SME 20/2 Turntable

by Shane Buettner

Equipment Report

If you do any poking around to find out who makes today's highly regarded, high-end turntable designs you're not going to have to look hard or far to find someone recommending SME. The Scale Model Equipment Company, known in the audio world simply as SME, is one of those rare companies with a foothold in other markets—aircraft instrumentation and industrial machinery, in this case—that are lucrative enough to allow extraordinary resources to be put into the service of designing and manufacturing audio products that other audio manufacturers simply can't match.

SME was founded in 1946 by Alastair Robertson-Aikman, a passionate audiophile with a now legendary attention to precision and quality control. By 1959 the company was manufacturing tonearms in steady quantities, and today's SME tables and tonearms are remarkable feats of engineering. While most manufacturers are assembling their products from parts made all over the globe, all the components used in SME's tables and arms are built to the most exacting standards imaginable by SME *at* SME. Even the screws and grommets used in the tables are made in-house. And just to be sure, Robertson-Aikman still personally inspects every Series 309, IV and V tonearm, and every turntable that goes out the door with the SME logo on it.

Although the Model 20/2 turntable is available a la carte for $9,999 it's also sold with SME's Series IV.Vi tonearm as a "performance package" for $12,499 at retail. I also used the 20/2 with SME's Series V tonearm and, without playing too much the spoiler to myself, I was so impressed after the months I spent with the SME components that I bought a table and arm for my reference system. Read on to find out why.

Design

SME's 20/2 is a medium-mass, suspended design with an outboard power supply. While it's not dainty by any standard at nearly 40 pounds, the 20/2 is nowhere near the size or mass of many of today's enormous "high-end" mass-isolated designs. In contrast to those designs especially, the SME is remarkably compact measuring just under 17" across and less than 13" deep. Density and stiffness matter more than sheer size in SME's book.

The design rationale for the SME 20/2 is that it has sufficient mass and rigidity to resist vibration, but that when it does vibrate the damping shortens the amount of time it takes for that vibration to dissipate. Low-Q, in other words. The 20/2's base and subchassis are made from a thick, rigid aluminum alloy that's dead—with a capital "D"—and covered with a black powdercoat finish that's quite sturdy with respect to resisting scratches and blemishes. In fact, I was very impressed with the ruggedness and durability of SME's table and arms.

While many high-end tables sport a fine jewelry-like finish with an aura that suggests looking at them the wrong way will cause damage of some kind, the SME makes its fit & finish statement in a heavy-duty, industrial-grade way that speaks to the company's background. The SME table and arms are more Hummer than Porsche, to put a finer point on it, and obviously built to last and look the same 10 or 20 years down the road. The only exception to the 20/2's brick house approach is the soft cover that's supplied to keep dust off of it. It's actually fine at performing its essential task, but caution must be exercised to always put your stylus guard on, and to avoid catching the cuing device if you're using the cover.

The 20/2's subchassis hangs from 32 O-rings, accounting for 64 strands distributed evenly among the four height-adjustable towers of the suspension. A hanging suspension means the state of the suspension materials is relaxed, as opposed to some spring suspensions, where the springs are in a constant state of compression. SME believes their approach solves the so-called "porch glider" effect that makes some suspended designs susceptible to playback artifacts due to horizontal movement in the suspension, which varies the platter-to-motor distance and causes speed variations. The hanging suspension works in conjunction with a fluid damping system. Energy not filtered by the suspension passes through a fluid damper in the base of the table where it's dissipated.

The platter alone weighs just over ten pounds and is matted with Isodamp, which is softer than vinyl and, according to SME

literature, just as sensitive to scratches. cutouts in the Isodamp diffuse vibrations further. The Isodamp mat has a depression surrounding the label area of the record, and then a flat washer fits around the spindle and slightly elevates the area just around the record's cutout. A heavy clamp screws down onto the spindle, pressing the label area down into the depression in the mat and tightly coupling the grooves to the Isodamp mat, and thus to the platter.

There is a cutout area on the left side of the subchassis where the motor and motor pulley rise from the base, so the only physical contact between the motor and the subchassis occurs at the flat belt that wraps around the motor's pulley and the "driven pulley" that spins the platter. Three feet on the bottom of the motor rest in three dimples lined with a rubbery material in the base, and a band similar to the suspension O-rings fastens the motor to the base.

SME feels their approach is most effective at preventing the suspension and other construction materials from imparting their own color on the table's sound. While I don't consider the Linn LP12's sound to be colored by its spring suspension, I do think the SME is in another league as far as eliminating any coloration that its construction materials might impart.

The outboard power supply is only five inches wide and just over 10 inches deep. The power supply connects to the table base and this is where you actually turn the table on at 33, 45 or 78 rpm. The conveniently narrow footprint of the table and power supply allowed me to place them side by side on a single (top) shelf on my rack. Speed can be adjusted for each of the three settings. SME literature is vague on the design of the 20/2 power supply, but it appears the power supply sends computer-generated sine waves at the proper speeds to the motor.

For those curious about SME's step up in the line, the 30/2, here's the short story. The 30/2 is everything the 20/2 is in terms of design, only more. A lot more. Although scarcely larger in overall footprint, the 30/2 tips the scales at nearly 95 pounds—more than twice as heavy as the 20/2. The suspension uses 12 O-rings per tower, for a total of 48 rings comprised of 96 individual strands. Instead of a single fluid damper, the 30/2 has a damper in each of the four suspension towers. Oh, and the 30/2 costs a lot more: $30K (gulp!) for the table by itself.

Series IV.Vi and Series V Tonearms

These two SME tonearms have much in common, and both are works of industrial art. The IV.Vi retails for $3,500, but the "performance package" mentioned above hooks you up with that arm and the $10K 20/2 table for $12,500—saving you a thousand bucks. The Series V arm is obviously the top of the SME line, and SME isn't shy about glossing it "the best pick-up arm in the world." The Series V arm now retails for $4,500, making it and the 20/2 an admittedly expensive $14,500 not-so-value-priced performance package.

Both arms use precision ball bearings at the horizontal and vertical pivot points, and share the same single-piece, tapered magnesium arm tube and headshell. Magnesium is claimed by SME to have an inherently high damping factor, and the constrained-layer, tapered construction of the tube is said to break up resonances further still. Having the arm tube and headshell comprise a single piece, with no additional screws or moving parts, means uncompromised rigidity.

Both arms employ lateral fluid damping comprised of a screw dipping down into a thick, viscous fluid, but it should be mentioned that this version of the Series IV arm (with the damping trough and Magnan internal wiring) is available only in the US through Sumiko.

The differences between the two arms are slim. Tracking force is set statically in the Series IV arm, but dynamically with springs in the Series V. Perhaps the most significant departure between the two is in the internal wiring. The Series V arm uses Van den Hul silver wire, while Sumiko's exclusive IV.Vi uses copper wiring by Magnan. Experimenting in recent years with speaker wire and interconnects has convinced me of the sonic superiority of silver wire versus copper in all instances. When the construction properties have been right (solid-core pure silver, not *silver-coated* copper or any other abomination), silver sounds more revealing and open, but also smoother and easier on the ears. There are other construction factors at work here, too, but I preferred the silver-wired Series V arm.

Setup

My hope is that anyone buying a table like this one would buy from an experienced dealer who would set it up properly. But frankly, SME has done such a thorough job of ensuring that their products travel well, and their instructions for setup are so clear, that I think a novice with a reasonable amount of mechanical inclination could get an SME table and arm setup properly in a relatively short time.

The 20/2 out of the box, in lockdown.

Once unpacked from its sturdy box the 20/2 is remarkably close to being ready to spin. The motor is in place, but shimmed with cardboard packing strips and held fast by a transit screw that's removable by hand. There's an adapter with a measured amount of oil to inject into the bearing housing to supply the bearing with its requisite bath. Two sleeved screws that lock down the suspension must be removed entirely, and then four transit screws must be turned counterclockwise with a ball-ended hex wrench to free the main bearing for play. Pull the flat belt over the motor pulley and driven pulley, carefully lower the platter into place and then level the four adjustable feet on the 20/2's base and you're ready to mount the arm.

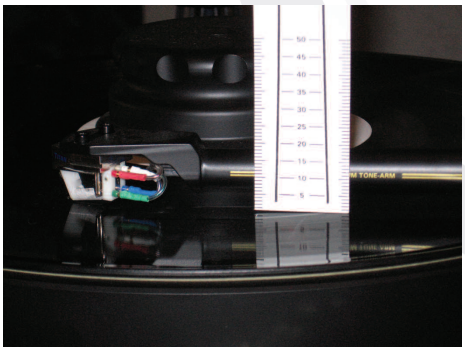
The 20/2 is set for an SME arm, and once the arm and cartridge are securely mounted the suspension can be adjusted. Adjusting the SME's suspension is far simpler than tweaking a spring suspension by eye and feel for just the right amount of pistonic bounce. The ball-ended hex wrench raises or lowers the subchassis at each of the four towers (sounds like a Tolkien quest, doesn't it?). A rectangular key slips in between the bottom of the subchassis and the top of the suspension tower sleeves as a way of measuring the distance. It's recommended that the gap between the two be 3mm, at which point the key fits snugly yet easily between the two.

The instruction manual states that the gap can be exceeded by as much as 2mm to increase isolation. Taking a cue from Silicon Valley turntable guru Brian Hartsell of The Analog Room in San Jose, I got tighter, more focused bass (and more neu-

trality) by increasing the gap from the 3mm point just a bit. Whatever your taste, there's no mystery whatsoever to adjusting the 20/2's suspension.

Once the suspension is dialed in you can finish fine-tuning the arm setup. Setup of the Series IV.Vi and Series V arms is identically straightforward, and I'll mention only some of the highlights. A VTA screw goes down into the base of the arm and allows fast and precise adjustments that are easily gauged using the supplied metered protractor and aligning its measurements with the two stripes that run the length of the arm tube. Drop the stylus onto the middle of a record of the desired thickness and measure the height of the stripes at stylus end of the arm tube and then again back toward the arm base, and adjust to the desired height. I adjusted VTA flat using a 180g record, letting it go slightly negative for 200g LPs and slightly positive for standard LPs. Life's too short and my music listening time too precious to adjust VTA for each record I play.

The tall guy with the rubber end-cap is the VTA screw.



Measuring VTA with the SME protractor.

A key is provided to scoot the arm back and forth to adjust horizontal tracking angle (overhang) using the other end of the same handy supplied metered protractor. The thick, silicone-based lateral damping goop comes in a syringe pre-measured for a fill and a re-fill. An adjustable screw paddles in the fluid. If you want more lateral damping, you just turn the screw farther down into the goop. If you want less, raise the screw farther out of the fluid, and if you want none just keep it all the way up. SME recommends replacing the damping fluid annually and admonishes you to use only their fluid.

Like adjusting the suspension, the amount of lateral damping applied to either the Series IV.Vi or V arm offers the ability to subtly tune the sound of the arm and table. More damping tends to warm up the midrange and treble, but also seems to have a positive impact on imaging, adding some dimension and roundness. The less damping that's applied the more lively and (sometimes) edgy the midrange and treble becomes. Even though I didn't want the additional warmth with the Series IV.Vi arm, I liked what it did to the imaging enough to apply just a little. With the Series V arm I applied perhaps a hair more damping, but really just enough to get the spatial dimensionality I crave.

Final Word on Setup

A critical aspect of the design of any component must address the fact that it will be shipped across the globe and not only must it arrive intact, it must be ready to be set up properly and perform within very narrow tolerances. SME addresses this marvelously, especially considering how many precision (and moving) parts are involved in the equation of a turntable and tonearm.

Every objective of setup and tuning for the SME arms and table is clear, obvious and straightforward, and there's no doubt when you're there. And just as important, the SME gear doesn't drift from its optimal performance setup over time. It's rock solid and, unlike some tables that look more impressive the farther away from them you are, setting up the SME arms and table makes their high quality fit & finish even more apparent. The SME combos make other table/arm rigs look and feel like toys.

Performance

I started with the SME 20/2 and Series IV.Vi arm, and initially used the Linn Akiva cartridge that I had been listening to on my LP12 for months. Using the same cartridge allowed me to hear very clearly what the arm and table were doing, and the differences were stunning.

Whatever I might have been expecting, I did not expect such an immediate and noticeable improvement in the very basic business of *playing records*. I know that sounds odd, because what the hell else does a record player do? What I mean is that the SME 20/2, with the same Akiva cartridge I'd had on my Linn, played back records more quietly, and was particularly more adept at quieting down noisier pressings. I'm not huge on owning super rare and expensive records, but a prized possession in my record collection is a very rare and valuable Nautilus pressing of Neil Young's *Harvest* that is flawless—except for a good-sized and quite audible scratch right smack in the opening of "The Needle and the Damage Done." The 20/2 tracked this song without so much as a tick or a pop! The first time I played it I couldn't believe it. I ran over and dropped the needle again only to be given the silent treatment once more.

Making the records I already own play back quieter is big, but this aspect of the SME's performance also lets me take a few more risks when thumbing through the used record bins here in the bay area. For the most part, so long as a record hasn't been skipped across the street like a Frisbee, odds are the SME will track it and play it with a minimum of noise.

Speaking of dark, quiet backgrounds, on pressings that are *inherently quiet* the 20/2's backgrounds are as black as night and freer of noise of any kind than any table I've heard. This extended the soundstage depth noticeably from front to back, and the precision of image focus increased as well. But I'm not talking in run-of-the-mill hi-fi terms. Focus in this case means that the vocalists and musicians take on nearly physical solidity and density. Not just a voice, but the mouth and head from which it emanates. There's image and then beyond that there's the palpable presence of the performers, and the 20/2 crosses the line for the utmost in communication and expression from the artists to you.

Although the 20/2 suppresses the mechanical artifacts associated with vinyl playback to a greater degree than any other table I've heard, it is not among the many, many tables I've heard that also damp the dynamic life and energy out of the music right along with the pops and clicks—the analog equivalent of tossing the baby out with the bathwater. The 20/2 has more control and authority and yet the grip is never so tight that it squeezes the life out of the music.

But these black backgrounds aren't just a matter of suppressing the LP's mechanical artifacts. More than any other LP playback system I've heard, the SME table and arm(s) simply don't have a sonic signature that you can point to. The closest one could come is tapping the subchassis or base and tying that lack of resonance to the black backgrounds. But there weren't any

tonal characteristics or colorations of any kind imposed on the music that made me feel at any time like I was hearing the LP playback system's interpretation of the LPs I played on it. This system—especially with the Series V arm (more on this later)—simply and wonderfully sounds more like the music and less like a record playing machine. Even digital diehards are going to have a hard time throwing FUD (fear, uncertainty and doubt) at this record player.

The preceding comments pertain to the SME 20/2 with the Series IV.Vi arm, and with Linn's Akiva cartridge. But with the SME Series V arm and Lyra's Titan cartridge ($4,500, read review here) the 20/2 showed me even more.

The SME Series IV.Vi arm delivered terrific sound and I wouldn't fault anyone for going that route, especially since the "performance package" (IV.Vi with 20/2) costs a full two grand less than a 20/2 and a Series V arm. But I liked the sound more with the Series V arm. In fact I liked it enough to pony up the extra scratch myself. So, there I said it: I bought the 20/2 and a Series V arm. Here's why.

The Series V arm has faster, tighter bass and a more strikingly resolved and open midrange—attributes that are unquestionably interrelated. I also found more sparkle in the treble and more transparency overall, which made the Series IV.Vi sound just a touch softer in comparison. Mark those last two words because, indeed, it takes a direct comparison to a superior arm to reveal these characteristics, which are subtle, but enough to get me to open my wallet a little farther. Lyra's Titan upstaged Linn's Akiva (also reputed to be built by Lyra) in some of the same ways, particularly with midrange clarity and top-end transparency. The Lyra might be a touch less full in the bass, but is unquestionably higher in resolution.

With the Series V arm and Titan on board the 20/2, the silent backgrounds and the elimination of the sound of the mechanical operation of the table took the combo to a dazzling level at revealing and defining the sound of the recording space. And while I could certainly cue in on minute details that previously had not been as apparent, this is something more. There is a complete and obvious sensation every time a record plays that the recording space has changed, that the miking techniques are different, that the players are interacting in different environments. These things are presented in a way that's bigger than the sum of the small details. The air in the listening room feels different as you're somehow taken into each new recording space on a large scale, which makes the small stuff that much more convincing.

As for tonality, I might as well describe what's on my records since that's all I hear from this table. But I will say this: I unequivocally hear more extension at the frequency extremes than I ever heard from my Linn and, as is so often the case when that happens with a component, I also felt like I heard more of what's in between. Brushed cymbals have the kind of texture and detail that makes you see the strands of the brush, and a piano lights up the room and then decays naturally, in perfect integration with the fundamental notes. Seductive, lid-off, open detail and shimmer with no sizzle or any other additive detractors.

The bass is no less impressive, with more outright extension than any other table I've heard, for a rock solid foundation to the music. Detail, expression and speed were beyond reproach, and overall the bass on this table sets the analog standard among the tables I've heard. Consider that this is with the suspension adjusted such that the subchassis is drawn up a bit higher than SME recommends initially. At the "stock" position recommended by SME, I did find the bass a little on the thick side, and a touch slower, but fortunately it's an easy adjustment to escape that if you choose. Or not. Different systems require different seasonings.

In the last several months the SME 20/2 has been in my room along with some other formidable tables, including the Linn LP12, the VPI Super ScoutMaster, and even Avid's Acutus. The latter made for an interesting comparison as it resides (roughly) in the same price category at $13K (without an arm), and is also a new and innovative take on the suspended turntable. In short, the Acutus uses a suspension hung from springs, as opposed to sitting upon and compressing the springs. Unlike the SME, the Acutus' chassis and subchassis materials are not critically damped, and the platter itself is very hard. Flicking your finger anywhere on the SME results in a dull thud, while flicking the Acutus platter in particular reveals a higher-pitched sound with some zing to it. And that's pretty much how I heard the two tables.

It's recommended by Avid's US distributor, Music Direct, that the Acutus be sold with an SME Series V tonearm. So for the sake of comparison, I simply moved the SME V with the Lyra Titan from the SME 20/2 to the Avid. The Avid has a lively, forward midrange, and it projects an enormous but solidly focused soundstage into the room. But in comparison with the SME it became apparent that the 20/2's midrange clearly reveals more real information, especially with vocals. This is a difficult distinction. Many audiophiles are seduced into confusing midrange emphasis with increase in detail, especially in short demonstrations. The Avid never approached the SME's bass foundation, making everything sound leaner. Adjusting the VTA of the tonearm added some weight and warmth, but at the expense of the Acutus' forward but lively midrange. It still didn't match the SME, and something was taken away from the Avid's most striking sonic attribute.

Fast, aggressive, dynamic piano recordings also revealed that the Acutus could not keep up with the SME's rock solid footing during complex passages of music. Fine details became blurred, the sound had even more zing and bite, and the image focus became less distinct on the Avid during such passages. One of the SME's many striking attributes is its ability to keep track of every nuance of even the most complex, dynamic passages with no loss of clarity whatsoever. Nothing rattles the SME; everything is there and always in the right place. The Avid isn't a bad table, but it's not my cup of tea, and I wonder what it would sound like with a softer platter material.

Conclusion

The SME 20/2 turntable and Series V tonearm combination is the best I've yet heard, period. If the 30/2, which costs a full three times more, is even incrementally better it must be a staggering achievement. The 20/2 is too expensive to be called a bargain, but I don't think it's overpriced considering that equal performance (or build-quality) is simply not available for less money. In fact, my experience with turntables to date indicates that to get even a little better performance would require wildly disproportionate spending. And my money is where my mouth is on this one since I threw down my own cash to have a 20/2 and a Series V arm in my reference system. I don't think my high regard for the SME 20/2 turntable and Series V arm can be made any clearer than that.

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