



# Good looking Discovery

**New Tactics have been deployed  
in this high-technology integrated  
stand-mounted loudspeaker**

WORDS ANDREW HARRISON   PICTURES TONY PETCH

PRICE	£5500/pair
SUPPLIER	Wilson Benesch
CONTACT	01142 852656

**It's a fact** that most small-sized loudspeakers are referred to as bookshelf speakers, even if they will never share the same shelf as any book. No self-respecting enthusiast would put a pair of loudspeakers anywhere but on dedicated floorstands anyway, preferably some distance into the room away from walls and library materials. But it's one thing to have a pair of small speakers that work best on stands; it's another to have speakers that are already built with an integral stand. Such is the way of the Wilson Benesch Discovery; it's a 1.2m-high compact loudspeaker designed around a clutch of new cutting-edge technologies, and with a price tag to match.

Visually, the striking and unconventional appearance of the Discovery is the first clue that this speaker marks an interesting rethink on loudspeaker design — dark carbon-fibre carcass, sloping Bishop-esque top, natural aluminium finish stand and trim, and the naked bass driver fastened to the underside of the cabinet. It's actually a two-and-a-half-way design, using a total of

four drivers per side. Facing front in the orthodox manner are a 6-in (150mm) mid/bass driver and 28mm soft-dome tweeter, in an inverted configuration with tweeter below and some 80cm above ground zero. The bass driver that appears to be firing upwards into the cabinet is actually the same type as that used on the front baffle, and it's joined by a complementary second bass driver mounted inside the cabinet, facing the first.

Wilson Benesch calls this a clamshell arrangement, as the units are arranged in an isobaric system, such that they push and pull in unison, the inner driver easing the job of driving the volume of air in the cabinet. There's a dividing wall inside this cabinet part way up, obliquely angled like the outer top surface, so that the two isobaric bass drivers work within the lower cavity volume while the mid/bass driver works within its own upper volume. Each of these chambers, upper and lower, is reflex ported, resulting in two aluminium tubes of different lengths protruding through the base of the cabinet like a pair of organ pipes.

The crossover is mounted inside the stand pillar on a long circuit board fixed at the bottom of the pillar. Mid/bass driver and ScanSpeak tweeter cross over around 4kHz, and the bass units are fed via a low-pass filter that gently rolls off their response around 500Hz. At the base of the stand column and facing to the rear



are a line of four speaker terminals. These allow connection to the bi-wire crossover, and a bag of jumper cables is supplied to unite the bass and treble sections of the crossover when using a single run of loudspeaker cable. The base itself is a hefty slab of aluminium with three spiked feet.

Despite the use of this tripod siting, there is some movement available in the entire speaker/stand assembly when mounted on piled carpet, and confidence is not assisted by the relatively high centre of gravity. A fabric grille is provided to screen off the front baffle drivers, leaving a discreet appearance. For the sake of listening, these were slipped off.

Character of sound belies the outward appearance. Whilst its looks are futuristic hi-tech, metallic and plastic, the sound is as pure and natural as the best wood-grain-finish traditional speaker. Only more so. The handover from mid to treble unit is seamless, as you'd expect in a crafted high-end loudspeaker. This must be helped by the clarity and transparency of the midband, heard on classical piano, intimate jazz and female vocal. A favourite recording of Rachmaninov Piano Concerto 2 [USSR Symphony/Lazarev, Melodiya 22317] showed incredible insight into the piano playing, the decay of the overtones, the rapid runs. The voicing in this critical part of the audio spectrum could not be faulted; there was more than a hint of the uncoloured ease of a good electrostatic.

For the most part I used Chord Electronics amplifiers, and although other amps were tried, it was when the Chord SPM 1200C was driving the Discovery that the real magic was happening. Using conventional linear power supply amplifiers like the Musical Fidelity A3, some subjective 'thickness' in the bass region was emphasised. This is not a critique of the A3 so much as a comment on the fast, transparent, effortlessness heard with the Chord and Wilson Benesch together. Cables used included Ecosse Reference monocrystal silver for speakers, with Chord Co Anthem and Ecosse Legend and Conductor interconnects. Sources were Linn LP12/Ittok LVII/Ortofon MC Jubilee, Philips SACD 1000, Musical Fidelity A3 CD and Linn Ikemi.

Overall bass replay was very good, if not quite as transparent as the premier-class quality heard through the midrange and above. Rhythm and timing were excellent, allowing a flowing beat to underpin naturally where required. There was doubt about the purity of bass, as some choice notes could be heard mildly augmented, perhaps a port resonance or newfound room node. Depth of bass was an interesting case, as while the loudspeakers could reproduce the bass of musical instruments to below 40Hz, more energy seemed to be focused in the mid-bass to upper-bass range. This made a very solid foundation which filled out rock and dance music, even if the mayhem of a film

soundtrack did catch them out with occasional distress at high volumes. They are not designed as a one-stop AV speaker, obviously, although Wilson Benesch has promised more speakers for launch this year, including a centre channel speaker. In the AV application, I would imagine the Discovery will be entirely at home, providing a subwoofer can divert and absorb the lowest frequency reproduction; and be watchful for magnetic picture distortion induced by several large and unshielded magnets! For dialogue, it can really impress with its impeccable diction and easy articulation, helped by the way that the layers of a piece of music, or TV or film dialogue





# definitivetest loudspeakers




➤ From left, the front bass/mid unit; amplifier-connections at foot of stand; and tuned port tubes emerging from cabinet

⓪ The speakers come with with grilles: they were removed for our listening sessions

voices, are kept entirely apart, with no sign of congestion or compression.

Combining techno and dance, as Leftfield regularly do on their *Leftism* album [Columbia HANDCD2], gave a good chance for the Discovery to demonstrate its prowess. While driving out a slow synth bass line in 'Original', the cool vocal of Toni Halliday hung naturally in space as gated drums and a wash of chorused strings ebb and flowed all around. And all sounding very clean and unflustered, even with volume levels held high. In fact it really was the cleanliness of sound that most impressed. Without ever sounding too clinical, or bright, or lean, these loudspeakers could get to the inside of music, rattling out swathes of clean music with extreme impact, and never sounding forced or contrived.

They had a uncanny way of showing off the intrinsic appeal of any type of music I could put through them. With pop and dance, they simply rocked like a club system, minus the distortion and compression, and with the visceral impact that gets you off your seat. Asked to play a violin concerto, the Discovery brings to life bow dragged across reedy resonant strings, with that beguiling ability to track fast virtuosic fiddle playing where a lesser speaker would show a blur of smeared notes running into each other. And unusually in such a revealing and finely-detailed sound, the Discovery did not make mincemeat of digital recordings, unlike some highly revealing speakers which highlight brittleness and sound edge in the extreme treble, all the while encouraging excess sibilance in vocals. This speaker's rendering of the *Miserere* by Allegri [Oxford Camerata, Naxos 8.550827] was a wonder to behold: the massed voices blended together in real space, recalling the hall acoustic, yet distinguishing soprano or alto voices as they rose above the rest. Truly angelic.

For the price of these loudspeakers you could get a truly awesome pair of high-end floorstanders that would fill the largest rooms. Wilson Benesch's aim with the Discovery seems a little different: here we have a relatively diminutive speaker that includes a built-in floorstand, and will blend into the smaller rooms of the world. In these situations you'd have an incredibly convincing portrayal of sound, without fear of taking over the room physically. But it can create a big sound where required, and given the right power amplifier, one that's balanced by a fine delicate touch that really communicates music. 

## TECHNOLOGY

Wilson Benesch made its name by applying new composite materials to good effect in the name of audio engineering, starting in the early 1990s with the Turntable and its attendant ACT tonearm and carbon-braced cartridges. These used carbon-fibre in critical areas, exploiting the inherent self-damping properties of this stiff, lightweight material.

In 1996, Wilson Benesch began research into loudspeaker technology, making several critical discoveries that have borne fruit in the giant Bishop speaker, and now the smaller Discovery. First, the isobaric principle, used most famously in the Linn Isobarik, gave the required control to extract the most efficient and cohesive bass performance. But the real progress was made with the development of a new bass and mid driver, the Tactic.

With the help of Leeds University's polymer science department, WB designed a new diaphragm material to offer the best balance of weight, stiffness and damping. The material was polypropylene, hardly a new plastic in the world of speaker cones, but the form used is very different to the quacky mass-market product, just as the carbon that forms diamonds differs from the carbon in a pencil. The polypropylene we are familiar with is known as an atactic polymer, differentiated by the internal molecular bonds which give it a low melting point. The breakthrough happened when it was treated with stereospecific catalysts, which gave the polymer a crystalline structure and allowed it to be drawn into a fibre, and subsequently woven into a textile. This form of polypropylene is called isotactic. Three layers of the isotactic fabric are welded together in a process that consolidates and compacts the material. The research with Leeds University and composite specialists Vantage Polymers led to another process that melts a thin skin on the fibres' surface as they cool, crystallising to form the new composite. This material is several times stiffer than conventional polypropylene, with completely different damping characteristics.

The Tactic drive unit is more than just the application of a new cone material, though. The motor unit, shown off to good effect on the exposed lower isobaric bass unit, has been optimised to reduce the 'shadow' effect caused by large unwieldy magnet assemblies behind the cone. As drivers increase in size and power handling, the magnet and voice coil tend to get larger, impeding the flow of air behind the cone. In the Tactic, the motor assembly is around half the size of traditional units, yet is almost 50% more powerful, and is claimed to give a dramatic improvement in control over the cone. The basket assembly is also optimised for stiffness, yet is relatively transparent to the rearward flow of air from the cone's excursions. Each basket is machined from a single billet of aluminium. As a complete loudspeaker, WB give an impedance of 6 ohm nominal, 4 ohm minimum, and sensitivity of 88dB/2.83V.