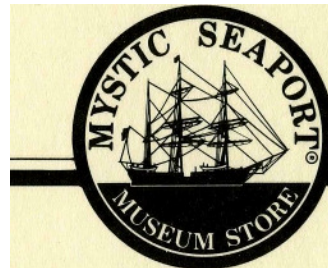


SHIP MODEL CLASSIFICATION GUIDELINES



DEPARTMENT OF SHIP MODELS SALES SERVICE
MYSTIC SEAPORT MUSEUM STORES, MYSTIC, CONNECTICUT

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PREFACE

There are many requests made by both ship model builders and collectors, to define and evaluate objectively the construction standards implied in the phrase "Museum Quality Ship Model". It is to this end we have addressed this publication.

Over months of research, discussion, and correspondence with our museum staff, the staffs of The Smithsonian Institute and The Mariners Museum, plus many distinguished builders, a near definitive explanation, in the form of our "Ship Model Classification Guidelines, has evolved.

Though contingencies exist, our department has affirmed the general significance of the late Howard I. Chapelle's PRELIMINARY BUILDING SPECIFICATIONS, as a basic guideline for museum ship model construction. These contingencies surface in the form of our supplemental specification additions and/or deletions, which appear as amendments to his report. Our additional list of museum approved construction specifications and materials also help to clarify these contingencies.

The sample SHIP MODEL CLASSIFICATION RATING SHEET, developed by this department, is intended to be used as a "tool" by which a builder or collector, implementing the use of the specifications and guidelines, can construct or survey a given ship model, and to a degree analyze the efforts put forth. Nevertheless, one must remember that an attempt to judge a model objectively cannot escape the subjective inclinations of the person making the judgment.

It is our hope that this definitive report will be accepted as the ways from which future ship models will be launched.

R. Michael Wall, Director

Department of Ship Model Sales & Service

1980

THE PURPOSE OF SHIP MODEL CLASSIFICATION GUIDELINES

"To provide ship model builders with a set of specific guidelines, that will insure quality control of the highest degree."

R. Michael Wall,
Mystic Seaport Museum

"... to produce an accurate scale model of museum grade workmanship and finish." Howard I. Chapelle,
Preliminary Building Specifications.

". . . to recognize and encourage excellence of craftsmanship in the art of building ship models." The Mariners Museum, Model Ship Craftsman Competition.

". . . your proposed ship model classification system, with specific rules and specifications, would fill the present vacuum in this field ... Such a work would result in higher standards of workmanship."
August F. Crabtree,
personal letter to Mystic Seaport Museum

"If a model is nicely made . . . than it is of great value as a standard of comparison in evaluating the characteristics of other models . . . if it is not accurately made, then it is of no value . . . we might even say it is an evil thing, for it is nothing but a lie that deceives the eye."

L. Francis Herreshoff,
An L. Francis Herrshoff Reader, 1978, IM Pub. Co.

HOWARD I. CHAPELLE
General Preliminary Building Specifications
Division of Marine Transportation
Smithsonian Institution, Washington, D.C.
(Revised 3-31-1961)

THE INTENT OF THE PLANS AND DETAIL SPECIFICATIONS IS TO PRODUCE AN ACCURATE SCALE MODEL OF MUSEUM-GRADE WORKMANSHIP AND FINISH. THIS SPECIFICATION IS GENERAL AND PRELIMINARY, AND FORMS PART OF A CONTRACT OR PURCHASE AGREEMENT.

The model is to be as complete, in exterior detail, as is agreed in the contract detail specifications or as indicated or shown in the plans.

Models are to be built to a selected scale. It is intended that models in a certain category shall be all the same scale so that, in exhibition, they give a sense of relative size. Small craft models will be made to 1-1/2, 1, 3/4 or 1/2 inch to the foot scale, as directed. Fishing and coasting vessels shall be built to 1/4, 3/8 or 1/2 inch to the foot scale as directed. Large sailing vessels and steamers will be built to 1/8, 3/16 or 1/4 inch to the foot scale as directed. Unless otherwise agreed, models are to be built to the scale of the plans furnished to the builder and are subject to measurement and templating upon delivery, prior to final acceptance.

HULL –

The hull form is to be shaped (using the "lift" construction method, planked, or planked over moulds or as otherwise agreed) with great precision using accurate templates for level lines, buttocks and sections; and the model hull will be checked by the curator or his aid prior to finishing to be certain the hull agrees with the lines drawing. 2 The margin for tolerance is 2 inches to scale in all models built on scales between 1/8 and 1/4 inch; 1 inch to scale on models built on scales between 3/8 and 3/4 inch; 1/2 inch on models built on scales between 3/4 and 1-1/2 inch to the foot. Models built on 1/8 inch scale to be within 4 inches by scale tolerance. The hull will be fair and smooth in all respects and fully templated in building to insure accuracy and shall be fitted with head rails, trailboards, knees, quarter galleries, ports, scuppers, chesstrees, sheathing, stern windows, deadlights, and mouldings in correct scale as shown in the plans or as otherwise directed. Parts may be made of brass if strength requires. The deck plank may be marked or the deck laid, as agreed upon in the contract or purchase agreement, without showing butts or too wide a seam. 3 Deck machinery or fittings to be as shown in the plans or as otherwise indicated. Hull and fittings to be properly painted or finished as directed in the detail specifications.

RIGGING -

To be to scale and of good and lasting material or proper appearance and color, so far as is possible. Rigging to be done to agree with instructions, as to source reference and methods, contained in detail specifications. Mast metal work to be to correct scale and properly

proportioned, "faked" only where it cannot be made to scale or where it does not show when model is rigged. The workmanship to be of museum quality throughout. Linen, wire, brass chain or other approved materials to be employed, as suitable.

MATERIALS –

The model hulls, deck furniture and spar work to be of well dried lumber, preferably white pine or poplar and the glue employed is to be damp resistant or "water proof". 5 Metal work to be of brass, copper or other approved material, as work requires. The use of white or "pot" metal is restricted to those portions of the metal work agreed upon in the contract or purchase agreement. Castings to be of copper or brass. 6 Rigging to be of brass chain, soft iron wire, 7 linen twine or other approved material, properly coated or painted as work requires. Lead or plastic are not acceptable for hull or spar fittings. Spars under 3/16" diameter to be of brass, not wood.

PAINTING –

To be of approved colors and flat, no gloss or egg-shell finish paint to be employed unless specified in plans or detail specifications. To be of high grade material and properly mixed for metal work.

HALF-MODELS –

These are to be made on the lift principle with great precision to the tolerance stated earlier in this general specification. The hull is to be carefully templated for sections, buttocks and level lines and is to be deck level. The outboard of the hull and deck furniture to be fitted with mouldings, carvings, lights, etc., as shown in plans. Stub masts are to be shown in correct position in rake, in half-section. Usually full length bowsprit and main or mizzen boom, in half-section, will be mounted with the model on the backboard, along with cutwater, keel, rudder, screw, stack, etc. as plans require. The whole are to be painted and finished as in original vessel or boat, as shown in plans and detail specifications. If model is to be planked, seams are to be laid off as in the full-size vessel or boat, complete with butts and stealers, wales, mouldings and cove or stripe lines, coppered if required. Backboard is to be painted or polished wood.

CARVINGS - To be artistically formed and neatly made, fitted as shown in plans, with great precision, and correct scale to size.

FIGURES - If human figures are required, they are to be of proper scale and proportion and dressed in contemporary fashion to the boat or vessel, as of her date of construction. Material and fastening or disposal on deck to be as agreed in contract.

SAILS - Will be made of lasting and suitable textile such as linen or as directed in the contract, detail specifications. If not set, sails to be furled on the spars, but if set the sails must be sewn or marked to represent cloths and patches, reef and reef bands and be complete as to appearance.

MECHANICAL MODELS - Where model is required to show machinery, the latter is to be built of metal or plastic, and is to be of accurate scale and proportion and properly assembled in working, or apparent working order, as the detail specification and plans require.

MOUNTING - Ship models are to be mounted on keel blocks and bolted to base board, or set in a proper cradle. All mounting chocks, blocks and base board to be of dry lumber: mahogany, white pine or other approved lumber, smooth and well sanded and painted or varnished as required.

AMENDMENTS:

- (1) **SCALE** - the same application should be applied towards the use of the metric system.
- (2) **HULL** - Plank or Frame vs. Plank on Bulkhead: due to the wide spacing of bulkheads on the normal kit model, flats normally appear even in the best of model construction, especially in areas requiring large or complicated bends. Completely framed models are much better in this regard, and allow for portions of the hull to be left unplanked without undue distraction.
- (3) **DECK PLANKING** - on small scales only (3/32, 1/16, etc.), all others should show butts. Over emphasis on small scale deck work should not distract from remainder of model.
- (4) **SAILS** - Preferably none, though suitable linen cloths can be employed for scales 1 /4" or greater. If employed, all details must be shown, reefs, reef bands, etc.
- (5) **MATERIALS** - deck furniture should be made from close grained hardwoods (pear, etc.).
- (6) **CASTINGS** - can also be made of other approved metals.
- (7) **IRON WIRE** - this may rust. One should use anodized tin wire instead.
- (8) **BRASS YARDS** - optional, use of close grain hardwood o.k.
- (9) **GLOSS PAINT** - Paint finish should not be a high gloss: flat, egg-shell, semi-gloss, and satin or their combinations are preferred.

- MYSTIC SEAPORT MUSEUM STORES - ADDITIONAL SHIP MODEL SPECIFICATIONS

HULL: construction

Kit

- a. Solid
- b. Plank on Bulkhead

Scratch Built

- * a. Solid (must be hollowed out over 10")
- * b. Lift
 - 1. Waterline
 - 2. Buttocks
- * c. Planked over Solid/Lift
- * d. Plank on Frame
 - 1. Solid Frames
 - 2. Built up Frames

*(Preferred Methods of Construction).

RIGGING:

LINEN ONLY!

- No Silk - has limited life.
- No Cotton - has limited life.
- No Synthetics or Blends - they stretch, haven't stood the test of time.

FITTINGS:

COMMERCIAL and SCRATCH

- No Lead (pot metal) No Plastics / Styrene
- Brass
- Nickel Silver
- Wood
- Paper
- Tin alloys (low in lead) **a. Britannia b. Pewter**
- Formica (phenol formaldehyde)
- Aluminum (hard alloys only)

PAINT:

- Shellac (for natural wood finish only)
- Floquil
- Pactra
- Humbrol
- Japan
- Clear Lacquers (Deft, Krylon)
- Polyurethanes / West System epoxy resin

GLUE:

- White (water resistant)
- Ambroid or Duco
- Epoxy
- Instant glues (zap, etc. on small areas only)
- Powered resins

WOODS:

No Balsa

All close grained hardwoods & their veneers.

- Fruit Woods - Ebony
- Boxwood - Dogwood
- Bass - Sitka Spruce
- Holly - Pine (high grade)
- Poplar - Model Plywoods

MISCELLANEOUS MATERIALS.

*No Styrene

- Fiberglass (only on extremely large hulls)
- Plaster (carvings)
- Epoxy (carvings)
- Duratite Surfacing Putty
- Treated Cloth/Fabrics (to scale)
- Glass

(Specifications subject to change)

PROCEDURES BY WHICH AN OFFICIAL OF MYSTIC SEAPORT MUSEUM WOULD USE THE CLASSIFICATION RATING SHEET

1. Categorize the given model in one of the listed CLASSES A-D or the SPECIAL CLASS.
2. Describe the method of hull construction (solid, lift, etc.).
3. Describe any SPECIAL BUILDING ASPECTS, if applicable.

Examples: Carvings, Interior Work, Working Fittings, Unique Mounting, Built Up Hull Frames, Rare/Exotic
Materials, Treenails/Pegs, Artistic Painting (weathering, etc.), Extreme Scales (miniatures, 1/2 scale)
* * *

RATING PROCEDURE:

1. Note each BUILDING ASPECT applicable (hull, rigging, etc.) and calculate "Base Number".

Base Number Calculation:

- a. Each BUILDING ASPECT applicable is worth a maximum of 50 points (10 points for each of the five CRITERIA).
- b. Multiply the number of applicable BUILDING ASPECTS by 50, and that will equal one's "Base Number".

Example:

$$\begin{array}{ccccccc} 5 & & x & & 50 & & = & & 250 \\ \text{Aspects} & & & & \text{Points} & & & & \text{"Base Number"} \end{array}$$

- c. After the numerical rating is completed, a total is calculated and divided by the "Base Number" for a percentage.

Example:

$$215 \text{ (total rated points)} / 250 \text{ ("Base Number")} =$$

86%

CATEGORIES OF SHIP MODELS

CLASS A **SCRATCH-BUILT MODEL:** Model built entirely from scratch materials by the builder with no commercially fabricated parts except cordage, chain and belaying pins.

CLASS B **MODIFIED SCRATCH-BUILT MODEL:** Model built from scratch, but supplemented by the use of some commercially fabricated accessories.

CLASS C **MODIFIED KIT MODEL:** Model built from materials provided in commercial kit, supplemented by other commercially fabricated parts or by scratch-built parts.

CLASS D **KIT MODEL:** Model built entirely from materials provided in commercial kits.

SPECIAL **SUB CATEGORIES:** Model built and/or displayed in any of the following methods:
Antique Waterline Cross Section Cut-away Exposed Interior Sailing Half Hull Power
Rare Materials Diorama Mechanized Builder's Extreme Miniature Ship in a Bottle
Shadowbox Americana Folk Art Decorative Production Pond Model Other

Categories provided by *The Manners' Museum Model Ship Craftsman Competition*, and by *Mystic Seaport Museum*, as prepared by R. Michael Wall, 1980.

RATING SHEET **Mystic Seaport Museum Stores Ship Model Classification System**

Model Name: _____ **Scale:** _____ **Builder:** _____

Class: _____ **Hull Construction:** _____ **Dimension:** _____ **Year Built:** _____

BUILDING ASPECTS	CRITERIA	Accuracy of Scale	Uniformity of Detail	Neatness of Construction	Materials and Their Application	TOTAL POINTS
HULL	Authenticity of Plans & Research					/ 50
RIGGING						/ 50
FITTINGS						/ 50
MASTING						/ 50
DECK WARE						/ 50
PAINTING						/ 50
SAILS						/ 50

SPECIAL ASPECTS

						/ 50
						/ 50
						/ 50

TOTAL / BASE NUMBER

= PER CENTAGE

Ratings 1 through 10 represent the degree of quality craftsmanship accomplished, as related to the *General Preliminary Building Specification*, prepared by the staff of the Division of Marine Transportation, Howard I. Chapelle, Curator, Smithsonian Institution (revised, 3-31-61). Added construction specifications provided by R. Michael Wall, *Mystic Seaport Museum Stores*. Judging criteria provided by *The Mariners Museum*, Model Ship Craftsman Competition.

90-100% Extraordinary
80- 89% Excellent
70- 79% Good
under 70% Not Rated

MUSEUM QUALITY SHIP MODELS

(Established 1979)



THE DEPARTMENT OF SHIP MODEL SALES & SERVICE
is interested in the purchase or consignment of scratch built,
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construction specifications.

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