



STEREO • MULTICHANNEL AUDIO • MUSIC
the absolute sound[®]

hi-fi+

GUIDE TO

VINYL PLAYBACK

SPONSORED BY CARDAS AUDIO

SME Model 30/2 Turntable

SME's top turntable, a treatise on turntable, arm, and cartridge matching, and a list of new and upcoming vinyl releases.

Paul Seydor

Good, better, best. A logical lead for this review, I thought, pleased with my cleverness. I may be the only audio critic who has formally reviewed all three SME turntables—in the same system and in the same room, no less. And as I reviewed them in reverse order to their introduction—beginning with the newest (and least expensive) Model 10A (Issue 129), proceeding to the Model 20/2 (Issue 141), and now arriving at the Model 30/2, SME's first and still flagship—my cleverness has the additional virtue of being literally accurate both to my experience and to the products' ascending excellence.

Well...maybe not quite literally. For true though they may be with respect to the 30/2's position in the SME line, "good" and "better" hardly do justice to the 10A and 20/2, easily among the finest turntables available. And as applied to the 30/2, the appellation "the best" gained much notoriety not long ago, owing to its rather liberal use by a reviewer not exactly known for restraint when it comes to all things vinyl. Perhaps "best" is an adjective wisest left unused or so severely qualified as to render it useless. I've had occasion

to hear all the contenders for "Best Turntable in the World," but I can't confer that title upon any of them—too many different setups, settings, associated gear, and source materials to start making global pronouncements.

That said, there is undeniably something about the 30/2 that seduces even temperate men into using superlatives. One German reviewer called it "the best turntable of all time." An intelligent, articulate gentleman, and the designer of what is regarded as one of the best pivoted tonearms, was



nearly at a loss for words when he started talking to me about the 30/2 a couple of years ago at CES. As I recall he all but struck a pose and blew a fingered kiss to the sky, mumbling something like "the best, nothing like it, just the best there is."

Is there some basis in reality for such reactions?

Despite a breathtaking \$28,499 (table only) pricetag, the Model 30/2 is in such demand that its importer, Sumiko, could spare only the demo it uses to train dealers, and that for just a few weeks.

The turntable was delivered with a Series IV.Vi arm (see my 20/2 review for details) and a new Celebration moving-coil pickup already mounted.

I don't need a lot of words to discuss the sound. For tonal neutrality, pitch accuracy, highest resolution, transparency, clarity, control, rhythmic grip, attack and release, reproduction of ambience, breadth and depth of soundstaging, ease and freedom from stress, and the whole litany of desirable audiophile clichés, this setup is unsurpassed by any I've used and equaled

EQUIPMENT REVIEW - SME Model 30/2 Turntable

MATCHING A TURNTABLE, TONEARM, AND CARTRIDGE

Matching a turntable, tonearm, and cartridge involves some technical decisions, not just aesthetic choices about which combinations sound the most musical. First, the tonearm must be able to fit the turntable's arm-mounting area. Many turntables have an arm-mounting board on which the tonearm is fastened. The arm-mounting board must be at least as big as the arm's base and be able to securely hold the arm. Any looseness will seriously degrade the sound. When mounted to the armboard, the tonearm's cartridge end should be positioned within a range that allows the cartridge to be positioned at exactly the correct distance from the tonearm's pivot point, a parameter called overhang. Overhang can be set using the turntable manufacturer's template or a third-party alignment protractor.

The turntable's suspension should be stiff enough to support the tonearm's weight. If the tonearm is too heavy for the turntable's suspension, the turntable won't be level. Manufacturers will specify a range of tonearm weights appropriate for their turntables.

Next, the tonearm's effective mass must be matched to the cartridge's compliance. Let's define these terms before examining how they interact.

An arm's effective mass isn't the tonearm's weight, but the mass of the moving parts, and where along the tonearm's length that mass is distributed. Any body has a certain amount

of inertia: A body at rest tends to stay at rest, and a body in motion tends to stay in motion. The amount of a body's inertia is its mass. If this body is rotated, however, the amount of its inertia in the rotational direction is called its moment of inertia. The effective mass of a rotating or pivoting object is the amount of mass that object would have if all of its mass were located at its "center of mass."

For example, adding one gram to the armtube near the pivot point would increase only slightly the effective mass; adding that same gram to the cartridge end of the armtube would greatly increase the effective mass. If you imagine pushing down on the counterweight side of the tonearm to lift the cartridge end of the arm, you can see how that one gram would require more force to lift when it is far away from the pivot point.

Less than 10 grams of effective mass is considered low mass, 11 to 20 grams is considered mid-mass, and more than 20 grams is high mass.

A cartridge's compliance describes how stiffly or loosely the suspension holds the cantilever. The cantilever is the thin tube that emerges from the cartridge body and holds the stylus. If the cantilever is easily moved, the cartridge is high-compliance. If the cantilever is stiffly mounted, the cartridge is said to have low compliance.

Compliance is expressed as a number

by almost none, with colorations reduced to unimaginably low levels.

But what specifically accounts for the special effect this turntable seems to have on even the most jaded listeners lies in three related areas of sonic performance: background silence, dynamics, and that elusive impression of liveliness, vitality, and whatever terms you use to describe that sense of involvement that persuades you the music has come alive in your living room and/or transported you to the venue of its making.

It wasn't long after cueing up the first LP—that trusty Bernstein Carmen on DG—that Melville's famous description of the dark side of Hawthorne's imagination crossed my mind: "shrouded in a blackness, ten times black." This turntable does background black like no other I've heard. (Only the Sota Cosmos and SME's 20/2 might be its equal.)

Since any good turntable already has a lower noise floor than even the best vinyl, I got to wondering what accounts for the darker backgrounds you hear with some, and that seems to exist apart from the noisiness of the source. David Fletcher, the retired designer of The Arm and the Sota turntables, believes it has something to do with bearing noise or lack thereof. Bearings that are beginning to wear or that aren't as precisely machined or well-designed will generate a certain amount of sub-Hertz (i.e., below 1Hz) noise that, although extremely low in amplitude, manifests itself as a kind of vague background grunge.

This in turn leads us to the sensational dynamic range of which the 30/2 is capable—the 'table's fabulously wide whisper-to-roar window. Its dynamics are probably no better than those of several other fine turntables, but in combination

with the incredibly low noise floor, they simply emerge in greater relief. The final movement of the Reiner Scheherazade [Chesky] shows this off to hair-raising effect.

The last thing I put on before the 30/2 had to be boxed up and taken away is my nomination for the greatest-sounding LP ever made: Ken Kreisel's direct-to-disc masterpiece For Duke [M&K], so palpable in its sheer physical impact that, a quarter of a century after first hearing it, "Take the A-Train" still drops my jaw. Such is the level of attention commanded by this setup that no activity other than listening was possible, because the musicians seemed to be in the room. When

SPECS & PRICING

SME Model 30/2 Turntable

Speeds: 33, 45, 78

Dimensions: 17.75" x 8.66" x 13.75"

Weight: 92 lbs.

U.S.

Price: \$36,000 table only; \$40K with SME V tonearm

SUMIKO

2431 Fifth Street
Berkeley, California 94710
(510) 843-4500
sumikoaudio.net
sme.ltd.uk

U.K.

Price: £13,650 (table only); £15,995 (with SME V arm)

SME LTD.

Mill Road,
Steyning,
West Sussex,
BN44 3GY
+44 (0) 1903 814321
sme.ltd.uk

CLICK HERE TO COMMENT IN THE FORUM AT AVGUIDE.COM

www.theabsolutesound.com

EQUIPMENT REVIEW - SME Model 30/2 Turntable

indicating how far the cantilever moves when a force is applied. Specifically, a force of 10⁻⁶ dynes is applied, and the cantilever's movement in millionths of a centimeter is the cartridge's compliance. For example, a low-compliance cartridge (a stiff suspension) may move only ten millionths of a centimeter; we say the cartridge has a compliance of 10. Because this method of expressing compliance is standardized, the reference to millionths of a centimeter is dropped, leaving only the value 10. Moderately compliant cartridges have compliances of 12 to 20, and high-compliance cartridges are of value above 20.

A cartridge's compliance and the tonearm's effective mass form a resonant system. That is, the combination will vibrate much more easily at a particular frequency than at other frequencies. When a bell is struck, it rings at the bell's resonant frequency. Similarly, a tonearm and cartridge will resonate when put into motion. Energy is imparted to the tonearm and cartridge by record warp, turntable rumble, the turntable's resonance, record eccentricity (the center hole isn't exactly centered), and footfalls (the vibrations of someone's footsteps transmitted from the floor to the turntable). These energy sources are all of very low frequencies, perhaps below 8Hz. Higher in frequency, the tonearm and cartridge can be set in motion by the musical signal in the grooves, with the lowest frequency being about 20Hz. Although we can't avoid resonance in the tonearm and cartridge, we can adjust it so that their

resonant frequency falls above the very low frequency of rumble and record warp, but below the lowest musical pitch recorded in the record grooves. By matching the arm's effective mass to the cartridge's compliance, we can tune the resonant frequency to fall between the sources of vibration.

Preventing the tonearm and cartridge from resonating is of utmost importance. The audio signal is generated in the phono cartridge by the motion of the cantilever relative to the cartridge. If the arm and cartridge are vibrating even slightly, that vibration is converted into an electrical signal by the cartridge. Because the cartridge can't distinguish between groove modulation (the musical information) and tonearm resonance, distortion is mixed in with the music. Tonearm resonance distorts the music's tonal balance, colors instrumental timbre, changes the music's dynamic structure (the way notes start and stop), and destroys the sense of space and imaging on a recording.

Excerpted from *The Complete Guide to High-End Audio, Third Edition* © 2004 by Robert Harley (hifibooks.com)

the music finished, I saw that the only note I had scribbled read, "VIVID!!!"

The Model 30/2 represents a damn-the-torpedoes approach to every parameter of vinyl playback that SME founder Alastair Robertson-Aikman deems important, including potential and theoretical ones. Despite its relatively compact size, the 'table weighs 92 pounds. The subchassis and base are manufactured from 3/4-inch-thick aluminum alloy plate, ensuring high mass and stiffness—the cornerstones of SME's philosophy—to sink all spurious vinyl resonances and other unwanted energies to ground.

But bulk isn't the whole story. The 30/2 also employs a unique suspension that seeks to resist acoustic feedback through a combination of tuning and fluid damping. A theoretical liability of all suspended turntables is their relatively high Q; that is, if sufficiently excited, they vibrate up and down or laterally. Because the stylus-groove interface is effectively filtered from structurally induced feedback above the tuning frequency, this is rarely a real-world concern. Still, in all sprung suspensions, compliance is controlled to some extent by damping the springs with foam inserts. SME goes a giant step further. While the subchassis is suspended from 48 custom-molded rubber "O" rings that are distributed over stanchions placed at each of the four corners of the base, the stanchions themselves rest in cylinders filled with a highly viscous damping fluid. Together, SME claims, "These eliminate overshoot

and give almost zero 'Q' recovery."

One point SME's literature leaves unmentioned is that the motor is mounted on the base rather than on the subchassis along with the belt-driven platter (e.g., the Sota Cosmos). Without fluid damping, the potential for occasional speed instability would exist since the subchassis/platter can move independently of the base/motor. The likelihood of this happening outside of an earthquake or a construction site is freakishly remote. But, as noted, the 30/2 is designed to address potential as well as actual problems.

The most novel and perhaps most controversial aspect of the 30/2's design is how the fluid damping is employed in combination with the suspension; because in so stiffening the compliance, the damping must also work to some extent against the effectiveness of suspension. I asked a couple of experts about this. One of them feels that, owing to the high overall suspended mass and extreme viscosity of the damping fluid, SME's is a valid and extremely effective solution to excessive compliance. The other, however, feels that the real-world advantages of filtering from a properly-tuned suspension far outweigh any theoretical benefits that might accrue from reducing compliance. If your turntable is mounted on a sturdy platform that doesn't rock or respond to footfalls, there are few domestic disturbances that should cause even an undamped suspension to vibrate, and most of them would be so disruptive to listening as to render momentary speed irregularities beside the point.

It wasn't long after cueing up the first LP that Melville's famous description of the dark side of Hawthorne's imagination crossed my mind.

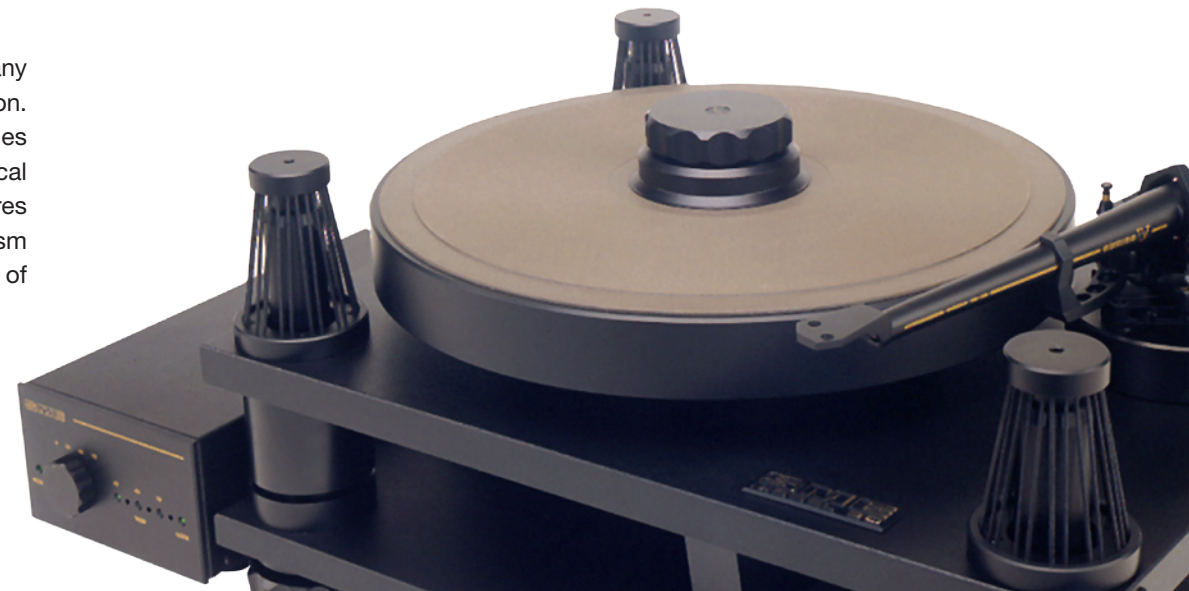
EQUIPMENT REVIEW - SME Model 30/2 Turntable

When experts disagree, the amateur must make up his or her own mind. The SME 30/2 is the only turntable I have used apart from the Sotas that does not require after-market platforms or other Band-Aids to ensure effective isolation from the listening environment. Indeed, though the turntable was situated within three feet of one speaker, there was never even a hint of acoustic breakthrough. No turntable I've used has bested the 30/2 in this regard, and only the Cosmos has equaled it (SME's 20/2 did about as well, but only if mounted on a Townshend Seismic Sink).

In the face of several competitors' offerings, with their oil-rig-in-your-living-room dimensions and Rube- Goldberg assortment of multiple motors, pulleys, belts, rings, pods, cones, line conditioners, and other contraptions, Robertson-Aikman evidently decided that his version of the Best Turntable in the World must be compact and elegant enough to fit gracefully into a domestic setting and be complete in and of itself, ready to use as is—apart, of course, from arm and pickup selection—with no additional purchases required to perform as claimed. He has succeeded without apparent compromise.

Whether all of the expense and overkill involved in the SME 30/2 are necessary for the turntable to achieve its level of performance is a question that remains debatable. One expert I know strongly believes as extravagantly wasteful all turntable/arm designs that cost tens of thousands of dollars are, noting that with creative engineering and clever design, improvements to real-world performance are achievable at much lower costs. It must also be observed that not everybody frames the problems or prioritizes the issues of vinyl playback like Robertson-Aikman.

But once this is said, it is impossible to fault any aspect of this magnificent instrument's execution. Everything I said in my review of the 20/2 applies even more to the 30/2, a masterpiece of mechanical engineering and industrial design that inspires the greatest confidence while rendering criticism principally a matter of confirming the realization of its high goals. **tas**



INCOMING HOT WAX: SELECT NEW AND FORTHCOMING LPS

A Frames: Black Forest

Patricia Barber: Companion and Nightclub (45rpm)

Beck: Guero

Berlioz: Requiem (Abavanel/Utah)

Bloc Party: Silent Alarm

Dave Brubeck: Time Out (45rpm)

Eva Cassidy: Time After Time

Johnny Cash: Original Sun Singles 1954-1958

Ray Charles: Genius Loves Company

Crooked Fingers: Dignity and Shame

Miles Davis: The Complete 1963-64 Columbia Recordings

Dead Meadow: Feathers

Nick Drake: A Treasury

Esquivel and Orchestra: Exploring New Sounds in Stereo

Fischerspooner: Odyssey

Ben Harper and the Blind Boys of Alabama: There Will Be A Light

Jimi Hendrix: Band of Gypsys

Hidden Hand: Mother, Teacher, Destroyer

John Lee Hooker: That's My Story

Hot Hot Heat: Elevator

Magnolia Electric Company: What Comes After the Blues

Stephen Malkmus: Face the Truth

The Mars Volta: Frances the Mute

Jackie McLean: Swing, Swang, Swingin'

Thelonious Monk: Mulligan Meets Monk

The National: Alligator

Of Montreal: The Sunlandic Twins

Alan Parsons: Turn of a Friendly Card

Pit Er Pat: Shakey

Ponys: Celebration Castle

Sam Prekop: Who's Your New Professor

The Royal Ballet Gala Performance (45rpm)

Sonny Red: Out of the Blue

Simon and Garfunkel: Bridge Over Troubled Water (45rpm)

Spirit: Model Shop

Spoon: Gimme Fiction

Unsane: Blood Run

William Elliott Whitmore: Ashes to Dust

Lucinda Williams: Live at the Fillmore West

Wilco: a ghost is born

Link Wray: Jack the Ripper

Neil Young: Greatest Hits