

TW-Acoustic Raven GT/10.5

Germany's TW-Acoustic is not quite a household vinyl name as yet, but its latest turntable, the Raven GT, and brand new Raven 10.5 arm promise to change all that
 Review: **Adam Smith** Lab: **Paul Miller**

On the face of it, designing a turntable would appear to be a relatively simple endeavour, especially when compared to the complexities facing the designer of, say, a particularly feature-laden DAC. After all, a turntable has simply to rotate at the correct speed and provide a stable platform for the tonearm, while resisting outside influences and remaining speed-stable under high groove modulation. But to listen to some turntable designers you might think that the whole process is something akin to a form of sorcery, giving rise to exotic and fragile designs that perform well enough – at least until the breeze from a particularly energetic passing butterfly disturbs the mystic interface of forces and everything has to start all over again.

A trip to the annual High End Show in Munich will suggest that the Germans generally approach things a little differently. Their turntables tend to be large and massy affairs, immaculately constructed and blessed with a solidity that suggests they will nonchalantly shrug off a lifetime of hard vinyl playing. Naturally, names like Clearaudio, Acoustic Signature and Acoustic Solid spring to mind, but there are quite a few manufacturers content to plough their own furrows in a rather more discreet manner.

GT ACKNOWLEDGED

TW-Acoustic is one such company that specialises solely in vinyl replay, and its first deck, the Raven One, was introduced after five years of development [see boxout]. A small range developed around this first deck, culminating in the mighty three-motored Raven Black Night. The £5000 Raven GT sits in the range above the Raven One and, as some might have surmised, it does indeed pay homage to UK distributor Graham Tricker, of GT Audio.

RIGHT: The Raven GT has no mat or clamp. The powerful DC motor is a bespoke item, the armboard outrigger easily adjustable while the 10.5 arm offers VTA on-the-fly and magnetic bias

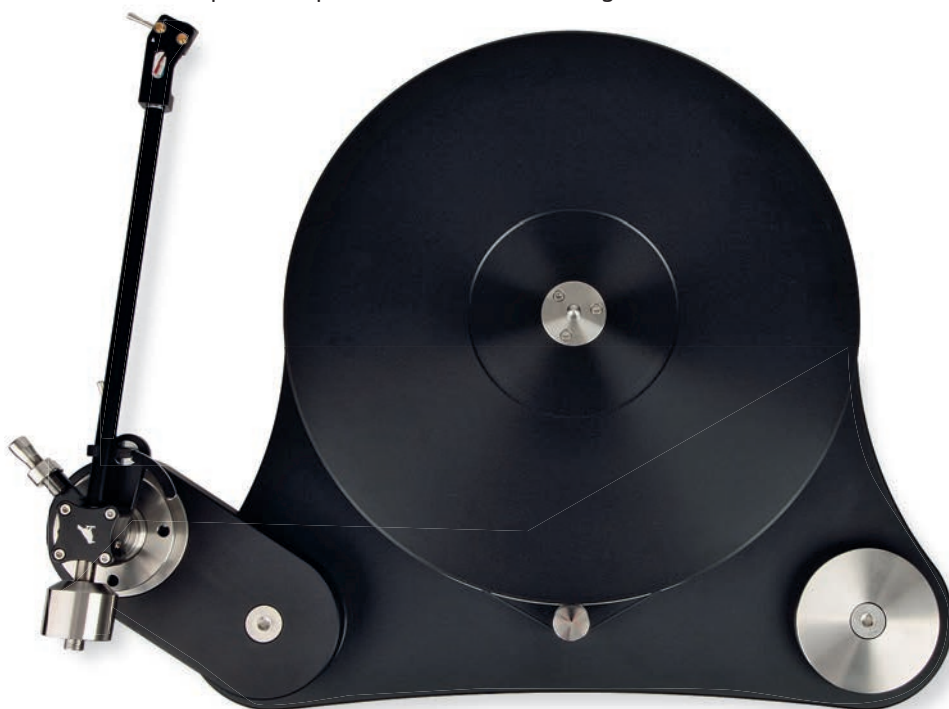
It is a visually commanding and superbly engineered design, but one that is deceptively simple and compact, taking up barely any more space than the Michell Gyrodec that usually occupies my equipment rack. The main chassis is in CNC-machined aircraft grade aluminium and is fitted with three adjustable feet. These are the same as used on the flagship Raven Limited deck and are internally decoupled to reduce the impact of external vibrations on the turntable.

In the centre of the base sits the bearing, which bolts in from underneath, requiring the platter to be simply slipped over once a coating of TW-Acoustic's Teflon-enriched oil is applied. The platter itself is a black polymer design manufactured to TW-A's own formula; it is 60mm thick and tips the scales at 6.4kg but, most importantly, the special mix of constituent materials ensures that its impedance is almost identical to that of the record. Consequently, no mat or clamp is required and transfer of energy between the two items should be optimal for performance.

The platter is driven around its periphery by a specially-ground belt and the motor is positioned very close to this for best energy transfer and to minimise the risk of belt stretch or misalignment. The motor itself is another item unique to TW-Acoustic, built to Woschnick's specification by Papst – a modified version of one of its standard models. The combination of massy platter and torquey drive system are core to Woschnick's goal of combining the 'timbre and low noise' of a belt drive turntable with the speed and dynamic quality of a classic direct drive design.

UP TO SPEED

Certainly, the Raven GT whips up to speed very smartly and changes between 33.3 and 45rpm with equal vigour. DC power is supplied to the motor by a microcontroller-based offboard supply, which allows fine speed to be varied and stored in its memory. The Raven GT can accommodate two tonearms of between 9 and 12in thanks to sturdy armboards that mount with a single bolt. These then contain a





LEFT: The 6.4kg platter is made from TW-Acoustic's own mix of polymers, claimed to offer an ideal mechanical impedance match to the vinyl record

further collar that can be independently removed to allow for ease of arm-changing – the only exception being the SME mounting which is too large to be accommodated by one of the insert billets.

For our review, the Raven GT was supplied with TW-Acoustic's latest tonearm: the £3500 Raven 10.5. Striking a good balance between the more common 9 and 12in designs, the Raven 10.5 is a superbly finished item that looks exactly at home on the deck. It mounts using a proprietary four-hole set-up and into this fits a superbly machined VTA adjuster. So smooth is its action that the most tremulous of hands can feel confident about adjusting VTA, even when a record is playing.

The armtube headshell is fixed but can be rotated to permit cartridge azimuth setting. Precision bearings locate the arm in both vertical and horizontal planes and three counterweights are provided to accommodate cartridges weighing between 5 and 20g, the overall effective mass of the arm being 14g. This is higher

than normal but by no means outlandish and ensures that a wide range of cartridges can still be used. Tracking force is applied by rotating the selected counterweight onto the finely threaded rear end of the arm. Bias is then applied by a contact-free magnetic adjuster.

MUSICAL ELEGANCE

After a suitable warm-up period I began listening using the supplied Ortofon MC Windfeld cartridge and found, unexpectedly, that my first scribbled comments were not to do with the deck's sound, but more the lack of it! As noted in the Lab Report [p39], the level of 'needle talk' from the stylus is very low indeed and surface noise was virtually non-existent. Even spinning a couple of picture-disc 12in singles (which generally suffer with high levels of vinyl roar) revealed this to be surprisingly muted. However,

concentrating on the music itself proved to be no less of a revelation...

For those who have never heard a turntable of this calibre, the main question is generally that of how much more of an increase in performance can be expected over a good quality £1500-£2000 unit. The Raven GT answers this immediately by offering a sense of poise, sophistication and

sheer musical elegance that one simply does not find lower down the price-tree. As a result of this, I often found myself listening at higher levels than I would normally, purely because the deck offers a gloriously

uncomplaining sense of power and control, completely free of compression or strain.

I am not a great opera buff, but something suggested it was time to reach →

'A huge wave of sonic grandeur thundered out of my speakers'

GERMAN GENIUS

Not exactly a household name in the UK, TW-Acoustic nevertheless has a loyal following both in this country and across the world. Thomas Woschnick, previously a teacher in a high school, started the company after years of repairing and modifying other turntables. He first became known for his modifications to Micro Seiki decks, offered to him after their drives had expired, and the new motor design he came up with evolved into the unit powering his own turntables. However, even with a wealth of repairs and modifications under his belt, Woschnick still felt the sound he was searching for remained elusive, thus leading to the birth of the deck that became the Raven One. Woschnick says he 'never intended to go into business' but friends heard his deck and coaxed him into starting his own company, based in Herne, in the Ruhr area.



ABOVE: The DC power supply has incremental speed adjustment for 33.3 and 45rpm

TURNTABLE/TONEARM



ABOVE: The Raven GT's motor is positioned very close to platter for the shortest belt routing, maximising the benefit of its high torque and aiding long-term stability

for my copy of *The Magic Flute* [EMI SLS912] and to cue up the Queen of the Night's demanding aria from Act 2. I am glad I did, as the sheer majestic force of the vocal performance had me pinned back in my seat. There was no sense of over-exertion from the Raven pairing, just a huge wave of sonic grandeur thundering out of my loudspeakers.

I then fed the Raven GT something quite different, to make sure that it could rock with the best of them. I was not disappointed. With 'Outlaw Man' from The Eagles' *Desperado* album [Asylum KS3008] underway, the Raven GT/10.5 showed that it was as musically adept at carrying a bass line as some of the best high-end turntables I have heard. But the way in which it underpinned everything with a sense of solidity and tautness meant that I seemed to be hearing the track almost for the first time.

PRESSING MATTERS

The pressing itself was an original from the mid-1970s on fairly unimpressive vinyl. It doesn't take much provocation for this LP to sound quite dull and lifeless, but the TW-Acoustic pairing was having none of that. Dynamics were ebullient and the many cymbal strikes throughout the track crisply shimmered off into the distance.

At the treble end of the spectrum, both turntable and arm showed themselves to be eminently capable and unflustered, adding a joyous sense of clarity, detail and sheer sophistication to proceedings. At no time did they mask a poor recording, but seemed to have a quite uncanny ability simply to push the bad aspects of such a pressing

aside. Rather like telling me these artefacts *were* there but reassuring me that if I really didn't want to hear them, why not concentrate on just the music instead? I even found myself digging out some long-forgotten and quite badly treated 'audio-centred' car boot sale acquisitions – I have not heard any other turntable dig the remaining *musical* information from these tortured grooves as well as here.

Moving on, I cued up something far more forgiving: 'The Painter' from Sara K's *Water Falls* LP [Stockfisch SFR357.8025.1]. Also hailing from Germany, this very atmospheric pressing inspired a heady level of emotion with the TW-Acoustic pairing, filling my listening room with Hans-Jorg Maucksch's exquisite fretless bass playing and setting Sara K's vocals almost in front of me. Both performers sounded larger than life, delicately detailed and utterly captivating at the same time. I can truthfully say that vinyl replay really doesn't get much better than this. ↓

HI-FI NEWS VERDICT

If claims of dubious wizardry, ostentatiousness and 'bling' styling are the chief requirements from your vinyl spinner, then look elsewhere, as TW-Acoustic's Raven GT and Raven 10.5 offer none of these. However, intelligent design, superlative engineering, neat styling and just a hint of vinyl magic ensure that the combo offers a stunning performance that puts it right up with the long-playing greats.

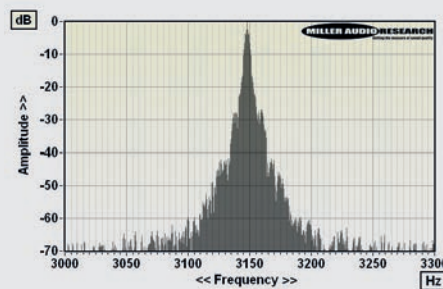
Sound Quality: 86%



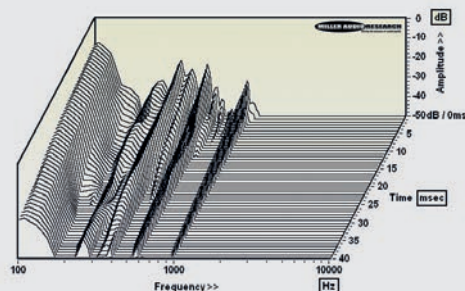
TW-ACUSTIC RAVEN GT/10.5

This is a new brand to the pages of *HFN*, and its debut is auspicious. The engineering of the Raven GT is exceptionally fine, its powerful DC motor bringing the 6.4kg platter up to speed in less than 3 seconds before its power consumption drops from 8 to 4W at 33.3rpm. Rumble is up (or down) with the very best turntables, achieving -69.5dB through the groove and falling to -71.7dB through the bearing itself. There is a possible motor mode at almost exactly 120Hz but the level is extremely low (-81dB below the 5cm/sec reference) and this does not appear in the through-groove spectrum. Speed accuracy is also first class, adjustable to within ±0.06% and exhibiting very little low-rate wow – just 0.02% as evidenced by the sharp centre line on the W&F plot [see Graph 1, below]. Some flutter is visible at ±12Hz but this is also well contained.

The new Raven 10.5 tonearm is no less immaculately machined, finished and assembled, its sealed, dual-pivot bearings completely free of play and yet enjoying <10mg friction in both planes. The 10.5in tonearm, a black anodised alloy, must surely be internally damped along its length for audible needle-talk is very low indeed. The main bending mode is clearly revealed at 108Hz on the cumulative decay plot [see Graph 2, below] with harmonics at 365Hz, 430Hz and 550Hz. The high-Q resonance at 1kHz is directly linked to the bearing block itself, not the tonearm tube. The 10.5 is otherwise clearly free of any higher frequency resonances – this is a good result. Readers are invited to view the QC Suite report for TW-Acoustic's Raven GT turntable and 10.5 tonearm by clicking onto the red 'download' button at www.hifinews.co.uk. PM



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted ±150Hz, 5Hz per minor division). Speed accuracy is excellent and wow very low indeed



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	33.31rpm (-0.065%)
Time to audible stabilisation	2.5sec
Peak Wow/Flutter	0.02% / 0.03%
Rumble (silent groove, DIN B wtd)	-69.5dB
Rumble (through bearing, DIN B wtd)	-71.7dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-56.7dB
Power Consumption	4-8W
Dimensions (WHD)	420x150x360mm (no arm)