

Initial "Kaz Antenna" Tests at WA1ION
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On Sunday, 22 APR, I installed a "Kaz antenna" in the yard behind my house in Billerica, MA. This antenna was reviewed recently by John Bryant (see "<http://members.aol.com/DXerCapeCod/kaztests.pdf>"). The dimensions I used were 1 m elevation of base wire off the ground, 4 m distance from center of base to apex of the triangle, and 16 m overall base length. The two sloping sections of the triangle, therefore, were a bit less than 9 m each. The antenna was in the open and was supported at the apex by a nylon rope stretched between the upper branches of two trees. The included area of this antenna is 32 sq. m which is comparable to that of the "classic K9AY" area of 31.6 sq. m and about 1.7 times that of the smallest size version suggested by Neil.

The area was not ideal since it was hard to keep all parts of the antenna as far as desirable from the house, coaxial lead-ins of other antennas, and a metallic above-ground pool structure. The coaxial cable to reach the feed side of the antenna ran roughly parallel to, and over most of its length, about 5 m from the base wire. The termination box had to be at the house end to achieve the desired west-nulling cardioid pattern. Performance was similar to the Pennant which had been tested in W. Yarmouth in July of 2000 inasmuch as the ability to adjust the termination resistance proved very worthwhile. I think, especially when there are imperfect set-up circumstances (stray coupling possibilities), use of the voltage-variable resistor (Vactrol) is highly recommended over settling on a fixed value in the 900 ohm range. Even with the "jury-rigged" set-up, nulls of signals in the southwest to west sector were good, probably 20 dB or better in most cases. The resistance needed to produce a good null did vary somewhat both with bearing and frequency: Worcester, MA stations on 580, 760, and 830 nulled at slightly different settings than those higher on the dial at 1310 and 1440. I have a sloping antenna on the opposite side of the yard which is intended to null the same range of directions. In some cases the sloper had a deeper null of a given station, but much of the time the Kaz antenna did as well or better because its termination resistance could be adjusted.

The controller box, coaxial coupler, and remote termination boxes used are the same ones I used for the Pennant tests (see: "<http://members.aol.com/DXerCapeCod/pennant.htm>": Pennant Antenna with Remote Termination Control (HTML with GIF's) or "<http://members.aol.com/DXerCapeCod/pennant.pdf>": Pennant Antenna article: PDF file.

Signal output of the Kaz antenna was less than that from the sloper. If desired, 10 to 20 dB of low noise amplification could be beneficial to get the output in the same "ballpark" as that of a 30 m sloper or end-fed wire.

The sloper (with noise reducing 4:1 transformer and "field site" grounding) rejected local electrical noises from TV's, computers, energy-saving gas-discharge lighting, and other sources better than the Kaz antenna. When I had tested Pennants and K9AY's, they too had more tendency to pick up electrical noise than balanced loops or noise-reduced wires did. The Kaz and similar terminated loops are still better in this regard than an active whip working against receiver ground.

Night-time testing with the Kaz antenna showed somewhat better rejection of high-angle skip from New York, Philadelphia, etc. than the sloper had. On more distant signals (e.g. Chicago) there wasn't as much difference. Generally speaking, if the termination resistance on the Kaz was not adjustable, the sloper would have had the edge more often. Some Trans-Atlantic signals were checked: in terms of hearability (allowing for the different antenna efficiencies), the Europeans coming in at the time - primarily high band Spain - were about the same amount over the domestic slop on both antennas.

I am going to run more tests at home and possibly elsewhere before putting together a comprehensive report in a month or so. Comparisons with the Pennant will be part of the research. The first battery of tests does not suggest any drastic differences in performance between these two related antennas. More later.