Do It Yourself!

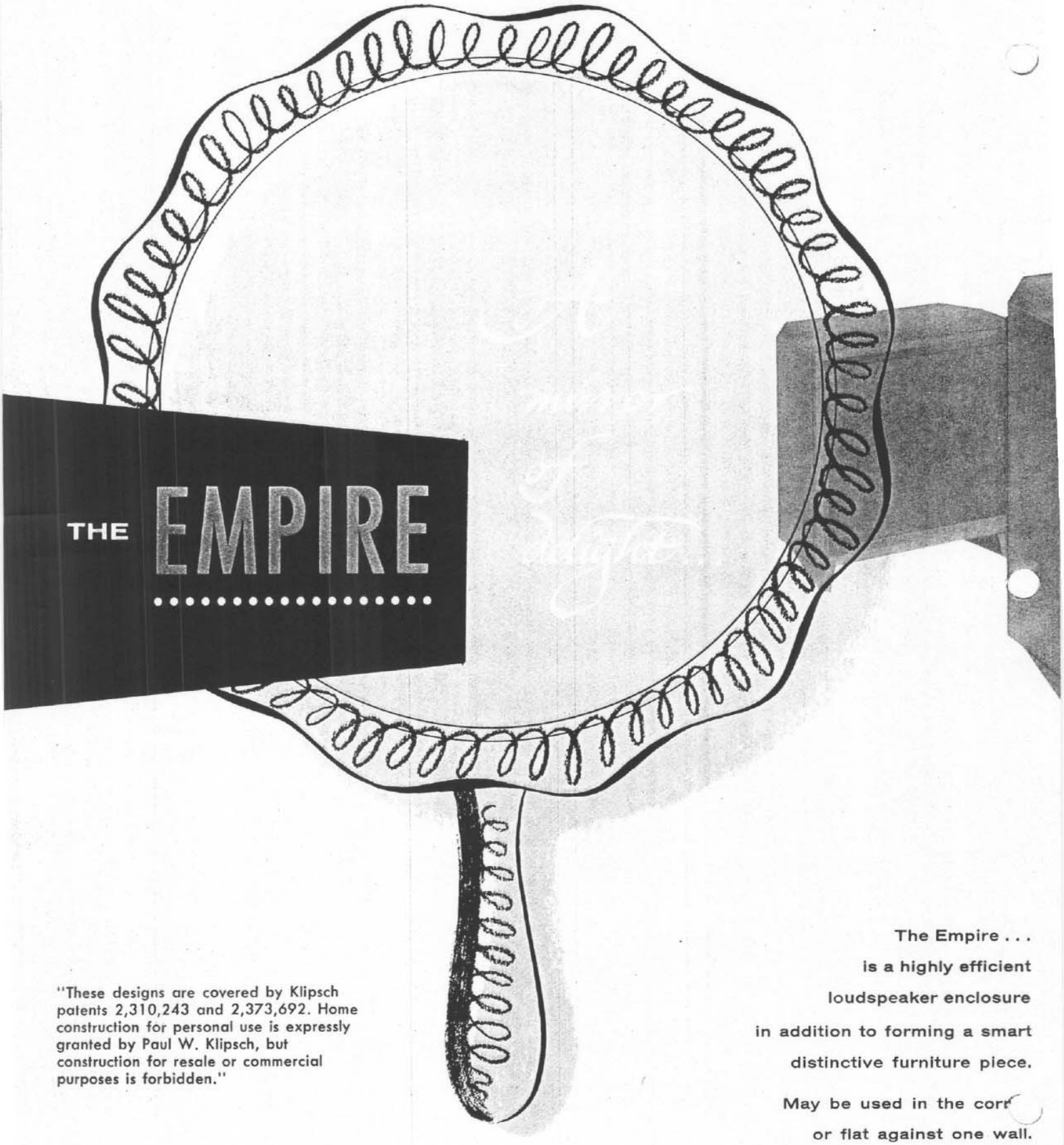
build the EMPIRE SPEAKER ENCLOSURE

MODEL NO. 185
PRICE $1.00

Electro-Voice®

do-it-yourself-project KD **5**

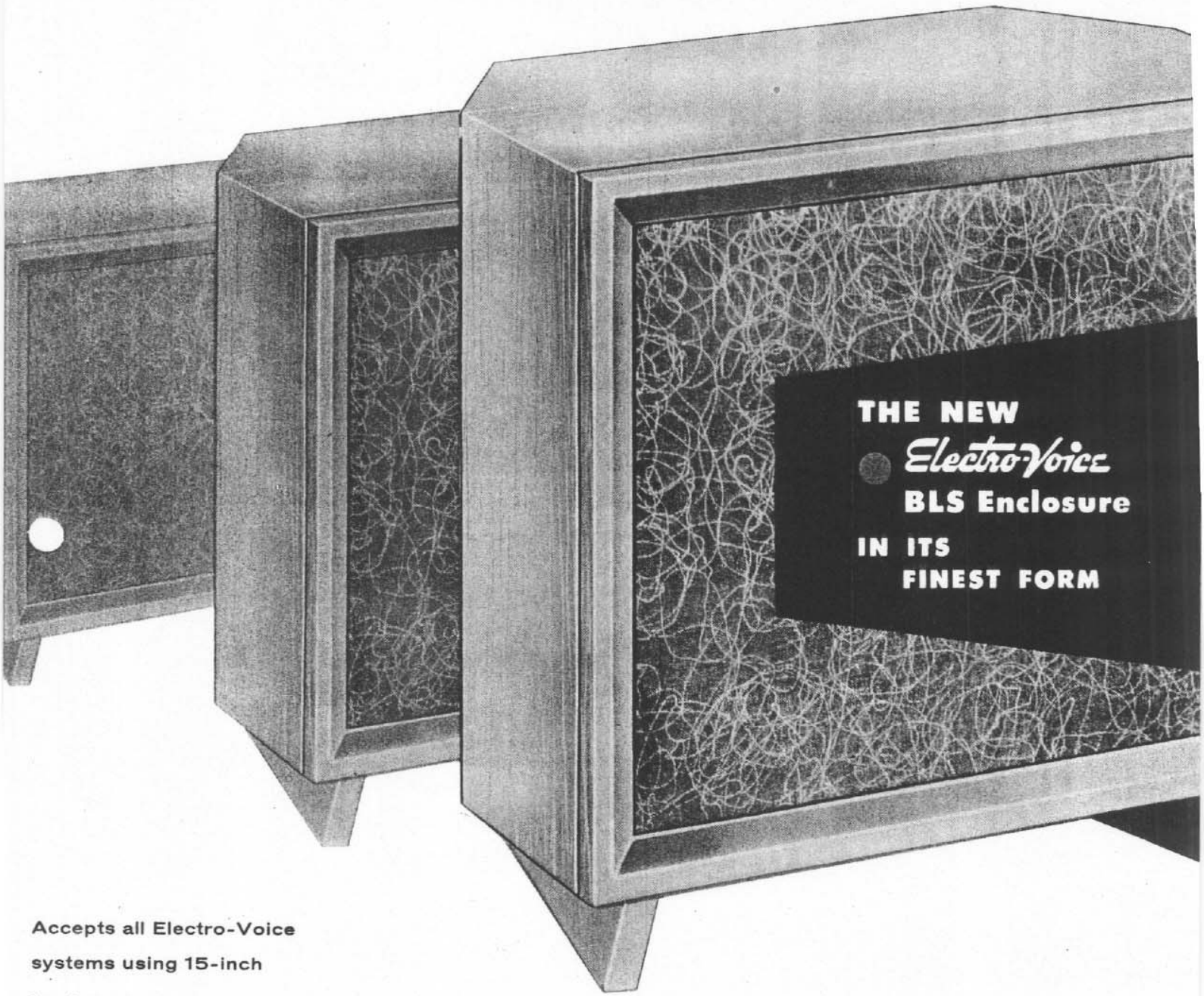
THE EMPIRE



"These designs are covered by Klipsch patents 2,310,243 and 2,373,692. Home construction for personal use is expressly granted by Paul W. Klipsch, but construction for resale or commercial purposes is forbidden."

The Empire . . .
is a highly efficient
loudspeaker enclosure
in addition to forming a smart
distinctive furniture piece.

May be used in the corn
or flat against one wall.



Accepts all Electro-Voice systems using 15-inch loudspeakers.

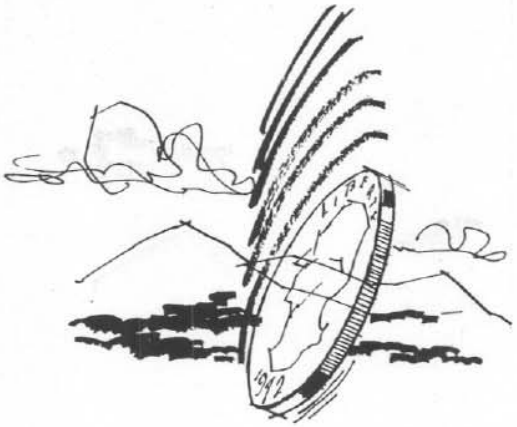
Now you can save money and have fun too by building this famous enclosure yourself ... in your own home.

THE EMPIRE

A MIRROR OF DELIGHT

The mirror is one of the oldest toys known and like all devices which started as conversation pieces and trinkets of delight it has serious potentialities. These potentialities were realized and exploited well before the dawn of recorded history. Not only did a mirror reflect the image of a lovely lady with the avowed purpose of making her more lovely still, a mirror also proved quite deadly. Tiny brass mirrors sewed to a leather jacket or nailed to a shield reflected sunlight into the eyes of the enemy, upsetting his ability.

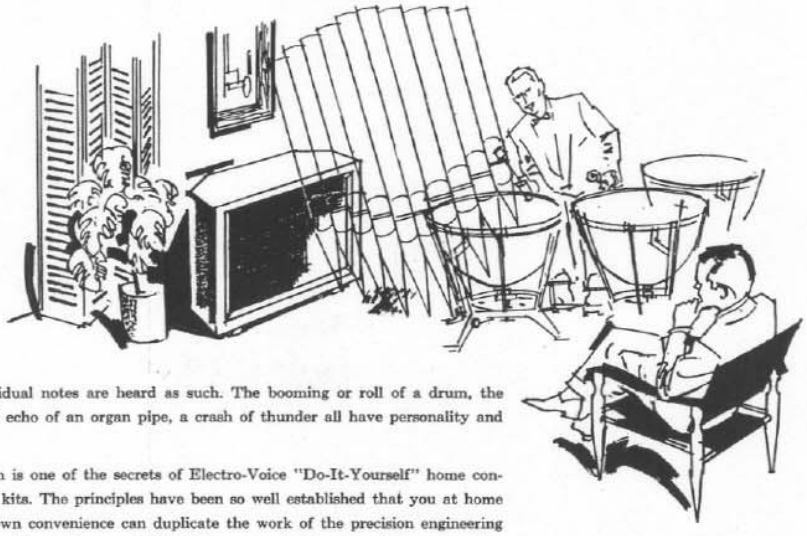
About 200 years ago it was discovered that a combination of lenses and mirrors would greatly condense and amplify a light source. Thus a tiny lard oil flame no larger than your finger could be made to cast a beam visible 30 miles away. With this discovery, the lighthouse came into existence.



Focusing mirrors will work on sound as well as light, since sound and light are both forms of electro-magnetic radiation. The focusing of sound was well demonstrated long ago by the whispering galleries and acoustical chambers built into temples and theatres. The same phenomenon also occurs in nature. There is a valley in Southern California where sound reflection is so perfect that a coin dropped on a rock can be heard within a quarter mile radius.

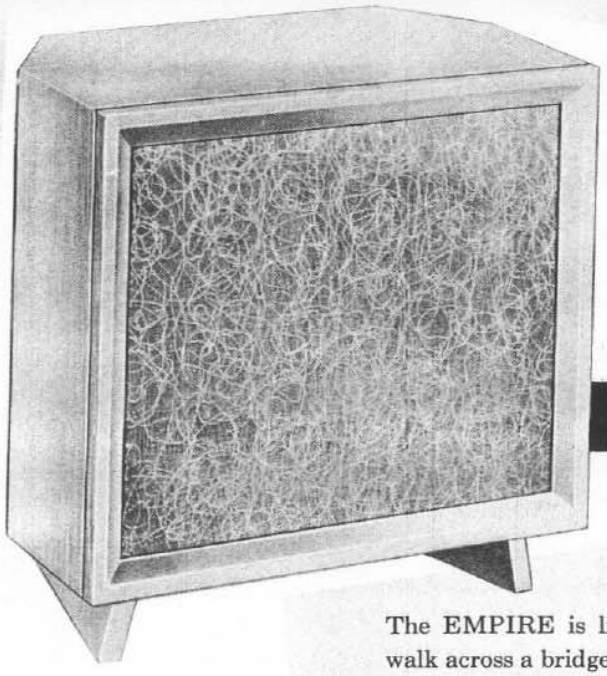
SOUND REFLECTION CONTROL

The basic formulas dealing with the focusing of sound have been developed through the acoustic art by numbers of people. Perhaps the most outstanding exploitation of these physical principles has been made by Paul Klipsch, who developed a system in which a basic acoustical chamber was coupled to the walls of a room. The whole system consists of a basic acoustic chamber, and numbers of acoustic "images" reflected from the surrounding walls and floor. The employment of secondary propagating images enhances both fidelity and acoustic volume and in the EMPIRE formula has been improved to a point where the illusive, seldom heard notes of the lower octaves are not only in evidence, but stand on their own merit. In the EMPIRE, the mirror of delight,



the individual notes are heard as such. The booming or roll of a drum, the swell and echo of an organ pipe, a crash of thunder all have personality and purpose.

Here then is one of the secrets of Electro-Voice "Do-It-Yourself" home construction kits. The principles have been so well established that you at home in your own convenience can duplicate the work of the precision engineering laboratory. In creating an EMPIRE, you can build a reproducer as good as the best, in line with your own personal skill and ability.



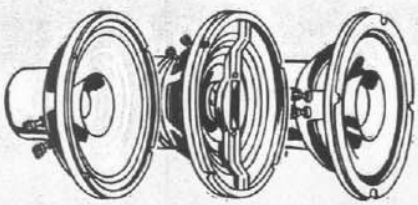
A BEAUTIFUL PIECE OF FURNITURE YOU

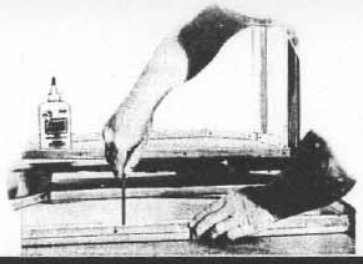
What do you get in the EMPIRE *?*

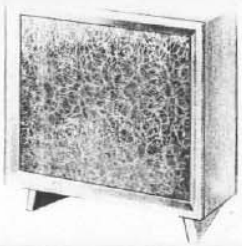
The EMPIRE is like a portcullis raised, allowing you to walk across a bridge into the realm of fantasy; the delightful world of make-believe where you may stroll among the players of the orchestra, hear the breathing of the singer and join in the spirit which moves the inner soul of man. Derived from the acoustic exploitation of physical fact, the striking new Electro-Voice BLS Bilinear Lenticular Slot porting arrangement allows the EMPIRE to be used as either a "cornerless corner" horn or placed on the side of a room. Here your touchstone with the musical world may be placed anywhere you wish in keeping with either the decor of the room or with your desire of placement in the listening area. Music can sooth the savage beast, but music as delivered by the EMPIRE can lift you out of the work-a-day world and keep you enchanted until you raise the needle from the record, turn off the power, and say, "I am satisfied for this evening."

HOW IS IT DELIVERED?

The creator of an EMPIRE has at his disposal a selection of components which not only include the feeling of the inner man, but a feeling for the limitations of his pocketbook as well. No man need be deprived of the finer things in life because he does not at the moment feel equal to keeping up with the Jones family. The components of the EMPIRE can be added from time to time. The system can start simply and grow. Installation can be held down to a strict budget, stay on the budget and still deliver complete satisfaction. Of course, it is obvious if you pay more, you get more, but the *more* resolves itself in the final quintessence into that haunting and hard to describe something which is to be sensed rather than pinpointed. Since the EMPIRE components are available in both the standard 15-inch Electro-Voice systems, and the B series with lighter magnets, the *more* consists mostly in the damping possible only in speakers with heavier magnets and the enhanced reserve power of the bigger units. The damping of heavier magnet speakers is greater and confers better reproduction of transient response. The heavier magnet loudspeakers are also more efficient and will reproduce more sound than the lighter models with the same power input. The tone quality, however, is exactly the same, and for smaller rooms and smaller budgets the B series of components may easily be chosen with full confidence.

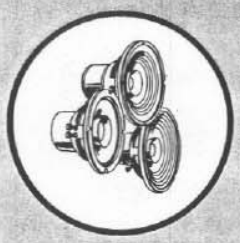


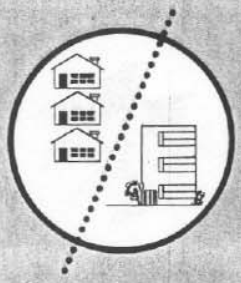




CAN (1) BUILD FROM PLANS, (2) ASSEMBLE A KIT, (3) PURCHASE ALREADY ASSEMBLED.

MAKE YOUR SELECTION . . .





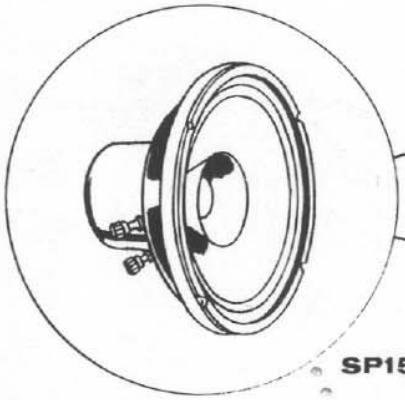
The selection of speakers can be done right now or you can mull it over as you build the cabinet. It is always an important issue and one which only you can decide. That is half the fun. Of course, if money is no object, there is really no decision to be made; just buy the best. The line of demarcation between the best and the budget price is so hard to find that many will not even look for it, being content to take the saving and accept the slightly less than ultimate performance. None but the musically critical can spot the difference unless two systems are available for direct comparison.

You may be confused as to the difference between coaxial speakers, triaxial speakers, and those systems employing three independent driver units. The difference between these reproducers is easily explained by analogy. The difference between a triaxial loudspeaker and three unitary drivers, for instance, is much the same as between three individual houses and a three flat building. The three flat building takes less material for construction and things are a bit more compact. Living can be just as gracious in the one as the other.

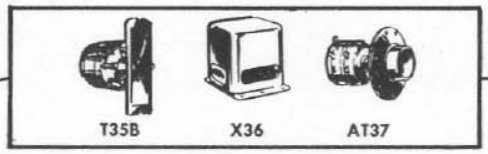
Physical dimensions, of course, also enter into the design of these units. A horn the size of the 8HD must stand by itself, for it is too large to be "coaxed" into anything of reasonable dimensions. The whizzer cone of the SP15 does the same work as the 8HD, that is giving full emphasis to the intermediate high notes. The 8HD does the job best, of course, as would be expected from its larger size. We think that all of these units when mounted in the EMPIRE will deliver reproduction well in excess of normal expectations.

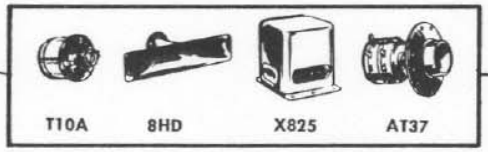
CHOICE 1

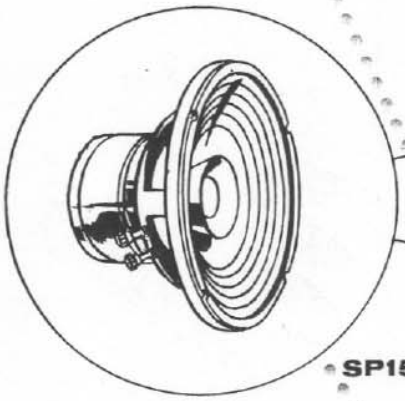
CHOICE 2



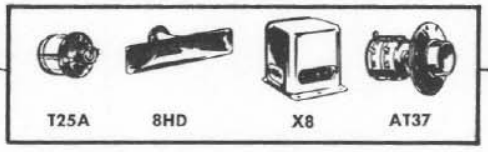
SP15B

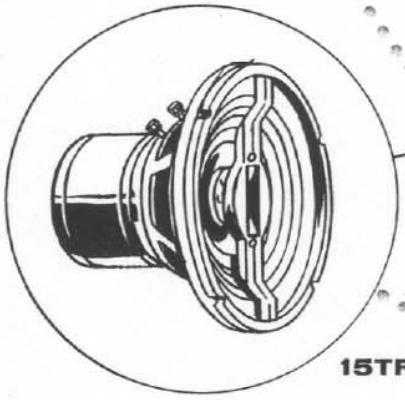




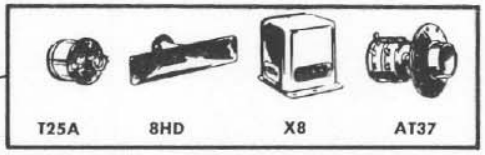


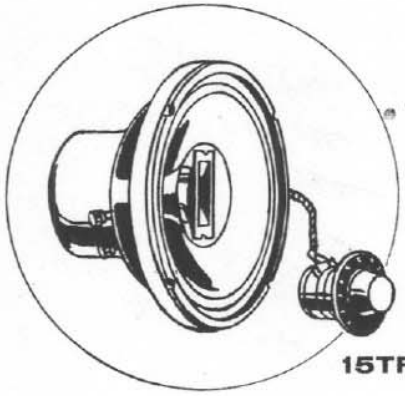
SP15



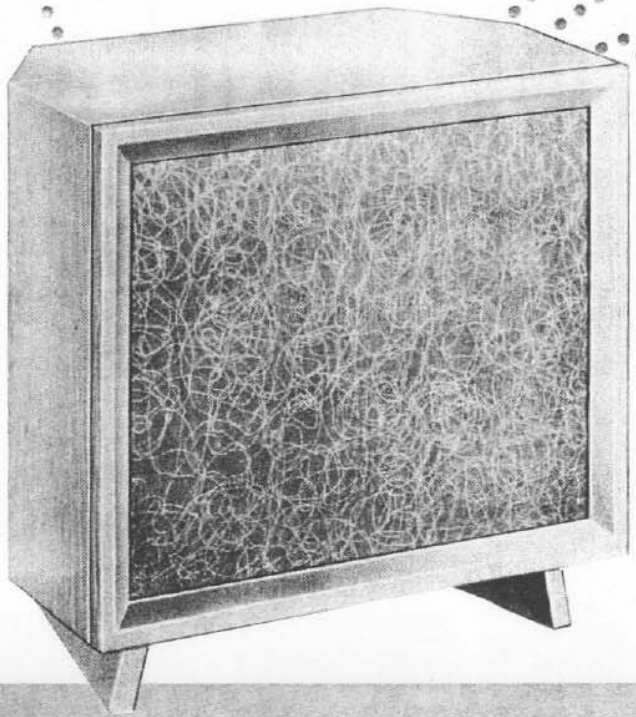


15TRX

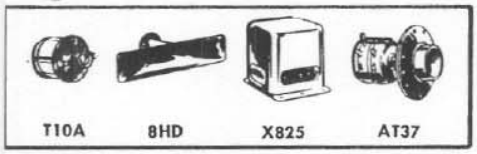


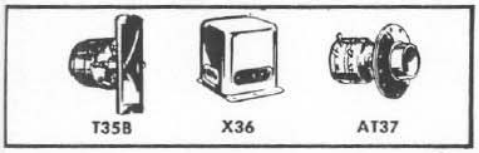


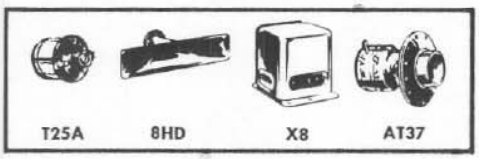
15TRXB

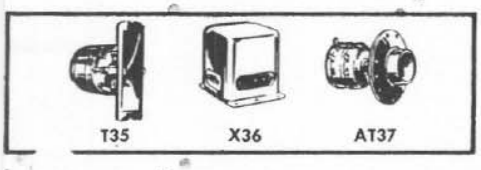


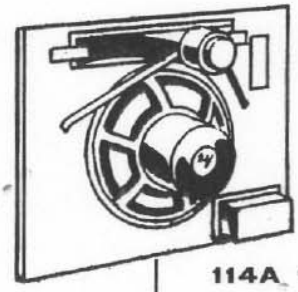
CHOICE 3

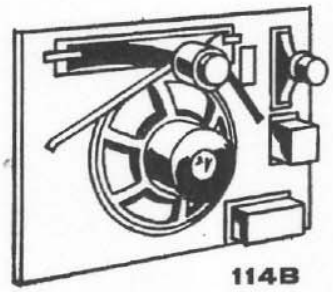


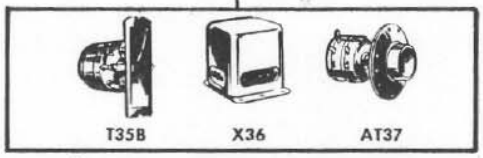


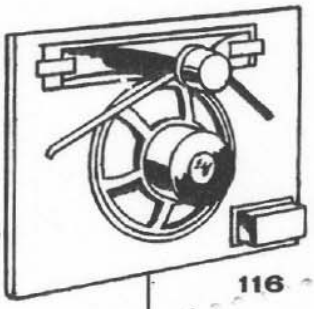


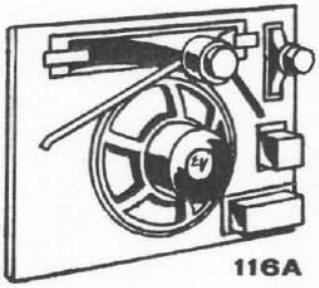


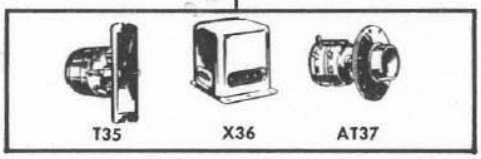


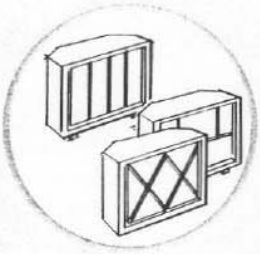












CHOICE IN CABINET WORK

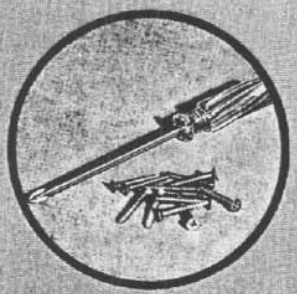
The creation of a delicate and beautiful piece of furniture is such a thrilling prospect that one often wonders why anybody bothers to buy furniture. Others, of course, would rather play golf than build their own cabinet, and to some the big thrill comes in laying cash on the counter and saying, "I'll take that one." It takes all kinds of people to make a world, and for all of them Electro-Voice has an EMPIRE in the form most compatible to their personality. Build it, assemble it, or buy it, all these choices are available for you.

STARTING FROM THE BEGINNING

Very few people have the facilities to create an entire high-fidelity system at home, but many can construct the loudspeaker enclosure and cabinet. For them, this is of particular interest. Electro-Voice has drawn the plans and made them available to the home constructor. The Do-It-Yourself fan starts from there, saws out the lumber, assembles the pieces and continues until a piece of furniture worthy of admiration results. Many people consider creative work a choice form of recreation and take infinite delight in the fashioning of each piece of lumber, admiring the grain, laying out the lines, watching the hissing saw cut the line in half, breathing sawdust and having such an enjoyable evening that it is almost time to get up before thinking of going to bed.

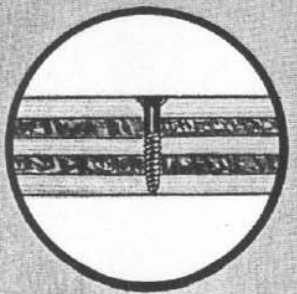
A man who can create his own furniture does not need help from Electro-Voice; only a clue here and there as to general arrangement and overall dimensions. Because of this, the remainder of this book will be devoted to assembling the parts after they are cut, and better yet, how to put together a kit of Do-It-Yourself precut parts.

While it is foolish to attempt to tell the rugged pioneer how to saw a plank, this manual will offer pleasant guidance to the part-time worker in wood who is raring to go, but must feel out each step as he approaches it.



THE MODERN CABINET ASSEMBLY TOOL KIT

SCREWDRIVER AT WORK

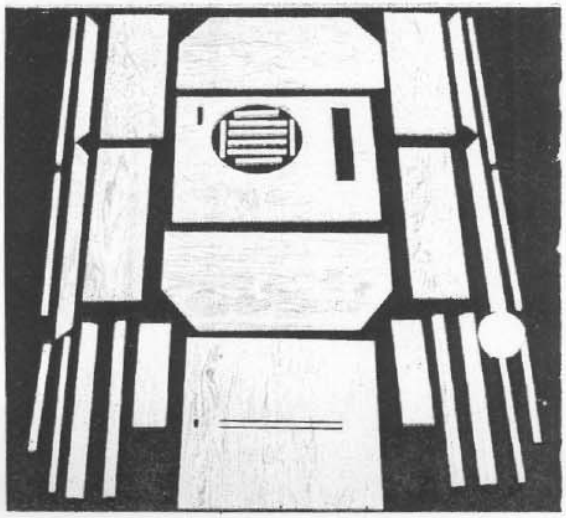


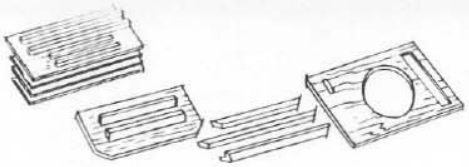
ONE SCREWDRIVER COMING UP

The EMPIRE kit can be assembled with just a screwdriver, something very few makers of home construction kits can boast. By the skillful employment of glue blocks and interlocking panels a rigid and exceptionally strong structure can be fabricated.

It is also different, and may be brand new to you. To make certain it is understood, every step has been photographed and keyed to the copy. You and your screwdriver can assemble this structure; and it will be right, if you do the job one step at a time. Do each step to the best of your ability and your effort will be well rewarded. There is no hard work involved, just careful attention to detail.

On the right you see the parts which go into your EMPIRE spread out, exactly as you should position them when the kit has been opened. In case you are building as well as assembling, turn the page and see the full dimensioned details. The details are the same as the photograph, except perspective has been eliminated so that you may pick off the dimensions and transfer them directly to the wood.





FOLLOW THE CHANNEL MARKERS

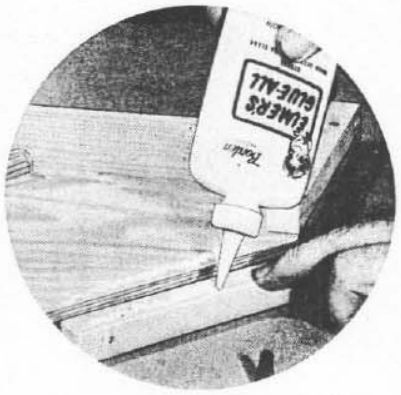
Find part 1 on the plan, then find part 1 in the pile of lumber, and mark it. Part 1 is where you start. Part 2 is fastened on to it, and next comes part 3. Each new piece you install is *one higher than the one just installed.* This technique makes possible the assembling of the cabinet. To insure ending with a usable speaker cabinet, follow the order given in the text.

A flask of milky white liquid is the magic ingredient which makes simple the difficult task of fitting together complicated cabinet parts. Unlike the older types of glue, this plastic adhesive operates at room temperature and requires no clamps. Since the glue sets in a big hurry and once bonded produces a permanent joint, the most bungling amateur can produce a satisfactory job. A joint glued and screwed according to instructions will hold permanently with no more effort on your part than applying the adhesive, lining up the parts, driving the screws and then letting it absolutely alone for thirty minutes.

GLUE LOOKS LIKE THICK CREAM BUT DRIES INTO CLEAR PLASTIC

ENTER THE GLUE BOTTLE

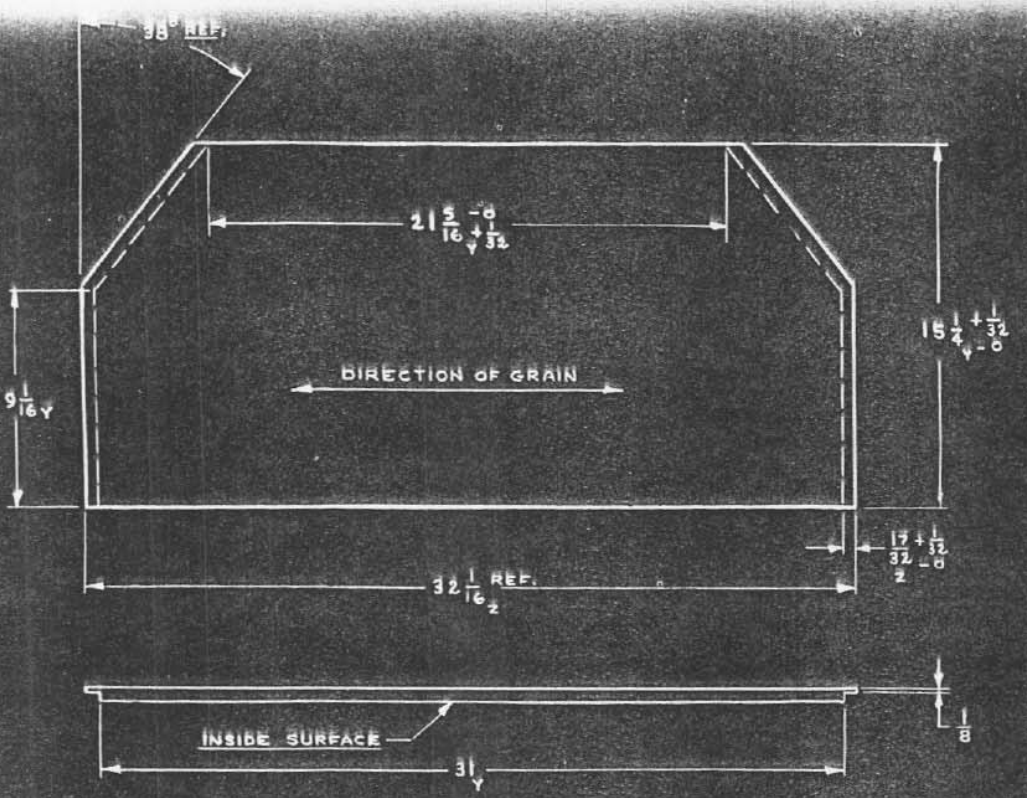
Glue in itself has neither bonding power nor adhesive qualities. To be effective, both mating surfaces must be liberally coated with glue, then brought into positive contact and held there until the glue goes through a chemical change known as polymerizing. The glue soaks into the wood and then hardens into a clear transparent plastic. If there is no pressure, the wood will simply be plastic-coated and there will be no bond. If pressure is applied, the glue should and will squish out of the joint. As each screw is seated, it forces the mating surfaces of wood into airtight contact, leaving enough to keep the surfaces coated. It is this microscopically thin layer of glue which does the work, uniting the two pieces until the joint is stronger than the wood itself. Glue looks so docile it has to be understood to be appreciated. There is no better time than now to learn its ways, because from now on you and glue will be inseparable.



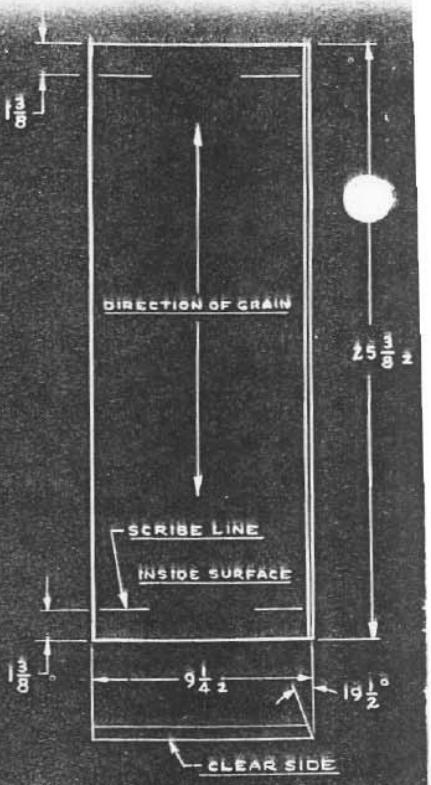
THE GLUE HAS TO SQUISH

A GLUED STRUCTURE IS RIGID AND EXCEPTIONALLY SUBSTANTIAL

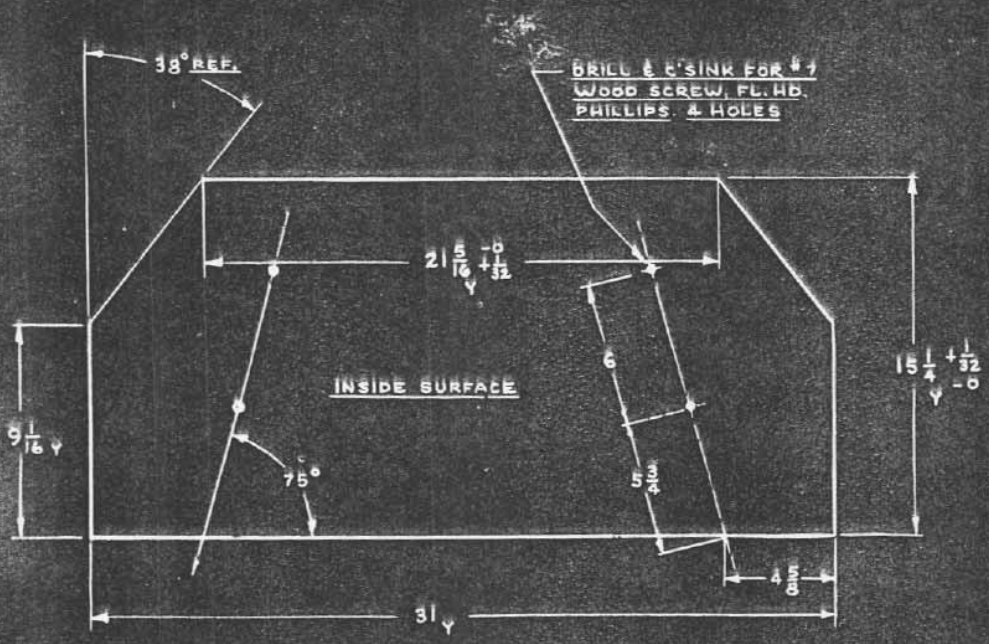
The screws perform no actual function in the permanent strength of the structure. They may be removed without weakening the joint for once the glue has set, the screw no longer has a function. In this respect, your EMPIRE resembles the old style cabinet art in which neither nails nor screws were used or needed. The modern plastic adhesive makes possible a finesse in construction which was unknown and undreamed of a mere generation ago.



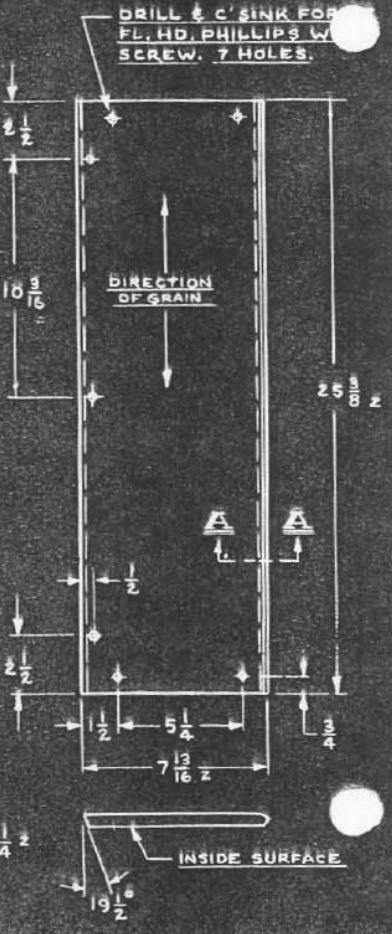
(7) ONE REQ'D, 1/2 BIRCH CABINET GRADE PLYWOOD
CLEAR SIDE SHOWN



(8) 2 REQ'D, 1/2 BIRCH CABINET GRADE PLYWOOD



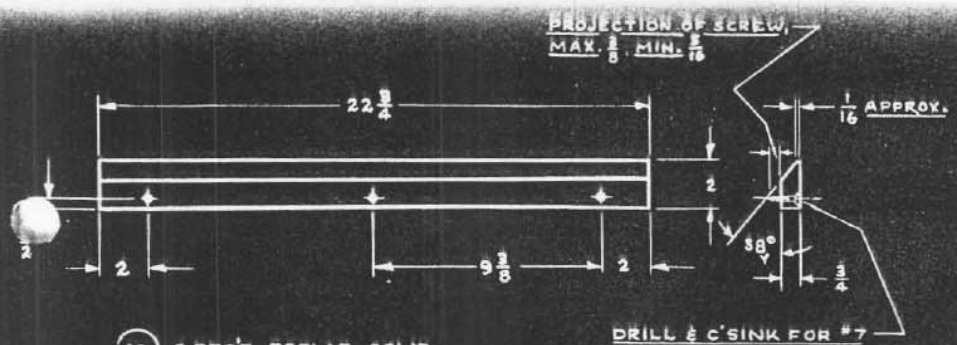
(3) ONE REQ'D, 1/2 FIR PLYWOOD
B-D OR BETTER



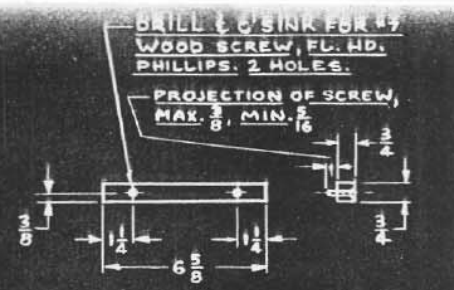
SECTION A-A

(12) 2 REQ'D, 1/2 FIR PLYWOOD
B-D OR BETTER
B. SIDE SHOWN

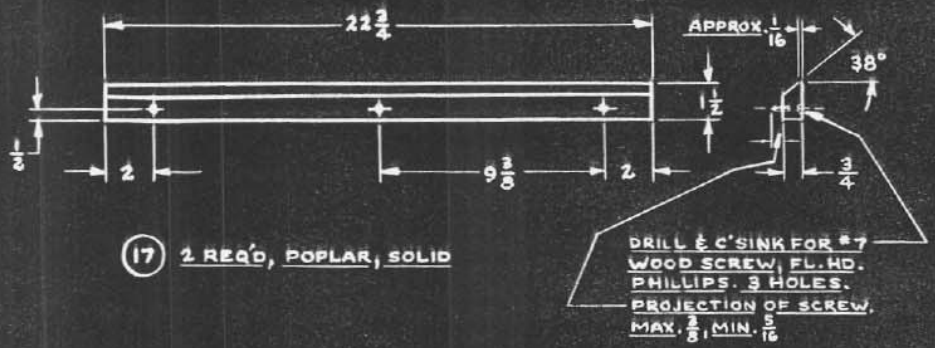
NOTE:
STAMP "INSIDE" ON ALL INSIDE SURFACES
EXCEPT 1, 2, 4, 5, 6, 9, 10, 11, 13, 14, 15, 17, 18 & 20



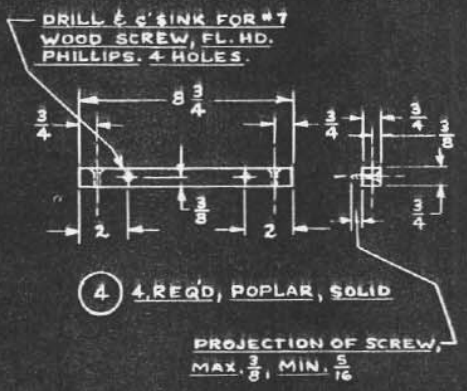
(10) 2 REQ'D, POPLAR, SOLID



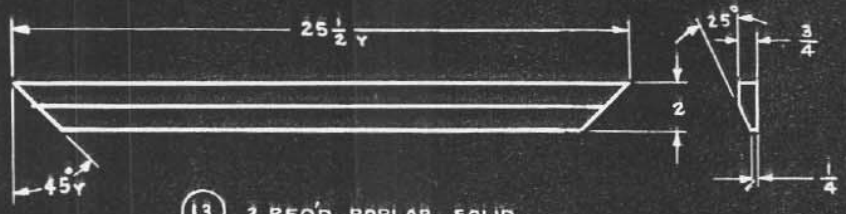
(5) 4 REQ'D, POPLAR, SOLID



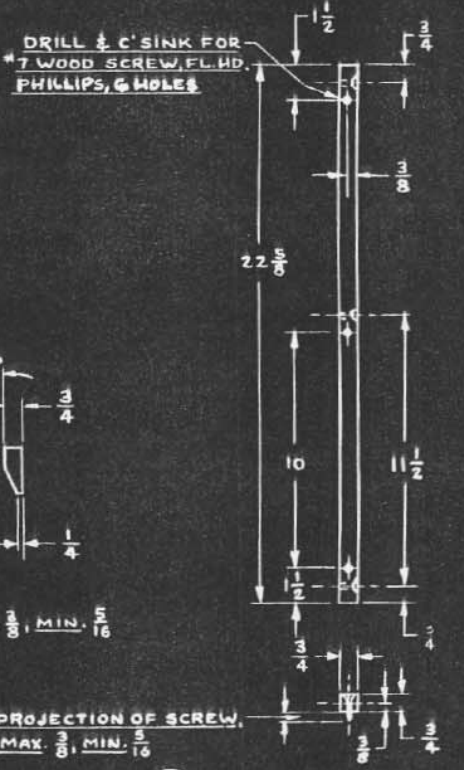
(17) 2 REQ'D, POPLAR, SOLID

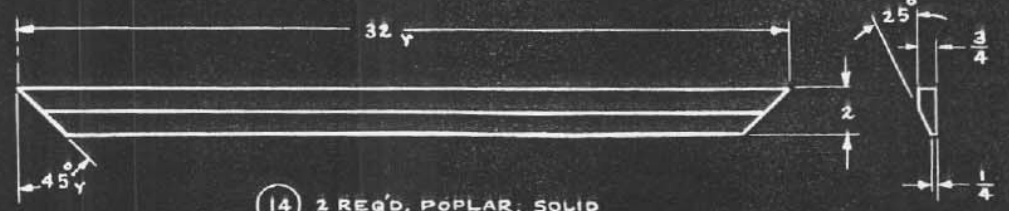


(4) 4 REQ'D, POPLAR, SOLID

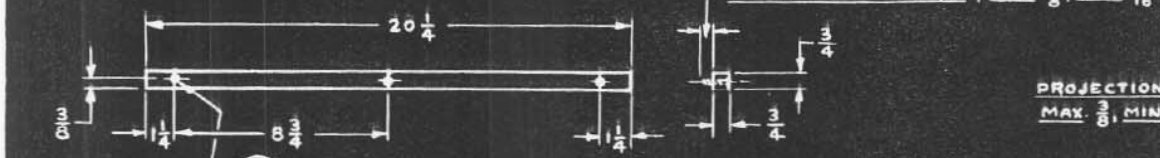


(13) 2 REQ'D, POPLAR, SOLID



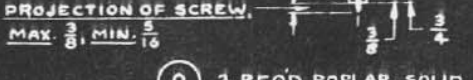


(14) 2 REQ'D, POPLAR, SOLID

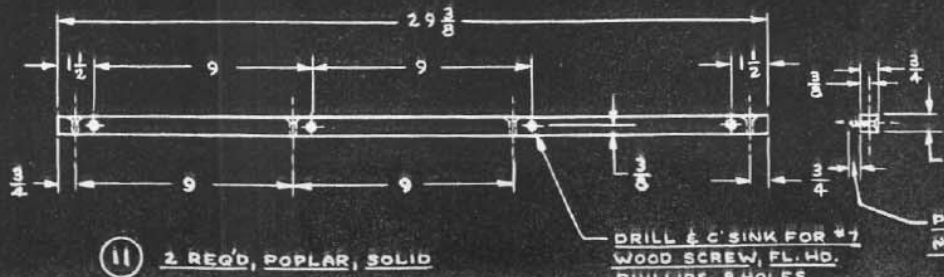


(6) 2 REQ'D, POPLAR, SOLID

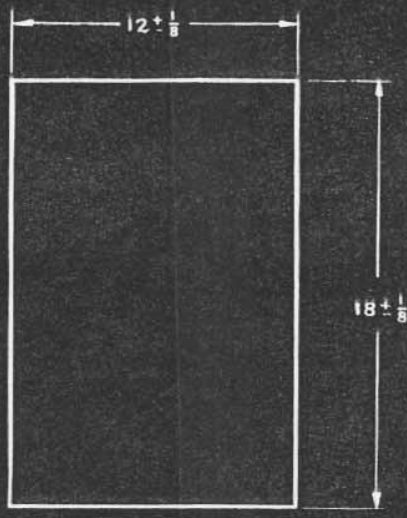
ILL & C'SINK FOR
WOOD SCREW, FL. HD.
ILLIPS. 3 HOLES.



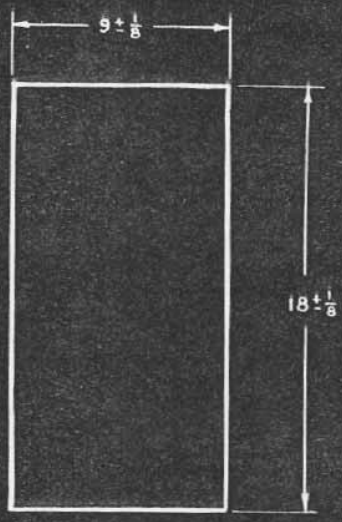
(9) 2 REQ'D, POPLAR, SOLID



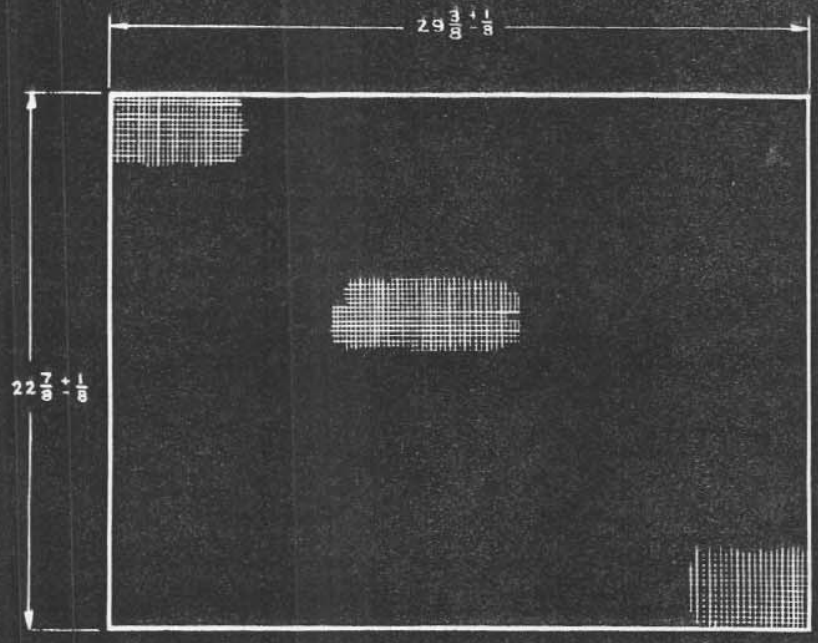
(11) 2 REQ'D, POPLAR, SOLID



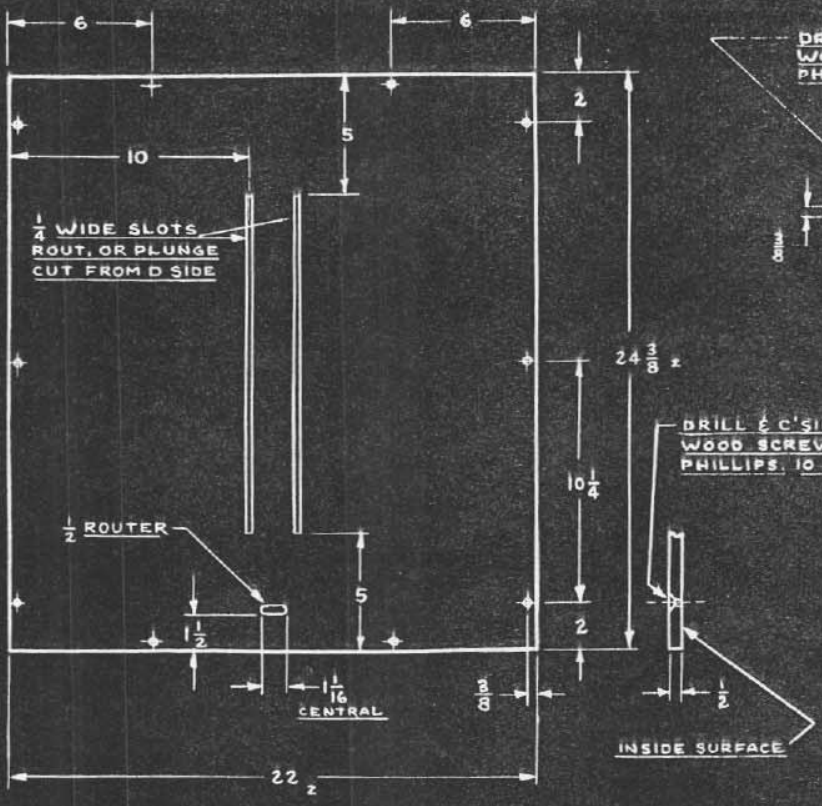
(18) 4 REQ'D, INSULATION



(20) 2 REQ'D, INSULATION

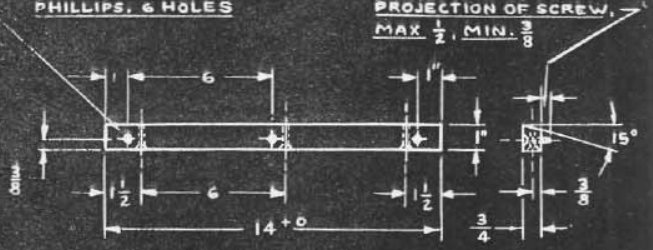


(15) ONE REQ'D, GRILLE CLOTH
K-D NOTED, HOME CONSTRUCTION TO SUIT



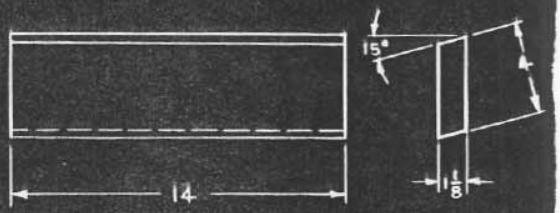
DRILL & C'SINK FOR #7 WOOD SCREW, FL. HD., PHILLIPS, 6 HOLES

PROJECTION OF SCREW, MAX. 1/2, MIN. 3/8



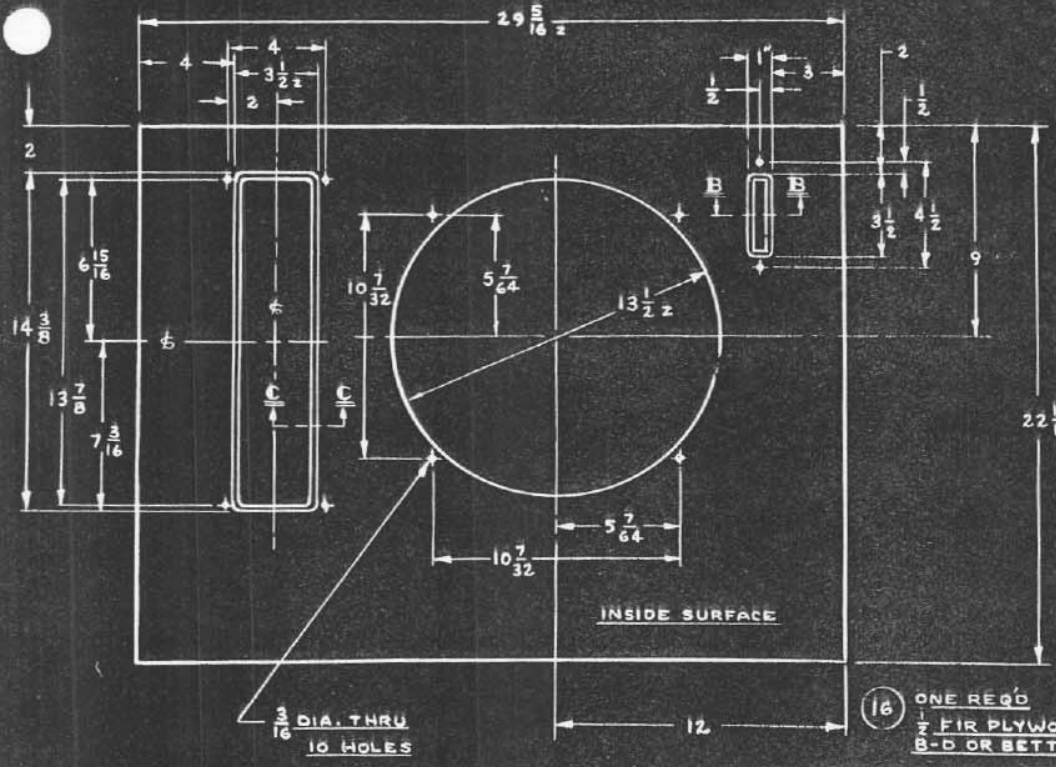
(2) 2 REQ'D, POPLAR, SOLID

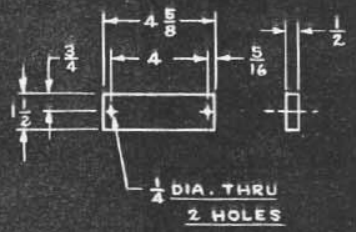
DRILL & C'SINK FOR #7 WOOD SCREW, FL. HD., PHILLIPS, 10 HOLES



(19) ONE REQ'D, FIR PLYWOOD B-D OR BETTER, "B" SIDE SHOWN

(1) 2 REQ'D POPLAR, SOLID





(21) 2 REQ'D, FIR PLYWOOD B-D OR BETTER

(16) ONE REQ'D 1/2 FIR PLYWOOD B-D OR BETTER, "B" SIDE SHOWN

USE 5/16 ROUTER 1/4 DEEP, ALL AROUND

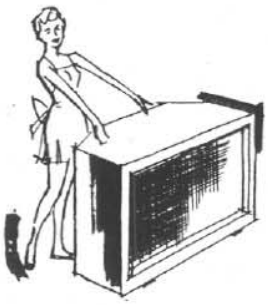
SECTION B-B HALF SCALE

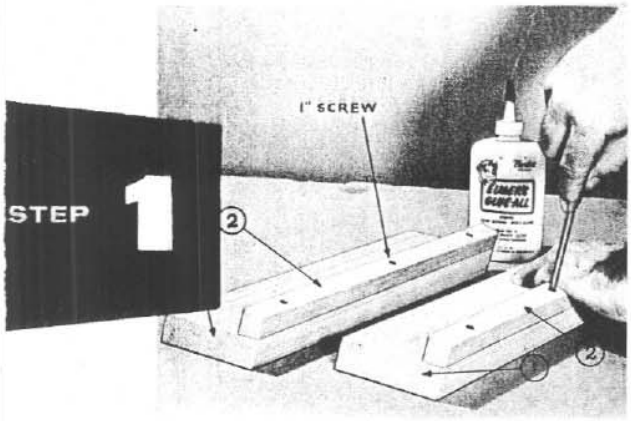
SECTION C-C HALF SCALE

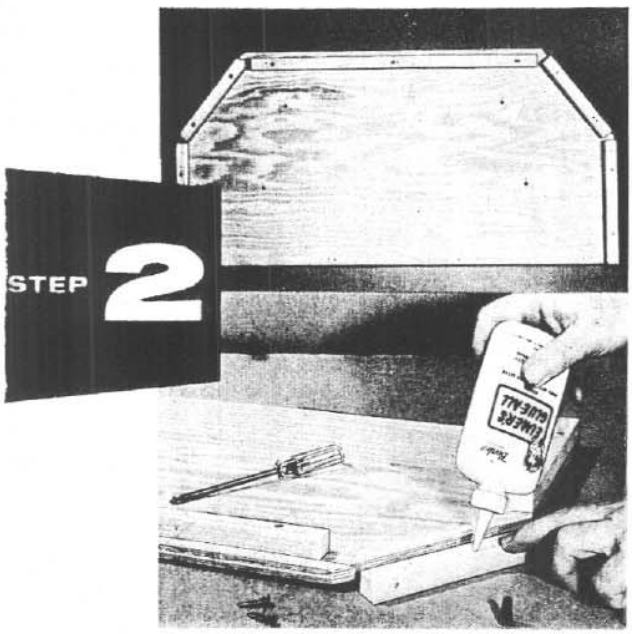
Electro-Voice

EMPIRE KD5 HOME BUILDING PLANS

ASSEMBLING THE EMPIRE...







STEP 1

Part 1 is the leg and part 2 the cleat which secures it to the bottom of the cabinet which is denoted as part 3. There are two legs and two cleats which must be united into two leg assemblies. The legs set on at an angle, so both top and bottom faces are angled. The cleats are also angled, so when assembled, the upper face will fit flush against the cabinet bottom.

Position the cleat and leg so top and both end surfaces are flush, then start the screws. The wood is soft, so they will drive easily. When the screws are seated, withdraw them and smear the mating surfaces with glue. It is always smart to dry assemble woodwork first, to make sure it fits and you are doing the job right. When satisfied, take out the screws, apply glue and then assemble permanently. The glue is so tenacious it cannot be removed when once set. You have about twenty minutes leeway, so even if a glued joint is not right, it can still be reworked, but once set, it is there forever. No glue joint is good unless the glue squishes out as the screws are tightened. This overflow can be wiped away with a damp cloth or simply left, if the surface is on the inside or bottom where it does not show. The glue will be clear and transparent not obvious or objectionable looking.

STEP 2

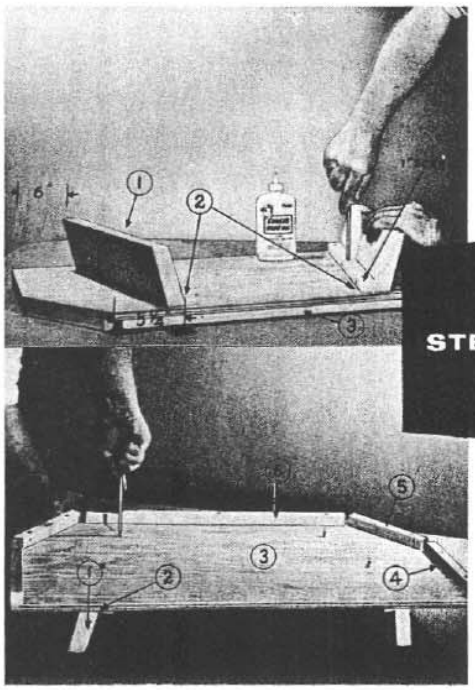
While the leg assembly is drying (30 minutes minimum), start work on the bottom assembly. This consists of the base panel, 3, and cleats 4, 5 and 6. There are two each of parts 4 and 5 and one of 6. This is not all, for the others fasten later to the top panel, 7. While you are at it you might as well credit here and debit there to account for all the cleats. There are four holes in cleat 4. Position the cleat flush with the front and end faces of 3 and insert 1-inch screws in the two *inside* holes. *Do not* use the outside holes until a later step. Cleat 5 is also flush with the outside edge, but not cleat 6, which is set to a scribe line one half inch in from the edge. This is to act as a stop for back panel 19, which does not go

in place until along toward the last. Use panel 19 as a gage to check your scribe line. Dry fasten assembly, then reassemble and glue permanently.

STEP 3

This is actually a continuation of step 2, but had best not be done until step 2 is completely dry. It is hard to disturb a screwed and glued assembly, but it *has* happened. Often a slight jar or even a gentle twist is enough to upset a glued joint that is only half dry. Why be in such a rush when you have to wait *only* 30 minutes.

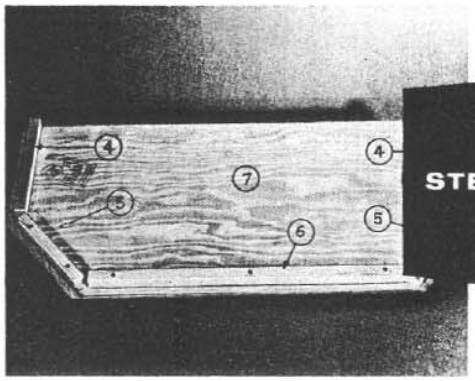
Now lay out the scribe line for positioning the leg assemblies. Turn the bottom assembly face down, measure in 6 inches from *each* front corner and 5¼ inches in from *each* back corner. The back corner is at the bevel. Now draw a straight line from each front mark to each back mark. This is the scribe line for positioning your leg assemblies. There are screw holes already drilled, but they won't line up until the legs are positioned with the *cleat* flush with the scribe line. The back of the legs come even with the back of the bottom. Now dry assemble and check for beauty and conformity. Take apart, apply glue and assemble permanently. Due to the powerful leverage exerted, the legs *must* be secure. Seat the top screws before the glue has a chance to start hardening. Once it begins to solidify it will no longer squish, and if it won't squish, a leg is liable to pull out by the roots at some most inopportune moment.



ONE STEP AT A TIME . . .

STEP 4

The top panel, 7, is almost like the bottom panel, 3. The main difference is the shoulder around sides 4 and 5. This shoulder makes a presentable junction between top and panels 8 and 12 with a minimum of end grain showing. Panels 8 and 12 butt lap bottom panel 3, just as in luxurious cabinet work. The assembly of panel 7 is exactly the same as panel 3, even to the half-inch scribe line for cleat 6. Be sure to use the *inside* holes on cleats 4.

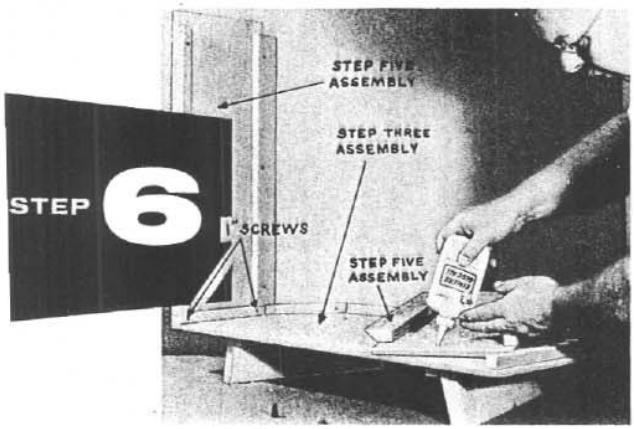


STEP 5

With the assembly 8, 9 and 10 you start adding height to your project. While simple, these three members must be aligned with the UTMOST accuracy because the addition of panel 12 *could* result in an ugly, gapping joint. A butt miter joint is a mean thing to handle, but if you follow instructions, you will have a good tight joint. (If you must be shown, fit parts 8, 9 and 12 together freehand and you will see in an instant what a mess a little off register gluing can make.)

Now that you know, adjust part 12 so it forms a tight angle to the bevel edge of part 8, and then slide part 10 into position. Tack it lightly with three box nails, then start the screws. Check for angle and fit, then pull out the nails and save them for the other side panel. If you are the cautious type, reserve gluing of piece 10 until panel 12 is to be installed in step 8. Of course, if you are good, you can do it now.

Both pieces 9 and 10 are set to scribe lines 1⅜ inches in from the end and piece 9 is flush with the edge. Be sure the cleats are fastened to the *inside* of piece 8. The inside is the surface where the bevel edge faces upward.

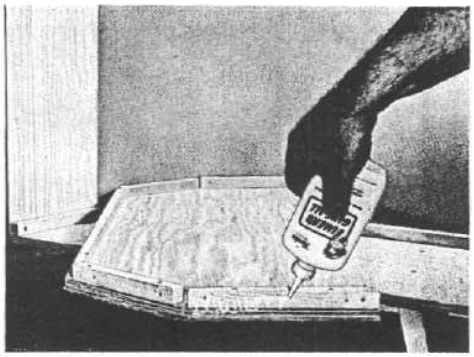


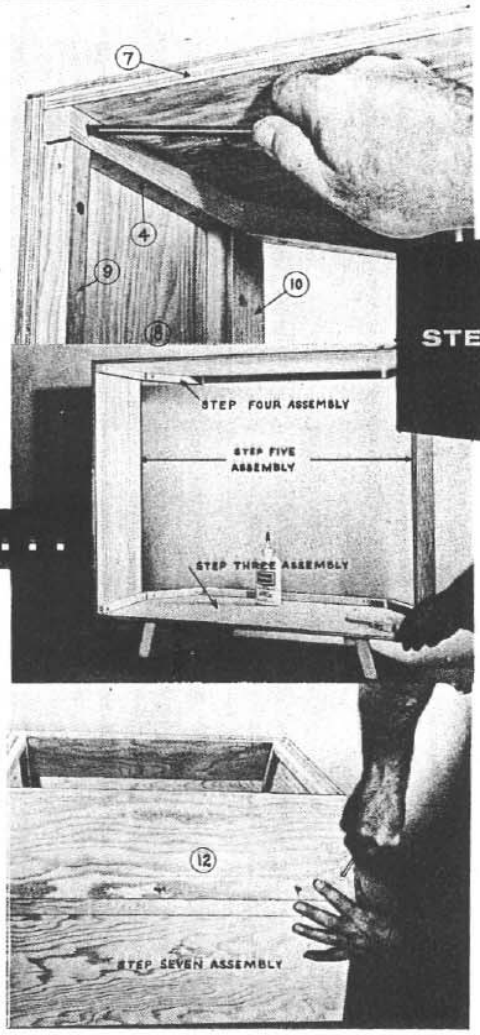
STEP 6

Now your cabinet begins to take shape. The *outside* holes in cleats 4, which we suggested you do not use previously, now come to the fore. By means of one-inch screws, the assemblies of steps 3 and 5 are united into 1. Step 5 assembly rests on top of cleat 4, and, if properly made, should lie flush along the bottom of panel 3. Better cabinet makers than you and I never take anything for granted, so it is only smart to line up the step 5 assembly *in all directions* before gluing it. If you do

not have a framing square, use the back panel, 19, which is accurate enough for all practical purposes.

At this point, the assembly is fragile and quite rickety, even with the glue and screws in place, but as soon as the glue polymerizes it will gain considerable strength. It would be prudent to install *one* step 5 assembly, line it up and then go for a walk. Do not work on the other one or even touch the cabinet until the glue is dry. At no time have we offered encouragement to be sloppy. All that is required of you is careful workmanship and the willingness to check, recheck and double check before the glue starts to set. If something slipped, take it down and start over. If the holes are wrong, plug them and drive the screws into the plugs. A plug is nothing more than a wooden match or sliver of packing case, dipped in glue and driven into the old screw hole. By holes, we do not mean those already drilled in your cleats, but those you made by driving the screw into the panel.

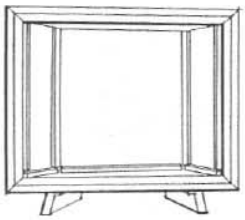




THE ASSEMBLY TAKES SHAPE . . .

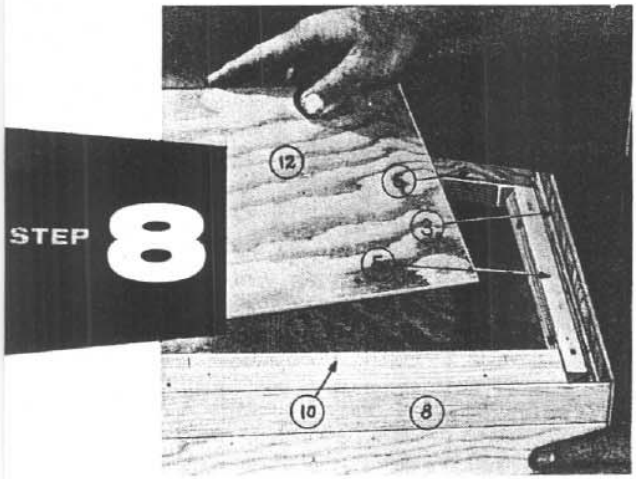
STEP 7

The top of the cabinet is the part your guests see first and it is the feature which gives the initial visual impression. No matter how excellent the tone quality, if the top jars the eye, the impression is bad. Most of the bad impression comes after the finish is applied, but it starts long before that; dents, scratches and sloppy workmanship cannot be hidden. Since the preferred finish is usually as delicate as a soap bubble, and almost as thin, it hides nothing. Be very careful of exposed surfaces. This will take effort on your part, but no more than it does to keep accordion pleats out of your car fenders.



The top assembly put together as step 4 is secured by a generous amount of glue on both cleats and shoulders, and four one-inch screws. Dry fasten first as usual to check fit, then glue and secure permanently. Have a damp cloth handy and use it to wipe away *all* the glue that squishes on the outside. There should be plenty because this is the most expansive of the joints. Plumb carefully and line up with your square, then allow a full hour for the extra deep joints to dry and set.

STEP 8



Now call upon the artist in your soul. If you have instead the soul of a boilermaker, so much the better, for the joint between panel 12 and step 7 assembly must be airtight as well as beautiful. If everything up until now was done correctly, it will be tight. Considerable leeway is demonstrated by the fact panel 12 drops in place. Twelve is secured by seven one-inch wood screws driven from the *outside*, where you have lots of room to work on them, and can regulate pressure so all screws seat evenly. The screws can be slightly countersunk and covered over with plastic filler, stick shellac or putty, or better yet, withdrawn and the holes plugged once the glue has set if you find their appearance disturbing. Step 8 completes the basic cabinet. From now on, the remaining steps will be trim and refinement.

As with a house, the framing goes up fast, but the little niceties that make a building a home take time and personal attention. Do not rush through the remaining features; they are just as important as the framing and go on much slower.

DETAIL AFTER DETAIL IS ADDED...

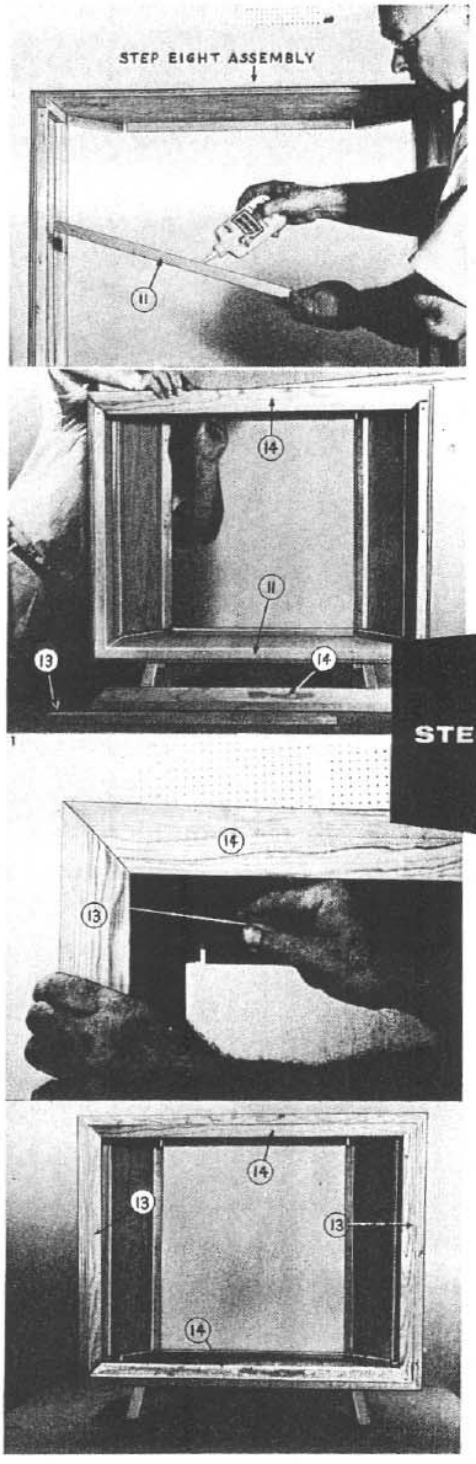
STEP 9

The first of the little niceties is the molding which goes around the front edge. This looks as if it is mitered, but it is actually screwed down to battens 9 and 11. 9 is already on step 5 assembly, but 11 has to be installed on step 8 assembly and step 2 assembly. 11 cannot be put in place earlier because it covers the forward screw

hole in batten 4. The two pieces of 11, one for the top, one for the bottom, are fitted in place with the front edge flush, screwed down, then removed and glued and screwed in place permanently. This completes the framing of the grille opening and you are ready for the quite particular task of putting on the molding.

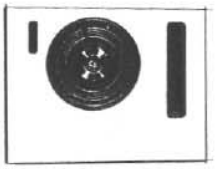
The molding is another one of those little surprises. Because it screws in place and fits by compression, it gives the illusion of great luxury, yet it is low in effort expended and requires no exceptional skill. The chances are ten to one none of your friends will know the difference between the screwed construction and an intricate and detailed cabinet job.

Start with section 14 which screws directly to 11 on the step 8 assembly. Center carefully and hand fit sections 13 with both ends against it. There will be one place, and *one only* where both parts 13 will fit without a gap in the miter, and this is the exact spot where 14 must be secured. Do not glue yet, but next fit both parts 13 in place and screw. The test of your ability comes when you *try* to make the lower 14 drop in place. If you are good, it will slide right in with an airtight joint at both ends. Instructions never take the place of practice; go ahead and dry fit the molding again and again, until it becomes automatic, then screw and glue it in place, getting plenty of glue in the miters. There is no rush, so make haste slowly. Wipe the glue away with a damp cloth and then go to a movie while it hardens.

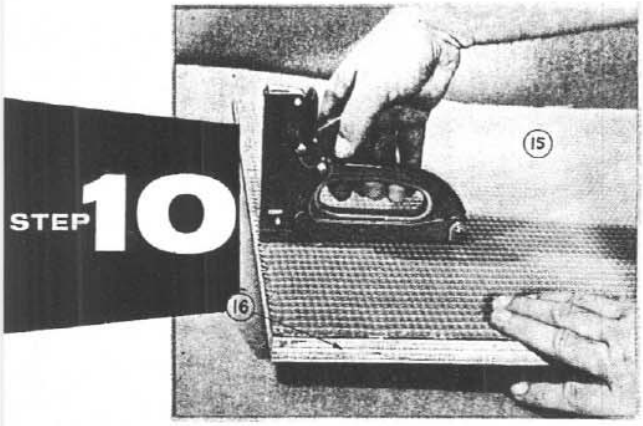


STEP 10

The grille cloth, 15, is purely ornamental, but its psychological effect is priceless. Like draperies, a grille can transform a plain cabinet into an ornate and well appointed piece of furniture. Installing the grille cloth calls for delicate manipulation. The cloth must lie flat and stretch tight without bags, sags or wrinkles. Fortunately, the material selected is quite docile; a plastic with a memory. The material is created flat and it will always return to that state given the opportunity. As soon as



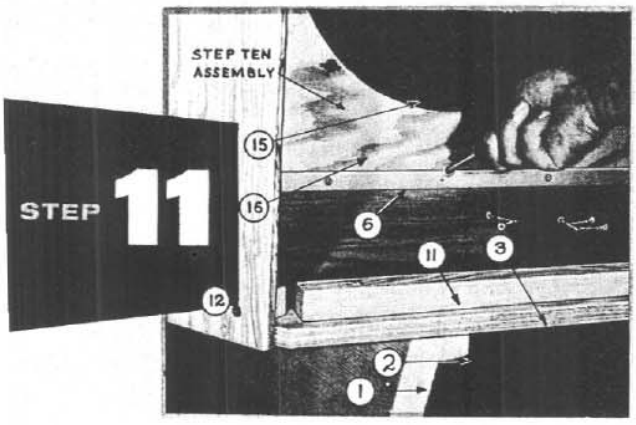
you open the kit, lay the plastic cloth out in a safe place and let it relax.



The grille cloth was mentioned first, but remember the baffle, or speaker mounting board, 16, *must* have the speaker bolts in place *before* the grille cloth is applied. This makes instructions a bit awkward, because there is no way of knowing what combination of speakers you will select or how you plan to lay out your system, so stop here, decide what speakers you are going to use, or better yet, have the speakers on hand before you install the grille cloth. Do not mount the speakers until *after* the bolts and cloth are in place. From here, you can go ahead and finish up the job, then come back to the grille and mounting board if that is more convenient.

Use a stapling gun or ordinary tacks to afix the grille cloth. Start at the *middle* of the left end, and work around both ways alternately, spacing the staples or tacks about two inches apart. Guide and smooth the material as you go. No hurry, take it easy. Avoid violent tugs and pulls as the material will recoil later and produce a reverse bulge. Smooth gently and staple as you go, to obtain a grille radiating quality and beauty.

YOUR SPEAKER IS RAPIDLY TAKING SHAPE . . .



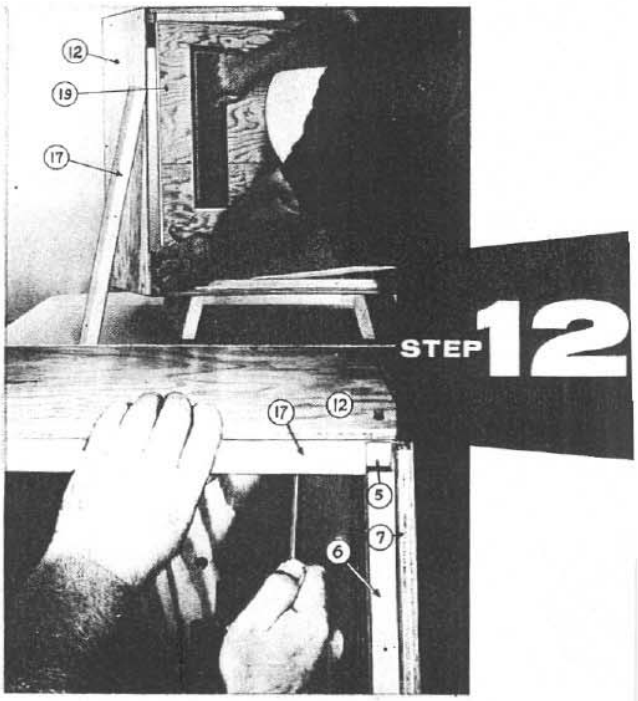
STEP 11

The step 10 assembly, consisting of speaker mounting board, 16, and grille cloth, 15, is secured to the cabinet in the same manner a cylinder head is fastened to an engine. That is, the board is battened down with studs. The "studs" are one-inch wood screws, each with a washer; fourteen are used in all. Position the board and start in the most convenient place, driving the screws at an angle into pieces 9 and 11 so that the washer clinches the board and pulls it snug. Do this before the speakers are installed, but after the grille cloth and speaker mounting bolts are in place. Once the board is secured, it need never be removed, because all additional items can be "back loaded" into position.

STEP 12

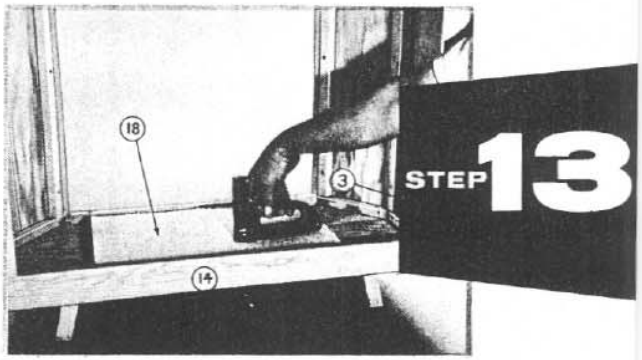
The back panel, 19, rests against a pair of cleats, 17. These can only be installed *after* the board is in place, because with them on, it won't go in. Therefore, do not glue one of the parts 17 in, rather screw it in place. The other one can be secured permanently. If the speaker board must ever be removed, unscrew 17, remove it, and the board will come out.

This is an excellent time to check construction, because if pieces 6 on the top and bottom absorb moisture on a humid day, they may swell sufficiently to keep 16 from passing. Do not dress the board down because it should fit tight. Instead, shave away a slight amount of material at one end of 6 on the bottom.



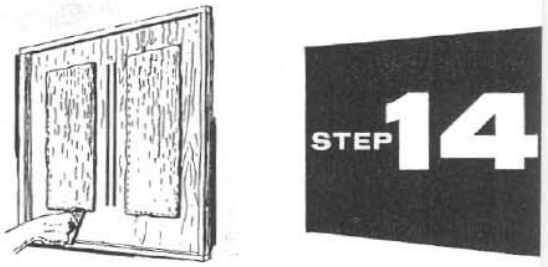
STEP 13

Acoustic pads, 18, are placed at strategic positions inside the cabinet. Cabinet resonance can be forestalled by the simple expedient of placing a pad of inert mass where it will do the most good. The four pads used in the EMPIRE can be stapled down, tacked or glued. Place one on the bottom panel, 3, the top panel, 7, and the two end assemblies 8 and 12. The pads go on the inside of the cabinet, of course, and the exact placement is not critical.



STEP 14

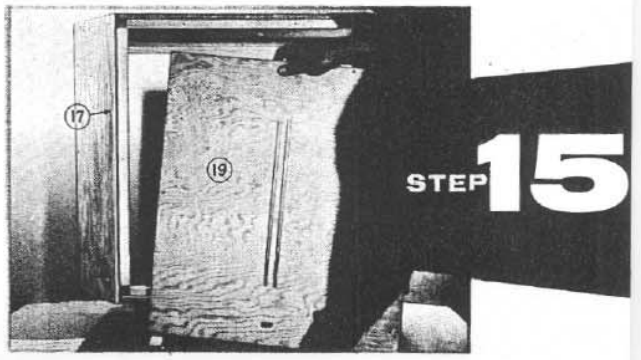
This consists of securing the two insulating bats 20 to the inside of back panel 19. They are so placed as not to interfere with the bilinear lenticular slots on the rear of the enclosure.

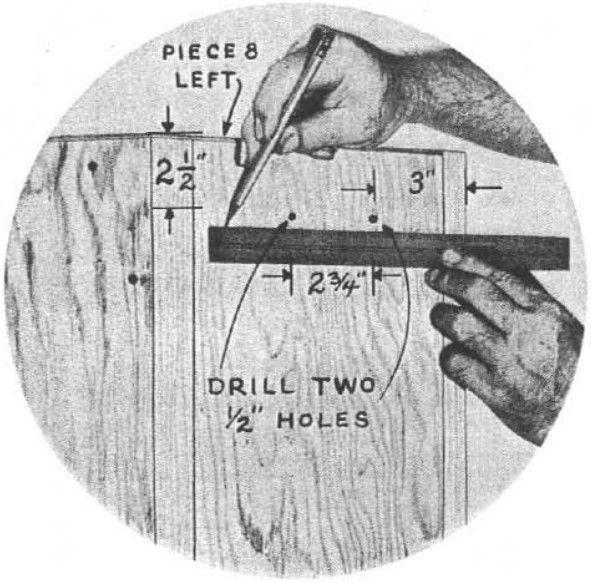


STEP 15

Installing piece 19 is much like screwing down the lid of an empty box. It will have to be taken off again; so for the time being, try it for fit, start the screw holes, then wait until it is time to install the speakers.

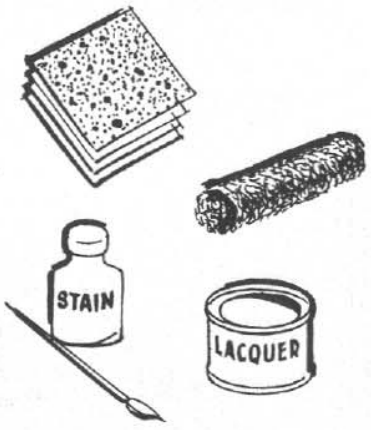
There are two parts left over, number 21. These are cleats to secure the 8HD diffraction horn in position. Keep them, and as soon as you install the speaker their use will become obvious. No information on speaker installation is included here because it all comes with the speaker combination of your choice.





AT37 ATTENUATOR LAYOUT

You may or may not need these two holes. If your selection of speakers includes a mid-range horn and a tweeter, each will require an attenuator or level control. These controls are mounted within easy reach, and each requires a half-inch hole. You can locate the holes now, then drill them at your convenience.



Electro-Voice

FINISHING KIT

Because a number of home constructors will finish but one project and then be content, a kit is available which contains sufficient material for one cabinet. Nothing extra to buy, nothing left over to clutter your home. Use it, discard it. For complete details, see the next page. The three pictures show kit in use.

LACQUERING IS THE LAST ADVENTURE

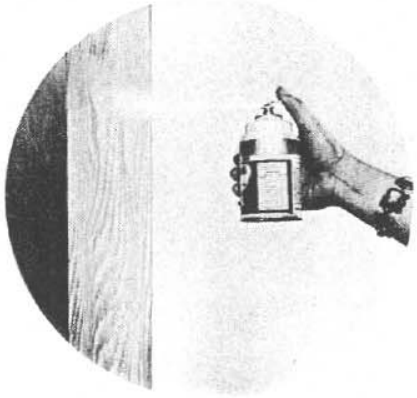
LACQUER FINISH

Telling you how to finish your EMPIRE is much like telling a young lady which dress to wear. The choice is yours and yours alone. You can paint the cabinet fire engine red, as we did for a test sample. It looked stunning trimmed with gold and black, or you can apply a simple, dignified and conventional finish, wax rub, varnish or lacquer. There are as many ways to finish a cabinet as there are finishers of cabinets. We are partial to lacquer because it goes on easier and looks more professional than most of the other "Do-It-Yourself" mediums.

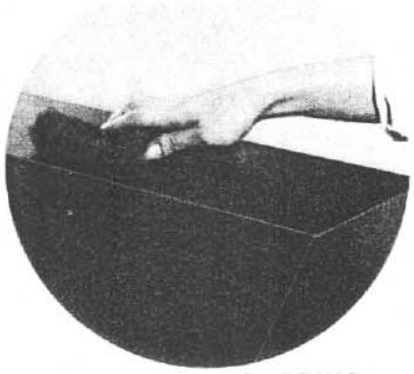
It is a development of the last few years and the chances are good that the occasional finisher of furniture has not yet encountered the neat and businesslike pressure spray can. A press of the thumb and a fine mist is squirted into the air. It is directed back and forth in front of the cabinet and in a matter of seconds the cabinet is coated with glistening lacquer. No brush marks, no drips, sags or runs will result if you read the instructions on the spray can. The great simplicity of this method is why we recommend lacquer.

CABINET FINISHING PROCEDURE

STAINING



LACQUERING

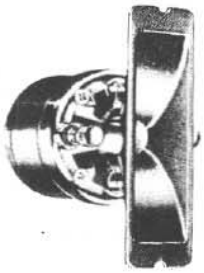


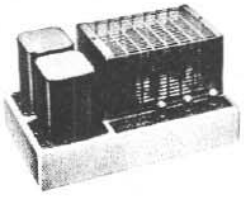
RUBBING

Choose *for your*

HIGH-FIDELITY COMPONENTS

LOUDSPEAKER ENCLOSURE





RADAX COAXIAL SPEAKERS

The discovery of the E-V Radax principle provides an economical and super-efficient method of utilizing two separate coaxially mounted cones to divide the audible spectrum. Both cones operate from a single voice coil. A built-in mechanical crossover separating the low frequencies from the high permits each cone to be specially designed to reproduce a specific portion of the audible range. This provides a true coaxial two-way system that assures clean, sparkling, wide-range reproduction.

TRIAXIAL SPEAKERS

Incorporating the features of the E-V Radax Principle, Electro-Voice triaxial speakers feature concentric mounting of all elements for smooth room-coverage. Extended high-frequency reproduction, with augmented bass and midrange, provides realism matched to room acoustics through adjustable level control and crossover network.

LOW-FREQUENCY DRIVERS

Heavy magnet structures, sturdy frames and edgewise wound voice coils are combined in E-V "woofers" to produce reinforced bass response with a very low resonant frequency. These units are available in both medium and high-efficiency models to compliment other E-V driver components.

HIGH-FREQUENCY DRIVERS AND HORNS

These HF drivers, with E-V's unique glass fibre diffraction horns, offer tailored midrange and high-frequency reproduction with exceptional "presence" at usual sound levels. Designed on the optical-slit principle, the diffraction horns provide perfect dispersion through a 120° solid angle.

SUPER-SONAX VHF DRIVERS

At least one more octave of silky highs is afforded through the use of E-V Super-Sonax very-high-frequency units. The use of an integral diffraction horn makes maximum dispersion possible and reproduction to beyond the audible range.

CROSSOVER NETWORKS

To insure optimum performance of multiple-driver systems, E-V electrical crossover networks are recommended. Utilizing high-Q air core coils and constant-K type ½-section filters, these crossovers feature low insertion losses with 12 db-per-octave attenuation.

LEVEL CONTROLS

E-V level controls are "L" pad attentuations designed for use with high-frequency and VHF drivers. Use of this control provides precise adjustment of listening level to suit individual taste.

PACKAGE SYSTEMS

Assembled separate two and three-way systems are available in complete packages. Consisting of compatible, matched E-V components, these systems are designed to give faithful, high-fidelity performance with your Empire Enclosure.

COMPLETE INFORMATION AVAILABLE UPON REQUEST

Additional information about Electro-Voice high-fidelity loudspeakers, systems, and components are available from your Electro-Voice distributors or by writing direct to the factory.

ELECTRO-VOICE, INC.

BUCHANAN, MICHIGAN

BULLETIN NO. 235, Part No. 53290

Printed in U.S.A.

ADDENDUM

MODEL KD5 EMPIRE KNOCK DOWN ENCLOSURE KIT

Your new KD5 EMPIRE enclosure kit contains 3/4" plywood, rather than the 1/2" plywood specified in the IB5 booklet. The thicker wood completely eliminates any possibility of cabinet resonance. Also, the one-inch wood screws have been replaced by inch-and-a-quarter screws.

These additions have made necessary the following changes in your IB5 instruction booklet. Mark them in your booklet before you begin construction.

Step 2. Line 8. "Position the cleat flush with the front and end faces of 3 and insert 1-1/4" screws in the two inside holes, ...Cleats 5 and 6 are also flush with the outside edge.

Step 3. Line 10. "Now draw a straight line from each front mark to each back mark." (Omit this sentence.)

Step 4. Line 7. Change to read "even to the 3/4" scribe line."

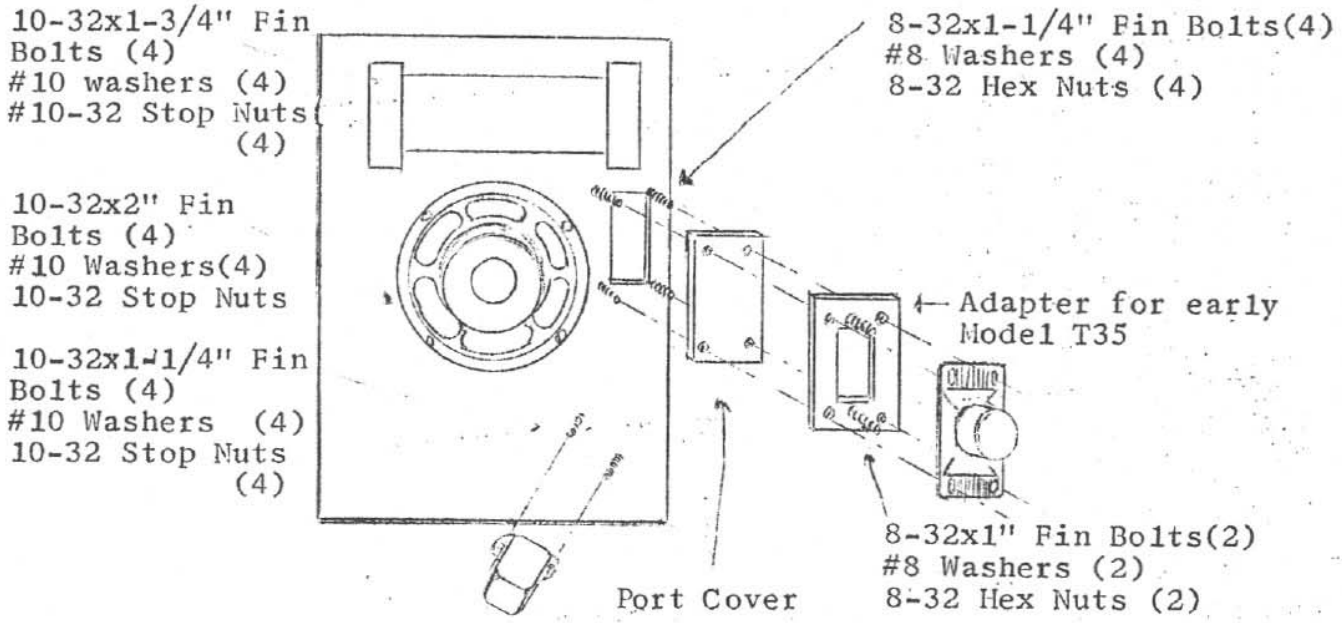
Step 5. Line 18. "Both pieces 9 and 10 set to scribe lines 1-5/8" in from the end..."

Step 6. Line 3. "By means of 1-1/4" screws, the assemblies of steps 3 and 5 are united into one. (i.e., screwed together.) Step 5 assembly...(omit the phrase "rests on top of cleat 4, and, if properly made,")...should lie flush along the bottom of panel 3."

Step 7. Line 14. Read "1-1/4" screws."

Step 8. Line 7. "Twelve is secured by seven 1-1/4" wood screws driven from the inside...."

The diagram below indicates proper hardware location. Additional instructions will be found packed with the specific speaker components.



ELECTRO-VOICE, INCORPORATED
Part No. 53713 Buchanan, Michigan Mimeo in U. S. A.

PACKING SLIP

EMPIRE KIT

DESCRIPTION	QUANTITY REQUIRED	RECEIVED
SPEAKER MOUNTING BOARD	1	
CABINET TOP	1	
FRONT SIDE PANELS	2	
BACK SIDE PANELS	2	
CABINET BOTTOM	1	
SQUARE CLEATS, FRONT FRAME, LARGE	2	
SQUARE CLEATS, FRONT FRAME, SMALL	2	
LEGS	2	
FRONT FRAME MEMBERS	4	
SQUARE CLEATS, FRONT SIDES	4	
SQUARE CLEATS, BACK SIDES	4	
ANGLE CLEATS, LEGS	2	
SQUARE CLEATS, BACK COVER	2	
ANGLE CLEATS, SIDES	2	
ANGLE CLEATS, BACK	2	
12" LF DRIVER ADAPTER RING	1	
INSULATION, LARGE	4	
INSULATIONS, SMALL	2	
GRILLE CLOTH	1	
BOTTLE OF GLUE	1	
FURNITURE GLIDES	4	
BOX OF TACKS	1	
1-1/4" WOOD SCREWS	124	
8-32 x 1-1/2" FIN BOLT	4	
8-32 x 1" FIN BOLT	2	
10-32 x 2" FIN BOLT	4	
10-32 x 1-3/4" FIN BOLT	4	
10-32 x 1-1/4" FIN BOLT	6	
10-32 ELASTIC STOP NUTS	14	
#10 FLAT WASHERS	28	
#8 FLAT WASHERS	6	
8-32 HEX NUTS	6	
NAILS	24	
PLUG BUTTONS	2	
SET OF DECALS	1	
ENCLOSURE LABEL	1	
INSTRUCTION BOOK	1	
GUARANTEE CARD	1	