



## BIG SPENDOR

*Released in celebration of Spendor's 25th Anniversary, the SP9/1 is the company's biggest speaker yet, and its first floor-stander*

by MARTIN COLLOMS



**With Spendor designs, enclosure and driver quality are accorded almost equal importance. If the drivers are not up to scratch, then no amount of effort paid to system design or enclosure build can advance their performance beyond a certain point. Likewise, a great drive unit can only be as good as the enclosure which supports it**

Since the launch of its first model, the free-space broadcast monitor BCI, Spendor's accent has been on quality and not quantity. Back then, in 1969, the BCI's cabinet and main driver were the most highly-developed on the market, and this showed in the low coloration, tonal accuracy and clarity of the sound. Its subtlety and inner balance reflected the finely-pitched judgements of the driver and system designer, the late Spencer Hughes, co-founder (with his wife Dorothy) of Spendor Audio Systems. His legacy has been continued in recent years by his son Derek.

A substantial piece of furniture-grade cabinetry, the new SP9/1 speaker stands an impressive 1.1m tall and weighs over 52kg (115lbs): definitely

a two-man lift.

Primary specifications show that this is intended to be a serious speaker. What do you get for your money? A true three-way model with a large, high power bass unit; an above average sensitivity of 90dB/W and a 125W power handling leading to a generous maximum sound level of 110dBA at one metre. The impedance load is uncompromised at 8 ohms, and its closely toleranced 40Hz to 20kHz frequency response promises good bass extension down to 30Hz in a typical room. The design is intended to be placed in free space, critically aligned with local boundaries for the best overall sound and stereo focus.

*Towers of power: The Spendor SP9/1s are heavyweights beautifully fashioned from real wood*

### TECHNOLOGY

The SP9/1 has a long pedigree and its primary engineering resource is the well established stand-mounted monitor, the S100. In the transition from stand mount to floor position the system has grown considerably. Its reflex alignment has been shifted down to provide greater bass extension and power handling while alignment has been optimised for the cabinet's frontal slope and altered local boundary characteristics.

For the bass range, 30Hz to 600Hz, Derek has chosen Spendor's own 12in (310mm)

unit, a driver of heroic build with a massive magnet and a very rigid cast alloy frame. The high power 44mm voice coil uses a temperature resistant Kapton former. In contrast to many other bass drivers the critically-damped (by hand) Bextrene cone of this unit will operate well into the mid-range, and has served well in a two-way application with a 34mm tweeter. Here, it is just coasting to the chosen crossover point.

The hand-coated polypropylene cone of the midrange unit has an effective range well beyond the 600Hz to 4kHz range asked of it: a miniature bass unit in its own right, this operates cleanly for four octaves outside the system design range.

Built for Spendor by ScanSpeak, the soft fabric dome tweeter is a version of a renowned recipe on the 19mm size. It will work down to 2kHz (with care) and when used from 4kHz its high linearity and power handling are assured.

A possible disadvantage of tweeter placement near the centre of a speaker is a reduction in 'air', since less off-axis treble energy is directed at the ceiling compared with a tweeter near the top of a cabinet.

The 110mm unit is fitted with a shorter voice coil to optimise its performance for midrange duty, and is loaded by a 9.5 litre sealed, acoustically damped chamber.

Built to a high standard of precision, SP9/1 tweeters are calibrated to an 0.5dB sensitivity tolerance and are matched to an adjustable crossover with 0.5dB settings for sensitivity using an auto-transformer, this following a BBC tradition and ensuring consistency of tonal balance in the critical mid-treble transition.

All sections of the crossover use damped 12dB/octave second order electrical networks, with film capacitors and low saturation iron dust inductor cores.

The main enclosure contains

a 105 litre volume tuned to 27Hz by an effective 90mm diameter, 160mm long ducted port located on the front panel, the exit flared to minimise audible distortion due to exit turbulence at high power levels.

The real foundation for this enclosure is the massive 54mm thick front baffle, a laminate composed of three 18mm boards. Vibration is so well controlled at this point that coupled resonance problems in the rest of the enclosure were found to be strongly reduced.

### SOUND QUALITY

Power amplifiers used were the Meridian 605, Naim NAP250 and Orelle SP150, later supplemented by an EAR 859 SE and the Musical Fidelity A1000. Analogue sources included the Linn LP12 / Armageddon / Naim Aro / Naim Prefix / Koestu Rosewood Signature II. Digital was sourced from the Accuphase DP-70V augmented by the Wadia 16CDP. For single wiring, short lengths of Van den Hul Revelation and Siltech ribbon proved worthwhile. In tri-wiring, Chord Flatline gave good results, but Naim NAC4 delivered the most bass.

This is a large loudspeaker with a broad front and, as anticipated, optimum results were achieved at a larger than usual spacing, 10-12 feet or more if possible. Given the powerful bass output possible, the SP9/1 is obviously at its best in larger rooms, where it has space to breathe. Fortunately it has ample power reserves to drive bigger rooms to realistic sound levels.

Next, the effect of the floor spikes was assessed. Spiking had a pretty major effect on focus and depth, on bass rhythm and attack as well as overall coloration.

Next came assessment of the grille, and I agree with the designer here; leave the grille off for critical listening. Thankfully none of the drivers is particularly susceptible to a

casual finger attack!

Historically speaking Spendor have taken a neutral position with regard to multi-wiring, although in recent years they have gone in for multiple entry with the usual bridging straps for normal use. As befits a high end speaker, the SP9/1 comes equipped with tri-wire terminals, and both this and the single-wired connection were examined. Good results were obtained with single wiring so use of the triple mode is not a necessity.

With the set-up trials finally completed, the spiked, tri-wired and grille-less speakers were put to work.

The SP9's sounded like old friends in that they certainly carry a fair measure of the Spendor legacy, and Spendor always gets certain major areas right. There is a fundamental accuracy of tonal balance and frequency response uniformity which is the province of the true monitor, a reference for judgement of programme quality. Although not entirely free from coloration, the SP9/1 was inherently neutral, even tempered and tolerant of system components, which meant that it was easy to set up and use. Nonetheless, its performance was complex and multi-layered and I found that it was not as easy to judge as the simpler two-way SP2/3, [HFN/RR May 1994].

Many programme excerpts were replayed with great accomplishment and the speaker demonstrated a wide, well controlled bandwidth from extreme treble down into the deep bass, a solid 26Hz in room. That well tuned 12in bass driver could take a real pounding; there was no compromise of the dynamic range in the bass. Its open, free, linear quality was a marked uplift over the usual weakening heard with smaller systems which inevitably sound somewhat strained when driven hard in the bass.

The SP9/1 delivered the large power envelope expected of a well designed three-way

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of this price and size. When properly located, it had good focus (though a step behind narrower or small systems). In general, depth was also 'good' to 'very good', particularly in the province of the mid and treble. In the lower mid, the big driver didn't sound so agile and here the impression of depth was more clouded. Stage width and height were fine although once again, narrower fronted designs can provide a greater impression of stage width.

This Spendor was quite transparent through the mid and treble, way above the norm but not eclipsing the achievement of the Monitor Audio Studio SE, to name one alternative. Lots of detail was present and in vindication of its 'Programme Monitor' calibre, this speaker could deal with a wide range of programme without falling over. I value that level of consistency.

Fed mainly classical programme, the SP9/1 performed very well, from piano (despite a touch of phasiness and 'wood' sound in the lower register) to orchestra at full blast. Singing voice was respectably accurate, with a mild chestiness on some low pitched female vocals but nevertheless beautifully articulate, with properly placed 'lips and teeth'. With some speakers, you can find your favourite singer has miraculously acquired false teeth but not so with the Spendor!

On rock material the SP9/1 proved less satisfactory, more obvious than in the equivalent situation using the SP2/3. Fed fast bass percussion, associated with well timed, dynamic lines in the mid range and firm rhythms, this speaker appeared to stumble and trip over itself. The SP9/1

sounded less well timed and rhythmic than the SP2/3, but it also has to be said that this aspect of sound has never been Spendor's forte. The rather restrained quality of these speakers is in part associated with this loss of timing. Dynamic peaks and dynamic expression were also somewhat muted and bass had a softened edge.

In isolation, and even with the reservations concerning rock material, this was a more than satisfactory speaker, thanks to the purity and the clarity of its mid and treble

with good cable, and preferably tri-wired. Check also the tightness of the driver mountings (use only firm finger pressure on the Allen key, though).

The best can be made of the speakers' limited rhythmic capability by using low resistance cable and a fast taut amplifier such as the Naim NAP 135 or NAP 250. The latter's nominal 70W per channel went a long way with the SP9/1 thanks to its kind amplifier load rating and high 90dB/W sensitivity. High sound levels were attained, even in the larger listening room. This is a powerful loudspeaker with a clean output extending to the low bass; no subwoofer is required.

Notwithstanding its polite performance on rock and heavy percussive material, that deep vein of inner quality, tonal accuracy, clarity, smoothness, low distortion and integrity all resulted in a high standard on less rhythmically demanding classical material. Many sounds – voice, acoustic guitar – were delightfully natural, distancing the SP9/1 from the crowd.

It measured as smoothly as it sounded, the lab results showing careful design, well tolerated engineering and fine build quality.

If it's of any help to you, this speaker's sonic quality is nearer to that of a panel speaker, an electrostatic or magnetic than say a Naim SBL or Tannoy D700. Speaking for myself, I would have liked more bass rhythm and dynamic expression but trying to view it dispassionately I feel the SP9/1 represents a lot of good speaker for the money, and strongly urge those interested to try it out.



registers. It was only when comparisons were made with dynamic rhythmic speakers such as the KEF R105 111, Naim SBL and DBL or Tannoy Definition 700, that the SP9/1 shortfall was clearly exposed.

## CONCLUSIONS

The SP9/1, Spendor's largest creation to date, offers a floor-standing, high power monitor of elegant cabinet-quality finish, suited to larger spaces and rooms. If its performance is to rise above the ordinary, then it must be well set up – critically placed and spiked, with grilles detached, used

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## LAB REPORT

Almost predictably on target, the SP9/1 sensitivity was within 0.3dB of the high 90dB/W specification. The impedance curve provided further good news and showed a mean value of 11 ohms in the mid treble with an absolute minimum of 5.6 ohms in the upper bass, for an overall rated value of 7 ohms. This represents a fairly kind amplifier loading, particularly for this class. System reflex resonance was seen at 27Hz on this graph, agreeing closely with the peak port output at 28Hz. Few resonances emanated from the port – a little at 50Hz, 20dB below rated level and considered innocuous. Given the good loading, high sensitivity, fine 150W power handling and low distortion, the SP9/1 will be capable of maximum sound levels of around 107dBA in a typical listening room; in other words, full orchestra at a realistic level. On axis at 1m [Fig 1], which is a little close for optimum integration of the bass-mid range, the frequency response was very accurate measuring +2dB 50Hz to 18kHz, while the best of the mid treble was nearer +1dB! With such accuracy no reliable comment can be made, this

speaker should sound neutrally balanced. The bass was genuinely extended to 30Hz, -6dB, and this speaker will reach 27Hz under a typical room loading. Up to 50W of pure low frequency input was tolerated showing good linearity and effective low frequency loading. That big port didn't impart significant distortion. Examining the family of forward responses [Fig 2] in the lateral plane, as well as above and below axis, the most variation was due to listener or microphone height. Below axis that small suckout developed at the lower crossover (B) while above axis another, less severe one appeared at the upper crossover point (A). These compared well with the fine integration in the lateral direction. Given the expanded vertical scale for this graph, these were good results, especially for a large enclosure like this one. Fig 3 shows the room averaged response, notable for its even and extended bass, its slightly forward upper mid range (just audible) and the smooth treble, with the correct upper range roll-off or 'house curve'. Moving on to the energy/time response, decay of

overall energy with time, the upper unweighted curve was not very good, and at this point inexplicable. Conversely, when Blackman Harris weighted the result was well up to standard. Moving onto the waterfall display the 30dB amplitude 0.1ms filter setting gave an interesting result. There was some congestion in the 4 to 6kHz range while the range above was notably clear. At lower frequencies the decay was complex, probably due to real delays in the three way crossover. On the more frequency selective display, 60dB amplitude, 0.2ms filter risetime, the 4kHz to 6kHz region quietened down after a millisecond while other more complex changes in the output occurred with time. A small, hidden resonance at 18kHz was associated with the short 'horn' loading on the small tweeter dome, but was not of much audible significance.

## SPENDOR SP9/1

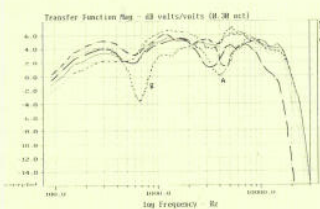


Fig 1: Spendor SP9/1: Frequency response on axis at 1m (dashed, nearfield correction; dotted traces, individual drivers)

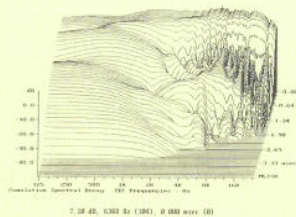


Fig 2: Spendor SP9/1: response at 2m, axial (solid trace); 15° vertical (dotted trace); 30° lateral (dashed trace); 45° lateral (long dash)

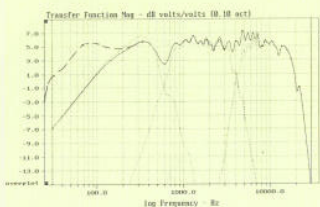


Fig 3: Spendor SP9/1: room averaged response (top trace); impedance, 2 ohms/div, base line zero (lower trace)

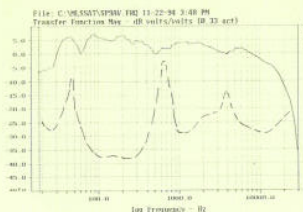


Fig 4: Spendor SP9/1: MLSSA waterfall display of energy decay, 50dB dynamic range, 0.2ms rise time

### Test results

### Spendor SP9/1

Recommended amplifier power per channel	25–150W
Recommended placement	freespace
Frequency response, ±3dB (2m)	40Hz–20kHz
Bass roll off (-6dB) at 1m	30Hz
Bass extension (typical in room)	27Hz
Voltage sensitivity (ref 2.83V) at 1m	90dB/W
Approximate maximum sound level (pair at 2m)	107dBA
Impedance (typical / minimum ease of drive)	8 ohms / 5.6 ohms / very good
Forward response uniformity	excellent
Dimensions (hwd)	1060x370x440mm
Typical price per pair (inc VAT)	£3,300 – £4,200 depending upon finish

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