

TURNTABLE/ARM

Belt-driven turntable with electronic speed control and arm
Made by: European Audio Team, Prague
Supplied by: Absolute Sounds Ltd, UK
Telephone: 0208 971 3909
Web: www.euroaudioteam.com; www.absolutesounds.com
Price (including arm): £2498

**AUDIO
FILE**

EAT C-Sharp/C-Note

EAT made its name with tubes before adding a distinctive turntable line. The C-Sharp maintains the brand's glossy visual appeal, but can it deliver sonics to match?

Review: **Steve Harris** Lab: **Paul Miller**

It's now some six years since EAT, already established as a maker of high-end audio tubes, burst into the high-end turntable market with the spectacular Forte and Forte S [*HFN* Dec '10]. EAT followed up with the E-Flat and its unusual tonearm [*HFN* Jan '12]. But with the new C-Sharp (£2498), EAT has moved into much more affordable price territory.

EAT's founder Jozefina Lichtenegger is wife of Pro-Ject boss Heinz Lichtenegger [see boxout], so it comes as no surprise that the turntables are manufactured in the same facility at Litovel in the Czech Republic. But although they clearly share some design heritage, the EAT products are quite different from anything offered under the Pro-Ject name.

SLIMMED-DOWN DESIGN

Many turntables of the high-mass school are unwieldy-looking devices, where the record is perched up on a platter that's as tall as it is wide. With the Forte, EAT took the lateral-thinking step of making the platter's diameter larger instead, to create a high-mass design that looked really good: a turntable of classic proportions and elegant design, but on a heroic scale.

With the Forte S, the platter diameter was reduced and the twin motors were built into the plinth, rather than having a separate outboard unit. With the E-Flat the two motors were hidden under the platter, driving a sub-platter from opposite sides through a single belt.

For the C-Sharp, EAT has produced a design that's slimmed down further. It uses the E-Flat's oversize 340mm diameter platter, but, with a single motor sunk into a rather shallower plinth, the whole player has a lower profile.

Immaculately black-lacquered, the plinth is made of 'highest density' MDF and is supported on three large cone-shaped screw-in aluminium feet with soft inserts,

adjustable for levelling. Nestling within the rim of the plinth, the carbon-fibre-patterned top plate forms a suspended subchassis on which the main bearing and arm are mounted.

It's actually a sandwich of carbon-fibre and MDF, supported on ten compliant elastomer cones. Once you have removed the three transit screws, this subchassis can move with its intended damped freedom.

The main bearing is an inverted type, its 10mm-diameter shaft projecting upwards from the subchassis and topped by a ceramic ball. Over this fits the sub-platter, with its matching bronze journal. As with the E-Flat, the sub-platter is a substantial item, a machined aluminium disc 80mm in diameter and 15mm thick. The belt, a round section type is said to be made from special anti-static rubber, which is then glue-joined and polished.

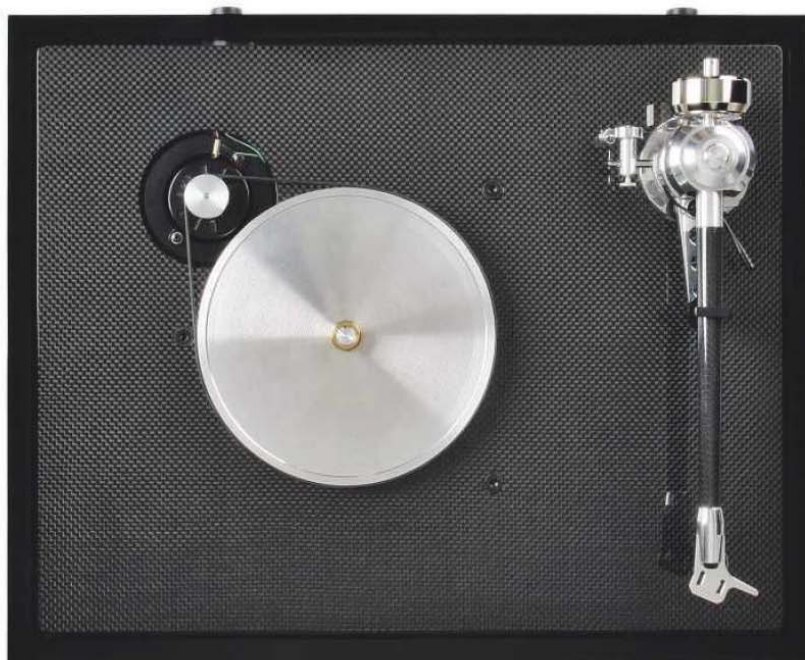
Because most of the platter's mass is in the sloping thick rim, it will have a greater

flywheel effect than a conventional-sized platter. Yet with the bonded-on polymer playing surface measuring just under 300mm, it's easy and convenient to put records on and take them off.

EAT's chunky two-part record clamp has a felt face underneath and so cannot damage your record labels. It's nice enough to use, but takes about six turns on the centre part to screw it down.

SEPARATE SPEED CONTROLLER

A small separate unit [see bottom of p35], EAT's speed controller takes low-voltage DC power from a plug-top power supply unit and synthesises the appropriate AC current for the two motor speeds. In standby mode, the central button will be lit green. Touch the 33 or 45 button, and its LED will flash blue until the correct motor speed is reached, when it will glow solid blue (this takes about 12-20 seconds). No fine speed adjustment is provided.



RIGHT: Here the (single) motor is mounted on the main plinth, while a carbon-fibre-skinned top plate forms a suspended sub-chassis to carry the main bearing and tonearm



Looking imposing if rather 'blingy,' the 10in C-Note arm fitted to the C-Sharp is described as 'a completely new design which combines all advantages of a unipivot arm with a Cardan design'.

It's hard to discern what's actually inside that big bearing housing. On top is a knurled button which, when unscrewed, comes out complete with a downward-pointing pivot about the size of a very large drawing pin. EAT's blurb only states that 'The unipivot in the middle helps the bearing to be less loaded'.

Whatever the secret of the bearings, the C-Note has the stability of a conventional gimbal type. So it doesn't wobble all over the place like a unipivot, but is easy and comfortable to handle; and there is almost no bearing play in the lateral direction. There is play in the vertical direction, but if the bearing design is good this will not be critical, as the bearing will always be loaded by the mass of the arm.

Arm height adjustment for VTA is carried out by slackening the two hex bolts that lock the sliding arm pillar in position in its mounting. At the front end, the sleek-looking tapered carbon-fibre arm tube is completed by a polished aluminium

headshell. Its straight sides and squared-off front edge make for an easy visual reference and, in fact, installing cartridges could hardly be simpler. EAT says that inside the tonearm is a special silicon-based grease to damp tonearm/cartridge resonances 'by more than 50%'.

The large-diameter rear counterweight is not so heavy as it looks because it is a hollow shell filled with a sorbothane-type material. A small accessory disc can be bonded on, allowing the arm to comfortably balance out even quite weighty moving-coils.

Balancing and tracking force adjustment is, as usual, carried out by winding the counterweight forward or back on its stub. The only slightly fiddly aspect is the thread-and-weight bias compensator. This is sited inboard of the C-Note arm housing, but the nylon thread must be passed around the back of the housing to hook onto a small peg on its outer side.

LIGHT, BRIGHT AND CLEAN

So, although this turntable comes pretty well disassembled, it really proved quite easy to put together and set up. I started by installing the excellent Ortofon Cadenza

ABOVE: While the C-Sharp shares the E-Flat model's heavyweight oversized platter, it carries an all-new 10in arm. Seen below is the matching control unit with electronic switching

Black, which worked very well. It gave a strong and commanding sound, with a fine, extended and very well-controlled bottom end, and detailed upper registers.

However, I also had extremely enjoyable results using a Benz Micro Glider SL. Although the bass was not so tight and the mid not so analytical, I felt that the easy-going Benz was subjectively a really good match for this turntable. With the C-Sharp, it always sounded warm and open, and I ended up just wanting to listen to more and more music.

On music with a beat, the turntable had an appealing, lively bounce about it. Listening to funky guitarist Mel Brown and the neat little instrumental 'W-2 Withholding' from *Eighteen Pounds Of Unclean Chitlins And Other Greasy Blues Specialties* [Bluesway BLS 6064], Brown's trademark tricky blues picking seemed hugely energetic. Brass and organ sounds were light, bright and clean, while the unidentified bass player's great sound came over with immediacy and clarity.

Again, the EAT delivered a meaty and beaty sound on the classic direct-cut *I Got The Music In Me* with Thelma Houston and Pressure Cooker [Sheffield Lab LAB-2]. In the title track, with horns, keyboards, guitar and background vocals all seemingly going flat out, the EAT seemed 



A FAMILY PRO-JECT

Jozefina Krahulcova entered the hi-fi business through a family connection, as her sister was married to the valve maker Ales Vaic. In 1998, while studying at the University of Economics in Bratislava, Jozefina started working for Vaic. She learned all she could about the art of making valves and she represented the company overseas. But times changed at Vaic and after only a few years, Jozefina was ready to set up on her own, as EAT. By 2003, she was having KT88s and 300Bs made by Tesla Vršovice in Prague, and it was while looking for a distributor in Austria that she met her husband-to-be Heinz Lichtenegger, owner of Pro-Ject. In 2006, Jozefina was able to purchase Tesla, moving the factory from its original site in Vršovice to Hloubětín, to the north east of Prague. Finally, with the facilities of Pro-Ject available, EAT was able to enter the turntable arena.



ABOVE: The C-Note arm's counterweight is damped by a sorbothane-like polymer while the nylon thread for the bias outrigger sits in a groove around the arm base, improving stability. The arm/signal out and PSU sockets use colour-coded connectors

unfazed and kept things well balanced. You could perhaps have asked for a bit more detail and definition in the brass, but the background vocals stayed sweet and didn't squawk, and the overall effect was great, a sound full of vitality.

Turning to more studio-based productions, the EAT seemed to be quite good at humanising a relatively processed recording. On Stevie Winwood's 1980 solo album *Arc Of A Diver* [Island ILPS 9576], Winwood overlaid all the instruments himself to a point where his vocals often seem almost buried in the mix. Yet with EAT they were always intelligible and impactful, so that the songs made sense.

ATTRACTIVE LIVELINESS

On intimate, small-scale classical recordings, the EAT could evince a quite convincing sense of space, and at the same time its lively quality was attractive. With Beethoven's Septet played by the Ensemble of St James [CfP CFP 40059], the players came to life in a very appealing way with characterful woodwind sounds. The spacious sound of the recording venue was made quite apparent, and the performance took on a good sense of scale since the double-bass was given its full weight and authority in the ensemble.

It was great to find some recent audiophile releases that really lived up to their promise with the EAT C-Sharp, and one of these was the expanded 2LP issue of *Last Dance* by Keith Jarrett and Charlie Haden [ECM 378 2250]. I was immediately captivated by Jarrett's spiky, instantly-communicative piano on 'My Old Flame', while Haden's string bass had terrific energy and presence, with a seemingly extra deep response from the EAT giving weight and gravitas. Even after Jarrett had turned the tune inside

out and upside down, Haden's bass solo burst out of the speakers with real passion.

After this, it was easy to relax into the superbly-crafted production of Eric Bibb's 2003 *Natural Light* [Pure Pleasure PPA 018]. On a highly-arranged track like 'Tell Riley' the backing musicians were nicely spread behind Bibb across a wide, fairly deep soundstage. And it truly conveyed the rich sound of Bibb's baritone vocals on a more intimate, introspective song like 'Circles'.

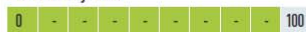
Finally I had a great mono blast with a record that's very far from audiophilia, *The Best Of Elmore James* [Sue Records/Island ILP 918]. As with other compilations of American material on this short-lived imprint, the overall sound makes you suspect that the tracks were simply dubbed from the US 45s.

But it was this compilation, released less than two years after James's death in 1963, that brought 'Dust My Blues' and 'Shake Your Moneymaker' to impressionable young British ears. On the C-Sharp, this music seemed every bit as vibrant and exciting as it ever did back then. 🎧

HI-FI NEWS VERDICT

With this model, EAT really is offering a lot of turntable for the money. The Czech company's unique advantage, of course, is its close association with Pro-Ject's manufacturing resources, and many of the design decisions and material choices seem to reflect the latter company's expertise. Yet this is still an eminently luxurious product and, if the looks grab you, the sound certainly won't disappoint.

Sound Quality: 83%

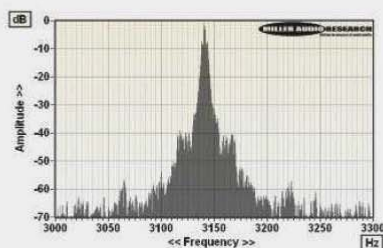


LAB REPORT

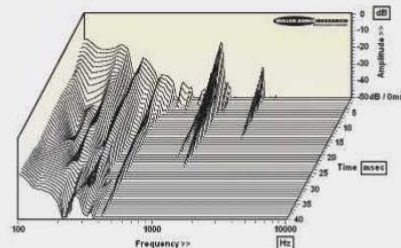
EAT C-SHARP/C-NOTE

As supplied, the new C-Sharp may have required a protracted 9sec start-up time and run slightly slow (-0.32%) but its performance was otherwise very close to that of EAT's E-Flat [HFN Jan '12]. Wow and flutter was well controlled with peak figures of 0.03% and 0.04% respectively [see Graph 1, below]. The -68.9dB through-bearing rumble improved by about 1dB through-the-groove (the clamp made little difference here) but alongside the inevitable hum and noise components seen on almost all turntable rumble spectra, the C-Sharp has a clear mechanical mode at 79Hz and minor harmonic at 158Hz, the primary at -65dB relative to the pick-up output at 1kHz/5cm/sec. We saw the same modes with the EAT E-Flat...

The partnering C-Note tonearm has what EAT describes as a 'traditional Cardan bearing', or pin and block unipivot, which offers good stability and low friction (<10mg) in both planes. This new arm design features an alloy bearing housing, a tapered carbon-fibre tube and bonded alloy headshell, the latter contributing to the high overall 15g effective mass but allowing the use of low compliance MCs with 'heavyweight' mounting hardware. The carbon tube's main bending mode is deferred to a reasonably high 205Hz with another mode at 280Hz and harmonic at 420Hz, all quelled by the tube's internal damping (carbon tubes can exhibit high-Q resonances if undamped). The sharp mode at 1.08kHz and harmonic at 2.22kHz are linked to the alloy headshell and fingerlift, but are short-lived. Readers may view full QC Suite reports for EAT's C-Sharp turntable and C-Note 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 ± 150 Hz, 5Hz per minor division). The -0.32% absolute pitch error will be inaudible



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

HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	33.23rpm (-0.32%)
Time to audible stabilisation	9sec
Peak Wow/Flutter	0.03% / 0.04%
Rumble (silent groove, DIN B wtd)	-69.8dB
Rumble (through bearing, DIN B wtd)	-68.9dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-56.8dB
Power Consumption	11W
Dimensions (WHD)	500x135x400mm