Subject: Wayne, which speaker for PA tops?
Posted by OneBean on Sun, 27 Mar 2011 15:31:56 GMT
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I am considering building some PA mains to go with some equipment my buddies have for a bar band. Which speaker do you recommend for us? One of the guys has a pair of Peavey 18" subs, and I have a variety of Crown and QSC amps to drive them. This is a rock / Blues band in smaller venues of about 1000 - 2000 square feet. We mic the drums and guitar, and the Bass runs through a direct box to the board, so the mains need to be able to support these with the subs taking everything from about 150 down. No keyboard or horns. Let me know what you think. Thanks.

OneBean

Subject: Re: Wayne, which speaker for PA tops?
Posted by Wayne Parham on Sun, 27 Mar 2011 21:25:51 GMT
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speakers.

Subject: Re: Wayne, which speaker for PA tops?
Posted by OneBean on Mon, 28 Mar 2011 01:32:12 GMT
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I built your Stage 4 Pi about 5 years ago, and I still love them as much as the first day. They have completely cured me of constant looking for new "better" speakers. I have a couple questions for you. Should I consider buying the new 4 Pi with upgraded drivers, installing them in my existing cabinets, and moving my Stage 4 Pi drivers to new cabinets for PA duty? Is there a significant jump in performance from the standard Eminance drivers, to the upgraded JBL and B&C drivers? Is the crossover upgrade worth the extra money? I have Bottlehead Paramours (2A3) driving them, and listen to mostly rock and blues. Also, my Stage 4 pi speakers have never seem more than 3 watts. Is it possible they aren't broken in yet? I have a bunch of hours on them, probably over 3000 hours of a variety of material. Like I said, I love the Stage 4 Pi, and wouldn't consider upgrading if I wasn't looking for some PA speakers. What do you think?

OneBean

Subject: Upgrades
Posted by Wayne Parham on Mon, 28 Mar 2011 04:43:27 GMT

Upgrades are worth their extra cost. I would upgrade in the following order, as I think these bring the greatest improvements in this order:

1. Woofer
2. Compression driver
3. Coils
4. Capacitors
5. Resistors

The upgraded woofer make a big difference, especially in midbass and midrange quality. I mean, the Omega 15 sounds nice but it just can't be compared to the JBL 2226. I think the biggest reason for this is the flux stabilization ring in the JBL woofer. It makes the motor more linear, reducing distortion and improving clarity. It also makes the speaker less fatiguing to listen to for extended periods or at high volume levels or both.

The tweeter is next. The DE250 is noticably smoother than the PSD2002, sounding more "mellow" but at the same time still being as crisp, even more so. The stock tweeter sounds good, and I wouldn't call it harsh by any means. Some titanium drivers are, but the stock one isn't. But still, the upgraded driver is more smooth, and it's worth upgrading, in my opinion.

The stock crossover is very good, and I think crossover upgrades are mostly for bragging rights. One exception is the coils, with the larger ones having less internal resistance, which improves damping. They aren't necessary by any means, but the low cost of the upgraded coils make that a worthwhile upgrade. The resistors don't cost much either, so some people like to upgrade them as well. The capacitor upgrades are pricey, and to my ears don't buy much. But if you want the very best, the capacitors can be upgraded too.

Lastly but certainly not least, I would suggest running multisubs, especially if you're running low power SET amps. The mains are really great for what they do best, but as with all high-efficiency mains, they don't reach down into subwoofer territory. When you push them with a lot of power, the midbass is so strong that you can sometimes feel like there's no need for subs. But really, they aren't hitting the deepest notes. And especially with low power, I think subs make a big difference. Besides, running a couple subs in addition to the mains help smooth room modes, probably an even more important feature than the increased extension. So if you haven't been using subs thus far, do yourself a favor and give it a try.

Subject: Re: Upgrades
Posted by OneBean on Mon, 28 Mar 2011 16:45:03 GMT

Wayne, thanks for the information, it's really helpful. I am running 2 subs, and it fills the bottom end really nice. I'm drooling all over the upgraded drivers, and the crossover upgrades seem

logical to me. That pushes the price up quite a bit, which slows me down a little. Just a couple more questions. Do you have any advice on my break in question? If I get the new drivers, should I break them in before installing them in my cabinets? Are the Stage cabinets and the current cabinets the same? Do the JBL/B&C drivers use the same cross over as the Eminance drivers? If I'm building a pair of boxes for PA duty, what material should I use? 3/4" birch plywood? Can I go thinner, like 1/2" birch plywood? Thanks for the help.

OneBean

Subject: Re: Upgrades
Posted by Wayne Parham on Mon, 28 Mar 2011 17:48:32 GMT
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the line model though.

The crossover is different between compression drivers because the DE250 is slightly louder than the PSD2002. Notice the different R1/R2 values on the schematic (shown below).

Baltic Birch is an excellent material to build with. It's light enough that I'd go with the thicker stock.

Break-in is really important with the JBL 2226, but not as much with the Omega 15. What's difficult about the 2226 is it isn't so much that the new driver needs to be broken in once as it constantly needs to be broken in. The driver just really responds best when it is given a little bit of power. It literally loses low-end when run at low power levels, almost a negative Fletcher-Munson curve.

The good news is that the shifts between low-power and high-power operation never put it in a peaky underdamped alignment. It just basically lacks some bottom end when the power levels are low. If you're running subs, it doesn't matter much, as it blends well either way, hot or cold. The improved midrange more than makes up for that idiosyncrasy, in my opinion.

Subject: Re: Upgrades
Posted by OneBean on Mon, 28 Mar 2011 23:54:09 GMT
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OK, thanks for the information. Time to start stashing some cash back for the upgrades.