



Hail The King Of Boom Boom

A show isn't a show without subwoofers

By Jack Alexander

Subwoofers, subs, sub-bass, boom-booms, low frequency support, LFE, .1 – I love 'em all.

Some would say that all subwoofers are inherently horribly colored and unnecessary, that they are anti-musical and difficult to integrate with the remainder of the system that runs high-pass 70 Hz or so.

Subs certainly can be a musical disaster, and even the best of them don't integrate without some serious hardware and effort, but I submit that a show isn't a show without them.

As for what is and is not musical, those in the anti-sub camp who sniff about the excessive low-pass 70 Hz used by those (such as moi) might want to remember that a lot of what they view as excess started out a long time ago as a (somewhat) calculated manipulation of human emotion (and various body parts).

I give you the king of instruments, the pipe organ. On top of those old churches there was the antenna on the roof transmitting to the chosen deity, and the collection of pipes downstairs delivering a solid 16 Hz to the nether-regions of the faithful, kind of like a disco with a religious message.

Nothing does 16 Hz like that 32-foot contra-whatever-its-called pipe. To this day it remains the king of boom boom.

There have been a lot of studies on the effects of energy low-pass at 20 Hz on the human specimen; it's known that enough 12 Hz will cause an outcome that merits no further discussion in a family publication.

The lore goes that Richard Nixon was going to use such a device for crowd control, except that the omnidirectional characteristic of the fre-

quency in question would have caused the same, um, eruption for the operators.

The fact is, high SPL manipulations of human flesh with energy even 40 Hz and below will have an emotional (O.K. sensual – I said it) effect. And that stuff at 20 Hz and below is even more potent.

DOING THE PITCH

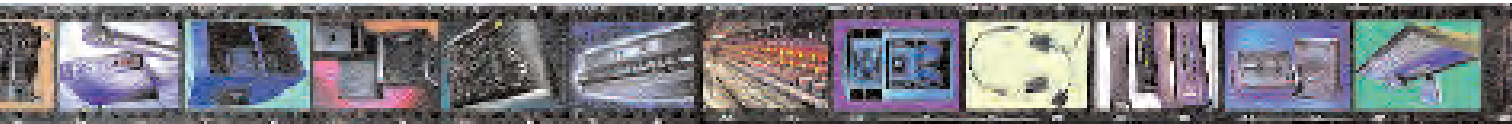
Of course in a high-toned publication like this, one should not talk about sex – we should be doing measurement and demonstrating the importance of flat response in sound systems. Blah. Blah. Blah.

I was once doing a pitch to a well-known audio engineer very high up the food chain. Two subs, one with linear response and a subjective outcome that even the most hair-shirted sub hater could love, and yet still quite loud.

The other was a disgusting horn-loaded sub, with bumps (35 Hz or so) loaded into the speaker management that made the thing even more gross, exacerbated by disco bumps in the horn's native response curve laid in by the sleazy designer.

It was no contest – the guy went for the disco sub, and when, in a moment of confusion (rule number 1 of sales, never question a buyer's decision), I asked why. "Because it's fun," he responded.

Before all the consultants and nervous nervosas scream foul, that the guy in question was some MI clown... We're talking about someone here with a serious resume and tech chops; he knew darn well that the flat sub was very good, but that it was more important to reach people on an emotional level, and this informed his choice – not some tech ideal that did



not relate to how people experience a show.

When Chairman Jones drops by my lair at the college, he's subjected to a room about 80 feet by 20 feet by 12 feet. (Or something like that – measurement isn't my strong point.) It houses four dual 18-inch-loaded boxes, four 15-inch bass horns, and eight 15-inch

hours just to find the crossover point and a few bits of EQ and delay offset to tidy the thing up. My most advanced students and I will be spending the whole summer improving on this initial effort and getting ready for the implementation of the four more dual 18s.

Most times when the Chairman vis-

and they're often misused, but heaven help if you're doing an event that requires them (or is perceived as requiring them) and they're not there.

You'll also need some serious help from your particular divine being if coming up against engineers with a lot of sub-bass programming time, and you've bought the party

It's known that enough 12 Hz will cause an outcome that merits no further discussion in a family publication

front-loaded bass devices, with another four dual 18s to be added after this fall. We've got around 75 kW of Lab.Gruppen and BGW power driving these low-end devices.

The programming to align the dual-loaded 18-inch subs with the rest of the rig initially took seven

its, the inmates are playing Dream Theatre or some such at arc weld levels, not really demonstrating the musicality and power of such a system at lower levels with somewhat less aggressive program material.

And that brings me to the point of all this – you don't always need subs,

line that subs and low bass are non-musical and excessive.

J.S. Bach didn't think so, and you shouldn't either. ■

Professor Alexander instructs on topics allied to performance audio at Columbia College in Chicago. Reach him at jalexander@colum.edu.

EAW BH760

www.eaw.com

Components: 2 x 12-inch
Operating Range: 29 Hz – 150 Hz (+/- 3 dB), 25 Hz (-10 dB)
Power Handling: 1600 watts continuous, (w/high-pass filter)
Maximum Output: 139 dB continuous, 145 dB peak
Nominal Impedance: 2 x 8 ohms
Size: 30 x 30 x 45 inches
Weight: 253 pounds

Designed as both a companion to the KF760 line array and for other applications. Sized for efficient truck packing. The drivers load into an expanding horn that is over 10 feet in length; arrays of two or more operate with increased output due to coupling effects between the horns. Integral skids for stacking stability.



Community TLF 218

www.loudspeakers.net

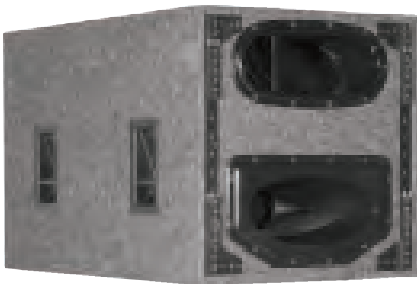


Components: 2 x 18-inch
Operating Range: 30 Hz – 250 Hz; 40 Hz – 125 Hz (+/- 3 dB)
Maximum Input: 800 watts continuous, 2000 watts peak
Power Handling: 128 dB, 135 dB peak
Nominal Impedance: 4 ohms
Size: 22 x 45 x 29.8 inches
Weight: 215 pounds

The design goal was to achieve “the apparent punch of a 15, and the low-end thrust of an 18.” Can be stacked or flown, includes integral fly track and stacking feet. “Active Air” cooling moves outside air over driver motor structures, and cone movement drives air throughout vented magnet pole piece for further motor cooling.

NEXO CD18

www.nexo-sa.com



Components: 2 x 18-inch
Operating Range: 29 Hz – 180 Hz
(@ -6 dB)
Power Handling: 3000 watts per channel (2)
Maximum Output: 145 dB peak
Nominal Impedance: 4 ohms
Size: 29.5 x 47.3 x 29.5 inches
Weight: 256 pounds

Directional, with dispersion listed as 120 x 120 degrees. Can provide cardioid or supercardioid output via its NX241 digital controller (required with the unit). Woofers fire in opposite directions and driven in reverse polarity. Can be stacked or flown, integrated flying system for use with GEO T Series modules.

JBL VT4880

www.jblpro.com

Components: 2 x 18-inch
Operating Range: 28 Hz – 75 Hz
(+/- 3 dB)
Power Handling: 4800 watts peak
Maximum Output: 138 dB peak
Nominal Impedance: 2 x 8 ohms
Size: 48.5 x 19.25 x 33 inches
Weight: 129 pounds

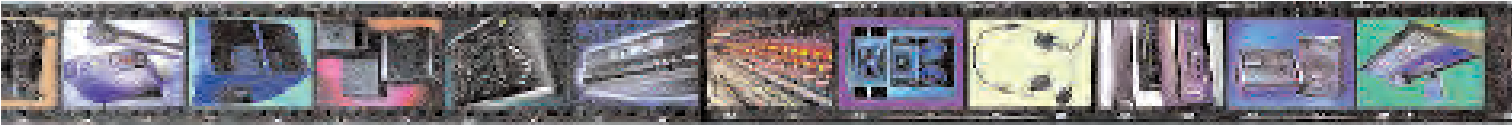
Designed to array seamlessly with large VerTec line arrays. Integrated suspension that matches VerTec "quick-release" system, and also can be flown stand-alone or ground-stacked. Cabinet of proprietary wood-based composite keeps cabinet weight low. Drivers are JBL model 2258 with dual voice coils.



You can take it with you.

TV100 Traveler PA System





Electro-Voice X-sub/f

www.electrovoice.com

Components: 2 x 18-inch
Operating Range: 35 Hz – 120 Hz
Power Handling: 1200 watts continuous, 4800 watts peak
Maximum Output: 131 dB (full space)
Nominal Impedance: 2 x 8 ohms
Size: 19.46 x 49 x 29.15 inches
Weight: 202 pounds

Loaded with EVX 180B woofers, shares the same rectangular cabinet footprint as other X-Line line array systems. Vented enclosure. Can be flown or ground stacked (non-flying version). Proprietary rigging, linking hardware included. Range of accessories also available.



Meyer Sound 700-HP

www.meyersound.com



Components: 2 x 18-inch; power amplifier
Operating Range: 28 Hz – 150 Hz
Amplifier Power: 2250 watts (1125 per channel)
Maximum Output: 139 dB
Size: 45.93 x 22.50 x 30 inches
Weight: 204 pounds

A new self-powered unit that has a rated output of 3 dB louder than its predecessor, the 650. Can be stacked or flown, optional "QuickFly" rigging kit available. Favorable size/output ratio, and packs well in both European and North American trucks.

The TV100 Traveler PA from Crate Audio - the expandable, portable solution!!

- Stereo Mixer with Digital Effects
- Powered Speakers with Cables
- Microphone with Cable
- Mixer and Speaker Stands
- All in a Luggage-Style Travel Case!

Only the Traveler PA can grow with you - simply add additional powered speakers as your needs grow!

CRATE
AUDIO
 make yourself heard.



www.crateaudio.com



L-ACOUSTICS SB118

www.L-ACOUSTICS.com



Components: 2 x 18-inch
Operating Range: 28 Hz – 140 Hz
(+/- 3 dB)
Power Handling: 1100 watts continuous,
4400 watts peak
Maximum Output: 130 dB continuous
Nominal Impedance: 4 ohms
Size: 51.2 x 21.7 x 27.6 inches
Weight: 234 pounds

Dual-chamber system, the reference unit for V-DOSC and ACRS loudspeakers and compatible with all company models. Signal processing via L-ACOUSTICS analog controllers or OEM factory presets for approved digital processors. Can be stacked or flown, includes internal rigging hardware.

McCauley Sound M56

www.mccauley.com

Components: 2 x 18-inch
Operating Range: 30 Hz – 200 Hz
(+/- 3 dB)
Power Handling: 1000 watts (AES)
Maximum Output: 139 dB peak
Nominal Impedance: 2 x 8 ohms
Size: 58 x 20.9 x 36 inches
Weight: 215 pounds

Intended for use with the company's large-format MONARC MLA6 full-range line array system. Includes integrated rigging system to fly within MONARC arrays and also can be ground-stacked. Proprietary McCauley drivers include neodymium magnetic structures. Designed for easy cart transport and truck packing.



Turbosound TSW-718

www.turbosound.com



Components: 2 x 18-inch
Operating Range: 50 Hz – 250 Hz
(+/- 4 dB)
Power Handling: 1600 watts (continuous),
2000 watts (peak)
Maximum Output: 136 dB (continuous),
142 dB (peak)
Nominal Impedance: 4 ohms
Size: 50.9 x 22.6 x 30.3 inches
Weight: 242 pounds

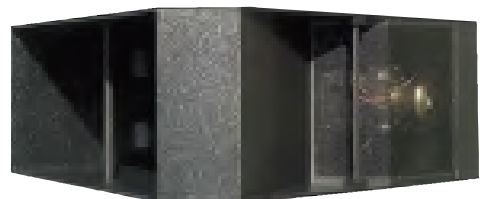
The dual woofers include 4-inch voice coils and large magnet structures. Each is horn-loaded on a "TurboBass" device that presents a large area horn flare. Dimension/size is optimized for truck packing. Ground stacking only, with four heavy-duty wheels available on the cabinets.

BassMaxx B-Two

www.bassmaxx.com

Components: 1 x 18-inch
Operating Range: 28 Hz – 110 Hz
(+5 dB)
Power Handling: 1000 watts (continuous)
Maximum Output: 137 dB (continuous),
142 dB short term
Nominal Impedance: 4 ohms
Size: 45 x 22.5 x 45 inches
Weight: 237 pounds

Lighter and more evenly balanced than the B-One. The 18-inch driver is designed with a rigid honeycomb-Kevlar cone and an under-hung (4-inch) voice-coil technology and neodymium magnet. A very long horn is designed to stabilize the lowest frequencies. Ground stacked applications only.





Adamson SpekTrix

www.adamsonproaudio.com



Components: 2 x 18-inch
Operating Range: 40 Hz – 170 Hz
Power Handling: 1200 watts, 2400 watts peak
Maximum Output: N/A
Nominal Impedance: 4 ohms
Size: 23 x 28 x 32 inches
Weight: 170 pounds

New, joins the SpekTrix line array series. Uses the company's Convertible Cardioid Technology – can be arrayed with all facing the same way or in back-to-front pairs. Vented enclosure, can be stacked or flown. Aluminum rigging hardware retracts into the cabinet body.

Martin Audio WLX

www.martin-audio.com

Components: 1 x 18-inch
Operating Range: 35 Hz – 150 Hz (+3 dB), 28 Hz @ -10 dB
Power Handling: 1100 watts (AES), 4000 watts peak
Maximum Output: 141 dB peak
Nominal Impedance: 8 ohms
Size: 19.29 x 39.45 x 31.50 inches
Weight: 187 pounds

A derivative of the WSX in smaller, lighter form. Termed a “hybrid low-frequency horn,” the single driver (with 4-inch voice coil) is front-loaded by a hyperbolic horn with low flare rate. The rear of the driver is reflex-loaded to extend low-end output. Can be stacked or flown (designed to fly in W8LC and W8LM line arrays) or in their own columns via integral hardware.



Yorkville Sound TX95

www.yorkville.com



Components: 2 x 18-inch
Operating Range: 30 Hz – 130 Hz (-3 dB)
Power Handling: 1700 watts
Maximum Output: 131 dB
Nominal Impedance: 4 ohms
Size: 24.8 x 24 x 51 inches
Weight: 208 pounds

Drivers use long-excursion voice coils. Rear-mounted wheels ease transportation, further enhanced with eight handles. Ground-stacked applications only. Advanced protection and crossover networks using analog signal processors. Horizontal orientation. Part of the TX Series of full-range systems.

SLS Loudspeakers LS88115

www.ssloudspeakers.com

Components: 1 x 15-inch
Operating Range: 38 Hz – 200 Hz (-3 dB)
Power Handling: 600 watts continuous, 2400 peak
Maximum Output: 123 dB continuous, 129 dB short term
Nominal Impedance: 8 ohms
Size: 19.25 x 16 x 28.5 inches
Weight: 116 pounds

Designed for use with the RLA/2 ribbon line array, utilizing the existing RLA/2 bumper bar and stacks above, below or beside LS8800 modules. Can be flown within RLA/2 array structures, independently, or ground-stacked.

