Belt-driven turntable with electronic speed control
Made by: Stella Inc., Tokyo, Japan
Supplied by: Absolute Sounds Ltd
Telephone: 0208 971 3909
Web: www.techdas.jp; www.absolutesounds.com
Price: £75,000

TechDAS Air Force One

Sighted in Munich, then in Las Vegas, tracked down by our intrepid hunters, here is our exclusive in-depth review of what just may be the best LP spinner on the planet
Review: **Ken Kessler** Lab: **Paul Miller**

In the wake (or midst) of the mighty Continuum, the SME 30/12, the Spiral Groove, the returns of Oracle and Transcriptor, assorted VPIs and Clearaudios and EATs and Avids and other high-end decks comes a new contender. Well, maybe it's not so new if you consider that its chief designer, Hideaki Nishikawa, worked on the most complex of Micro-Seiki's magnificent decks, the SX-8000II.

Google its image and you'll see, without too much effort, that its sculpted housing over the motor and pulley foreshadows the architecture of the Air Force One: its indirect descendant. This turntable is the product of almost a half-century's experience in high-end audio, and it enjoys the sort of maturity only found in debut products created by seasoned pros – like the first D'Agostino amplifier.

UNPROMISING DEBUT

It appeared on a nondescript static display at last year's High End Show in Munich, about as unimpressive a European launch as one could imagine for a product that – within six months – would be hailed by all and sundry as a vinyl Messiah. It did not take a genius to see, even without hearing what it could do, that the Air Force One, with its air suspension, air bearing and vacuum LP hold-down, was something out of the ordinary. The finish alone assured us of that.

Nishikawa-san explained to *HFN* that 'The goal of Air Force One is to achieve silence in reproduction comparable to digital reproduction, especially in reproducing the recorded information of the background noise.' This is the first time I've ever heard a turntable designer acknowledge that the absolute background silence and the between-track silences of digital are virtues one should aspire to in analogue, even if attaining them seemed impossible.

Jumping ahead, it explained why the air pump of the AFO (for short) was truly inaudible. I've been around enough air-bearing decks and tonearms to know that the pump noises can be deal-breakers. Not so with the AFO: the pump itself is as quiet as the silences which Nishikawa wants to exhibit in LP replay.

Nishikawa also says that he wants the AFO 'to achieve dynamic range reproduction by analogue that cannot be achieved with high-end digital products, the complete reproduction of the information recorded in the analogue discs, and to achieve reproduction with rich artistic quality.' So, while he admits to admiring the silences of digital, he holds the virtues of analogue as sacrosanct. And if acknowledging silence as a format's primary strength isn't an ironic, back-handed compliment to digital, then I'm a Fabianist. Again with the humour: Nishikawa also told us that he wanted to achieve 'the best performance in a compact-sized analogue turntable, instead of making an over-sized turntable.' That's not exactly how I'd describe a deck weighing 79kg, with a footprint of 600x450mm, with an outboard power supply of 430x150x240mm (whd), plus an air condenser unit that's 260x160x240mm (whd) and adding another 4kg to the mass. On the other hand, it does take up less real estate than the Clearaudio Statement, a Continuum, *et al*.

DELIRIOUSLY COMPLEX

Taking all this in requires one to step back, clear one's head of preconceptions, and approach the deck as if it emerged from a clean slate. Yes, there are precedents for air bearings and vacuum hold-down to deal with LP warps, and Nishikawa himself describes the Air Force One as a 'compilation of the technologies of the Micro-Seiki SX-8000II'. But the way they're combined and executed means the AFO is greater than the sum of its parts.

Its construction is deliriously complex, with its stainless steel main platter

RIGHT: With the stainless steel platter and upper platter removed, the floating glass section of the chassis is revealed. The centre hole feeds the vacuum system, the offset hole the air bearing while speed sensor can be seen through the glass itself

enhanced by interchangeable upper platters, rotating above a base made of a sandwich construction. The latter incorporates pure aluminium/super duralumin/aluminium and rides above a floating glass sub-level, the entire 43kg assembly resting on massive, adjustable, air- and polymer-gel-cushioned feet.

Here it is worth noting why observers have swooned at the finish of this beast. You will notice a black layer between the champagne colour of the deck. Run your hand along the seam and you feel nothing but smoothness. It is machined and anodised to a level that would impress the snootiest horologists in the Vallée de Joux.

In addition to the two external boxes for power and air and the deck itself is a separate housing weighing 6.6kg for the AC synchronous motor. It drives a platter that weighs up to 30kg (depending on the choice of upper platter) through a flat surface-polished polyurethane fibre belt, the speed controlled by a DC amplifier.

At the front, in the centre, is a display that shows the speed to two decimal places, with pitch control of ±0.1rpm steps available for those who, for example, can hear the difference between various versions of Miles Davis's *Kind Of Blue*, or assorted Doors tracks with speed issues. The display communicates with the user, saying, for example 'Wait' as it gets up to speed. Unlike the SME 30, which is unparalleled for both its acceleration to full speed and its unbelievably rapid braking, however, the AFO seems to take ages to get up to speed and then for it to stop rotating.

> 'Observers have been known to swoon at the finish of this beast'

Where it astonishes, though, is in the rapidity with which it clamps down an LP if you're using vacuum hold-down. What I loved about it is that it doesn't require a puck to make a seal. You simply press a button after putting an LP on the platter and, within seconds, it's locked down. The same array of buttons in the right/front corner offers 33.33 and 45rpm selection.

ABOVE: Able to support two arms, with Bob Graham offering one specially for the Air Force One, this turntable features pitch control and buttons for suction and play speeds

Reminiscent of Micro-Seikis that could support more than one tonearm, each AFO comes with a tonearm board as specified by the customer but with space at the rear for a second. It is also supplied with one of three upper platters [see boxout] but customers can, of course, buy *all* of them. A massive dust cover is also provided, while another extra beyond more platters and armboards is a special damping table.

A note about pricing: after much confusion, thanks to an innumerate distributor in another country who doesn't understand capitalism and published the equivalent of a trade price, the rest of the world has to sell the AFO for around 20% less than it was supposed to command. So, at £75,000, as supplied with one upper platter and armboard of your choice, it's actually under-priced! Extra armboards cost £1998, while extra platters are £7500.

PLATTER MATTERS

Unusually, the Air Force One can be ordered with a choice of three upper platters to position on top of its 19kg non-magnetic stainless steel platter. The UK review sample was fitted – appropriately – with what the importer feels is the most sonically neutral, that made of aircraft-grade 'extra super duralumin' (the top of the three in the photo). Below it is the non-magnetic stainless steel upper platter, said to be punchier in its bass and attack, while the bottom image is that of the methacrylate upper platter, described as sounding softer. As all can be ordered with or without vacuum hold-down, that gives the user six platter types to consider.

INSTANT APPEAL

I've now heard the Air Force One in four systems, all of which benefited from its strengths. For the review, the remarks apply to the AFO fitted with both a Continuum Cobra arm and Koetsu Blue Onyx MC cartridge, and an EAT E-Go ⇨

HIDEAKI NISHIKAWA

Hideaki Nishikawa brings to the Air Force One a resumé that speaks volumes for its provenance. 'I joined Stax in 1966, working there for about ten years, developing electrostatic headphones.

'After that, I joined a few audio manufacturers and mainly designed tonearms, including Infinity's Black Widow. Then I joined Micro-Seiki as Technical Department Manager, and then the Sound Business Director.' Nishikawa-san was involved there in the development of electrostatic headphones, tonearms and, appropriately, turntables.

Of his 12 years there, he cites the SX-8000II turntable with air bearing and vacuum system as the statement product. 'In fact, Air Force One is a compilation of technologies from the SX-8000II.

'I thought about developing Air Force One because there are still many people in high-end audio who have an attachment to analogue records. I wanted to warn against the fact that computer digital audio is becoming the mainstream.

'Therefore, I wanted to bring back the good old analogue age to show the way high-end audio should be. For this, I decided to develop a high-end turntable which provides reproduction with a rich artistic quality that cannot be achieved even with high-end digital products.'

Future TechDAS products will include an MC cartridge, electrostatic headphones and a new turntable. Says Nishikawa-san, 'I'm afraid I cannot talk about its details, but the turntable will be introduced at the Tokyo show in November'

ABOVE: The huge AC synchronous motor is positioned adjacent to, but separate from, the main chassis. It is driven via a 2x50W amplifier for both phases and is adjustable in ±0.1rpm steps

arm with Koetsu Gold Onyx, feeding the Thrax phono stage into Constellation's Virgo preamp and Centaur 500W monoblocks, driving Magico S5s [*HFN* Dec '12]. All wiring was Transparent Opus.

It has long been my experience that those opening bars of the initial exposure to a component – assuming that you're playing music you know, in a room you know, and with a system you know – will establish either rapport or repulsion. Worse, it may even bore you.

Of course, there are countless shades in between, but the opening salvo from Rodriguez's *Cold Fact* [Blue Goose BMG002] forced the needle way past 'acceptance' to instant adoration. (By the way, when I gave the Rodriguez documentary 'Digital Disc of the Month' in *HFN* May '12, who knew it would go on to win an Oscar!)

> 'It was both exquisitely precise and yet feather-light ethereal'

Listening to the recently rediscovered singer-songwriter's first LP, I was dazzled by an intimacy that could only have been a by-product of the source not imposing itself on the signal. Even though the record was 43 years old, with just enough surface noise to distract, the music possessed a contradictory quality that made the ambience electric: it was both exquisitely precise and yet feather-light ethereal at the same time.

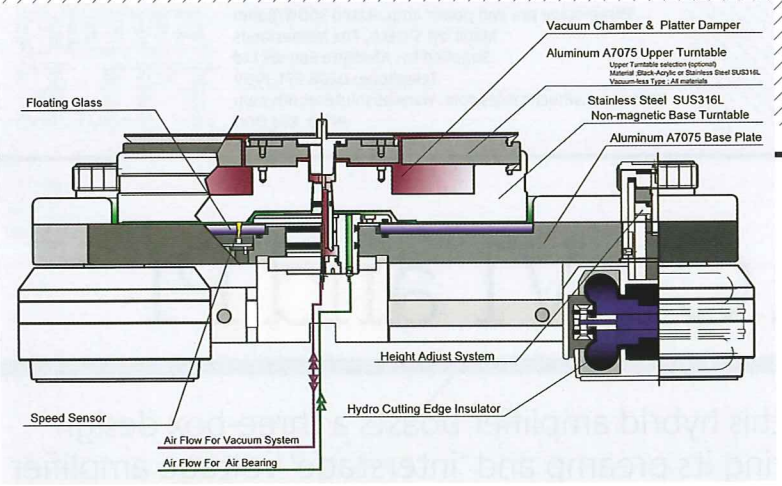
Acoustic guitar – so easy to check the reality of, if you happen to have one in your possession – shimmered in all of its woody, resonant glory. Rodriguez's voice, a perfect communicator of the Tim Hardin/Biff Rose school, was revealed with nuances that no CD ever mustered. Having recently attended a live club gig of just voice and guitar, with the occasional visit to the piano, in a club seating only 30, I was transported back to it. The AFO allowed the music to fashion an atmosphere as convincing as the reality I'd just experienced.

Emotion was the order of the day. Sam and Dave's *Soul Men* [Stax S725], an LP I know so intimately that I hear it in my sleep, was the first to hammer into me Nishikawa's desire to strip away any of the unwanted noises we seem rarely to escape when playing vinyl. Raw soul, with sizzling guitar work, meaty bass, two voices duelling – the ultimate arbiter of the AFO's excellence was the interplay between Sam's clear tenor and Dave's raspy baritone.

AS IF BY MAGIC

It was as if the AFO rose to a hackneyed, but understandable cliché, in which audio components are treated as if they were musical instruments. They are *not*, for if they were, they would be re-interpreting the truth of the original recording. Instead, the turntable acted like a conductor or arranger, ensuring that the two voices melded and battled, which is as it should be when the foundation of the music is old-style, call-and-response gospel.

Never have I heard 'Broke Down Piece Of Man' reproduced with so much energy nor with the sense of anguish and pain demanded of the performance. Dave delivering the line 'Heartache and misery, walk by my side,' then pleading, 'Please give our love another chance' – the torment would elicit forgiveness from ⇨



ABOVE: Cutaway diagram illustrating the key layers and components of the Air Force One. The separate AC motor is not included in the drawing, but would sit to the left

the coldest of cynics. LPs were flying from shelf to platter. Willy DeVille *Miracle* [Polydor 833 669-1] is the showcase that gave us 'Assassin Of Love'. DeVille possessed a voice of such distinct texture and deep resonance that woofers probably quaked at mention of his name.

From the most ghostly of background silences, a week before Nishikawa-san told me that's what he was trying to achieve, came a sound that materialised as if by magic. And more than once the notion of a CD's quietude crossed my mind – as if I was the target of a deception, and a CD player was actually there.

A PEERLESS PLATFORM

Hound Dog Taylor's live 'Gimme Back My Wig' from *Beware Of The Dog!* [Alligator 4707] is as poorly recorded a mess as you will ever hear, yet the energy from those grooves, powering his ever-out-of-tune guitar, was palpable enough to make you forget about sound quality suitable for a telephone.

Conversely, who knew that, after their devotion to mono on their debut, Doctor Feelgood's *Malpractice* [United Artists UAS 29880] would deliver 'Back In The Night' with so much force, so much wall-to-wall Geils-like majesty? Indeed, it was depressing, hearing a twentysomething Wilko Johnson, knowing that same day he was playing his farewell tour.

It 'crunched', but in a good way – it's the only term I can think of to describe the staccato bursts of his guitar, the mass of the rhythm section. Lee Brilleaux's snarl occupied its own, three-dimensional space, the trio behind him with each member in his personal turf, yet the way it coalesced was one of juggernaut proportion.

Irrespective of arm or cartridge, it got back to one thing: the Air Force One is a peerless platform for vinyl. Readers will know that I am not of the *schadenfreude* school of reviewing. I do not write rave reviews in order to make you feel inadequate, my dictum being: 'If what you own was excellent on Tuesday, it will still be excellent on Wednesday'. Thus, I have no intention of buying a book of scratch cards in the hopes of winning enough to buy an Air Force One, as the SME 30/12 repeatedly sends chills up and down my spine.

But I will say this much: If you are looking for a turntable that is the hi-fi equivalent of a Greubel Forsey wristwatch or a Bugatti Veyron SuperSport, *and* the rest of your system is of such high resolution that the angels crowd around your shoulders to listen in, *and* you can house a deck this large and this heavy, *and* you are (and this is the tricky bit) a kind enough and charitable enough soul worthy of owning such a gift from the music gods, then you are an ideal candidate for the Air Force One.

HI-FI NEWS VERDICT

Camps for specific turntables are the most absurdly dedicated of all audio cults. I adore SMEs, others worship Continuum, sins have been committed for Linns. This deck handily stands between my two personal favourites, the SME 30/12 and the Continuum, thanks to pricing, and from all others for sheer performance. It is the most revealing analogue source I have ever heard bar the best examples of open-reel tape. Period.

Sound Quality: 90%

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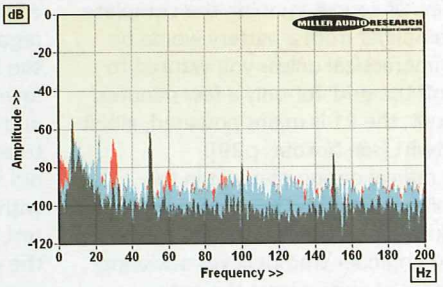
LAB REPORT

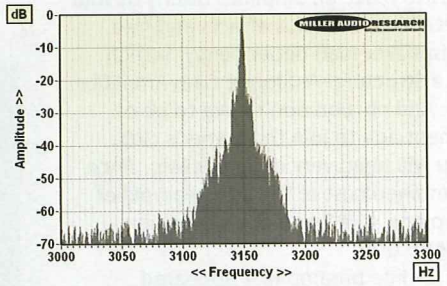
TECHDAS AIR FORCE ONE

As anticipated, the massive Air Force One broadly matches the state-of-the-art performance secured by SME's 20/3 and 30/12 [*HFN* Mar '09 and '11], albeit with a 'character' all its own. The massive platter is brought up to speed over a cautious 20 seconds, the motor torque progressively adjusted to overcome the inertia without causing the polyurethane belt to slip or significantly stretch. It's all very civilised, but once stabilised the platter is true to 33.33rpm within a fabulously accurate 0.02%. Cyclical speed variations match the best we've measured, the AFO offering slightly lower wow than the SMEs' but marginally higher flutter, yielding an equivalent peak-weighted total of just 0.03% [see Graph 2]. It just doesn't get any better than this.

The mechanical (rumble) and electrical noise spectra are arguably more interesting. There is a cyclical peak of electrical noise every 1.8secs as the speed sensor and servo cause the platter's speed to be compensated every rotation. The (white) noise is below that of the vinyl groove but it does knock about 1dB off the through-bearing rumble figure which, at –74.5dB, is still close to the absolute limit. Through-groove rumble is exceptionally low with the vacuum hold-down activated [blue trace, Graph 1 below] at just –74dB. Releasing the vacuum reveals structural noise below 5Hz and an obvious resonance at 30Hz with harmonic at 60Hz [red spectrum, Graph 1 below] which are completely removed once the LP is secured to the upper platter surface. Incidentally, the peak at 7Hz is arm/cartridge resonance, the tone at 21-22Hz is 'built into' the test LP and the 50Hz hum picked-up through the EAT E-Go exit wiring. Readers are invited to view a full QC Suite report for the TechDAS Air Force One turntable by navigating to *www.hifinews.co.uk* and clicking on the red 'download' button. **PM**



ABOVE: Unweighted bearing rumble from DC-200Hz (black infill) versus silent LP groove (with vacuum hold-down, blue; without, red) re. 1kHz at 5cm/sec



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted ±150Hz, 5Hz per minor division)

HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	33.34rpm (+0.02%)
Time to audible stabilisation	20sec
Peak Wow/Flutter	0.01% / 0.02%
Rumble (silent groove, DIN B wtd)	–74.0dB (–70.0dB w/o vacuum)
Rumble (through bearing, DIN B wtd)	–74.5dB
Hum & Noise (unwtd, rel. to 5cm/sec)	–55.1dB
Power Consumption	50W
Dimensions (WHD)	600x160(+arm)x450mm