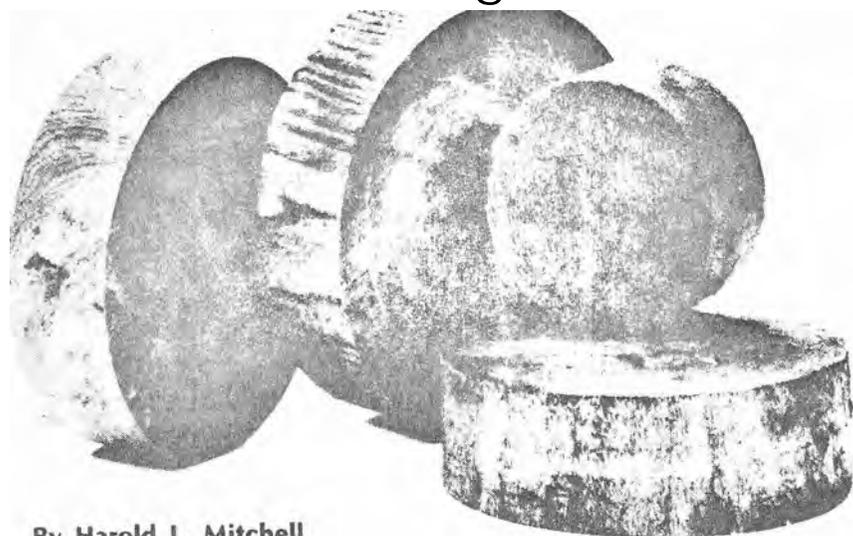


Beat the High Cost of Walnut Turning Blocks



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REMEMBER the good old days when you could buy high-quality walnut suitable for woodshop turning projects without obliterating the department budget?

Well, you still can, thanks to modern wood technology, and here's how.

The next time you order material for turning bowls, vases, round platters, and similar projects, think in

terms of walnut log cross-sections—but with some important differences from the cast-off wood of yesterday.

These particular cross-sections are sawn from green logs, debarked and rounded on a lathe, and—here's the difference—stabilized at high temperature with polyethylene glycol-1000 (PEG) to prevent splitting and checking, and then kiln-dried to 6 percent moisture content. The material is free

of seasoning degrade, and will stay that way.

The round bolts produce beautiful bowls with a distinctive grain pattern—somewhat comparable to rotary-cut veneer—not otherwise attainable.

PEG treatment, followed by thorough drying, is the key to successful use of this material. As most woodshop instructors know from experience, log and limb cross-sections normally check badly and develop typical pie-shaped cracks during the drying process. This is because wood shrinks twice as much in the tangential plane (roughly parallel to the growth rings) as in the radial direction.

The internal stresses that result from such differential shrinkage are tremendous. Invariably they cause serious checks and splits as the wood loses moisture down to equilibrium moisture content (about 6 percent) in the rather arid environment of a heated or air-conditioned woodshop. PEG treatment, which physically bulks the wood fibers, largely prevents shrinkage, and thus prevents the development of destructive stresses.

Economy is Good **BYk g**

For budget-conscious woodshop instructors, the relative economy of the treated material is good news in today's economy, when escalating prices of thick blocks of kiln-dried walnut suitable for turning reflect the diminishing supply of trees, the continued strong demand for this fine hardwood, and the ever-rising costs of logging, sawmilling, kiln-drying, and related processing.

The accompanying table summarizes price data from the catalogs of four suppliers who cater to the school market. Two of them are the only ones I know of who are supplying the PEG-treated material. Data for square blocks are taken from listed prices of two national suppliers and are in line with those of other large suppliers of this more traditional type of material.

Note that in all instances the round bolts cost less than comparable square blocks, the price advantage ranging from 1 to 5 percent in the smaller sizes to 29 percent in some of the larger sizes. All sizes considered, the average savings is 15 percent. Prices shown

Comparison of the Cost of Square Blocks and Round Bolts of Walnut Required to Produce Bowls of Dimensions Shown

Supplier	Type of Material	Diameter			Thickness
		8-in.	10-in.	12-in.	
Nos. 1, 2 No. 3 No. 4	Round bolt	\$3.00	\$4.75	\$5.65	2 in.
	Square block	3.15	4.80	—	
	Square block	3.51	5.15	6.91	
Nos. 1, 2 No. 3 No. 4	Round bolt	4.50	6.75	8.75	3 in.
	Square block	5.50	9.05	12.20	
	Square block	5.09	7.55	10.34	
Nos. 1, 2 No. 3 No. 4	Round bolt	5.75	8.00	11.50	4 in.
	Square block	—	—	—	
	Square block	6.72	9.70	13.67	

Prices quoted by the two suppliers of round bolts were so nearly identical that they were combined and averaged.

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include postage from shipping point to the same parcel post zone. In the smaller sizes, shipping charges may account for nearly one-third of the total cost.

Waste is Expensive

The main reason for the price differential is that with a square block, 12 by 12 by 4 in., 22 percent of the material is wasted in preparing the block for turning. This is needless waste of a valuable natural resource that is in short supply and which costs more than 0.7 cents per cubic inch net scale in the standing tree.

Much better and more complete use of the resource, together with even greater financial savings, is possible if you are in a walnut-producing area. Commercial loggers of walnut timber normally leave in the woods to rot relatively large volumes of usable material in the form of unwanted limbs and odd-shaped bolts that are too short or too small in diameter for efficient processing. Sawmills also

generate quite a bit of residue potentially usable for woodshop projects. Usually this waste can be had for the asking. State foresters or county agricultural agents can often direct you to active logging and sawmilling operations in rural areas.

The large walnut planter and the vases shown in the photograph were made from this class of round "waste" material. Because of their height (10 in.), it was not feasible to process them like smaller bowls; that is, from pretreated dry bolts. The reason is that the practical effective depth of PEG diffusion into walnut end grain is about 2 in. This limits the thickness of prestabilized walnut turning bolts to approximately 4 in.

So a slightly different technique was used in processing the planter and vase. Cylindrical holes 8 in. deep and 6 in. in diameter for the planter (3 in. d for the vase) were first drilled into rounded green bolts of suitable length and diameter. The partially hollowed-

out bolts were then placed on a lathe and shaped to the desired exterior configuration. They were next soaked for an appropriate period in a 50 percent solution of PEG-1000, dried, sanded, finished with a Danish oil especially formulated for use on treated wood, waxed, and polished. They are just as free of seasoning degrade (checks, splits, etc.) as are bowls made from prestabilized bolts up to 4 in. in thickness.

(Editor's Note: Suppliers of the PEG treated round bolts referred to by the author are Crane Creek Company, Box 5553, Madison WI 53705, and Mississippi Valley Woodcraft, Holmen, WI 54636.)



Bowls turned from dry, stabilized cross sections up to 4-in. thick.

Planter and vases made from green bolts, 12 in. long. Note distinctive grain patterns, knot swirls.