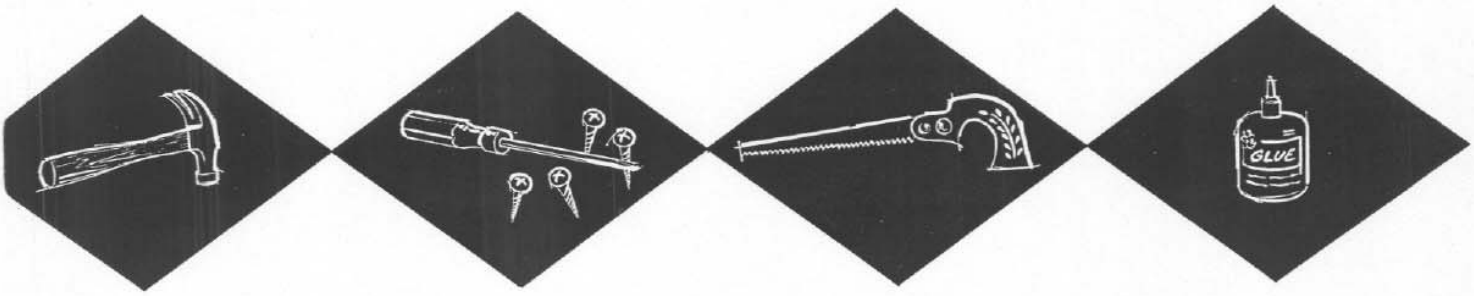
MODEL No. 183
PRICE $1.00

Do It Yourself!

build the

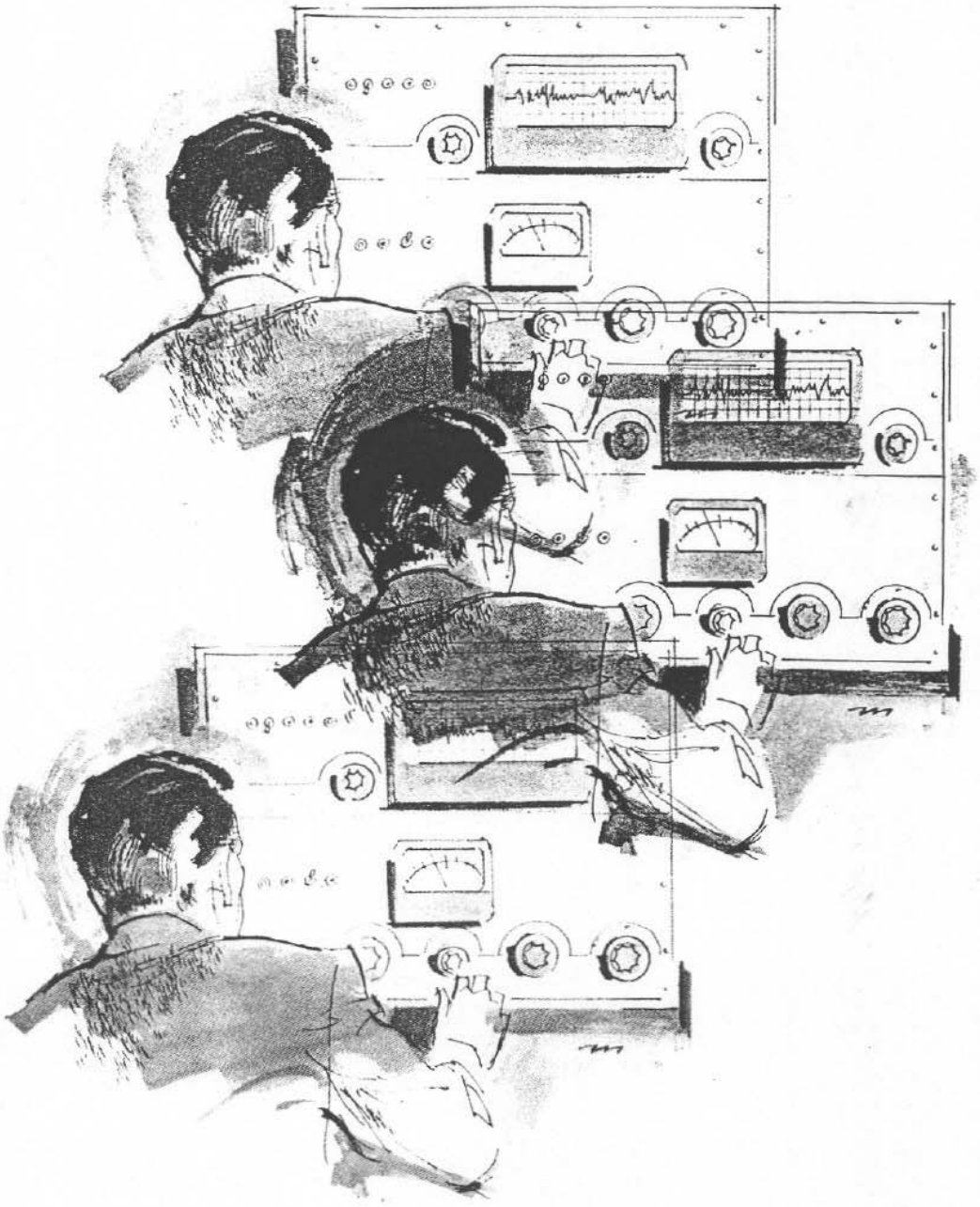
CENTURION

SPEAKER ENCLOSURE



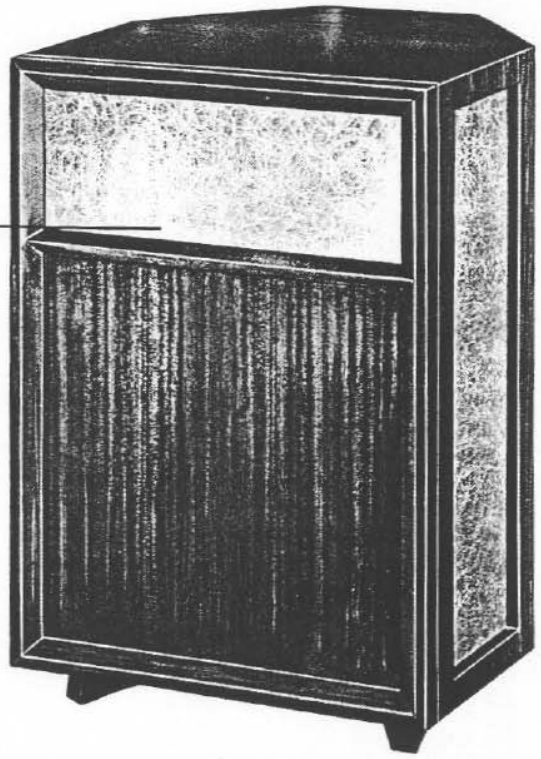
Electro-Voice® do-it-yourself project **KD 3**

RESEARCH



S THE

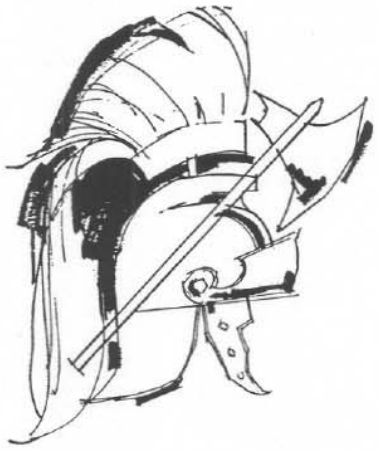
Magic WORD

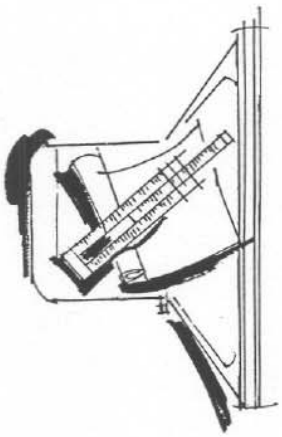


Electro-Voice makes it easy for you to obtain the exciting CENTURION loudspeaker corner enclosure. Utilizes the Electro-Voice exclusive "W" single path indirect radiator horn for low-frequency drivers.

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

THE ELECTRO-VOICE CENTURION . . .

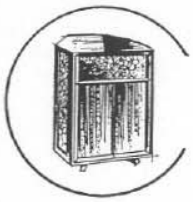




Years of engineering and research go into the development of all new Electro-Voice products. The new Electro-Voice CENTURION, therefore, is the end product of a new idea of sound propagation which started long ago. The idea had been in the minds of E-V engineers, designers and sales personnel. It was discussed at meetings, reviewed at conferences and argued in informal sessions, until the idea jelled into something which could be put down on paper.

Even the derivation of the name CENTURION is quite interesting. The premier product of the Electro-Voice loudspeaker line is the well-known incomparable PATRICIAN. The name PATRICIAN was drawn from the ruling class of Rome, and it was honestly felt that the reproduction of the new proposed Electro-Voice enclosure would be so startling, so realistic that it too deserved a name bearing connotation of its superiority. The Centurions were leaders of the military in Rome, each Centurion commanding a century of 100 men. Militaristic things aside, the Centurions were members of the Aristocracy and men of great weight in their society. Hence, the new Electro-Voice "W" enclosure became known as the CENTURION.

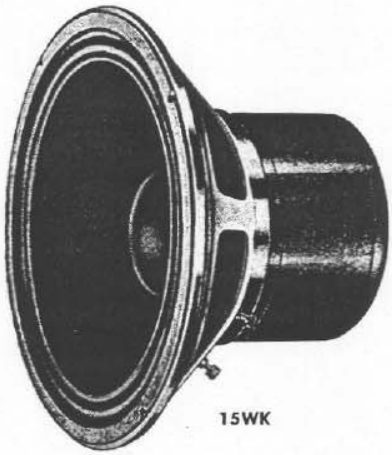
One engineering function at Electro-Voice is to take ideas and develop their ramifications into realities of three dimensions. An engineer usually starts with a rough sketch and a pad of mathematical computations, and if he is very fortunate, and if the premises are well founded, ends up with a workable new product. The science of loudspeaker design has advanced to the point where it is now possible to predict accomplishment of a desired end result mathematically. Armed with theoretical answers, such a unit can be built, and if there are no unforeseen difficulties, the first model can be refined until it is finally worthy of preproduction tooling and eventually production. Today Electro-Voice engineers strive for improvements, both large and small, which add up to a net result undreamed of only a few short years ago. It is the sum of these painstaking efforts which makes the CENTURION so outstanding . . . for it is E-V research and engineering which perfected the 15B series of speakers, the heart of the new Electro-Voice CENTURION.



COMPONENTS FOR THE ELECTRO-VOICE CENTURION

In developing the 15B series, Electro-Voice had a very definite end in view; the object was to reduce cost and still retain the superior reproduction of the standard 15-inch units. Lowering costs by skimping on quality is easy but cutting cost by designing a new component from end to end is a major engineering achievement.

A fine high-fidelity speaker is usually a massive affair due to the extremely strong frame necessary and the heavy magnets employed. In the 15-inch series of Electro-Voice loudspeakers, for instance a 5¼-pound Alnico V magnet is used, and the whole magnetic assembly weighs 38 pounds! Trimming off cost and retaining quality from such a highly integrated unit is certainly a challenge. It requires a delicate balancing of performance factors, since magnet weight to a large degree governs the final cost of the loudspeaker.



15WK

It is not entirely, however, a factor of magnet weight which governs the quality of output. Theoretically, it is possible to obtain identical frequency response from a light magnet structure by properly balancing certain design parameters.

The only basic difference between the new B series and the standard 15-inch series is the greater efficiency of the latter units. On the other hand, at equal listening volumes, the distortion content of the heavier 15-inch series is lower than that of the 15B series. In addition to this, the light magnet weight speakers do not have the high damping factor of the heavier magnet units. However, in a properly designed acoustical housing, the fidelity of tone quality and range can be exceptional. This is especially true when used with the newer type audio amplifiers . . . employing variable damping factor control to match the impedance requirements of the loudspeaker exactly. The combination of loudspeaker design factors and proper acoustical housing were the happy and rather obvious blend of ingredients – once determined – that created the CENTURION.

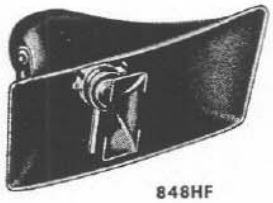
15BWK

The resulting performance of the CENTURION was so fine, that it was immediately hailed as a "junior GEORGIAN." The question of cabinet size as well as acoustics was vital in this case, since it had been one of the major premises of this project that the new unit would be small and still have the full range reproduction that so distinguishes the senior Electro-Voice loudspeaker systems. The CENTURION was designed like a violin; light, delicate and with a new and exclusive type of horn path. By making the inside of the horn essentially the outside, the number of necessary component parts in the folded bass horn path was reduced to only 7 in the CENTURION in direct contrast to 51 used in the GEORGIAN. As a result, by using the exclusive Electro-Voice "W" single path horn load, the CENTURION comes within a very few cycles of duplicating the startling bass reproduction of the GEORGIAN.

Following the precedent established by its larger cabinets, Electro-Voice has developed an enclosure which would match a selected system of drivers in an optimum manner, and had proved its new enduring concept of design.

A very happy admixture of good fortune, engineering sense, and hard work, the CENTURION turned out to be a remarkable instrument. It is not only pleasing to look at, but it is wonderful to listen to and best of all, is easy to own.

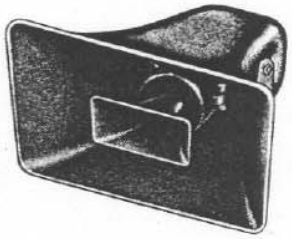
The ease of owning a CENTURION is enhanced by the fact that it can be assembled from a kit of parts or built up from stock lumber. If you are one of the select group who prefers to "do it yourself," here is a musical instrument well worthy of your time and attention.



848HF

A 15-inch cone loudspeaker will reproduce tones as far down as the second audible octave of the musical spectrum; reproducing notes that are as low as 30 cycles. This is the realm of the double bass, the pipe organ, and the Manchu thunder drum. It is a realm rarely heard; heretofore it has been possible to reproduce these tones only in the concert hall, that is until the advent of the Electro-Voice PATRICIAN and GEORGIAN. In the past, this was a rare experience, but thanks to the skill and ability of Electro-Voice engineers, it is rapidly approaching the stage when the multitude can embrace this greatest of all musical experiences.

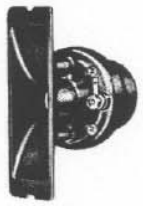
The 15BWK very-low-frequency driver of the CENTURION handles a restricted and exclusive range of frequencies; from the region of 30 cycles up to 300 cycles, where crossover is made to the next driver unit. The 15BWK is a specialized reproducer having a highly compliant edge roll to allow the great excursions necessary at low frequencies. The voice coil is especially designed to have very low DC resistance, to accept every bit of power possible to be purveyed in this range.



847HF

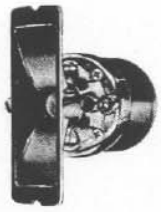
At 300 cycles there is a gradual blending of frequencies through a crossover. The X336 crossover network used in the CENTURION consists of many coils and condensers, each specialized to pilot the bass tones to the 15BWK, the upper bass and fundamental tones of speech and song into the 847HF mid-range coaxial driver, and the very-high-frequencies to the T35B Super-Sonax very-high-frequency driver unit.

The new 847HF is a unique device fabricated of molded fiberglass. It is a smaller version of the famous Electro-Voice 848HF Compound Diffraction Projector, scaled down and refined for a basically lower volume level of reproduction. There is no loss of tonal quality in comparison between the 847HF and the 848HF. The new "little CDP" in its own realm does pack a maximum amount of performance into a minimum amount of space and has an output level designed to complement the other components of the CENTURION. Because the 847HF is actually two speakers in one, employing an acoustical crossover network, the mid-bass tones are purveyed through the large molded fiberglass bell, and the higher tones are spread throughout the room by the front-mounted exclusive Electro-Voice Hoodwin Diffraction type horn.



T35B

At 3500 cycles, the place where cymbals begin to clash, the X336 crossover network channels the higher notes into the T35B very-high-frequency driver. Tiny as the T35B is, it is a brute for output, and for some listening applications must be reduced in absolute output level by the use of the AT37 level control which controls the brilliance range. Another control is also provided for the "presence" range controlling the output of the 847HF. Coupled together and using the networks in the X336, complete jurisdiction of the reproduction of the CENTURION in all of the ranges is possible.



T35

3

WAYS YOU CAN OBTAIN A

CENTURION

The picture of a man making up his mind is one that no artist has yet painted. The picture, therefore, of a man deciding how he would like to obtain his CENTURION is one which is difficult to describe. There are three paths open and they are all attractive.

Perhaps you are the sort of person who decides it costs you less to work at your familiar job, earn money, and then spend it for what you want than it does for you to attempt to master a strange craft, buy tools and consume hours of your time by "doing it yourself." Everyone is well aware of the superior quality and infinite pains which go into all Electro-Voice products. The CENTURION you buy comes to you in a well padded carton assembled, wired, complete and ready to play. Uncrate it, connect it and this brilliant musical instrument is ready to add to your pleasure. Purchased as a complete finished unit, you know precisely what your end product looks like, but you do miss the fun and pride of building a unit yourself.

CHOICE 1

CHOICE 2

A certain percentage of the population will choose the second path of obtaining a CENTURION. What is important to them is the gratification of the creative urge. Since the beginning of time man has had to make what he wanted and needed. Man is a creative individual, and this, of course, is the reason for his place in the ultimate scheme of things. For the man who likes to build things, Electro-Voice furnishes these detail plans that can be followed to finally produce a CENTURION which displays the best a creative craftsman has to offer. There are some exceptionally capable cabinet makers prowling around just waiting for an excuse to start making something. No one knows that any better than we do, because whenever Electro-Voice launches a new enclosure product, there is always a rush of requests for prints.

In Choice 2 the builder must select his own lumber, cut it, fit it, assemble it, sand it, stain it and apply the finish which meets his requirements. We do nothing but supply the plans which are on page 10 and 11 and tell him how to proceed with the assembly after the parts have been cut out.

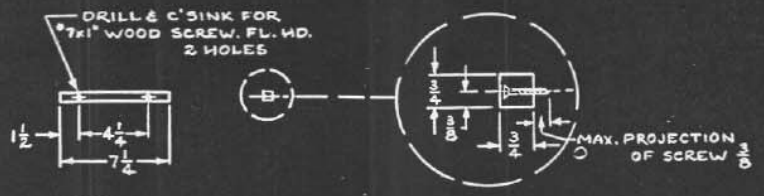
Even the finishing of the cabinets has been made much simpler through the availability of Electro-Voice finishing kits. These finishing kits will provide the constructor on a modest scale with the exact tools which are used in the final production of all Electro-Voice fine furniture cabinets. Employing these materials, you will be able to produce a piece of beauty of which you will be eternally proud. The CENTURION is a most fascinating product for one who wants something different to test his ingenuity.

CHOICE 3

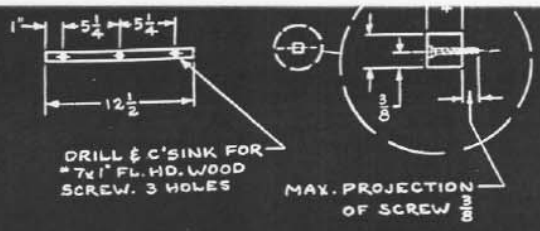
This is the "do-it-yourself" version or the kit where all parts have been precut on Electro-Voice factory jigs to size. All you have to do is put the parts together. It is not an easy project, but it is a reasonable one. A musical instrument as precise and as efficient as is the CENTURION is no bang-up, one-evening project. Even with all the sawdust-creating work done for you, assembling the components is an exacting, but highly rewarding task. It is much like putting together a violin. It has to be done right and instructions are made to be followed. A skilled cabinet maker can visualize the procedure and work rapidly and accurately, but the man who wants a musical instrument and wishes to make it would be wise to proceed one step at a time. It will take longer, but what is time when you have so much at stake. Don't let anybody rush you. Don't hurry up so you can play it and see how it sounds!

Full instructions for assembling the CENTURION are given further along, and the agony you might experience while delaying assembly by following instructions only makes the ecstacy you experience when it plays more enduring and more personal. Choice 3 is for the man who wants to improve his position in life by demonstrating he can do the difficult and succeed in the creation of a superior musical instrument at the lowest possible cost.

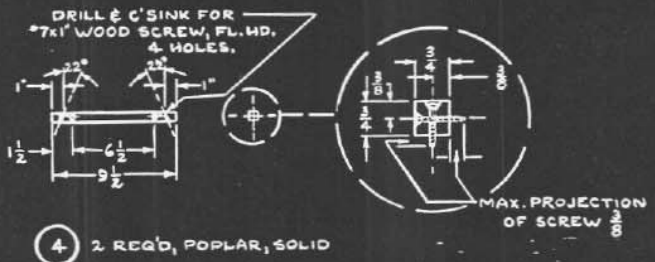
Here then are the choices, the roads that lead you to the ultimate CENTURION. You have wide latitude. You have this book to read while you are weighing your method of acquisition and when your mind is made up you can order what you want with the assurance you will get Electro-Voice quality. Whichever of the channels of expression you may wish to select, the goal is attainable by the expenditure of either money, energy or a combination of these two in proportions of your own choosing. Electro-Voice wishes you good building and good listening!



(7) 4 REQ'D; POPLAR, SOLID



(11) 2 REQ'D, POPLAR, SOLID



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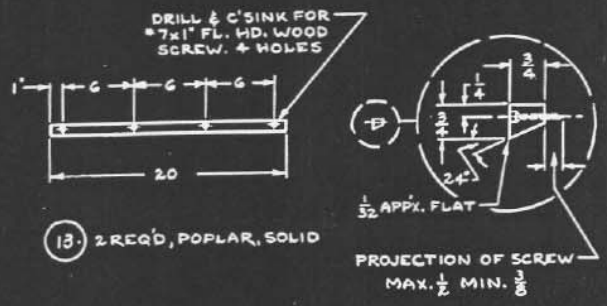

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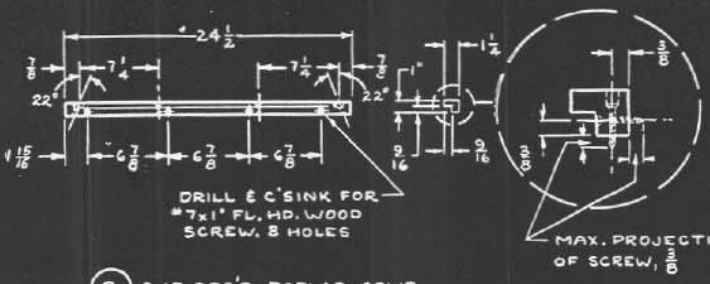
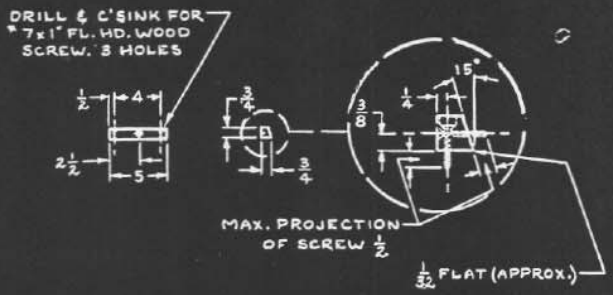


(8) ONE REQ'D, POPLAR, SOLID



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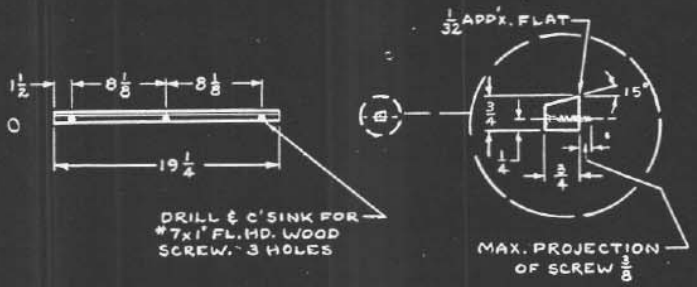

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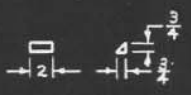
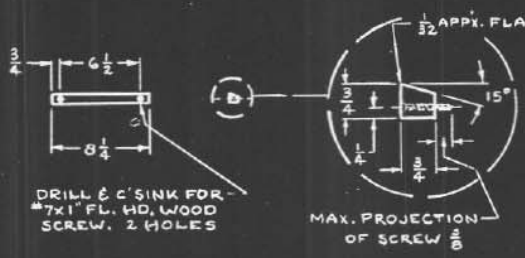


(23) 14 REQ'D, POPLAR, SOLID

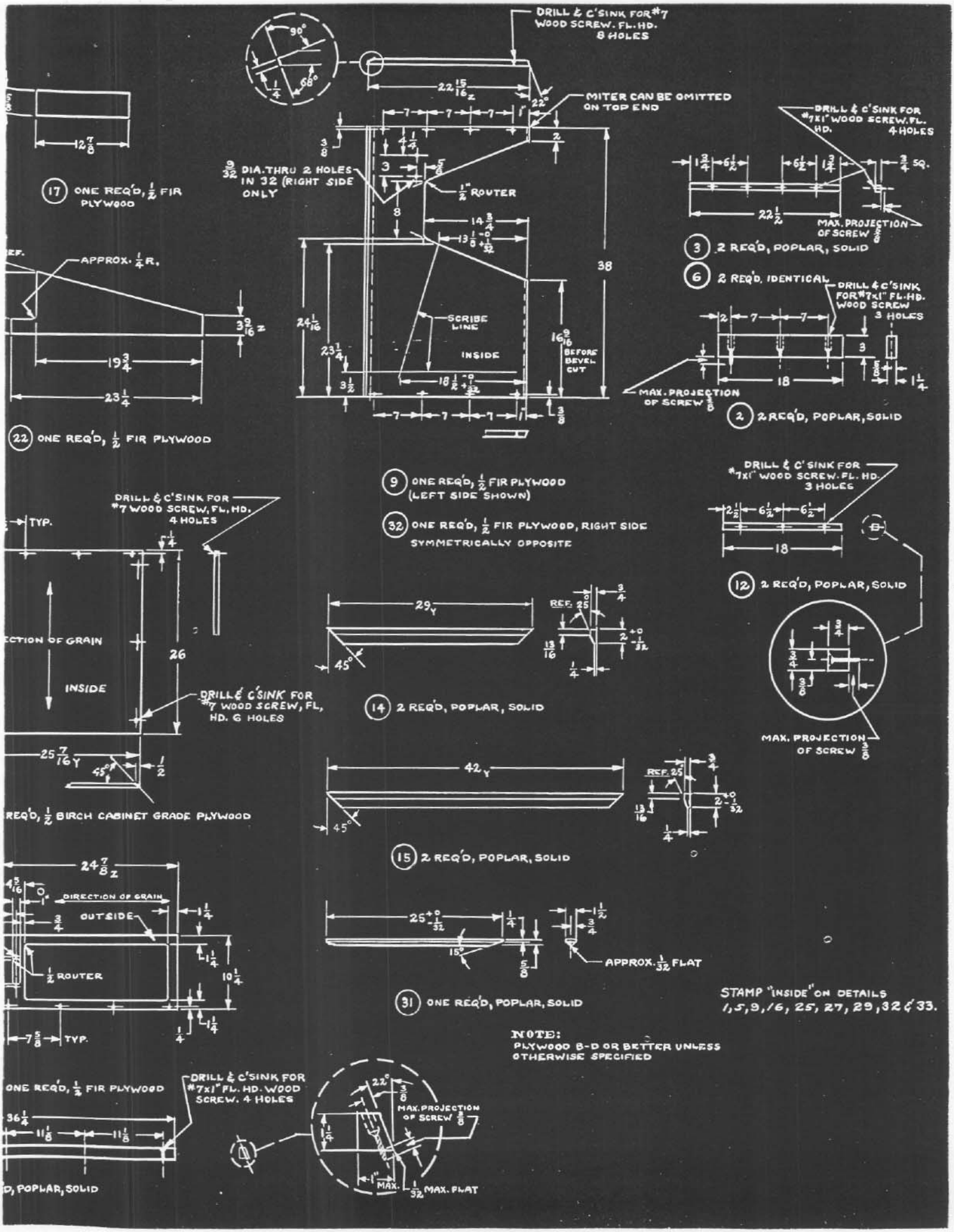


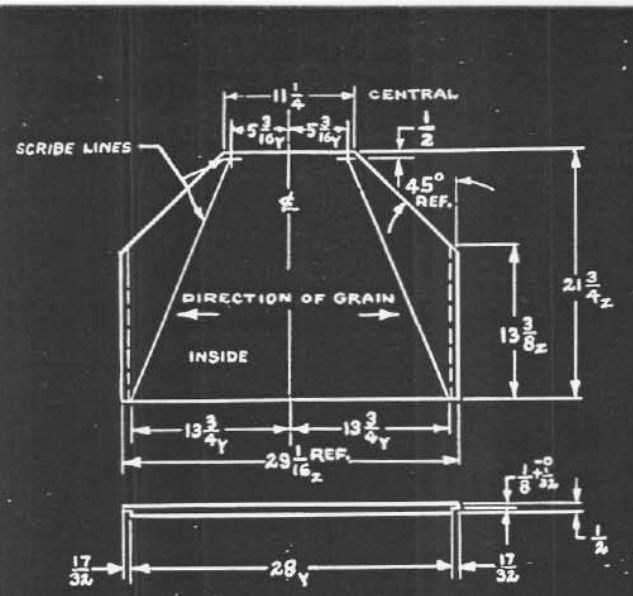
(24) 1 REQ'D, POPLAR, SOLID

Electro-Voice

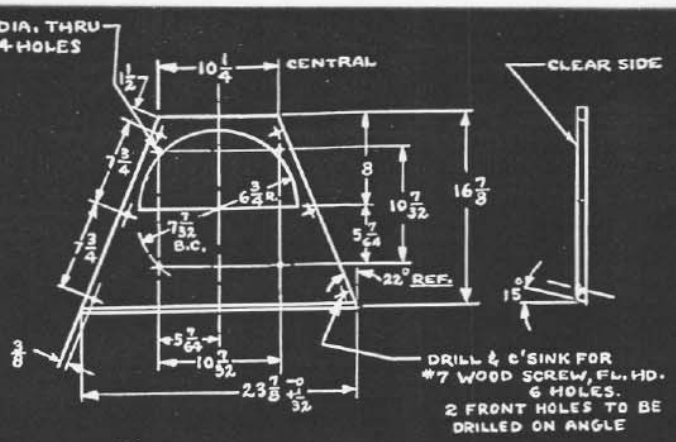
CENTURION KD3

HOME BUILDING PLANS

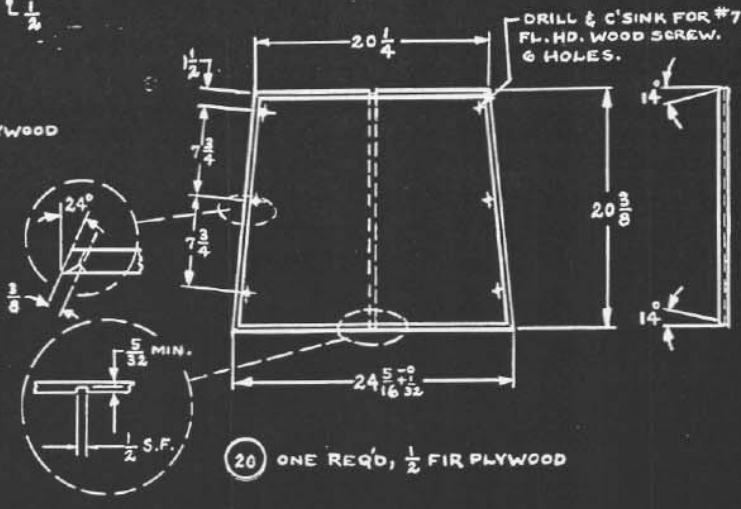

DRILL & C'SINK FOR #7 WOOD SCREW. FL. HD. 8 HOLES
MITER CAN BE OMITTED ON TOP END
9/32 DIA. THRU 2 HOLES IN 32 (RIGHT SIDE ONLY
1/2" ROUTER
SCRIBE LINE
INSIDE
BEFORE BEVEL CUT
38
17 ONE REQ'D, 1/2 FIR PLYWOOD
22 ONE REQ'D, 1/2 FIR PLYWOOD
DRILL & C'SINK FOR #7X1" WOOD SCREW. FL. HD. 4 HOLES
MAX. PROJECTION OF SCREW 3/8
3 2 REQ'D, POPLAR, SOLID
6 2 REQ'D. IDENTICAL
DRILL & C'SINK FOR #7X1" FL. HD. WOOD SCREW 3 HOLES
2 2 REQ'D, POPLAR, SOLID
9 ONE REQ'D, 1/2 FIR PLYWOOD (LEFT SIDE SHOWN)
32 ONE REQ'D, 1/2 FIR PLYWOOD, RIGHT SIDE SYMMETRICALLY OPPOSITE
DRILL & C'SINK FOR #7 WOOD SCREW, FL, HD. 4 HOLES
DRILL & C'SINK FOR #7X1" WOOD SCREW. FL. HD. 3 HOLES
12 2 REQ'D, POPLAR, SOLID
DRILL & C'SINK FOR #7 WOOD SCREW, FL, HD. 6 HOLES
14 2 REQ'D, POPLAR, SOLID
MAX. PROJECTION OF SCREW 3/8
REQ'D, 1/2 BIRCH CABINET GRADE PLYWOOD
15 2 REQ'D, POPLAR, SOLID
DIRECTION OF GRAIN
OUTSIDE
1/2 ROUTER
31 ONE REQ'D, POPLAR, SOLID
APPROX. 1/32 FLAT
STAMP "INSIDE" ON DETAILS 1, 5, 9, 16, 25, 27, 29, 32 & 33.
NOTE: PLYWOOD B-D OR BETTER UNLESS OTHERWISE SPECIFIED
ONE REQ'D, 1/2 FIR PLYWOOD
DRILL & C'SINK FOR #7X1" FL. HD. WOOD SCREW. 4 HOLES
MAX. PROJECTION OF SCREW 3/8
MAX. 1/32 MAX. FLAT
D, POPLAR, SOLID



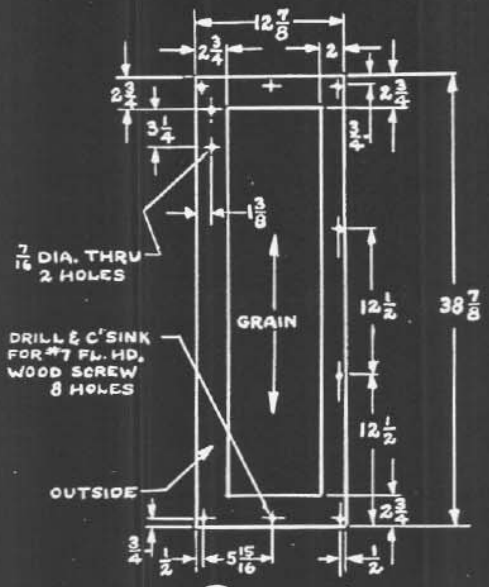
(5) 1 REQ'D, BIRCH CABINET GRADE PLYWOOD



(18) ONE REQ'D, 1/2 FIR PLYWOOD



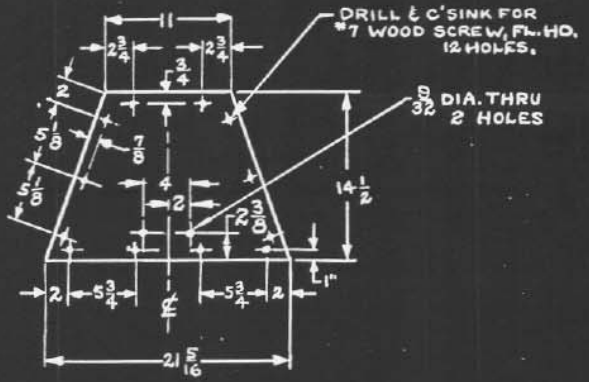
(20) ONE REQ'D, 1/2 FIR PLYWOOD



(27) ONE REQ'D. AS SHOWN, (WITH 1/16 DIA. HOLES) LEFT SIDE

(33) ONE REQ'D, OMIT 7/16 DIA. HOLES

1/2 BIRCH CABINET GRADE PLYWOOD



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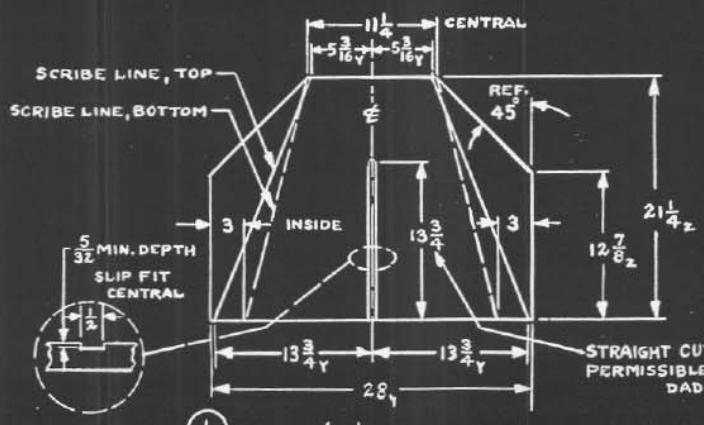
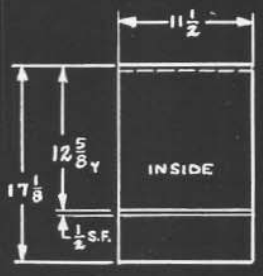
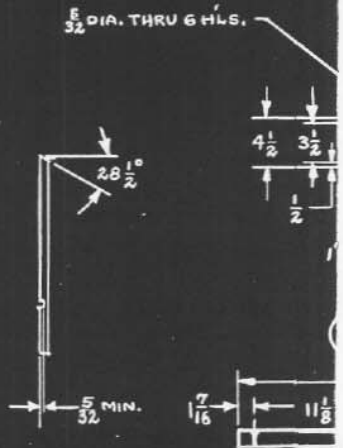
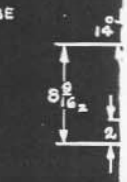


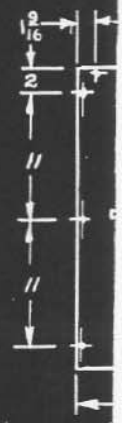
(1) ONE REQ'D, 1/2 FIR PLYWOOD

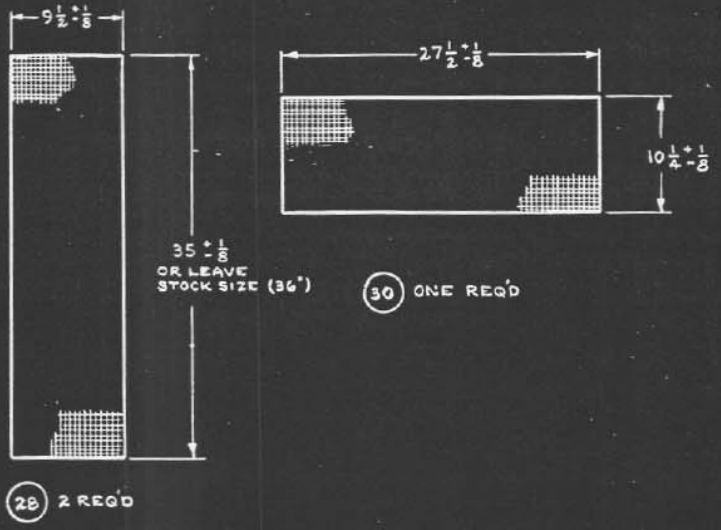


(25) ONE REQ'D, 1/2 FIR PLYWOOD

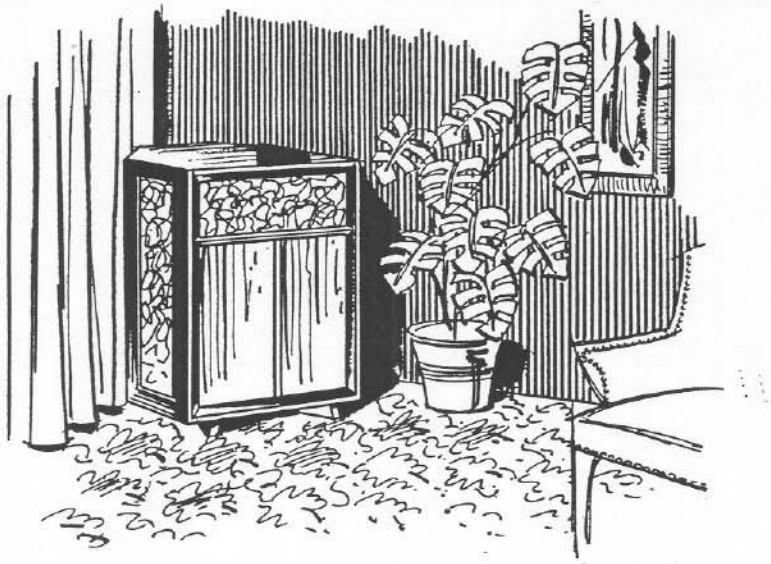








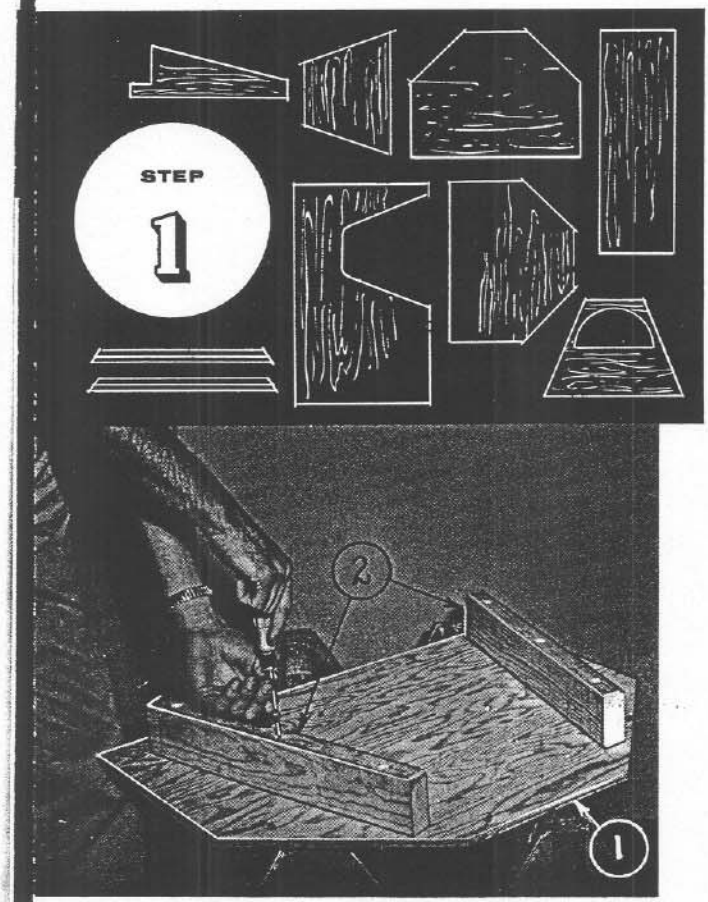
NOTE: "Y" and "Z" dimensions are those held to critical tolerances by the Electro-Voice Quality Control Department.



ASSEMBLING THE

CENTURION KIT . . .

Two important tools are used in the assembly of the Centurion; a screwdriver and a bottle of glue. You will have to supply your own screwdriver, but the glue is furnished in the kit. Do not under-estimate the glue, it may look like thick cream, but it has adhesive qualities beyond belief. Once it takes hold, it sticks and it stays stuck; the wood will break before the joint opens. This is good to know before you start the actual assembling of the cabinet, and here is where you start.



STEP 1

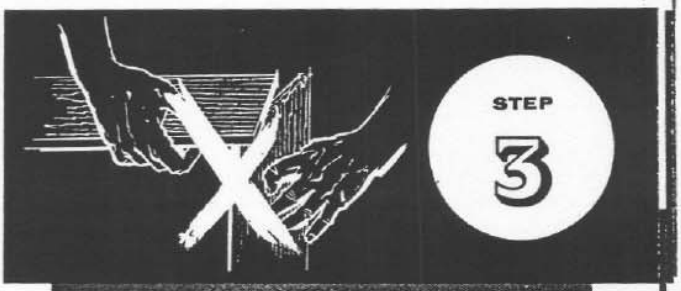
When you first look at the parts of your Centurion spread out on the floor, you may say, "Just where does one start?" There are many parts in the Centurion, and surprisingly, they all go together, although at this stage it may not seem possible. Check your detail drawing on page 10 and 11 and locate piece 1. This is the bottom panel. The feet, piece 2, are screwed and glued to the under side of piece 1. Guide lines are factory scribed on piece 1, and the legs should be located outside these guides. The rear corner of the leg should come almost to the edge of 1. This operation is not too exacting because the legs serve only as a cabinet support. Make a serious attempt at accuracy, though, for you will need the experience and ability later. Use an excess of glue, so that the surplus will "squish" out.

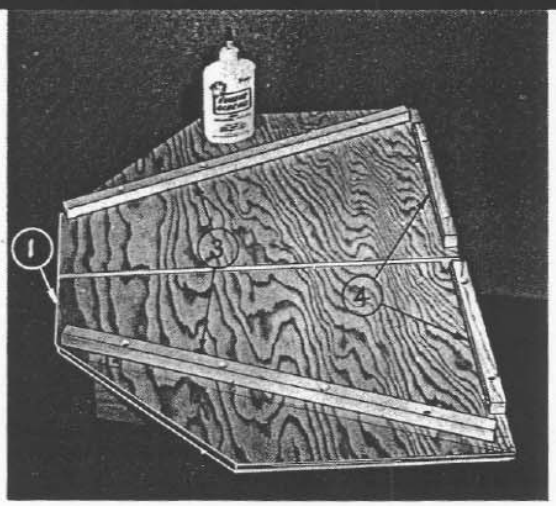
STEP 2

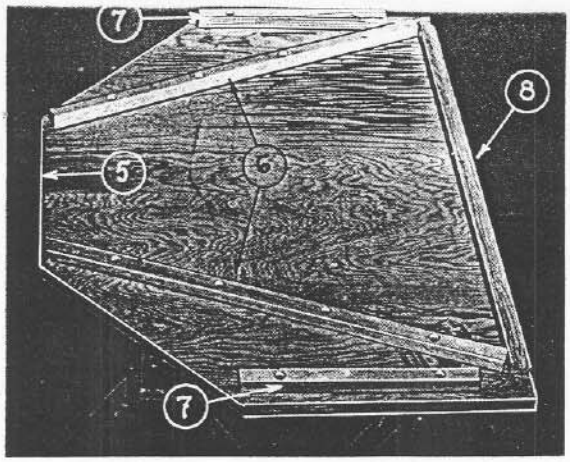
Turn piece 1 over. The top side may be recognized by the groove routed directly across the middle. If there is any confusion in your mind as to which piece is the bottom, 1, and which is the top panel, 5, let this groove be your guide. The early steps in the assembly of the cabinet consist of fastening cleats and battens to panels, as you will do now. Later on, other pieces will be screwed and glued to these cleats. For the present, locate pieces 3 and 4 and install them on 1. No dimensions are given and no complex measuring is needed as each piece, now and hereafter, either is located against a scribe line, butted against an edge, or slid into a groove. Full explanation will be given as each new part is encountered, and your task will be one of matching parts against construction marks and securing them in place. These scribe marks are pencil lines put on the wood at the factory. They may not be conspicuous, but they are just as important as surveyor's stakes, and should be observed with extreme respect. Missing a mark may be enough to throw the entire cabinet out of line before it is assembled. If you have any doubt of your ability, screw the entire assembly together *WITHOUT GLUE*, and see how you come out. If it looks like it should, then take it apart, apply glue and reassemble. Once the glue has set, the assembly is together to stay.

STEP 3

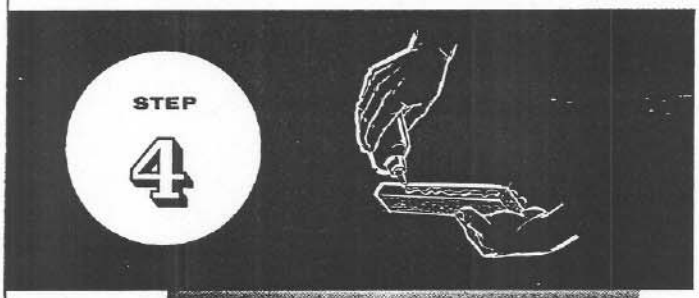
Cleat 8 is butted against the front edge of panel 5 and glued in place. Use temporary nails, if necessary. The diagonal battens 6 are laid out on the scribed guide lines and glued in place. Be certain that battens 6 are parallel to 3 and panel 1. When you come to cleat 7 you will make the discovery that the top 5 is larger than the bottom 1. This is conventional practice in cabinet making, for the grilles butt under the top while they lap over the bottom. This is one of the last assembly steps, but the foundation must be laid at the very beginning.

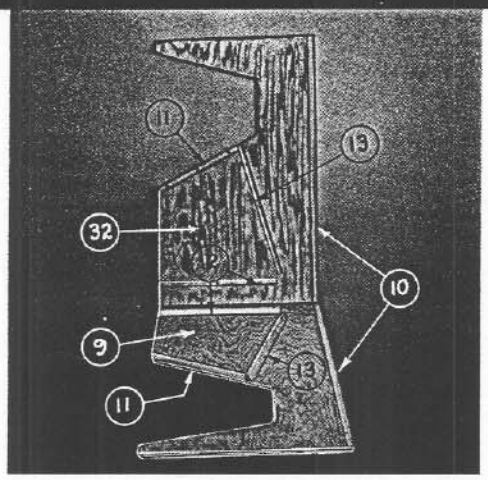






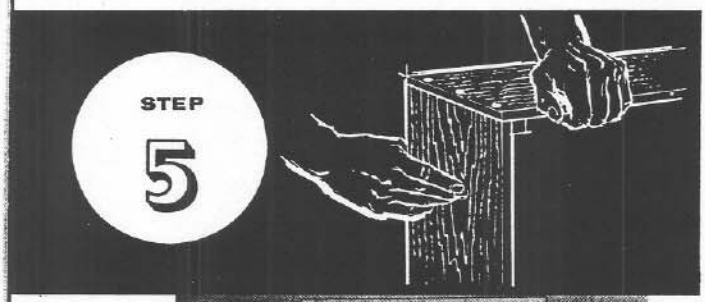
The preassembly of the top and bottom panels, 1 and 5, is identical in procedure; and can be covered in one explanation. Bottom panel cleats 4 are butted against the edge of panel 1 and secured. Because glue has a tendency to skid, the use of guide nails is permissible. They are pulled out as soon at the cleat is secure. The diagonal battens 3 are laid out to guide lines and secured. Parts 3 must be absolutely parallel with parts 6 because they are used to line up panels 9 and 32 at the top and bottom.

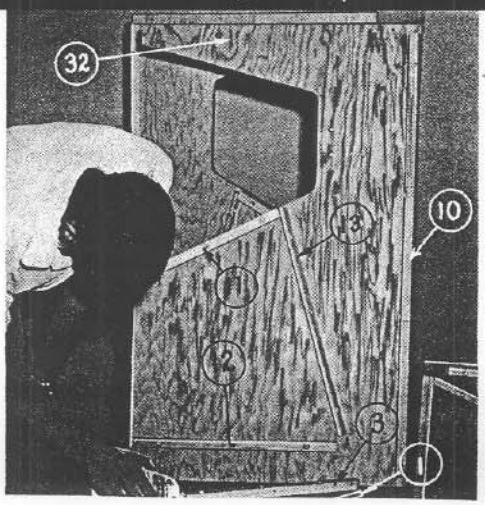




STEP 4

Panels 9 and 32 are the last of the basic exterior to be preassembled. 9 is the left hand panel and 32 is on the right. 32 can also be identified by the two holes drilled in it for mounting the 847HF mid-range driver. The illustration shows that the right and left-hand panels are mirror images of one another. 10 is butted against the front, glued and screwed in place. The positions of battens 11, 12 and 13 are indicated by scribe lines.

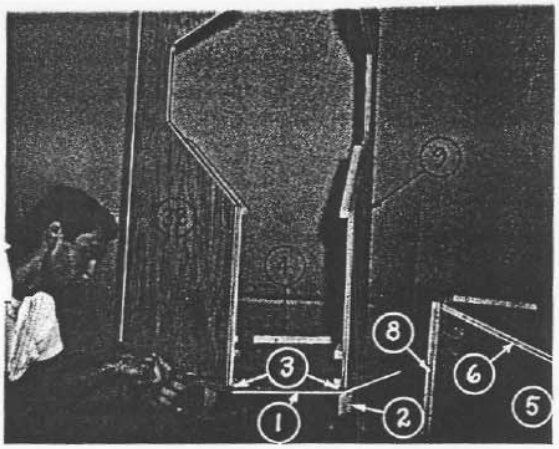




STEP 5

Up till now you were fastening cleats and battens to panels. Now you will build the subassemblies into the major assembly. The cleat and batten technique is simple, rapid and positive. It enables you to do with a screwdriver what would normally require a complete set of cabinet clamps by older construction methods. The panels should first be dry assembled, thus locating register points and starting the screw holes. Then, the panels should be removed, the mating surfaces glued and the panels reinstalled.

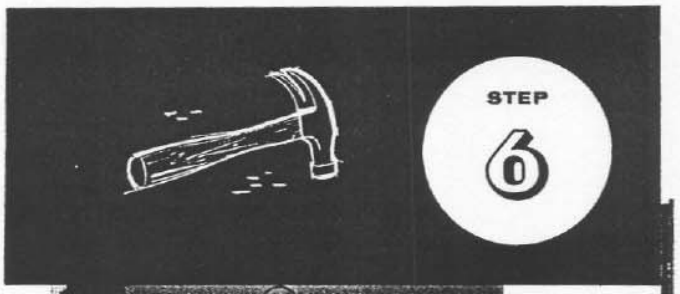
Start by securing panel 9 to bottom 1 by means of cleat 3. Install both panels 9 (be sure they are square to 1), then, let the assembly rest over night to permit the glue to dry. When touched, there will quite likely be an ominous cracking sound, but it is only the normal reaction of an unsupported glued joint being disturbed. Do not be afraid of getting too much glue in a joint. The excess will "squish" out and can be wiped away with a damp cloth, or merely left. It will dry transparent and can be sanded away.

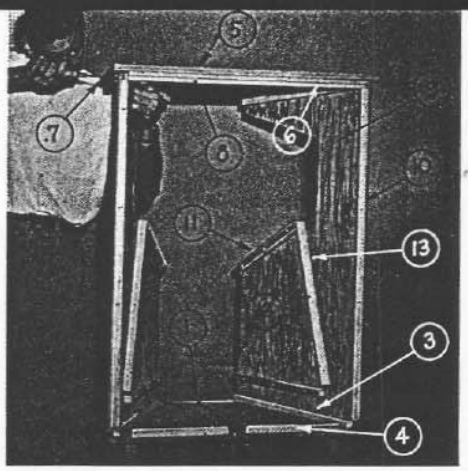


STEP 6

Fastening the top, 5, onto panel 9 takes a bit of jockeying because cleat 7 is in the way of two of the screws. Here is where the superiority of the Phillips head screws becomes obvious for the screw can be driven straight and accurately, even when the screwdriver is out of line.

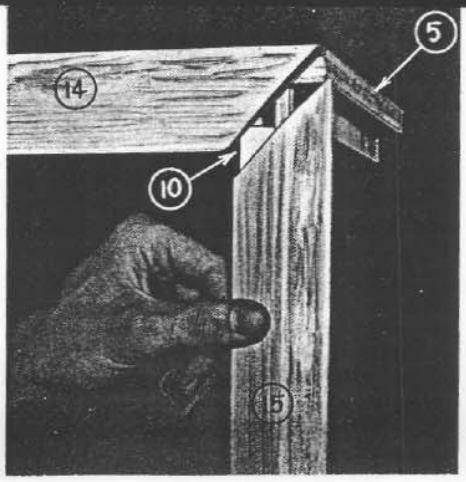
With the top glued and screwed in place, the structure has assumed final dimensions, but is still rickety. When the frame and internal bracing are installed, the structure will become rigid. Do not move the cabinet while in the early stages of assembly; let it remain undisturbed until the glue has set. There is nothing violent about driving screws, but it takes only one slip or jolt to upset calculations, especially if the glue is half set. As glue dries, it goes through a complex chemical change called polymerization. Moving the joint during this time may disturb the molecular structure of the glue and may abruptly halt the bonding action. A joint that opens up is usually a joint that was jolted.

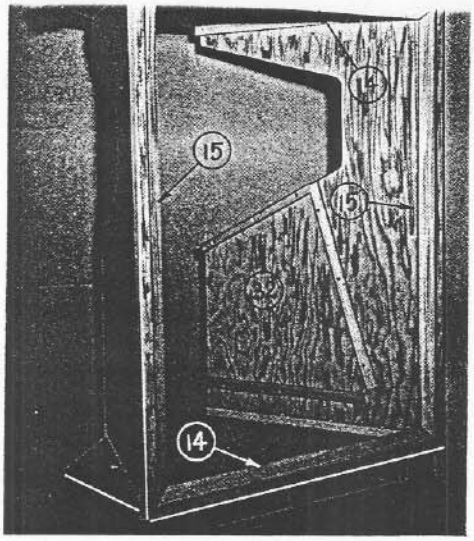




STEP 7

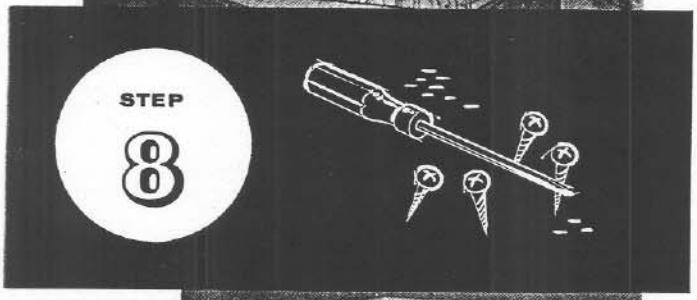
The front frame, 14 and 15, is not merely ornamental trim; it is an integral part of the structure and supplies a considerable degree of the rigidity. While the frame appears to be a mitered molding, it is actually the front half of an angle. When screwed and glued to battens 10, 6, and 4, which in turn are anchored to panels 1, 6, and 9, the frame bonds the Centurion shell into a unit.





Start by securing 14 to the top panel 5 and batten 6 from the back by means of screws and glue, making certain it is accurately registered. 15 must line up so the miter joint fits without lap or crack and at an angle of exactly 90 degrees.

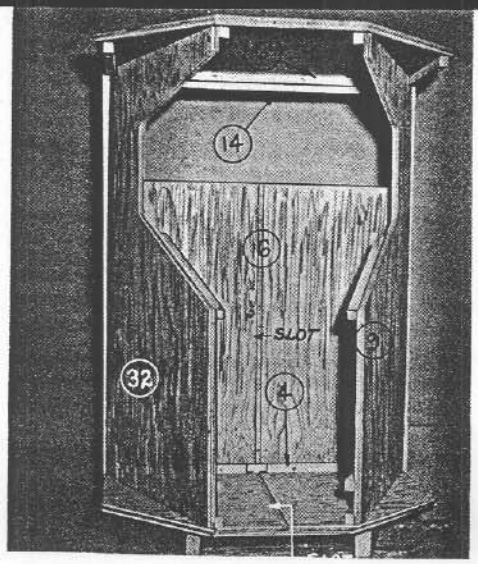
As the bottom front frame, 14, is positioned you may discover that the cabinet is slightly out of line. Feel perfectly free to correct the misalignment by pushing the assembly until all vertical lines are plumb. The same tactics are employed when framing a house, so this situation is no reflection on your ability as a cabinetmaker. With the members vertical, position lower 14. When it is glued and screwed, the inclination to lean will vanish. Make certain the miter corners are well glued. It may even be to your advantage to insert brads to help hold until the glue sets. The brads can be withdrawn later and the holes filled for appearance's sake.



STEP 8

The front panel, 16, acts as a brace, and holds the assembly vertical. Getting 16 in place is quite a trick. Angle it in, like a tight squeeze in a parking lot and then when one side is flush against 10, snap the panel in place. When once positioned, 16 can be pushed far enough back for the glue to be applied around the facing edge. With the glue applied, push 16 firmly against the frame, parts 14 and 15, and insert the screws from the back, working them one by one, all the way around, until the front panel is drawn up snug. This operation must be done all at once, so it is completed before the glue starts hardening.

Because the front panel of the Centurion is visible to a seated group, treat it with respect. Avoid dents, gouges, bruises or other occupational hazards. These do not show up in unfinished lumber, but once a coat of lacquer is applied, every tiny pin scratch will show up. It is wise to treat ALL of your cabinet lumber with extreme respect, handling it gently, installing it carefully.



STEP 9

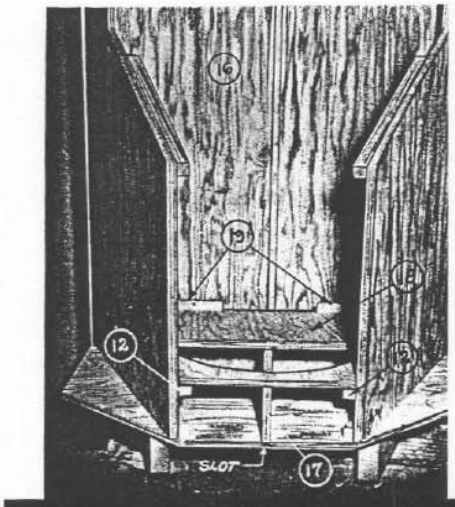
The exponential horn of the Centurion is an intriguing arrangement. It wraps around three sides of a sealed rear speaker cavity, producing a very long horn flare in a minimum of space. Coupled to the walls of the room, the horn assumes large dimensions, indeed. The speaker itself is situated in an unorthodox manner, face down inside a sealed cavity.

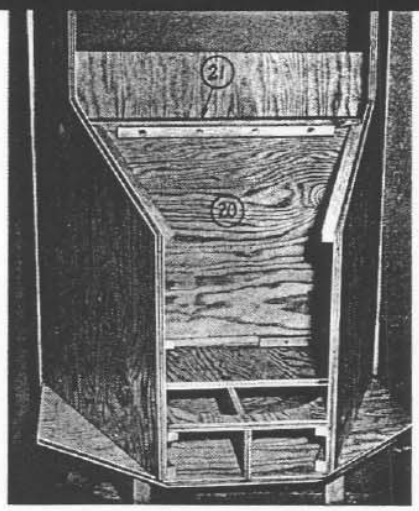
Before installing the speaker mounting board 18, lower brace 17 into the slot in the bottom, 1. This brace is to stiffen the mounting board and help support the weight of the speaker. It requires no involved mounting procedure, for once 18 is lowered, 17 cannot get out. 17 should be positioned so that there will be a ⅛-inch overhang to the rear. This will mate later with the slot in rear panel 25. It is quite sufficient to apply a nominal amount of glue to the bottom edge of 17 and fit into the slot in 1.

The speaker mounting board 18 with its half-moon hole is peculiar looking, and is properly calculated to act as the throat of the Electro-Voice W exponential folded horn. It is just such precise proportioning that is responsible for the final superlative performance of the Centurion.

The speaker is lowered from the top and secured with bolts which thread into the Tee nuts – so be sure to drive them in from the side away from the speaker frame. The Tee nuts must be driven in place in the mounting board before the board is installed.

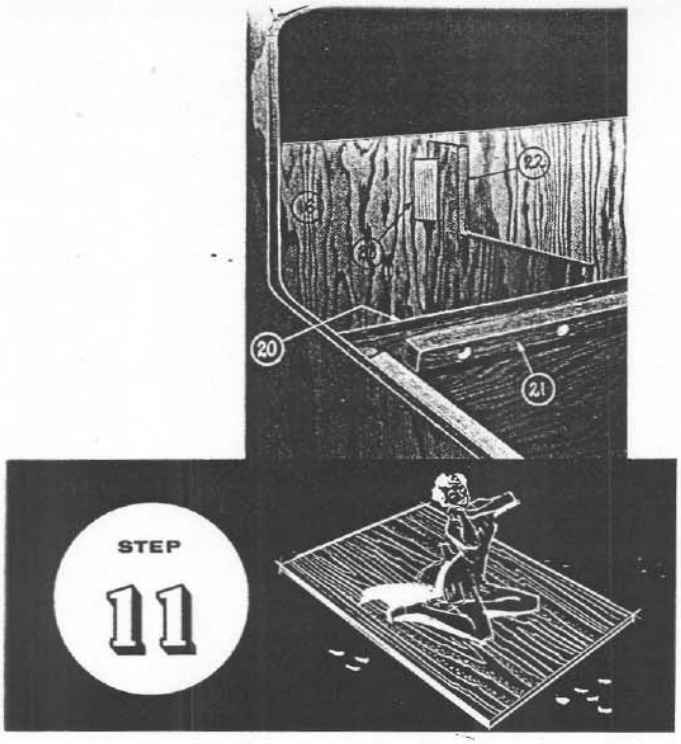
Glue is smeared on cleats 19, and these in turn are secured to the front edge of 18. With the cleats installed, more glue is smeared on cleats 12 and the top of 17, and 18 is lowered into position and secured with screws. When 18 is pulled all the way to the rear, it will protrude ⅛ inch. This will mate with the horizontal groove in 25 during a later step. Two nails through 18 into the edge of 19 are sufficient to hold it, but if you are very precise, you can apply glue to the edge just to make the job consistent. This is the start of the folded horn air column and the bottom of the loudspeaker sealed rear cavity.





STEP 10

Panel 20 continues the dividing line between the sealed cavity and the air column. It is glued and screwed onto cleats 13, 19 and has cleat 21 screwed and glued to it. Take more than a passing amount of care in creating the sealed cavity for there is a significant difference in pressure between the cavity and air column. An air leak of an appreciable amount will result in marked degradation of bass response.

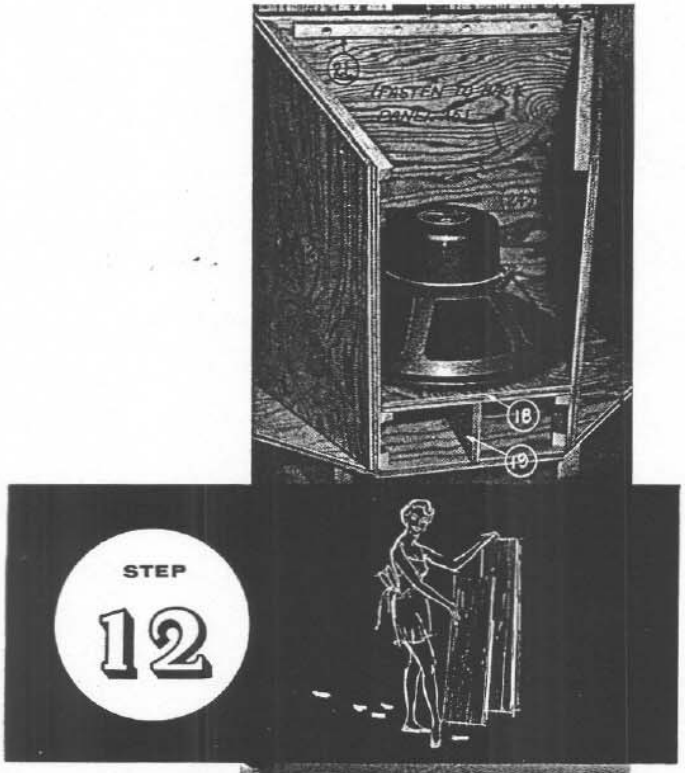


Ordinarily, the glue is sufficient to seal all air leaks, but to play safe, it may be found advisable to use either marine glue seam-calking compound, adhesive tape or lacquer seal in addition. Follow the precept that the better the sealing job, the more satisfactory will be the bass response. Either seal the cavity seams as the job progresses, or come back later and do it all at once. Either method is satisfactory.

STEP 11

A plywood panel has a natural tendency to resonate when a deep note is sustained. The possibility of this occurring with panels 16 and 20 is discouraged by the introduction of spacer 22. The spacer is fitted in the slot in the back of 16, and wiped against panel 20.

"Wipe blocks" 23 are the prism shaped chunks of wood found in the kit. There is no sure way of screwing 22 to either 16 or 20, because screws driven in end grain tend to act as wedges instead of holding. The wipe blocks are smeared with glue, pressed in place and gently rubbed back and forth till they take hold. Wipe blocks placed on both sides of 22 hold it rigidly and permanently in place against 16 and 20.



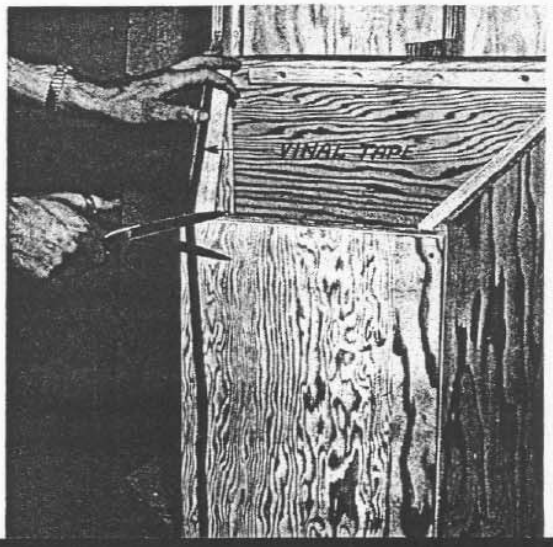
STEP 12

The back panel 25 can be installed only after speaker mounting board 18 is in place. Glue and screw 24 to the back panel 25. The speaker is not installed permanently at this time, but it should be tried for size. Remove the speaker and put it back in the carton when satisfied that it will install correctly and lie flat. (Be sure to use a vacuum cleaner to clean thoroughly both the cavity and air column before placing the Centurion in use.)

The back panel, 25, of the sealed cavity is now installed permanently, glued and screwed substantially all the way around. The cover plate 26 must be removable, so it is carefully fitted in place, but secured only with screws. Do not drive these screws any tighter than necessary or eventually they will strip and the seal will no longer be effective. It is impossible to predict how many times 26 can be removed and replaced before the threads strip, but in case they do, fill the screw holes with match sticks and glue and start over.

With the installation of 26, you will discover that the pile of lumber has dwindled down to almost nothing, and the Centurion has reached the stage where it can be placed in operation. There are still

minor refinements to make, but the job is essentially over; you have proved your ability to create a piece of hi-fi equipment.



STEP 13

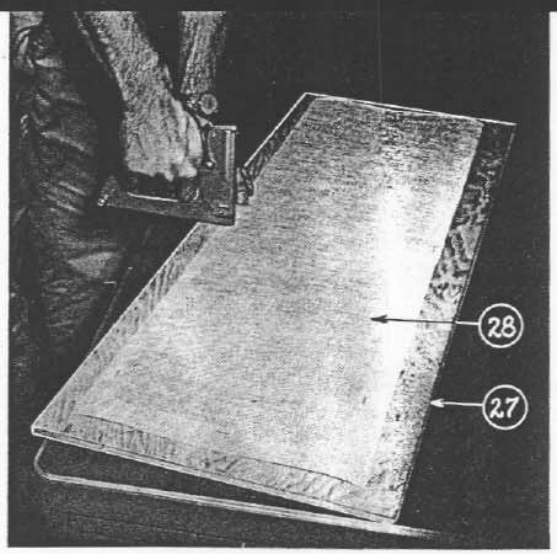
A removable cover plate requires a sealing gasket. The gasket is made of a strip of thick Vinyl rubber adhesive coated tape. Measure the tape and snip to length; peel off the cloth backing and press it into contact with panels 9, 20 and 25. The use of staples or small tacks may prove advisable. If so, drive them deep enough to permit the bearing surface to be on the rubber. Do not place the sealing gasket where it will be punctured by screws driven into the cleats.

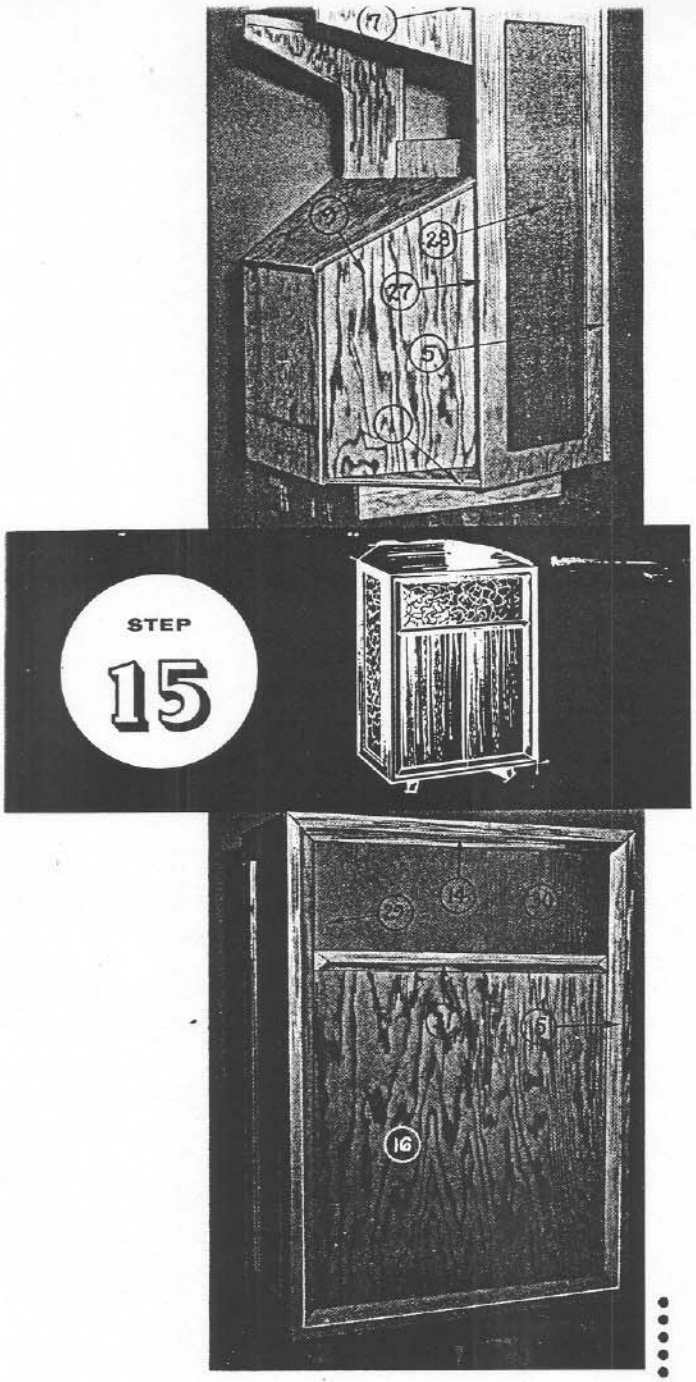
STEP 14

The grille panels 27 are purely ornamental. Note that these panels are right and left handed. The left panel is drilled for mounting the AT37 "Brilliance" and "Presence" controls. The side panels will not change the performance of the Centurion, but they will complete the design as a piece of furniture. Unlike the larger Georgian and Patrician, the Centurion is self-enclosed, and the front and sides are actually the exterior cabinet. An application of finishing lacquer and the addition of the grille cloth 28 will make the Centurion acceptable in the best circles. The illustration shows the grille cloth being installed before the frame has been finished. This was done for consistency and clarity because unfinished wood photographs with maximum clarity. Once the finishing material is applied, the cabinet will take on the elegance of parlor furniture. Do not install grille cloth until the finishing is completed.

When the time comes, the grille cloth 28 is laid on the back of 29, face down and secured with closely spaced tacks or staples. Stretch the cloth tight, smooth out the wrinkles and bulges as you go, and work slowly and carefully. Badly applied grille cloth will look like an unpressed suit.

The grille panels are hung on cleat 7, butted tight against frame 15, and finally secured to the edge of bottom 1. The panels are screwed in place without glue, and may be removed for housekeeping.



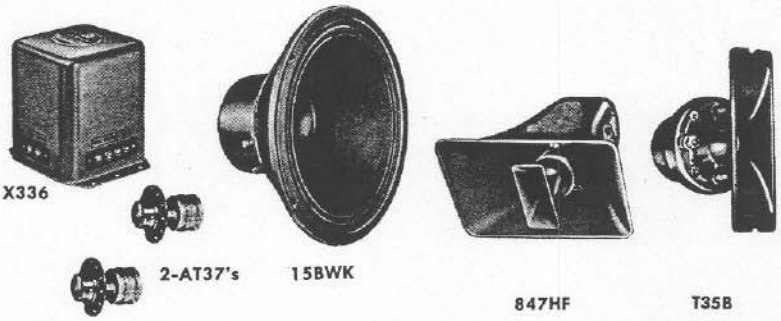


STEP 15

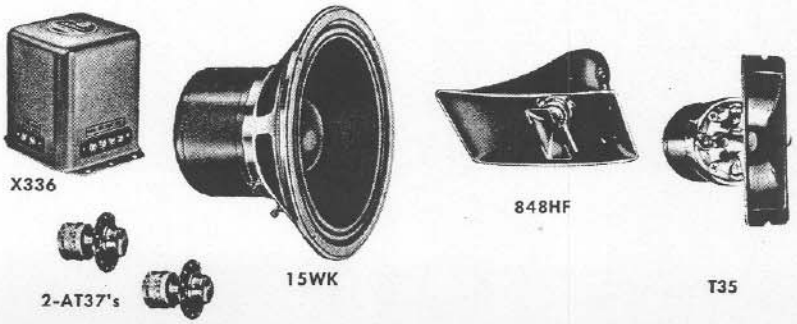
The front grille frame 29 is painted black so that when it is placed behind grille cloth 30, it will not show through. The cloth should be wrapped completely around 29 on all four edges and stapled on the under side. The panel may now be installed in the frame opening between 14 and 15. When in place, the lower seam will be concealed by molding strip 21. Center 31 between the two side moldings 15. The middle trim 31 should overlap half on 29 and half on 16. Screw, but do not glue 31 to 29 from the back of 31 after the grille cloth 30 has been wrapped on. Panel 29 must be removable because the very-high-frequency driver is fastened to it.

Two "suits" of components are available for the Centurion. The Model 117 is composed of "B" series units and the Model 105 uses the heavier magnet model reproducers. The operational difference between the 117 and 105 components has been covered in the introductory paragraphs of this booklet.

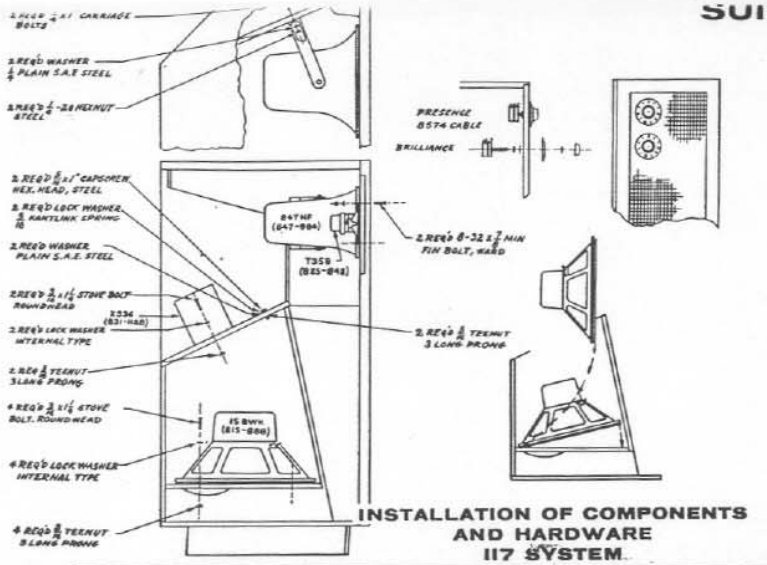
SUIT 1



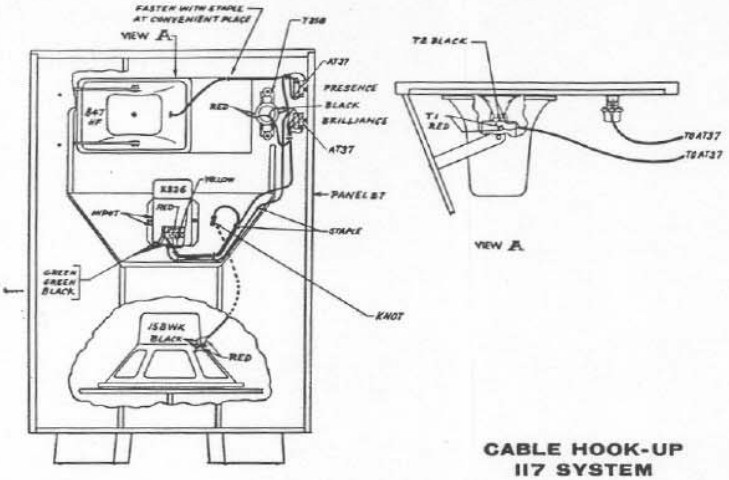
SUIT 2



SUIT 1

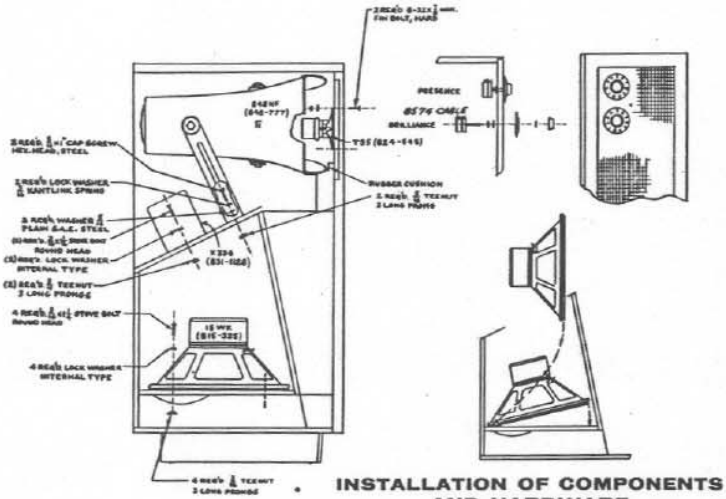


INSTALLATION OF COMPONENTS AND HARDWARE 117 SYSTEM

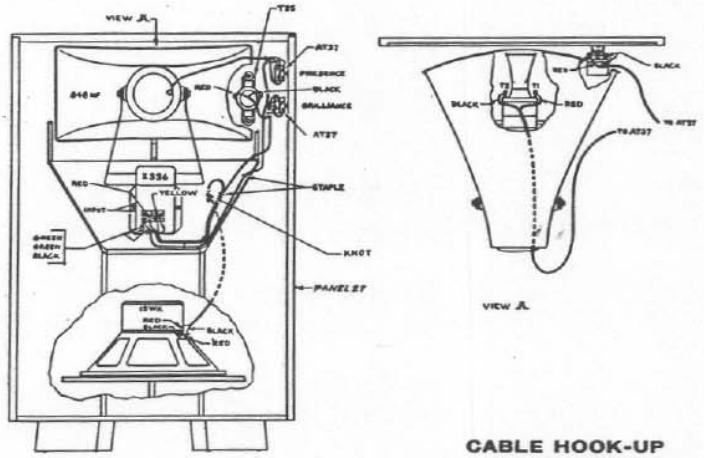


CABLE HOOK-UP 117 SYSTEM

SUIT 2

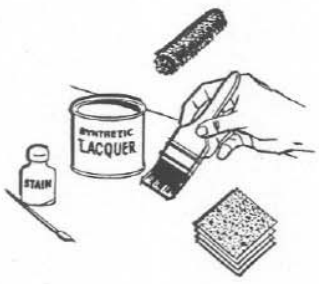


INSTALLATION OF COMPONENTS AND HARDWARE 105 SYSTEM



CABLE HOOK-UP 105 SYSTEM

Both the 117 and 105 employ the 8574 cable harness. The AT37 "Brilliance" and "Presence" controls on the harness are identified by tag, and are installed in the drilled, left-hand side panel 27. (See "Cable Hook-Up for 105 or 117 Systems.") The units should be wired in accordance with the accompanying diagram. The low frequency driver 15WK or 15BWK is mounted as shown in Step 12. The X336 crossover is mounted on top of 26, and if the 848HF is used, it should also be mounted on 26 as shown. (See "Installation of Components and Hardware for 105 or 117 Systems.") The 847HF is bolted to the side panel with ¼ #20 bolts after panel 29 and the VHF driver are in place. The T35 or T35B is mounted on the fin bolts on the rectangular slot in 29.



If you don't want to be bothered with the chore of rounding up the various necessary ingredients to finish your enclosure, order an Electro-Voice finishing kit and get them all in one ready-to-use package. The finishing kits take the work out of this most important step. You won't have to worry about how and why, just follow the directions and a fine furniture finish will be the end result.

FINISHING KITS ARE AVAILABLE IN 6 COLORS:

FK1	Walnut
FK2	Mahogany
FK3	Red Mahogany
FK4	Honey Maple
FK5	Golden Oak
FK6	Jet Black

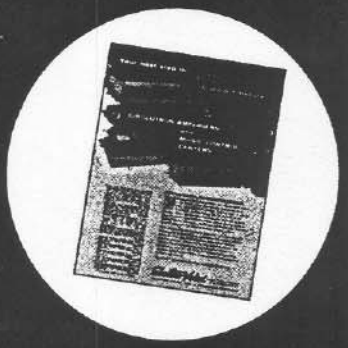
We will be happy to supply additional information about any of the following Electro-Voice product lines upon request:

want more information

about other

Electro-Voice

products ?



- High-fidelity components, speaker systems, enclosures, accessories and "do-it-yourself" speaker enclosure kits
- High-fidelity amplifiers, preamplifiers, AM and FM tuners
- Public address loudspeakers
- Phonograph cartridges
- Microphones for public address, broadcast and general purpose
- Microphone accessories
- RME communications equipment and specialized electronic products

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