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Subject: I'm fascinated by the Double Horn Single driver speaker box  
Posted by [lon](#) on Mon, 26 Jul 2004 03:20:16 GMT

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Below is a picture of a double horn single driver project. But it is a trick photo: Look closely and you will see a mirror image of the bottom part of the enclosure reproduced on the top-- upside down. I still like it. But there is a lot of questions how to make the compression chamber for a single driver with a top and a bottom horn mouth. Maybe Sir Fitz will take an interest in this.  
Faux Double Horn

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Subject: Re: I'm fascinated by the Double Horn Single driver speaker box  
Posted by [akhilesh](#) on Mon, 26 Jul 2004 04:39:48 GMT

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Hi Lon, The link does not work... I think it's because the new melhuish site uses some fancy php software that may preclude linking....or maybe just their server is down! I am fascinated by the 2 way horn...what's the concept here? Hornload the same driver both ways? Wonder what that does to high frequencies and efficiencies? What kind of driver would be suitable for this? Just some initial questions for the more experienced horn builders amongst us. -akhilesh

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Subject: Re: I'm fascinated by the Double Horn Single driver speaker box  
Posted by [robertG](#) on Mon, 26 Jul 2004 17:05:46 GMT

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Have a look at Terry Cain's creations (Cain & Cain)! He's the king of doublehorn single driver! In my opinion, having 2 horns instead of 1 won't change much in the sound quality, except perhaps a better integration (the driver being exactly in between the two mouths), but for higher freq., no effect at all. Design wise, it reduces the footprint by putting half the bulk above the driver. But I sure would'nt want this thing to topple on a children (or cat, or dog, or feet)...

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Subject: Re: I'm fascinated by the Double Horn Single driver speaker box  
Posted by [akhilesh](#) on Mon, 26 Jul 2004 17:11:14 GMT

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Hi Robert, Are the same frequencies coming out of two different mouths? Or is there a frequency divide? thanx-akhilesh

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Subject: Re: I'm fascinated by the Double Horn Single driver speaker box

Posted by [toddm](#) on Mon, 26 Jul 2004 18:20:09 GMT

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that link doesn't work for me - here or from the other forum where you posted. also, i didn't find it in the images section of the other forum. any ideas?toddm

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Subject: Re: I'm fascinated by the Double Horn Single driver speaker box

Posted by [robertG](#) on Mon, 26 Jul 2004 19:37:49 GMT

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As far as I can tell, both paths are tuned to the same frequency. Obviously, somewhere, the path breaks in two (probably in the first or second bend after the throat), but you should ask TC, just to make sure.

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Subject: huh....

Posted by [akhilesh](#) on Mon, 26 Jul 2004 19:48:43 GMT

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Wonder why there should be two mouths then. WOuld;n;t it make the speaker smaller if only one mouth was used?hmmm i know almost nothng about horn design theory, so i'll let others jump in. Thanks for pointing out this design though!-akhilesh

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Subject: Re: huh....

Posted by [lon](#) on Tue, 27 Jul 2004 03:15:40 GMT

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Someone like Bill Fitzmaurice could answer on this. His 'snail' series of designs point the driver rearwards and move the sound to right and left through a divided horn. They look like the letter 'M' in McDonalds. There's a fresh snail design in the current audioXpress and on the cover. The snails are mostly designed to be PA speakers for musicians, but the Snail 2 was a regular stand up three-way system. The woofer on that design wasn't exposed at all. There's lots of horn designs but why I like the double horn is that the lower frequencies get up to listening height... or that's the way I imagine the physics to work. The J-Lo is an over/under design for the Jordan 92s from Nelson Pass and friends. But that design gives no thought to having to move the huge crate that the J-Lo construction is. I also don't know if sound waves are affected by gravity. There's been some speculation about that.

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Subject: Re: I'm fascinated by the Double Horn Single driver speaker box

Posted by [lon](#) on Tue, 27 Jul 2004 03:33:03 GMT

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[http://fullrangedriver.com/tiki-download\\_forum\\_attachment.php?attId=27](http://fullrangedriver.com/tiki-download_forum_attachment.php?attId=27)Try that and pste it into the box. It loads for me from bookmarks.I am frustrated. I just made a long message about backhorns and blew it off, so here goes again. Bill Fitzmaurice can help on these questions. Over yearshe has built a series of designs he calls the 'snails'.Snail one though... Snail 8 i think. These are speakers whichare designed to be high efficiency PA speaks for musicians. There is a snail build in the current (August 2004) audioXpress and on the cover as well. The snails have a woofer facing rearwards into a divided horn which comes outthe right and left side of the enclosure. Imagine the letter'M" from McDonalds and you'll get the idea. Terry Cain also has a concept like this. It looks likea standard BK16 from the Fostex manufacturer's design page\_plus\_ a mirror image backhorn coming out the top. Theyno doubt weigh a ton. Another over/under design is from Nelson Pass called the J-lo (also in audioXpress... I'll find the issue for you ifyou like) which uses a single Jordan 92s. I'm sending now so i son't lose this one. :-)

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Subject: You are right, the link does not work

Posted by [lon](#) on Tue, 27 Jul 2004 06:57:31 GMT

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Must be a from here to there problem because I have it in bookmarks. However, I copied the link to myself as mail and couldnot get it either. This may be because the guy Ron took the bogus \*pic\*down. Over at [www.fullrangedriver.com](http://www.fullrangedriver.com) ron's addressis available at the fullrange driver form post called"Does this look familiar?" I was trying to find itand this guy ron responded. Now, on to things we can actually find pictures ofreal projects. ;-)

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Subject: Off topic - Poof

Posted by [Wayne Parham](#) on Tue, 27 Jul 2004 08:40:20 GMT

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Man, I hate it when I'm writing a post and power goes out or something happens and I lose the post. Sometimes I put a lot in them, and if one gets lost after I'm nearly finished writing, it can be terribly frustrating. I've gotten to where if I'm writing more than a sentence or two, I do it in Wordpad and save along the way. When I'm done, I'll copy and paste it into a post. But as sure as I start a post thinking it will be short, then I get on a roll and think I've got a good one, poof, there's a power blip and it's gone to digital heaven.Sorry to make an aside about something as silly as this. I didn't want to derail your thread, but I do empathize with you on the lost post thing.

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Subject: Interesting, thanx Lon  
Posted by [akhilesh](#) on Tue, 27 Jul 2004 11:33:53 GMT  
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SO it seems like splitting the chambers allows us to change the direction of the sound, without altering the frequency balance in any way. THat makes sense. It may also change the aesthetics of the cabinet. thanx-akhilesh

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Subject: I am still on the Doubl;e Horn thing Re: Off topic - Poof  
Posted by [lon](#) on Tue, 27 Jul 2004 17:52:50 GMT  
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Whelp, today I am not trying to paste links. I was up too late trying to do that last night. But I did find a double horn over at the full range driverforum so you all can do this:  
[www.fullrangedriver.com](http://www.fullrangedriver.com) -> Image Gallery -> ianssmall1 image (it's in the last row) It looks like lan tried to have a hybrid like I mentioned over in the thread on Voigts: the project is leaning backwards. In a box with right angles this makes it look similar to one of the new Ushers but I don't think I could ever live with something that looks like it's been at the bar too long. However, I think the slant side of a Voigt would not create this precarious illusion.

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Subject: Re: I am still on the Doubl;e Horn thing Re: Off topic - Poof  
Posted by [Wayne Parham](#) on Tue, 27 Jul 2004 18:58:37 GMT  
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I'm having a hard time pulling that one up. But I am familiar with the dual path horns you guys are talking about here.

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Subject: Split-path horns  
Posted by [Wayne Parham](#) on Tue, 27 Jul 2004 19:17:55 GMT  
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Klipschorns, LaScalas and Belles are all split-path horns. Some people call this a "W" fold, because the shape of the paths look like a "W" or an "M". In a Klipschorn, the two paths are laid on each side of the motor chamber and throat. Some designs have one path above the driver and the other below. But that's just a layout difference; The design is basically the same. Splitting the path means each can have smaller cross-section area. It is really an architectural device in that it allows the horn designer to layout the cabinet shape to suit his taste. The cross-section area of

each path is added together at a given distance down the throat to determine total cross-section area. It can also be modeled as two small but identical horns driven by a common radiator, but the effect is the same, acting as a single horn. Another thing that splits the horn path is phase plugs. A phase plug is a device that splits the path into many segments. It is used to keep path lengths nearly the same from all points on the radiator into the throat. There are designs that use two different horns driven by a single radiator. These kinds of designs usually have two different flare rates and horn lengths, often with a smaller front-loaded horn and a larger rear-loaded horn. In this case, the two paths work at different frequency ranges.

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Subject: Re: I am still on the Double Horn thing Re: Off topic - Poof

Posted by [hurdy\\_gurdyman](#) on Tue, 27 Jul 2004 19:26:35 GMT

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Is this the

one?[http://fullrangedriver.com/tiki-browse\\_image.php?galleryId=2&sort\\_mode=created\\_asc&desp=39&offset=0&imageId=77](http://fullrangedriver.com/tiki-browse_image.php?galleryId=2&sort_mode=created_asc&desp=39&offset=0&imageId=77)Dave

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Subject: Re: I am still on the Double Horn thing Re: Off topic - Poof

Posted by [Wayne Parham](#) on Tue, 27 Jul 2004 20:59:21 GMT

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Ah-Ha! Now I see it! Those are beautiful speakers.

Fe108 horn photo

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Subject: Re: I'm fascinated by the Double Horn Single driver speaker box

Posted by [roncla](#) on Tue, 27 Jul 2004 21:31:17 GMT

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I never intended for this pic to be taken in a serious manner. I ran some sims on the dbl horn concept and decided its just too big for transport. The pic is of my horn with some dig tricks. I am working on a design at present which is a FLH/RLH(single 206e driver) with a 200 hz mechanical crossover.

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Subject: Re: huh....

Posted by [roncla](#) on Tue, 27 Jul 2004 21:37:40 GMT

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I also don't know if sound waves are affected by gravityNope its a wave in a medium.ron

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Subject: Heres the file  
Posted by [roncla](#) on Tue, 27 Jul 2004 21:42:27 GMT  
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<http://ihost.it-mate.co.uk/users/roncla/files/dbl206e.jpg>

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Subject: Its this horn with dig tricks  
Posted by [roncla](#) on Tue, 27 Jul 2004 21:49:10 GMT  
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<http://ihost.it-mate.co.uk/users/roncla/files/composit.jpg>

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Subject: Re: Split-path horns  
Posted by [robertG](#) on Tue, 27 Jul 2004 23:51:24 GMT  
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Right! Khorn, belles and Scalas have split paths. TC horns are just the same but different in a way that the horn is rear loaded and the driver radiates forward at mid and high freq., so theoretically, the two mouths (on each side of the driver) form kind of a d'Appolito alignment.

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Subject: Re: I am still on the Doubl;e Horn thing Re: Off topic - Poof  
Posted by [robertG](#) on Tue, 27 Jul 2004 23:54:50 GMT  
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They are slanted so to make the driver less beamy - the drivers aims just above the ears when seated, so it's slightly off-axis.

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Subject: Informative post, Wayne, thanx NT  
Posted by [akhilesh](#) on Wed, 28 Jul 2004 01:07:33 GMT  
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NT

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Subject: Re: I am still on the Double Horn thing Re: Off topic - Poof  
Posted by [lon](#) on Wed, 28 Jul 2004 02:45:44 GMT  
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Yes. Everyone seems to have gotten this ok. :-)

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