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Pass Labs XP-22 Preamplifier and XP-27 Phonostage

REVIEW
by Andrew Quint
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I've had Pass Labs power amplifiers in my audio system for more than 20 years. A pair of Aleph 0 monoblocks was first, eventually joined by an X5, when I took the plunge into multichannel music. Now, I employ three XA 60.8s for the main-front and center channels, plus an Aleph 0s for the surrounds. For some reason, in all that time, I never tried a Pass preamplifier. So when Robert Harley proposed a review of the Pass Labs XP-22 preamp and the XP-27 phonostage, I leaped at the chance. Ok, that's not entirely true—I didn't leap. My leaping days are over. But I did stand up very quickly when I got the news. I have witnesses.

Even steadfast admirers of Pass electronics may not be aware that the company's products have long been designed by two individuals, founder Nelson Pass and Wayne Colburn. Colburn first worked with Pass at Threshold Audio in the 1980s, and later joined Nelson at his new company, soon becoming a partner. There's definitely a division of labor at Pass Labs, with Colburn largely responsible for the preamplifiers, integrated amps, and the manufacturer's only DAC to date, while Pass himself is in charge of the "big iron"—i.e. the power amps. However, the two are in constant dialog when developing new models, and, as expected, listen critically to each other's designs. Even for these hardcore engineering types, listening outranks measurements in the evaluation process.

Pass Labs launches new models relatively infrequently—a product life of seven or eight years is typical. When I asked Wayne Colburn what prompted the introduction of the XP-22 and XP-27, he responded that "some of this was regulation driven for emissions and safety standards. This led to power supply redesign with new lower-noise transformers and EMI control. We also upgraded our Audio Precision [analyzer] to the latest model and upgraded our ability to correlate measurements with sound."

Highly regarded for the volume controls he designs, the famously self-effacing Colburn does his best to give the credit to the semiconductors utilized: "Just a state-of-the-art chunk of silicon," he said. "I have worked on volume controls since the Forte 44 and Threshold T2, and they are pretty critical. (Forte was a lower-priced Threshold product line.) I had my own unique design in the original X preamps, and then NJR from Japan paid us a visit with a new part. They seemed rather proud of it, and Nelson and I gave it a try. I was skeptical but pleasantly surprised. They had done a great job—a compact solution with no inductance or capacitance due to packaging or layout, and great matching, coupled with transparency."

The power supplies are dual-mono, employing very quiet, double-shielded toroids that have lowered the noise floor over prior models. The output stage is more robust, which makes driving long cable runs easier. In all their products, Pass and Colburn strive for simple circuits and use parts with the most linear behavior. As low-level nonlinearities are additive in their impact on sound quality, avoiding them in the first place reduces the need for negative feedback—a technique that itself has a deleterious effect on sonic neutrality and detail.

The XP-22 preamplifier is a two-chassis design, the control module attaching to the identically sized power supply with a 9-pin JAE umbilical cable. The two boxes are stackable, and there are pieces of felt glued to the bottom of the preamp's four feet to prevent scratching the top surface of the power supply. The owner's manual does comment that the "best performance" results when the power supply is sited on another shelf. The rear plate of the power supply sports an IEC 320 power receptacle with an associated rocker on/off switch, as well as the connection for the JAE cable. A discrete blue LED on the front panel of the power supply lights up when the preamp is turned on.

On the front of the preamplifier's control unit, there's a 5-1/8" x 5/8" alphanumeric display positioned in the middle. To the right of the screen is the rotary volume-control knob and to the left, in addition to a headphone jack, are four small buttons to select inputs, dim (or turn off) the display, and mute the unit. The volume control is a single-stage device that's said to be quieter and more accurate than earlier iterations. It's the same one used in Pass Labs' newest and most elaborate preamplifier, the XP-32, a three-piece component that situates the gain circuitry for each channel in a separate chassis. Around back, besides the AC and power cable connections, are five sets of stereo inputs, two balanced XLRs and three unbalanced RCAs. The last of the RCAs, "Input 5," is always set to unity gain for a home-theater application, where the home-theater controller handles volume. To protect us from ourselves, when Input 5 is selected, the XP-22's gain automatically resets to 0dB to avoid what the owner's manual decorously calls "nasty surprises." There are three pairs of outputs, one XLR and two RCAs.

The machined aluminum remote has decent heft, but not so much that you'll break the glass coffee table if you happen to drop it. It has all the functionality that the XP-22's front panel provides, plus the welcome ability to easily adjust left/right balances, a feature that's of use in more rooms than you might think. If, say, the balance needs to be shifted to the right, it leaves the right channel at the level you started listening at and lowers the left channel level by the desired amount. Subsequently, when the overall volume is adjusted up or down, that difference is maintained between the two channels. Each press of the "Increase" or "Decrease" button raises or lowers the level by 1dB.

The XP-27 phonostage is also a two-box design. On the rear panel of the control unit, in addition to the power connections, are two sets of RCA inputs—this phonostage can be connected to two turntables or dual tonearms on one 'table—and two pairs of outputs, one each XLR and RCA. Three knobs in front facilitate the optimal use of any cartridge. One, to the far left, adjusts resistive loading of the cartridge, with options for 30, 50, 100, 160, 250, 320, 500, 1000, and 47k ohms. The adjacent control offers choices for reactive loading—you are changing capacitance. The alternatives are 100, 200, 320, 430, 530, and 750 picofarads. Most moving-magnet (and moving-iron) cartridges can be successfully loaded at 47k with 100pF of parallel capacitance, though adjustments to the latter parameter can occasionally be beneficial. As vinyl aficionados are well aware, getting the resistance load-setting right for a moving-coil cartridge is critical to extracting its best performance. The owner's manual outlines a methodical approach for adjusting the resistance and capacitance settings. The third knob changes the gain setting—53dB for moving magnets, either 66dB or 76dB for moving coils; moving-iron cartridges generally like 66dB. Finally, a series of buttons on the front panel will let the user chose between the two inputs, engage a subsonic filter, and mute the XP-27.

I listened to the XP-22 and XP-27 with Pass XA 60.8s, my long-standing reference amplifiers, driving Magico M2 loudspeakers. In addition to its connection to the XP-27, the XP-22 received analog output from an Ideon Absolute DAC that had decoded digital data from either an Oppo BDP-103 or a USB output from a MusiCHI SRV-1 server, reclocked with Ideon's Blackstar edition MasterTime. LPs were played on a VPI

Scoutmaster with the JMW Memorial tonearm. Two cartridges were used, an Ortofon Cadenza Bronze moving coil (0.4mV output) and an Acoustical Systems Fideles moving magnet (5.5mV output.) Both cartridges were meticulously set up by Doug White, owner of the ultra-high end store, The Voice That Is. (See Neil Gader's interview with Doug in Issue 306.)

With the Pass XP-22 and XP-27 in the audio chain, I experienced the most musically involving sound I've yet heard under familiar circumstances—that is, in my own room. That's in comparison to the sound quality I've achieved in recent years with digital sources using *no* preamplifier, which may be counterintuitive for many audiophiles. We're so used to "stripping away veils," to "opening windows," to "cleaning lenses"—the list of strained metaphors seems inexhaustible—that the idea of *adding* something to the reproduction chain that improves things can be kind of mind-boggling. But numerous listeners have made this observation, and many experts agree that a good preamplifier can buffer an input impedance mismatch so that the interconnect from preamp to power amp doesn't cause sonic degradation. Not just any old preamplifier can do this—many systems *will* sound better when the preamp is sent packing. But the Pass XP-22 is one that's good enough to move the needle in a very positive direction.

Musically meaningful detail and resolution were excellent. The Pass components take these parameters right up to the limit of what's believable without crossing the line into sound that's clinical or over-etched. Several examples from my listening notes involve the lowly triangle, as played by both orchestral and jazz percussionists. Listen, for example, to the chorus of "The Great Pagoda of Funn" from Donald Fagen's *Morph the Cat* album. A triangle delicately rings out two eighth notes on the first and third beat of each bar. The *pings* are objectively quite soft, yet I can't imagine the song without them. Triangle figures importantly, as well, in Rimsky-Korsakov's *Capriccio espagnol.* The instrument is heard all by itself in the fantasia-like fourth movement ("Scena e canto gitano") but, on Lorin Maazel's 1979 recording with the Cleveland Orchestra, the triangle is just as intelligible when it must be heard over the din of the full orchestra in movements I, III, and V—just as the instrument is in life. With lesser electronics, this delicate sound can be obscured by everything else going on in a musically complex environment.

Tonally, familiar recordings were uncolored from the top to the bottom of the frequency spectrum. Trumpet, cornet, and flugelhorn—three instruments of the same brass sub-family—were readily distinguished from each other. If the recording possesses the information, the rendering of space can be dramatic and dynamics startling. Apropos of that last sonic parameter, I played music that was ubiquitous in audio stores circa 1983, Flim and the BB's *Tricycle.* This album was recorded by Tom Jung for his DMP label and has the distinction of being the first nonclassical recording to be released in the compact-disc format. On the title track, solo piano quietly plays a jaunty marching tune that's punctuated by detonations from electric bass and drums that demonstrated the potential for lifelike dynamics with the then-new technology. With the XP-22 playing a DSD64 download of *Tricycle* from HDtracks, the "we're not in Kansas anymore" sense of amazement that I remember from 35 years ago was experienced as acutely as ever.

My experience with the Pass phonostage was transformative. With the low-output mc cartridge, the system was dead quiet between tracks, even if I ventured close to the loudspeakers; the XP-27's manual confidently promises adequate gain for cartridges with an output ten times lower than that of the Ortofon.

Maybe you've seen the cartoon of two audiophiles standing in front of an analog setup as one says to the other: "The two things that really drew me to vinyl were the expense and the inconvenience." With the XP-27, dialing in the two cartridges was remarkably easy, even for someone with strong obsessive tendencies, accomplished efficiently by repeating a few minutes of either orchestral music or a piano trio and

experimenting with resistance and capacitance settings. For the Ortofon Cadenza Bronze, I ended up with a resistive load of 250 ohms and a reactive load of 100pF; for the Acoustical Systems Fideles, the corresponding values were 47k ohms and 320pF. The gain was set at 53dB for the mm and 66dB for the mc; the highest, unused gain setting probably would have been suitable for an ultra-low-output cartridge.

I haven't listened to records terribly much in recent years. For me, it wasn't a matter of LP playback being better or worse than listening to digital sources, but rather that they were *different*. In any event, I pretty consistently picked the digital option. Maybe it was a matter of convenience (reviewing audio equipment is certainly easier with a digital playlist) or maybe it was the value I place on those audio metrics where digital truly does have an edge. Perhaps it was a self-fulfilling prophecy: For more than a decade, I've been improving my digital componentry as I "downsized" my analog rig. A couple of thousand records were sitting largely untouched.

Using the XP-27, I came to appreciate a subjective audio term that I really hadn't grokked before. The word is *action*, and it was introduced by TAS's Jonathan Valin to describe a change in the presence of an instrument or voice that occurs when the music changes in one or more parameters including pitch, duration, and intensity. It can be seen, I think, as an advanced form of imaging—the source of the musical sound is precisely localized in space but there's an organic ebb and flow that derives from the music's progression through time. I heard this effect clearly as I listened to a vinyl reissue of a favorite Mercury Living Presence recording, the 1956 performance of Roger Sessions' *The Black Maskers* Suite, played by the Eastman-Rochester Orchestra with Howard Hanson conducting. This vividly scored work has many wind solos that briefly become the musical focus, and, via the XP-27, they did indeed become more pronounced in their immediacy. The CD version of this recording, the remastering of which was supervised in the 1990s by Wilma Cozart Fine, the original producer, also manifested "action." But the vinyl reissue had more of it, and the listening experience was more compellingly real. My consumption of LPs will be seeing an uptick.

The Pass Labs XP-22 and XP-27 represent the zenith of what's currently possible with linestage and phonostage performance. I've certainly heard none better. Whether you're a consumer of vinyl, digital audio in some form, or both, you owe it to yourself to hear these two exceptional products.

Specs & Pricing

XP-22 Preamplifier
Type: Dual-chassis solid-state
Power consumption: 40 watts
Inputs: Three single-ended RCA, two balanced XLR
Overall gain: 9.3dB balanced
Input impedance: 22k ohms
Output impedance: 25 ohms RCA, 50 ohms XLR
Dimensions: 17" x 4" x 12.5" (both control unit and power supply)
Weight: 40 lbs.
Price: $9500

XP-27 Phonostage
Type: Dual-chassis solid-state
Power consumption: 50 watts
Inputs: Two RCA

Outputs: One RCA, one XLR
Gain: 53dB, 66dB, 75dB
Cartridge loading: Resistive: 30, 50, 100, 160, 250, 320, 500, 1k, 47k ohms; reactive: 100, 200, 320, 430, 530, and 750pF
RIAA response: +/- 0.1dB 20Hz–20kHz
Dimensions: 17" x 4" x 12.5" (both control unit and power supply)
Weight: 45 lbs.
Price: $11,500

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