

THE HAM-ER

www.hendricksares.org

amateur radio emergency response



April-June 2019

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Chief editor/publisher of The HAM'ER: Ron Burke

Front Page News :

Catch the rebirth wave of Packet Radio in Hendricks County (see page 7)



KB9DJA-1 PACKET STATION

Message from the Emergency Coordinator

Starting with this issue, we will have a page named, "Radio Speak." This is where hams can write in anything that has to deal with Amateur Radio: Whether be projects, experiences, practice, creations, etc.

We encourage all of you to write to me a 1-2 page article of your experiences in the hobby since you have had your ham license. This also can be a radio feature.

Write to me at: kb9dja@gmail.com.

Remember, not all emergencies are big !!!!!

Ron Burke KB9DJA

What generates as much power as all the electric power plants in the U.S., but can only power one light bulb for a month ?



Answer:

Lightning !

In the instant it flashes, lightning produces as much energy as every power plant in the U.S. does in that same instant. The lightning is over so fast that a single light bulb would use up all the energy in just one month !

Lightning strikes about three million times a day on earth. In addition to its electric charge, a bolt of lightning can reach a temperature of 50,000 degrees Fahrenheit. **THAT IS HOTTER THAN THE SURFACE OF THE SUN !**

What looks like one bolt of lightning is actually many flashes, up to 20.

About 80 people are killed by lightning in average per year in the U.S. This makes it one of the most dangerous natural hazards.

- ◆ Every five seconds you can count between a lightning bolt and its thunder equals one mile between you and the lightning. Lightning can strike miles away from its cloud. Its best to take shelter in a building, or enclosed metal vehicle such as a car. (Not a convertible...) Stay there for at least 30 minutes after the last thunder is heard.
- ◆ If you are on water, try to find shelter nearby.
- ◆ If you have to take shelter outside, stay away from large metal objects like golf carts, golf clubs, bicycles, or metal fences. Avoid trees by themselves in open areas. If in a forest, take shelter in a clump of shorter trees. If nowhere else is available, go to a low spot and crouch down. **(DON'T LIE DOWN.)** Beware of standing water.
- ◆ If your hair stands on end, a lightning strike may be about to happen. Crouch down as low as you can. Put your hands over your ears and head between your knees. This makes you a smaller target while minimizing your contact with the ground.
- ◆ If someone has been struck by lightning, **CALL 911...** If they are not breathing or do not have a pulse administer CPR. Check for burns. **CAUTION.... Make sure they are not electrically charged before you touch the victim.**

TRUE STORY : In 2008, eight firefighters taking a break from a wildfire were struck by a single bolt of lightning. With the clear skies overhead and calm, lightning traveled from a distant storm, hit a tree, traveled down through its roots to where the firefighters were sitting. It threw each of them about ten feet in the air. They all required hospitalization but survived. **If you hear thunder roars, stay indoors !**

(This page for reference only)

The Science Behind Home Disaster Preparedness Kits Is a Disaster



Helicopters got to Wilmington, North Carolina, after a day of isolation; Hurricane Florence made landfall there, and the city, with one foot in the Atlantic and the other in the Cape Fear River, soon became an island. Its main roads underwater, Wilmington went without help until boats and choppers reached it with medical supplies, water, and food.

But it only took a day. According to the federal government, that's actually pretty fast. Since the terrorist attacks of September 11, 2001—or at least since Hurricane Katrina hit New Orleans in 2005—the government has urged all of us, every individual, to be ready to go without help for at least three days in the wake of a disaster. You're supposed to have kits in your cars and at home ... maybe not the shopping cart from *The Road*, but just, like, be ready, OK? And now with Florence a waning threat but with fires and storms an apparently permanent part of Earth's changed climate (and earthquakes, volcanoes, and terror always possible), the rules seem to be shifting a bit again. The new message: Be ready for *14 days* on your own. Two weeks.

That's a lot of supplies to buy and store—especially when the whole idea of home disaster preparedness kits is based much more in conventional wisdom than actual data. On the other hand, one might save your life. Good luck, everyone!

Recommendations for what's supposed to go in these kits vary, but basically it's a gallon of water per person per day and food, too, plus medicines, blankets and sleeping bags, maybe a tent, extra eyeglasses, lots of batteries, something to make light with, something to make fire with, maybe a hand-cranked radio.

All that makes sense. "It is not realistic, even in developed countries, to expect that the governmental infrastructure will be able to reach everyone within hours," says Daniel Barnett, a disaster preparedness researcher at the Johns Hopkins Bloomberg School of Public Health. "Individuals need to have self-sustainability." At minimum, you want to take as much pressure off of first responders as possible so they can triage effectively, attending to life-threatening situations while you chill in your backyard, if you're able. That's part of supporting what disaster pros call "resiliency," the ability of a community or region to withstand whatever it gets punched with. It's supposed to be interpersonal, too—neighbor to neighbor.

Continued on next page.

The problem with all that is, as Barnett and his colleagues showed in a 2012 [review](#) of the literature, almost no one [actually builds kits](#). Well, perhaps fewer than half overall, but results varied wildly by region—as low as 7.4 percent in northeastern Alabama, much higher in post-Katrina New Orleans (85 percent of survey respondents had a disaster plan, but only 22 percent had a kit). Partially that’s out of inertia, laziness, fear—all the things that keep everyone from preparing for anything. But also, older, better-educated, wealthier, homeowner people were more likely to have kits than younger, less-educated, poorer people. And of course, poorer people are the ones who get hurt the most by disasters in the first place.

A couple of years ago things got even more complicated. In 2016 the Washington Military Department, essentially that state’s National Guard, ran an exercise called [Cascadia Rising](#). The idea was to [simulate a response](#) to an earthquake and subsequent tsunami emanating from the Cascadia Subduction Zone off the Pacific Northwest, subject of a much-read [New Yorker article](#) from the previous year. “Cascadia Rising was a massive eye-opener,” says Karina Shagren, spokesperson for the Washington Military Department. “We realized there would be pockets of communities that won’t receive help for several days, if not several weeks.” Washington’s coastal communities would lose the bridges that connect them to the rest of the world. They’d have to wait for help by air or sea.

So Washington and Oregon upped their estimates. People should expect to be on their own not for at least three days but at least two full weeks.

That messaging is now at the core of Washington’s [emergency preparedness](#). It has also trickled out nationally, albeit somewhat confusingly. A FEMA spokesperson says the agency now recommends “at least a three-day supply of food, water, and medications,” but more water if it’s really hot, and “up to two weeks of supplies when preparing for catastrophic events.” A representative from the Centers for Disease Control and Prevention, on point in case of [pandemics](#) or [bioterror attacks](#), says his agency’s [recommendations](#) echo FEMA’s. Tom Heneghan, senior manager for Disaster Program Development at the American Red Cross (practically a quasi-governmental entity in times of disaster), says households and businesses should have three days of supplies in case people have to evacuate but two weeks’ worth if people are sheltering in place.

Risk communications is hard, and disasters are complicated, but all that advice is frustrating. Three days is the go-bag, maybe? As a child of earthquake country I would venture that a two-week supply list for the aftermath of a Big One looks very different from the bioweapon pandemic checklist. The road to [prepper madness](#) is paved with surplus MREs, tarps, and duct tape. (I suggest gaffer tape, actually—DM me.)

For a family of four, a gallon of water per person per day for 14 days is 56 gallons of water, an industrial-sized drum. It’s also more than 100 full meals, or a pantry full of cans, beef jerky, rice, and so on. It’s a full complement of camping equipment. And it all has to be somewhere accessible and, ideally, not vulnerable to whatever kinds of disasters you’re expecting. And none of this stuff is free. “There are massive issues of access and equity in terms of how people can stockpile even a couple of days’ worth of supplies, much less 14 or more,” says Anita Chandra, a disaster researcher at RAND. “When you’re talking about disasters, you’re talking about events that disproportionately affect those with the least access to assets.” (Where Washington state is concerned, Shagren says they suggest people build their stashes a little bit at a time, as much as they can.)

[Continued on next page.](#)

Here's the worst part: Nobody knows if disaster preparedness kits actually help. They might! You should still have a kit, if you can do it. "Institutions are worried they can't get to people in time ... particularly people who live below or close to the poverty line," Chandra says. "It's coming from a concern about the fact that the resources are very mismatched against need." Which is to say, government agencies don't have the money to send a fire truck to every house after an earthquake or hurricane. People have to be able to help themselves.

But at the same time, a risk of this change in message is that it suggests that the government is abrogating its responsibilities, either out of incompetence or because of some kind of rugged-individualism message. "What matters in terms of disaster response and recovery is community connections and social cohesion," Chandra says. "The negative side of that conversation has been a twisting of that idea into, 'go take care of yourself.' That was never the intention."

Rugged individualization has failed once before. During the Cold War, the US government tried to get people to build fallout shelters in their backyards. "Social vulnerability just didn't get factored in. Nobody built them. It didn't ring true for people even then," says Scott Knowles, a disaster researcher at Drexel University. "By the mid-1960s, civil defense officials had figured that out, so they started hoarding stuff in the commons." Cities designated or built communal fallout shelters that were stocked with beds and supplies. "If we really want people to survive, we can't rely on them to hoard all that stuff in their homes. It's not rational. So maybe this is something for the government," Knowles says.

Is there stuff you should probably definitely have access to in your home? Sure. Copies of personal identification documents. Prescription medications. A good whistle. Lightsticks. Water purification tech. A crowbar. (The time you need a crowbar is the time you really, really need a crowbar.)

But the hard truth is, local communities can and probably should be filling gaps that government advice suggests are the responsibilities of individuals. The [central insight](#) that sparked full-fledged research into the sociology of disasters and their response was that people tend to help each other in times of distress. Disaster researchers and risk managers don't want to jeopardize that covenant. Yet that's the deeper risk of telling people they're on the hook to defend their own castles for two weeks after a disaster.

Yes, fill those jerry cans in the basement with water and get your solar cells ready, but when the disaster hits, share the water. Offer your neighbors a charge. Maybe they'll trade a bite of jerky. But it's not wrong to look toward government—local if not regional and national—for aid. Building cities in ways that don't exacerbate hazards is a start, like less impermeable surfacing, fewer buildings in the wildland-urban interface, and reined-in coastal and watershed development. Helping the most vulnerable people in a community *now* has humanitarian value, but also economic value—they'll be safe during and after a disaster, won't need rescuing, and can help with recovery.

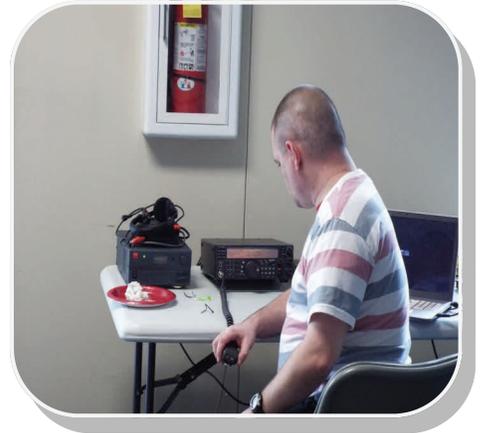
That's the real lesson for putting together a disaster kit. It's there for whoever needs it. Someday that might be you; someday it might be your neighbors. Until the helicopters come, we're all in this together.

- Author: Adam Rogers (reprinted for use by permission.)
- www.wired.com/ science
- 09.20.18
- 03:02 pm

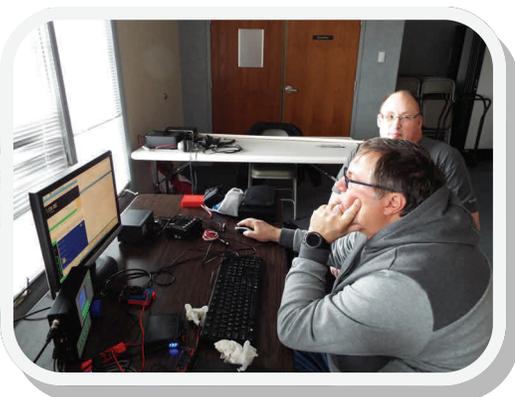
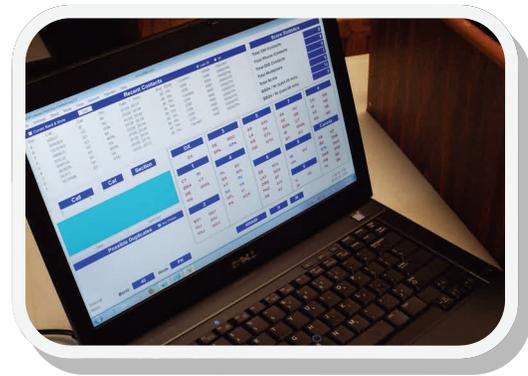


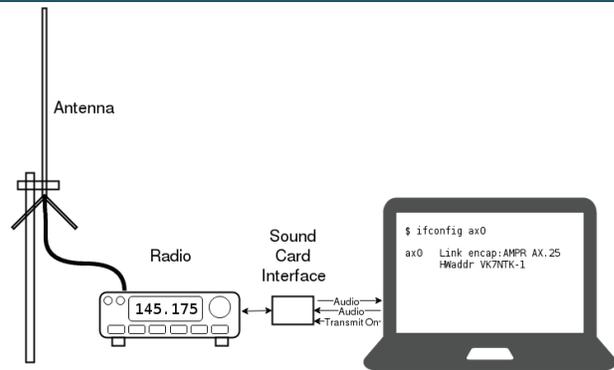


FIELD DAY 2019



Winter Field Day 2019 ! Was sponsored again in Hendricks County by the CTS group. (*Communications Technology Support*)
This year more hams were active in this annual event that is held in the middle of winter with over four amateur radio stations in operation.





Packet radio basics

As the name implies this mode of transmission splits the data to be sent up into a series of packets which can be sent one at a time. As messages are usually much longer than the amount of data which can be sent in one packet, it takes several packets to complete the message.

One of the advantages of amateur packet radio is that one channel can be used by several amateur radio stations at the same time. This means that when sending data any station has to wait until the channel is clear. Once the frequency is free the first packet can be sent, and the receiving station will return an acknowledgement to say that all the data has been received correctly. If this acknowledgement is not received the transmitting station waits for the frequency to clear and re-sends the data. This process is repeated until the data has been correctly received. Once the first packet has been transferred, the second, and subsequent ones are all transmitted in the same way.

As the receiving radio station checks for errors and the transmitter repeats the data until it has been correctly received the system is very resilient and gives very high levels of accuracy. The other advantage is that the approach of waiting until the frequency is clear before transmitting allows many stations to use the same frequency, providing an efficient utilization of the available spectrum. Nevertheless traffic is often high and as a result several channels may be allocated for amateur packet radio on a given band.

Amateur packet radio features

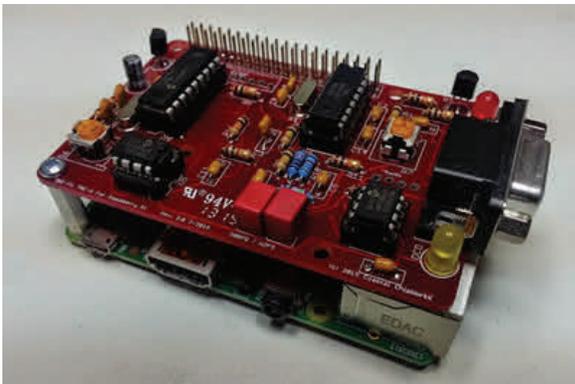
Packet radio is able to utilize a number of features which were not present in previous types of data communication. One of the most widely used is the ability for other stations to relay messages, so that much greater distances can be covered. Stations which relay messages in this way are called digital repeaters or digipeaters for short.

Packet radio transmissions take place on a single frequency. This means that digipeaters have to receive and transmit on a single frequency. For them to be able to relay the messages, the message must first be received in full, stored and then transmitted. Once the final station in the chain has received the message the acknowledgement is sent back along the chain to the first station. This is known as an end to end acknowledgement. Only then is the next packet sent. This means that when a message is sent over a long path using several stations as repeaters, the message can take a very long time to get through, especially if any packets have to be repeated. One powerful facility which amateur packet radio offers is the ability to read data from a mailbox. Sometimes called a bulletin board system (BBS), it enables messages to be sent to a particular mailbox and left for collection by a particular station. In many respects it is like a radio e-mail system.

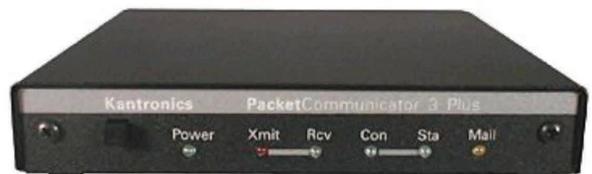
A message is sent to the local mailbox. Once received it is stored and then it is passed on via a network of mailbox stations until the required destination mailbox is reached. The message is stored at this mailbox until it is read by the recipient station. The advantage of using the mailbox system is that it is not necessary to know the route required to be taken by the message. This is worked out by the system, as it has a knowledge of the stations and works out a suitable route. Data is generally sent at periods of low activity, often at night, and this means that messages can take a few days to arrive. However as many links exist between countries it is possible to send messages around the world.

Continued on next page.

Take Your Choice of PACKET RADIO



Digital communications with packet radio - very cool!



2019 HAMFEST



Photo: Jimmy Merry KC9RPX



**RADIO
SPEAK**



Who is using packet radio?

STATE OF AMATEUR PACKET RADIO

In Hendricks County Indiana

Hendricks County is busy with many users leaving packet BBS systems up and running 24/7. You can find Ken Bandy KJ9B, Bob Burns W9BU, Wayne Michael AC9HP, Ivin Flint W9ILF and Bruce Jones N9DBJ along with Gary Day (call sign may change) and Mike NR9R on packet as clients from time to time.

What is packet radio?

Packet radio is a digital mode that is actually very complex and would take an entire book to explain exactly how it works. It is a protocol that allows communication between multiple stations. It is known as AX.25. If you enjoy a detailed technical read you can dive in here:

<https://en.wikipedia.org/wiki/AX.25>

Ultimately packet radio in its basic mode allows you to connect to another station in a similar way that would use a dial up BBS. If you have no experience with that then you may find it is similar to a mainframe terminal with characters and green screens. However packet is so much more. Packet on HF only allows for 300 bps. This is extremely slow but still useful for short traffic messages. It also can be useful for automated mail transfers when needed. Packet on 2m is 1200 bps and you can do much more. The speed increases as the frequency increases.

Where is packet radio?

Packet radio on the 2 meter band in Hendricks County is usually sitting on 145.050.

The KO9F group has a digipeater up in Danville and from that repeater you can access a wide area. The KJ9B packet station also allows for you to switch over to the 220 band and connect to other 220 mhz stations. I don't have a good handle on the way 220 mhz packet is used but I know the speed is greater.

When should we use packet radio?

For starters Packet radio is fun to use daily. You can use it for sending emails via the winlink system, use it to connect to other amateurs and share messages. You can also use it to connect to stations around the world. On Sundays a statewide packet net is experienced in the BPQ chat room at 9 pm eastern.

Why should we use packet radio?

Where do we go from here?

Currently there is work being done at both hospitals, and other agencies to put together packet radio stations in Hendricks County, packet radio is being discovered to be a fast, reliable error-free mode of radio communications during an emergency/disasters.

By: Wayne Michael AC9HP



West Hospital

Every **THIRD** Saturday of each month, we have a monthly radio test of the Amateur Radio Stations located at each hospital.

These test are at **10:30 am**. The purposes for these tests are to check the radio's output and audio signal from the radio at each hospital and get a signal check from anyone located outside of the hospital.

The radio operators from the hospitals change monthly and are practicing their skills on how to handle net protocols and message handling. **Operating frequency is 147.570**. Please show your support by checking in and give them a signal check.

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Hendricks County
Amateur Radio Emergency Service

** FOR A COPY OF OUR E-PLAN AND OTHER INFORMATION **

VISIT US ON : www.hendricksares.org

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HENDRICKS COUNTY ARES WEEKLY **NET**

*** EVERY TUESDAY NIGHT ***
7:30pm on 147.015 MHz REPEATER

Upcoming Events: Spring 2019

HAMVENTION 2019

MAY 17-19 at the GREENE COUNTY FAIRGROUNDS and EXPO CENTER in XENIA, OHIO.

Tickets are good for all three days
 ADVANCE Admission tickets:\$ 22 At the GATE: \$ 27



For a complete listing of hamfest in our area:
 visit our website: www.hendricksares.org

INDIANAPOLIS HAMFEST: Communications and Technology Expo.

July 12-13
 Outdoor Flea Market Hours:
 Time: Friday (12) 2p-7-p
 Saturday (13) 6a-2p

Location: Marion County Fairgrounds, Indpls.
 7300 East Troy Ave.

Tickets: \$8 At the Gate

2019 SKYWARN Severe Weather Class

This class will be held at the Hendricks County Government Building, 355 S. Washington St. Danville. Conference rooms 4-5.

Date/Time: March 23 at 1:30 pm

When severe weather strikes in Hendricks County, tune to : 147.165 MHz to monitor. This is Hendricks County SKYWARN Amateur Radio frequency.



April 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

May 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

June 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						