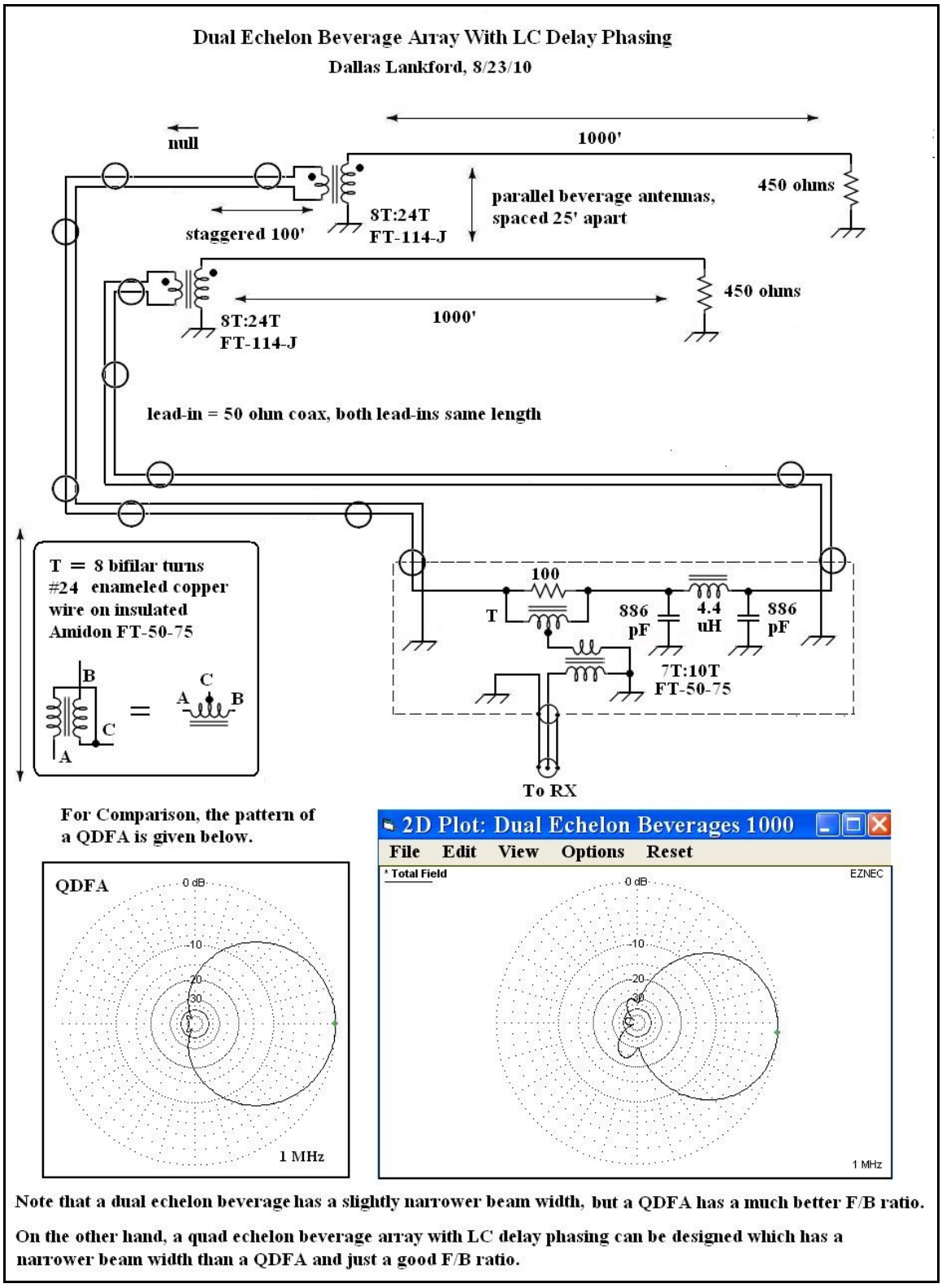
Dual Staggered Offset Beverage Arrays

Dallas Lankford, 12/11/2008, rev. 5/9/2011



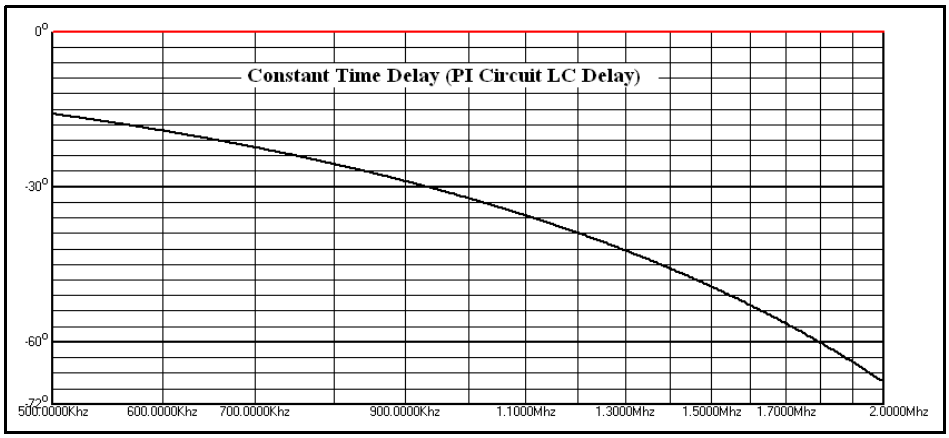
Staggered offset beverage arrays have been around for a long time. AT&T built a large quad staggered offset

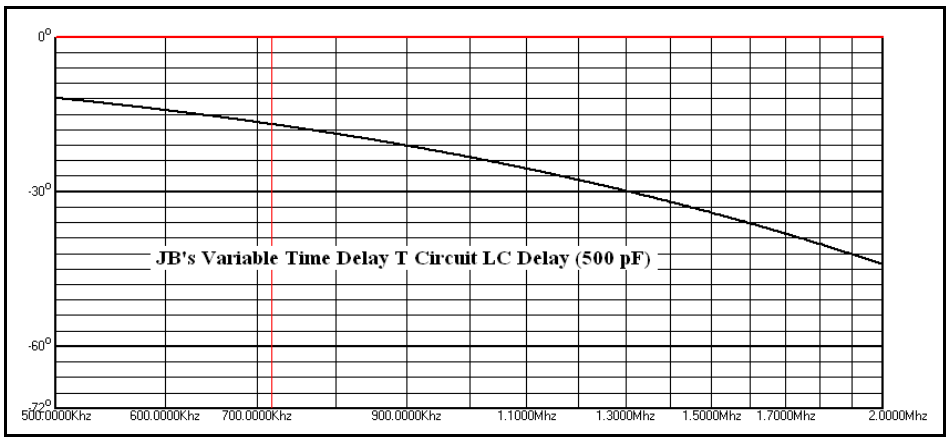
phased beverage array near Houlton, Maine in 1927 for their first transatlantic telephone system in 1927. Staggered offset beverage arrays are sometimes called echelon beverage arrays. W8JI has a schematic of a dual staggered offset beverage array using coax delay on his web site. My dual SO beverage array above uses LC delay.

I sent Jurgen Bartels an email with the schematic above attached on August 23, 2010. Eventually he made some changes, implemented his variant of my above array, and published the results on his web site. His description of my contribution to that project is not accurate.

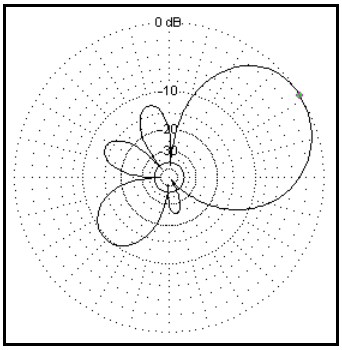
In my opinion, he made a mistake in making the phaser variable. Yes, he can null some stations ddeeper. But the pattern of his array is almost certainly degraded by his null steering, make his array less than optimal for recording the entire MW band with Perseus or other broadband recording SDR's.

He used a T circuit LC delay rather then the Π circuit LC delay which I used in the schematic above. His is certainly a bad choice because his does not have constant time delay necessary for a unifor pattern from one end of the MW band to the other; see the phase plots below.





I doubt that there is a setting of the variable capacitor he used which will give the constant time delay required for a uniform pattern from one end of the MW band to the other which is required for optimal entire MW band splatter reduction. My array is optimized for splatter reduction for the entire MW band. JB's is not. At right is an EZNEC plot of JB's array at 1.5 MHz with the variable capacitor set to 500 pF which shows clearly the non-optimal pattern of JB's array for one setting of the variable capacitor.



My beverage should be at least 4' above the ground. Dual SO BOG's probably will not have a good pattern.