Subject: Re: jensen A-12 horn loaded
Posted by Wayne Parham on Mon, 12 Apr 2010 17:29:10 GMT
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That's an interesting build you're considering. Please keep us posted on your progress.

As for horn design and how to select the horn lenth and flare rate, throat size and front chamber and rear chamber volumes, I'd make a Hornresp model and see what worked best. You can modify the throat and chamber sizes and see what effect that has on response. You'll need to know the electro-mechanical parameters of the woofer, so measure one with a woofer tester from Smith & Larson.

One thing that's different about field coil woofers is the magnetic strength is directly proportional to field coil current. A woofer with a fixed magnet has a constant flux level in the gap (disregarding flux modulation for the moment). But since the field coil drive voltage can be changed, the magnetic flux in the gap can be changed. So the woofer will measure differently at different field voltage levels.

When field coil voltage is too low, the cone isn't controlled very well. When field coil voltage is too high, you risk the potential for damage by overheating the coil. You'll want to pick a field coil voltage between these two extremes. Within these limits, you can consider field coil voltage to be a configurable parameter just like flare rate and length, throat size and chamber volumes.