

TechDAS Air Force V

Who knew that TechDAS could follow the remarkable Air Force III with an even less-expensive, air-bearing, vacuum hold-down turntable? We welcome the Air Force V
 Review: **Ken Kessler Lab: Paul Miller**

Reason to celebrate: at £12,500, TechDAS's latest turntable – the Air Force V – costs one-tenth the price of the current Air Force One [HFN Jun '13]. Re-read that sentence. It means that the glory of owning one of the true upper-echelon turntables has been reduced by 90%. And you still get 90% of the performance.

This series of record decks has upped the ante for high-end turntables, offering air suspension, vacuum LP hold-down and an air-bearing with construction that recalls their spiritual ancestors: the classic Micro-Seikis of the 1970s and 1980s. With rapid dispatch, designer Hideaki Nishikawa, who created those legendary Micro-Seikis, has devised a full range of four models (there is no Air Force IV due to the Far Eastern notion that the number 4 is an ill omen) plus the high-end statement Air Force Zero due next year. With the Air Force V, however, the technology is now within the reach of exponentially more vinyl users.

LESS IS MORE

For TechDAS ascending model numbers mean lower-prices, so following the Air Force III [HFN Sept '16] the visually-similar Air Force V exhibits only one obvious economic consideration at a glance – an in-board motor. But that doesn't account for a price nearly £17,000 lower. To get to the bottom of this seemingly inexplicable vinyl voodoo, I went straight to the source and Nishikawa-san kindly supplied this succinct clarification:

'The biggest difference is that the motor is in a separate unit in the Air Force III, whereas it is incorporated into the main chassis of the Air Force V. The main chassis is made of solid aluminium in the III and of machined aluminium

RIGHT: Top-down view demonstrates the V's compact footprint, yet each corner can take an armboard with (up to) a 12in arm. Photo shows deck fitted with Graham's uni-pivot Phantom arm [HFN Sep '16]

plates assembled together in the V. Also, the III has a solid massive platter versus main and sub-platters in the V.'

To the price of £12,500 without tonearm, one can add a record clamp and up to three additional armboards. You might wonder why anyone would want four tonearms, but as a reviewer, I can only dream of the freedom it affords, especially for assessing arms or cartridges. Like the Air Force III, the V has a pillar at each corner that accepts the armboards that can be cut for any tonearm between 9in and 12in. Our review sample was fitted with the Graham Phantom, but I have also used the deck with the SAT and assorted SMEs.

As Nishikawa-san described above, there are material differences, and the Air Force V is less 'glamorous' than the III Premium,

which is finished in gloss black. Unlike the stylised, curvaceous Air Force One, the Two [HFN May '15], III and V enjoy what is best described as the 'laboratory look' familiar to owners of Audio Research, Manley and EMT equipment: functional rather than fashionable. It emphatically states that this

is a no-nonsense deck, a fact reiterated by its 30-page manual.

Set-up is not difficult, and the manual is comprehensive, but it does demand a sequence of procedures in order to avoid damage to

the multi-part platter or the air pump/vacuum, which is housed in a separate, 350x175x270mm (w/h/d) enclosure [see inset picture, p43]. TechDAS supplies all the necessary tools and hoses, including 'T'-shaped handles that facilitate the lifting of the 6.7kg

'My Wilson Yvette speakers seemed to relish the exercise'



LEFT: Layout is very similar to the Air Force III with pushbutton controls in a panel. It offers on/off, speed select (but no fine speed adjust here), vacuum hold-down and a digital display

the cartridge in this Air Force V review sample for my own trusty Koetsu Urushi, intrigued to hear that there was an immediate shift in dynamic contrasts over my beloved SME and Linn LP12 turntables. The sound, however, differs in nature, so it wasn't as clear-cut as one might hope – if one hopes for easy answers.

Starting with my new fave test for low level information and bottom octave extension, the slams in 'The Boxer' from Simon and Garfunkel's *Bridge Over Troubled Water* [Mobile Fidelity UD1S 2-004; One-Step] acquired a firmness that contrasted with the slightly tighter sound of an LP clamped physically rather than with vacuum hold-down. I was slightly stymied, because I found both convincing and holographic, even if the vacuum-held V seemed somehow more 'grand' – and if you know that performance, grandeur is a key characteristic.

One immediate trait, consistent throughout the listening sessions, and with my other experiences of the V, was the epic scale of the musical space. My reference SME decks are no slouches in this area, and actually

offer tighter positioning of the instruments, but I suspect those wedded to huge orchestral works will potentially find the Air Force V more enveloping. Once again, it puts the 'grand' in 'grandeur.'

Here I must point out a geographical consideration that makes contemporary SME and the Air Force turntables cousins rather than rivals: TechDAS's parent company, the Stella Corporation, distributes SME in Japan, and uses SME arms on Air Force turntables at shows. They co-exist in Japan for a number of reasons, and I am now learning why Nishikawa-san considers them complementary rather than mutually exclusive, for they differ like a ↪

anodised platter – essential as the fixed plate over which the air flows is made of smooth, polished glass.

Unlike the much larger One and Two, the V is remarkably compact, regardless of the number of arms deployed, with a near-square footprint of only 312x368mm. Obviously, one needs space around it to accommodate the tonearms that extend over the sides, so this won't quite fit into a 400mm-wide gap, but this remains a compact record deck like the III, which has a motor sitting separately to its side.

Like the III, the V has a control panel at the front that contains buttons for speed selection of 33.33 and 45rpm, plus 'stop', alongside a digital display that shows the precise speed and when it is locked. The

pump also includes an auto shut-off facility after one hour, so you can leave the unit in standby unless you're going away for extended periods.

THIS SUCKS!

Once you've experienced the benefits imparted by vacuum hold-down, it's hard to return to decks using a mere record clamp. The security, the flattening of mild warps – it's all good. With all LPs, including superior, heavy-duty pressings, the V mates them securely with the platter.

Having just reviewed DS Audio's DS-W2 [see p64], my test LPs were the same to exploit audio memory. I swapped

IN THE AIR TONIGHT

Air bearings have held designers in thrall for decades, but my own initial exposure to the technology was with the Air Tangent tonearm from Sweden. It succeeded in eliminating the problems of linear-tracking arms that merely slid across a parallel rod or were powered by some arrangement of belts or gears, and which could exasperate with occasional sticking or jamming. As with anything using air pumps, complexity and noise were issues usually attended to by crafty location of pumps to reduce noise. While the Air Tangent remains the pinnacle of the concept for many collectors, air-bearing turntables were original pursued, in pre-production form at least, by speaker brand Infinity. The idea was, again, about eliminating friction, as well as bearing noise and vibration entering the arm/cartridge/deck mechanical loop. Maplenoll, newcomer Holbo in Slovenia, Bergmann [HFN Jun '12] and others follow this path, some with air pumps, others with magnetic support of the platter.



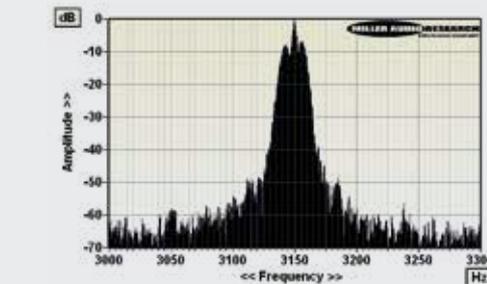
LAB REPORT

TECHDAS AIR FORCE V

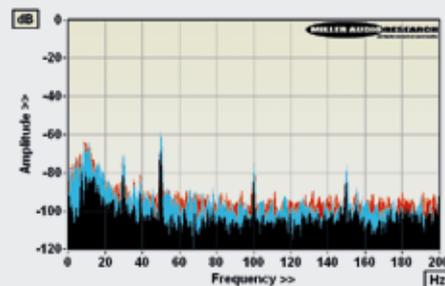
The Air Force V's own registration of 33.33/45rpm speed suggests a start-up of some 20secs with 'lock' finally indicated at 25secs, even though 'audible' stabilisation is achieved rather quicker at some 7secs. In this and in physical appearance the Air Force V looks remarkably similar to the Air Force III [HFN Sept '16], although the chassis plays host to a new and fully integrated motor assembly. The belt drive is close-coupled to a sub-platter/platter combination that weighs 6.7kg – some 3.3kg less than the III's alloy platter. It still employs a disc of polished glass beneath the platter, the pumped air escaping smoothly across its surface and raising the rotating mass by some 30µm.

However, while absolute speed accuracy is excellent at -0.02% [Graph 1, below], dynamic speed variations from the V are higher than those measured for all the costlier TechDAS decks. These use higher-torque outboard motors, the chassis-mounted drive in the V delivering a peak-weighted total W&F of 0.11%. In practice, the W&F spectrum is dominated by two ±6-7Hz wow sidebands, these also showing some DC drift.

Otherwise, the V's simpler platter, with its soft foamed mat, is seemingly *more* effective at suppressing vinyl noise (through-groove rumble is -72.1dB versus -68.6dB for the AF III), although the through-bearing rumble is about 1.5dB higher at a still impressive -72.5dB (all DIN-B wtd re. 1kHz at 5cm/sec). The Air Force One [HFN Jun '13], Two [HFN May '15] and III have all demonstrated bearing/chassis modes between 30-40Hz and a single, low-level mode at 30Hz is also visible on the unweighted spectrum for the V [black/blue traces, Graph 2 below]. Levels of noise-like rumble are also lower via the V, possibly courtesy of the reduced platter mass and reduced incoming air pressure. 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 (-0.016%)
Time to audible stabilisation	7 seconds
Peak Wow/Flutter	0.07% / 0.04%
Rumble (silent groove, DIN B wtd)	-71.3dB (-72.1dB with hold-down)
Rumble (through bearing, DIN B wtd)	-72.5dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-55.1dB
Power Consumption	32-35W (5W standby / 25W idle)
Dimensions (WHD) / Weight	312x168x368mm / 17.7kg



ABOVE: Pneumatic hoses from the outboard pump are connected to the air-bearing 'Flotation' and LP hold-down 'Vacuum' fittings while power, pump and speed controls are communicated via a multi-pin connector. Note separate ground post

Lamborghini versus a Ferrari. And in similar fashion, at this level, personal bias or taste becomes an arbiter.

With a raucous live album, such as Twisted Sister's *Live At The Marquee 1983* [Atlantic 603497861378], the V creates a sense of space akin to a club (and having been to the old Marquee, it's convincing as can be). Meanwhile the crowd noises, Dee Snyder's vocals and the ace guitar work cut through with a cleanliness I had not readily anticipated.

One has to listen to the band's steam-hammer percussion to hear qualitative differences, with the vacuum hold-down benefiting the transient attack. Thuds and thumps taxed my Wilson Yvettes' woofers [HFN Feb '17], which seemed to relish the exercise, the V's delivery offering a generous sense of air.

LOVE AFFAIR

I was starting to fall in love again with the whole air-bearing/hold-down concept, the Air Force III having filled me with lust, as did the One and Two before. With Doug MacLeod's *Break The Chain* [Reference RM-2519], the V showed it to be so close in competence to its dearer siblings that – rather than undermine their worth – it simply elevates the notion of the V's value-for-money. How so?

Seasoned listeners know the difference between what they are actually hearing and what they may or may not prefer. For some, for example, the notion of a master tape's authority is too aggressive in home listening, where hyper-detail may be a distraction. But with the Air Force V, the balance between seductive sound and attention-grabbing command are minimised, making it easy to listen

to for extended periods. Too clinical a sound usually means truncated listening sessions.

With MacLeod's twangy guitars and textured vocals, the V perfectly captured the liquidity of the former and the gruffness of the latter, reminding me of the contrast between Dianne Reeves' and Lou Rawls' vocals on 'At Last' or the barrage of guitars on the Buffalo Springfield's 'Bluebird'. The Air Force V thus possesses the analytical capabilities of the best decks I've heard, but tuned to possess enough warmth and 'humanity' to avoid accusations of clinical cleanliness. And MacLeod's blues do not need to be sent through the wash cycle...

Speaking of 'Bluebird', I returned to Buffalo Springfield's *What's That Sound?* [Atco/Rhino 03497 86066], to listen to this epic track once more. This studio creation has so many layers of sound, and so many competing guitar farragoes that it can baffle systems and upset even the finest of trackers. In 50 years of worshipping this song, I have never heard it portrayed more vividly. ♪

HI-FI NEWS VERDICT

Make no mistake: TechDAS has balanced cost and features to add another turntable to the family that fits perfectly in the lineup. While I consider the Air Force V to be not the finest turntable available – that remains the Air Force One – it is certainly one of the best-value high-end decks on the market. I now know how would-be Porsche 911 owners on a budget felt when the Cayman appeared.

Sound Quality: 87%

