

Art Dudley Listening

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Electrical Measuring Technology (EMT), based in Mahlberg, Germany, is nothing if not a company with a point of view. Established in 1940, first as a designer of test equipment and later as a manufacturer of transcription turntables, EMT entered the cartridge business by supplying their broadcast clients with Ortofon pickup heads. Soon thereafter EMT began making their own Ortofon-inspired mono pickups, such as the very high-output, very low-compliance, and altogether wonderful OFD 25. Then, in 1965, EMT produced a broadcast-quality stereo pickup head of their own design, the TSD 15 (footnote 4).

Some 46 years later, the TSD 15 remains the cornerstone of the EMT line, and is virtually unchanged: Of all the notably long-lived products in perfectionist audio, today's TSD 15 seems the closest to its original forebear. Moreover, beginning in the late 1970s, the TSD 15's basic motor unit has been popular with such OEM cartridge manufacturers as van den Hul, Roksan, and Brinkmann, and remains so to this day.



In its most traditional form, the TSD 15 is an A-style pickup head (\$1900) weighing just over 17.5gm and available with either EMT's proprietary diamond-shaped output-pin pattern or the more common SME square pattern. (EMT refers to the latter, with a trace of a sniff, as the *international* pattern, designated on their headshells with an *i*.) As with the Ortofon SPU pickup heads, the TSD 15's motor unit is removable from its headshell but remains electrically unusable in that state, being thus untethered from its output pins. Mechanically,

though, the EMT is a bit more adaptable than the Ortofon to life in the nude. And even when it *does* stay in its shell, the position of the TSD 15 motor can be adjusted very slightly, to fine-tune the overhang. Which is very cool.

The pertinent specs: The TSD 15's armature is wound with enough fine wire to give it both a high impedance (24 ohms) and a high output (1.05mV). Its compliance is low but not exceptionally so, the recommended downforce being a perfectly reasonable if nonetheless nerd-curdling 2.5gm. (Compare that with a recommended downforce of 4gm for the 32gm Ortofon SPU Classic A.)

The TSD 15's basic stylus is a conical diamond with a tip radius of 15 μ m—hence the name—which is a shade smaller than the Ortofon SPU's 17 μ m tip. Incidentally, the TSD 15, like all of EMT's pickup heads, has a clear-plastic magnifying loupe built into the front of its alloy headshell. I'm told that this was intended to work, hand in glove, with a miniature light built into EMT's turntables, as a visual aid in lowering the stylus to the groove. (Compare that with the human coccyx, originally part of a design to keep us balanced in trees through which we no longer travel, yet which is similarly nice to keep around for old time's sake.)



The EMT TSD 15 is a fine all-rounder, combining starkly honest music-making with the sorts of refined sonic attributes most audiophiles cherish. Its spherical stylus tip seems a little quieter in the groove than the SPU's, but that may be a function of the EMT's softer suspension making for a less perturbable motor. (One must also consider that an EMT tonearm will, for whatever technical reasons, be kinder to an EMT pickup head.) Stereo imaging is quite good, with greater specificity than usual for its stylus profile, and the EMT's overall presentation is open, clear, and transparent. Yet within that transparent soundfield exist sounds of much-greater-than-average presence, body, and color, and the TSD's ability to communicate the flow and momentum of musical lines is, in my experience, exceeded only by that of the Shindo SPU.

But you can spend more on it if you want to: At the end of 2010, to commemorate their 70th year of doing business, EMT introduced a limited run of TSD 15 pickup heads in a gold hammertone finish—*hammertone* being to anachrophiles what *herringbone* is to Martin guitar enthusiasts—with the user's choice of spherical or super-fine-line elliptical styli. For that

edition, the price climbs to \$2000, to cover the extra \$100 worth of sheer cool: worth every damn dime.

Speaking of which, it may seem reasonable to wonder whether the large stylus profiles—and generally low compliances and high tracking weights—of the phono cartridges preferred by anachrophiles should keep us awake at nights, worrying about our records. I have some guesses on the matter, but let me emphasize that that's all they are: Lest this column touch off yet another flurry of *Rope Dudley in* letters from the preposition-danglers among our readers, I'm very much open to opposing points of view, especially when accompanied by believable (footnote 4) supporting data.

That said, I'm enduringly untroubled for one reason in particular: Of the LPs I've bought brand-new, a significant portion were purchased during my teens, when the only phonograph at my disposal was a Webcor record player fitted with a piezoelectric cartridge, the stylus of which was wide enough to deserve a pair of mud flaps with Yosemite Sam's picture on them. But I kept that stylus clean, and I kept the records clean, too—and today the vast majority of those records sound fine (more so the ones on the Reprise label, less so the ones on Capitol, for whatever reason). As for the LPs that've come my way secondhand, which now constitute a slight majority of my collection, most are classical LPs manufactured between 1949 and 1969, the Devonian Age of stylus tips. Nonetheless, most of my secondhand records sound good, and about 20% of those sound creepy good. I can't imagine that many of them were played with elliptical or hyperelliptical tips: It was a spherical world back then.

Yes, I used to read *Stereo Review*. Yes, I remember all those scare-stories about stylus mass and groove heat and how my records and I would go to hell unless I bought the latest Trackmaster SUX5000 Mk.II (and then the Mk.III the next year, and the Mk.IV the year after that . . .). Yes, I bought some of those cartridges. Yes, they tracked beautifully, but otherwise made my records sound tizzier and tickier and more skeletal than ever. Yes, in the late 1970s I bought my first low-compliance moving-coil cartridge and started loving my records again. And, yes, I remain of the opinion that my records are in greater danger of being damaged by space debris than by high-compliance cartridges and spherical styli.

My advice today is just another variation of my advice from yesterday and the day before: Life is brief, so work hard, read everything within reach, help the needy, take care of your kids and your elders, and buy something really nice for your spouse. Then, with the money left over, buy something that'll please *you*, not the guru du jour. And sleep tight.

Footnote 4: EMT Studioteknik GmbH, Industriestrasse 25, 77972 Mahlberg, Germany. Tel: (49) (0)7825-879-47-0. Fax: (49) (0)7825-879-47-15. Web: www.emt-studioteknik.de. US distributor: Tone Imports, 20 Continental Avenue, Suite 5H, Forest Hills, NY 11375. Tel: (646) 425-7800. Web: www.toneimports.com.

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Follow-Up September 2011

Art returned to the EMT TSD 15 in September 2011 (Vol.34 No.9):

Love them though I do, I can't imagine there's very much money to be made in the manufacture of spherical (as opposed to elliptical, hyper-elliptical, or just plain fanciful) phonograph styli; consequently, I can't imagine there are many people left in the world who ply that trade. In fact, until recently, I would have guessed that all contemporary spherical tips come from the same place—like meals at any of the fine Indian restaurants on New York's E. Sixth Street, which are rumored to share a single tandoor.

And therein lies a tale: When I wrote about EMT's long-lived TSD 15 phono cartridge (\$1950) in the May issue, two characteristics in particular stood out. First, the EMT sounded quieter in the groove than other low-compliance pickup heads fitted with spherical styli: I heard a little less hash, crackle, and steady-state roar. Second, according to the folks at EMT, the TSD 15's spherical tip is measurably smaller than the one used in the similarly long-lived Ortofon SPU Classic A: 15 μ m for the former (hence the model designation), 17 μ m for the latter.

During a visit to my local friend and engineering advisor Neal Newman, the obvious and ideal solution was broached: Let's look at examples of both under the microscope—and photograph them. So we did (fig.1).

Fig.1 Ortofon SPU Classic A stylus (left); EMT TSD 15 stylus (right); both from beneath.

In this first photograph, the stylus of my own Ortofon SPU Classic A—the motor unit of which I purchased brand new last year—is on the left, the stylus of the review sample of the EMT TSD 15 on the right. (These images were enhanced in Photoshop only by opening up the midtone levels, increasing contrast, and applying an "unsharp mask," in order to better show minute details. I was consistently surprised by the distinctness of the Ortofon's stylus tip—it came out that way in every shot!—and though I cleaned both styli prior to taking these pictures, a bit of hair or fiber persisted in clinging to the EMT's cantilever. Ewww.) The Ortofon's diamond shank seems to have been ground at a different and somewhat blunter angle than the EMT's. For its part, the very end of the EMT's cantilever has been rounded down, presumably after the stylus shank was installed. In both cartridges, the shank appears to have been punched into the crimped and flattened cantilever from above, then secured in place—also from above—with a drop of cement.

Fig.2 Ortofon SPU Classic A stylus (left); EMT TSD 15 stylus (right); both from in front.

In the second photo (fig.2), the differences are even more visible. (So is that damn hair!) As far as I can tell, the shanks of both styli are perpendicular to their flattened cantilevers, suggesting that at least one of the ingredients needed for good channel balance and good wear characteristics was in place. It does seem that a greater portion of the EMT's shank has been dressed away by its maker, with facets that extend closer toward the cantilever. Also, it appears that the very end of the EMT's cantilever was finished with a minute smear of solder. Although this photo doesn't show it, the dabs of cement on both products were neat and clean.

Lacking a reliable means of making and illustrating comparative stylus measurements that are accurate to the micron—I sympathize with those who wonder just what the hell qualifications *Stereophile* is looking for in their reviewers!—I can't say whether the EMT's stylus tip is indeed smaller than the Ortofon's, although its shank does *look* different from the Ortofon's, and there's little doubt that the EMT's cantilever tip is of lower mass, given the amount of alloy that's been dressed away. Whether any of those differences can be linked to one or another audible difference is anyone's guess.

Consequently, although much of the preceding may seem like yet another subtle ploy to interest normal people in the wisdom of having an analog rig with a massive tonearm and a low-compliance pickup head (it is), it seems safe to say this: Today, as 50 years ago, not all spherical "needles" are the same—and it may well be that the EMT TSD 15's very low groove noise is related to that distinction.—**Art Dudley**