

# Specifications for Construction of Exhibition Models of U.S. Naval Vessels

Curator of Models, U.S. Navy



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Model specifications are published here for general interest and are not to be referenced regarding official Navy contracts.

## 1. DURABILITY OF MATERIALS

As part of the permanent collection of the Department of the Navy, it is reasonable to expect a new ship model to last one hundred years before deterioration is visible. Therefore, resistance of models and parts to the actions of temperature, humidity, and light is essential. Extreme care must be given to select materials which are known to be compatible and will not, in time, interact chemically.

Although only a few materials are prohibited in "Specifications for Construction of Exhibition Models of U.S Naval Vessels," some recently developed model-building materials and techniques should be avoided until sufficient time has passed to properly evaluate their longevity. Though some of these recently introduced materials may ultimately test superior to more traditional techniques, substances of unproven longevity should not be employed in models built under these specifications. It is advised that fiberglass resins, styrene, expanding foams, casting resins, and cyanoacrylate glues be avoided when other materials can possibly be used.

### Workmanship

Workmanship shall be in accordance, in every respect, with the best model-building practices. Hulls shall be smooth, fair, and symmetrical; without blemishes, sap pockets, or tool marks, and shall be scraped and sand-papered to smooth surface. Machined parts shall bear no tool marks. Castings shall bear no visible mold marks. In no case shall glue alone be deemed sufficient

to hold deck houses, fittings, or other appurtenances in place. Mechanical fastenings such as screws and pins shall be used in addition to adhesives.

## Range

Models shall be museum quality and shall consist of the whole exterior of the vessel from keel and appendages to the top of the highest antenna or fitting, and shall include interiors of such enclosures, conning stations, deck house topside stations, gun and missile stations, hangars and bays as are accessible to weather without opening watertight doors or ports. Generally, all items on the prototype twelve inches or larger for 1:96 scale (six inches or larger for 1:48 scale) will be reproduced.

## Rigging

Running and standing rigging and cable antennas shall be represented. Windlasses shall be wound with appropriate cable or line.

### Ports and Windows

Large windows shall be indicated on the model by clear acrylic plastic. Ports shall be transparent, and shall have a hole bored behind them to give an appearance of depth.

## Gun Turrets

Gun turrets shall have the openings in face plates required for elevation of the guns. Where required, gun shrouds shall be represented.

## Aircraft and Vehicles

Where appropriate for the mission of the actual vessel, and visible on the model, scale aircraft or vehicles will be provided. Landing pads shall be provided with at least one representative scale aircraft.

## Small Boats

Small boats shall be mounted on davits or otherwise as actually carried and shall show all details, motors, and equipment twelve inches or larger in actual size. If represented with weather covers, gripes and all fastenings visible are to be shown. Landing craft and whale boats shall be without covers and shall show all exposed details and equipment.

### Special Features

Special functional features peculiar to the vessel (for example: stern doors, towing devices, special antennas, fire fighting gear, etc.) shall be shown.

## 2. MATERIALS

### Rigging

Layed rope shall be represented with first-quality, twisted, linen line. Wire cable will be used to represent wire cable. Wire will be used to represent wire. Care shall be given to insure the proper color of all rigging. Knots and seizings may be secured with thinned white glue.

### Flags

Flags shall be such material that a natural appearance as in a calm is achieved.

### Deck Covering

Deck covering shall be represented as installed on the vessel, including safety treads and nonskid areas. Decks which are bright shall show planking, seams, scarfs, butts, and miters, and shall be rubbed to a dull finish. Paper shall not be used to represent deck coverings.

## Hull

Hulls shall be built up in lifts of clear, first-grade mahogany or basswood; doweled and glued together with water-resistant glue. The wood shall be completely free of knots, checks, and sap pockets and shall be thoroughly seasoned. Models over 12 inches beam must be hollowed for reduction of weight. The hull shall be composed of the least number of parts necessary to achieve the proper shape. An excessive number of glue joints shall be avoided. On models less than 12 inches beam, hull lifts shall be cut to the full body shape: lifts shall not be cut in halves, thereby creating a glue seam along the vertical centerline of the model. The lifts shall conform accurately to lines of the vessel as shown by the plans. A stable, durable, flexible body putty may be used in moderation to fill gaps.

## About the Nautical Research Guild

Founded in 1948, the Nautical Research Guild (NRG) is an IRS 501(c)(3) approved nonprofit educational organization with an international membership of historians, ship model makers, artists and laypersons with a common interest in the history, beauty and technical sophistication of ships and their models.

The NRG publishes the quarterly Nautical Research Journal, a quarterly magazine whose articles span the broad spectrum of topics in the linked disciplines of nautical research and ship model building. The NRG also holds an annual conference and operates the Model Ship World online community.

For more information about the Nautical Research Guild, including membership options, visit <http://www.thenrg.org>.

## About Model Ship World

Model Ship World is the world's largest ship modeler's forum with over 32,000 members. The forum hosts over 900 scratch build logs and over 2,400 kit build logs.

Free to join, the forum has an active community of modelers across all skill levels. With over half a million posts in more than 15,000 topics, Model Ship World is an incredible resource for any modeler.

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