PINEAPPLE UKULELE BUILD CLASS — SESSION 1

The bridge

A compact "slots-n-knots" tie-bar bridge in the Martin style: four drilled holes, four rear-edge slots, and each string's knot seated in its slot. No bridge pins, no center tie channel.

> **Today's finish line**
> Each builder leaves with a shaped, drilled, and slotted bridge — its top sanded to the final 2° slope — labeled and bagged for later in the build.



The destination: a finished class bridge, saddle seated.

WHERE TODAY'S WORK FITS

1. Brace stock + bridge	2. Join + thickness plates	3. Brace the top	4. Brace the back	5. Bend sides
6. Blocks, linings, rim	7. Close the body	8. Fit neck + fretboard	9. Finish	10. Bridge install + setup

STARTING MATERIAL

Bridge blank: 1 in wide x 7 mm thick x 104 mm long (≈4.09 in; slight deviation from the Oaktown plan). The closed-end saddle chamber has already been cut on the CNC.

The bridge is made now, stored safely, and installed near the end of the build.

CLASS RHYTHM

- Brief tool or jig demonstration.
- Work with your build buddy.
- Measure, check, then cut.
- Stop at each checkpoint.
- Label every finished part.

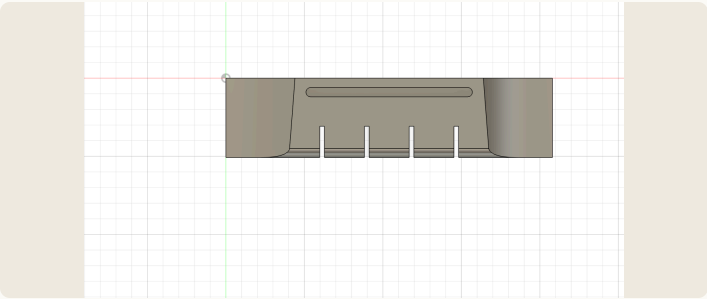
BRIDGE

Make the Martin-style bridge

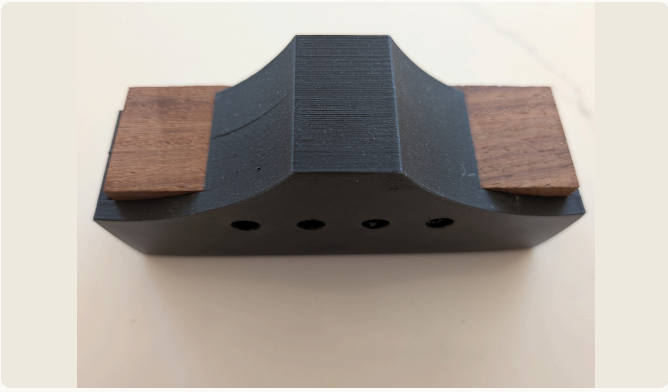
The class bridge is a compact "slots-n-knots" tie-bar design modeled on traditional Martin ukulele bridges. Each string passes through a drilled hole and a narrow slot to the rear edge; its knot seats in that slot. It uses no bridge pins and no center tie channel.

Why this shape.

- **It rocks the top.** A plucked string rocks the bridge back and forth, and that rocking pumps the soundboard — the bridge is the engine, not just an anchor.
- **Wings reach the fan braces.** The wide wings spread the string load and extend toward the fan braces, coupling the bridge into the braced top.
- **Height follows the fretboard.** On a flat top the bridge stands about as proud of the top as the fretboard is thick — that geometry sets the string height over the frets.
- **Light, with a sharp break angle.** A light bridge lets the top move freely; the 2° slope (page 5) sharpens the break angle that drives energy into the top.



Class bridge, top view: closed-end saddle chamber above; four string slots open to the rear edge below.



Blank seated in the jig, ready for drilling and wing shaping.

Orientation checkpoint — stop before drilling. Keep the CNC-cut saddle chamber facing up. Seat the blank fully with its rear (string-knot) edge toward the jig's drill-guide holes. Compare it with the CAD view and instructor's sample; have your buddy verify it. Reversing the blank puts the string holes on the wrong side of the saddle chamber.

This differs from the Oaktown plan. Oaktown uses a traditional tie bridge with a 1/4 in center channel and angled holes that tie off inside it. This class design follows the lighter Martin-style arrangement: four holes, four rear-edge slots, and knots seated in those slots.

Tool stop: Do not use the drill press, bandsaw, handsaw, or shaping tools until the instructor has demonstrated the jig, guards, hand position, and work sequence.

Drill, slot, and shape the bridge

Three jigs keep the sequence repeatable: the black 3D-printed jig for sizing, squaring, drilling, and wing layout; the dedicated bandsaw jig for the four string slots; and the 4 in spindle for shaping the wings.

Tool stop: Do not use the drill press, bandsaw, or spindle sander until the instructor has demonstrated the matching jig, guards, hand position, and work sequence.

1. **Size and square.** Use the 3D-printed jig as a reference while bringing the blank to a snug, square fit.
2. **Identify.** Find the CNC-cut saddle chamber; mark the top, gluing face, and rear edge.
3. **Load and check.** Seat the blank with the rear edge toward the drill guides. Buddy-check before drilling.
4. **Drill and slot.** Drill through the four guides with a 1/4 in bit, or the next size down approved by the instructor. Use the dedicated bandsaw jig to cut each hole through to the rear edge. The instructor will demonstrate it.
5. **Shape.** Use the jig profile and the 4 in diameter spindle on the spindle sander to establish the bridge wings; then refine the curves and bevels.
6. **Finish-check.** Confirm symmetry, clean holes and string slots, an undamaged saddle chamber, and a flat gluing surface.

BEFORE DRILLING

- [ ] Blank is fully seated and square.
- [ ] Saddle chamber faces up.
- [ ] Rear edge meets the drill-guide side.
- [ ] Buddy and instructor approve.

BEFORE STORING

- [ ] Holes and slots are clean.
- [ ] Wings are symmetrical.
- [ ] Saddle chamber is undamaged.
- [ ] Gluing face is flat; bag is labeled.

Next: Sand the 2° top slope — the final shaping step, on the next page.

BRIDGE — VISUAL REFERENCE

Read the jig and the string path



The jig does three jobs: its straight edges help size and square the stock, its four holes guide the string holes, and its curved shoulders establish the bridge-wing profile.



Finished reference: symmetrical wings, four clean rear-edge string slots, and a saddle seated in its own closed-end chamber.

HOW THE STRING IS SECURED

1. Tie a stopper knot at the string end.
2. Lead the string through its rear-edge slot.
3. Seat the knot at the drilled hole.
4. Carry the string forward across the saddle.

This is the "slots-n-knots" arrangement: no bridge pin and no shared tie channel.

FINISHED BRIDGE CHECK

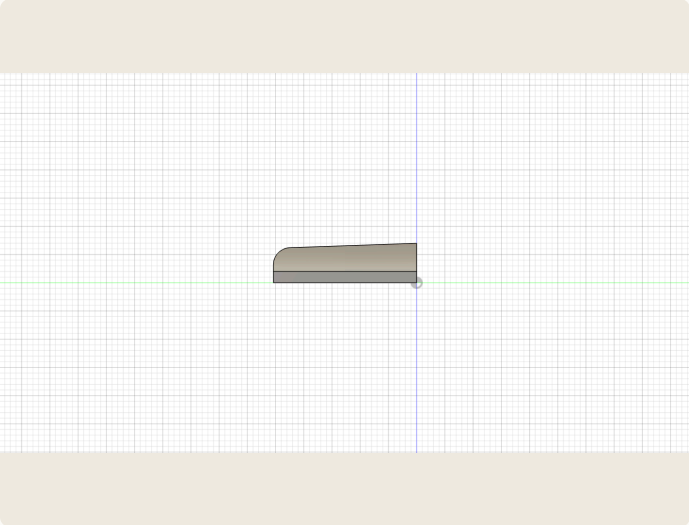
- [ ] Four holes and rear-edge slots are clean.
- [ ] Wings match and flow smoothly.
- [ ] Saddle chamber is undamaged.
- [ ] Gluing face is flat; storage bag is labeled.

> **Do not force a poor fit.** If the blank rocks, binds, or leaves a visible gap in the jig, remove it and correct the stock before drilling. The jig is a reference, not a clamp.

BRIDGE — FINAL SHAPING

Sand the 2° top slope

The top of the bridge gets a subtle 2° slope — high at the saddle, falling toward the string-knot edge — so each string breaks cleanly over the saddle toward its knot. A dedicated 3D-printed jig holds the almost-finished bridge at exactly 2°: you sand the exposed top square to the jig, and the slope comes out right.



Profile view: the 2° slope across the bridge top, high at the saddle edge.



In the jig: the almost-finished bridge mounted for sanding, "Top" tape facing up.

1. **Mount.** Seat the almost-finished bridge — drilled, slotted, wings shaped — fully into the slope jig with the "Top" tape facing up. It should sit flat with no rocking.

2. **Sand.** With the jig flat on the bench, sand the exposed top at a right angle to the jig. Use a flat sanding block with fresh paper and long, even strokes. Check your progress often.

3. **Check.** Sight along the top: the slope should run evenly end to end, with no dips or facets. Compare it against the CAD profile view.

SANDING METHOD

Hand sanding is recommended — a flat block keeps the slope true. A disc sander can work if you are careful: light passes, keep the jig flat on the table, and don't round the edges.

SLOPE CHECKPOINT

- [ ] Bridge is fully seated; no rocking in the jig.
- [ ] Slope is even end to end; no dips or facets.
- [ ] Saddle chamber is undamaged.
- [ ] String slots are still clean.

WRAP-UP

Buddy-check, label, and look ahead

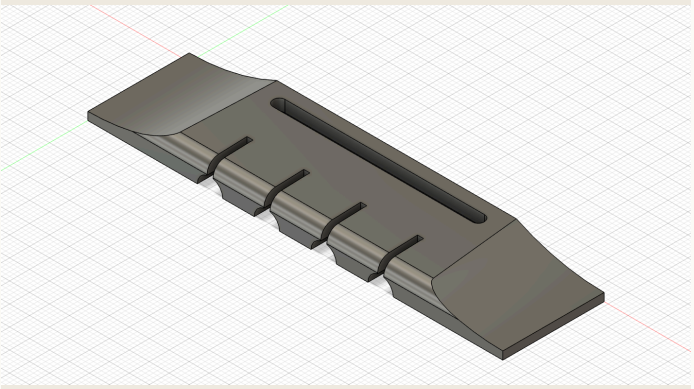
BEFORE YOU LEAVE

- [ ] Four holes and rear-edge slots are clean.
- [ ] Wings are symmetrical; 2° slope is even.
- [ ] Saddle chamber is undamaged.
- [ ] Gluing face is flat.
- [ ] Your name is on the storage bag.

BUILD LOG

What worked well today?

What should I check before the next operation?



Reference: three-quarter CAD view of the finished bridge geometry.

NEXT SESSION

Prepare the top and back plates, transfer the patterns, and begin the simplified side-bending workflow. Your bridge waits in its bag until the body and neck establish its exact location.

WATCH THE COMPLETE BUILD

Make a Ukulele at home | Build from scratch | Hand-made pineapple tenor Ukulele

A first-time builder follows the same Oaktown Strings pineapple tenor plan. Use it to preview the full sequence or revisit a step after class.

https://www.youtube.com/watch?v=fSsfNltTWeo

References: Oaktown Strings, *Pineapple Tenor Ukulele*, version 1.3 (Robert Lattuga, 2020), plus archived construction instructions; Got A Ukulele: Martin T1 StreetMaster Tenor; Unofficial Martin Guitar Forum: Ukulele bridge design. Photos and CAD views by the instructor.