

I took delivery of my Geddes Abbey speakers the other day and thought I'd post some initial observations. First, my thanks to Mike G and others on this board (and over on DIY) whose comments propelled me to go visit Earl and hear his speakers.

Impressions? Pretty simple. These are the best speakers I've heard in 30 years as an ardent audiophile in a real world setting at a real world price. Full stop. Might sound cliché as it seems we are bombarded every day by "professional reviewers" who toss that statement around like free advice.

Now, I have obviously not listened to every speaker on the planet and so it is quite possible there are speakers which are as good or better than the Geddes. However, like most of you, I have owned and listened to an array of speakers - electrostatics, horns, ribbon and dome tweeter-based multi-driver speakers with and without active crossovers in my home, at stores and at shows. Each design had strengths and weaknesses, but none of them sounded like live music. I erroneously attributed this to the usual suspects - the listening room wasn't optimized, my cables weren't good enough, my electronics weren't good enough, my power wasn't clean enough, etc., etc., etc. So I did what most audiophiles do. Spend a ton of money on building an optimal listening room and going through a couple of cycles of buying the best electronics, cables, power delivery, etc., etc.

Well, that approach got me closer to my goal of realizing the most accurate in-home musical playback system possible, but nowhere close enough. I listen to a lot of live music and certainly recorded music played through my system didn't sound like live music.

So earlier this year I began to scour the internet in search of the holy grail - a truly accurate speaker. By chance I stumbled across Dr. Geddes on Audiocircle and did a deep dive on his design. I'm not an acoustics expert, but I do have a sufficient technical background to grasp why his design should be superior. So Earl was kind enough to let me come visit and, my experience was the same as the others who have made that pilgrimage so I won't bore you with yet another playback of listening impressions. Let me just say I would have written the same comments. Accordingly, I ordered a pair of Abbey's with the extra bracing and constrained layer dampening options. I bit my tongue and opted to let Earl build them with non-exotic crossover parts (blasphemy you say) knowing I could always tweak that myself later.

Despite being impressed at Earl's place there was a bit of doubt in the back of mind. How much of my impressions were the room design versus the speaker? How would they sound with my electronics in a far from optimal room? (Note: While I had a dedicated, professionally designed listening room for many years, I recently moved into an historic Victorian row house while I renovate my new place and, therefore, my current listening room is far from ideal).

After they arrived I quickly hooked them up while they sat on the floor pointed dead ahead (i.e. the dreaded axial axis) and put the juice to them. Well, I was immediately so mesmerized at what I was

hearing it took me quite a while to get motivated enough to turn them off, put them on stands and toe them in appropriately.

So how do they sound? Accurate. Like live music. I have several CD's of live music from small bands I used to hear regularly at clubs. Live music has rich tonality, texture, large dynamic swells, speed, three dimensionality and subtleties. The Abbey's get it all right. If the recording has a large soundstage that's what you hear. If the recording was close-miked in a small studio, that's what comes through. Individual instruments and vocalists are all presented in a life-like 3D soundstage. The dynamic capability, high frequency and midrange of the Abbey's are amazing and while they roll off quickly below 50hz the bass they do produce is among the very, very best I've heard. Tonally rich, properly delineated, without bloat or overhang and properly positioned in the soundstage.

Currently I have just one sub (a REL Britannica) crossed over at 50-60hz and I could live happily ever after with just it, but I'll be replacing it with 3 new subs with better phase, crossover and EQ controls as I'm confident I can get even better results. Once I get my portable frequency analyzer back I'll take some in room measurements and post them.

Oh, and I did I mention that these babies will play at insane levels with no noticeable compression. And they don't have "head in vise" imaging - you can stand up and move around in the room and still have excellent imaging - the perspective just changes as you would expect. Lastly, the fact that I am getting this type of performance in a less than optimal room reinforces the advantages of Dr. Geddes' design.

Bottom line, after listening to the Abbey's it's clear (pun intended) the speakers I've owned and auditioned over the years have been colored and distorted, especially the dome-tweeter based designs. I obviously need some more time to validate my initial impressions. If it's one thing audio has taught me, one needs to live with speakers for a while to be sure they're all that.

Thanks to Dr. Geddes for sharing the fruits of his distinguished career.

David McQuillan

July 2009

---

First a little background regarding both goskers and myself. My audiophile roller coaster started approximately 15 years ago while in college. My first system was, ahem, a Bose 201. That's right! Well, after about a month I took apart the speaker, noticed that there was a measly 1st order network composed of an electrolytic for the tweeter and my grey matter started spawning wild and imaginative diy creations. Thereafter my first 'high end' encounter was with Legacy Audio which was run by Bill Dudleston. He was my first introduction into the world of 'controlled directivity,' and after listening to his Whisper loudspeakers, I was completely hooked. Being a pauper as well as a college student, I didn't have \$12K to spend on a pair of Whispers so I settled on a 2 way monitor called the Studio which used a no name Taiwanese tweeter and a Focal dual voice coil Kevlar woofer. I was in bliss for about 1 year. Then I was off to professional school, the Legacy system was sold to my best friend and I went into the

grueling halls of medicine with a pair of Sennheiser HD580 headphones and a Headroom portable amp setup for about 4 years. I returned with great enthusiasm during residency (and finally a disposable income even though it was a pathetic \$28K) and built myself a pair of North Creek Music Okara II's which I still use today. This is, once again, a 2 way monopole minimonitor using a Vifa P13WH woofer, a SS 9500 tweeter and was designed by George Short of NCMS. I knew I wanted more, but my wallet was always empty, and mega systems, well, cost mega dollars. Until now. In May of 2008, I took a trip to see Earl Geddes and was seduced by the Summas. My voracious appetite for narrow controlled directivity, high efficiency, and distributed subwoofers, has only grown since then. His designs are the real deal.

Enter goskers. Well, for a fella who just completed college recently, this guy has had some kick ass systems. Ellis 1801, Line sources similar to those designed by Selah Audio, multiway loudspeakers composed of Audio Technology midwoofers, Raven tweeters, TC Sounds subwoofers in U-frame enclosures, and finally the Linkwitz Orion++ with Thor subwoofers. My lord, I thought, this guy went through an entire buffet line of loudspeakers that most enthusiasts would in their lifetime.

What the hell am I doing with a pair of North Creek Okara's? 🤔

### **On with the Show**

The room is roughly 12 feet wide and about 25 feet deep (leading into the kitchen) with about an 8 foot ceiling, carpeted floor and side walls made of drywall. No room treatment at all. The electronics by audiophile standards are again, pathetic. A Pioneer receiver, a Philips cd player, and this box that looks like it just returned from a war that 'goskers' says, is a balanced power transformer! And guess what, we even had a coffee table in between us and the speakers...sacrilege! If you read my Summa review, these two rooms are in stark contrast to one another.

Did the Nathan survive the harrowing room or lack of room treatment? Oh, most certainly.

We listened to several cd's. I will talk about a few of them in detail. The most amazing aspect of the Nathan's isn't the efficiency, it isn't the dynamics, it's the incredible depth of the soundstage. Everything is placed and carefully delineated in that soundstage much like a beautiful canvas. There is no shift in this stage, regardless of head position or even seated position. In fact, the shifts are very minimal and subtle. Music is rendered with such ease, as though the drivers are just loafing along without a care in the world. This is true when you are listening at a nominal 75-85 dB at the listening position but alas, how about at peaks of 100+ dB, does anything change? Yes, the only aspect that one could ridicule were room modal issues. Why? This is a completely untreated room, the antithesis to Geddes' room which I auditioned the Summas in! In fact, 'goskers' turned the subwoofers off, and guess what? The bass got boomier! The distributed bass technique works. In a treated room, it would work wonders.

We listened to Live Art by Bela Fleck. We listened for so long, I think we practically finished the first cd. This system renders bass guitar solos with such electricity, such vibrance and with minimal to no

overhang, it shocked me more than the Summas only because gosker's entire system including receiver and cd player costs about \$4K. It sounded, honestly, like \$40K. The samba sequence first heard on 'Tell It Like It Is' on Traci Chapman's New Beginning cd was very, very live. Are you ready to dance baby? Compared to other systems, there was silence around Traci's voice and thus rendered it with alarming accuracy and neutrality.

But before you throw my review into the sewer you should know that the Nathan system was extremely resolving of differences in recording venues and techniques. You were very aware of poorer recordings but not to the point of ejecting the cd in disgust. The sound staging was somewhat smaller, the details were more obscure and the dynamics were somewhat truncated. That is all.

### **Epilogue**

You want bone crushing macro-dynamics - this system has it.

You want mind boggling micro-dynamics - this system has it.

You want bowling alley soundstage depth - this system has it.

You want focus, point source like imaging - this system has it.

You want speed, electricity, that jump factor - this system has it.

You want a system that is so simple and so inexpensive that it competes with the likes of similar transducers that are in at least the five figure dollar range - this is it.

You want it live - this is it. Nothing embellished and nothing tarnished, neutral and direct. It is amazing how good it sounds when the honest truth is portrayed.

*Earl Geddes has uncovered a design that transcends the state of the art to the point that seemingly worthless electronics can provide such divine aural splendor.* It probably will make the audio industry shudder for David has now met Goliath (I couldn't resist). And we all know how that story ends.

My Abbeys will be here by January 2010. Tune in then or just get plain jealous

Anand

---

I recently picked up my pair of Abbeys from Dr. Geddes and was able to hear them in his theater which people have raved about. First, let me say that Earl's a cool guy and really wanted me to experience the Abbeys in his own setup. His room has been described quite a bit, but what's surprising is...he doesn't have all that many room treatments up. A diffusor on the ceiling in front of the listening position and the thin mattress covered by a rug on the ground. Hearing his system, which is powered by a really inexpensive receiver, just made me realize how much money I spent on things I didn't really need.

Now, I didn't listen long...just a few long tracks, but I'm getting similar results in my own system (that hasn't been tweaked to perfection just yet). The sound was glorious...bass didn't stand out but sounded incredibly natural. Voices sounded like...people, not recordings of people. And the highs are also so

natural-these speakers can do it all. The highs are a bit different, I must admit, it almost seems as though something is missing at first, probably because my ears are used to reflections inside my room messing things up for me. Imaging and soundstage-that's where these speakers hooked me. A natural sounding speaker with great dynamics is a killer speaker...but combined with a huge soundstage and the best depth of sound I've had in my own home...it's just crazy crazy good.

The Abbeys are great speakers as long as a person can deal with their size, the appearance (Earl's cabinets look great, btw, for what they are), and the need for a subwoofer or three.

I have two main amps...a DIY F5 clone and a Mcallister PP150-8. With these speakers, I much prefer the F5, though bass is slightly better with the Mcallister tube power amp. Both sound great, but a high resolution speaker with a high resolution amp = win

Dave Marlar  
June 2009

---

My occupation requires frequent travel and recently took me to Ann Arbor, MI. As Earl lives in the vicinity, I contacted him to see if he would be available for an audition of his sound system. On very short notice, Earl agreed to accommodate me despite his already established schedule. Thank-you for allowing an audition on very short notice, Earl!

Prior to the audition, Earl showed me the Abbey and Nathan molded waveguides. From the original effort, it is evident Earl has improved the quality of the waveguides. In the current form, I would not hesitate to buy either kit based on the mold quality.

Earl played several musical tracks, most of which I was quite familiar from artists such as Cream and Diana Krall. Not being very eloquent, I will not try to provide a detailed review as one would read in an audiophile magazine. However, I will try to leave my general impressions from an audition of approximately one hour. The most obvious impression: effortless. The high efficiency speakers seemed to easily handle any genre, even at high volume. Detail - it was as if I was hearing the detail I hear in my Etymotic ER-4 in ear monitors, but instead of the sound originating in my head, it was from a large soundstage in front of me. Non-fatigue - Even at higher volumes, I did not fatigue listening to the Summas.

This year I had the opportunity to attend RMA in Denver. While research indicates the memory of hearing is poor, I do not recall be as satisfied with any system present there as I was listening to Earl's. However, this is an unfair comparison as the hotel rooms were not as optimal as Earl's home theater.

I look forward to investing in Earl's kit in the very near future. While there will always be opportunity to improve any system, I think a home system with the Abbeys or Nathan and multiple subwoofers would satisfy me for a long time, particularly considering the cost of

entry.

I think the DIY community is fortunate to have several acoustic gurus such as Earl and Danley participating. Thank-you!

LeRoy Oddie  
January, 2009

---

Hi fellas,

Wife and kids were out the door visiting friends down south so I called up Earl and asked if I could audition his speakers yesterday. For what its worth, here are some speakers I have heard and respect:

Linkwitz Orions++, right at Siegfried's house near San Francisco, NaO II dipoles designed by John Kreskovsky, GR Research OB5's and OB7's

Earl was an excellent host, brought me down to his well treated home theatre room (about 15 feet wide and 30 feet deep with a 10 ft ceiling) where the Summa 15's were in the corners behind curtains and turned in 45 degrees to avoid the side walls. There were also 3 subwoofers setup in the room (all bandpass design!). The Summa's are about 98dB/2.83V/m efficient in full space. His electronics are extremely simple and plain by audiophile standards. A PC and Toshiba CD player as sources, a Pioneer Digital Receiver (100 watts/channel), zip cord wire and zip cord interconnects. Nothing amazing here at all.

First CD we played were various tracks from Bela Fleck & Flecktones, a Live CD.

Wow! We were playing at peaks of 100 dB from my listening position (roughly centered about 10 feet away from the speakers). No compression. Tight clean bass. Performers were in the room. Imaging was very stable over a horizontal axis of an entire sofa. Music appeared from a complete black void.

The most open midrange I have ever heard. This includes the dipole systems I have listed above. There was no real part of the frequency response that was drawing attention, although I was continuously amazed by how clean the bass was and how delineated it was. Treble was just there, never drawing attention to itself but never lacking either.

Image body, intensity were all there. Small instruments sounded small. Close miked, sounded close miked.

Neutral is a great way to describe it. Next we listened to some cuts from Diana Krall. Her voice was so compelling that she really sounded she was right up there on stage, playing for you. A personal treat if you will.

Next, Geddes played a cut from a DVD from Phantom of the Opera. Dynamics in spades. Everything was released unshackled. And just when you thought the music may lose control, it doesn't. How quickly the Summas start and stop is uncanny. I believe this is as

much a product of speaker design as it is the room. The final cut was my favorite. Eagles DVD Live! The guitar solos were electrifying, even soul searching.

I am beginning to understand why some audiophiles say they listen at 80 or 85dB. I think its because of compression. When I auditioned the Orions and NaO II's, I was a little hesitant to crank it up. With the Summas, the music just gets louder but never, ever loses control.

In any case I suggest anybody within a spitting distance of Michigan to call up Earl and give these an audition. Even if you own fancy schmancy loudspeakers, I mean TAD 3 ways, Avante Garde, etc...give it a listen. It will challenge every audiophile belief you have had. Earl was kind enough to let me have one of his books, "Premium Home Theater." I have been leafing through the book and found one paragraph regarding 'subjectivism' that I found quite eye opening (page 249):

"When dealing with subjectively oriented AV issues,I prefer to deal with the science (facts), whenever possible, and not Audio Tarot. My wife coined this wonderful phrase after she first came into contact with the audio community that I work in. She has a background in experimental psychology and knows how easily subjective opinions can be swayed by external factors. She noted that a large amount of audio folklore is accepted by its practitioners purely on faith,i.e. there is no way to either prove or disprove these beliefs. Basically, audio,in these aspects, is a religion. Mankind has always had trouble reconciling facts with their fundamental belief system when the two come into conflict (to wit Galileo). The facts are often suppressed in order to perpetuate the established belief system. The practitioners of Audio Tarot will always prefer to suppress those facts that contradict their established beliefs."

Trust me just like many of you, I am part of the (gulp) Audio Tarot as well. Will I give up some of my fancy schmancy equipment? Probably not terribly soon. But boy was this system an awakening.

What did it teach me? The speaker/room equation is the achilles heal to audiophile aural enlightenment. Until you've solved that issue, you (I mean me) will be in this perpetual audiophile merry-go-round of exchanging equipment, spending thousands of dollars, etc...

Fix that problem first. For if a loudspeaker/room with Pioneer electronics can blast me into an eargasmic orbit, what more do I want? Better question is what more can I have? Will better electronics make a better listening experience? Perhaps. However, the Summa 15's really take you 90% there, so I'm not surprised that a simple receiver can take you so far ahead of everybody else.

Anand Raman  
May 2008

---

This past weekend, a friend and myself took a trip up to the Detroit area to audition the Summa's at the Geddes household. I have been on many audio trips and have learned to prepare myself for any situation that I might encounter. Most of this 'preparation' has been developed through the listening to poor systems in even worse environments. I have come to the point where listening to systems wedged into corners with a with a big screen TV and bookshelves closely flanking each side is not appealing. I am looking for a truly great system in which all variables have been considered and addressed.

I am currently a Linkwitz Orion++ owner. I have had them setup in three different environments with varying degrees of success. They have sounded the best in the current room which has them 6ft from the front wall. I made the decision years ago to purchase the Orion plans because of the science and history of SL's work. I have been reasonably happy with my decision over the years but have always been looking for the ultimate. I have told many listeners at my place that the Orion's don't do anything wrong. With that said, I have never felt that they do everything right. So, for me the search has half-heartedly continued.

My ideal system would have to do a couple important things well. Music is my main priority but I would also like a system to do double duties for movies on occasion. My feeling has always been that if it can do music well then HT should be a breeze. Until this past weekend, I have not been able to find an affordable solution to conclude this seemingly impossible search. I am not the type of person that likes to mess with the details; cables, amps, IC's, DAC's...we all know the typical list which many people go through. Money, patience, time and science have all been standing in the way of 'tweaking' every little last detail. The system through which the Summa's are played would greatly downsize the majority of audio guys. The power, digital conversion of audio and volume control are all done by a Pioneer receiver. At the end of the session I was astonished, amazed and very glad that this was the case.

With all of these caveats listed I want to say that I am not a flavor of the week cheerleader. I like to make a sound investment based on science more than subjectivism. My many listening sessions in others environments has really given me an uneasy feeling as to others perceptions and reported findings. So, I was more than excited to arrive at situation which is based on more science than I can even start to understand. A sense of ease came over me while making the 6 hour drive as there has been more studies and research done to achieve this design and room than I can even begin to refute with my own thoughts. I will focus this review on the system as a whole. This system is very attainable for the average home owner. Almost everything needed to achieve comparable results is listed in the HT book written by Geddes and Lee. I highly recommend getting this read as it contains a lot of outstanding information that will help anyone down a path of audio or video enlightenment. The HT room built has very little visible acoustics absorbers in place. The main focus is on low frequency attenuation but this achievement is not visible. The room, though well built, is not beyond what a good home builder might be able to with some time and effort.

The Summa's are the best overall system that I have heard. The first thing that jumped out to me was the high end. It was different, the likes of which I had never heard before. There was more air, detail and naturalness than I had ever heard before. The music coming out

was just completely effortless. The best description that I can think of is well, right. Being very used to the Orion's I was interested to hear the bass from the Summa setup as open baffle bass is supposed to be some of the very best, period. Well, I would replace that period with a semicolon. There was no region that jumped out over another. The impact that everyone likes was there in spades yet was never overpowering the music. Again, the descriptor that I would use is just, right.

The one region with which I was most concerned was the midrange. Come on, a 15" playing midrange?? The last few years I have scoured over all the driver tests in which keeping a driver as pistonic as possible throughout its pass band has been crucial. Now I am supposed to believe that a 15" driver can produce good much less great mids that would rival my Orion's or Accuton systems which I have heard? Well.....Geddes and Lee's views on distortion tests do not mimic all the latest rage but they do plenty of distortion tests and whatever they are doing works. I felt nothing was missing from the midrange at all. I was expecting lack of detail, nope, naturalness, nope, breakup at higher volumes, nope. That completely blew my major concern out of the water. Again, the best description that can describe it is, right.

After the start of the first song I could tell that I would like everything. The imaging was great. Placement and positioning was outstanding. I could tell more about the recordings than that of any other system I have heard before. The typical things of hearing items and instruments in the recordings which I didn't know were there certainly applied on a couple different occasions. The musical selections which I listened to ranged from classical to vocal to rock. All were produced with equal correctness. If you want a reference for accurate recording reproduction then read on.

The only thing which I felt was not absolute top of the heap was the depth of image. The speakers were relatively close to the front wall. The image had depth and layering as good anything I have heard before but it was just compressed together closer than my Orion setup (6ft from front wall) or Avalon Sentinel (12ft from front wall). From my own experiences with speaker placement I have found that depth of image is only as great as the amount the speakers are pulled out into a room. In most listening environments, placing the speakers 3ft from the front wall is about average. I will only make the assumption that if the Summa's are pulled further out into the room then the depth will improve accordingly.

Two other items were highly interesting to me. When setting in the sweet spot everything was glorious. Moving to the seats either left or right offered very little image shift. There was a change in imaging but nothing collapsed. There was still a very good center image, a better one than I have ever heard. I attribute this to the controlled directivity of the Summa's. The great bass is one offered through design. Multiple subs are used in a three dimensional space. While other designs (OB) have attempted to say that fewer room modes are excited in reality it is better to excite as many as possible and to an even extent. Good bass is all about room pressurization. Pressurizing these modes in as even a fashion as possible is the best way to get good bass. Because of the nature of low frequencies, multiple sources spread throughout the room with emphasis placed on the suckout portions

of the listening environment is the way to go. Do some research or better yet hear it for yourself and I bet you will be a believer.

If you doubt the ideas behind this design then I highly recommend you read the Summa design paper then spend the money to order the HT book offered on the GedLee website. This guy knows his stuff and reading some of his works will prove just that. He is a trained professional who has dedicated his life to this craft. The Geddes/Lee combination is one of a gift to us all. Having two doctors with ones emphasis being on the production of sound and the other being on the receiving of sound makes for a great marriage, pun or no-pun.

Joel Wasser

June 2008

---

I want to share my experience I was lucky enough to have on Saturday morning.

I have been following several threads on DIYaudio over the last few months and this one has really had my attention from the beginning.

I am your typical audiophile who is constantly buying and selling gear trying to improve the sound of the system. I have reached the point where I actually think things through before buying and selling something so I have a goal of what I am searching for.

My current system is Emerald Physics CS2 speakers combined with a highly modified Behringer DCX 2496 with the low frequencies driven by Odyssey Audio Stratos Monoblocks (SE boards & upgrades). I have settled on a DIY First Watt F3 amp for the high frequencies. These speakers do more things right than wrong and I have fallen for many of their excellent qualities.

I live in driving distance of Dr. Geddes and he was kind enough to allow me the opportunity to hear his Summa speakers and to ask questions about the kit that he has put together.

First things first. Dr. Geddes was really friendly to have me over without knowing me and to answer my questions. He was also kind enough to let me play several cds that I am very familiar with so I could have a better grasp of the sound I was hearing.

The sound of the Summa speakers was extremely pure. At first I thought I was not hearing all the bass I should be. I found out very soon this was not the case. Dr. Geddes believes in using multiple subs to get the bass right in a room. I have never heard of this approach before and as the morning went on I realized how realistic it sounded. The Summas have a realistic sound that I have not heard in any speaker system before. We listened to different types of music on the system and I was very impressed with what I heard.

Dr. Geddes also played a few concert dvds and the DTS soundtrack to them. This is where the sound levels went up. I could not believe how open the sound was. We were listening at near concert levels and it was as close to being at a concert as I have ever heard. The

dynamics were astounding and there was no compression. I also experienced zero listener fatigue which is absolutely crucial for me.

Contrasting the sound I heard in his room to what I have become used to with my system led me to several observations. I believe the CS2 is a very competent design and an excellent sounding speaker system especially when you factor in cost. I don't think that I will ever be able to attain the midrange I am looking for with my current speakers. I think that using an extremely well designed two way speaker with very high quality drivers paired with multiple subwoofers placed properly will be the way to the sound I am searching for. The bass and dynamics in his room were the most realistic I have heard. It didn't sound like a stereo system it sounded live. I was completely stunned to find out the modest electronics that were used in this system. I am not saying they weren't good, they obviously are based on the sound I heard. I just expected the electronics to cost thousands more to achieve the sound quality that I heard.

I also had a chance to see the prototype of the kit that is being offered. To say that I am interested and intrigued would be an understatement.

I am very thankful that I had the opportunity to hear the Summa and that I have a better understanding of the design and how excellent it actually sounds.

I have extremely high hopes for the kit that is being offered. I will continue to follow this thread and may very well take on the project.

Nicholas Goode

April 2008

---

Count me in as another who has heard Dr. Geddes system.

I was away from home for the July 4 weekend and Detroit was only a little bit out of the way on the trip home, so, wanting to take a trip to hear the system anyway, I had to jump at the chance for a listen. Earl was gracious enough to let me stop by for a quick listen even though it was quite late on a Monday evening- thanks.

When I arrived we chatted for a minute and then went down to the theater for a listen. We first listened to one or two stereo tracks, then several tracks+video from a Cream concert, and finally several tracks+video from an Eagles concert.

What can I say... the system **doesn't do anything wrong**.

Let's pick the low lying fruit first: dynamics. Bottom line: the system played without any noticeable change in sound quality up to the levels we wanted it to. That is more than can be said for almost every stereo out there, and certainly every dome system I've ever heard. I've heard a few horn/waveguide systems that sound "dome-like" up to levels where a dome runs out of steam, and they can certainly get louder, but they have always tended to get

"spitty" or have the "horn sound" when pushed past that point... not here- the system sounded the same at all the levels we played it at. If I had to guess, I'd say our listening got up to around 105 dB A-weighted or 110 dB unweighted, both of those being RMS over a 1s time interval. I can't say what the peaks hit, but I wouldn't be surprised at 120+ dB. I would be interested to see how much more the system had in it, but it wasn't really necessary for what we did. I will say that at times I like to listen to it a little louder, maybe another 5 dB or so, but that's not very often.

Tonally, the system was neutral- no problems in any frequency ranges and the overall spectral tilt was flat to slightly downward-tilted. The bass and midbass, IMO one of the major challenges of a small room, was right on- articulate, smooth, and balanced... a lot like a good pair of headphones or a good system outside. I've only heard a few small room systems that get the bass this close to right, and I've never heard a system do this well through the bass and midbass. As a side note, I'm guessing this has to do with having the subs and midbasses overlap, as I've always had a problem getting the midbass right when crossing it over to the subs around 70-80 Hz, even if having the bass good up to that point. The other tough area, the high end, was as clean as can be. The OS waveguide and foam do as advertised... at no point did I hear anything resembling the "horn sound." As noted above, I've heard horn systems sound this good at low volume, but not when cranked up. The foam seems to take away that last little bit of harshness that I've never been able to do away with otherwise. I won't say that it was an earth-shattering difference as some people (Geddes on WG thread) have claimed, but it certainly WAS a difference, and it's certainly WORTH doing it, considering there's no better (other?) way to get the job done.

I was most curious to hear the spatial characteristics of a system setup with the philosophy explained in the Summa paper, as the rest of the performance is fairly easy to quantify (does it screw stuff up?). I'm a bit hesitant to start describing this because it's very subjective and difficult to reliably compare with other systems heard on other days, but I'll give it a whirl; just be sure to take the description with a grain of salt. One of the first things I noticed was that the room seemed quite live at high frequencies. Usually that means listening fatigue, but over the 45 minutes or so of constant listening at high volumes I experienced none. A highly damped room can make a crappy speaker sound better, but with a good speaker this just seemed right. The sound stage and imaging was as good as I've heard... the stage was appropriately wide, high, and deep, and the images sounded real- not pinpoints and not vague, confused locations, but rather images of a definite direction that were appropriately sized and fuzzy, like a live performance. That's about all I want to say on that... give it a shot and you'll be a believer.

Overall, it's about what I expected: a well-designed and executed system, certainly the best one I've ever experienced. All (or very close) aspects of system performance have been addressed, and, might I say, in as simple and economical way as possible. Many systems can get one aspect right (often an irrelevant one in high end audio!), but rarely do you hear something get it all right. I've heard a few AES conventions' and CEDIAs' worth of show demos, several companies' listening rooms, several DIYers' offerings, and messed around with quite a few setups myself, but I've never quite seen something put it all together the way this did. To put this in a bigger perspective, I also have friends who have or are

working as audio engineers (systems and/or transducers) for Boston Acoustics, Klipsch, Legacy, DCM, Bose, EAW, Electrovoice, Eminence, Pioneer, MTX, Visteon, and Harman, and while I can't speak directly for them, I have enough shared listening experience to say with some certainty that they'd all be very impressed.

This is one seriously good system; everyone who can give it a listen should jump at the opportunity.

Nolen Ryba  
RYBAudio  
June 08

---

I have been a drummer and percussionist for about 30 years. I began looking into DIY designs when it appeared there were no mainstream commercial offerings that achieved what I desired for my newly built studio. This room is a shared space used for music rehearsal, my wife's dance classes, and recording studio. I wanted the accuracy and quality of a studio monitor and PA levels for music rehearsal when needed, in a single speaker. I have always thought if a speaker was good enough it would work as both and I don't care for the sound of most pro horns. I know this was a tall order and as I began reading about speaker design it was always a story of trade-offs to achieve the desired result.

I ran across Dr. Geddes information on waveguides and read this thread and others with great interest. I read several of his white papers even though some of the math made my head hurt.

When I realized I was going to be less than an hour from his place on a weekend trip I knew I wanted to hear these speakers. So I convinced my wife to stop by on the drive home. I arrived at about 8:30am. Dr. Geddes was kind and inviting, even offering us a cup of coffee. I found out he had been at a big music festival in WI and didn't get home till 1:00AM. This impressed me on two counts. Firstly welcoming us into his home after a late night, secondly it's nice to learn he's a true music lover as well as a scientist.

We went down to his home theater where we started listening to some familiar audio CD's. The first thing that struck me was absolute pinpoint imaging. The clarity and accuracy was astonishing. Instruments sounded like instruments, not recordings. I have been many recording studios over the years and have never heard sound this accurate, not the big soffit mounted JBL's or any near fields. Then he fired up the projector to play some concert DVD's. Dr. Geddes was in the process of replacing projectors so the projector wasn't ceiling mounted. This means my wife and I had to move from the usual sweet spot in the center of the couch. Guess what, the image stayed spot on. After noticing this I leaned even farther away from center towards the side wall. The image never collapsed. The levels were going up at this point. The amazing thing was everything remained so clear, the sound just got louder, sonic balance never changed, no compression whatsoever. We listened to some Cream and it sounded like Marshall stacks and Harke bass cabs were in the room. The bass was never boomy or muddy; it was like a bass player was right there. And the drums, oh my god, drums are the torture test for most speakers, good reproduction of sharp

transients requires headroom. The kick drum was the most realistic I have ever heard. Actually all the drums sounded like a kit was in the room, cymbals were perfect with every overtone and nuance. Next Dr. Geddes put on an eagles live DVD. It had reached ear piercing levels by this time and Joe Walsh was wailing on his guitar like he is known to. As loud as the guitar was I could still clearly hear every other part with perfect stereo placement and detail. They don't appear to color anything. It would seem they are the final link in the idealistic wire plus gain theory I have heard touted as the perfect amp.

I wouldn't have any problem recommending these for use in any studio, even for mastering. They are the most revealing speakers I have ever heard. I also wouldn't have any problem recommending the very same speakers for use in any nightclub. I would think you could pair them with some high efficiency pro subs and they would kill every club systems I have ever heard.

I don't know what else to say except I Have to have these!

Bruce K

My wife's impressions follow below:

From a Women's view point:

First of all let me say that Dr. Geddes was a gracious host, inviting us into his home at 8AM after arriving home the previous night at 1AM.

I have worked in the music business for about 30 years and spent many a night in the studio with mix downs until I didn't think I could hear anymore. I was blown away by these speakers. I felt like I was sitting in front of a live performance! Several songs, that I have heard a thousand times, was a new experience, hearing instrumentation that I never knew was there. So, as for sound...outstanding!!!! I agree with my husband that these speakers should become the industry standard.

Now, from the female viewpoint of aesthetics, because I also love interior design and my husband is always trying to find ways of designing the function, but also pleasing to the eye for me, I have to say that I love the design! They are so beautiful that I wouldn't have a problem having them in my living room, or any room! They look like a beautiful piece of sculpture. In fact, there were a gorgeous pair of red ones in his living room that I would have loved to have in our music studio, but alas, they have already been spoken for.

We will be getting these speakers, as there is nothing on the market today that can even come close to their amazing sound. Thank you Dr. Geddes!

Bruce K

June 08

---