

# Furniture Restoration — Workbook

This workbook turns the course into bench time on a real piece. Each section pairs with a course module and gives you diagnosis sheets, solvent-test logs, repair checklists, and finishing sample plans to run as you work. Pick an actual piece of furniture to restore, keep the templates open beside you, and let each test and decision be recorded rather than guessed so your strip-or-save and color choices are made on evidence.

## Reading the Piece: Wood, Finish, and Whether to Restore

Diagnose your piece fully, wood, age, and finish, before any tool touches it, so the restore-versus-refinish call is informed.

### Exercise: Identify the Wood and Date the Piece

Take a piece of furniture and examine it the way a restorer does. Feel the pore texture on a raw or worn spot, note the color and grain, and heft it for weight. Then pull a drawer and read the dovetails, saw marks on the unfinished back or bottom, the screws, and the hardware. Record your best guess for both species and age, with the evidence behind each.

- Are the pores open and coarse (oak/ash) or fine and closed (maple/cherry/birch), and what species does that point to?
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- Are the dovetails hand-cut (irregular, few) or machine-cut (uniform), and what saw marks do you see on the unfinished surfaces?
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- What do the screws and hardware tell you, and what is your overall age estimate and confidence?
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- Given the age and value, is this a candidate for full refinishing, or should original finish be preserved?
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### Worksheet: Existing-Finish Solvent Test Log

Choose a hidden test patch, clean it of wax first, then run the solvent tests one spot at a time. Record what each solvent does so you can identify the finish and choose the strip-revive-reoil path. Use the diagnosis template to keep a permanent record per piece.

Test patch location (hidden spot)

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Denatured alcohol result (gummy=shellac / no effect)

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Lacquer thinner result (softens-wrinkles=lacquer / no effect)

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Hard film resisting both? (suspect varnish/poly: yes/no)

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Fingernail scratch: film that flakes, or oily/no film (oil only)?

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Mineral spirits: removes waxy haze with finish intact? (wax on top: yes/no)

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Identified finish

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Chosen path (revive / re-oil / strip)

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### Checklist: Before-You-Strip Decision Checklist

- Wood species identified from pores, color, and weight
- Age estimated from dovetails, saw marks, screws, and hardware
- Existing finish identified by solvent test, not by guesswork
- Considered whether the finish can be cleaned and revived instead of stripped
- Confirmed the piece is not a valuable antique that loses value if refinished
- Hidden test patch sanded to confirm the true wood color underneath

## Stripping and Surface Preparation

Remove failed finish safely and bring the wood to a clean, even, scratch-free surface, or prove it never needed stripping at all.

### Exercise: Strip a Test Area and a Full Surface

On a piece that genuinely needs stripping, brush chemical stripper thickly onto one section, let it dwell undisturbed until the finish wrinkles across the whole area, then scrape with the grain using a plastic or dull scraper. Use a stripping brush or brass brush for any molding or detail. After-wash per the product, then strip the remaining surfaces.

- How long did the stripper need to dwell before the finish wrinkled fully, and did a second application help?

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- Where did detail (moldings, carving) need a brush or string instead of a scraper?

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- Did you wear nitrile/butyl gloves and work with real ventilation, and how did you collect and store the waste?

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- After the after-wash and drying, was the surface clean and residue-free, or did finish remain in the pores?

### Worksheet: Sanding Grit Progression Log

Plan and record your grit steps for each surface so you never skip more than one grit. Note dust removal between grits and the final grit chosen for your color plan (180 for pigment stain, 220 for dye or clear). For any veneered surface, record that you hand-sanded with light pressure.

Surface (top / side / leg / drawer front)

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Solid or veneer?

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Starting grit

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Grit steps used (e.g., 120 to 150 to 180)

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Final grit (180 stain / 220 dye-clear)

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Dust removed between grits? (yes/no)

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Grain raised with damp cloth and knocked back? (yes/no)

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## Checklist: Stripping Safety and Cleanup Checklist

- Nitrile or butyl gloves and eye protection on (not latex)
- Working outdoors or with cross-ventilation and organic-vapor respirator
- Heat gun kept away from any veneer, glass, and detail
- Stripper applied thick, allowed full dwell, scraped with the grain
- Waste sludge and rags collected in a metal container per local hazmat rules
- Surface after-washed/neutralized and dried fully before sanding

## Exercise: Clean and Revive Instead of Strip

On a second piece whose finish is intact but dull, dirty, or crazed, wipe it down with mineral spirits to remove wax and grime and see what the finish looks like underneath. If it is crazed shellac, practice reamalgamation with denatured alcohol on a hidden area first, then a small visible area. Finish with a coat of paste wax and compare to the stripped piece.

- How much did a simple mineral-spirits cleaning change the look before you did anything else?

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- If you reamalgamated, did a light touch re-flow the crazing, or did too much solvent start to lift the finish?

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- Comparing this revived piece to a stripped one, what did you gain by preserving the original patina?

## Structural and Veneer Repair

Make the piece sound and flat: re-glue loose joints with reversible glue and flatten, patch, and blend veneer until repairs vanish.

## Exercise: Disassemble and Re-Glue a Loose Joint

Find a loose joint or a wobbly chair. Soften the old glue with warm water, steam, or gentle heat and ease the joint apart without forcing, labeling the parts. Scrape and sand all old glue off both surfaces, dry-fit (shim the tenon if loose), then glue with liquid hide glue and clamp with a band or bar clamp and cauls. Dry it flat.

- Did the joint come apart cleanly once the old glue softened, or did you have to add more heat/moisture?

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- Was the tenon still a snug fit, or did you shim it with a shaving/veneer to fill a gap before gluing?

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- What clamp strategy kept the piece square, and did all feet touch a flat surface as it cured?

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- Why did you clean off the old glue rather than gluing over it?

## Checklist: Reversible-Repair (Hide Glue) Checklist

- Used liquid or hot hide glue so the repair is reversible and stainable
- Both mating surfaces cleaned of old glue down to fresh wood
- Loose tenon shimmed to a snug fit rather than relying on glue to fill a gap
- Thin even glue coat on both surfaces, assembled within the open time
- Clamped tight with cauls to protect the wood; squeeze-out wiped with a damp cloth
- Piece cured flat and square; no modern epoxy/PVA used on an antique

## Exercise: Flatten a Blister and Patch Missing Veneer

On a veneered surface with a blister and a chip, first try reactivating the old hide glue under the blister with a damp cloth and warm iron. If it will not re-bond, slit along the grain, work fresh glue under it, and clamp flat over wax paper. For the chip, cut a grain-matched patch in a diamond or grain-following shape, glue it, level it by hand, and blend the color.

- Did the old glue reactivate under heat and moisture, or did you have to introduce fresh glue under a slit?

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- What patch shape did you use to hide the seams in the grain, and how visible is the seam now?

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- How did you blend the patch color to the aged surrounding wood, and at arm's length can you find the

repair?

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### Worksheet: Repair Inventory and Materials Worksheet

Walk the whole piece and list every structural and veneer issue before buying materials. Note the repair method and what each fix needs so you make one shopping trip. Use the repair-and-materials template to total quantities.

Issue location

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Issue type (loose joint / break / blister / chip / missing veneer)

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Repair method (re-glue / shim / reactivate / patch / fill)

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Glue/material needed

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Clamp or tool needed

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Color-match needed afterward? (yes/no)

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### Color and Finish: Staining, Topcoats, and Distressing

Dial in even color and a durable, good-looking finish on samples first, then commit to the piece, and age new work to match if needed.

#### Exercise: Build a Stain-and-Topcoat Sample Board

On scrap of the same wood (or a hidden area), sand to your planned grit, apply wood conditioner where the wood is blotch-prone, then test your stain: flood it on, let it penetrate, and wipe all excess with the grain. Once dry, brush your chosen topcoat over part of the sample so you can judge the real, finished color, not the bare-stain color.

- On blotch-prone wood, how much did the wood conditioner even out the absorption versus an untreated patch?
  - How different is the color under the topcoat compared to the bare stained wood?
  - Did you need a second stain coat to reach the target tone, and did you sneak up on it with samples rather than guessing on the piece?
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### Worksheet: Finish Selection and Coats Worksheet

Decide the topcoat based on how the piece will be used, then plan and record each coat. Note sanding between coats and dry times. Use the finishing-schedule template to track coats per surface.

Piece and expected use (dining table / side table / decorative)

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Finish chosen (poly varnish / wipe-on oil / shellac / wax)

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Reason it matches the use (durability vs. look)

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Number of coats planned

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Sanding/steel wool between coats (grit)

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Dry time between coats

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Final wax coat? (yes/no)

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### Checklist: Finishing and Fire-Safety Checklist

- Stain and topcoat color confirmed on a sample board first
- Stain flooded and fully wiped off with the grain; no excess left on the surface
- Topcoat applied in thin coats with the grain in a dust-free space
- Light sanding (320) or steel wool between coats for adhesion and smoothness
- Oily rags spread flat outdoors or submerged in water in a metal can (combustion risk)
- Final paste wax buffed over the cured finish if a softer sheen is wanted

### Exercise: Distress and Blend New Work to the Piece

If a repair or refinished area looks too new, add controlled wear: round edges and rub through finish only where hands and bodies touch, add a few varied dents at realistic contact points, then wipe a dark glaze into the recesses and off the highs. Knock back any too-bright color with a dilute wash. Seal the distressing under a topcoat.

- Did you place wear where life actually puts it (edges, corners, around pulls), and does it read as authentic versus random?

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- How did the glaze in the recesses tie the repair into the rest of the aged surface?

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- Did you keep the distressing restrained and honest, blending rather than faking an untouched antique?

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## Your Action Plan

1. Choose one real piece to restore and a second dull-but-intact piece to clean and revive for contrast.
2. Diagnose the main piece fully: identify the wood, estimate the age, and run solvent tests to identify the finish.
3. Make the strip-revive-reoil decision in writing, only strip a genuinely failed finish, and revive whatever can be saved.
4. If stripping, work safely with gloves and ventilation, dwell the chemical fully, scrape with the grain, and after-wash.
5. Sand through a correct grit progression to 180 (pigment stain) or 220 (dye/clear), hand-sanding any veneer with light pressure.
6. Inventory every joint and veneer issue, then re-glue loose joints with reversible hide glue, shimming any sloppy tenons.
7. Flatten veneer blisters by reactivating or re-gluing, and patch missing veneer with grain-matched, grain-following patches.
8. Build a stain-and-topcoat sample board on matching scrap, dial in even color with conditioner, then apply your chosen topcoat (varnish, oil, or wax) in thin coats, sanding between and disposing of oily rags safely.
9. Distress and glaze new work only where real wear and grime would occur so repairs and refinished areas blend in.
10. Buff a final paste wax over the cured finish, then review your logs and note the weakest skill to practice on the next piece.









