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

Posioned 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 not: as has been a common occurrence of late, this masterpiece sniffs you upside the head with the Law of Diminishing Returns. Its performance is so good that, like the entry-level DS-E1 cartridge, it is shy of the Air Force One Premium, with the 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 Premium One, 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 platter weighs 8kg. The latter is made of aluminium, while the Premium uses gunmetal, said by the maker to be ‘optimised for the best sound quality’.

The suspension system has also been uprated, as has the outboard motor, which now has four tonearms and a heavy-duty motor housing. The Air Force III Premium’s compact footprint, yet each corner serves a different need beyond ultimate performance. What changes is the size of its dearer siblings. Because TechDAS knows the III Premium, I have also used it at shows and in the maximum number of arms they can accommodate – four tonearms and a substantial saving.

‘I almost failed to recognise my own familiar system’

Offered in gloss black with gold accents and platter edge, to distinguish it visually from the III, the Premium 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 Premium One, 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 platter weighs 8kg. The latter is made of aluminium, while the Premium uses gunmetal, said by the maker to be ‘optimised for the best sound quality 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 uprated, 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 at least 564x431mm (whd) for installation.

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 task, and the sucking down of the LP and 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.

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

TUNBTABLE

The outboard motor is positioned to the deck’s left. This raises the subject of set-up, which I almost failed to understand until this is achieved to two decimal places. Conversely, when the stop button is pressed – holding it down for a few seconds actually switches the unit into standby mode – it takes a while for the platter to stop rotating. Press the stop button once more and the LP is then freed of its vacuum hold-down.

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

TAKE TO THE SKIES

Fitted with the Graham Phantom Elite tonearm and TechDAS TC01 MC cartridge (HFN Sep ’14), the II 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 RIAA Living Stereo (SP-1933) filling the space in front of me while exhibiting so much air and atmosphere I almost failed to recognise my own familiar system.

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Yvettes simply vanished. To speaker location. The Wilson constraints that might be attributed with an uncanny freedom from any located precisely as they should be, were cavernous, individual sounds speakers’ was repeated and audiophilic goal of ‘disappearing recording possessed space and to question my own prejudices. Fatigue-inducing artefacts that I had Cleveland Orchestra, was so free of. Juliet/Nutcracker Suite purists find a mite brittle, due to I turned to an album some analogue imprint make almost any system high-speed, half-track tapes. Punch, more realism than anything short of those opening moments. 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 LP spinners. The One and Two may deliver a tad more weight, but, in my system, my room, well… I have never heard better. 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 that one can only marvel at the skills of an orchestra comprised of 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 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 –65.6dB [AF III] to –70.6dB 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 a 15-20Hz with the AF III are also largely banished in the Premium, PM

**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. 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 a 15-20Hz with the AF III are also largely banished in the Premium, PM

**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%

**HI-FI NEWS SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Turntable speed accuracy at 33.33rpm</td>
<td>33.33pm (+0.012%)</td>
</tr>
<tr>
<td>Time to audible stabilisation</td>
<td>8 seconds</td>
</tr>
<tr>
<td>Peak Wow/Flutter</td>
<td>0.02% / 0.03%</td>
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<tr>
<td>Rumble (silent groove, DIN 8 wtd)</td>
<td>–65.6dB [-70.8dB with hold-down]</td>
</tr>
<tr>
<td>Rumble (through bearing, DIN 8 wtd)</td>
<td>–74.0dB</td>
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<tr>
<td>Hum &amp; Noise (unweighted, re: 5cm/sec)</td>
<td>–53.1dB</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>30-40W (20W idle)</td>
</tr>
<tr>
<td>Dimensions (WxHxD)</td>
<td>473x170x363mm / 55kg</td>
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