Subject: And now for something completely different .....
Posted by Martin on Sat, 28 Jan 2006 15:53:39 GMT
View Forum Message <> Reply to Message

..... at least for me. Not a TL this time.(Trivia question : What TV show did that line come from? You will show your age with the answer.)Thought I would share my latest project, my son and I wired it up last weekend and it has been tweaked several times during the past few days.http://www.quarter-wave.com/OB_Wings_Back.jpghttp://www.quarter-wave.com/OB_Wings_Out.jpgThis is an OB system (48" tall x 60" wide with the wings out) using either the Lowther PM2C, PM2A, or DX4 driver and two Dayton 15" high efficiency woofers (JBL 2226 clones) per side. I am using a DBX DriveRack PA digital crossover, the woofers roll off at 120 Hz 12 dB/octave and the Lowthers roll in at 120 Hz 24 dB/octave, and two Rotel RB-1080 200 watt amps.All solid state and no passive BSC filter required. My calculations indicate the efficiency is about 98 dB/w/m and reasonably flat above 50 Hz. Decent bass into the 30 Hz range but no measurements yet to prove any of these numbers.This is a very efficient system and even at fairly loud volumes the drivers barely move, you have to touch them to convince yourself they are connected. Great dynamics and bass. Best reproduction of a kick drum that I have heard from any of my own speaker designs, they can move a lot of air. Very similar sound to my Lowther ML TL design but with better bottom end, no big surprise I guess.More details to come on my web site when I am done tweaking and find time to documented the project,Martin

Subject: Cool!
Posted by Wayne Parham on Sat, 28 Jan 2006 16:20:47 GMT
View Forum Message <> Reply to Message

I'll bet they sound great. Swap in some JBL 2226's sometime, tell us what you think.Hey, you coming to the Great Plains Audiofest this year? We'd all love to see you there!Nudge, nudge, wink, wink.

Subject: Re: Cool!
Posted by Martin on Sat, 28 Jan 2006 16:28:35 GMT
View Forum Message <> Reply to Message

Thanks Wayne, they are very impressive. My wife hates them!I looked very hard at the JBLs, these Dayton drivers had identical specs right down to moving mass, BL, and efficiency for less than half the price. I think I got four drivers for the price of one JBL and the construction and consistency between units is very impressive. So for frequencies below 200 Hz, I did not feel I was loosing anything with the Daytons.GPAF? Would love to come and hear eveything, meet the people on the forum, and discuss audio and music. But that is just too far from home at this time. Maybe someday but not this year.Martin

Subject: Re: Cool!
Posted by Wayne Parham on Sat, 28 Jan 2006 16:39:01 GMT
View Forum Message <> Reply to Message

We'll miss you, and hope to see you next year.

Subject: Re: And now for something completely different .....
Posted by Manualblock on Sat, 28 Jan 2006 17:06:52 GMT
View Forum Message <> Reply to Message

Monty Python.

Subject: Re: And now for something completely different .....
Posted by akhilesh on Sat, 28 Jan 2006 20:56:13 GMT
View Forum Message <> Reply to Message

HI Martin,Cool.Welome to the world of the Orions. You may want to check out the Linkwitz web site. I think the Orions are the best design I have seen, other than the Klipschorn (for 1948).
-akhilesh

Subject: Re: And now for something completely different .....
Posted by Martin on Sun, 29 Jan 2006 11:48:55 GMT
View Forum Message <> Reply to Message

Hi akhilesh,"You may want to check out the Linkwitz web site."I have visited Linkwitz web site in the past and read through the sections he has presented on his designs. He has a lot of interesting things to say and obviously is an expert in his field. But as usual, I wanted to reinvent and try to learn everything for myself. I wrote the MathCad worksheets needed to design my OB system taking into account the driver parameters, the crossover (assumed active), the position and number of drivers on the baffle, the driver's directivity, the size and shape of the baffle, and the reflections with the floor. Spent a few months working on this and coming up with the design I built. Seems to work well and I am having a lot of fun adjusting the crossover to hear the effects.This is an experiment and learning experience so we will see how long they last or how long my wife tolerates them.Martin

Subject: LF driver
Posted by colinhester on Sun, 29 Jan 2006 18:10:49 GMT
View Forum Message <> Reply to Message

Do you have the exact part number for the woofer? I've looked at the 2226's, but I just cannot justify the price for my modest needs.....TIA, Colin

Subject: Re: LF driver
Posted by Martin on Sun, 29 Jan 2006 23:50:35 GMT
View Forum Message <> Reply to Message

The part number at Parts Express is 295-080.http://www.partsexpress.com/pe/pshowdetl.cfm?&DID=7&Partnumber=295-080I bought them a few years ago for a different project that did not get built. The T/S para,eters on the PE site have chnaged a little but not enough to matter.Martin

Subject: Re: LF driver
Posted by colinhester on Mon, 30 Jan 2006 01:35:05 GMT
View Forum Message <> Reply to Message

Thanks, Luckily for me I live two exits south of PE, about a 15 minute drive door-to-door. I will certaibly look for these at their next tent sale.Did you ever try an MTM instead of an TMM configuration? I look forward to the writeup on this project.....Colin

Subject: Re: And now for something completely different .....
Posted by akhilesh on Mon, 30 Jan 2006 03:54:25 GMT
View Forum Message <> Reply to Message

Sounds cool, Martin!So you think you will stay with the single driver design, or go with the OB in the long term? -akhilesh

Subject: Re:Also look at these drivers
Posted by Bill Epstein on Mon, 30 Jan 2006 11:40:43 GMT
View Forum Message <> Reply to Message

B&C 15"Badder B&CI love Italian race cars, wine and Osso Buco! So I'm very interested to hear the 294-673 B&C vs. my 2226. They should have more low output. Question is whether it will be as clear as the JBL.

Subject: Re:"...2 down and one to go, Dorothy Kilgallen..."
Posted by Bill Epstein on Mon, 30 Jan 2006 11:57:01 GMT
View Forum Message <> Reply to Message

Now that's showing your age!

Subject: Re: LF driver
Posted by Martin on Mon, 30 Jan 2006 16:46:23 GMT
View Forum Message <> Reply to Message

One of my design goals was to put the Lowthers at ear level, or very close, so this dictated part of the FR-W-W (full range-woofer-woofer) arrangement. The Lowther plays from 100Hz to 200 Hz and up depending on the xover frequency setting selected. At these low frequencies, I did not calculate any significant interference pattern from the crossover between the woofers and the Lowther. So I guess I am not sure what I would gain from a W-FR-W alignment of the drivers. I can see an even bigger baffle for a W-FR-W if I maintained the height position of the Lowther.Martin

---

Subject: Re:Also look at these drivers
Posted by Martin on Mon, 30 Jan 2006 16:48:26 GMT
View Forum Message <> Reply to Message

"Question is whether it will be as clear as the JBL."If you are only using the woofers up to a maximum of 200 Hz, do you think that clarity will be an issue? When I turn of the amp for the Lowthers and just listen to the bottom end there is not that much "music" output other then the very low bass lines.Martin

---

Subject: Re:"...2 down and one to go, Dorothy Kilgallen..."
Posted by Martin on Mon, 30 Jan 2006 16:50:56 GMT
View Forum Message <> Reply to Message

I have never heard that line .... I guess I am still young!Martin

---

Subject: Re: And now for something completely different .....
Posted by Martin on Mon, 30 Jan 2006 16:53:38 GMT
View Forum Message <> Reply to Message

I am definitely going to work on them for a while. I still want to design and build a BLH for my Lowthers so a comparison between different styles of enclosures is in the works. They will be in the main system for a while but there are so many other things to try. One other option would be a coaxial driver now that I have the amps and crossover working together.Martin

---

Subject: 50Hz - 200Hz
Posted by Wayne Parham on Mon, 30 Jan 2006 17:32:53 GMT
View Forum Message <> Reply to Message

That's reasonable. But there are a couple of octaves there that are really important for vocal and midbass clarity. I meant to make mention of this in my reply to you the other day, but got busy and just clicked the post button.Midbass punch and vocal clarity is one of the things I listen for. Distortion in the 50Hz to 200Hz range tends to manifest itself as deep vocal heaviness, since it increases output in the range from 100Hz to just under 1kHz - right where the vocals are. Most of what's played on piano is there, and really, so are the fundamentals of most instruments. So even when a woofer is crossed over at 200Hz, I think that makes it responsible for an important part of the audio spectrum and not just the bass foundation.I haven't listened to the Dayton woofers, they may really sound good. Maybe their distortion levels are very low. Even if they generate a little more distortion, that may make vocals "warm" sounding. I don't mean to voice an opinion on what drivers are better or worse, just that I can really hear the difference when an improvement is made in the audio range the woofers are covering.

Subject: Re:Monty Python!
Posted by Manualblock on Mon, 30 Jan 2006 17:47:13 GMT
View Forum Message <> Reply to Message

The Pirahna Brothers. Headquartered in the MInistry of Silly Walks. "But this Parrots not dead; he's only sleeping."

Subject: Re:Monty Python!
Posted by Wayne Parham on Mon, 30 Jan 2006 18:35:35 GMT
View Forum Message <> Reply to Message

Love the ministry of silly walks.

Subject: Re:Monty Python!
Posted by Manualblock on Mon, 30 Jan 2006 22:01:51 GMT
View Forum Message <> Reply to Message

If you are a python fan try the british sit-com "The Office.", not the American version, the britsh one.

Subject: Re: 50Hz - 200Hz
Posted by Martin on Mon, 30 Jan 2006 23:47:08 GMT
View Forum Message <> Reply to Message

Wayne,"I haven't listened to the Dayton woofers, they may really sound good. Maybe their distortion levels are very low."What type of distortion are you describing? If it is displacement generated then I would counter by saying that I have two 97 dB/w/m 15 inch woofers wired in parallel and even at loud volumes the motions are so small they are not visible. Where would distortion be generated? I believe that these Dayton drivers are made by Eminence, but I might be wrong, which indicates quality to me. When I compared the Dayton's T/S parameters, and the physical description, I was convinced they were identical at that level to the JBL 2226. You have worked with many drivers so I am looking for an opinion on where I can improve, I have only worked with these Daytons. What would I be missing that might make them behave differently then the JBL drivers below 200 Hz?Martin

Subject: Re: 50Hz - 200Hz
Posted by Wayne Parham on Mon, 30 Jan 2006 23:50:41 GMT
View Forum Message <> Reply to Message

It's caused by flux modulation, making piston motion asymmetrical. A properly designed shorting ring helps counteract this.

Subject: Re:Monty Python!
Posted by Wayne Parham on Mon, 30 Jan 2006 23:59:29 GMT
View Forum Message <> Reply to Message

Thanks, I'll check it out. British humor is real hit and miss for me. I liked some of "The Goodies" back in the seveties and early eighties, but some of the stuff they did was downright weird. Maybe there were cultural references I didn't understand. Then there was "Fawlty Towers" and more recently "Keeping Up Appearances" and "Are You Being Served." I kind of like "Are You Being Served" but "Keeping Up Appearances" is 30 minutes of the kind of thing that makes you terribly uncomfortable in people. It's funny, in a way, but it's the kind of people you try to avoid in real life, and I feel the same way about watching them on TV. That one is more "miss" than "hit".

Subject: Re: And now for something completely different .....
Posted by footstony on Tue, 31 Jan 2006 00:44:52 GMT
View Forum Message <> Reply to Message

Very nice Martin,It is completely different, but also the same...still wavelengths to contend with, no BSC is a big bonus but plenty of baffle issues to think about.A lot of musical instruments are dipole radiators especially kick drums!How would you model a man with a tape recorder up his nose?Regards Philip

Subject: Re: And now for something completely different .....
Posted by Martin on Tue, 31 Jan 2006 01:18:11 GMT
View Forum Message <> Reply to Message

It is different for me is all I was implying."still wavelengths to contend with, no BSC is a big bonus but plenty of baffle issues to think about."OK, couple of questions. What waveguides are you referring to and what are the baffle issues?"A lot of musical instruments are dipole radiators especially kick drums!"Good observation, I had not thought of that before."How would you model a man with a tape recorder up his nose?"Not sure what this means, why would I want ot model a man with a tape recorder up his nose?Martin

Subject: Re: 50Hz - 200Hz
Posted by Martin on Tue, 31 Jan 2006 01:20:14 GMT
View Forum Message <> Reply to Message

You get flux modulation with very small motions in a driver that claims an Xmax of +/- 3 mm? I

have not observed these moving +/- 0.5 mm at fairly loud volumes in my somewhat too small room.Martin

---

Subject: Re: 50Hz - 200Hz
Posted by Wayne Parham on Tue, 31 Jan 2006 02:38:31 GMT
View Forum Message <> Reply to Message

Distortion is reduced at lower power levels, this is true. But it is still lower on a device with a flux control ring than one without.I've heard good drivers without shorting rings, but all the speakers that sound really great to me have this technology. At moderate power levels, I can tell 'em right away, as soon as I hit the door when one is playing. It's that apparent to me.

Subject: Re: And now for something completely different .....
Posted by footstony on Tue, 31 Jan 2006 04:15:43 GMT
View Forum Message <> Reply to Message

Hi Martin,You must think I'm mad. It was a very bad joke. We are very familiar with British TV in Australia.I was talking about the Monty Python sketch. (from memory) And now for something completely different ...a man with a tape recorder up his nose, (then a man with a tape recorder up someone elses nose and finally in stereo)I was wondering how it might really sound. If you were really keen it could be modelled. You have the (nasal) cavity then the nasopharynx leading to the throat perhaps it would work like a BLH. It's not very funny at all..When I read your post, I was thinking about wavelengths in relation to the dimensions of the (open) baffle. Dips and nulls can be predicted at wavelength multiples. Its funny how something so different to a ML TL or a ML TQWT can be also the same. Optimising the dimensions according to wavelengths involved. it's all a bit deep and meaningful really...I have played with a few open baffles with a variety of speakers although my wife thought they were too big. I love the "articulation" of the fundamental frequencies.Regards Philip

---

Subject: Push-pull for pneumatic symmetry at VLF
Posted by Wayne Parham on Tue, 31 Jan 2006 04:55:30 GMT
View Forum Message <> Reply to Message

Hey, I just thought of something. You have two woofers, so run 'em in push-pull. That provides pneumatic symmetry essentially by having a "strong" driver and a "weak" driver on each half-cycle. They'll combine well at very low frequencies. Seems to me that a shorting ring must work better higher up, but down low the push-pull idea is probably best. Be interesting to measure and find out where the transition frequency is, if there is one, but I would also guess that

driver position and orientation would matter a lot. Anyway, it's a thought.

Subject: Re:Monty Python!
Posted by Manualblock on Tue, 31 Jan 2006 13:09:22 GMT
View Forum Message <> Reply to Message

Yes absolutely; Keeping Up Appearences is a one joke outing. I can watch "As Time Goes By", because of the phenomenal acting ability of Geoffry Palmer and Judi Dench. We don't get talent on that level here on TV. I like the understated humor of the good british sit-coms just like I like the slapstick humor of the good American coms. Trouble is there has not been a decent American sit-com since Seinfeld. At least not on regular TV.I don't know if the Office will appeal to you then because it is very laid back. But some of the scenes had me on the floor. So tell me; you really take a personal opinion regarding the people portrayed on the shows and their behaviour as individuals? Thats a novel approach.

Subject: Re:Monty Python!
Posted by Wayne Parham on Tue, 31 Jan 2006 14:49:27 GMT
View Forum Message <> Reply to Message

It's not so much that I take offense by the shows or see them as anything other than entertainment. It's just that I don't enjoy watching twits on TV, characters made to be uncomfortably quirky just to be funny. I mean, some quirky characters are really funny, like the ones on Seinfeld. Loved those guys. But the fat lady that's demanding of the brow-beaten husband on "Appearances" should have been kicked to the curb on the first episode. No redeeeming features and the show isn't even funny in my opinion.

Subject: Re: Push-pull for pneumatic symmetry at VLF
Posted by Floyd Andrews on Tue, 31 Jan 2006 16:51:20 GMT
View Forum Message <> Reply to Message

"Pneumatic Symmetry"! I love it! Wayne, you need to TM this right now. Think of the advertising! "Yes, ladies and gentlemen, the Doppelganger 3000, with Pneumatic Symmetry (TM), sonically clobbers the competition." (Cue large breasted women in bikinis draped over the speakers)Brilliant!

Subject: Re:Monty Python!
Posted by Manualblock on Tue, 31 Jan 2006 17:31:55 GMT
View Forum Message <> Reply to Message

Well; thats true; the neighbor woman next door who is so nervous about visiting that she always upsets the apple cart is pretty funny but that is just replay of old vaudeville jokes.I see the husband as a decent, long-suffering guy who despite the wifes frantic need to put on airs and present as royalty still loves her and is willing to tolerate her eccentricities as a result. That premise goes back to W.C. Fields and The Bank Dick, the hen-pecked nice guy husband.. I see a lot of folks who live in similar marraige dynamics.Most guys are whipped in some way or other; if it isn't apparent then it's subtle, but it's there.They'll admitt it if you press them.

Subject: Re: Push-pull for pneumatic symmetry at VLF
Posted by Wayne Parham on Tue, 31 Jan 2006 18:42:23 GMT
View Forum Message <> Reply to Message

Subject: Re:"...2 down and one to go, Dorothy Kilgallen..."
Posted by MWG on Wed, 01 Feb 2006 04:14:57 GMT
View Forum Message <> Reply to Message

If you can remember that then you'll remember John Cameron Swayze before he was hawking Timex watches

Subject: Re: And now for something completely different .....
Posted by shayne yasinski on Wed, 01 Feb 2006 05:03:16 GMT
View Forum Message <> Reply to Message

I like it!!!!!!!!!!I also love the kick drum.I have been playing with the table tuba and getting nothing close to what i want.your design looks like my first big system that i had made from parts i got at work.lots of power and lots of jbl drivers.for me it all went downhill when hometheatre got big and 2 channel died.ya got me hookedshayne