

# THE ARRL 500-kHz EXPERIMENT

## WD2XSH

Under the experimental license WD2XSH, a group of radio amateurs has begun exploration of the 500-kHz band. Our objectives are to apply modern technology to this classic frequency, to demonstrate that we do not cause harmful interference, and thus to pave the way for a new amateur band at WRC-12.

The classic 600-meter band provided for maritime calling and distress communication for nearly a century, but has now fallen into disuse because of the transition to the satellite-based GMDSS system. As an amateur band, it can continue to serve much the same role by providing reliable regional emergency communication via ground-wave. Such communications are omnidirectional and not subject to disruption by the state of the ionosphere.

Since issuance of the license in 2006, WD2XSH operators have accumulated over 40,000 hours of interference-free operation. Reception and QSOs at distances of 500 to 1000 miles are routine. QSOs have been made at distances of 3713 mi, and reception has been reported at 6679 mi.

Amateur/experimental stations are now operating on 500 kHz in eleven different countries, including Canada. Several stations are also operating under a second U.S. license, WE2XGR. The frequencies range from 493 to 515 kHz. The modes of operation include CW, slow-speed CW, PSK-31, and WSPR. In the eastern USA, stations can be heard almost any evening.

In the best tradition of amateur radio, our operators have used a wide variety of technologies to put their stations together. The transmitters include modern solid-state designs, modified vacuum-tube equipment, and vintage equipment. The antennas are mostly top-loaded verticals, but loops and some other antennas are used as well.

We welcome reception reports via our website [www.500kc.com](http://www.500kc.com), which has additional information on the experiment.

