



SECRETS of Home Theater and High Fidelity

Product Review - Manley Labs Neo-Classic 250 Vacuum Tube Monoblock Power Amplifiers - May, 2001

John Kotches

	<p>Specifications:</p> <p>Power Output: 250 Watts Tetrode Mode, 100 Watts Triode Mode, Per Monoblock</p> <p>Tube Compliment: One 12AT7 Input, Two 6414 Drivers, Ten EL34G Output Tubes Per Monoblock</p> <p>Input Impedance: 100 k Ohms</p> <p>Input Sensitivity: 1 Volt</p> <p>MFR: 10 Hz - 30 kHz \pm 1 dB</p> <p>Size: 7" H x 19" W x 13" D</p> <p>Weight: 65 Pounds Each</p> <p>MSRP: \$9,000/Pair</p>
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Introduction

Manley Laboratories does about 90% of their business in the professional audio marketplace. Their bread and butter products have such names as *The Massive Passive* (a tube-based stereo equalizer), *Mid-Frequency EQ*, *Stereo Electro Optical Limiter*, *The Mono*, and *Stereo Tube DI* (Direct Interface, to provide warmth to the sound of an electric guitar, bass, and even synthesizers). In addition, they custom manufacture studio mixing consoles, build microphones and other professional products.

With all this work being focused on the professional side of the house, it would be easy to think that the Hi-Fi gear

gets short shrift. What actually happens is that the same mind set for building professional gear (rugged, reliable, nearly bulletproof construction) and thoughtful layout, is transferred over to the consumer side of the operation.

One look at the physical specifications and it's obvious that these are beefy amplifiers. Let's take a look below and see what we get from an amp that looks like an Art Deco rendering of a power amplifier!

Many of you may be wondering how a die hard solid state guy ended up with these amplifiers. The answer is simple: I've been wanting to review a product like this for a while, and our way cool Tube Editor, Paul Knutson, doesn't have speakers that are appropriate for these amplifiers to drive. So, I was in luck.

Building the Perfect Beast

To get high output power on tube amplifiers you need lots of tubes. No less than 13 tubes per monoblock are required to deliver 250 watts in tetrode mode from these amplifiers. Strapping the tubes into triode mode delivers a more modest 100 watts. Once the cage is removed, this is what you're looking at from the top of the amplifier (see photo below, click on it to view larger version).



The top left of the picture has the speaker output binding posts. Although my review unit had spade lug/bare wire connectors only, the latest units are shipping with WBT five-way binding posts, which will accept banana plugs. Inputs include balanced (XLR) and single-ended (RCA), selectable via a toggle switch. Rounding out the back panel are the B+ Fuse, easily accessed and removed with your fingers or a flat-head screwdriver, the Mains Fuse and the IEC power connector - insert your power cord of choice here! This connection panel is at a 45° angle for easier access to all the connections.

Moving down the picture, on each side of the amplifier are two seriously heavy transformers. Between the transformers are two capacitors (for each half of the symmetric circuit), each with 3,800 μF capacity.

Front and center (bottom center of the image) is the Input tube (a single 12AT7WA). This feeds a pair of 6414 tubes for the driver stage, each of which feeds five EL34G output tubes. The reason for two driver stages and two sets of output tubes is that the amplifier operates in push-pull mode.

Pretty Maids All in a Row

One thing that tube amplifiers require is careful biasing of their output tubes. Bias is the voltage on the grid at idle (no music), and bias requirements change as the tubes age. Some tube amplifiers make it an interesting challenge to set the bias. Manley makes it easy to measure and check the bias.

The bias adjustment panel is covered by the snazzily engraved identification faceplate. Behind that plate are the bias adjustment reading points and potentiometers to set each tube's bias (between 275 and 300 mV is the correct bias voltage to set, for obtaining 27.5 to 30 mA of standing current draw). With the easy to reach connections, and the handy diagram thoughtfully silkscreened on the backside of the faceplate, it's a piece of cake. Even a relative klutz with a multi-meter (yours truly) can check and set bias voltage. It took me less than five minutes to do this for each amplifier in my case.

If you can't get the bias voltage within specification, it's time to replace that tube.

Start Me Up

The front panel has an array of switches, and it's important to know and love them.

On the right side of the faceplate are *Power On* and *Soft-Start*. It is always best to power up the amplifier with the *Soft-Start* switch down (engaged). This powers up the tubes to half voltage, prolonging tube life. Powering them up from cold start to full voltage is quite stressful on the filaments. With *Soft-Start* down, the amplifier is also in what Manley calls "Ever-Warm". This keeps the tubes warmed up, drawing 30 watts, as opposed to leaving the amplifier on all the time, which would draw several hundred watts. So, this is the correct switch position when powering up the amplifier. Above the *Soft-Start* switch is a green LED which blinks when in *Soft-Start / Ever-warm* mode.

At this point, the backlit Manley 250 logo comes on with half voltage, so it starts to glow, and then comes on at full brightness in full power mode.

After allowing about 30-60 seconds for the tubes to warm up, you throw the *Soft-Start* switch up to bring the tubes fully on. Once this is done, the green LED stops blinking and the amp is just about ready to play tunes.

To the left of the bias adjustment plate / connection points are the switches controlling Triode or Tetrode modes and the *Mute* switch. When down, the mute switch is engaged, which shorts the input.

In the Triode Mode, the amplifier delivers 100 watts, while in Tetrode Mode, it is 250 watts. Triode mode straps the screen grids to the plates in each of the output tubes. You have to power down the amplifier (at least to soft-start mode) before switching between Triode and Tetrode modes.

Once the amplifier is fully fired up, it looks gorgeous, with the softly glowing tube filaments visible through the mesh cage, installed for safety - this keeps the hot tubes away from prying fingers of children and curious family pets.

Babylon Sister

One of the really cool things about the Neo-250s is that you get two distinct sonic personalities. Triode mode comes very close to the traditional tube sound - but doesn't overdo the midrange lushness that some tube amplifiers demonstrate. I found the soundstage pushed back somewhat, and instruments like Acoustic Bass took on a slightly warmer, *woodier* sound. In addition, female voice took on a very engaging quality.

On the other hand, when I jumped over to tetrode mode, the soundstage was more forward, and acoustic bass (and all bass heavy material) was more authoritative and less warm. Tetrode mode sounds more like my current reference amplifier, but definitely improves upon it. That's no knock on my reference amplifier which is 1/5th the price on a per channel basis. The Neo-250s are exceptionally good amplifiers.

The recording that most exemplified this particular difference was Carmen McRae's "Carmen Sings Monk". My favorite is track 12, a live version of *Suddenly* (more commonly known by its instrumental name *In Walked Bud*).

You'd Be So Nice to Come Home To (aka Triode Mode)

A few years ago, Saxophonist Bennie Wallace released an exquisitely recorded disc, "Someone to Watch Over Me". Bennie has a unique style, and this disc captures him doing some of his best work. At times his playing is melodic and wistful, at other times it's unstructured with interesting travels over the range of his horn. Mostly, he's got that fat tenor tone that I'm particularly fond of! This disc is a collection of Gershwin tunes, and the first track *Nice Work if You Can Get It* is worth the price of admission.

The Neo-250 defines a soundstage much more delineated than my reference amplifier - and it's easy to draw an image of the group in my mind, I can see the quartet in front of me. Piano is crisply rendered, and sits from just left of center all the way off to the right side of the soundstage. The trap set (drums) overlaps the piano at center and extends all the way to the left side of the soundstage. Wallace is placed front and center, and the acoustic bass is set dead right in my system. You hear pianist Mulgrew Miller throw sheets of notes, each distinctly struck during his improvisation. In addition, you hear the timbre of Bennie's Dexter Gordon influenced tone, and his technical mastery of the instrument - with a uniform tone that stretches from the bottom to altissimo. In addition he also gets a marvelous subtone out of his instrument on some other tracks.

Samuel Barber is another composer that I was introduced to in college - and an obscure, but wonderfully recorded collection of his works is on Stradavari Classics, with Andrew Schenk conducting the New Zealand Symphony. His most famous work is *Adagio for Strings* (the theme music for "Platoon"), and the Neo-250 does a superb job reproducing the intricacies of this disc. The imaging is eerie - their uncanny ability to tell you who sits where within the orchestra. The massed strings are highlighted by the darkness of the violins playing at the bottom of their usable range, with the cellos and bass adding weight to the layers. The dynamic subtleties of the musicians' playing is

reproduced in all its glory to my ears. In addition, as the violins climb to the top of their register (about 5:00 - 6:00 in), the tonal quality takes on the much brighter timbre that is the norm for the instrument's sound. Also, as the music reaches its climax (6:00+) some extraneous noise jumps out at you - I'm not sure, but I think it's the conductor trying to coax a little more volume out of the strings! The notes emerge from a quiet background as the piece continues towards its peaceful conclusion several minutes later.

Then, I decided to throw some solo piano at the amplifier, and was not disappointed. Keith Jarrett's disc "The Melody at Night, With You" was put into the disc spinner, and I jumped ahead to *Shenandoah*. Jarrett's rendition of this American staple is serene, peaceful, and elegant throughout. He doesn't take off in improvisations that move you farther and farther away from the song. The Neo-250s present this piece in all its splendor. Fortunately on this track, his humming is not present - which can be distracting. At one point, the right hand has the melody line slightly recessed versus the harmonization, and with a lesser amp, you might lose the detail. At the end of the piece, you get a very nice *grind* due to the voicing Jarrett uses as the *sostenuto* fades to nothing. That's not a negative term, because I also call it *beautiful dissonance* from time to time.

How do they sound on voice? Fabulous for females, as evidenced by what's becoming an audiophile battle ax recording, Diana Krall's "When I Look In Your Eyes". This disc, on a system with a tilt towards the bright, will overemphasize the sibilance present. The Neo-250s would have none of that. Sibilance was still there, but it was much less exaggerated than I've heard it before. This "diminished" top end wasn't evident when hearing the delicate work of cymbals. Stand back, I'm about to use an audiophile term, so be prepared!!!! Non-audiophiles, please avert your eyes. The drummer (whose name escapes me) does a fabulous job of using every inch of stick to get a variety of sound out of his cymbals. Each variation in striking force (microdynamics) is faithfully rendered from these amplifiers. Non-audiophiles, it's now safe to look again. The one failing I detected is that when Krall smacks the keys very hard (occasionally), if the volume was set too high, I'd get a bit of a clip out of the amplifier. Since my speakers aren't the most efficient transducers around (85dB/1w/1m), this is understandable with 100 watts output.

Bad, Bad Leroy Brown (aka Tetrode Mode)

This is the other side of the Neo-250's personality. When thrown into tetrode mode, you get a different and still quite pleasing sound! Large scale orchestral works, and most rock and pop tunes benefited from tetrode mode over triode mode. Bass was emitted to new levels from my speakers which was my biggest surprise of all. My speakers were caught in a vise grip that wasn't about to let go, and they were loving every minute of it!

Supertramp always had excellent sonics, and unlike many rock groups, dynamic range that wasn't compressed severely. Some current pop/rock recordings are so compressed that they have a scant a 1-3 dB dynamic range. *Bloody Well Right* has a nice introduction, mostly on a Wurlitzer electric piano, with the rest of the band hitting some accents along the way, about 18 dB higher, a very nice punch! As the introduction completes, the Wurlitzer is playing near the top of its range, and if your system has any tendency towards HF edge, this can take on an unpleasant tone. Not a problem in sight. The Neo-250s give you a great sonic picture of how layered Supertramp's recordings are - just when you think you've heard everything, along comes something else. For instance, midway through the tune, an acoustic piano makes an appearance, and they get a funky sound, kind of like a slightly out of tune upright piano.

If you're ever looking for a pop recording with some excellent low frequency included, I recommend Sarah McLachlan's "Surfacing". Rather than discussing a single track, I'm discussing three consecutive tracks: *Do What You Have to Do*, *Witness*, and *Angel*. The first of this trio of tracks is where some sibilance can be distracting, and while the sibilance wasn't eradicated, its presence was greatly reduced - listen for the lyric "Had the sense to recognize" and you'll understand how this could be objectionable in some systems. The acoustic piano had a marvelous full body that was a treat to my ears, and the synth bass managed to get my windows in the listening room to rattle a bit - and the subwoofer wasn't turned on. Wow! The song ends with some guitar work including some feedback, and even though the volume versus the rest of the cut is drastically reduced, no detail is sacrificed as the song fades. On *Witness*, my biggest comment is that the Neo-250s provided much more bass than my reference amplifier, but at no time was it uncontrolled. Finally, on *Angel* in lesser resolving systems, the reverb can get in the way of the main vocals (dead center), but the Neo-250s kept everything in complete focus - the reverb was never overwhelming. Piano has a superb fullness to the tone that I found very pleasing.

Act Naturally

There's an obscure song title for you!

EveAnna, if you've read down this far, you knew I'd have to do this! Yes folks, these were also used in a multi-channel/home theater context. The Neo-250s don't quite match my reference amp in terms of absolute sound pressure level, but still manage to perform their duty in this context superbly. Try putting on the opening battle scenes

from *Gladiator* to hear how well these amps do for movies. As Maximus says to Quintus, "At my signal, unleash Hell.", so it is. These amplifiers reproduce with no effort whatsoever all the soundtrack's subtlety. The individual voices shouting commands down the ranks, the screams of the barbarians from Germania, the whistle of arrows through the air from the archers, Maximus' voice echoing through the forest as he gives last minute instructions to his flanking troops. Underneath all these effects, never getting lost is the glorious music from Hans Zimmer and Lisa Gerrard. Needless to say, I was thunderstruck!

Dinosaur is a recent addition to my collection, and I can understand why Stacey Spears loves this DVD! The transfer is superb, and the sonics are very well done. The asteroid impact scene got plenty of output, and as best I can tell (I haven't yet experienced an asteroid impact), was rendered accurately. No sign of clipping from the amplifier, but I also hadn't hit reference level (it's just too loud!). The loudest I could listen to it was -6 dB (well below full output at 0 dB). Ok, so I wimped out at 99 dB SPL at my seat, I can live with that :-). The opening scene with the egg is a blast, the music and all the various sounds on the eggs journey to its new home assaulting you.

Music videos also benefited greatly, and readers of my earlier reviews are well familiar with my usual suspects for this type of material. Steely Dan's "Two Against Nature" finally exhibited a small amount of reverberation that I thought was lacking before. It turns out that the reverb is so subtle as not to be noticeable with my reference amplifier. This was most apparent on *What a Shame About Me*.

The opening guitar battle between Don Felder and Joe Walsh on *Hotel California* off of "Hell Freezes Over" sounded better than it has a right to, with every nuance of each guitarist reproduced in every detail. Does anyone else notice that Felder had a note or two that was flubbed in volume? At least they weren't over-compressing the sound to get past this type of realistic touch. That's about all I'm writing on this disc, because it's getting to the point of being overdone in reviews :-)

I have DVD-Audio capability in my system, and I'm not afraid to use it! Out came Blue Man Group's DVD-Audio disc. Even if you don't have DVD-Audio, pick up this disc. One side has the DVD-A version, the other has the DVD-Video version. While graphics are limited - the sound is not. The tribal/primal/incredible sounds that were captured are excellent. Now I have to get downtown to see them live in Chicago. Blue Man Group employs a variety of home made percussion instruments, made more often than not out of PVC. You've seen a variation on one of their instruments in some recent TV commercials. Be warned, the dynamic capabilities of your system will be tested! I think my favorite instrument is the tubulum - which is basically PVC pipes that are used to produce a sort of marimba-like quality. From start to finish, this disc will give your system a dynamic range test.

Then for variety, I pulled out kd lang's "Invincible Summer" - as described in an earlier review - which is a collection of a dozen well crafted pop tunes, all of them well captured. I glanced through the recording notes, lo and behold, mastered by Bob Ludwig at Gateway Mastering! No wonder this disc sounds so good. It's hard to pick out any particular track, because the disc flows together well, and the tunes aren't rock anthem length. It's a return to an older era where 3:00 (or so) songs were the norm. A couple of things noticeably stand out on some of the tracks. On *Suddenly* (track 3), guitar and drums come out of the left channel - this is the first time I've noticed soundstage depth on a DVD-A disc. On the Neo-250s, it's plain to hear that the drum is pressed further back into the soundstage than the guitar (and also towards center). My reference amp doesn't paint that type of vivid front-to-back image. On *Extraordinary Thing* (track 5), the background vocals are rendered so cleanly that it's obvious all vocals are done by kd lang. In addition, the (real) strings are nicely placed into the layer of sounds. The playing is almost that stereotypical 70's disco synthesized strings, but you can tell that real violins are making the sounds with no effort on your part.

[Note: All listening during Home Theater sessions was done in tetrode mode, because triode mode didn't have enough output power for my mains in a home theater situation!]

Sweet Surrender

In case you haven't figured out by now, I think these are fabulous amplifiers. In triode mode, they deliver a nearly classic tube sound, sans an overly sweet midrange that some find enjoyable. In tetrode mode, they deliver visceral impact with a top end that seems to extend forever - or at least as far as my speakers can go! This is the first time in the almost twelve years I've owned my speakers that I've felt like they could be holding the rest of my system back. It is possible that more performance is available from the Neo-Classic 250s, which would make their performance even more remarkable.

I won't kid you, \$9,000 for two channels of amplification is expensive - but if you have the financial wherewithal to shop for amplification at this price point, the Neo-Classic 250s have to be included on your audition list. Leave your preconceived notions about tube amps at home and go experience some first rate sound courtesy of the talented

engineering from the folks at Manley Labs.

I hope my local UPS guy still thinks I'm mad at him for leaving some *Adult Signature Required* packages on my porch without a signature, otherwise they'll be here way too soon to pick these amplifiers up. When you read about these amplifiers in print publications, and you will - remember where you read about them first!

Thanks to Jerry Bashin at Lovan for lending me two of their Sovereign II amplifier stands for this review, as there's no way they would have made it into my rack with the amount of gear I had in during this period of time.

- John Kotches -

Reviewer's Reference System:

Preamplifier	Manley Purist
Preamplifier/Processor	B&K Reference 30
Speakers	Acoustat Spectra 22
Digital Source	Onkyo DV-S939 DVD-Audio
Digital Source	Camelot Roundtable DVD/CD
Interconnects	Nordost SPM Reference
Speaker Cables	Nordost SPM Reference
Amplifier Stands	Lovan Sovereign II

Referenced Recordings:

Artist	Title	Label	Catalog #
Carmen McRae	Carmen Sings Monk	Novus	
Sarah McLachlan	Surfacing	Arista	07822 18970-2
Bennie Wallace	Someone to Watch Over Me	Enja Records	ENJ 9356-2
New Zealand Symphony, Andrew Schenk Conducting	Samuel Barber	Stradavari Classics	SCD 8012
Supertramp	Classics, Vol. 9	A&M	CD 2507/DX862
Blue Man Group (DVD-Audio)	Audio	Virgin	7243 4 77893 9 7
Keith Jarrett	The Melody at Night, With You	ECM	ECM 1675
Diana Krall	When I Look in Your Eyes	Impulse	IMPD-304
kd lang	Invincible Summer	Warner Bros.	9 47605-9

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