



### Pass Labs INT-25 integrated amplifier

Herb Reichert | Jan 23, 2020



In my personal life I prefer the minimalist, one-box architecture of integrated amplifiers. Always have. Before I started writing for Stereophile, my only audio system consisted of a pair of 15 ohm Rogers LS3/5a loudspeakers (with factory wall mounts) and an ancient Creek integrated amplifier, connected to my computer via a Halide DAC HD, and to an Oppo CD player. That system had pitch-perfect tone and was satisfying with all types of music.

I would never purchase an integrated amplifier with a DAC or phono stage residing in the same box. To me, that's like buying an active loudspeaker. Why would I pollute a fine audio component with a non-upgradeable and possibly third-rate ancillary? For digital, I want a super-quality DAC like the HoloAudio Spring I used for this review. For my moving-coil cartridges I want a step-up transformer and the best tubed phono stage I can afford. Therefore, I need my integrated amp to be a simple, purist, high-bias class-A design, like the new Pass Labs INT-25 (\$7250).

#### Description

If you look at the back panel of the INT-25, you'll see only three pairs of gold-plated RCA line-level inputs and two pairs of Furutech loudspeaker connectors, plus a generic IEC socket.

If you look at the front, you'll see a modestly thick brushed-aluminum faceplate with a small OLED display that tells me only where the volume level is set, plus a power-on button, three input-selector buttons, a mute button, and an IR window for the heavy, brushed-aluminum remote control. Very clean and minimal.

The INT-25 measures 17" W × 6" H × 17.9" D and weighs more than 50lb, which makes it infinitely more manageable than the INT-60 I reviewed back in November 2016. The INT-60 measures 19" W × 7.6" H × 21.2" D and weighs 93lb. I could not lift the INT-60 into or out of its box without help.

The INT-25 is simply a Pass Labs XA25 amplifier with a minimalist, single-ended version of the INT-60's line-level preamp attached. I wrote Nelson Pass an email asking him to give me some new words to explain to my readers why the XA25 amp drives so many loudspeakers with so much dynamic authority and unmatched transparency. He responded:



"The XA25 has a very simple topology using some new parts and uniquely operating them in push-pull class-A without degeneration. Developing the .8 series, we clearly saw that degeneration—putting resistance in series with FET Source pins (or Emitter pins for Bipolar transistors) impacts the sonic performance, and not for the better.

"Of course, there is a reason why people use degeneration (the 'other form of feedback') in gain stages—it stabilizes the characteristics of the transistors so that you don't have to do precise matching and compensation to keep circuits stable. "At the same time, it is a form of feedback, and carries some of the same baggage. Interestingly your 'no feedback' solid-state amplifiers routinely depend on degeneration in the gain stages to control the stability and distortion, and so do not achieve the same characteristics that help make SET tube amps so popular.

"The XA25 is our first example of undegenerated push-pull class-A with Vertical MOSFETs, enabled by new techniques. The result is more life to the character and improved dynamics. This is not a big surprise; degenerating resistors are usually inserted to 'tame' a transistor's personality.

"So, with power FETs, it turns out that there are a couple more advantages that you don't see with bipolar transistors: FET character is 'square-law': The current through the transistor is a square function of the Gate-to-Source voltage, and in this respect, the FET is like a tube.

"Push-pull class-A operation of purely square law devices results in a perfect cancellation of distortion (literally perfect), while degeneration adds measurable higher-order harmonic and intermodulation distortions to that arrangement.

"Also, square law devices in push-pull class-A have a naturally larger class-A envelope at a given fixed bias, along with a lower output impedance and higher efficiency.

"What's not to like?"

## Protocol

For the purpose of this report, I'm going to forgo my normal amp-testing procedure and not bother connecting the INT-25 to the whole pile of speakers lining my hall walls; if you read my XA25 amplifier review, you'll know how the INT-25's power amplifier section works with most of them. You'll also learn how the INT-25's amplifier section compares to the other power amplifiers stacked by my equipment rack.

Instead of all that heavy lifting, I decided to use only three transducers: the Harbeth M30.2 monitors; the DeVore Fidelity Orangutan O/93 floorstanders; and the RAAL SR1a ribbon headphones.

## The Harbeths and the Rhinemaidens

The first music I experienced with the INT-25 driving the Harbeth 30.2s was Scene 1 of Wagner's *Das Rheingold* with Kirsten Flagstad singing Fricka and Georg Solti conducting the Vienna Philharmonic (3 LPs, London OSA-1309). The moment the Rhinemaidens appeared, it was obvious the INT-25 was reaching extra-deep and extra-microscopically into this uniquely spacious recording. The voices of Alberich and Wellgunde and the huge force of the Vienna Philharmonic came from a more vast, more precisely described three-dimensional space than I had ever before noticed. Those qualities made this spellbinding recording even more vivid and dramatic.

I mean, who out there doesn't enjoy "watching" a Wagner opera from microphones positioned just above the performers' heads? This slightly elevated view makes me feel like a detached spirit hovering above and among ancient gods. This landmark recording, produced by Decca's John Culshaw and recorded by Kenneth Wilkinson, cast a top star in every role and had them perform on an enormous studio stage (with a grid painted on the floor). Each singer's choreographed movements were mapped out to simulate a scaled-down version of an actual performance. Listening with the Harbeth 30.2s pointed straight at me in the extreme nearfield, I felt the weight of the orchestra and sensed the performers' movements.

When I used this recording to compare the INT-25 integrated to the combination of Pass XA25 amp and PrimaLuna EVO 400 preamp, Decca's studio space sounded distinctly more 3-D via the INT-25 than it did with the Pass-PrimaLuna combination. This newfound dimensionality appeared to be related to the INT-25's greater depth of field: Performers' voices seemed more in focus no matter where they were positioned on Decca's studio stage. The walls of the Decca studio were more discernable.

More surprising was how the overall sound of this recording seemed finer-grained with the INT-25 than it did through my Rogue Audio RP-7 preamp and Stereo 100 amplifier combination—a combo that excels at grainlessness.

## Driving DeVore Fidelity

The DeVore Fidelity Orangutan O/93 loudspeakers are, by design, tube-friendly. They couple well with single-ended directly heated triode amps such as the 845-tubed Line Magnetic LM-518 IA and the Elekit TU-8600R single-ended 300B integrated. They're also friendly with low-power class-A solid-state designs by Nelson Pass. The O/93s are a chief reason I fell in love with Pass's First Watt SIT-3 amplifier; now, with the INT-25, I'm discovering a new and different side of the Orangutan's personality.

The Pass Labs integrated elicited a pristine, extremely well-sorted behavior from the O/93s. It played Wagner's *Die Walküre*, with Birgit Nilsson and Gré Brouwenstijn singing and Erich Leinsdorf conducting the London Symphony Orchestra (44.1/16 FLAC, Decca/Tidal), with an unprecedented amount of detail and spatial acuity. Better still, the INT-25 allowed the O/93s to play this utterly stunning Kenneth Wilkinson recording at highish volumes—with no noticeable clipping. No blurring. No clumping of detail. And no solid-state hardness.

Please forgive my focus on opera recordings. Probably only a few of you listen to this arcane art form. I use them in my reviews because I like how they sound, and opera recordings present difficult information-recovery challenges for any hi-fi system. I no longer have the Decca LPs (which were among the most thrilling-to-play, information-rich discs I've owned). But even from a Tidal stream, this Wilkinson-recorded Wagner is a musical supernova that instantly shows me how low-distortion clear (or smeared-and-blurred) my system actually is. The INT-25 let the O/93s make that *Die Walküre* into something so beautiful I just laid back and basked in it. Life was good—and poetic. No question: With the O/93s, the INT-25 made a righteous, musically satisfying alternative to tubes.

## Compared to Line Magnetic triodes

My Russian neighbor was totally zonked out, snoring on the couch, while I quietly exchanged the INT-25 for the Line Magnetic LM-518 IA tube integrated. When I turned the volume back up, he snapped bolt upright and began a disoriented barrage of Russian curses. "%\*#@%\*#@?"

I was playing exquisitely recorded guitar music from the album Tassili (44.1/24 FLAC Anti-Epithaph/Qobuz) by Tinariwen, a Saharan Tuareg group that performs a type of Malian music known as Tishoumaren. My neighbor's response: "What the & %\*# is this?" He couldn't tell I was laughing. "Be quiet and listen," I instructed.



This album has a unique, extremely vivid sound because it was recorded in a series of unedited takes performed live in the silence of the desert, near the town of Djanet on the Tassili n'Ajjer plateau in Algeria. The Line Magnetic's 845 tubes driving the DeVore O/93s amped up Tinariwen's vividness factor. Playing Tassili, the sonic force produced by the LM-518 made the INT-25 sound not threadbare, nor dry, but slightly skeletal.

I and the now-calm Russian sat in silent awe, listening carefully to every track as rendered by the Line Magnetic amp. Vlad broke the silence first, saying how intense and real the guitar on "Tameyawt" sounded. How every note was "%\*#@ exploding."

**It was true.**

Tinariwen's music is rooted in moody, sometimes-droning electric guitars and relentless drum rhythms that shift unexpectedly. With the Line Magnetic LM-518 (driving the O/93s), goatskin drums pounded the floor and note decays appeared as touchable room-filling densities. With the INT-25, these densities were rendered more as resolved detail and less as energy, as through the 845 tubes.

Bass was tighter, and drumbeats pounded the floor more distinctly with the INT-25 powering the O/93s. Nevertheless, it was the crisp clarity with which the Pass labs projected vocals into the room that held my attention. The INT-25 made the O/93s image more precisely; but images were not quite as weighty or tangibly present as with the LM-518. The INT-25 seemed uncanny in how it showed fingers on guitar strings and tapings on the guitar body. In comparison, it was uncanny how physical and painterly the Line Magnetic LM-518 IA made the guitar amp's reverb sound.

Fancy-pants audiophile audio is all about where various components direct the listener's attention: The INT-25 focused more on the visions in my head, while the LM-518 IA addressed feelings in my body. Both honored the music on Tassili.

The INT-25's ability to excavate detail was even more apparent on Tinariwen's recording, from their album [aquariumdrunkard.com/2015/12/01/tinariwen-live-in-paris](https://aquariumdrunkard.com/2015/12/01/tinariwen-live-in-paris/)>Live in Paris (48/24 FLAC Anti-Epithaph/Qobuz), of "Tinde Final Tinariwen," featuring 75-year-old tinde master Lalla Badi performing at Théâtre des Bouffes du Nord. Lalla Badi's voice made

me cry in 30 seconds. The powers of rhythm and tone forced my surrender. The word *tinde* in the title refers to the goatskin drum as well as the intimate celebratory nature of the chosen songs. Again, on this album, the LM-518 exceeded the INT-25 in its ability to deliver the dense sound bodies of the performers and their instruments. It also edged out the Pass Labs INT-25 at making goatskin "feel" like real stretched skin.

At an average level of only 84dB, the INT-25 made bass that physically shook the floor and the couch. (I don't know how *Live in Paris* was recorded, but damn! It sounded live in a way I think live actually sounds.) The reverb drone from the electric guitars made the air in my room feel like it does at concerts with enormous speaker stacks. Rhythm delivery kept my head nodding in time.



While comparing these two drastically different amplifiers, I fell back in love (again) with the DeVore Fidelity Orangutan O/93 speakers. I forgot how warm, vibrant, and satisfying their midrange could be. I had never realized how elegant and detailed their top octaves could be. Best of all, I discovered how fresh and transparent they could sound with some sparkling clean solid-state. With the DeVore O/93s, the INT-25 was a highly recommendable alternative to tubes.

## Compared to XA25 + HPA-1

The most relevant comparison I can make is between the INT-25 integrated, which costs \$7250, and the \$4900 Pass Labs XA25 amplifier connected to the \$3500 Pass Labs HPA-1 line stage/headphone amplifier. Together, these Pass Labs separates cost slightly more (\$8400 plus interconnect) but include a world-class headphone amp designed by Jam Somasundram.

After extended listening, I could not describe the sound of either the INT-25 or the combination of HPA-1 and XA25 as vivid in a tube-like way, or one that presents musical tone in its most completely saturated form. Both Pass Labs setups sound fresh, alive, and clear, but a little Apollonian compared to the above-mentioned Line Magnetic SET amp. However! The INT-25 does generate a delightful amount of "FET sparkle" and a distinct but subtle "tube-like" glow. The HPA-1/XA25 combo does not. Neither does any other solid-state amplification I know. This is an important distinction. This subtle radiance enhances the INT-25's breezy, clear-sky transparency, making the INT-25 the most musically satisfying yet neutral (I hate that word) solid-state amp-preamp combination I've encountered.



## With RAAL-Requisite SR1a headphones

Because its drivers are full-range ribbons, the RAAL-Requisite SR1a headphones have a DC resistance of only 0.018 ohms; this requires a power-absorbing resistive network (included with the headphones) to bring the ribbon's dead-short impedance up to a level capable of being driven by a loudspeaker amp like the Pass Labs INT-25. (The RAAL ribbon headphones were designed to be used with loudspeaker power amplifiers in the 50W to 150W range—not a traditional headphone amp.)

I played Act 1 of the previously mentioned *Die Walküre* and Scene 1 of the previously mentioned *Das Rheingold* and, as I often do while listening to opera or large orchestral recordings via headphones, I sat there shaking my head in amazement. The INT-25 put the uncanny resolving powers of this unique transducer on full display. Even more than my JPS Labs Abyss AB-1266 Phi headphones or the HiFiMan Susvaras, the RAALs resolve—by which I mean something conceptually and perceptually different than the dry, gray, unsupple, artificially etched sounds some audiophiles mistake for resolution. The SR1a shows the INT-25 about 5.8 ohms of series resistance, and while said resistance does consume amplifier power, the RAALs have no crossover or time-twisting reactances. When I use these full-range ribbons, I feel like they are exposing the kaleidoscopic inner workings of a recording better than any other transducer I've encountered.

On the Decca *Rheingold*, this exposure didn't just show me an avalanche of tiny, previously unseen details, nor did it show me just the Decca studio space and the singers moving about on the gridded floor under the microphones: It seemed to reach back into the guts of the INT-25 and show me, in sonic terms, the clock workings of its separate amp and preamp sections. What the RAAL headphones exposed was something that confirmed my developing suspicions: The INT-25's minimalist, Wayne Colburn-designed preamp and its Nelson Pass-designed amplifier (with its lack of degenerative feedback) are the "secret" Pass Labs ingredients that raise the INT-25's sonics to the best solid-state I've ever heard, along with the First Watt SIT-3 and J2 power amps.

## Conclusion

Every day, the Pass Labs INT-25 sounded like a purer, more austere instrument than the combination of the Pass Labs XA25 amplifier with any of my in-house preamps. Every day, I noticed how the INT-25 offered a less obstructed and more transparent view of what my source components were excavating from my recordings. In addition, it made my hi-fi less hi-fi and the musicians more there—with a lower level of editorializing than I've gotten from any previous amp-preamp combination I've reviewed. My new solid-state reference.