Bergmann Sindre Straightline Tracking arm and Turntable

Thor's Turntable?

paul Seydor

The Danish designer and manufacturer Johnnie Bergmann named his Sindre, a new straight line tracking integrated turntable, after *Sindri* , a dwarf in Norse mythology who forged Odin's golden ring and Thor's hammer. While forging and hammering are pretty far removed even as metaphors from the tasks of playing a record, this would hardly be the first time in the history of audio that a product's name is at once allusive and elusive, and Scandinavians do seem to love actually *naming* their products as opposed to assigning mere model numbers (have a look at the Ortofon catalog or stroll through any IKEA). Bergmann clearly intends to invoke a spirit of workmanship worthy of the gods, which could also be construed as adding hubris to obscurity. Fortunately, there is nothing dwarfish about the Sindre's performance, and its craftsmanship is certainly of a high order indeed. In the remarks that follow I will be making some criticisms of aspects of the design, but I should like it understood from the outset that the Sindre is one of the finest turntables I have ever used and that I enjoyed every minute of the time I had it in house.

As every reader must know, pivoted tonearms are intrinsically compromised because they inscribe an arc across the record, whereas a record master is cut radially, that is, the front to back axis of the cutting stylus is held at a right angle to the groove as it tracks along a radius. Assuming correct arm geometry and pickup alignment with respect to offset and overhang (according to formulas developed in the 1940s and before), lateral tracking error (LTE) of pivoted arms can be reduced but reaches zero at only two points. Everywhere else there is a deviation from tangency with consequent penalties in distortion. In practice the significance of LTE appears to be rather small when arms and pickups are properly set up, its audible consequences even smaller (e.g., the loudest distortion products tend to be of the relatively benign second order harmonic variety). But high-end audio is nothing if not perfectionist, for which reason straightline tracking—henceforth SLT—arms have long been something of a holy grail among designers and audiophiles.

In the late seventies and early eighties I went through a period where I tried out several SLT integrated turntables (these did *not* include the Goldmund, way beyond what I could afford) and found them all lacking in one way or another when compared to my preferred setups (Thorens/SME, Linn, later various SOTAs with The Arm or SMEs). The SLTs' putative tracking advantages were more than offset by any number of problems in the arms and/or their associated tables (see sidebar). Owing to these experiences, I was too discouraged to try some highly regarded separate SLT arms, notably the Eminent Technology, the forerunner to all subsequent airbearing SLTs, including the Sindre's. So when Robert Harley proposed this assignment, interest and anxiety were piqued in about equal measure.

DESCRIPTION AND S ET UP

Priced at $21,000, the Sindre comes as three boxes: the integrated turntable, an outboard controller/power supply for the motor, and an outboard air pump for the airbearings. With its clean lines and black/silver/white color palette, the main unit is appropriately Danish in its elegant

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simplicity, but this simplicity belies a good bit of sophistication in thinking and engineering. The nucleus of the design consists in the use of airbearings for both the arm and platter assemblies. In an arrangement reminiscent of the Air Tangent, Bergmann uses a fixed open pipe with tiny vents along the top. The back of the arm tube is attached to a light, rigid, short sleeve that fits around the air pipe and allows the arm to glide as if friction free. As dust and grit can easily cause an airbearing to hang up, the pump is outfitted with a filter (easily replaceable should the need arise).

The arm is mounted at the factory; its base, counterweight, and bearing assembly are made from a hardened aluminum alloy, the tube from carbon fiber. Setup is straightforward and easy (despite a manual that, as translated from Danish, is as risible as anything I've read from the Far East). Vertical tracking force is static, set by a counterweight, so a gauge (not supplied) is needed. Vertical tracking angle is set by loosening a screw on the arm base and raising or lowering the column as required. For accurate pickup positioning, the Sindre comes with an easy to use aluminum jig that fits over the spindle; on the jig is a radial line from the spindle to a second line that intersects it at 90° near the outer edge of the platter. Simply position the pickup so that the stylus cues down at the crosshairs (the shank aligned with the intersecting line), then check it again at any other point along the radius. Once the stylus cues down on the radius at any two *separate* points, you've finished this adjustment. In place of a headshell in the ordinary sense of the word, an aluminum headpiece terminates into a narrow head beam with a half moon cross- section. Over this fits a crossbeam to which the pickup is fitted. The crossbeam is not otherwise attached to the headpiece until the pickup is installed and tightened down, whereupon they form in effect a clamp around the head beam.

There are two things I dislike about this arrangement. First, the lack of a proper headshell to which the pickup body can be solidly attached might be the cause of one of the few tonal anomalies I heard from the Sindre (more about this later). Second, and more important, in an application where precision is of the essence, there really should be a *default* setting for level *visà-vis* the platter/plinth which can be easily returned to. There is none on the Sindre. Once you get the stylus positioned for correct radial tracking, you've got to loosen the crossbeam to adjust the azimuth; but if you loosen it too much, the stylus will likely over or under shoot the radius, at which point you have to redo that adjustment. In practice, this was not quite so frustrating as I'm making it sound, but I was struck that an arm of this sophistication was not better thought out here.

There is also a more important reason why I dislike the absence of a default to level. Eyeballing azimuth by dragging out mirrors—I almost wrote "smoke and mirrors"!—and other paraphernalia is hardly the most reliable way to get it right, but that only brings up the question of why it wasn't done right *before* the pickup left the factory. I've climbed on this soapbox before in these pages and I shall do so again now: any pickup costing more than a couple of hundred dollars that needs after-factory adjustment to achieve correct azimuth ought to be returned. It is shameful that there are pickup manufacturers who justify the thousands of dollars they charge for their products on the basis of claims to precision engineering and exacting craftsmanship yet cannot guarantee something as fundamental to stereo reproduction as correct azimuth, in effect leaving the quality control to arm designers and us consumers.

The only other aspect of the arm that raised an eyebrow is the cueing mechanism. Running parallel to and below the shaft through which air is vented is a second, smaller tube that extends through the arm base, where it is attached via a rubber O-ring to a large knob. To engage cueing you simply turn the knob, which causes the tube to engage a small pin sticking out from the bottom of the arm at the back, thus raising or lowering it. The trouble is, there is no damping or cushioning of any sort, which means that the speed of the cueing is as fast or as slow as you turn the knob. The uninformed

buyer expecting the typical damped mechanism could easily turn the knob so fast that the pickup actually hits the record when down-cueing or goes sailing into the air when up-cueing. *And there is no warning about this in the manual.* As I already knew about the issue before the turntable arrived, I experienced neither surprise, but it is grossly irresponsible of Bergmann and/or its domestic distributor Aaudio Imports not to put a very big alert in the manual. Otherwise the cueing not only works superbly, it is the most precise I've ever used: absolutely accurate to the groove, with no drift. (For all I know the lack of damping partly accounts for its accuracy. Fair enough, but just let the buyer in on it!)

The turntable is belt driven by a DC motor controlled by an outboard power supply that selects and affords fine adjustment of speed (33/45). According to the literature, the turntable's air bearing consists "of two aluminum discs between which the air supply creates a Recessed on the back of the plinth are a pair of WBT phono jacks (no signal cable is provided, so the user must supply his own), connectors for the air hoses to the outboard pump, and a pair of recessed screws that adjust air pressure for the airbearings. The manual is not terribly clear how much pressure should be applied (nor are there any indicators) and at least one reviewer reported having some difficulties here. I had none. Turn both adjustments to minimum. For the turntable, raise the pressure until the platter, once up to speed, spins without producing any scraping noise against the subplatter. For the arm Bergman supplies a plastic cylinder to obviate the need to set the air pressure with the pickup installed. Place this cylinder over the air tube, then slowly raise the pressure until it glides smoothly with seemingly no friction. That's pretty much it.

The pump operates quietly enough that it can be left out in the open, but the long air hoses and the generic industrial appearance suggest placement out of sight in a cabinet or even in another room. But this also involves an inconvenience, as there is no way to turn the pump on and off except at the pump itself, another surprising oversight in a product this thoughtful and expensive. Surely Bergmann could have figured a way to incorporate the pump's on/off function onto the motor control chassis, which is designed to be placed near the turntable. With no room on the equipment shelf, I had to place the pump in the cabinet below. Unless I wanted to bend down and open the cabinet door every time I used the turntable, I had to plug the pump into one of those switches that plugs into an AC outlet. A one time only annoyance, you might say, and the switch was cheap enough, but I'd still call this pretty Mickey Mouse even if the Sindre were priced a whole lot less than it is.

I've gone into the design and setup of the Sindre in such detail because I know I am far from alone in being skeptical about the advantages of SLT arms in practice (again, see sidebar), especially with respect not only to setting them up but to their being able to maintain their adjustments without constant fussing, tweaking, and other sorts of attention. In my experience the Sindre really does represent something of a breakthrough for an integrated SLT turntable in eschewing needless complexity of engineering and setup while being seemingly full-featured—not to mention foolproof—in operation. My complaints about the head piece, the cueing mechanism, and the on/ off arrangement of the air pump notwithstanding, I've rarely had installing and aligning pickups go quicker, easier, or more accurately than here; and once I performed the other tasks of setup and adjustment, all quite simple and easy, no further trimming or attending to was necessary. Functionally, the Sindre performed flawlessly throughout the entire review period—rarely has playing records been more pleasurable.

LISTENIN G

The first thing I do when reviewing a new turntable before listening to a note of music is to check its isolation characteristics. This may seem a curious, if not perverse way to begin the listening section of a piece about a turntable that features a truly superb SLT tonearm; but the Sindre's plinth is fixed, not suspended, and regular readers of mine will know of my preference for tuned, sprung suspensions as the surest way to protect the stylus/record interface from structure-borne disturbances. No matter how heroic the damping or behemoth the mass, I've never found a fixed plinth arrangement that is anywhere near as effective as a tuned suspension when it comes to physical isolation.

In my listening room all turntables are mounted on a sturdy, built-in cabinet secured to both the floor and the walls. My usual practice is to cue the stylus to a record on a stationary platter, turn up the volume, and tap the surface of plinth. In the case of the Sindre, nothing, not a burp. I raised the volume and tapped harder. Nothing. I raised the volume even more, made a fist, and lightly but firmly pounded on the plinth. Still nothing. So I hit it with considerable vigor and was able to produce the slightest, and I do mean *slightest*, thump through the speakers, so low in level it wouldn't have disrupted quiet conversation. Finally, I pounded the surface of the cabinet as hard as I could with absolutely no audible effect whatsoever. This is *not* only by an order of magnitude the best isolation I have ever experienced from a fixed-plinth turntable, it is the only time I've ever not felt the need for after market remedies with one! Bergmann attributes this to a combination of the Sindre's massive plinth/base, which is constructed of three separate layers of high density particleboard and rests on three metal cones, and the airbearing, which has been designed to act as a kind of "spring."

So how *does* it sound? In a word, superlative. Outfitted with an Ortofon Windfeld, my reference this last year or so, the Sindre sailed with ease over just about every stretch of round black sea I launched it upon. Quite early into the evaluations I noticed two outstanding characteristics that I cannot say for certain owe to the radial tracking but

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that logic suggests do. First, my most difficult to track LPs really do seem to have been negotiated a bit more cleanly and confidently, especially at side ends where the climaxes of so many big works occur. I have one LP in particular—an Argo recording of the Advent service at Kings College—that I've never been able to track absolutely cleanly without at least some residual shatter, especially when the boys' voices go way up high. I have no idea if it even *can* be tracked absolutely cleanly, but the Sindre/Windfeld came closer than anything else I've used, if only by a smidgeon. And in general very hot sibilants on closely miked singers' voices seemed to sound a hair or two cleaner as well.

Second, by a slight margin imaging with respect both to the soundstage and to the position and/ or movement of players and singers within it was more precise, stable, and predictable than from any other vinyl setup with which I've had long experience, while depth appeared to be limited only by the recording venue and the disposition of the microphones. This was made particularly evident by an old favorite I was inspired to pull out: the marvelous *King James Version* , a Sheffield direct-to-disc that was a much-trusted reference in the days when vinyl ruled the world. The miking here offers a middle perspective so that the sense of a big band playing in a beautifully reverberant acoustic (a church in Santa Barbara, I believe) is captured with striking realism, likewise as reproduced.

Of course, the Sindre shines in many other areas. Take resolution: During Father Christmas's monologue near the opening of *The Christmas Revels* I became aware of the venue, the size of the room, its acoustical character, the distances

to the side and back walls (even what they seem to be made from), as I rarely have before. Complex, thickly scored passages with a lot going on in them, such as are to be found on this recording or my trusty Bernstein *Carmen* , are rendered with truly remarkable inner detail and clarity. If you enjoy following scores, know that you can pick out a voice, an instrument, a contrapuntal strand or fugal line and follow it with ease, assuming the mics picked it up and the musicians have balanced it to be heard.

Yet such intimacy is never at the expense of the big picture or the gestalt. In Classic Records's handsome reissue of the Everest recording of De Falla's *Three Cornered Hat* , it was thrilling to hear the opening fanfare emerge with such richness of atmosphere and integrity of spatial presentation, the soprano sounding as if she is with the orchestra, not apart from it. Even more satisfying was to hear her apparently offstage appearance on the second side sound as if she really were offstage or at least quite distant, yet with the voice projecting into the acoustic of venue. An old recording of the musical *Camelot* , made in England with Laurence Harvey as Arthur, recorded very naturally, albeit with orchestra and chorus placed behind the soloists, was staged for the gramophone: in the ensemble scenes, such as "The Merry Month of May" and "Fie on Goodness," the performers move about in a very realistic way that makes the drama come movingly to life. The Sindre's way with dynamics is similarly lifelike, unforced and effortless at the loud end of the scale, refined and nuanced at the quiet end.

As these examples suggest, the Sindre leaves little to be desired in the areas of resolution, clarity, control, and dynamics. When it comes to tonal balance, I became aware of what appear to be just two anomalies. Before describing them, let me say that I am far less confident than many of my colleagues when it comes to ascribing tonal characteristics to arms and turntables. This is because it is impossible to listen to them in isolation, only as a three-part system.All one can do is describe the sound of the setup and compare it to the sound of other setups one has some (preferably long) familiarity with, hoping that a reliable consistency will emerge over time. As readers may recall from earlier reviews of mine, the Ortofon Windfeld in the Basis Vector 4 arm on a Basis 2200 arm/turntable yielded a more dead neutral tonal balance than I've experienced from any other pickup, and some other reviewers, using it in different arms and turntables, came to pretty much the same conclusion. The Sindre/ Windfeld combination yielded similar tonal neutrality throughout most of the range except at the top and very bottom. With every recording I use to evaluate high frequency clarity, airiness, and definition (try the opening cut on Sheffield's *The Name is Makovich*), the sound is as clean and well controlled as I've heard from any setup and considerably superior to most. Indeed, it's a sound that in its precision I'd liken almost to a scalpel. But I also heard a slight Yang, as opposed to Yin, cast, heard a similar effect with the Dynavector 17D III, which rivals the Windfeld for flatness of frequency response if properly loaded (I run all moving-coil pickups correctly loaded), I am led to wonder if perhaps the lack of a full sized headshell on the Sindre arm means that some spurious low level resonances at the stylus/vinyl interface are not being suppressed or passed along to be drained away as heat in the chassis.

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The few reservations I've expressed about the Sindre should be read in the context of the most minute and exacting comparisons made at the

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Bergmann Sindre Straightline Tracking a rm and Turntable

t ype: Straightline tracking air-bearing arm and turntable

Effective arm mass: 10 grams

Motor: Belt-drive, DC, 33/45 rpm

Dimensions: 18.7 ” x 19.7” x 18.26”

weight: 50 lbs.

Price: $21,000

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