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Reference 3A Nefes Loudspeakers

Malcolm J. Gomes

There is little doubt that most audiophiles regard crossover networks in loudspeakers as a necessary evil. A few hate them with such a vengeance that they opt for panel or single driver speakers just to avoid the downsides of crossovers. Advances in crossover designs over the past decade have minimized and in some cases eliminated many of their inherent ill effects but I do not know of anyone who has yet come up with a crossover network that does not in some way distort the signal being delivered to the driver units. Bad as it is with two-way speakers, it tends to get significantly worse with three-way and four-way speakers.

Some speaker designers have opted to transcend the disadvantages of a crossover by doing away with them completely and instead, utilizing full range driver units. However, here again, there are unavoidable compromises like anemic reproduction or total absence of the bottom octave of the audible frequency spectrum.

Every once in a while, we find a speaker designer that decides to take up the challenge of designing a multi-way dynamic loudspeaker system with no crossover. I have auditioned a few of these valiant efforts but hitherto, although I have found them to have benefited in some respects from eliminating the crossover, there were far too many tradeoffs in terms of sonic performance to tip the overall balance in their favour.

This being the case, when Suave Kajko, the publisher of CANADA HiFi requested me to review another loudspeaker system with no crossover, I was a bit skeptical. However when he mentioned that this model, under the Reference 3A moniker, has been designed by Tash Goka of Divergent Technologies, it perked up my interest. I have a lot of respect for Tash and I thought that if anyone could successfully pull off a loudspeaker design without a crossover, Tash could. This loudspeaker



retails for \$9,950/pair and answers to the name of 'Nefes', which means 'breath' as in the "the life giver" to the wind instruments used in Sufi music. I wondered if the Nefes would be the first loudspeaker

system without a crossover that would take my 'breath' away.

The Reference 3A brand has its roots in France where in 1959 it was set up by Daniel Dehay under the name 3A, which stood

for Applied Acoustic Arts. The company was then relocated to Switzerland in the late 1980s where the name was changed to Reference 3A. After changing ownership a few times, Dehay once again acquired the company in 1992. The company is currently located in Kitchener, Waterloo in the Canadian Province of Ontario and is managed by Tash Goka.

design features

Tash and a colleague delivered the Nefes to my auditioning facility, which is just as well because although they are not extremely heavy (130 pounds), they are a bit too large (10 X 16 X 45 inches) for a single person to carry alone. The set-up was quite straightforward and the height-adjustable feet made it quick and easy to achieve perfect alignment.

This speaker is equipped with two 8-inch, full-range, hyper exponential woven carbon fiber drivers that have been developed specifically for the Nefes and which are directly coupled to the amplifier. These are complemented with a pure Beryllium tweeter assembly in a 'D'Appolito' array. The cabinet is reassuringly rigid and inert. The overall design goal was to eliminate the crossover network altogether in order to avoid possible signal interruptions and phase errors for a more coherent sonic performance.

To compensate for the lack of a crossover network, the Beryllium tweeter is protected by a high quality non-inductive silver-in-oil capacitor that acts as a high-pass filter. The tweeter is mounted behind an exponential acoustic wave-guide to achieve better time alignment and more uniform dispersion.

The core center of the woofers is equipped with a patented surreal acoustic lens which is designed to dissipate any vortex that could form as a result of air turbulence, thus minimizing any related noise that could be generated by the cone shaped drivers. According to Tash, eliminating this vortex allows the driver units to perform with enhanced clarity, natural tonal balance and wider dispersion.

The inside of the Nefes binding post connectors have a patented magnetic conduction signal wave-guide. This is a first in Reference 3A speakers. The strong magnetism of this wave-guide keeps the electrical signal flow aligned. It also mini-

mizes the random pathways for electrons within and along the conductor and promotes signal transfer where resistance to the signal is highest and where the greatest losses can occur. According to Tash, this has been done to deliver a more dynamic, open and spacious sound with greater detail retrieval.

The internal wiring comprises specially selected, cryogenically treated, OCC single crystal pure copper conductors with Teflon dielectric. These wires have been precisely calibrated to optimize signal transfer to the drivers.

The Nefes cabinet is finished in a durable anthracite coloured, suede textured Nextel coating, which absorbs not just sound but also light, rendering the cabinet acoustically and optically quiet. This cabinet finish is very workmanlike and will not appeal to everybody. It is also likely to have a lower wife acceptance factor. Both my wife and daughter felt that it looked like an unfinished surface.

The inside of the cabinet comprises of very dense panels and several perforated braces at critical points on both the horizontal and vertical planes. The vertical spine brace is off centered to cancel out potential resonance noise. The drivers are anchored to this vertical spine with large brass bolts, which mechanically ground them. The vertical braces are perforated to avoid contact with the cross braces and also to increase the surface areas that dissipate vibrational energy. The cross braces are also perforated with different size openings and are arranged so that they are not parallel to the side panels. This minimizes unwanted sound wave deflections. To avoid corner nodes as well as to improve rigidity, solid planks of triangular gussets have been placed on all the inside corners of the cabinet. To spread out any potential thickness related resonances, board materials of different thicknesses have been employed.

All this extra attention to the internals of the cabinet is meant to reduce superfluous vibration energy inside the enclosure so as to allow the speaker to deliver better clarity. To free the main drivers from sympathetic frame vibrations, the mechanical grounding system has been configured to drain mechanical vibrations from the drivers thus allowing them to perform at their optimum level.

Upon completion of the production of each Nefes speaker system, they are placed on a break-in rack and fed high-level test tones for a minimum of seventy-two hours. This is followed by several tests during which the two speakers are matched to tight tolerances to try and squeeze out the most realistic renditions of harmonics and spatial sonic images.

performance

I auditioned the Nefes connected to my reference system which consists of the Bryston BP26 preamp, the Ayre V3 (SS) power amp as well as the Ars Sonum Filharmonia integrated tube amp. My sources included the NAD C565BEE (SS) CD player and the Bryston BDP-1 digital player, connected through one of my DACs which include the Calyx Femto, the Mytek Stereo 192-DSD and the Resonance Labs Conero.

All this attention to detail enables the Nefes to sound surprisingly good right out of the box but I followed Tash's suggestion that the speakers be broken in for another 200 hours to help them reach their peak performance level.

The Nefes is capable of delivering a frequency response of 28 Hz to 40 kHz plus or minus 3 dB. It has above average efficiency of 92 dB. It also presents amplifiers with an easy impedance load of 8 ohms with very little deviation irrespective of the frequencies it is fed. It can handle up to 150 watts RMS per channel. These speakers come with a five-year parts and labour warranty against manufacturing defects.

Based on guidelines from Tash, I positioned the Nefes well away from the back and side walls of the listening room and at a distance of around three meters from the sweet spot, with the listening position and the two speakers forming an equilateral triangle. The speakers were toed-in to have the tweeters pointing at the sweet spot. The metal stabilizers and the height adjustable brass floor spikes with a locking ring make it easy to perfectly level and align the speakers. The speakers are supplied with a protective grill, which I chose not to use during the audition as they did adversely affect the transparency and definition of the sound.

Before I get into details of the Nefes sonic performance, I need to disclose that I

have a preference for soft (preferably silk) dome tweeters to metal dome tweeters because, to my ears, they tend to integrate better and sound more natural. In contrast, metal dome tweeters be they aluminum, titanium or beryllium, tend to sound harsh if not implemented well.

Of the three, beryllium generally sounds smoother because this metal allows for domes that are lighter while still offering superior rigidity and damping. They also break up much higher in the audio band. Beryllium is around seven times more rigid and propagates sound waves around three times faster than titanium or aluminum. Beryllium tweeters are also quite expensive and usually found in higher priced speakers. During the recent past, I am glad to see many of the better known speaker brands switch from aluminum and titanium tweeters to silk or beryllium dome tweeters.

I must say that the tweeter in the Nefes is one of the best implementations of a beryllium transducer that I have heard. It reinforces my view that a huge part of a beryllium dome tweeter's performance is in its implementation. Kudos to Tash for delivering the smoothest, most precise and coherent performance that I have hitherto heard from a beryllium tweeter.

My first impressions of the Nefes performance is their sound stage, which is wider than any other speaker that I have auditioned in this price range. What is also remarkable is their ability to sonically disappear, despite their large cabinet size. The tone and timbre is very natural and will appeal to those who are looking for a neutral speaker but may be less appealing to those looking for a more euphonic sound or bass that is exaggerated.

This speaker is very adept at retrieving micro details in the recording without sounding overly analytical. They can also play surprisingly loud before I could detect any hint of compression or distortion. They have one of the best mid-range reproductions of any speaker in the very crowded \$10,000 price point, although I have heard a few similarly priced speakers with more saturated and fuller mid and upper bass.

The Nefes delivers a very good rendition of the piano, which is one of the most difficult instruments for a speaker to get right. I played the piano for a rock band

for many years and so I have a very good mental reference of what a piano should sound like and whoever voiced the Nefes probably tickled the ivories as well, to have gotten it so right.

This speaker is very capable of producing male vocals, which it does with amazing palpability. Female vocals are also rendered with a good deal of finesse. Acoustic instruments sound taut and crisp while string and wind instruments come through with a degree of presence that is, at times, quite startling. Though not congested by any stretch of the imagination, I would have liked a little more air between and around the instruments and voices.

The Nefes is particularly adept at connecting you emotionally with the artiste. When listening to Aus Misa Criolla Kyrie by Jose Carreras, I could easily feel the incredible emotion in his voice as he belted out this well recorded track. When I played Die Tanzerin (The Dancer) by Ulla Meinecke, although the song is in German, which I cannot understand, I totally enjoyed the experience because the emotions of the lyrics came through in spades. Track after track, the Nefes delivered rich harmonics, accurate tonality, precise imaging, well fleshed out timbre and soul satisfying musicality.

The clean and relatively artifact free sound that you hear from the Nefes makes it the 'I told you so' speaker for the audiophile segment that is not partial to crossover networks. The ease and effortless-ness of delivery gives this speaker a very low fatigue factor and I was able to listen to it for hours without feeling I have had enough.

The leading edges of music notes might be a tad too prominent for some, while the presentation is a smidgen on the forward side though never in your face. Dynamic contrast is well above average compared to other similarly priced speakers.

The Nefes needs a good-sized room to realize its full potential. A room that is less than 4,000 cubic feet will cramp its style. It also deserves very high quality and very neutral front-end components and good speaker cables and interconnects. Tash provided me with Reference 3A speaker cables and interconnects and although they worked well with the Nefes, I heard distinctly smoother, more coherent and better-defined sound when using

the Tellurium Q Black Interconnects and Ultra Black Speaker Cables.

The Nefes bass reproduction would satisfy the vast majority of audiophiles but for those who find music incomplete without the bottom octave, a superior subwoofer would be a good partner for this speaker. I tried mating the Nefes with a pair of JL Audio Fathom f112 subs and the results were most satisfying, providing a great foundation to the overall sonic image, improving definition and authority in the bass while adding exponentially more depth to the sound stage.

If you are looking for a pair of speakers in the \$10,000 range and have neutral upstream components and a good sized listening room, don't pull the trigger till you have heard the Nefes. As its name suggests, it just might take your breath away.



quickinfo

Reference 3A

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Reference 3A Nefes Loudspeakers

Price: \$9,950/pair CAD