Subject: Tractoid Horn Beaming
Posted by Dean Kukral on Sat, 24 Jan 2004 21:04:07 GMT
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Why should tractoid horns (round, formed by revolving a tractrix on its axis) have low dispersion? (See Shanko's posts on Oct. 15, 2003)Suppose a tractoid horn is flush-mounted to an infinite baffle. And suppose spherical sound waves travel down the horn. Then, when they leave the horn, they should be hemispherical in shape and omnidirectional. In fact, they should disperse perfectly in all directions. See the "orthogonal to circles" diagram at,www.xahlee.org/SpecialPlaneCurves_dir/Tractrix_dir/tractrix.htmlThe only flies in the ointment that I understand are,1) The compression driver may not produce spherical waves, so the value of the tractoid geometry is negated (why, then, load this driver with a tractoid??), or2) The geometry of the tractoid, along with the laws of fluid dynamics, does not maintain the spherical shape of the sound waves as they travel down the horn, so they leave the horn focused. (Again, then, why use a tractoid?)3) The absence of the infinite baffle completely mucks up everthing. (Same question.)4) Perhaps the Oris horns do not flare out to their asymtotic ends; but this would not explain the issue for other tractoids or "tractrix horns."Can someone explain why these would beam?