Subject: Great Plains Audio 704-8A quick notes
Posted by spkrman57 on Mon, 04 Jul 2005 01:31:16 GMT
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Hey gang!I restarted the Altec A7 Voice of the Theatre renewal with Tim and Colin, soo to follow into the High Efficiency 2 way hot setups will be Joe I hope, he is going 2-way, but not VOTT but reflex and Altec horn/driver.Anyways, this is about a 16" coaxial driver made by a Bill Hanshack who runs Great Plains audio. Bill was one of the last GOOD engineers working for Altec before they let the bean counters run them out of business.The woofer cone is a 15" 515 variant and a 902 driver on a Mantaray horn lens. Crossover I am using is the N1500 (1500hz) with 2 different adjustable controls for HF compensation adjustment, and a MF adjustment.I have mine in 4 cubic ft cabs tuned to 40hz(temporary until my cabinet make completes the 10 cubic ft enclosures for me(exterior - interior I am going to guess at around 8.5 cubic ft after bracing and drivers and ports are taken into consideration. I am thinking of going with a port of 6" x 10" x 14" deep for around 28hz(at least that is what my feeble mind is thinking).Current evaluation using Yamamoto 45 SET amp/DeHavilland - Verve pre/Audio Note -cd21x cdplayer:The pinpoint imaging is nice and the soundstage sets back well enough. The bass goes deep but is thin(tolerable - bigger box will help out here). The treble sounds decent enough even though the plastic Mantaray horn is thin plastic.This is a speaker system for someone who don't want to tweak(other than crossover controls), imaging is good and I would recommend these if you have a large room. Unlike most High Efficiency speakers, this speaker likes more power to come alive. The 2 wpc Yamamoto did not wake them up like my McIntosh MC-240(40wpc).More on this will follow, time for more beers and currently listening to "Talking Heads live in concert CD).If anyone has any specific questions to ask about the 704-8A or willing to travel to Columbus, Ohio to hear them, just drop me a line through the forum(e-mail).Ron

Subject: Re: Great Plains Audio 704-8A quick notes
Posted by colinhester on Mon, 04 Jul 2005 13:18:56 GMT
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Sounds like your setting Joe up with a nice system. Can you elaborate on the specifics? I guess Joe's wife is adding your name to her "loser" list.The SV811-10 amp is coming along nicely. I should have it done in about a month. Might be a good time to have a gathering here in Cinci.....Colin

Subject: Re: Great Plains Audio 704-8A quick notes
Posted by spkrman57 on Mon, 04 Jul 2005 14:28:08 GMT
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Colin,So far if things keep going the same direction, start with 811B horn and 806 drivers, 1.6khz

crossover (ala Pi system) and trying to find out which 15" driver for the bottom will be used in the Bozak cabinets.Ron

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Subject: Great Plains Audio 704-8A - more notes
Posted by spkrman57 on Wed, 06 Jul 2005 16:23:33 GMT
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I have noticed that these speakers would really like a larger room than I have (192 sq ft). These speakers would benefit from a 20' x 25' room with at least 10' ceilings.These speakers have given me the opportunity to compare a coaxial system vs separate horn systems. I have to say there is something about a larger horn that serves my listening preference. I believe that JBL's 15" driver offering meshes better with a horn crossed over at 1500hz than the Altec offerings.At least owning these coax drivers for a short time was worth the trouble. Once finished with the new custom cabinets will go on loan to a few friends I have discussed this with. They all have larger rooms than me and different tastes in music.I wish I had a pair of Jensen Imperial horns to play these with as I bet they would be very impressive.Regards, Ron

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Subject: Re: Great Plains Audio 704-8A - more notes
Posted by billfort on Sun, 10 Jul 2005 12:59:52 GMT
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Thanks for the update Ron, I was wondering how these where working out for you. I don’t know how these would compare to my Altec 604-8G’s but I did find them much better over-all when in larger boxes (9ft3) with a wide baffle. What crossover did you use?Your room observation surprises me actually. I used Altec 19’s and 604’s in the same small 11 x 17 room (but at different times and systems) and felt the co-ax was much better suited to that small space. I love the 19’s but feel you have to get pretty far back from a large horn design before they really click in.I’ll be building a larger horn system this summer (Altec 902 on a 400Hz round wood tractrix and Altec 416-8A woofer) so will get to try this comparison again. Results may be different in my current system and dedicated 12 x 22 listening room but I can’t see ever giving up my 604’s, even if demoted to another room.Keep us posted on future ‘704’ observations.

Subject: Re: Great Plains Audio 704-8A - more notes
Posted by spkrman57 on Sun, 10 Jul 2005 17:38:26 GMT
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Bill,I have found that Altec 1" drivers play much better at 1.6khz than at 800hz or 500hz. The crossover on the 704's is a Altec N1500 (1500hz) and it seems very close from what I could see

on the exposed side to resemble the crossover for the Model 19.Bill Epstein is building my new cabs for the 704's. It will start out as a 10 cu ft (exterior) and will have approx 8.5 cu ft after subtracting the bracing and driver volumes. I told Bill I wanted a port size of 6" x 10" x 14" deep. Not sure how exact that will be, but I bet with that size cabinet it should work out okay.Currently the 4.5 cubic ft cab tuned to 40hz has bass, but I would have to admit it is down approx 6db relative to everything else, so it sounds kind of thin.This system will not replace my separate horn-loaded systems that I like to tinker with. As soon as I get some room in the house, I plan to install my 4 16 ohm 2226J's (JBL) in the 4648 cabinets and run a 399 (Altec 288K) 1.4" driver on 311-60 horn and see what happens at 800hz crossover. I have tried it out with a 1.6khz crossover and was surprised that it played the HF notes almost as good as my 1" drivers!!!I would love to have a 1.4" throat round traxtix horn (ala Edgar) with a 650hz flare rate to be used at 800hz, and without using a adaptor like I did before with my 288C on 350hz Edgarhorn.When is your next trip across the border here to Ohio???Ron

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Subject: Re: Great Plains Audio 704-8A - more notes
Posted by Wayne Parham on Sun, 10 Jul 2005 22:40:26 GMT
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Scope this:
Altec gear in a Pi box

Subject: Re: Great Plains Audio 704-8A - more notes
Posted by spkrman57 on Mon, 11 Jul 2005 10:07:39 GMT
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Wayne, Sounds like the 704 can use a cabinet similiar to the 416.704-8A specs are as follows:fs 30.9hzQts .261Qms 8.49Qes .270Vas 16.35 ftEff 4.87%/98.5db/wattI tried Pi-align and it gave me a 4 cu ft box, but I am still trying to figure out how to use it. Why does it ask for bottom cutoff, I would think the program would figure it out. I just used 40hz since I did not know what it was asking!What do you come up with? Bill is building 10 cu ft box for me and that is exterior, I expect after bracing and driver accounted for that I will have approx 8.5 cu ft. And yes, I used the port size from the 416 info since I figured it would be close!Any comments here????Regards, Ron

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Subject: Re: Great Plains Audio 704-8A - more notes
Posted by Wayne Parham on Mon, 11 Jul 2005 10:30:51 GMT
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PiAlign really only cares about Vad, Frd, Qd and Qty. The rest of the fields are just for archival

purpose, providing a database of driver parameters for each component in a system.

Subject: Re: Great Plains Audio 704-8A - more notes
Posted by billfort on Mon, 11 Jul 2005 14:35:38 GMT
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My plan to target 400Hz as the tractrix mouth cutoff is due to me wanting to try an 800Hz cross on the 902 and since the 811 horn is about this size, seems like a good starting point. I will definitely try a higher cross as well.One place where my plans changed a little was the throat – I measured the 902 exit expecting 1” but found it’s more like .875” so my tractrix throat will start with that dimension. I know it’s not much but I think it might be best to have a smooth transition from driver to horn throat without a .063” step in there.I know a bunch of the software models say 4 to 5ft3 for flat alignment with these Altecs but in my experience, if you want full range, larger is better. I think you are in the right ballpark with the cabinets BillE is building. What baffle width are you using? As much as they look prettier, I found narrow baffle cabs sounded a little ‘thin’ in the upper bass lower mids with the 604’s and a 26” wide baffle (as used in the 620) yields better balance making that famous ‘604 midrange shout’ a touch less noticeable.I sure would like to hear a purpose built round wood tractrix on an Alnico Altec 1.4” driver, if I ever find a pair of these at a reasonable price I’ll consider building some but with the price of Altecs these days, I don’t see this happening anytime soon.No plans for travel anywhere near your place right now Ron, I really have to get down there! Do you ever get anywhere near Toronto? I’d love to have you over.

Subject: Re: Great Plains Audio 704-8A quick notes
Posted by Todd W. White on Sun, 17 Jul 2005 20:36:05 GMT
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The 704-8A really does better, as does the Altec 604-8G/H/K, in a large box, around 9 cubic feet (internal volume).Crossover is suggested no lower than 1500 Hz. A "K" crossover in very good operating condition works pretty good with the 704.I agree - the 704 "likes" a little more power to get the low end working well, but mostly, I think, in order to handle transients in the modern digital media. They're the most efficient 2-way ever built in the Altec tradition, perhaps by anyone else, too, but they do like to have a big box and extra amplifier headroom.As for box tuning, Jerry Hubbard tuned the Iconic Stonehenge V System we demonstrated at the GPAF at 40 Hz using a horizontal slot of 11" H x 2.5" v x .75" D.
Iconic's Stonehenge Systems Page

Subject: Re: Great Plains Audio 704-8A quick notes

Posted by spkrman57 on Tue, 19 Jul 2005 10:00:09 GMT
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Todd, I am surprised at the port size dimensions. I would think with the T/S parameters of the 704-8A that it would like a lower port frequency. Why the 40hz tuning and not something like 28hz which would be close to the 6" x 10" x 14" deep I was considering???Ron

Subject: Re: Great Plains Audio 704-8A quick notes
Posted by Todd W. White on Wed, 20 Jul 2005 02:37:50 GMT
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Not sure why Jerry Hubbard did that, but I'll be glad to ask...

Subject: Re: Great Plains Audio 704-8A quick notes
Posted by spkrman57 on Thu, 21 Jul 2005 10:48:23 GMT
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Thanks Todd!I still have time to change up my vent size choice. But until I get info to change my mind, I still think that 6" x 10" x 14" deep sounds more like what the T/S paramters would call for.I would be interested in what your techie has to say!Ron

Subject: Re: Great Plains Audio 704-8A quick notes
Posted by GM on Thu, 21 Jul 2005 16:11:44 GMT
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Greets!What you tune it to has to do with how much series resistance there is and the desired room/speaker placement, though some folks ignore these and tune them to a more personal taste, such as the 'West Coast Sound' championed by Altec, and now apparently by Iconic. Great party/DJ alignment, but no good for a more accurate reproduction in a typical wide BW HI-FI app of today. One thing for sure though is that such a large vent you propose will have strong enough pipe harmonics that will audibly comb filter with the driver's response above ~250 Hz if not damped.GM

Subject: 704-8A tuning

Posted by spkrman57 on Thu, 21 Jul 2005 17:29:51 GMT
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GM, Thanks for the reply. I take it that you are in agreement with Todd with the short depth port, is that correct? Ron

Subject: Re: 704-8A tuning
Posted by GM on Thu, 21 Jul 2005 21:03:27 GMT
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Greets!You're welcome! Uh, no, not per se anyway. I mean you use whatever size vent that's required to keep vent speed low at whatever Fb you've chosen, and if it's big and/or long, then I recommend damping down its harmonics as required to smooth its response out.WRT designs that use 3/4" long vents (baffle thickness only), it's my understanding that high cross sectional area (CSA):length vent ratios don't have enough acoustic inertance to work as well as when the ratio is reversed, so can be overdriven easier, allowing the driver to overexcurse since it needs a longer time period to 'pump up' (for lack of a better phrase). IOW the ducted port's much more rigid air mass 'piston' damps the driver better and is acoustically more efficient than the large, flimsy membrane of the shallow vent.That said, I've compared them and found they both perform well and have designed/built many well received speakers using big CSA:length ratio vents rather than making/recommending multiple smaller, longer ones since learning of this, so I'm not going to lose any sleep over it. As always though YMMV.GM

Subject: Re: Great Plains Audio 704-8A quick notes
Posted by Todd W. White on Fri, 22 Jul 2005 13:23:49 GMT
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I talked with Jerry Hubbard about it yesterday, and he said that, given the size of the enclosure and the performance parameters of the 704-8A, it COULD be tuned a little lower(it currently has an F3 of 40 Hz), but not much. Therefore, he didn't think it was worth the effort - one could spend more time fiddling with the thing than listening to it... With regard to the tuning port size/type, we looked at ducted ports, but Jerry pointed out that the speaker only "wants" to see a certain vent size, and doesn't really "care" how you achieve it as much as that it GETS the size it needs and can operate through it without having to work at it. That said, we figured out it would take THREE large flared ports to accomplish the same thing we did with the horizontal vent, and the cost just didn't outweigh the advantages (if any).When you listen to the 704-8A in the Stonehenge V enclosure, it performs almost effortlessly in the LF region (it does in the HF region too, but we're not talking about that right now), as does the "G" in the Model 17 and the "H" in the Model 18. So MANY speakers seem to have "work" hard to get the LF out to the listener - the 704-8A in the SH V box doesn't have this problem. In fact, the LF performance is very similar to listen to as the Model 19.

Subject: Re: Great Plains Audio 704-8A quick notes
Posted by billfort on Wed, 27 Jul 2005 23:26:52 GMT
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I suppose modeling programs can be misleading and only listening (testing?) is the real measure but 28Hz tuning on a 9ft3 box looked real bass shy compared to 40Hz when I modeled enclosures for my 604-8G (which I'm sure isn't the same as your 704).All I can say is that I'm very happy with a 40Hz tuned 9ft3 box for my G's. I don't know how much of a roll a wide baffle and dual side mounted vents of fairly large area (1 1/2" long) plays in the final product but I like the results.

Subject: Re: Great Plains Audio 704-8A quick notes
Posted by spkrman57 on Thu, 28 Jul 2005 09:49:59 GMT
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Bill - send me a e-mail through the forum - I lost your e-mail addee!Ron

Subject: email on the way
Posted by billfort on Thu, 28 Jul 2005 19:32:27 GMT
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I replied to your email today Ron, the addy you used is fine.