

ALL-IN-ONE TURNTABLE

Belt-driven turntable/arm/cartridge with phono stage
Made by: SME Limited, Steyning
Supplied by: SME Ltd
Telephone: 01903 814321
Web: www.sme.co.uk/audio
Price (with arm/cartridge): £14,950

AUDIO
FILE

SME Synergy

After a change of ownership comes an unexpected new direction for this iconic British analogue brand – meet the world's most prestigious all-in-one turntable package...

Review: **David Price** Lab: **Paul Miller**

Ten years after the passing of SME's founder, Alastair Robertson-Aikman, in 2006, the hi-fi world's most iconic precision engineering brand finally moved out of family hands to be acquired by Ajay Shirke's Cadence group. Former aerospace man Stuart McNeilis was appointed as CEO [interview, p39], and the company signed up a UK distributor, Padood (also handling Nagra), for the first time.

In just one year, the fruits of this investment were realised in an entirely new product – the company's first ever turntable package – with motor unit, tonearm, cartridge and phono stage all bundled neatly together. The £14,950 Synergy was unveiled in early form at the 2018 High End Show in Munich and is presented here, exclusively, in its final production guise.

FLEXING ITS MUSCLES

The plan was for Padood to shake the barnacles off the boat, freeing up time for SME to focus on designing and manufacturing products instead of selling them. With SME's audio business now in the ascendency, it's also time for the company's precision prototyping and engineering arm to start flexing itself, with Formula One, aerospace, medical and high-end automotive as target markets.

The Synergy turntable is just the first stop on a roadmap that sees SME

growing strongly in both audio and engineering sectors. No pressure, then...

SHARING OF PARTS

Cynics might claim that the Synergy is the thin end of a wedge that ends up with SME making cheap plastic Bluetooth turntables. But Stuart McNeilis is adamant

that this is not so. 'The Synergy is aimed at customers seeking a turntable solution which is factory configured, set up and ready to play... SME does not intend to enter into the production of mass market audio

products. Our partners were selected to match the stringent, ultra-high quality and reliability disciplines of SME. They all have impeccable track records.'

The result is a compact new motor unit with an SME Type IV tonearm pre-fitted with a selected Ortofon moving-coil cartridge, feeding a bespoke integrated

phono stage by Nagra and connected throughout by Crystal Cable wiring.

The deck is clearly inspired by the Model 15 [HFN Oct '15], but has a more compact form factor. McNeilis confirms there's considerable sharing of parts across the SME range, which of course is no bad thing. 'The Synergy motor is a derivative of the Model 20 motor,' he explains, 'but re-engineered specifically for this application. The platter and bearing are from the Model 15 but the latter is also re-worked to better match the new subchassis.'

Moreover, isolation is adopted here instead of suspension, the deck's three pillars containing a polymer developed by an aerospace rubber isolation specialist to SME's exact requirements. The Synergy certainly feels like a quality item. Sitting on three adjustable feet, the compact but weighty aluminium base confers stability and has SME's beautiful black 'camera finish'. The upper tier carries the arm mount, bearing assembly and inner

'The Synergy turntable is just the first stop on SME's roadmap'

RIGHT: Machined alloy platter is damped with a lossy polymer and the top surface diamond-turned with a fine scroll. The spindle is threaded to accommodate a large clamp



hi-finews
OUTSTANDING
PRODUCT

LEFT: Unlike most high-end turntables, 'compact' is the watchword here. The Synergy is essentially a two-tier design of base and subchassis with isolation between, plus a tonearm that's a variant of the Series IV

platter, while the motor is decoupled from the chassis by rubber bands.

SILKY CUEING

The electronic control unit will feel familiar to those who have used SME turntables before. Housed in a one-piece CNC-machined case, it offers microprocessor-controlled speed via a closed loop servo system for 33.3, 45 and 78rpm, all with $\pm 0.01\%$ fine pitch adjustment. The 4.6kg platter whisks up to speed quickly and the 'lock' LED lights by way of confirmation.

The tonearm is closely based on the SME Series IV, using the same unique one-piece

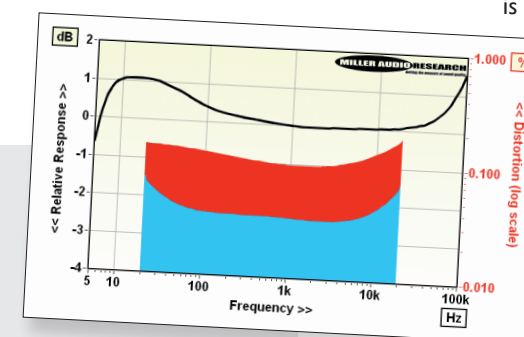
pressure die-cast magnesium tube, now with 'Synergy' livery. The internal wiring is upgraded to a Crystal Cable monocrystal type. As with the IV, it's an exquisitely designed and built affair and has a gorgeously silky feel when hand cueing.

That's probably down to its precision yoke housing with 10mm ABEC 3 ball-bearing races. The yoke is mounted to the 23mm-diameter heat-treated, ground and honed steel pillar, with a pair of 17mm ABEC 7 ball bearing races widely spaced to resist tilt.

SME's partnering cartridge of choice is the highly regarded MC Ortofon Windfeld Ti [HFN Jan '18]. It too is beautifully engineered using the company's Selective Laser Melting technology where fine particles of titanium are welded together to create a body core optimised for rigidity and low weight. It is fitted with gold-plated 6N oxygen-free copper coils, coupled to a cantilever tipped by Ortofon's Replicant 100 diamond. Its low-ish 0.2mV output

is certainly suited to the integral Nagra phono stage [see PM's boxout, left].

Most will enlist the services of their friendly local SME dealer to set up the Synergy, but if that's not possible then it's actually fairly straightforward to get going.



PERFECT PARTNERS

Who better to partner SME in the creation of a premium all-in-one vinyl solution than Nagra and Ortofon? But this is no mere coincidence, for the Danish brand's MC Windfeld Ti pick-up [HFN Jan '18] with its superb $< 0.1\text{dB}$ channel balance, minimal 60hm coil impedance and low 200 μV output (re. 1kHz at 5cm/sec) is well suited to Nagra's solution, based on the BPS [HFN Jan '10].

The BPS's batteries are replaced here with an external 12V PSU, but the custom step-up transformer and active RIAA stage look largely unchanged. It offers a fixed +67.8dB gain and a maximum output of 1175mV which, in practice, is determined by the input overload margin of 480 μV . This represents a limited headroom of +8dB when teamed with the MC Windfeld Ti but indicates that audiophiles should not be tempted to 'upgrade' their Synergy with a higher output MC. At least, not before contacting SME and requesting that the phono stage's lower gain setting be accessed by a qualified service agent.

Otherwise, distortion is below that of the pick-up and scales with input/output level – from 0.03-0.07% at 500mV output [blue infill, inset Graph] to 0.09-0.18% at 1000mV out [red infill, above]. The phono stage offers a generous 79dB A-wtd S/N ratio while Nagra's recognisably sculpted frequency response [black trace] is retained, showing an extended HF (0dB/20kHz to +1.4dB/100kHz) and, more significantly, a gently shelved-up bass (+0.3dB/150Hz to +1.1dB/20Hz). PM

SIMPLE SET-UP

Motor and phono preamp power supply umbilicals need to be plugged in, and the RCA cable is attached along with twin phono lead earths to the deck's ground, and the motor earth to its earthing point. Fit the belt, place the main platter on the sub-platter, and you're done.

The cartridge comes pre-fitted and aligned in the Synergy tonearm, which itself is already mounted. The obvious caveats about placing the deck on a level surface a good distance from your loudspeakers apply, but overall the deck proved surprisingly unfussy. Duly set up, ➔

ALL-IN-ONE TURNTABLE



ABOVE: The partnering Synergy tonearm is a sleek version of SME's Series IV. It features the same one-piece die-cast magnesium tube, with improved internal damping and Crystal Cable wiring

it's a pleasure to look at and to use. Surely the finest sounding turntable package in the world, this is a stellar performer. Certainly there are no rough edges, or any of those mechanical 'uncertainties' that lesser decks may exhibit.

PURE POLISH

The SME Synergy has a natural ease that makes everything seem effortless and unforced, yet by no means bland. Far from it, because this is a seriously insightful machine, performing an archaeological dig on whichever LP you care to play. It ferrets right down to the foundations of the recording, yet still manages not to sound forced or forensic. There's a fine line between a turntable being a transcription device and a musical instrument, and the Synergy gets this balance right.

Its standout characteristic is 'polish'. Cue up any average pop recording, and it's as if it has been pressure-washed then buffed up with an exotic Carnauba wax. This isn't down to any particular euphonic coloration on the Synergy's part, rather it's as if a layer of distortion has been stripped away. Music sounds easy and effortless with a velvety feel.

For example, ABC's 'When Smokey Sings' [*Absolutely*; Neutron Records 842 967-1] is a slick late '80s pop song but hardly

one of the world's great recordings. Drop the stylus into the groove though, and the track comes alive with a vibrancy and shimmer that one so rarely hears, with the keyboard stabs glinting away in the middle distance. Every strand is separated out, yet it's all delivered in such an unfussy way.

Despite being an unabashed smoothie, the Synergy has real muscle. You'd think that anything so refined would lack brawn, but the turntable served up copious amounts of low frequency energy – way more than I've heard from almost any other vinyl front-end. The deck's bass has a mastertape-like quality, apparently indifferent to the kinetic struggle between the cartridge and record groove.

EERIE TRICK

No matter what condition the disc is in, the Series IV/Windfeld Ti sticks to the groove like a limpet and keeps the bass rock-solid. My 12in single of the SOS Band's 'No One's Gonna Love You' [Tabu Records 429 05121] is hardly the best surviving example, and its production sounds forward with chiming mid '80s digital synthesisers. Yet this deck scavenged out great tracts of bass synthesiser and gave serious impetus to the drum work. It didn't quite exhibit the transient speed of the finest and costliest high-end direct-drive designs, but still it

'It sticks to the groove like a limpet, furnishing rock-solid bass'

STUART MCNEILIS

Meet the new boss. Stuart McNeilis is CEO of SME Ltd, having come from the aerospace industry. 'It was considered that my knowledge and experience would complement the highly skilled workforce at SME', he says. An aircraft engineer by profession, he started at BAE Systems as an Aeronautical Engineering Apprentice, and rose to senior management positions in Engineering, Operations, Customer Relations and Sales.

'I don't consider myself an audiophile,' he confesses, 'but I am a music lover and vintage audio equipment enthusiast.' Stuart is leading the transformation of the company from its first era to its second, and the Synergy can be seen 'as a kind of bridge', he suggests.

'The design and engineering challenges were about retaining SME's values and engineering principles – its DNA. The Synergy had to be instantly recognisable as an SME product, incorporating the precision engineering for which we are world famous, with a compact design, sleek and modern look. The research, development and coordination with the three other high-end audio suppliers naturally generated some integration challenges, but the combined effect is greater than the sum of the parts.'

SME is approaching its 75th anniversary, he points out. 'This is a fabulous opportunity to present a milestone audio product. With the group acquisition of the famous Garrard audio brand, SME will play a vital role in its revival. There is a new Garrard turntable pending...'



ALL-IN-ONE TURNTABLE



ABOVE: Separate PSU ins are provided for the motor [right] and integral MC phono stage [left], with a line-level output on RCAs. Tonearm wiring is by Crystal Cable with a captive lead to the phono stage. Ground posts are fitted to both motor and chassis

was still closer than fans of the latter might imagine. The result was a taut and funky bass that thundered out of the loudspeakers, making the song riotously good fun.

The Synergy's excellent speed stability pays dividends across all types of music. It's able to play that eerie trick of letting you mentally slow the record down to almost a standstill, as you take in everything that's going on in the mix. It gives you the chance to hone in on anything, as if you're hearing the multitrack master in the studio with your hands on the faders.

UNCANNILY SPACIOUS

On the retro electro of Nu Era's 'Lines Between Us' [*Geometricks EP*; Omniverse OMN1201], I found myself able to tap my feet along to the hi-hat cymbal, snare and rimshot sounds as if all other strands in the mix had been erased from the recording. I then enjoyed the bass synthesiser noodling up and down, then the lead keyboard playing its melody with heady abandon.

Another highlight is the excellent soundstaging that made

Beethoven's 'Pastoral Symphony' [Berlin Philharmonic Orch/Karajan; DG 2531106] such a joy. My 1977 pressing may not be the choice of classical music cognoscenti, but is uncannily spacious all the same. The Synergy set up a vast recorded acoustic, stretching far left and right while falling back a good long way. The orchestra, set in the Philharmonie, was reproduced in all its glory, with a scale rarely heard from vinyl sources at any price.

Within this, image location proved superb – reminding me of my experiences with the company's great tonearms. The effect was rather like the auto-focus on a digital camera locking on to the subject – things fall into place and make complete sense, not just individually, but as a whole.

SME has out-engineered itself with the Synergy. Its combination of refinement, detail, stability and scale ensures that this turntable sounds just sublime. ⚡

HI-FI NEWS VERDICT

Any nerves that SME aficionados may have had about the company searching out less specialist customers should be calmed by the Synergy. Rather than pandering to populism, it makes excellence just that little bit more accessible. The company's superlative build remains intact, performance isn't compromised, yet it's obviously easier to set up and use. And, yes, it does sound greater than the sum of its parts.

Sound Quality: 90%

0 - - - - - 100



ABOVE: Dedicated outboard PSU offers 33.33, 45 and 78rpm with fine pitch speed adjustment in increments of $\pm 0.01\%$. Curved case design complements the deck's circular chassis

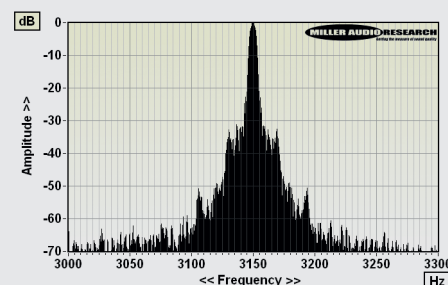
LAB REPORT

SME SYNERGY

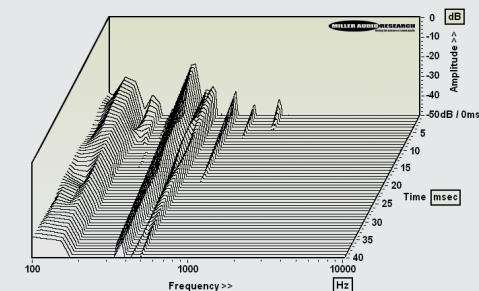
The platter, bearing and motor of the Synergy turntable clearly take their cues from the Model 10 and Model 15 [*HFN* Oct '15] – proven components reflected in the superb performance of this relatively compact belt-driven design. The three-phase, eight-pole motor offers user-adjustable speed control over 33.3, 45 and 78rpm and brings the 4.6kg alloy platter up to speed in a swift four seconds. As supplied, our sample was a mere -0.05% adrift in absolute speed with a low 0.015% peak wow – as evidenced by the sharp central peak in the W&F spectrum [Graph 1]. This value and the 'shape' of the spectrum is very similar indeed to that of the Model 15's and although the Synergy's peak flutter is fractionally higher at 0.035% (versus 0.030%) the shoulders at $\pm 20\text{Hz}$ are necessarily at very low amplitude.

The Synergy's bearing – a 19mm chrome-steel spindle running in sintered bronze bushings – incurs a mere -71.4dB through-groove rumble, improving to -72.5dB with the record clamp in place. The deck itself proves to be quieter still with a through-bearing rumble of just -74.5dB (DIN B-weighted).

The partnering Synergy tonearm is evidently based on the Series IV [*HFN* Jun '10] which is less structurally complex than the V. The key section of the arm – the headshell, tapered tube, bearing yoke and counterweight rail – are all still fashioned from a single magnesium alloy die-casting. The result is an arm with an effective mass of 12g benefiting from an exceptionally simple and well-controlled resonance behaviour with a well-damped main bending mode at 140Hz and higher-Q harmonics/twisting modes at 355Hz, 440Hz, 485Hz and 668Hz. The pre-loaded bearings offer almost zero friction and no detectable play. PM



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted $\pm 150\text{Hz}$, 5Hz per minor division)



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	33.33rpm (-0.05%)
Time to audible stabilisation	4sec
Peak Wow/Flutter	0.015% / 0.035%
Rumble (silent groove, DIN B wtd)	-71.1dB / -72.5dB (with clamp)
Rumble (through bearing, DIN B wtd)	-74.9dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-60.1dB
Power Consumption	5W (<1W idle)
Dimensions (WHD) / Weight	370x178x350mm / 24.5kg