THE BRUCE ANTENNA SYSTEM

REBORN FROM A MYSTERIOUS PAST

by GEORGE WEBB, KEJ7214

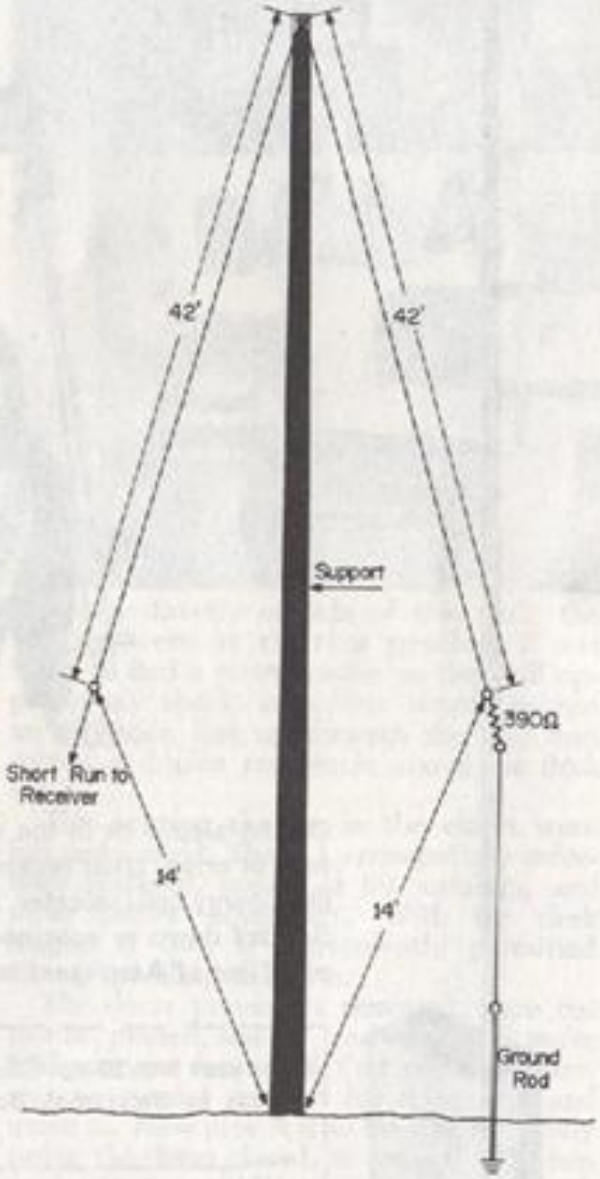
Nobody hereabouts has any ideas as to where this antenna originated, but we do know that it was written up in technical publications as long ago as 1935; and it was called "The Bruce Aerial System." Being an experimenter by nature, when I came across the description of the "Bruce" I was so intrigued that I decided to build the things to see if it really worked with modern signals. By golly, it did, and well too!

The antenna seems to work well between 6 and 27 mc/s with exceptionally good results between 15 and 17 mc/s, which probably indicates the design center of the antenna. I have found the Bruce useful for monitoring communications between Cape Kennedy and the manned space shots, as much of the talk seems to take place slightly above 15 mc/s (15.065 mc/s to be exact). The Bruce well outperforms any other antenna I've tried on this frequency, providing a fantastic increase in signal strength over the others.

The general idea of the Bruce is that it is an 84 foot length of wire, attached to the receiver at one end, run to an earth ground between 390 ohm resistor at the other. The center of the length of wire is formed into a peak using the side of a building, a tower, or other supporting structure 50 feet high.

To build the Bruce, obtain some solid copper insulated wire, about 100 feet of it. Pick the center and use that as the peak of the antenna, now droop down each side to the 42 foot mark—angled out so that the bottoms are 14 feet each from the base of the support (see diagram). One side goes to the receiver with the lead as short as possible. At the other side, a 390 ohm resistor is placed in the line at the 42 foot mark. The other side of the resistor is run to a grounded rod which should be driven into moist ground as deep as possible—in fact, you might even wish to help moisten the ground with a gallon or two of salted water (a handful of salt per gallon is OK).

That's about the size of it.



PARTS LIST

100 ft. roll of #16 or #18 solid copper insul. wire
390 ohm resistor (any wattage)
4 foot ground rod (Lafayette 18-7215W or equiv.)