Wooden Hang Print Packet

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Packet folder: ‘/mnt/c/Users/Tony/Documents/GitHub/wooden-hang‘

File Map

File	Purpose
‘design.md‘	Project intent, governing model, target layout, branch comparison, and prototype ladder.
‘bom.csv‘	Starter bill of materials with stock, fixtures, hardware, and measurement tools.
‘sourcing.csv‘	Supplier/search tracker with required specs and alternates.
‘cut-list.csv‘	Rough/final stock sizes, material, operations, and notes.
‘drawing-brief.md‘	Manufacturing drawing requirements and critical dimensions.
‘assembly-manual.md‘	Shop sequence from coupon tests through full-layout assembly.
‘validation.csv‘	Measurement log for pitch, decay, cross-talk, cavity response, and moisture content.
‘supplier-rfq.md‘	Supplier quote starter for prototype materials.
‘visual-bom-brief.md‘	Art direction for image-forward BOM documentation.
‘wolfram-starter.wl‘	First-order plate and cavity model starter.
‘README.md‘	Project entry point and artifact map.
‘family-spec.csv‘	Prototype ladder and family steps.
‘photo-shotlist.md‘	Documentation shot plan.
‘risks.md‘	Risk register with verification tests.

Design Summary

Wooden Hang is a handpan-inspired wooden idiophone / resonant-vessel hybrid. The packet does not assume wood behaves like steel and explicitly treats the first prototypes as empirical studies.

The recommended first serious build is a **top-plate hybrid**:

- tuned wooden top plate
- isolated note zones created by thinning, slots, or hybrid relief
- bowl or cavity underneath
- removable or replaceable top during early learning cycles

Secondary branches are documented but not prioritized for the first build:

- split-shell CNC carved body in four operations
- segmented or stave shell with tuned top

Key Dimensions

Parameter	Value	Status
Outer diameter	18.0 in	design target
Overall height	4.75 in	design target
Playing surface diameter	15.8 in	derived estimate
Top-plate thickness	0.200-0.320 in	experiment range
Bowl depth	2.25-2.75 in	derived estimate
Gu diameter	2.75-3.50 in	experiment range
Primary key	G minor	assumption
Note count	9 concept / 3 to 5 recommended first playable	design strategy

Prototype Ladder

Prototype	Goal	Exit Gate
WHG-P0	Coupon matrix	Repeatable pitch trend
WHG-P1	Single-field cavity rig	One useful note plus measurable cavity response
WHG-P2	Three-note sector	Manageable cross-talk and hand spacing
WHG-P3	Five-note subset	Playable subset worth scaling
WHG-P4	Full 9-note layout	Data-backed decision on family viability

Manufacturing Notes

- Use stable hardwood or laminate systems first, not highly figured show stock.
- Keep note-zone geometry accessible from the underside.
- Track moisture content with every measurement session.
- Treat the first full body as a measurement object, not a finished instrument.
- Keep at least one replaceable top in the workflow until the geometry is earned.

Required Measurements

- note frequency
- cents error
- decay time
- cross-talk between adjacent zones
- body or port resonance
- moisture content
- structural issues such as cracks, buzzes, or sink

Drawings And CAD

- ‘drawings/wooden-hang-layout.svg‘ documents note placement and spacing.
- ‘drawings/wooden-hang-section.svg‘ documents top plate, bowl, and gu relationships.
- ‘drawings/tone-field-detail.svg‘ documents the field or tongue hybrid tuning zone.
- ‘cad/wooden_hang_master.scad‘ provides a parametric concept model.

Risks Snapshot

- pitch may not track cleanly with geometry
- sustain may be too short
- a full 9-note map may be physically crowded
- removable-top hardware may buzz
- finish and humidity may move pitch enough to confuse the learning loop

See ‘risks.md‘ for full mitigation and test details.

Tooling Note

The local environment does not currently provide the expected ‘.xlsx‘, ‘.pptx‘, or ‘.pdf‘ generators used by the instrument-maker workflow. This packet therefore includes the Markdown, HTML, CSV, SVG, SCAD, and JSON deliverables first and intentionally skips:

- ‘Wooden-Hang-Design.xlsx‘
- ‘capstone-deck.pptx‘
- ‘print-packet.pdf‘