Subject: Anyone Familiar with the Onken Cabinet Alignment?
Posted by Manualblock on Thu, 03 Nov 2005 14:58:41 GMT
View Forum Message <> Reply to Message

nt

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by GM on Thu, 03 Nov 2005 20:41:21 GMT
View Forum Message <> Reply to Message

Greets!Not in the biblical sense. What do you want to know about it?GM

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by Manualblock on Thu, 03 Nov 2005 23:01:58 GMT
View Forum Message <> Reply to Message

Well; it seems that from what I can make out it tries to make a large cab very stiff in order to drive the cabinet resonances out of the audible band. Am I correct? I remmember that Welbourne used to use them with those round horns and some people like the alignment for particular drivers. Thanks for the reply. I was wondering how big they have to get with an Altec 416 driver. And what exactly makes them desireable.

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by GM on Fri, 04 Nov 2005 01:18:09 GMT
View Forum Message <> Reply to Message

Greets!You're welcome!There are different 'Onken' designs, with the most visible being the Jensen Ultraflex 'clone', which in turn is derived from Thuras's 1932 bass reflex patent. Yes, Jensen 'killed two birds with one stone' WRT wanting a vent area = driver Sd and brace the cabs well too boot. Factor in using 3/4" void free plywood and cleat reinforced joints and all that's left is to add a brace/support system for the heavy driver(s) and some stuffing to damp down the harmonics of the (summed) large vent. The Onken 'W' OTOH is just a large reflex with standard vents, but it's 'claim to fame' is sand filled double wall construction to damp the cab's resonance.The 416-8A articles with plans/ measurement:
http://ebenisterie.musique.free.fr/RDS/Divers/Audiophile1977.pdf
http://ebenisterie.musique.free.fr/RDS/Divers/Audiophile1982.pdf How big any cab needs to be is dependent on the driver's specs, total system impedance, and the desired F3, Fb, so this

alignment may not be suitable for your app.. For example, SS amp driven 416-8C Onken alignment (n = 6.34): Net Vb ~10.5 ft^3/~35 Hz F3, Fb with overall dims: 36.5" h x 23.5" w x 26.38" d. Driven with a 300B: Net Vb ~19.5 ft^3/~26 Hz F3, Fb with overall dims: 36.5" h x 40.13" w x 26.38" d.Folks tout the big vents increased bass output, but they don't mention the downside, which is the chopped up response above the cab's BW where their harmonics comb filter with the driver's lower mids output if not properly damped, which of course damps down the extra gain, and then some. Bottom line, Onken's got the sexy look, but a simple

---

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by Manualblock on Fri, 04 Nov 2005 14:14:11 GMT
View Forum Message <> Reply to Message

Much obliged GM; I assume the diff. from SS to 300B is damping factor driven. Is that really a 10 cu ft box?

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by GM on Fri, 04 Nov 2005 19:02:03 GMT
View Forum Message <> Reply to Message

Greets!You're welcome! Correct, I used a 3.2 DF (2.5 ohms output impedance) to get the alignment, but ideally you would design around your amp's DF. ?? I mean this is what the measured specs I have calcs, and of course the big vents is what makes the Vb calc'd from the posted dims somewhat greater. Using published specs I get ~8.97 ft^3 net/~38 Hz Fb, so should still work fine in a slightly oversized/lower Fb cab. GM

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by Manualblock on Fri, 04 Nov 2005 22:47:39 GMT
View Forum Message <> Reply to Message

I have a spare pair of 416's lazing around here doing nothing. How would this alignment stack up agianst the stock Model 19 cab regarding bass extenstion and letting the woofer breath would you think?

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by GM on Sat, 05 Nov 2005 01:28:58 GMT
View Forum Message <> Reply to Message

Greets!The M19 has a classic Altec alignment, peaking around 50 Hz with the -8B, and requires the room to fill in the rest if need be, while the Onken peaks lower based on a percentage of its (Fs/Qts) spec to help the driver above Fs where it runs out of excursion, but rolls off at a steeper rate, so it just depends on the room, speaker location and how much bottom end you need. GM

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by freddyi on Sat, 05 Nov 2005 13:27:48 GMT
View Forum Message <> Reply to Message

hey GM - did U see Bill Woods "half-horn" (AA RCA Fan's gallery) w. broadbanded V vents gapped 1.125" from rear panel?? FI

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by GM on Sat, 05 Nov 2005 16:01:17 GMT
View Forum Message <> Reply to Message

Greets!Yeah, Altec offered some duplex cabs with a shelf vent variant which I initially used in my 20 ft^3 dual 515B 'subs', but with the advent of real LF capability I tuned it much lower, first with a longer shelf that extended up the back wall, and later with a T/S vent to get around the strong TL action's upper harmonics mucking up the lower mids when I began using them with a higher XO point. Some folks believe the Onken is mildly loaded this way, but it's not, though its vent system does have some resistive damping due to the large summed surface area Vs one or two large round vents of equivalent CSA.GM

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by Manualblock on Sat, 05 Nov 2005 18:46:14 GMT
View Forum Message <> Reply to Message

Does the 515b work well tuned that low? I always read it was not particularly suited to sub-frequency use. Man thats a big cab!

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by GM on Sat, 05 Nov 2005 23:45:43 GMT
View Forum Message <> Reply to Message

Greets!With a measured 20 Hz Fs/~0.2 Qts, all it lacks is some room/boundary gain and excursion, which is supplied by the extra driver/channel and a couple of corners. Four corner loaded 515Bs do a pretty good job of mimicing a basshorn until you want to start busting drywall seams. Anyway, the system does ~111 dB/16 Hz/200W in-room before thermal power compression sets in, or about what a single driver room sized folded horn will theoretically do at ~2W. My house is a flimsy stick built one with a floating floor though, so they could do at least another 6 dB in a concrete foundation brick n' mortar built one.WRT its low Qt rising response, this can be either active and/or passively EQ'd. Mine are EQ'd ~flat 20-20 kHz and still close to 100 dB system eff. above ~40 Hz. Not going to compete with the 'big boys', but good enough for my well abused ears.WRT size, I grew up around huge mono consoles, 7-8 ft^3 end table speakers and 3-5 ft^3 'bookshelf' speakers, so 20 ft^3 seems right reasonable to me for a corner loaded app, especially since they use to be 30 ft^3 before I cut them down. This is the price you pay for having eff. and wide BW.GM

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by Manualblock on Sun, 06 Nov 2005 14:32:46 GMT
View Forum Message <> Reply to Message

Nice thread; thanks much becuase I like the hazy and out of focus recollections of those old consol Fishers and Scott amps built into wall units with big Bozak Moorish designed cabinets lining the wall's.Those really were the days.Good info; What do you drive the high end with if I may ask?

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by GM on Sun, 06 Nov 2005 17:46:23 GMT
View Forum Message <> Reply to Message

Greets!You're welcome! Yeah, a pair of Concert Grands is quite an auditory experience! I use to 'clone' their tweeter 'horn' concept using recycled radio/TV drivers to make large 'el cheapo' ~100 Hz 'multicells'. Its faceplate says Sony TA3200F (early '70s), but according to a service tech it isn't one under the cover, so we assume it's a Japan spec version that he didn't have data on. All I know for sure is that it's a very low -fb/distortion/noise floor, ultra wide BW 120W/8 ohm class A-B SS amp that I prefer over any other amp I've used.GM

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by Manualblock on Mon, 07 Nov 2005 03:15:39 GMT
View Forum Message <> Reply to Message

I have a Luxman M-120 I am partial too. It's from that era also. I wrote a post one time describing all the console equipment that used to appear at the curb on garbage night around the mid-seventies. Who knows what went into the scrapper back then.

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by MINGSU on Thu, 17 Nov 2005 02:51:25 GMT
View Forum Message <> Reply to Message

Hi GM,Can you help to design an Onken cabinet for a 15" SG38WNS GOTO driver?Thanks,Ming

---

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by GM on Thu, 17 Nov 2005 22:36:03 GMT
View Forum Message <> Reply to Message

Greets!If you have T/S specs, and I need to know your amp's output impedance (not tap rating) if tube.GM

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by MINGSU on Thu, 17 Nov 2005 23:31:35 GMT
View Forum Message <> Reply to Message

My SET amp has 8 ohm tap. It is Audio Note amp but I don't know the output impedence. I might find a SS amp to drive the bass with 200Hz crossover.The 15" bass driver information as follow: FR=28-800Hz, 16 ohm, Fs=28Hz, Qts=0.25, 99dB/w/m, Max input power=40W, 18,000 Gauss.Thanks,Mingmingsu@yahoo.com

---

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by GM on Fri, 18 Nov 2005 00:54:56 GMT
View Forum Message <> Reply to Message

Greets!Without knowing either the damping factor or output impedance of the amp, I can use a 'worst case scenario' of 4 ohms and the cab may be too big, which can be offset by damping the ports some, but without the driver's 'Vas' spec I could be so far off that you would have to stick an

Altec or other known high Vas driver in it to make it work well. If it's more like a JBL or similar and it makes the cab way too small, then you wind up with a high Q midbass box with no LF output to speak of. For example, using an Altec 'worst case' Vas, the basic cab's volume (Vb) could be almost 23 ft^3, but with a JBL's low Vas, as little as ~6.2 ft^3. So can you find out its Vas spec, or feeling lucky and want to pick a number? I also need the VC's DC resistance (Re) to figure the effect of the amp's output impedance on Qts.GM

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by MINGSU on Fri, 18 Nov 2005 01:08:28 GMT
View Forum Message <> Reply to Message

I will try to get those spec. I do know the driver is the GOTO SG38WNS from Japan.Thanks,Ming

---

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by MINGSU on Fri, 18 Nov 2005 15:23:43 GMT
View Forum Message <> Reply to Message

Hi GM,I go the T/S for the driver. Can you send me a email(mingsu@yahoo.com) so I can send the data sheet to you?Thanks,Ming

---

Subject: Re: Anyone Familiar with the Onken Cabinet Alignment?
Posted by GM on Fri, 18 Nov 2005 18:57:41 GMT
View Forum Message <> Reply to Message

Greets!You've got mail.GM
