Variations in 18th-Century Casework

Some 'old masters' built better than others

by Wallace B. Gusler

Some people, in their reverence for the "old masters," believe the 18th-century furniture makers knew all and could do no wrong. Others claim that traditional excellence is a myth. The truth is that furniture construction in the 18th century varied almost as much as style—both construction techniques and style can be spread on a spectrum ranging from London high-style to English and American urban and provincial, to rural, and to non-professional folk art. The style and construction of a particular piece of furniture was affected by the economic and commercial conditions prevailing at the time and place it was made, as well as by the professional and ethnic background of the maker. Patronage was extremely important—provincial furniture was supported by provincial patrons, who were either ignorant of more sophisticated production, or else unable or unwilling to pay what it would have cost. Generalized statements praising or criticizing 18th-century furniture construction do not consider the varieties of context, and are not very useful.

In the English-speaking portion of the 18th-century world, London was the center for both stylistic and technological developments in cabinetmaking as in most other fields. Though Continental developments did shape London cabinetwork, in considering American furniture, it is London's leading role that is most important. Proclaiming American furniture superior to English examples, as patriotic curators, dealers and students have done, represents an inversion of values. The most highly developed construction in chairs and case furniture known from Colonial America was produced in Williamsburg, Va. —not because of any American technological developments, but because cabinetmakers there followed the highest levels of London style and technology. And what fostered this extraordinary production was the advanced economic, political and social status of Colonial Virginia. Wealthy patrons there were attuned to London's cultural life and demanded the latest London styles and technology.

Casepieces attributed to the shop of Peter Scott (1694-1775) of Williamsburg are of outstanding construction, and possess features not found in pieces from other

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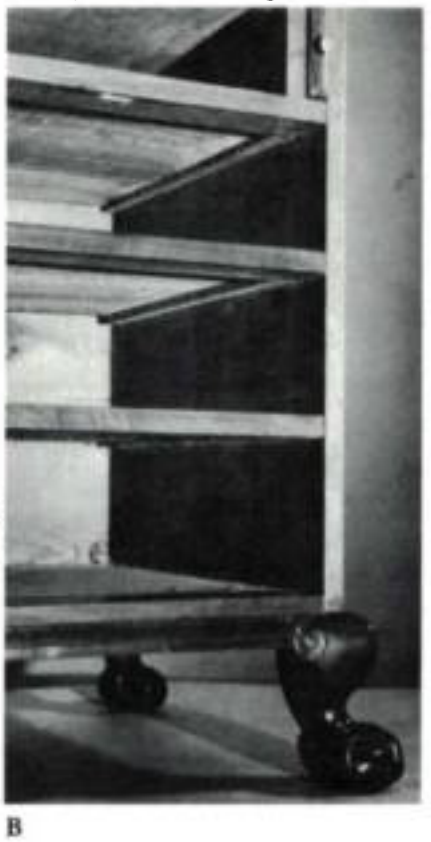

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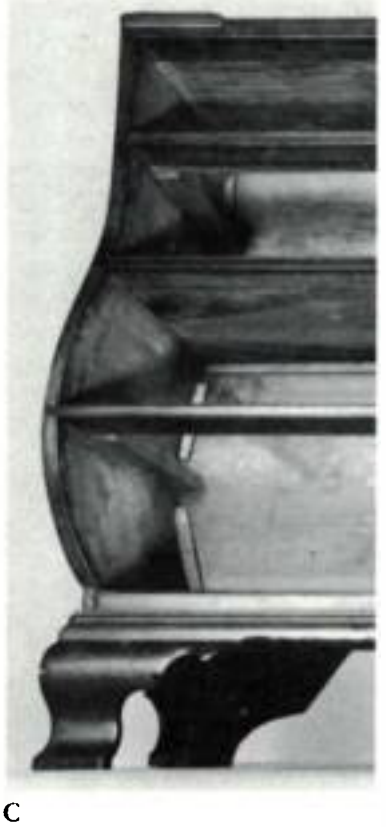


C

A: *Desk-and-bookcase, attributed to the Peter Scott shop in Williamsburg, Va., circa 1760. Walnut, poplar, yellow pine and beech; 90¾ in. by 44½ in. by 23½ in.* B: *Carcase construction of the Scott desk-and-bookcase is modeled after English techniques, using full, thin dustboards with kicker strips below.* C: *Lower portion of a Boston chest on chest, circa 1760, has drawer runners nailed directly to sides and one full dustboard. A crack is visible at the bottom of the carcase side, and the dovetail of the middle drawer blade has been forced out from the carcase edge; both defects are the result of troublesome crossgrain construction.*

Photos: Delmore A. Wenzel, The Colonial Williamsburg Foundation

American cabinetmaking centers. Examining the case furniture of this shop and comparing it with English developments and with other American production reveals things useful to contemporary and reproduction cabinetmakers alike.

The main case construction of Scott's desk-and-bookcase, shown in photo *A,* is of the board and dovetail type. Dovetail case construction was introduced into England from the Continent in the second half of the 17th century. Early examples with dustboards have "full bottoms," i.e., dustboards as thick as the drawer blades that continue to the back of the case. (The English cabinetmaker's term "drawer blade" may be unfamiliar, but it avoids the ambiguity of the term "divider," which is also used for partitions *within* a drawer, and of the term "rail," which is used for just about any narrow piece of wood that happens to be horizontal.)

The English (apparently in the George I period, 1714-1727) developed a dustboard thinner than the drawer blade, which makes the case lighter in weight, and this is the type Scott used here (photo *B*). The drawer blades are about 3 in. wide and ⅞ in. thick and made of solid walnut. They are dovetailed into the carcase sides and the joints covered at the front by a glued strip 3/16 in. thick. (Leaving the dovetail joints exposed, as in some Boston casepieces and in much rural American and English furniture, is a provincial detail not in line with the finished approach of London furniture.) Rabbeted into the back of the drawer blades are ½-in. thick dustboards that extend all the way to the back of the case. The sides of the case have dadoes cut the full thickness of the drawer blades to receive these dustboards. Narrow strips of wood inserted below the dustboard keep the dustboard at the top of the dado. These strips, which are sometimes called kickers, have two other functions: They keep the drawer beneath from tipping down when it is opened, and they also provide solid support under the dustboard where the drawer above runs.

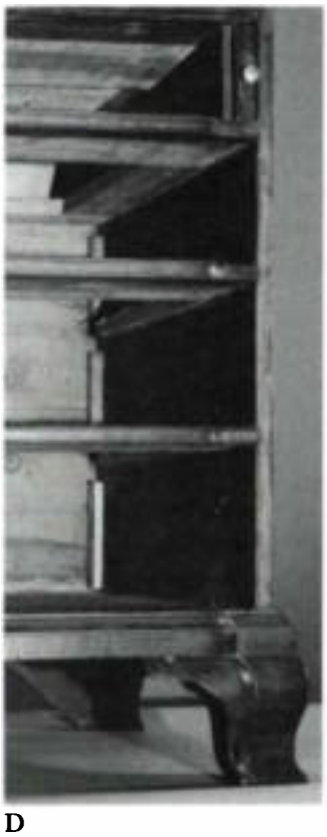
This dustboard construction avoids several problems seen in cheaper constructions of the period. Because the grain of the dustboards runs in the same direction as the grain of the top, bottom and sides of the case, they can expand and contract compatibly as they respond to humidity changes. Full dustboards also hold the case square, preventing the sides from cupping or twisting out of plane. The kickers that wedge the dustboards in the dado are slightly shorter than the depth of the case, leaving a gap between their ends and the backboards. This prevents them from pushing out the backboards or drawer blades when the sides of the case shrink. These strips are not nailed but are glued only on the end that butts against the drawer blade. This allows the sides to expand and contract without restriction.

The cheaper alternatives to this full-dustboard construction are of two general types. The one seen most often is simply a drawer blade dovetailed into the carcase side, the joint left uncovered (photo *C*). The drawer support is inserted into the dadoed sides and nailed, or is nailed to the plain sides of the case. This solution is obviously simpler, faster and cheaper than dustboard construction but it has serious drawbacks. The grain of these nailed-in drawer supports runs across the grain of the case sides; thus the supports become battens impeding the movement of the sides. The nails further complicate the situation, causing compression shrinkage between them. Split sides often result, and sometimes split tops and bottoms as well. These drawer supports can also force the drawer blades out of their housings and push the backboards from their rabbets. Additionally, cases built this way lack the stability that full dustboards provide. In the Boston bombe example (photo *C*), the single full dustboard in the center of the case shows that the maker understood the problem and its proper solution. His compromise was probably a result of economic necessity.

The other major type of construction used instead of dustboards consists of a joined frame. The front of the frame is the drawer blade, the back element fits against the backboards, and the two side elements form the drawer supports. These two sides are usually mortised into the front and back elements of the frame; therefore, although dadoed into the carcase sides, they need not be glued or nailed there. The top drawer cavity on the Massachusetts desk (photo *D*) is constructed this way. Frames do not usually split the case sides, but can push the drawer blades out of their housings, or push the backboards off, when the sides of the case shrink. This frame method was very popular in the back country of Pennsylvania, Maryland, Virgina and North Carolina, and perhaps it derives from a Germanic approach. Unlike the Massachusetts example shown here, examples from these areas usually have frames at every drawer blade.

Typical of Philadelphia, the thin dustboard in a high chest of drawers (photo *E*) appears to be the product of a loss or misunderstanding of the London construction seen in the Scott case. Instead of the dado being cut the full thickness of the drawer blade, it is thin, receiving the thin dustboard snugly and omitting the kicker. This construction was usual in Colo-

D: *Massachusetts slant-top desk, circa 1770, has a full frame, but no dustboard behind the drawer blade of the top-drawer cavity. Usually the side member of this frame is not glued to the sides; often it forces the drawer blade or the back boards out as the case side shrinks.*
E: *Philadelphia high chest, made by Henry Cliffton in 1753, has a thin dustboard, but no kicker to keep the drawer from tipping down when opened. (The two square glue blocks on the side of the chest are a recent repair.)*



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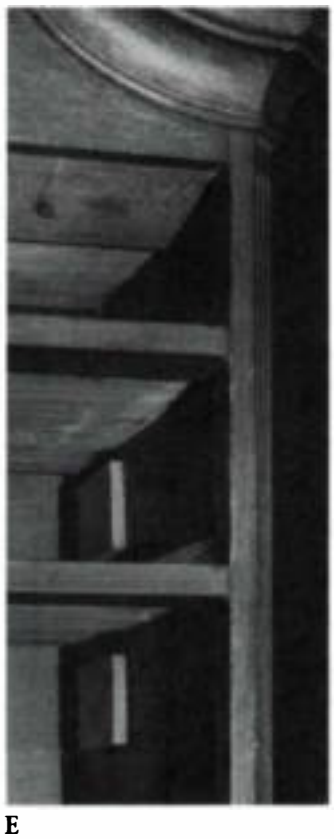


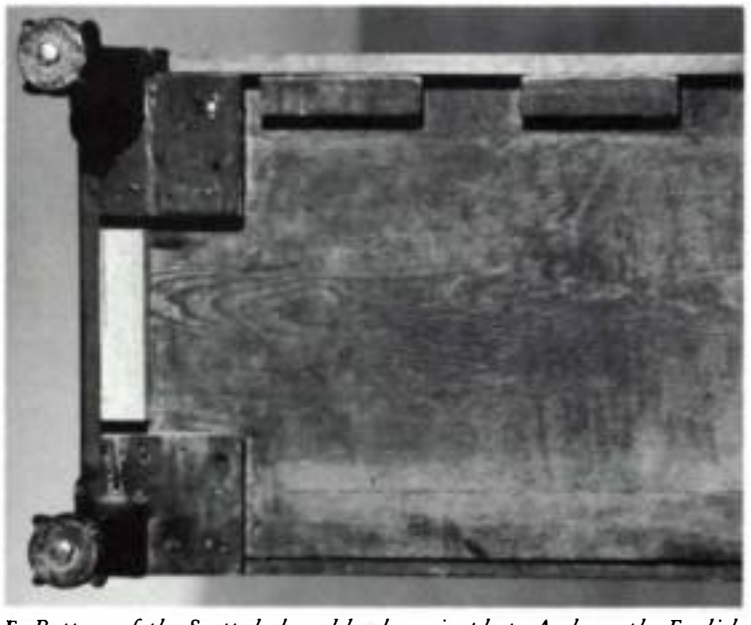
E

nial Philadelphia and to some extent in other areas. During the Federal period it became common in American production.

The range of construction techniques in 18th-century furniture can also be seen in carcase base-moldings and bracket feet. Scott of Williamsburg followed advanced London practice. He glued base moldings to a series of secondary wood blocks, which were in turn glued to the bottom of the case (photo *F*). The base molding is not attached directly to the carcase, but overlaps it by 1/16 in. to 1/8 in.—just enough to prevent a visible gap. This arrangement allows the case to expand and contract without great stress developing between the sides and the molding. The gaps between the blocks add some flexibility, and since the blocks are smaller than the sides and bottom and made of a weaker secondary wood (pine or poplar, usually), they give way first.

Scott's base construction is rarely found in other areas of Colonial America. The most common systems are of two types, both of which present shrinkage problems. In one system, the base molding is glued and nailed directly to the sides of the carcase. In the other a wide frame is glued and nailed to the case bottom, the nails often driven through and clenched. These batten frames are sometimes made entirely of primary wood whose edge is molded, but more commonly the primary-wood molding is nailed and glued to a frame of secondary wood. Both of these systems restrict the movement of the crossgrain sides, causing them to crack.

Bracket-foot construction in Scott's shop has two sophisticated features unknown in cabinetwork from other American cities. Both features can be found in production from major London establishments. The ogee bracket feet are formed from two-ply laminated boards, the outer portion of primary wood (walnut or mahogany) and the inner of yellow pine. This two-ply composition provides two grain patterns at the weakest point, where the ogee curve swings inward, therefore



F: *Bottom of the Scott desk-and-bookcase in photo A shows the English method of applying molding to segmented glue blocks instead of directly to the carcase side and front. This system allows the carcase sides and bottom to expand and contract without cracking.*

G: *Typical bracket-foot construction, as in this view of the Massachusetts slant-top desk, (also shown in photo D) employs a corner glue block with the grain running perpendicular to the grain of the bracket members. Cracked bracket feet are common. Note that the base-molding glue blocks run all the way into the corner, unlike the glue-block construction shown in photo F.*

H: *Bracket foot of a Scott bookcase, above, and of a London-made china cabinet, right, both show composite glue-blocking and laminated bracket members: primary wood on the outside and secondary on the inside. These two features, unknown in combination in American shops other than Scott's, have ensured exceptionally good survival of his bracket feet.*

helping to prevent fracturing at this critical location. Additionally, the softer secondary ply provides a resilient core that enables the foot to withstand greater shocks without breaking than if it were constructed entirely of hardwood.

The essential strength of the 18th-century bracket foot is the glue-blocking inside its corner. In the better pieces, the weight of the case is on these glue blocks and not on the brackets. The blocks are directly below the corners of the case, while the brackets are directly below the base molding. In pieces where the weight is taken by the brackets, the base molding is often broken loose, allowing the case corner to slide downward. The typical glue-blocking in bracket feet is made up of a square, vertical piece glued into the corner formed by the two brackets (photo *G*). The grain is perpendicular to the horizontal grain of the brackets. Excessive or sudden changes in relative humidity can cause the brackets to shrink, often breaking the glue joint since the block does not shrink in like amount. In some cases the glue-block joint holds and the brackets split at their weak point where the ogee swings inward. After splitting, each segment shrinks unto itself, leaving a gap at the fracture point.

Another defect of this construction shows up when the case is moved. If slid along the floor, the foot glue block is liable to catch on an uneven area and snap off.

By the mid-18th century, a composite glue-blocking technique that solved these problems had evolved in some London shops. Composite glue-blocking consists of several layers of secondary wood blocks stacked one on the other to build up a vertical foot block. All the grain in the glue blocking runs horizontally, parallel to the grain of the bracket itself. In addition, the blocks are stacked crossgrain, which alternates the grain orientation at the joint between glue-block and bracket-foot member to provide long-grain gluing surfaces to each side of the bracket. The layers are also face-glued together, producing an extremely strong foot (photo *H*). Scott's pieces combine this feature of foot construction with the laminated bracket, and his is the only American shop known to do so. Several other Williamsburg shops used composite-blocked feet, as did some in Norfolk, Va., and Annapolis, Md., but to my knowledge, this construction does not make a single appearance in the furniture of Boston, Newport, New York, Philadelphia or Charleston.

In summary, if it is to 18th-century American furniture that the craftsman and designer look for instruction, it is wise to realize that there were various construction methods as well as levels of sophistication. All American production is an offshoot of the English techniques that were most highly developed in London. The transition to America involved some loss or distortion of the original systems. Cabinet shops producing furniture closest to London in style and construction centered in Williamsburg. According to the degree of sophistication in typical case constructions, the other centers range, from high-style to provincial, as follows: Charleston, Philadelphia, New York, Newport, and Boston/Salem. Other cities should be in this list, but their production has been too little studied to reach definitive conclusions. □

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Post-and-Panel Chests

A 19th-century design

by Jim Richey

Experts on antique furniture usually advise, "Buy it and leave it alone." They didn't see the 140-year-old chest of drawers we brought home. Once sturdy and clear-finished, it was wobbly and covered with ugly paint. A previous owner had cured its loosened joints by driving nails through the cheeks of the mortises. Proper restoration had to start with complete disassembly.

While rebuilding, I realized that the post-and-panel construction of this unadorned country antique is really quite sophisticated and deserves to be better known. It is strong and handsome, and not likely to crack apart over the years. Hundreds of these chests survive: They were made throughout the Ohio River Valley states, of local hardwoods by village cabinetmakers who cared more for function than for fashion.

The post-and-panel chest is designed to cope with seasonal humidity changes and long-term panel shrinkage without damage. All the critical dimensions of the chest are determined by long-grain members—posts and rails. Built like a post-and-beam barn, the chest is strong enough to handle the strains of cross-country moving. Yet, there are disadvantages. The joinery is difficult, the material list calls for more and thicker wood than slab-sided construction and the finished chest seems to weigh a ton.

The old chest shown on the next page is 44 in. high, 44½ in. wide and 20½ in. deep. The top, front and sides are solid cherry. The back, drawer sides and drawer bottoms are poplar. The side panels are 16 in. wide, cut from a single board. Nowadays, unless you have access to unusually wide, clear stock, you would have to glue up two boards for the side panels. It is also perfectly acceptable to construct two (or more) panels per side with a stile between that's mortised into the top and bottom rails. Authentic 1830 panels are flat on the outside, beveled on the inside. The bevels can be turned to the outside for an attractive, if not authentic, effect. As with all frame-and-panel construction, the panel is left unglued in its groove, free to move as humidity changes.

If you decide to adapt the post-and-panel design to a chest project, carefully cut and dry-fit all the joints first. The mortise-and-tenon joints where rail meets post are crucial to a strong chest. Single tenons on the ends of the rails will work, but divided tenons mated with divided mortises are stronger and not much harder to make. Drawbore and peg the mortise-and-tenon joints, if desired, to gain extra strength and to reduce the number of clamps needed for assembly. Don't substitute one horizontal tenon for the two vertical tenons shown in the sketch at the ends of the drawer dividers; a horizontal tenon here won't hold, and it will weaken the posts.

Don't try to glue up the carcase all at once. First glue up the more complex side assemblies. The drawer-guide supports (with the drawer guides yet to be screwed on) need not be glued in; the post-and-rail frame will hold them in. With the side assemblies done, you can glue up the back or leave it