

Clearaudio Master Innovation

With this new high-end model, Clearaudio has brought even more of its Statement turntable technology into its Innovation range. So does it really master the music?
 Review: **Steve Harris** Lab: **Paul Miller**

A turntable can become a shrine, in front of which the audiophile devotee performs arcane rituals, hoping to be rewarded with heavenly music. And turntables have become ever larger and more elaborate, until, when it comes to Clearaudio's top model, the Statement, we are looking at the audio equivalent of a high altar.

While the massive Statement continues as Clearaudio's very top model, below it in the hierarchy comes a new flagship for the main Innovation Series. A spectacular and impressive turntable, especially when mounted on the matching Olymp stand, the Master Innovation visibly justifies its rather grand title.

It's certainly not cheap. In the finish seen here the Master Innovation is priced at £14,500, and there is also an all-black version at £15,400. The 9in Clearaudio Universal arm fitted to our turntable adds £3350, while the Olymp stand is priced at £8000, or £8500 in black.

SANDWICH LAYERS

Clearaudio's first turntable, back in the late 1980s, was the original Reference, with a boomerang-shaped acrylic chassis and a deep acrylic platter similar to those still used today. After many further variations came the supremely rational Solution Series, which allowed buyers who'd started with one of the simpler models the option of upgrading later. The same principle applies to the current Innovation Series.

So the Master Innovation is built up on Clearaudio's familiar, elegant, three-lobed chassis members. There are just rather more of them here than in the other Innovation models – even before you include the Olymp stand. Each member is constructed as a sandwich, with a core of Panzerholz between two sheets of aluminium. Panzerholz translates

as 'armour wood' and is an extremely hard type of multi-laminated plywood, manufactured from beech veneers and synthetic resins under pressure and heat.

Looking like two turntables in one, the Master Innovation is in fact built as two separate units. Its multi-platter arrangement provides for Clearaudio's magnetic contactless drive system, which was introduced in the Statement. The upper section is the turntable proper, with a 70mm-thick acrylic platter sitting on a 15mm stainless steel base platter.

This runs on a Clearaudio Ceramic Magnetic Bearing, in which the platter's weight is supported by the repelling effect of

opposing magnets. The platter effectively floats on a cushion of air, while the journal bearing is in the form of a ceramic shaft, designed to be a perfect fit in a bronze bearing sleeve, this fit being achieved by hand polishing. The magnetic fields are

completely shielded inside the bearing assembly and cannot affect the cartridge.

The CMB bearing shaft is also extended downwards to carry the additional 30mm-thick under-platter.

Set into the lower face of this is a circle of 20 neodymium button magnets, and it forms the driven member in Clearaudio's contactless magnetic drive system. Immediately below, and fitted with an exactly complementary array of 20 magnets in its upper surface, is the 40mm-thick platter belonging to the lower turntable section, forming the driving member of the system.

There is a clear air gap of a few millimetres between the two platters, but they are

'Clearaudio's Master Innovation looks like two turntables in one'



RIGHT: Running on Clearaudio's patented Ceramic Magnetic Bearing magnetic bearing is a 70mm-thick acrylic main platter. The version that comes in a black finish has a softer POM platter, which may give a slightly different sound



LEFT: While the lower half of its 'double' turntable construction provides Clearaudio's contactless magnetic drive, the optional Olymp stand is built up of four additional chassis

locked together by the attraction between their sets of magnets. So the lower section is in essence a complete turntable, but its function is purely to provide contactless drive to the player system above. Its left hand front chassis pillar carries the DC motor in a special isolating housing, with four blue-LED-lit control buttons for Off (illuminated as long as power is connected), 33.3, 45 and 78rpm.

CONSTANT MONITORING

Speed accuracy is maintained by Clearaudio's Optical Speed Control system. The underside of the platter carries a stroboscope ring, microscopically etched with more than 1500 bars. This is constantly scanned by an infrared sensor mounted on the chassis, which enables the OSC unit to correct the speed on a virtually continuous basis. A set of three small screw trimmers, set into the wood of the chassis under the platter edge, provides independent fine adjustment for each of the three speeds.

While two of the upper turntable's feet have points to locate on the lower unit's pillar tops, the third foot is cloven in a clever bridge design, to clear the motor pulley and belt. The lower unit's three pointed feet mate in turn with the pillars of the Olymp stand, if this is used.

Clearaudio's most expensive arms are tangential or parallel-tracking types but our Master Innovation came with the top pivoted tonearm, the Universal; this beautifully-engineered arm uses miniature ballraces. Ours was the standard 9in arm but there is now also a £3495 12in version. Both can also be supplied with the optional VTA-Lifter, which allows arm height/VTA adjustment during play, when the prices become £3625 and £3770. Four different counterweights are provided, to accommodate cartridges of any weight up to 20g and more.

PRECISION AND WARMTH

Setting-up was very easy and straightforward, although you need to take care in handling because the components are very heavy. For listening I used the excellent Ortofon Cadenza Black cartridge, but I started with the Benz Glider SL, and immediately felt that the Clearaudio turntable really allowed this always enjoyable pick-up to blossom, combining a sense of accuracy and precision with real musical warmth. A great example ➔

MAGNETIC ATTRACTION

Probably the first hi-fi use of opposing magnets for isolation was in Sony's 1981 SW-90 Floating Magnet Sound Base, an accessory for the high-end Esprit series, which embraced those memorable square-coned APM speaker models. Years later, the idea was unwittingly copied by John Jeffries for his Stratosphere turntable. However, Clearaudio's CMB turntable bearing and contactless drive system are among many startling innovations made possible by the high power of today's magnets. In the mid-1970s, disruption of mining in Zaire led to the 'cobalt crisis', making both alnico magnets and the newly developed samarium-cobalt type vastly more expensive to produce. This spurred on research that led to the first neodymium-iron-boron alloy magnet in 1982. Neodymium magnets are now used in countless applications from computer drives to flying toys.

TURNTABLE

NEW DRIVE CONCEPT

First of Clearaudio founder Peter Suchy's children to enter the business was Robert, joining in '91. In charge of exports and marketing, he probably deserves quite a lot of the credit for the company's continuing growth. His brother Patrick has also been with the company for some 15 years, while sister Veronika joined more recently.

Since the late 2000s the Innovation Series has replaced the previous Solution Series with many advances, starting with Clearaudio's patented Ceramic Magnetic Bearing [CMB]. As Robert Suchy explains, 'Right now it is reserved in Europe, but we are working on worldwide protection. The Optical Speed Control does not need patent rights protection, because it is exclusively designed and produced only for us. We introduced this with the Innovation Series.' In fact, the OSC forms part of a new drive concept, with a DC motor built into the main chassis, replacing both the old freestanding single motor and the three-motor system of the Maximum Solution and Master Reference.

As Robert Suchy explains, 'One aspect design-wise was to implant the motor. The second one was the integration of a better drive system, with the DC motor. The decoupling and isolation gave us a lot of headaches, but finally we designed a double isolation cylinder, which has the same ability as a free-standing motor unit. The change to the CMB and the changes of platter weights and optimisation provided a solution that achieved the same effect as three motors.'



ABOVE: A complete new drive system with a single DC motor has neatly replaced the three AC motors of Clearaudio's previous 'side-force-free' belt-drive concepts

of this was the way it put over Joan Armatrading's first album, *Whatever's For Us* [Cube Records HIFLY 12]. Here a full-bodied presence brought out the singer's emotion and the nuances of vulnerability too, seemingly balanced perfectly against the lush instrumental backdrops added by Gus Dudgeon, so that what can seem like bloated over-production became harmonious and thoughtful support.

Possibly the best compliment to this Clearaudio turntable is that it encouraged me to revisit and enjoy a lot of records that hadn't been played recently. I've always felt that Paco de Lucia's 1987 album *Siroco* [Mercury 830 913-1] might somehow have lost something in the translation from the actual Madrid recording to the digital mixing at Wisseloord Studios in Holland. But while the Clearaudio laid bare a somehow rather brittle, tensed-up quality in the recorded sound, at the same time it helped you hear through to the passion and power of the artist and his intentions.

Going back again to the 1970s, with Joni Mitchell's *Ladies Of The Canyon* [Reprise K44085], I felt once again that the Clearaudio turntable and Benz cartridge delivered warmth and richness as well as alluring detail. You had to be captivated by the pretty imagery of 'Morning

Morgantown' before being drawn into the emotional depths of some of the other songs. The big acoustic guitar sounds were just right and the piano didn't become too clattery. The Clearaudio player had a stability and strongly-grounded quality that let the music speak across the decades.

MAGICAL TEXTURES

It seemed that the turntable could keep a sense of proportion, with music of any

scale. It could be both impressive and inviting in orchestral works.

On a 1971 recording of Schubert's 4th and 5th Symphonies [VPO/Kertesz; Decca SXL 6843] the orchestral sound was a delight,

spacious and airy, while the music had its proper drive and momentum. It always seemed ready to give you the rich, magically tangible textures of the Decca sound, and even the LXT mono albums had a great sense of depth perspective.

With Eric Clapton's *Backless* [RSO Deluxe RSD 5001] 'Walk Out In The Rain' displayed a firm and impulsive quality to the electric bass, although the track as a whole did not sound so bass-heavy as it can. Here, the treble was well detailed, revealing the subtleties of cymbal splashes, organ chords and background slide guitar which have been fed into the mix, so that it never

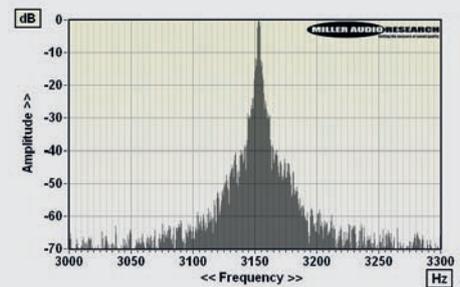
'Even the Decca monos had a good sense of depth perspective'

LAB REPORT

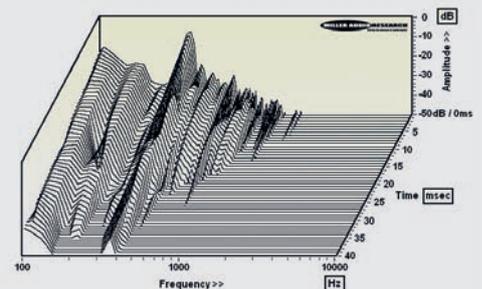
CLEARAUDIO MASTER INNOVATION

Comparisons with Clearaudio's 'directly belt-driven' Innovation deck [*HFN* Sep '09] are instructive, for this Master Innovation shares the same inverted bearing with a polished sintered bronze insert and ceramic ball for the *drive* platter while the playback platter is supported and coupled via powerful magnets. The in-groove rumble is almost identical at -70.1dB but the through-bearing rumble (measured at the magnetic bearing) is some 3dB lower at -73.5dB and on a par with the very best turntables we have featured in *HFN*, including those from SME and TechDAS [see p16]. The sharpness of the main peak in the W&F spectrum [see Graph 1, below] is indicative of the Master Innovation's minimal low-rate drift while both peak wow and peak flutter are <0.02%. This is an excellent result. Power consumption varies from 7W at startup to 4W once stabilised and the 9sec period inbetween reflects the extra inertia of the double platter arrangement featured here.

Clearaudio's partnering Universal tonearm also passed through our lab tests with flying colours. Bearing friction is <10mg in both planes while the cumulative spectral decay plot [Graph 2, below] reveals some housing modes up to 200Hz, one main beam mode at ~350Hz and several lower amplitude harmonics up to around 2kHz. Importantly these modes decay by at least 30dB over the 40msec time window available to the test – this is far from a 'lively' arm and an ideal partner for energetic MCs. Readers are invited to view a full QC Suite report for the Clearaudio Master Innovation turntable and Universal tonearm by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted ±150Hz, 5Hz per minor division). Absolute speed accuracy can be finely adjusted by the user



ABOVE: Cumulative tonearm resonant decay spectrum, illustrating various bearing, pillar and 'tube' vibration modes spanning 100Hz-10kHz over 40msec



ABOVE: Since our picture was taken, Clearaudio's magnetic drive platters have had additional stainless steel elements embedded within them to increase their mass

descended into a grungy mess, but remained almost polite. On 'Watch Out For Lucy' the bass was quite agile yet somehow sounded a little elusive and perhaps not substantial enough. But again the backing details, in this case Marcy Levy's rather de-emphasised background vocals and the twitching little harmonica licks, were clear enough to catch the ear.

PRESENCE AND INTENSITY

With the superb Ortofon Cadenza Black, the rocking sounds of Eric Clapton were tougher and more upfront, with the cartridge displaying the kind of impressively deep, controlled bass that seems to be a strong feature of the whole Cadenza range. Yet there was a tremendous level of detail too, with the fastest guitar chops far back in a complex mix being clearly heard.

On *Backless*, the bass-lines were powerful and the drums quick, while Clapton's vocals had presence and a gritty intensity. This combination really shone on 'Roll It', seeming to revel in Clapton's exuberant display of guitar sonics and particularly his stirring slide guitar sound, driven onwards by a thunderous rhythm.

The Clearaudio/Ortofon combination showed it could do acoustic instruments too. When I put on a 1974 recording of Beethoven's Septet played by the Ensemble of St James [Classics for Pleasure CFP 40059], it was striking to hear the instruments firmly placed in a believable space. A fairly weighty

balance suited this music, with its foundations laid by the double-bass with horn and bassoon above in a warm lower-mid balance, while the treble seemed just incisive enough to give immediacy and pace.

That impressive bass quality came to the fore again on Jennifer Warnes' *Famous Blue Raincoat* [Classic Records/Rock The House RTH5052-1]. On the title track the instruments worked their magic around Warnes' beautiful vocal, while the sax obbligato was perfectly placed and even sweet. The classic 'Bird On A Wire' provided a great example of the Clearaudio's ability to produce a huge soundstage with instruments placed wide and deep, while at the same time giving you all the force and vigour of Vinnie Colaiuta's hot drumming. The beat goes on. ☺

HI-FI NEWS VERDICT

Although it lacks the Statement's 'pendulum' chassis system, this model embodies the rest of Clearaudio's signature technical advances, yet is easy to set up and use, with or without the rather expensive stand. Either way it seems that the special bearing and drive system do give it a sound with exceptional detail retrieval, as well as a stable, neutral and open quality that is thoroughly admirable.

Sound Quality: 87%

