

HIGH FIDELITY

“... exceptional sonic value
... we are enthusiastic
about the AR-94...”

AR94 HIGH-TECH SPEAKERS

AR's line of vertical "high tech" speakers started at the top, with the AR-9 (HF, October 1978). Since then, as much of the 9's blue blood as possible has been transfused into the nether price regions. The process began with the AR-90, followed by the 91, 92, and, most recently, the 93 and 94, each representing a yet lower price. In testing the AR-94 we are, therefore, documenting the other extreme of the series. And we find that, despite the wide price spread between the 94 and the 9, an astonishing proportion of big daddy's genes remain operative in the new baby.

All the models in the series employ vertically aligned drivers (except in the bass) for maximum stereo-image clarity, which also is enhanced by the acoustic blanket surrounding the high-frequency drivers to absorb their radiation along the baffle board and forestall diffraction and reflection effects at the enclosure's front edges. But while the bigger models use paired side-firing woofers at the bottom of the enclosure (which therefore couple to the floor and the back wall), the 94 takes a markedly different approach in this region. Though it is termed a three-way system, it has no midrange driver per se; rather, two 8-inch drivers cover both bass and midrange via an unusual crossover scheme. Both drivers receive a share of input below 350 Hz; as that crossover point is approached, the signal to the lower driver rolls off and the full midrange input is fed to the upper one. One reason for this relationship, according to AR, is that it effectively prevents cancellations—the so-called wall dip—from occurring, as they would were both 8-inch cones driven to the higher frequencies. A conventional crossover of 6 dB per octave is applied to the tweeter.

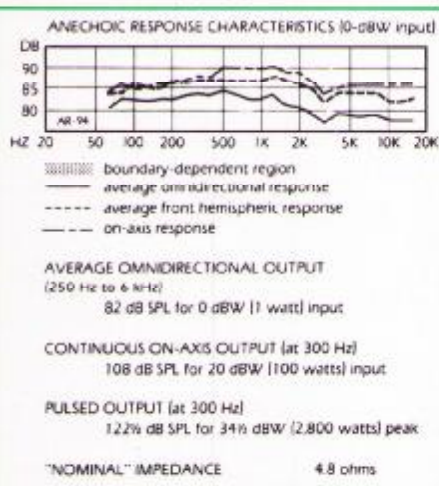
Exclusion of driver level controls from the 94 represents one of the cost savings in the design, and we don't miss them. (Many designers have told us ruefully

that they include such controls only because "the market demands them." If a speaker is well designed in the first place, driver controls are an inadequate substitute for good placement and room acoustics.) The speaker connects to the amplifier via color-coded screw-down posts on the underside of the enclosure, and a recess on one side of the integral base allows the wires to pass freely without tilting the cabinet. According to AR, some 20% of the manufacturing cost of a typical loudspeaker system goes into wood veneers and the like for the enclosure. The 94 therefore eschews such materials, employing instead unfinished particleboard covered by a nonremovable black cloth "stocking" and finished top and bottom with black plastic caps. The result is not only another cost saving, but a distinctive and very attractive appearance.

Despite the complexity of the crossover network—or, perhaps, because of it—we were pleased to note the unusually smooth, consistent impedance curve in the data from CBS Technology Center. From a high of 10 ohms at 55 Hz, impedance dips smoothly to the "nominal" 4.8 ohms at 150 Hz, rises gradually to about 10 ohms again at 3 kHz, then settles down to a little under 6 ohms at 10 kHz. Some amps may balk at paralleled pairs of 94s, but on a one-per-channel basis they present a very "comfortable" load to typical output stages. Thanks to its relatively large cabinet volume, the speaker is fairly efficient for a moderate-priced acoustic suspension design, but use of a skimpy amp seems pointless considering the 94's excellent dynamic range. In fact, the thunderous (122% dB) output in the pulsed test drained the lab's amp dry without inducing untoward behavior in the speaker.

Frequency response plots show elevated output down to about 40 Hz. Distortion products—both second and third harmonics—are remarkably well controlled; at moderate listening levels, they stay well below 1% over most of the band. At loud levels (100 dB SPL), harsher-sounding third harmonics remain below 1% on the average, while second harmonics hover around 1%. Scope photos demonstrate the 94's ability to reproduce 300-Hz transient waveforms with excellent precision; the tweeter does show some evidence of blurring 3-kHz pulses, but we could hear none in listening tests.

Frankly, we were surprised at just how impressive the AR-94's tonal reach and balance proved to be. Bass reproduction was our first eye-opener. With program material stretching from drum rolls to the deepest organ fundamentals, we were mightily impressed with the unit's ability to put out clean, articulate bass. Complex orchestral passages—frequently the bane of less well designed systems—are reproduced with clarity and honesty of timbre. Imaging, too, proves remarkably accurate and is notable for its front-to-back depth. High frequencies, especially the demanding percussives of piano and triangle, are handled with clarity and verve. Obviously, we are enthusiastic about the 94, as we have been about each of the AR vertical models we have heard. While they certainly are not equal in absolute performance—the 94's deep bass is not as magisterial as that of the 9, for example—the littlest of the genus offers exceptional sonic value, in our estimation.



AR-94 loudspeaker system, in wood cabinet with wraparound cloth covering.

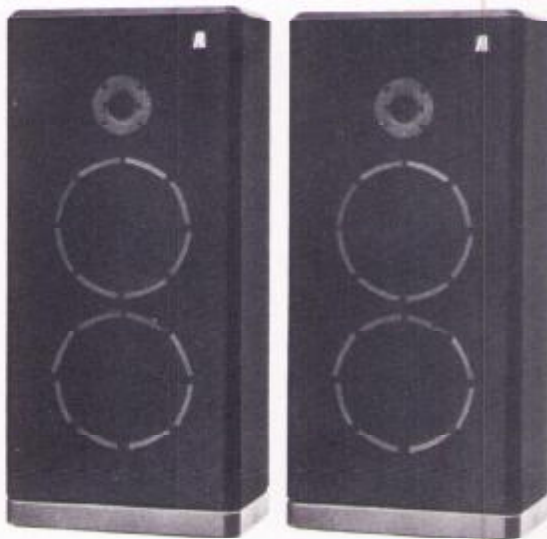
Dimensions: 14 by 30 1/2 inches (front), 10 1/4 inches deep.

Warranty: "full," five years parts, labor and performance.

Price: \$199.00 each.



TELEDYNE
ACOUSTIC RESEARCH
10 AMERICAN DRIVE
NORWOOD, MASSACHUSETTS 02062



Acoustic
Research
AR-94
loudspeakers