



**“Latvis’s aesthetic
is one of
elegant
simplicity.”**

No vibrations

When it comes to a music playback system, the prevailing view is that there is no such thing as a good vibration. Any vibration your audio system picks up and transmits is potentially a bad one. Instead of sorting out good from bad vibrations, a well-designed playback system should minimize the adverse impacts of all of them. Unsurprisingly, there are different approaches to vibration control. Some designers try to reduce the impact of vibrations by spreading them broadly over the entire frequency range, thereby minimizing their impact at any single frequency. Others try to channel the vibrations to a particular frequency range where they

might be used sympathetically, in conjunction with the musical signal. A similar approach has been used in certain speaker designs, in which cabinet resonances are channeled to function as musically enhancing distortions. Think Shun Mook speakers—or, if you were lucky enough ever to own or hear a pair, the European Holophone Systems speaker line. Others adopt a “Take no prisoners!” attitude toward vibrations. Count the designers at Harmonic Resolution Systems among those who appear to have taken this approach.

Before I explain what’s so bad about vibrations in the audio chain, I need to distinguish among a variety of different but related questions: What are the sources of vibrations in the audio chain? What are their deleterious sonic consequences? Are some vibrations more likely to inflict sonic wounds than others? Are some of those wounds more damaging than others? What are the various ways of eliminating or reducing vibrations? What are the sonic benefits of doing so? Where does one get the greatest benefit for the lowest relative cost?

We can distinguish between at least two kinds of vibrations: structure-borne and air-borne. The sources of structure-borne vibrations include household devices and the audio and video components themselves. Often, the design and construction of an audio component fails to eliminate vibrations and resonances internal to it. If that energy interacts with vibrations at similar frequencies elsewhere in the chain, the energy can, in effect, be amplified as it makes its way to your loudspeakers. The most damaging sources of structural vibrations are loudspeakers. Here the adage “Whatever goes around comes around” is doubly meaningful. Loudspeakers literally shake the room, and that room is the environment in which the rest of your system is situated. The vibrations created by the loudspeaker, including those internal to it, are fed back into the system through the room only to resurface as part of the output from the loudspeaker, and so on in a vicious cycle. Worse, given that most structure-borne vibrations have broad frequency ranges, the prospect of finding matching natural frequencies is high; the consequence is that nonmusical energy can be significantly amplified.

The difference between structure- and air-borne vibrations has less to do with the source than the manner of transmission. Air-borne vibrations originate in anything that is within the audible range of the music playback system. Again, think about what your loudspeakers alone are contributing. These vibrations reach the outer skins of components and the equipment racks, floors, and furnishings that support those components. Some of this energy is dissipated; the rest is transformed into mechanical resonances that, like structure-borne vibrations, wind their ways through your system, often being amplified along the way.

The basic idea is simple to grasp. An audio or video signal from a source component exists in a noisy, vibrating environment; worse, the components in the chain are themselves, to varying degrees, noisy as well. The noise is transmitted throughout the system and is likely to be amplified along the way.

Nonmusical information is detrimental to sound reproduction in a variety of ways. First, it is likely to blur or obscure low-level detail. More often than not, bass, which is hard enough to reproduce accurately under most conditions, will be less resolved and tuneful, and overall accuracy and musicality will be reduced. Timing suffers, and music is inaccurately portrayed.

HARMONIC RESOLUTION SYSTEMS

M3 Isolation Base

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Once is Not Enough

As my time with the M3 Isolation Base drew to a close, Marc Mickelson, Mike Latvis and I put our heads together one last time and decided that it would make sense to add a second M3 Isolation Base to use under the preamp. The first question was, how much, if any, additional improvement would a second Isolation Base make? Second, if there were improvements, in what areas of sound reproduction did they occur?

Soon thereafter, a second M3 appeared at my door. Like the first, the base arrived beautifully and safely packed in a wooden crate. I opened the crate immediately, unpacked the Base—it was considerably smaller than the one on which my turntable was resting securely—and under the Shindo Monbrison it went.

The improvements were noticeable if less drastic, at least as far as LP playback was concerned. With a second M3 in place, the noise floor vanished almost entirely. Images were even better focused, and the sound was even more natural and relaxed. The changes were subtle but real: The effect on LP playback was additive.

The impact on CD playback was positively addictive. The Monbrison is a full-function preamp; in isolating the preamp, I was in effect also reducing vibrations that would adversely impact CD playback. My CD setup includes an Audiomeca Obsession II working as a transport to feed the fabulous Audio Logic MXL DAC. Transports are notoriously noisy, but I had no idea just *how* noisy until I put the second M3 under the Shindo. As with LP playback, the CD noise floor dropped precipitously, the bass became more fully developed, and the overall focus improved.

To ensure thoroughness in the review process, I first left the M3 under the Monbrison, but removed the M3 from under the turntable. The net effect was instructive. Overall LP playback was quite good, comparable to the impact the M3 under the preamp had on CD playback. Sometimes you don't know what you've got till it's gone. Without the M3 under the turntable, the sound was excellent—I could have lived with sound that good forever. On the other hand, the difference between foreground and background was somewhat more difficult to make out; the images were a bit less defined, and the overall sound was a tad less natural. The experience was simply less absorbing.

Then, to ensure *total* thoroughness, I removed *both* M3 bases. Hey, I have a great system, even without any M3 Isolation Bases at all. But I don't have a special one. I don't have one that's as natural and real as music itself. At the end of the day, by eliminating vibrations, the HRS isolation bases simply increase the relaxed naturalness of music playback; and that, my friends, is no small feat, given how hyped-up most high-end systems can sound. Moreover, it is a feat based on sound engineering principles. In my book, by consistently improving the sound of music in a way that is supported by sound science and engineering, Mike Latvis and HRS have gone a long way toward making the entire vibration-control industry credible.

It would seem to follow that the greater a system's potential to resolve inner detail, to produce pitch-accurate bass notes, and to present the musical message clearly and accurately, the greater the risk posed by unwanted vibrations. The greater that risk, the more crucial fine-tuning the system is. This is true enough, but, like many truths, misleading.

Every system has some potential to resolve inner detail—to soundstage. This potential varies and is limited by the quality of the components and their relationship with one another. Unwanted vibrations make it impossible for a system of any sort to realize its inherent potential. In many ways, the less high-end a system is, the more likely it is that the manufacturer has paid inadequate attention to component-based, structure-borne vibrations. So one might say, again correctly but somewhat misleadingly, that if any system could benefit from vibration isolation, it would be a mid-fi one.

The truth is, *all* kinds of systems can benefit from vibration control. The marginal *differences* in impact may be greater in one system than in another, depending on both the inherent potential of the system and the extent of vibration problems in it. The marginal *value* of the difference depends on the importance of musical involvement, soundstaging, proper pace, and accuracy to the listener, relative to the cost of the improvement.

In either case, the easiest way to think about vibration isolation and damping is this: To reproduce a music signal accurately, we need to isolate the components from noise in the environment *and* we must prevent the components from contributing noise of their own. To do this, we must isolate and damp.

The M3 Isolation Base

Harmonic Resolution Systems is in the isolation and damping business. Chief engineer and designer Mike Latvis is a degreed mechanical engineer with a love of music who has dabbled in audio since his early teens. He has spent most of his adult life as a mechanical engineer specializing in isolation systems and noise reduction, working on, among other things, a variety of military and aerospace projects. After designing audio isolation devices for himself and friends, he eventually founded Harmonic Resolution Systems several years ago.

At this point, the HRS product line includes isolation bases that go under electronic components, damping plates that go on top, a record clamp, Nimbus feet, and a newly designed equipment rack that was displayed for the first time at the January 2004 Consumer Electronics Show.

The Isolation Bases are specifically configured to work with the customer's equipment, in sizes that correspond to component size; within the size parameter, they can be constructed to handle components of different weight. They can be placed in equipment racks, on furniture, even on the floor.

I began my review of HRS products with an M3 Isolation Base (\$1345 USD to \$1965, depending on size) placed under my Well Tempered Classic turntable. The M3 Isolation Base is an engineering and aesthetic triumph. Latvis's aesthetic is one of elegant simplicity. Unobtrusive, handsome, and subtle, each Isolation Base has two main structural elements: a machined-aluminum frame and a granite slab. Simple, but only in appearance.

The 0.75"-thick granite slab, which is placed inside the frame, is in fact decoupled from it, and sits on proprietary polymer feet that have two purposes: 1) to support the weight of the granite and the component, and 2) to decouple the granite from the frame and dissipate residual vibrational energy and control structural resonances. The entire base rests on four custom aluminum isolation feet precisely shaped to ensure minimum connection with the surface below (rack, furniture, floor, etc.). Each HRS Isolation Base foot is a six-degrees-of-freedom isolator.

Vibrations that get beyond this first barrier face a series of mechanical chokes and other antiresonance devices machined into the aluminum frame. In all, seven different materials are

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M3 Isolation Base

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“...a special product that far exceeded my expectations.”

used to produce the second line of defense. The materials chosen, and their densities and locations within the frame, are determined by their various antivibrational properties. Final adjustments to materials, combinations, and spacing are determined by extensive listening tests.

The engineering at this stage is no small feat, as HRS Isolation Bases are designed to dissipate nonmusical energy throughout the frequency range. Some isolation platforms reduce unwanted energy at some lower frequencies, only to, in effect, accentuate distortions at higher frequencies. If you've ever heard a rack that had the odd feature of making your system sound both sluggish and bright at once, this is likely what was going on. There is no overstating the engineering know-how that goes into each HRS Isolation Base.

I have had some experience with various antiresonance and antivibration devices, and my experience was mixed. In some environments and with some products, I heard obvious improvements. In other contexts and with other products, if there were improvements, they were subtle at best—and largely escaped my ears. Often I heard differences, but it was not clear that the differences constituted unambiguous improvements. Some equipment racks, for example, sounded bright to me; other damping and isolation devices robbed music of its life and energy. The one thing I was confident about was that, as with speaker drivers, each material had its own sonic signature. Paper drivers sound like paper, metals ring, ceramic is hard, and so on. After that, I wasn't sure what to expect.

An M3 Isolation Base was custom-made to work optimally with the Well Tempered Classic 'table, based on the latter's dimensions and weight. I began the review with the WT tracking a Grado Reference cartridge through the moving-magnet section of the classic Counterpoint 5.0 preamp. Later in the review process, the Counterpoint was replaced by the spectacular Shindo Monbrison preamp, which has a wonderful low-output moving-coil phono section. I also replaced the Grado with a Roksan Shiraz. My listening time was split evenly between the two. Toward the end of the review process, Mike Latvis sent me a second M3 Isolation Base, which I placed under the Shindo preamp (see sidebar on previous page).

The Well Tempered Classic has no suspension, and the design goes to considerable lengths to minimize resonance and nonmusical vibrations. The Well Tempered has a full, rich, warm tone with very good pace and a weighty bottom end. Some find the sound a bit slow down low; others think it is simply correct and that other 'tables are hyped up a bit down low. I waver between the two views, and that probably explains why this is my third Well Tempered. I love it, I leave it, I look for another. If the 'table has any weakness (other than the peculiarities of its initial setup), it is that the upper frequencies are not as extended as they are on some other 'tables (e.g., Clearaudio) with somewhat lighter and brighter tonal balances.

In this regard, the Grado Reference provides a bit more of the same. I had previously used a series of Dynavector and Benz moving-coils with the Well Tempered, but the folks at Transparent, who at the time owned the rights to manufacture and distribute the 'table, use the Grado Reference, as does mastering engineer Bob Ludwig. Encouraged, I replaced the Dynavector with the Grado and off I went.

Before the HRS base arrived on the scene, the sound from the Well Tempered was as expected: big, rich, warm, reasonably well-detailed, coherent, and easy on the ears. I very much enjoyed listening to LPs. I had a good setup. If I could describe it in one word, it would be *musical*. That's vague, I know; but *musical*, *unfussy*, and *satisfying* are just about right.

The HRS changed all that in ways I was unprepared for. First and foremost, there was a drastic reduction in the noise floor. As a result, the background became much “darker”—more silent. The darker the background, the much better-focused the sound and images seemed. The better-focused the sound, the more apparently dynamic it was, with a noticeable increase in the contrast between foreground and background. The greater the contrast, the more lifelike the sound.

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M3 Isolation Base

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Harmonic Resolution Systems M3 Isolation Base

Price: \$1345 USD to \$1965, depending on size.
Warranty: Five years parts and labor.

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The second change took place at the bottom end. No one would accuse Grado cartridges of being highly refined in the bottom octaves. They present a rich, warm, and weighty bottom end, but not a particularly transparent one. With the M3 Isolation Base in place, the WT-Grado combo picked up the pace considerably. The bottom end remained weighty and warm, but took on more definition and transparency. LP playback, which had always been satisfying and engaging, became far more alive and present— even with the Grado cartridge. The sound became, *in comparison*, light-footed and agile.

After nearly two months with the WT-Grado-Counterpoint combo, I replaced the Counterpoint with the Shindo Monbrison. Shindo is legendary for their preamps, especially their low-output moving-coil phono sections. Also, out went the Grado cartridge, in came the Roksan Shiraz. Of course, out too went the M3 Isolation Base, at least until I had a sense of what the new combination sounded like without it.

The Shiraz is rich, robust, and extremely dynamic. It has the body of the better moving-magnet cartridges, the speed and detail of the better moving-coils. It's a Roksan-modified EMT— just a first-rate cartridge.

If the M3 brought an increase in pace, energy, definition, and focus to the WT-Grado-Counterpoint combo while reducing noise, the sound with the WT-Shiraz-Shindo (once broken-in) was a revelation. It's common to refer to a great CD playback system as sounding "analog-like"; when we hear that, we know exactly what the person means. In a completely different way, a great LP playback system can be CD-like. By that we mean that it is dead quiet, the sound seeming to come from a dead-"black" background. There is only sound and that dark silence. With the M3 in place, the new combination was CD-like in just this respect. The music coming from LPs was crystalline in its clarity and transparency. Yet it was also warm and weighty, rich and robust.

The differences the M3 made were nowhere more apparent than on two of my favorite albums: The Modern Jazz Quartet's live double LP, *The Last Concert* [Atlantic SD2-909], and Ron Carter's *Piccolo* [Milestone Stereo M-55004]. Both albums are well-produced and -recorded. Carter's brilliant bass work simply exploded from the speakers against utter darkness. Bass notes were rendered well-defined, full-bodied, and alive in a way that was unmatched in my long experience with vinyl. On the MJQ album, Milt Jackson's vibes were clear as could be, the bass deep and musical, the overall coherence of the performance startlingly real.

Conclusion

The Harmonic Resolution Systems M3 Isolation Base made a substantial, repeatable difference to my Well Tempered Classic turntable's playback of LPs. The difference it made was constant in some respects, varied in others. With both the Grado-Counterpoint and Shiraz-Shindo Monbrison combinations, the M3 Isolation Base increased resolution, focus, pace, and reduced the noise floor dramatically. On the other hand, the differences it made depended on those combinations.

I reject the view that anything that is essential to the success of a music playback system can be called a "tweak." No tweak I have ever introduced into my reference system has ever made a comparable improvement to the music or to the level of enjoyment I have gotten from it as the HRS M3 Isolation Base. It is a special product that far exceeded my expectations. With it, Harmonic Resolution Systems takes its place among the elite manufacturers of isolation devices. This will not be the last you hear from this company.

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