



JINW MEMORIAL TONEARM

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SINCE 1984

VPI TNT

Hot-Rod Turntable and JMW 12.5 Tonearm

by Roy Gregory

The VPI TNT first hove onto my personal horizon around ten years ago, and yet, strange to relate, this is the first time I've ever put pen to paper on the subject of the company's top turntable. I owned what was probably the first TNT Mk I in the country, bought blind after a brief but happy association with an HW19 Mk III. It's a decision that I've never for a moment regretted, and one that has formed and informed my audio thinking to this very day. Big, black and heavy, this complex, brooding beast of a turntable, used with the Eminent Technology ET II air-bearing tonearm made me reconsider both what was possible and the structure behind accepted wisdom.

Remember, the TNT appeared at the height of the three point suspended hegemony, with the likes of Linn, Pink Triangle and Roksan well and truly in the driving seat. Its four point suspension and separate motor/planetary drive set-up, its high mass and two inch thick suspended acrylic chassis all set it apart from the crowd – but so did its sound. The TNT/ET combination was an ear-opening experience, re-defining the dynamic range, soundstage volume, transparency and dimensionality and overall speed stability of the vinyl source. It produced a big, confident,

poised sound, full of subtlety, colour, life and power, completely over-riding the performance of 'tables that we British, in our insular way, had arrogantly assumed were world beaters. Yet, despite this clear superiority, its wider acceptance met with dogged resistance as magazine editors in particular stood with their fingers in the dyke of a crumbling belief system. History has finally swept away those blinkered individuals, but for me it will always be the TNT that represented that all-important first crack in the edifice.

Of course, much has changed with the TNT itself since that first incarnation, its designer Harry Weisfeld being nothing if not an inveterate tweeker. The platter has become an aluminium/lead/acrylic composite (Mk II) while the motor went from square to round and was physically separated from the pulley assembly (Mk III). I'm not sure about the Mk IV, although I believe there were changes to the main bearing as well as the more obvious advent of a separate flywheel to further decouple the motor and improve speed stability. The Mk V introduced air suspension pods in place of the springs and a vastly improved power supply in the shape of the SDS, a sophisticated sine wave regeneration unit and a welcome replacement for the aging

PLC which was flakey at best and downright frustrating at worst, when its reluctance to switch to 45rpm could teach the average mule a trick or two. Whilst this was more of a problem in Europe and the UK than its home market, the PLC was well past its sell by date. Along the way there also arrived the JMW Memorial tonearm, named for the Weisfeld's son Jonathon who was instrumental in its development but tragically died in a car accident before it reached production. It is an elegant damped uni-pivot available in 10" and 12" lengths, which along with a specially commissioned low output moving iron design from Grado (yes, before Grado decided to market one themselves) made a complete VPI front-end a reality for the first time.

Finally we reach the subject of this review, the Hot Rod or HR. This sports the latest incarnation of the main bearing, now sporting a "60 Case" ►

Let's not forget that as well as demonstrating new levels of vinyl performance, revealing the inadequacies of existing UK 'references', the TNT also showed the door to the first generation of audiophile CD players, establishing a performance margin that even ten years on, with CD finally starting to deliver on its musical promises, it still easily maintains.

▶ tool steel shaft, a unit that according to Harry Weisfeld is now so quiet in operation that, along with the improved isolation provided by the air pod suspension, the pulleys of the planetary drive system (designed to reduce the transfer of motor noise) are now the noisiest element in the system. The obvious solution was simply to get rid of them, eliminating a major sub-assembly as well as the machining they necessitate in the top plate. And while he was on the simplification trail he decided to get shot of the armboard too, eradicating another machining operation and providing the tonearm with a much more massive and mechanically consistent termination, albeit at the cost of one of the TNT's great claims to fame; the ability to accommodate any arm known to man (or more importantly in this case, woman). Of course the deck will still accept them, but you'll need to choose in advance.

The end result is a slimmer and lighter looking beast (more like the TNT Jr) and whilst it is now pre-cut for a particular arm, the vast majority of customers are buying turntables as a whole these days.



Having listened to the sonic benefits Harry reckoned that the loss of flexibility was a cheap price to pay for the gains involved. Of course, starting out with a Jr and upgrading to full TNT status becomes more complex, but should you wish to upgrade from say, an RB300 to another arm,

VPI can supply an acrylic plug to close the redundant mounting hole. For those who really want interchangeability the Mk V remains available, but the HR is the better sounding (and cheaper) alternative.

Setting up the TNT has always been a straightforward procedure, the major complications being the practicality of accommodating its enormous footprint and protecting the acres of acrylic from dust.

(VPI did make a dust cover at one point, but it was enormous and had such a deleterious effect on the sound as to be beyond

serious consideration. Besides, it looked like a fish tank. My solution was to use a silk dustsheet, which worked fine without causing any static problems.) Having decided

where you are going to place the





► deck, make sure its support is absolutely level and position the main chassis. Originally this involved placing the suspension towers and idlers with considerable precision before lowering the massive floating deck into place. Now however, the idlers are gone and the air suspension units hang from their sleeves, retained by their valve covers, making the task simplicity itself. Next you need to gently place the platter on the main bearing, ensuring that you align the guide marks properly. Place the flywheel and motor assemblies and install their belts, assemble the arm (not forgetting to attach the lead-out wires) and you're ready to set the suspension.

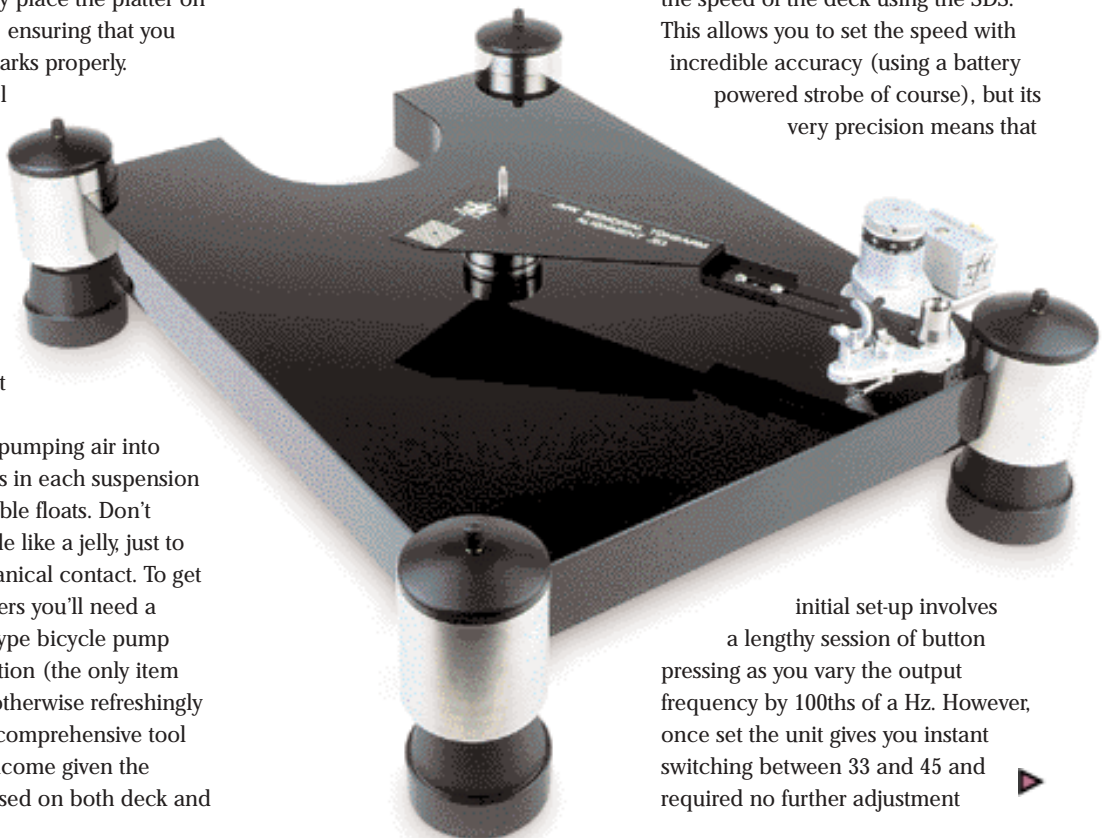
This involves pumping air into the small bladders in each suspension tower until the 'table floats. Don't expect it to wobble like a jelly, just to be clear of mechanical contact. To get air into the bladders you'll need a Schraeder (car) type bicycle pump with a lock on action (the only item missing from an otherwise refreshingly high quality and comprehensive tool kit, especially welcome given the Imperial fixings used on both deck and

arm). Traditional screw on pump adapters will simply let all the air out of the tiny pockets as you remove them. Air suspension forks on mountain bikes suffer from similar problems and there are a variety of special hand pumps for inflating them, as well as at least one nifty screw on adapter that allows you to release tiny amounts of air under perfect control. Which is of course how you level the beast. It's simply a case of dipping the valves slightly to lower the appropriate corners, at the same time making sure that you don't ground the deck. It will take a little practice to get a feel for the microscopic adjustments necessary, but it's easy enough to start again, and you'll soon get it right. Replace the valve covers and you're away. For more extreme adjustments you can twist the Delrin feet that support

the air pods, winding them down the fixing screws, however, a good solid mating of pod to foot is to be preferred (sonically as well as in terms of practicality and overall stability), and as long as you levelled the support properly then this shouldn't be necessary. Don't be tempted to overfill the bladders as the suspension offers greater isolation at lower pressures. The 'softest' should provide 3mm of clearance and no more.

Ah yes, those valve covers. I know that VPI are serious about offering value for money, but those nasty plastic screw on caps have no place prominently displayed on a product at this price. This is one situation where a nicely executed bit of bespoke machining would go a long way. Who knows Harry, keep 'em light and offer them in a range of anodised colours and you could sell your valve covers to the cycle industry and make some real money!

Final step in the process is to set the speed of the deck using the SDS. This allows you to set the speed with incredible accuracy (using a battery powered strobe of course), but its very precision means that



initial set-up involves a lengthy session of button pressing as you vary the output frequency by 100ths of a Hz. However, once set the unit gives you instant switching between 33 and 45 and required no further adjustment ►

▶ after the first couple of days and the bearing settling down. This is such a massive operational (and sonic) improvement over the PLC that every VPI owner should put the SDS at the top of their wish list - now.

So much for the deck, what about the JMW arm? The 10" version was covered by JMH in his review of the VPI Aries back in Issue 8, but given that Editorial privilege allows me a little extra space I can afford a more in depth examination of this fascinating product. The guiding principles behind the arm are structural simplicity and optimised replay. Doesn't every arm set out to optimise replay? Well yes, but it's remarkable how few designers agree on what that aim actually entails, or provide the tools to achieve it.

In developing the JMW, Harry Weisfeld (a man with a serious collection of tonearms and the scars to prove it) quickly realised that his prototypes sounded better the more he removed from them. One sacred cow after another went to meet its maker, including the provision of bias adjustment, until he settled on mechanical stability and correct VTA as the critical factors. The result was a 12" uni-pivot with a low-slung centre of gravity. Contrary to appearances, the azimuth is set by rotating the eccentric mass ring around the base of the bearing housing. The groove in the headshell accepts a light alloy rod that sits at right angles to the cartridge. Viewed from the front it allows rapid setting of basic azimuth, although the

final adjustment should always be made from the cantilever/stylus, or using a mono recording with one channel in reverse phase and then summed. In this instance the counterweight is 'dropped' simply to keep its mass below the plane of the bearing. It slides for downforce adjustment, its locking screw running in a vertical slot to prevent accidental offset. You also get a dedicated single point alignment protractor which works on the same principle as the Dennesen universal device reviewed in Issue 1. I'd still prefer to see a complete tracing arc, but this is the next best thing.

Damping is provided by filling the bearing cup with a heavy oil. The precise level is critical to the ▶

VTA - the forgotten factor.

Considering that arms like the RB300 dispense with it all together you could be forgiven for wondering whether all this effort expended on VTA adjustment is worthwhile? The answer is an emphatic yes! The RB300 has never had pretensions to state of the art performance, and you only need to look at how many people have tried to offer solutions to this particular mechanical blind spot in order to appreciate how importantly other people view it. The fact that no other British built arm has actually done the job any better, relying on simple locking collars for the most part, merely reflects another aspect of the UK's institutional analogue arrogance.

In fact, the one area in which serious state of the art tonearms can readily better budget killers like the Rega is in providing more precisely adjustable geometry and operational parameters - especially VTA. The Forceell, ET II and Rockport, Triplanar and Spothem arms have all done so successfully. The JMW betters them all.

How critical is correct VTA, and what effect does it have anyway. Let's use the JMW and the Alto re-issue of the Argenta *Concierto de Aranjuez*

(SCLL 14000) as a working example. It's vast and coherent soundstage makes it an obvious choice, but that's far from all I'm after. With the JMW's height scale set at 15 the sound is warm, round and indistinct ("blowsy" according to my listening notes). Raising it to 20 introduces much needed substance and stability. The opening of the 2nd movement now hangs together better, with greater front to back depth, overall focus and rhythmic coherence. The guitar, almost clumsy before offers greater range and dexterity. Raising the arm to the optimum 23 setting locks everything into place, not just spatially but temporally as well. The opening guitar strums become individual, precisely spaced and accented notes, the melodic theme wonderfully expressive. Suddenly you can understand why this was Rodrigo's favourite recording. It's not just the focus and substance of the notes, but their shape and spacing that brings Yepes' brilliance to life. The thuddy bass that is a feature of this disc now has far more shape, the notes complex and centred, while the soundstage takes on a special transparency, accentuated by the immediacy and perfect timing of the orchestral contributions. Raise the arm again, to 30, and the sound becomes

pinched and dry, the playing mechanical, losing all delicacy and expression. Suddenly the whole thing sounds like an exercise rather than a vivid and dramatic performance, while the soundstage is infested with a fine silvery grain that destroys its depth and far focus.

This listening was conducted with my ClearAudio Accurate whose Trigon stylus profile is nowhere near as extreme as a van den Hul, and yet the window of acceptability was less than ± 2 graduations. And the differences noted are neither subtle nor musically unimportant. In fact, they're vital. Now consider that each graduation on the JMW's scale amounts to 0.35 of a thousandth of an inch in arm height at the pillar of a 12" arm. The implications for 9" arms trying to make adjustments with basic locking collars are pretty horrendous - and I haven't even started on the subject of different record weights and thicknesses. Oh yes! I think it's about time that we started taking VTA seriously, given the amount of money we spend on trying to recover a signal most of us have already lost at the stylus. Still not convinced? Try a Ringmat support system with its built in VTA adjustment. You will be.

▶ overall sound of the arm, and in most cases less is generally more. You can remove oil with the tip of a Q-tip, and in most cases a minimal amount of damping is all that is required. It is well worth spending some time getting this right, with a little experimentation paying musical dividends.

Perhaps the most controversial aspect of the arm is the absence of a conventional bias mechanism relying on a spring or falling weight. Instead, the user simply puts an anti-clockwise twist in the lead out wire before connecting its high quality Lemo plug to the termination box. Purists will wince but having run my Accurate in a JMW for around six months of heavy use I detected no untoward or asymmetrical wear on the stylus. Nor did I have any problems with the stability or location of central images. So, on the whole I can only applaud the elegance of the JMW's solution to a problem

that other arms tend to fudge anyway. Besides, it allows the arm to offer another, unique attribute.

You remember that Harry's second critical factor was correct VTA adjustment? Well, the JMW is arranged so that the entire arm assembly can be raised and lowered by twisting the micrometer style knob on the tower beside the main bearing. Nothing particularly new in that I hear

you say, except that the VPI's adjustment is precisely calibrated, allowing simple, but more importantly, repeatable adjustments of VTA. So simple in fact that those with the inclination can adjust it for each and every record, and record the appropriate setting for next time. However, it is when you combine this facility with an arm tube that can be physically removed, complete with counterweight, that you hit pay dirt. Forget interchangeable arm wands or headshells, the JMW is the first arm that allows you to swap a cartridge, complete with all its alignment parameters preserved intact, in a matter of seconds:

Remove one arm assembly, replace it with another, connect



the Lemo plug and dial in the VTA. That's all there is to it! For audiophiles who want to run more than one cartridge, shops who want to compare and demonstrate them, or reviewers who need to optimise their source for other equipment, this is a Godsend. And whilst you might scoff, consider for a moment the lengths that someone spending this sort of money on a turntable will be prepared to go to in order to maximise their musical enjoyment.

Are there costs involved? Well, you end up with two breaks in the arm cable (at the Lemo and the Phono output sockets) so it would be nice to see a hard wired terminal box as an option, with the lead-out wires connected directly to the Lemo socket, but that is one nasty solder job, which means it's best done at the factory, which means in turn that you lose the flexibility of choosing your own arm cable. After all, a botched solder joint is worse than a decent set of connectors. The other factor that you can't ▶



▶ adjust is the damping (at least not readily and repeatably). As long as the various cartridges don't require wildly different degrees then go with the minimum - it's a compromise but a minor one given the alternatives. No, all in all it has to be said that this is the most thoroughly thought out arm since the ET II, and that is saying something. This is a massive and very real benefit. It's also typical of an arm that is so clearly the product of somebody who is personally passionate about vinyl replay.


In fact everything about this 'table suggests that it's a labour of love, not least its musical performance. If I had to pick a single word to describe the TNT/JMW's sound then it would be "honesty". It offers a complete and wonderfully credible view of the music, devoid of the doctored frequency response, truncated bandwidth or sonic hyping that so often makes hi-fi so obvious in its operation. That's not saying that music from the VPI is indistinguishable from reality. However, it gets two critical aspects of reproduction spot on, and that makes its version of events much easier to accept. Firstly, it's a well balanced product doing everything equally well, with no obvious flaws in its performance, and no standout attributes to draw the listener's ear and distract from the music as a whole. Secondly, it gets the proportions and perspective of the performance just right. No huge images at the front of the stage supported by pygmies at the back, and no tiny orchestras right up close. The overall scale of the presentation, and the relative scale of players within the picture are both extremely natural, making the performance itself a natural extension of the listening experience. Like I said, easy to accept and satisfying as a result.

How does the Hot Rod sound compared to the Mk V? We're going by aural memory here, which is always dangerous, but what the heck.

Playing Buddy Holly *Legend* (MCA MCMD 7003) an album that has graced all my TNTs, I'd have to say that the most obvious benefits of the Hot Rod are improved focus, transparency and low level detail. It seems at first more forward, but this is actually simply a case of greater immediacy and the absence of residual texture in the acoustic space. The bass is also slightly leaner, with less bloom than before, providing a more natural overall balance with the treble. Compared to the (vastly more expensive) ClearAudio Master Reference, the VPI lacks that 'table's astonishing "reach out and touch" clarity and inner instrumental detail. It's sax is not as three dimensional, the distance from reed to bellmouth not as well defined, but it makes up for it with the absolute solidity and coherence of its presentation. There's nothing thin or insubstantial about the sound at all. Whilst the TNT may not be the last word in information itself, the information it provides is properly presented and backed with a creamy smooth sense of power and substance and security. There is a telling inevitability to the Hot Rod's music - you know it's going to get there, and you know it's going to do it without any unnecessary histrionics.

The DCC re-issue of the Stokowski/Villa Lobos *Uirapuru* (LPZ 1003) is a case in point. You don't get much more dramatic music, or much greater dynamic contrasts, but the VPI sails through it, instruments never shifting or growing with volume, the loud never trampling the quiet, the constant shifts in tempo evolving naturally to drive the music. Even behind the loudest crescendo the texture and complexity of the drums and percussion is still apparent, as befits their critical role in this atmospheric music.

This is the key to the TNT/JMW's appeal. It is musically unobstructive and unobtrusive. The extreme stability

of its musical presentation helps to create the wonderfully palpable soundstage that has always been a VPI hallmark, whilst its Row M perspective, bandwidth and dynamic range keeps the overall scale natural, and more importantly, believable. This turntable is unmistakably the product of a designer who puts musical considerations first. Listen and you hear music, rather than the system playing it. This is one product that gets it right. 

TECHNICAL SPECIFICATIONS

VPI TNT Hot Rod

Speeds: 33 and 45,
independently switched
and adjustable.

Platter Mass: 11Kg

Dimensions (WxHxD): 787 x 254 x 483mm

Total Weight: 50Kg

VPI JMW Memorial Tonearm

Type: Damped Unipivot

Effective Length: (12") 308mm
(10") 256mm

Effective Mass (12.5): 11.5g

Prices:

Turntable (incl. SDS and JMW 12.5)

£6500

JMW 12.5 Tonearm £2195

Spare 12" Armtube £995

JMW 10.5 Tonearm £1895

Spare 10" Armtube £895

SDS £950

Distributor

Cherished Record Co.

Tel. (44)(0)1579 363603

Fax. (44)(0) 1579 363604

Net. www.cherished-record-company.co.uk

Manufacturer

VPI Industries

Tel. (001) 732 583 6895

Fax. (001) 732 946 8578

Net. www.vpiindustries.com