



The  
**Wave Bender**  
July 2018  
AWARD WINNING NEWSLETTER

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WRARC PREZ SEZ

President's Report for July

I would like to thank everyone who participated in the Youngstown Marathon. We had a nice turnout and we appreciate all the work that went into the event. I would like to thank Bob, N8RCM, Roy, KD8IJF, Joe, W0JW, and Maureen, KD8NXS, for organizing the event. We had a follow-up discussion at last weeks board meeting and as a result, Bob and Steve will do a presentation at our monthly meeting in July on how to participate in marathons. Joe has volunteered to organize the Panerathon this coming August while Maureen and I are out of town. The Friday night net continues to attract hams from WRARC and elsewhere.

This week we had 35 call-ins to the net.

73 Brian, AB8BL



ABOUT WRARC

The Western Reserve Amateur Radio Club was organized by a small number of Mohoning Valley area Hams in 2009. Some of the original charter members are still active in WRARC today.

Over the past 9 years, WRARC members have gladly donated their time by providing reliable communications for many entertainment and charitable events. These include the Panerathon, Youngstown Marathon, Kids Shine 4 a Cure, the Tour of the Valley, Diabetes walk, Walk to End Alzheimers, the Peace Race just to name a few. We even adopted a highway which we clean up two times a year.

Members of WRARC are also trained weather spotters who provide observations to the National Weather Service.

There are 751,878 Amateur Radio operators in the US, and about three million amateur radio operators world-wide. Ham volunteers provide emergency communications for the Department of Homeland Security (DHS) Citizens' Corps, the American Red Cross, the Salvation Army, the Federal Emergency Management Agency (FEMA) and thousands of state and local agencies all for free!

Anyone is welcome to attend our meetings, and anyone interested in Amateur Radio is welcome to join WRARC, whether currently licensed or not.

Stolen & rewritten to fit WRARC

IN THIS ISSUE

**2018 Officers:**

**President:** Brian Lewis, AB8BL      ab8bl@wrarc.net  
**VP:** Maureen Stein, KD8NXS      kd8nxs@wrarc.net  
**Secretary:** Stan Adamski, KB3WPD      kb3wpd@wrarc  
**Treasurer:** Rose Marko, KD8TII      kd8tii@wrarc.net  
**Past President:** Bob Mitzel, N8RCM      n8rcm@wrarc.net  
**Trustees:**  
 Darrin Cannon, N8DMC      n8dmc@wrarc.net  
 Roy Haren, KD8IJF      kd8ijf@wrarc.net  
 Steve Fabry, KC8SOY      kc8soy@wrarc.net

**Appointed Positions:**

Social: Maureen Stein, KD8NXS      kd8nxs@wrarc.net  
 Publicity: Joe Wojtowicz, W0JO      w0jo@wrarc.net  
 Nets: Steve Fabry, KC8SOY      kc8soy@wrarc.net  
 Classes/Testing: Bob Mitzel, N8RCM      n8rcm@wrarc.net  
 Newsletter/Web: Jane Avnet K8JAA      k8jaa@wrarc.net  
 Historian: Rose Marko, KD8TII      kd8tii@wrarc.net  
 Badges: Steve Fabry, KC8SOY      kc8soy@wrarc.net

**Officer's Meeting:**

July 10, 2018, 7:00 P.M.  
 Austintown, Eat 'n Park,  
 5451 Mahoning Ave  
 All members welcome

**Members Meeting:**

July 17, Davidson's  
 3636 Canfield Rd., Cornersburgh  
**Program:** Public Service Workshop

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**OTHER IMPORTANT WEB SITES**

**THE ARRL EXAM SEARCH PAGE**

<[HTTP://WWW.ARRL.ORG/FIND-AN-AMATEUR-RADIO-LICENSE-EXAM-SESSION](http://www.arrl.org/find-an-amateur-radio-license-exam-session)>

**OHIO SINGLE SIDEBAND NET**

<[HTTP://WWW.OSSBN.ORG/INDEX.HTML](http://www.ossbn.org/index.html)>

**ANTENNA HEIGHT ABOVE AVERAGE TERRAIN (HAAT) CALCULATOR**

[HTTPS://WWW.FCC.GOV/MEDIA/RADIO/HAAT-CALCULATOR](https://www.fcc.gov/media/radio/haat-calculator)



<http://www.wrarc.net/>

FROM OUR VP

Summer is going fast and here we are coming up on the month of July already. Our first major public service event, the Youngstown Marathon is behind us. Thank you to all who gave so willingly of their time and efforts to participate in the event. You are much appreciated. Likely, by the time you're reading this, Field Day 2018 will also be over for the year and we will be looking toward our next public service event- the Panerathon on Aug. 26.



As of this writing, the program for our next general meeting on July 17 will be a work shop on how to most effectively do public service events, like the races we do. Some of the areas to be presented and worked on including the particulars on using individual radios and antennas on them, the things that need to be transmitted, and things not necessary to transmit, how often and under what circumstances to call into net control, and telling the difference between what things are important to pass on and what things are not. The guys may have some other things planned as well and it will be a good "hands on" type of activity for everyone. It's always good for all of us to practice these things from time to time. This work shop will be in lieu of a speaker this month. We will resume with a speaker in Aug.

I will likely be in Florida during most of July and August. Joe, W0JO, will be coordinating things for the Panerathon, and will soon be looking for volunteers. All of us Steins should be back in time to participate in the event. Mark your calendars for August 26!

Enjoy the remainder of summer. Have fun and try to stay cool and comfortable in whatever weather July has to give us. Happy Fourth of July to all as well. See you all on our return.

73, Maureen, KD8NXS,  
VP/WRARC



HAMS HELPING HAMS



Antenna party in Austintown at Ray Lashure's, K8NVY, QTH. Thanks to Steve Fabry, KC8SOY, Roy Dyckman, KD8JMO, and Darrin Cannon, N8DMC, who were at his home installing Ray's permanent Eagle One.

These are some of our WRARC Elmers helping other hams get on the air. If you need help, or you have a question, call an Elmer. Remember, the hobby is using your radio.

73, Darrin N8DMC.

WHAT'S COMING UP?

- June 26 Ham Community Breakfast - Boardman Eat 'n Park
- July 10 Board Meeting - Austintown Eat 'n Park Members welcome  
Ham Community Breakfast - Boardman Eat 'n Park
- July 17 Members meeting 7:00 P.M. - Public Service Workshop
- July 24 Ham Community Breakfast - Boardman Eat 'n Park
- Aug. 14 Board Meeting - Austintown Eat 'n Park Members welcome  
Ham Community Breakfast - Boardman Eat 'n Park
- Aug. 21 Members meeting 7:00 P.M.  
Speaker: Sarah Churchill, Librarian for Digital Services  
of the Public Library of the Mahoning County.
- Aug. 28 Ham Community Breakfast - Boardman Eat 'n Park
- Aug. 26 Panerathon - Please Volunteer
- Sept. DTBD Fall Road Clean up - Please Volunteer
- Sept. 11 Board Meeting - Austintown Eat 'n Park Members welcome  
Ham Community Breakfast - Boardman Eat 'n Park
- Sept. 18 Members meeting 7:00 P.M.  
Speaker: Bruce Manning NJ3K, retired EMA director from  
McKean County, Pa.  
Topic: how early radio and telegraph changed communication.
- Sept. 25 Ham Community Breakfast - Boardman Eat 'n Park
- Oct. 21 Youngstown Peace Race - Please Volunteer



CONTACT WRARC ELMERS WITH YOUR QUESTIONS - [QUESTIONS@WRARC.NET](mailto:QUESTIONS@WRARC.NET)



Beatty, Dave KC8WY  
 Fabry, Steve KC8SOY  
 Haren, Roy KD8IJF  
 Williams, Russ NR8W  
 Wojtowicz, Joe W0JO

anything  
 Yaesu FT8900, FT8800, Mobile  
 ???  
 Electrician, tele-data, Amateur Extra  
 ICOM radios, D-Star

kc8wy@zoominternet.net  
 kc8soy@yahoo.com  
 harens@juno.com  
 rwiliams@neo.rr.com  
 w0jo@arrl.net

**He who is afraid of asking, is afraid of learning**

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Articles from members for the Wave Bender are encouraged. They must be received by the editor by the 20th each month. Please send your articles to: [k8jaa@arrl.net](mailto:k8jaa@arrl.net), and put WRARC on the subject line of your email. You may also send your articles to the editor: Jane Avnet, 1440 Skyhawk Pl., Wright City, MO 63390

Join us for the WRARC Friday night Net 9:00 P.M.  
 KD8DWV - 145.270, PL -110.9  
 Upcoming Net Control Operators

July This could be you  
 Aug. This could be you  
 Sept. This could be you

If your name has never been on this list  
 Contact Steve, KC8SOY to take a turn at Net Control  
 330-774-6346



WRARC Simplex Frequency 146.565

**Mahoning County ARES® Nets**

1st Monday 8.40 PM ET W8QLY Repeater - 146.745 (PL 110.9)

&

3rd Monday 8.40 PM ET W8QLY Repeater - 146.745 (PL 110.9)

ARES thanks MVARA for the use of their repeater



W8SGT is facilitating The Ohio HF net every Tuesday - 7:00 PM

The net is run from the State of Ohio EOC on the  
 Ohio ARES Admin frequency 3875 kHz LSB  
 moves to 7240 Khz after 20-min.

All are welcome to check in.

The Ohio ARES/OES Digital Emergency Net held every Tuesday at 8:00PM.  
 held on 3585 kHz USB.

Please note all digital communications are Upper Side Band.

<http://www.http://ohden.org/> for net details. Net Manager Gary NJ8BB

**COLUMBIANA COUNTY DIGITAL NET**

Wednesdays 8:30 pm - 9:30 pm

145.510 MHZ SIMPLEX

First Wednesday of the Month Mahoning County Skywarn Net  
 is held on the W8QLY repeater 146.745 (-) at 8:30P.M.

Thanks & 73

All of our members (and others) look forward (hopefully) to getting this newsletter every month, so keep sending those articles, jokes, and suggestions!

Thanks goes out to this month's contributors; N8SY, W5YI, the ARRL and the World-Wide Web.



On Sun., June 3, we had our first major public service event, the Youngstown Marathon race. It was a very early start to the day as we were all there between 6:00 and 6:30 A.M. Fortunately, the rain held off until the race was done, but the air was very humid for the runners. All of those runners seemed to fare well and there were no major incidents with any of them. One man aggravated a previous knee injury and could not finish the race. It was clearly communicated by our folks that he needed a ride back. The EMA was supposed to send a vehicle out to get him but they never sent one out after all. I'm not sure what happened there, but the man's wife brought their own vehicle in to get him, the last I heard.

Our members who came out to work the event were: Rose, KD8TII, net control; Donna Haren, scribe; Joe, W0JO, at the EMA trailer; Ted, KD8IJE; Roy, KD8IJF; Dennis, KA8DJM; Maureen, KD8NXS; Rocky, W8RKY, John, KT8TAT; Stan, KB3WPD; Mike, KE8IWZ; Darrin, N8DMC; Steve, KC8SOY; Bob, KE8HHH; Matt, KE8JJY; Bob, N8RCM; Brian, AB8BL; Kevin, KD8NXR; and Aiden, KE8JYR. We were joined by members of 20/9 and MVARA Bobby McCully, AB8OP, and Frank Sole, WB8YHD.

Many thanks to all who came out. You are very much appreciated. Thank you as well to those who just joined the hobby/service of Ham Radio, who so willingly came out to help. Matt Campbell, KE8JJY, did double duty as the captain of the water station near the 680 bridge, that his company sponsored, and the duties of a Ham Operator from the same location via crossbanding with his HT at his post to his mobile station in his vehicle parked away from the spot. Also, welcome to our brand-new Hams - Matt, Mike Malarky, KE8IWZ, and Aiden Divelbiss, KE8JYR, who is only 13 years old. Thank you to John Ricci, KT6TAT, who is a recently joined club member. We are happy to have all of you as part of our group.



Picture by N8DMC

Being that this event was the first one of the year, it went reasonably well with a few glitches that we can address. There were some issues, particularly with locating some of the spots where we needed to be. These are things we need to discuss with the race organizers. We are invited to a wrap up meeting to go over ways to improve things for next year, our input is wanted. We had a few rough spots of our own that we can address before the next event, to help things run as smoothly as possible. It's just a matter of tweaking a few things, we may be able to do that with a workshop on the things to do and not do as our July meeting program. It's always good to step back and evaluate everything that is part of these events after the fact to help us all grow stronger for the next time out

The race officials were happy to have us there. BTW, thanks, Brian, for bringing the donuts in the morning to get things kicked off. It was nice to have them and they were, no doubt, breakfast for many of us.

73, Maureen KD8NXS



PANERATHON - AUGUST 26

Together with 11,000 participants and spectators, our sponsors and community supporters raised \$410,000 through the 2017 Panerathon.



To date, the Panerathon has raised more than 2 million dollars for the Mercy Health Foundation Mahoning Valley in support of The Joanie Abdu Comprehensive Breast Care Center, JACBCC, at St. Elizabeth Hospital, the first comprehensive breast care center in the Youngstown area.

The Panerathon is a 10K run and a 2 mile fun run or walk, on **August 26**, which also includes a kids run. Those who sponsor and/or participate in Panerathon will be saving lives!

HOW PANERATHON SUPPORTS THE JACBCC



All proceeds for Panerathon support Joanie's Promise Fund at the Mercy Health Foundation Mahoning Valley. Funds raised through Panerathon made possible a state-of-the-art mobile mammography unit that has been operational since September 2016. It is the first mobile unit in eastern Ohio to offer 3D mammography, which allows for a more thorough breast examination. There are approximately 24 sites serviced a month throughout the tri-county area by this unit, and from September 2016 to December 2017, over 1,700 exams were performed.

WHAT IS JOANIE'S PROMISE?

Joanie's Promise is that ALL women will have access to the Joanie Abdu Comprehensive Breast Care Center. Therefore, screening expenses are covered for any woman who qualifies financially. Also, transportation will be provided for any woman who requires it.

In short, Joanie's Promise will ensure that every woman in the Mahoning Valley is aware of, able to get to and is welcome at the JACBCC

Through education and screenings, breast cancer rates in the Mahoning Valley will be reduced. We will not have the fourth highest breast cancer mortality rate in the country.  
mercy-health-bus

"Through my ears, Joanie hears the voices of grateful women for the care they will receive in this magnificent facility. Through my eyes, she sees the reality of what once was only a dream. Through our souls, we both see the beauty, the love, the compassion and the generosity of a caring community that has made that dream come true. We are, and will always be, eternally grateful." ,

USE YOUR LICENSE TO SERVE THE COMMUNITY - VOLUNTEER

COULD THIS BE YOU?

Could this be YOU? This is the Wave Bender YOUR Newsletter. We have plenty of room for YOUR article(s)! If something is of interest to you, odds are that we all will enjoy your thoughts and activities! Did you Participate in Field Day? Tell us about your experience. Do you have a favorite radio? Have some reminiscing to do? Maybe you have a question for one of our Elmers. OR, a Tip or Trick you learned that would help one of YOUR WRARC friends. You are warmly invited to contribute! Don't worry about writing or formality - we can help you with that. Your article could go in this spot next month for us all to enjoy!!



**Youngstown Peace Race 10K & 2 mile Run**  
**Oct 21, 2018 9:30 AM EDT**  
**Mill Creek Park**



The Peace Race is not your ordinary Midwest road race. The Peace Race has attracted runners from all corners of the globe since its inception in 1975. The Peace Race is a USATF certified course.

**The Location:**



Enjoy the fabulous fall scenery at the setting of the Peace Race's course in Mill Creek Park.

**Peace Race Charities:**

Proceeds from the Youngstown Peace Race benefit several area charities, including:

- Akron Childrens Hospital
- St. Vincent DE Paul Society
- Rescue Mission of the Mahoning Valley
- YMCA's Partner in Youth Program
- Farhaven School/Special Olympics
- The Beatitude House

## USE YOUR LICENSE TO SERVE THE COMMUNITY - VOLUNTEER

Fireman's Rule of Thumb (pun intended) ensures that you're a safe distance from a HAZMAT incident:

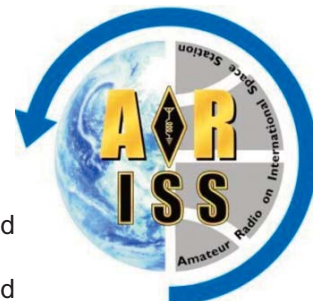
If your extended thumb arm's length does not cover a HAZMAT scene, you're too close.  
 If your thumb covers the scene you're between 1/4 and 1/2 mile away.

### SB SPACE @ ARL \$ARLS007

#### ARLS007 Space Station Digital Amateur Radio TV System Transmitter Determined to be Defective

QST de W1AW  
 Space Bulletin 007 ARLS007  
 >From ARRL Headquarters Newington, CT June 15, 2018  
 To all radio amateurs

The Amateur Radio on the International Space Station (ARISS) "HamVideo" digital Amateur Radio TV (DATV) transmitter on the International Space Station (ISS) is reported to be defective, with onboard repair not possible. Also known as HamTV, the DATV system stopped working in mid-April, and a subsequent test on June 1 using a second L/S band patch antenna on the Columbus module had failed.



ARISS-EU Mentor Gaston Bertels, ON4WF, said ARISS plans to return the transmitter to Earth to repair, pending space agency approvals and availability of ARISS funds.

"Schools and crew members performing educational ARISS school contacts are delighted to use Ham Video," Bertels said. "We will do the best we can to restart this service as soon as possible."

Following extensive testing, the Ham TV system was first used for an ARISS school contact in February 2016.



## OHIO SECTION MANAGER RE-ELECTED

Our Section Manger, Scott Yonally, N8SY, has been "unanimously reelected" for another two year term! CONGRATULATIONS!

He got the official call last week form ARRL HQ. Scott is what makes this section great and he's the hardest working ham and section manager I know. For everything we see and hear Scott do you can bet he is also doing a hundred other projects as well...all for us. So, fire up the radio, and land line, cell, email or snail mail and shoot him a message.

The next time you see him shake his hand and pat him on the back...a continued job well done! Thanks Scott for the hard work



From the Public Information Coordinator  
John Ross, KD8IDJ - PIC  
john.ross3@worldnet.att.net



## FROM OUR SECTION MANAGER



Hey Gang...

Is it just me? It seems to me as though we need volunteers to help out with every kind of event that you can think of. Are you volunteering, or, are you one of those who say "I just don't think I want to do that, but.. if you have a REAL emergency, let me know, I can always find time for that! It's true, we have way too many folks that think things like bike races and marathons are not training. Wow, how wrong you are!! It is training, and it soon will count! Yes, our new ARES Connect system is based on events like this! All kinds of events, bike races, foot races, heck, even those things that we have FUN with like Field Day will soon count. Most of these events are really interesting and yes, even FUN to do. And, like I said, the new ARES Connect system will very soon be up and running for real here in Ohio!

As most of you know, Ohio was chosen as one of four test Sections in the country. Why? Well, that's easy. We are a very active Section and Headquarters knows it! If you read the results from the 2017 ARES S.E.T. from page 2, you already know just how active we are! Now, I'm here to tell ya' that Ohio, like the other three test Sections will be released very soon to start migrating the remaining counties into the new system. Yes, we will kick off the release of the new system before any of the other Sections outside of the Beta testing. Once this has been done, we will be using the new system. We will still use our old system of reporting for a little while yet, but it will disappear in the not so distant future, and we will be on the ARES Connect System completely.

How's your training going? Yes, I know that I've been hammering hard on this, but as a lot of you found out at the ARRL Forum at Dayton last month that things are going to change within ARES very soon. Our Great Lakes Director, Dale Williams, WA8EFK has been heading up this committee to change ARES and its requirements for some time now. Dale gave a really good overview of those proposed changes at that forum. Yes, for now they are just proposals, as that the Board of Directors have not voted on accepting them yet. That will happen in about a month from now at the July Board of Directors meeting. Once adopted, it will be the new way of operating in ARES from that point forward.

I've been hammering on you for a very long time now so that you would be prepared for when this day comes, and as you can see, it will be coming very soon now! The changes to the NEW ARES program are dramatic, but they are easily obtained. You just have to be willing to LEARN a little. Why do we need these changes? That's easy, let me break it down this way, 4 years ago (2014) during the 100th Anniversary of the ARRL, we told Federal Emergency Management Agency (FEMA) in an agreement that we signed with them, that we would help out with communications in disasters. They stated that they would be willing to accept our help, but only if we agreed to training. So, with that knowledge in my pocket, I started on a campaign to make *Continued page 10*

## SECTION MANAGER - CONTINUED FROM PAGE 9

sure that NO ONE in Ohio would be left behind or forgotten about. We started with the E.C. and D.E.C. appointments and required them to have, or quickly obtain the training as part of their acceptance to their appointment.

In 2016 we were involved with the federal government and many served agencies for the Republican National Convention and the NAACP National Convention. We were told then and there that we HAD TO HAVE this, and even additional NIMS training, in order for us to participate. It wasn't just us as hams either, EVERYONE involved with these projects had to have the training. And that made me see just how important this was to our future with all of our served government agencies. So, at the beginning of 2017 we ramped up that training requirement for individuals that wanted to work inside our government served agencies, feeling that the need to understand Incident Command is absolutely needed.

Now, it's not without consideration for how this impacts all of you and your volunteer time. So, let me take a quote from the NIMS Training Guide as to who should have the training.

Q: Who should take NIMS and ICS training?

A: Everyone involved in emergency management (to include emergency operation center personnel in support of the field), regardless of discipline or level of government, should take the NIMS baseline curriculum courses (Independent Study-700 and ICS-100). The NIC recommends that only individuals with a command and general staff role take advanced ICS courses. Fulfilling the training associated with this plan helps emergency management organizations, departments and agencies to develop preparedness capabilities for effective and efficient incident management. As a result, trained emergency responders are available as mutual aid to support incident management in other jurisdictions, if requested. The NIMS Training Program should sustain a personnel qualification system that is coordinated, maintained and meets the needs of the emergency management community. As the above states. Everyone that is involved in support of the field! That's us folks!!

Now, don't forget that your ICS certificates aren't the only things we're looking for either. If you have Basic First Aid, CPR or AED training, it's also very valuable in the field as well. And, don't forget about the newest training out there, "Stop the Bleed..." This one is really good, and it's something that you can use no matter where you are. These courses are not only useful for you in the field, but you'd be surprised how they can help you around the house as well. Remember, most accidents happen within 25 miles of you home! And YES, my accident last year happened within that 25-mile radius. You need to be prepared! Ok, as I told you last week, we've gotten to the 700 mark! Congratulations and an ARRL ARES Mesh Vest went out to Ken Cornett, N8SPW. He was the 700th person to send us his NIMS certificates! And YES, he was sent an ARRL ARES Mesh Vest! Now, on to number 725!! Here's the figures as Jim, W8ERW has given them to me...

Members in the database – 946;  
Active members – 913;  
Members NIMS complete -703;  
Total courses logged - 6,589;  
2017 training courses – 782;  
2018 training courses - 390.

These numbers just keep growing. And we want them to continue for sure!

Website updates..

It seems that every week we updated the DMR Net Listing webpage thanks to Greg, WD9FTZ. And, of course, the ever changing and growing NIMS Roster from Jim, W8ERW. That's going to do it this time around... I'll catch you on down the log for sure, and stay dry my friends!!

Scott, N8SY



INFORMAL AMATEUR RADIO NETS BEING MAINTAINED IN WAKE OF VOLCANIC ERUPTIONS IN HAWAII

Two informal informational nets remain open on the island of Hawaii ("The Big Island") in the wake of recent and ongoing volcanic eruptions and seismic activity, Pacific Section Emergency Coordinator Clement Jung, KH7HO, reports. No formal traffic has been passed, but frequencies are being monitored.



"All normal communications, such as cell, landline phones, internet, and public safety, are operational," Jung told ARRL. Fissures associated with the Kilauea volcano on The Big Island began erupting on May 3, spewing lava and venting high levels of sulfur dioxide.

An Amateur Radio net is in operation on 7.088 MHz (SSB), and the Voluntary Organizations Active in Disaster (VOAD) 146.720 MHz repeater (100 Hz tone) on Mauna Kea was activated after Hawaii's governor issued an emergency declaration. A federal disaster declaration has been approved.

The Hawaiian Volcano Observatory reports active venting of lava and hazardous fumes continues, with no end in sight. The Hawaii Volcanoes National Park closed after roads and trails were damaged. The Observatory this week increased the Aviation Color Code to RED, due to increased ash emission.

FEMA reports some 360 evacuees are staying in emergency shelters. Some 2,000 residents have been evacuated in all. "Twenty fissure vents have formed in and around the Leilani estates subdivision," the agency said in its May 17 report. "Air quality in the southeast area of Lanipuna Gardens has been rated 'condition red' (immediate danger to health) for high levels of sulfur dioxide. Volcanic-tectonic seismicity continues."

The US Geodetic Survey has warned that new lava outbreaks could happen "at any time," as well as "more energetic ash emissions."

**“IF YOU DON’T READ THE  
NEWSPAPER, YOU’RE  
UNINFORMED. IF YOU  
READ THE NEWSPAPER,  
YOU’RE MISINFORMED.”  
—MARK TWAIN**



*BIRTHDAYS THIS MONTH*

**USA**



## WHICH WAY DOES CURRENT REALLY FLOW?

By Dan, KB6NU

His remarks on a Nuts 'n Volts article, "Which Way Does Current Really Flow?" I agree that in electronic circuits electrons flow from negative to positive, but it really doesn't matter. I agree with one of the article's commenters who says, This is a silly argument. It's like comparing apples and oranges and challenging people to take sides.

Electron flow is not current flow. Electron flow is easy to understand, an actual physical property, and a real help in understanding vacuum tube operation. But it falls apart when one needs to understand complex electronic systems. [Conventional] current flow is a mathematical abstraction. It is defined as a net flow of positive charge, irrespective of the polarity of the physical charge carriers — whether electrons, holes, positive or negative ions, or whatever.

When looking at any circuit containing a resistance with a voltage across it, conventional current through that resistor says that the voltage drop occurs as the current through it meets resistance. On the other hand, in negative (electron) flow, a voltage INCREASE will correspond to the 'current' flow through it, clearly violating physical laws. Conventional current flow is consistent with the laws of physics and those of other engineering disciplines.

You are correct that engineers, professors and scientists use conventional current flow. That is not because they are too obtuse to understand electron flow; I assure you they fully understand it. It is because in their world they have to solve more general problems involving complex math and science, and, again, conventional current flow is consistent with physical laws.

It is unfortunate that electron flow and current flow are so often confused. They both have their place.

After reading that article, I thought I'd see what the ARRL Handbook has to say about current. In the 1963 edition, they don't mention electron flow at all. They have one diagram showing the direction I was recently taken to task by one of my blog readers regarding my description of current flow in my No Nonsense Technician Class License Study Guide. He wrote:

You casually say that current flows from Positive to Negative (with cool accompanying directional arrows), without any accompanying qualifying statement. Over the years I have looked at ALL the views on the subject. Positive to Negative is NOT what I was taught 48 years ago, and I have never seen a good reason to change my view of current flow in both series and parallel circuits, but the voltage source has no polarity. It's simply labelled "Source of E.M.F." Diagrams giving practical examples of series and parallel circuits do include a battery, and if the reader were to mash up the two diagrams, they would conclude that current flows from the positive terminal to the negative terminal.

The most recent edition of the Handbook that I have is the 2005 edition (it might be time to get another copy!). It says, Electrons move from the negative to the positive side of the voltage, or EMF, source. Conventional current has the opposite direction, from positive to negative. This comes from an arbitrary decision made by Benjamin Franklin in the 18th century. The conventional current direction is important in establishing the proper polarity sign for many electronics calculations. Conventional current is used in much of the technical literature. The arrows in schematic symbols point in the direction of conventional current, for example.

Having said all that, I really don't see that there's much of a controversy here. I did learn to think of current as conventional current in college, although it was mentioned that electrons actually flow in the opposite direction. Using the concept of conventional current has never seemed to hold me back. I've been able to design circuits and repair electronic equipment thinking that current flows from positive to negative.

Although it's a departure from my "no nonsense" style, I am thinking of including a sidebar, similar to the paragraph above from the 2005 Handbook explaining the two ways of looking at current flow. What do you think?

When he's not trying to figure out which way current flows, Dan blogs about amateur radio at KB6NU.Com, teaches ham radio classes, and operates CW on the HF bands. Look for him on 30m, 40m, and 80m. You can email him at [cwgeek@kb6nu.com](mailto:cwgeek@kb6nu.com).

## THE BIRTH OF 33

Clara had her ticket  
She also had a rig  
Because she was just startin  
It wasn't very big  
She slowly tuned the crystal,  
And watched the meter drop.

Then tapped the key a couple times  
To be sure it wouldn't stop.

Now everything was ready,  
She called a short CQ  
And received an answer  
On thirty-six sixty -two.

They chewed the fat "bout stuff and things.  
"bout dresses, work and dates.

They finally called it QRT  
the girl sent eighty-eights.

Clara though it might be funny  
Whether it be Miss or Mrs.  
To end a perfect QSO  
by sending "Love and Kisses"  
It sounds too sentimental;  
Just a little too much "goo"  
To be sending "Love and Kisses"  
to a girl the same as you.

For an entire week she pondered;  
Wouldn't even touch the rig.  
She pushed her slide rul by the hour,  
Employing "logs" and "trig"  
She added and subtracted.  
What could the answer be?

To reach a happy medium  
Twixt eighty-eight and seventy-three.  
Clara finally looked up from her work  
All smiles and not forlorn.  
Twas July in Nineteen Forty  
that thirty-three was born.

There's no real definition  
Bit it's meaning is known well.  
It's how a YL says good evening  
To another friend YL.

Author Unknown.



STOLEN IDENTITY

Stolen identity? Here's your first 4 steps.

Call Your Banks & Creditors

Put a stop to things as fast as you can by notifying your banks and creditors that your identity has been stolen. Auto and home equity loans, credit cards, bank accounts, and bill pay are all at risk, so the sooner you notify banks and creditors, the faster they can decline transactions and cash advances.

Notify the Credit Bureaus

Because thieves can use a stolen identity to rack up thousands of dollars in purchases on existing accounts or open new ones, let all three credit bureaus (Equifax, Experian, and TransUnion ) know what happened ASAP. Call each one directly or go online to initiate an alert.

File an FTC Complaint

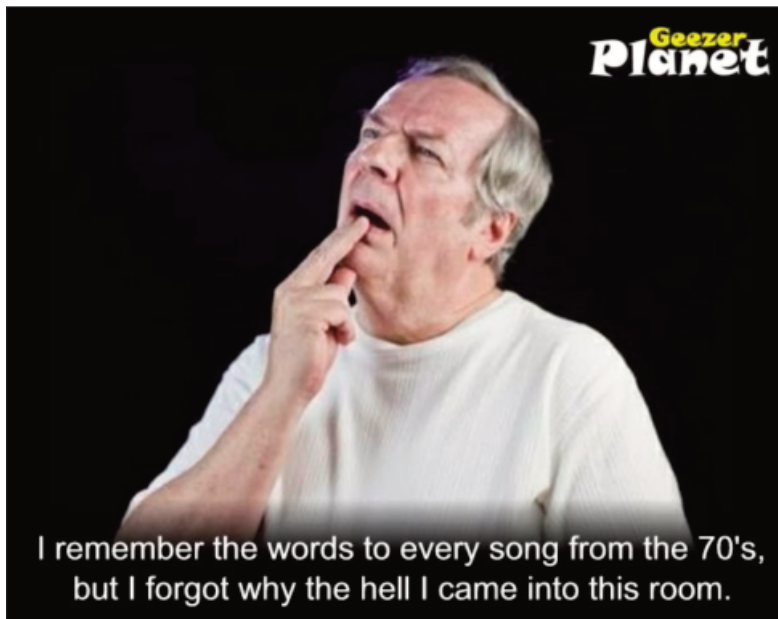
Fraud is a serious crime and you can help stop the bad guys by reporting identity theft to the Federal Trade Commission. In addition, filing an FTC complaint gives you documented proof that may be required by your banks and creditors. Visit IdentityTheft.gov to file a complaint online 24/7.

Make a report with local law enforcement

If someone has taken your personal information and used it to commit fraud in your name, that is a crime and you are a victim. Filing a police report gives you documented proof that you've declared your innocence and stated you are not responsible for any crimes committed using your name

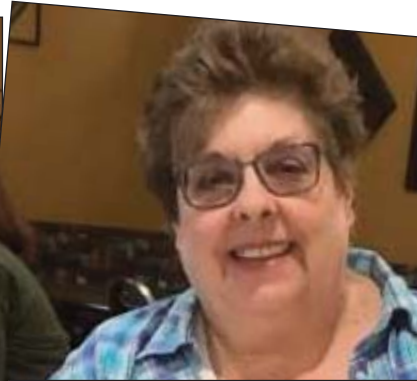
From Huntington Bank

A Stealthy HF Coat Hanger Antenna - KR1ST www.kr1st.com/hfcoath.htm



"A government big enough to give you everything you want, is big enough to take away everything you have" Thomas Jefferson





Photos by KD8TII

# July 2018

PREPAREDNESS LEADS TO READINESS - MATT W8DEC



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>1</b> Canada Day Dominion Day 	<b>2</b> ARES Net 8:30 PM 146.745 PL 110.9	<b>3</b>	<b>4</b> Independence Day 	<b>5</b>	<b>6</b> WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	<b>7</b>
<b>8</b>	<b>9</b>	<b>10</b> Ham Breakfast Eat'n Park Boardman 8:30 A.M.  Board Meeting Eat'n Park Auatintown 7:00 P.M.	<b>11</b>	<b>12</b>	<b>13</b> WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	<b>14</b> Bastille Day 
<b>15</b> National Ice Cream Day	<b>16</b> ARES Net 8:30 PM 146.745 PL 110.9	<b>17</b> WRARC Meeting 7:00 P.M.	<b>18</b>	<b>19</b>  WaveBender Input Due	<b>20</b> WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	<b>21</b> National Junk Food Day
<b>22</b>	<b>23</b>	<b>24</b> Eat'n Park Boardman 8:30 A.M. Ham Community Breakfast	<b>25</b>	<b>26</b>	<b>27</b> WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	<b>28</b> National Day of the Cowboy
<b>29</b>	<b>30</b>	<b>31</b>			WRARC Net 9:00PM 145.270 Swap n' Shop Ask the Elmers	