

## TURNTABLE

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: £28,998

# AUDIO FILE

hi-finews  
OUTSTANDING  
PRODUCT

# TechDAS Air Force III Premium

TechDAS' Air Force III gets the Premium treatment, with upgrades throughout the design, a heavier platter and revised 'Air Condenser' – does it punch above its weight?  
Review: **Ken Kessler Lab: Paul Miller**

Positioned in the 'lower half' of the burgeoning TechDAS catalogue, the original Air Force III [HFN Sep '16] delivered more compact dimensions, the capability to handle up to four tonearms and a substantial saving over the One [HFN Jun '13] and Two [HFN Apr '15] turntables. Even with its new, performance-gap-closing fitments in Premium guise, the price is two quid shy of £29,000 – roughly a tenth the estimated cost of the forthcoming Air Force Zero flagship and £17,000 less than the Two Premium. A bargain, then?

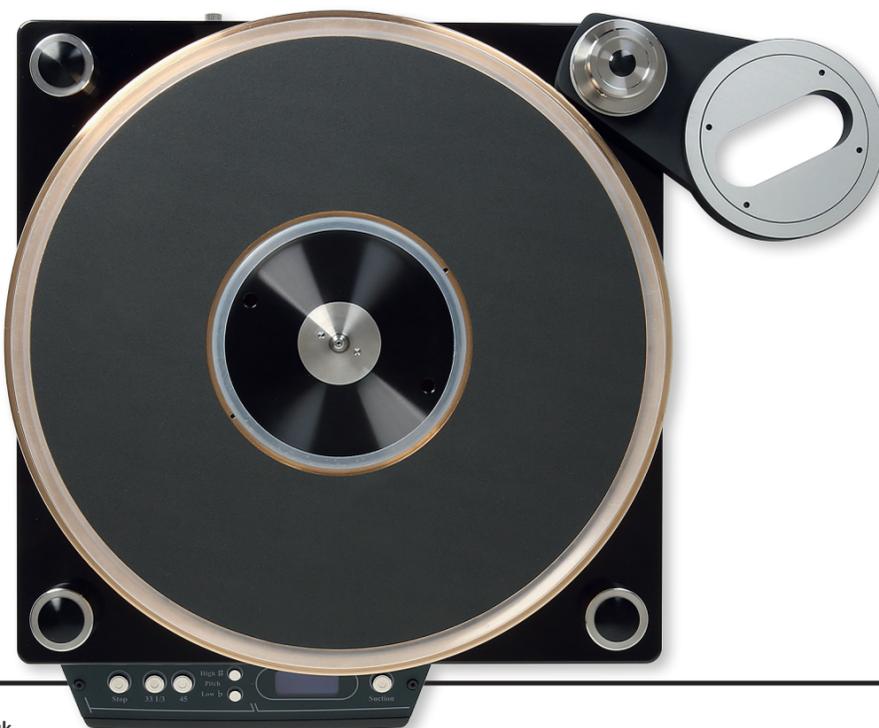
Afraid so: as has been a common occurrence of late, this masterpiece smacks you upside the head with the Law of Diminishing Returns. Its performance is so good that, like the entry-level DS Audio DS-E1 cartridge [HFN May '19], it will assuage the pain of not being able to afford the more costly offerings.

### CLEAR VOICE

Fortunately for me, tasked with reviewing the III Premium, I have also used it at shows and have heard it played side-by-side with its dearer siblings. Because TechDAS knows how to voice its products, the hierarchy remains intact. What changes is the size of the gap between each level, which seems to grow ever narrower.

Because the pecking order remains whole, if you can afford the One or the Two, don't let me stop you. But each deck serves a different need beyond ultimate performance because the III, the III Premium and the even more compact Air Force V [HFN Jan '19] demand less shelf space and they outdo the One and Two in the maximum number of arms they can accommodate. So sound and price aren't the only determinants. [Note: the One and Two have their model numbers spelled out, while the III and V use Roman numerals.]

**RIGHT:** Top-down view highlights the III Premium's compact footprint, yet each corner can host an armboard. The inner and outer 'rings' of the platter have soft rubber seals that maintain the LP-clamping/flattening vacuum



Offered in gloss black with gold accents and platter edge, to distinguish it visually from the 'III, the Premium edition is far more than an exercise in aesthetics. Most prominent among the improvements are a new PSU unit said by TechDAS to be 'almost equivalent to that of the Air Force One', with its air condenser also having double the capacity of the standard model. It is now fitted with two separate air pumps for air bearing and vacuum; this arrangement is also found in the Air Force One Premium, while the original models feature only one air pump for both air bearing and vacuum.

Next comes a heavier platter, weighing 29kg – the regular III's platter weighs 9kg. The latter is made of aluminium, while the Premium uses gunmetal, said by the maker to be 'optimised for the best sound velocity to enable playback as close to

live music as possible.' The Premium's electronics are deemed to be better than those even of the Air Force One, if a little shy of the Air Force One Premium, with the goal of increasing motor torque, improving its start-up time and speed accuracy. To deal with an extra 20kg of platter, the

suspension system has also been updated, as has the air bearing to prevent resonance via the platter.

These enhancements come with increased stability, smoother sound, increased bass extension and quieter operation

[see PM's Lab Report, p45]. TechDAS points out that as the modifications are fundamental, they are not retro-fittable upgrades to non-Premium models.

As for the rest of the design, the 473x170x363mm (whd) chassis weighs a hefty 21kg, and it requires a set-up space of a minimum of 564x413mm (wxd) when

*'I almost failed to recognise my own, familiar system'*



the outboard motor is positioned to the deck's left. This raises the subject of set-up, which I recommend is undertaken by the dealer, even though a manual is provided. That's because positioning of the motor unit is critical for speed accuracy.

### SUCK IT AND SEE

To accommodate this, TechDAS provides a white plastic spacer among the set-up tools to locate the motor housing precisely. Once the motor is *in situ*, its non-flexible polyurethane fibre belt installed, the deck automatically takes care of tensioning through the controls on the display panel, in conjunction with an adjuster next to the pulley in the motor housing.

What amazed me was the sheer quietness of the air pump/vacuum source [pictured, p45]. Housed in a substantial case measuring 430x175x370mm (whd)

sitting on springy feet, it barely makes a whisper. Its main on/off switch is placed at the back, but the condenser unit is powered on and off, from and to standby, through the controls on the deck.

Using any TechDAS deck requires a ritual to which one soon becomes accustomed. The switch-on activates the air-bearing, while a separate button labelled 'Suction' draws the LP to the platter, and the process is swift. The preferred speed is then selected via the 33 or 45 buttons and the platter begins to rotate. Thanks to its great mass, getting up to speed takes a few seconds, but the digital display shows 'Locked' when this is achieved to two decimal places. Conversely, when the stop button is pressed – holding it down for a few seconds actually switches

**ABOVE:** Layout is identical to the Air Force III with pushbutton controls set into a panel. It offers on/off, speed select (with fine speed adjust), vacuum hold-down and a digital display

the unit into standby mode – it takes a while for the platter to stop rotating. Press the suction button once more and the LP is then freed of its vacuum hold-down.

### TAKE TO THE SKIES

Fitted with the Graham Phantom Elite tonearm and TechDAS TC01 Ti MC cartridge [HFN Sep '14], the III Premium immediately demonstrated the sort of prowess that lets you know you're in the presence of a true high-end performer. The revelation was instantaneous, the sound

of the Crew Cuts' *Surprise Package* [RCA Living Stereo LSP-1933] filling the space in front of me while exhibiting so much air and atmosphere I almost failed to recognise my own familiar system.

Yes, it was that substantial a gain in performance. I have many hundreds of hours on my Audio Research REF6/REF75SE electronics through Wilson Audio Yvettes [HFN Feb '17]. Surprises are rare, but this time? The only alterations I can name that show similar degrees of difference are alternative loudspeakers, even within brands.

Crew Cuts recordings are all about harmonising, but the performances aren't

### AIR SUPERIORITY

Operating a deck with an air bearing and vacuum hold-down requires a slightly different operating routine. Eagle-eyed readers will see that this deck doesn't require a special puck or circumferential hold-down ring to ensure that the vacuum works (although a clamp is an option), so it's easy to use rather than challenging. Carefully-engineered holes in the platter, precision gaskets and other details accomplish the tasks, and the sucking down of the LP to platter surface is rapid and in some cases visible if the LP is mildly warped or dished. Once the suction is activated, the LP is effectively locked to the platter. As the heavy platter floats on an air bearing, the owner's manual points out that when the pump is not switched on and the platter is therefore not floating, it settles and rests on a polished glass surface, under which is the speed sensor [see inset picture]. The user is cautioned not to rotate the platter by hand when the pump is not powered up, as it could score the glass.





**ABOVE:** As with all TechDAS decks, pneumatic hoses from an outboard pump [see below] are connected to air-bearing 'Flotation' and LP hold-down 'Vacuum' fittings while power, pump and speed controls are communicated via a multi-pin connector

a capella. Instead, they are backed by an orchestra comprised of the finest musicians of the day, and the brass, vibes and percussion simply resonate throughout the room with such natural, convincing presence that one can only marvel at the skills of the engineers working 60 years ago. What the III Premium extracted from my admittedly-mint copy was more bloom, more ambience and more realism than anything short of high-speed, half-track tapes. Punch, attack, speed – it left me breathless.

### PERFECTLY FORMED

Members of the Living Stereo cult will know that the LPs under that imprint make almost any system sound silky, sexy and superior, so I turned to an album some analogue purists find a mite brittle, due to its digital origins. Telarc's *Romeo & Juliet/Nutcracker Suite* [DG-10068], performed by Loren Maazel and the Cleveland Orchestra, was so free of fatigue-inducing artefacts that I had to question my own prejudices.

Like the Crew Cuts LP, the Telarc recording possessed space and scale so perfectly formed that the audiophilic goal of 'disappearing speakers' was repeated and maintained. Stage depth and width were cavernous, individual sounds located precisely as they should be, with an uncanny freedom from any constraints that might be attributed to speaker location. The Wilson Yvettes simply vanished.



**ABOVE:** The (very quiet) air-bearing/vacuum pump has sprung isolation feet

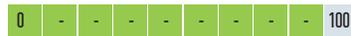
Even monophonic LPs had body in complete denial of their single-channel, dead-central nature. Peter & Gordon's *I Don't Want To See You Again* [Capitol T2220] completely avoided the thinness I often associated with the recordings, a discernible richness characterising the sound. As with the Crew Cuts, this duo enjoyed the privilege of the best available studio musicians, and both the title track and 'Nobody I Know' proved as revelatory as those opening moments.

How so? This pair of Lennon-McCartney compositions – both Top 20 hits in the USA when I was a lad of 12 – are as familiar as any tunes I can name. But here I was, 55 years later, hearing details previously obscured or unrecovered. The experience was a gift of incalculable value, like tasting a favourite food as if it was the first time. Thrilling? That's the best way to describe the sensations provided by this most capable, commanding and coherent of LP spinners. The One and Two may deliver a tad more weight, but, in my system, my room, well... I have never heard better. ☺

### HI-FI NEWS VERDICT

Instead of incremental gains, the TechDAS Air Force III Premium produced a level of improvement in LP playback in my system that I found to be nothing short of breathtaking. Detail, clarity, transparency, voices so natural-sounding that I was reminded more of tape than vinyl: this deck is a total triumph, a maestro of scale and presence. Just don't stroke and fondle it too much: gloss black loves fingerprints!

Sound Quality: 89%

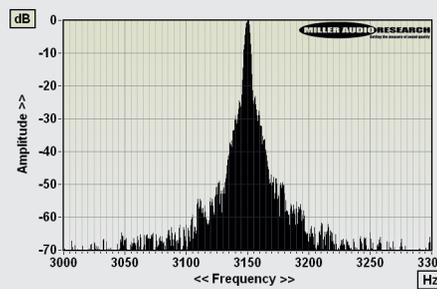


## LAB REPORT

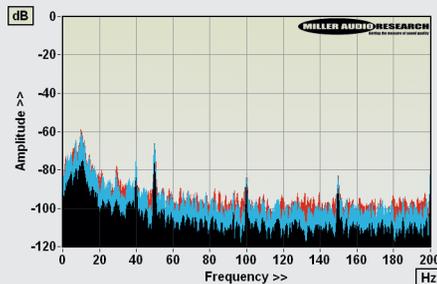
### TECHDAS AIR FORCE III PREMIUM

While the original Air Force III [HFN Sep '16] shares a similar motor unit, air-suspended bearing and LP vacuum hold-down as the Air Force One [HFN Jun '13] and Air Force Two [HFN May '15], this 'Premium' version is substantially revised. Aside from the piano black/gold colour option (silver is also available) the deeper 29kg gunmetal platter is the most obvious giveaway, increasing its moment of inertia while – thanks to the increased torque of the AC synchronous motor – actually *reducing* start-up time from around 12 seconds to 8 seconds. Once again the pumped air escapes smoothly across the polished glass surface under the platter, raising the rotating mass by some 30µm and maintaining the through-bearing rumble at a very low –74dB (DIN-B wtd re. 1kHz at 5cm/sec). The superiority of this Premium model is particularly evident in the improved through-groove rumble, reduced here from –68.6dB (AF III) to –70.8dB with the vacuum hold-down in effect. Furthermore, the bearing mode noted at 36Hz in the AF III is shifted to 40Hz here [see Graph 2, below], and also reduced by 5-6dB in amplitude.

Excellent absolute speed accuracy remains a feature of the TechDAS decks – though precise tensioning of that inflexible polyurethane fibre belt is critical here – with the AF III Premium incurring a mere +0.012% offset at 33.33rpm. Wow, already close to the limits of both engineering and measurement, remains unchanged at 0.02% (peak wtd) and is illustrated by the sharpness of the 3150Hz peak [see Graph 1]. Flutter is slightly reduced over the AF III from 0.04% to 0.03% in this Premium model and remains distributed as an innocuous 'white noise' on the spectrum. The discrete sidebands noted at ±15-20Hz with the AF III are also largely banished in the Premium. PM



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



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

### HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	33.33rpm (+0.012%)
Time to audible stabilisation	8 seconds
Peak Wow/Flutter	0.02% / 0.03%
Rumble (silent groove, DIN B wtd)	-68.5dB (-70.8dB with hold-down)
Rumble (through bearing, DIN B wtd)	-74.0dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-53.1dB
Power Consumption	30-40W (20W idle)
Dimensions (WHD) / Weight	473x170x363mm / 55kg