

NewAudio Spatial One

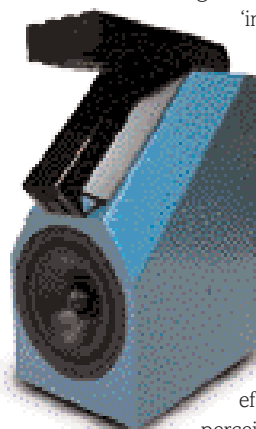
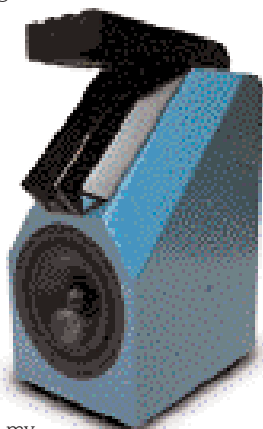
Brad Watts' spatial awareness increases with this innovative Australian design.

Recently I had the pleasure of reviewing a monitoring system that really surprised me. Initially I was surprised to see that the speakers weren't another set of 'active monitoring ideally suited to surround and multi-media applications'. The surprises continued. These speakers looked downright odd. The upper 'headstock' arrangement was not the typical nearfield I was expecting... and what was the aluminium run of grooves mounted beneath the headstock? They looked like something from some retro sci-fi show, yet were reminiscent of a pair of monitors I'd seen in the late '80s. The fact was, I had previously witnessed this design in the Hayes Omni F80



monitor.
The chap that dropped the speakers to my studio agreed with my recollection. "Yes, I designed those".

The penny was beginning to drop. "So you must be Joseph Hayes", I quizzed the deliverer. I was correct. It turns out that Mr. Hayes has started a new company with a new design of the F80. Newer, better and ready to tackle estab-



lished ideas of nearfield design, the company is NewAudio and the monitor is the Spatial One.

Orientation Express

I should give you a little orientation on what this unusual design is all about. The concept has been dubbed 'chaos speaker technology'. That may sound an alarmingly haphazard, but the term 'chaos' applies to how the design affects the listener's perception of upper frequency content. Most of what we listen to in this era is stereo recordings. The concept of stereo relies a great deal on the image that stereo creates. The simplest

'image' can be created by merely adding a delay to a vocal, for example – you pan the main vocal signal to the left; then you add a delayed signal of that vocal at a lower volume panned to the right, say 30ms or so. This gives the impression of the vocal being in a particular space – a stereo image of a space. The delayed signal is effectively a reflection of the original. The deal here is that time has had an effect on how the material is

perceived. It's a psychoacoustic phenomenon known as the 'Haas' or 'precedence effect'. It's exactly how animals such as us use two ears to judge where a sound is coming from. After about 30 to 35ms of delay time the reflections begin to sound like echoes and become separated from the original sound.

Second Opinion – Michael Gissing on his new 5.1 system

For the past 18 months, I have been testing various speakers to find a setup for 5.1 monitoring at Digital City Studios. All the usual brands came and went, and all were rejected for various reasons. Firstly, I was not looking for self-powered speakers, as I was replacing passive speakers. I wanted something that would plug into my Denon six-channel amp – which has Dolby Surround decoding, discreet six-channel monitoring, stereo and mono, all switchable on the front. An active monitor setup would have required considerable redesign of monitor routing and the addition of surround decoders.

But most speakers were not rejected because they were self-powered. I wanted to find speakers that were close to the Sony AMP-6 speakers that I have used for the past eight years and, frankly, most speakers I

tested were not as accurate as they are. The other issue is image. One speaker that came close tonally were the Duntech Studio monitors, but they had the unfortunate characteristic of developing their image past three metres. This meant that small head movements at two metres (my mix monitor distance) resulted in disturbing changes in tonality.

So it was with a certain pre-emptive resignation that I tried the Spatial One speakers, developed by Joseph Hayes. I decided after talking to Joseph that at least he was working on a design that was phase accurate, particularly off axis. This meant that from my close monitoring distance to the listeners at the back of the studio, the sound and image were constant and extremely accurate. Secondly, his boxes were not too big. The problem with

surround monitoring in the video world is the speakers need to be above the TV monitor. Large speakers are difficult to mount and place the tweeter too far above the video image.

With Joseph's design of a rig to hold the three front speakers in an array above the video monitor, I was able to finally find the 5.1 combination that I wanted. As all five speakers are identical (an important consideration in 5.1) the other determination was that cost had to be also reasonable. I was extremely pleased with the tonal character and particularly the image from the Spatial Ones. But the fact that the five speakers cost less than some stereo pairs I had previously tried, was a huge bonus and made it possible to refit both Studio A and B with the Spatial Ones. And so, another Japanese product has been replaced by 'Australian Made' at Digital City.

It's within the zero to 35ms range that we refer to the delayed sounds as 'early reflections'.

Now if you're manufacturing listening spaces using principals based on time displacement there are other early reflections to be concerned about – the reflections created by the actual room the speakers are in. This is why we try to design studios that are reflectively inert. You don't want a room's reflections having an impact on what your audio material sounds like because your audio has to be replayed in a variety of systems and in a variety of (often uncontrolled) environments. So what we do is spend large amounts of money treating studios with absorbent materials to tame these early reflections. Along with absorption we install quadratic diffusers, not to absorb but to smear those early reflections so they're not affecting the signals we want to transfer to the outside world – a diffuser will break down these reflections. Without these treatments a room will sound 'bright', 'echo-y', or far too 'live' – i.e. the sound we're creating within the stereo image has additional images created by the room's acoustic properties.

This is where the diffusers mounted beneath the tweeter of the Spatial One come into play. By diffusing the upper frequencies immediately at the sound source (before it is presented to the surfaces of the room), the very directional upper frequencies have already been spread about. It uses the Haas effect at the point where we'd like it – within the domain of the speaker as opposed to that of the room. The result? your perception realises a more coherent stereo image.

Fatigue? All in the Mind

I'll admit I was sceptical, but during the months that the Spatial Ones were in my studio I witnessed various minor changes to the design that resulted in major benefits to the sound. Initially I sensed a certain metallic quality in the top end. I thought this was due to the diffuser being aluminium, but after NewAudio's small adjustments in the positioning of the downward facing Kevlar tweeter, the top end became smooth and pleasurable. Slight adjustments in the rear port length brought bass directionality into line. The point being that I observed the critical attention to detail NewAudio put into their speaker. After seeing approximately six sets of the Spatial Ones, the final pair are sounding quite delightful. This is the monitor they'll be producing. I've done a few mixes using this set and I'm very pleased with the results. The top end is smooth and accurate with seamless integration with the low range driver. The other startling aspect of these speakers is that the image seems to remain uniform wherever you stand in the room. I found I could listen to these monitors for hours on end without experiencing listening fatigue. I've recently been having a few listening sessions with folk for an upcoming project and I noticed these were the speakers people preferred listening to. The chaotic dispersion of the high end fills the room as if the act was really there – you're quite unaware of the direction of the audio material. In the ideal listening position the

stereo image is immaculate. I'd go so far as to say, better than I've heard in any speaker of this size and superior to monitors costing far more.

Spatial Specs

I should give you an idea of the hardware and specifications involved. The Spatial Ones are a passive design – you'll need an amplifier. NewAudio recommend up to 150w per channel. The high frequency driver is an inverted Kevlar cone manufactured by Focal (the same driver used by KRK), and the bottom is a 6.5-inch SEAS driver. These are both audiophile components. Long-term power handling is rated at 100w and 150w peak into 8 Ohms. Frequency response is 59Hz to 18kHz with a -3dB rolloff, and 50Hz to 20kHz with a -10dB rolloff. The cabinets are well constructed from 17mm MDF and, to improve monopole behaviour, are strengthened with a steel brace – most manufacturers resort to simply using more MDF for their bracing. The design of the cabinet dictates that the front panel is quite small, providing a very rigid mounting for the bass driver. Connection to the monitors is via solid screw posts that easily accept heavy gauge cable or 'banana' plugs. Alternatively, the connection panel can be removed and replaced with a four-pole Speakon connector for interfacing with amplifiers that output from their own crossover system, such as the Crest LT and CPX series. NewAudio even supply the screw-in isolation spikes – very thoughtful. To the rear of the headstock is a metal mounting bracket that suits NewAudio's own mounting system. The mounting bracket doubles as a handle should you wish to take them for a walk. The hammertone finish can be supplied in a blue, silver or gun metal black for those with a penchant for interior decoration.

NewAudio can supply systems for multichannel surround and also have pricing structures that include their own active sub bass unit. I did have use of the sub and quite frankly it rocks. Dubbed 'The Stomper', it will reproduce your material down to 30Hz. Unfortunately this article size precludes further comment on the sub apart from mentioning that everybody should have one and the Stomper is a prime choice for those ready to take the low frequency plunge. Overall, NewAudio's monitors represent exceptional value for a studio monitor. Compared to the plethora of imported designs available you know your getting your dollars worth. When it comes to the Spatial One I firmly believe you're getting a whole lot more.



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Price

• *Spatial One: \$1,584 per pair; Stomper sub: \$1,644.50*