

AN INTERVIEW WITH THE MAN BEHIND THE SOUND

In order to learn as much as possible about the MSP10 STUDIO and its background, we talked directly to Akira Nakamura, head of the MSP10 STUDIO design team. Nakamura was also the brain behind the legendary NS10M and NS10M STUDIO. Here are some of his comments:

Interviewer: *What were the first projects you were involved in at Yamaba?*

Nakamura: It was speakers right from the very beginning, but the first ones I worked on were for musical instruments – Yamaha Electone organs, to be specific. We couldn't get the sound we wanted from speakers purchased from other manufacturers, so we started developing and manufacturing our own.

Hi-fi speakers weren't an issue back then?

Not in the beginning. I joined the company and started working on musical instrument speakers in around 1965, but serious development of hi-fi speakers wasn't started until about 1970.

What audio speakers did you work on prior to the NS10M?

Most of them, but perhaps the most notable was the Yamaha NS1000M. I think we released it in around 1974. The NS1000M became one of the longest-selling hi-fi speakers, ever. As I remember, the NS10M was released several years later, in about 1978.

Was the NS10M an instant success?

In the home-use market, yes. It wasn't until several years later that studios began adopting the NS10M for near field monitoring. This was because it was originally developed for the home market, and was only sold through outlets targeted at the home market. But once the studio people caught on, we had to expand our retail routes to include the pro-audio market.

Why did the NS10M become the industry standard for audio production?

At the time, most studios were using small single-unit cube-shaped speakers for near-field monitoring – actually they were probably used mostly to hear how projects might sound on a boom-box or car stereo. But the engineers were looking for a compact monitor with a bit more power and a wider frequency range, as well as something that more accurately represented the home audio sound of the time. The NS10M was perfect. It also had the midrange definition that the engineers needed for rock and pop production, and eventually became the engineers' primary tool for sound creation and mixing, rather than simply a means to hear the results on a less-than-perfect system. It wasn't long before you could walk into just about any major studio and find a pair of NS10Ms sitting on the console meter bridge. This was an advantage for the engineers, because they were familiar with the NS10M sound and could expect the same quality in just about any studio, anywhere in the world.

So Yamaba didn't start out to deliberately create a studio monitor speaker?

Not really. We were only interested in achieving the cleanest, most natural reproduction possible. As it turned out, what we were trying to achieve was precisely what the audio production professionals were looking for.

The white NS10M woofer cone was quite distinctive, is there a story behind the color?

We were in the process of trying out different pulps and papers for use in speaker cones, but nothing gave us the sound we wanted. Looking for the cleanest, most impurity-free cone paper we could find, we eventually came across a type of especially pure pulp that a photographic-materials manufacturer was using. That was our answer.

The "NS10M STUDIO" was introduced in 1987. What was the story behind that development?

In addition to optimizing the design for horizontal placement, there was the "tissue paper issue". There was a period in which the pro-audio magazines and papers were full of articles about how engineers were placing layers of tissue paper in front of the NS10M tweeters to give them the balance they needed. There were even arguments as to how many layers of tissue paper gave the best response, how far it should be placed in front of the tweeter, and so on. So we sat down with the speakers – and a supply of tissue paper – and began an extensive series of tests. The overall balance of the NS10M-plus-tissue idea was fine but, as you would expect, some of the high-frequency definition was lost. We figured out a way to deliver the required balance without losing detail, and that became the NS10M STUDIO.

After selling more than 200,000 units, NS10M STUDIO was discontinued in 2001, causing great shock to the engineers and the industry. Why was it discontinued?

The white cones. Due to a number of unavoidable reasons it has become impossible to continue manufacturing those cones. Without those cones there can be no NS10M. Fortunately, we were able to produce enough maintenance units to keep current users supplied for several years. Also, it was about the time that the NS10M STUDIO was being widely adopted that we began work on the MSP series speakers with the goal of providing powered convenience with superior frequency response and an extended low end. Now that the MSP10 STUDIO has been perfected, there's really no better choice.

Tell us something about the new MSP10 STUDIO: what were the main sonic goals behind its development?

There are other popular powered monitor speakers on the market that have a nice "comfortable" sound, but we came to the conclusion that they weren't really accurate enough for critical monitoring applications. We wanted to create a monitor that delivers the source without "softening" it in any way. Engineers need to hear frequency, they need to hear dynamics, imaging, separation . . . there are so many parameters that must be kept under control. The MSP10 STUDIO was designed from the outset to allow the listener to hear every single aspect of the sound as clearly as possible so that he or she can make the most effective creative decisions and sonic adjustments. If a slight change is made to the EQ on one track, you need to hear it. If the reverb time of the ambience used on the vocal track is adjusted by a fraction of a second, you need to hear that, too. Once we knew what we wanted to achieve, we had to translate those concepts into actual design parameters and refinements – drivers, amplifiers, crossover, enclosure, finish – everything counts.

The original MSP10 and the new MSP10 STUDIO look quite similar – how can we tell them apart?

Visually the only difference is in the location of the Yamaha logo (in the MSP10 STUDIO it is below the woofer), and the fact that the radius of the enclosure corners is a little sharper in the new version. The main differences, however, are internal. It's the difference between sound designed for listening and sound designed for monitoring, and that meant making significant refinements to the midrange performance and crossover parameters as well as parts and assembly precision.

How does the MSP10 STUDIO fit in with modern monitoring practices?

These days many engineers monitor at low levels. Paradoxically, this allows them to hear detail that gets "washed out" at higher levels. When we tested other powered monitor systems we discovered that they tended to lose definition at such low levels, so we put a great deal of effort into ensuring that the MSP10 STUDIO stayed clean and precise right down to the lowest levels.

How about surround monitoring?

Of course, the MSP10 STUDIO is an ideal monitor for surround applications. The 120° dispersion of the tweeter waveguide makes it a perfect choice for surround setups – plus the fact that is basically an excellent monitor speaker.

Were there any major obstacles to achieving the desired performance?

Many. But the areas that required the most time and energy were probably the actual manufacturing processes. In order to achieve the desired high quality consistently in all units, we had to dramatically increase the dimensional precision of all parts, as well as the assembly procedures used to put them together.

What is different about the new "advanced magnetic circuit"?

Speaker engineers who are serious about sound quality have known about the problems with magnetic shielding for quite some time. Magnetically-shielded speakers have a "cancellation circuit", which is basically a reverse-polarity magnet attached to the back of the speaker's normal magnetic circuit. Conventional cancellation circuits consist only of a magnet and outer yoke — a configuration which results in a random flux pattern when magnetized. This disturbs the magnetic field of the main magnet and has a deleterious effect on the sound. With the new "advanced magnetic circuit", an extremely consistent flux pattern is produced in the "shield" magnet by placing it between inner and outer yokes at the magnetizing stage. The result is significantly improved sound quality.

Why is the MSP10 STUDIO so heavy? (The MSP10 STUDIO weighs 20 kg, compared to about 12 kg for the leading competitor.)

Well, being heavier is not something we can really brag about, but in the process of optimizing overall performance we simply ended up with a heavier enclosure, heavier woofer, and heavier transformers in the amplifiers. We weren't prepared to compromise performance for reduced weight.

How large a factor is the reduced radius of the MSP10 STUDIO enclosure corners?

The change is subtle, but it does make a significant difference to the sound. By simply changing the corner radius by a few millimeters we achieved noticeable better definition and imaging. This might be partly related to external diffraction, but it is more likely to be a result of the change in the structure and solidity of the corner joints that affects the overall performance of the enclosure.

And what about the 9-process, 5-layer finish? Is it really that important?

Very important. What's on the surface of the enclosure has a significant effect on the way it responds. The right finish can effectively control unwanted resonance in the wood. The benefits of this are most noticeable in delicate decays and reverb tails – in the MSP10 STUDIO they fade out most naturally, without a trace of coloration. The finish we're using is very similar to the finish used on pianos. There's no way to completely eliminate enclosure resonance, but we've succeeded in making it as transparent and "musical" as possible.

INTERVIEW



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