

Model Ship Case Design

Shop Note Topic

MODEL SHIPWRIGHT GUILD WNY

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Model ship display cases are usually the last step in model ship building. When it comes to rigging it is especially challenging to keep rigging from ‘growing hairs” from ambient air particles and the unexpected accident. It is recommended for dust as well as damage control that the display case build commence early on in a project if not initially.

This shop note is focused on modeler built cases. Several examples of commercially built cases are on display in the museum.

Some practical things to think about in developing a display case

- ✓ Aesthetics (size of case, materials)
- ✓ Environmental considerations (direct sunlight , over heat ducts etc.)
- ✓ The type of mounting of the model
- ✓ Display/Presentation method (table top, wall etc.)
- ✓ Weight
- ✓ General Rule: cases are usually built with a minimum of 2 to 3 inch clearance in all dimensions for large models, smaller models are severed best with about 1 to 2 inch clearance.

Case Types:

Wood frame cases

Self supporting with no frame

Self supporting with “frame”

Wood Framed Display Cases

(Drawings to be included when stored on web page)



Wood Types Best Suited

Mahogany

Cherry

Maple

Straight grain wood for aesthetic and stability considerations

Frame member dimensions are proportionate to size

Large cases; consider frame members of 7/8" square stock

Smaller cases; nominally 5/8" square stock

Bases are mostly driven by aesthetic considerations

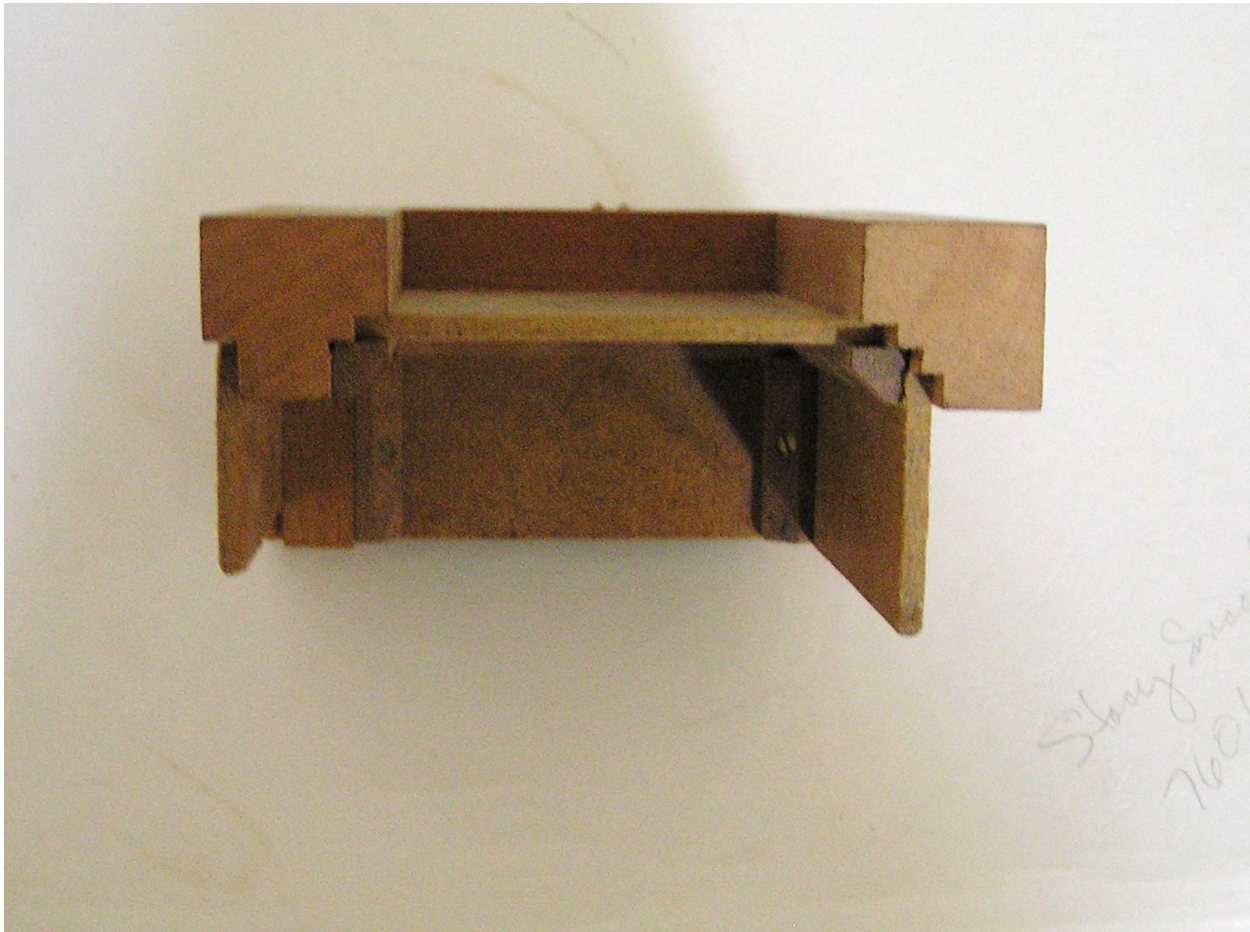
Two examples; plain (no feet), contemporary (shown) and period (a bit more complex but elegant) See attached figures

Decide on base type; raised bed or flat bed (case size consideration)

Simple frame construction (example sans base, shown below)

Make the base and top assembly together to EXACT size. Corner splines recommended.

Tablesaw cuts for all members using a flat ground blade.



Mitered corners for top frame and base

Doweled or screwed assembly of top and base to uprights

Glass splines simple and safe to make (see sample).

Add felt to splines (where they meet glass) to deal with glass rattle

Self Supporting, No Frame

Consider the “window” material

Plate/Tempered glass practical considerations

- Weight(per sq. ft.) vs size of case: $1/8'' = 1.7\#$, $1/4'' = 3.23\#$
(case shown weighs close to 40 lbs)
- Cutting to dimension accuracy challenge (careful with hardware stores)
- Relatively scratch resistant
- Not UV resistant
- Cheapest option

Plexiglass/Lexan

- Weight (per sq. ft.)vs case size: $1/16$ ish = $.38\#$, $1/8''$ ish = $.73\#$, $1/4'' = 1.46\#$
- Not static and scratch resistant
- Not UV resistant
- Can do at home with a carbide tip, 60 tooth saw blade (sharp)
- Next cheapest option

Museum Glass

Multiple Grades (Three examples)

- ✓ Conservation Clear; 99 % UV
- ✓ Conservation Reflection Control; 99% UV, non glare
- ✓ Ultra Vue Laminated; 99%UV, abrasion resistant, anti reflective, shatter resistant, anti reflective

Cost a factor, can be 10X plate glass retail

Museum Acrylic

Much the same in terms of options with antistatic and abrasion resistance films

Cost for grades less than museum glass

Suppliers

Tru Vue.com via custom frame shops OR Military History Society
@ significantly lower cost

Bonding methods

CA

Silicone adhesive

Biggest challenge: accurate and polished ends cuts for professional results

Well suited for small to medium sized cases. Large cases present alignment, weight and stability concerns. May require assembly jig

Usually 5 sided case for viewing

Self Supporting Framed

All the same materials and bonding methods apply for the “window” material

Accuracy of cuts is slightly less critical

Polished edges not required

Well suited for small and medium sized cases.

Two methods of framing

Wood frames of size equal to or smaller than covered in Wood Framed Cases. Be careful with proportions as even 5/8 inch frame members get clunky in smaller cases.

Brass framing not only looks professional it can add strength and hide “window” material size, polished edge issues.

Can be done at home with hand tools and care.

Assembly is aided by “jigging” and the frames

Lacquer is recommended for tarnish resistance

Other metals; aluminum doesn't quite provide the same appearance.

Recommended brass sizes

¼” right angle, .0625

½” right angle, 0625

Lengths can be custom cut

Prices are reasonable

Brass Suppliers

K and S (special order lengths can be obtained)

Onlinemetals.com (long lengths available albeit shipping is \$\$\$\$)