

## step 6

The T35 VHF driver now may be mounted in place. Mount the T35 bracket inside on the top section of the 200-cycle diffraction horn, using the predrilled holes. A slight bend must be made in the bracket after it is in place to allow the T35 to be aligned vertically.

Wire the T35 as shown in the schematic diagram, the black wire connecting to the black terminal, and the red wire to the red terminal. The AT37 level controls may be mounted, optionally, on a board as shown on the phantom view of the exterior as shown in the home construction drawings, or in any other convenient position. Extensions up to 20 feet in length may be added to the #8675 cable harness.



## step 7

Now mount the 6HD and T25A in place. This is accomplished by following the assembly instructions packed with the T25A driver. Note that the T25A mounting bracket foot faces forward in the components assembly drawing. Attach the threaded adapter plate furnished with the T25A to the bracket and horn and bolt it in place using the flat gasket supplied with the driver. Now screw the T25A onto the horn. The complete subassembly now may be placed in position.

On the factory-built Model 115 unit, use the cap screws and washers furnished with the "K" horn. On the home constructed unit, mount horn foot brackets over the preinstalled carriage bolts and nuts and then lock washers and nuts. Do not tighten until the 6HD horn is lined up parallel with the front of the "K" horn structure. Now install the rubber spacers and screws, drawing them down just enough to compress the rubber slightly. Complete the tightening of the foot bracket. Wire the T25A driver as shown in the schematic diagram, below, the T2 terminal to the black wire, and the T1 terminal to the red wire. Run the wires parallel to those from the 828HF drivers and staple in place.

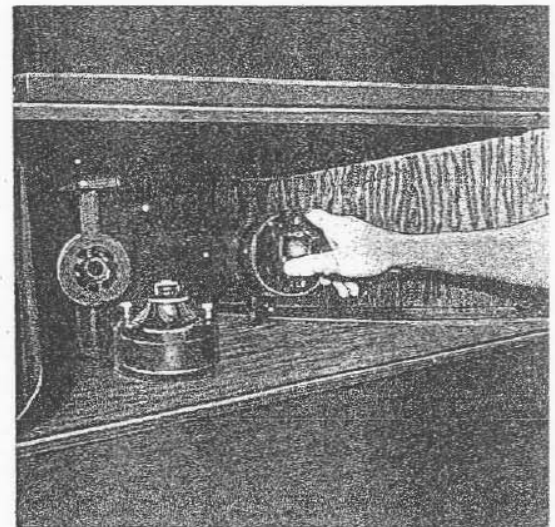
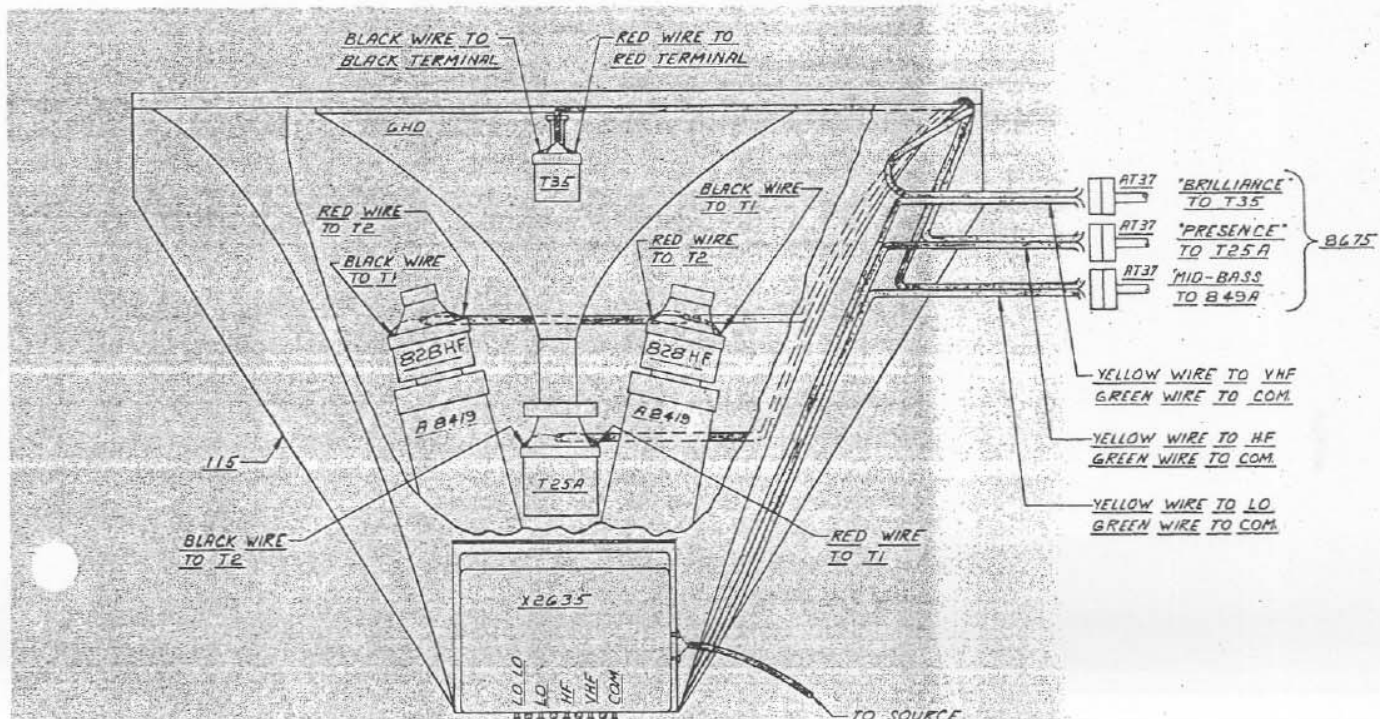


Fig. 32 — Four speakers nest compactly inside the 200 cycle horn.



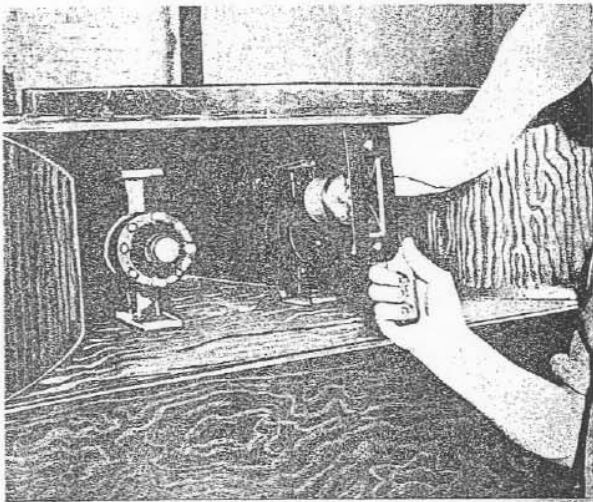


Fig. 33 — Installing T35.

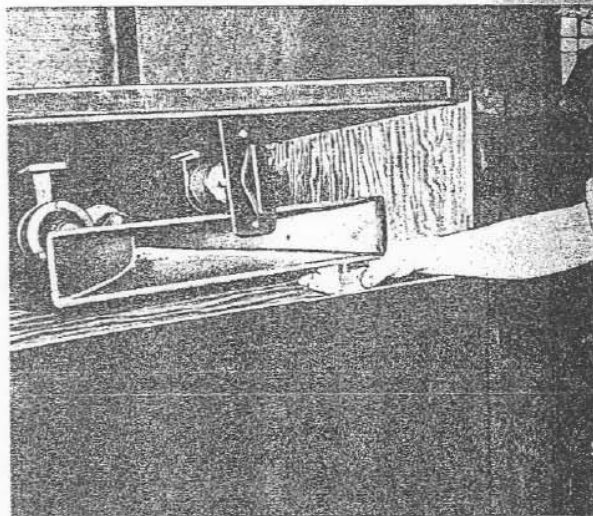


Fig. 34 — Installing T25A Treble Driver and 6HD Horn.

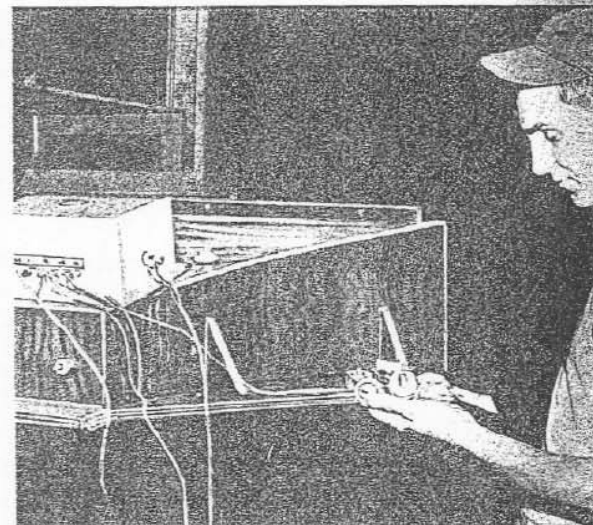


Fig. 35 — Checking controls.

## step 8

If the drivers have been connected as described, all units will be phased properly. Connect the output terminals on the X2635 crossover network as follows:

1. Splice the black wire from the 18WK with the three green wires from the high frequency drivers and connect them to the terminal marked "COM" or "Common".
2. Connect the yellow wire from the T35 *Brilliance* control (AT37) to the terminal marked "VHF".
3. Connect the yellow wire from the T25A *Presence* control (AT37) to the terminal marked "HF".
4. Connect the yellow wire from the 828HF *Mid-Bass* control (AT37) to the terminal marked "LO".
5. Connect the red wire from the 18WK to the terminal marked "LO-LO".
6. The terminals marked "IN" should be connected to the 16-ohm output of the amplifier.

## preparation for operation

The lead wires to the amplifier should be #18 fixture wire up to 20 or 30 feet; for longer lead lengths, use #16 two-conductor cable. If the unit is connected to a Williamson-type amplifier, capacity between long leads may induce oscillation, resulting in instability and distortion. The remedy is to separate the two wires by an inch or so, or to use television twin-lead.

A high-quality amplifier with damping factor of 10 or more should be employed. If the amplifier has a variable damping factor, it should be set at maximum, although no qualitative difference will be observed past a setting of 10.

## testing

If the unit has been wired according to the instructions provided, it is ready for operation. If an audio oscillator is available, the following confirming check may be performed:

Feed the test oscillator into an unequalized, high-impedance amplifier input. Do not use a magnetic preamp connection. With the signal at a comfortable level, select the frequency of 200 cps. If the 828HF drivers are properly connected and in phase with the 18WK VLF driver, the level will just barely diminish at this frequency (down 3 db) as the MID-BASS control is turned counter-clockwise. If they are not connected in phase, the level will *increase* appreciably.

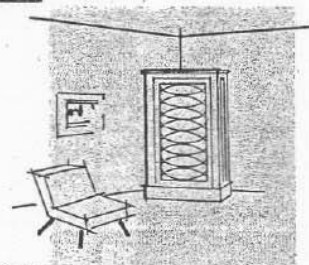
Select 600 cps as the next point on the oscillator and repeat this test for proper connection of the T25A-6HD assembly. The same effect will be observed as in the previous test, and show proper phasing of the T25A to the 828HF drivers as the *PRESENCE* control is raised or lowered.

Because of the short wavelength of sounds radiated, phasing is of little importance for the T35 driver.

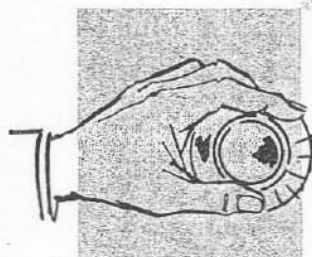
If the sound radiated by the driver in question does not decrease as its attenuator is turned down, a reversal of connections will bring the unit into phase.

# OPERATING INSTRUCTIONS

**PLACEMENT**—The 103C-115 assembly will function in an optimum manner only when operated in a corner. Closely situated chairs and objects affect the operation of the bass section only if their size is very large, so that they form an appreciable portion of the wavelength of the low-frequency tones being emitted. For instance, the wavelength of a 30 cps tone is 111 inches, and an object 3 or 4 feet square must be actually blocking the side ports to affect radiation at this frequency. If furniture is kept 2 or 3 feet away from the sides of the unit, perfect radiation of all tones will be insured. An open window or door, several feet away, will cause little degradation of response.



placement



controls



mid-bass

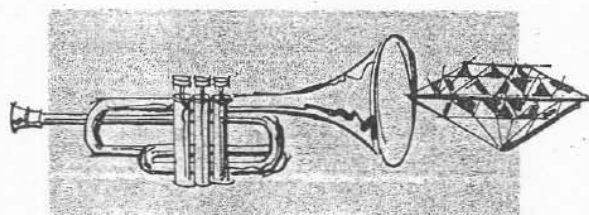


presence

**SETTING THE CONTROLS**—The three level controls allow complete balancing to any acoustical environment. The controls are continuously variable, insuring optimum adjustment to all tastes. While playing a comprehensive orchestral selection, set the MID-BASS control to maximum, and the PRESENCE and BRILLIANCE to  $\frac{1}{2}$  rotation. This will be a pleasing setting for a large living room with hard walls and few drapes and rugs. If the room is average in size (about 14 by 20 feet), advance the PRESENCE control to about  $\frac{3}{4}$  rotation. This will require a readjustment of the BRILLIANCE control for good musical balance, so advance this control slightly while listening to various passages in the music. If the source material is clean and wide range, the point of balance will be definite, the higher tones will suddenly fall into place, and there will be little doubt that the proper setting has been achieved. In heavily draped rooms the setting may be as high as 9 or 0, but only in extreme cases.

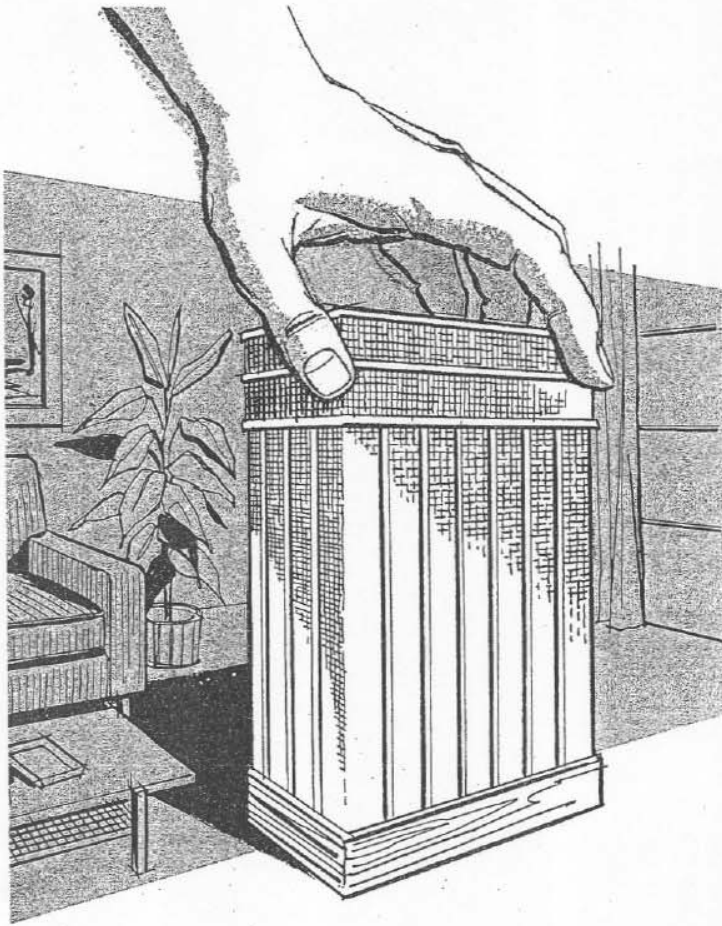
Ordinarily, the MID-BASS control is operated fully clockwise, at a setting of 0. But over long periods of listening, engineers and others engaged in recording and music monitoring, have found that a decrease in the energy in this part of the spectrum vastly lessens listener fatigue. The user should set this control to conform to his own listening habits, but probably never lower than a setting of 5.

Once set, the controls need never be touched except for an unusual record with poor musical balance, or a badly worn record which requires lowering of the BRILLIANCE setting to subdue scratch.



brilliance

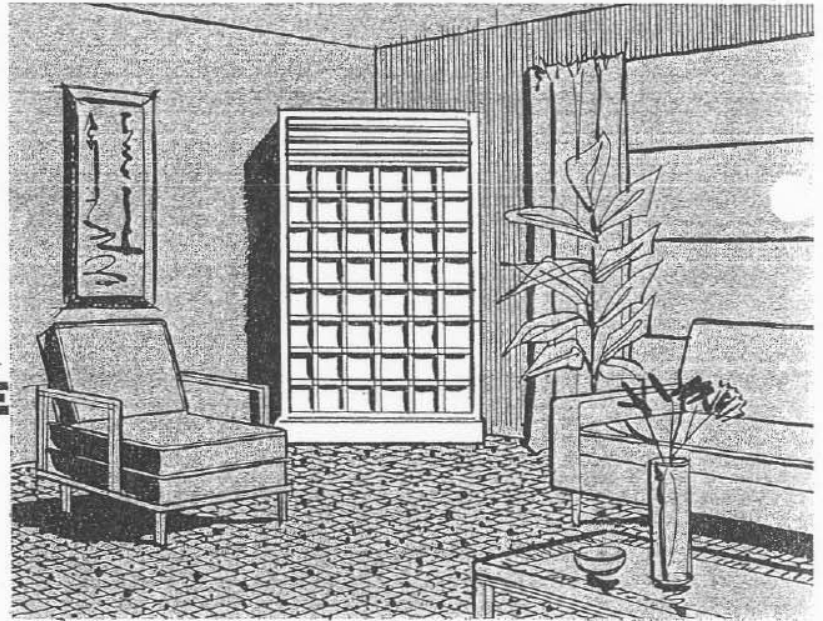




To you and me, the Patrician enclosure is beautiful, a work of art, a means to an end. But to friends, neighbors and even members of the family the reaction may be 'Now that you have it waddaya gonna do with it?' That is highly unimaginative thinking, but alas, very close at hand.

As it stands, the enclosure has all the radiant appeal of a piano crate, but dressed up, it can surpass the piano for elegance. Ideas for cabinets are yours, all yours, because if they were not, you would have made selection Four. Because they are all your ideas, and confidential brain children at that, we will not trespass. If, on the other hand, the Patrician is to be blended into the landscape here are a few suggestions.

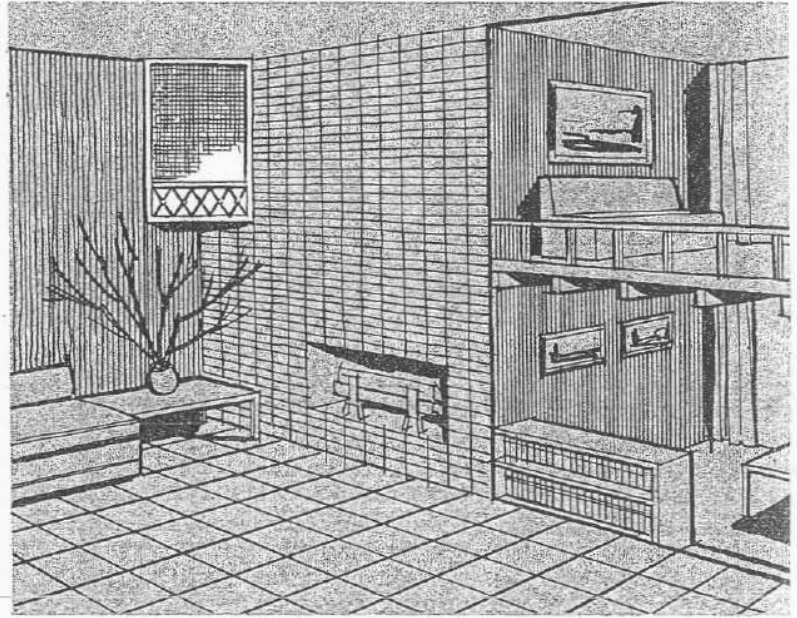
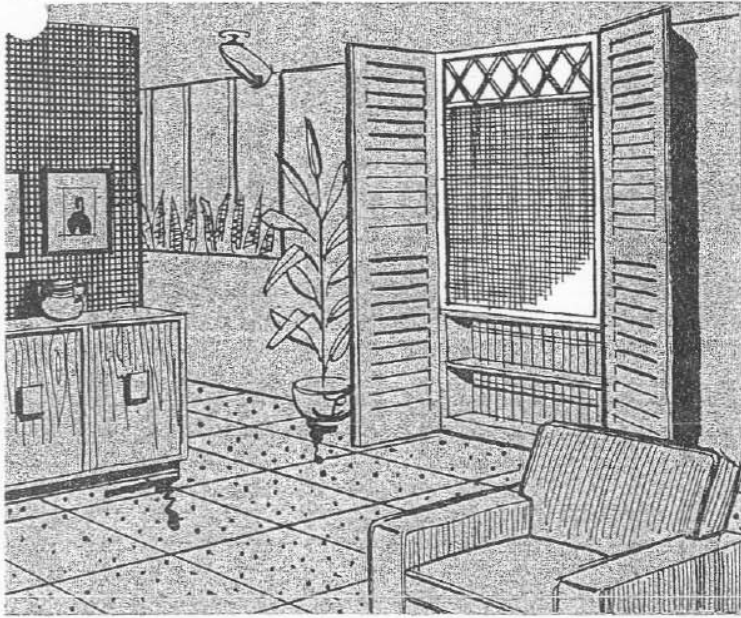
## FITTING THE PATRICIAN IV INTO THE PICTURE



### CORNER PLACEMENT

In the good old days when men carried rifles, axes and blanket packs as items of wearing apparel, the corner was the logical place to dispose of such garments when entering a room. To discourage this practice, the good wife made certain each and every corner was well graced with a cupboard, what-not or at least a spinning wheel, so the idea grew and hung on. Today people instinctively expect to find the room corners occupied, and nobody questions the presence of a built-in Patrician. If it blends into the scheme of things it can be modern, colonial, Georgian, Gothic or Grand Rapids. The only point being that it must look as if it belonged there.





### EXIT BLOCK

Up till recently it was customary to build houses with three or more entrances into each room, including the bath. Modern taste frowns upon such a traffic pattern and road blocks in the form of partitions became popular. A Patrician can be built into one of these otherwise non-useful barriers. The front side couples into the hi-fi room, the back becomes a storage wall with most of the space already spoken for. If you have an abundance of closets the same idea applies. Additional horn area can be obtained by mounting swinging doors which open into horn extensions, and are folded flat on silent night. The efficiency of the Patrician is so high anyway, you will lose only the effect of the lowest of the deeper notes by abridging the room section entirely.

### BALCONY SCENE

This is not practical in low ceilinged living rooms, but for clubs, restaurants, auditoriums and the larger houses where there is plenty of overhead area going to waste, the Patrician enclosure can be mounted UPSIDE DOWN in the corner *and at the ceiling* so the 200 cycle horn comes at ear level. This leaves the floor area free and actually gives better tone quality because wall area near the ceiling is usually unoccupied.

### BOILER ROOM COUPLING

Many of the newer homes do not have room in the parlor for a Patrician so the sound can be 'piped' in from below. The use of gas and oil for fuel has liberated the old coal bin and today basements are the roomiest areas in the house. The two units are separated, and the bass horn laid on its side in the basement, or hung close under the parlor floor, depending upon home construction and dampness. Only one side of the horn is coupled, but by doubling the trumpet area it can be fed through into the 'window seat' with ample volume and excellent quality. The 200 cycle horn is built into the window seat.

### SECOND STORY MANIPULATING

The same deal applies to basementless homes which have sealed off attics or unfinished upstairs rooms. Here the bass horn feeds down through a grill at the edge of the ceiling. There is no bottom to a deal like this as the entire house can be brought into the act or even designed around the bass horn.

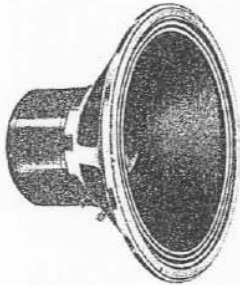
All of which boils down to what was said at the beginning of the book. When you build a Patrician, you start something. When it is all dressed up and looking pretty it becomes a cherished item in the household. An evening of listening to their favorite music will overcome the resistance of friends and family, and they will thank you for bringing them the means to so much enjoyment. Now—through the years to come—just sit back and LISTEN!



FOR THE

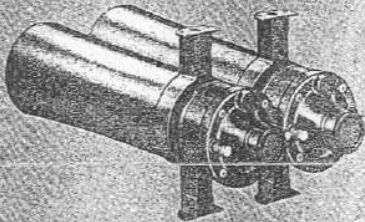
# DRIVER COMPONENTS

## PATRICIAN IV HIGH-FIDELITY ENCLOSURE



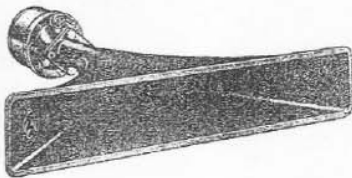
MODEL 18WK  
LF DRIVER

**LOW-BASS SECTION** Employing the Klipsch principle of folder corner-horn loading, the new Patrician IV utilizes an 18-in. low-frequency driver, Model 18WK, housed in a "K" type reproducer scaled up 16 2/3 percent. The taper rate has been extended to 35 cps. The first three octaves, to the first crossover point at 200 cps, are reproduced by a tremendous bass driving section . . . the largest, most highly developed ever designed for a home audio system. When the Patrician is placed in a corner, the folded throat of the bass horn becomes part of the entire room, allowing the large wave lengths of the second and the upper part of the first audible octave to be formed properly.



MODEL 828HF  
DRIVERS WITH  
A8419 HORNS

**MID-BASS SECTION** A separate horn employed as an indirect radiator with its two complementary Model 828HF driver units takes over for only the next 1 1/2-octave range to 600 cps. Because no metal horn presently developed satisfactorily reproduces down to 200 cps, the horn load for the intermediate bass drivers is fabricated of wood and phenolic tubes. These are a part of the overall interior assembly.



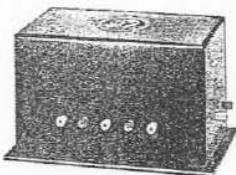
MODEL T25A  
HF DRIVER  
WITH MODEL  
6HD HORN

**TREBLE SECTION** From 600 to 3,500 cps or the next 2 1/2 octaves, the Electro-Voice Model T25A treble driver exhausts into a 600-cycle Model 6HD diffraction horn. This diffraction horn is the latest design and employs the principles of optical diffraction to disperse high frequencies uniformly, without the losses typical of cellular and lens type horns. Thus, the important "presence" range is assured of complete and proper transmission by this specialized driving unit. Other frequencies, not a part of this range, are completely excluded.



MODEL T35  
VHF DRIVER

**VERY-HIGH SECTION** The range above 3,500 cps, extending beyond the range of hearing, is reproduced by the Model T35 Super-Sonax very-high-frequency driver. This driver, a recent Electro-Voice development, utilizes an integral diffraction horn. Through the Model T35, the remaining octaves of the upper audible register are completely accomplished with practically no measurable distortion.



MODEL X2635  
CROSSOVER

**CROSSOVER NETWORK** To allocate the various portions of the spectral energy to the respective driver units, the Model X2635 crossover network divides the amplifier power into four separate portions, and eliminates upper harmonic and intermodulation distortion from one driver in the region covered by the next.

# Electro-Voice

**ELECTRO-VOICE, INC.**  
BUCHANAN, MICHIGAN

# MODEL HOME CONSTRUCTION PART IV

