ARTVIBES AUDIO

WHITE PAPER

PROLOGUE

Fifteen years ago, we, three musician friends who shared a passion for both music and sound, decided to create a loudspeaker which would express our appreciation of music and sound reproduction by taking the science and art of speaker performance to new high in fidelity. We decided to put in whatever it took to achieve this objective, irrespective of how much time, resources and effort it would entail. It took us fifteen long years, but we finally reached our goal.

SOUND ADVENTURE

Our overwhelming love for music of all provenances and genres helped us establish our criteria. We visited many high-end audio dealers and spent hundreds of hours attentively listening to dozens of speakers. We even bought many pairs of speakers so that we could critically listen to them at our own facility, using different audio components. We paid very close attention to how different speakers responded and adapted to different amplifier configurations including tubes, solid state, pure Class A, Class AB and even Class D.

What became abundantly clear is that speakers with the 6-inch and 8-inch woofers were just not up to the task when it comes to accurate bass reproduction. It was not just a question of achieving the highest fidelity in terms of tone, timbre and harmonics, it was also a quest to achieve lower frequency reproduction that allowed you to physically perceive the bass when the artist intend you to feel it in your bones. We were determined to achieve bass reproduction that you can detect not just with your ears, but also with your whole body, just as you do at a live performance. We were also resolute in achieving bass reproduction that was not just true-to-life but which also blended seamlessly and harmoniously with the other frequencies without masking or overshadowing them.

We experimented with woofers of all available cone materials, magnet configurations and cone sizes from 10-inches and above. What we discovered is that to our ears as musicians, the best 10-inch woofers had the best balance between moving the right amount of air and submitting to being totally under control even when reproducing challenging passages of music.

The other advantage of the better 10-inch woofers is that they deliver a much larger, better-defined and more three-dimensional soundstage with richer harmonics and more air around the instruments. This makes it very easy to follow any single instrument without any masking from the other instruments, whether you listen to a simple arrangement by a jazz trio or to a full philharmonic orchestra playing a tutti passage of the composition. The best 10-inch woofers also deliver sound with the least compression and distortion at near live rock concert volume levels.

We tried several woofers, made with different cone materials. In the end, we chose to use paper cone woofers because of its unequaled damping qualities, rigidity and lightness. One paper cone

woofer stood head and shoulder above all the rest, the revered Danish speaker manufacturer ScanSpeak makes it. This outstanding woofer delivers a natural, organic quality to the sound while revealing all the nuances and subtleties even down to 20 Hz. We regarded this as a huge asset especially when listening to today's electronic music compositions, which explore the bottom octaves with the same mastery as Bach did with his sonic masterpieces (in his Toccata and Fugue noticeably)!

Of course, the DaVinci and Dali, with their 10-inch woofer, are intended for larger rooms. We designed the Picasso, with the ScanSpeak Revelator 6-inch woofer, for the smaller rooms. It does not have the physical presence of its big brothers, but is every bit as faithful to the music.

We repeated the same intense and elaborate testing process when choosing the midrange and tweeter drivers. For the midrange, we initially liked the sonority of dome drivers, but we found that they were too fragile and limited with regard to the audible frequency band. Once again, it was a midrange reflex driver from ScanSpeak that caught our attention. This is the ScanSpeak 4-inch Revelator. This driver, fitted with its own enclosed space within the speaker cabinet itself, delivers amazing performance. Coming from the ScanSpeak family, it was no surprise how well it blended with its 10-inch woofer sibling.

The selection of tweeter proved to be quite a challenge. We tried several metal and fabric dome drivers from various brands. The vast majority of them, especially the metal dome models, sounded too aggressive and harsh. They also did not play nice with our selection of mid-range and woofer. After trying out numerous permutations and combinations, we found ourselves with one clear winner and once again, it was a ScanSpeak model. This tweeter had just the right amount of sweetness without being euphonic. It also delivered sound that was as smooth as a baby's bottom, which made the sound incredibly seductive and brought down the fatigue factor to a negligible level.

Early in our sonic adventure, we discovered that the type of wood in which a speaker is made is of the utmost importance. We found that speakers built with different types of wood but the same damping and bracing sounded very different. Therefore, we proceeded to find which wood formulation and structure would sound the best to our musically trained ears.

We tried out MDF, HDF, particleboard, and different types of plywood. Initially, we liked the particle board, which allowed for beautiful harmonics and the right balance across the audible frequency spectrum at low to medium volume. Sadly, when we increased the volume level, severe distortion manifested itself. We tried to tame this distortion with different thickness of particleboard, but to no avail. As for the MDF, we found that it killed the dynamic quality of the music and made it dull and lifeless. In most cases, female vocals renditions were not as vibrant as it sounds at a live performance. In addition, this popping quality of any good bass recording which allows the listener to hear the fullness of string vibration or the clear leading edge and decay of deep bass notes on a church organ was never really there. More importantly, we felt that speaker cabinets with this wood configuration did not allow for the sharing of harmonics between the drivers and that this prevented the speaker from producing acceptable level of coherence or dynamism. We never could make a speaker "sing", as we like to say, in a manner where the music really comes alive. Speaker cabinets made out of HDF showed the same flaws

as MDF and so our intrepid search continued.

Plywood caught our attention early on. It sounded dynamic, lively, and vibrant. It also generated very little distortion even with fairly thin cabinet walls. We decided to push our research and testing further by trying out different wall thickness and plywood types. We ended up by choosing Russian Birch Plywood, which is uniquely manufactured with multiple ply layers of Birch veneer, used uniformly, throughout the panel. Each layer of birch veneer is peeled at 1.3 mm or 1.5 mm thickness giving the panel a multi-ply edge that is both aesthetically attractive, and offers unmatched strength and stability. Compared to all other varieties of plywood we tried, only the Russian plywood showed negligible distortion while maintaining the sonic balance of the speaker performance even at very high volume levels. This is the only wood configuration speaker cabinet that allows us to hear the most refined musical details even at very low volume. So Russian plywood it was.

Once we had established the driver units and cabinet material that met our high standards, we began designing the crossover network. To our minds, the crossover can make or break the performance of a speaker irrespective of the quality and performance of the driver units and the speaker cabinet. We therefore took our time to ensure that our crossover would not only bring out only the very best in the drivers that we selected, but which would also achieve synergy between all three drivers in a way that would achieve the best possible top to bottom continualness approaching the best single driver or co-axial speaker system.

Here, we experimented with various components including capacitors, resistors and other components. We discovered that the price of the components had little bearing on their performance. We also found that synergy between the components influenced the sound to a great degree. We therefore had to try out countless permutations and combinations before we finally had a crossover network that made the three drivers dance together in perfect harmony.

It was then time to determine the choice of internal cabling. Here again, we took a no-compromise approach, trying out various brands, different metal conductors and alloys, solid core and stranded as well as a whole host of dielectric varieties and configurations. We finally arrived at what would work best between the three drivers and the crossover network. Once we made these selections we found that even the solder made a difference to the speaker sound and so we experimented with different types of solder before finally settling on WBT silver which delivered the best performance.

After we had chosen all our components, we then contacted a speaker engineer and designer and asked him to design a cabinet for us following our stringent criteria. Fortunately, the engineer knew and liked Russian Birch Plywood and used it to create our speaker cabinet design. Once we agreed on the design, we had the speaker cabinet made by a top cabinetmaker that took great pride in his work.

We then had to choose a finish that would do justice to the speaker. Here again, nothing but the best would do so we decided to use the services of a Lamborghini car painter specialist to paint our speaker. We had it done in white for the Dali, but we can have it done in any color one likes for any of our models.

Although we were extremely pleased with the look, we decided to go one step further. Being ardent art lovers we decided to give our customers an option that no other speaker manufacturer in the world has hitherto offered. We decided to combine art with the sound of music by offering our speakers with the exterior painted by a selection of well-known and highly revered artists.

The results have been astonishing to say the least. Now, our customers can let state-of-the-art speaker performance pamper their ears while their eyes drink in the sheer beauty of the exotic works of art that cloak the speaker cabinet. This is truly a treat for the senses.

We have put in a whole lot to make our speakers the very pinnacle of sonic and artistic rendition. We sincerely hope that you, our valuable customers, will get as much out of our speakers as we put into them.