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FIFTH ELEMENT

Wilson Benesch A.C.T. loudspeaker

Wilson Benesch (www.wilson-benesch.com), distributed in the US by The Sound Organisation (www.soundorg.com), is a Sheffield, UK–based engineering firm that made its début in the audio world by making a tonearm from carbon fiber. (See Jonathan Scull's report on his visit to the WB factory in December 1996, Vol.19 No.12).

Someone who responded to an online survey on *Stereophile*'s website nominated Wilson Benesch as a worthy company whose products have been neglected in the pages of *Stereophile*. That caused me some measure of chagrin. I'd pretty much dedicated my January 2002 column to WB's radical Discovery loudspeaker (Vol.25 No.1, www.stereophile.com/thefifthelement/493). I also prominently covered WB's more conventional Arc (November 2002, Vol.25 No.11, www.stereophile.com/thefifthelement/726), and had a pair of their next-to-top-of-the-line Chimeras here for quite some time, preparing for my column recommending stereo systems at various price points for actress and lingerie model Rebecca Romijn-Stamos (May 2002, Vol.25 No.5, www.stereophile.com/thefifthelement/582). By the way, I later saw Romijn-Stamos in *Femme Fatale*. Does she kiss her mother with that mouth? Criminy. And she seemed like such a *nice* girl. Were fair Rebecca ready to lay out serious long green on a two-channel system, the Chimeras were right there at the top of the list.

Wilson Benesch's first loudspeaker, the A.C.T. One (A.C.T. stands for Advanced Composite Technology), was introduced in 1994. It won 12 awards, and was selected as the reference loudspeaker for two audio journals published outside the US. The One was followed in 1997 by the A.C.T. Two, which was slightly larger and nearly half again as expensive. (The Ones cost about $10,000/pair, the Twos about $15,000.) When, five years ago, I first heard and wrote about the A.C.T. One (*The Absolute Sound*, No.119), I had been aware of carbon-fiber composite only from racing yachts and open-wheel racing cars.

Wilson Benesch's "Just Plain" A.C.T. loudspeakers.

The A.C.T. One and Two have since been discontinued in favor of a new speaker, somewhat confusingly called the A.C.T. (Perhaps they should have christened it the Just Plain A.C.T.) The good news is that the new speaker costs $12,500 in the US, which is $2500 less than a speaker it replaces in the line. The US price is also lower than the A.C.T.'s suggested retail price in the UK, translated into today's weak dollars.

The hallmarks of Wilson Benesch's "house sound" are extremely low distortion, seamless coherence, unfussy easefulness, rounded liquidity of tone, articulate dynamics, and seductively natural imaging and soundstaging. I think there are five major technical factors that contribute to making all these benefits possible.

- Carbon fiber's combination of low mass, high rigidity, and high self-damping results in an enclosure that contributes very little degradation in terms of time smear or ringing.
- In addition to enhancing rigidity, the cabinet's sloping top and curved shape reduce diffraction effects and make room placement less critical.
- The use of nearly identical drivers for the bass and bass-midrange — which makes the A.C.T. a 2.5-way design rather than a three-way — would seem to make dispersion more uniform (or, more precisely, make the rate of change of dispersion more uniform), and the transition between those two drivers harder to perceive. (The bass driver's cone is slightly more heavy and stiff than the midrange driver's; the voice-coils are also different.)
- Closely related to that, the A.C.T.'s crossover is very simple, aiming for the least possible compromise of phase integrity. The crossover's bass-driver section has one inductor, which rolls the woofer off above 500Hz. The bass-midrange driver sees all the same bass

from the amplifier as does the bass driver, but its slightly lighter cone and higher port tuning are said to give it an acoustical low-bass rolloff. The bass-midrange driver section of the crossover (again) has one inductor, rolling it off at 5kHz. The tweeter crossover is a simple first-order design that rolls in at 5kHz; the tweeter's bandwidth is supposed to extend to 30kHz (–6dB).

• The use of a high-quality silk-dome tweeter avoids the problems potentially associated with out-of-bandwidth ringing from metal or exotic-material treble drivers. While I admit that people cannot hear steady tones above some frequencies, I remain convinced that the ear/brain system does in some way respond to transients in the high-harmonic range. "Keeping the bad stuff up where people can't hear it" is not a design goal I find myself instinctively agreeing with.

Reason #6 of 12, why Wilson Benesch does not offer their loudspeakers as DIY kits.

The A.C.T. One was the most strikingly elegant loudspeaker I had ever seen. Simply beautiful. It was about 42" high, 9" wide, and 14" deep. Its top was of solid cherry, tapering from rear to front. The front panel consisted of an alloy baffle in which the drivers were mounted, and, below that, furniture-grade cherry veneer. The side caps (vertical corner pieces) were solid cherry. Viewed from in front and above, the A.C.T. One had a front-to-rear shape reminiscent of a boat's prow, a bouzouki, a balalaika, or a bishop's miter: square at the bottom, the sides gently curving to meet a rounded point, which was the speaker's structural "spine." The side panels were made of glossy-black quilted carbon-fiber composite, the first such use in a loudspeaker.

I could easily envision a pair of A.C.T. Ones fitting right in in a model room at the Winter Antiques Show, surrounded by Biedermeier furniture, Persian rugs, and old oil paintings. Or, for that matter, in an austere loft. The styling was a neat hybrid of hi-tech and early 19th-century fruitwood-and-black.

The new A.C.T. is the same size and shape — the same entire "look" — as the One, but with the internal volume of the larger Two. That bit of legerdemain was accomplished by replacing the older speaker's internal structural bracing, formerly made from wood-based composites, with a unitary assembly of laser-cut welded steel. Furthermore, while the older speakers used separate carbon-fiber panels for each side, the new A.C.T.'s carbon-fiber structure is a continuous monocoque in a U-shape or arch design. Wilson Benesch claims that the A.C.T. has the stiffest structure ever employed in a floor-standing loudspeaker system. As might be expected, the new speaker is heavier than was the One, at about 100 lbs. The review pair's side endcaps were finished in Regal Silver, while the tops were high-gloss black. The black fabric grilles are held on by elegantly machined posts.

The A.C.T.'s 7" bass and bass-midrange drivers are Wilson Benesch's proprietary Tactic drive-units, which have basket structures machined from solid metal billets, and cones made from isotactic polypropylene. This driver was first developed for, and at first exclusively available in, the company's flagship model, the Bishop. (The original A.C.T. One's drivers were sourced from ScanSpeak.) The tweeter is a new hand-painted silk-dome unit. Its mounting plate has a crescent shape cut out of its lower edge, in order to bring the tweeter's center closer to the bass-midrange driver's center.

The A.C.T. uses its predecessors' unique, cantilevered design of an intermediate plate plus a base plinth. The rear spikes attach to the steel intermediate plate; the front spikes attach to the base plinth proper. The A.C.T. also has a double-ported enclosure. One port is at the bottom, above the steel intermediate plate. There is also a small port near the top of the rear "spine." I gather that this is more along the line of pressure release for the midrange driver. The manufacturer specifies a –3dB point of 35Hz.

Binding posts of Wilson Benesch's own design, at the lower rear, provide for biwiring. Jumpers are provided for single-wiring, and high-quality wrenches for the spike nuts and binding posts. The spikes, nuts, wrenches, owner's manual, and jumpers come packed in a small plastic attaché case. The A.C.T.s' shipping cartons, by the way, are exemplary. Three large quarter-turn latches on an overlapping flap make them the first loudspeaker cartons I have ever seen that are reusable without packing tape. (Engineering elegance aside, I assume that having a carton that can be easily opened and closed for customs inspection is a rational concession to our post–9/11 realities.)

The A.C.T.'s standard finishes are silver and black. An upcharge applies to wood finishes in satin natural cherry, maple, and oak, or high-gloss stained red cherry, bird's-eye maple, or walnut burl. The high-gloss woodwork is crafted by the same firm that provides dashboards for Anglo-German luxury automaker Bentley. Other loudspeakers have industrial design and fit and finish of about the same quality as Wilson Benesch's, but I can't think of one that surpasses.

Listening to the A.C.T. has been an immensely enjoyable experience. Some loudspeakers seem to bring out the neurotic audiophile in just about anyone, but Wilson Benesch is as far from that vibe as one can get. The speakers seem to say, "Please just sit down and enjoy the music." The A.C.T.s were not "euphonic." They just got it satisfyingly "right."

There were no surprises in my listening sessions, just a renewed sense of recognition of the music. The A.C.T. sounded as you would expect: much like the A.C.T. One and Two, but with the work on refin-

ing the concept having yielded obvious improvements.

The new Wilson Benesch A.C.T., although quite reminiscent of its predecessors, reached a new level of magical organicity and seductive coherence. Their sonic presentation embodied near-electrostatic clarity of detail without ever sounding etched, tipped-up, harsh, or in any way unmusical. The A.C.T.s' imaging and soundstaging were just short of staggering; from time to time, the speakers really did seem to disappear.

Memory is fallible, but the new A.C.T. might make the One sound slightly euphonic in the upper midrange, such as on Ella Fitzgerald's *Easy to Love* (CD, Verve 821 990-2). The A.C.T. also had even less of a sense of "boxiness" than the older speakers, and that is quite an achievement. Dispersion was excellent; there was no sense of horizontal or vertical constriction. Image height, width, and depth were superb.

I did have the impression of substantially more bass fullness with the new speaker. To say the least, it did not fall down on the job with organ recordings, both my own and ones from other labels, such as Michael Murray's inaugural recording of the Ruffatti organ at San Francisco's Davies Symphony Hall (CD, Telarc CD-80097). The A.C.T. rose to the occasion of Bach's textbook organ fugue "Kyrie, Gott heiliger Geist," BWV 671, with a thrilling display of power.

Admittedly, though, a speaker that is flat at 28Hz and has output below 20Hz will always have the ultimate advantage in terms of visceral impact on organ recordings when compared to a speaker, such as the A.C.T., that begins to roll off right below 40Hz. Partially compensating for its lack of deepest bass, the A.C.T. could play seriously loudly without any sense of strain, through the use of the Tactic drivers. WB claims 111dB are available at 1m. I'll have to take that on faith, but the old garage-door track on the *Hi-Fi News & Record Review Test Disc* (CD, HFN/Denon 003) was arresting.

Other favorite tracks through the A.C.T. were John Atkinson's recording of Cantus singing "Shenandoah" (CD, Cantus CTS 1201), Ensemble Amarcord singing "Juramento" (CD, apollon classics apc 10102), and the pizzicato-scherzo movement from Ravel's string quartet, played by Nuovo Quartetto (CD, Denon 33C37-7830, NLA).

This is as good a time as any to recommend that you check out (but not necessarily wholeheartedly embrace) Sixpence None the Richer's second major-label album, *Divine Discontent* (CD, Warner Bros. 886010). I have enjoyed the journey into the sonic and philosophical world of this record, despite having a couple of reservations. First, Leigh Nash is doubtless a very fine person, but her singing voice is a bit raspy and somewhat wavery — not quite out-and-out annoying, but not rapturously beautiful, either. Second, most of the tracks, by which I mean the individually recorded channels of music or vocal that were mixed to assemble the complete "track," do seem to have been dynamically compressed a bit too much, perhaps in an effort to make the finished product sound punchier on a car radio.

Nonetheless, this disc contains two or three truly exceptional songs. Sixpence's remake of Crowded House's "Don't Dream It's Over" is good clean fun, while their original "I've Been Waiting" is poignantly confessional. That song, addressed to a lover human or divine, has the refrain: "So I'm changing who I am / 'cause what I am's not good / And I know you love me now / But I don't see why you should."[1]

However, if you want an object lesson in what separates well-intentioned neophytes from true artists, move from *Divine Discontent* to Elvis Costello's magnum opus of rage barely held in check, *All This Useless Beauty* (CD, Warner Bros. 46198). Apart from the essential musical value of the songs and the singing, the production values and added sounds are almost a history of making records, and of musical styles.

The first song includes the lines "as I sit here moping / With a bamboo needle on a shellac of Chopin." Later in the album you hear DJ-style scratching, and a panoply of production tricks that harks back to the dawn of "concept albums" such as *Pet Sounds*. Peter and Gordon, take a bow.

Elvis C. might not be everyone's cup of tea — listening to this album straight through might make one question whether Diana Krall really had any idea what she was getting into when she married him, though I guess that's none of our business — but if I had to pick one rock record that was the spiritual equal of Fitzgerald's *The Great Gatsby*, *All This Useless Beauty* would be it.

I drove the A.C.T. with Plinius' 9200 integrated amplifier, both on its own and as a preamplifier for the darTZeel NHB-108. As far as I'm concerned, the Plinius is the bargain champ in amplification. For

1 Copyright 2002 Squint Songs and My So-Called Music, all rights reserved. And ya just gotta love the first verse's T.S. Eliot allusion.

a lot more money, the darTZeel amplifier is a *wonderful* complement to the A.C.T.'s bred-in-the-bone musicality. Stereovox, Nordost Valkyrja biwire, and Wireworld Super Eclipse 5 biwire speaker cables all sounded wonderful — any preference was both amplifier-dependent and a matter of personal taste. With the Plinius integrated, it was the Wireworld by a nose; using the darTZeel, it was the Nordost by a nose.

The A.C.T.'s published impedance curve is quite benign, averaging 6 ohms and not falling below 4 ohms. Sensitivity is claimed to be 88dB. I've heard reports from the field that the A.C.T. works very well with tube amplifiers, even low-powered ones (by which I mean 20Wpc or so rather than 3Wpc).

The one point on which Wilson Benesch speakers have sometimes come in for criticism in the US press has been their handling of the very bottom octave. To avoid misunderstandings, *midrange* means having to do with middle C (262Hz) and the octaves on either side; 131Hz or thereabouts (*eg*, 140Hz) is thus a plausible dividing line between lower midrange and upper bass. An electric bass guitar's low E is 41.2Hz. I would therefore posit 40Hz as the dividing line between "bass" and "low bass." This makes sense, given that 20Hz, the pitch one octave below 41.2Hz, is generally regarded as the limit of human hearing's pitch sensitivity.

As far as landmarks go, below E at 41Hz there are the notes D at 36.7Hz, C at 32.7Hz, B at 30.8Hz, and piano low A at 27.5Hz. Below piano low A there are only the additional bass strings of a Bösendorfer Imperial Concert Grand piano, organ pipes, percussion, sound effects, and synthesizers.

My impression was that the A.C.T. was flat at 41Hz and obviously lacking at 20Hz. I estimate that in my room it was down about 6dB at 28Hz — in other words, half as loud as at 41Hz. To put this in perspective: Unless you listen almost exclusively to organ or the largest symphonic works, I doubt that the A.C.T.'s comparative lack of low-bass extension will be much of an issue. (If your setup does double duty as a home theater, this is probably a nonissue; filling in the octave from 20 to 40Hz is what subwoofers are made for.) The A.C.T. was flat at electric-bass low E and really punchy on bass drum. In a word, it was a *fantastic* speaker for rock music.

I imagine it would have been possible for Wilson Benesch to get more bass extension out of the A.C.T., but (I assume) only at the cost of over-porting the enclosure, thereby running the risk of "one-note bass." Keeping in mind the ever-present, serpent-in-the-garden temptation upon audio designers to design their products to be impressive during a brief showroom audition rather than building them to be appreciated and enjoyed over the long haul: at the end of the day, limited low-bass extension is, in my book, preferable to boomy bass, or bass with poor pitch definition.

If you want more bass extension than the A.C.T. can provide, Wilson Benesch's Chimera, at $20,900/pair, offers a larger cabinet with two pairs of isobaric woofers and a passive bass radiator. The added bass drivers result not only in more bass extension (their published –6dB point is 25Hz, compared to the A.C.T.'s published –6dB point of 32Hz), but also in better coupling to the room, and a greater sense of heft, authority, and dynamic ease.

To sum up the Wilson Benesch A.C.T.:

Pros: Drop-dead gorgeous; extraordinarily low distortion; tonally seamless and coherent; superlative soundstaging; room-friendly and easy to set up; powerful yet nuanced dynamics.

Con: Although the new model's improved bass is excellent — very quick, very clean, and powerful — larger and more ambitious speakers will do a better job with the lowest octave.

If you're shopping for speakers in the $12,500/pair range, you're doing yourself a huge disservice if you don't audition the A.C.T. I haven't heard another speaker in its price tier that I prefer.

If you're not shopping in that range, you probably should hear the A.C.T., just to have an idea of what is possible in the, at times, seemingly absurd quest to reproduce some of humankind's highest aspirations using coils of wire attached to domes and cones.

Verdict: Class A, Restricted Extreme LF.

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