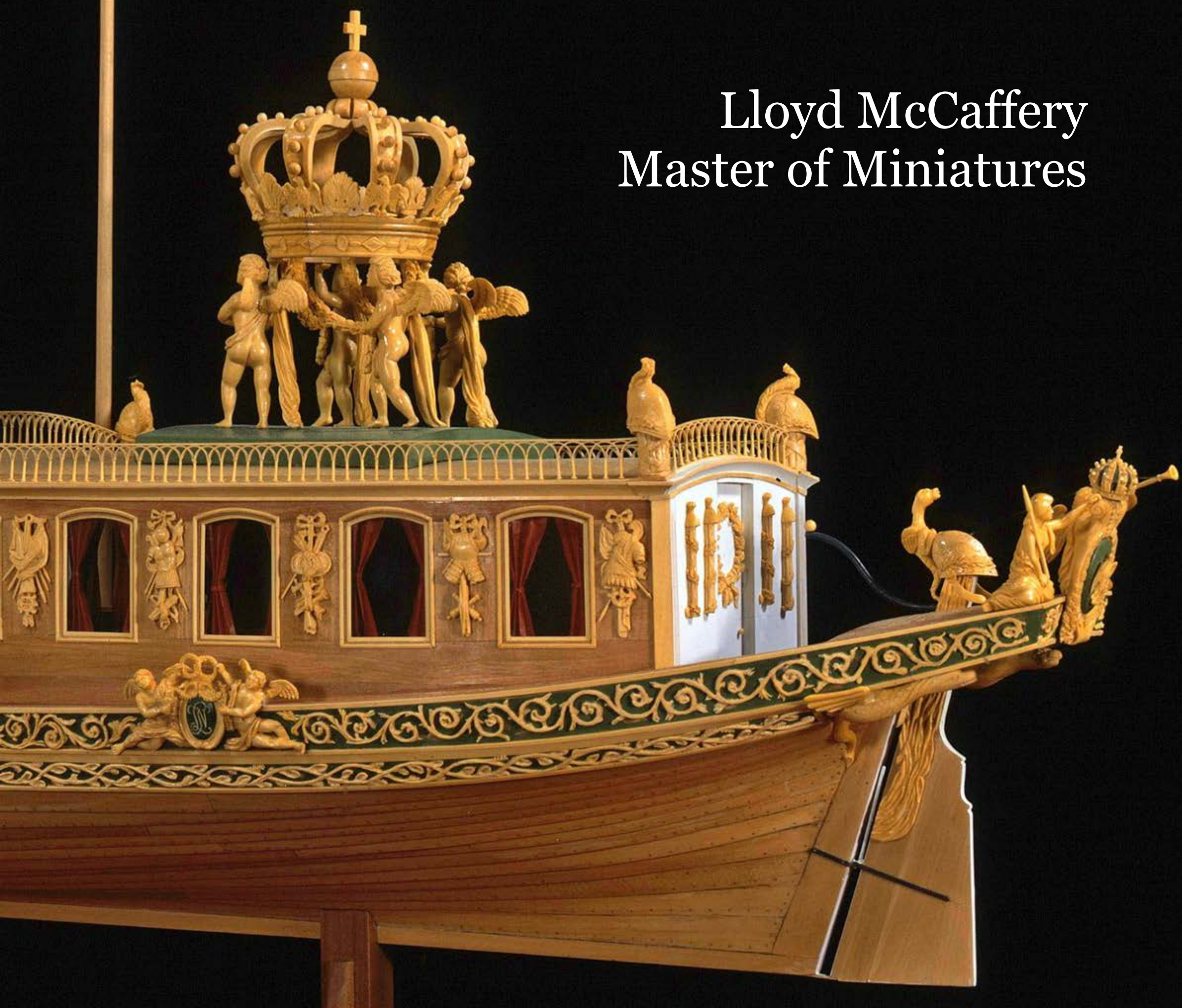


Lloyd McCaffery
Master of Miniatures



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Master of Miniatures

Presented by J. Russell Jinishian Gallery

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INTRODUCTION

For over forty-five years Lloyd McCaffery has devoted his life to creating some of the most magnificent miniature objects in the history of mankind. It's been my pleasure to have known Lloyd for over 30 of these years during which time I have continued to be amazed at the extraordinary craftsmanship, integrity and elegance of his creations. He is a unique figure in the history of art. From the moment he started working in miniature and "discovered his destiny," he has devoted his considerable intelligence and technical skills to perfecting the art form and expanding the boundaries of the history-based miniatures that have come before.



His determination to work only from the original research documents results in each new work becoming an object of historical importance in and of itself, as it brings to life otherwise lost or buried information about a particular subject. His dedication to absolute perfection in every aspect of construction and carving means that every piece of every model or sculpture must meet the highest standards of excellence before it becomes incorporated into one of his creations. He takes no short cuts. Achieving the level of dimensional complexity and historical accuracy that McCaffery does would be impressive in any size, but the fact that he does so in the most extreme miniature scale is nothing short of astonishing.

Often McCaffery's artwork is so detailed and so minute that it is hard to appreciate the truly sophisticated aesthetic it contains with the naked eye. As a result, in this book we decided to reproduce his works at many times their actual size. In fact, the true test of any miniature is what happens to it when it is enlarged. If anything is out of scale, it all becomes immediately distorted and obvious. Only very great miniature art can survive this rigorous scrutiny, and, as you will see, McCaffery's miniatures pass this test with flying colors. Once you've examined the remarkable artwork on these pages, you will know why we believe that Lloyd McCaffery deserves a very special place among the world's greatest miniaturists.

J. Russell Jinishian
Fairfield, Connecticut

“It is my goal to achieve perfection in
miniature...”

Lloyd McCaffery

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Lloyd McCaffery is one of the most amazing miniaturists of this or any age. Just as the names *Fabergé* and *Tiffany* have come to represent superior levels of design and quality, so too do we believe that, when this generation of miniature carvers is examined, Lloyd McCaffery's name will be found atop the list.

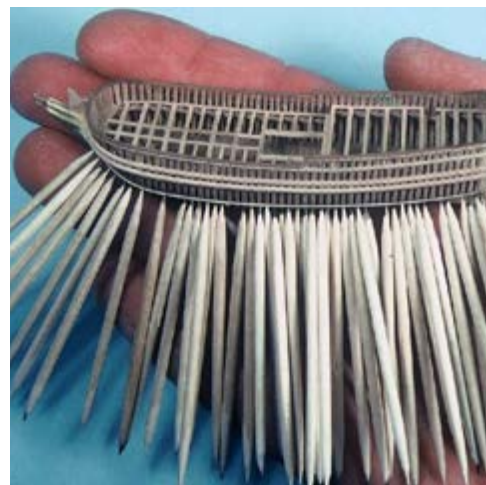
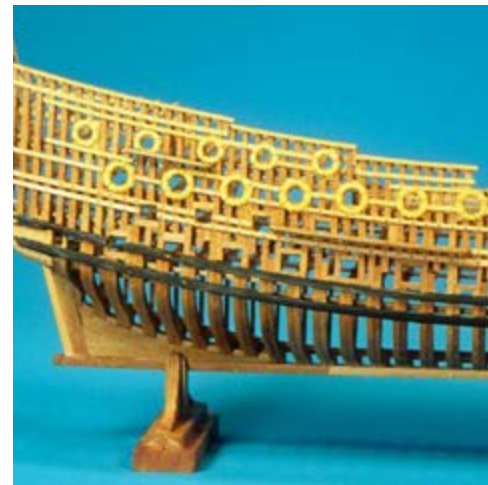
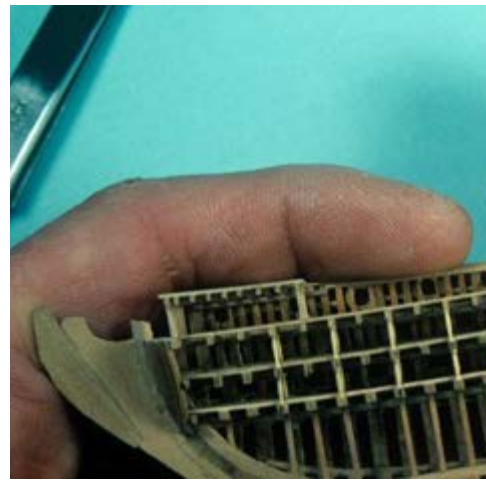
Over the past five decades he has set new standards in the field, from pioneering unique methods of miniature construction to perfecting the art of intricate detailed carving. He has devoted his life to the creation of the most detailed and exquisite work at small scales that it is possible for the human mind to imagine. McCaffery is trained as an artist and sculptor, and his works in the ship model field have long been collected by serious connoisseurs of this genre. More recently, he expanded his range of subjects to include miniature dinosaur skeletons, wildlife, carousel horses, stagecoaches and original figure sculptures.

The woods he uses are smooth, hard, fine-grained fruit woods. The tools include air turbine dental engines, jewelers' tweezers, and a number of miniature versions of planes, chisels, and knives he has fashioned to his own exacting specifications to achieve the results he seeks.

His work has been featured in many magazines, among them *Connoisseur*, *Wooden Boat*, *Miniature Collector*, *Yankee*, *Wildlife Art News*, *Sea History*, *Wildfowl Carving & Collecting*, *The Yacht*, *Fine Woodworking*, and *Showboats International*. He has written many articles for the scholarly publications *Model Shipwright* and the *Nautical Research Journal*. His definitive book on ship modeling techniques, *Ships in Miniature*, was published in 1988, and reprinted in 2002 by Conway Maritime Press of London. His miniature model of the HMS *Prince* was featured in *The New York Times Magazine* in November, 1990. Just 3 ½" long, it is built up plank-on-frame and incorporates 100 turned cannons with the muzzles bored out. The hatch gratings are built up just as on the actual ship. This model sold in 1990 for \$100,000, setting a world record for a contemporary ship model at the time.

His work has been exhibited and can be found in the collections of many museums worldwide, among them the United States Naval Academy, Annapolis, Maryland; Victoria and Albert Museum, London, England; U.S.S. Constitution Museum, Boston, Massachusetts; the Maritime Museum at Mystic Seaport, Mystic, Connecticut; Pan-American Japanese-American Amity Hall, Kushimoto, Japan; and the Columbia Maritime Museum, Astoria, Oregon, among others.





“Ships are among man’s most beautiful and important creations and are worthy of our best efforts to replicate them in miniature.”

Lloyd McCaffery



FULL SHIP MODELS

A good scale ship model in essence lifts a vessel up out of the water, shrinks it down and places it in our homes or offices to study and admire. All good ship models can provide insight and information on an individual ship's construction and appearance. Great ship models become fine works of art in and of themselves. These models are able to not only replicate the appearance of a ship in three dimensions but capture a ship's unique *spirit* as well. McCaffery's uncanny ability to accomplish this in an extreme miniature has earned him a place among the finest miniaturists of this or any era. The models on the next pages rank among the finest ever created. It may be hard to envision

but McCaffery's "Small Ships" are actually built up by him miniature plank for miniature plank, peg for peg, exactly as the original ship was built. If a ship's grating, originally five feet across, was constructed of 40 different pieces, then the ship's grating on the McCaffery model, measuring just 1/4" across, is constructed of the same 40 pieces!

In order to accomplish this amazing feat he first had to make a set of miniature tools to his own exacting standards. He then uses construction methods and materials that are permanent, to ensure his miniature creations will last virtually forever. It's not just the complexity of crafting these ships at such

small scales but the creative aesthetic that McCaffery applies that sets him apart as an artist- each choice of wood and material is researched to be visually pleasing and revealing of a ship's character. To this end, McCaffery leaves nothing to chance he also designs and builds the cases and bases, and even etches the nameplates for his exquisite creations, to ensure that a model's complete presentation reflects his artistic vision. It is this total mastery of his art form, from extensive scholarly research to impeccable craftsmanship, that puts McCaffery's ship models in a class with the world's most revered miniature creations.

Above: Detail of USS Constitution, 1812



*Starboard overall view of the 100-Gun First-Rate English Ship
Britannia, 1682 showing its massive bulk and tremendous firepower.*



Detail of the starboard side showing McCaffrey's mastery of ship construction and carving.

100-Gun First-Rate English Ship *Britannia*, 1682

Scale: 1" = 16' LOA 14 1/2" Hull length: 12"

Pear, Apple, Holly and Lancewood with English Oak Burl Base

Taking the artist years to build, McCaffrey's complex model of the 100-Gun Ship Britannia is simply the ultimate expression of everything a ship model can be. Here in his own words is the artist's elaborate process for researching and constructing this amazing work of art:

This model is a miniature exposition of the 100-gun ship built in 1682 as part of the Royal Navy's "Thirty-Ships" program of 1677. It represents one of the major ships built by the British as it contended for maritime supremacy in the seventeenth century. I hope that my model will serve as a means of educating people about this ship and how it was built and used. *Britannia* was the only 100-gun first-rate ship of the 30

ships requested by the King and funded by Parliament. It was designed and built by Sir Phineas Pett, one of a dynasty of shipwrights in the seventeenth century. It fought in just one battle, at Barfleur in 1692, and was given a great repair in 1701. The ship finally was broken up in 1715.

There is a great deal of information available on this ship. First there is a dockyard model at the United States Naval Academy Museum in Annapolis, Maryland. I spent three days taking the lines off this model in 1995. This model is rare in that it is a design model, built before the ship. Evidently Pett made the model to show the king his ideas, but Charles rejected the design as being too broad and shallow in draught. This type of hull would have been useful in operations against the Dutch, but the king was increasingly concerned about the French and needed a hull that was deeper and narrower. The final design proved to be unstable, and a girdling was undertaken. The situation was not



Overview of the port side showing how just five main "bends" serve to define the ship's shape and are held in place by the lower main wale and upper chain wale. The channels, very conveniently, anchor to the wale.



On the port side McCaffery has eliminated much of the internal structure, planking, and framing to allow a close examination of the complex interior construction of the vessel.

helped by massive over-gunning as usual. Frank Fox provided a great deal of information in his book, *Great Ships: The Battlefleet of King Charles II*. He did a construction drawing showing how the cross braces were fitted. He also supplied the ship's ordnance list, and I used the one for 1677 listing guns made of iron. I also examined the Vincenzo Coronelli lines (Coronelli 1697, Plate XII), but these, while properly showing the whole moulded shape, were of the wrong proportions when compared to the published dimensions. In the end I drew up my own lines based on the dockyard model and the tabular information in the Edward Battine's manuscript list. The result fits the known dimensions, conforms to the basic outlines of the dockyard model and the paintings and drawings of the ship, and is correct according to the whole moulded method of hull form. It is not intended to try to recover the exact lines, but to show as close as possible what the ship looked like.

The methods of drafting lines in the seventeenth century did not result

in an accurate set of lines for building a ship. They had to be altered in building to produce a fair hull form. This is particularly the case where the floor sweep meets the resolving sweep down to the keel. There was a knuckle here that had to be dubbed off to produce a fair run. And the limited use of rising and narrowing lines did not permit enough body sections to be drawn at bow and stern to produce accurately cut frames. This problem was not resolved until the creation of more accurate draughts using variable radii for the sweeps, the introduction of buttock and diagonal lines and the innovation of cant frames in 1715.

Much information was used to flesh out the basic structure of the model. The drawings and paintings of the Willem Van de Velde (1633-1707), Isaac Sailmaker (1633-1721), and Vincenzo Coronelli (1650-1718) provide a lot of material to work from. The Van de Velde drawings are, of course, the most authoritative and served as the basis for most of the others. There seems to be a view of the stern that is



The splendid glory of an English First Rate's stern shows here. McCaffery spent many weeks on this intricate boxwood taffrail carving, which is just 1 ½" wide.

missing, as the other artists produce detailed renderings of this, and must have taken their material from this drawing. Coronelli evidently based his engravings on a lost model, as he shows details that conform to the Van de Velde drawings, yet gives much interior construction that could only be based on a model. As stated before, the dockyard model at Annapolis has had many changes made to it, evidently around 1701 when the ship was given a great repair. I used it to establish the style and motifs of the carvings in comparison with the drawings. Through careful examination it is possible to tell which carvings date from the original construction of the model and which are later additions.

My model was made to the scale of 16' = 1", resulting in a model around 15" long. It is made mostly of pear wood taken from one tree from the state of Ohio. This is ornamental pear and not the fruit tree. Some apple wood was used as a dark contrast wood, and limited deck planking was laid using holly wood. This, by the way, must always be laid sprung in, with tapering toward bow and stern. Straight-run deck planking did not come into use until the early 1800s. All decorations are hand-carved in boxwood, the most elegant and excellent hard wood for this purpose. I praise it above all others, as much for its light yellow color, which matches the yellow ochre of painted work, as for its incredible working properties.

The framing was built up using information from Edward Battine's 1684 manuscript and the dockyard model. 5/64" sided frames were doubled following the run on the Naval Academy Museum model. The entire port side is cut away, with just five main "bends" fitted and locked into place with just the lower main wale, upper chain wale, and finishing rails. This approach permits a complete view of the interior, including the keel, keelson, riders, and all the complex interior construction. The diagonal hold braces were an intriguing detail, and very difficult to fit. The conventional riders overlapped above some of the decks. All hanging and lodging knees are fitted, with most of the deck beams pruned back to allow unobstructed views of the interior. This, however, meant that many deck erections could not be fitted because there was nothing to support them. But the value of being able to see the complete sweep of the ship's anatomy was the goal. I separately fitted the tiller, rowle, quadrant, frog, and whipstaff. The pumps, riding bits, galley hearth, and one capstan are also shown. All hatches are properly built up of boxwood, with athwartship notched ledges and then battens laid therein. I leave some of the battens out to show exactly how these fittings were made. The actual opening on

hatch gratings of this period was 4". in my model each opening measures just 1/64"!

All carvings were left in natural finish, along with the majority of the hull, and all fittings and decorations are pegged as well as glued in place. The large gunport wreaths are around 5/16" diameter and have two cherubs, a crown at the top, and fruits and foliage at the bottom. The quarterdeck and poop wreaths have just fruits and foliage. The figurehead, consisting of a horse, rider, and dragon (each side) is carved from one piece of boxwood and is just over 1" high. The stern and bulkhead were decorated with what were called brackets (uprights) and badges (panels). All of these follow the information in the drawings and paintings, with individual faces on all the figures. There are two Royal Arms on the ship, and these were always blazoned in the proper tinctures. Polychrome decorations were not used on Royal Navy ships, in spite of some model "experts" claims to the contrary. There is hand-painted scroll work on a black background shown just under the finishing rails. The stanchions were a difficult feat of miniature turning. Those on the entry port are around 3/16" high, while those supporting the finishing rails are just 3/32". The sheet bits have individual carved heads mortised to their tops. The yellow rail moldings were run to basic shape on a miniature table saw and scraped to form. The four lanterns follow the shape given by Coronelli. They were turned as solids on a lathe with the panels then being excavated between the framework. The interior was then hollowed out and the two halves joined with a rebate and lip at the edges.

The crowning glory of the stern is the taffrail carving, which on the model is just 1 1/2" wide. It has two horses, six personages, and various decorative elements. The Royal cipher "CR" on the dockyard model is reproduced by drilled holes on the model.

I must make a comment here about the name of the ship. Some authors have repeated a reference about the name being carved in the rail at the break of the poop and stated that this has only one "N" for reasons of symmetry. I examined this carving on the model, which is one of the additions from 1701, and this statement is not true. While it indeed includes but one "N," the name is displayed "BRITA" on one side of the central medallion and "NIA" on the other. This illustrates how important it is to use first-hand knowledge when researching and writing about these old models. Most metal fittings on the ship were fabricated of wood in the model and painted and manipulated to look



This bow section clearly shows the intricate standing rigging that McCaffery has replicated along with the carved figurehead of King Charles II trampling a dragon and the headrails leading to the elaborate carved beakhead bulkhead showing warrior figures. For scale, McCaffery has included two sailors that give us a sense of how massive the original carvings he's replicated really were.

like metal. The bell was turned from brass. *Britannia's* full battery of guns is shown on the starboard side. These were to have been iron in the 1677 list, and I have shown them thus. Some of the guns at the bow and stern were eleven-foot-long culverins, and these, curiously, project rather more from the gunports. The lids have rebated edges, as do the ports. The long culverins, would have been taken from the broadside and used as chase guns when needed

All masts and yards are based on data from James Lee's *The Mastings and Rigging of English Ships of War*, Anthony, and the illustrations of the ship. They are sawn and scraped out of degama or lancewood, sometimes called Cuban lemon wood. All riggings are of *Nichrome*, a nickel-chromium wire, with some copper for ratlines. I consider this wire essential for rigging miniature models, as it is the only material to hold a proper catenary, especially for waterline models. All rigging material was properly laid up, either cable or shroud, except for the

smallest diameters for crowsfeet and ratlines. All lines were painted with Humbrol flat enamel. The trucks were turned on boxwood. All rigging lines are security anchored, either by gluing into holes bored into the spars or by hooking pieces together. The flags are of glassine, a neutral pH paper, painted in accordance with the heraldic norms of the period and the display of them in the paintings of the ship. A wind vane is shown above the foretruck. I discovered how these items were fitted by examining a photograph of the model (lost in World War II) alleged to be *Loyal London*. They used a metal frame to hold half the cloth vane out horizontally, thus giving an accurate and immediate indication of the direction of the wind. I had puzzled over the strange behavior of these vanes in various paintings, as they stuck out halfway and then dropped down limply. The examination of the long-lost model provided the key to understanding this. The flags are all properly lashed to the flagpoles, as they were before the introduction of halyards. Fid mauls are fitted in the fore and main tops. These were long-handled hammers

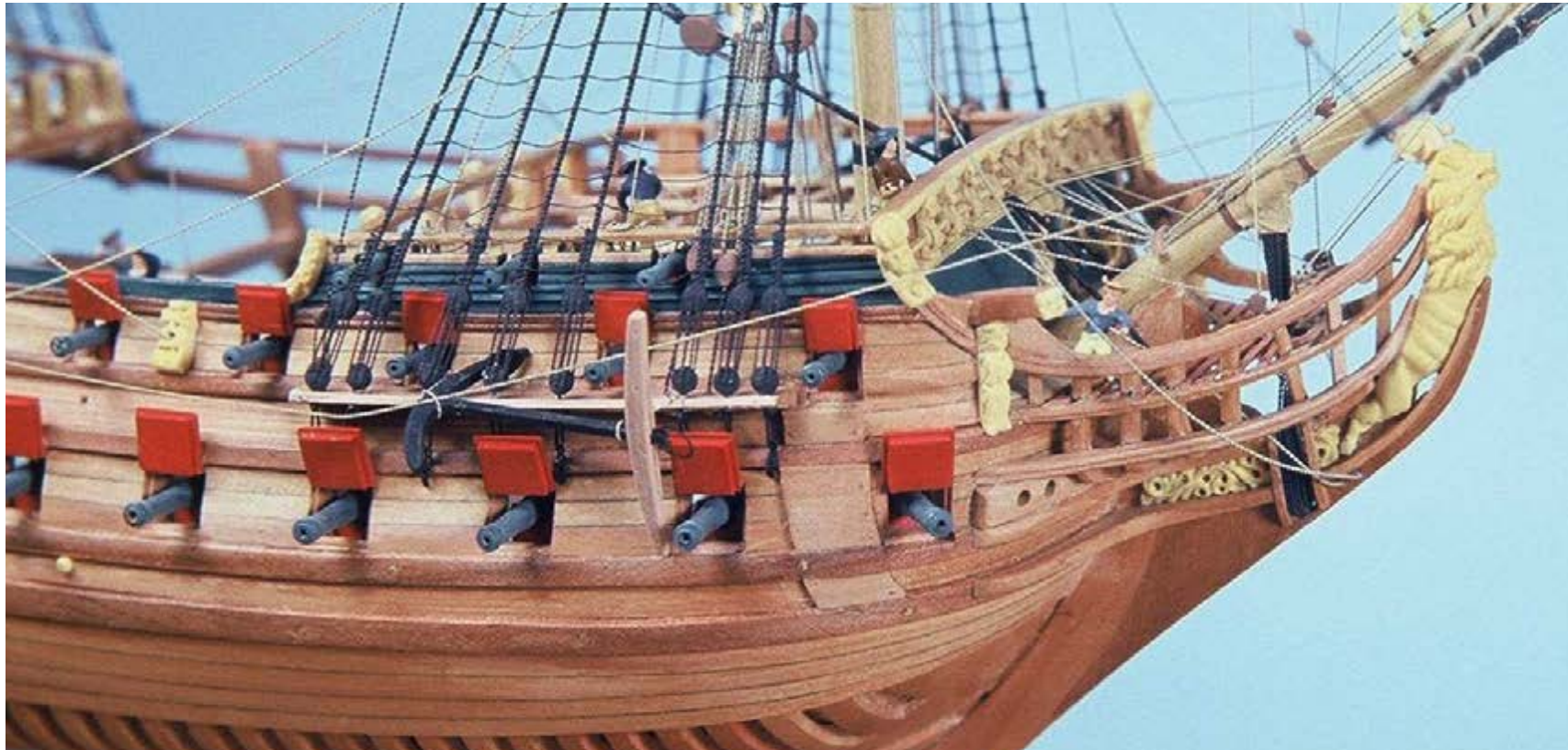


Detail of the starboard side. The guns are painted wood to imitate the original iron. The stanchions of the balustrade on the entry port are just 3/16" high. Those under the cap rail are 3/32" yet all were hand-turned by the artist.

used to knock out the fids in the event the topmasts needed to be lowered quickly, and thus they were kept in the tops. To show scale, King Charles II, Samuel Pepys, and eighteen other figures are placed on the model, along with a white cat below decks. The base is English oak burl veneer. The model took two years working full-time to complete.

McCaffery's incredible model of HMS Britannia embodies everything that distinguishes the work of Lloyd McCaffery from all the others. Unparalleled research using only original documents cross-checked to establish first-hand, the real facts about how the ship was conceived and constructed. This process alone can take months, sometimes years. The result is a remarkable work of art that helps preserve the world's maritime history and showcases its beauty for generations to come.

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 Models: Coronation (1685) Second-Rate from the Thirty Ships Programme, Kriegstein Collection
 Hampton Court (1678) Third-Rate Earl of Pembroke, Wilton House



Detail of the bow section. Note the scrollwork carving on the beakhead bulkhead and the lion with scroll figurehead just 1" wide. Clearly shown too are miniature gunports, each tiny lid rabbeted and subtly curved to fit the hull of the ship which, on the original vessel, kept the gunports watertight.

**Der Hollandische – Zweidecker Von 1660-1670
(A Dutch Third-Rate of 1660-1670)**

Scale: 1" = 16' LOA 12" Hull length: 10 1/2"

Boxwood, Holly, Pear, and Lancewood With Acacia Burl Base

While a significant, large-scale, original 17th-century model of a Dutch ship-of-war was destroyed in Berlin during World War II, fortunately she was well documented with plans and photographs published after the war. The Dutch authority on such matters, Herbert Tomasen, believes this model may have been of the *Jonge Prins*. Whatever her name, she has the three attributes regarded as necessary by the artist for being a subject for a ship model: good looks, accurate information and historical significance. McCaffery's model is constructed plank-on-frame, using sources published by the Dutch authorities such as Ketting, Hoving, Tomasen and Dik. The starboard side is partly planked with some framing exposed, while the port side is *completely* cut away,

showing the complete interior. Just four main "bends" serve to fill out the shape of the hull on this side, and the main wale and some upper rails connect these to give the longitudinal sweep of her lines. Interior details include pumps, tiller, sweep and whipstaff, capstans and various partitions. Most of the main structure is of pear wood from one tree cut in the state of Ohio. The deck is individually planked of holly.

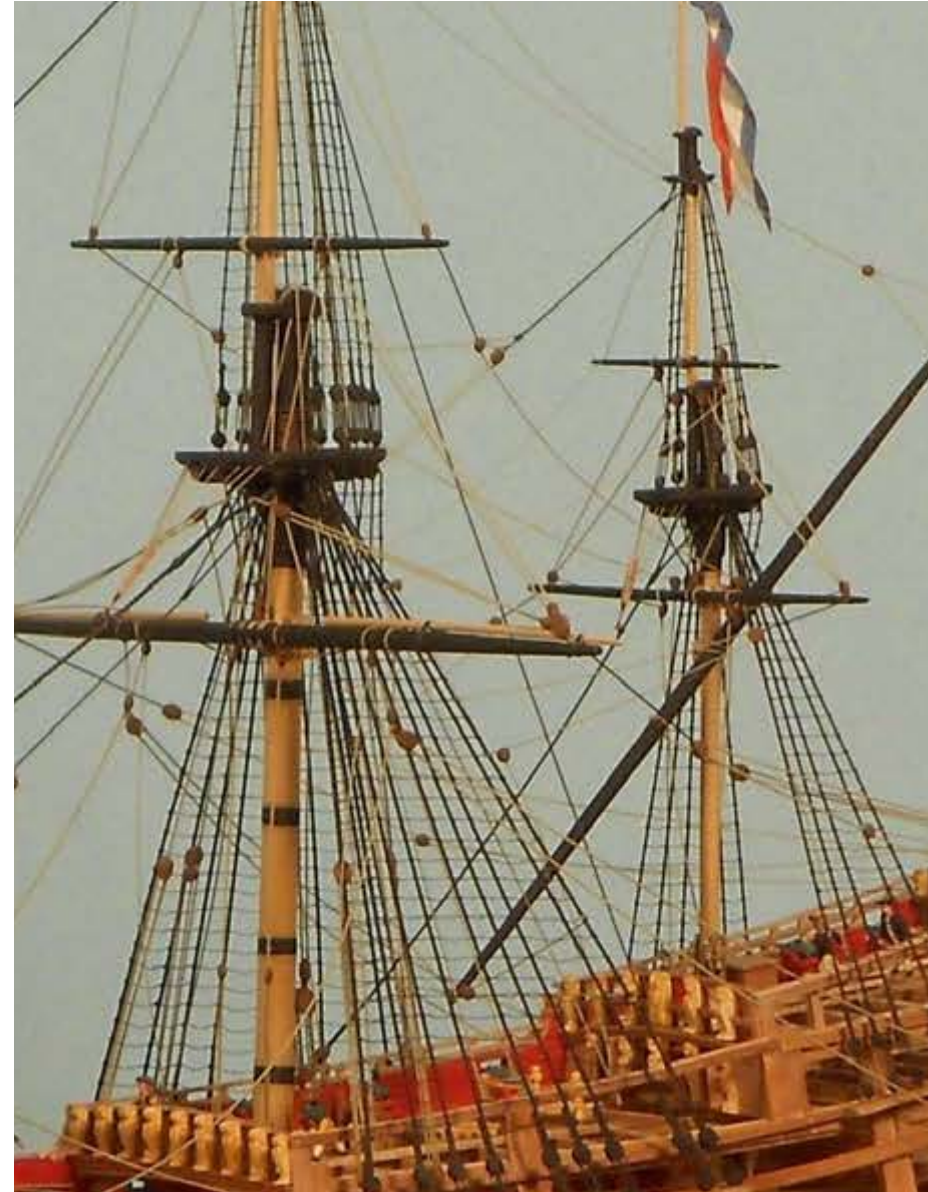
The carvings are all of natural boxwood and are based on the excellent photos of the actual model, as well as the paintings and drawings of the Van de Velde. They are all completely detailed, showing the faces on the cherubs on the quarter galleries and stern. The arms on the stern are those of William of Orange and are blazoned in the proper tinctures. The lanterns were turned from boxwood and hollowed out. They were made in two sections with a lip and rabbet. The balusters for the companionway were hand-turned. The flags are of glassine, a neutral-pH, thin paper.



*Der Hollandische – Zweidecker Von 1660-1670 (A Dutch Third-Rate of 1660-1670)
The port side of the model is completely cut away to show the ship's interior detail.*



In the 17th-century battle for domination of trade routes and territory, each nation constructed its own style of ship to achieve its ends. McCaffery's magnificent miniature reveals the distinctive characteristics of Dutch ships of the period which were generally more shallow in draught, much smaller than their English rivals, and not as lavishly decorated. In the model (shown above) copper wire was used for the footropes while all of the flags are made of a neutral pH.



glassine and painted with permanent artists' paints. All the intricate details of 17th-century rigging, including the crowsfeet, are reproduced in this model. The masts and yards are made of lancewood, all tops, crosstrees and moldings are fitted. The trucks at the top of the flagstuffs were turned of boxwood. The standing and running rigging are constructed of nickel chromium wire which perfectly imitates the actual rigging.



This incredible boxwood stern carving measures just 2 1/4" wide. It shows the faces of cherubs and the Coat of Arms of William of Orange. The miniature lanterns are individually turned and hollowed out, each made in two sections with a lip and rabbet.

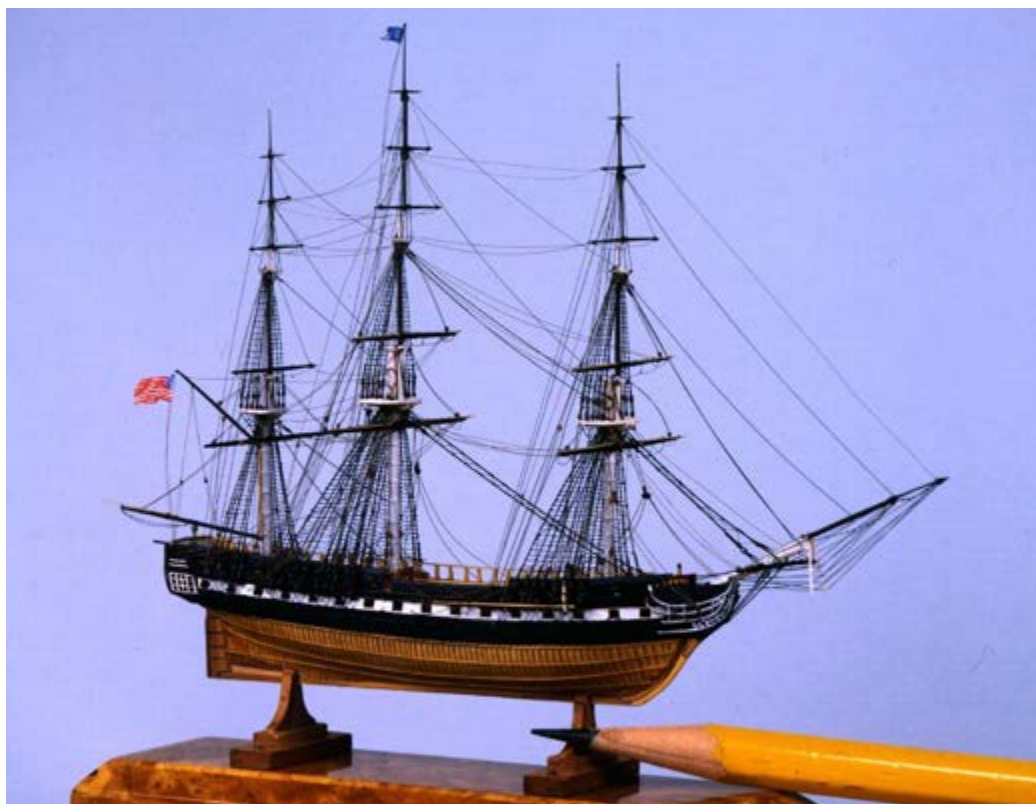
USS Constitution, 1812 -1815

Scale: 1"= 64' LOA 5' Hull length: 3"

*Magnolia, Apple, Boxwood and
Lancewood with Acacia Burl Base*

Which ship holds the distinction as the oldest commissioned warship afloat in the world today? It's the USS *Constitution*, the 308' 44-gun frigate launched from Harrt's Shipyard in Boston, Massachusetts on October 21, 1797. One of the first ships ordered by the new U.S. Congress to start America's Navy, she was to prove her worth over the years in battle after battle. *Constitution's* most famous actions occurred during the War of 1812, when she captured numerous merchant ships and defeated five British warships. Her legendary battle with the HMS *Guerriere* earned her the nickname of "Old Ironsides" after cannonballs were observed literally bouncing off her massive 21" thick oak hull! Finally she was returned to Boston in 1934 where she is still berthed today, a powerful symbol of U.S. Naval history. McCaffery's model reveals the unique construction characteristics that have helped her remain afloat when nearly every other large sailing ship in the world has been lost to the ravages of time.

Although America's flagship has been painted and modeled thousands of times since her launching in 1797, until now no one has replicated her in extreme miniature scale as has master miniaturist Lloyd McCaffery. The amount of detail and historical information incorporated in his model would be staggering in a model ten times her size. In order to achieve this level, McCaffery has had to pioneer new techniques and materials, inventing new tools to manufacture every minute piece of the model himself. Along with his 3" model of the HMS *Prince*, which was



Above: USS Constitution, 1812-1815 shown here actual size

featured in *The New York Times* magazine and on *CBS Television*, this ranks as simply one of the finest miniature objects created in our time.

McCaffery's model of the USS *Constitution* is constructed with the starboard side painted white on black above the main wales and the port side left natural finish, with most of the framing cut away to show the intricate interior construction. The frames are made of magnolia with double 'bends' to represent the full-size framing practice. The keel, stem and sternpost are of apple, with three scarph joints in the keel as per the original specifications. The stem is joined to the keel with a compound scarph and is made of five pieces. The interior is fitted with all beams for each deck. The knees, carlings and ledges are fitted to the starboard side only, to allow the fullest view down into the structure from above. The hatch gratings are built up just as on the full size ship, with

battens fitted into notches cut into the crosspieces. The headrails are of boxwood, cut and steam-bent to shape. The side planking is of boxwood, with two treenails fitted at every frame. The sheer rail is fitted on the port side as per the original draft, and is drilled and pegged vertically into the stanchions and fitted with belaying pins. Pin rails on the starboard side are fitted inboard, again with belaying pins and coils fitted. The wheel is a double one. The ship's bell is on the front side of the main. The figurehead is shown on the port side only, with the familiar scroll and trailboards on the starboard side. All windows in the transom and starboard quarter galleries are built up from wood, with mortise and tenons where they cross. The spars are of lancewood with brass skysail poles. Most of the rigging is of *Nichrome*, a nickel-chromium alloy wire, with some copper wire for footropes.



Although America's Flagship has been painted and modeled thousands of times since her launching in 1797, until now no one has replicated her in extreme miniature scale as has master miniaturist Lloyd McCaffery. The amount of detail and historical information incorporated in his model would be staggering in a model ten times her size. The starboard side (shown three times its actual size above) shows the ship finished and painted white on black from the wales up, as she was in 1812, and framed in magnolia below. The familiar scroll and trailboards are visible on the bow. The cannons are turned from boxwood with the muzzles bored out. Those on the lower deck are long 24 pounders, with carronades fitted on the spar deck.

The Studdingsail booms are made of lancewood, tapered as per the original. They are fitted to the fore channels and the lower and topsail yards. The boom irons are made of pieces of wire, and these are fitted into holes bored in the ends of the yards. The cannons are turned from

boxwood, and the muzzles bored out. Those on the lower deck are long 24 pounders, with carronades fitted on the spar deck. These are 12-pounders. This astonishing model is mounted on a plinth and base of acacia-cluster burl veneer, polished with ten coats of varnish.



This remarkable model of the USS Constitution is shown here five times its actual size. The frames are made of magnolia, with double 'bends' to represent the full-size framing practice. The keel, stem and sternpost are of apple wood, with three scarph joints in the keel as per the original specifications. The stem is joined to the keel with a compound scarph and is made of five pieces. The interior is fitted with all beams for each deck. The knees, carlings and ledges are fitted to the starboard side only, to allow the fullest view down into the structure from above.



The hatch gratings are built up just as on the full-size ship, with battens fitted into notches cut into the crosspieces. The side planking is of boxwood with two treenails fitted at every frame. The sheer rail is fitted on the port side as per the original draught and is drilled and pegged vertically into the stanchions and fitted with belaying pins. Pin rails on the starboard side are fitted inboard, again with belaying pins and coils fitted. The wheel is a double one. The ship's bell is on the front side of the main. The figurehead is shown on the port side only. All windows in the transom and starboard quarter galleries are built up from wood, with mortise and tenons where they cross.

Napoleon Bonaparte's Imperial Barge, 1810

Scale: 1"=2' LOA 29"

Lancewood, Boxwood, Holly and Apple with Black Walnut Base

Napoleon Bonaparte's Imperial Barge is one of the most splendid relics from the age of sail and oars. Preserved in the Musée de la Marine in Paris, she is an excellent subject for a model.

In the spring of 1810, Napoleon decided to visit Antwerp to inspect the defenses there, and Admiral Decrès and Marine Minister Lassaut ordered a barge of suitable magnificence to be built for the occasion. A barge in *Architectura Navalis Mercatoria* 1768 (Plate XLVI No. 2), was chosen for the hull form. According to the history on the plans of the Emperor's Barge published by the Musée de la Marine, master shipwright Le Theau built it in 21 days and nights. Two sculptors did the carvings, as evidenced by the clear differences in styles.

Napoleon used the barge just once, and then Napoleon III used it in 1858 during a visit to Brest, France. The notes on the plans say that the barge was restored and even altered for the occasion. After many years it was moved by rail to Paris, where today it resides in the Musée de la Marine's main hall. McCaffery's model showcases the incredible decorative carving of the Imperial Barge.

Here, the artist explains his unique approach and elaborate methods:

Chapman's XLVI No. 2 and the 1:25 scale plans drawn by the *Friends of the Marine Museum* are the two known sources of her lines. I usually like to visit the actual ship, when available, or examine the original design or "as built" drawings. In this case, however, the French did a fine job of preparing the plans. However, I did visit the barge, taking measurements and photographs to cross check information on the drawings. The photos were essential references when it came to the carvings, as the illustrations on the plans lacked sufficient detail. I also examined the 1:4 model of the barge in National Scheepvaartmuseum in Belgium. This model, made by Becckekeleers in a shipyard in 1932, is an interesting interpretation of the subject. I changed the plan's original scale of 1:25 to my desired scale of 1:24 (1" = 2').

Creating the lapstrake hull was straightforward. The backbone of keel, stem, and sternpost was fitted into slots cut into wood templates glued



Neptune rides a mythological sea horse based on a dolphin. He is flanked on either side by a cherub with a mermaid's tail. The one to port is blowing a conch shell while his partner holds the shell in his lap. Note how the group is composed with a rising diagonal line concluding at Neptune's head.

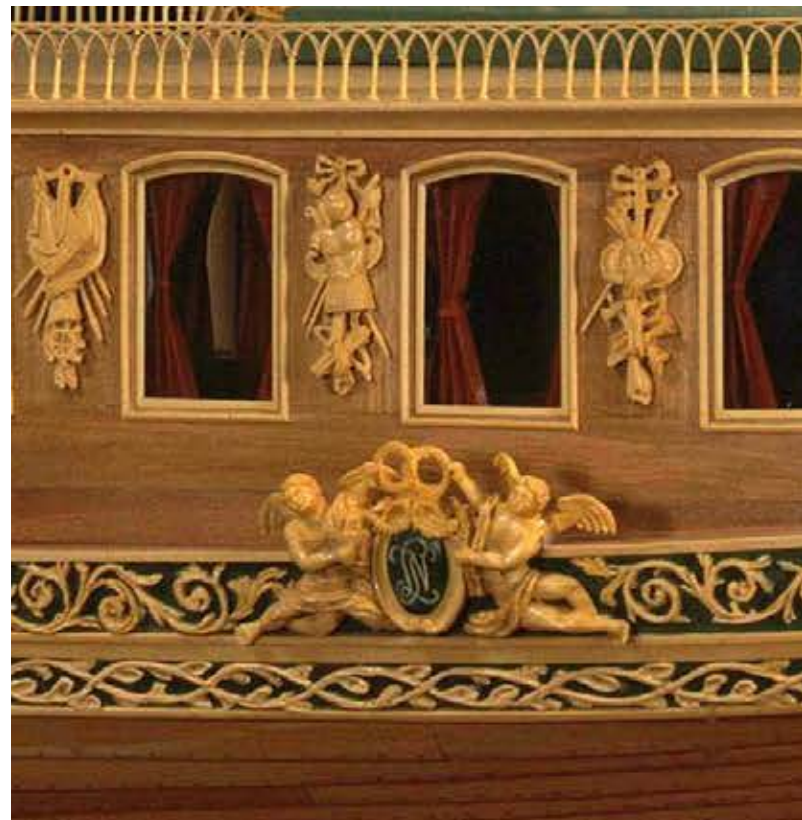


The 3" tall imperial crown on the coach house roof is carried by four cherubs and is decorated with 56 tiny carved pearls.

upside down on a building board. I made a torsion box to use as the base. After determining the planking curves with cardboard templates (I prefer a “spile-by-eye” approach rather than using dividers to step off the curves), the planks were shaped using miniature spokeshaves, files and sanding blocks.

The planks were glued together, then I lifted the assembly off the templates and began the delicate riveting process. To locate the rivets’ fastening points, I used a compass with its pencil scribing a line just back from the edge of each plank. Rivet locations were stepped off with dividers along this line. Copper wire inserted into the holes was cut just shy of the planks, and the ends peened with an anvil and small hammer. This set the planks permanently in place, avoiding a reliance on glue alone.

With the shell completed, I built up the frames in three layers with the



The sides of the coach house are festooned with twelve unique drops of nautical and naval subjects like cannons and armor.

bottom one notched to fit the interior steps in the planking. I then mounted the 12 thwarts and gratings, and finished the hull.

My carvings were done exclusively in boxwood (*Buxus sempervirens*). It has a secret life as the finest material for miniature sculpture. The best boxwood comes from the Pyrenees, England and the Caucasus, where several new varieties were discovered. The figurehead of Neptune is the main sculpture on the barge. I carved it from a single block while referencing the plans, my photos, and measurements. I peeled away the boxwood in layers, leaving room for projections such as elbows and knees. A lot of success in carving depends on establishing the proper proportions and anatomy.

Neptune’s trident was quite involved. I turned the shaft from lancewood and carved the tines from boxwood. Each tine has a hollow diamond cross section. A hollow sleeve of dark apple wood joins the spear to the



Napoleon's Barge, a rare relic of an age of excessive splendor, was built for the emperor's visit to inspect the defenses of Antwerp in 1810 and is now preserved in the Musée de la Marine in Paris.



The model is built to the scale of 1" = 2', or 1/24 life size. It is based on the museum's plans and the artist's observations and photographs.



The complex carvings as seen here on the McCaffery model are astonishing in their variety. The oars are turned and carved from degama or lancewood, with the starboard set painted and leathered and those on the port left natural.

shaft, resulting in three different hues along the length of the trident. The eyebolt, pin and shackle were carved out of boxwood and painted to imitate iron. Both sides of the coach house have a series of bas-relief trophy carvings. My photos proved vital, as each is unique in composition. I carved the trophies mostly from single pieces of boxwood, then turned and added the cannons, spears and whatever other round objects were needed.

The decorative railing around the coach house roof and various other components had to be carefully fabricated and assembled to accurately replicate what was on the barge. I turned each column, with some taper and entasis. The material for the arches was cut and bent over a form. To duplicate the rail's double overlap, I made two separate strings of arches tenoned into the tops of 152 columns. One string was placed over the other and the arches half-lapped in two places. The top rail completed the assembly. I turned tenons on the bottom of some columns

so the railing could be anchored to the coach house roof.

The two crowns on the barge presented some challenges. The smaller one at the stern rests on top of the imperial arms seal and is supported by two figures sitting on the transom. I turned this crown from a solid piece of box, then I carved its arms. For the imperial crown on the coach house roof, I turned just the base ring, cutting and carving the curved arms separately. The pearls decorating the arms decrease in diameter upward, so I turned six each of seven sizes. I used this same approach on the crown on the stern, except the pearls are much smaller.

The frieze of interlaced myrtles along the wale was a challenge to make consistent. I first cut 5-10" strips of boxwood and curved them to the sheer. These were glued to wood supports, then I repeated the design stepped off with dividers. After sketching the scroll-work and leaf patterns, I did the initial stabbing down or piercing with carbide bits



The coach house has an edging made from hand-bent boxwood arches, each half-lapped in two places. This railing is topped with a boxwood molding and is mounted on 152 hand-turned pillars. Even the interior of the model has a painted decoration on the ceiling and three Empire-style chairs for furnishings.

(the frieze is completely pierced). The surface and edges were shaped, the carving carefully removed and the undercutting done with diamond bitts. Each carved section was carefully matched to provide a continuous pattern.

All the carvings were left natural, as I think gold leaf obscures detail. The wood was finished with diluted gloss polyurethane varnish. I applied it liberally, and then wiped off any excess to build up the finish within the surface of the wood. This process enables me to control the surface sheen like professional modelers who built the old dockyard models, who often applied a dark wash to increase the definition of the carved work. They wiped the wash off a carving's high areas but left it in the recesses to add depth and create shadows. All the fish and other decorations on the blades are painted and gilded, not carved. The amount of carved work was almost neverending, but eventually the time came to mount the model. I used two apple wood pedestals and built a

black walnut plinth and base with red velvet inserts. I did my own calligraphy for the nameplate, patterning the capital "N" in Napoleon on the letter used in the cipher badges.

There is no question that the ornate design and elegance of the original barge was truly fit for an Emperor like Napoleon. However difficult it was to build the barge at full scale by the scores of shipwrights who worked on her, McCaffery's mastering and single-handedly figuring out how to replicate all her decorative features in extreme miniature is a *tour de force* of miniature construction that has never been seen before. Every single piece of the model had to be carved exactly like the original or nothing would fit together properly. To do this McCaffery had to first mentally deconstruct the original barge piece-by-piece, an astonishing puzzle in itself, then recreate every single piece, every angle, every curve, then position each piece into the next to arrive at the final incredible miniature creation we see above, perfect in every detail.



Above: Prince Frederick's Barge. The prow, stern and rail are carved and gilded with the royal coat of arms and Prince of Wales' feathers among riotous sea-creatures, swags and Vitruvian scrolls.

Prince Frederick's Barge, 1732

Scale: 1" = 2' LOA 32"

Hawthorne, Boxwood, Lancewood, Apple, Holly, 24-carat gold leaf with Carpathian Elm Burl and Black Walnut Base

This magnificent state barge was built between 1731 and 1732 after the designs of a noted architect of the period, William Kent, for Prince Frederick, the eldest son of King George II. Built by John Hall on the south bank of the Thames, she was powered by 21 oarsmen. The elaborate carvings were executed by James Richardson, Master Carver to the Crown. The Prince used the barge for royal occasions as well as pleasure trips along the Thames until 1849, when she was placed in the Royal Barge House of Windsor Castle. From there she traveled in 1925 to the Victoria and Albert Museum, and in 1951 was placed on loan to the National Maritime Museum in Greenwich, England where she is displayed today. At sixty-four feet long she is the largest object in the

museum's collection. When Lloyd McCaffery set out to build the Prince Frederick's Barge, the only known accurate scale model of this iconic barge, he first flew to the National Maritime Museum in Greenwich, London to view the actual restored barge on display in the barge house and spent one and a half months taking measurements.

All measurements are accurate to within 1/8". To do this, a base line was stretched along the port side of the keel. Station lines were measured out along this line. Vertical and horizontal measurements were then taken from the outside bottom edge of each plank. Additional measurements were taken of details, such as thwarts, carvings and oars.

A reference line was then stretched from bow to stern inside the barge above the thwarts as a datum line for measurements inside the barge hull. As further reference, several hundred photographs were taken of various parts of the barge, including hull structure, thwarts and many of



While the original barge decorations were all gilded in 24-karat gold, McCaffery has left the port side of his model natural wood so that the viewer may better appreciate the intricacy of the carvings.

the carvings. The model's hull is made of apple wood, planked over a solid wood formed and carved to the shape of the inside of the plank. The ribs are made of holly laminated in three layers. They were then steam-bent and glued, then doweled and pinned into place. Copper nails were used, as well as glue on each plank. The astonishing carvings are all of boxwood. McCaffery first made precise, detailed drawings of all the complicated carvings. The sinuous shape of the dolphin is covered with tiny carved fish scales. The rolling wave scroll pattern was carved in small sections and fitted between separately carved rails. The shell decorations were carved then hollowed out to fit over the decorative railings. For the finish, the appearance of the barge served as a guide for the model. The rough, time-worn appearance of the hull was copied in the sheen and worn appearances on the hull of the model, particularly about the thwarts. The starboard side of the model was gold-leafed, with the port side decorations left natural finished to showcase the intricacy of McCaffery's magnificent carvings.

In 1986 this model was awarded First in Class at the International Ship Model Competition at the National Maritime Museum in Greenwich, England. In 2013 and 2014 it was featured in the "William Kent-Designing Georgian Britain" Exhibition held at the Bard Graduate Center in New York City, NY and the Victoria and Albert Museum in London, England.

It has been said that Lloyd McCaffery is building models that challenge the standards of the greatest ship modelers in history. Through a subtle balance of color and texture among hundreds of parts, McCaffery's model of Prince Frederick's Barge truly appears to be this amazing vessel magically shrunk.



The model's intricate stern features the Garter Star stern emblem shown below the Prince of Wales' feathers. It is constructed of 34 different pieces fitted together then gold-leafed and attached to the hull.



Above: The inside of the coach house is furnished just as it was in 1731 and decorated complete with a painted ceiling mural as in the original. The fish-scale-patterned decorations on the outside of the roof were steam-bent by McCaffery then carved out and fitted into place.



English Barge, 1768

Scale: 1"= 8' LOA 6"

Hawthorne, Boxwood, Lancewood with Acacia Burl Base

This miniature of a small pleasure craft is based on plate XLIX No.2, in *Architectura Navalis Mercatoria*, 1768, by H. F. Chapman. Chapman is generally regarded as the world's first Naval Architect. He spent much of his career in scientific inquiry concerning problems of ship design, construction and sailing.

This plate is listed as a "design draught", but it's possible that it is actually based on an existing barge in the National Maritime Museum in Greenwich, England, which the artist personally examined in detail. This barge is a Thames wherry derivative, which in turn is a descendant of the small boats of the Vikings. It has a long, raking bow for beaching, fine run and full body sections aft to support the coachhouse.

Above: English Barge shown two times actual size

The high, upswept stern and badge are typical of the type. Many examples of this and larger versions are to be seen in the paintings of Canaletto and the etchings of E. W. Cook.

The port side of the model is unplanked (see above) and shows the framing of hawthorne. The starboard side is clinker, or overlap, planked using boxwood. All joints are drilled and fastened with miniature treenails, or pegs. The scroll carvings, just 1/16" high, are done in boxwood and include the scrollwork along the gunwale aft, two cats at each end of the coach house and the stern badge. The oars are each carved from a single piece of lancewood with a hollow spoon blade. The Royal Standard is of neutral-pH glassine. The base is acacia-cluster burl veneer.



Royal Boat of Khufu

Scale: 1" = 8' LOA 17 1/2"

Apple, Bamboo, Lancewood with Cherry Base

This ancient craft is one of the oldest preserved boats in the world, and certainly the most spectacular. Discovered in 1954 in a pit next to the Great Pyramid at Giza where it is still on display, it is around 140' long. It is connected with the funerary monuments built for Khufu, or Cheops as the Greeks called him. This boat is around 4,600 years old, and may actually have been used on the Nile. It is built of cedar of Lebanon, and some of the timbers measure 65' long and 3' wide. Transporting and shipping them must have been a gargantuan task.

McCaffery's model is constructed of apple wood, using the same techniques as on the actual boat. Hook scarphs and joggled seams are

joined by bamboo pegs inserted in the edges of the strakes. The port side is left natural finish, with the starboard side painted green and the papyraform ends gilded. An oculis known as the Wedjat eye is painted on the starboard bow.

The decking and paneling of the house are of lancewood with a framework of apple wood. There is a curious framework constructed over the house, and it probably was covered with reed matting or cloth awnings. Seven figures are placed on the boat to show scale.

“You should put your heart into the creation, for you determine not only the accuracy, but the impact and magnitude of the work.”

Lloyd McCaffery



THE WATERLINE MODELS

A proper Waterline Model can capture the three-dimensional illusion of a ship under sail like nothing else can. To accomplish this, a ship modeler must have a thorough understanding of the ship's hull and rig, sea conditions, set of sail and placement of crew, and be able to replicate each of

these elements in miniature so as to appear perfect when viewed from any angle. A daunting task, yet years of dedication to achieving this goal have allowed McCaffery to create models that can carry us out to sea aboard them.

Above: Detail of Tea Clipper Thermopylae, 1868



Tea Clipper *Thermopylae*, 1868

Scale: 1" = 16' LOA 18 1/2"

Basswood, Crab Apple, Lancewood, Lindenwood, Brass, 24- carat gold-leaf with Black Walnut Base

Thermopylae was one of the loveliest of all the clippers. She was designed by Bernard Weymouth and built by Walter Hood & Company of Aberdeen. She was a composite ship, with iron frames, beams and keel. The planking was wood, sheathed with copper below the waterline. She was specifically designed for the China tea trade and became the great rival of *Cutty Sark*. She was sold to the Portuguese in 1897 for use as a training ship and renamed *Pedro Nunes*. She was deliberately sunk in 1907 after being found unserviceable.

This extraordinary waterline model is set in a carved and painted basswood sea. It is based on the lines, general layout and sail plan

drawn by David MacGregor. There are a number of photos and paintings of the ship, and these were used for various details. A most important reference is the model of her in the Powerhouse Museum in Australia, by Cyril Hume, who was actually able to interview members of her crew about her layout. As a result, McCaffery's model brings together all these reference sources to create the most accurate portrait of *Thermopylae* to date. The books by George F. Campbell and David MacGregor on the Tea Clippers were a valuable source. The book *Masting and Rigging the Clipper Ship and Ocean Carrier* by Harold A. Underhill was used for all rigging details.

The basic hull of the model is made of basswood with side and deck planking of crab apple. All deck houses and fittings are made in pieces just like the original. The stanchions of the bitts and fife rails are all hand-turned, with finials. Brass is used for the signal gun, tops of the capstans, portholes and binnacle. The side pinstripe, names, scrollwork,