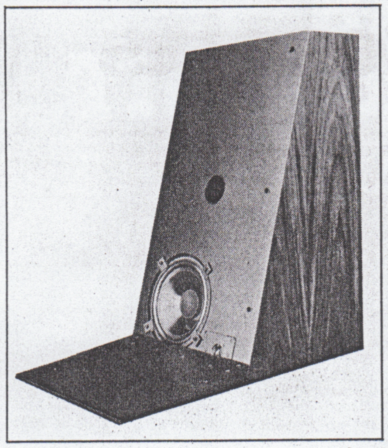

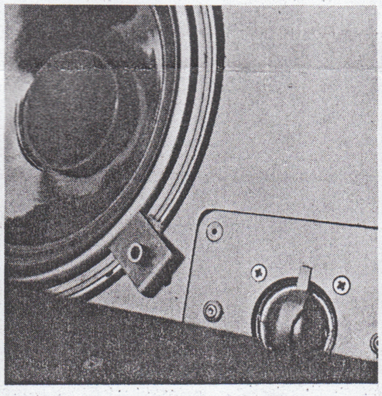

This close-up of the Type 1's drivers shows how the convergence baffle (the ramp coming up from the floor in front of the speaker) covers the bottom half of the tweeter. Because the ramp's hard surface is a sound reflector, its acoustic effect is analogous to that of a mirror. If an optical mirror were placed here (that is, horizontally bisecting the tweeter), it would reflect the top half of the tweeter so that the reflected image would appear where the bottom half actually is. Despite the reflection, therefore, you still would see only one tweeter. Move the mirror to the floor plane, however, and you'll see two tweeters—the real one and its reflection—with their acoustic potential for mutual interference. Felt attached to the underside of the convergence baffle absorbs the output from the bottom half of the tweeter.

maining gap is closed by the addition of a "convergence baffle"—a short ramp, hinged to the front of the speaker, that effectively extends the floor up to the drivers (covering, in fact, half of the 1-inch dome tweeter). Snell says the slope of the baffle is calculated to make the paths of the direct and reflected sound converge (hence the name), so that they remain perfectly in phase over the entire frequency range for smooth, ripple-free response.

The Type 1's other particulars are more conventional. A metal strip in front of the tweeter affords some protection and acts as a diffuser, to improve high-frequency distribution. At 2 kHz, the tweeter crosses over to a 10-inch reflex-loaded woofer. The port is mounted about halfway up the enclosure's sloping front baffle, which tilts backward to optimize the convergence baffle's interaction with the drivers and to minimize standing waves within the box. The front baffle is completely covered by a removable foam grille, stiffened by fiberboard backing over all but those areas in front of the port or a driver. The speakers are sold in mirror-image pairs.

A recess at the rear of the enclosure holds sturdy five-way binding posts for amplifier connections, separate fuses for the woofer and tweeter, a large variable resistor intended mainly for factory tweaking of the tweeter level, and a three-position midrange contour switch. The last makes possible subtle response touch-ups that compensate for the absorption characteristics of different floor coverings.

Diversified Science Laboratories' impedance measurements show a very flat curve. Aside from the bass resonance (where the impedance measures 22.5 ohms), it generally lies between 6 and 16 ohms with the contour switch at its normal position. Setting the contour for maximum boost lowers some values slightly. Based on these data and the speaker's moderately high sensitivity, we would expect most amps to have no difficulty driving a single pair, though some might balk at taking on two sets in parallel. In DSL's pulsed-power test, the Snell accepted the amp's full output without distress; in the 300-Hz continuous-power test, the woofer fuse performed its intended function (perhaps a bit overzealously) by blowing at a little over 10 volts (the equivalent of 12½ watts or more into 8 ohms, depending on how fast DSL raised the test level)—well before the speaker had a chance to get into trouble.

Distortion measurements are equally encouraging, becoming significant only at the very high level of 100 dB SPL, where total harmonic distortion reaches 5% at 250 Hz, 4½% at 6.3 kHz, and 3½% at 10 kHz. But these are isolated instances: Over most of the frequency range above 100 Hz, THD remains less than 1%. Naturally, performance improves at lower volumes. At sound pressure levels of 90 dB or less, total harmonic distortion averages less than ½% from 100 Hz to 10 kHz.

Most heartening of all is the speaker's exceptionally smooth on-axis frequency response, which remains within a ±2½-dB range from 40 Hz to 20 kHz. Response is still good off axis, but the increasing directivity of the woofer as it approaches its relatively high crossover point creates a dip around 2 kHz, while the directivity of the tweeter above 10 kHz rolls off the top octave.

All speakers perform differently, depending on, in part, where they are placed with respect to room boundaries—wall, floors, and ceiling. Maximum bass output occurs when a speaker is placed in a corner; minimum low frequency output when it is put in the middle of a room, off the floor and away from the walls. DSL tested the Type 1 well away from side walls with its back against the rear wall. After some experimentation, we arrived at a similar position as the optimum in our listening room, with the speakers toed-in slightly, to put the listener at the sweet spot—on axis to both.

So positioned, the Snells sound very smooth, clean, and neutral, with deep, taut bass and sparkling highs. Some members of our listening panel did note a touch of thinness or brightness on some material, but this was virtually the only complaint. Although the reproduction is at its best on axis, the sound holds up very well off axis as well. Imaging is quite good: not as wide open as with some speakers, but with precise, stable placement of instruments and voices and a respectable sense of ambience and depth.

We experimented some with the midrange contour switch, whose sonic effect turns out to be fairly subtle. This impression is confirmed by DSL's measurements. We hear this in our listening room as a slight addition of body or warmth and find ourselves favoring the INCREASE-1 position for most material. Of course, the choice of setting depends heavily on room acoustics and personal taste.

The Snell Type 1 is a cunning implementation of a fascinating idea—and it's a good speaker, to boot. Indeed, were it less good, we might be inclined to look askance at the price, which is not small. What it reflects, however, is unusual attention to detail in both design and construction. If what you're seeking is top-notch sound in a handsome, well crafted, quirk-free package, the Snell Type 1 deserves a place on your auditioning list.

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