

The Merrill•Williams Turntable R.E.A.L. 101

35 Years in the Making

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George Merrill, a Memphis, Tennessee native, began his career in the audio business when he was just 14 years old. In 1974, he created UnderGround Sound. After realizing how different turntables sounded from one another, he set out to experiment with all the versions of Acoustic Research turntables and modified them accordingly. These “Merrill Mods” made a legend of George Merrill.

MERRILL-1-HEIRLOOM

The next step was to design an original turntable based on these years of research. The Merrill Heirloom was launched in 1978. This pricey product did not catch the attention of distributors in the United States but it contributed to reviving interest in AR turntable modifications.

MERRILL-2 MS2-MS21

In 2001, after having modified more than 5000 AR turntables, George Merrill began collaborating with Anthony Scillia, a mechanical structure engineer and a manufacturer of tools and parts for the aeronautic and medical industries. Subsequently, Mr. Scillia took over turntable modifications and started designing original parts. Impressed by this achievement Mr. Merrill entrusted him with all the work. George Merrill eventually suggested reissuing the Merrill Heirloom, and two years later the Merrill-Scillia Research MS21 was born, combining the experience and the expertise of its two designers. The turntable is machined to a “T” tolerance, the limit in the aerospace industry. The MS21 met Mr. Merrill and Mr. Scillia’s expectations, although its \$24,000 price tag made it largely inaccessible. In an effort to create a more affordable turntable, Mr. Scillia began designing the MS2, which would cost \$8,000 and feature the same inner parts, sub-chassis, and mechanism as the MS21. The difference would be measured in terms of materials used. Early on, the two men were primarily concerned with controlling energy and resonance, which gained the MS21 widespread praise in specialized publications and a “Class A” rating in *Stereophile* magazine.

MERRILL-3 R.E.A.L. 101

In 2009, George Merrill associated with Robert Williams, co-founder of Ardent Studios (ardentstudios.com), first created as Ardent Records in 1959. In 1966, the company moved to the heart of Memphis, where it recorded such artists as Led Zeppelin, Isaac Hayes, James Taylor and Bob Dylan. Ardent is also involved in the development and revival of vinyl recordings. Both partners are obsessed with technology, yet the new product was designed with listening criteria in mind. Vinyl records have survived the test of time, and, according to John Fry, president of Ardent Studios, there is currently an upsurge in interest for their production and reissue. According to SoundScan, vinyl records experienced the most growth of any music format in 2010, with 2.8 million units sold, the best year since 1991. With an increasingly diversified clientele, ranging from customers brought up with the format to teens who find the medium “cool”, vinyl records could come to the rescue of independent record stores. Even Best Buy started selling the format in 2008, and more than 16,200 titles are available on-line as of August 2011.

We are getting now to the third generation of Merrill turntables. Contrary to the MS21 which was an improved version of the Heirloom, the R.E.A.L. 101 (for Rubber-Elastomer-Acoustic-Laminate) uses a radically different approach, though still based on the concept of managing energy dissipation. According to the manufacturer, the final product outperforms the original design. From the onset, I was then expecting an impressive performance, although I did not have the opportunity to listen to earlier versions. However, what can be said at first sight is that this turntable wins points for style in comparison to its predecessors.

The R.E.A.L. 101 has a semi-rigid suspension. It uses the “Energy Management Design” technique developed by Merrill in 1979. The laminated base consists of one piece of a 14 pound rubber compound elastomer faced with aluminum. Certain areas are isolated with what Mr. Merrill calls “Energy Isolation Valleys” (breaches in the laminate) in order to prevent operating parts (motor, platter spindle/bearing, tonearm) from transmitting energy through the aluminum laminate material. Energy isolation and dissipation occur only within the core elastomer, which means that the energy developed by operating parts are absorbed and dissipated before it can intrude and affect the performance of other parts. For example, the motor energy is dissipated before it can contaminate the energy release from the tonearm.

In order to maintain the rigidity integrity intact, seven struts are solidly placed in calculated locations within the plinth to form a support truss system. The aluminum laminate acts as a ground plane so as to deter electromagnetic energy.

Coupling the energy transfer tonearm mounting platform to the dampening elastomer also acts as a means of energy dissipation. Furthermore, the ability to azimuth align to the platform with the platter, is integrated into the design of the tonearm mounting platform.

To thwart energy intrusion, the R.E.A.L. 101 has three inverted hemispheres composed of a special highly absorbent rubber. Finally, the combination of the laminate, feet and platter make the turntable virtually impervious to contamination by air-borne energy encountered in the listening environment.

The platter is manufactured from a compound containing bakelite cellulose and resin, a high density, low resonance and stable material. The platter is then covered with a rubber-cork compound mat that serves to eliminate vibrations within the vinyl as the stylus is tracing the record. The platter shaft is made of precision ground $\frac{3}{4}$ inch stainless steel with a hardened thrust ball placed at the end, and is supported by an oil well bearing manufactured from graphite impregnated nylon. A hardened surface at the bottom of this bearing allows the shaft thrust ball to ride with virtually no friction.

The motor drive uses a regulated DC power supply wired to a microprocessor which employs crystal-controlled adjustable dual oscillators for sine and cosine drive. The oscillators drive two high-power low-distortion amplifiers that power the motor, and the turntable speed can be checked with an on-board strobe light driven by a short pulse square wave oscillator.

Two optional accessories complete the turntable: a periphery clamping ring and a center weight. Unfortunately, I had neither of these at the time of my tests, but I will be able to relate the results in the next issue.

INSTALLATION

Setting up the turntable is relatively easy, and begins by arranging the platform on its three feet. Next, one must connect the cable to the motor underneath the platform, and place the platter on the base. The final and most delicate step is to install the drive belt on the motor disk with the tool provided. No adjustments are needed as there are no springs in the suspension, and all that remains to do is simply to plug in the power supply.



The turntable that I was provided came with a custom base for the Ortofon AS-212S tonearm, the most basic of Ortofon's tonearms. Its installation is very simple, and Merrill even offers the possibility of creating custom bases for any tonearm.

The tonearm was adequate, but it did not reveal all the turntable's qualities, in my opinion. For the first tests I decided to attach a Grado cartridge to the ensemble.

The turntable was placed on a Symposium platform sitting on a SolidTech unit. The motor's external power supply is contained within a metal casing with two power switches for both 33 and 45-RPM speeds. Each speed can be individually adjusted with the help of the strobe light wired to the casing. For my installation, I would have liked to have a longer cable between the casing and the turntable in order to place the casing farther aside. I would also have preferred the light to be attached to the casing with a flexible arm, much like a reading light, since the relay cable forces one to either place the light on the supporting unit or to let it hang. A flexible arm would allow a constant reading of the rotation speed.

I was careful to break in the unit for a good fifty hours before starting my first sound tests, using the Ortofon/Grado combination, but the cartridge seemed to be the weakest link in the system and I did not feel that it was doing justice to the turntable's qualities. For the sake of comparison, I installed my 47 Labs RS1 tonearm with its Clearaudio Signature cartridge, and despite having set the tonearm without much precision, the Merrill immediately began to sing.

It is important to keep in mind that the RS1 tonearm is very unusual and that it goes against many audio principles. First, it is not fixed, but rather placed directly onto the turntable. Second, the cartridge carrier is articulated and third, its placement is not particularly critical.

Once the first step was completed, I removed the Ortofon tonearm and support ring, and meticulously replaced it with the RS1. The only problem was that I had to place a 2" x 3" Symposium plates between the base of the tonearm and the turntable in order to adjust the height of the arm, which could potentially impact the sound produced. I then proceeded to relay the cartridge to a Nagra phono preamp.

LISTENING

From the very first notes it was clear that I was faced with a truly great turntable. Considering Mr. Merrill's 35 years of research and experimentation, and the enviable reputation of his products, this should come as no surprise.

I began my listening session as I often do, with George Gershwin's *Concerto in F*, recorded in 1981 by the Monte Carlo Philharmonic Orchestra conducted by Lawrence Foster, with Gabriel Tacchino on the Steinway piano (Erato, NUM 75024). I immediately noticed the absence of background noise and an ease of listening, with a clear and spacious presentation devoid of excesses in the high medium. The piano rang luxuriously and naturally upon the energetic attack of the notes, and faded amid rich harmonics. On the whole, everything about the Merrill surpassed the sound of my own reference turntable, bitterly revealing its limits. Never before with my system had I encountered such three-dimensional breadth and depth in this recording.

Then followed Purcell's *O Solitude Chants et Anthems*, directed by Alfred Deller (Harmonia Mundi France HM 247, 1979 Winner of the Charles Cros Academy Award). The Merrill's most remarkable feature is the ability to free and separate the choir voices, as well as to eliminate distortion and excessive brilliance. The violins, baroque violas, and bass violas de gamba sounded more polished, and the whole was noticeably less "harsh" than on my reference turntable.

I confirmed this phenomenon while listening to the *BWV 140 Cantata* with the Henrich Schütz Choir from Heilbronn accompanied by the Pforzheim Chamber Orchestra, and conducted by Fritz Werner (Erato, EPR 15540). Once again, a veil was seemingly lifted from the music and the presentation became much more lively.

Next I listened to Margaret Argerich's piano in Bach's *English Suites* (Deutsche Grammophon 2531 088, recorded 1980), a good choice for comparison as I have already listened to it on such turntables as the Linn, Avid, Oracle and my own Goldmund. This record once again demonstrates the Merrill's ability to excel in fluidity and presentation due to a background devoid of noise, and a capacity to viscerally carve out bass tones. Upon remembering the Oracle MkV's presentation, I perceived how well the Merrill wraps notes in their own air and space and I noticed the utter absence of mechanical noise from the cartridge running along the grooves.

Vivaldi's *Four Seasons* by the Saint-Martin-in-the-Fields Orchestra, directed by Neville Marriner, with violinist Alan Loveday, revealed another surprise. The Merrill has an

exemplary ability to free the instruments from each other, decongest the sound, present large and deep orchestral masses without aggressive crescendos, and to give ample room to the first violin in this recording. The Merrill enhances all details in the music with subtlety and care.

During my tests I was fortunate to receive a visit from a musician friend of mine, a trumpet player and the head librarian at the Metropolitan Opera in New York City, though his title does no justice to his real role. He is in fact in charge of ensuring that musicians are provided with the right scores for every performance, adapted to the specifications of the singers. In that role, he has collaborated with the world's most talented artists. With his indispensable musical knowledge and the Merrill on, we proceeded to review a whole series of albums well into the early morning. Of course, his comments on the system and the turntable were highly positive, but I especially took advantage of his presence to measure the Merrill's ability to justly reproduce certain characteristics of vinyl records. We listened again to some of my favorite albums (mentioned previously), and his comments were full of praise for the Merrill's ability to scour information from the deepest recesses of the music and reveal hidden details. He guaranteed to me that he had never before heard such tonal accuracy from a stereo system.

I then presented Monique Pagé and Marc Hervieux's rendition of Théodore Dubois *Seven Last Words of Christ*, from the Fidelio label. My guest was impressed by the singers' presence, and I have to admit that I had never heard Monique Pagé so present and real. When the Radio Ville-Marie Choir took over it seemed as if the room was overflowing with sound, and we could visualize each row and every singer. At a high point in the album on the last notes of the first track, the Merrill flawlessly revealed the depth of the organ going down to 16 Hz. In a rare occurrence, we departed from classical music towards, amongst others, old Georges Moustaki recordings. My friend, though originally from Ontario, lived in Montreal for a long time and had many French speaking friends. And to my surprise he knew practically all the lyrics to Moustaki's songs. It was an emotional evening reinforced by the Merrill, and when the song « Le Métèque » came on, we could feel George Moustaki's warm voice present and solidly anchored between the two speakers. It was an unforgettable musical experience and an unanticipated lesson: I expected a technical opinion and instead experienced a moment of pure joy.

In the following days I continued my tests with Mozart's *Horn Concerto KV 412-417*, interpreted by Gerd Seifert with the Berlin Symphonic Orchestra, directed by Herbert von Karajan. This album has been with me for decades and it is a perfect test for tones. The horn at its peak rang true and, shining in space, clearly detached itself from the orchestra. All this certainly gives a rest to my reference turntable!

All along the tests, the Merrill clearly distinguished itself in reproducing bass frequencies. This was especially salient when listening to « The Rapids » and « Beacon », two of my favorite test pieces, on the *Oregon* album. The bass tones were among the best that I have ever heard on my system; unfettered, without artificial inflation and masking none of the surrounding details. Surely an unequivocal success.

After all my tests, I moved on to a live recording of Paolo Conte's *Concerti*, curious to hear what the "room" where Paolo plays sounds like, since this is where all the beauty of this live recording lies. One is given the impression of being transported to the performance, of really being there in person. Listening to the audience clapping makes one truly realize how accurate and natural the Merrill is. Thanks to the Merrill, this was among the best musical experiences I have ever known.

CONSIDERATIONS

I must mention that the first tests of the Merrill were made without the optional periphery clamping weight or the center ring, which I did not have at the time. However, I quickly substituted my Goldmund center ring for the manufacturer's, the result of which was a far better sound. I'm certain that these two accessories will further improve the sound produced, and once I have received them I will be sure to impart the results of my tests in the magazine's next issue.

CONCLUSION

The Merrill R.E.A.L. 101 is an undeniable success. Then again, one could not expect any less considering the amount of experience and research that went into this product. This turntable has the ability to transport the listener into the recording, and presents an accurate, natural and vibrant performance. Thanks to Mr. Merrill's ingenuity, the R.E.A.L. 101 far surpasses my reference turntable and reveals a wealth of details without any deficiencies in the musical presentation. It opens up and delicately reveals mediums and high mediums like very few turntables do, and it delivers accurate, unfettered and unexaggerated bass frequencies.

It is easy to handle and does not require any complicated adjustments. The Merrill•Williams deserves a tonearm-cartridge pairing worthy of its excellence in order to reach its true and full potential.



R.E.A.L. 101 Turntable

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