

THE DESIGN OF THE CARVING TABLE

The purpose of the carving table is to support the workpiece in a way that allows the maximum degree of both: (a) stability while working; and (b) accessibility to the workpiece. To meet these criteria, the ideal table would have to be massive, sturdy and yet small and light enough to be easily maneuvered for working on all sides of the carving.

To combine these apparently divergent qualities there has to be compromise somewhere along the way. The design of the carving table must take into account the environment of the carver, including the methods of working and the usual size and type of work being done. The carver who works primarily in blocks measuring less than 18" will require a different kind of table than the carver who regularly works in blocks measuring 36" or more.

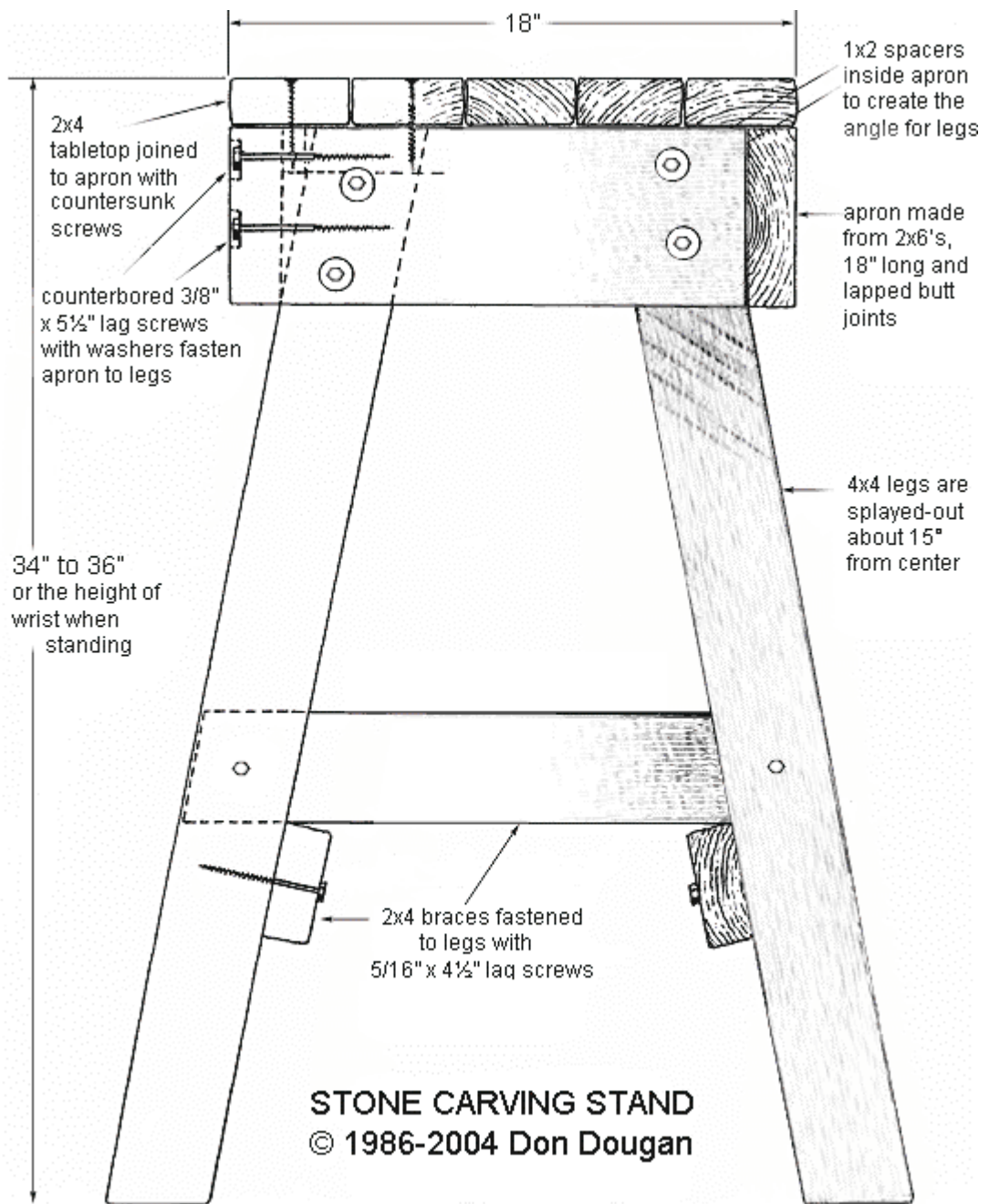
The materials and construction in the accompanying design for a carving table was based with the following primary criteria in mind:

- the table should be able to safely support at least a 1000 lb. stone — *a distinct possibility since the studio is equipped with a 2-ton overhead hoist; and a cube of Georgia marble measuring 21¼ inches to a side weighs a few ounces shy of half-a-ton.*
- the table should be stable if even a small 20-lb. block was being carved.
- the workpiece on the table should be within arm's reach no matter from what side of the table the carver is standing and working.
- the table would probably be subjected to rough treatment by a variety of users for a number of years.
- the table had to be made as inexpensively and quickly as possible using the tools at hand in the school's (well-equipped) woodshop.

The design for the carving tables successfully met all these criteria, and they have been in use in the sculpture studio every quarter since 1986. The strength, stability, and durability of the table is due to the relative stoutness of the legs, apron, and braces; and the strength of the lag bolts. The width and depth of the tabletop were kept to less than arm's length, while the legs were splayed-out to increase stability. The type of wood chosen was rough-sawn yellow pine; which is comparatively heavy, hard, and inexpensive. The compound angles of the legs were quickly and easily cut with the use of a custom-built holding jig to fit the large-diameter radial-arm saws in the woodshop. A pneumatic ratchet wrench was used to rapidly drive the long lag bolts into the pre-drilled holes.

An option that could be used to make the table more workable in small areas might be to fit heavy-duty swivel casters to the legs, which would allow the entire table to be rotated or moved to different locations in the studio. If casters are to be used on the carving stand, they should be casters that lock into position so as to stabilize the table during carving sessions, and for studios which have uneven floors or floors that slope, the use of locking casters is imperative to prevent any possibly hazardous runaway situation.

The braces on the legs are ideal places to put a shelf to hold extra tools while working, storage for extra sandbags, or on which to place another block of stone as ballast to add mass and stability to the carving table. However, if the table is not fitted with casters, it will also make the table much more difficult to move around — unloading and re-loading the ballast blocks every time.



BILL OF MATERIALS

4x4 lumber - for legs
 2x4 lumber - for top
 2x4 lumber - for upper braces
 2x4 lumber - for lower braces
 2x6 lumber - for apron
 1x2 lumber - for spacers
 3/8" x 5 1/2" lag bolts
 3/8" USS flat washers
 5/16" x 4 1/2" lag bolts
 #6 x 2 1/4" flat head screws or 6d common nails
 #10 x 3 1/2" flat head screws or 12d common nails

QUANTITY

4 pieces, 36" long
 5 pieces, 18" long
 2 pieces, 20" long
 2 pieces, 22" long
 4 pieces, 16 1/2" long
 4 pieces, 15" long
 16 each
 16 each
 4 each
 8 each
 18 each

BUILDING THE CARVING TABLE

The steps to construct the carving table as designed:

1. Lay out the wood for the apron in a lapped pattern, and use 2 each of the 3½" wood screws (or 12d nails) to fasten the corners of the 2x6's to each other. Pre-drill pilot holes for each fastener to prevent the close end of the wood from splitting.
2. Arrange the 5 pieces of 2x4 on the top of the apron and fasten them in place. Again, pre-drill pilot holes for each fastener to prevent the close end-grain of the wood from splitting. Make sure the heads of the fasteners are set well-below the table surface so they won't protrude and thus cause damage to workpieces in future.
3. Turn the assembled apron and top upside down. Fit the 1x2-spacer bars inside the apron against the underside of the 2x4's, which form the tabletop and screw or nail in place with the 3½" screws or the 6d nails.
4. Working with the apron upside down, use a scrap piece of 2x4 with a notch cut in each end, and wedge two of the legs into diagonally opposite positions in the apron. When in place, pre-drill the eight pilot holes for the lag bolts through the apron into the legs, stagger-spacing the holes. Drill about a ½" deep counterbored hole to fit the 3/8" USS washers. Using a socket wrench, install the 3/8" bolts and washers. Leave the bolts a bit loose in the hole — they will be tightened later.
5. Repeat the last step using the other two legs, and then turn the table upright. Place table on a flat level floor, tapping the legs into positions in which all four legs are in contact and the table does not wobble. When this is done, all sixteen lag bolts can be alternately turned down tight.
6. Position the braces on the legs, clamping them in place while the pilot holes are drilled for the 5/16" lag bolts, and the lags are screwed in place.
7. At this point you may discover that the table is too high to work at comfortably. To remedy this, decide exactly how much too high it is. Take a scrap block of wood measuring slightly less than the dimension the table is too high, and tape a pencil to the upper surface it, point out and parallel to the floor. With the table in an upright position on the flat floor, place the block of wood on the floor so the pencil point is at the height at which you want to cut off the legs. Slide the block along the floor, scribing the line completely around each leg.
8. Then set the table on its side, using the line on each leg as a guide to cut the bottoms off with a handsaw. This should leave the table as wobble-free as it was before, but at the correct height.

Round over or chamfer the leg bottoms to prevent them from splitting when dragging the table around the studio. Also chamfer the rough corners and sharp edges of the tabletop, apron, and braces to complete the table.

CUSTOMIZING THE TABLE TO FIT YOUR NEEDS

This version of the stand was built using pressure-treated lumber, and has been used and stored outside in the weather for 18 years, and though time and use have given it a definite patina, it remains as usable as the day it was made.

Quite often various temporary set-up jigs are screwed to the top in order to hold specific workpieces in place for different types of operations, but most of the time when carving the work is simply positioned with several sandbags made out of old cut-off blue-jeans pants legs.



Some of the set-up variations I have found useful enough that they are saved in the studio and re-used as required:

- ◆ a removable sandbox top that allows small carvings to be worked more easily when placed in the in loose sand
- ◆ a sturdy table extension made of 2x4's and plywood is screwed onto the tabletop to raise the working surface about 10 inches in order to make the process of carving more comfortable and accessible when working details into smaller-size carvings
- ◆ a piece of ½" steel plate is screwed down across part of the top and overhanging one side, serving as a worktable for the occasional arc-welding job
- ◆ a large lazy-susan type bearing that is screwed down between two pieces of plywood (the top piece cut into a circle, the bottom piece left as a slightly larger square) that can be attached to the tabletop and used to pivot the workpiece for viewing, photo shoots, etc. For working operations there is a pair holes that can be of lined-up in the plywood into which a pin can be inserted to lock the position, and there is also a removable stud in the center of the circular piece of plywood allowing a flat-sawn stone with a matching hole to be centered on the bearing — and thus allowing the bearing and workpiece to pivot during the fashioning of circular disc-forms when using a power sander/grinder.