Subject: Re: Pattern control and mouth size
Posted by Wayne Parham on Fri, 09 Feb 2007 06:52:51 GMT
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Arraying horns, or any sound source for that matter, presents potential combing issues. If sound

interact with sometimes positive interference and sometimes negative interference, depending on their respective positions, distances and phase relationships. Their size and shape matters too, since a sound source that is small radiates a different pattern than one that is large. When several sound sources interact, their pattern begins to act like multiple slit diffraction, which makes interference patterns in addition to the nulls you saw from single slit "sidebands". Look up double-slit diffraction to see more information about how that works.Again, all horns that are

single sound source and will act something like double-slit interference. If the horns are axisymmetrical, then they will behave the same in the vertical and horizontal planes. If not, they will act differently in each plane. That may or may not make arraying more difficult, depensing on what kind of array you need and what frequencies are required.Usually, a sound engineer strives for single sound source summing. But that is not always the case. In some cases, it is desirable to have dense interference, in order to smooth the sound field. For example, if sound sources (or

way to correct for that is to add sound sources that increase energy in nulls formed by interaction betwen other sound sources. Ironically, multiple sound sources spaced apart cause nulls to form, but adding a few more can average the sound field. This is called dense interference and it is a very useful technique.
Horn Arrays