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BOWERS & WILKINS' EXTRAORDINARY 802 D3 LOUDSPEAKER DIAMONDS ARE ARE FOREVER

2120

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Bowers & Wilkins 802 D3 Diamond

LOUDSPEAKER

This is getting to be a habit." That's how I ended the first paragraph of my review of Bowers & Wilkins' 800 Diamond speaker,¹ in the May 2011 issue; apparently, *Stereophile*'s habit of reviewing models from B&W's 800 series remains unbroken.

Later in that review, I said that "The 800 Diamond doesn't *look* radically different from its predecessors." That doesn't apply to the 802 D3 Diamond (\$22,000/pair). It's still a three-way system with tapered-tube high-frequency and midrange enclosures, stacked and nestled into a generous bass enclosure that's vented on the bottom into the space between it and its plinth. But other than that, the 802 D3 radically differs from the previous generation: only eight components are retained. Four of those are the binding posts, another is the diamond-dome tweeter, and the remaining three are trivial. According to Martial Rousseau, B&W's head of research, "This is not a product update. This is a completely reimagined entity."

Description

When I set-up the 802 D3s, the first thing that struck me was that they were taller than the 800 Diamonds. That, coupled with the change from a boxy support plinth (which also housed the crossover) to a flat, 1"-thick aluminum plinth, suggests that the bass enclosure is of significantly greater volume. Indeed, the 802 D3 weighs only 17 lbs less than its older and broader brother. Another striking change in appearance is the 802 D3's silvery Continuum midrange cone, which replaces the iconic yellow Kevlar of the 800 Diamond's cone. Continuum is a coated, woven material that B&W developed over the last 8 years, intended to perform like Kevlar in reducing the magnitude and duration of cone breakup—but to much higher degrees.

The diaphragms of the 802 D3's woofers are also of new design and material. Although similar in appearance to the older Rohacel laminate cones, albeit with smaller dustcaps, the new diaphragm has a foam core of varying thickness: thinner at the central voice-coil, thickening with increasing radius, then thinning again as it nears the surround. B&W calls this shape Aerofoil, and claims that it combines maximal stiffness with minimal mass. When I tapped and scratched it, the 8" Aerofoil cones sounded considerably more dead, and felt more compliantly mounted, than the 800 Diamond's two 10" Rohacel cones.

The 802 D3's woofers protrude from their enclosure because the front of the latter is curved—a reverse of the design of earlier 800s, which had flat fronts and curved rears. The change was made to enhance cabinet stiffness where it counts, and to minimize edge diffraction, though I wonder if the latter is significant at the frequencies involved. Nonetheless, one consequence of the curved front is that the woofers can't be mounted directly to it; instead, they're attached to metal cylinders that emerge from the front. These cylinders are rigidly secured to an enclosure made with the latest version of B&W's Matrix, now made from plywood and aluminum and pressure-fitted to the main body for enhanced structural rigidity. A concomitant consequence of the new shape is that the rear of the 802 D3 is a single, massive aluminum heatsink that runs, like a keel, the

1 See www.stereophile.com/content/bampw-800-diamond-loudspeaker.

SPECIFICATIONS

Description Three-way vented-box loudspeaker. Drive-units: 1" (25mm) diamond-dome tweeter, 6" (150mm) Continuum-cone FST midrange driver, two 8" (200mm) Aerofoilcone woofers. Crossover frequencies: 350Hz, 4kHz. Frequency range: 14Hz-35kHz. Frequency response on reference axis: 17Hz-28kHz, ±3dB. Sensitivity: 90dB/2.83V/m. Harmonic distortion (second and third harmonics, 90dB, 1m): <1%, 80Hz-20kHz; <0.3%, 100Hz-20kHz. Impedance: 8 ohms nominal, 3.0 ohms minimum. Recommended amplification: 50-500W into 8 ohms on unclipped program. Maximum recommended cable impedance: 0.1 ohm. **Dimensions** 47.3" (1212mm) H by 15.2" (390mm) W by 22.7" (583mm) D. Weight: 207.9 lbs (94.5kg). Finish Gloss Black, Rosenut. Serial numbers of units reviewed 000685, 000686. Price \$22,000/pair. Approximate number of dealers: 300. Warranty: 5 years, repair or replacement, nontransferable. Manufacturer B&W Group Ltd., Dale Road, Worthing, West Sussex BN11 2BH, England, UK. Tel: (44) 0800-232-1513. Web: www.bowers-wilkins. co.uk. US: B&W Group North America, 54 Concord Street, North Reading, MA 01864. Tel: (978) 664-2870. Fax: (978) 664-4109. Web: www.bowers-wilkins. com.

The 802 D3 radically differs: only eight components are retained. cabinet's entire height. The crossover network is mounted on the inside of this heatsink, the four binding posts on the outside, at the bottom, and the top is milled out to accommodate the rear of the loudspeaker's Turbine Head: the vaguely oil-drop-shaped structure that houses the midrange driver and supports the tweeter.

The tweeter and midrange enclosures are completely re-engineered and, while the midrange enclosure was previously made from Marlan composite, both are now machined from solid aluminum. An ancillary benefit of the tweeter-housing redesign is that it can be more easily removed and replaced if the Diamond tweeter is damaged. Of course, it's also less likely to be damaged in the first place: the 802 D3's protective tweeter cover is now fixed, to prevent any untoward contact with the dome.

Also reengineered are the metal frames of the midrange and bass drivers, to increase stiffness and reduce resonances. At public demonstrations, B&W illustrates the effectiveness of their new design by suspending from cables "empty" samples of the new and old tweeter housings and midrange baskets and inviting attendees to strike them. The old ones sound brightly musical, like bells or triangles; the new ones respond with a dull clunk. Here in my listening room,



my 800 Diamonds sat right next to the 802 D3s, and I wondered if the striking (!) difference would still be audible when the housings were fitted with drivers and securely mounted in finished speakers. As expected, the differences were small, but responses from the D3's driver rims were higher in pitch, and definitely less lively. (For additional technical and philosophical issues, see the sidebar, "The Great Unveiling.")

The overall appearance of the 802 D3 is more streamlined and less plush than earlier 800 models. The review samples, finished in Gloss Black (Rosenut is also available), came with black grilles for the midrange and woofers, but I preferred using only the midrange grille, perhaps only until I adapt to the change in diaphragm color from yellow to silver. On the other hand, the vertical array of exposed woofers and the midrange and tweeter modules formed a visual motif reminiscent of the original Nautilus, while the racetrackshaped woofer grille looked ungainly. The 800 Diamond's Turbine Head

800-series styling has moved from the Elizabethan to the Edwardian age.

MEASUREMENTS

used DRA Labs' MLSSA system and a calibrated DPA 4006 microphone to measure the Bowers & Wilkins 802 D3 Diamond's frequency response in the farfield; I used an Earthworks QTC-40 for the nearfield frequency responses. (For logistical reasons, I measured a different sample from those auditioned by KR.) As with the Marten Coltrane



Fig.1 B&W 802 D3 Diamond, electrical impedance (solid) and phase (dashed) (2 ohms/vertical div.).

3, reviewed elsewhere in this issue, the 802 D3 was too bulky to be lifted off the ground. The earlier-than-usual reflections of the drive-units' output from the ground thus compromised the measurements' resolution in the midrange. The loudspeaker was also too heavy for me to lift it onto my Outline computer-controlled turntable, so I had to examine its off-axis behavior by manually rotating the loudspeaker on its casters and checking the angle with a protractor, a time-consuming procedure.

B&W specifies the 802 D3's sensitivity on the tweeter axis as a high 90dB/2.83V/m. My estimate was a little higher, at 91dB(B)/2.83V/m. This speaker will play loud for very little input voltage! However, it is a relatively demanding load for an amplifier to drive. Fig.1 shows the B&W's electrical impedance (solid trace) and phase (dotted trace). The magnitude drops to 3 ohms between 100 and 130Hz, and again between 670 and 770Hz; and while the electrical phase angle is low in the lower region, it becomes increasingly inductive above 600Hz, reaching +46° at 1kHz, where the magnitude is 4 ohms. There is also a combination of 4 ohms and -64° at 69Hz, implying that this speaker does require an amplifier that is not upset by a low effective impedance.

My accelerometer was out of action when I had the B&W speaker in-house for measurement. However, listening to the woofer enclosure with a stethoscope while I drove the 802 D3 with a sinewave generator revealed the presence of low-level modes at 380 and 415Hz.

The saddle centered on 20Hz in the impedance-magnitude trace suggests that this is the tuning frequency of the

was embedded in the bass enclosure and embraced by a ruff of Connolly leather; the 802 D3's Head is nestled into a shallower saddle on the bass enclosure, isolated from it by hidden compliances. By fanciful analogy, 800-series styling has moved from the Elizabethan to the Edwardian age.

Installation and setup

I placed the 802 D3s where most speakers have sounded best in my room: about 11' from my main listening seat, which is just a bit more than the 9' 10" that B&W says is typically required for proper integration of the drivers' outputs.² I adjusted the toe-in by ear—it seemed ideal when the tweeter axes crossed about 18" behind my head.

Because the 47" height of the 802 D3's tweeter is so much greater than the 36" distance between my ears and the floor when I'm seated, I tilted the loudspeakers forward: When first unpacked, the 802 D3 sits on four generously sized rollers, but adjustable spikes are already in place on the underside of the plinth. An ingenious mechanism allows the user to simply reach underneath, flip a lever, and rotate the spike until it hits the floor (or one of the substantial, floorprotecting footers, also provided). Repeat for the other three spikes, then adjust each to horizontally level the speaker and achieve the necessary degree of tilt. I already loved the smoothly rounded shape of the 802



D3's plinth—I had painful memories of stubbing my bare toes on the sharp edges of the 800 Diamond's boxy base—but the new plinth also made balancing and tilting the enclosure much easier than with

Continuum is a coated, woven material that B&W developed over the last 8 years.

any earlier 800 model.

After connecting the 802 D3s to my Theta Digital Dreadnaught D power amplifier with AudioQuest Oak biwire cables, I fine-tuned the B&Ws' final positions by ear with familiar recordings.

Listening

Although my usual protocol is to do no critical listening for a few weeks, I was able to get down to it very quickly: my sample had been shipped not from B&W's factory but from their design,

2 The info from B&W states: "Ideally you should be seated with your ear level at the tweeter height plane (broadly speaking). Distance to the speaker: roughly 2.5 times the tweeter height (measured from the floor) to the ear as a minimum distance. So on an 802 D3 the tweeter height is roughly 120cm to the centre of the diaphragm to the floor. Multiply by 2.5 and you get 300cm or 3m (9ft 10in)."

measurements, continued

large, flared port that fires downward from the woofer enclosure. This was confirmed by the fact that the summed output of the two woofers (fig.2, blue trace) has the expected minimum-motion notch at this frequency. (The two woofers offered identical measured responses.) The port's output (red trace) peaks between 10 and 40Hz, but has a significant peak at 248Hz in its upper-frequency output. Though



Fig.2 B&W 802 D3 Diamond, acoustic crossover on tweeter axis at 50", corrected for microphone response, with nearfield responses of midrange unit (green), woofers (blue), and port (red), respectively plotted below 500Hz, 350Hz, and 650Hz. this resonance does result in a small discontinuity in the woofers' nearfield response, the fact that the port faces the floor should minimize its audible consequences.

The woofers are crossed over to the midrange unit (fig.2, green trace) at around 500Hz, with steep filter slopes. The tweeter's output in this graph appears to be balanced a little too high in level, which persisted when I averaged

Boundary 1000 100 100 100 1000 1000 1000 Frequency in Hz

Fig.3 B&W 802 D3 Diamond, anechoic response averaged across 30° horizontal window on tweeter axis at 50", corrected for microphone response, with complex sum of midrange, woofer, and port responses plotted below 300Hz. the farfield response across a 30° horizontal window centered on the tweeter axis (fig.3). The 802 D3's midrange and bass output is smooth and even, and the slight boost in the mid- and upper bass is entirely an artifact of the nearfield measurement technique. As KR found, the 802 D3's low-frequency alignment is free from underdamped boom.

The plot of the B&W's lateral dispersion (fig.4) reveals that the tweeter becomes more directional than is usual in the top octaves, which in a typical



Fig.4 B&W 802 D3 Diamond, lateral response family at 50", normalized to response on tweeter axis, from back to front: differences in response 90-5° off axis, reference response, differences in response 5-90° off axis.

research, and listening facility in Steyning, West Sussex. For all I know, they're the pair I auditioned when I visited last August (see sidebar).

At Steyning, the first thing I'd noticed about the 802 D3s was that their soundstage was more open and detailed than that of the 802 Diamonds. But here in my Manhattan system, what first struck me was the greater definition I heard with familiar bass lines. I briefly entertained the thought that both perceptions might be due to a shift in balance caused by tighter, lighter reproduction of the bass—but no, the low frequencies were just as potent and extended as before. Something else was afoot.

The 802 D3's Diamond tweeter has the same diaphragm as before-but, as mentioned earlier, it has a new housing and fixed protective cover. Whatever the reason, the new speaker's treble range sounded distinctly more delicate than that of its predecessor. I first heard this with the classic Oscar Peterson Meets Roy Hargrove and Ralph Moore (CD, Telarc CD-83399). In the past, my attention had been drawn to Lewis Nash's cymbal accents, often at the expense of the melody in Peterson's piano. In fact, I liked it. With the D3, the cymbal was still as spicy, but in better balance with the piano. The same improvement

With the 802 D3, Bowers & Wilkins have brought their 800 series into the 21st century.

occurred with higher-resolution recordings, such as Tarik O'Regan's *Threshold of Night*, with Craig Hella Johnson conducting Conspirare and the Company of Voices, recorded in the famous Troy Savings Bank Music Hall (SACD/CD, Harmonia Mundi HMU 807490). Individual voices had

ASSOCIATED EQUIPMENT

Digital Sources Oppo Digital BDP-105 universal BD player; Baetis XR3 PC-based music server; exaSound e28, Merging Technologies NADAC-8 multichannel D/A processors; QNAP TS569L NAS.

Preamplifiers Audio Research MP1, Parasound Halo P 7. Power Amplifiers McIntosh Laboratories MC303, Parasound Halo A 31, Theta Digital Dreadnaught D. Loudspeakers Bowers & Wilkins 800 Diamond. Cables Digital: AudioQuest Vodka (HDMI) & Carbon (USB). Analog Interconnects: AudioQuest Earth/DBS balanced, Kubala-Sosna Anticipation (RCA, XLR). Speaker: AudioQuest Oak/DBS biwire. AC: AudioQuest NRG-10, JPS Aluminata, Kubala-Sosna Emotion.

Accessories Environmental Potentials EP-2450 power conditioner, CyberPower 850PFCLCD AC filter (supplied with Baetis server).

Listening Room 24' L by 14' W by 8' H, with two MSR Acoustics Dimension4 SpringTraps in front corners, two Ready Acoustics Chameleon Super Sub Bass Traps at sides, and moderately sound-absorbing furniture. Front wall has large windows partly covered by fabric drapes and 4' by 2' by 3" OC 705 panels. Rear of room opens into 10' by 7' foyer and 12' by 8' dining area.—Kalman Rubinson

what seemed a perfectly natural degree of sibilance, defined but not outlined.

The midrange, too, was highly refined. Clearly, B&W's designs of the slightly smaller (150 *vs* 160mm) Continuum diaphragm and concomitantly smaller (but more rigid)

measurements, continued

room will work against the excess onaxis energy in the same region. But the output of the large-diameter midrange unit does drop off at the top of its passband more than 45° to the speaker's sides, which might make it sound a little polite. At more moderate off-axis angles, the contour lines in this graph are smooth and evenly spaced, which always correlates with precise, stable stereo imaging. In the vertical plane (fig.5), a suckout in the upper crossover



Fig.5 B&W 802 D3 Diamond, vertical response family at 50", normalized to response on tweeter axis, from back to front: differences in response 15-5° above axis, reference response, differences in response 5-10° below axis.

region develops immediately above the tweeter axis. Below that axis, which is a high 47" from the floor, the mid-treble region becomes a little boosted compared with the region below.

Turning to the time domain, the 802 D3's step response on the tweeter axis (fig.6) indicates that all four drive-units are connected with positive acoustic polarity, and that, in general, the decay of each unit's step blends smoothly with the start of that of the next unit



Fig.6 B&W 802 D3 Diamond, step response on tweeter axis at 50" (5ms time window, 30kHz bandwidth).

lower in frequency. However, the output of the tweeter is very slightly too forward in time, which suggests that the B&W's optimal listening axis will be a little below the tweeter axis. The cumulative spectral-decay plot on the tweeter axis (fig.7) reveals a generally clean initial decay.

Overall, the Bowers & Wilkins 802 D3 Diamond measures very well. I'm not surprised that Kal Rubinson liked it as much as he did.—John Atkinson



Fig.7 B&W 802 D3 Diamond, cumulative spectraldecay plot on midrange axis at 50" (0.15ms risetime).

Turbine enclosure represent not a philosophical but an evolutionary shift. It might account for what I heard as an extension of the Diamond tweeter's delicacy in delineating the sounds of consonants in vocal music. I easily appreciated this throughout the O'Regan disc—voices floated free in the hall's acoustic—but it became my focal point when listening to my go-to vocal track, Finzi's "Come Away, Death," sung by mezzo-soprano Marianne Beate Kielland, accompanied by pianist Sergei Osadchuk (free stereo 24-bit/192kHz PCM download or SACD/CD, 2L 2L-064-SACD). This may not be the best recording ever made of solo female voice and piano, but my familiarity with it makes it a critical tool. Through the 802 D3s, Kielland's voice was as lovely as ever, but the D3s conveyed more of its physical presence.

Probably the most satisfying thing about the 802 D3 was its agility in the bass, which I think accounted for my initial responses at Steyning and at home. This is not one of those large speakers for which "authority" is a euphemism for an overripe midbass that obscures bottom-end nuances. The 802 D3's authority was more tight, powerful, and extended than I expected. Firm bass-drum *thwacks* cleanly revealed the initial stroke as well as the ensuing resonance. I could pick any of my favorite orchestral recordings from Telarc or Reference and rediscover how good they are. Even more impressive were good recordings of pipe organ, such as Mendelssohn's Organ Sonatas, played by Thomas

Murray on the wonderful E. & G.G. Hook instrument in Jamaica Plain, Boston (CD, Raven OAR-390). In the fourth movement of the Sonata in f, I could follow the pedal notes, low as they are, as clearly as if they were played on a piano. (This CD derives from the original Sheffield Records S-13, a remarkable LP produced in 1973 by Lincoln Mayorga.)

But much more important than the speaker's reproduction of any part of the audioband was a degree of driver-output integration that let the 802 D3 perform as a single sound source, to a degree not before achieved by B&W or, indeed, by many speaker makers. At my normal listening distance, mono sounds played by a single 802 D3 seemed to emanate from the Continuum midrange driver; listening in stereo to both speakers, the deep, wide soundstage spanned my room, the sound quite independent of the two cabinets—and often tricking me into thinking that my 800 Diamond center-channel speaker was hooked up. (It wasn't.)

"Nobody," from Ry Cooder's delightful Jazz (CD, Reprise

THE GREAT UNVEILING

In August 2015, I visited Bowers & Wilkins in England. It was an exciting prospect to see the factory, and meet the people who designed and built the speakers I've been using for years. Of course, as the time of my visit approached, it was impossible not to speculate that something important was afoot—there was growing Internet buzz that it was time for B&W to update its 800-series speakers. Nonetheless, B&W remained tight-lipped.

I arrived in Brighton in the morning and took the afternoon to tour the town. I hadn't been there in over 40 years, and barely recognized it. I'd remembered a bright, busy sand-and-sailing town, but Brighton is now deep in the throes of

27355-2), demonstrated most of the features that made the 802 D3 so satisfying. This recording doesn't possess extreme dynamics or really deep bass, but I thoroughly appreciated the clarity of Cooder's solo voice and guitar, the air and balance of the band, driven by tuba and bass drum, and, most of all, the presence and weight of the male backing singers, especially in the final chorus. The 802 D3s made it all sound fresh and new.

Live recordings were transporting. Eric Clapton's Unplugged (CD, Reprise 45024-2) took on a new electricity due to the immediacy of his voice and guitar, the natural impact of the bass, the environmental noises, and the sheer hugeness of the recording space. Andris Nelsons and the Boston Symphony Orchestra's recent live recording of the Sibelius Symphony 2 (BSO Classics 1401, 24/96 FLAC download) put me only a few rows back from the stage of Boston's Symphony Hall, from which vantage I could pick out individual instruments and hear pizzicato notes from the violins amid the orchestral swell. More important, I felt part of the performing space in a way surpassed by only the multichannel download.

Was the 802 D3 faultless? Yes and no. I heard no problems with it in my room and system. Its tonal balance was somewhat lighter than many, including the 802 D3's 800-series predecessors, because the bass was entirely devoid of bloat or emphasis or resonance. Despite this, there

of bloat or emphasis or resonance. Despite this, there was no lack of authority when that was called for, and the speaker's reproduction of deep bass was formidable. However, some listeners may find fault with that new balance because it might not suit the sound of their system and room, or their taste. Further, the 802 D3 easily revealed differences among other components. Of the amps I had on hand, I liked Theta's Dreadnaught D—it seemed most consistent with the D3's balance of clarity and power. Parasound's Halo A31

three-channel amp leaned a bit toward the clarity, McIntosh's MC-303 leaned toward the power.

Conclusions

With the 802 D3, I think Bowers & Wilkins have brought their 800 series into the 21st century. Their commitment to completely reimagine, reengineer, and redesign the 800 series has resulted in a loudspeaker that carries on the family resemblance while being entirely new. This an impressively better loudspeaker in every way. Those who loved the earlier 800s, as I did, will want to hear it. Those who didn't are advised to.

> urban renewal, with construction and reconstruction sites on nearly every block. There was a sense of optimism in all the activity. At dinner that evening, optimism also brimmed in Doug Henderson, president of B&W Group North America.

> Henderson told me that the reason for my visit was, indeed, to see firsthand what was going into the development and production of the first major revi-

sion of the 800 models since 2005. timed to coincide with the company's 50th anniversary, in 2016. I clearly recalled the impact of the original 801, in 1979. With its individual enclosures for the bass, midrange, and high-frequency drivers, it was not only a great-sounding speaker but, more significant, the first truly full-range, bullet-proof speaker of domestically acceptable size. At that time, all the other big speakers were really big. Most of them, from Altec, JBL, and Tannoy, were derived from professional/studio designs: even B&W's own landmark DM70, with its panoramic electrostatic tweeter and 15" woofer. was difficult to fit into a home listening room. In a sense, the 801 was the first uncompromised domestic loudspeaker.

Since then, the 800 series has grown: by expansion, with the additions of larger and smaller models; and by evolution, with the Matrix (1987) and, later, Nautilus (1998) lines. Beginning with the original three-way, three-box design, features were retained and added, and some became emblematic of the 800s: a curved main cabinet of multilaminate, Matrix cross-bracing inside, the use of nonresonant materials for the midrange and tweeter housings, a Kevlar midrange diaphragm with a free-suspension termination, a diamond-dome tweeter, a stiff composite woofer cone, and, especially, the Marlan midrange head and tweeter tube inspired by the classic Nautilus (1993), which has remained the flagship of the line.

The next morning, at B&W's Visitors' Center, I was given an overview of the history and philosophy of the 800 series by senior product manager Andy Kerr. Development of technology at B&W is ongoing, and many of the new features now being implemented have been in the works since well before the release of the previous 800 series. This theme was repeated by Martial Rousseau, head of research, who outlined the background work that determined the changes that have gone into the new speakers. Recent improvements in structural analysis made possible by the use of a laser Doppler vibrometer permitted Rousseau's team to determine how the

Clockwise from left: Handspraying and inspecting tweeter housings; forming the multilaminate cured cabinet; the cabinet form is set under heat and pressure.

structures should be modified to minimize responses to sound-related forces. 3D printing allowed them to quickly print and test prototypes. Advances in finite element analysis and computer modeling and simulation contributed to their research. This long and fascinating presentation included extraordinary graphics that showed how changes in shape and materials can reduce resonant responses and distortion. This was done by magnifying the time and amplitude of the real-world effects until the animated models bent and twisted like small buildings and bridges subjected to hurricane-force winds.

In short, a busy morning. That afternoon, I stretched my legs with a tour of the factory. Again, B&W's website boasts many illustrations and videos of the factory, but a few things stood out. According to Dave Ford, head of production, all B&W speakers used to be made in this 135,000-square-foot facility; now, it and its 320 employees make only the 800 models. To my surprise, production of the 800 D3 series was already in full swing, the intention being to have product in the distribution pipeline worldwide by launch date. As we toured each department—from driver construction and testing to cabinet construction and finishing to final assembly, quality control, and packaging—Ford showed me the care and precision of the work being done at each stage.

I was particularly impressed with the painting and finishing of the Turbine Head and solid-body tweeter housings. Following each of the multiple applications of paint, workers hand-polished and carefully inspected the housings. As I examined a rack full of housings, Ford told me that they were rejects; sure enough, their imperfections had been marked. But many of the circles surrounded flaws invisible to me, and those that I could see were minuscule. I asked



Ford why they couldn't just mount these units so that their blemishes were hidden underneath, and I wondered how big a flaw had to be for a part to be rejected. His responses were swift and clear: No, he replied, they wouldn't use the part, and they had no defined criterion for rejection. Any noticeable imperfection, no matter how small, would result in rejection. Impressive.

My final morning at B&W was spent at the listening room in the Steyning Research Establishment (SRE), originally established by John Bowers as B&W's R&D facility. I'd earlier visited the site to see the labs, the modeling shop, and the buzzing engineering workroom, where more than two dozen people were preparing for the future. Still, the day's biggest kick was entering the B&W listening room, pictures of which I've seen for decades. Here is where every B&W speaker model and update is vetted by the designers and production people.

The purpose of that day's auditions was to compare the older Diamond models with the new D3 models. The B&W guys swapped them in and out, using padded hand trucks. In every case, using the same few musical selections, the D3s sounded distinctly clearer and more dynamic, and conveyed a more open and convincing soundstage. I returned home greatly looking forward to getting a pair of 802 D3s to audition on my own home field.—Kalman Rubinson



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