

Antenna Shoot-Out: Rowley, MA
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On the afternoon and early evening of Wednesday, 19 MAY 2004, I ran a series of antenna experiments at the Rowley, MA salt-marsh site (GC = 70.829 W / 42.745 N).

This was an assessment of the ability of five different antenna configurations to null out a variety of skip and groundwave domestic stations on bearings between 225 degrees (southwest) and 315 degrees (northwest). Not only was the degree of nulling important but also, just as important, were the strengths of European, African, and Middle Eastern stations arriving on the opposite set of bearings: 45 degrees (northeast) clockwise to 135 degrees (southeast). In short, the antenna system producing the best ratio of desired Transatlantic stations to nulled domestic "pests" was the winner.

Each set-up consisted of two broadband antennas and the Superphaser-2 phasing unit ahead of the Drake R8A. The receiver and phasing unit were powered from the car battery DC supply.

Configurations were as follow:

- 1. 76 m (250 ft.) wire on the ground aimed west (unterminated) versus 152 m (500 ft.) wire on ground aimed east (terminated in salt water)
- 2. 76 m unterminated west wire versus active whip on car roof
- 3. 76 m unterminated wire on the ground aimed east versus 152 m terminated east wire
- 4. 76 m unterminated east wire versus active whip
- 5. 152 m terminated east wire versus active whip

The best set-up was #5, the 152 m wire versus the whip. At several points on the band, the intended foreign DX stations were quite a bit better with this arrangement than with any of the others. The 76 m east wire versus whip was also useful, though the amount of slop that Djibouti-1431 and some of the other DX stations were experiencing increased.

Any of the configurations using two wires on the ground showed weaker pick-up of low angle DX: this put them at a deficit to set-ups involving the active whip as one of the antennas when it came to reducing the ratio of high-angle skip to either low-angle DX or groundwaves. A good case in point was France on 1557 versus New York City on 1560. Anytime a wire was phased against the active whip, especially if the wire was the long terminated one, France was more in the clear than with any of the two-wire set-ups. Neil Kazaross had been recommending a longer on-ground wire phased against a shorter one but, at least in the salt-marsh setting, any of the shorter (under 100 m) wires on the ground seemed to be deficient in "low angle grab".

A fairly short whip (on the order of 2 m) actually has quite good low-angle pick-up, at least at seacoast locations. "A/B" tests with various loops and wires on/near the ground often show the whip to be better, especially in pre-sunset DX situations when the Transatlantics are coming in at a very low angle approximating groundwave and any advantage a loop or wire would have in side-nulling is minimal since domestic skip has not yet risen to an appreciable level.

Soon I will be getting one of MFJ's 3 m (10 ft.) telescoping whips with the idea of using it as a passive transformer-coupled antenna not requiring a buffer amplifier for adequate sensitivity.

As the evening progressed, a good deal of DX was heard with the preferred 152 m wire versus whip set-up. Kuwait - 1548 was blasting in and a good Radio Sawa ID was captured on tape for subsequent Web posting.

Other than the typical late-spring / summer experience of getting nibbled by mosquitoes and gnats, the salt-marsh DX session was enjoyable and contributed considerably to my knowledge of what antennas to use on future DXpeditions.