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Scaena Loudspeaker System, Pt. 1



This multidriver hybrid system derives its name from the Latin, where one meaning of “scaena” is “stage,” and derives its design ancestry from the much-admired Pipedreams a decade or so ago. The Scaena (the makers pronounce it “say-na”) is, however, in looks and sound, an altogether different creature.

In that antecedent version, the Pipedreams, the principal design goal was the creation of a realistic soundstage and ambient space through the use of direct radiators, as opposed to the so-called “di-” or “bi-polar” radiators then in vogue.

The overriding aim of the new system is the creation of a high degree of accuracy

in the frequency and time domain, and a new level of audio resolution.

Even after several months of listening, I don't quite have a grasp on how to describe this speaker's sound, and I am still wrestling with that. **Yes, it has the lowest distortion, methinks, of any full-range system I've heard. And it has the leanest (in the sense of accurate and right) midbass I've heard. And, yes, it can, with the right amplifier, create a thrilling sound, not that far removed from the concert hall. It goes as low as the big IRS and Genesis systems and the Nola Grand Reference, but it does so more cleanly and with less “character” than those, partially because it is crossed over so cannily you think you are hearing one speaker. Nothing is missing from any of the fundamentals of a musical instrument, and the basic overtones are there, intact. It reminds me, in its speed and transient accuracy, of an electrostatic from the midbass to the lower highs, but with power, three-dimensional imagery, and “presence” I have never quite heard the likes of before.** But further than that, I cannot directly go in Part One of this essay, although you will find tantalizing (I hope) hints in this piece.

The team behind the Scaenas includes several veterans of the old, defunct Pipedreams group, including designer Mark Porzilli; George Bischoff, Porzilli's right-hand man from Melos Audio; Alan Eichenbaum, the CEO in large part responsible for the creation of the new company; and Sonny Umrao, the chief operating officer and the man who shaped the look of the speaker.

The flagship version, which I am reviewing here, has two main towers, tall, slender—and minus conventional enclosures—each with 18 midrange

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drivers and 12 ribbon tweeters on either side. It's called the Model 1.4, because it also has four 18-inch subwoofers (two per channel!). A somewhat less thunderous set of single 18-inches-per-side is dubbed the 1.2.

There are, additionally, two less elaborate versions, with prices ranging from \$40,000 to \$83,000. (Robert E. Greene is reviewing the smaller Model 3.) The less elaborate systems differ in the number of drivers from top to bottom, although the most apparent difference at first sight will be their towers' reduced heights.

The midrange units are made in Denmark by Tymphany and, says Eichenbaum, these are modified to increase their magnetic flux, thus providing more control for the voice coil, more dynamic power handling, and "far more" linearity. This flux increase is achieved by increasing the driver's magnet structure. For the record, the "three-inch" midrange's frame size is four inches, the actual moving diaphragm but two.

And, as we shall see, it is these very midrange drivers that account for the resolution of the system, its remarkably low distortion, and its frequency ease, which I consider to be the source(s) of the Scaena's remarkable realism.

The ribbons, planar units made in China, are larger in size than the normal design, Eichenbaum says, because this "changes the resonance characteristics—freer movement equals lower distortion," and allows, in a line array, more radiating surface. The ribbons cover the range from circa 6kHz to above 20kHz. One deliberate design consideration called for the elimination of complex crossovers in the front towers. (Porzilli says, "One of my dreams is to design a speaker without any crossovers whatsoever," and this one comes closer to that goal than most.) Thus, for the tweeters, "The internal crossover," says Eichenbaum, "contains an excellent foil inductor from Denmark" for rolling the midranges, "and a film-and-foil capacitor for rolling the tweeters." The tweeters' response is 12dB down at 3kHz.

Down below, the midrange units' natural roll-off "starts at 90Hz, but since

they are allowed to run full-range, the tower's [combined signal] is not sent to the external bass crossover." (The mid's natural roll-off is 12dB per octave and then that increases to 18dB.) In other words, the smooth mechanical roll-off of the drivers eliminates the need for a crossover. Porzilli is more to the point: "A single capacitor removes the midrange from the tweeters. A single coil removes treble from the midrange."

The woofers are made by Eminence (of Eminence, Kentucky), said to be the largest supplier of 18-inch woofers in the world. The cones are made of plastic-coated paper pulp, and are housed in round cylinders that look something like a naval depth-charge barrel, the so-called "ashcan." They are ported (at 16Hz), in an enclosure designed to prevent standing waves by the use of a "rectangular diffractor," damped with cotton/wool fibers.

Instead of using the 700-watt amplifier supplied with the system, I substituted the Burmester 911 Mk III. Having little confidence in the idea of the supplied electronics, I thought the 911 would be the better amp to drive the woofs. I had no immediate alternative, so I used the Scaena electronic crossover, about which, in time, I shall have more to say. The 'Since then, and recently, the crossover control box has been updated for the sake of simplicity of operation and the adjusting of the bottom octave's response. This means we'll have to have another pass at this system solely to hear Scaena's in-house amp and revised crossover.

present arrangement, not surprisingly, made setup more complicated and vexatious for my tender sensibilities.¹ The woofers themselves must sit behind the 7' 10"-high towers; achieving the correct balance and phase between the two is no mean feat. In fact, it is one of the most challenging aspects of dialing in the sound, and a small wonder if they ever sound as good as they can under "show conditions."

I haven't gotten into all the design considerations behind the speaker's sound just yet. I want to describe, if I find the descriptive vocabulary, the sound of the system first, before attempting to explain some of the ways in which that sound has been achieved.

First off, in setting the system up, you have to keep in mind that what you are striving for (and what the design team has achieved) is a seamless continuity, bottom to top, of the frequency domain and the recreation of the soundstage.

And you may find that the four-sub option overloads the room, in which case, the Model 1.2 will be the better choice. Given a kind of reckless desire to push the limits, I set my goal as taming the two-sub-per-channel option. All of this, of course, depends on room size and shape, and Room #3 is happily devoid of audible resonances and thus capable of something approaching a concert-hall level of realism. By carefully adjusting the (original) equalizer for the lowest bass frequencies, we avoided overloading the room, but that didn't mean we were scotch (or sour mash whiskey) free. **This system is capable of full output down to 16Hz** and one of our high-priced turntables, not tremendously well isolated on its own base, generated subsonic distortions of the most unpleasant sort. The remainder of the system, thanks to Arcici Racks and two Halcyonic isolators (designed for electronic microscopes) did the trick. **The 1.4 is a system that means business, and the business it's about is reproducing everything, every signal it's fed, and, as I have implied, with a degree of linearity and low distortion I have found to be unique.**

Secondly, and much more problematic in this case, came the search for best associated equipment—remember that with this speaker, everything is audible, particularly the character of the basic amplification. The colorations of some of the amplifiers I had most liked in the past were highlighted here. I understand that this system proved, for those who got a chance to hear it early on, a bit too revealing of electronic colorations or too "cool" for those who have grown accustomed to the present-day mania for big speaker systems of great warmth and midbass romanticism or enhanced "hi-fi" thrills. It ought to go without saying that realism should trump romanticism, but these are difficult days for the industry and for reviewers.

While I was trying out the Scaenas with

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different amps, I was also working on an evaluation of the Reference 3a's Grand Veenas (Issue 178), which was refusing to reveal its own "character" or "sonic signature," instead feeding through to mine ears what it was fed. I did a few informal comparisons between the Veenas and the Scaenas and decided the bigger system was much like the Veenas, except that it magnified everything, reproducing a far larger soundstage and soundfield, one that approximated what you'd hear in a good concert hall. The Grand Veenas, of course, did not provide the bottom-end depth, punch, or articulation of the bigger system, but then it doesn't cost even a tenth as much. I also came to see, upon further listening, that the Veenas were somehow a bit more forgiving (the Jack Bybee "purifiers," perhaps).

It was, at this point, that I received the latest generation of VTL tubed electronics, the 700-plus-watt monoblock Siegfried amplifiers and the TL 7.5 Series II linestage. An aside: I shall be considering both the linestage, largely ignored this time out, and the amplifiers in a separate review shortly, using each with other associated equipment.

With the VTL amplifiers, the system attained, for the first time for me, a shocking sense of realism. The Siegfried supplied enough power for the system to float gracefully over the most momentous of climaxes, with the smooth neutrality that was lacking (overall) in our reference amplifiers (the Western Electric and the ASR). It was not a question of playing louder; the other amps did that. It was the effortless way it played, and how the nuances of dynamics, at both micro- and macro-levels, became easily audible, as such are in unamplified music. It was as if we had expanded the dynamic scaling itself. More strikingly, the ease of transient attacks also suggested those you hear in a good hall—in other words, with ambient decay as natural as that first wave. With this combination, you don't sit back and say, "Oh what great sound"; you sit back and say, "What a wonderful piece of music," or just forget about all that, once you get over

the shock of hearing something several steps closer to the real thing. Yes, even on digital recordings, especially as heard through the latest update to Ed Meitner's five-star two-channel CD player.

Part of the surprise of the Scaenas lies in their nearly unprecedented truth to the music's foundation, the midbass frequencies. These lack bulge, boominess, excessive warmth and emphasis, and incoherences. I don't have to tell any of you who are fascinated by the "art" of sound recreation that the reproduction of the midbass frequencies has been and is the *bête noire* of high-end sound reproduction. It is a region of the spectrum that almost no one gets right, save the designers of large full-range planar systems; but these don't have the power and ease under pressure of the Scaenas at full tilt. Once you hear the midbass *per se*, it will underline how dependent we've become not on the pursuit of the absolute sound, but of a Splenda-like sweetened sound. If you have a system like the Scaena, you can make it sound romantic, if that be your perversion, but you can never make an inherently romantic system a reflection of the real thing.

Forbearing, for now, a test of the Siegfrieds on several other systems (for instance, on the Grand Veenas and the Hansen Kings), does not prevent me from recognizing their "authority" and the advances over earlier VTL designs. They are the least colored of the VTL products I have heard. While I hasten to add that it's been almost five years since I had a chance to audition Luke Manley's work seriously, my notes recall the older VTL electronics, always smooth and easy on the ears, as being dark in tonal coloration, and the victims of occasional grain and noise artifacts, especially at the frequency extremes. On the other hand, then as now, the VTL designs were strongest in recreating a sense of ambient space and the focus of instruments upon a soundstage.

This new generation, for me, has as its underlying significance a fine balance between yin and yang character, being neither "whitish" in its signature nor leaning to the ecru to beige to black side. Owing to this utter lack of coloration, the

VTLs make a heavenly marriage for the Scaenas. (You may well find your focus shifting onto the sound of elements further back in the chain.) This combination is not only easy on the ears, it is capable of retrieving the ultra-fine harmonic details and of reproducing overtones, particularly those up way high. This means you—without effort—pick out individual violins in the string section and by so doing identify each player's character. Try, for starters, "Mercury" from *The Planets* on the Mehta/L.A. Philharmonic XRCD to see what I mean, and while you're there, check out the subtle transient strikes on the highest bells. Or the Chicago strings in the Reiner *Lt. Kije* in the Classic Records 45-rpm remastering.

More surprises awaited. We had started out with the Nordost Valhalla interconnects and cables, and found, as we reported earlier, the change to the new and obscenely expensive Odins like the difference between the best whitish-sounding solid-state amps (say, a Spectral) and the best tubed units (of which the VTLs are one). During the evaluation, an update arrived for the two-channel Meitner CD/DSD player, the CD-SA. Several issues back, I found the Lab 47 Pi/Tracer Revised the only deck that gave the Meitner serious competition sonically, perhaps, I thought, besting it in a kind of high-frequency airiness and sweetness completely unfamiliar to me in digital playback. But, *voilà*, the update to the Meitner (which can be downloaded via computer and fed into the player) achieved that same sweetness and airiness, even liquidity in the top octave, while beating the competition, by improving on transient response from top to bottom of the spectrum (not, evidently, by extending the preset 44kHz/16-bit limits, but by Meitner's untangling of the phase problems seemingly inherent in conventional Red Book playback). This was an improvement I did not expect, nor did I expect to hear the improvements in low-level dynamics Meitner has achieved.

If I go on about this a bit, it is because, with the Scaena/VTL system, all such changes are immediately obvious, not subtle, just there for you to hear without straining or imaginative supposings.

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SPECS & PRICING

SCAENA Model 1.4

Frequency response: (with port contribution) 16Hz-21 kHz -3dB

Nominal Impedance: 4 ohms, 3 ohms minimum (towers)

Tweeter complement: Twelve planar ribbons per tower

Midrange complement: Eighteen 4" midranges per tower

Woofers complement: Four 18" (one per enclosure)

Sensitivity: 93dB

Recommended power (mid/high towers): 100Wpc or more

Dimensions: 94" x 10" x 12" (towers, w/o supplied machined-aluminum stands); 20" x 20" x 23" (woofer)

Weight: 1500 lbs. (with 4 woofers)

Price: \$83,000

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But that was not the end of what has been, through these speakers, a voyage of unexpected discoveries. After I had gotten used to the sound as it evolved, I invited a perceptive and musically astute listener in for a round or two. This guy is in love with lush romanticism (that he adores Mahler would be no surprise, and if you happen to know the sound of Zanden electronics, you won't be surprised to find he is crazy about those, too). He found the system too "cool" and too revealing for his tastes, and he had problems with some aspects of the dimensional field. I thought this over and began to wonder about this "coolness," whether, indeed, the system might be a little too much so, and perhaps, just maybe, a bit one-dimensional in the top octaves. I had a dim memory of some

past experiments with differing kinds of amplifier tubes (more in a moment) and since Manley had provided a full set of KT-88s for the Siegfrieds as an alternative, I decided to switch the 6550 tubes in the amplifier to the KT-88s.

I first, and inadvertently, listened to the 88s in the amplifier's so-called triode mode (a switchover easy enough for a technical nitwit—like me—to do). You lose half the Siegfried's rated power, and gain a softer, less intrusive top octave. But, holy kimono!, the resultant sound was as lushly, sexily, seductively, ripely ready for the aural plucking as I think it has ever been my pleasure to hear. Believe me, 'twas swoon worthy.

But I was not be lured off my absolute path by such blandishments. (To slightly

paraphrase Gordon Holt's remarks in a speech at CES 15 years ago, "if the only measure of sound quality [has become] whether the listener likes it, that has pretty well put an end to audio advancement.")

So I readjusted the system for tetrode operation (as I'd listened with the 6550s), and upon hearing what happened sonically, I came to see that the nowadays garden-variety 6550s are indeed cool-sounding, distinctly lacking top-end three-dimensionality, ambient detailing, and the true sweetness you sometimes hear in the hall. The KT-88s brought the music more closely into the room, while expanding the stage's field of depth considerably. But something troubled me about the 6550s and I began to suspect that Jacob Heilbrunn, who had the Siegfrieds before I did, had put most of his time on the amplifiers using 6550s, and learned from him that I was right. Prior to this revelation, we had lost three 6550s in the Siegfrieds. This is how I got to the disturbing conclusion that the tube life of the 6550s was not what it should be, but then the manufacturers of tubes in China and Russia have not maintained the quality level of the U.S. makers. The tubes' sonic differences brought back to mind experiments with designer Dan Fanny some years ago, in which we were able, using a single amplifier chassis, to contrast different brands and makes of tubes. I then opted for the KT-88s and understood why Conrad-Johnson did also.

You may wonder, with the rolloff of the midrange units, why their apparent response (audibly) goes so low. You definitely do not hear the woofers' character until the sound is at the bottom octave (which I define, nowadays, as 16 to 32Hz). Porzilli's explanation is simple, and classical: "Bass that deep is heard as sine waves...the human ear cannot ascertain bass information below 100Hz or so. You *do* hear bass quality, but you're actually hearing it from the 3-inch mids playing it, added to the fundamentals from the 18-inchers. So you get 18-inch-woofer bass power with 3-inch-woofer bass detail."

Furthermore, he says, "If you combine, let's say for convenience, 50 drivers correctly, you'll get 1/50th the distortion of a single mid/tweet, and 50 times the

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speed of a single mid/tweet because each has to move only $1/50^{\text{th}}$ as far to achieve the same output if it were acting singly (drivers are their fastest near the magnet and slow down as you push them into high excursions which pulls them away from the magnet, their power source. They barely move in the Scaenas.”

There is, as I came to learn, much more thinking behind the “sound” of this system than we perhaps accustomed to. And I can’t begin to detail every last little thing. But there are two more points and they relate to the midrange drivers.

First, says Eichenbaum, “We find identical drivers are never identical. Each one has its own small characteristics. By connecting them in a series, they equalize themselves to one far more linear component.” Second, he says that part of the speaker’s ability to reproduce

micro-detail as well as it does has to do with the shaping and construction of the midrange driver enclosure. In my opinion, most attractive, but hard to describe unless you’ve seen its ovoid cocoons.

I am dancing on tectonic plates at this point, but I have begun to suspect that the secret of the speaker lies in the performance of the midrange array.

First of all, unlike the first generation of the Pipedreams, before they were modified, the designer used a remarkable Panasonic ribbon tweeter whose sound I quite liked, as I do the Magnepan ribbons and those used in the Nola Grand References (the Ravens), which have an inherent upper-octave “thereness” that the Chinese planars in the Scaenas do not. I am far from certain about their top-octave performance (at this point) or convinced by the truth of their sound. I am beginning to suspect that the cut-off of the mids at 6kHz overlaps

considerably onto the planar units, to their advantage, just as the midbass and upper midbass fundamentals and early harmonics are dominated by the middle-frequency drivers. There *is* just a hint of the transition to the big woofers in a darkening and thickening of the lowest octave, which I don’t consider troublesome (just now). So, I leave you with this supposition as I

end Part One: **What if it is a wideband midrange line-array that lies at the heart of this system’s remarkable realism?**

At the very last minute, these comments came in from George Bischoff, who was intimately familiar with the design process: “The crossover point of the mids is at 6kHz, rolling off at 6dB per octave (they are only 9dB down at 9kHz), thus covering most of the primary notes of music. Our design concept was to create a ‘one-way loudspeaker’ with help at the extreme ends.” **TAS**