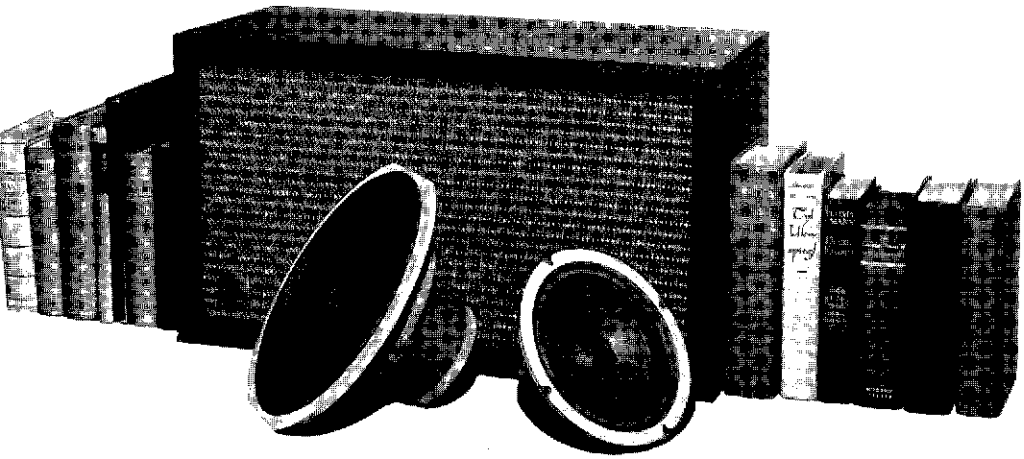


AR<sup>INC</sup>



*the* AR-1 SPEAKER SYSTEM

**A REVOLUTION IN ENGINEERING ACOUSTICS**

**ACOUSTIC RESEARCH, INC.**  
24 Thorndike St., Cambridge 41, Mass.

## THE ACOUSTIC SUSPENSION\* PRINCIPLE

If you have ever handled a conventional loud-speaker you will know that the moving system is mounted on elastic suspensions: when you depress and then release the cone it springs back to its normal position.

The necessarily imperfect quality of these mechanical springs (which, in technical language, become non-linear on large excursions) is the greatest single source of speaker distortion. The condition cannot be cured by removing the spring tension from the suspensions, because elastic restoring force is indispensable in modern speaker design.

Acoustic Research has *replaced* the mechanical spring of the bass speaker suspensions with a pneumatic spring of near-perfect characteristics—the sealed-in air of the cabinet. The practical results of this fundamentally new approach to speaker design are:

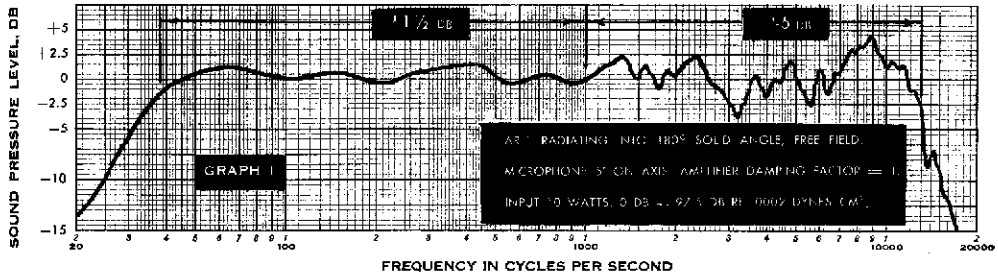
1. *Reduction of bass harmonic distortion, from values currently accepted as unavoidable in speakers, by a factor of 4.*
2. *Uniform and extended low frequency response. We believe that the AR-1 establishes new industry standards in this respect.*
3. *Determination of optimum cabinet size as conveniently small—an extra dividend.*

The size of the AR-1 speaker cabinet is dictated by acoustical considerations, and represents an advance in, rather than a compromise with quality. No allowances for size should be made in evaluating the performance of the system.

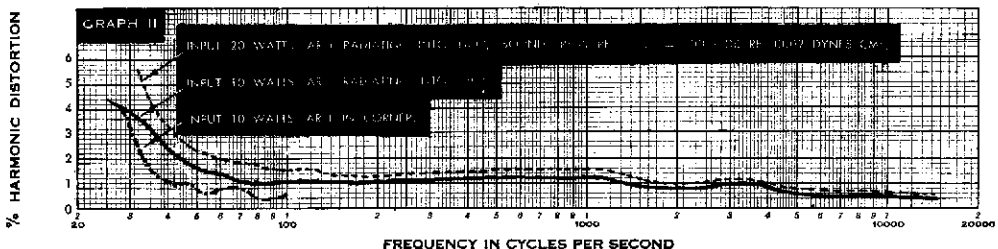
## TECHNICAL DATA

The Acoustic Research AR-1 speaker system consists of an acoustic suspension 12-inch low-frequency mechanism\* and an 8-inch mid-and-high frequency unit, mounted in a sealed, Fiberglas-filled cabinet of braced 3/4-inch hardwood veneer. The "woofer" system is also available separately. Dimensions are 14" high x 11 1/2" deep x 25" long.

<i>Woofer magnetic circuit</i>	3.3 lbs. Alnico 5 6 lbs. Armco iron	<i>Amplifier power requirements</i>	10 clean watts for moderate level in average room.
<i>Impedance</i>	4 ohms		At least 30 watts for high levels and large rooms.
<i>Woofer res. freq., unmounted</i>	Subsonic	<i>System bass res. freq.</i>	43 cps $\pm$ 1 cps



The uniformity and range of Graph I means full fundamentals from organ pedal pipes or the bass viol, the natural sound of strings and brass, and natural speech, without boominess or stridency.



So far as we know Graph II sets a new low-distortion standard in published speaker data. It means "clean" sound.

Reprints of technical articles on the AR-1, from **AUDIO**, sent on request.

"Your AR-1W speaker has been of inestimable value in the production of our recording series, *'The King of Instruments.'* No other system I have ever heard does justice to the intent of our recordings. Your speaker, with its even bass line and lack of distortion, has so closely approached 'the truth' that it validates itself immediately to those who are concerned with musical values."

*Joseph S. Whiteford, vice-pres.,  
The Aeolian-Skinner Organ Co.*



**Atlantic** (John M. Conly)

"The AR-1W woofer gives the cleanest bass response I ever have heard."

**AUDIO** (Edward Tatnall Canby)

"...the highs impressed me immediately as very lovely, smooth, unprepossessing, musical (for music) and unusually natural. No super-hi-fi screech and scratch... As to the lows... I was no end impressed, from the first time I ran my finger over a pickup stylus and got that hearty, wall-shaking thump that betokens real bottom bass to the time when I had played records and tapes on the speaker for some months on end."

**The Audio League Report\***

"Speaker systems that will develop much less than 30% distortion at 30 cycles are few and far between. Our standard reference speaker system,† the best we've ever seen, has about 5% distortion at 30 cycles."

\*Vol. 1 No. 9, Oct., '55. Authorized quotation #30. For the complete technical and subjective report on the AR-1 consult Vol. I No. 11, *The Audio League Report*, Pleasantville, N. Y.

†The AR-1W

**The Saturday Review** (R. S. Lanier)

"... goes down into the low, low bass with exemplary smoothness and low distortion. It is startling to hear the fundamentals of low organ notes come out, pure and undefiled, from a box that is two feet long and about a foot high."

**High Fidelity** (Roy Allison)

"... a woofer that works exceptionally well because of its small size, not in spite of it... I have heard clean extended bass like this only from enclosures that were at least six or seven times its size."

**THE Nation** (B. H. Haggin)

"... achieves the seemingly impossible; a real and clearly defined bass in a cabinet only 14 by 11 $\frac{3}{8}$  by 25 inches in size."

**audiocraft**

"The reproduced sound\* so perfectly duplicated that of the organ that no one could be sure which was playing."

\*At a demonstration of live vs. recorded pipe organ, in which the reproducing system included four AR-1's.

AR-1 (2-way system in mahogany..... \$185  
or birch cabinet)  
AR-1 (2-way system in walnut or cherry) .. \$194  
AR-1U (2-way system, unfinished pine) .. \$172

AR-1W (woofer only in mahogany..... \$145  
or birch cabinet)  
AR-1W (woofer only in walnut cabinet) .. \$154  
AR-1WU (woofer only, unfinished pine) .. \$132

5% higher in the West and deep South