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CONSIDERATIONS

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The Oracle Delphi MK II Turntable

So many years passed and through them all the Linn Sondek reigned like a monarch of the British empire. Now, the king is dead and I mean really dead. Recent turntable evaluations have led me to the conclusion that, aside from the Goldmund (the first table in my experience that clobbered the Linn) and the SOTA, at least two other turntables offer significantly improved performance over ol' King George—the Oracle Delphi Mk II and the VPI.

Actually, if you recall some 634 years ago, the Oracle (not yet called Delphi) from Oracle Audio Corporation was hailed by an infamous west coast reviewer, known for his use of cotton balls, as the turntable that buried the Linn 634 times over (the most famous specification in High End history). Alas, that Oracle was a prototype and the subsequent production models, through commendable for a fledgling company, didn't fulfill the promise. Linn, to quote **Monty Python and the Holy Grail,** was "not dead yet".

Fortunately, Oracle Audio Corporation survived its period of great expectations and became an established High End company. Earlier versions of the Oracle Delphi did not sound as good as the Linn I knew and I suspected this was a result, to a large degree, of set-up difficulties. It was every bit as difficult as a Linn to set up correctly.

The Delphi has now seen the light for approximately five years, in which time, **Marcel Riendeau has refined the design until it now ranks with the very best turntables in the world—and, itself, demonstrates a few tricks from which other designers could learn. The Oracle Delphi MK II is, truly, one of the great turntables.**

1. The Oracle Delphi MK II Design.

Although Oracle Audio Corporation designates the table I reviewed as the Delphi Mk II ("Delphi" hereinafter), it is, in reality, the sixth generation of the original Oracle. I am, however, informed by Jacques Riendeau, the Veep, that the expense to update the table is negligible ($50 for the impressive new spring system).

The Delphi, like the SOTA Sapphire, is a holistic design which addresses the major problems encountered by a turntable system. What is fascinating is the different choice of solutions chosen by the designers of the Delphi and Sapphire (and Goldmund and VPI, for that matter). To summarize the differences in approach, I would characterize the Sapphire as a clever design that succeeds through simplicity and the Delphi as an aesthetically elegant design that succeeds through finesse and refinement. I feel the design concept chosen by Riendeau is more difficult to bring about with excellent results in comparison to the less complicated concept of the SOTA. For that reason, Riendeau deserves a hearty round of applause for the level of performance achieved by the Delphi Mk II.

A. The Delphi Subchassis/Spring System

At the outset, I believe (1) it is inherently more difficult to make a low mass subchassis system perform well and (2) that even as its best, a low mass subchassis system has inherent limitations which are exceeded by a high-mass subchassis system. I draw these conclusions from my experiences with four tables of differing subchassis design (Linn, SOTA, Oracle, and VPI). Because the Delphi uses a low-mass subchassis, it has an inherent deseign disadvantage **vis-à-vis** the SOTA. It overcomes this disadvantage with the use of the most sophisticated spring system I've ever used or seen.

The appearance of the Oracle is elegant, exotic, legendary. There is nothing else like it and its appearance is a consequence of its subchassis.* The subchassis looks like a mutated starfish. The three largest arms terminate in circles which fit over the freestanding spring assemblies that support the subchassis. Another arm terminates in a large circle which bears the pick-up arm mounting board. The mounting board is a removable circular piece of acrylic. The fifth and final arm is much smaller and terminates in a built-in bubble level. A cute and practical touch, indeed, which I wish other manufacturers would adopt so I wouldn't always be searching for the level which my elemental is fond of hiding. The designer's stated purpose of this distinctive subchassis shape is to reduce any tendency of the subchassis to pick up airborne vibrations (as if the subchassis were a sail and the vibrations were the wind). A nice sentiment, to be sure, but one I find less appealing than the simple fact that the table looks sexier this way—my "mutated starfish" description notwithstanding. I rather suspect that a significant increase of mass in an enclosed structure would be more effective in combating airborne feedback.

Speaking of mass, the subchassis weighs approximately 4.5 pounds, in starting contrast to the 22-pound SOTA and 40-pound VPI. The Oracle platter is actually one pound heavier than the subchassis, a design aspect I consider suspect because the subchassis should be more massive to provide a stable base for the moving platter. It is constructed of four laminated layers of aluminum. The laminated construction dampens subchassis resonances so that the subchassis is relatively inert while also being very rigid. Although the subchassis is relatively inert when considered independently, it is all the more deadened when it is coupled with the spring system (when you put the table together). Indeed, this is a design concept that shows up repeatedly—the damping of component resonances by couplings within the system.

The suspended subchassis has a tuned resonance of 3.5 Hz. That, of course, is only when the turntable has been properly set up. **Indeed, hypercritical comments about the Oracle made by AHC and BWT in previous issues probably stemmed from the fact that they had no idea how to do it. Oracle Audio Corporation has addressed this problem and resolved it to my satisfaction.** With the new spring system, anybody can set up the Delphi, following a series of reliable, repeatable steps that rely on easily checked measurements rather than the instinctive mechanical aptitude previously required. Perhaps there is room for improvement by special "tweak" finishing touches. **I found the performance to be so good that I had no such inclination to fiddle about.**

The spring system, then, establishes a new standard of sophistication.

First, variations in pick-up arm weight are addressed. The Delphi is a three-point suspension that is workable. The Delphi comes with five color-coded springs of varying strengths. No two springs in use are of equal strength. For ultra-heavy pick-up arms, the three strongest springs are used. The strongest spring bears the most weight so that its expansion is roughly equal to the expansion of the weakest spring, which bears the least weight. This solves many of the set-up and subsequent consistency problems encountered with earlier versions of the Delphi.

I'm talking about spring expansion instead of compression: Yes, the weight of the Delphi subchassis hangs from the springs instead of resting atop them. Furthermore, although the weight rests on the bottom part of the springs, the subchassis's center of gravity is at mid-point of the spring so that lateral excitation of the system causes less of a pendulum effect. Recall that this pendulum effect works in the SOTA. Why then, avoid it in the Delphi? Because the Delphi is a low mass, three-point system in which the pendulum effect would not be corrective as it is in the SOTA—it would be disruptive because it lacks a symmetrical set of springs and the weight that causes a natural centering of motion in the SOTA. (This is one of the clever aspects of the SOTA, which uses normally disruptive forces to its benefit).

*HP: Actually, not quite so. Its predecessors were the Gale and the Win.

The most significant aspect of the Delphi spring system is its approach to damping and isolating spring resonances (yes, resonances in the actual springs). Of the other turntables in my experience, only the SOTA and the Linn make a stab at this area. The Linn uses rubber grommets at each end of the spring and the SOTA places damping material loosely inside the spring. **The Delphi goes far beyond these comparatively meager efforts.**

The Delphi springs are bell shaped (Liberty Bell)—supposedly more effective as a filter due to this shape. More important, Oracle Audio Corporation has immobilized the upper part and most of the lower part of the spring so that only the optimum middle segment of the spring is working as a suspension device. The upper part of the spring is damped by a conical rubber grommet which fits inside the top point of the spring. This grommet absorbs into the spring system most of the initial vibrations transmitted from the turntable base. The lower part is immobilized by a threaded plastic sleeve (which is also integral in suspension adjustment) that is further buffered by a grommet made out of sorbothane. The weight of the subchassis rests upon the sorbothane grommet. The final touch is a sheath of felt inserted inside the spring that presses lightly against the spring. The felt is said to dampen resonances in the critical middle section of the spring without hampering its movement.

I believe the refinement of this spring system has helped to remove some of Delphi's more infamous colorations (midbass overstatement) and, by its level of sophistication, closes much (but not all) of the inherent gap which exists between a low-mass and high-mass subchassis. I would like, very much, to see this type of sophistication present in other High End designs.

My tentative conclusion on other aspects of the design is that the subchassis/suspension, in order to support proper reproduction of low frequencies, must have (1) high-mass and (2) a very rigid platter-to-arm loop which is relatively inert. The two best turntables at very low-frequency reproduction are the Goldmund and VPI which share the design feature on an inert, high-mass subchassis plate on which the bearing housing and arm are both mounted. I suspect that to achieve linear bass response, a turntable suspension must also have a low resonant frequency, preferably around 2 Hz. The SOTA's low bass performance is not quite as tight or deep as the Goldmund or VPI (it lacks the ultra-rigidity in the platter-to-arm loop) but is more linear than the VPI, which (this is tentative) seems to have a midbass to upper-bass area depression.

What of the Delphi? The bass is the Delphi's weakest point. It is flat until it rolls off and loses impact in the low bass. The Delphi subchassis is inert and the loop is fairly rigid. Further, the suspension's resonant frequency is around 3.5 Hz. The lack of sufficient mass, thus, seems to be the critical factor which the sophistication of the Delphi spring system cannot overcome in regard to low frequency reproduction.

B. The Delphi Mat/Platter/Bearing

The Oracle turntables have always been noted for their innovative record/platter coupling system. Briefly, the Delphi "groove isolation" system slightly raises the center of the record and then forces the entire surface of the record flat onto a very sticky mat via the use of a threaded spindle clamp. This system is critical to the Delphi's performance and the best clamping system I have used short of a vacuum system. Surprisingly, the most important aspect of this clamping system is the adhesive nature of the mat.

Because of the clamping device and the adhesive mat, the entire record surface is brought into an intimate contact with the mat that more effectively damps vinyl resonances. The stickiness (viscosity, to be scientific about it) holds the outer edge of the record to the mat and allows the clamp to work from the lead-out groove to the lead-in groove. Other clamp systems only hold the internal part of the record in the necessary intimate contact with the supporting surface.

The Delphi's mat is, of course, made of some proprietary rubber compound. The construction is distinctive because there are carbon fibers in the rubber for the purpose of damping the natural resonance point of the rubber.

Below the mat is the Delphi's aluminum/magnesium alloy platter which weighs 5.5 pounds (my comments on mass, high or low, return here). The platter mass is concentrated around the rim (as much as possible) to achieve the flywheel effect (remember "centrifugal energy," guys?) which helps overcome speed variations caused by the stylus/groove drag. Another unique Oracle Audio Corporation device, the peripheral wave trap (PWT) is a big thick rubber band that fits snugly around the outside edge of the platter. The purpose? To damp platter resonances. Does it work? Yes.

The Delphi bearing uses a tungsten carbide thrust plate (90 Rockwell in hardness) which is removable from the bearing housing for easy replacement if damaged. The spindle (thrust shaft) has a press fitted tungsten carbide ball bearing of equal hardness to the thrust plate. There is nothing remarkable innovative about this bearing; it is merely well-executed, which is the most important aspect about any high end turntable bearing.

C. The Delphi Motor and Drive System

Prompted by the benefits achieved by the Mod Squad power supply, Oracle Audio Corporation has designed a new regulated power supply for all of its turntables. It works as a three-level buffer that isolates the Delphi's D.C. Hall effect servo motor from irregularities in the power line. Dubbed the "dynamic isolator", the Delphi's power supply has two outboard units. First, an outboard transformer steps the line voltage down from 110 volts to 27 volts and rectifies the a.c. to d.c. The 27 volts leaves a headroom of 3 volts over the 24 volts at which the Delphi motor is set to operate. From the transformer, the d.c. passes into an outboard capacitor bank. In front of the capacitor bank is a resistor network which delays the flow of d.c. into the capacitors so that the motor draws its power only from the capacitors that have largely filtered out the irregularities (ripple) in the power. Consequently, the motor draws its power from an energy pool where the ripples have been smoothed out.

The final level of buffering in the Delphi's drive system is the use of capacitors in the Hall-effect sensor to smooth out the transient of the servo motor's operation so that the servo motor's "hunt" effect is defeated.

The consequence of all this power supply sophistication is probably the most stable drive system in existence for a belt drive turntable. I recall

the improvement rendered in the Linn Sondek when the Valhalla modification was incorporated. To wit, greater inner detail and clarity; qualities which the Delphi has in abundance.

II. The Oracle Delphi MK II Sound

The Delphi is a turntable which certainly has a "sound". Had I originally compared it to the Linn and not the SOTA, I would have been hard pressed to describe the Delphi's colorations, just as I had difficulty with the SOTA. However, I now know (and herein report) the "sound" of the SOTA.

I have two standards in evaluating a turntable's sound. One, does it get more or less information out of the record groove? Two, what distortions does it add to the information retrieved from the groove? The Delphi is tops in the first category among the turntables I have tested. In the second category, it is much like the ancient Oracle at Delphi—ambiguous.

The first and most significant aspect of the Delphi's sound is its superior retrieval of information from the groove. The cartridge is clearly tracking the groove with less interference in the mid and high frequencies. Consequently, the noise floor has been lowered and, at or near that noise floor, musical information is resolved with greater precision and clarity. Expressed in terms of dynamics, the Delphi is more astute at resolving distinctions in the pppp range. This quality is, of course, of paramount importance for a turntable. The Delphi also does not lose this resolution of inner detail stressed by complex information in the ffff range. However, its dynamic power comes into question simply because it does not deliver the big, powerful bass of the VPI, Goldmund, and SOTA. Thus, the Delphi has a more "refined" sound when, perhaps, it should not be so refined.

The inner detailing and clarity seemingly extend into the low frequencies because the Delphi so accurately resolves the high frequency overtones of instruments such as the bass drum. Still, there is a lessening of the fundamentals of such instruments. This is the Delphi's one great coloration.

The second quality which is immediately apparent is the Delphi's extension and clarity in the high frequencies. It makes VTA adjustments much easier and more important, lest the highs become cool and hard. I find the Delphi Mk II to be very unlike the description rendered by DAW in Issue 32. The highs do not seem dull (although DAW pronounced the high frequency performance of his Delphi to be accurate) and the midbass is most certainly not overstated. If anything, the midbass may be slightly lean. **The Delphy did reveal the SOTA Sapphire's one most significant coloration, which is a slight softness in the highs and a high-frequency roll off. The SOTA's highs also lack the Delphi's clarity in this region.** Thus, in contrast, the SOTA is slightly yin and the Delphi is slightly yang in tonal balance. Neither is dead neutral. The difference, I suspect, is caused by the different mats on the tables and the Delphi's superior clamp system (for the highs and clarity) and the mass in the SOTA subchassis (for the lows).

Some of the Delphi's superior clarity must certainly come from its top-notch power supply and drive system. I also noted that when the Delphi mat became dirty and lost its adhesive quality, there was a loss in inner detailing, low level resolution, and sound-stage focus. The lost qualities were immediately restored when the mat was cleaned with Oracle Audio's mat cleaner (supplied with the turntable). Thus, a good portion of the differences between the Delphi and SOTA Sapphire stems from Oracle Audio's adhesive mat and clamp system. This, of course, makes me yearn for the SOTA Star (vacuum) Sapphire, which Robert Becker keeps close to his vest and far from us poor little reviewers. For shame.

In contrast to the SOTA, the Delphi's sound-stage is essentially the same dimensions. However, there is a discernible improvement in focus and dimensionality.

III. Conclusion

At this point, I prefer to withhold any further comment on the sound of the Delphi and the SOTA until I can conduct a controlled experiment using master tapes (with a VPI, Goldmund, and another contender). Suffice it to say that the differences described above exist; and you know my preliminary opinion on how each turntable departs from the correct sound.

Which turntable is my reference and which would I recommend pending resolution of the differences? The SOTA is a breeze measured against the initial setup of the Delphi. Both are refined products of top value. The Delphi has the more significant coloration (subtractive) but is otherwise more convincing in its presentation despite the coloration.

In this world of trade-offs, I prefer the Delphi, but only sightly because fundamental low frequencies are so important to music (and me), especially when a component is so extended at the other extreme. More to come.

—TOM

[1]The system used for these evaluations was comprised of the Souther SLA-3 Revised straight-line arm and Monster Alpha-1 or Sumiko Talisman S cartridge; Conrad-Johnson Premier Three or Musical Concepts/Hafler DH-110 (with and without teflon capacitors) preamplifiers; the revised Berning EA-2100 power amplifier; and the Stax F-81 loudspeakers with and without the new RH Lab subwoofer. Interconnects and speaker cable by Discrete Technology.

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