

The Advent Loudspeaker...



and The Smaller
Advent Loudspeaker

First of All, Who and What is Advent?*

Advent Corporation is a new company formed to develop new kinds of home-entertainment products. Most of us involved have had long prior experience in making and marketing high-performance audio products for the home. We are in business now to produce new home-entertainment products, both audio and visual, that go well beyond the limits generally accepted at a given moment and explore new or significantly different approaches to design. One of our main product objectives is a color television system that uses a projected image instead of a conventional picture tube, producing a picture of 4½ by 6 feet.

Our President and General Manager, Henry E. Kloss, was previously President and a founder of KLH Research and Development Corporation, and, prior to that, General Manager and a founder of Acoustic Research, Incorporated. He has been directly responsible, over the past fifteen years, for a major proportion of the important and lasting audio products for the home, including roughly half of the total number of loudspeakers now in use across the country in component stereo systems and high-performance three-piece music systems, radios and phonographs. His credits would be embarrassingly long to present complete, but they include:

- The longest-lived best-selling component speaker system on the market, unchanged in design and undiminished in popularity after twelve years.
- The revolutionary miniature full-range speaker that made it possible to provide sound of high quality in radios and phonographs of modest size.
- The first high-performance FM radio.
- The first high-performance portable stereo phonograph.
- The development of the three-piece compact stereo system as a primary medium for home audio.

All of us at Advent share with him some convictions, developed over several years of working together, about the way in which products can and should be developed. The Advent Loudspeaker is one result of those convictions, and we will have some more to say about them as we describe the speaker.

What is the Advent Loudspeaker?

Our first product, the Advent Loudspeaker, is based on a premise that is not easy to accept. We believe that it's possible to produce a speaker system, for a moderate price, that will be nothing less than the right, completely satisfying choice for most people with a demanding interest in music and sound. The Advent speaker is designed to combine the following objectives:

- To fit the highest category of loudspeaker quality, with overall performance at least the equal — in every audible and useful respect — of the most expensive speakers available.
- To do that at about half the average cost of the speakers now generally considered the best available.
- To be small enough, unobtrusive enough, and un-critical enough in placement to fit gracefully and usefully into a home.
- To produce enough output at low distortion to permit listening to music at satisfyingly loud levels in even the largest living room.
- To be driven comfortably by the majority of good amplifiers and receivers now available, with a power margin sufficient for the most demanding musical material.
- To sound convincing not only on the best recordings but on the great majority of recordings of all kinds.

In developing the Advent Loudspeaker, our initial interest was in the category just below the "ultimate" in performance and a long way below it in price — the category in which most serious listeners, believing that further improvements are not worth the added cost, decide to buy. We knew that we could produce a speaker that would be both significantly better and significantly less expensive than the speakers considered the best value in that category. Our aim was to do that and establish a new point of diminishing returns that would be closer to the highest level of speaker performance.

But as we began to apply some new thinking about old concepts and to take advantage of new materials and manufacturing techniques, it became increasingly clear that we could provide a really tremendous gain in performance-per-dollar. *So much, in fact, that the difference between something very good and the highest level of performance was essentially nonexistent in actual cost.* It made no sense, then, to stop short of a speaker in the "best" category.

We didn't stop short of that point. As difficult as it may be to believe of a speaker system of this cost and apparent simplicity, we know of no way to make any useful improvement in its performance.

*About our name: When you form a new business, and are eager to get on with things before the lawyers get all of the papers signed and the incorporation proceedings over with, your (our) lawyers call you "an advent company." We decided the term suited our continued desire to get on with things, so we appropriated it for our permanent company name.

How is all that possible?

The performance of the Advent Loudspeaker is due in great part to some important specifics of design and construction. But the key to all of them, and to the entirely new level of value the system represents, is that it is the first loudspeaker system to exploit the full potential of two-way loudspeaker design.

For just about as long as home audio has been of real importance, it has been assumed that the three-way speaker system, which assigns at least one specialized speaker to each of the three segments (low, middle, high) of the frequency range, is a necessity for optimum sound. The two-way system has been accepted as a "good" medium-price expedient, but the idea of extra speakers and further specialization for optimum quality fits in both with the idea of separate, specialized audio components and with the widespread feeling that "more is better." But the superiority of the three-way system is one of those "absolutes" that remain true only so long as no one really challenges them. After a thorough review of today's materials and manufacturing technology, we knew that the old assumption no longer need be true.

The trouble with the concept of the three-way system — a crucial one — is that it's based on the limitations of an earlier generation of loudspeakers. When high fidelity first gained wide interest for home listeners, the only suitable speakers available for use in a home audio system were those used in theater and public-address systems. The individual speakers in theater systems were specialized and restricted in range for the purpose of maximum power-handling to fill large public spaces, and they converted to full-range use in home systems only in three-way designs.

As new cone materials and new techniques were developed specifically for home loudspeakers, the need for three-way systems has disappeared. It's simply no longer true that if a woofer is to be able to deliver excellent bass response it will not have enough mid-range output, or that a tweeter can not combine excellent high frequency and mid-range response. Nor is it true that the three-way system is somehow capable of wider range or subtler characteristics.

Today's three-way systems fall into three categories:

- Those that sound genuinely excellent.
- Those designed that way because of the severe limitations of their individual (and outmoded) drivers.
- Those that simply throw in an extra speaker or two because it looks better as a selling point.

Of those three, only the second *has* to be a three-way system.

The Two-Way System

We began the design of the Advent Loudspeaker with the knowledge that a two-way system had basic advantages, both theoretical and practical, over any other way of designing a full-range speaker system for the home. They include:

- Less interference between drivers than any other practical system, yielding more uniform characteristics over the listening area. A single speaker would be better here as an ideal, but lacks either the range or power-handling required in the "best" category, or both.
- A better transition between drivers than the three-way system, because there is no need to sharply cut off the operating range of any driver. Whether such a cut-off is made for good reasons or simply to satisfy the arbitrary parameters of three-way design, its ill effects are audible.
- One simple crossover network instead of the two more complex networks needed in a three-way system.
- A cost significantly lower for excellent sound than that of an equivalent system of three-way — or any other — design.

Those advantages are important enough in themselves, but there is an overall advantage that seems even more important to us. It is that the simplest feasible approach to an objective produces the best kind of engineering — a concept not too far from the notion that the shortest distance between two points is either a straight line or the one that is straightest under the circumstances. "Over-engineering" is a common problem in audio equipment, and one for which the customer often pays heavily in many ways. Good design to us is represented by the simplest approach that permits reaching an objective without compromise, not by an over-elaboration that makes the buyer pay for our painting the lily.

If the two-way system has effective limitations, they apply to the tremendous power-handling required for use in a theater auditorium or in some laboratory applications. An extra driver provides (all other things being equal) both greater power-handling for these purposes and the extra radiating area helpful both for radiating power and dispersing sound over a large public area. But those are the *only* significant limitations of two-way design. *They have no importance in the design of the best possible speaker system for use in a home.*

The Specifics of the System

The Advent Loudspeaker is a "system" in the fullest sense of the term. All of its components, including the cabinet, have been designed from the outset for no application other than this one, and all of them are interdependent.

That interdependence is worth stressing here. The relationship of cabinet size and speaker size, for instance, is critical. If the size of the low-frequency driver were increased (all other things remaining equal), the result would be *less* bass; a larger driver in the same cabinet would raise the effective stiffness of the air in the enclosure and would establish a higher bass roll-off frequency.

Some other factors are equally important, and we will try to make them clear as we go along.

The Low-Frequency System

The operating range of the low-frequency driver extends from the lowest frequency of musical importance to the upper crossover point of 1,000 Hz. To achieve this objective, we chose to build the driver on a standard 12-inch frame that provides at low cost the width and frame depth needed for maximum cone excursion at lowest frequencies and highest power. The piston diameter of the cone combines maximum usable response at 30-35 Hz with a maximum of dispersion in the upper part of the operating range.

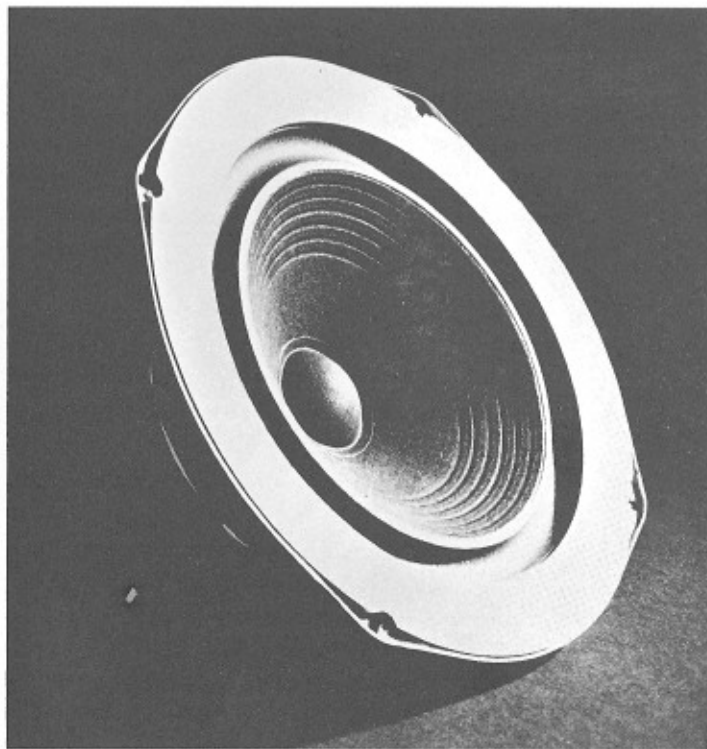
The driver's capabilities at lowest frequencies is made possible in great part by a new outer suspension design of thermally-formed fiber-reinforced polyurethane. The new suspension, a highly durable and reliable centering design, permits long linear cone motion, yet remains an effective airtight seal that maintains the full operating effectiveness of the system's sealed cabinet. In the acoustic-suspension design used for low frequencies in the system, the mechanical rigidity of conventional suspensions is replaced by a combination of a free-moving suspension and the stiffness of the air trapped inside a sealed enclosure. For optimum performance both at first and over years of continuous operation, the free-moving suspension of the speaker should have no tendency to develop air leaks, however small. The new suspension of the Advent Loudspeaker is more effective than any in our experience.

The felted cone of the low-frequency speaker is formed by a low-vacuum process developed to assure high uniformity from speaker to speaker and the proper resistance to the transmission of excess energy through the cone. (The "live" energy-transmitting cone still used in many speaker systems is a prime source of the kind of distortion generally called cone "break-up.") The composition of the cone is as important as any other factor in achieving the smooth operation of the driver in the upper part of its range.

The heavy magnetic structure of the low-frequency driver is designed to provide "critical damping" for the

speaker in its specific cabinet volume — that is, the amount of damping that could not be increased without rolling off bass response unnecessarily. (Like everything else in speaker design, the improvements secured from increasing the weight and flux density of a magnet go only so far; increasing beyond that point just rolls off bass response.) Also part of the magnetic system is a double-wound, four-layer voice coil that is significantly longer than the magnetic gap in which it operates. This is to allow a uniform proportion of the coil to stay in the gap at all times, even when cone and voice coil make their longest excursions, and is a vital factor in keeping bass harmonic distortion low at even the highest listening levels.

The efficiency of the system has been carefully chosen to provide for reproduction of the lowest usable frequencies with amplifiers and receivers of good quality and medium power. While efficiency is lower than that of some comparably-priced speakers of more limited range, and will require a slightly higher setting of a volume control for the same acoustic level, it is no more likely to tax the actual power capabilities of the amplifier or receiver used in a home. This doesn't hold for auditoriums or, in many cases, for large (and sometimes noisy) audio showrooms, but it is emphatically so for home listening at even the highest usual loudness levels.



The Advent Low-Frequency Driver

design that is at least as important as any other factor in the performance of the system, and directly responsible for the clarity and definition of instruments at all loudness levels. Its unique diaphragm is formed in one piece, and is made up of a very small inner dome and an outer rolled ring that serves as both as the driver's suspension and as a highly effective radiating surface over half its area. The design is such that no part of the radiating surface is very far from the voice coil driving the diaphragm, and it combines exceptional uniformity of driving force over the entire surface with the ability to radiate large amounts of high-frequency power.

The rolled ring form of the Advent Loudspeaker's high-frequency cone not only is itself a radiating surface for optimum high-frequency power response, but is also a free-moving and linear suspension that permits exceptional cone excursion and power handling down into the mid-range of music. The advantage of one driver for both mid-range and high frequencies shouldn't be underestimated, since it avoids all of the disturbing interference effects common to combining

speaker, the two-way concept takes the designer in a direction in which he *should* be going anyway for the sake of high-frequency power handling.

The driver also uses a two-layer voice coil in a relatively heavy magnetic system. The magnet is heavier than it otherwise need be in order to provide a gap wide enough to avoid eventual "rubbing" of the voice coil because of slight changes in its centering over a long period of use. Other factors include the careful choice of cone size and weight as part of the system concept, to provide sufficient output with proper efficiency with no need for an over-elaborate and over-expensive magnet structure.

Also part of the system design is the placement of the driver in a mounting position forward of the front inner surface on which the low-frequency driver is mounted. This arrangement minimizes unwanted reflections from the front of the enclosure and consequent irregularities in response at random points in a room. To prevent damage in normal use around a household, the cone is protected by a metal grille.

About High-Frequency Power, Dispersion and Other Matters

It wasn't generally realized until a few years ago that the effective high-frequency response of a speaker depended on the total amount of high-frequency power radiated in several directions from the speaker — not just along the narrow axis directly in front of the speaker. The sound perceived by a listener across the room from *any* loudspeaker is made up more of indirect sound reflected from room surfaces than of direct radiation from the speaker. If high-frequency power is not spread out in proper proportion to the more easily-spread middle frequencies of music, the overall sound will range from "overbrilliant" to "raspy," depending on how much high-frequency power is going out along the speaker's axis. It will not sound right under any conditions.

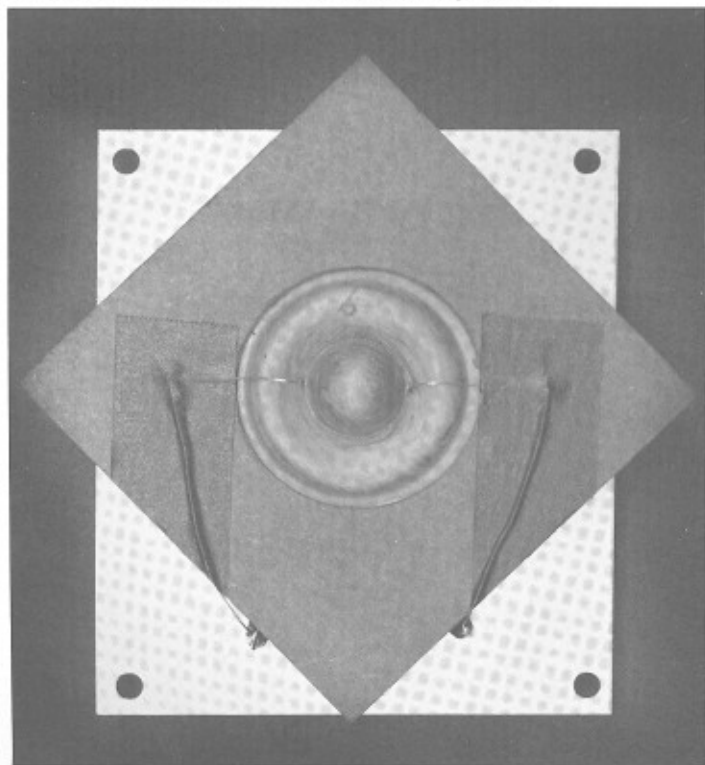
What makes this question of appropriate dispersion a difficult and complex one is that the dispersion itself is not enough. The kind of design chosen for a high-frequency driver, and particularly its diaphragm, must be capable of handling and radiating *power* — enough of it to provide not only for the tremendous high-frequency content of some kinds of musical material, but also for the loud levels at which many people want to reproduce that material at home.

Many present systems that were designed for good dispersion of high frequencies do not relate it well enough to the requirement for high-frequency power, and some provide their performance only up to the point where the demands of music begin to get heavy. Many systems that do justice to string quartets do not do the same justice to cymbals, snare drums and brass.

The Crossover and High-Frequency Balance Switch

The single crossover network between low-frequency and high-frequency drivers is a simple LCR design that is also used for "contouring" of electrical input to the requirements of the system's design across the frequency range. The contouring action at various points in the frequency range represents a careful choice of octave-to-octave musical balance based on some fifteen years of experimenting with a wide range of recordings of improving but still variable quality. The overall octave-to-octave balance, a critical concept that no other manufacturer to our knowledge fully explores, was chosen on the basis of exhaustive listening both to recordings and to wide- and narrow-band noise inputs. Although ours is not the only possibly "right" choice, we think you will find it convincing over the widest range of musical material.

A factor that still varies widely in recordings is the overall high-frequency characteristic — a function both of the amount of high-frequency musical material present and of the amount of extraneous noise and distortion present along with (or instead of) it. To provide for the range of characteristics that exist, a three-position switch on the rear panel of the cabinet provides three different high-frequency contours above 3,000 Hz. The three contours were chosen to suit actual conditions, and are more precise and useful than the changes which a simple variable potentiometer on the tweeter can provide. Although the switch was designed for variations in program material, it also can compensate to some degree for extremes of high-frequency reflection or absorption in a listening room.



The Advent High-Frequency Driver (protective grille removed)

Just How Good is the Advent Loudspeaker?

We strongly believe that the Advent Loudspeaker is the equal in useful measurable performance of any system now available at any price, and that it has significant audible advantages over many of the systems widely sold as the "best" on an absolute basis. We realize at the same time that the low price and simplicity of the system will encourage comparing it simply with systems in its general price range, and that there is not much we can do about the understandable human assumption that something costing \$200 must be better *somehow* than the one pegged at \$100. So we urge you, whether or not you might buy it anyway because "it's great for the money," to compare it under equal conditions of placement and relative loudness, to anything you care to at any multiple of its price.

The low-frequency capabilities of the Advent Loudspeaker are the usable equal of any speaker's. Specifically, it will reproduce the 30 Hz organ pedal note that begins Richard Strauss's *Also Sprach Zarathustra* as room-shakingly as one could ask — providing, as in the case of London CS-6609, the note is actually present on the record. For the most part, its ultimate low-frequency capabilities are beyond those of most recordings and broadcasts, and will be revealed in full only by master tapes.

The high-frequency capabilities of the system provide the subtle but audible advantage over many systems of excellent performance and far greater cost. Part of the unstrained clarity and the "open" quality of the system is due to excellent power response at high frequencies, and part to the simplicity and lack of unwanted interaction between drivers in its two-way design. Whatever the reason for its performance on a particular kind of musical passage, we believe you will be able to hear the difference. It isn't blatant (the system isn't more "brilliant" or "mellow" or just plain louder than another of similarly excellent performance), but a matter of important degrees. The absence of any form of high-frequency stridency or "edginess" is such that you will not be particularly aware of high frequencies at all until a passage with demanding high-frequency content appears. For the most telling indication of the importance of high-frequency power response in the system, we suggest that you listen comparatively, at healthy volume, to a good pop recording with cymbals, brushes, heavy brass, or other instruments of high treble intensity.

There is no objective scale for measuring the much-discussed matter of the lack of audible "coloration," but we believe the Advent Loudspeaker rates at least as well in that regard as any loudspeaker ever made. The only way we can suggest to judge this critical absence is to note just how quickly you tend to cease listening to the speaker itself and begin to listen to the music.

Press Comment on the Advent Loudspeaker

"The shape of the curve above 6 kHz corresponds almost exactly to the calibration curve of our microphone, which indicates that the true response of the speaker is virtually flat to well beyond 15 kHz.

"The low-frequency performance of the speaker system is even more impressive than its high end. The flat, extended response to below the lowest audible frequencies is genuine, not the result of added distortion products which can make an inferior speaker seem better than it really is. The harmonic distortion of the speaker, with a 10-watt drive level, remains under 10% all the way down to 20 Hz, and is only 6% at 30 Hz. Heretofore, we have measured this order of bass distortion only with the most expensive acoustic-suspension speaker systems, or with other types such as horn-loaded speakers which are still costlier. . . .

"In designing this speaker, the manufacturer had the goal of producing a speaker comparable in performance to the best acoustic-suspension types previously available, at a substantially lower price. We listened to the speaker by itself, and in A-B comparisons with some considerably more expensive types, and we feel that the company has essentially achieved its aims. It has a silky smooth, balanced sound with well-dispersed highs, and lows which can really be felt, rather than merely heard. We can't recall having heard another speaker in its price class that can match it."

ELECTRONICS WORLD
Julian D. Hirsch

"After several weeks of listening [to the Advents] we *still* hadn't found anything to complain about. We couldn't even find any sonic characteristics to hang adjectives on, in order to try to describe their sound. They were, in fact, the *least*-colored loudspeakers we have ever heard, and this includes the highest-priced systems currently available.

"Probably for just that reason, the Advents proved eminently easy to live with, and sounded equally comfortable and natural at low or room-filling listening levels. Dispersion was excellent and so, as a consequence, was the stereo imaging. Driver blending, too, was excellent, and the speakers did an outstanding job of reproducing the front-to-back perspective in stereo and mono program material. . . .

"By all the accepted standards of evaluation . . . the Advents are as *accurate* reproducers of sound as any top-line system we have heard."

THE STEREOPHILE
Box 49; Elwyn, PA 19063

"The lows, . . . remained strong and clean all the way down to 20 Hz with very low distortion. . . . Without a doubt, the Advent is one of the smoothest and widest-range speaker systems we have had the pleasure of testing. . . .

"The tone-burst response was excellent throughout, ranking with the best we have seen from any speaker. . . .

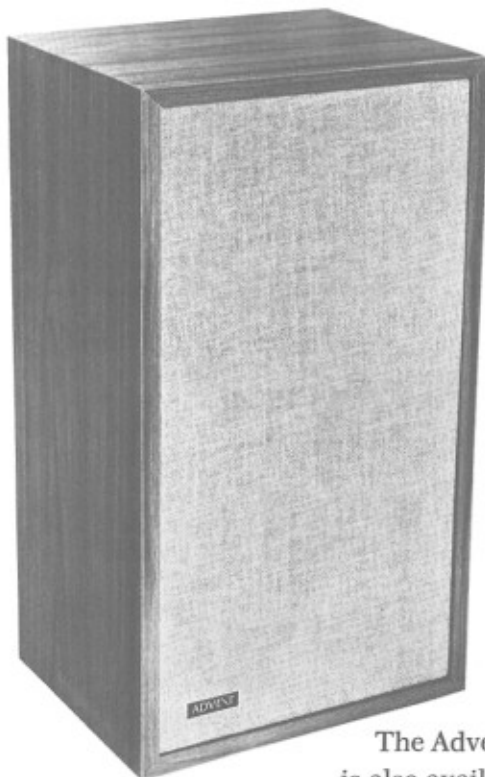
"The extreme low-bass reproduction, which is one of the most expensive characteristics to build into a speaker system, sets the Advent speaker apart from anything else in its price class. In this respect it can only be compared to the best acoustic-suspension speakers selling for twice its price — or more."

STEREO REVIEW

". . . the frequency response was flat, with only ± 3 dB variations over the major portion of its range. What is more important is that the 45-degree off-axis response follows the on-axis response to a remarkable degree, denoting excellent high-frequency power response. . . .

"One could say that at twice the price the Advent speaker would be a good value, but at \$116 it is a bargain."

AUDIO



The Advent Loudspeaker is also available in a walnut finish vinyl clad cabinet

The Smaller Advent Loudspeaker

The proven way to design a good small speaker system is to give up the lowest octave or two of bottom bass, and some amount of power handling, for the sake of very good overall sound at low cost. Since genuinely low bass (60 Hz and under) isn't present in most music, this approach has been responsible for some excellent low-priced systems that on most material sound remarkably like the best speakers of any size or price.

But it is also possible, and has become more and more worth considering, to design a small speaker system that would sound as good as the best speakers of any size or price on *all* musical material — one that would give up none of the bandwidth, lowest bass included, associated with them. For that formidable a speaker at small size and low cost, a designer has to accept these conditions:

- If it is to fill a living room with high sound levels, organ pedal tones included, it will need a more expensive voice coil and magnetic assembly than those in the lowest (\$45-60) price category. But it doesn't have to cost *much* more.
- If it is to go as far into the bass as larger systems, with as low distortion, it can't be as efficient as they are. But it can be efficient enough to use in a home with present equipment of modest cost.
- There is no practical way to bring its maximum low-frequency power handling capability up to the limit of an equivalent larger system. But you can come so close that most people, even those playing demanding music under demanding conditions, will never have reason to need or want the larger system.

Those conditions outline The Smaller Advent Loudspeaker. It is a small, moderately-priced speaker system of unique performance. Its effective frequency bandwidth is exactly the same as the original Advent Loudspeaker's, and it sounds as close to it in overall character, octave for octave, as any loudspeaker model can to another.

On all kinds of musical material, and under most listening conditions likely to apply in most homes, it is the equal of any speaker system available.

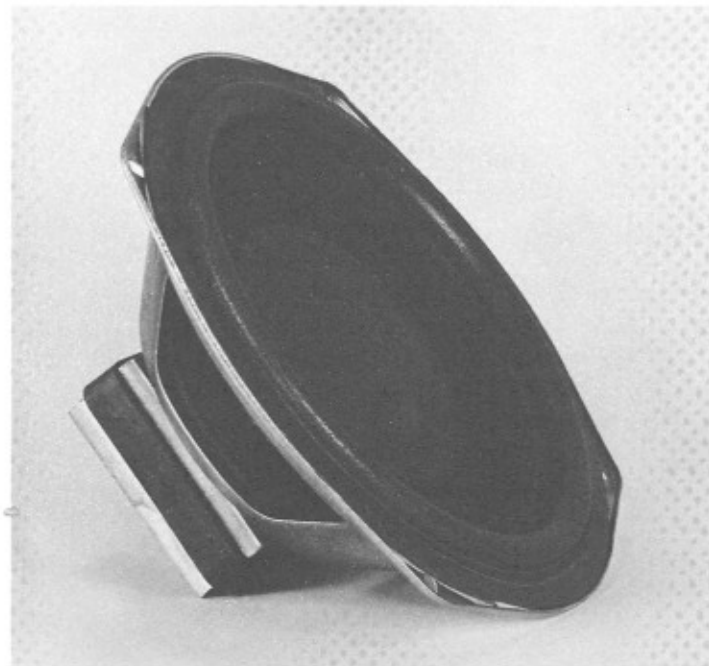
The Smaller Advent Loudspeaker is a more pertinent product than it could have been earlier. New manufacturing techniques help account for its price, which previously would have had to be outside the moderate category. It also can now be driven by low-priced amplifiers and receivers, more powerful than earlier models for their price and more likely to approach their rated power at the extremes of the frequency range. Its 4-ohm impedance is designed specifically for present solid-state units, which deliver their maximum power into that impedance, and it can be driven satisfactorily by present receivers in the \$200 class.

It's worth stressing that no technical sorcery — in the way of "revolutionary" design principles or exotic new raw materials or, as sometimes happens, wishful thinking — is responsible for the surprising performance of The Smaller Advent Loudspeaker. Its bass performance in particular is based (see "How It's Done") on thorough understanding of basic design factors, including the way in which four rigidly related characteristics affect such matters as efficiency, power handling, and the shape of a low-frequency response curve. As in the design of our original speaker, The Smaller Advent Loudspeaker's performance derives from an engineering approach that sees the shortest distance between two points as either a straight line or the one that is straightest under the circumstances.

What's Inside

The basic approach to the system design of The Smaller Advent Loudspeaker is exactly that of our original speaker. The drivers are designed solely for their function in the system, and have no redundant features or performance capabilities.

The low-frequency driver has the same effective excursion capability as the driver in the original Advent Loudspeaker, so that the system's overall power handling — a function largely of woofer area and excursion — equals or exceeds that of other speaker systems of its size (although it is not identical to that of our larger system). The materials and fabrication processes used in the manufacture of the woofer cone are identical to our larger system's, and the magnetic motor (again, see "How It's Done") is somewhat stronger. The nominal low-frequency speaker size (a whimsically variable measurement in speakers these days) is nine and a half inches.



The cone and rolled-ring suspension of the high-frequency driver are also identical to that of our original system, with the 7/8-inch center dome helping account for unusually good high-frequency dispersion. Since the slightly lower efficiency of the bass driver calls for correspondingly less high-frequency efficiency, the magnetic structure of the new high-frequency driver is lighter and smaller than the original. This

allows a small but well-worthwhile saving in cost, in keeping with our intent of building no redundant costs into the final price the listener pays for the system.

Also omitted to save costs is the three-position high-frequency switch provided with our more expensive system. The high-frequency balance chosen for The Smaller Advent Loudspeaker is the same as the "Normal" setting of the original system.

How It's Done

Although inventive advertising sometimes denies it, there is no mystery about the low-frequency performance of sealed speaker systems. Four basic factors — the mass of the moving system (cone, voice coil, and suspensions), the area of the speaker cone, the strength of the magnetic "motor", and the volume of air in the cabinet — are tied together, and changing one factor either changes performance predictably or forces you to make easily calculated changes in one or more of the other factors to maintain the previous performance.

Suppose, for instance, that you increase the magnetic motor strength of a speaker to make it more efficient. That alone will be enough to produce greater mid-band efficiency, but if the speaker had previously been properly damped ("critically damped" is the engineer's term) to achieve a given level of bass performance, with a magnetic assembly chosen to suit a particular cabinet size and cone weight, the new stronger magnet will provide extra, unwanted damping that causes bass response to fall off sooner. So, to get more efficiency *and* the same bass as before, you would have to increase not only the magnet strength but also the cabinet size and probably the mass of the moving system.

Now. To achieve our own objective of the same bass in a smaller cabinet, the easiest expedient actually would be a significantly smaller speaker cone for the woofer. (The smaller the cone size for a given cabinet, the lesser the effective stiffness of the internal air volume of the cabinet, and so the less air resistance to a speaker's low-frequency excursions.) But since we also wanted to maintain as much as possible of our original system's cone excursion and power-handling capability, which are partially a function of cone size, we chose to shave the size of the original cone by only a small amount and to allow a more massive moving system with a larger voice coil — which, together with a new magnetic assembly, results in a stronger (and equally high-priced) speaker "motor" than that of our original system.

What that yields is a speaker system significantly smaller than our original with the *same* bass cut-off and slightly lower power-handling capability. The engineering trade for this, not avoidable even with the stronger magnetic assembly of our smaller speaker, is a corresponding slight reduction in efficiency. To make that tolerable efficiency loss even less in its real significance, we designed our new system to have a 4-ohm impedance that would draw more effective power from present solid-state equipment. That effectively offsets much of the efficiency loss, and insures that our low-priced speaker will not turn out to be so power-hungry that its low-cost status might be compromised by the need for an expensive, high-powered amplifier. In fact, it makes it possible to drive our new system, with a comfortable margin of power for demanding home listening, with present receivers in the \$200-250 range. *While a receiver in that price range may be hard-pressed to drive the speaker to loud levels in a large and noisy audio showroom, it will have no trouble doing so in a home.*

Why You Should, Or Shouldn't, Buy It

The Smaller Advent Loudspeaker represents our best effort to supply, for the lowest practicable cost and smallest practicable size, *every* sonic characteristic that most people associate with the best possible loudspeaker. Not just the same kind of sound, but the same bandwidth and other performance characteristics — with no compromise that will be either audible or measurable under most conditions of use.

Believing that we have done that, and opened the highest level of speaker performance to people who otherwise wouldn't have the money or space (or both) for it, we hope that people will or won't buy it for the right reasons.

While we have nothing, for instance, against anyone using it with an ambitious amplifier or receiver, we hope that its lower cost won't simply be a spur to

buying a more expensive amplifier or receiver than you really need. Anyone interested in maximum performance per dollar should investigate using a low-priced amplifier or receiver even if it sounds inadequate in a showroom — arranging, if possible, for a home trial.

We hope, too, that it won't be bought for features it doesn't have. It is not as suitable as the original Advent Loudspeaker for use in elaborate installations in very large living rooms or small auditoriums.

What it will do is provide an absolute maximum of performance in normal use for a fraction of the size previously considered necessary and for far lower cost — roughly \$200 less, counting the less elaborate equipment with which it can be used — than ever before.

About Listening to Speakers in a Showroom

For meaningful comparisons of the speakers (ours or anyone else's) in a showroom, some simple guidelines will be of great help.

- First, speakers should be compared ("A-B'ed") at exactly the *same* loudness level. If the levels are different, the *louder* speaker — regardless of its basic quality — will almost always sound better at the instant of comparison.

One convenient way of doing this in a showroom that doesn't permit the levels of stereo pairs of speakers to be matched for an A-B comparison, is to readjust the volume control at the instant of comparison. Another way is to listen monophonically to *one* speaker against *one* competitor, with each on different channels of a stereo amplifier and with the amplifier's balance control set to equalize the output of the two speakers.

- The speakers should be side-by-side so that you hear only the differences between the speakers and not a combination of speaker and room placement differences. It is not always possible to arrange for this in a showroom. However, you should be aware that speakers with widely disparate placements, such as one on the floor and one on a shelf, or one in a corner and one away from a wall, cannot be meaningfully A-B'ed. In fact, two *identical* speakers so placed will sound considerably different!
- Rapid switching comparisons from moment to moment can be helpful in defining low frequency and high frequency range differences between two speakers on the same material. However, you will also find it helpful to listen to each speaker for periods of a minute or more on the same musical passage so that balance and the subtleties of a recording can be genuinely evaluated.
- "A-B-C" comparisons, in which three speakers are compared at once, are useless. It simply isn't possible to remember the basic sound of system "A" by the time you get around to "C". Compare two speakers at a time, and *then* compare your favorite against another.

Press Comment on the Smaller Advent Loudspeaker

"Although it occupies exactly half the volume of its larger relative (which is simply called 'The Advent Loudspeaker'), weighs far less (27 pounds *vs.* 42 pounds), and is 40 per cent cheaper, its acoustic properties are *identical* to those of its big brother. This was the goal of the designers, and we can verify that they achieved it, and with perhaps a little to spare . . .

". . . when appropriately used, it will perform very well indeed with any good amplifier in the 15 to 20-watt-per-channel power-output range . . .

"In our tests, the averaged acoustic output of the Smaller Advent speaker varied less than ± 3 dB between 120 and 13,000 Hz, which is an uncommonly smooth response . . . It did not fall below the mid-range level until we reached 32Hz. Overall, this frequency response would be noteworthy in a speaker system of any size (or price) . . .

"We made 'A-B' comparisons of the Advent with several excellent speakers many times its cost. Using a wide range of program material, we could not, in many cases, detect any difference in sound quality when switching between speakers. In respect to balance, low-frequency solidarity, clarity, and definition, the Smaller Advent ranked with some of the best . . .

"Even if you are not as impressed as we were, any preconceived ideas you may have about the limitations of sub-compact speaker systems will, we think, be shattered."

STEREO REVIEW

"Response data taken at CBS Laboratories show speaker response running within plus or minus 6 dB from 33 Hz to 17,000 Hz, an excellent mark for any speaker system and particularly remarkable for one in this price class . . .

"The speaker could not be driven into significant distortion with steady-state power input of 100 watts, and it did just as well with pulse power peaks of up to 460 watts, at which level the measured output was 108.2 dB. These data indicate robust construction, good dynamic range, and the Advent's usability with just about any competent amplifier or receiver on the market.

"We ran the Smaller Advent from several low-powered, moderately priced receivers and amplifiers and were able to enjoy extremely clean, room-filling sound. Like its larger ancestor, the new speaker system has a neutral, honest quality on all types of music. Its size and cost recommend it particularly for use in modestly priced stereo systems, built around an amplifier or receiver that furnishes at least 15 watts per channel into a 4-ohm load (of which there are many now available) . . ."

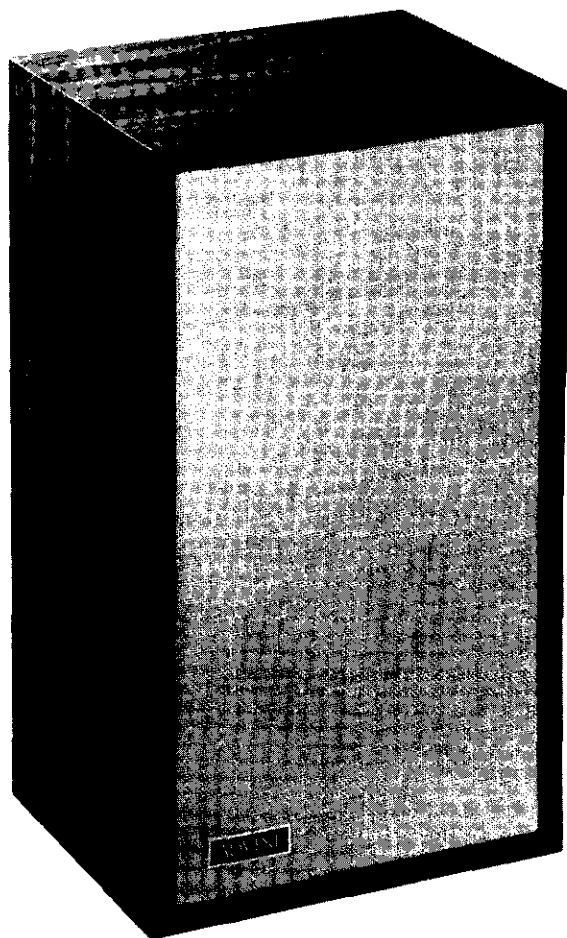
HIGH FIDELITY

". . . The new system is . . . virtually identical in performance to its bigger cousin . . .

"The tone burst response of the Smaller Advent Loudspeaker was very good, displaying no signs of ringing or spurious frequencies in its output . . .

"We also did considerable A-B comparing of the Smaller Advent Loudspeaker against several other systems, all far larger and more expensive. To our amazement, the Smaller Advent proved to be just as good as many of them and better than others under practically any listening situation we could devise. The Smaller Advent can deliver a room-filling 30-Hz fundamental which must be heard to be believed!"

POPULAR ELECTRONICS



Recommended Amplifier Power

ADVENT LOUDSPEAKER

20 watts rms per channel (8 ohms)

SMALLER ADVENT LOUDSPEAKER

15 watts rms per channel (4 ohms)

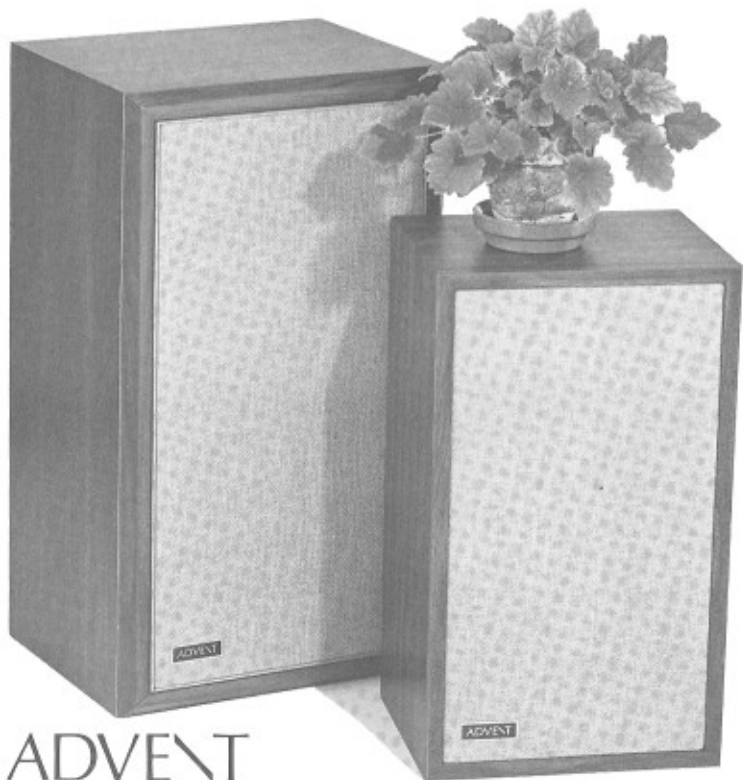
Actual power requirements vary for any speaker according to the size of a room and the listening level that is considered satisfying. These recommended powers should be used as a starting point in determining your own specific requirements.

For example, if your room is 1500 cubic feet or less (as most rooms are), then you will not need as much power. On the other hand, if your room is very large and/or you like your music reproduced louder than real life, then you will want more power than we've recommended.

Dimensions:

Advent Loudspeaker: 14 $\frac{1}{4}$ " x 25 $\frac{5}{8}$ " x 11 $\frac{1}{2}$ " deep

Smaller Advent Loudspeaker: 11 $\frac{1}{2}$ " x 20" x 9 $\frac{1}{4}$ " deep



ADVENT

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