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Did you ever have one of those classes? You are supposed to be learning how to defend against a knife, but no matter how you try, it still looks like a sawn-off piece of broomstick. Again and again, your training partner manages to poke you in the ribs because you simply can't take the attack seriously.

Many martial arts curriculum involve weapons to one degree or another. Whether it is a specialty, like in eskrima or silat, or only a small part of the overall training, students need to have the right equipment to optimize their training time. Unfortunately, it can be tough finding suitable replacements for actual weapons, for several reasons.

First, they must be durable to withstand constant use without becoming more hazardous than need be – breaking into shards, for instance. Second, it should replicate the actual item as closely as possible so the student is forced to pay attention to the weapon's characteristics – in other words, keeping track of where a knife's edge is. Third, and admittedly the least important, it would be nice if it were aesthetically pleasing too.

There are plenty of options for more realistic training knives. Many businesses supply a variety of them, from small pocket-sized ones, to large Bowie knives, and crafted from wood, plastic, aluminium or steel. The prices vary considerably too.

Instead, why not make your own? The materials aren't expensive, and it is a pleasant hobby to fill in those unfortunate times when there is no class for the evening.

Tools

The following list is, at the very least, a starting point limited only by your tool-buying budget: jig saw, hand saw, rasps, files, belt sander, sand paper, #000 steel wool, burnishing tool, polyurethane, beeswax, heat gun.

Woods

The wood of choice for your training dagger is hickory. It is a strong hardwood, resistant to cracking and denting as evident in its use in axe handles and baseball bats. Depending on your location, finding hickory at your lumberyard might be difficult.

An alternative is oak, which is also strong and tough, as well as having an attractive grain. A plank ¾" thick is usually easy to find, and is well suited for the project.

Design

The easy route is to make a tracing of your favourite knife onto cardboard, make a few modifications to simplify the final product, and then copy the outline onto your wood. This has the added advantage of allowing you to train with something that has more of the characteristics of the knife you would use for self-defense.

For the more artistic, creating a design from scratch is the only way to go. There really isn't a limit as to what you can do, except that the more complicated the design, the more time and patience it will take to complete. The tip of the dagger must be rounded since pointed wood will pierce just

c. 2002

like the steel version. As well, the guard needs to be robust or eventually it will snap off. This applies to any part that you are tempted to make thinner, since your training dagger will be taking impact on a regular basis. Essentially, anything that projects out from the body of the dagger needs to be strong to avoid fracturing and rounded to avoid unnecessary injury.

Rough Cutting

Hopefully you have access to a jigsaw. Although not essential, it will dramatically shorten the amount of time needed in the next step, shaping. A handsaw just can't cope with the curves and subtle angles in most knife designs, forcing you to do the majority of the shaping work with rasps and files. Remember to cut outside of your guidelines – you can always take off more wood later.

Shaping

First, the hilt. The human hand fits a handle that is more elliptical than round in section, as well as needing curves that fit the palm. Otherwise, you are essentially back to wielding that sawn-off broomstick again. Grip the hilt and study where your hand comes into contact with the wood, then remove material from that spot. Do this with both hammer-grips and ice pick-grips to ensure you'll get maximum use out of your knife.

Next, the blade. Although you would want a real knife to be as keen as possible, it is a drawback on the wooden version, which needs a thicker edge for durability and safety. As mentioned previously, the tip needs to be rounded too. Before starting any of the shaping, pencil in whatever guidelines you will need, so that they will be consistent on both sides of the blade. Start with rasps until you are satisfied with the basic shape, then refine it with files.

Sanding

Much like when you were at the cutting stage, if you have access to a belt sander this stage will go much faster. Some hand sanding is involved regardless, but it is preferable to do the bulk of the work by machine.

To a large extent, it is almost impossible to spend too much time at this step. In fact, many people get bored here and move on, making the final product ugly to look at and uncomfortable to hold – in essence, a shaped stick. If you are bored, take a break and come back later, but don't skip ahead.

Start with the rougher grades of sand paper, working as much as possible in the direction of the wood's grain. This becomes more important as you switch to the finer sand papers. A scratch or gouge, even a shallow one, will require a lot of time to sand everything down to remove that blemish. Instead, sand with the wood grain and have patience.

Whiskering

This is a step missed by many. Although the surface feels smooth, part of that is due to the sand paper temporarily pushing the tips of the wood fibres flat. They need to be raised and then removed to achieve a truly smooth finish.

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Turn on a stove burner to medium. While you are waiting for it to heat up, dab your fingers in water and rub them all over your training dagger. You want to dampen the surface, but not soak it. Next, hold it over the burner to drive off all the water. As the water evaporates from the heat, it will lift the flattened wood fibres, which feel like whiskers. Using a piece of steel wool, work against the grain to remove them. Do not work with the grain as that will just push the fibres flat again. The whiskering process may need to be done more than once.

Burnishing

This is the final sanding. Professional woodworkers used agate burnishers but unless you plan on doing this for a living there are less expensive alternatives, such as steel burnishing rods. For those on a budget, a piece of hambone does the job adequately too, and gets smoother through repeated use. Rub hard on the wood surface with whatever burnishing tool you have, and again, take your time. Your careful work will be rewarded as the wood starts to shine, revealing the character of the wood grain.

Finishing

Although the hardwood in the training dagger is tough, unless further steps are taken it will dent, chip and eventually be a hazard. Nobody wants to have a wood shard implanted at high speed.

There is some debate as to what the best finish is for wooden knives. Polyurethane is tough, impervious to moisture, and you will probably never have to do any upkeep on the finish, but it isn't very comfortable in the hand. Beeswax will keep the wood from absorbing moisture, and feels great in the grip but will need to be reapplied eventually.

For a compromise, you might want to use polyurethane on the blade since that is the area that will be taking all the impact. On the hilt, however, use beeswax. Use a hairdryer or heat gun to open up the pores of the wood, and melt in the wax. Remove the excess, burnish again, and it is ready for training.

Never, ever, use oils like tung or linseed on the hilt of your dagger. These finishes are used to protect wood from exposure, like in gunstocks, pianos and furniture, but can raise blisters if used on handles. Waxes are the best finish for any wood you will be gripping.

This method can be used to create just about any training weapon you might need. Get some practice on making wooden daggers before moving up to bigger projects like swords though. The amount of patience necessary increases in proportion to the length of the project.

Many warriors of old made their own weapons, tailored to their exact preferences. Nowadays there might not be too many martial artists who need to be so specific, but that doesn't mean they shouldn't try their hand at it. Creating one's own wooden knives can be an enjoyable extension of weapons training, with the added benefit of having a tool that is dependable, realistic, and pleasing to the eye.