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## NuForce Reference 9 SE Mono Amplifiers

### "I have seen the future, and it works"

Lincoln Steffens wrote that in 1921, on his second visit to the USSR. For a less ironic update, let's try: "I have seen the future, and it's a hoot."

I acquired my Mark Levinson No.33H monoblock amps in February 1999. The uninitiated (just about everyone) asks what they are. "Space heaters from Princess Leia's pied-à-terre. I scored them at a *Star Wars* auction." Each No.33H weighs 200 pounds and a pair costs \$24,000 USD. No, I'm not kidding. In standby (in which mode the manufacturer prefers you to leave them) they burn, together, 400W; ready to go, 1000W. I've put up with this absurdity because I regard the No.33H as a masterwork. Our utility bills reflect my devotion.

And here I sit, the No.33Hs poised to strut and preen, preparing to comment on a pair of mono amps that weigh 7.5 pounds each and cost \$4200/pair. "Hey, ya big lug, pick on someone yer own size!" I think not. Disparity's the point. Is this the audiophile version of that old Charles Atlas ad (this goes back to my comic-book days) in which the swaggering bully kicks beach sand in the hapless wimp's face, or are we about to witness an audiophile twist on David and Goliath? Just looking at the NuForce Reference 9 SE and ML No.33H side by side invites incredulity. The less charitably disposed just laugh.

### So, shouldn't we all be snickering?

Radically different switching-amplifier implementations and switching-power-supply enhancements account for the contrast. The Reference 9 SE combines NuForce's own switching amplifier with a switching power supply that requires mere droplets of the juice the ML No.33H absorbs. The Reference 9 SE idles at about 6W. The amp's 80% efficiency translates to 100W of consumption at 80W of continuous output, which I doubt many of us could live with for more than a few moments -- not in the same room, anyway. In other words, when these little squirts are going like Vulcan's forge, you're running the equivalent of two small light bulbs.

Further, the technology invites miniaturization, at which NuForce has gone with a vengeance. Switching power supplies and amplifiers are not new; nor, in the past, have they proved well suited to high-quality audio applications. Relatively recent developments have them competing with -- perhaps even exceeding -- conventional "linear" designs. NuForce's take on a switching amplifier is proprietary, and other NuForce iterations have been creating a stir. My SoundStage! Network colleague Jim Saxon has praised the NuForce 8, and so have others. You'll find reviews, along with NuForce's explanation of how their technology differs from traditional class-D amplification and other relevant features, on the company's website. NuForce provides the blurbs, I do the listening.

### Your reporter owns up to a bias



Our planet is under duress, and we humans are to blame. One does what one can to stem the degradation. I recycle my trash according to our transfer station's directives and look forward to the day my car's no longer worth servicing so that I can acquire a hybrid or whatever other fuel-stingy ride is by then available. I am predisposed to love an amplifier that operates on a shoestring. In his 1899 book, *The Theory of the Leisure Class*, Thorstein Veblen introduced the term *conspicuous consumption*. High-end audio is surely among the behavior's more florid expressions, and this guilty audio dweeb is looking to make amends. I was busting for these cute li'l NuForce Munchkins to bitch-slap my Mark Levinson brutes. In the words of our president and in hope of a happier outcome, bring 'em on!

### **Reviewing his lines in his dressing room, deus ex electronica**

My ML No.33H amps have remained the constant in a system whose every other component has changed over past eight years. Wilson Audio WATT/Puppy 5 speakers made way for WATT/Puppy 6s, then 7s. The predecessor of the Aurum Integris CDP player-preamp was a Mark Levinson No.390S CD player, upgraded from a No.39. In writing about this and that, I've tried to keep my responses proportionate to the differences I've detected. In terms of omigod ear-pop, the Integris CDP quite simply humbled the No.390S and has since occupied pride of place. (The difference between the exemplary WATT/Puppy 6 and the 7 is too subtle to characterize in omigod terms. Many Wilson fans would have been astonished were it otherwise. The watchword here is consistency. You start with a solid idea and improve on it incrementally.)

From the outset, I've valued the ML No.33Hs for their neutrality, transparency, clout, detail, timbral accuracy, and dynamic subtlety. They are Titans with a firm but feather-light touch. I used to write about recordings far more than I do now, and long ago developed a preference for audio gear that interferes as little as possible with what's on the disc. I much prefer clear to rose-tinted windows. Which brings us to our virtual duchy's Great Schism: In terms of the ideal we hobbyists stash somewhere rearward of the ears, we've neutrality here and recruited attractions over there. Card-carrying single-ended-triode fans and fellow travelers should be properly wary of your reporter's prejudices.

### **Preparing for the event**

Flanking a low wooden cabinet, the ML No.33Hs sit atop Silent Running Audio Ohio Class isolation platforms. Centered on the cabinet, the Aurum Integris CDP occupies a home-brewed assemblage of isolation gear: from the bottom up, four Vibracones support a 16"W x 16"L x 2"-thick concrete tile, and three sets of DH Squares and ceramic DH Super Cones separate the CDP from the tile. It's inexpensive and effective. If you don't like the look of raw concrete, paint it.

I began by duplicating these platforms on either side of the CDP for the NuForce Reference 9 SEs -- the lovely old Chinese cabinet's topside resembled a sidewalk. An interior designer shares my life. For the sake of domestic accord I removed the two outer tiles and painted the remaining tile black. Milady smiled. The NuForce amps and their tripods of DH Squares and Cones were now in direct contact with the cabinet, to no audibly deleterious effect. Altogether, it's an attractive tableau.

I began the burn-in period with NuForce's provided power cords and later compared them to a pair identical to the one I've been using with the CDP, the Integris version of the Cardas Golden Reference (the only difference is the Integris version's Wattgate wall plug). The NuForce power cord contains a ferrite, as does the Cardas. Ferrites are helpful at dealing with the RF generated by switching power supplies (more about RF further on). Speaker cables and interconnects were by Crystal Cable. I cover the ironic aspect at the end of this report.

### **Are we in Omigod's country?**

Indeed we are, both feet and baggage. The Reference 9 SE, which is burned in for 10 hours at the Taiwan factory, is accompanied with before-and-after performance printouts. The numbers are impressive. Rather more to the point was my sense of astonishment, which grew with the passage of time. Long before the recommended 75-hour burn-in, I heard the amps doing everything the ML No.33Hs do -- and, amazing to say, doing it all a little bit better.

What grabbed me first was the silence -- the sense of an easy, unforced void. The noise floor was below the earth's crust. The specs claim a signal/noise ratio of 100dB at 100W output. From where I sat, it might as well have been 200dB at any output. An utterly noiseless amp -- subjectively noiseless, at least -- is already well ahead. Microdynamics will sound all the more distinct, as will grander dynamic excursions and spatial, timbral, and harmonic effects.

The Reference 9 SE was neither "analytical" nor "forgiving." It simply *was*. Listening to music in an environment of purest silence -- production background is something else -- I begin to ignore the hardware, particularly when it was this visually unimposing. (One of my No.33Hs' Silent Running platforms displaces a good deal more air than two stacked 9 SEs!)

While not notoriously onerous, the WATT/Puppy 7's load is far from the world's easiest: a nominal 4 ohms, it dips to 2 ohms at a couple of points. And yet, via the Wilsons, nothing I threw at the NuForce amps fazed them in the slightest. Huge, complex orchestral passages did not congeal or compress -- no small accomplishment. Further, it's rare that, at full tilt, a large mixed chorus will sound other than grainy, sometimes even in the concert hall. The NuForce's ability to separate vocal threads was exemplary. Given a good recording, the soundfield achieved an eerie palpability. A jazz CD such as *An Hour With . . .* [hatOLOGY 554] can be a startling event. Michael Moore's sax, clarinet, and melodica, Ernst Reijseger's cello, and Han Bennink's drum kit provide everything but the cigarette smoke of these 1998 Swedish sessions. Playing this closely miked disc at a hefty volume setting, I got a hair-raising sense of the 9 SEs' abilities. At *ffff*, Moore's alto sax pinned back my ears, but never sounded other than *there* in all its natural, brassy glory. However raucous or clamorous the music, the NuForce amps prevailed.

In the matter of unflappability, a particularly strenuous test is track 12 of the Kroumata Percussion Ensemble's *Jolivet, Harrison, Cage & Sandström* [BIS CD-272]. Played loud, Sven David Sandström's *Drums* could inspire a three-toed sloth to sprint for its life. I can best describe the transients' leading edges, especially those of the prominent tenor drum, as assaultive. That one or both amps broke no sweat attests to their vigor, and that the ensemble's textures and timbres sounded as distinct as they did even at the music's most riotous moments speaks to its killer accuracy. The bass drum in *Labyrinth*, a disc of percussion music by Lou Harrison [hatART 105], which I often play when reviewing new gear, was meticulously clean and well defined. The metal percussion glimmered like snowflakes. Paradise.

I listened to three performances of Olivier Messiaen's *Turangalila Symphony*, with Riccardo Chailly and the Royal Concertgebouw [London 436 626-2], Kent Nagano and the Berlin Philharmonic [Teldec 8573 82043-2], and André Previn and the London Symphony [EMI 69752]. I mentioned above having early opted for neutrality over system-spawned color; through the NuForces, I easily heard how well or badly these recordings had been engineered. The relatively recent Nagano (2000) and Chailly (1992) didn't do particularly well; the Nagano is rather airless and topless, the Chailly uncomfortably tizzy. The Previn (1978) -- great performance, by the way -- is a gem rendered all the more attractive for its Francis Poulenc discmates, the *Concert Champêtre* for harpsichord and instrumental ensemble, and the Concerto in G Minor for organ, string orchestra, and timpani.

*Turangalila*, one of the 20th century's more spectacular tours de force, is scored for a large orchestra with an enormous and varied percussion section, and the Reference 9 SEs' ability to keep the music's threads in clear view was among its most winning qualities. From a top end that extended into space to a bottom that neither mumbled nor slurred, the amps' control of the speakers was something else again.

Remembering that the Poulenc harpsichord concerto was inspired -- more like provoked -- by Manuel De Falla's harpsichord concerto, I retrieved the Falla from my shelves, along with a few other discs by the Spanish composer. The concerto [Dorian DOR-90214], an intimately recorded gem, brought home again how splendidly the Integris CDP and the NuForces transmitted every mote, smidgen, and crumb of a well-produced disc.

One enchanted evening, I compared three performances of Ravel's two piano concertos: Pascal Rogé, with Charles Dutoit conducting the Montréal Symphony [London 410 230-2]; Jean-Yves Thibaudet, with Dutoit and the Montréal again [London 452 448-2]; and Krystian Zimerman, with Pierre Boulez and the Cleveland Orchestra (G Minor Concerto) and the London Symphony (Concerto for the Left Hand) [Deutsche Grammophon 289 449 213-2]. While all three CDs sounded wonderful, only the Zimerman-Boulez performances pulled me into the performers' world. It would not have been the same had the sound system withheld any of these superb dramas' constituent parts: the exquisite detail, the explosive fortes, the lifelike sense of place and space. I wondered, *Can amps be better than this?* Different, certainly.

One enchanted afternoon, I played the first of Beethoven's Rasumovsky Quartets, Op.59 No.1, as performed by Auryn String Quartet [Tacet 125]. A good recording of a string quartet tells us pretty much everything about sonic authenticity: soundfield, timbral and harmonic complexity, dynamic finesse. It's a luscious experience. Then, once again, I put the cute NuForces through rather more strenuous paces: a visit after a long absence with Morton Subotnik and his Wizard-of-Oz synthesizers. *Sidewinder*, a work for four-channel tape mixed down for CD release [Mode 133], begins with nigh-inaudible rattles, then builds to a succession of muscular moments. I used to like this stuff a lot more than I do now, but as a hi-fi demo, its fangs are still sharp.

Annual compilations of Europe's premier new-music event, the Donaueschinger Musiktage, appear on Col Legno, Wulf Weinmann's preeminent new-music label. The sessions are largely remarkable in that, at an educated guess, they're minimally engineered by Southwest German Radio, Baden-Baden, with first-rate gear, to often brilliant effect. The "presence" factor -- the keen sense of performance space, the dramatic dynamic leaps, the experience of utter coherence even during crashing fortés -- were all the more lifelike with the NuForce amps in play. In listening to a number of tracks, I again asked myself how amplification could get much better. Transparency? Resolution? More than I deserve. As a matter of dumb luck, the synergy of the amazingly fine Integris CDP, my WATT/Puppy 7s, the Crystal Reference cables I used for these sessions, and the NuForce amps dropped me squarely in canned heaven.

### **So what exactly constitutes a (speaker) control freak?**

NuForce's CEO, Jason Lim, mentioned in an e-mail to me that "most production units have 0.01 or 0.02% THD . . . and less than 0.2dB attenuation from 20Hz to 100Hz. The frequency response has variations of 0.02dB from 100Hz to 20kHz." Its manual claims that the Reference 9 SE's response is essentially flat to 50kHz, and to 90kHz at something less than flat. But subjectively, we're already on Cloud Nine at 50kHz. Trying to imagine 90kHz as a perceivable sound component is rather like envisioning a billion dollars in loose change. The Reference 9 SE's damping factor is given as 4000 at any frequency. That's *one* remarkable number! The output source impedance falls below 10 milliohms; *i.e.*, close to zero -- another remarkable number. And, for the coup de grâce, the amp produces close to zero phase shift. In terms of overall speaker control, those figures may have had a lot to do with what I heard from the Reference 9 SEs.

### **Do you still wind your watch?**

If you look inside a jet-setter's timepiece -- a Breitling, Rolex, Patek Philippe, or the like -- you'll see the justification for at least some of its high price. The jeweled, exquisitely machined workings are a feast for the discriminating eye. The innards of a mass-market quartz-movement watch are banal by comparison. However, for accuracy and dependability, which is what most of us want when we glance at a wristwatch, the quartz movement's plain-Jane guts beat luxe hands down. Reliability and accuracy to the nearest second are the last features for which one purchases a Breitling.

Some years ago, I toured Madrigal's Connecticut plant and saw what goes into a Mark Levinson No.33H. (The No.33H is still in production but Madrigal is no more; the Harman Specialty Group now manufactures the Mark Levinson line.) Its promotional brochure doesn't embellish the amp's imposing interior. The No.33H serves as an apt audio analog of a luxe watch: its many handsome, high-quality parts bespeak a technology on the cusp of obsolescence.

Not to worry. For all practical purposes, the LP is beyond obsolescent. Does a mere fact of quotidian life put off philovinyllites? Ha! Disdainful of the maddening crowd, we audiophiles opt for exclusivity -- and sentimentality -- with our checkbooks. Vacuum tubes, anyone? A vinyl player that costs what you paid for that Mercedes? Step this way, sir. Believe me, fellow zealots, anchor-heavy transformers and capacitors the size of fruit-juice cans are not about to disappear.

Am I being brash? Consider a pair of tiny amps that, as I hear them, exceed the sonic performance of a humongous and rightly celebrated twosome that cost a tad less than six times as much. I have seen -- and heard -- the future, and it is indeed a hoot. And easy on the wallet. Goliath may not be quite dead, but he's sure getting his lumps.

### **Unanimity in audio? You must be high**

Not everyone shares my view of a badly beaten and humbled champion. I conveyed my enthusiasm for NuForce Reference 9 SE to an acquaintance, an executive in a company that designs and manufactures high-end audio components. In my adulatory e-mail I asked Throckmorton about Audioissimo's own plans with respect to switching amplification. (Names have been changed to protect me from wrath.)

"We are developing class-D solutions," said Throckmorton, "but I haven't heard anything yet that makes me think that the technology -- anyone's -- is able to outperform the better class-A and -AB designs. . . . I think it's much like when CDs were introduced, when there were wild differences of opinion about how they compared to vinyl. The more you listened, the more fault you found, and even today, as you know, many still prefer analog recordings. Our sister company [a manufacturer of lower-priced components] offers several class-D amps in their lineup. Some people think they are simply amazing and others can't sell them. The reaction reminds me of the old vinyl vs. CD debate.

"Although the technology is not new, it is only recently that the component parts needed to get decent sound have been available. There are still issues with noise and distortion, frequency response, and performance with changing speaker loads. We will probably introduce class-D into our lineup within the year. . . . [We] will start by using it at the entry level and migrate upward as the performance improves to justify it."

Well -- this is, after all, a response to having been told that someone else's amps impress me to pieces. Noise and distortion? To the contrary. NuForce's performance claims contradict Throckmorton's disdain and, more important, reinforce what I heard from the Reference 9 SE. I can't comment on speaker loads, except to observe that the NuForce's impressive stats predict a uniformity of performance with a wide range of transducers. If this is entry-level, send food and a few changes of clothes. I ain't movin'.

### What not to worry about

The power cord that comes with the Reference 9 SE will satisfy. NuForce's Jason Lim and Casey Ng, with whom I've been in contact with any number of questions, urged me to evaluate the amps with the supplied cords, and I have. You can safely deny yourself the pleasure of aftermarket snakes. With some gear, they make a big difference; here, not. I'm still much taken with the Integris version of the Cardas Golden Reference power cord, but I'm not so naïve as to deny the possibility that I'm responding to their look as they trail from the NuForce into the wall.

I mentioned that I've evaluated the Reference 9 SEs with Crystal Cables. The list price of these remarkably fine speaker cables and interconnects exceeds that of two Reference 9 SEs. (NuForce recommends Stealth cables. Owing to a slip-up, I wasn't able to acquire them by deadline.) Add another fistful of mad-money for the Integris-Cardas cords and we find ourselves chin-deep in a peculiarly audiophilic absurdity. Let's put it this way: I prefer the Reference 9 SEs absolutely. It's great to save money on initial outlay and operating costs, but in aiming for the best, the audiophile who buys the NuForces in no way compromises his ascent to the summit. The MSLPs of the cables and power cords I used with the 9 SEs still bring the entire ensemble in well under what I might pay for a great many conventional high-end amps. Do the math and rejoice in the music.

### Lunch was delicious but not exactly free

NuForce's switching amplifier generates RF. When they were on, the Reference 9 SEs degraded the signals of two FM radios, one in the kitchen, the other in my wife's painting studio -- nothing else, just the radios. Solution: As I heard no advantage in leaving the NuForce amps in standby (as I always did the ML No.33Hs), I turned them off. Simple and effective.

### Last gasp

My good opinion of the Mark Levinson No.33H remains intact, even if the big fellows no longer stand guard over the Wilson WATT/Puppys. They did what the best amps should do. Were I to have judged the NuForce Reference 9 SE an even match, it would have recommended itself purely on the basis of price, size, and operating costs. But in my view, and much to my initial surprise, the Reference 9 SE exceeded the No.33H in finesse. The NuForce struck me as a little faster, a little more responsive, a little more immediate, a little more transparent, a little more resolving -- a little more *there* within the recording. The differences I heard may have had something to do with speaker control. I'm not qualified to play the tech sage.



I do know that listening to a wide selection of CDs, many of which I hadn't played in ages, has been a pleasure. One example of many: In 1992, EMI Classics reissued, on nine CDs, recordings from the early to mid-1970s of Rudolf Kempe and the Dresden Staatskapelle performing the orchestral music of Richard Strauss. Kempe, who died at age 66 in 1976, was a superb Strauss conductor, and in that regard, the discs are priceless. The engineering is typical of its period: good but not remarkable. Still, the sense of hearing through the NuForces everything these discs have to offer -- and *only* that -- has made this a pleasurable reacquaintance with a collection I hadn't played for a long time. The Straussian mood continued with his opera *Ariadne auf Naxos*, in a 1986 recording with James Levine conducting the

Vienna Philharmonic [Deutsche Grammophon 419 225-2]. What before had sounded to me like a workmanlike production was translated by the NuForces into an in-the-room experience corresponding in surprise with what we've read about out-of-body events: a large and lifelike soundstage a step beyond what I'd ever heard from this set. It's that little extra *something* that grabbed me.

In short, the NuForce Reference 9 SEs performed as ideal a role as I could have hoped for. Even those SETniks and fellow travelers I earlier cautioned might find them irresistible.

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**NuForce Reference 9 SE Mono Amplifiers**  
**Price: \$4200 USD per pair.**  
**Warranty: Five years parts and labor.**

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