

## HP's Choice: Line Stages

### The Documentary

Once upon a time, this section would have been called "Preamp-lifiers"; that was before the advent of the compact disc and the era we might call B.M. That is to say, before Madrigal, which, in its collective high-tech wisdom, decided that a phono stage was no longer a necessity in the modern two-channel control center. For those enamored with the Madrigal sound, the sonic equivalent of cinematographer Gordon Willis' work on the first two parts of *The Godfather*, this decision meant buying a separate phono stage from the company (and they weren't giving that away). Thus, with its Mark Levinson Model 28, released early in 1988, Madrigal gave us our first high-end line stage, although it and we still called the thing a preamp. At the time, I bemoaned the assumption behind this product, namely, that analog playback was a thing of the past and that the company's decision was premature. Perhaps, in retrospect, it was not that, just realistic or slightly prescient.

In today's brave new world, where turntables, arms, cartridges, and analog LPs are still very much available, if now in a lively niche market, we have few full-stage preamplifiers.

The great William Zane Johnson of Audio Research has just introduced a full-feature preamp, the SP-16, said to be the sonic successor to the SP-10, albeit marketing it in two versions, the 16L being the line stage only. The 16 itself does have a phono stage, but it will not accommodate the lower output moving-coil cartridges (such as the spectacular Miyabi and top-of-the-line

Dynavector). This decision is said to be occasioned by Johnson's wish to keep the price of the 16 within reason, certainly a new wrinkle in his SP thinking. You could either buy a separate phono stage to go with your new line stage, or something like the celestially expensive Burmester 808 Mk V control center, outfitted with the company's superb moving-coil (and, at additional cost, of course, moving-magnet) stage as part of the package, creating, thus, a full-feature preamplifier that, perversely perhaps, we shall be annotating only as a line stage. Ditto, for the Hovland HP-100, which can be had without or with (for more money) a built-in transformer for low-output cartridges.<sup>1</sup>

control (the *bête noire* of the obsessively aroused sonic purists) makes the process of evaluation less harrowing. For flexibility, the Burmester can hardly be topped. Each of its module boards has individual trim pots, so that you can perfectly match the input levels of all your components. You can even turn off the unit's display lights, a move said to improve the sonics, and by gum, with the right system, you can hear that it does just that.

In olden days, e.g., pre-line-stage times, audio reviewers simply evaluated preamplifiers without separately analyzing the colorations of the phono stage vis-à-vis the line stage. Behind this excuse of a short cut lay the

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For this report, it's just line stages, pure and simple.<sup>2</sup> So exactly what is it that we are looking for in a modern line stage, sonic flavorings aside? Flexibility and versatility, I'd say, which means sufficient inputs to meet the variety of equipment at one's disposal, and sufficient outputs to encompass the complexities of a bi- or tri-amplified speaker system. (Y-connectors are such sonic bums.) For this reviewer, himself somewhat corrupted by the sugar plums of convenience, a remote

assumption that the old line stages inherently had so little coloration as to be not worth the bother separately assessing them, especially since the devices being plugged into it (FM tuners and tape recorders) were themselves highly colored. One sterling exception to this practice was the Right Rev. J. Peter Moncrieff, who, in the late *International Audio Review* (IAR) did the right thing and assessed both. This reviewer did not. He didn't then give a frankly damn about most high-level

<sup>1</sup> A transformer set for an impedance of 100 ohms, far below the optimum 47k ohms virtually all moving coils require.

<sup>2</sup> We'll take up the new generation of moving-coil cartridges and the latest phono stages in a subsequent part of HP's Choice. And just you wait till you see what we've heard!



sources, a double mistake considering the short life of the usually sonically superior (to LPs) open-reel tapes and the potential for FM live (or taped) stereocasts of orchestral concerts.

Thanks to considerable critical listening of late, I have come to the vile conclusion that line stages are just as colored as the old-fashioned phono stage. Maybe they are more colored, seen in light of the much more neutral step-up devices for low-output cartridges. We can agree that, if true, it's a weird reversal.

Our associated equipment, particularly the most elaborately complex speaker systems, is significantly more revealing than all but the most exceptional gear of two decades ago. Certainly we can all, if we concentrate, now hear how noticeably line stages color the input signal. Perhaps, shudder at the thought, that is because contemporary digital is, overall, a cleaner

source, even though it is less rich and reveals less of music's overtone structure. (I am tempted to strike a parallel between high-definition video images, which look weirdly, supernaturally clear, versus 35-mm film, which is richer and more life-like.)

So, we might ask ourselves, what should we be listening for in a contemporary line stage?

Obviously, our first consideration would be the apparent frequency bandwidth. I say apparent because a simply static measurement of frequency response—which usually would be measurably flat—isn't going to tell anyone how a unit will actually sound

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in terms of its "character" or reproduction of the harmonic palette of music. That is to say, some line stages don't have the bottom-octave reproduction they should, in weight, slam, or authority, qualities we have a right to expect from the airily priced gear we have at hand here. Likewise, there is often some softening, if not supersonic rolling, in the said-to-be-inaudible over-20kHz region that will be heard as a dulling or softening of the top audible octaves. Initiates would say the transient attacks of the upper harmonics have been compromised.

And for all the progress that has been made during the past decade in creating a correctly proportioned musical soundstage within its ambient space (with the positioning of instrumental images defined thereupon and therein), too many line stages failed, particularly in the back half of the stage, to recreate both the stage's width and ambient field.

Especially common with transistorized line stages is a distorted compression of images, both instrumental and vocal. What I am talking about here is "dimensionality," or better put, the three-dimensionality of the players' instruments and the vocalists' bodies. Solid-state devices tend to flatten these sonic images into Stereopticon flat slivers (like painted ships upon a painted sea or images in the old Viewmaster "stereo" slides).

If you stumble into a unit that reproduces the third dimension, it can be an eerie revelation. You hear the size of a female vocalist's chest (Eileen Farrell's as captured by Keith Johnson for Reference Recordings, for example) and something of the resonance of the lady's body cavity; or you can hear the air under a tympani skin or the column of air resounding in a bassoon or clarinet (particularly the clarinet)—all of which can be squashed flat as if

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steam-rolled by transistors, and by digital itself.

Weirder yet, some of the units we listened to created fully dimensional imagery in the front half of the stage, but not much past there.

Another failing (perhaps related to this image squeezing), and one not much remarked upon by some self-styled serious commen(po)tators on equipment, is the inability of most line stages to recreate the air or sense of distance between the ensembles of an orchestra, or between the individual voices in a mass or requiem or, let us say, a Broadway show.

Sometimes, this "air" between the players will be volume (or dynamically) related. The empty spaces will be there at lower volume levels, and disappear as things get louder. It sounds as if the field is collapsing, and it is particularly audible at the higher frequencies.

A thought-clue: With AC cables, like Ray Kimber's new and stunning Palladian line, the first and most evident difference is that you hear the space between the performers with greater presence (or is it absence?). Obviously, the Palladian and its kind filter out noise from the AC line, which, just as obviously, is intermodulating with the audio signal. Not quite so apparent is the fact that even the Kimbers can't overcome improper internal shielding against stray radiation fields in a line stage, which will create grain and a loss of separation "distance" at high playback levels.

Certain audio theoreticians, if I read them aright (and can stay awake long enough to do so), seem to be saying that audible spacings in the sonic curtain account for what they call a "black" background (as in black hole?). But these "spacings" are in the music, not in its backdrop. Such spaces have no coloration, unless the unit in question is dark and on the yin side of the spectrum.<sup>3</sup> One simply "senses" air between the players. Clearly and purely.

Reviewers (not theoreticians) who

throw around phrases like "black velvet" haven't darkened the doors of a concert hall in years. Name me one mainstream reviewer who regularly listens to live, unamplified music. These are the bubble brains who say a component has "rhythm," a physical impossibility, of course. A piece of audio gear either allows the timing and rhythm of the music to come through unimpeded or it does not. This has to do with the coherency of its reproduction of phase relations, and with a lack of cellulite bulges in its bass and mid-bass limbs.

Now we come round again to the subject of a component's character or basic coloration. Long ago, I suggested that we filch the far-Eastern concepts of yin (the dark, the receptive, the mother womb) and yang (the bright, the fire, the rising white light) as a barometer for character, with perfect sonic neutrality being a perfect blending of the two. Say a "5" between a "1" and a "10". Some units have colorations that don't exactly fit on a scale

nicely on the yin side of the thermometer and that "blue" is a function of the yang. And these, I now believe, are mostly a function of the way a unit reproduces the dynamic contours of a full-frequency range of variable loudness levels. Almost inevitably, a dark-sounding unit (all of the early Madrigal/Mark Levinson designs) will be dynamically constricted in the top two octaves. *Exempli gratia*: The "gold" is a combination of a slightly rolled-off bottom octave and high degree of dynamic bloom in the midbass, again, with a corresponding bloom in the upper midrange and a dynamically dropping top octave. The "blue" is a sharp, narrow dynamic dip in the lower treble.

The real new frontier of audio design lies in this very area of dynamics, or the way a component reproduces the dynamic contours of the music. Years ago, we introduced the notions of micro- and macro-dynamics, terms used by way of contrast. Most components in those days repro-

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duced the small dynamics with great truth (the Jadis, for instance), or did well with the biggest dynamics, a *spécialité de chez* Audio Research. It was either or. What we (in this case, I), did not take into account then was the parts of the frequency range in which the dynamic gradations were taking place, or put better, where the contrasts they did reproduce were most obvious. The Audio Research tubed electronics had that kind of shazam!-like quality in the upper midrange that seemed most consonant

of pure blacks and white and "grays" (*vide*, former Krell gear, before the recent sea change), notably those with "gold" (early Conrad-Johnson electronics) or "tan" colorations. There was even one, to my consternation, that turned up with a bluish cast (the promising Tag McLaren line stage). But if you look at the yin-yang scale as a function of color temperature, you'd find that "gold" and "tan" fit quite

<sup>3</sup> The underlying assumption in this essay is that we listen to unamplified music, recorded with as little electronic boondoggling as possible.



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with the sound we had come to expect from recordings, if not in the concert hall—where dynamic weighting is spread across the frequency spectrum with great evenness (this is the quality that the classic Mercurys inevitably got right and why they are more truthful than the much perfumed and jiggery-pooked RCA Living Stereos of the day). Not coincidentally, the classic ARC had a gentle plateau in the octave where dynamic differences were most easily heard. That should have been the tip-off. A deeper insight into dynamics has had to wait until wider overall recorded dynamics became a reality, mostly thanks to the much-maligned CD.

The best new components can be terrific mentors. Until Carl Marchisotto's (Alón) Exotica Grand Reference, I hadn't encountered a speaker system with as wide a dynamic envelope as this multi-driver design.<sup>4</sup> The Grand Reference, which is as full-frequency as full-frequency can get, can, except for the lowest notes at its very bottom, reproduce quite wide dynamic contours, micro- to macro—*ppp* to *fff*—at any octave. I don't know how to measure or quantify the ability to show the contrasts in dynamics across the frequency spectrum, so I struggle for words to illuminate the concept. If any of the other components in the system are compressing dynamics in any part of the frequency scale, you absolutely will hear that.

There are, also, no measurements that will tell you how a speaker system itself resolves low-level information—in other words, how far down into the noise

floor it will reach. The champions at this have been the quasi-full-range electrostatics and, most spectacularly, the Beveridge electrostatics (now said to be back, or almost back, in production under the aegis of *fil's* Beveridge). But not one of these designs could encompass big orchestral crescendi and peaks. Likewise, many of the big systems (notoriously, the Tympani series of Magneplanars for Audio Research),<sup>5</sup> had to be turned up louder-than-loud to achieve a sense of "life"—the true *pianissimo* simply did not exist therein. And so, while I cannot give you a measurable indicator of the Grand Reference's resolving range in decibels, I can say, based on much close listening, that this system's overall dynamic "width" exceeds that of any speaker I've evaluated so far.<sup>6</sup> Beyond that new "frontier," dynamics, there lies the much more elusive goal of "continuousness," which, while not quite as rare as the said-to-be extinct Ivory Billed Woodpecker, is as seldom heard as a nightingale in the New World. And just about as difficult to describe in words. (You want to hear the bird itself, listen to the Third Movement of Respighi's *Pines of Rome*, where you'll hear a recording on a recording.) I've beaten my hard, hard head against the wall trying to create a verbal analogy, and have failed. I'm reduced, indeed, to saying something akin to the US Supreme Court justice who said he couldn't define it, but he knew pornography when he saw it. (That is, you'll know it when you hear it.) I liked Sallie Reynolds' comparison of continuousness to a sheet of water: Whatever it is, it

creates a musical soundspace that is liquidly seamless from one end of the stage to the other, in a body of air into which each musician is "speaking." The quality of continuousness is not strained, nor was it in evidence with the line stages under review here.

And finally, there is the question of musicality. How much of the musical gestalt—the sound of music—does the line stage let through? In this assessment, I found a nightingale, as you will see, and accordingly rated the line stage in question more highly than some of its competitors which were actually more "transparent," more "focused," and less colored. No one unit combined all the best qualities, which is a shame. This situation leaves a reviewer in the position of deciding what's best based on his fundamental biases, and in my case, that bias is in the direction of "something" that sounds like real music or most like the real thing, the absolute itself (increasingly a forgotten ideal, even in the pages of this august journal).

This is where subjectivity, as opposed to the observation of the sound of the line stages, comes into play. What can you live with, when all are imperfect? Scot Markwell, who managed the set-up of equipment in these evaluations, would not choose the one I rank at the top, and I understand the excellences of the unit he likes and would hate not to have it around for awhile as a standard of comparison, since it does so much so well (you're going to have to read on to find out which is what here). I underline this notion of bias, when components are at similar levels of excellence, not to weaken my conclusions, but to humanize them.

One more thing: In my ratings, the top five are closely bunched. There is no five-star line stage (at least I haven't discovered it yet), because no single unit excels in every category. So I've had to split hairs to denote the differences among the best. Because all have at least one shortfall in the sonic departments described above, there would be arguments among listeners of good faith about which of the top three belongs at the top. I have, in the following text, made my values clear.

<sup>4</sup> Although, truth to tell, some of Arnie Nudell's more elaborate designs were ahead of their time in this regard. The Exotica, like many a new speaker, owes much to Nudell's pioneering work.

<sup>5</sup> The first Magnepan speakers to achieve great acclaim were those that Audio Research commissioned, as the Tympani series. These were, many of you will recall, elaborate folding panels that looked like room dividers and had the pure of heart looking for "The Speakers."

<sup>6</sup> Having said that, I have to add that here in Sea Cliff we have not evaluated a genuinely efficient speaker system, like the Avantgarde Trios, which we would expect to be able to reproduce even wider dynamics than we are achieving with the somewhat less sensitive Alóns.



## The Documentarian's Tools

I made the decision at the beginning of the sessions to include only the cream of the crop in the roundup of line stages. So there will be no second-rate gear getting a "buy" recommendation from me. Another decision I made was to test the line stages only, omitting for now any phono stage that might be available for the gear. In one somewhat offbeat case, that of Krell's integrated CD player/line stage, I am holding back a review of its line stage until I can write a second (and shorter) article about some late additions, among them the MBL 6010 D and the Gamut CR2.

The constants in the set-up included the Acarian Alón Exotica Grand Reference speaker system, in Room 3, the Nordost Valhalla interconnects and speaker cable, and the Edge

...There are no measurements that will tell you how a speaker system resolves low-level information...how far down into the noise floor it will reach to resolve the softer sounds.

Signature amplifiers, along with the Krell KMA-160 Class A units that drive the Reference's bass towers. I also used the five-star Burmester 969 CD turntable and 970 digital-to-analog (upsampling) converter. More than once, though, I threw a curve into the testing, trying out the surprisingly excellent Krell KPS 25sc deck (separated from its line stage) and, toward deadline, the Krell 750 Mcx monoblock amps. Sometimes, even in a tightly controlled set-up, one will want to introduce a variable, if only to check the consistency of his sonic findings. At this level of subtlety of colorations and excellence of compo-

nents, you can never be too certain that there is not an interactive coloration somewhere that will lead you to an observational misjudgment.

More to the point: Given the dynamic extremes I was deliberately provoking, the Krell 750 turned out to be more than useful. During quadruple *forte* passages, I thought (actually I was pretty sure) that the Edge Signature, even though rated *circa* 400 watts into 8 ohms, was on the verge of clipping (or perhaps in early stages thereof). I had no big tube amplifiers on hand, having returned the VTL Wotans, and having no luck with the suddenly indifferent Audio Research

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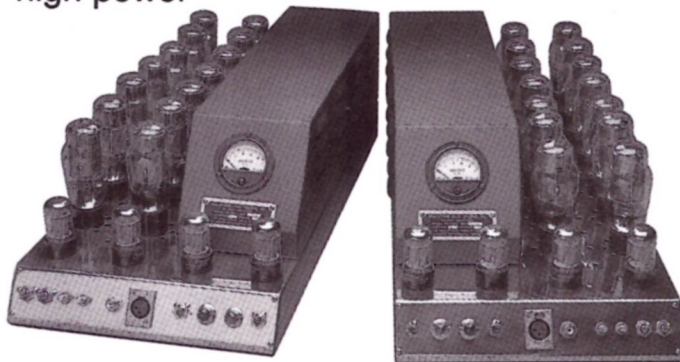


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team, I found myself in a dilemma. How could I tell? (I'm assuming that all of you know that, given equal or near equal wattage ratings, the tubed amplifier will always sound audibly more powerful—before clipping—as well as more authoritative.) Some speaker systems of relatively high sensitivity, like the Alón Exoticas or Dave Wilson's Watt/Puppys, just don't come "alive" with baby amps, even given similar playback loudnesses. To get the best of such behemoths takes either 300-plus watts of tubed power or close to twice that of solid-state power. Not only did the Krell Mcx confirm my suspicion that there had been that sea change in the company's house sound (a startling and good one), but that the dynamics of one or two of the line stages were straining the Edge's good nature when I let things rip. (The Edge sounded fine until the sound pressure meter closed in on 100dBA.) Yeah, I know I could have turned the levels down, but I needed to know whether the line stage was the problem, or the amplifier.

I was all over the place, at first, with the musical material. Then as the sessions progressed, I settled down with three recordings.

The first is a two-disc EMI recording of Puccini's *Tosca* that represents a return to (analog) form for that company. The sound is nothing short of incredible, and the performance, in one guy's opinion, the best since the revered Callas. It's a two-disc set [5.57173], conducted with considerable verve by Antonio Pappano, with the orchestra and chorus of the Royal Opera House at Covent Garden. The young lovers are that real-life star team of Angela Gheorghiu and Robert Alagna, with Ruggero Raimondi as Scarpia. Reminiscent of the glory days of the best EMIs, the sound here has ultra-wide (and undistorted) dynamics, with quite deep bass, and an opera-house-like recreation of the spatial relationships between orchestra and singers. About four minutes into the "Te Deum," there is a massive collision of orchestra and a huge chorus, while

Raimondi rides atop the racket at full power, just the way a big-name star can resound in a large opera house, like the Met. It's the *Tosca* of Gheorghiu who burns most dramatically, but I have to say that all the players are joined in playing out a *verismo Tosca*, one with slam-bang fury. (That said, I think Alagna squalls a lot and I'd prefer a Bjoerling or tonally more "golden" throated tenor when the going gets heavy.)

The cut I used most in the final round of testing was No. 22 on Side One, the "Te Deum" that accompanies Scarpia's devilish and horny sacreligiousness as the church service begins, while a cannon (bass drum here) outside and a church organ inside provide the fundamentals over which chorus goes double *forte* and Scarpia (at 104dB in our set-up) louder yet. Believe me when I tell you this one was murder, up there with *Gladiator* as a ceiling buster.

At the other end of the dynamic scale, I found several cuts (1, 2, and 4) on Triloka's sampler *Trance Planet* [TR 8030] particularly revealing of fine *pianissimo* gradations and of the upper partials and harmonic overtones of more than a few exotic instruments. Cut 1 contains overtones as delicate as any I've heard from digital, while Cut 2 features, in deep center stage, a grouping of musicians playing instruments (most of which I could not identify) that cannot readily be reproduced by some of the line stages (and they aren't being played loudly). The fourth cut, "Angelica in Delirium," with Antonia Reiner chanting words from *The Song of*

*Solomon* over an exotic background of chants and a particularly deep bass guitar will test your woofer's mettle. (I've never been able to find the "forthcoming" album from which this cut was taken, or to learn anything more about the three-person group, Gol, whose talent seems intriguing here.) In all the cuts, but especially the first, "Kothbiro," there are overlapping layers of ambient space (no doubt courtesy of multiple-miking with added reverb), that demonstrate just how effectively "pop" recording techniques can be in creating an almost alien atmosphere. Much of this can be lost if the line stage isn't up to separating and defining the spatial cues.

And to cap it off, I used the first eight minutes (a bit less, actually) of the Fourth Movement of Penderecki's *Credo* [Hansler 98.311], which has a bit of everything from chorus, to a heavy percussion battery, to full orchestra. Of particular interest to me, besides the reproduction of the voices in the chorus, were some of the percussive effects, ranging from softly hit cymbals and tambourines to a back-stage array of tympani almost cinemascopically deployed across the hall's rear wall. Both spectacular and musically engrossing. This is not to say there were not other recordings deployed during the sessions, from the Leinsdorf/Boston Mahler *Third*, to the Mercury Rodrigo *Concierto Andaluz*, to name but two. What I wanted were a few discs that pushed the envelope and that were not going to lose their charms during repeated switchings.

## II. The Line Stages

### Hovland HP-100 Tubed Line Stage

**I**t does happen. Sometimes a reviewer will have second thoughts about a product after writing his/her/its initial evaluation. This isn't so bad if the new insights lead to an upward revision of the original findings. But it ain't so

good if the new insights incline one in the other direction.

That said, I have to confess that I've had my doubts about the Hovland. They were first occasioned by two separate and identical episodes in which the HP-100,<sup>1</sup> after being left on overnight or for long uninterrupted

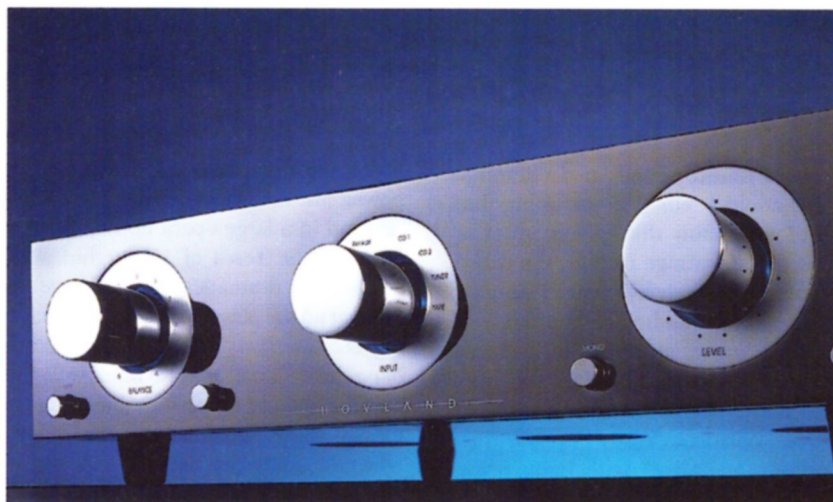
<sup>1</sup> HP? Hmm? Must have named it after Hewlett-Packard.



periods, began to sound distorted and unpleasant. In both cases, turning it off for just a few minutes rectified the situation. Both units went back to the factory, and we are now, I do believe, on our third sample, presumably somewhat upgraded (sez Scot Markwell) from the first.

It's still as beautiful as ever, as beautifully built, too. And at \$6,400, it represents something of a bargain in high-end dollars, inflated though they have become. And it still has its own unique sonic signature, a highly seductive one that tends to the bewitching and the addictive.

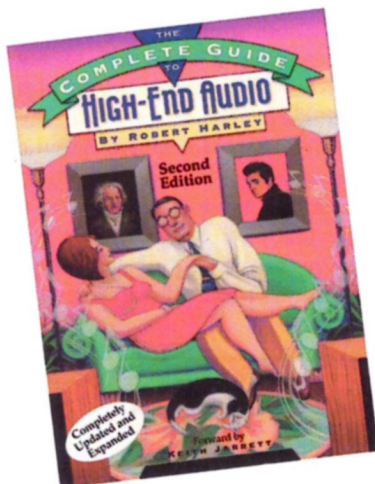
But I have found that the 100 sounds better with some combination of components than it does with others. I'd like to say it is singular in this regard, but that phenomenon, the component that becomes



chameleon-esque in different environments, is happening with greater frequency these days. In my opinion, that is the opposite of what should be happening. I believe that a component, as in, say, the Nordost Valhallas, should sound pretty much the same everywhere (given the limitations of the components with which it is associated).

With one of the best references I have yet put together—the one used in these listenings—the Hovland does not, for instance, sound continuous. Now, if you'll read my and Peter Braverman's first thoughts on this design [Issue 131], you'll believe that we saw eye-to-eye on its continuousness. Rereading Braverman's review in

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light of my recent experiences with the 100, however, I see that we weren't exactly talking the same game. The best I can say about that, now, is that the Hovland has elements of the continuous, but not up and down the frequency scale—something new under the sun in my experience with continuousness. Where it does have that special "x" quality is through the mid-band. Where it is also, simultaneously, quite transparent, in the old-fashioned J. Gordon Holt sense of the word.

One of the things that troubles me about the 100 lies in its dynamic footprint (it's in "good" company in this respect with the other line stages under review). Where the Hovland genuinely shines is in the bottom octave, where it has romp-'em, stomp-'em dynamic slam and life, plus an articulated low, low bass to cry for. However, there is, in the upper mids, particularly in the region where you'll find massed choristers at play, a dynamic squeeze (compression) that lends a rough edge to massed strings and voices, particularly women's and at high playback levels. Below a *fortissimo*, though, the reproduction and articulation of the voice is beautifully

rendered. And the top two octaves are sweet, extended, and silky: You get an aesthetic tingle. I happen to think that some of this is a coloration, sexier than life, but there are so many worse things that can happen in the top octave that you, and maybe I, might be inclined to forgive our ravishment.

It interests me that the sound is curiously recessive at soft to normal listening levels, suggesting to me a mid-band compression. And this effect begins in the upper midbass, the foundation of the orchestra, thus robbing the orchestra of some of its authority. (There is a thinning out of the sound at loud levels.) Odder yet is the Hovland's schizophrenia in image dimensionality. In the near field, voices and instruments have that 3-D quality, but further back, all is flatlands. Like one other tubed unit in this test, the 100 isn't that specific when it comes to fixing an instrumental or vocal image in space. Timbral accuracy, that is, the ability to render complex overtone structures, it has. Its "character" is a bit on the cool side of neutral, but not out of the ballpark. In this respect, the Hovland is among the best in the evaluations. ★★★

## Edge Signature Solid-State Line Stage

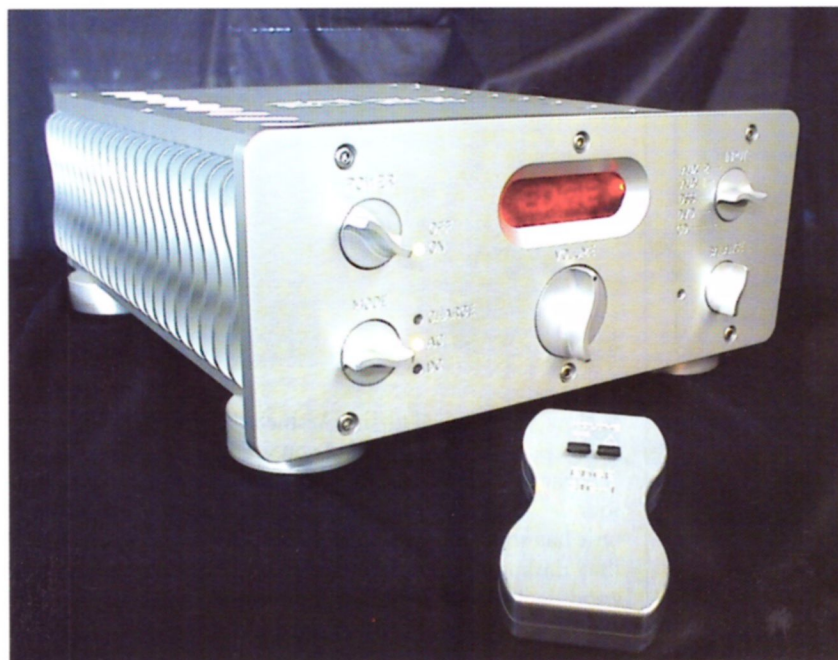
Given the superb performance of Edge's Signature monoblock amplifiers, I jumped at the chance to listen to their newest addition to the Signature family, even though it was the last to arrive during the tests, and accordingly, will require a bit of further listening.

What lifts this unit out of the ordinary is the fact that it can be battery-operated, as well as through the usual AC line source. The Edge is not the first such design I have heard. And it has at least two common sonic shortcomings that the others had: (1) a lack of punch and testicular capacity in the lowest frequencies and (2) less dynamic authority throughout the spectrum. The dynamic contrasts simply aren't as wide or as vivid as they ought to be, even in AC operation.

But how just plain gorgeous the Signature sounds in its battery-driven mode! Talk about *crème fraîche*!

At this point, I should note that, save for the Conrad-Johnson, all of the line stages under review here have detachable AC cords, and I could have listened with the Kimber Palladian connectors, which cleaned up the sound in a way not dissimilar to that of the battery-operated Edge. It didn't seem fair to do it in a non-stock version (although I am just itching to run this series again with the Palladians in place). If the Edge, and to a lesser extent the Kimbers demonstrate anything, it is, and conclusively, that there's a lot of crap coming through courtesy of your local power plant.

What you get with the Edge battery is a genuinely exquisite top octave, a rich, lifelike midbass that allows the lower strings not only to sing with authority, but with their individual harmonics isolated and intact, down to the lush sound of the rosin the players use. Each player stands alone, in his own small pool of air. There are several gong strokes in the Penderecki *Credo*, and it is a revelation to hear here just how complex the harmonics of the gong are. The attack on all the percussion instruments in the *Credo's* Fourth





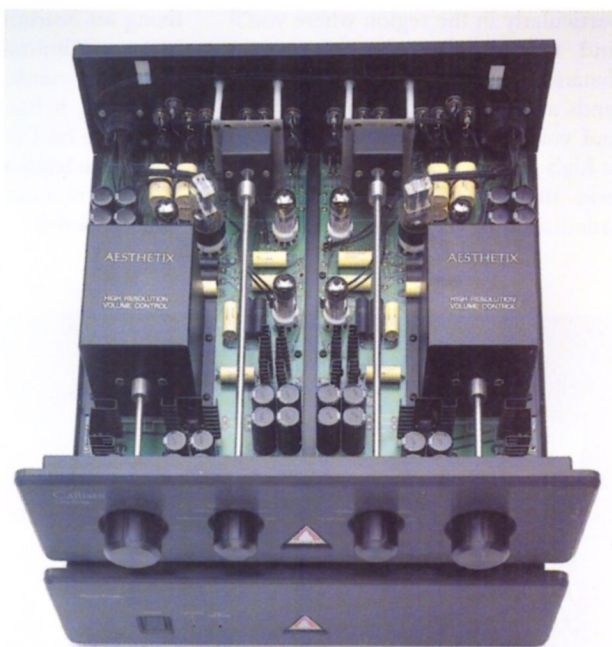
Movement—tympani, tambourine, and cymbals—is so distinctly rendered that all sound tonally more complete. One more advantage: It brings home much of the hall ambience more recognizably than you ordinarily hear it. Not only do we get much of the transparency we have with the Hovland (and the upcoming Wyetech), but we get that elusive feel of the music, at least during passages that don't require it to reproduce *fortissimos*. And in terms of neutrality, the Edge is an almost perfect "five," neither yin nor yang.

On the down side? The Edge, in its battery mode, doesn't quite "grab" voices in the way the best units can, that is, make a voice sound like a singularity that arrives at the ear as one wave. Perhaps this is because, in terms of dimensionality, the Edge just doesn't recreate the "body" of that instrument. And there is a compression of rear-stage width that bunches players together at the back center. The battery itself can run for about 12 hours, although the preliminary instruction booklet gives no hint about how long it lasts before you'll need to recharge it (run it all the way down, and it will need an overnight recharge).

The Edge in the AC mode is, by contrast, not particular-

ly special. It has more kick in the extreme bottom, more separation in the rear of the soundfield, and far less air and space between the ensembles and players within. Unlike the Edge battery, the AC version shortens the decay "tails" of transients, while blurring voices and reducing the overall air about the orchestra. There is also a reduction of the sweetness, purity, and delicacy of the top highs. That aforementioned gong isn't as instructively distinctive, nor are the mid-bass strings nearly so articulate; indeed, they sound a bit muddy. The sound's character is a bit darker, and certainly there are minor solid-state artifacts. I'm not sure I know how to rate this thing. The battery stage, if you can forgive the low-bass shortcomings and a loss of dynamic contrasts, would surely be three-and-a-half stars. The AC stage (and this, remember, I am contrasting with the battery drive, not letting it stand on its own) I'd comparatively rate well below that, maybe, two and a half. We could split the difference and call it ★★★ or recommend it solely operated in its battery mode.

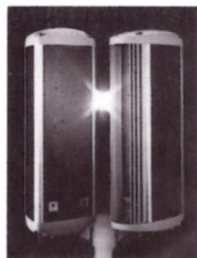
#### Aesthetix Callisto Tubed Line Stage



**H**ow you'll react to the Aesthetix Callisto may entirely depend on how troubled you are by its darkish, yin-like "character." Heard on its own, and after warming up—it sounds "darker" when first turned on—this three-piece unit has stunning dynamics, some of the best ever. Inside that darkness, there is, contradictory as it may seem, a good deal of transparency. You can hear straight back to the farthest wall of the orchestral soundstage. And the players on any musical stage are reproduced with that

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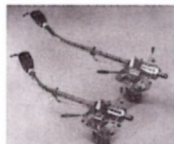
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kind of specificity that lets you almost "see" them. It also has the ability to reproduce that 3-D quality of imagery, throughout most of the stage, that can be jaw-dropping to novitiates. (It is only surpassed in this regard by the Conrad-Johnson, and not by all that much.)

The Callisto's dynamic "jump" gives it a mighty realism when it comes to reproducing unamplified music. When this jump is, sonically, combined with the quite low distortion and apparent lack of sonic artifacts like grain and texture, the unprepared listener may well think he has stumbled into a new kind of listening experience.

I have used the Callisto as a reference for quite a few months now, forgiving the darkness, for the sake of the other things it does so well (or lets the recorded music do so well), particularly its wide dynamic bandwidth, which was a revelation at the time.

If it does anything wrong, the flaw comes with in its weighting at the bottom of the dynamic spectrum: It sounds as if notes have been slightly transposed downward. The kettle-drum batteries on the Penderecki *Credo* sound tubbier, close to bass drums; much of their distinctive timbre is suppressed. There also is a bit of this at the top, where the Callisto is not par-

ticularly dynamic, so that the last ounces of bloom or air are hidden, to the detriment of high transient harmonics. ★★☆☆

#### Wyetech Opal Tubed Line Stage

**W**yetech is a Canadian firm, located in a suburb of Ottawa, dedicated to sophisticated tube equipment designs. Since I wasn't particularly thrilled with the Opal's little brother, the one-piece Jade, I did not anticipate that the two-piece Opal would be the masterpiece it is. But indeed, this is the kind of line stage we ought to have had from Audio Research.

Its failings? Its inability to recreate a third dimension for individual images and just a touch of softness on transient attacks. Its controls are clunky (and, on our unit, the balance controls for each channel were not rightly aligned) and there is no remote (it degrades the sound, they say).

It can, its designer Roger Hebert says, swing 50 volts, and in terms of dynamics through almost all of its quite wide frequency range, it sounds as if it does just that. (You might just find yourself running out of power during *fortissimos* if you've an ordinary solid-state amp. The climax of Act One of *Tosca* will prove the point.) Any

strain you might hear won't be the Opal, something we learned the hard way during the sessions.

The Opal is uncannily transparent. In just that sense alone, it exceeds every other line stage in the test. Not only that, but the distortion, top to bottom, sounds lower here than on any other line stage I tested. It gets the dimensions of the soundstage just right, front to rear, and it has a sound

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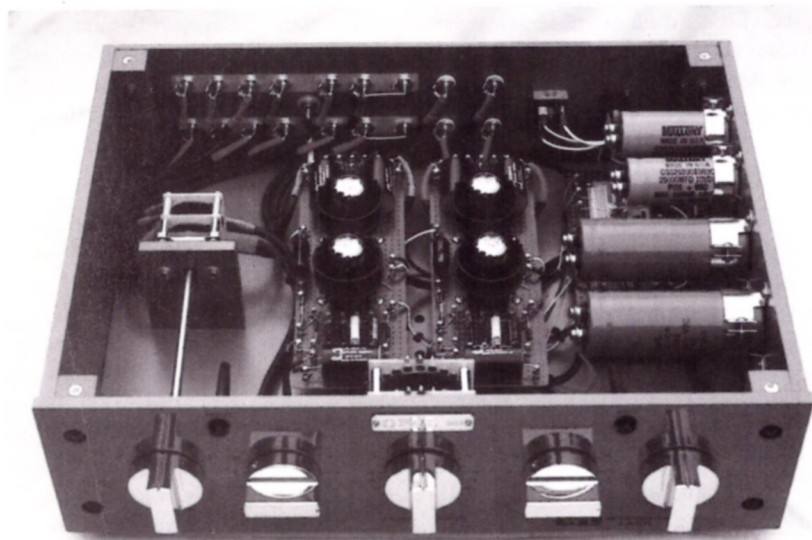
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you'd call, as my notes suggest, "extremely subtle, neutral and cool." It picks up every detail on the recording, rendering audible some ordinarily buried lines and instrumental touches. In untangling these lines, it is a perfectly natural performer, never giving you the sense that it is "high definition" or "analytic" or with razor-edged boundaries. It can even do an aspirated consonant, by which I mean that slight escape of air that precedes a hard spoken (or sung) consonant. That is, friends, downright supernatural.

While the Opal is not seductively tinted in the titillating way the Hovland is, it is "seductive" to listen to. I think that is because of its purity and transparency, which will knock out many experienced listeners. These qualities make it seem a revelation, since you'll be "experiencing" the entire sonic spectrum without the sense that you're missing anything. Put another way, you'll find there's more "there" there on every disc you play. On unamplified plucked string instruments, of which there are abundances in *Trance Planet*, you may feel, as I did, that you really haven't heard all there is to hear of the sounds, even though you know the music.

★★★★

#### Conrad-Johnson Anniversary Reference Triode Tubed Line Stage Series II

**F**or reference's sake, and rather expecting the Connie J to take a shellacking after the Callisto and Opal, we inserted the second generation ART into the evaluations, little expecting to be bowled over.

But despite some serious reservations I had, this line stage did three vital things so powerfully well that it put the thrill back into the experience of the music, as opposed, say, to the thrill I got from the Opal's reproduction of the music.

My reservations may well be the result of aging tubes, and until I can find out, I suggest you take this with the conditional gram of salt we review-



ers sometimes suggest (thus blaming you all, not ourselves). The C-J demonstrated quite a bit of texture and that texture filled the spaces of the music in the rear soundstage. Could have been tube rush.

It was also not as precisely focused in rendering images as the other bests in this bunch. Individual images sounded as if they were being "seen" through desert heat. And, in addition to its slightly golden warmth (not as pronounced as that coloration used to be in past C-J designs), it also has—not a frequency—but a dynamic roll-off at opposite ends of the frequency extremes, so in many situations, it can sound a bit bass shy and lacking in oxygen at the top.

But be damned if the ART didn't get the visceral thrill of music through loud and clear. The "Te Deum" at the end of Act One of *Tosca* had a thrilling opera-house likeness that raised the hairs on my arms (and Markwell's, too). With the ART in the playback chain, you, to some extent, forget the sound except as a function of the music. Scarpia ("Va, Tosca") is scary, and the contrast between his star-stalking lust inside the cathedral walls, during a morning mass, makes the intended dramatic contrast, one not usually felt in any living room. And with the ART's unparalleled ability to recreate dimensional images, front and rear of the stage, you think you are hearing real people. There's a body behind Scarpia's voice as he lifts the roof off the house (and it isn't a puny 97-pound weakling)

and there are what sounds mighty like real congregationalists in deep center to his rear. Even the mighty bass drum, imitating the cannon blasts outside the church, sounds as weighty and well-defined here as it does with line stages that seem to go lower.

Part of this is because of the way the midbass is contoured. It is in this region that the ART is at its considerable dynamic best, with much of the "action" or "jump" of our experience of the real thing. No other line stage in the survey even comes close to suggesting the authority the Connie J does—the authority that comes from music's essential foundation. The ART also has a nearly equal dynamic bloom further up in the upper midrange that, taken together with the midbass, really does imitate the way real sounds rise and fall when they are heard live.

And it is just because in its range, harmonically and dynamically, that the Series II gets it right—because it, alone, sounds, despite its shortcomings, closest to the real thing, that I think it best of the bunch. Certainly Four Stars, probably ★★★★★?

*Postscript:* Once this piece was finished, and just after deadline, Jim White (who had/has not read this report) showed up to install a few long-planned mods to the Callisto Signature. The sonic difference between the two versions almost literally floored HP, who will now have to change the relative rankings of the top three line stages. All this and more in the next issue.