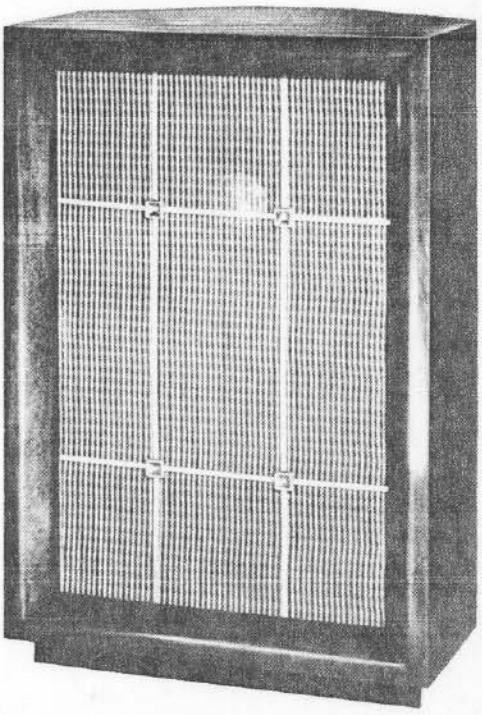
Electro-Voice

Aristocrat

By **HOWARD SOUTHER**
Electro-Voice, Inc.

Construction details and performance data on a folded corner horn enclosure. It will accommodate any high quality, low resonant frequency, 12-inch loudspeaker.



The E-V "Aristocrat" enclosure. The performance data covered in article was obtained using the E-V SP12-B "Radax" unit.

THE mind through the ear delights in the stimulus caused by sounds which are mathematically related. The generation of such sounds is called music. It is generally conceded that the widest variety of these sounds causes the greatest satisfaction; thus, we find that loudspeaker systems of the widest response range are the most pleasing, granting good source material of low distortion as an understood prerequisite.

Where space is limited there is no particular problem in achieving excellent response in the treble ranges. Generating mechanisms for producing the rapid, delicate pulses of the higher frequencies are inherently small in themselves. But not so the bass range, comprised of the first two octaves from 30 to 120 cycles-per-second.

The area near a sound generator, in this case the cone of a loudspeaker, is what engineers term a region of high acoustical impedance. To achieve useful transfer efficiency of motion into acoustical energy, we must build up considerable air pressures.

To deliver these sound pressure waves to the listening area, a region of very *low* pressure or low acoustical impedance, a transformer of some kind is required, just as it is in an electrical circuit.

The recognized scientific means of accomplishing this transformer action is through the use of a horn. This horn must expand in area at a constantly accelerating rate to accomplish its function, the ideal horn being one of infinite length and infinite mouth size.

The Horn Design

This last requirement almost stops the design project before it begins. But let us examine first the requirements of a suitable horn. Fundamental tones of even the largest bass instruments, such as monstrous drums and 16 foot organ pipes, start at 30 cycles per second. The mouth requirement for a horn capable of reproducing a 30 cycle tone is ¼ the wavelength of this tone, or 111 inches. For a 50 cps tone, this dimension decreases rapidly to 80 inches.

The next thing to consider is the length of the horn. The formula governing horn design says that the taper rate, or the flare, governing the expanding cross section of the horn, shall double every 1½ feet of its length in order to reproduce a 30 cps tone at the mouth (whose cross section we have already computed to be 111 inches).

The Design Takes Form

Our design still has impossible dimensions for the living room; something having a length of 6 to 10 feet, according to the throat size we select at the start of the horn, and a mouth 10 feet across! On the other hand, certain things are in our favor:

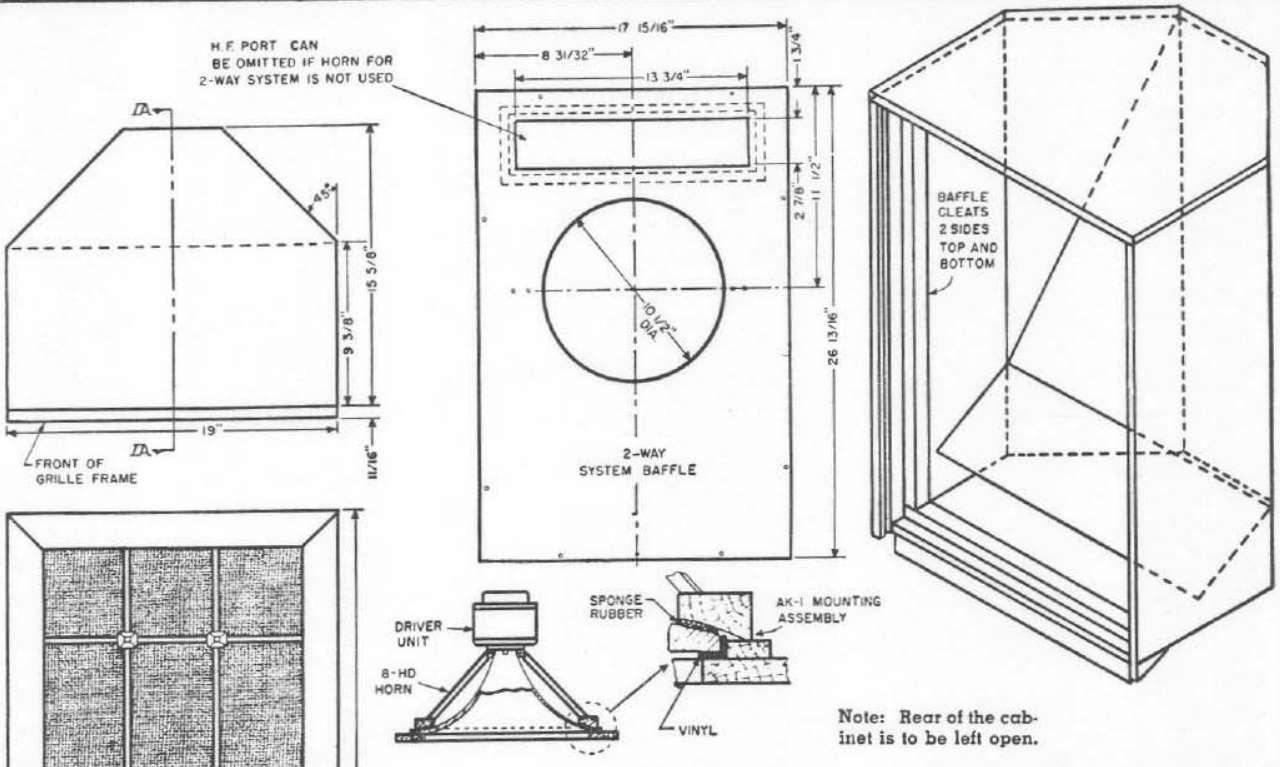
Ideally, the lowest tones in frequency lend themselves easily to propagation in a closed cavity of a size such as our living room. Examination reveals a partial horn available in the *corner* of the room, the mouth of which is in most cases *more* than 111 inches across! Some years ago, Paul Klipsch, the noted acoustics authority, seized upon the idea of housing only the *throat* of the required horn in a furniture cabinet and placing it in this corner. In the design of the "Aristocrat," we find that by keeping the driver unit itself small, we have such a throat assembly of very compact proportions. There now results a clean, extended low-frequency response to the 30 cps region, surprisingly free from peaks and valleys in its characteristic curve. But, although the range is well extended and satisfactory, the efficiency in the first octaves is still too low to accomplish a pleasing musical balance. This is true, in the main, because our driving cone is only a piece of parchment, and a far cry from the ideal acoustical requirement for a piston of infinite lightness and infinite rigidity.

Building the Efficiency

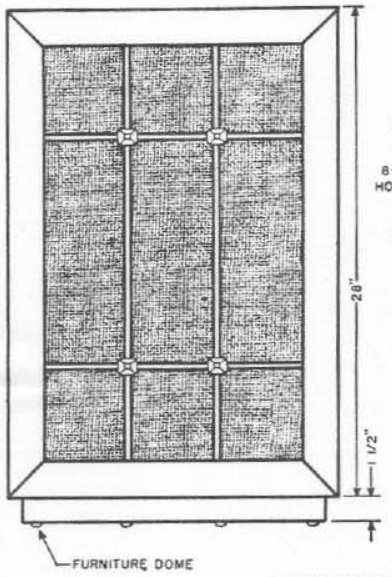
By exploiting a phenomenon involving acoustic resonance, the efficiency in the bass range may be augmented as much as 4 to 8 times. Observe the cross-sectional drawing of the "Aristocrat": By utilizing the reactance of the small air mass directly behind the speaker, in conjunction with the high compliance or capacitive factor of the specialized driver cone, the combination can be used to reinforce the sound over a four-octave band with the large air mass, due to the horn, which is presented by the corner.

Performance

If the "Aristocrat" is carefully constructed, and care is taken to effect a complete seal of the front baffle board to prevent air leaks from front to back, rather startling bass performance will be realized. Response range will be as shown in the curve (Fig. 2) revealing a response within 5 db of flat to about 30 cps. This operation is supported by evidence disclosed in the impedance characteristic (Fig. 1) denoting a satisfactory reactive component in the voice-coil system well into the first octave. The high impedance at 120 cps is fortunately not reflected adversely in the frequency response curve.



Note: Rear of the cabinet is to be left open.



This cabinet design is quite flexible. It can be used with three speaker combinations: (1) A 12-inch full-range speaker alone, (2) A 12-inch unit with high-frequency horn and treble driver, and (3) A 12-inch coaxial type loudspeaker.

To achieve the unusual bass performance of which the enclosure is capable, the 12-inch drivers should be good quality units having a free space resonance of 45-60 cycles. If the E-V Model 8-HD horn is employed, it is supplied with the AK-1 mounting assembly. With this horn a crossover network and treble driver unit are needed.

Performance curves shown were obtained using an E-V Model SP12-B "Radax" coaxial unit.

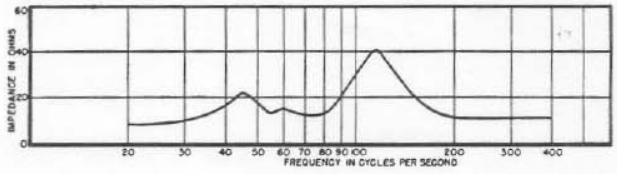


Fig. 1. Impedance characteristics.

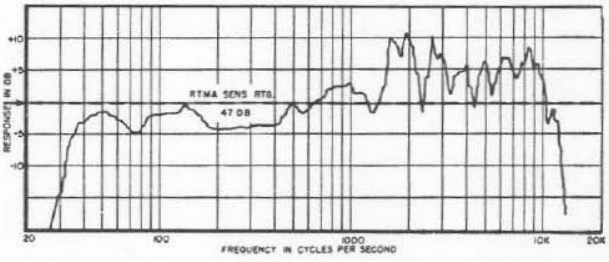
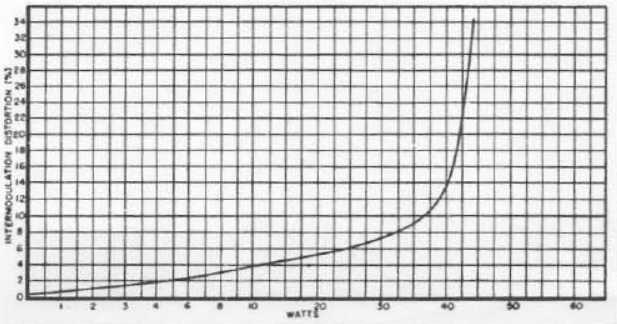
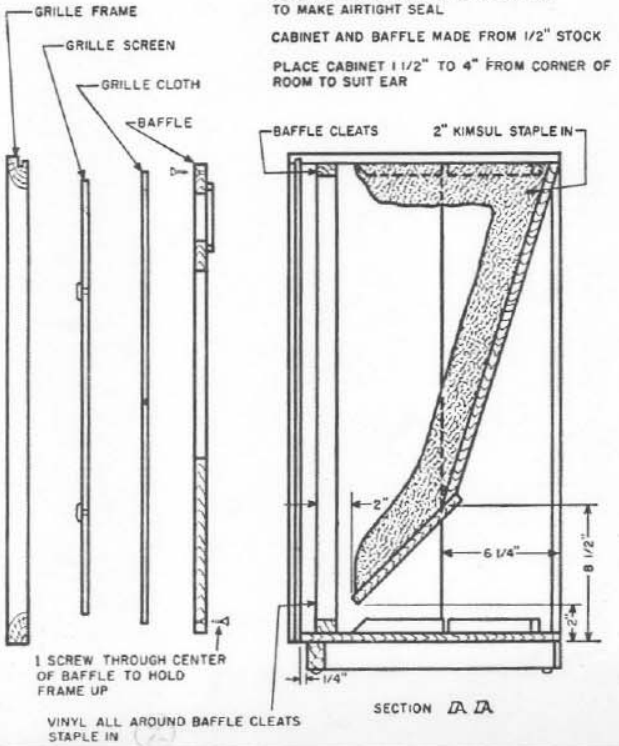


Fig. 2. Frequency response.

Fig. 3. Intermodulation distortion.





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The Aristocrat I

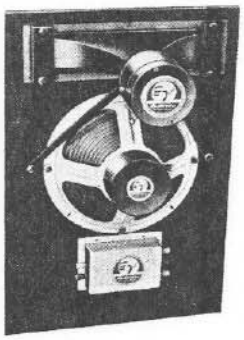
Lowest price in any commercially available 800 cps separate 2-way speaker system

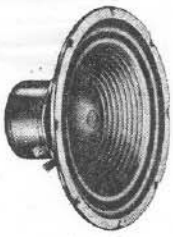
New model 12BW low-frequency driver

New model 8-HD diffraction horn

Conforming to the scientific rule which dictates a low crossover for maximum cleanliness of reproduction, this System provides at low cost an integrated 2-way speaker system with components designed for 800 cps separate operation. The resulting cleanliness vastly exceeds the quality associated with coaxial type speakers where a higher crossover must be employed because of space restrictions within the cone. Yet—this reproducing system requires actually but 3½ inches more height than usual coaxial speakers, and the flexible mounting board permits fitting into most existing cabinets, either of the conventional reflex type, or of folded corner horn types, such as the famous Electro-Voice ARISTOCRAT enclosure.

ARISTOCRAT I STANDARD, 800 CPS CROSSOVER, SEPARATE 2-WAY SYSTEM
Consists of Model 108 separate 2-way system package mounted, wired and tested in Aristocrat enclosure ready for operation. Dimensions: 29½" high, 19" wide, 16½" high. Weight: Net, 68 lbs., Shipping, 116 lbs.
LIST PRICE in Mahogany Aristocrat, $299.00, Audio-phile Net, $179.40
LIST PRICE in Blonde Aristocrat, $309.00, Audio-phile Net, $185.40





SPECIFICATIONS: MODEL 12BW
RTMA SENSITIVITY RATING; 45 db. **INSTANTANEOUS PEAK POWER INPUT;** 25 watts. **CONTINUOUS PROGRAM LEVEL;** 18 watts ± 5 db to 35 cps in Aristocrat, 15 watts ± 5 db to 40 cps on flat infinate baffle. **FREE AIR RESONANCE;** 45 cps. **BINDING POSTS;** polarized, red-positive, black-negative for forward motion of cone with dry cell applied. **IMPEDANCE;** 16 ohms at 400 cps. **DIMENSIONS;** 12⅛" diameter, 6⅜" deep. **MOUNTING HOLES;** Six ¼" holes spaced 60° apart on 11½" circle. **WEIGHT;** Net, 9 lbs., Shipping, 9½ lbs.

MODEL T-10 HIGH-FREQUENCY DRIVER

SPECIFICATIONS:
RTMA SENSITIVITY RATING; 45 db. **MAGNET;** 1 lb. Alnico V. **DIAPHRAGM DIAMETER;** 1½". **PEAK INSTANTANEOUS POWER INPUT;** above 800 cps, 30 watts, 20 watts continuous program level, above 400 cps, 15 watts program material. **DC RESISTANCE;** 10.5 ohms. **IMPEDANCE;** 16 ohms. **RESPONSE RANGE;** ± 3 db to 11,000 cps, with high useable efficiency to 15,000 cps. **THROAT DIAMETER;** ⅞". **FUNDAMENTAL RESONANCE;** 275 cps. **DIMENSIONS;** 4½" diameter, 5" deep. **WEIGHT;** Net, 8 lbs., Shipping, 13 lbs. **LIST PRICE,** $67.50, Audio-phile Net, $40.50.

component specifications

MODEL 108, 800 CPS CROSSOVER, SEPARATE 2-WAY SYSTEM

An integrated high quality assembly of unusual range and cleanliness. Ideal for custom-crafters. Fits readily in most existing cabinets, in a wall, door or book-case. Consists of 12 BW LF driver, T-10 HF driver, 8-HD Hoodwin diffraction horn, X-825 Crossover Network, black flat baffle with properly cut ports for components, and AK-1 Accessory Kit containing all brackets and mounting hardware complete. Dimensions mounted: 27" high, 18" wide, 12½" deep. Weight: Net, 33 lbs., Shipping, 72 lbs.
LIST PRICE, $184.00, Audio-phile Net, $110.40.

MODEL 12BW LOW-FREQUENCY DRIVER

Designed especially for extended response at the extremity of the bass range, the stiff straight sided 14 gram seamless, moulded and moisture proofed cone prevents relaxation of the suspension material along its length. This precludes the formation of spurious sum and difference tones caused by the outer area moving at a slower rate than the central fundamentally excited area. The heavy, totally enclosed Alnico V magnet fills the precisely machined gap of minimum dimensions with a high flux density of 10,000 lines per square centimeter. This complete closure of the magnetic area prevents distortion of TV pictures when the driver is used in proximity to the receiver. The large 2" copper wound voice coil has an allowable excursion of over ½", guaranteeing high power handling capacity without "bottoming" against flange of the highly permeable nosepiece.
LIST PRICE, $49.50, Audio-phile Net, $29.70.

MODEL X-825, 800 CPS, CROSSOVER NETWORK

Restricts low frequencies to the bass driver, allowing the high frequency unit to operate only above 800 cps for minimum distortion. Attenuation below 800 cps is 12 db per octave. Air cored coil with Q of better than 150 is employed, along with paper type condenser with generous overload factor. These prevent amplitude distortion with varying load and frequency.
POWER RATING; 40 watts. **INPUT, HIGH OUTPUT, LOW OUTPUT;** all 16 ohms impedance. **DIMENSIONS;** 7½" long, 5¼" wide, 2½" high. **WEIGHT;** Net, 1½ lbs., Shipping, 3 lbs.
LIST PRICE, $30.00, Audio-phile Net, $18.00.

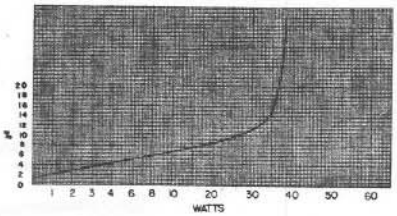
MODEL 8-HD, 800 CPS, DIFFRACTION HORN

SPECIFICATIONS:
180° dispersion accomplished by diffraction principle. **ACTUAL CUTOFF;** 600 cps. **RECOMMENDED CROSSOVER POINT;** 800 cps. **DRIVER MOUNTING;** two 5/16-18 holes space 180° apart on 2" circle. Accepts T-10 or T-25 drivers. **DIMENSIONS;** 3¼" high, 14¼" wide, 7¼" deep. **WEIGHT;** Net, 1¼ lbs., Shipping, 2 lbs.

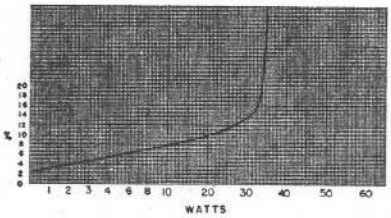
Response, impedance, efficiency and distortion data

ELECTRO-VOICE is the only speaker manufacturer so far to publish authentic, unretouched, machine-run response curves of its products. The industry in the past has been reluctant to do this because the test conditions influence the character of the results. Furthermore, it is recognized that the significance of curves leaves considerable to be desired in the subjective evaluation of loudspeaker performance. A satisfactory degree of correlation can be established by careful interpretation, however, and an attempt is made to achieve this correlation in the short notes covering the measurements shown on following page. Because the anechoic chamber does not permit the inclusion of the walls of a room, the response curve is a composite of anechoic chamber above 100 cps, and the simulated living room below this point. Observe that a 5 db dip is introduced in the design exactly at 60 cps to reduce the effects of turntable rumble. Augmented response in the "presence" region 3-6 KC is satisfactorily introduced to offset ear insensitivity at room reproducing levels. Sensitivity, or efficiency, is measured by the recommended method established by the Radio and Television Manufacturers' Association.

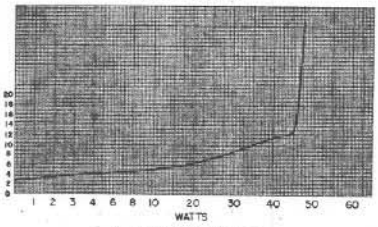
intermodulation distortion aristocrat II system



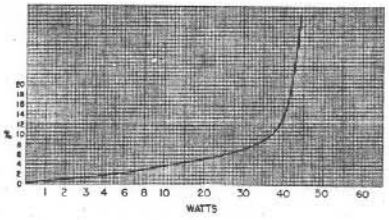
intermodulation distortion aristocrat I system



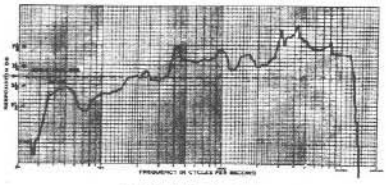
intermodulation distortion sp-12 radax



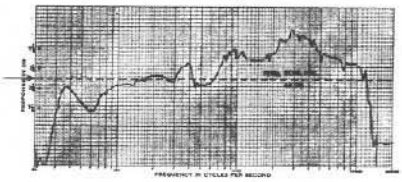
intermodulation distortion sp 12-B radax



response range aristocrat II system



response range aristocrat I system



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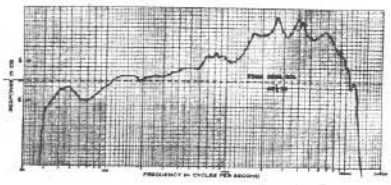
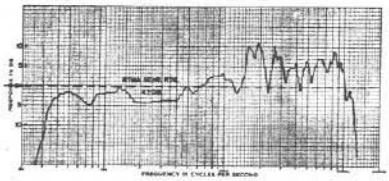
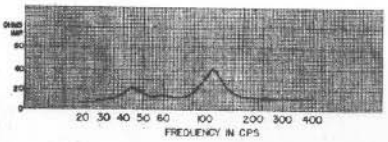


response range sp 12-B radax



impedance of aristocrat with 12" E-V Drivers



Qualitative Measurements

An anechoic chamber of the dimension of 12' x 12' x 20', together with a standard calibrated microphone, Model TI-401 signal generator and Model TI-402 distortion analyzer were employed. For the intermodulation tests a carrier signal of 60 cps was employed, modulated by 2, 7 and 12 KC with a ratio of 4:1.

Quantitative Measurements

The same anechoic chamber and microphone were employed. Impedance measurements were made in a simulated living room 12' x 14' x 9', using a Ballantyne Voltmeter across the voice coil with 100 ohms in series.

Although the most modern equipment was used in this distortion analysis, its value in measuring distortion products in loudspeaker systems is open to considerable question. For instance, the only available and arbitrary modulating frequencies could be the weakest points in the design distortion-wise, and every other frequency point might be comparatively distortion free; thus a very fine speaker could show up poorly. The converse is also possible. For the arbitrary points shown, the distortion in these systems is unusually low compared with other commercially available quality systems.

The Aristocrat II

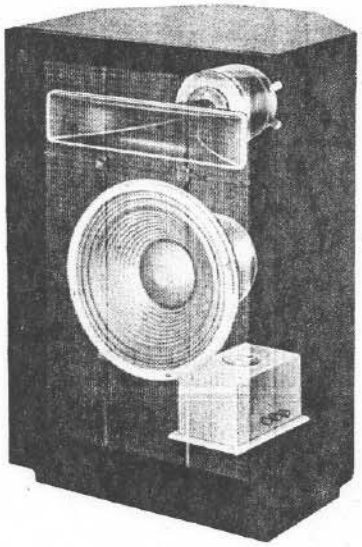
Deluxe 800 cps separate 2-way speaker system

New E-V Diffraction horn for full 180° dispersion of high frequencies

12″ low frequency driver with powerful 3 pound magnet

25 watt treble driver

Where the finest sources are available from FM and the high quality vinylite recordings, the discriminating listener will be satisfied with no less than the deluxe components of the ELECTRO-VOICE Model 111 System, tastefully housed in the beautiful ARISTOCRAT enclosure for top results. The more powerful 12W Low-Frequency Driver is utilized for smoother, more efficient bass reproduction. The T-25 High-Frequency Driver delivers augmented signals beyond the frequencies found on most of the finest source materials available today. The large ½ section X-8 800 cps crossover network not only restricts bass tones to the low frequency driver, but restricts also the high frequencies to the treble driver. This subdues further the electro-mechanical distortions of both transient and harmonic nature. In addition, the combination of these elements diminishes the effects of disagreeable intermodulation products.

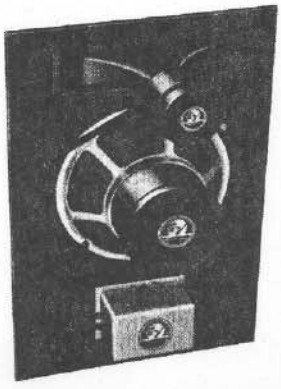


phantom view
aristocrat II system

ARISTOCRAT II DELUXE SEPARATE 2-WAY SYSTEM

Incorporates the Model 111 separate 2-way system package completely installed, wired and tested in the Aristocrat enclosure ready for operation. Dimensions: 29½″ high, 19″ wide, 16½″ deep. Weight: Net, 91 lbs., Shipping, 137 lbs.
LIST PRICE in Mahogany Aristocrat, $392.00, Audio-phile Net, $235.20.
LIST PRICE in Blonde Aristocrat, $402.00, Audio-phile Net, $241.20.

model 111 separate 2-way loudspeaker system

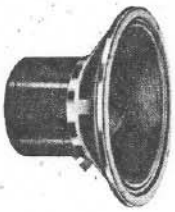


model 111
separate 2-way system

MODEL 111 800 CPS CROSSOVER SEPARATE 2-WAY SYSTEM

Consists of Model 12W Low-Frequency Driver, Model T-25 High-Frequency Driver, Model 8-HD, 800 cps, Diffraction Horn, Model X-8, 800 cps, Crossover Network, Model AK-1 Accessory Kit of horn mounting brackets and necessary hardware. Black flat baffle with properly cut ports for components fits Aristocrat cabinet, or provides ideal assembly for custom installation in doors, walls or existing cabinets. Dimensions: 27″ high, 18″ wide, 13½″ deep. Weight: Net, 80 lbs., Shipping, 94 lbs.
LIST PRICE, $277.00, Audio-phile Net, $166.20

component specifications- Aristocrat II



MODEL 12W LOW-FREQUENCY DRIVER

Uses a heavy, straight-sided, 14 gram, ribbed 12" cone for maximum strength to prevent diaphragm break-up. Magnet structure weighs 23 pounds and houses a large 3 pound Alnico V slug for high efficiency. Compliance of outer cone rolls and inner spider is carefully calculated for maximum extended bass range response. Maximum excursion is 1", guaranteeing complete freedom from "bottoming" at full bass power. When the Model 12W is employed in the Aristocrat cabinet, the compliance is matched to the back cavity air mass. This forms a broadly resonant circuit more than 3 octaves wide in combination with the forward air load, resulting in efficient, uncompromised response to within 5 db of flat at 35 cps.

LIST PRICE, $95.00, Audio-phile Net, $57.00

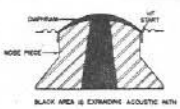
SPECIFICATIONS: MODEL 12W

RTMA SENSITIVITY RATING; 48 db. **MAGNET;** 3 lb. Alnico V. **MAGNET STRUCTURE WEIGHT;** 23 lbs. **RESPONSE RANGE;** ±5 db down to 40 cps on flat infinate baffle, ± 5 db down to 35 cps in Aristocrat Enclosure in average living room. **FREE AIR CONE RESONANCE;** 41 cps. **BINDING POSTS;** polarized; red-positive, black-negative for forward motion of cone with dry cell applied. Cone moisture and fungi-proofed. **INSTANTANEOUS PEAK POWER;** 25 watts on flat baffle, 30 watts in Aristocrat cabinet. **IMP;** 8 or 16 ohms. **CONTINUOUS PROGRAM LEVEL;** 20 watts. **DIMENSIONS:** 12⅛" diameter, 7½" deep behind mounting panel, 11" baffle opening, four ¼" mounting holes spaced 90° on 11½" circle. **WEIGHT;** Net, 25 lbs., Shipping, 26 lbs.

MODEL T-25 HIGH-FREQUENCY DRIVER

In order to reproduce the rapid delicate pulses of the upper octaves, the vibrating or piston member of a high frequency driver must be light, and thus small. On the other hand, to achieve useable power transfer the diaphragm assembly must be large and consequently heavy. These irreconciliable requirements have limited the high range of driver units in the past; the usual roll-off of a 40 watt 2½" diaphragm being 3,000 cps, and that of 25 watt 1½" diaphragm about 4,500 cps. Resonance cavities are frequently introduced to gain augmented response several thousand cycles higher, but with accompanying raggedness in the reproducing characteristic and sharp attenuation after the resonant peak. Another factor entering into this complicated design problem is the violent phasing-out of the acoustic energy at certain frequencies. This phenomenon transpires when the signal approaches in wavelength twice the diameter of the diaphragm. The unfortunate circumstance thus experienced drastically affects listening quality, which demands a rise of between 5 and 10 db in this region.

ELECTRO-VOICE high-frequency units completely by-pass these seemingly unsurmountable design difficulties! Louis Hoodwin, a brilliant physicist on the Electro-Voice Engineering staff, has invented the unique loading device for the HF diaphragm, whereby the effect of diaphragm mass is no longer a factor. The accompanying sketch shows that the usual cavity in the piston region has been eliminated. The throat of the acoustic system begins *directly at the voice coil where it is joined to the diaphragm;* thus, for the first time, a true scientific exponential flare takes place from the *very origin of the sound source.* This results in the greatest transfer efficiency, and the smoothest, most extended high frequency response available on the market today. The moulded phenolic impregnated linen diaphragm has tremendous strength, and can be overloaded to the point of voice coil disintegration without fracture. Furthermore, it is not susceptible to the radial splitting and buzzing common to delicate aluminum diaphragms.



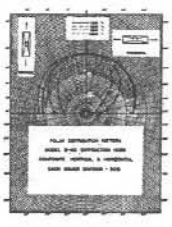
LIST PRICE, $95.00, Audio-phile Net, $57.00

SPECIFICATIONS: MODEL T-25

RTMA SENSITIVITY RATING; 48 db. **MAGNET;** 1¾ lb. Alnico V. **DIAPHRAGM DIAMETER;** 1½". **PEAK INSTANTANEOUS POWER INPUT;** above 800 cps, 50 watts, continuous program material, 25 watts, above 400 cps, program material, 20 watts. **IMP;** 16 ohms. **DC RESISTANCE,** 10.5 ohms. **FUNDAMENTAL RESONANCE,** 275 cps. **FREQUENCY RESPONSE RANGE** ± 3 db to 11,000 cps, with useable efficient response to 15,000 cps. **DIMENSIONS;** 5" diameter, 6" deep. **THROAT DIAMETER;** ⅞". **MOUNTING HOLES;** Two 5/16-18 tapped holes, 180° apart on 2" circle, or four 5/16-18 tapped holes 90° apart on 3" circle. **WEIGHT;** Net, 11¼ lbs., Shipping, 15½ lbs.

MODEL 8-HD 800 CPS DIFFRACTION HORN

In order properly to load the driver diaphragm, an exponential horn is required of the proper flare. In addition, the high frequencies which would ordinarily beam straight down the axis must be adequately dispersed in order to cover the entire listening area. In the past this dispersion has been meagerly affected by a multiplicity of cells, each pinpointing a spot in the room, usually 8 in number. Each cell intercepts a solid angle of 20° at about 2 KC; at 10 KC this angle is only about 10°. In keeping with the requirements of the discriminating listener, *Electro-Voice* has developed the diffraction principle of high frequency sound dispersion. The employment of this principle in the Hoodwin horn design affects *better than 180° of dispersion,* sans all pinpointing effects, and does this with more efficiency at all frequencies. The Model 8-HD horn, in addition, has a wide margin of safety near the recommended crossover frequency of 800 cps; the horn is designed actually with a 600 cps cut-off, thus, eliminating the response disturbances associated with operation too near the actual cut-off point. A most important feature of the Hoodwin horn is the increased efficiency of 3 db, or double that of conventional cellular horns. This is brought about by the elimination of the viscous resistivity of the air engendered by the multiplicity of throats at the driver unit mouth. The horn design uses the new material Fibreglas, noted for its fine acoustic properties and extreme ruggedness.



LIST PRICE, $27.00, Audio-phile Net, $16.20

SPECIFICATIONS: MODEL 8-HD

180° dispersion accomplished by diffraction principle. **ACTUAL CUTOFF;** 600 cps. **RECOMMENDED CROSSOVER POINT;** 800 cps. **DRIVER MOUNTING;** two 5/16-18 holes spaced 180° apart on 2" circle. Accepts T-10 or T-25 drivers. **DIMENSIONS;** 3¼" high, 14¼" wide, 7¼" deep. **WEIGHT;** Net 1¼ lbs., Shipping, 2 lbs.

Note: With only slight modifications with a drill, the mounting flange will accept most competitive makes of high-frequency drivers.

MODEL X-8, 800 CPS, CROSSOVER NETWORK

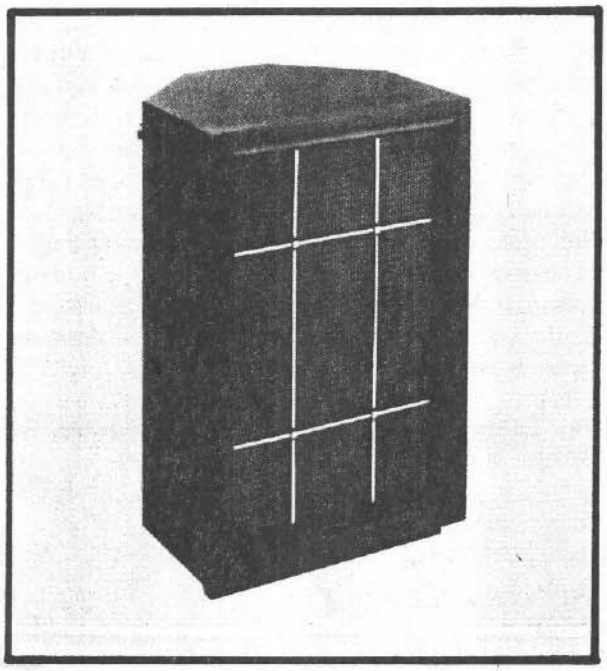
Utilizes the standard circuit employed by the motion picture industry, the full m derived ½ section configuration. Restricts low frequencies to bass driver and directs high frequencies to treble driver. M is .6. Attenuation is 12 db per octave each side of crossover point, presenting an optimum degree of attenuation with minimum possibility of transient distortion generation. Utilizes air-cored coils to eliminate distortion with varying load and frequency. Q is better than 150. Condensers are paper type with generous overload factor.

LIST PRICE, $50.00, Audio-phile Net, $30.00

SPECIFICATIONS: MODEL X-8

INSERTION LOSS; Less than 1 db. **PHASE ROTATION;** 270°. **POWER RATING;** 60 watts. **INPUT, HIGH OUTPUT, LOW OUTPUT;** Choice of all either 16 ohms or 32 ohms. **DIMENSIONS;** 8" long, 5½" wide, 4½" high. **WEIGHT;** Net, 5 lbs., Shipping, 6 lbs.

ARISTOCRAT III LOUDSPEAKER SYSTEM



SPECIFICATIONS

Frequency Response:	35 to 15,000 Hz
Nominal Impedance:	8 ohms
Crossover Frequencies:	800, 3500 Hz
Dimensions:	752 mm (29.6 in.) high 483 mm (19 in.) wide 414 mm (16.3 in) deep
Weight:	34.5 kg (76 lb)

TRADITION

The original Aristocrat, engineered by Electro-Voice almost three decades ago, offered a combination of reasonable size and elegant appearance coupled with high quality, wide-range performance. The new Aristocrat III continues this tradition. An exquisitely balanced three-way system, it successfully extends sound reproduction, without coloration or distortion, to nearly the upper and lower limits of audibility.

The Aristocrat III's abilities in bass reproduction are made possible by the 12W Series II, 12-inch woofer coupled to a folded corner horn bass enclosure beginning at the rear of the woofer cone. At midrange frequencies, direct radiation from the front of the woofer accounts for acoustic output. This form of acoustic loading permits a higher, more economical crossover point by allowing front radiation from the large driver cone. Thus, a high-frequency horn of small dimensions (the E-V Model 8HD) can be housed within the structure with ease. The built-in X8 crossover network transfers energy to the 8HD/1824M midrange above 800 Hz. At 3500 Hz an X36 crossover network supplies the very highest audible frequencies to the T35A driver.

The surprisingly modest dimensions of the Aristocrat III make it easy to accommodate into small rooms. The elegantly styled Aristocrat cabinet is solidly constructed from selected hardwoods and walnut veneers.

PLACEMENT

After connecting the Aristocrat output terminals to your amplifier, the unit is ready for operation and can now be placed in the corner of the room. If corner placement is not possible, the Aristocrat may be placed near a wall with some reduction in low-frequency efficiency. In this case spacings from the wall should follow the guidelines suggested below for corner placement.

Adjacent to hard wall surfaces, the unit can be placed as far as 100 mm (4 in.) from the corner walls of the room. The minimum spacing that can be used is 25 mm (1 in.) with a nominal suggested value of 50 mm (2 in.). Adjust this spacing for most pleasing musical balance in the upper bass region. In the lowest octave of the system this spacing is not critical because of the relatively large wavelengths involved.

AMPLIFIERS

While the Aristocrat III can accommodate the full music power output of amplifiers designed for home use, most any modern, good quality high-fidelity unit may be used with very satisfactory results.

The design and construction of the speaker and enclosure components, which comprise the Aristocrat III system, combine to provide an unusually efficient operating device. Because of this high efficiency, far less amplifier power is needed to achieve maximum performance than with many smaller or equivalently priced systems.

The Aristocrat III owner who is selecting an amplifier should devote careful attention to choosing one with quality components, employing state-of-the-art technology.

CONNECTIONS

Connection of your Aristocrat III to the amplifier should be made with No. 18 or larger wire (common zip or lamp cord is good). For proper phasing, be sure to run the lead from + on the Aristocrat III to the output terminal on the amplifier, and from – to the Common terminal.

When using Aristocrat III's in stereo pairs it is important the speakers be in phase. To check phasing in this type of system, feed monophonic source materials into both channels simultaneously and adjust the amplifier's balance control so that the Aristocrat III's are playing at equal loudness. Then stand at the point of convergence of the axis of the two speakers (midway between them and at a reasonable distance from them). If the stereo channels are properly phased and balanced, the sound will seem to come from an imaginary speaker midway between them. If this effect cannot be obtained at any setting of the stereo balance control, the connection to one of the two Aristocrat III's should be reversed. This is accomplished by reversing the connection at either the amplifier or speaker system or by use of the phase switch on your amplifier if one is provided. When the system has thus been adjusted so that monophonic sound seems to come from the imaginary center source, well recorded stereo discs and tapes will be reproduced with startlingly precise stereo localization, and the overall sound quality will be magnificent at almost all listening locations in the room.

LEVEL CONTROLS

The loudness of the midrange and very-high-frequency sections of the Aristocrat III may be individually adjusted by means of the level controls provided. A simple way to adjust the very-high-frequency (Brilliance) control is to tune in a live FM broadcast and, with volume level equal to that of your own voice, adjust the control until the "S" and "T" sounds are no more prominent in the announcer's voice than they are in your own. This adjustment will usually prove satisfactory. Setting the high-frequency control too high will produce a "metallic" sound. Your best guide to setting the control properly is, of course, a familiarity with the sound of live music. Acoustically "hard" or "live" rooms will normally require a somewhat retarded setting of the Brilliance control to compensate for the greater amount of high-frequency reflections. In "soft" or "dead" rooms, with carpeting, draperies, and soft furniture, a more advanced setting of the high-frequency control will normally be required.

The midrange control adjustment is somewhat less critical. Should a more perfect match to the room be necessary, simply slowly rotate the controls individually to suit your hearing.

CUSTOMER SERVICE

The Aristocrat III is packed to provide protection well in excess of shipping requirements. If shipping damage does occur, contact the dealer from whom the unit was purchased.

FIVE YEAR WARRANTY – Limited

Electro-Voice high fidelity speaker systems are guaranteed for five years from date of original purchase against malfunction due to defects in workmanship and materials. If such malfunction occurs, speaker will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to the proper Electro-Voice service facility. Unit will be returned prepaid. Warranty does not cover finish or appearance items or malfunction due to abuse or operation at other than specified conditions. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee.

Specifications subject to change without notice.

Part Number 530099–130

a Gulton COMPANY ELECTRO-VOICE, Inc., 600 CECIL ST., BUCHANAN, MICH. 49107

MANUFACTURING PLANTS AT ■ BUCHANAN, MICH. ■ NEWPORT, TENN. ■ SEVIERVILLE, TENN. ■ GANANOQUE, ONT. ■ LITHO IN U.S.A.