knew what it was. He worked for the phone company and the joke was “Dave had half of Ma Bell in his basement.” Internet linking was something he was into early on with his own IRLP node. He owned a server that, for a long time, served resources for the Cleveland area – not only ham radio clubs but community organizations too. Maybe you even dialed into the old HamNet BBS system located in Dave’s basement (yet another reference those under 35 won’t understand).

Dave was my mentor with technologies LEARA was using as I was going to be helping or taking them over. He is the reason I’m into digital modes. Cleveland’s first D-STAR repeater was in-part Dave’s doing. Of course I had problems at first and he was my go-to for questions. The little space here covers only a fraction of his involvement and lives he impacted through his countless contributions. Goodbye and 73, Dave.



HamNet BBS before closing

Thanks for reading and 73... de **Jeff - K8JTK**

[TOP^](#)

From the Section Emergency Coordinator

Stan Broadway, N8BHL - SEC

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It Was Our Exercise, It Was Their Reality I would guess that most of us in Ohio ARES lived through the blizzard of '78. It was a storm that imprisoned many families for several days while the states dug their way out from under a deep snowbank. Perhaps a few of us have lived through a major disaster. I worked in the Ohio National Guard during the big Xenia tornado. In both of these events whether cold or hot, you see people who are there but have ‘checked out’...they walk, they talk, but their eyes.



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Their eyes are locked in a vacant stare, one that will fade but that now shows the amount of overload under which they're having to live. There's a unique odor after such a disaster, sort of a dank mixture of wet stuff, torn wood and dust. In an extremely devastated area, people can't find their address- can't even find their own street because it has all changed.

In Ohio, the Simulated Emergency Test focused on a devastating winter storm, which brought wind damage, flooding, then extreme cold and snow. Multiple punches which would surely have hampered communication and service to our communities. And our place in that is to be smart enough to put together temporary ad-hoc power, radio and antenna resources to get on the air. Our ability to do that, especially in smaller communities that would have been easily isolated from the rest of the state, would literally be the difference between life and death. In order to be successful we simply must practice. That's what SET is all about.



When you need to improvise – Union County did adapt and overcame!

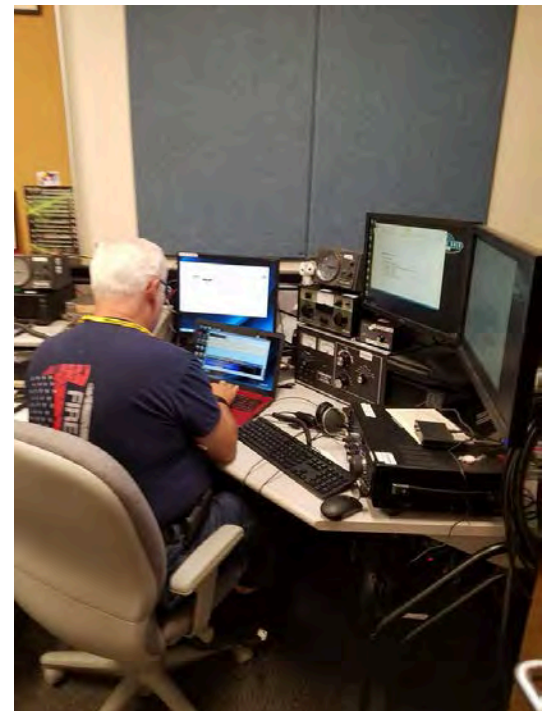


Shelby County was operating portable

We had good results for SET. We are not finished collecting data from counties involved. W8SGT Auxcomm personnel worked the week prior to ready the station as much as possible. While all intentions were there to add a new antenna to the roof, rainfall prevented that element of preparation. We also tried unsuccessfully to have access to our desktop PC's to load specialized amateur software to link the PC's to our radios.

Our plans were to operate the following:

- HF 3.902 MHz sideband voice anchoring the Ohio ARES Emergency Net
- HF 3.585 MHz digital messaging participating with the Ohio Digital Emergency Net (OHDEN)



- HF 5 MHz (60 Meter) channel 4 SSB voice to test interoperability. FEMA approval was granted to allow amateur stations such as W8SGT to talk across agencies to SHARES and other FEMA stations as needed. This is a major test for real life situations which might involve our station exchanging voice and digital messages with those services.
- VHF message handling through the Central Ohio Traffic Net (COTN)
- VHF/UHF communication with localities which are involved in their own scenarios
- UHF DMR digital voice across the state

During the two-day event, W8SGT handled 80-meter SSB voice communications with over 50 amateur stations around the state in 27 different counties. The station connected with 16 more stations in 9 counties on the DMR network. In addition, W8SGT generated 25 OPBUL messages outbound to the state via the Ohio Digital Emergency Network (OHDEN). We logged 25 specific messages into W8SGT/OHEOC-JDF and there were more 'informal' messages taking place as well. I would guess some of us often ask, "Why do we bother with all this? The technology today isn't going to fail."

I submit Hurricane Michael. When it came on land as almost a Category 5 storm with 155 miles per hour winds, what they really faced was a 100-mile wide tornado that lasted for several hours. Everything else *did* fail! There was nothing. And that's when the hams stepped in, to assume our traditional role as the only source of immediate communication from within a disaster. It still happens. And in order to "put our money where our mouth is" we MUST be ready, we MUST be practiced, and we MUST be able to perform at a highly professional level. The damage you see in coverage of Michael is exactly the damage you'd see after an EF2 or 3 tornado hit your downtown. The preparedness we achieve in SET exercises will determine how quickly and completely we will respond. It was an exercise. Three days later, we got a real-life lesson in "Why".

73, Stan, N8BHL

You can view all of the SEC's monthly reports on the website.. <http://arrl-ohio.org/SEC/default.html>

[TOP ^](#)

From the Affiliated Club Coordinator

Tom Sly, WB8LCD - ACC

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This is the time of year that most clubs are having their election of officers for the upcoming year. It would be nice if we had lots of younger hams (20 – 50 years old) who were interested in taking those positions, but, they're just hard to come by. We have to do a better job of recruiting younger members to the hobby! In the meantime, those of us in the 50's and 60's needs to step up and take the leadership positions. (Don't get me wrong here, if your club *does* have younger members, and they can and are willing to do the work, get them busy!) One thing that really aggravates me is the guy who really does not want the job but says "I'll do it if no-one else will."



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While this guy is well meaning and doesn't want to let his friends down, he really doesn't have the right attitude to do the position justice, and usually doesn't. Another thing that aggravates me is the guy who wants the position, so he can have the title and a special badge to wear. He's not really interested in doing the work.

I know that most of you that run for club office are good guys (and gals – I don't mean to be leaving anyone out) and really want to do the best for the club. Here are a few things that I think are important basics for all club officers: First and foremost, you need to be at the club functions! That means the main monthly meeting, committee meetings, club activities, nets, operating events..... yeah, in an active club that can be a lot of activities. But if the club members see that it's not important or interesting enough for the officers to participate in, why should they? Now that your club officers are at all of your functions, they should be responsible for creating a warm and welcoming culture among the members. *Everyone* should be personally welcomed to anything that is going on and made to feel like they are appreciated for being there and most importantly that they are a part of something. If you've ever been "the odd man out" at something, you know what I am talking about. This really does not take a lot of extra effort for the good it will do.



For the outgoing administration: try to have a couple of months planned into the next year. If you get elected in November or December, take office in January, and are responsible for meetings and activities as of 1/1/20++, it's hard to get off to a good start. Try to leave a couple months for the new officers to get into the flow of the club and make the contacts necessary to get things moving. And, be supportive of the new officers! I've asked you to be an active part of the club while you've been officers, but please, don't disappear as soon as someone else takes over. They need your support.

In January of 2017, I took over as the secretary of the Portage County Amateur Radio Service (PCARS) for the prior secretary who needed to leave due to taking care of aging parents. I stepped in on a "temporary" basis, until a suitable replacement could be found. Not having been club secretary previously, I have to say that it is a pretty important and demanding position! But so is the treasurer, the trustees, the president and the vice-president positions. Your officers give a lot of their own personal time, energy, and yes – cash, for the benefit of the club and its members. PCARS has just had a new person volunteer for the job as secretary (in PCARS secretary is an appointed position, not an elected position). There's a lot to learn when taking over a new position. Sure, there will be a few bumps getting started, but, given time and support, he will be an *awesome* club secretary.



I've always lived by the idea that no matter what the endeavor, you can beat 70-80% of the competition just by showing up and being on time. Sad but true. But, if you want to make to the top, that last 20-30% is going to be a real dog fight! I hope that those of you running for club offices will take a look at where you stand with life, ham radio and your club. Have you got the fight in you? I know you do.

To the membership of our clubs: you've got some responsibilities too. First and foremost, show up! Your club officers put a lot of time and effort into planning meetings and events. Every time you're a "no-show" they have to wonder to themselves why bother? Same thing with helping out. The club officers can't do everything – give them a hand. An occasional "attaboy" wouldn't hurt either.

Give it some thought. YOU might make a pretty good club officer! If everyone in the club works together, taking the attitude that they are not going to let anyone in the club fail, you will have an outstanding club.

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Finally, as I said, I am no longer the secretary at PCARS! That frees up a pretty big block of time for me. I will be traveling across OH visiting as many of you as I possibly can. I hope to have a chance to meet you all in person and seeing your club operations first hand.

73, Tom Sly WB8LCD

From the Public Information Coordinator

John Ross, KD8IDJ - PIC

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FROM THE PIC

Across America...Hams on the Air

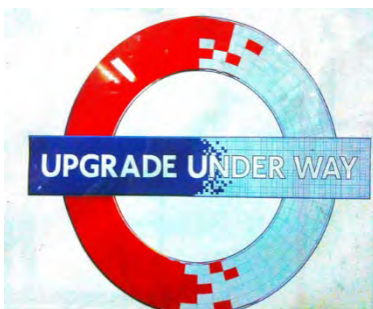
In the past month I have traveled from the Rocky Mountains, across the desert southwest, through the fields of Texas and Oklahoma, under the arch in St. Louis, and across the Mississippi back to home. Without exception EVERYWHERE there were hams on the air! In Arizona and New Mexico, the open, flat desert allows signals to travel for miles. There was always a ham at the other end of my CQ. In the upper reaches of Texas and the rolling hills of Oklahoma signals so strong you hear the cattle in the background. Missouri sure showed me that hams are chatty folks. Of course, in the Midwest the air was full of hams just waiting to help anyone who asked for it.

I've been worried for a few years that we were not using our great hobby enough. Well, I'm proud to say we are, and we are everywhere! Really, whenever I turned on the radio or my handheld I heard traffic. All kinds of good talk beyond the signal strength reports and the "do I sound Ok" replies. It's impressive and encouraging that amateur is alive and well. Locally, we may have some work to do to ramp up the conversations, but it's good just to know hams are doing what they need to do...communicate.

In the last couple of months hams have been at the forefront of the recovery efforts for Hurricane Florence and now Hurricane Michael. The Hurricane net is still buzzing this week.

Pretty soon the Scouts will be on the air and we've had a great couple of months with ARES training and exercises.

Keep up the good work and keep talking.



From Tech To General

My friend Dan just got his ham license this past August and already he's studying for his General! I told him that's great news and asked if had done much on air work on 2 meters. He hemmed and hawed and said not really...didn't know anyone to talk too!! HELLO...CQ...call me and I'll jump on the air or better yet, I monitor the local repeater...just press the button and talk! I've now arranged for a landline "signal" when's he's going to be on the air.

The words of **Tom Delaney, W8WTD, Vice Director** echoed in my head. Tom told us in August that if you study alone, learn alone you would not have anyone to talk too. Truer words have never been spoken. Most of our clubs are great at running license classes. If you know someone who wants to be a ham or a known ham who wants to upgrade...lead them to the classes, introduce yourself as Elmer and watch what happens.



PIO Stuff

If you use electronic applications like Face Book, Twitter, texting or Tweeting to communicate with your members...be careful. Face Book just got hacked...millions of user's data compromised. Yes, it's nice to have that instant feedback but be careful what you post...it may come back to haunt you. Today in world of modern journalism there are many new ways to communicate but that doesn't mean the old methods are not good and cannot be used.

And...speaking of the "old" methods...in just a couple of months you can start sending entries for the 2019 Ohio Section Newsletter Contest!!! January newsletters can be sent in December and you'll need two different months of entries to entered. There is nothing like our section's newsletters...all great and a tribute the editors and writers who spend a lot of putting them together.

Next month I'll review the rules for you and open up a new folder on the computer for the submissions. I can't wait.

The Great Pumpkin QSL Card...Almost

Last month I promised a story on how to turn your pumpkin into a QSL card. Well, I tried. Cutting your call sign into a pumpkin is not easy task...and what I ended with up looked scarier than the standard triangle eyes and mouth!!! Writing on it with a felt tip marker looked bad too....so I gave up. Make next year. In the meantime... have a Happy Halloween and next month...how to turn your turkey into a QSL card!!!



That's it for this month. Thanks for the emails and calls.

73, John, KD8IDJ

From the Section Traffic Manager

David Maynard, WA3EZN – STM

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ACCURACY - ACCURACY

If you have been a traffic handler for very long I am sure you have been told to copy the radiogram "exactly" as it is being sent. As this hold true for 99 percent of the time it is not true 100 percent of the time.

I am sure you have heard if not received or sent a radiogram where there is an obvious mistake in the text or the header. For instance, an October traffic report where the header date is August being sent.



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I see this mistake at least once a month. But there is more, and I am not immune to making a mistake either. Here is one of my recent mistakes.

450 R KB8XXX 16 XXX OH OCT 8
KD8TTE
BT
YOUR TEST WELFARE NUMBERS 2090 TEST WELFARE 2091 TEST
WELFRE 2092 UNDELIVERBLE DUE TO INCOMPLETE ADDRESS
BT
KD8TTE <<<< wrong signature???

A similar mistake in the radiogram below from the RRI link shows how easy it is to ruin the meaning of a radiogram by a one-word mistake.

----- Forwarded Message -----

From: "James Wades jameswades@gmail.com [TFC-OPS]" <TFC-OPS@yahoogroups.com>
To: TFC-OPS@yahoogroups.com; RadioRelay@yahoogroups.com
Sent: Friday, October 12, 2018 7:59 AM
Subject: [TFC-OPS] "Unglued"

Hello Everyone:

Yesterday, I originated several messages, all of which contained the word "unguarded." A few hours later, I received an e-mail from an addressee requesting clarification of my "cryptic" message. It turns out that "unguarded" became "unglued" somewhere in the process.

Of course, we all make mistakes. However, this incident points to something that should be quite obvious. In the case of plain text traffic, it is wise to review the text carefully before acknowledging receipt of the message. If the text does not make sense, one should seek fills or request clarification. For example "eighth region Winlink function unguarded" makes sense, whereas "eighth region Winlink function unglued" likely does not. There is good news. The message was originated at 2230Z and delivered sometime before 0230Z, so the speed of service for a routine radiogram is excellent. In this respect, good customer service was provided. Unfortunately, the garble did undermine the quality of that service.

I suspect this error has a bit to do with the heavy reliance on "bulk traffic," with its predictable texts and "cookie-cutter" formulas. When a unique radiogram is injected into the system, many are unprepared to handle significant variations in content. This case, and others like it, point to the need for more individual, personalized messages to exercise the system.

73,
JW (WB8SIW)

I agree with Jim that we have become complacent with the handling of bulk traffic from stations like NK9X, N1IQI, KI0JO, DL4FN and others. When we get something different we seem to be in a hurry to pass traffic and close the net. Even with the bulk traffic from these stations we want to go reading speed and can easily override a mistake or a change in the text while we rush. I have notice this with traffic coming from the eighth region and other nets to the OSSBN net. Sometimes the text read does not match the text intended as it is coming through the digital network without errors.

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I have been sending out some radiograms with the handling instructions HXC. I am concerned with the fact that more than a few of the radiograms are being delivered and no delivery (HXC) report is coming back to me. I want to remind everyone that the handling instructions are there for a purpose. I would hope that all traffic handlers pay attention to the handling instruction and act appropriately. Here is a list of instructions and their meaning:

HXA – (Followed by a number) Collect landline delivery authorized by addressee within miles (If no number, authorizations in unlimited)

HXB – (Followed by a number) Cancel message if not delivered within Hours of filing time, service originating station

HXC – Report date and time of delivery (TOD) to originating station

HXD – Report to originating station the identity of stations from which received, plus date and time. Report identity

of station to which relayed, plus date and time, or if delivered report date, time and method of delivery

HXE – Delivering station get reply from addressee, originate message back.

HXF - (Followed by a number) Hold delivery until date.

HXG – Delivery by mail or landline toll call not required. If toll or other expense involved, cancel message and service originating station.

The easiest way to report back to the originating station is to use ARL FORTY SEVEN and ARL SIXTY SEVEN and adding the letters ARL before you check number in the header .as

ARL FORTY SEVEN : Reference your message number to delivered on at UTC.

Example: (ARL FORTY SEVEN 1234 WA3EZN SEPT 1 0012)

ARL SIXTY SEVEN : Your message numberundelivered because of Please Advise.

Example: (ARL SIXTY SEVEN 1234 phone disconnected)

In the above example it is a good idea to also include the phone number so the originating station knows you were calling the number that he had in his radiogram. Dyslexia happens you know.

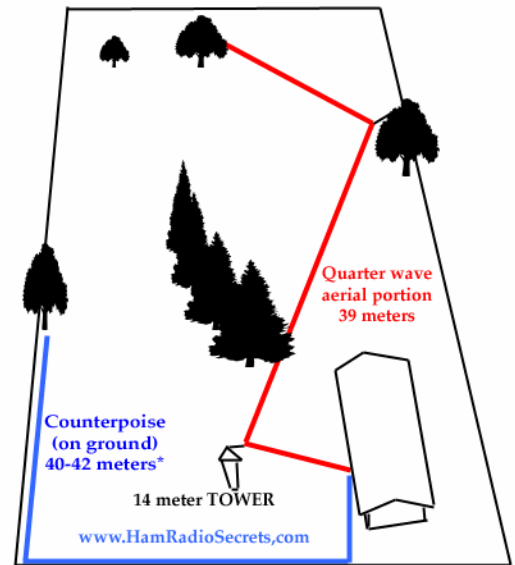
A point brought up by WB8SIQ on the OSSBN net is the use of handling instruction HXB. The proper procedure for HXB (followed by number) is cancel delivery if not delivered within so many hours of the filing time in the header and service originating station. If this handling instruction is use you must have a time filed in the header of the radiogram. Otherwise the destination station will not know what to do.

Another point well worth mentioning is the use of Q signals on a phone net. Q signals are special ARRL signals for use in amateur CW nets only. They are not meant for use on phone nets or casual amateur conversation. Do not use QN signals on phone nets. Say what you mean in words. Here are a few that I have heard said in error.

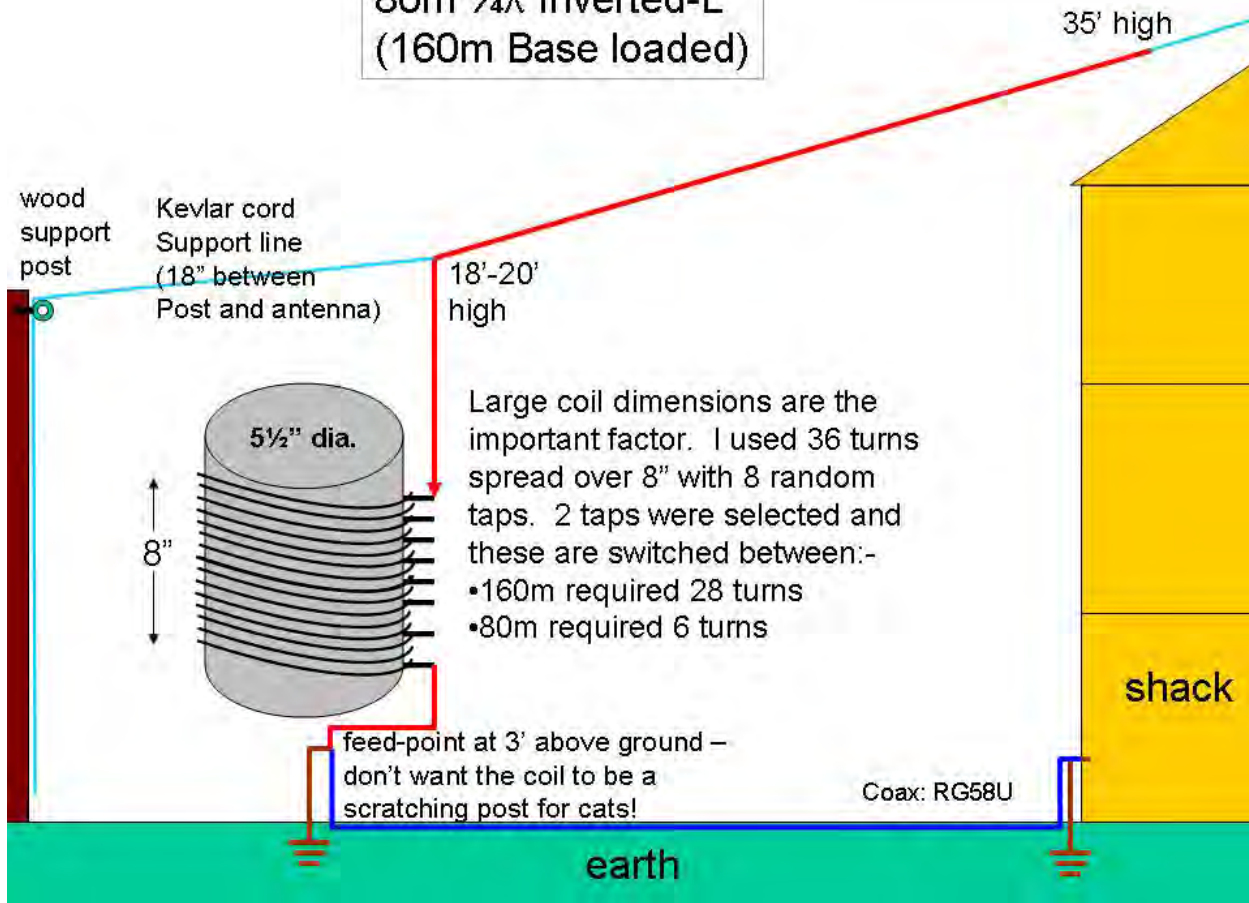
I am QRU – simply say you have no traffic

I QSL your message – simply say Rodger

Now to using 160 meters to pass traffic when 80 meters goes long. Here are two different setups which can be adapted for your use for 160 meters.



80m $\frac{1}{4}\lambda$ Inverted-L
(160m Base loaded)



73, David, WA3EZN

You can view the STM's monthly report on the website.. <http://arri-ohio.org/stm/stm.html>

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Out and About

Lyn Alfman, N8IMW - ASM

lynalfman@aol.com



I say a busy active club is a club that lasts because there is always something for each of its members. And, here is an example of a busy active club—The Cambridge Amateur Radio Association. Besides monthly meetings (many of which are followed by a program) and Tuesday evening nets, members meet for lunch each Thursday (unless it is a holiday) at a local restaurant. And several members get together after the meetings to share a meal and social time.

In August, the club set up an amateur radio demonstration display booth at the three-day Salt Fork Arts & Crafts Festival. They participated in the Covered Bridges Special Event Station Day and in the Ohio QSO Party. Meeting notices appeared in the newspaper and its website as well as on the local radio stations and their website.

In September, the club put up an amateur radio exhibit in the large display at the Crossroads Branch Library for the month. They had planned to activate Blue Rock State Park for OSPOTA but got rained out. They had a joint Special Event Station with the Amateur Radio Club of the American Legion Post 641 in Belle Valley activating the three crash sites of the USS Shenandoah airship. An article about the Special Event Station appeared in the Noble County newspaper. Also, several members help the local EMA/LEPC man a booth to get citizens to sign up for weather and emergency alerts at the Guernsey County Fair. They had an amateur radio test session. They had meeting and testing announcements in the paper and on the local radio stations and their respective websites. Members also are working on the Waller-McMunn Museum building.

So far in October, they have had two articles in the local newspaper, been featured in a four-page article in a local magazine and had an amateur radio test session. Several members also took part in the Black Swan Simulated Emergency Test drill. Members are continuing to work on the Waller-McMunn Museum building. Members will help with line up and communications for the Byesville Halloween Parade on October 31.

In November, they will provide line up and Communications for the Cambridge Christmas Parade as they have done every year since 1979. Then on December 1, they will provide the same for the Byesville Christmas Parade. They will have a Special Event Station on December 8 to commemorate the club's 105th anniversary of its founding on December 4, 1913. Of course, they will have their annual Awards Banquet on December 21. As part of their tradition, they will have a Santa Net on Christmas Eve where children at a member's house can talk to Santa Claus, NP1SC (North Pole 1 Santa Claus).

- The Zanesville Amateur radio Club raffled off a radio and plan to do another one starting next month as fundraisers.
- The Coshocton County Amateur Radio Association participated in the Black Swan Simulated Emergency Test.
- TUSCO Amateur Radio Club and the Sunday Creek Amateur Radio Federation are both busy preparing for their January Hamfests.

So ... be careful and have fun, but above all remember to be "Radio Active!"

'73 de Lyn

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From the Educational Outreach – ASM

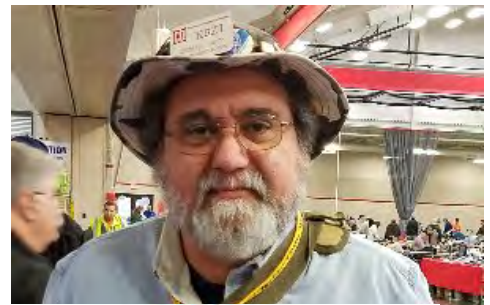
Anthony Luscre, K8ZT

k8zt@arrl.net

ARRL School Roundup Contest & Getting Ready for Contesting Season In General

Mark your calendars for the week of **October 15th through 19th** for the Fall Term of the [ARRL School Roundup Contest](#).

The objective is to exchange QSO information with club stations that are part of an elementary, middle, high school or college. Non-school clubs and individuals are encouraged to participate. It is sponsored by the ARRL, its Hudson Division Education Task Force and the Long Island Mobile Amateur Radio Club (LIMARC) to foster contacts with and among school radio clubs.



School Club Roundup
October 15-19, 2018



School Clubs may operate no more than 6 hours in a 24-hour period, and a maximum of 24 hours of the 107-hour event.

I would love to share a list of School Radio Clubs in your area, but I do not have a definitive list, so please if you know of a K-12 School Radio Club in your area please submit your information via this [form](#). Also please forward the link to this [form](#) to anyone else you know that has information on school clubs.

Additional information about the Roundup..

W8EDU will be on the air most days plus Thursday evening, and many other school stations in the state will be on. The School Club Roundup software package has its own chat room, and most active stations log in there to indicate that they are on the air and on what frequency. Local stations wishing to make 2-meter, or 70-centimeter contacts may call us in 216-368-3579 or email me on ad8y@arrl.net.

The Case Amateur Radio Club has won two out of the last three SCRs in Collegiate categories, but the elementary, middle, and high school winners have beaten us soundly every time. Perhaps we can invite the 6th graders to give us some lessons.

73,

David, AD8Y

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Autumn is traditionally the beginning of the Amateur Radio Contesting Season. There are many articles on preparing your antennas and radios for the contest. You definitely should follow this advice, but I wanted to add a few other things for you to consider adding to your to-do list to increase your success and enjoyment.

1. Read a good article:

- a. [Contest University Files](#). Contest University has generously shared presentation files. If you have never attended Contest University, held the Thursday before Dayton Hamvention®, you should! For details and to register visit www.contestuniversity.com.



- b. Monthly ARRL Contest Newsletter. ARRL members may subscribe at no cost or unsubscribe by editing their Member Data Page as described at www.arrl.org/contests/update.
- c. Visit K8ZT.com contesting page- www.k8zt.com/contesting for a wide variety of articles from many contesting gurus

2. Install, configure, interface and learn how to use a contest logging software program.

- a. For Windows users I suggest the excellent, free [N1MM+](#) software



- b. For a list of other logging options visit www.k8zt.com/contesting
 - c. Be sure to take advantage of the ability to interface your rig and even your antenna rotator to your computer to get maximum benefit from your logging software.
3. In addition to logging software there are a number of **other software programs and websites** that can provide useful contesting tools
- a. **Contesting Calendars** are a must have to know times and rules. You can also use these to find a new contest to try.



- b. **Propagation** and space weather sites help let you know band conditions- www.k8zt.com/propagation



c. **Spotting** lets you see who is on the air-



d. **Realtime Online Contest Score Reporting** is a great way to see and compare current scores of contest competitors. CQContest.net and [Contest Online Scoreboard](http://ContestOnlineScoreboard) are two sites. You can view the information during the contest or even better yet you can participate by having your scores show up. It is very easy with many contest logging programs to automate this process. This automation means you lose no valuable contesting time to post your information. Robert Tuttle, N8YXR from the Mad River Radio Club has put together an [excellent Contest Online Scoreboard How-To](#) to assist you (just remember to adjust your club affiliation listing if you are not a member of the Mad River Radio Club).



Hopefully you might find some ideas for your group. If you have any ideas to add, please feel free to drop me an email (k8zt@arrl.net).

73,

Anthony, K8ZT

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ARES Training Update

Jim Yoder, W8ERW – ARES Data Manager

w8erw@arrl.net



ARES Training Update

I expect anytime now we will see our next NIMS certificate submission which will take us to number 750 and our Section Manager will be awarding another ARES safety vest to that lucky person. Overall, there are nearly 1,000 ARES members who have submitted training documents to the database, well over half of our ARES official membership number. I think that is amazing and the numbers continue to increase almost daily. We have approximately 7,200 total courses logged as well. Fantastic this is indeed. Our Ohio Hams are the greatest.

I have recently had several questions come up regarding how we determine the level designations that are represented on the report that I generate regularly. There appears to be some confusion and I'd like to clarify the process this month. I have also made some revisions to the report and I hope the changes will make the information more understandable.

However, before I continue, let me announce our 750th ARES member to submit his certificates for NIMS training, W8TRW Allen Mytyk from Toledo, Lucas County. Allen will be receiving a nice ARES safety vest awarded by our Section Manager, Scott Yonally N8SY. Congratulations Allen!

ARES participation consists of three levels, 1, 2 and 3. Most Amateurs would enter at level 1 and progress as necessary or desired to level 2 and level 3. Level 1 members have not completed the initial NIMS training, ICS-100, ICS-200, ICS-700 and ICS-800. Once these core NIMS courses have been completed and the completion certificates are logged into the ARES Training database, you are considered level 2. Level 3 requires the submission of your completion certificates for ICS-300 and ICS-400.

Beyond level 3 are several ICS and ARRL courses that are desired for more advanced participation in ARES activities. The ARRL courses in Emergency Communications, EC-001 and EC-16 are two of those. Both courses are required to attain this designation. ICS-706 and ICS-802 comprise another designation and again both courses are required. Served agencies may require these courses.

Additionally, there are some other courses which may be required by our served agencies. These are COMM L, COMM T, COMM N and AUX COMM. ARES members serving in a management role may be required to have these courses in addition to the advanced level courses.

Many of our routine ARES activities do not normally require level designations to participate. Providing communications support for a local public service event such as a 10K or bicycle race are examples. NIMS certification at level 2 and at level 3 would be required to actively deploy with ARES to a disaster situation that would utilize the NIMS structure to manage. The more advanced and supplemental training could be required by a served agency as they deem necessary and our member(s) would be acting in a management role with them.

ARES encourages all members to complete NIMS training, ICS-100, ICS 200, ICS-700 and ICS-800. These are considered the core courses and would normally be required to serve with your local EMA.

Some of the confusion that has surfaced recently is with the supplemental courses, especially, ICS-706 & ICS-802 and EC-001 & EC-016. In order to attain these designations, both courses in each are required.

All ARES members are encouraged to progress to whatever level they desire by taking the required courses and submitting their certificates to the ARES Training database. These are all exceptional courses designed to give you the skills to operate in an environment where they are necessary for success in responding to and managing to a disaster situation.

As always, your questions are welcome. Please feel free to contact me or any of our Ohio Section officials with your concerns. We are here to assist you and help in any way that we can.

Now for some fun stuff. We have just completed our SET exercise, Operation Black Swan 2018. From all that I am hearing, we were a great success this year with many county ARES organizations participating. Seneca County was quite active throughout the SET period this year as Jeff Potteiger WB8REI directed our activities. Jeff focused on providing a real-life exercise including unexpected events, changes, failures and many of the happenings that might occur in a real situation. We were able to utilize repeaters and simplex, Hamshack Hotline, the AREDN MESH Network, NTS Traffic, CW and SSB. I may have missed something. All in all it was an interesting and productive exercise drawing a wide variety of our capabilities into the action and offering some very realistic failures of normal routine operation. Thank you, Jeff and the entire Seneca County ARES team, for a great SET exercise this year.

Thanks again,

73, **Jim, W8ERW**

From the Official Observer Coordinator

John Perone, W8RXX - OOC

w8rxx@arrl.net

The Ohio OO's monitored a total of 496 hours in September with just one OO notice being sent.

It is good to receive a notice from an OO BEFORE getting one from the FCC. This way the problem can be corrected before it goes to far.

I have recently learned It may be more of a transition from the OO to VM program. The new MOU between the ARRL and the FCC is being reviewed, and it then needs to be signed. The October QST has a description of what is being planned on page 9 and also on pages 79 and 80.

Does everyone have a copy of the latest FCC rules and regulations? The Fourth Edition effective November 1, 2017 is available from the ARRL. (Item # 1173) or you can simply download it from the government's website:

[>> Here <<](#)



73, **John, W8RXX**

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One Question Questionnaire



Hey Gang

Wow... I'm really surprised that there's only about 9 % of the clubs around that have a greeter. **Club officials!!** You really need to take notice of this statistic and make that happen in your club! Having a greeter is one of the best ways of getting folks to come back to your meetings. If folks feel welcome, they will come!!!

OK... Here's the next question for you to answer, and this one is really important.

“Do you know how to solder a PL 259 connector onto a piece of coaxial cable??”

You'll find the “One Question” questionnaire on the Ohio Section Website! <http://arrlohio.org> It's all in fun and it's not a scientific survey in any way, but we are learning some things that we didn't know from these questions. I hope that you are enjoying answering these “ONE QUESTION” questionnaires.

The Handbook Give Away

Hey Gang,

Have you registered for the “Handbook Giveaway” drawing for this month yet? If you haven't, go to: <http://arrl-ohio.org/handbook.html> and get registered.

What's the catch? I want to get everyone checking in to the Ohio Section website as often as possible, and in order to register each month, you have to visit the website often! There's nothing else to it. I pay all expenses, and from time to time, I Give Away more than just a Handbook. And, you'll never know just what months will be those special times that I will have more than just a Handbook to Give Away!!



Many of you ask me just how do I know when the drawing is on? Well, that's easy all you need to do is check in on the Ohio Section Website on a regular basis and watch for the big **RED** Arrow that will appear on the left side of the page. This is the sign that the drawing is on and you need to get registered. So, keep a sharp eye out on the website and check in often! <http://arrl-ohio.org>

Club Corner

This is YOUR corner of the newsletter. Send me what your club is doing and I'll make sure that it gets in. Got a special event or club project that you want everyone to know about? Send it to me!. Need help with a project? Send it to me.

Let me know what you club is up to. Are you going to have a special guest at your meeting or are you having a special anniversary? Just sent it to: n8sy@n8sy.com



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Just Another November??

(from Tom Sly, WB8LCD)

Have you ever had a chance to look at a radio spectrum allocation chart? I mean the BIG one that shows the entire radio spectrum. It's pretty amazing. Especially if you look for all of the Amateur Radio allocations that are made. I can only guess, but I would have to think that our allocation of radio spectrum is worth somewhere in the Billions (if not Trillions) of dollars!

I do know that commercial/industrial/military interests would LOVE to kick us to the curb and take our allocations away from us. We can't let that happen.

In Amateur Radio's stated purpose are several things that we are to be about to justify our existence and the spectrum allocations we occupy. One of those things is Service to our community. That has typically meant communications support in times of emergency. Certainly a "natural" spot for us to be to serve our communities. To that end, I would encourage all of you to support EmComm functions whether it be via ARES, The Portage County Communications Unit, The Salvation Army or any other organization that uses Amateur Radio as a means to complete their mission.

In addition to purely emergency operations, we have ample opportunities to participate in our communities by providing communications support to all sorts of community-based activities – bike races, marathons, car shows, the Iditarod, you name it!

Ham Radio has been an important communications tool used by many organizations! (Remember a few years ago we even had at our club meeting a speaker who talked about how Ham Radio Operators were used at the Super Bowl to safeguard communications?)

There are lots of ways to use Amateur Radio to support our communities. But, there are also lots of other ways that we can serve our communities as a group of hams, even if we don't use amateur radio as the means of providing that service. I am *extremely* proud of my club, The Portage County Amateur Radio Service, Inc. (PCARS) for its support of the Amelia DiGirolamo Center of Hope in Ravenna, OH.



“The Amelia DiGirolamo Center of Hope is dedicated to enhancing the nutrition of low-income people in Portage County where local food pantries are not present. Hot meals are offered at no cost five days a week and they typically serve 75-100 individuals per day. Opportunities for socialization, cooking classes and referral services are also offered.” On an annual basis, more than 100,000 people are served each year. Most importantly, of every \$1.00 donated, 94 cents goes directly to those in need.

While not the usual example of Amateur Radio Public Service, this is certainly a cause worth supporting. Over the last 12 years, PCARS has raised over \$29,000 in donations for the Center of Hope. Last year our donation was \$6445.00.

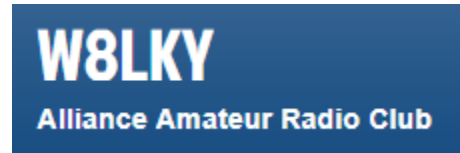
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Because this has been a successful program for us, I would like to suggest that other Amateur Radio Clubs in the Ohio Section look for causes similar to this that they can support. Large or small, all donations are always appreciated, and these activities can be a good source of PR for your club. (you will need to send out the press releases, don't wait for someone else to do it.)

I know that this is not the usual time to be thinking of donating to a charitable organization (that's usually thought of after Thanksgiving), but if your club is thinking of doing something like this, NOW is the time to get it started. There are many organizations like the one that PCARS has chosen in your area, and they desperately in need of your help.

Don't know how to get this idea started, or help want to help out other clubs like PCARS with this wonderful gift of giving? Send me an email wb8lcd@arrl.net

Alliance Amateur Radio Club Gets New Officers



Last Wednesday night was the annual meeting for elections, and here are the results:

- President: Ron Rittenhouse, KE8HCY
- Vice President: Charlie Theiss, KE8EQI
- Secretary: Dave Moreno, KE8JLP
- Treasurer: Tony Schillig, KD8BBK

Trustees

- Bryan Webler, N8WD (exp 2019)
- Howard Miller K8DXR (exp 2020)
- Peter Lucke N8IGZ (exp 2021)

We congratulate everyone and wish them the very best for the upcoming 2019 year!

Lawrence County, Ohio ARES to Participate in Cabell County, WV LEPC Exercise 10-13-18



At the request of Cabell County, WV ARES, EC Greg Hendry, W8DUQ several members of the Lawrence County, Ohio ARES team will participate in the following exercise. This is an excellent example of the multi state / county ARES cooperation which is essential during a major disaster.

Mike Love, WB8YKS - SOARA / ARES - Ohio Section , PIO

From Greg Hendry, W8DUQ Cabell County, WV ARES, EC

On Saturday October 13, if you saw lots of police, fire and EMS activity near Huntington High and St Mary's Education Center (5th Avenue/29th Street) you shouldn't have been concerned. The Cabell/Wayne Local Emergency Planning Committee in cooperation with Huntington Police conducted an exercise simulating an active shooter situation.

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Again, THIS WAS ONLY AN EXERCISE. Ham radio was a part of the exercise using the W8VA repeater, 146.76. Messages about the exercise included statements such as "exercise traffic." The exercise began around 8am and concluded around 12 noon.

From a community notice about the exercise

The mass causality exercise is spearheaded by the Cabell-Wayne Local Emergency Planning Committee (LEPC) and is designed to examine, discuss and demonstrate policy, procedures and coordination with responders and community partners, including Cabell County Schools.

During the exercise, it is likely that there will be a number of emergency vehicles and exercise volunteers located at Huntington High School and at other sites across the city. Please do not be alarmed. The exercise is designed to allow our first responders and the school district to put emergency response plans into action so that strengths and opportunities to improve can be identified. The ultimate goal of all participants in Saturday's exercise is the safety of our students and community.

Participants in the exercise include, but are not limited to, Cabell County Sheriff's Office, Cabell County Schools, Huntington Fire Department, Wayne County Office of Emergency Services, Cabell County Emergency Medical Services, Cabell County 911, City of Huntington, TTA, Amateur Radio, WV State Police, Cabell-Huntington Health Department, Milton Police Department, Huntington Police Department, St. Mary's Medical Center, Cabell Huntington Hospital, the VA Medical Center and River Park Hospital.

Ham radio was once again at the forefront in helping with these types of exercises. We do this to keep in practice so that if an emergency would actually happen, all of us, government agencies and ham radio will be able to better understand our various rolls in these types of situations.

First Aid, CPR and AED Classes Forming

There will be a First Aid, CPR, and AED class on **Saturday, October 27th from 9:00 am till about 3:00 pm.** If you want a card or certificate the cost will be \$25.00. The class will be instructed by Lawrence County EMS personnel and is certified by the American Heart Association. We have checked around and this is the best price we can find for a complete class. **Please register on ARES Connect under Lawrence County Events.**

FM Radio and Programming Clinic



SARA is holding an FM radio and programming clinic for any licensed amateur on Saturday, **October 20th.** The clinic will be held 10 am to 12:30 pm at the Wadsworth Public Library,

132 Broad St. in Wadsworth Ohio. Experienced hams will lead a presentation and discussion on the following topics:

- Basic FM radio operations
- Basic antenna information including fixed, mobile, and H/T considerations
- Basic repeater operations covering repeater etiquette, offsets/splits, CTCSS/PL, Digital Coded Squelch (DCS), Allstar, and Echolink
- How to program radios from the keypad
- How to program radios using the Chirp software

Following the presentation, experienced hams will be on hand to program radios with a stock list of area repeaters or to help people program their radios. SARA's website has more information at <https://w8wky.org/clinic>.

Technician Classes forming



The TMRA Education Committee has released the schedule for the Fall Technicians Class. The class schedule will follow our traditional style. Two classes held two weeks apart and a V.E. Testing Session after the final class. The Class is FREE, you will have to provide your own book, or one can be purchased from the TMRA (\$25.00). The testing session will cost \$15.00 which is the standard fee set by the ARRL.

Class one will be held on **Saturday October 27th** from 08:00 TILL 17:00. Class two will be held on **Saturday November 10th** from 08:00 TILL 17:00 (This includes the V.E.Session) Both classes will be held at Lucas County EMS Training Center - 2127 Jefferson Avenue, Toledo.

To Enroll in the Class, or for more Information please contact Steve Stalker, KC8TVW at 419-467-3734 or kc8tvw@arrl.net

Technician Class Slated

A six-week class to prepare for the Technician license will be held starting **November 1st**, on Thursday evenings at 6:30 pm. The location is the Bowling Green FabLab in Woodland Mall. The only course material required is the ARRL License Manual- 4th edition. This can be obtained from ARRL at arrl.org.

The course will end with a review and VE exam session on December 20th. For further information, contact Bob, N1RB, at: boughton@bgsu.edu

NEW HAMS SEMINAR "I GOT MY LICENSE, NOW WHAT?"

Congratulations, you have studied and passed your element and received you first Amateur Radio License. NOW WHAT?



What Radio should I buy? Should I buy new or used Equipment? What Aspects of Ham Radio should I get involved in? What Activities should I get involved in? What Club should I join, or should I join one at all? And many other Questions.

Welcome to The HUGE world of Ham Radio, this hobby has so many aspects that the new Ham can explore. This 4-hour Seminar is designed to help you gain clarity and hopefully answer some of the questions new Hams have.

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We hold this Seminar two times a year, within a few weeks of the completion of our Spring and Fall Tech Class. Everyone is welcome to attend.

This is a **FREE** Seminar. There will be Equipment and experienced Hams on-site. Come on out and meet the Club Members and get a look at some of the radios and bring your questions. We will get them answered and help get you on the road to the world of Amateur Radio.

The Fall New Ham Seminar - **Saturday November 17th** from 0800 till 1200. It may go past 12:00 if there's a lot of questions or if there's a good discussion going on a certain topic. We will meet at the Maumee Fire Station 2 - 450 west Dussel Drive, Maumee. Look for the Big Blue Water Tower, parking in the rear

Help Wanted

It's that time again... Bill, KD8HCQ is seeking some more volunteers for the:

4H Haunted Hayride

October 19 -20 & 26-27 – (Friday & Saturday night)

Dress for the winter... Wear dark clothing if you are planning to be out in the woods. If being out in the woods is not feasible for you, we could use a few volunteers in the parking lot as well.

We use simplex frequency of: 147.570

Meet at the log cabin (near the playground) from around 6PM. We do need you to sign in as well as sign a normal waiver form.

Ohh... Did I mention FREE hot chocolate!! That's usually delivered on the trail mid-way through the night to warm us up. Water is also usually available.

Feel free to bring a chair to sit in. For more information contact Bill, KD8HCQ at: kd8hcq@wrarc.net

Incident Command System (ICS) Training Schedule

All current trainings are listed on the Ohio EMA training calendar located at:

<https://webeoctraining.dps.ohio.gov/TrainingAndExercise/courselist.aspx>

I've been asked to also include a link to the Kentucky EMA training calendar as well..

<https://kyem.ky.gov/training/Pages/default.aspx>

<https://sites.google.com/site/ccoemtraining/home>

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Please pay particular attention to these courses listed above, as that there's a lot of ICS 300 & 400 classes listed that are very useful for all Amateurs to have under their belts. I will also state that G775 is also a very good course to take as well. These 3 courses are multiple day in class courses, so please be prepared to spend some time taking them.

I would like to remind any of you that are going to take any of the in-class training sessions that you dress appropriately. Please don't go into these classes with attire that doesn't represent you, and Amateur Radio in the best of light. I'm not setting a dress code, but if you wouldn't take your wife out to a nice restaurant in these clothes, you may want to reconsider what you are wearing. Remember, you will be in class with fire / police chiefs, mayors, township trustees and a whole host of other government and civil officials that will remember how you represented Amateur Radio while you were in these classes together.

We do recognize that IS-300/400 requires multiple days of actual classroom training that is not easily obtained. So, if you just can't find the time to fit these class room courses in, we do have an alternative method for getting you to Level 3. Completing the following "FREE" and "ONLINE" courses will act as substitute for you FEMA Leadership Development Course requirements. You absolutely will need to complete all 7 of these courses to get your ICS 300/400 credit. Here are the courses that you need to take: **IS-120, 230, 240, 241, 242, 244 & 288.**

[V.E. Test Sessions](#)

(from arrl)

10/15/2018 | [Athens OH 45701-2059](#)
Sponsor: Athens Cty ARA
Location: Red Cross Southeastern Ohio
Time: 7:00 PM (Walk-ins allowed)
[Learn More](#)

10/16/2018 | [Sandusky OH 44870-1926](#)
Sponsor: Sandusky, Ohio VE Team
Location: Sandusky Radio Club
Time: 7:00 PM (Walk-ins allowed)
[Learn More](#)

10/17/2018 | [Akron OH 44301-2108](#)
Sponsor: Pioneer AR Fellowship
Location: Firestone Park Community Center
Time: 7:00 PM (Walk-ins allowed)
[Learn More](#)

10/20/2018 | [East Liverpool OH 43920-9486](#)
Sponsor: Triangle ARC
Location: Glenmoore Volunteer Fire Station
Time: 1:00 PM (Walk-ins allowed)
[Learn More](#)

10/20/2018 | [Mansfield OH 44907-1502](#)
Sponsor: Inter-City ARC
Location: Peoples Community Center
Time: 1:00 PM (Walk-ins allowed)
[Learn More](#)

10/21/2018 | [Elyria OH 44035-1343](#)
Sponsor: American Red Cross
Location: American Red Cross
Time: 12:50 PM (Walk-ins allowed)
[Learn More](#)

10/27/2018 | [Hamilton OH 45011](#)
Sponsor: Butler Cty ARA
Location: Fairfield Twp Police Det
Time: 9:00 AM (Walk-ins allowed)
[Learn More](#)

10/28/2018 | [Massillon OH 44646](#)
Sponsor: Massillon ARC Hamfest
Location: Massillon Boys & Girls Club
Time: 9:00 AM (Walk-ins allowed)
[Learn More](#)

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11/01/2018 | [London OH 43140](#)
Sponsor: MCARC
Location: Madison County Engineer's Office
Time: 7:00 PM (Walk-ins allowed)
[Learn More](#)

11/01/2018 | [Youngstown OH 44505-1400](#)
Sponsor: Mahoning ARA
Location: Red Cross
Time: 6:30 PM (Walk-ins allowed)
[Learn More](#)

11/03/2018 | [Bryan OH 43506-8410](#)
Sponsor: Williams County ARC
Location: Williams County 911/EMA
Time: 10:00 AM (Walk-ins allowed)
[Learn More](#)

11/04/2018 | [Marion OH 43302-1523](#)
Sponsor: Marion ARC
Location: TV 39
Time: 2:30 PM (Walk-ins allowed)
[Learn More](#)

Special Events

- **10/19/2018 | Commemorating 79th. Anniversary of the United States Coast Guard Auxiliary**
Oct 19-Oct 21, 1402Z-1402Z, W8E, Loveland, OH. United States Coast Guard Auxiliary District 8ER. 21.336 7.234. QSL. David Stroup, 6138 Misty Creek Dr., Loveland, OH 45140. cgaux8@yahoo.com

ARRL Contest Corner



Want to know about ARRL contests? >> [Click Here](#) << for the latest information from ARRL about contests. A generic ARRL contest calendar is also provided there that gives the weekends for all our events, to assist with long-term planning of your contest operations. The Contest Corral files include non-ARRL events.

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Scouting's Jamboree-On-The-Air (JOTA) coming in October

Jamboree-on-the-Air, or JOTA, is the largest Scouting event in the world. It is held annually the third full weekend in October. JOTA uses amateur radio to link Scouts and hams around the world, around the nation, and in your own community. This jamboree requires no travel, other than to a nearby amateur radio operators ham shack. Many times, you can find the hams will come to you by setting up a station at your Scout camporee, at the park down the block, or perhaps at a ham shack already set up at your council's camp.



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Tell Me More



Scouts of any age can participate, from Cub Scouts to Boy Scouts and Venturers, including girls. Once at the ham radio station, the communication typically involves talking on a microphone and listening on the station speakers. However, many forms of specialized communication may also be taking place, such as video communication, digital communication (much like sending a message on your smartphone but transmitted by radio), or communication through a satellite relay or an earth-based relay (called a repeater).

The exchanges include such information as name, location (called QTH in ham speak), Scout rank, age, and hobbies. The stations you'll be communicating with can be across town, across the country, or even around the world! The World Scout Bureau reported that the 2017 JOTA-JOTI had over 1.5 million Scout participants from more than 160 countries.

When Is It?

Jamboree-on-the-Air is held the third weekend in October. This year that is: **October 20 – 21 to be exact.** There are no official hours, so you have the whole weekend to make JOTA contacts. The event officially starts Friday evening during the JOTA Jump Start and runs through Sunday evening.

How Can I Participate as a Scout?

Contact your local Scout council and see what may already be planned in your area. You can also contact a local ham radio operator or a local amateur radio club.

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You can find a searchable database of clubs at www.arrl.org/find-a-club. This website is operated by the American Radio Relay League, the national association for amateur radio, which is cooperating closely with the BSA on JOTA and many other activities.

Your local club may be able to direct you to its planned JOTA activities. These can include ham stations set up at camporees or other events. Or, if there are no planned activities, you can either work with them to get something set up or arrange to visit a local radio operator's ham shack at a scheduled time to participate in JOTA.

How Can I Participate as an Amateur Radio Operator?

Contact your local Scout council and see what may already be planned in your area and how you can help. You can find your council using [the Council locator](#).

NASA On The Air

Amateur Radio Special Event



2018 is a big year for NASA anniversaries and we'd like for you to help us celebrate. NASA was created in 1958, the first manned lunar mission was in 1968, and the first elements of the International Space Station (ISS) were launched in 1998. The club stations at the various NASA centers and facilities plan to be on the air with special events to celebrate these milestones and some may be offering commemorative QSL cards. There will be a special certificate indicating how many centers you worked on various bands and modes that may be downloaded. QSL instructions are available on the QRZ.COM site for each individual club station. We have a web-based system for you to check your points total and download a certificate at the end of the event in December 2018. Visit the Scores section for a link to that system. Points will be awarded for each center worked on each band and mode (phone, CW, digital).

The event runs from December 2017 through December 2018. Note that any contact with a NASA club station during the full time frame will count toward your points total. The following events will have more NASA club participation:

- Apollo 17 45th anniversary – 11-19 December 2017, beginning of event
- NASA founded 60th anniversary (act signed by President Eisenhower) – 29 July 1958
- ISS First Element Launch 20th anniversary – 20 November 1998. We are planning a joint event with the European Space Agency. See <https://sites.google.com/site/esahamradio/home> Check back for further details.
- ISS Node 1 Launch 20th anniversary – 4 December 1998
- 50th anniversary of Apollo 8 – launch 21 December 1968, splashdown 27 December, end of event

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Note that there may be other special event operations by the various centers commemorating specific events but those listed above will include participation from all the centers. All operating modes are fair game including satellites, repeaters, EME, ISS APRS, etc. We hope to be on the air for casual contacts and contests as well. Please check back on our website: <https://nasaontheair.wordpress.com/> for updates as the program is developed.

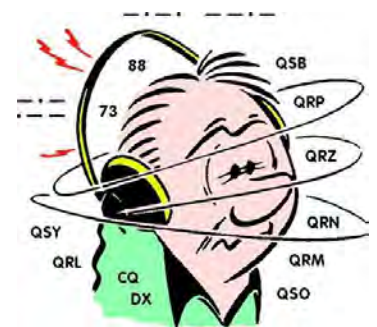
(ed. note.. they have a really cool QSL Card that I'm sure that you'll want to have for your wall!!!)

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DX This Week

(from Bill, AJ8B)

Well, Uncle Frank is at it again. You may recall that I previously wrote that I would be putting up a 160M Inverted "L" to find some DX! He has informed me that he worked 37 different countries between 9/1 and 9/28 on 80M. He admitted that the noise was tough, and he had to stick to the "gray line", but it was there to be worked and he worked it! Doesn't make me rethink my plans, but, it does challenge me to make sure I am getting all that there is to work during this low time in the current cycle.



If you are having success just drop me a line and let me know what you are doing! – aj8b@arrl.net

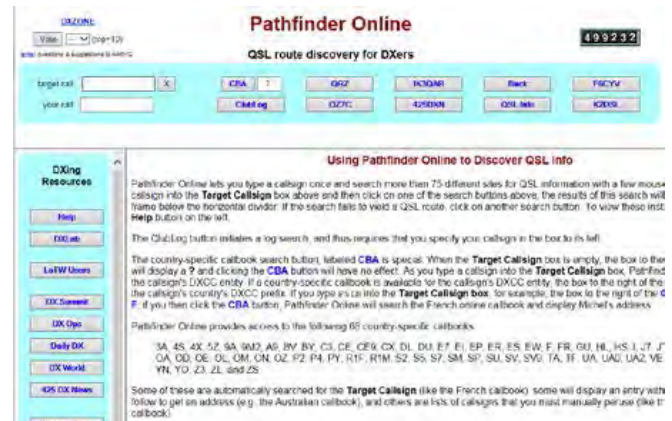
DX Topic of the Week: QSL Routes

So, you have spent the time to locate the DX you need and you have worked him. Are you sure? Several times when I was chasing something I needed, I recorded the session. If they don't quite get your call right, you can tell them to check again. "It was at 1042Z and you worked K8DV before me and K1FJ after me". More data can't hurt! Always make sure that your computer time is correct. The biggest mistake I have seen has to do with Time Zones, especially around the time change! I use Dimension 4 as my time sync program on all my PCs. It is an excellent time base for FT8 as well. I would hate to find out that I was "NIL" (no in log) for a group that was in Rwanda but won't be back for several years. In a few issues, we will look at DXA – a potential game changes for real time QSO confirmation.

The best source of information on QSL routes is usually the DX Station. Often, they will simply say "QSL via QRZed.com" or "QSL CBA" (call book address). If you have listened for a while and have not heard any instructions, then the next source of information is www.QRZ.com. I have found very few hams that don't have at least some QSL information on QRZ.com. It is becoming more frequent to have hams indicate that they only confirm the QSO via Logbook of the World (LoTW) and not via paper QSLs. Many hams have THOUSANDS of QSL cards at home and really don't want any more. Other hams may request that you email them the QSO details and use Paypal to send them \$ to cover postage. They will then confirm the QSO via a QSL card in the mail. Of course, these instructions will be on their QRZ.com webpage.

My third source of information is via The Daily DX webpage: <http://www.dailydx.com/qsl-routes/> There are listings for QSL routes, managers and addresses as well as other useful sites.

The next source of information on QSL routes and information is an "aggregator site" at <http://www.dxlabsuite.com/pathfinder/WebClient/> There are over 60 country specific callbooks, 10 individual search sites and much more information at this site.



Once you have identified the route, there are a few nuances for each route.

If you are mailing direct to a DX entity, remember a few things.

- #1 - Use nesting envelopes – One inside the other
- #2 - Use printed labels or print address info on envelope with printer.
- #3 - No CALLSIGNS on envelopes.
- #4 - Place nesting envelope flap down
- #5 - Use bureau cards (thin cardstock)
- #6 - Enclose at least 2 USD
- #7 – Be Patient – Faster than the BURO, but, not as fast as LoTW!

If you are directed to a particular QSL manager, remember to...

- #1 - Be Patient - a busy QSL manager can handle hundreds, if not thousands of direct requests per month.
- #2 - Managers often have to wait weeks to receive logs
- #3 - Many times QSL cards have to be designed/ordered/printed
- #4 - DO NOT send an email 2 weeks after sending your request – doesn't help and it may put your request at the bottom of the list!
- #5 – Make sure that you QSL within one year of the QSO as logs get lost, ops become SK, or logs get closed

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Finally, if you use the BURO (details on the BURO in a future edition), remember that this may be the longest turn around time of all the routes – but, it is the most economical. Before using the ARRL QSL BURO, make sure that the entity that you are attempting to confirm is a member country and that the card will be transferred to that BURO. The upside is that you can use LoTW to confirm QSOs in a very expediate fashion and then use the BURO to get the physical card later. I have received as many as 70 cards at once from the BURO and I have also received cards that were 5 or more years old.

Be patient and adjust your approach to your need. Let me know what you think and what your favorite route is. Also, if there is a route that I have not addressed (QSL service for instance), let me know.

From our friend at the DailyDX and the WeeklyDX, Bernie has this to report:

- **EP – Iran** – Shif Island, IOTA AS-189, is scheduled to be active from November 17th to the 23rd . A 7 day operation is planned from this new IOTA island. This trip is being conducted by the Russian Robinson Club.
- **A3 – Tonga** – Europeans PA3EWP, PA4WM and GM4FDM will be in Tonga in November using the callsign A35EU. They will attempt 80 meters and even 160M.
- **KH0M – American Samoa**. Two groups will activate American Samoa over the next several weeks. Watch for W1VX/KH8 and KH8/VK4MAP

More details can be found at www.dailydx.com

Let me know what you are hearing, working and what QSLs you have received! I am also looking for questions, issues, or topics of the week to be featured – aj8b@arrl.net

More info can be found at www.swodxa.org or www.aj8b.com

ARLD042 DX news

This week's bulletin was made possible with information provided by NT5V, The Daily DX, the OPDX Bulletin, 425 DX News, DXNL, Contest Corral from QST and the ARRL Contest Calendar and WA7BNM web sites. Thanks to all.

WESTERN SAMOA, 5W. Steve, WB2IQU will be QRV as 5W2IQ from Apia from October 18 to 25. Activity will be on 40, 20, 15 and 10 meters. QSL direct to home call.

CAPE VERDE, D4. Harald, DF2WO is QRV as D44TWO from Praia, Santiago Island, IOTA AF-005, until October 22. Activity is holiday style on 160 to 10 meters using CW, SSB and various digital modes. QSL via M00XO.

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SPAIN, EA. Members of the Cartagena Team are QRV with special call AM5BCP until October 21 to commemorate the Battle of Cabo de Palos 80 years ago. QSL via EA5GUQ.

WALES, GW. Special event station GB100MCV is QRV from Holyhead on Holy Island until October 28 to commemorate the sinking of the Royal Mail Ship Leinster during World War I. QSL via bureau.

REPUBLIC OF KOREA, HL. Operators Han, DS2GOO, Rew, DS4NYE, Rocky, HL1VAU and a few other members of the Korea Contest Club are QRV as home calls/3 and D70LW/3 from Hwang Island, IOTA AS-080, until October 14. Activity is on 80 to 10 meters using CW, SSB, RTTY and FT8. QSL via home calls, and D70LW/3 direct via DS4NYE.

SOUTH SHETLAND ISLANDS. Sang, DS4NMJ is QRV as DT8A from the Korean Antarctic Scientific Base King Se-Jong on King George Island, IOTA AN-010, until the end of December 2018. Activity will be on various HF bands using mainly CW and some SSB. QSL via HL2FDW.

PANAMA, HP. Members of the Radio Club de Panama and GREMPA, an emergency group, are QRV with scout station 3E1JT until October 31. This includes being active in the upcoming Jamboree On The Air. Activity is on all bands using SSB, with some CW and on various satellites. QSL via HP1ALX.

SVALBARD, JW. Just, LA9DL, Erling, LA6VM and Halvard, LA7XK are QRV as JW9DL, JW6VM, and JW7XK, respectively, from Longyearbyen, IOTA EU-026, until October 15. They will be QRV as JW5X in the Scandinavian Activity SSB contest. QSL JW7XK via LA7XK, JW9DL via LA9DL, JW6VM via LA6VM, and JW5X via LA5X.

ARUBA, P4. Operators NN5E and NT5V are QRV as P4/home calls until October 19. Activity is on 80 to 10 meters using CW, SSB, RTTY and FT8. QSL to home calls.

UKRAINE, UR. Special event station EM75QM is QRV until October 28 to commemorate the liberation of Melitopol in World War I. QSL via bureau.

GREECE, SV. Erich, HB9FIH is QRV as SV8/HB9FIH from Lesbos, IOTA EU-049, until October 21. This includes being active from numerous COTA, SOTA, and lighthouse references. This also includes being an entry in the upcoming Worked All Germany contest. QSL to home call.

CHRISTMAS ISLAND, VK9X. A group of operators will be QRV as VK9XG from October 17 to 29. Activity will be on 160 to 10 meters using CW, SSB, RTTY and FT8. QSL via G3TXF.

CAMBODIA, XU. Jaye, VK2SD is QRV as XU7AME from Phnom Penh until October 16. Activity is holiday style on 40 to 6 meters. QSL to home call.

VIET NAM, XV. Jun, OE1ZKC is QRV as XV9RH from Hanoi until October 16. Activity is in his spare time on the HF bands using only CW. QSL to home call.

LAOS, XW. Bruce, 3W3B is QRV as XW4XR until October 22. Activity is on 40 to 6 meters using CW, RTTY and FT8. QSL via E21EIC. In addition, Champ, E21EIC is QRV as XW1IC until October 16. Activity is on 40 to 6 meters. QSL to home call.

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VANUATU, YJ. Stan, LZ1GC, Lubo, OM5ZW and Karel, OK2WM will be QRV as YJ0GC from Efate Island, IOTA OC-035, from October 15 to November 4. Activity will be on the HF bands, with a focus on the low bands, using CW, SSB and RTTY. QSL via LoTW.

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THIS WEEKEND ON THE RADIO. The NCCC RTTY Sprint, NCCC CW Sprint, Makrothen RTTY Contest, QRP ARCI Fall QSO Party, Nevada QSO Party, Oceania DX CW Contest, SKCC Weekend CW Sprintathon, Scandinavian Activity SSB Contest, Pennsylvania QSO Party, Arizona QSO Party, FISTS Fall Unlimited CW Sprint, South Dakota QSO Party, PODXS 070 Club 160-Meter Great Pumpkin Sprint, UBA ON 80-Meter CW Contest and the UBA ON 6-Meter Contest are all on tap for this upcoming weekend.

The ARRL School Club Roundup runs from October 15 to 19.

The 4 States QRP Group Second Sunday Sprint and Telephone Pioneers QSO Party are scheduled for October 15.

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The RSGB 80-Meter Autumn Data Series, CWops Mini-CWT Test and Phone Fray are scheduled for October 17.

The ARRL International Grid Chase runs during all of 2018.

Please see October QST, page 91, and the ARRL and WA7BNM Contest Web Sites for details.

FAA Reauthorization Act of 2018 Overhauls Marking Requirements for Short Rural Towers *(from arrl bulletins)*

Thanks to ARRL efforts on Capitol Hill, language in the [2018 Federal Aviation Administration \(FAA\) Reauthorization Act](#), just signed by President Donald Trump, resolves the issue of problematic or preclusive rules affecting some rural Amateur Radio towers. The previous FAA Reauthorization Act of 2016 had instructed the FAA to enact tower-marking requirements, similar to those in some state statutes, aimed at improving aircraft safety in the vicinity of meteorological evaluation towers (METs). These towers are typically between 50 and 200 feet and set up in rural areas, often on short notice.



In the wake of fatal crop-dusting aircraft collisions with METs, the National Transportation Safety Board (NTSB) had recommended that states institute laws, sometimes called “crop duster” statutes, requiring marking and registration of METs. While some state crop-duster laws exempted ham radio towers, federal regulations dating to the 1996 FAA Reauthorization Act did not, and ARRL had expressed its concerns since.

“There is no evidence whatsoever that even one Amateur Radio antenna below 200 feet has ever been involved in an aviation accident,” ARRL General Counsel Chris Imlay, W3KD, said.

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“To impose painting and lighting requirements on Amateur Radio antennas between 50 and 200 feet tall would preclude many, if not most, of the exurban, rural, and, in some cases, suburban Amateur Radio antennas that are and will be sited outside incorporated towns and cities. This would ironically defeat the entire reason such antenna facilities are sited in those environments: because rural and exurban areas are where such antennas are permitted and the few areas where antennas are not precluded entirely by private land use regulations.”

Prior to 2017, per long-established FAA regulations, unless such short radio towers were located within the glide slope of airports or heliports, they were not required to be painted or lighted.

After attempting to address the issue through the FAA, ARRL’s legislative team met with staff members of Senator Jim Inhofe (R-OK) and other lawmakers and their staffs associated with the congressional committees of jurisdiction. Senator Inhofe — himself a pilot — was of the view that the 2016 legislation was excessive and that exemptions should exist for both broadcast and Amateur Radio antennas and support structures. “We worked with our close allies at the National Association of Broadcasters (NAB), [who were] afraid that this legislation would have a large adverse effect on short broadcast towers,” Imlay recounted. “We also worked with the Association of American Railroads, which has hundreds of short towers along rail lines in rural areas that would have been affected.”

Imlay said Section 576 of the large 2018 FAA reauthorization now requires that the only towers less than 200 feet tall that have to be painted and lighted are meteorological aids and those within the glide slope of an airport or heliport. The remainder of such towers in rural or agricultural areas lower than 200 feet need to only be included in an FAA-maintained database, which will be updated by the owners of such towers.

Imlay credited members of the ARRL Legislative Advocacy team, as well as Senator Inhofe and ARRL’s broadcast and land mobile association partners for getting the language revised in the new, 5-year Reauthorization Act. “We consider this a big success for Amateur Radio,” Imlay said, “and it would not have been possible but for the visibility that has been achieved for ARRL through our active Capitol Hill advocacy for the Amateur Radio Parity Act.”

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Northern Florida ARES Teams Handle Hurricane Duty

Over the past week, Amateur Radio Emergency Service® (ARES®) teams in the ARRL Northern Florida Section went on alert and some activated to support emergency communication before and during Hurricane Michael.



Miller Norton, W4EMN, the Communications Watch Officer at the Duval County Emergency Operations Center (EOC) in Jacksonville, Florida, was monitoring [SARnet](#) — a UHF-linked repeater network in Florida — when he heard an urgent call for help that needed to be sent to the State EOC in Tallahassee. All other forms of communication were out, but Norton was able to relay the message to via Amateur Radio. He also passed along messages and requests from the Jackson County EOC to the American Red Cross. Norton said officials in Tallahassee and Jackson County were both “incredibly grateful” for the way the SARnet system functioned during the

weather emergency.

Jackson County Emergency Coordinator Ricky Whittington, KD4AST, deployed to the county EOC in Marianna.

“We took a direct hit by the center of the storm at 140 MPH,” he told Clay County ARES Assistant Emergency Coordinator (AEC) and Public Information Officer Scott Roberts, KK4ECR. “[The] county maintenance building across the road from the EOC was picked up and slammed into the north side and over the roof of the EOC just prior to the eye passing over.”

The incident took out the HF antenna, which has since been restored. Whittington said the internet failed, as did cell service for a while. Hams have been passing material and resource orders to the State EOC via HF and SARnet.

Whittington reported “total devastation of Bay, Jackson, and Gulf counties,” with loss of electrical power and water service, in addition to damage in Franklin, Holmes, and Leon counties. “[The] *only* mode of communications after the eye came across was ham radio, until we got minimal cell service a few hours ago,” he reported on October 11.

ARES teams in other counties reported activations, although some teams remained in monitoring mode.

- Escambia County ARES activated on October 9 at 2300 CDT to support two shelters — special needs and pet-friendly — until they closed on October 10 at 1700 CDT
- Although the Alachua County EOC activated at Level I, the ARES volunteers never activated beyond Level 3. However, AEC Susan Halbert, KG4VWI, spent a day at the EOC coordinating with emergency managers in case they needed to open a shelter for local evacuees or for host county operation. No hams were needed for shelters, but one or two shelters opened for outside evacuees.
- The Gilchrist County EOC activated at Level 2 and shelters opened. The local 2-meter repeater was excellent, and no power outages were reported. ARES primarily remained at Level 3 in monitoring mode. Daily nets were held for hurricane weather briefings and the Northern Florida Section Emergency Net on HF was able to provide up-to-date storm location information to the State EOC when it lost internet service.
- Citrus County ARES was called to activate on Monday, October 9, at 5 PM CDT. At that time, emergency managers had opened four shelters, serving 38 clients (and 13 pets). Telephone and internet service remained operational throughout the weather event, although ARES volunteers staffed two shelters on a precautionary basis, as well as the EOC at activation. All shelters closed by 6 AM on Wednesday, October 11. Citrus County ARES volunteers covered two back-to-back 12-hour shifts at the EOC. ARES personnel stood down at 6 PM on Tuesday, October 10.
- Duval County activated to Level 3 monitoring status along with the activation of the Duval County EOC. No shelters opened in Duval County, and there were no reports of serious damage.
- Clay County also activated to Level 3 monitoring, when two tornadoes touched down in the county. No shelters were opened, and no official activations were requested.

Weather Underground and Ham Weather Stations

Have you visited the webpage to see all the Weather Underground stations yet? I’ve just added several new reporting stations to the listing. This is really great we are growing every week.! Here’s a link to it... <http://arrl-ohio.org/wus.html>



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We're starting to get a really good collection of stations all over. I know that there is a lot more than what we have listed. How's about sharing your weather information with all of us! All that you need to do is send me your Weather Underground ID and your call sign and I'll take it from there. Sent it to: n8sy@n8sy.com I think this will be a lot of fun for sure!

What Is The Maximum Voltage A Human Can Withstand?

First, let me say this for everyone's sake.. Don't try this to see if it's wrong or right. It needs to be considered as subjective information, and your safety is worth more than proving any article wrong!!!

VOLTAGE, CURRENT, AND POWER

Voltage is related to the electric force between two points. More specifically, it is the gradient of the electric field, which in turn is a description of electric force. It is a description of electric potential energy, the ability of the electric field to force a charged particle and move it (i.e. the ability to do work).

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Because electric force exists between electric charges, voltage can also be interpreted as related the difference in charge between two points. Any time there is a voltage between two points, there must also be an electric field, though the electric field will actually depend on the physical distance between the two points.

When an electric field exists in an imperfect conductor, a current will flow in the conducting medium. Current is the movement of charged particles (electrons, ions, etc). In order for charges to circulate in a loop, a power source is required which might maintain the potential difference (the voltage) between two points by, we could say, 'rearranging' the charges: a voltage source. It could also maintain a constant flow of current: a current source. Either way, a potential difference (voltage) in an imperfect conductor will always cause a current. In imperfect conductors, the current will have many, many interactions with the conductor's atoms. It's like playing Plinko. This will then give more kinetic energy to the conductor's atoms, and heat is generated. So, any time a current flows in an imperfect conductor, heat is generated.

With these simplified definitions of voltage and current, we can look at some scenarios that will help clear up some of the confusion. If there is a voltage between two points, it means there is a difference in the quantity of charge between those points. This applies anywhere. If the charge difference is between two conductors, say a human hand and a doorknob, the charge difference will cause an "equalization". Many charges will be moved very quickly because they are under a great force (by nature of there being a voltage). This is a current, but it is limited to the difference in charge between the two points. Once all the charges are moved, there's no more current.

The voltage in this scenario is only dependent on the difference in the quantity of charges, but it can get into the thousands of volts, the kilovolts (kV). The limited quantity of charge that can possibly be moved, however, means this voltage is reduced to 0V very, very quickly, and the current flow is quite brief.

If, on the other hand, you have a power source, such as a voltage source, the potential difference will be maintained. The current that flows will be proportional to the resistance of the path, as long as the power source can supply enough current. That is key: Every power source can only supply current *up to a point*, called the **rated current**. So, an AA battery, for example, can supply currents up to, maybe, 1A (1 ampere).

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You have to put it across a resistance that will not exceed this. If the “load”, the conductive/resistive path between the + and the -, is too low resistance, the battery’s internal resistance will limit any more current from flowing.

Voltage sources are much more common for the average consumer, so current sources we’ll leave by the wayside. Voltage sources include things like batteries and wall outlets. You can have constant voltage, which produces constant current, or *direct current* (DC), or voltage that changes continuously from a positive value to a negative value, producing a current that moves forwards and then back, over and over - an *alternating current* (AC). This is really only included in this description for completeness.

Anyway, all voltage sources have a rated current. If you exceed it, the voltage will simply get lower instead of the current increasing any more. For the voltage of the source, V, and the maximum supply current, I_{max}, we say the **power** of the source is $P = V \cdot I_{max}$.

The power of a source is constant. Or at least ideally. If you convert the voltage to a higher voltage, the maximum current must decrease. If you want to convert the output to get more current, the voltage output will go down. Whatever you do, the product of the voltage and the max current will stay constant.

For example, a given AA battery with a voltage of 1.5V and a rated max current of 1A, the power is $1.5 \cdot 1 = 1.5W$. We can know “step up” the voltage from the battery (using a clever circuit called a switch mode convert) from 1.5V to as high a voltage as we want. Let’s put the voltage to 5kV (5,000 V) because that’s a very high and seemingly dangerous voltage. But we know the power is constant, at 1.5W, so the maximum possible current our circuit will be able to supply will be $1.5/5000 = 0.0003 = 300\mu A$ (300 microamps). After 300 μA , the supply voltage will simply drop instead of supplying any more current, just as before.

This is a failure of the *power supply*, and the actual applied voltage will drop, so the load isn’t actually seeing the 1.5kV after you try to pass 300 μA . Power supplies with higher power ratings will be able to source more current, supplies with lower ratings will be able to generate still less current, before they all hit their limit. *Side note: switching converters, or any voltage converter for that matter, will always have an efficiency rating. If you supply it with 1.5W, it might only be able to supply 85% of that, 1.2W.*

MAN VS ELECTRICITY

Current	Required Voltage		Comments
	1,000 Ω	100,000 Ω	
1 mA	1 volt	100 volts	Threshold of feeling, tingling sensation.
15 mA	5 volts	500 volts	Maximum current level a human can withstand before sustaining injury.
15-20 mA	10 volts	1000 volts	Beginning of sustained muscular contraction (“Can’t let go” current.)
100-300 mA	100 volts	10,000 volts	Ventricular fibrillation, fatal if continued. Respiratory function continues.
6 A	6000 volts	600,000 volts	Sustained ventricular contraction followed by normal heart rhythm. (defibrillation). Temporary respiratory paralysis and burns.

Extreme Pain
 Burns, Permanent Damage, or Death
 8

Now we can talk about what happens when current flows through a person. As was mentioned, current flow always generates heat. The more current, the more heat. The human body has a fairly high resistance, but not as high as one might think. To get current to flow requires a power source with a voltage that is fairly high, because we're forcing the current through a lot of resistance. Here's a familiar chart of what happens to a person at different currents.

The current passing through your body will be generating a lot of heat, enough to burn your insides. It will also mess with your nervous system, limiting your ability to control your muscles. The amount of current that can kill is rather low, at around 100mA+. The resistance of the human body is roughly between 100k and 1k, or 100,000 and 1,000 ohms. In the chart you can see the voltage required to get the corresponding current levels to pass through a human body at either side of the spectrum.

Now, knowing what we know about power, we see that a deadly amount of current will pass at between 100V and 10kV at 100–300mA, which would require a power supply that is not only at a voltage of 100V–10kV, but is also capable of supplying between 10W and 1kW (1,000W). If the power supply satisfies both conditions, you will be in danger.

If it has a rated power of <10W, you'll never be at risk, because either the voltage will drop (and thus the force causing the current is reduced, and the current will reduce) or the current will simply be too low to cause death. Assuming you fit in the 100mA part of the current survival threshold, anyway.

CONCLUSION AND OTHER CONSIDERATIONS

So what voltage can a person survive? Well if we're considering death from heat, burning, and tampering with vital organs, it's going to be between 100V and 10kV, as long as the power supply can actually produce the current that would kill you. An ideal, limitless power supply will always be deadly between 100V and 10kV, but in the real world there are always power limits.

This seems to imply that the human body can withstand any voltage, as long as the source of the potential difference (e.g. a difference in amount of charge) can't produce currents high enough to burn you and disrupt your organs. Even if you have a voltage of 100MV (100,000,000V) between you and something else, you should be perfectly alright as long as no current can flow through you. Right?

This is actually interesting because I can't say for sure that the human body will always be alright as long as the voltage difference is caused by something that can't really supply current. If, for example, there are two 10ft square plates with a voltage of 100MV between them, and there's no arcing or anything, and you're between them, your body resistance should allow for a significant potential difference across you from the side facing one plate to the side facing the other. When that happens, the charges in your body will naturally want to reorient themselves, and I don't know what risks you would face when this happens. Maybe you would see no change, maybe you would lose brain function and your heart would stop, but I would think the former to be more likely. I'd have to really think about it.

Anyway, let's finish up by replacing "It's not the voltage that kills you, it's the amps!" with "Death by electrocution requires a high voltage power supply that has a rated power which allows for 100mA or more of current to flow under load." It's catchy, I guess.

[TOP ^](#)

Final.. Final..

Scott Yonally, N8SY - SM

n8sy@n8sy.com

Hey Gang,

Ok.. I want to know just who in the world left the freezer door open!!! It's always amazing to me just how quickly it can get cold here. It's been another crazy week for me with lots going on everywhere.

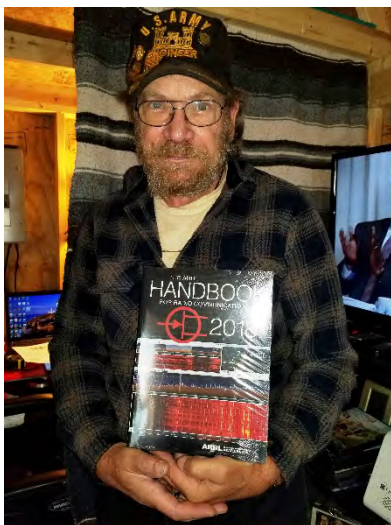
ARES Connect

Instructions to Register

Enter ARES Connect

Are you registered in ARES Connect yet? If not, why? No matter how much you resist, it's coming, and we need to make sure that no one is left behind.

Especially now, if you didn't see in last week's newsletter, I've started an incentive program for those who are not only registered, but actually using the system as well. How do you get in on this program? Easy, just start using the ARES Connect system. The more you use it, the more hours you will collect. Those hours are what I'm using for the contest. The person with the most hours will receive a prize.



Last week to kick off the program, I gave away an ARRL Handbook. That's right, a handbook! Congrats to **Jim Beal, N8RAK** who won the ARRL Handbook from me for being the top man on hours recorded in the new system!

Now, in order to keep it interesting I won't always be giving out just handbooks either, I have a lot of other really neat items for you to win as well!

Here's the score card for hours as it stands thus far in October..

Name	Hours
Scott Yonally (N8SY)	49.00
James Hershberger (KE8ERN)	18.50
Michael Klaiss (KC8BUJ)	14.25
Mark Atwell (KD8DGH)	13.50
Mathew Nickoson (KC8NZJ)	12.50
Daniel Rinaman (AC8NP)	12.50
Franklin Doan (KA8LKN)	12.25
Michael Boyle (WF8B)	12.00
Jeffrey Potteiger (WB8REI)	12.00
James Yoder (w8erw)	11.50

[TOP ^](#)

I'll be doing this give away on a pretty regular basis, so please do YOUR part and sign up for events. If you need help getting yourself registered, or find something not working right with the system, please don't hesitate to let me know. I can usually get fixed or answered pretty quickly.

We do have a set of instructions on how to get registered right above the button to enter ARES Connect. I would strongly suggest that if you haven't registered yet, that you read these instructions first. Here's a quick link to get you started... http://arrl-ohio.org/ares_connect_directions.pdf

I am suggesting this since I'm still finding some errors that can mess up your ability to do much with the system. First and most importantly, we want you to be honest when answering all the questions about your training. Please, don't just hurry through the questions, read them carefully, if you don't understand something, please ask me, I'm here to answer your questions. We know that you mean well by answering that you do have the needed courses in, but I will let you know that we are verifying what you say you have with what is showing for you in our statewide database when we are completing your registration.



So, how can you find out if you are already listed in our statewide database? Easy, here's a link to it... <http://arrl-ohio.org/SEC/special/ICS%20Complete%20by%20County%20and%20Name.pdf>

I will also say that I'm seeing a lot of folks using their own "User Name" instead of using your call sign. It is mandatory that you use your Call Sign as your User Name. Headquarters has found some that didn't comply and changed it for the user already. So, please be advised.

On this same subject, some of you noticed that you can acquire your Level 3 by substituting your ICS 300/400 with the following NIMS courses. Completing the following "FREE" and "ONLINE" courses will act as a substitute for you FEMA Leadership Development Course requirements.

You absolutely will need to complete all 7 of these courses to get your ICS 300/400 credit. Here are the courses that you need to take: **IS-120, 230, 240, 241, 242, 244 & 288.**

I also want to let you all know that we have surpassed the **750th** person in the database with all 4 NIMS courses completed last week as well, and we are already well on the way to **775!**

In the next couple of weeks, we will have the School Roundup as well as JOTA happening. I know for sure that we have schools and scout troupes participating here in Ohio, so I send me your pictures... As many of them as you can. I will get them in the next edition! If I get enough pictures, I'll start a gallery like we have done with Field Day! Send them to: n8sy@n8sy.com

I just got notified that the Afterschool Programs of Lancaster in partnership with Lancaster City Schools, The Lancaster and Fairfield County Amateur Radio Club, and NASA are very close in announcing the date for their ARISS contact! I know that this will be a really memorable moment for a lot of kids and adults too.

That's going to do it for this time around. Stay safe, and most of all... have FUN!!

Scott, N8SY

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Back Issues of the PostScript and Ohio Section Journal (OSJ)

Hey, did you know that PostScript and Ohio Section Journal (OSJ) are archived on the website? You can go back and look at any edition simply by clicking:

<http://arrl-ohio.org/news/index.html>



Chit – Chat, and All That!

Do you know someone that's not getting these Newsletters? Please, forward a copy of this Newsletter over to them and have them "[Opt-In](#)" to start receiving them. Heck, just have them send me an email n8sy@n8sy.com and I'll get them added to the Ohio Section Emailing list. We now have over 6,000 folks receiving these newsletters weekly. Quite impressive, I'd say!



I urge all of you to make sure that everyone, regardless of whether they are a League member or not, get signed up to receive these weekly Newsletters. You can always "[Opt-Out](#)" at any time if you feel this is not what you were expecting. It's fun and very informative.

Hey, did you know that PostScript and Ohio Section Journal (OSJ) are archived on the website? You can go back and look at any edition simply by clicking:

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The pictures throughout this newsletter are from various sources. Take a good look at them, you just might be in one of those pictures! "SMILE...!!!!!"

Got questions, concerns or would just like to sit and chat awhile? Heck, I'll even buy the coffee!! Give me a call at (419) 512-4445 or email me at: n8sy@n8sy.com



[TOP^](#)

The Ohio Section Journal (OSJ) is produced as a comprehensive look at all the programs within the Ohio Section. I sincerely hope that you have enjoyed this edition of the OSJ, and will encourage your friends to join with you in receiving the latest news and information about the Ohio Section, and from around the world!