

## Review: HeadAmp AE-1 Portable Headphone Amp

The portable music scene is one that has had a great deal of change over the past couple years. While portable amps are not a new thing, only relatively recently have amps that can truly be considered high-end been released. The RSA SR-71 was the amp that, for many, opened eyes (and ears!) to how good a portable system can sound. Since the SR-71's introduction, Xin has released his SuperMacro, Headroom has released the Coda and the Micro line, the Portaphile has been released in several revisions, and HeadAmp has very recently released the AE-1 amplifier. All of these amps strive to produce real audiophile sound, and the ones that I have heard all succeed to one degree or another.

When I was offered an AE-1 review sample by HeadAmp, I was quite pleased to be reviewing a product that so many people were looking forward to receiving, but I knew that reviewing the AE-1 by itself wouldn't answer the questions that many people were asking. I was, however, fortunate enough to borrow an SR-71 for comparison with the AE-1 review sample that I received, thanks to DigitalBill's kind offer. Logistics prevented me from directly comparing the SR-71 and the AE-1, but I took extensive notes on the SR-71 while I was using it, and I feel I have a very good grasp of how it sounds.

The first section of this review will be a comparison of the SR-71 and AE-1 sound. The equipment I used with both amps was an RCA RP-2485 PCDP, an Apple 4GB iPod Mini DAP, a Yamaha DV-S5770 universal disc player, MisterX Canare Mini to RCA Cables, the Canare HP-1 Mini to Mini cable, the Sony CD3000 headphones, the Etymotic ER-4P with S adaptor canalphones and the Grado SR-60 headphones. I listened to a great deal of music with both amplifiers, but I settled on a few albums for the actual review. They are *Sea Change* by Beck on the DVD-A format and on CD, *With Teeth* by Nine Inch Nails on DVD-A and CD, *Gaucha* by Steely Dan on SA-CD and CD, *East Coasting* by Charles Mingus on CD, *California* by Mister Bungle on CD, and *Liszt: The 19 Hungarian Rhapsodies* by Roberto Szidon on CD. I refrained from using any *King Crimson* or *Bjork* for the review, as I have a hard time reviewing equipment with their music, as I tend to get sucked into it.

In this review I will use the terms "soundstage" and "headstage". To me, soundstage is the presentation of sounds in a position that is

"outside the head" and headstage is the separation of instruments and positioning "inside the head", which is something that few headphone systems can prevent doing, though ideally all sounds would be presented "outside the head" in a manner more in keeping with live performances and speaker rigs.

The first thing I did upon receiving the SR-71 was to plug into my Yamaha dedicated source playing the *Sea Change* DVD-A through the CD3000. My initial reaction was that the SR-71 had a strange soundstage presentation. Instead of having a broad soundstage, with instruments coming distinctly from outside my head, which I was used to with the Meier Audio Corda HA-1 MkII and my Singlepower PPX3, the sound was instead coming from a region that I can only describe as a tube. It was as if I were sitting in the middle of a tube that extended barely past the outside of my head, but was very tall. Sounds would come from above me and from below me, but very little would come from side to side, as is normal for many recordings. The *Sea Change* DVD-A has, to me, a very natural soundstage, and this was somewhat disconcerting, especially as the CD3000s very broad soundstage is one of the defining features that it presents. Headstage, however, was respectable, as instruments and voices were fairly well separated and presented in a way in which each sound could be easily heard and analyzed. The soundstage was especially disconcerting, as even the Headroom Bithead, which is a substantially less expensive amplifier, gives a decent illusion of the sounds coming from outside of the head, though the SR-71 is substantially better in most ways than the Bithead. Guitars were realistic sounding with the SR-71, but Beck's voice did not present the graininess that I had come to expect from this album. The SR-71, in general, did not present itself to me as being a particularly detailed amplifier with the CD3000, and this came as something of a disappointment. The percussion was a bit laid back, and did not present the bite of attack that I was expecting. This particular album is a pretty bassy one, and I was not disappointed with bass response, as it was full, rather tight and decently well textured. The album was enjoyable to listen to, but a bit strange.

This album was also the first one that I listened to with the AE-1, and the experience was quite different. Soundstage immediately presented itself as broad and natural, with notes clearly coming from well beyond the side of my head, though some sounds also seemed to come from behind me, which is sometimes a bit disconcerting. Headstaging seemed to be correct, with the various sounds being clearly separated while not being too distant from each other. The guitars sounded very natural, and the drums had the weight and speed of attack that I find

pleasing, as it makes the drums sound like, well, drums. Beck's voice was somewhat grainy, as it should be, I am pretty sure I was hearing the saliva gurgle softly in the back of his throat. This level of detail is one thing I'm looking for, as gross as hearing spit might seem. The bass response was less than the SR-71, in general, but still quite big, as it is a bassy album. The AE-1's bass was as tight and textured as the SR-71, but seemed to go a little deeper.

With *Gaucha*, the album was presented a bit better than *Sea Change*, but the "tube effect" was still very much present. Guitars once again sounded quite nice, as did the organ and synth piano that Donald Fagen plays, but Fagen's voice itself had a plastic and unrealistic tone to it. His voice is quite unique, and instead of sounding "like fagen", it sounded strange. It is difficult to explain, but his voice was nasal and did not present the graininess and roughness in certain notes that I had come to expect. Bass response was again quite nice.

The AE-1 presented this album, quite well. Soundstage and headstage were just right, and didn't have present any of the sounds as coming from behind me. Guitars sounded very nice, as did the organs and percussion, and Fagen's voice sounded just about perfect. Bass was quite present, but not as much so as the SR-71.

*With Teeth* presented itself better, soundstage wise, with the SR-71 than the other two albums did. I think that this is because the soundstage is particularly wide. Actually, the AE-1 and the SR-71 sounded very similar on this album, the differences being a little less detail but more bass with the SR-71, and a bit more detail and attack weight, but slightly less bass with the AE-1.

*East Coasting*, by Charles Mingus, sounded downright bad to me on the SR-71. Not because it lacked detail, or was too laid back, or was too dark, but because the soundstage was terrible. *East Coasting* was well recorded and was given a very good remastering in the year 2000. The sound should be broad, with all the instruments seeming to be from outside the head. With the PPX, the outside the head presentation has the drums being rearward, and bass off to the right and the sax and trumpet in the wings and forward. The SR-71, however, had instruments coming from above and below, while smearing everything together. It was a strange, disconcerting effect, and I hated it.

The AE-1, however, presented the instruments correctly and was very enjoyable. The detail in the instruments was also quite nice, and the

weight of attack in Mingus' playing and in the drum kit was very exciting.

*Liszt: The 19 Hungarian Rhapsodies* by Roberto Szidon is one of my favorite Romantic CD's, and it is very well mastered and recorded. The SR-71 suffers from a similar problem on this CD as it does with the Mingus album, though to a lesser extent. The piano sounds pleasant and warm using the SR-71, but the lack of soundstage and a somewhat muddy resonance and decay in the lower notes on the piano prevent the illusion that you are actually listening to a real piano from ever happening. The AE-1, however, is crystal clear in regards to resonance and decay, and the very broad registers of the piano sound very natural, and very reminiscent of a live piano concert.

In general, I would say that for use, even just part of the time, as a home amp, the AE-1 is significantly better than the SR-71. the AE-1, to me, doesn't sound like a portable amp, it just sounds like a nice amp. My PPX3 has been out for repairs for a week now, and while I miss the tubey goodness, I don't feel "underamped" using the AE-1 at home.

In a portable setting, the amps are much closer. I use my SR-60 (with hole modded 414 pads) and my Etymotics when I'm listening portably, and the soundstage problems that the SR-71 exhibits with the CD3000 are much less of a big deal using these phones. My belief is that neither the SR-60 or the ER-4 really gives much of an "out of head" experience, so instrument placement and headstage are more important with these phones. The SR-71 and the AE-1 both do a good job with in this regard. Using the iPod (with pocketdock and 320 KBPS AAC files) the SR-71 does a nice job filling out the bass using the ER-4P/S, though I think it's a little too much when using the SR-60, as the 60 has a bit of a bloomy midbass, but it's still pleasant. Using the RCA CDP, the bass was perhaps a bit much with either amp when using the SR-60, but this is more a flaw of the RCAs boomy bass than it is of either amp. Walking around, the difference in weight of attack with the two amps is hard to hear (as is the electrical noise that the RCA presents), but when sitting at a desk, the Etymotics and 320 AAC files are more than capable of showing the extra detail that the AE-1 is capable of, and I believe that the AE-1 has better extension of both the treble and the bass using the Etymotics. The Etymotics are both a borehole and a microscope, so songs that have deep bass are heard all the way down while being super detailed. For desk use with typical portable phones, I believe the AE-1 is a better amp, though the difference is less than it is with home cans and a home source.

From a physical standpoint, I believe that the AE-1 is better suited for portable use. I actually put the amps in the vinyl bag that comes with the Koss Portapros, and the AE-1, which has no protrusions, slips right in to sit alongside the source in my backpack. The SR-71 has a front panel that sticks out and can catch on fabric or other object placed near it. I also prefer the layout of the AE-1, as it allows the use of cables with thicker plugs, something that is a little bit of a problem with the SR-71, as the input and output jacks are close together. One flaw of the AE-1 is the lack of a hash mark on the volume knob, which once caused me to be exposed to very high sound levels when I forgot about the volume difference when I switched between the ER-4P/S and the CD3000 with a gap of a few minutes, but I soon learned to zero out the volume before turning the amp on, which is a good practice anyway and it was completely my fault that I got whacked in the head with Cannibal Corpse at high volumes. Still, a hash mark on the volume knob would be a pleasant addition.

Battery wise, the AE-1 is better, though the SR-71 isn't bad. I used the SR-71 with Duracell NiMH rechargeable batteries, and I had to charge the batteries 5 times in a three week period. This isn't a big deal if you have spares sitting in your charger, and battery changes are quick and smooth thanks to the well designed battery compartment. The AE-1 never ran out of power even when I used it heavily for several days without charging, and I don't think that anyone that has even occasional use of a wall outlet is going to have an issue with battery life. The lithium ion battery will, eventually, wear out with many deep discharges and charges, and I'm not sure if the battery the AE-1 uses is a standard one. This could be an issue after a few years of use, but the typical use of the amp shouldn't cause the battery to start wearing out for a very long time. In three weeks I haven't done a single deep discharge of the amp, and I've been using it a lot. When it is used at home with the wall wart plugged in, the battery is still the source of power for the amp, but the amp is continuously charged while in use. There is no problem keeping the amp plugged into the charger at all times, as I believe the LiOn has a cutoff circuit.

One really handy feature of the AE-1 is the loop out function. For those of you that aren't aware of how it works, you can use either the RCA jacks on the back or the mini jack on the front as the input. Then, whichever set of jacks is unused becomes a loopout and you can plug another set of cables into to loop the music out to another amp. My use of this has been to use Kimber Hero RCA cables into the AE-1's

RCA jacks in the back and then using a MisterX Starquad mini to RCA cable to connect the PPX3. The RCA jacks on the AE-1 are spaced out enough for most cables, and I have had no problems with the Kimber Heroes that have rather chunky locking RCA plugs. I noticed no degradation of sound using the loop out to my PPX3, and the loop out is completely passive and can be used when the amplifier is turned off. This is a really handy feature, and very much helps in the integration of the AE-1 into a home system.

Finally, for the last several days I have had the use of a pair of Grado PS-1 and HP-2 headphones. As my PPX3 is out for repairs, I have only had the AE-1 for use. I was a bit leery that it wouldn't be able to drive the notoriously inefficient HP-2, but I was pleasantly surprised that it has driven both phones with aplomb. Even with the HP-2, there is plenty of volume (in fact, it will go much louder than I would ever listen), and the sound is very good. The HP-2 is not hindered at all, and I can't hear any major flaws with the very unforgiving phones. The HP-2 has a very strong, fast attack which makes percussion instruments,, such as drums and pianos, sound amazingly life like. To paraphrase Jahn, cymbals don't sound like "chtssss, chtssss", they sound like cymbals. The HP-2 also has this amazing linearity that the AE-1 does an admirable job with. The PS-1 with the AE-1 has great, tight bass, but also a very sweet, forward mid range that is very enjoyable. The PS-1 also is able to achieve a very high level of resolution and speed with the little AE-1. I think the AE-1 is definitely worthy of high-end phones.

In closing, I think the AE-1 is a great product and worth every cent. It sounds great, has fine build quality, handy features and a very long battery life. From my perspective, you can't ask for much more in a portable amp, and I think it is very worthy of consideration for people looking for a single amp for both home and portable use. The SR-71 is a worthy portable amp, but flaws in the presentation prevent me from suggesting it for use with music that relies greatly on a natural soundstage. Big thanks to Justin Wilson of HeadAmp for supplying the sample, DigitalBill for letting me borrow the SR-71, Tkam for the Kimber Hero interconnects and GoRedWings19 for the HP-2 and PS-1.