Ham 136 - Hf emergency differences

Dr. Marc & Rosemary Durham, Theway Labs, Bixby, OK

Mission: *Establish reliable, lowest technical common denominator communications, locally & regionally, in a HOA*.

Every ham license gives access to VHF and higher frequencies. The radios are pretty much like the old-time telephone party line. Pick-it-up, dial-the-number, talk! That consistency is so important. Antennas are similar, radios are similar, and sound quality is pretty good, approaching recording quality. What more do you want? DISTANCE!

The original commercial and amateur radio was medium wave to high frequency and they talked around the world.
So why is HF not used more? Sound quality, fade, slow data rates, nature, and myriad negative conditions.
But it has one insurmountable, wonderful feature. HF talks where nothing else can.
If Elon were to cut off satellite comms tomorrow, absolutely no communications can penetrate where HF goes.

Amateur is different things to different people. HF activity really illustrates the personality types. Three very different uses permeate most HF communications.

Digital allows low power to penetrate around the world. It is excellent for seeing where signals go and how far. A computer and software is involved in random contacts for short duration and limited information.

Distance (DX) communications allows global comms with a variety of power, antennas, and equipment. It is excellent for random communications for which amateur is noted. Atmospheric, meteorology, and noise conditions mean it is here today and gone tomorrow.

Disaster (emergency) communications is often between known stations, in a largely impenetrable environment. Extended two-way communications are necessary.

Each of the three have a large application and following. Each is very different, but still makes a technical contribution. It is difficult but remember, what floats your boat, likely is of little interest to whom you are visiting.

Clearly, the same tools will not work for all three communications types.
Previous articles have delineated equipment and shown conventional antennas and some specialty, like highly directional mag-loop. The traditional antenna premise assumes higher and gain is better, but Triad works in reactive field.


"So then he says, 'Let me show you my logbook.' It was all FT8!"

But, what is used for communicating point-to-point in the niches of harsh terrain such as hills, forests, and locations without infrastructure?

Do just the opposite of what everything else does.
Operate on 40-m or preferably 80-m.
Lower your antenna into reactive field effect, less than 15’ above the dirt.
Mono-band or dual band is easier and likely better SWR.
Straight antenna elements are unnecessary. Nothing in nature is straight.
Every location, soil condition, elevation, wire material, and surrounding is different, so you must roll your own.
Fence antennas can be effective. Carefully insulate the radiator and use effective lightning protection /grounding.
A low-profile Triad design works very well.
To paraphrase the Great Rabbi: Do not tell anyone about your antenna. They will not believe it anyway.

For reliable, emergency communications, do not expect to buy ‘the one’. It does not exist. Experimenting shines on.

What are some of the ups and downs of emergency type HF communications?
You will not speak to a lot of stations, but more likely the same ones again.
If you can pick up your mic and hit the same HF station again and again after tweaks, you are the winner.
If contesting for distance, or number of contacts, or wild locations is your objective, you will likely be frustrated.
You will seldom have a real event, thankfully. But when you do, it is like CPR, you do it until help arrives.

What is a typical operation? Put your antenna up, try it out, tweak. Do it again.
Your antenna may well work now and not work right, the next time. If persistence is your gift, be blessed.
If that sounds boring or tedious, it is likely not for you.
If you get excited beating local weather, global meteorology, and technical irritations, welcome home.

Since changing conditions still impact communications that must get through (emergency), you will likely change band and particularly frequency often, chasing the same group of operators on the other end.

The Australian Bureau of Meteorology has a website to help forecast what bands will be open.
https://www.sws.bom.gov.au/Category/HF%20Systems/Online%20Tools/Prediction%20Tools/HF/HF.php

Do the best practical. This is not cellular, digital, or audiophile quality. Get on the air.

Life is good. Enjoy!