

The Journey from *Penturning to Penmaking*

by Kurt Hertzog

Improving Throughput, Uniformity, and Quality

If you are like me, my time in the shop is far too short, which makes my time there very precious. When I do manage to get some shop time, I do my best to maximize both enjoyment and throughput (production). Depending on your reason for being in the shop (relaxation, experimentation, production, or whatever), your needs and outlook will be a bit different from mine or could even change from day to day. In this issue, we'll cover some shop aids, tips, and tricks that may help you produce more pens—if that is your goal—with the by-product of more uniformity. Even if it is just fun that you are after, some of these things might “automate” the more mundane tasks and give you time to enjoy and experiment with the fun things. This column has more images than I usually use: I think pictures often convey the ideas far more than words, especially when it is a *concept* rather than a *fact* being conveyed.

GENERAL-PURPOSE SHOP AIDS

Being space-challenged, I need to use every cubic inch of my shop. Yes, I have a shop—I'm a woodturner, but if I ever become an “artist,” I may change it to a “studio.” Regardless, the space overhead has become invaluable for storing materials, jigs and fixtures, measuring devices, diamond hones, and more. The overhead area is not only necessary as storage space, but I also use it as a workplace efficiency tool. Whenever there are sales at the discount hardware stores, I buy a quantity of the tape measures, 6" scales, scratch awls, and welder's magnets. The magnets go on everything that has exposed metal that can be used to hold items for quick access and repeated use. If you have a magnet (or two) on every machine, you can hold drill bits, 6" scales, awls, tin cans filled with pencils, or anything else you'd like to have handy. If you have magnets with these items scattered around the shop, you'll never be more than a step away from the most commonly needed items. My floor joists are filled with nails positioned over the equipment to hold tape measures, diamond hones, bowl depth gauges, masking tape, and anything else that I repeatedly use at that location. If I ever need to walk more than two steps for an item, I get another one (or more) of those same

important items and locate them above the needed location! Marking the sizes on things or the purpose of them makes quick identification with less potential for error. Even using a magic marker to error proof the sequence or orient multiple-piece tools can speed the process and improve quality.

RUNNING PRODUCTION MENTALITY

There is much to be said for a production mentality for the more tedious tasks, even if you produce your pens one at a time. You can look at these as both time-savers and money savers. Regardless of the price of the material, set up your bandsaw to cut blanks and get ahead of the game. Don't drill them until you are ready to glue in the tubes, but you can have an ample supply cut from larger stock ready for processing as needed. I buy my tubes in bulk. Whether using small cut-to-length brass tubes or longer lengths, I can now be running blanks, drilling, gluing, facing, and prepping in batches. I don't need to fool around with kit bags until I'm in assembly mode. Having blanks prepped, stored, and ready for final finishing lets you amortize the setup time. You are also ready at a moment's notice to create a pen.

MAXIMIZING SETUPS

When you take the time to get equipment set up, don't spread that setup time and effort over one or two pieces—that is inefficient. I try to run as large a batch as I can when I have to set up a piece of equipment. That could be anything from my drill press to the bandsaw. Spreading the setup time over a larger quantity of pieces also helps with uniformity, since all pieces processed at that time are using the same adjustments and tooling. Right or wrong, they all should be nearly identical within that batch. Often, the impact of job setting can have a magnified benefit. When I am cutting blanks to length on the bandsaw, setting the stop block to the marker line on the fence helps speed the process, as opposed to just using the line and hand-holding the cut to the line. This improved uniformity in length allows me to set the table on the drill press to just let the drill tip clear the stock when I am drilling. It speeds up the hole drilling, making it less time

consuming to do the drilling and to position the material. "All the same size" lets me clamp multiple parts and quickly move from one to the next in the drilling process. Small time savings? Yes it is, but do enough drillings, coupled with every bit of wasted time eliminated, and it really adds up.

TIME VERSUS MONEY

There are many chances to fool yourself with false economy. Regardless at what rate you value your time, it is usually false economy to continue to put time (read money) into a flawed product. If it is messed up, yet can be easily recovered and yield a quality result, then go ahead. If there is little hope of a quality result, the moment you know it is not going to work, give it up! Your time is probably worth far more than the material lost, so continuing to add value to something likely to be scrapped later is a poor decision. What about the time required for precision? If you have a 1/2" square blank and you agonize over getting perfectly straight drilling so that you can use the 1/2" blank, did you "save" any money using minimal stock? Would it have been more cost effective to use a 3/4" square stock and achieve an adequate drilling in a fraction of the time because of the greater room for error? It depends on the situation, but I find that my time is in short supply, and unless the material is very dear, my time is more valuable than saving a few pennies.

ECONOMIES OF SCALE AND CONVENIENCE

I like a pretty pen blank as well as the next guy. However, when you stop and think about the cost of a blank, you are really paying dearly for the convenience of having it cut and sold to you as a single item. When you calculate the purchased pen blank by its board foot cost, you will be surprised. Cutting your own blanks not only gives total freedom regarding your choices of species, size, and grain orientation, but also can save you a great deal of money. If the blanks are sized at 3/4" by 3/4" by 5", you can get fifty-one blanks out of a board foot of lumber. You can buy some pretty fancy wood at \$100.00 per board foot and still have a cost per blank of under \$2.00 each. Even a super-sized blank of 1" by 1" by 6" only costs \$4.16, using that same \$100.00 per board foot lumber cost. Though buying in small quantities and being able to see the exact grain may be worthwhile for you, I think \$250.00 per board foot (standard 3/4" blank at \$5.00, for example) is a bit high for my convenience. Before I get mail about kerf loss, scrap, inventory costs, etc., I only use the above as an example of convenience costs; however, the example may make you look at a block of beautiful wood in a different way. Now, that stunning piece of burl available to you at \$100.00 or \$200.00 doesn't seem that expensive when you see it as yielding a large quantity of pen blanks that will really cost you \$3.00 each and a bit of bandsawing.

MAKING SHOP NECESSITIES

Not to confuse the concept of making things for the shop with saving money, I offer the following ideas as conveniences, multitasking tools, and maybe money savers from your own perspective. When I try to think of things I use in my shop that I can't easily make, I can't think of many. Will

I save money by turning my own bushings? Perhaps not, but I can make a set of bushings that are exactly the size I want as opposed to accepting whatever size is being sold. They are not only tuned to my dimensional wishes, but I can make them from scrap at 2:00 a.m. on demand when the crisis hits and not wait for my local retailer to open the next day. A set of bushings is less than a four-minute task from scrap material, so you decide if buying them mail order is cost effective. A drilling fixture can be a piece of 2 x 4 with a few minutes processing and a quick clamp. It works as well as the highest-priced fixture you can buy, and the quick clamp can multitask not only as a shop clamp, but also as a drilling fixture and pen assembly tool. When I make my own multistep mandrel out of wood, do I save any money? Maybe not, but I did create a mandrel that fits an assortment of different kit sizes (exactly) that I can use, cut into, glue over, or generally abuse and recreate on demand when it becomes unserviceable. Cost?—a scrap piece of oak cutoff and five minutes at the lathe.

CONCLUSIONS

The ideas pitched in this column are conceptual for the most part: Multiples of commonly used tools conveniently placed at each workstation; saving time by intentionally allowing room for error in cutting or drilling; making things on the fly that fit exactly, since you tuned them by trial and error with the exact piece rather than a measurement; buying a quantity when the "price is right" and having it for future needs; and seeing raw material not as a high price "I can't afford it," but as it really is in a per-piece cost that may be more attractive. The few shop tips here are just the tip of the iceberg. This is all the space we have left in *this* issue, so somewhere in the future, I'll dedicate an entire column to more ideas.



Fig. 1. Welder's magnets stuck on every metal surface allow for storage of supplies, marking and measuring items, and often-needed tools.



Fig. 2. Extra 6" scales, scratch awls, tin cans for pencils, and cutoff saws (yes, a hacksaw blade makes a great cutoff saw) within easy reach save time.

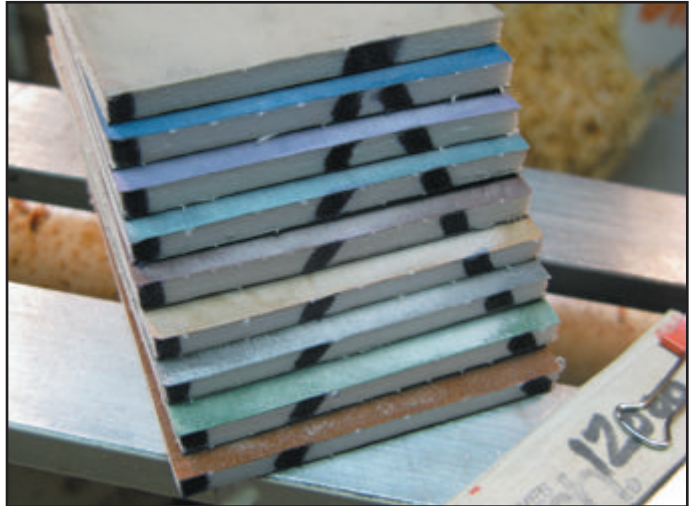


Fig. 5. I mark my micromesh to easily orient it by sequence so that I don't have to memorize color codes.

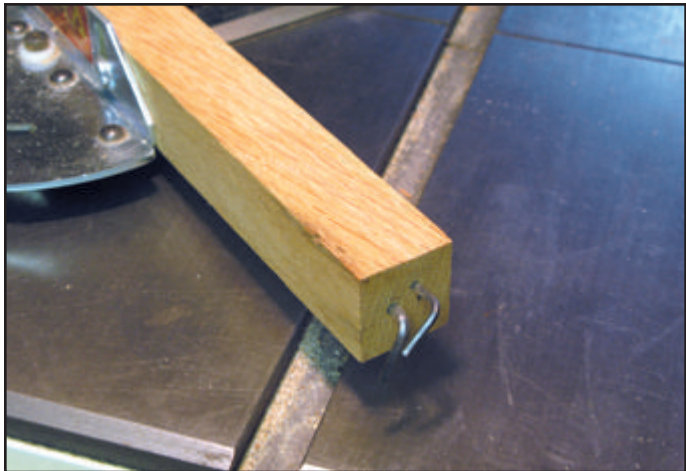


Fig. 3. Having the correct adjusting Allen keys attached to the sacrificial fence makes adjustments easy.



Fig. 6. Highlighting the location of the drill size makes it faster to locate—and even better, mark the kits that it is used for right on the drill.



Fig. 4. If you can afford them, having a set of Optivisors (or equivalent) with the various magnifications and focal length clearly marked and readily accessible saves time.



Fig. 7. If you mark the adjusting screw size on the tool, you don't need to guess whether it is English or metric, and what size it is.



Fig. 8. The proper-sized adjusting tools for my pen mills and a can opener for finishes are located on top of my drill press.



Fig. 11. If you are going to need longer tube stock in the future, why not make some ahead of time to have ready and capitalize on the equipment setups.

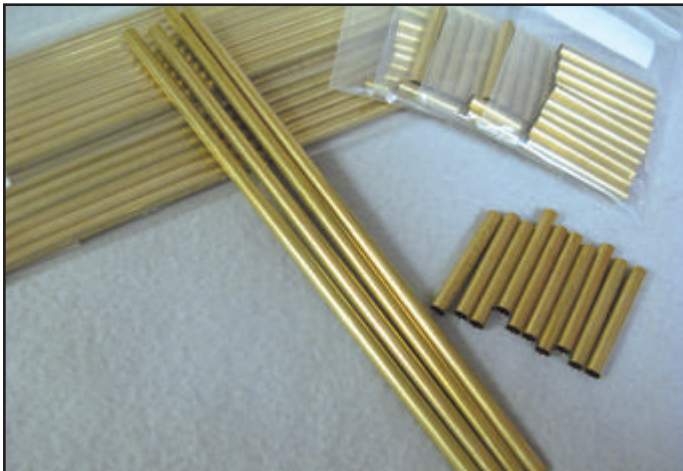


Fig. 9. Buying tubes in bulk lets you work far ahead of your kit purchases, reducing investment and allowing for "production runs," plus long tube stock gives design freedom.



Fig. 12. Practice materials are processed for one of my classes with the drilled blanks to get tubes glued in immediately and extra blanks are cut (to remain undrilled) waiting for future needs.

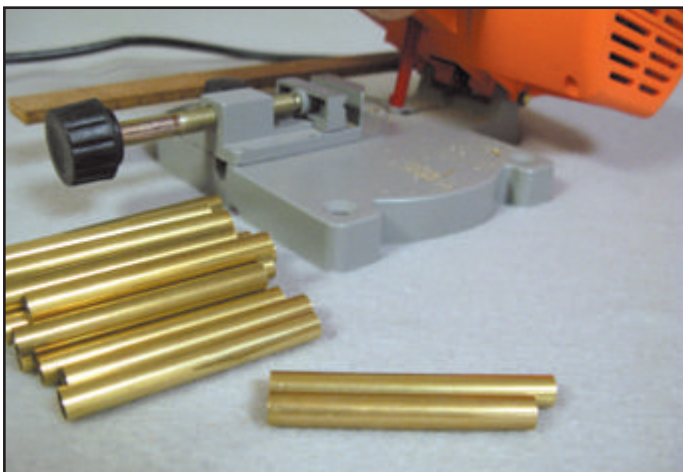


Fig. 10. Here, I'm running a batch of longer tubes for my kits with no centerbands, using an inexpensive mini cutoff saw (notice the length of the stop block that is taped in place).



Fig. 13. Though batch sizes are your choice, doing small lots doesn't take advantage of using the setup time for a larger quantity.

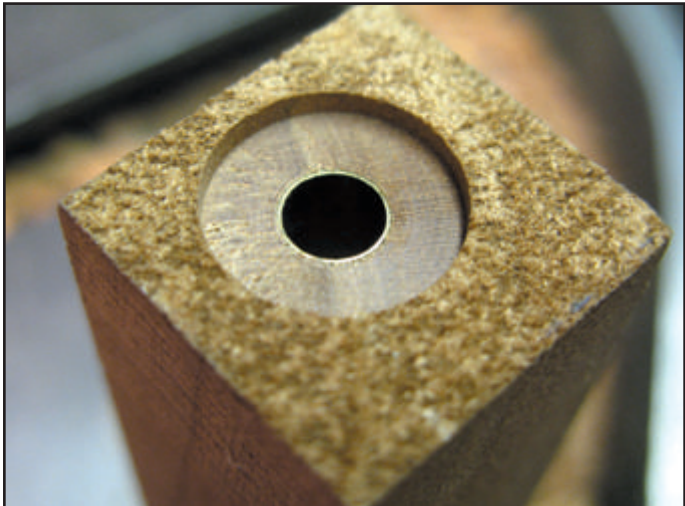


Fig. 14. In an economic trade-off, a sufficient amount of extra material takes away the need for precise hole location.



Fig. 17. Pen blank storage can be problematic, but the easier it is to assess your inventory, the faster you can select materials and get on with the job.



Fig. 15. Key tools for the penmaker include center drills, chamfer tools, and a handheld short pilot barrel trimmer.



Fig. 18. Marking species, date, source, and price on bulk buys helps with not only memory, but also resupply.

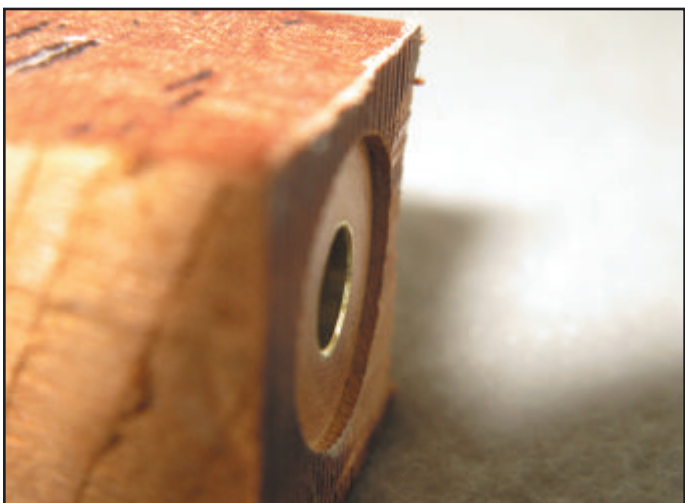


Fig. 16. The chamfer on the edge of the brass tube makes the assembly process quicker and less likely to have problems.



Fig. 19. Don't be afraid to buy and store a quantity of material when the quality and/or the price is right.

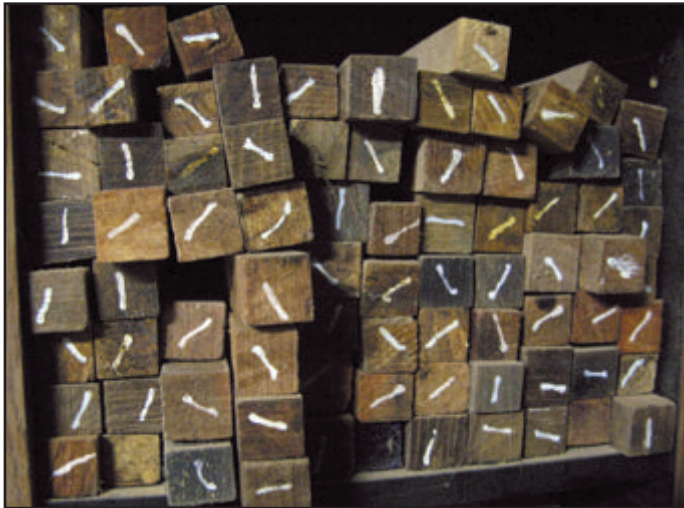


Fig. 20. Having established markings makes quick identification possible, such as this white end mark indicating a stabilized blank in my stock.

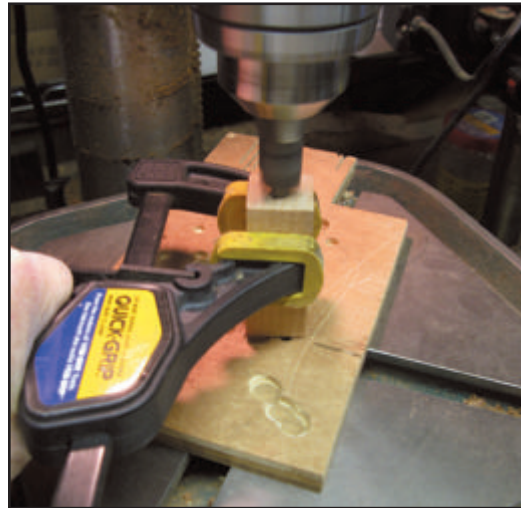


Fig. 23. The multitasking quick clamp is a drilling vise, cutting clamp, assembly tool, and hanging fixture when clamped on a floor joist.



Fig. 21. Miniature stickers for drying green wood pen blanks can be homemade, and the blanks are cut generously sized and then stickered for drying.



Fig. 24. Making things and marking things saves money, gets you going in a pinch, and saves time.

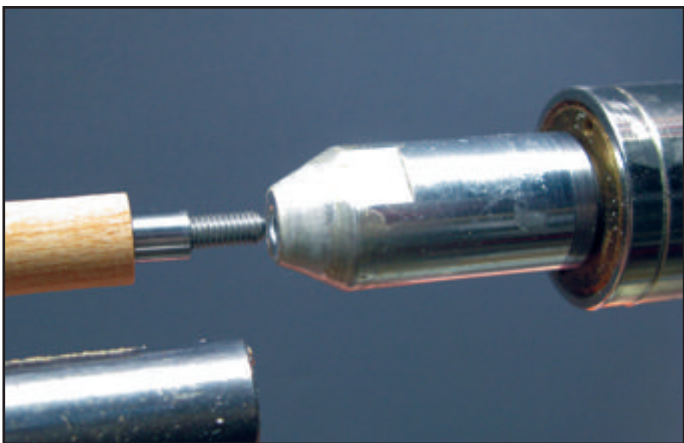


Fig. 22. A mandrel saver, whether purchased or homemade (such as this one), is a must-have tool if you use a two-blank mandrel.



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A professional woodturner, demonstrator, and teacher, Kurt Hertzog enjoys the continuum of woodturning, from making his own turning tools to photographing his finished turnings.

Kurt is a regular feature columnist for *Woodturning Design* magazine, one of the five Council Members of the Pen Makers Guild, and a member of the Board of Directors of the American Association of Woodturners.

Kurt's work has been featured in the American Association of Woodturners "Rounding the Corners" Exhibit, and he has been published in *Woodturning Design*, *American Woodturner*, *Pen World*, and *Stylus* magazines. You can see his work on www.kurthertzog.com.