

**Subject:** NVIS Day  
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Hello ARES

Each year Ohio ARES conducts the NVIS Antenna Day. It is scheduled for April 25th this year, but we are going to take the advice of Stan Broadway, Ohio ARES SEC, to continue with NVIS Day but not as a large group event. Instead we invite you to operate NVIS day from your home as an individual.

The event runs from 10:00am to approx 4:00pm, primarily on 40M & 80M SSB. As with most events of this nature you can expect most of the activity between 10:00am and noon or a little after. The purpose of the event is to get volunteers thinking about how to communicate within the state. Normal VHF/UHF rigs are mostly limited to less than a 50 Mi radius even when using a repeater and are considered to be line-of-sight. For greater distances we rely on the HF bands and SSB/CW/DIGI. The rub is that most vertical and horizontal antennas for HF have a relatively low launch angle. Check the attached diagram for a pattern with greatest strength at an angle of 41°. The problem is the signal is weak for stations that "under" the pattern, and frequently creates a situation where you can easily talk to Texas but can't copy Columbus. NVIS antennas are designed to have a very high launch angle that shoots almost straight up, hits the ionosphere, and is returned to earth in a cone shaped pattern that does a better job covering stations within a couple hundred miles. See the pattern in the second drawing.

So what do you do to get an NVIS pattern? The good news is it's not hard and can be as simple as taking an existing antenna and lowering it to only 10'-15' above ground. You can find details on the DX Engineering Website here: <https://www.dxengineering.com/techarticles/miscinfo/learn-how-to-build-a-nvis-antenna> and on the Ohio ARES website here: <http://arrl-ohio.org/SEC/nvis.html> . A search for NVIS Antenna on your favorite search engine will also give about 120,000 web pages dealing with NVIS.

We hope you will consider trying out an NVIS antenna and joining in from home. See you on the air.

73  
Dave, KD8NZF  
MC ARES EC

