Subject: Foldes Bass Horn plans
Posted by Shekhar on Thu, 21 Mar 2002 07:53:29 GMT
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Hi,This is a great site and am happy to have come across it. Hope to build it better together.I've been designing and making my own Bass horns for dance clubs and have usually used 15" folded horns but they rarely deliver anything useful below 55 Hz due to size limitations. So for a while i've been looking around for a solution which could give a lower usable freq limit (maybe a t the cost of a li'll efficiency loss). i have traditionally steered clear of 18" drivers for employment in any kinda bass (for dance and new age music reproduction) due to the poor transient response. But to my surprise i heard a set of four Cerwin Vega LR 36 18" subs recently and was surprised with their efficiency as well as the transient response. I would appreciate if anyone can help me demystify these beautiful machines and or supply me with their plans (SL 36 and LR36B)Regards,Shekhar.

Subject: Re: Foldes Bass Horn plans
Posted by Walt on Thu, 21 Mar 2002 11:36:15 GMT
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Hello,The reasons the LR-36 did work so well, was because they were stacked together. When you stack several 15" horns you will get the same effect. We have been using the CV-36A design (62x62x92cm) with RCF L18P300 woofers. We were not impressed at all... we were using one per side.They can give a great sound but as I said, you need at least 4 a side to reach the 45Hz notes with full power.If you want a small punchy cabinet at only one per side which goes DEEP, take a look at the Karlson design. These cabs can give you amazing results (when built correctly)Best Regards,Walt

Subject: Re: Foldes Bass Horn plans
Posted by freddyi on Thu, 21 Mar 2002 12:56:51 GMT
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Greetings Shekhar,as Walt says in his post below and as you know from experience, conventional basshorns built to 1/4 size or less will not give great low-frequency performance as they approach cutoff -- also they become bulky below 70Hz flare and more so when stacking in multiples - I've

not heard the new C-V but assume they use a long-throw 18" like Digital Designs' "Beast"a reflex has a better figure of merit in LF than horn for equivalent bulk and to my ears a Karlson with good driver and back plus tapers braced will outpunch both reflex and practical sized horns Rog Morale presents several designs for 18", one with fairly long path but Walt and his brother Martjin built that and were disappointed compared to their Karlson boxes - My Karlson both stock and mod do better for solid sound below 100Hz than my Peavey FH-1 or Sentry IV - - more than mesurements,- Karlson 15" seem to excell on transients such as kickdrum and heavy bass - a approximately scaled 18" Karlson might be a winner for PA application - Cetic Gauss marketed one in 1970's - if you're in US then Eminence Sigma could be a nice 18" for low cost (~$125 discount) assuming its power handling is sufficent for your needsWayne's 10pi horn may well work better in LF.Here's Rog Morale (horn/bandpass/scoop) and Job Ulfman's (Karlson) links:http://www.speakerplans.com/index.htmlhttp://studict.student.utwente.nl/e.j.j.ulfman/Best wishes,Freddy

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Subject: Re: Foldes Bass Horn plans
Posted by Adam on Thu, 21 Mar 2002 21:31:38 GMT
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I recently had some help designing an exponential horn for a JBL 15" (don't remember the model) which can fit in a 40 cubic foot cabinet in 1/4 space (against floor and a wall). 40 Hz flare. BTW, if I were you I wouldn't be worried about 18" drivers and transient response... That's very much a myth. Some of the best drivers for SQ have been that size or even larger.Adam

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Subject: Re: Foldes Bass Horn plans
Posted by Shekhar on Fri, 22 Mar 2002 05:40:25 GMT
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Greetings Freddy,Thanks for your interest and taking time out. Your right when you say that a well designed reflex will outperform any practical sized folded horn, thats been my experience too but the reason i'm getting deeper into this whole (kinda endless :-) debate between folded horns and reflex designs is that I have a bit of this transient bug bothering me too much.Regarding my choice of LF drivers less said the better, i'm in delhi India and the only drivers which have sustained availability and repair kits are the common ones from j.b.l. like 2226H etc. So i'm kinda

very limited in my own right. Nevertheless Guess its been a blessing in disguise as due to above i've become adept to designing improvising and custom manufacturing my own LF drivers using a combination of my own basket assemblies and ready stock recone kits!!Thanks once again for your input.Best wishes and good luck,Shekhar.

Subject: Re: Foldes Bass Horn plans: Karlson design
Posted by Shekhar on Fri, 22 Mar 2002 05:58:25 GMT
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Hi Walt,Thanks for your input on the same. About Karlson design, well I have'nt heard them ever and so am clueless about them. I will greately appreciate if you can help me with their detailed charecterstics and plans. Any light on the same will be much appreciated.Good luck,Regards,Shekhar.

Subject: Re: Folded Bass Horn plans
Posted by Wayne Parham on Fri, 22 Mar 2002 13:08:08 GMT
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The Cerwin Vega L36 and T36 basshorns are pretty good. They're small and inexpensive, and

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Subject: Re: Foldes Bass Horn plans: Karlson design

Posted by freddyi on Fri, 22 Mar 2002 14:50:50 GMT
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Hi Shekhar,Karlson box is an odd thing - look under 'articles' on Job Ulfmna's Karlson pagesthe 'coupler" consists of a 65 liter tapered cross-section pipe with radial slot cut in side - the slot broadbands the front pipe resonance - orignal 1951-54 design has a 'shelf' board - think it acts as a short waveguide and possibly sets up a hybrid condition between rear chamber's port and 1/4 wave action - I'm currently running a variation without any shelf board - just tuned to ~39Hz Z min between first two peaks - need to tweak a bit - am getting ~2.5db over similar reflex with same driver @32hz and 3dB in upper bassin typical 15" size Karlson, there's a 3rd Z max occuring around 160hzinitally years ago, I considered it a non-sensical design but after using find subjectively that they can outpoint a reflex on heavy transients - they tend to have some gain above 50Hz - it sounds "faster" than folded hornby 1965 Karlson had decided ellipse based reflectors could improve the design - maybe so depending upon whether used high to reach horn or used as sub bewo 125HzKarlson is worth building to hear - think they do best with lower mass 15" having a good force factor - Altec 421 do well in 1954 specsamazing you're assembling drivers to get what you need! - are there a couple of manufacturers in India who build high-end pro woofers, along lines of US Digital Designs' "Beast"?Very Best!Freddy ps - hope this link is correct - couldn't load Karlson page to directly copy and paste

http://home.student.utwente.nl/e.j.j.ulfman/

Subject: Re: Foldes Bass Horn plans: Karlson design
Posted by Shekhar on Sat, 23 Mar 2002 06:18:43 GMT
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Hi Freddy,Got the link to the site and have begun all the research I can do on the same :-) After listening your experience with Karlson designs I'm almost itching to finish one as soon. Regarding the original 1951-54 design are there any changes/tweaking that you suggest? Any light on the specifications of the ideal driver to be used with it?Now talking about High end pro. speakers well, (i'm smiling even before you can read this :-) j.b.l cinema speaker drivers are as high end as they get here. Though a lot of stuff is available in the unorganised market here, almost anythingand everything. But the prices are crazy. To give you an idea, would u believe a j.b.l. 2226H for us$-440/450!! Unbelieveable...specially when you convert it into the currency here.Phew!! nough' of that i've had....Glad i'm moving soon from here.Have a good day!!regards,Shekhar.

Subject: Re: Foldes Bass Horn plans: Karlson design - heres radial slot calculator
Posted by freddyi on Sat, 23 Mar 2002 12:04:30 GMT
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Dear Shekhar -you're doing better than me - messed-up (from virus) computer can't access the Karlson site the enclosure is such an oddball - main changes were to tack wood strips on port and shelf gaps - wouldn't have to be glued to try - think this moves Z min from 50Hz t0 48Hz or so - also 1st specs had a bit more taper gapdespite exponential slot claim - I think Karlson used radial:Compute the radius r as follows: r = (h^2 + w^2 - w*t + t^2)/2*(w - t) For Karlson 15, h = 30.19, w = 10.17, t = .23, r = 51 For Karlson 12, h = 23.5, w = 7.38, t = .25, r = 42.5 ----------RADIAL SLOT CALCULATOR:5 CLS10 Print "This Routine Calculates a Karlson Radial slot"20 Input "Enter height of slot";H30 Input "Enter t=1/2 width at

(H^2+W^2-W*T^2)/(2*(W-T))60 Print "Radius for this slot ="; Rat frequencies felow tuning the karlson will pretty much mesure with warble and sine like a 100l reflex tuned similar - above tuning, things aer different - do suspect distribution of power is pretty much affected by system tuning as tuning to 28hz gave waht you'd expect from a reflex plus lost a bit of uppser bass - sounded very good - for some reason sounded better than measurements indicated - this was eXemplar guys's sub for Altec A-7 - used a 30Hz bandpass on lo-tuned Karlson and 30Hz hi-pass on A7will try to meet you on Karlson forum or High Efficiency forum so we won't eat so much of Wayne's bandwidth probably just have to build and try some drivers you have - if you use a high crossover point then look for a driver which has riding on-axis response - EV15L was ok - liked Altec 421 better - had a big sound with 511 horn with Eminence 1" on top ~1.2Khz xoverFreddy