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Classic Project



In this plan you'll find:

- Step-by-step construction instruction.
- A complete bill of materials.
- Construction drawings and related photos.
- Tips to help you complete the project and become a better woodworker.

Heirloom Blockfront Chest



Heirloom
Blockfront Chest

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WJC180



Heirloom Blockfront Chest

Continuing our tradition of bringing readers a steady stream of top-quality traditional furniture plans, we're proud to present another design from the world-renowned Wallace Nutting Collection at Berea College in Berea, Kentucky.

If you've always dreamed of making a blockfront chest, but were put off by the complexities of some blockfront designs, take a close look at this piece. The clever use of solids, which are molded, rather than making and applying separate moldings, vastly simplifies what can otherwise be a most challenging design. Except for the shaping work that's required to apply the blockfront profile to the drawers, top, bottom and

the front feet, the actual construction requires no more work than there is in making any simple chest of drawers.

Finding Stock

As you'll note from the Bill of Materials, the chest is built from several different thicknesses of stock. For starters, $\frac{3}{4}$ in. thick stock is used for the sides (A), top (B), rails (D), runners (E) and stops (I). The bottom (C) is cut from $1\frac{1}{2}$ in. thick stock, while the front feet (G), and the side and back feet (H) are cut from $2\frac{1}{2}$ in. and $1\frac{3}{4}$ in. thick stock, respectively. The drawer fronts (J) are all cut from $2\frac{1}{4}$ in. thick stock, while the drawer backs (K) and sides (L) are $\frac{1}{2}$ in. thick material. The chest back (F) and drawer bottoms (M) are $\frac{1}{4}$ in. plywood.

Edge Gluing

Once your stock is prepared, you can go to work edge-gluing to create the various wide parts—the top, bottom and sides. When laying out your stock for the top and bottom, to avoid any glue line showing, position a wide enough board at the front edge of both of these parts to accept the entire profile cutout.

Cut Case Dovetails

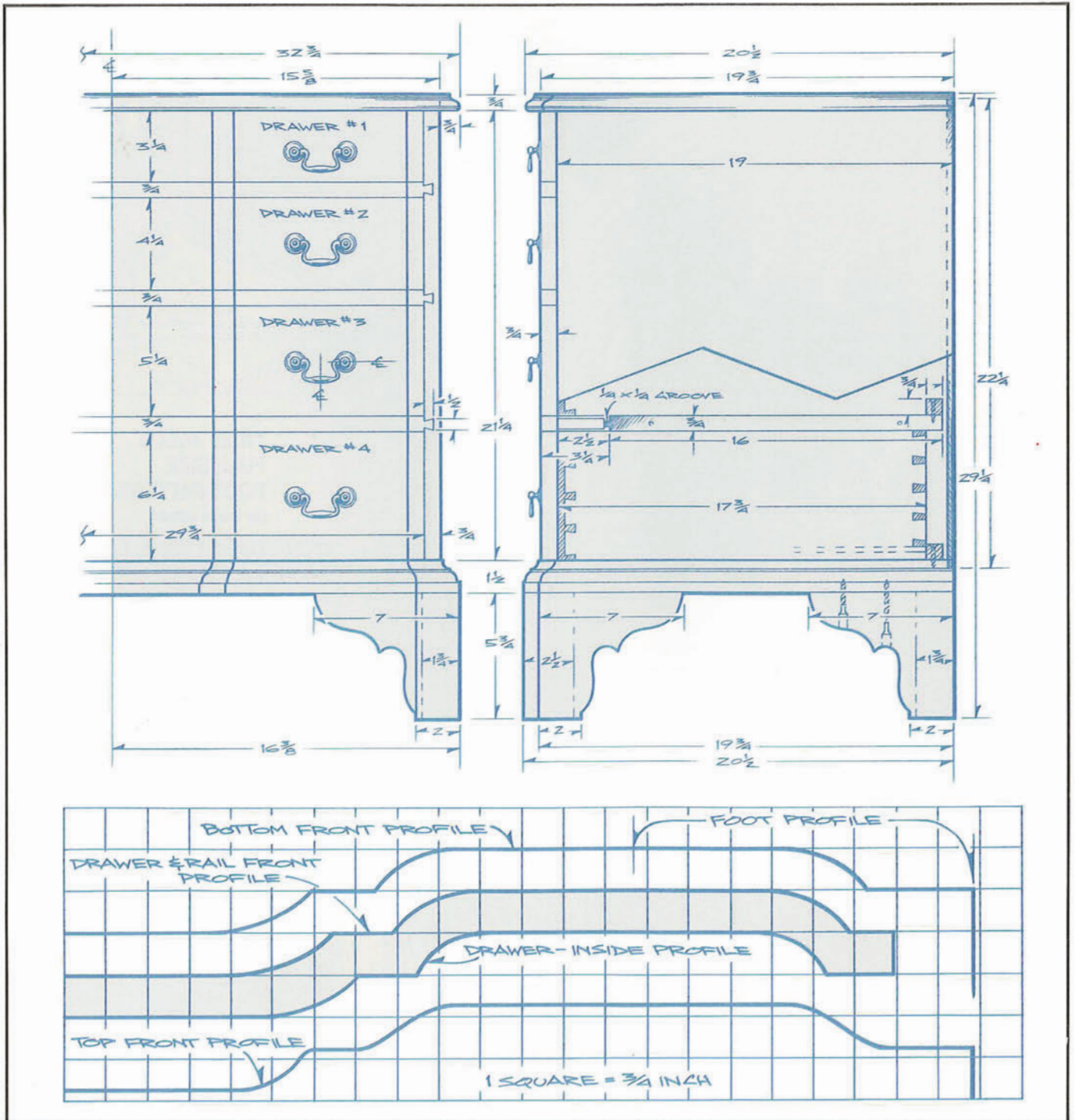
Once your top, bottom and sides are prepared, lay out and cut the dovetail on the ends of the sides, and the matching dovetail groove in the top and bottom. As shown in the exploded view, notch

back the dovetail on the sides $\frac{1}{4}$ in. at the front edge. The dovetail groove in the top and bottom will be $18\frac{3}{4}$ in. long, matching the length of the dovetail. As shown in the Back Detail, the dovetail groove is located on-center $1\frac{1}{8}$ in. from the ends of the bottom and top. Note that the molded profiles on the top and bottom have not been cut yet, which enables you to use the router and an edge guide when making these dovetail grooves. When cutting the groove, it is sometimes a bit much for a low-powered router to hog out the entire dovetail

groove in a single pass. A dovetail groove isn't something that can be accomplished in several passes. However, by making an initial cut with a straight cutter, you'll remove much of the waste and make the work of actually cutting the dovetail groove much easier.

Once the case dovetails have been cut, lay out and cut the dovetail grooves in the sides for the dovetails on the rail ends. As the exploded view shows, these grooves are $2\frac{1}{4}$ in. long. Dry assemble the case, and cut and test fit the rails. Also, establish the $\frac{1}{4}$ in. by $\frac{1}{4}$ in.

grooves on the back edge of the rails to accept the matching tenons on the runner ends. Note that the dovetails and grooves are cut on the rails before the profile is cut on the front edge. While your case is dry assembled, cut and test fit the back. A bearing-guided rabbeting bit is used to establish the rabbet in the case for the back. Square the rabbet corners with a chisel.



transfer the profiles to the top, bottom and rails, and carefully cut them out. Sand to remove any ridges or irregularities. Tip: The rails and drawer fronts all share the same profile. Make a template of hardboard, plywood or cardboard, then use this template to trace the profile to the three rails and the four drawer fronts.

Mold the Edges

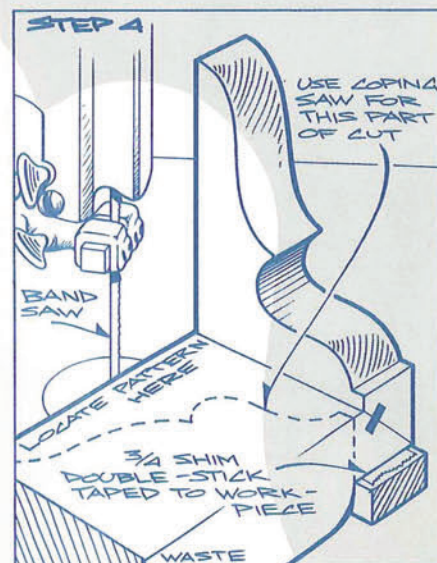
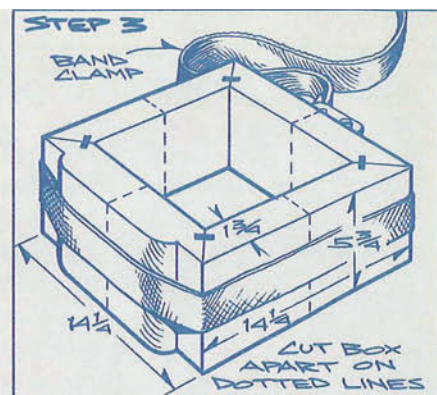
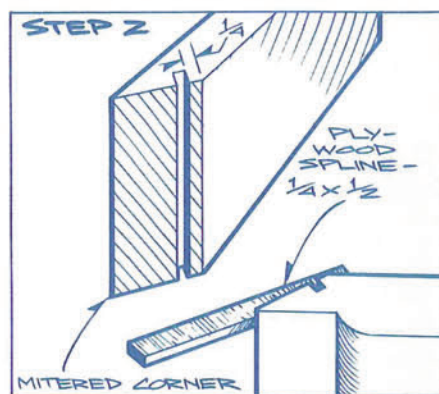
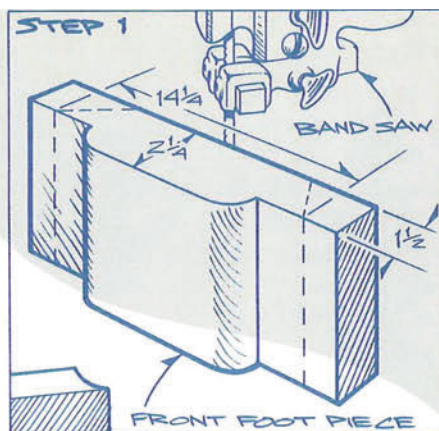
Now, mold the edges of the top and bottom. The bottom is molded with a large classical bit,

For the top, use a $\frac{1}{2}$ in. radius cove bit, followed by a $\frac{1}{4}$ in. radius roundover (or, if you have an ogee bit, it will produce the same profile), then gently break the bottom edge by hand with some sandpaper. The combination of the cove and roundover bits (or the ogee profile) won't quite match the table edge molding shown in the photo, but that molded edge was accomplished with a custom-ground cutter.

Note: When cutting the molding on the front profile of the bottom, the router bit will leave a radius on the inside corners. You'll need to shape these sections (see exploded view) by hand, using carving gouges (if you have them) or sharp knives and chisels. Then sand to fair in your hand shaping with the router bit molded edge.

Case Assembly

You can now assemble the case. Since long sliding dovetails can be a nightmare come assembly time, follow these rules. First, the sliding dovetail should fit easily into its groove—too tight, and when glue is applied the wood will swell, making assembly impossible. Second, when the time comes for the actual assembly, follow the procedure detailed in our Gluing Detail, and apply glue only to the front half of the dovetail grooves in the top and bottom, and to the



TINTED AREA IS FULL-SIZE FOOT PATTERN (for inside corner)

back half of the corresponding dovetails on the sides. This way, you'll be able to slide the dovetails halfway together before encountering any resistance from the glue. Also, apply glue to the ends of the rails, and slide them into their corresponding dovetail grooves.

Once your case is assembled, temporarily tack the back in place—it will help to square up the assembly while the glue dries. When dry, remove the back and glue and screw the runners in place. Use glue only where the runners meet the rails—countersunk screws hold the runners to the case sides. As shown in the side elevation, the length of the runners allows a little space between their ends and the back. This space accommodates any movement in the case as the wood responds to seasonal changes.

The Feet

Cut three pieces of $1\frac{3}{4}$ in. thick by $5\frac{3}{4}$ in. wide stock, mitering the ends to establish a final $14\frac{1}{4}$ in. length. Then take a $5\frac{3}{4}$ in. wide section of $2\frac{1}{4}$ in. thick material, transfer and cut the front profile with the band saw, and miter the ends to get the $14\frac{1}{4}$ in. length (Step 1).

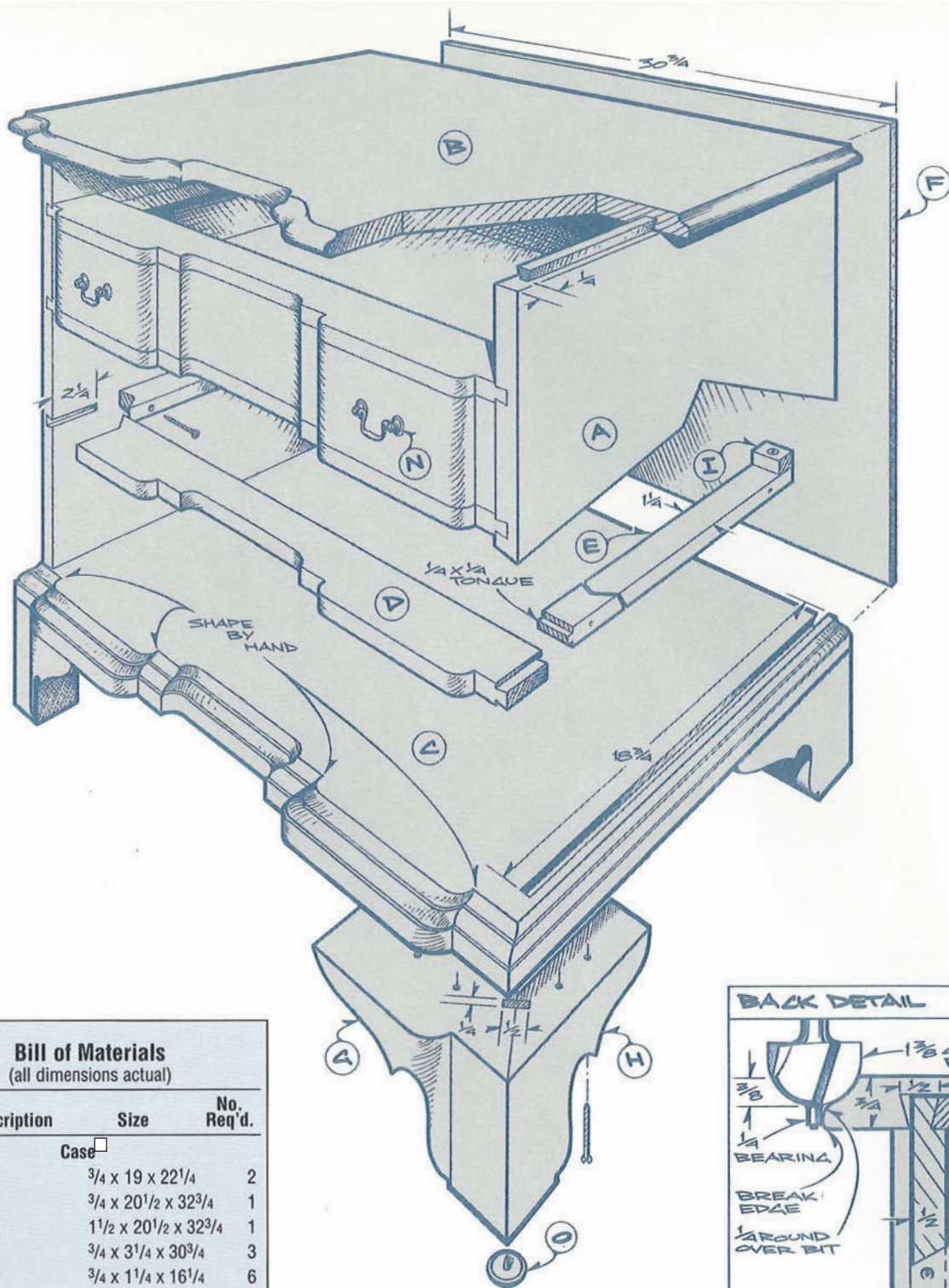
Next, as shown in Step 2, cut a $\frac{1}{4}$ in. wide by $\frac{1}{4}$ in. deep spline groove in the mitered ends of all four pieces. Cut four $\frac{1}{4}$ in. by $\frac{1}{2}$ in. plywood splines, then

apply glue and use a band clamp to assemble the four pieces (Step 3).

When dry, cut the assembly apart, exactly down the middle of each side. Now, make a cardboard template using the full-size pattern above, and use that template to trace the profile of the feet. Note that the template is butted up to the inside corner of each foot. Make the profile cut as shown in Step 4, with a $\frac{3}{4}$ in. thick shim fixed with double-stick tape as a leveler under the corner of the foot. You can make most of the cut with the band saw, but you'll need the coping saw to make that part of the cut that's tight to the inside corner. Once all the feet are cut, sand carefully to eliminate any saw marks. When satisfied with your work, counterbore for screws and mount the feet to the bottom.

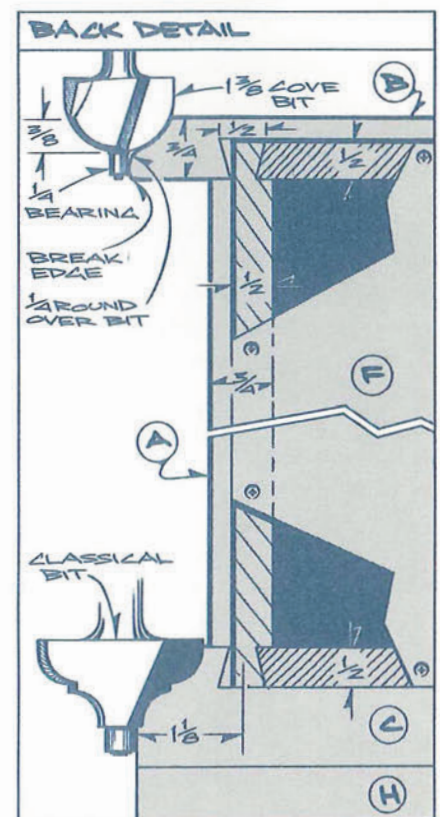
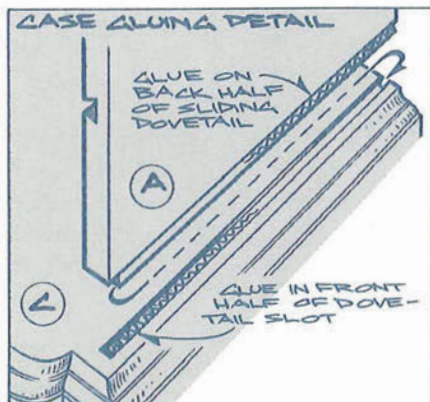
The Drawers

The four drawers are almost identical—but each of the three lower drawers is

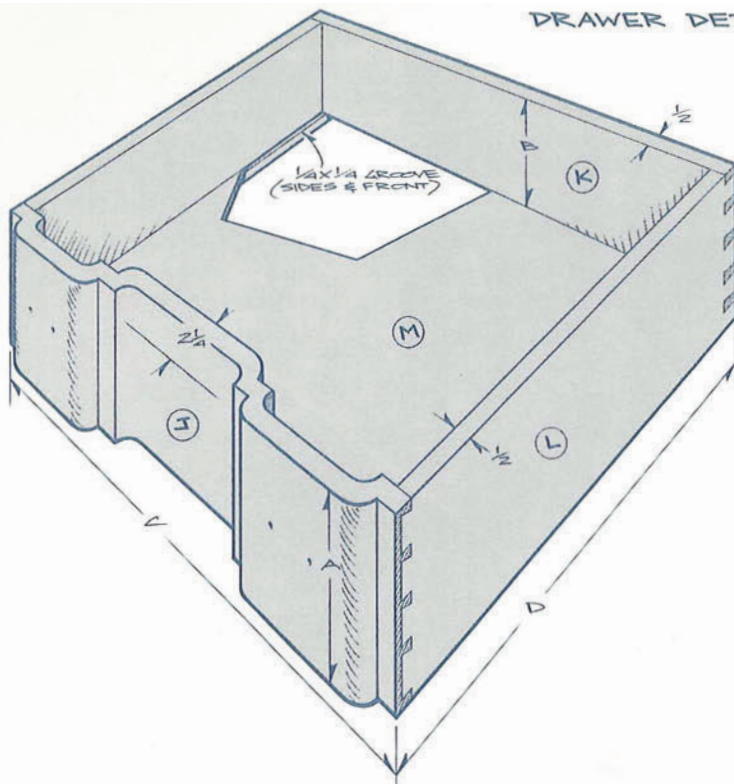


Bill of Materials
(all dimensions actual)

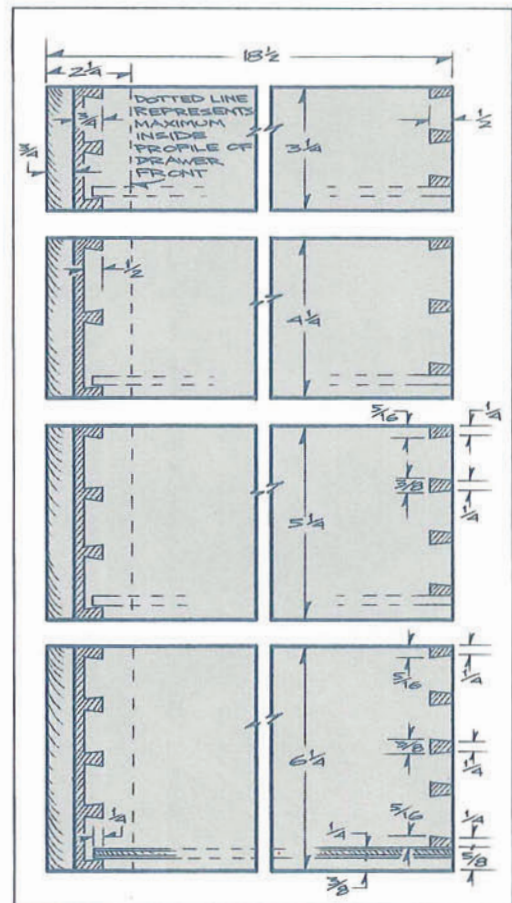
Part	Description	Size	No. Req'd.
Case			
A	Side	3/4 x 19 x 22 1/4	2
B	Top	3/4 x 20 1/2 x 32 3/4	1
C	Bottom	1 1/2 x 20 1/2 x 32 3/4	1
D	Rail	3/4 x 3 1/4 x 30 3/4	3
E	Runner	3/4 x 1 1/4 x 16 1/4	6
F	Back	1/4 x 22 1/4 x 30 3/4	1
G	Front Foot	2 1/2 x 5 3/4 x 7	2
H	Side/Back Foot	1 3/4 x 5 3/4 x 7	6
I	Drawer Stop	3/4 x 3/4 x 1 1/4	8
Drawers			
(no. required per drawer)			
J	Front	2 1/4 thick (see chart)	1
K	Back	1/2 thick (see chart)	1
L	Side	1/2 thick (see chart)	2
M	Bottom	1/4 thick (see chart)	1
N	Brass Bail Pull	2 1/2 in. bore	8
O	Nylon Glide	1 in. dia.	4



DRAWER DETAIL



Drawer Chart					
Drawer	A	B	C	D	Size of Plywood Bottom
No. 1	3 ¹ / ₄	2 ⁵ / ₈	29 ³ / ₄	17 ³ / ₄	1/4 x 17 ¹ / ₄ x 29 ¹ / ₄
No. 2	4 ¹ / ₄	3 ⁵ / ₈	29 ³ / ₄	17 ³ / ₄	1/4 x 17 ¹ / ₄ x 29 ¹ / ₄
No. 3	5 ¹ / ₄	4 ⁵ / ₈	29 ³ / ₄	17 ³ / ₄	1/4 x 17 ¹ / ₄ x 29 ¹ / ₄
No. 4	6 ¹ / ₄	5 ⁵ / ₈	29 ³ / ₄	17 ³ / ₄	1/4 x 17 ¹ / ₄ x 29 ¹ / ₄



exactly 1 in. deeper than the drawer immediately above. Start by cutting stock for the sides, backs and fronts. The operative drawer dimensions are included in the Drawer Chart above.

Next, cut the profile on the drawer fronts. Use the same template that you made for the rails to trace the drawer front shape. But, first, transfer the inside profile of the drawer front to your template, and cut it out (remember, the drawer fronts are shaped on both faces).

There are any number of ways to shape the drawer fronts. But the simplest is just to cut them out carefully with the band saw. You can make a series of cuts up to the profile with the table saw and miter gauge, which will allow waste pieces to fall away as you cut with the band saw. Once the drawer fronts are cut, sand carefully to remove saw marks.

Now lay out and cut the dovetails. The Drawer Detail suggests dovetail layouts for the various drawers, but you can use whatever layout you prefer. Cut the 1/4 in. by 1/4 in. groove in the drawer sides and front for the 1/4 in. plywood bot-

tom. You'll need to use a ball-bearing guided rabbeting bit to establish the drawer bottom groove in the drawer fronts. Correspondingly, the front edge of the drawer bottoms must be cut out to match the drawer front inside profile. Note that the drawer backs are sized 5/8 in. narrower than the sides and front, which enables the bottoms to be slid into place, and then anchored with a few screws inserted up into the bottom edge of the back. Once all the dovetails are cut, test assemble the drawers and try them in their respective openings.

If everything fits well, glue and assemble the drawers. Check to be sure that each is square, then add the stops.

The Finish

The chest shown sports a lacquer finish, but a hand-rubbed oil finish is another option. In any event, sand thoroughly before applying a finish—this isn't the time for shortcuts.

The Hardware

There's nothing quite so disconcerting

on a fine piece as poor quality brasses. The brasses (N)

are a top-of-the-line reproduction of authentic period brasses, and are just the thing to put the finishing touch on your chest. Lastly, add the nylon glides (O),

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Internet Production Coordinator