

Refurbish a Vintage Block Plane



A toolmaker's tips
for rejuvenating
this workhorse

BY ELEANOR ROSE



I'm a toolmaker, but I fully believe in refurbishing. It is the most accessible way into an often expensive craft. Almost without fail I opt for old when building my own tool collection—and that's despite being able to make my own versions. I prefer to give something a second or maybe even a third life. Take it from someone who spends more time on eBay than she should: There are enough antique tools to go around. It's just up to us to get them back into working order.

Block planes are a good choice for refurbishment. They're plentiful, meaning you can find a solid user at an affordable price. Plus, they're a workshop staple, so even if you already have one, buying another is easy to justify. You can set them up for

separate tasks, like one for shooting small parts square and the other for rough shaping. All it takes is \$25 to \$40, some time, and the tips I'll share here.

What to buy

Luckily, because so many vintage models are available, you can be picky. I recommend a Stanley 9½, which has lateral and depth adjusters and an adjustable throat. If you can't find one, look for another Stanley or a block plane from Ohio Tools, distinguishable by their maroon japanning. I recommend avoiding vintage planes with a wheel and a threaded post to tighten the cap iron. These are too prone to failure after decades of use, and existing damage can be hard to see. Finally, opt for steel

and cast-iron tools. These are always superior to aluminum and plastic.

Clean, disassemble, and derust

Now you have your plane in hand. It's probably rusty, dirty, or even hiding spiders, like a recent purchase of mine was.

I start off with a good degreaser. My favorite is CMT 2050, which is nontoxic and pretty environmentally friendly. It's technically a blade and bit cleaner, but if it can cut through pitch it must be good. It also acts as a rust preventative if you do not rinse it off, helpful if you have to step away for a day or two between refurbishing steps. However, in place of a dedicated degreaser, dish soap and water with some extra elbow grease also works just fine,

Buying vintage? Here's what to look for...



A lateral adjust and depth adjust add convenience. This Stanley 9½, a common plane, uses a lever to adjust the blade from side to side and a knob to advance or retract it—two nice improvements to tapping with a hammer. Finding one with the wooden handle on the end is uncommon, so don't agonize over it.



An adjustable throat helps with cut quality. With the 9½, you can open the throat wide for heavy, coarse cuts or close it down to control tearout and take finer shavings.

... and what to avoid

as does Simple Green. Typically I scrub, rinse, then repeat at least twice.

Once you scrub the exterior of oils, grime, and eight-legged beasts, you can start disassembly. This step is mostly about patience and discovery. I wish every tool was similar enough to have a perfect how-to list, but sometimes screws are reverse-threaded, sometimes a tool has been altered by a previous owner, and sometimes you find one that's damaged. Every time I take an antique apart there is a hidden screw, a pin hidden under dirt, or something unexpectedly ground flush.

I have two major points of advice when disassembling: WD-40 won't solve anything no matter how much you want it to, and if a screw won't turn, don't force it. I made both mistakes when I started out, and each caused tears.

If your plane is particularly rusted and you cannot get a screw, threaded rod, or knob to budge, then try heat. Use either a quick, light touch with a propane or butane torch, or pop the plane in an oven at 350° for 20 minutes. The heat expands the metal ever so slightly. It will shrink as it cools, breaking the rust bonds to allow for removal. This process can warp the



A threaded rod for tightening the lever cap and a cross-pin are weak points on vintage planes. These experience too much tension to make them long-lasting. The wheel-tightening mechanisms are often stripped after years of use and abuse. And over time pressure against the pin can lead to hard-to-see cracks in the casting above it.



Clean and disassemble

Give the plane an initial cleaning with a good degreaser. Scrubbing down the plane now removes dirt, grease, and grime, letting you better see parts when you disassemble it.



Disassembly is about patience. Don't force components apart. They may be reverse-threaded, like this lever cap screw on the 9½ (others on the 9½ are standard threaded). Some parts may be secured with a pin, which should be gently tapped out.



Protect threaded rods. Pliers can damage threading, rendering the part useless. To prevent this, Rose uses silicone thread covers made for powder coating. A few wraps of masking or electrical tape will also work.



plane, but you'll address that later. Be sure to take out the blade for either step, as the heat can ruin a blade's temper. When heat doesn't work, I use a lubricant. If that doesn't do the job, I look for a hidden pin or weld/braze. If those fail, I have another trick up my sleeve: Evaporust.

Evaporust is truly a magic potion. I'm convinced wizards make it. It does exactly what it says it does: It removes rust completely. Plus, it's reusable. I submerge all the plane parts after disassembly and another degreasing and let them sit for 3 to 24 hours, enough time for the liquid to break up any lingering rust bonds. Nearly instantaneous flash rust is possible when you remove the parts, so wear gloves and protect the fresh metal with oil or more CMT 2050. If you do get any flash rust, it's a breeze to remove with a Scotch-Brite

Remove rust and protect with oil



Soak rusty parts in Evapo-Rust. With all the parts separated, you can thoroughly clean them. Then submerge rusty components completely to avoid unsightly discolored etching lines where the product doesn't reach. Evapo-Rust usually takes 3–24 hours to work. It will also often loosen parts that are still stuck.

pad, or give it another soak in Evapo-Rust.

Next, remove any old paint or lacquer with a stripper for marine paint and lacquer, or with acetone. I've also heard good things about Citristrip. Be sure to check for lead in any paint, and wear a respirator. Protect the parts from rust after this step, too, and then reassemble the plane.

Stripper will not remove japanning. That needs to be sandblasted away, which I fully discourage unless you know exactly what you are doing. Fortunately, I rarely find it necessary to remove japanning. Touch-ups, which I perform at the end of a refurb (if at all), do just fine.



Scotch-Brite knocks off loose rust. Any rust left after soaking is easily rubbed off with an abrasive pad. However, this freshly exposed metal is prone to flash rust. Quickly coat the parts in a rust-resistor, like camellia oil, to stop this. If rust does happen, it's easily managed with Scotch-Brite before oiling.

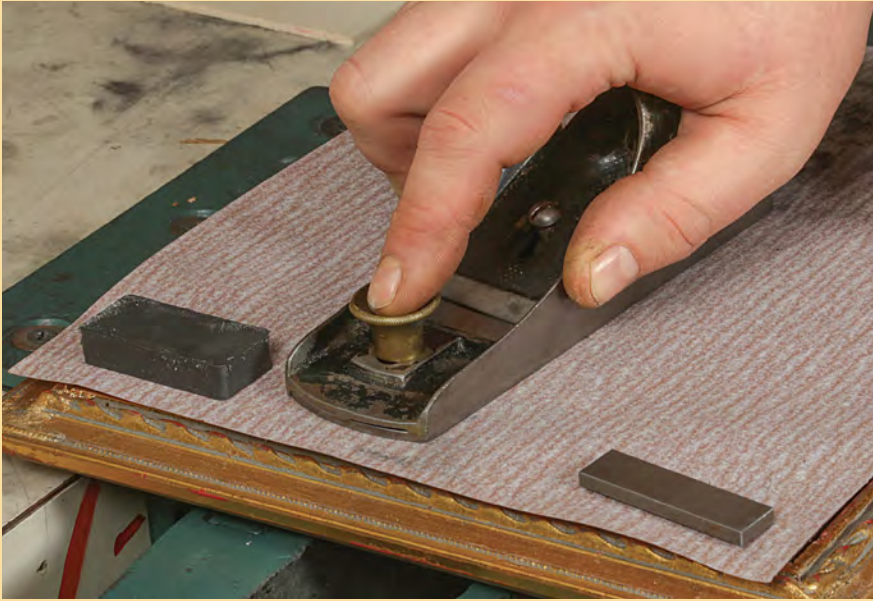
Joint the sole

Until now, much of the work has been on cosmetics and basic functions, like getting rusted knobs to turn. But to turn the plane into a reliable user, you'll want to joint the sole with sandpaper affixed to a flat surface.

The preferred surfaces to achieve flat are granite or machined steel. There are a few other options, too, like thick glass panels (¼ in. or more) and melamine. Plywood cannot typically be trusted but might serve in a pinch. Be sure to check any of these surfaces for flat and true by placing a rule longitudinally at each end and in the middle, latitudinally at each edge and in the



Flatten, square, and polish

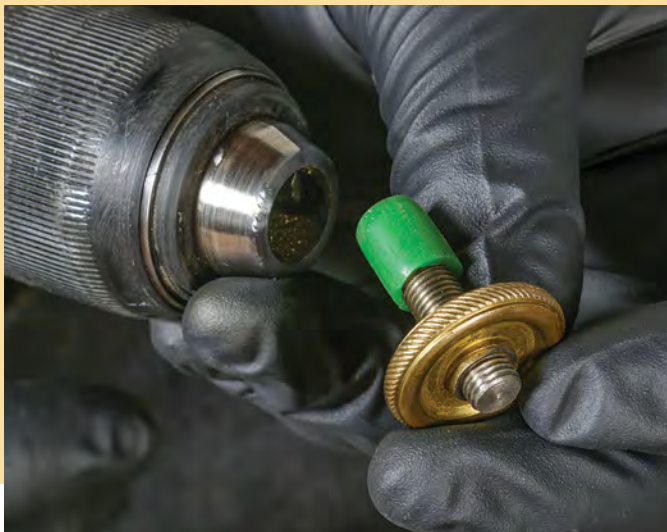


Start flattening the sole. Rose secures sandpaper to a flat, milled metal surface using strong magnets so it doesn't bunch or crimp. Flatten with the blade installed (but fully retracted) to keep the plane body in tension. The shiny areas show the high spots (above). This plane still needs work ahead of its mouth, the most critical area.

Square up a side if you want to shoot with the plane. True only the side you'll use on your shooting board. Rose guides the plane against a squared block that has strong magnets in its base. This block is your reference, so concentrate on holding your newly flattened sole against it.



Polish round parts in a drill. Protect threads with thread covers or electrical tape. While holding the drill's trigger, polish the parts with fine sandpaper or a Scotch-Brite pad. Dirtier parts may require initial cleaning with a brass wire brush.



middle, and diagonally both ways. If you see no light between the surface and the rule, you can safely use it.

I flatten on a machined surface, so I can use strong magnets to attach my sandpaper. They allow me to quickly and easily change out worn paper, or reuse sheets that still have life. I recommend sticky-back sandpaper if magnets aren't an option. Its thickness is controlled, so it's preferable to a spray adhesive, which you can easily overspray, creating lumps. You can also use double-stick tape if you are careful to apply it edge to edge with no overlap, or you can clamp cauls over your abrasive.

Step up the grits as you fix the sole. Start with 80 or 100 if your sole is scratched or particularly wonky. Stop at 220 grit. Going all the way to a polish is unnecessary and will be undone the minute the plane touches wood. If you want to use the plane for shooting, square a side too.

During flattening, the plane should be assembled, including the blade and cap iron with the same tension on the iron as it will have in use. However, retract the iron into the plane so it doesn't project; otherwise you'll grind the cutting edge. You want to save that edge for when you flatten the back, hone the bevel, and get to work. □

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Japanning is easy to touch up

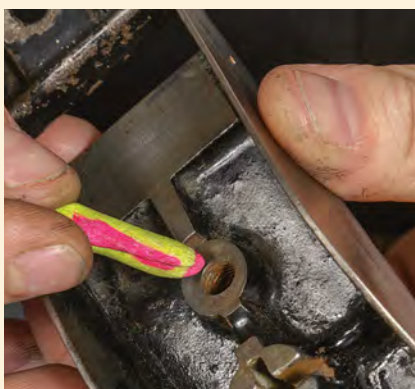
That black glossy finish on some of your hand planes and other tools is japanning. It started out as a furniture finish imitating Japanese lacquerware, but its uses expanded to protecting metal tools as well. Depending on how far you want to refurbish a tool, you may consider refreshing the japanning. My recipe is easy to make and apply, and it cures to a shiny brownish black, a correct antique look, so you won't ruin your plane's old charm with its new paint job. Just be sure to apply it somewhere with good ventilation, or even outside.

The steps are simple. First, strip off old paint, residual grease, grime, and oil, and old, flaky japanning. Next, apply the japanning. I make mine by combining one part linseed oil and one part thinner, then I mix in lamp black until the finish is opaque. Feel free to experiment with your own ratios.

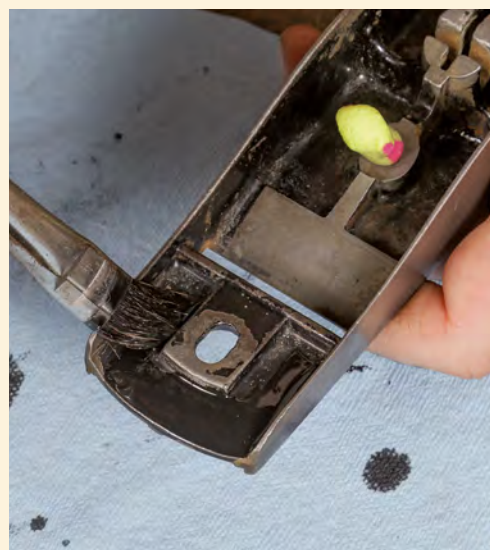
My technique only touches up the old japanning. It's more about filling in cracks and gaps instead of doing a whole overhaul. To completely reapply japanning, you have to first sandblast the casting—and sandblasting is something I don't recommend to anyone except those who know exactly what they are doing and can take the proper precautions against lead paint and damaging the tool.



Strip and clean to prep for japanning. To ready the surface, Rose brushes on acetone to strip any paint from previous owners and remove any remaining grease. For stubborn spots, she breaks out a wire brush, which also scratches off old japanning that's loose.



Brush on the japanning mixture. Protect any holes with rolled-up earplugs, and avoid the sole and sides of the block plane. If japanning inadvertently gets on these surfaces, scrape it off with a razor blade and follow with sandpaper.



Bake three times to cure the finish. Rose's sequence is 300°F for an hour or two, then let it cool. Repeat at 350°F, cool, and then heat one final time at 400°F. A toaster oven works fine.