

First Sounds: Audio Research Reference 150 SE

by Roy Gregory, September 19, 2015

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In the world of high-performance audio, there are few true or enduring benchmarks. Audio Research Corporation (ARC) is one of them. Exhibiting a stylistic and commercial stability that has at times bordered on the phlegmatic, they have been a touchstone for performance and consistency from day one over 40 years ago. Nor is it just the company that represents a benchmark; it, too, has its own benchmarks from within its range, and one of them is the subject of discussion here.

Back in the day, I remember my first contact with ARC's power amplifiers. While the world in general (and the UK in particular) went hoopla over the D70, I looked on bemused -- because I'd heard the D115. We've all had our audio epiphanies, but for me the D115 was more than that. Its musical presence, authority and dynamic density completely rearranged my concept of what a hi-fi system could do. Its ability was to bring a live performance right into the room. The D70 was certainly nice, but the D115 spoke with the voice of musical truth, warts and all -- and you've got to remember that this was back in the 1980s, when the last flames of punk still flickered. Since that day, each time ARC have released a new line of amplification, it's always been the *just the*

right side of 100 watts, four tubes per side stereo chassis that's been the first model I've reached for. It's a lineage that has included some truly great amps, leaving big shoes to fill -- shoes in which the new Reference 150 SE now finds itself standing.

With any amplifier, there's always a getting-to-know-you period, especially in this case, as the SE designation denotes the upgrade of an existing model, the Reference 150, which I never laid hands on. My last close encounter with ARC power amps involved the Reference 110, to which the Reference 150 introduced double the reservoir capacitance using proprietary caps and new wider-bandwidth output transformers mated to its KT120 output tubes, upping the rated output from (you guessed it) 110 watts to 150 watts per channel. The SE (\$15,000) now adds KT150 output tubes, along with the associated DC supplies to drive them. Inevitably, a lot of the attention this and the other SE amps will attract is going to fasten on that switch in tubes -- especially given the 150 SE's novelty and retro envelope. But for me the question isn't so much where the 150 SE sits relative to its predecessor, but where it stands in the market as a whole.



The Reference 150 SE could serve as a metaphor for the changes in the audio industry as a whole. The front panel is cleaner, thicker and way better finished, while the amp itself could be described as *balanced, boxed and buffed*. The all-enveloping casework isn't just a step away from the earlier, open-chassis styling; it's now built entirely from aluminum. The circuitry is fully balanced, with a front-end based around a pair of 6H30 tubes for each channel (and offering XLR-only inputs as a result), and as I've already mentioned, the output power has increased substantially. Domestically, there's no doubt that the Reference 150 SE has a prettier and far more acceptable face, but don't confuse that with a forgiving temperament. Every product has a learning curve, and this one is no different. It is just as demanding and critical of partnering system and setup as its forebears, and when it comes to getting the best from it, there a few simple things worth knowing before you start, mostly linked directly to its enclosed casework.



The chassis cover is held in place by 18 machine screws that need to be removed and replaced in order to fit the tubes. Also under the cover are the speed controls for the twin cooling fans mounted on the rear panel. Putting safety first and assuming a worst-case scenario, ARC sensibly set the fans to the highest of their three speed settings to provide maximum cooling -- essential if the amp is to be placed in an enclosed space or rack. But if you are going to use the amp out in the open, you might find the fans unacceptably loud. I used the 150 SE in two different free-standing situations: as a pair of the stereo amps (greedy, I know) driving the Wilson Sasha 2/WATCH Dog system in my larger main listening room, and in a simpler, two-channel setup in my smaller

room, driving either Vienna Acoustic's Liszt floorstanders or MartinLogan's (shockingly good) Motion 35XT stand-mounts. In both cases I found the fan noise intrusive. Just as well that you can reduce the speed then -- except that to do so means removing and replacing the cover all over again. The moral of this story? Consider fan speed at the same time as installing the tubes. If you are going to be using the amp in a free-standing setup or close to the listening position, then tack

the cover back in place with four screws and fire it up to check the noise level before battening down the hatches.

As with almost all large amps, the 150 SE's chassis cover is also largely unsupported, meaning that it can vibrate. I found that adding a long HRS damping plate to the spine of the 150 SE's case delivered a worthwhile improvement

in terms of the resolution, microdynamics, separation, dimensionality and the blackness of the background. The soundstage went deeper, was much more clearly defined, and the sound was more intimate, more immediate and more communicative. If you think that sounds like a significant benefit, you'd be right. Once again, the good news is that the fix is easy -- and easily investigated. It's something the company is aware of but they are reluctant to simply apply damping pads to the underside of the cover, given the effect of elevated temperature on the performance and longevity of such pads. A constrained-layer panel (similar in effect to the HRS plate) is a possible solution, but that will take time and, inevitably, money. In the meantime, if I were using or



considering this or any of the other ARC amps, I'd want to hear what the HRS damping plates can do for their performance.

One final wrinkle involves the output taps. Like most tube amps the 150 SE offers a choice of 4-, 8- and 16-ohm outputs, allowing the user to match the amp to the speaker load. Given that speaker impedance characteristics are rarely constant and frequently

complex, this isn't a straightforward decision. Indeed, in many cases shifting between an amplifier's 4- and 8-ohm taps will be a swings-and-roundabouts exercise, with each offering its own strengths and flavor. Not so the Reference 150 SE. Here I found that the choice of impedance tap was not only critical to maximizing performance, the best choice wasn't necessarily the obvious one. So, both the Liszt and the Motion 35XT sounded significantly

Reference 75 SE: when less isn't less

I initially heard about the Reference 75 SE (\$10,000) when it was in its first incarnation, as the Reference 75, which used KT120 output tubes. Warren Gehl at Audio Research told me that he believed the amp was "special," even among the more powerful and expensive amps in the Reference line. Warren cited its directness and purity, framing it, at least in my mind, as a more powerful SET amp, albeit one with a push-pull output. I was in -- I wanted to write about it -- but as happens when you review audio equipment, other products slot in and take your time, so I never got around to writing about -- or even hearing -- the Reference 75.

When the SE version of amp was announced earlier this year, I wasn't about to be caught flat-footed again, so I *bought* one, sight unseen and sound unheard. For the Reference SE amps, Audio Research announced "substantial performance upgrades. . . to coincide with the changeover to the KT150." These included new active and passive parts and changes to accommodate the physically larger output tubes. For the Reference 75 SE, the cooling fans of the larger Reference amps were omitted, because the fewer output tubes -- just two per channel -- made them superfluous.

A Reference 75 can be transformed into an SE amp for \$2500, a little more than the difference in price between the two models. Interestingly, while the KT150s are capable of increased output power, Audio Research decided to run the tubes conservatively and extend their life to 3000 hours instead.

There certainly is great purity to the Reference 75 SE's sound. The midrange's combination of presence and illumination, its sense of verisimilitude, is something SET

owners will recognize. There is fullness without bloat, texture without edge, and transient speed without leading-edge emphasis. Vocalists come alive with a physical presence and projection. Like all of the Audio Research electronics I've heard, this amp throws a huge soundstage when the recording obliges, and it arrays musicians side to side and front to back with spooky precision.

The Reference 75 SE also has the grunt to drive full-range speakers like the Wilson Alexia, although when pushed past 100dB with music like Keith Richards' "Words of Wonder," it does run out of gas, especially down low, reaching a point past which the music just can't get any louder. If your room is midsize or small, or you don't push your volume control to 11, the Reference 75 SE will happily trudge along without issue. Audio Research makes more powerful amps for everyone else.

As Roy points out about the Reference 150 SE, choosing the right output taps is both critical to hearing the Reference 75 SE at its best and definitely not a by-the-numbers exercise. I've heard many Wilson Audio speakers and Audio Research amps together, and I don't remember a single speaker that didn't sound best via the amps' 8-ohm outputs, even though the speakers were all rated at 4 ohms nominal. So experiment and let your ears be your guide.

I can't say how the upgrade to KT150 output tubes will sound to owners of non-SE amps with KT120s, but on its own the Reference 75 SE is as special as Warren Gehl promised about the non-SE amp. If you can live with its 75Wpc and balanced inputs (and you have a \$10,000 budget), I don't know of a better amp -- tube or solid state.

-Marc Mickelson



better connected to the 4-ohm taps -- exactly as their specs suggest. The Sasha 2s, on the other hand, definitely prefer the 8-ohm taps, despite a 4-ohm rating and a minimum impedance value that hovers just above 2 ohms. It's another aspect of setup that's easy to overlook but almost as easy to check. With the Reference 150 SE, it's essential that you take the time.

The fact that I've used so much space on the housekeeping involved in getting the best out of this amp should tell you two things. First, it is capable of remarkable resolution, and second, it is also capable of remarkable musical performance. The same qualities that reveal just how big a difference something like the HRS plate can make dig deeply into the signal, revealing the very nature of the musical performance encoded within. Was my first impression of the 150 SE as startling as the first time I heard the D115? No -- because my expectations have shifted accordingly. Does the current amp exhibit the same musical and sonic DNA as the D115? Yes and no. Yes, in that so much of what makes this amp such an engagingly musical performer is linked to its sense of presence and dynamic authority; no, in that the 150 SE brings a whole host of musical and sonic capabilities to the party that the D115 couldn't even dream of.

This isn't just evolution -- this is transformation. The 150 SE matches the dynamic power and impact that made the D115 such a standout and shares that amp's incredible ability to swell and expand with the music when necessary. But while the 150 SE's core capabilities remain firmly rooted in its ability to deliver convincing dynamic range and weight, coupled to a rich and natural tonal palette, it now augments those qualities with a level of spatial, textural, harmonic and dimensional resolution that adds shape and perspective to the picture. Vocal and instrumental accents are much more apparent, each performer's character more identifiable, the overall shape of the song clearer and musically more

effective. If you want a quick reality check, just try a round or two of that old audiophile favorite "name that artist," and see how easy this amp makes the task of identifying the singer performing any given cover number.

That sense of immediacy and musical intimacy works wonders with small-scale acoustic rock/pop or jazz recordings. The Reference 150 SE effortlessly captures the breathy texture and individual tonalities of the horns, the shape and pitch of bass notes, the pace and



placement of drum patterns and piano lines, integrating them into a musically cohesive whole. At the same time, large-scale orchestral dynamics are delivered with a sense of substance that makes them truly dramatic -- and without allowing the brass and percussion to climb forward and trample all over the strings. Instead the orchestral image is held stable while the music swells out from it, expanding into the acoustic space -- the music just gets louder, not bigger, and it doesn't come not further forward. Setting up a decent soundstage with good dimensionality and a natural perspective is one thing; locking that soundstage in space, maintaining its dimensions and holding the instruments stable within it while also responding to the dynamic demands of the musical program, that's quite another. It doesn't matter



whether you are talking about a jazz quartet, a girl and a guitar or the Berlin Philharmonic, as soon as the stability of the soundstage collapses, or even wavers, the fragile illusion of life and presence, the sense of performance and performers in your room, goes with it. Few amps are truly capable in this regard -- and most of the ones that are boast massive power outputs and a sound that crushes the vitality out of even the most spirited performance. The Reference 150 SE can't match the carved-from-solid definition of a really big amp, but it does hold the acoustic space rock steady, the instrumental images stable in a way that is both surprisingly rare and musically satisfying.

It's this ability to resolve without pulling apart, to separate without dismantling, to hold stable without holding too tight that characterizes not just the Reference 150 SE but ARC's Reference products as a whole. Does that make them perfect -- and this the perfect amp? No, because they are not without character. There are certainly amplifiers that achieve even greater levels of transparency and control than the Reference 150 SE, especially at low frequencies, and let's not forget the existence of ARC's own Reference 250 SE and Reference 750 monoblocks. There are amps with wider dynamic range, better microdynamic definition, more emphatic temporal cues and a more purposeful sense of musical direction. But in almost all cases, those qualities come at the expense of the overall sense of unforced musical coherence, the convincing sense of a musical whole that flows so easily from the Reference 150 SE -- especially when hung on the end of the Reference 10 line stage. It leans on the shape of phrases rather than the shape of individual notes, but then it's called a sentence for a reason, and that's exactly what the Reference 150 SE makes -- musical sentences that make musical sense.

I could dismantle the 150 SE's performance and slice it up into audiophile sound bites. I should point out that where it deviates most from neutral is at the bottom

end, where it values the weight and center of the note over leading-edge definition, a design choice that is intimately connected to its relaxed and communicative qualities, but one that also places an extra emphasis on precise speaker setup -- and confuses the issue when it comes to direct comparisons. But instead I'll just observe that the way to listen to the 150 SE is to put it in a system, pay attention to the housekeeping details outlined above, adjust the speakers to match its balance, and then settle back for a good long time. That's when you'll really appreciate just how easy this amp is to listen to -- and how easy it makes listening. That uncanny combination of musical insight, substance and integrity is what makes the Reference 150 SE another genuine benchmark product. Don't misunderstand that terminology. "Benchmark" doesn't mean best. What it means is a product with the overall balance of musical capabilities that the competition needs to match or beat.

And the most important word in that sentence is *balance*. A single-chassis amplifier with enough power to drive all but the most demanding speakers and do so with the musical authority to really deliver on the promise of high-end audio, the Reference 150 SE is capable of delivering so much music in such a coherent way that you simply don't notice what it doesn't do.

Any complaints? I'd really like meters. The Reference 75 SE has meters; so do the Reference 250 SE monos. But as ARC point out, the Reference 110 didn't have them, nor did the Reference 150 (partly, I suspect, because all those reservoir caps are taking up the space immediately behind the front panel) so as an upgrade on the 150, the 150 SE misses out too. And just to put the tin lid on it, the D115 had no meters either, so perhaps it was never going to be, especially as the Reference 150 SE embodies so much of what left that older amp lingering long in my musical memory -- and then some. This amp doesn't just fill its predecessors' shoes; it needs a bigger size.