



The Harris County ARES® NVIS Workshop

Find out how this Texas county manages its critical need for emergency communications.

Russell Richter, WP2AHG

On November 3, 2019, members of the Harris County Amateur Radio Emergency Service (ARES) gathered in Houston, Texas, for a Near Vertical Incidence Skywave (NVIS) mini-Field Day. They met beneath a 500-foot radio tower behind the Harris County Office of Homeland Security and Emergency Management.

Over the last several years, Harris County has been the target of widespread natural disasters: Hurricanes Imelda (2019), Harvey (2017), and Ike (2008); the Tax Day Flood (2016); the Memorial Day Flood (2015); Tropical Storm Allison (2001), and unnamed flooding events in 2009, 2012, and 2014. These natural disasters threatened the communications infrastructure in the region. Harris County ARES members were activated to serve as emergency communicators.



Walt Sepaniac, N5TQ, a Liaison AEC for District 14 of Harris County ARES, made contacts using his go-kit.



Peter Aronstam, KW5PA, set up an inverted V Buddipole antenna for NVIS.



Linda Kangas, W5LDK, ADEC for District 14 of Harris County ARES and a Training AEC in the southwest unit, contacted a station in St. Louis, Missouri. It was her first contact on the 40-meter antenna she built that morning.

Event Details

The event challenged ARES members to test various designs of rapidly deployable amateur radio stations using portable power, as well as HF antennas that would be used in a communications emergency for passing traffic to stations outside a disaster-affected area. NVIS propagation is ideal for disaster communications due to its relatively short range, compared to skywave propagation used for DXing. The event involved 12 participants, seven antennas, and scores of contacts. Here are some highlights of the event:

- Event organizer and Operations Assistant Emergency Coordinator (AEC) for District 14 of Harris County ARES, TJ Butler, N5CFT, set up a battery- and solar-powered Yaesu FT-817ND transceiver with an end-fed 40-meter antenna from Par EndFedZ®, and a 40/80-meter cross-dipole antenna. He worked a low-power station in Oklahoma.
- Sherwin Klomp, K5SEK, an Operations AEC for District 14, set up a Buddipole on 80 meters, making several contacts as far away as northern Oklahoma on his Yaesu FT-817ND.
- Linda Kangas, W5LDK, built a 40-meter dipole on site. The first station she contacted was 690 miles away, in St. Louis, Missouri. Linda is an Assistant District Emergency Coordinator (ADEC) for District 14 and a Training AEC in the southwest unit.
- Walt Sepaniac, N5TQ, a Liaison AEC for District 14, brought his go-kit to the event and set up a dipole antenna, contacting a station 20 miles north of Lawton, Oklahoma.
- Peter Aronstam, KW5PA, an ADEC for District 14, brought his radio, PACTOR modem, and Buddipole. He contacted stations on 40 meters.



David Underwood, WB5HJV, DEC for District 14 of Harris County ARES, used his Jeep to stabilize the base of his antenna mast.



TJ Butler, N5CFT; Walt Sepaniac, N5TQ, and Mike Dome, KG5NOV, erected a 40-meter NVIS Par EndFedz antenna.

- David Underwood, WB5HJV, District Emergency Coordinator (DEC) for District 14 of Harris County ARES, brought his Icom IC-7300 and Jeep-mounted screwdriver antenna to contact digital stations.



Sherwin Klomp, K5SEK, set up a Buddipole antenna for 40 meters.

Summary

Each station during the event was running 100 W or less, because the point was to test antenna designs for emergency communications, rather than making contacts. All the stations that were contacted were within the expected range of NVIS propagation, showing the efficacy for emergency communications of each antenna type that was deployed. Served agencies in Harris County can be assured that in the event of a communications emergency, Harris County ARES hams can set up off-the-grid radio stations and contact hams outside the affected area.

All photos by the author.

Russell Richter, WP2AHG, earned his Novice-class license while working at RadioShack in 1991, and earned his Amateur Extra-class license in 2013. Since 1993, he has worked as a business analyst at HP Inc. Russell enjoys working public service events with his older daughter, KG5IRE, and going on long walks with his younger daughter. Russell is currently the ARES Emergency Coordinator for Harris County's Southwest Unit. He can be reached at wp2ahg@gmail.com.

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