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The Audio Perfectionist Journal has been published and distributed in electronic form since 1999. Journal #9 is the first one to be printed on paper and distributed by mail and some background information is called for.

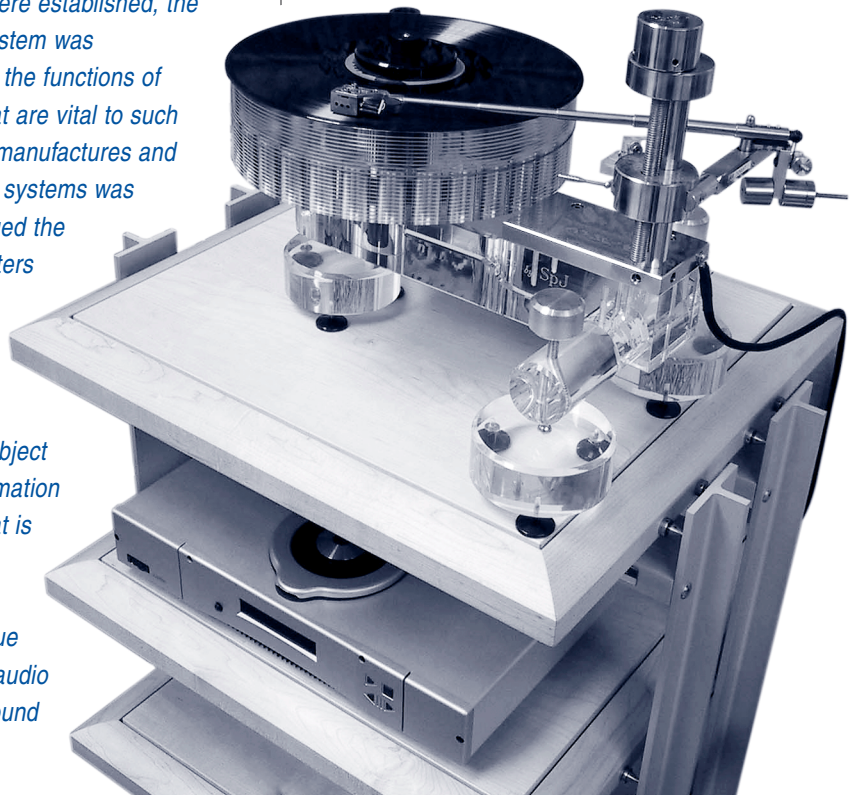
The content in the Audio Perfectionist Journal is based on my high fidelity approach to home music reproduction. Journals #1 through #8 defined this comprehensive method for evaluating audio components and systems. Goals were established, the purpose of a home audio system was described and we examined the functions of some of the components that are vital to such a system. The industry that manufactures and sells audio components and systems was scrutinized, and we challenged the expertise of some of the writers who review and criticize the industry's products.

Journals #9 through #12 will delve deeper into our subject of interest and provide information about audio components that is more specific and detailed. You need this information if you want to get the best value for the money you invest in audio components and the best sound from the components you choose.

Let's start by restating our primary goal and outlining some of the material that was introduced in previous Journals.

Emotion is a Good Thing

We have established that our primary goal is the emotional satisfaction that music can bring and we need to think about how to assemble an audio system that will accomplish this goal. We are confronted by a marketplace filled with a confusing myriad of audio products which are often proffered with hype and misinformation. Those who rely entirely on emotions to lead them to the components necessary to bring about musical satisfaction in the home may



experience years of frustration and financial loss. Wise enthusiasts will also enlist their intellect in order to ferret out those products that are well designed and fairly priced because the marketplace is filled with products that are neither.

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REVIEW


Wadia 861

INTEGRATED CD PLAYER

by Shane Buettner

Over the last three years I've spent a lot of time listening to disc players at my home and have brought many of them to Richard Hardesty's listening room to listen to them in his system and compare them with one another and with Dick's reference gear. During that time, Dick's reference CD player has been Wadia's 860, which was then upgraded to the 861 (the 861 sells for \$7,950). During this time many players have come and gone; few have even approached the Wadia's performance, and none have unequivocally surpassed it. In fact, I've yet to hear a single player that I prefer overall to the Wadia. Let's take a look at this reference quality player.

Design and Construction

The heart of Wadia's digital technology is the DigiMaster™ filter system. This software-based filtering solution is implemented on high-powered dual Motorola DSPs. Software-based solutions are inherently flexible, allowing relatively easy running changes and improvements. The 861's DigiMaster version is 2.4, which engages 32x oversampling with 44.1k and 48k signals.

The 861 is also compatible with signals up to 24/96 resolution (oversampling at 16x with 88.2k and 96k sources), but, since its drive is a CD mechanism, signals with resolution higher than



16/44 must come from a player with a DVD transport via the 861's digital input. Wadia makes a point of oversampling at a direct multiple of the incoming sample rate as they believe that asynchronous oversampling (oversampling a 44.1k signal to 96k instead of 88.2k, for example) has deleterious effects on sound quality. I don't have such a rock solid opinion on this philosophy. I've heard some products that perform asynchronous oversampling that sound bad, but I've also heard others that sound excellent, such as Musical Fidelity's Tri-Vista.

The 861 uses two K-Grade Burr Brown PCM-1704s per chan-

nel in a dual differential stack for each channel. (The 860 used Burr Brown PCM-1702s, and I'll explain the differences I heard between the two iterations later in the review.) Following the DACs the 861 uses Wadia's proprietary Swift Current technology. Based on a "current conveyer" IC (Integrated Circuit), this solution performs current-to-voltage conversion without negative feedback.

Many DACs incorporate their own I/V (current-to-voltage) conversion with op amps that employ negative feedback. The players I've heard that avoid feedback in the analog output section

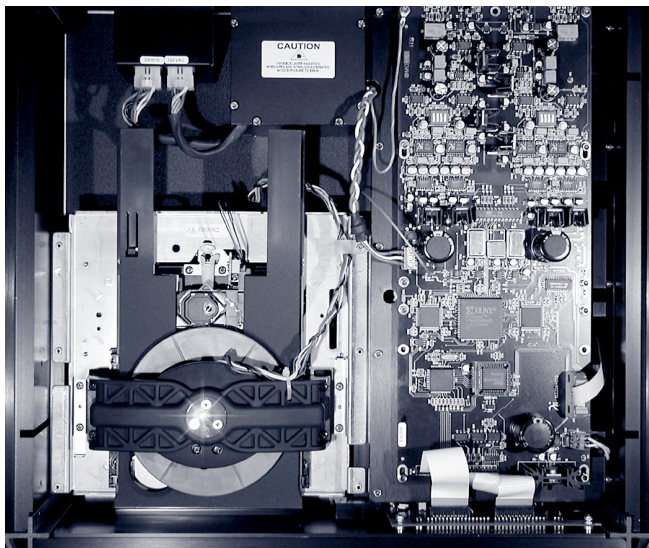


image in a more coherent and convincing fashion than nearly all the players I've heard that use feedback. Whether this is evidence of feedback introducing timing errors (feedback is a time domain phenomenon) or simply that the I/V conversion internal to DACs is generally poor I can't say for sure. That the Wadia eschews feedback and sounds this good probably means something though.

The 861 has user-selectable low-pass filter algorithms with different roll-off characteristics. The setting that Dick and I both prefer is algorithm "A," which has the gentlest roll-off and the best time domain performance, resulting in the most organic and musically satisfying sound.

The 861's analog output stages are truly balanced, maintaining balanced operation from the DACs to the output. It also has a sophisticated digital volume control and high current output stage that allow the 861 to drive an amplifier directly as a digital preamp.

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The Wadia's construction materials are heavy-duty, and I mean that literally. The 861 tips the scales at 48 lbs. and its remote control is heavier than a lot of *players* on the market. It has a fit & finish and overall look and feel that instill the kind of pride of ownership one expects from an \$8K CD player. The body is a "monolithic" machined aluminum piece and the disc drive mechanism is a trick job by Teac with its own internal clamping mechanism to minimize vibration and a self-aligning digital servo to adjust tracking errors. Wadia claims that this "full" clamping mechanism offers superior performance even to top-loading mechanisms that use a manual clamp that fits only around the disc's spindle hole.

The 861 uses two separate power supplies with their own toroidal transformers. One supply is dedicated to the transport mechanism and servo, while the other powers the D-A circuits. The transformers are shielded in an aluminum subchassis with neoprene lining on the top and bottom of the enclosure to prevent any hum, noise, vibration and other transformer-related artifacts from contaminating the audio circuitry. As Dick's experience of upgrading his Wadia 860 to an 861 indicates, upgradeability is a key tenet of Wadia's philosophy.

In addition to upgradeable software-based DSPs, the Wadia 861 is physically constructed in a modular fashion with separate, replaceable boards for inputs/outputs, DACs, display/controls, and the transport mechanism. The rear panel is also easily replaceable to facilitate new interface options. (The same is also true of Wadia's more affordable 301 CD player.) Wadia takes pride in making sure your cheese isn't left out in the changing winds of the digital world!

Performance

The Wadia 860 was smooth, refined, and musically involving in a way that nearly all CD players just aren't. Images were full and round with superb spatial delineation. But, compared to the most detailed and resolving players (like Ayre's D-1x), the 860 was noticeably soft and warm. And I don't mean to imply that was a bad thing. Playback of 16/44 redbook CDs can benefit from the right amount of softening around the edges. Over the long haul I've often felt it would be more pleasurable not to hear as many of the CD's flaws (particularly the hard, glassy sound that bright recordings exhibit) even if that means losing some degree of resolution. The Wadia 860 was still competitive with the best players out there, and while I may have found it

preferable in some ways to players with more resolving power, it was obvious that there were sonic tradeoffs for the "listenability" and musicality I enjoyed so much.

Being so familiar with other products that use Burr Brown's PCM-1704 DACs, Dick and I both expected that the 861 upgrade (which switched out PCM-1702 DACs for the PCM-

"The Wadia's construction materials are heavy-duty, and I mean that literally."

1704s, among other things) might be the cat's pajamas if it bridged the gap between the 860's musical righteousness and the more highly detailed response of players like the Ayre. Man, did it ever work out that way!

The revamped 861 has it all—extended response at the frequency extremes, a midrange with incredible resolution of low level musical detail and texture, and a grand soundstage with precisely drawn layers of image focus. The 861 retained all that was engaging about the 860 and added more of everything. The 860 got the music right, but the 861 can take you into the recording space in a way its predecessor couldn't. And it does so with a deliberate grace, making instruments and vocals feel more natural, real and vital than any other CD player I've heard. Although dCS' Verdi/Delius stack and Ayre's D-1x at least match the 861's resolving power, they don't quite match its vitality. Images of musicians and vocalists are fuller, more three-dimensional and more holographic. It's as though there's more air around the images, which have mesmerizing solidity and substance.

Tonally, the 861 is rich, full and warm but doesn't lack any degree of air or extension on top. It captures the full foundation of the music, along with all the midrange and top end detail, without the slight leanness that accompanies the Ayre D-1x's resolving capabilities. The 861 also has a remarkably deep soundstage, front to back, as well as incredible ability to focus far out to the sides of the stage. At all times even the subtlest differing planes are revealed to create most convincing images of musicians in front of you, spatially differentiated from one another and clearly defined.

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All of the 861's considerable attributes improve commensurately when a 24/96 signal is fed into its digital input. 24/96 is much more rhythmically right than redbook CD, with greater resolution of the timbres of instruments and the recording space. The ability to focus instruments way out to the sides and far back behind the speakers is particularly improved with 24/96 and the Wadia does more justice to these recordings than any player I've heard.

Conclusion

The Wadia 861 is one of the very best CD players available at any price, and is unquestionably the one that I enjoy listening to the most of all the players I've heard. The 861 is one of the players that you should look at very closely if you have the \$8000 to spend on a CD-only player. Musical Fidelity's \$6K Tri-Vista, for example, is nearly as good a CD player and not only plays SACDs, but is a cut above the Sony players with SACD performance. That being said, for those who demand the best and can afford it, the Wadia 861 is an absolute killer CD player. Its pure performance edge and Wadia's commitment to upgrades for its customers make this player a compelling option.

Special Note: As we were going to press Wadia informed us that a special edition version of the 861 is about to become available that offers an even more advanced transport mechanism and makes other incremental improvements to the player. We can't wait to hear it, and will be reporting on the 861 SE in a future issue of the **Journal**. [APJ](#)

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