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Special Feature



The Birth of the Cool

Metaxas & Sins Tourbillon
T-RX Tape Deck

Jonathan Valin

I' m not going to kid you: I am among the mechanically inept—high among them, I would say. If there were a merit (or demerit) badge for hastiness, clumsiness, and willful inattentiveness around machinery of any kind, I'd be wearing it (and would have royally earned it). And yet I very much doubt whether I would have gotten into this hobby when I did, which was as a teenager, or stuck with it as long as I have, which has been a lifetime, if it weren't for the spell that complex, finely crafted mechanical objects have cast on me from youth to old age.

Now, in the world of high-end audio, there is nothing as intricately or as spellbindingly crafted as a reel-to-reel tape deck. You can see this simply by looking at one. (Of course, if you're like me, you will look at one at your peril for, once seen, that spell will be wound up.) Here is the ultimate in high-end-audio mechanics—a concoction of motorized reels, motorized capstans, motorized retractable capstan bars, tension arms, metal rollers, and rubber pinch rollers, with an electromagnetic transducer (the record/playback head assembly) at its center—that when fed a spool of pre-recorded tape comes closer to recreating “the absolute sound” than any other playback medium extant. Indeed, if the words “absolute sound” are something more than a catch phrase, if they mean what they say, then highest-fidelity playback of 15/30ips, two-channel, reel-to-reel mastertapes is what they mean.

Special Feature Metaxas & Sins Tourbillon T-RX Tape Deck

Specs & Pricing

Nominal recording level: 0dB @ 514nWb/m
Maximal peak rec level: +4dBm
Erase efficiency: >65dB, 1kHz
Recording/playback speeds: 7.5ips, 15ips, 30ips
Frequency response: 30Hz–20kHz, ±2dB
Distortion: <2% at 1kHz, 514nWb/m
Crosstalk: >55dB
Signal to noise ratio: 67dB, 38cm/s ASA filter, 514nWb/m
Wow & flutter: <0.25%
Input impedance: 10k ohms
Output impedance: 560 ohms
Price: \$36,000

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Part of the reason that mechanical objects like tape decks are so endlessly intriguing is that you have to lay hands on them to make them work. These aren't "black box" components like DACs or solid-state amps or almost everything else in hi-fi nowadays. Tape decks have to be manually operated, like view cameras or stick-shift gear boxes (or tonearms and turntables, for that matter). Part of that manual operation involves the tape itself, which must be loaded by hand onto a hub and spindle, threaded through a series of rollers and tension arms on either side of the playback head, and wound (initially by hand) onto a take-up reel. (If, as is usually the case with 15ips dubs of production mastertapes, the tape is delivered to you "tails out"—which is to say, wound backwards, so that the reel starts with the end of the recording rather than with the beginning—you will have to rewind it and then re-thread it from the playback reel back along the tape path to the take-up reel before it can be auditioned.)

Yes, reel-to-reel machines are a lot of work, and there is more to that job than simply loading and/or rewinding the tape. But there is something important to be said for committing yourself to all this labor. As anyone seriously interested in cameras or cars can tell you, being compelled to lay hands on an object to make it work breeds a connection that goes a lot deeper (and is a lot more intensely satisfying) than merely pressing a button on a DAC or a virtual button on a computer tablet. It not only gives you a sense of proprietorship, but of active participation. The thing literally can't do its job without you. Speaking for myself, this sense of psychological and physical involvement is a large part of why high-end audio has not (yet) lost its charm. Whether it is wholly true or not, the feeling that your physical assistance is necessary to make something function—that *you* are the missing piece it is designed around and that your gradually acquired skills and

expertise will make it function *better*—generates a pride in and satisfaction with your purchase that only comes with active engagement.

All of this brings me to an electromechanical object that is simply so damn marvelous that I haven't seen its like in decades (maybe ever)—the Metaxas & Sins Tourbillon T-RX tape deck.

Unlike Greg Beron's fabulous UHA SuperDeck (reviewed in Issue 319), the Tourbillon is not a completely updated and beautifully refurbished machine from the heyday of analog playback. It is an entirely new creation, built from scratch by tape maven Kostas Metaxas. Metaxas is not just a high-end-audio designer of considerable renown; he is also a gifted, award-winning visual artist, whose creations simply don't look like the more or less plain-Jane boxes that everyone else builds. (Trust me: You won't confuse a Metaxas component with the work of any other audio designer.) Metaxas is also a highly skilled tape recordist, whose many 15ips reel-to-reel live-concert tapes are available from Todor Dimitrov at Master Tape Sound Lab (mastertape-soundlab.com) and also directly from Metaxas himself.

Since he began recording back in the 1980s, Metaxas has been obsessed with finding the very best tools for the job. Eventually, this quest led him to the celebrated Swiss company Stellavox, whose tape decks were at one time ranked among the finest money could buy. From the 1960s through the 80s, Stellavox offered two lines of tape recorders—a portable deck (the SP/SM series) for location recording and a larger

Until very recently, the only decks that diehard R2R tape-lovers could purchase were refurbished models.

machine (the TD series) for the studio. After considerable research, Metaxas bought one of each.

In time, Metaxas became friends with Georges Quellet, founder of Stellavox. Though Quellet's Stellavox decks were the quintessence of Swiss craftsmanship—some of the finest examples of electromechanical engineering made in the past century—his company was eventually done in by digital. After taking a stab at an intriguing DAT recorder (the Stelladat), Quellet retired from a field that was simply changing too quickly for him to keep up with, especially since he and his small staff built everything by hand, in production cycles that often took months and years to complete.

Stellavox was hardly the only casualty of the digital revolution. By the end of the 1990s, *every* manufacturer of analog tape decks had succumbed. (Which is why, until very recently, the only decks that diehard R2R tape-lovers could purchase were refurbished models.)

Then two things happened.

In the mid-2000s, Dan Schmale, Mike Romanowski, and Paul Stubblebine founded The Tape Project and began demo'ing with refurbished R2R tape machines at hi-fi trade shows, playing back two-track 15ips copies

Special Feature Metaxas & Sins Tourbillon T-RX Tape Deck



of mastertapes that The Tape Project had secured the rights to copy and sell (in limited quantities). Within a decade, the number of exhibitors using R2R tapes and tape machines to demo with at audio shows had grown substantially. Even mainstream audiophile record companies and record retailers—such as Acoustic Sounds/Analogue Productions, Chasing The Dragon, Fonè, Groove Note, Opus 3, and Yarlung—started to dip their toes in the R2R market, releasing limited numbers of their own and of classic titles on 15ips tape.

If The Tape Project got the R2R ball rolling on the source side, it is United Home Audio's Greg Beron who got it going on the hardware one. An awful lot of audiophiles, including many of you reading this review, got your first taste (or first reminder) of how good reel-to-reel playback can sound via one of Greg's modified Tascam machines, either in a manufacturer's showroom or at one of Greg's and MBL guru Jeremy Bryan's after-hours gatherings at RMAF, AXPONA, Capital Audio Fest, T.H.E. Show, etc.

Thanks to Greg and The Tape Project, the number of R2R tape enthusiasts (and R2R tapes) has greatly increased over the past decade. While I can't say that their numbers come anywhere close to the hungry masses who have rediscovered the joys of vinyl, there are now enough tapeheads to constitute a niche market—guys and gals with the money and the “absolute sound” incentive to reach for the highest-fidelity playback possible.

As a side benefit of this mini-revival, some companies have begun to build and market R2R tape decks again—brand-new, not refurbished items. Which brings us to the Metaxas & Sins Tourbillon T-RX.

In the light of this tape renaissance (and with the advice and blessing of Georges Quellet), Kostas decided to build his own, enhanced versions of the Stellavox SM8 portable and TD9 studio machines (among the last—and best—commercially available analog Stellavoxes). After three-and-a-half decades of working with both machines, Metaxas was as familiar with their design strengths and those areas where they could be improved upon as anyone in the tape-recording business. Hewing to Quellet's engineering principles, employing the very best, often bespoke parts on the planet (some identical to those found in the Stellavox originals, many new and greatly improved), hand-building, testing, and fine-tuning everything himself (or with the help of his sons), giving free rein to his own artistic gifts in the looks and ergo-

nomics of the things, Kostas brought forth two visually stunning, sonically extraordinary, and completely brand-new products: the Metaxas & Sins Tourbillon T-RX portable deck (reviewed here) and the larger, pricier Papillon studio deck.

To give you some idea of how the Tourbillon looks in life, let me tell you how my tape-loving friend Andre Jennings—a guy not prone to bouts of wild enthusiasm—reacted when he saw the Metaxas machine. At very first glance, the Tourbillon literally stopped him in his tracks. He stood there and gazed at it for a goodly number of seconds before whispering, in a totally un-Andre-like tone of voice, “Man, that's cool looking.” (And he's scarcely the only one who's had this awed reaction—everyone who's seen and heard it has said those very same words.)

It's probably better for me to refer you to the photographs of the Tourbillon than to try to describe it. To riff on Andre, it's just too cool for school. Not only is it not shaped or styled like any other decks I'm familiar with—with their hefty, squared-off, sheet-metal chassis and purely functional (not designed to be aesthetically pleasing) controls—it is also shockingly compact, a mere 14" wide, 12" deep, and 2" tall (not counting the u-shaped, lifting-bracket mounted towards the front of the bottom panel and the conical feet mounted towards its rear, both of which the unit rests upon, at a slight acute angle, when seated on a shelf). The T-RX doesn't weigh much, either—about 25 or so pounds, bracket and feet included—making it easy to carry to a recording venue

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or a friend's house in its dedicated transport case. Its petite dimensions and low mass also make lifting it by that front bracket and situating it in your listening room a snap.

Unlike the Stellavox SM8, the Tourbillon T-RX doesn't require hub-adaptors and motor pulleys to accommodate and play back 15ips or 30ips tapes on 10½" reels. It'll do that (and more) just as it comes. All you have to do is load a tape, throw a switch on the top panel to select playback speed (30ips/15ips/7½ips), throw a second switch sitting beside it to choose between IEC and NAB equalization, and begin to play.

The T-RX's other controls are stylish but minimal: two pairs of large red volume knobs on the skinny front panel of the unit's matte-silver chassis—one set for left and right record gain, the other for left and right playback gain; two circular VU meters on the top panel above the record/playback/erase head-assembly for monitoring record/playback levels; an oblong Noritake LCD screen below the head block that registers the operational status of the unit; and beneath that the customary bank of piano-key controls for rewind, fast forward, stop, play, test, and record (there is also a record safety-switch to prevent accidental erasures on decks equipped with a record head).

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On the far left of the narrow back panel are the left/right outputs to your preamp—you can choose to order the deck with pseudo-balanced XLRs (the T-RX uses single-ended circuitry, thus the “pseudo” part) or with standard RCAs—followed to their right by a multi-pin input for the outboard power supply’s cable, followed in turn by a pair of XLR inputs for your microphones (assuming you have specified a unit with record heads). The only other I/O is a four-pin LEMO jack on the right side of the chassis for headphones or a meter/scope.

Inside this exquisite little chassis, which has been CNC-milled from a solid block of aluminum, is more tech than I can possibly detail. But to give Metaxas’ mechanics and circuitry a cursory look, let’s begin with why the T-RX is called the “Tourbillon.” As many of you may already know, in horology a tourbillon is a complication added to a watch (a rotating cage in which the escapement and balance wheel are mounted) that increases time-keeping accuracy. The T-RX uses a 64-bit ARM-Cortex microprocessor (yes, a digital part) to perform this same function—to regulate the speed of tape travel (and braking) with unprecedented 0.001% accuracy, by synchronizing the four, Swiss-made, NASA-grade Maxon motor/controllers (two reel motors and two capstan motors) with the two linear Actuatorix motors that control the dual, milgauss-steel, capstan rollers mounted on a retractable bar, which automatically shifts forward when the play or record button is pressed (to allow the tape to contact the playback and record heads). The heads themselves are the same type used in Stellavox’s TD9 machine—Photovox Butterfly units made in Torino, Italy. Headblocks are hot-swappable (in case you dig up a vintage Bogen or Woelke), and the unit can accommodate both quarter-inch and half-inch tape, although bias will need to be re-set for 30ips if you plan to use the machine to record. (The unit comes biased for 15ips and Scotch 468 tape; Metaxas claims that, at 15 or 7½ips, there is no need to adjust bias for any other tape formulation. At 30ips, however, you may have too much high-frequency energy with the bias set as it comes from Metaxas & Sins, so re-biasing via an MRL calibration tape and the adjustment of two rotary trimmer pots is recommended. For details on the biasing procedure, consult Metaxas website at metaxas.com.)

The electronic heart of the Tourbillon is its playback circuit, which is based on Queller’s purist design from the 1960s, but with significant upgrades. Unlike every other deck that he is familiar with (and he owns studio-grade Ampexes, Studers, Otaris, as well as Stellavoxes), my pal Andre tells me that the signal from a Stellavox only passes through four or five transistors from input to output, where the signal in other machines is routed through scores of active electronic parts. The result is a native purity and fidelity that set the sound of Stellavoxes apart. When this playback purity is enhanced by the markedly improved accuracy with which the Tourbillon moves the tape and transmits its signal, the result is, well...I’ve never listened to anything quite like it. To put the cart before the horse (or maybe the horse in the cart), this is, simply, the most neutral and complete presentation I’ve heard from any audio component. This is the absolute sound in the definition of those words that makes the best sense to me: the sound that was recorded in the studio or the concert venue.

To a large extent, I’ve already commented on the Tourbillon’s sonics in my review of the outstanding Estelon X Diamond Mk II loudspeaker in our last issue (323). The unusually natural and lifelike, virtually uncolored reproduction of the tapes therein discussed (*Cbet Baker Sings, A Tribute to Ella Fitzgerald*, and *Joan Baez*), the many new things that I learned about the singers, the instrumentalists, and the recording techniques and the old things I re-learned about myself and about the way music has shaped my life are owed equally to the Metaxas & Sins Tourbillon T-RX, which is to tape recorders what the original Quads were once claimed to be to other loudspeakers—a clearer window on the music, a window through which you can not only look at the performers as they were when they were originally recorded, in the light of a day long past, but at the you who once was when you first heard the music that they made, in the noontime of your life.

I could leave it at that and feel as if I’d done the Tourbillon justice, only I know that you want more. So, let’s take another trip down Tourbillon Lane, beginning with a fabulous-sounding studio album, Vanessa Fernandez’s *Use Me*—a collection of R&B songs (penned by the likes of Marvin Gaye, Curtis Mayfield, Isaac Hayes, Al Green, and Bill Withers) on the Groove Note label, recorded in 2014 by Michael C. Ross at Ocean Way (now United) Recordings, and mastered by none other than Bernie Grundman at his own studio, Bernie Grundman Mastering.

Even on first listen, I was smitten by how outstandingly

Even on first listen, I was smitten by how outstandingly good this tape sounded.

good this tape sounded. No, it isn’t an all-acoustic recording made in a real space. This is pre- and post-assembled pop music, sung by a gifted female vocalist from Singapore (of all places), backed by good journeyman musicians (bass player, guitarist, drummer, and keyboardist) from the States, taped in a Hollywood recording studio with vintage microphones, and mastered in a different Hollywood studio with vintage tube electronics.

I don’t know what I was expecting from *Use Me* (I haven’t always loved previous Groove Note artists and releases), but it certainly wasn’t what I got. Turned out the playlist was great, the vocals quite entertaining (neo-soulful, with a bit of a hip-hop vibe), the instrumentals well played, the arrangements good, and the sound...well, the sound was *To Die For*. With the exception of certain titles from Jonathan Horwich at IPI and digitally recorded pop outliers like Patricia Barber’s *Café Blue*, I haven’t listened to a lot of contemporaneous jazz/pop recordings on tape. However, if they’re all like *Use Me*, then I’m clearly missing out in a big way.

Except, they’re *not* all like *Use Me*.

What the Tourbillon was telling me wasn’t to run out and buy a whole bunch of twenty-first-century soul and funk R2Rs; it was telling me the reason why *this particular* soul and funk R2R was so en-

joyable. That reason can be summed up in a word: quality. The quality of the performers and the song list, the quality of the mics and tape deck used to record them, the quality of the engineering at the session and the mastering after the session, and the quality of the tape transfer itself. What the T-RX was so faithfully reproducing, and what I was consequently hearing, were the warmth and body of the Neumann U67 mic that recording engineer Mike Ross used for Fernandez's vocals (and of the similar vintage mics he used on the instrumentals); the warmth and body of the tube electronics with which mastering engineer Bernie Grundman mastered those vocals and instrumentals; and something else...something that I couldn't put my finger on until Groove Note's proprietor Ying Tan told me: what I just called the quality of the tape transfer.

As is the case with LPs, where the generation and level of wear of the production mastertape (and of the metal work parts pulled from it) make marked differences in the sound of vinyl pressings, R2R tapes will vary in sound quality with the generation of and level of use seen by the mastertape they are dubbed from. All other things being equal, dubs made from early production masters are likely to be better sounding than dubs made from later-gen ones, just as dubs made from tapes that have seen a lot of use (and/or rough handling and long storage in inadequate conditions) are likely to sound worse.

Thanks to Greg Beron, I've heard proof of this proposition. As an experiment, Greg kindly loaned me a pristine production mastertape of the great *Gerry Mulligan Meets Ben Webster* album from Norman Ganz and Verve Records. Note that I said a "production mastertape," and not a dub of same. (Greg, who is as connected in the world of reel-to-reel as a person could be, knows someone in Europe whose father worked at an LP pressing plant and who, when digital came along, rescued all the production mastertapes that came to him to be turned into vinyl records.) On direct comparison with a dub, the actual production tape sounded better, richer, fuller, more "complete"—very much like the difference I heard with Ying's mastertape through the Tourbillon.

As it turns out, there are good reasons for this. To begin with, Groove Note tapes like *Use Me* were made quite recently (this one just eight years ago); consequently, they haven't had occasion to be overused or poorly handled or badly stored. More importantly, Bernie Grundman, who also handles the mastering of Groove Note R2R tapes for the retail market, doesn't dub from a second-generation 15ips production master but from the original 30ips master itself. Since no additional-generation dubbing master is used, the Groove Note R2Rs are one audibly important step closer to the absolute sound magnetically preserved on that 30ips mastertape's dual tracks.

Even though I didn't know precisely how to interpret them at the time, the Tourbillon was telling me these things in the unusually high quality of its playback. In other words, this is one exceptionally neutral, faithful, and transparent source component—as I said earlier, the most neutral, faithful, and transparent I've ever heard (alongside the UHA SuperDeck).

Let's move from recording and mastering revelations to musical ones.

You hear recorded music with a fidelity and completeness that are unrivaled in my experience.

The highly celebrated album *Thelonious Monk with John Coltrane* [Jazzland/Puget Sound Studios] has an interesting backstory. Though famous for documenting a pivotal moment in jazz history, when two giants of bebop and hard bop joined forces, *Thelonious Monk with John Coltrane* almost didn't come to be. Though it was released in 1961, it was assembled from outtakes recorded at three different studios in 1957, at the time when the Monk Quartet was enjoying its fabled residency at The Five Spot in NYC.

Coltrane wouldn't have been available to join Monk's group if he hadn't recently been fired by Miles Davis from Davis' first great quintet/sextet, ostensibly so that "Trane could shake his heroin habit. (He was rehired by Davis in '58.) Monk himself wouldn't have been able to form a quartet and play in a high-profile New York City nightclub if he hadn't had his cabaret card restored that very year, after it had been pulled in 1951 following a marijuana bust. But such is life. The stars aligned, and Monk, "Trane, and the rest of this groundbreaking group (Wilbur Ware on bass and Shadow Wilson on drums) got that gig at The Five Spot, where their music-making proved to be so popular (particularly with the jazz cognoscenti) that they were held over for half a year.

It was around this time that Coltrane began experimenting with his so-called "sheets of sound" improvisational style. Though I recognize what that phrase, coined by *Downbeat's* Ira Gitler in 1958 for his liner notes to *Soultrane*, refers to, the words somehow seem inadequate, if not a bit misleading. Maybe that's because I (perhaps unfairly) think they imply mere virtuosity, a headlong rush to sound as many notes as can be sounded in a given intake of breath, without a corresponding demonstration of the musical reasoning behind the admittedly awesome showmanship. Oh, the virtuosity is there, God knows—just try "Trinkle, Tinkle" from this album—but so is the reasoning.

To hear clearly what I'm talking about you need...well, you need a T-RX. Through the Tourbillon, you'll hear every note in those "sheets" of sound—"Trane's high-speed arpeggios and diminished scales, the "three-in-one" chords that Monk taught him, the sixteenth-note quintuplets and septuplets, often played so quickly that, as one jazz critic noted, they seem to liquify from arpeggios into glissandos—and you'll hear them with the "spin," the harmonic/dynamic/temporal nuances that Coltrane added to each and every one. Rather than uniform sheets of sound, this avalanche of notes is like tiny beads of varying shape and color, dangling, curtain-like, from a horizontal melody and root-modal line that Coltrane is oh-so-careful to remind you of, by adding just a little stress or duration to key melodic notes.

It is a truly bravura bit of music-making. *But*...you won't hear it as I just described it (or,

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at least, you won't hear it with the same paradigmatic clarity) unless you hear it through a Tourbillon, whose neutrality and completeness are, as I can only say once again, unparalleled in my experience of source components.

Let us finish this jaunt down Tourbillon Lane with what the T-RX can tell us about one of the great classical recordings—Edward Elgar's gorgeous, five-song cycle *Sea Pictures* [EMI/Horch House], with incomparable mezzo-soprano Dame Janet Baker soloing and the great Sir John Barbirolli conducting the London Symphony Orchestra. People have sometimes complained about the mixed "quality" of the poems Elgar set to music in this piece—as if contemporaneous composers like Mahler or Schoenberg were orchestrating sonnets from Shakespeare. But the fact, as someone once said, is that the quality of the verse is now inseparable from the quality of the music, and the quality of the music is sublime.

The performance on this 1965 recording has long been considered a benchmark (as is the Barbirolli/Jacqueline du Pré performance of the Elgar Cello Concerto on the flip side). Recorded by Christopher Parker at EMI's Abbey Roads Studio 1 in St. John's Wood, *Sea Pictures* was mic'd with a Blumlein pair of Neumann KM56s (what EMI called its "two-headed monster"), and also with various Neumann outriggers scattered among the orchestra for added coverage, and a separate M49 or KM56 for Baker herself.

When listening to this famous recording on LP, you might think that it was made (as the Cello Concerto was) in Kingsway Hall. It has a warm, dark, alto-like tonal balance that is very familiar and attractive. On tape, however, *Sea Pictures* sounds far more like what it actually is—a great recording made in a studio. The Kingsway-like ambient and timbral warmth are somewhat reduced, but the clarity of parts and articulation is increased—markedly. The harp glissandi, the seabird woodwinds, the divided strings, the Elgarian *molto maestoso* of "Sabbath Morning at Sea," the slow, steady, lapping of the low-string arpeggios of "In Haven," in sum, everything about the orchestra, the score, and the performance is suddenly more fully available to the ear.

If you were weaned on the LP, this new clarity of orchestration, scoring, and inner detail will come as a bit of a shock. Oh, it's there on the LP, but you have to work (which is to say, deliberately concentrate on this or that individual choir of instruments) to find and hear it. Here, it comes to you unbeckoned, as it would in a concert hall. Such effortless transparency is one of the wonderments of tape playback, regardless of the deck. Of course, some tape players will add their own color to what they're revealing—a slight overall timbral darkness, an added touch of treble sweetness, an extra dollop of low-to-midbass punch, or, contrarily (particularly with big studio decks from back in the day), a slight overall sterility. As far as I'm able to tell, the Tourbillon T-RX is unlike any of these. With the Metaxas deck, you hear what is there—no more and no less—including, as I've indicated, the quality of the transfer. But you hear it with a fidelity and completeness that are (let me say it yet again) unrivaled in my experience (or only rivaled by the far larger and more expensive UHA SuperDeck).

Functionally, the Metaxas & Sins Tourbillon T-RX is not a completely carefree device. You may need to adjust playback

And yet the T-RX is considerably less money than other top-line tape decks.

balance via the front-panel volume knobs to compensate for any channel-to-channel imbalances in the output of the playback heads or in the tape recording itself. (But this will be true regardless of deck.) It can also be a chore to load a tape on the T-RX, as Kostas doesn't use the easily adjusted "trident" hub-spin-dles with built-in flanges that you find, for example, on Greg Beron's UHA models. Instead, he employs a large, removable device he calls the "Hubba Hubba," which has two parts (not counting washers and springs)—a flanged bottom section onto which the reel is fitted, and a screw-on top piece that tightens the reel down to the turntable. Like everything else Kostas makes, it looks very cool. The trouble is that the flanges on the bottom part of the Hubba don't always fit smoothly into the corresponding slots on the reels. Though it is intended to be a low-maintenance, easy-to-use system, wherein you simply loosen the top clamp and lift the reel on and off the bottom part, the occasional tight fit of the flanges sometimes requires you to take the entire mechanism off the turntable and disassemble it—in order to tap the bottom part off of (or onto) a tight-fitting reel. It doesn't take a lot of time or force to do this, and it only happens occasionally—most reels slip on and off as designed. But it is less convenient and carefree than what

I'm used to with Greg's decks. There is this, as well. Though the online instruction manual warns you about it, you *must* mute your preamp whenever you turn the T-RX's outboard power supply on or off. If you don't, you'll hear a series of loud pops through your speakers—none of which are good for your ears, your temper, or your drivers.

At \$36,000 (equipped with record *and* playback heads), the Metaxas & Sins Tourbillon T-RX tape deck is scarcely cheap. And yet it is considerably less money than other top-line tape decks (\$50,000 less than Greg's wonderful SuperDeck, for example). It is also a brand-new item—in- novatively constructed from the best parts in the world and warrantied for two years (parts and labor). And, oh yes, it is also (alongside the UHA SuperDeck) the most realistic-sounding, highest-fidelity source component I've ever heard, as well as one of the coolest-looking pieces of stereo gear I've ever seen. It will surely be my nominee for TAS's Overall Product of the Year Award in 2022. You simply don't come across something that is this sonically flawless, functionally innovative and ingenious, and aesthetically breathtaking every day. In fact, I haven't come across anything like it in nearly 60 years of looking. That should tell you something.

I'm going to finish by saying something I probably shouldn't say (and have never said in TAS before), but...if you've got the dough and access to R2R tapes—and you aren't wedded to the idea of owning a full-sized machine like the SuperDeck—then don't even think about it. Just buy the T-RX. I did.

JV Talks Tape With Kostas Metaxas

You are as much a visual artist as a hi-fi equipment designer and manufacturer. How have you balanced your two talents? And what led you to a career in hi-fi, rather than in the fine arts?

For me, art and design are “visual music.” If something is organic, well-proportioned, and beautiful to look at, chances are that it is also literally lyrical and harmonious. My process for design or “art” is one of discovery rather than creation. I start on a path, and let it lead me to where it has to go. I remember asking a well-known Michelin chef—Michel Roux—if creating a plate of food was “art.” He answered that it was actually more than art, because it titillated all the senses. Composing a plate of food includes not only the visual for the eye, but texture for the tongue, perfume for the nose, and sounds for the ear. What draws me to hi-fi and the artform of music reproduction is, similarly, the balance of sensibilities between technical, visual, and aural. For me, a great hi-fi system has to bring together very complex technologies to be able not just to communicate the very emotional story of a great composer through its performance, but also to itself be an *objet d’art* that gives enormous pleasure to the owner.

I also work in the fine arts through my contributions to companies such as S.T. Dupont (writing instruments) and L’Epée clocks, amongst others. It’s a welcome distraction!

How did you first become interested in tape recording (and tape recorders)? And what is the aesthetic that you follow when you make your recordings?

I had a passing interest in tape recorders when I was a teenager, but I could never afford them. Once I set up my company to produce hi-fi amplifiers, I realized that even the best turntables, tonearms, cartridges, and LPs (i.e., sources) of the time, such as the Goldmund Reference of the mid-1980s, weren’t good enough. By pure chance, a colleague in Switzerland introduced me to Stellavox recorders. I knew that the best LPs came from R2R masters, so I logically assumed that tapes would be an improvement to using LPs as my references. The improvement was, in fact, revelatory, and looking further into the machines I owned, I realized I could improve them, which I did. Over 100 concerts later, I started to understand that as much as I enhanced a tape deck’s electronics (such updates are common nowadays on most old machines from the 60/70/80s), I eventually hit a brick wall because I could not do the same with the mechanics. This led me to build my own machines, the Tourbillon and Papillon, where the mechanics have been improved.

As for my recording work, I was particularly interested in capturing the entire “soundspace width and depth”—not just an intimate “close-miked” sound, but a real soundstage similar to those of the engineers I admired from the concert recordings of

the 1960s and 1970s (Bob Fine [Mercury], Lewis Leighton [RCA] and Ken Wilkinson [Decca]). As a teenager using Quad ESL57s, I could hear a huge and very realistic soundspace on their recordings. This recording style was my reference. Armed with my portable Stellavox SM8, I initially used a pair of Bruel Kjaer ½"-capsule 4133s to record with, then the much-faster ¼"-capsule 4135s, before settling on the sublime sound of my Neumann TLM50s and M150s ½"-titanium-capsule microphones.

My initial idea was to start recording with tape, then gravitate to an equivalently pure “digital” recording setup, which would be easier to hump in and out of concert halls. Sadly, absolutely none of the digital setups I tried could capture the scale, bloom, detail, density, and sheer naturalness of analog tape.

In this digital day and age, what made you decide to build and market a brand-new tape recorder? And how do you see the future unfolding for reel-to-reel tape enthusiasts?

As I said, digital recording, sadly, simply doesn’t have the sonic realism of tape. Also, I knew that if I was hitting a brick wall with my Stellavox machines (and others were, too, with their “updated electronics” machines), then none of us had really heard the true potential of tape as a medium. In other words, I wanted to see how far I could push the realism of R2R in a serious high-end way. Doing some research into the well-known brands of the 1960–80s, I found out that the mechanical engineers and electrical engineers generally didn’t work together. Since I’d already spent 30+ years improving the electronics of my Stellavox SM8, if I was able to develop a

tape transport that I could adjust and listen to for improvements (in a way similar to adjusting a turntable setup), I should be able to hear much more information from my R2R. This has been the case with both the Tourbillon and Papillon. The improvements with the transport parts, rollers, bearings, and tape heads has also led to further improvements to the electronics and power supplies. It’s a constantly evolving process.

As for the future of tape, I believe there will always be a market, not just from enthusiasts, but also from archivists. There are so many tapes that were hidden for decades, which are now starting to emerge.

Will there be more Metaxas & Sins tape-recording-and-playback products beyond the Tourbillon T-RX and the Papillon decks?

The Tourbillon and Papillon are essentially a starting point. They have allowed me to investigate the absolute latest technology with motors, encoders, controllers, PID systems, and mechanicals for the tape path. I’m hoping that this will give insights to producing an even better and more dedicated system for tape handling and operation in the future. The fun always is the journey. **tas**

