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# GRAMOPHONE DREAMS

BY HERB REICHERT

THIS ISSUE: Herb auditions a 300B amplifier from Feliks Audio and the current, US-made Western Electric 300B tube.

## Stealth and nuance

From my writing chair, I can see about a dozen moderately priced tube and solid state audio amplifiers.

The five stacked next to my desk are First Watt or Pass Labs models designed by Nelson Pass. Across the room is a hybrid tube/class-D Rogue Sphinx V3 integrated. That black Sphinx is standing on its side behind one of the DeVore Fidelity Orangutan O/93 speakers. Next to the Orangutan is a Schiit Aegir. The most conspicuous amp in the room is my BFF, the Line Magnetic LM-518 IA,<sup>1</sup> which breaks the night's darkness with its tall, bright-emitter 845 triodes. Next to that is AmpsandSound's Bigger Ben KT88/6L6 single-ended speaker and headphone amp.

Behind the Ben is the made-in-Japan Elekit TU-8600S single-ended 300B kit-amp. In the shadow of the Elekit sits the stunning (but humble) 2.3W Decware 25th Anniversary Zen Triode amp.

Stage center is my reference high-power solid state amp: the Parasound Halo A 21+. The black, monolith-like Parasound is installed on a Harmonic Resolution Systems M3X-1719-AMG GR LF isolation platform and is connected directly to the wall outlet by a thick, stiff, 1m length of AudioQuest Tornado power cable.

Next to the A 21+ sits the new, made-in-Poland, \$6499 Feliks Audio Arioso, the stereo, single-ended 300B amp that I am about to describe in some detail.

But, before I do that, I am impelled to tell this brief warmup story.

For two weeks, I'd been listening to old-time country blues, mostly from collections by Harry Smith and Alan Lomax. I was listening with the Falcon Gold Badge LS3/5a's powered by the Parasound A 21+. This system's dramatically articulated sound was doing all the work, leading me excitedly from one artist or track to another. Rarely had my favorite kind of music felt more exciting or *important*.

Then, a few days before my deadline, I thought, "Dammit, I should get that Feliks amp into the system, give it some warmup time, and get my ears returned to single-ended, 300B sound."

Inspired, I hit pause on Turner Junior Johnson's "When I Lay My Burden Down" from *The Land Where Blues Began – The Alan Lomax Collection* (16/44.1 FLAC Rounder/Qobuz) and

exchanged the 300W (into 8 ohms) Parasound for the 300B Feliks Arioso, which is rated at 8W.

When I restarted that Turner Junior Johnson tune, I started mumbling "What the hell? Are you kidding me?" I was shaking my head in disbelief at how radically different the music now sounded. With the Arioso, the pitch of Turner's voice seemed to have dropped half an octave. His growl was now rougher and darker and thicker in texture. But what really got me was how Turner appeared to be directly *there* in front of me with a definite tangible *human-ness* that I did not notice with the Halo A 21+. The Arioso appeared to recover some extra amount of

**I discovered a more microscopically detailed, laboratory-clean midrange.**

low-level information (picked up by Lomax's microphone) about Turner Junior Johnson's physical *body* and *movement*. This new information was extremely subtle; it seemed I could feel Turner Johnson's *personality*, there in the room, near me. Art Dudley alluded to this "human presence" in his Jeffrey Jackson/Experience Music report.<sup>2</sup> This newly discovered fleshy people-ness impressed me, excited me, and strengthened my connection to one of my all-time favorite songs.

Sporting Electro-Harmonix EH Gold 300Bs, the Feliks amp did not sound warmer, fuzzier, blurrier, more distorted, or more euphonic than the Parasound. It did not emphasize the midrange or roll off the frequency extremes. It was simply more transparent to what Alan Lomax had recorded.

### Feliks Audio Arioso

When I hoisted the Feliks Arioso's black-powder-coated chassis from its inner box, it seemed twice as heavy as its specified 39.68lb (and it was! It weighed 68 pounds on my bathroom scale). According to my ruler, the Arioso measured 15" wide × 8" high × 18" deep. Viewed from above, it possessed

1 See Alex Halberstadt's recent review of the LM's successor, the LM-845IA, in the July issue of *Stereophile*. —Editor

2 See Listening #190 at [stereophile.com/content/listening-190-experience-music](http://stereophile.com/content/listening-190-experience-music).



an unusual, distinctly masculine stealth-bomber aesthetic.

The Arioso's tube complement is anchored by a tank-sturdy NOS Russian 5C3S (5U4G-type) rectifier tube. It features two octal-base Psvane CV181 MK2/6SN7 voltage-amplifier driver tubes and two ceramic-base Electro-Harmonix EH 300B Gold output tubes. The extra-firm "gripping-of-the-pins" I experienced while inserting and removing these tubes indicates that the Arioso uses top-quality tube sockets, mounted to the chassis.

The Arioso's distinctive, matte-black chassis sits on four sturdy vibration-absorbing footers, but inside is where its true beauty resides. Like all Feliks amps, the Arioso is point-to-point wired and looks and feels (to me) like it was built to sound good and last forever.

Kevin Deal of Upscale Audio, Feliks Audio's American distributor, wrote to me in an email: "The Arioso's power and output transformers are designed and manufactured in Poland by Edis Ogonowski." He told me that the Arioso uses "Caddock and carbon film resistors" and that "part of the Arioso's magic is from using rare Soviet-era PIO K75-10 capacitors in the power supply. These oil and paper caps are cherished by the DIY crowd in Eastern Europe, and Feliks has a large supply of them." (I use the same Soviet capacitors in my DIY amps.) "In addition, they use Red Jantzen coupling capacitors."

In contrast to my Elekit TU-8600, which has only one input, the Arioso is a legitimate integrated amplifier by virtue of its *three* line-level (RCA) inputs, which are engaged using Japanese-made Takamisawa small-signal relays. The output level is set via a motorized RK27 Blue Alps volume control. Along with Power and Mute, the input can be selected via teeny-tiny front panel buttons with BB-sized indicator lights or with the Arioso's unusual, palm-sized, paddle-shaped wood remote.

### Listening

After a week of enjoyable listening with the Feliks, I needed to see how it would feel to swap in my long-favored, made-in-Japan Elekit TU-8600S (\$1880 without tubes). I immediately noticed the TU-8600S's reach-out-and-hug-me fullness. The Elekit has a way of making sound sound *embracing*. Like the Feliks Arioso and the Parasound A 21+, the Elekit plays clear and bright and fast. It is not warm or soft, too wet or too dry, but it is supple and



yielding, and—dare I say it—feminine. With the Elekit, vocal and instrumental tones are presented with a hormone-infused purity that sometimes takes my mind back to 1969 to Max Yasgur's farm 40 miles southwest of Woodstock, New York. Supervisual, supersensual audio on acid.

When I switched from the naked-at-Woodstock psychedelia of the Elekit TU-8600S to the Feliks Arioso—both amplifiers using Electro Harmonix Gold 300Bs—the amount of change that registered on my brain was no more than 20%. The most noticeable part of this change was the Feliks's distinctly higher degree of clarity, which expressed itself as a rather frank neutrality. The Feliks seemed clearer and more neutral than any amplifier I've used except the 25th Anniversary Decware Zen Triode and the Pass Labs INT-25.

When someone asks, "Herb, what do 300Bs sound like?" I answer, "Preternaturally clear!" I add, "With the right amp and speakers, they are the audio equivalent of 70mm movie film."

While powering the Falcon LS3/5a's, the Arioso did a super job at that hyperdetailed, wide-screen thing, but I was curious whether its midrange tone would become more saturated powering the DeVore Fidelity Orangentan O/93 speakers. The Falcons are 15 ohm speakers, and the DeVores are specified as a 10 ohm nominal impedance; therefore, I started out with both speakers hitched to the Arioso's 8-ohm taps (one pair at a time of course).

I hope it's okay to fall in love with classical music performers, because I've been doing it my whole life. My first crush was Kirsten Flagstad; my latest is another high-passion Norwegian: violinist Vilde Frang.

I have been repeat-playing *Nel cor più non mi sento – introduction and variations on a theme from Paisiello's La*

*molinara*, Op.38, from Frang's and pianist Michail Lifits's 2019 release: *Paganini & Schubert: Works for Violin & Piano* (24/192 FLAC Warner Classics/Qobuz). Vilde's performance is locked in and emotionally intense. The violin sound is sharp, thick, and electrifying. I play this recording just to feel *the density of sound* from the violin. With the DeVores on the Arioso's 8 ohm tap, this recording felt quick and agile—but not as rich of timbre or as bitingly textured as I thought it should sound. (This deficiency was subtle, and it reflects my personal taste.) When I connected the 10 ohm DeVores to the Arioso's 4 ohm output tap, the sound displayed a more grain-free clarity. Colors became more saturated. The sound felt more correct.

I searched with Roon and found 1920s blues pioneer Henry Thomas's *Texas Worried Blues: Complete Recorded Works 1927–1929* (16/44.1 FLAC Yazoo/Tidal). I used the sound of his famous pan pipe as a guide for determining which output tap I should use.

On the 4 ohm tap, I played Thomas's "Bull Doze Blues," which, if you didn't know it, is the song Canned Heat's "Goin' Up the Country" is based on. As I listened, it became obvious: The highest notes from Henry's pan pipe were *made* to be played by 300Bs through speakers like these DeVores. With the Feliks amp, Henry's pipe notes appeared in vivid resolve with no excessive flare or glare. The 10 ohm speaker on the 4 ohm tap was now *the* happening concept. When I switched back to the 8 ohm tap, the sound became slightly more relaxed, a touch brighter, and spatially more diffuse.

The lesson here is: If you have a tube amp that offers multiple output taps, never assume 8 ohms to 8 ohms, or 4 ohms to 4 ohms. Try them all and choose the one that pleases you most.

My only criticism of the Feliks Arioso was: It never took acid and



rolled naked in the Woodstock mud. It played even the raunchiest 1920s blues wearing a crisply pressed Sunday-go-to-meeting shirt.

### Western Electric 300B

The Western Electric Company was founded in 1869 as a pioneering electrical engineering and manufacturing operation hoping to become a leader in the dawning electrical age.

In 1906, a Yale graduate physicist (and former Western Electric employee) named Lee De Forest demonstrated the first three-element (Audion) vacuum tube. De Forest's new third element (a control grid) changed our world forever by making it possible to amplify small alternating currents into larger, precise copies of the original. In 1912, Western Electric bought De Forest's Audion patent and, within months, was producing the world's first high-vacuum tubes. The first task for this new device was to amplify sound. By the 1930s, Western Electric Company, now associated with AT&T and Bell Labs, had established itself as the world's leader in communications and sound reproduction equipment.

The 300A triode tube appeared in 1932, followed in 1938 by the 300B tube, which incorporated a center-tapped, equipotential cathode. Western Electric's 300B remained in production for 50 years until 1988, when Western Electric ceased tube production.

In 1992, entrepreneur Charles Whitener approached AT&T to inquire about acquiring the intellectual property and a license to manufacture and sell vacuum tubes and audio equipment under the Western Electric name. Charles's goals, he told me in a recent email, were "to bring back the audio division of Western Electric with precision and authenticity."

On Valentine's Day in 1997, the first set of "reissued" WE 300Bs was shipped from the WE Kansas City Works in Lee's Summit, Missouri. By the end of that year, WE was shipping worldwide, and Japan's prestigious *MJ Audio Technology* magazine had named the new 300B "Product of the Year."

Tube production continued at the Lee's Summit plant until 2002. In 2003, WE's electron tube operations were moved to Huntsville, Alabama, where the 300B remained in production through 2008, at which time 300B production was paused "in order to concentrate on making tubes [other than 300Bs] and test equipment for the



US Department of Defense."

In October 2020, WE shipped the first 300Bs from its brand-new Rossville, Georgia, facility, the Rossville Works. Whitener wrote, in that same email, "This is the 3rd and final electron tube manufacturing plant I have built. It is the most advanced facility of its kind anywhere in the world."

### The new WE 300B

Vacuum tubes are elegant switching devices that succeed or fail on the strength, volume, and long-term consistency of their cathode emissions. My love for triode-tube audio is fueled by my personal vision of thermionic emission as a glowing, volcanic, natural force that makes recorded music flow.

Today, if you were to ask me what makes these new made-in-Rossville 300Bs different from 300Bs manufactured in Germany, Russia, China, or Japan, I would speculate that it is the company's unique filamentary core material, which, according to the WE website, "is derived from a 1963 melt from the Western Electric Hawthorne Works in Chicago." Equally important is the cathode wire's oxide coating, which, according to Whitener, consists of "a mix of strontium and barium, ... but Western engineers add their own proprietary elements to form their own unique coating—one that was originally developed for use in underwater sea-cable applications." Western Electric's website proudly adds, "This special coating not only extends the lifetime of each tube, it supports the dynamics required for superior music reproduction."

I used to tell people that a tube's midrange sounded like its plates (anodes) looked. I don't believe that anymore, but Western Electric's unique-looking, patent-pending,

graphene-coated nickel plates are surely another reason that these 300Bs sound different than everybody else's. In another email, Charles gave me a glimpse behind the scenes of American tube manufacturing in its end days (the 1980s) and its new days (now):

"Back in the day, the WB Driver Company was the primary supplier of raw and exotic metals to US tube manufacturers. As the tube industry began its long, slow decline, units of Driver were sold off or merged with other firms. The carbonized nickel unit was later processing nickel under a company called Driver-Harris. Later, this line was sold to a company called Harrison Alloys. Harrison was the last company that produced carbonized nickel in the US.

"We had all of our nickel that was specially manufactured to Bell Labs specs shipped to Harrison Alloys in New Jersey beginning in 1995. Unfortunately, Harrison went bankrupt around 1999, and the consigned nickel we had stored with Harrison was sold at auction. That created a serious dilemma. It appeared our only option was to learn how to process the nickel and carbonize it in-house.

"Fortunately, Bell Labs had patented a process for carbonizing nickel in the early '60s, and we began building a line that would emulate this process. During this effort, in an attempt to create a safer process for carbonizing"—processes that utilize hydrogen combined with carbon-rich gases at temperatures above 1000°C can be dangerous—"we began coating the nickel with graphene, albeit by accident! Problem solved and with a significantly better result. As far as we know, we are the only tube manufacturer in the world that uses carbonized nickel for its anode construction."

### Comparisons

Potential 300B users are always asking how long should these new 300Bs last? I always answer, “Look at the warranties.”

Original Western Electric 300Bs were stated, by WE, to last “40,000 hours”—more than 4.5 years of use running 24/7.

The made-in-Japan Takatsuki 300Bs sell for \$2499 per matched pair with a one-year warranty. That translates into \$6.84 per day of warranted ownership.

The made-in-China (by Linlai) Cossor “WE 300B Edition” costs \$499 per matched pair with a 90-day warranty. This translates into \$5.54 per day of warranted ownership.

The made-in-America Western Electric 300Bs sell for \$1499 per matched pair. That price includes a five-year warranty, which translates into 43,800 hours of use and \$0.82 per day of warranted ownership.

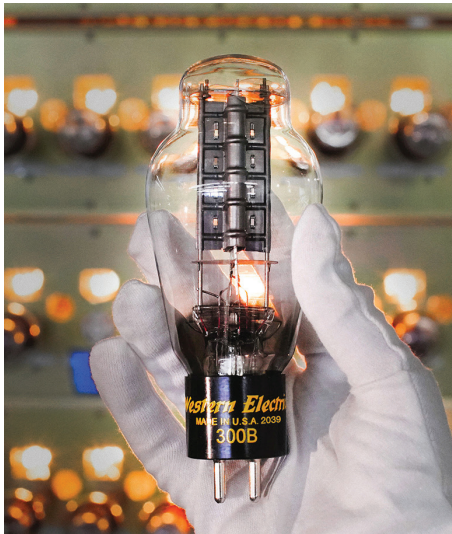
Because cathode quality and the completeness of a tube’s vacuum are the prime factors determining a tube’s life, it is reasonable to assume that these warranties reflect each manufacturer’s belief in their ability to consistently accomplish these two extremely difficult manufacturing tasks—a tall order, but it explains why different tube brands sound different and how tubes from different batches (from the same manufacturer) can sound different.

According to Charles Whitener, Western Electric uses a double oxide cathode coating consisting of strontium and barium carbonates, “with proprietary elements added.” Not triple-coated (strontium, calcium, and barium carbonate) liked other manufacturers. “With triple-coated cathodes, a layer of aluminum orthosilicate forms between the coating and the core material itself. Interface impedance is increased and harms the life of the tube.

“We could not guarantee a tube for 5 years with a triple-coated cathode.”

Purportedly, double oxide coatings give highly consistent emissions resulting in longer, more even-sounding tube life. Triple-oxide coatings are credited with more powerful but less consistent emissions.

With the new Westerns installed, the Feliks Arioso single-ended 300B amplifier’s 50Hz–1kHz octaves were more brilliantly lit and refraction-free than with the stock Electro-Harmonix EH Gold 300Bs. Bass with the WEs



### The WE tubes played *Bloom* with unprecedented clarity and transient authority.

was more tightly damped than with the Psvane, Cossor, or Electro-Harmonix 300Bs. The WE tubes *appeared* to slightly increase the Feliks’s damping factor, which might indicate a lower-than-usual plate resistance.

When the Western Electric 300Bs replaced my Russian-made Electro-Harmonix EH Golds in the Elekit TU-8600S, I discovered a more microscopically detailed, laboratory-clean midrange. Historically, Western Electric 300Bs have offered this unique, low second-, high third-harmonic character that manifests as mist-free transparency and strong drive.

Previous to experiencing the new Westerns, the made-in-China Cossor-branded, made-by-Linlai WE 300Bs (\$495/matched pair) were the cleanest, lowest-in-second-harmonic 300Bs I’d ever used. These Linlai-Cossor tubes are advertised to be “100% 1:1 replicas” of vintage Western Electric 300Bs, but I hope you can see how ridiculous this claim is. Even the new Western Electric tubes cannot achieve this, and they have original cathode core material, tooling, tech data, and even some of the original workers.

Replicas or not, the Cossors were hyperbolically eloquent and water-clear. Their overtly appealing liquidity made the new Westerns seem a bit stark and the Electro-Harmonix EH Golds a bit coarse. The EHs specialized

in making snare drums, double bass, saxophone solos, and spring reverb sound tangibly present. The more delicate and transparent Cossor WE 300Bs specialized in making church choirs, sitars, string quartets, and sultry female vocals seem unabashedly beautiful.

After a couple of weeks of studying the new Western Electric 300Bs, I went back to the Cossor “replicas” and played a stunning, gloriously transparent recording called *Bloom* featuring Armenian singer, songwriter, pianist, and storyteller Areni Agbabian backed by Nicolas Stocker’s sparse, mystical percussion (24/96 FLAC ECM/Qobuz). The Western Electric tubes played *Bloom* with unprecedented clarity and transient authority. In contrast, the Cossors played it with conspicuous delicacy and detailed refinement.

(To my surprise, after I wrote these words to describe the Cossors, I discovered that Linlai claims their unique “overhung filaments,” where the filament extends past the top of the grid wires, give their WE 300Bs “greater delicacy and refinement” than those of other manufacturers. Obviously, I heard what they heard.)

The new Western Electric 300Bs *might* be sonically superior even to WE 300Bs made before 1989. With their 5-year warranty, I view them as the most cost-effective choice in today’s competitive 300B market. Time and consumer consensus will make *their* choice, but for now, if I could have only one pair of *new* 300Bs, I’d choose the Western Electrics. ■

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