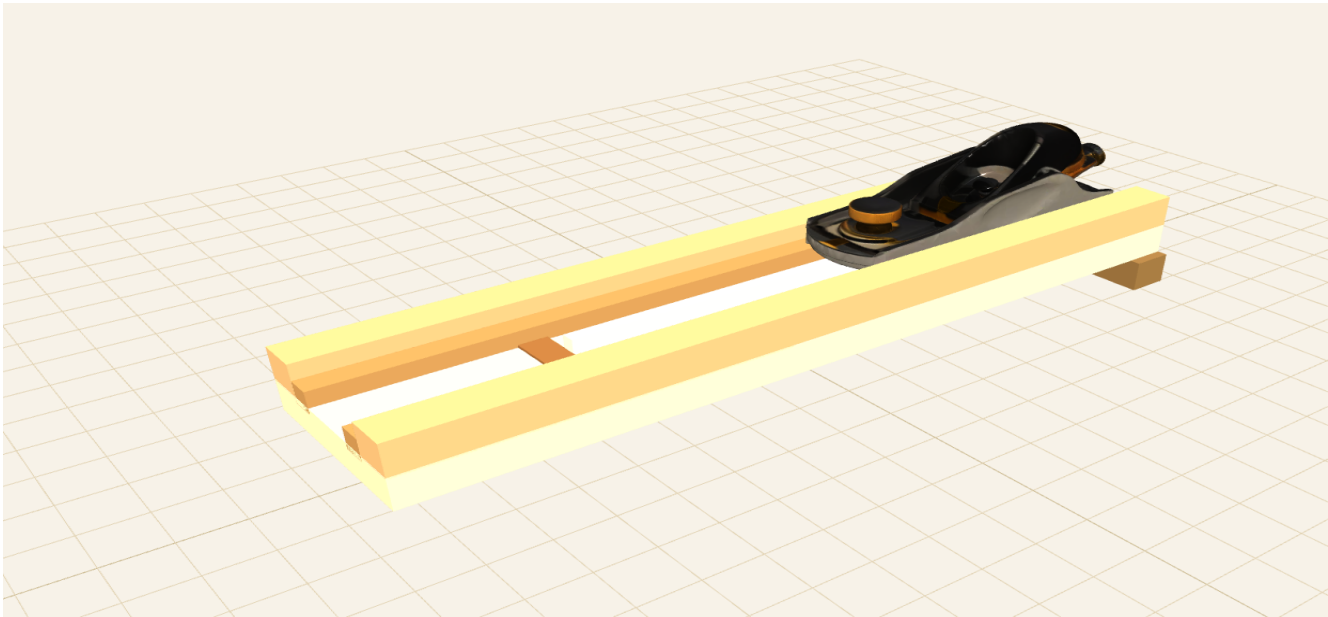


How to Make the Brace-Planing Jig

A shop-made rail-rider jig that lets Session 1 students thickness every brace part with the Lie-Nielsen 60-1/2 low-angle block plane — no calipers-and-prayer, just swap the rails.

WHAT IT DOES

The plane rides **sole-down on two rails**; the brace blank lies on the bed between them, taped down. The blade cuts the blank **flush with the rail tops**, so **exposed rail height = finished dimension**. Seven interchangeable rail pairs cover every part in the class; the base, walls, and stop never change. Two fence strips on the wall inner faces guide the 1-3/4"-wide plane body so it can't wander, and a cleat under the start end hooks the bench edge — the jig is its own bench hook.



The finished jig: rails drop into dadoes in the bed, the fence strips guide the plane, and the cleat under the start end hooks the bench edge.

MATERIALS & TOOLS

- 3/4" Baltic birch or MDF for the base (flat, stable)
 - 3/4" hardwood (maple, cherry) for walls, rails, stop, cleat
 - Titebond or similar wood glue
- #8 × 1-1/4" wood screws; high-tack carpet/turner's tape
 - Router + 1/2" straight bit (or dado stack); drill/driver with pilot & countersink bits
 - Table saw or bandsaw, hand plane or sander, calipers, clamps, square

CUT LIST

Part	Qty	Dimensions	Notes
Base	1	15" × 3-5/8" × 3/4"	Mill flat; rout dadoes before attaching walls
Outer walls	2	15" × 3/4" × 3/4"	Inner faces parallel, 2-1/8" apart, flush with base edges
Fence strips	2	15" × 1/8" × 3/4"	Glue to wall inner faces, 1-7/8" apart, bottom edge 7/16" above the bed
Rail pairs	7 pr	15" × 7/16" × (H + 1/8")	H = 2 mm, 3/32, 1/8, 3/16, 7/32, 1/4, 3/8" (buried 1/8" seats in the dado)
End stop	1	1/2" × 1-1/4" × 1/16"	Glue across the channel bed, 1/16" proud; leading face 11-1/4" from start end
Bench-hook cleat	1	4" × 3/4" × 3/4"	Under the start end, centered; hooks the bench edge
Screws	6+	#8 × 1-1/4"	3 per wall (pilot all); cleat from above
Double-stick tape	—	—	High-tack carpet/turner's tape; consumable

BUILD STEPS

1. **Mill the base flat.** Cut 15" × 3-5/8" from 3/4" stock. The bed is the reference surface — if it isn't flat, nothing downstream is.
2. **Rout the dadoes.** Two 1/2"-wide × 1/8"-deep dadoes, full length, centered **27/32" each side of the base centerline** (1-11/16" apart). Do this **before** gluing the walls — a router rides the open base far easier than the finished channel. Test with a rail offcut: it should drop in with a slip fit, not a press fit (seasonal movement will bind a tight dado).
3. **Mill the seven rail pairs.** Rip 7/16" wide, then plane each **pair together** to an identical overall height of **H + 1/8"** — the buried 1/8" seats in the dado, so the exposed height is the finished dimension. Check with calipers in several spots; **label both sticks** ("3/8", "7/32", ...). Milling checklist:

Exposed height H	Mill rails to (H + 1/8")	Used for
2 mm	5.2 mm	Soundhole reinforcements — height pass
3/32"	7/32"	Bridge plate — height pass
1/8"	1/4"	Fan braces — width pass
3/16"	5/16"	Soundhole reinforcements — width pass
7/32"	11/32"	Fan braces — height pass
1/4"	3/8"	UTB / MTB — width pass
3/8"	1/2"	UTB / MTB — height pass

4. **Glue + screw the walls.** Walls flush with the base edges, **inner faces parallel and 2-1/8" apart**. They back up the rails; the fence strips (next step) do the plane-guiding. #8 × 1-1/4" screws, 3 per wall, **every screw piloted**.
5. **Glue the fence strips.** Two 15" × 1/8" × 3/4" hardwood strips, one per wall inner face, **inner faces 1-7/8" apart** — they guide the 1-3/4" Lie-Nielsen 60-1/2 body (1/16" clearance per side). Set each strip's **bottom edge 7/16" above the bed** — a 7/16" spacer block underneath makes a perfect gauge — so the strips clear the tallest 3/8" rails by 1/16". Test-fit the plane between the strips before the glue sets; wax the fence faces.
6. **Glue the stop.** The 1/16" strip goes across the channel bed, **leading face 11-1/4" from the start end**. It sits below every rail height, so the plane sole passes cleanly over it.
7. **Attach the cleat.** Centered under the start end (about 3/16" overhang per side), flush with the start edge; screw from above, piloted. Seal any MDF surfaces against moisture.
8. **Test.** Drop in the 3/8" rails, tape an MTB blank flat-side down with one end against the stop, and take a few passes with the block plane toward the stop. The blank should finish **flush with the rail tops** along its full length. If it rocks before taping, joint a flat reference face first — tape won't flatten a rocking blank.

USING IT IN CLASS

Part	Height pass (flat)	Width pass (on edge)
UTB & MTB	3/8" rails	1/4" rails
Fan braces (×3)	7/32" rails	1/8" rails
Soundhole reinforcements (×2)	2 mm rails	3/16" rails
Bridge plate	3/32" rails	Rip to 1-1/8" on the bandsaw — too tippy on edge

Plane binds between the fence strips? Ease the strips and wax the fence faces. **Tape tip:** free thin stock with a thin putty knife or gentle warming — don't pry thin spruce off strong tape. And flip the blank end-for-end if the grain tears: plane **with** the grain.