Subject: Dedicated horn loaded mid -- big disappointment.
Posted by noviygera on Tue, 13 Oct 2009 00:26:34 GMT
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I purchased a pair of front loaded horns with JBL e120 12" drivers. They are crossed over at 200 and 800Hz  24/octave
2 pictures here:
http://picasaweb.google.com/noviygera/Midbass#
dimensions are of the cabs are 28" wide-20" high and 24" deep.

When I hooked them up the sound was loud, very boomy, rolled off (as in muffled), and what really surprised me, completely lacking in detail and articulation. What is to blame here: cabinet or driver? or both?

I was comparing these to my current 10" vintage Rola drivers on open baffle and there is no comparison. The open baffle is much more "natural" tone, detail and articulation of small music nuances, except for one thing: less efficiency and less boomy.

I am very interested in going the horn loaded mid bass "direction" but this negative experience completely surprised me. Why such poor performance? Any thoughts on this?
-Herman

Subject: Re: Dedicated horn loaded mid -- big disappointment.
Posted by Wayne Parham on Tue, 13 Oct 2009 00:50:43 GMT
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Horns are bandpass devices, rarely covering more than two octaves and almost never more than a decade.  So you'll definitely need a woofer below and tweeter above.  Also, horns don't work well with just any driver.  A horn and driver should be matched for best performance.

When this horn is used in the right system, I would expect it to sound pretty good.  But to know how to set it up, you'll need to do some work.  Measurements would be helpful.

Subject: Re: Dedicated horn loaded mid -- big disappointment.
Posted by noviygera on Tue, 13 Oct 2009 03:03:58 GMT
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Wayne,

This horn is used 200 to 800Hz. Seems this is an appropriate range for it. However, compared to a simple open baffle 10" driver, used in exactly the same frequency range sounds much cleaner, more natural.

I was very surprised, I thought the midbass horn would be much better in this application (what it was made for) but it doesn't. It must be a problem in the driver ( JBL e120 ) or the horn enclosure. But which is the problem?

Something tells me that the 12" JBL e120 is a driver made for loudness -- not clarity or articulation. Could this be it?

-Herman

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Subject: Re: Dedicated horn loaded mid -- big disappointment.
Posted by Wayne Parham on Tue, 13 Oct 2009 05:02:56 GMT
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Hard to say without seeing measurements. Could be a sensitivity mismatch, since the midhorn is probably something like 105dB/W/M and the rest of the drivers are probably at least 10dB less sensitive. Or it could be that there are pipe modes down low. Is there any way for you to make measurements to see which it is?

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Subject: Re: Dedicated horn loaded mid -- big disappointment.
Posted by noviygera on Wed, 14 Oct 2009 23:02:00 GMT
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I'd like to do measurements but am not sure how to. I have a laptop, an external sound card and a Behringer omnidirectional mic. Is there free software that I can use, plug and play? Do I just measure "in the room" or is there a special proce dure?

Thanks,
Herman

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Subject: Re: Dedicated horn loaded mid -- big disappointment.
Posted by Wayne Parham on Thu, 15 Oct 2009 01:17:15 GMT
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You could try Speaker Workshop, which is freeware. For more information on things like what you'll need to get going, how to make measurements, what to look for and how to do it, see the Measurement forum, here on ART.

Measurements are best taken outdoors, free of reflections from walls that cause notches in

On the other hand, if all you're interested in is higher frequencies, you can get away with working indoors.  The process is called "pseudo-anechoic" and what is involved is setting up the measurements to send the signal and only capture what happens before the first reflection arrives.  You do it with gating, which is setting the measurement "window".

Pseudo-anechoic measurements are a great way to get work done indoors, say on a cold winter day when you don't want to be outdoors.  Since the crossover frequency is often where you're most interested, and since this is usually high enough to do pseudo-anechoically, that saves you from having to make all measurements outdoors.

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