Subject: The Tuba 24 Compact Folded Horn Sub.
Posted by Bill Fitzmaurice on Sun, 14 Mar 2004 14:21:05 GMT
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Just want to let everyone not a subscriber to AudioXpress magazine know that the current (April 2004) issue contains plans for my latest design, a 24" cubed folded horn sub suitable for both pro sound and HT.

Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by DanR on Sun, 14 Mar 2004 17:00:49 GMT
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Can I download plans on the internet or get them directly from you? What woofers does it use?One of my techs tells me that we need woofers with a Faraday ring for best sound. He says the harmonics from deep bass are in the midbass and that's where the horn is most efficient. That's one reason why there is bass bloat I hear from some horn speakers. I'm also told we have to use enough horns for the room to make mouth size right, so we'll make sure to do that too. We need the efficiency but don't want the bloat, so I want to use a good woofer. What do you think? Got woofers?

Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by Bill Fitzmaurice on Sun, 14 Mar 2004 20:22:23 GMT
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The plans are available only in AudioXPress magazine at this point. I do have the right to sell them outright but I generally won't do so until at least 6 months after publication; since the magazine has been kind enough to go to the expense of publishing my work they deserve the opportunity to recoup on their investment before the plans are made available from another source.This box is designed to use a ten inch woofer. The prototype uses an Eminence Beta 10, which is quite inexpensive, though many other woofers will also work. It is intended for maximum SPL and extension from the smallest box size and least amount of input power possible, so drivers of better than 200 watts capability are neither required nor necessarily desired.Your technician is correct- most bass energy is contained in the 2nd harmonic band between 60 and 100 Hz, not in the fundamental range an octave down from that.The overall mouth size of a horn array affects SPL more than it does the low frequency limit of the array. The low frequency limit is primarily affected by horn length, so achieving a particular Fc at a particular SPL is dependant on both mouth size and path length, not by mouth size alone.

Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by admin on Sun, 14 Mar 2004 23:37:58 GMT
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Please read the rules concerning product promotions. You probably weren't aware of these, so we would like to point them out now. AudioRoundTable.com appreciates your comments, but if you are selling plans and magazine subscriptions it must be done in the Swap Meet forum or a sponsored forum. Please don't be offended. You may discuss general audio topics in any forum, but you may not discuss one of your products for sale unless a specific inquiry about them is made. Thanks.

Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by DanR on Mon, 15 Mar 2004 00:28:36 GMT
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What is the best woofer you would use in this horn? Also can you describe its general layout to give some idea? Size is obviously important but my main focus is sound volume and quality down deep.

Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by Bill Fitzmaurice on Mon, 15 Mar 2004 02:13:35 GMT
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Sorry for any confusion. I'm not selling either plans or subscriptions. While I am a contributor to audioXpress magazine, I am not an employee, nor do I benefit in any way from any sales of audioXpress magazine either by the single issue or subscription. My only intent was to point out the availability of plans that may be of interest and the source from which they may be obtained. Thank you.

Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by Bill Fitzmaurice on Mon, 15 Mar 2004 02:31:44 GMT
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There are at least a dozen drivers that will work well in this box. However, if what you're interested in is primarily gross SPL and maximum low frequency extension it is probably not what you're looking for. Tuba 24 delivers horn performance to 32 Hz in a compact package, and is more efficient than other cabinets of equal size and more, but it is not the loudest and lowest box out

there. It is the loudest and lowest 8 cu.ft. box out there that I'm aware of.

Subject: MASSIVE HORNSUB
Posted by DanR on Mon, 15 Mar 2004 17:13:55 GMT
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Bill, please see my hornsub note in the prospeakers section.
MASSIVE HORNSUB

Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by lon on Tue, 16 Mar 2004 20:17:08 GMT
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Bill, I will be looking forward to the new _audioXpress_ to see your latest plan. Years ago when I first picked up a Speakerbuilder mag., it wasthe intricacy of your designs that drew me into the hobby frompreviously just assembling kits. I'm a bit surprised that Audioroundtable was not familiar withyour relationship to the magazine. lon@athenet.net thanks for bringing the news of the new project in here.

Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by Bill Fitzmaurice on Tue, 16 Mar 2004 23:08:43 GMT
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Thanks for the kudos. I have no hard feelings over the webmaster's comment; irrespective of who I am he has an obligation to keep trollers out of here, so he was doing the job he's supposed to do. Better that than to have him asleep at the wheel.

Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by Peter on Wed, 17 Mar 2004 23:04:43 GMT
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Hello Bill,For a home theater/main listening system, what can one expect for in-room lower and upper f3s and f10s?Thanks,Peter

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Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by Bill Fitzmaurice on Thu, 18 Mar 2004 13:05:51 GMT
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Corner loaded the average SPL is 99dB, with lower F3 at 32 Hz, lower F10 at 27Hz; upper F3 210Hz, upper F10 240Hz. Wall placement gives the same SPL from 62 Hz, with SPL below that down 3dB from corner placement. Measured outdoors with no boundary effects the SPL at 32Hz is still 90dB. These results are when loaded with an 8 ohm Eminence Beta 10; system average impedance is 12 ohms, with minimum impedance 8 ohms. You can get an additonal 3dB of voltage sensitivity with a 4 ohm driver for an actual impedance of 6 ohms average, 4 ohms minimum.

Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by Bill Fitzmaurice on Thu, 18 Mar 2004 14:23:38 GMT
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Here is an SPL chart: http://hometown.aol.com/fitzmauricew/myhomepage/photo.html

Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by Peter on Thu, 18 Mar 2004 16:38:38 GMT
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That is excellent, Bill; fits my system perfectly.Thanks,Peter

Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by Adrian Mack on Sat, 27 Mar 2004 22:57:34 GMT
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Hey BillJust wondering, is the Tuba 24 got a path length at least 1/4wl of 30Hz? Or have you got it running as direct radiator down low? Adrian

Subject: Re: The Tuba 24 Compact Folded Horn Sub.
Posted by Bill Fitzmaurice on Sun, 28 Mar 2004 12:27:42 GMT

The horn Fc is around 60 Hz in half-space, below that radiation is primarily direct-radiator mode, though when boundary assisted in room the effective path length and mouth area is increased. The design is specifically intended for live pro-sound, where boundaries aren't usually present; within the horn passband boundary loading has little effect. On the other hand, since room loading will bring response below 60 Hz up to a reasonable level, the design is also viable for hi-fi/HT, though less than ideal. It's not a Labhorn, but at 24" cubed it was never intended to be.