Lloyd McCaffery
Master of Miniatures

Presented by J. Russell Jinishian Gallery
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.
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 Battie’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 bitts, 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 bitts 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 ½” 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 “BRITAN” 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
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 Masting
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 cords 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
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.

**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 Tomassen, 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, Tomassen 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 Veldes. 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 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 flagstaffs 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 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 scarf joints in the keel as per the original specifications. The stem is joined to the keel with a compound scarf 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 trenails 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 trenails 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 Beeccekeers 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.

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

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 bottom one notched to fit the interior steps in the planking. I then mounted the 12 thwart 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 degana 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 bits. 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 never-ending, 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.
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 at 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 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 one of 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 scarps 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 oculus 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 bits 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,
trucks and cockerel are 24-carat gold-leafed. The figurehead is based on photos of the ship, and the close-up photo of the figure on the original builder's half model. The planking on the quarterdeck and aft house is properly curved and tapered.

The masts and yards are made of lancewood and painted white where appropriate. *Thermopylae* was unusual in having white rather than black spars. All rigging is of a nickel-chromium alloy designed to never disintegrate like rigging made of thread. The larger sizes are twisted up to simulate rope and painted to represent natural or tarred standing rigging.

The sails are formed from a Japanese rice paper called masa. Wooden formers were carved to the shape of the sail and the wet paper gently pulled over the form to give the curves two dimensions. A cloth was stretched over the paper to keep the shape while drying. This shaped piece of paper was then painted and sanded to look like a sail. Cloth lines were drawn on with pencil, and reef points made up of wire. The flags are made from neutral-pH glassine, painted and curled to represent flags flying. The red duster is at the peak of the gaff, with the house flag at the main truck. She makes her number, 1569, under the second distinguishing pennant. This is from Marryat's code. The Hume model shows the house flag painted on the ends of the catheads, and this is also done on this model.

A crew of 17 figures is shown about the decks and in the rigging, with the ship's cat leaning into the lift of the deck on the main hatch. The sea is carved from English lindenwood, which is harder and crisper to work with than American basswood. The botanical difference is *Tilia Cordata* or platiphyllos versus *Tilia Americana*. The base is made of strips of black walnut.
**United States Brig of War Argus**

Scale: 1" = 16' LOA 10 1/2"  
_Basswood, Boxwood, Apple, Lancewood, Painted Basswood Sea with Laurel Burl Base_

_Argus_ was a handsome brig built in 1803. She was 94' 9" in length with a 27' 4" beam, and 12' 8" depth of hold. Her original armament was 16 24-pound caronades and 2 long 12's. She was one of four vessels built to reinforce the squadrons in the Mediterranean who were combating the depredations of the Barbary powers. She was designed by Joseph Hartt, and built by Edmund Hartt in Charlestown, Massachusetts. She had a tall, narrow rig as befitted her service in the Mediterranean. She was captured by HBM Brig _Pelican_ in the channel on August 14, 1813.

McCaffery consulted multiple sources to ensure the accuracy of his model, these included two lines plans of _Argus_ in the National Archives. Noted Maritime Historian Howard Chapelle (1901-1975) also did a redrawing of these in _The History of the American Sailing Navy_, lowering the steeve of the bowsprit to allow the inboard end to properly 'bury' on deck. Chapelle also fleshed out many details from other sources. We are also fortunate to have an actual survey made of her by the British after her capture in the Admiralty records, while an indent of articles needed for her construction and equipage is held by the New York Historical Society. For the set of the sails McCaffery used the paintings of Robert Salmon (1775-1845). There are at least five paintings showing how the mainsail was twisted by having the main lower and topsail yards braced differently. This twist adds considerably to the liveliness of the ship's appearance in the model.

The model’s hull is carved from solid basswood and planked over. The deck planking is made of crab apple wood, laid 'sprung in', that is, it is curved and tapered fore and aft. All deck fittings and accoutrements are
fitted together including hatch gratings, the ship's wheel, and fiferails. The boats are shown nested, with the thwarts of the lower boat removed to lower the center of gravity. All guns are fitted and rigged with tackles. A large crew is placed at various points on the model, engaged in diverse tasks. The ship's cat is lounging on deck. The masts and yards are made of lancewood, and all tops and trestletrees are built up. The rigging is made of Nichrome wire. It is essential to use a strong wire like this to establish the catenary of the rigging, and show the lines under the influence of wind. This type of wire also gives proper set to the various flags and pennants.

The sails are the most important aspect of this model. McCaffery uses two approaches to get the effect of realistic sails. The first, for sails that are fully set with 'belly', he uses a Japanese hand-made paper called masa. He carves wood forms to the exact shape and size of the sail to be made. The paper is quickly soaked with water, and carefully pulled into shape over the form. When dry, it is then painted and sanded until smooth. Then he adds cloth lines, bolt ropes, reef points, and other details. The result looks convincingly like an actual sail. For jibs and staysails, the artist cuts the scallop shaped edge of the sail where it strains against the stay. Sails that are clewed up are carved from apple wood. This is a slow, exacting process, as there are no straight lines, even where the sail is fixed to the yard. The main topsail on this model is also made of wood. This is because of the complex sags and bulges where the sail is taken aback against the main mast and rigging.

The incredibly realistic sea is carved from basswood, then painted to show a small chop of waves. McCaffery has set the hull of the ship with some heel to leeward, with the bow rising up through the waves as she makes her way forward. The model is mounted on a custom-made laurel burl veneer base.
“While there is no right way to make a miniature, there are certain absolute standards of research, permanent and archival materials and sound construction materials that must be strictly adhered to.”

Lloyd McCaffery
THE DOCKYARD MODELS

When the British Admirals decreed in 1716 that a scale model of every naval vessel that was proposed to be built or rebuilt be submitted for their approval prior to construction, a whole new type of ship model came into being. The Admiralty style or Dockyard Model was primarily conceived to showcase the design aspects and construction details of a particular vessel. Because the ship’s rigging was essentially standard, the models built for the Admirals’ scrutiny consisted of the ship from the keel up to the deck only. These were often made by professional ship model makers employed by the Royal Navy. For historians, these surviving Dockyard models still provide valuable information about ship construction of the past. In the following models, McCaffery has adopted this ‘dockyard style’ approach to further our modern understanding of the construction methods employed in these complex creations of another era.

Above: Detail of Schooner Yacht America, 1851
Schooner Yacht *America*, 1851
Scale: 3/8"=1'  LOA  39 1/2"
*Poplar, Apple, Holly, Cherry with Black Walnut Base*

There’s a reason why the One Hundred Guinea Cup, which was contested off the Isle of Wight on August 22, 1851, at the invitation of the Royal Yacht Squadron (“Open to yachts belonging to clubs of all nations”) was renamed the *America’s Cup* from that day forward. The American Schooner *America*, sailing under the flag of its owner John Cox Stevens, the Commodore of The New York Yacht Club so bested the competition as to astonish the British yachting community, whose motto had been “*Britannia* rules the waves.” In fact, *America’s* victory gave birth to one of the most notable sporting observations of all time – When Queen Victoria asked a companion “Who came in second in the race?” and he replied “Ah, your Majesty, there is no second!”

As a result of *America’s* triumph, her design was intensely scrutinized throughout her career, and, more than any other, this single vessel came to symbolize the beginning of the Golden Age of Yachting. Subsequent to the race, *America* spent time under different owners, serving as a racing and cruising yacht, a training vessel and even a warship for the U.S. Naval Academy during the Civil War. In 1921, she was donated to the U.S. Naval Academy, however, in 1942 the shed in which she had spent her last two years collapsed, and the great yacht was no more.

Lloyd McCaffery’s remarkable model gives us a builder’s eye view of the significant design and construction that still makes her the envy of the yachting world today. This model was built to reveal the construction and interior layout of the hull to better understand how she
The port side of the model is partially cut away to reveal construction details and interior furnishings including the ship’s cat. On deck the figures of the ship’s designer George Steers and owner John Cox Stevens give a sense of the scale of the model.

was built and used. There are a number of interesting aspects of her design and building which are not generally known and which are displayed here for the first time. The model is based on the hull lines taken from the actual yacht in 1851. This was done by the British Admiralty when she was in England for the race. The dockyard surveyors had a proven track record of accurate measurement of many hundreds of vessels over a span of several centuries. Thus these lines provide a true shape of the yacht at that point in time. She measured 95' 6" on deck, 23' extreme beam, and drew 11' aft.

The other important source of information on her construction is the Cedergren material. This consists of sketches, watercolor renderings of her interior and a scale plan, all made by Pehr Wilhelm Cedergren of Sweden (1823-1896). He personally inspected the yacht when she was in England. This information can be found in the Log of Mystic Seaport, Vol. 29 #3, October, 1977. The framing dimensions come from the list of scantlings on the Stearman Sail Plan, dated October 31, 1851. This list also provides much additional information on her construction. In the model, poplar was used for the framing, with apple wood for all other structural components. Dark apple wood contrasts with lighter sap wood to delineate the scarph joints in the keel.

There are three figures on the model. John Cox Stevens, Commodore of the New York Yacht Club and a prime figure in the syndicate formed to create the yacht, is seated in the cockpit. He gestures with his right arm "across the pond" to indicate the future course of the venture. In his left hand he holds a telescope, symbolic of navigation and vision for the future. The other figure in the cockpit is George Steers, designer of the America. At his right side are papers representing the correspondence which brought about the birth of the yacht. In his left hand he holds a ruler, symbolizing his role as designer. Another figure is placed in the foc'sl just to show scale. Various crew items are placed there, and some
kitchen utensils clutter up the galley. A cat pursues an elusive quarry along the top of the keelson. The door knobs are turned from holly, and all the brass work is lacquered.

It is not generally recognized that *America* was built with diagonal iron strapping. This type of reinforcing is documented in the building of the Clipper *Great Republic* as well as other vessels. It appears to have come into use in 1850, and thus *America* was one of the first vessels to have it. An article from June 22, 1851, in the sports newspaper *Spirit of the Times* states that she had diagonal iron braces about four feet apart. But most interesting are the photographs taken inside the yacht when she was at Trumpy's Yard at Annapolis, Maryland from 1940 to 1945. These photographs very clearly show these braces. Circumstantial evidence also supports their use. The photos taken of *America* show that she never hogged, and this would be impossible with the small backbone she had unless there was some other system of support for the hull. The *New York Marine Register* and *New York Lloyd's Standards* provided information on how the knees and deck beams were constructed and placed. On the model the framing on the starboard side is cut away in two areas to show how the iron braces were fitted. The first course was laid against the inside of the framing, with the frames being cut away or rabbeted so the iron was flush with the inside surface of the framing. The next course of iron was laid at 90 degrees to the first and riveted at the crossings. The ceiling was scored and rabbeted to fit over the second course of iron, flush with the framing on the inside of the vessel. This is exactly how McCaffrey has shown it in the model.

The early 1800s were a period of transition when it came to laying the deck planking. All vessels prior to about 1810 had the deck planks laid "sprung," that is, with a curved taper to match the shape of the hull. Thus the planking would start out at the centerline running straight fore and aft, but gradually curve so that it matched the curve of the side of
McCaffery's unique approach of only partially planking the deck allows us to look downward at the layout and fixtures below deck.

The ship. This is described as late as 1856 in the Practical Shipbuilder by Lauchlin McKay. The evidence for this method being used up to that time is overwhelming. In constructing the model, McCaffery laid the deck aft of the break in this manner and left all the deck planks off the deck forward of the break. This follows the procedure used on the fishing schooners.

Here the deck fittings are of choice dark apple wood to imitate mahogany. Early photographs of actual yachts show mostly natural finished deck furniture with white reserved for the inside of the bulwarks. The model’s furnishings are waxed to give a sheen that looks like gloss varnish at this small scale.

Howard Chapelle (1901-1975). All are carved from boxwood with a natural finish. The model is mounted on cherry pedestals and placed on a plinth with black walnut trim. The nameplate features the artist’s own calligraphic design.

While many models have been built of this important yacht, few have peeled away the exterior shell to reveal the construction and interior details with the refinement and elegance of McCaffery's model. Close examination of it reveals that every joint, every scarf, every turning on every fixture is perfectly executed so that, viewing the model from every angle, we can see for the first time what only her original builders saw, all shown here exactly proportioned to scale.

The artist’s stern carving is based on the original, which is preserved today at The New York Yacht Club. The trailboard decoration follows the design on the British lines drawing as copied by Maritime Historian
The starboard side of the model clearly shows the bulk of the massive hull. McCaffery has left most of the planking off to give us a clear view of the framing of the USS Constitution, painted in her original yellow ochre and black colors. The 1 1/2" Hercules Figurehead (shown above) measuring 12’ on the actual vessel is carved from a single piece of boxwood and painted white.

**USS Constitution, 1797**

Scale: 1” = 8’  LOA  25”

*Cherry, Apple, Boxwood and Holly with Poplar and Black Walnut Base*

Internationally recognized as America’s national ship, USS Constitution is one of the most famous vessels in history, as well as being a fine-looking frigate. This model was created to demonstrate how the ship was built, with special focus on the fitting of the diagonal riders. The original drafts by Doughty were used, along with the extensive written descriptions by the ship’s original designer Joshua Humphreys (1751-1838). This material spells out the size and fitting of all the components of her hull. Paintings of Constitution by Antoine Roux (1765-1835), Michele Felice Cornè (1752–1845) and Thomas Birch (1779-1851) were used as a reference for the ship’s appearance. The hull framing on the starboard side was built up out of cherry. The main structural elements such as the keel, beam, knee, and riders, are of apple wood. The interior was made with boxwood. The outside planking on the starboard side is made of holly, with a number of strakes left off to show some of the framing. McCaffery shows her painted in yellow ochre as she appeared when she was launched in 1797.
Windows in the stern and quarter galleries are glazed, with the frames half-lapped of thin pieces of boxwood. The figurehead is carved from a single piece of boxwood. It is based on the description given by Humphreys, the eyewitness account of the Rev. Dr. Bentley and the Michele Felice Cornè watercolor of the ship.

The main structural members on the interior, such as deck beams, were severely cut back to give a clear view of the riders. All scarph joints in the keel and stem are cut and fitted. The hull is configured as originally built, with closed bulwarks on the quarterdeck. This results in a model that gives an understanding of how Humphreys envisioned her, before any changes were made. There are six figures created specifically to show scale, and these are placed around the model. A cat takes it all in from his perch on the keelson. The model is mounted on a base and plinth of acacia burl veneer with a maple insert.

Remarkably, today, USS Constitution is afloat in Boston, Massachusetts still fully commissioned as a United States Naval vessel.
UNITED STATES NAVY (1749-1892)
When the ordinary difficulties of miniature ship modeling and carving proved not enough to challenge the supreme skills of Lloyd McCaffery, he sought out a new project to showcase his unique ability to combine important historic research with carving in three dimensions. His choice was to take on the task of researching the entire history of United States Naval Ship Figureheads and recreate them in exquisite detail, each just 2" - 3" high!

Here in the artist's own words was his process:

I have long recognized that recreating the fabulous decorations of old ships at miniature scales is the most challenging aspect of ship modeling, yet enjoyable and rewarding all the same. Certainly the epitome of all marine carving is the figurehead. Recreating the human form in wood to a reduced size is challenging enough, but to do it in miniature can be intensely difficult, and achieving the human face particularly so. The ultimate challenge is obtaining a likeness of a specific and well-known person. I have long contemplated the idea of a collection of ship figureheads in miniature, but an entire collection would have to overcome problems of relative size, and the choice of an appropriate scale proved a vexing problem. Too small, and much detail on the full-size figures could be lost. Too large, and it is not a sufficient challenge. Then, too, a collection of random subjects from the vast panoply of figures available would lack focus and limits.

To tighten up and unify such a collection, I narrowed the field to figureheads associated with the growth of the United States Navy, from its earliest colonial antecedents to the decline of major ship carving in the late 19th century. I estimated that I could accurately portray at least 40 and perhaps as many as 60 of these figures. The result is a unique assemblage of historically significant miniature carvings that can inspire and teach people about these fascinating relics of a bygone era in our history. The collection is further unified by being the product of a single artist working in a distinctive style and technique, yet respecting the appearance and workmanship of the originals. Where the original figure has survived, such as the Jacksons and Franklins, I replicate what the ship carver did while presenting it in my own style.

A tremendous amount of research was necessary before any carving could begin, to ensure the accuracy and authenticity of how each figurehead appeared from every angle. For this project, the quality and extent of information available for these figures varies greatly. In the best-case scenario, the actual figurehead survives, typically in a museum. In other cases, original ships’ plans were extremely helpful. In addition to drafts, any U.S. Naval vessel that was unfortunate enough to have been made a prize by the British would have its lines documented and saved in Admiralty records. Written descriptions by eyewitnesses to a launching—or even the occasional acerbic criticism of a new figure on a ship—provide supplemental information. The many paintings, drawings and woodcuts made of these ships were another valuable source, although their accuracy and authenticity also varies widely. Some artists, such as the Roux family of Marseilles, were noted for their scrupulous accuracy; they were, after all, paid to sketch and paint ships with precision.

I have also taken to studying examples by the original carvers. Even if other figureheads by the same carvers might not have survived, more often there are allegorical, religious, Masonic, and decorative carvings still extant. The famous sculptor William Rush (1756–1833), for example, began his career as a
ship carver, having carved four of the original six frigates’ figureheads. While these have not survived, there are almost a dozen surviving full-sized figures he created for various architectural applications. These figures show how he handled drapery, hands, poses and costuming. I can take certain aspects of these carvings and apply his manner of working to a figure of which we have a description but no surviving example. With the preliminary scholarship completed, I can then move on to designing and carving each figure. I explain my methodology for creating this figurehead collection in detail on page 56.
McCaffery's Methodology for the Figurehead Collection:

Materials:
For carving, I use boxwood (*Buxus sempervirens*). Seen everywhere as the green, clipped hedge plant along sidewalks, it has a secret afterlife as the finest material for miniature carving. It is very hard and requires much work to finish the surface to eliminate any blemishes of the carving process. It has an extremely fine, tight and diffuse porous grain, and a lovely tawny yellow color. It can be quite light when first cut, and exposed to sunlight it mellow to a darker yellow tan. For the stem and bases, I use apple heartwood. It has a dark reddish-brown color and makes a nice supporting contrast to the carved figure. I did not want this part of the structure to compete with the carvings.

Scale:
I settled on the scale of 1/4"=1', or 1:48 life size. This is the standard scale for many of the official “dockyard” models, many of which are preserved to this day. This scale allows much fine detail on the surviving figures to be replicated in miniature, yet the whole collection can be displayed in a small area and readily grasped by the viewer as an organic whole.

Technique:
My overall approach to carving is what I call "peeling an onion". I gradually reduce the material all over, taking off thin layers to carefully work down to the final surface. This must be done with great sensitivity, as there is no replacing material once it is removed. I utilize many techniques that I have learned or developed over the years such as turning the figure, while examining its ever-changing profile. This is a key to doing faces, as any disturbance to the ideal contours stands out. I sometimes strike a centerline for those straddle figures but otherwise start working on the block without more than a brief sketch. When I have reached the final surface, I hold very small pieces of fine 500/600-grit sandpaper between tweezers and begin sanding. This can take a few days or sometimes weeks to get the proper finish. I then scrape and burnish the wood to a high polish in certain areas, usually the convexities. This gives a nice return of the light falling on the surface and increases the sense of depth. Boxwood can be polished to a high sheen without any finish, but I use a dilute varnish to provide a penetrating finish which brings out the color and depth of the wood.

Mounting and Display:
Each piece is fitted to a stem of dark apple wood. The dimensions for the stems are usually taken from original draughts or reconstructed from other source material such as paintings. These stems are usually tapered in thwartships thickness. I fit the cheek rails leading up from the trailboards, as this helps tie the figure to the stem. I originally thought of making the entire bow of each ship, complete with headrails, but this would entail much more work, and the question arose as to what to include and what to leave out. I decided on the stem approach as the most viable. The stem is mounted against a backboard, and the whole is supported on an apple wood base.

This growing assemblage of the historic relics of our naval heritage will be a unique artifact and statement about this aspect of our nation's history. I do not know of any other collection like it. As the pieces are all the same scale, by the same artist and presented alike, they form a distinctive display, which is inspirational, informative, and educational. I firmly believe this collection should be kept together as an organic whole, displayed for public benefit. Perhaps it can be placed in a museum as a self-contained collection of these miniature recreations of a lost culture.
The Collection of Miniature Figureheads of the United States Navy (1749-1892)

The United States Navy Figurehead Series is a work-in-progress with 41 finished and another 11 planned to complete this unique collection. The existing figureheads in the collection have already been the subjects of exhibitions at the United States Naval Academy Museum in Annapolis, Maryland and The Erie Maritime Museum in Erie, Pennsylvania.

Completed Figureheads of the United States Navy Collection:

1749 44-Gun Ship of the Line HMS America
1776 34-Gun Frigate Hancock *
1776 32-Gun Frigate Raleigh
1776 32-Gun Frigate Randolph
1778 36-Gun Ship Confederacy *
1779 42-Gun Frigate Bon Homme Richard
1781 Privateer Ship Rattlesnake *
1782 74-Gun Ship of the Line America
1797 44-Gun Frigate Constitution - Hercules *
1797 44-Gun Frigate United States *
1797 38 Gun Frigate Frigate Constellation *
1798 28-Gun Subscription Vessel Merrimack
1799 32-Gun Frigate Essex *
1799 36-Gun Frigate Philadelphia *
1799 28-Gun Frigate John Adams
1800 44-Gun Frigate President *
1803 Brig of War Syren - Knight *
1803 Brig of War Syren - Mermaid *
1803 Brig of War Vixen
1805 Brig of War Argus
1805 Brig of War Hornet *
1808 44-Gun Frigate Constitution - Scroll *
1809 Brig Hamilton
1813 General Armstrong
1813 Ship Scourge
1814 90-Gun Ship Independence
1815 74-Gun Ship Franklin *
1816 74-Gun Ship of the Line Columbus
1817 74-Gun Ship of the Line Delaware *
1820 74-Gun Ship of the Line USS North Carolina
1820 74-Gun Ship USS Ohio
1822 44-Gun Frigate USS Potomac *
1822 120 Gun Ship USS Pennsylvania
1834 44-Gun Frigate USS Constitution - Jackson *

Completed Figureheads of the United States Navy Collection (continued):

1834 44-Gun Frigate USS Constitution - Jackson *
1836 38-Gun Frigate USS Macedonian *
1837 Sloop of War USS Cyane
1847 44-Gun Frigate USS Constitution - Jackson *
1849 Revenue Cutter Joe Lane (aka Campbell)
1858 Sloop of War USS Lancaster
1864 74-Gun Ship of the Line USS Alabama *

Planned Figureheads of the United States Navy Collection:

1774 30-Gun Man of War Alfred
1776 28-Gun Frigate Virginia
1777 40-Gun Frigate South Carolina
1782 74-Gun Ship of the Line America
1799 20-Gun Sloop of War Patapsco
1814 74-Gun Ship of the Line Washington
1814 Brig of War Saranac
1815 74-Gun Ship of the Line Franklin
1815 16-Gun Brig of War Chippewa
1843 20-Gun Sloop of War USS Portsmouth
1892 Protected Cruiser USS Olympia C-6

* These Figureheads are shown on pages 58 - 69
36-Gun Ship, *Confederacy*, 1778

*Confederacy* was a most unusual ship in her proportions, being very long, narrow and shallow of draught. She had row ports and was almost a "galley frigate". There is the usual controversy over her designer, and this is hashed out in Howard Chapelle's book *The History of the American Sailing Navy*. She was built by Jedediah Willett in Norwich, Connecticut on the Thames River in 1778. She was captured by the British without firing a shot, and this sad event means that at least we have the draught made with details of her profuse carvings. McCaffery used all this historical information to ensure accuracy. The figure has sometimes been referred to as a Greek warrior, however, in the trailboards it is depicted as an animal with teats. This depiction brings to mind the she-wolf of the myth of the founding of Rome. The draught is torn just between the figure and the wolf, and McCaffery suspected this is where Romulus and Remus would be depicted. Therefore he used Roman material as the basis of his carving.

The figure is carved from a single piece of boxwood with the short sword and shield added. McCaffery turned studs individually with tenons to fit the leather straps on the kilt. This is a straddle figure, and the legs and greaves are the same port and starboard. The intricate detail of the face and plumes on the helmet are just the type of miniature carving that sets McCaffery's work apart from all the others.
34-Gun Frigate, Hancock, 1776

Described by the British as "the finest and fastest frigate in the world", she was captured by the British, and thus we have her draught with the figurehead drawn on the stem. A most handsome figure, it depicts American Statesman John Hancock in colonial dress. We have a description by a British spy of a man's head with a small cocked hat. This is a straddle figure, fitted to the tapered stem. This fitting is a tricky act in miniature, with repeated trial and shave of the components to insure a tight seam. The stem profile and the pose for the figure were based on the original draught. The figure's carved coat is based on the original dress coat of John Hancock, which is preserved to this day. The buttons for his miniature waistcoat were individually turned on the lathe with tenons.

Privateer Ship, Rattlesnake, 1781

This vessel was not part of the Continental or Federal navies. McCaffery included it in this collection to illustrate the use of legalized piracy during this period.

Governments would issue "Letters of Marque" to ships, termed "Privateers", to prey on the shipping of enemies. Due to Rattlesnake's capture by the British, we have an original drawing of her lines which depicts the figurehead as an Indian, albeit with a strange topknot. Chapelle's redrawing of the original draught was used for the outline of the stem, while the original drawing was used for the details.
32-Gun Frigate, Essex, 1799

This ship was one of the "subscription" frigates donated by the citizens of Salem, Massachusetts to the new U.S. Federal Navy. She was designed by William Hackett and built by Enos Briggs. She had a very interesting career before being captured off the coast of Valparaiso in 1814. For reference there is the original draught by Hackett, though the entire plan is very crudely drawn, with the stem in particular being too long and stretched out forward. No other plan of this period shows this type of stem, and McCaffery used Chapelle's redrawing, which fairs the stem in very nicely. Much detailed information on this ship has been preserved, and The Frigate Essex Papers by Philip C. Smith reprints much of it. The Joseph Howard (1780-1857) watercolor, which is still in existence, clearly shows the full figure of a Native American.

McCaffery referred to Howard Chapelle's stem profile and the Howard painting with the figure holding a hawk in the right hand, tossed over the shoulder, and a staff in the left. Opposition movement required the left leg to be striding forward. The long hair worn loose and the necklace were reproduced. The entire figure was carved from a single piece of boxwood, with the tomahawk and staff added in the hands. Even the fingers and fingernails were detailed.

44-Gun Frigate, United States, 1797

The United States was one of the original trio of 44-gun frigates authorized for the new U.S. Federal Navy. She was actually the first ship launched May 10, 1797 from Humphrey's shipyard in Philadelphia. She is famous for capturing HMAS Macedonian under the command of Stephen Decatur Jr. and thus is forever linked to that ship. She survived until 1866.

McCaffery used the Chapelle draft to establish the stem profile and location of cheek knees. There is a very crude painting of this ship, showing a figure holding a spear. Fortunately we have Humphrey's description and original carver William Rush's details, and the latter gives the indication of the spear. The artist followed this description along with the style of other Rush figures for pose, drapery and details. This figure of the "Goddess of Liberty" is the result.
38-Gun Frigate, Constellation, 1797

This ship was another of the original six frigates authorized by the U.S. Congress in the Navy Act of 1794, for the new U.S. Federal Navy. McCaffrey used a copy of the original draught preserved in the National Archives for referring to the profile of the stem. Some interesting written material survives concerning her figurehead, including the initial list of names and ideas, with descriptions that the original carver William Rush envisioned. McCaffrey also referred to a description of the actual finished head, written by Rush himself. This took the form of a letter published in the Federal Gazette & Baltimore Daily Advertiser on August 9, 1797. He describes the head as a female figure, and goes into detail about the pose of the figure and various emblems he carved.

These were good materials for reconstructing the figure, though exactly how the details were arranged might be difficult to puzzle out. Fortunately someone took issue with what Rush had done and wrote a caustic letter to the same paper, which published the criticisms on Sept. 6, 1797, the day before the ship was launched. It seems the viewer couldn't find anything good to say about the figure, or the trailboards or stern, for that matter. But these searing comments provide a good reality check on just what Rush did do, as the critic was basing his observations on his view of the finished ship.

A female figure is shown with flowing hair, right arm raised, probably holding a torch or light. Her right arm rests on a sphere, under which is a pyramid of rock with flame ascending from it. The scale, mirror, dove, Herculean club encircled with laurel and Phrygian cap of liberty were placed based on the written descriptions. The figure is scaled to fit the "space for the figure" given on the draught. The artist used the dozen or so surviving figures by Rush for pose, anatomy, drapery and details. Incredibly, some of the figures included fittings like a scale and mirror!

This figurehead carving is a good example of how McCaffery pulls together information from a variety of original reference materials to recreate a carving that would otherwise never be seen and appreciated.
36-Gun Frigate, *Philadelphia*, 1799

This 36-gun ship was built by subscription by the citizens of Philadelphia, Pennsylvania between 1798 and 1799 and presented to the U.S. Navy in 1800. Her career began surreptitiously in the Caribbean during the Quasi War with France, when she captured French vessels and reclaimed six merchant ships. However, she met a very different fate off the Barbary coast where continued piracy against American vessels by sailors under command of the resident Pasha resulted in the first Barbary War. Unfortunately for her, while sailing off Tripoli, on October 31, 1803, she ran aground on an uninhabited reef. Despite every effort by Captain William Bainbridge, including throwing all their massive cannons overboard and even sawing off masts to lighten her load, she was stuck on the reef. Bainbridge and his men were forced to surrender and turn the valuable frigate over to pirates; however the Americans weren't quite finished. In an act of bravado and incredible daring in February, 1804, a small boarding party led by Lt. Stephen Decatur, Jr. snuck into the harbor and burned the mighty ship in the harbor, ensuring that the pirates would not be able to raise her for their own use.

McCaffery used Howard Chapelle's redrawing of the draught as the basis for the stem profile. For the figure there exist two contradictory drawings. The sail plan by Hutton in the Lenthall Collection shows a strange figure with both hands grasping the club of Hercules over his head. The other draught, however, shows a figure clad in lion skin with the club over his shoulder. Fortunately, we have a reference in Claypoole's *American Daily Advertiser* (November 8, 1799) stating that the left hand was placed on the fasces. This description is congruent with the carving of Hercules for *Constitution*. Since William Rush was the carver of both figureheads, this makes sense.

Her original figurehead was also lost to history, but using original plans, McCaffery was able to reconstruct it for the ages.
44-Gun Frigate, *President*, 1800

*President* was one of three 44-gun frigates authorized by the U.S. Congress in 1794 and a near sister of *USS Constitution*. She was built by William Doughty and Christian Bergh, and launched in New York on April 1, 1800. The building draught for these ships was by Josiah Fox. The ship was captured by the British on January 15, 1815.

The original ship draught dated April, 1795, was used to determine the profile of the stem. It included a description of what the figure should look like: a bust of George Washington supported by two female figures, port and starboard. The figures were carved by Daniel N. Train. The description is quite convoluted, and it would have been difficult to reconstruct the figure, if not for two remarkable watercolors of the ship by French artist Antoine Roux (1765-1835). Noted for their scrupulous accuracy, the Roux family of Marseilles produced detailed paintings of many vessels, including *President*. One of these, titled "President in a Gale", is in the collections of the USS Constitution Museum. Another, in the New York Public Library, shows the ship entering the port of Marseilles. Detailed close-ups of these two paintings were used to carve this replica. The paintings show the figurehead as a bust of George Washington, with the figures holding a mirror, scales on an escutcheon, and a hand on the fasces. The escutcheon behind Washington looks to be edged with acanthus leaves, and this is congruent with the other treatments of the period.

This figurehead was complex to carve, with many elements that needed to be precisely fitted together. In addition, it is most difficult to realize a likeness of a specific individual, in this case Washington. McCaffery used the William Rush (1756-1833) terracotta bust and his full-length woodcarving for this. The two supporting figures have faces only 1/8" high, yet are delineated by McCaffery in extraordinary detail.
Brig of War, Syren, 1803

These two figureheads from the Brig Syren (later renamed Siren), illustrate the difficulties in researching and determining what a figurehead from over 100 years ago actually looked like.

This fine brig was built in 1803 and saw service in the Mediterranean, Algiers and Tripoli during the Barbary War. When a peace treaty was signed in Tripoli on June 10, 1805, she returned to Washington, D.C. In 1810, her name was changed to Siren. She was captured in July, 1814 by HMS Medway and no more was ever heard of her.

Her draft survives in the National Archives in Washington, D.C. It is presented in Personnel and Ships' Data in NAV DOCS. Howard Chapelle presents a redrawing with a lowered angle of bowsprit in the History of the American Sailing Navy. There is also an Admiralty report with spar dimensions, made after the ship's capture. McCaffery used the Chapelle draft to establish the stem profile and lower cheek knees. But the figurehead of a knight drawn on the draft may not have been used, or possibly it was changed, because Chapelle notes and illustrates a female figure, evidently a mermaid, which was on a crude Admiralty draft. To resolve this discrepancy the artist carved both.

The knight figure is quite a striking action figure. The miniature buttons or studs for the kilt and cuirass were hand-turned by McCaffery. The mermaid required referring to sculptures of the period. All the scales for the lower body are incised.
Brig of War, *Hornet*, 1805

*Hornet* was built in Baltimore, Maryland in 1805 and saw service in the War of 1812 under the command of James Lawrence, whose dying orders while commanding USS *Chesapeake* during her battle against HMS *Shannon* in 1813, "Don't give up the ship!" have become the stuff of Naval lore.

To reconstruct her figurehead McCaffery referenced Howard Chapelle's redrawing of the original draught in *The History of the American Sailing Navy*, 1949 (Fig. 65), and a recently discovered original drawing of the figurehead to create this delicate carving of an eagle with spread wings, holding a Union shield.

74-Gun Ship, *Franklin*, 1815

This large ship-of-the-line was the first vessel laid down at the Philadelphia, Pennsylvania Navy Yard by Samuel Humphreys and Jonathan Penrose. Launched in 1815, she sailed to England and later became the flagship of the Mediterranean Squadron. She returned to the United States in April, 1820, and from October, 1821 through August, 1824, she served as flagship of the Pacific Squadron. She was eventually broken up in 1853.

Fortunately, her original figurehead is preserved today at the U.S. Naval Academy Museum. It is one of the few actual figureheads by William Rush (1756-1833) that have survived the ravages of war and time.

For further reference, McCaffery consulted the naval architect John Lenthall's original plan and personal watercolors and drawings made by William A.K. Martin (1817-1867) and Thomas Birch (1779-1851), which clearly showed the design of the distinctive acanthus scroll around the figure.

The volutes of this scroll corkscrew out as they spiral in, a challenge for any sculptor, made even more forbidding in extreme miniature, yet McCaffery manages it with ease.
74-Gun Ship of the Line, *Delaware*, 1817

*Delaware* is the third ship of this name. She was a 74-gun, built in 1817, and launched in 1820 at Norfolk Navy Yard in Virginia. There were several other ships built to this design. She survived until 1861, when she was burned at Norfolk. Howard Chapelle's stem profile was used for this figure. The original figurehead of Tecumsah has survived, and is preserved today at the U.S. Naval Academy in Annapolis, Maryland. The actual wood figure is preserved indoors and a bronze casting of it is on display on the grounds. This makes Tecumsah, the celebrated Shawnee Chief, one of the most recognizable and famous of all figureheads.

McCaffery carved this figurehead at the scale of 1/4"=1' taking measurements and photos for this purpose right from the figure. There is a great deal of detail on this figure, from the pipe, wampum, knife and hawk to the oak leaves and acorns bunched below the torso. The cheek rails fair up into the scrolls on port and starboard. The scowling face is surmounted by stylized feathers.

44-Gun Frigate, *USS Potomac*, 1822

The USS *Potomac* was launched in May of 1822, although her fitting-out was not completed until 1831. Her figurehead was a bust of prominent Virginian Captain John Smith. Her long career included the shelling of the Sumatran town of Quallan Baton in retaliation for the capture of the U.S. merchant ship *Friendship* and the massacre of her crew. After cruises to protect American interests in the Caribbean and the coast of Brazil and service during the Civil War, she was finally decommissioned in January, 1877.

To achieve an amazing miniature likeness, McCaffery used the most accurate period woodcut print of Smith, and he referred to Howard Chapelle's draught in *The History of the American Sailing Navy* for the mounting.
38-Gun Frigate, USS Macedonian, 1836
Prize of the War of 1812

This vessel began life as a 38-gun frigate of the Royal Navy in 1812. She was captured in a famous sea fight by the U.S. frigate United States on October 30, 1812. She served in the U.S. Navy until 1835, when she was broken up. Incredibly her original figurehead, a stylized image of Alexander the Great, survived and is displayed outdoors at the U.S. Naval Academy. McCaffery used Chapelle’s draught for the stem profile and location of the cheek rails. This draught is his redrawing of the class draught for these British frigates, as her original draught has not survived. There is an 1851 watercolor by Charles Parsons titled "Old Macedonian, Wallabout Bay", which shows a frigate hauled out on mud flats.

This carving is based on photos and measurements made in 1995 during McCaffery’s visit to the U.S. Naval Academy, as well as photos supplied by the museum staff. The photos show some surface details that have since eroded. The lower cheek rail from the draught fairs very nicely into the scrolls on both sides of the actual figure.

74-Gun Ship of the Line, USS Alabama (aka USS New Hampshire) 1864

The USS Alabama was actually laid down in 1819 but launched as the USS New Hampshire in 1864. This ship was one of the 74-gun ships-of-the-line built after the War of 1812. For reference, McCaffery used the draught in The History of the Sailing Navy, as redrawn by Chapelle based on a draught of the USS North Carolina, another 74-gun ship of the line. The original figurehead was by Laban Beecher. This carving was based on a drawing by M.V. Brewington of the original figure in Shipcarvers of North America (Fig. 41, p. 45). The figurehead is unusual because of the arms raised over the head.
Figureheads of the USS Constitution, 44-Gun Frigate, 1797 - 1834:

Hercules, 1797

McCaffery had excellent sources for the figurehead of Hercules, including the original draught from 1795 by Josiah Fox, which gives the shape of the stem. He also had the description of the figure written by carver William Rush, who submitted ideas for the figure, which was actually carved by the Skillin brothers of Boston, Massachusetts. There also exists an eyewitness description by the Rev. Dr. William Bentley. Most compelling is the gouache by French painter Michel Corne (1762-1832). All these sources show a Hercules figure, his right arm raised holding a scroll representing the Constitution of the United States, his left hand resting upon the fasces. His left leg is forward, as seen in the painting. He is clad in a lion skin, with a baton or club lying beneath him. There are also some representations of Hercules figures by Rush from this period which are congruent with the general trend in sculpture from that era. The figure is carved from a single piece of boxwood except for the scroll. The cheek rails were placed as they were defined in the draught, to tie the figure to the stem.

Scroll, 1808-1834, War of 1812

The original Constitution figurehead of Hercules was "broken into pieces" in a collision with the frigate President on Sept. 4, 1804. The log has a few entries explaining that a "billet" was fitted by local carpenters. This billet was on the ship until the ship was given a large repair in 1808. At that time, Daniel Train carved a billet and other decorations for the vessel. This is the scroll she had during the War of 1812. Fortunately there exists a woodcut and a photograph of the decorations. The USS Constitution Museum has a stereograph photo of the navy yard with a distant view of the stem and scroll. Even better is a starboard side view of the scroll, which matches what is seen in the photograph. Two sailor lads lounging at the base provide some sense of scale. McCaffery used this information and the original draught to create his carving. It has a large, S-curve acanthus foliage scroll, with the upper end corkscrewing out in a billet. The lower end is a simple spiral. The artist referred to the partial billet in the Peabody Essex Museum, as well as a much more complete billet said to be from USS Independence, last seen at the Alameda Navy Yard. This decoration is much more than just a billet head, occupying the space a conventional figurehead would on the stem.
Figureheads of the USS Constitution, 44-Gun Frigate, 1797 - 1874:

Andrew Jackson, 1834

This piece replaced the scroll of the 1812 era and is probably the most controversial of all figureheads. When the ship was given a major repair in 1833, Commodore Elliot commissioned a Hercules figure to replace the scroll. During the refit, President Andrew Jackson visited Boston, Massachusetts. In response to his popularity, Elliot had a full-length figure of Jackson carved and placed on the ship by Lyman Beecher. However, in one of the oddest acts in American presidential history, persons unknown snuck into the shipyard one night before the ship was even launched and literally sawed the head off the figure already mounted on the ship. A replacement head was quickly commissioned. The figure and head now reside in the collections of the Museum of the City of New York.

Andrew Jackson, Replacement Head, 1834 (inset photo at right)

The smallest carving in this collection, the replacement head replicates the original Andrew Jackson head (seen above). The original was not re-discovered until 2011.

Second Andrew Jackson, 1847-1874

This full-length figure of Jackson was carved in 1847 to replace the first Jackson. It is a better piece of sculpture with a sense of life and forward movement not found in the first folk-sculpture piece. It was on the ship until 1874, when it was removed and sent to the U.S. Naval Academy, where it remains to this day. McCaffery took photos and measurements of the figurehead, and used this material, along with the profile of the stem, to create this miniature. It is carved of one piece of boxwood, with the buttons turned on a lathe with tennons, which fit into holes bored in the figure.
“The ability to carve and work at an extreme miniature scale is developed only through experience. I cannot stress enough that this is a solitary endeavor.”

Lloyd McCaffery
SHIP CARVINGS & OTHER MINIATURES

In the 18th and 19th centuries, striking decorative carvings were commissioned from Master Artists to decorate the bows of many commercial and naval sailing ships. The subjects usually related to the name of the vessel and held a powerful symbolism for the sailors aboard her. As works of art, these ‘figureheads’ are considered representative of some of the finest sculptural carvings of their age.

McCaffery’s ability to reproduce the details of these massive creations in extreme miniature scale is nothing short of remarkable. In an ongoing effort to create new and more difficult challenges for his skills, McCaffery has expanded his subject matter, which showcase his unique abilities to solve problems of extreme miniature scale that no other carver would even consider tackling.
**Royal Charles Stern Decoration**

Scale: $\frac{1}{4}" = 1'\ 3" x 3"

*Boxwood with Black Walnut Base*

This miniature carving is a replica of the major stern decoration that once adored the great ship *Royal Charles* of 1660. The original is 12’ 3” wide and is preserved today in the Rijksmuseum in Amsterdam. The ship was built by Peter Pett at Woolwich, England in 1655 for Oliver Cromwell. She was renamed *Royal Charles* by Charles II on his return from Holland. She was a major unit of the fleet during the Second Dutch War. She was captured by the Dutch during their infamous raid up the Medway and taken to Rotterdam as a trophy. The ship was eventually broken up, but the stern decoration has survived to this day.

In preparation for carving this intricate miniature, McCaffery spent time in the Rijksmuseum in Amsterdam, Netherlands, taking measurements and photographs of the original carving. The original had a subtle curve to it to fit the shape of the ship’s stern, and this subtle curve is duplicated in McCaffery’s miniature carving. It is mounted on a pedestal with a base of black walnut.
Double Equestrian Figurehead of the 100-Gun Ship

Royal George of 1756

Scale: 1/4" = 1'  Height: 5 3/4"

Boxwood, Apple Plinth with Acacia Burl Base

This woodcarving is a miniature representation of the massive figurehead of the 100-gun ship Royal George of 1756. At 21' tall, it is the largest and most intricate type of figurehead ever carved. The vessel had a long career which finally ended when she capsized and sank while undergoing minor repairs in 1782. She is one of the ships the Colonial Navy had to contend with during the Revolutionary War. The figurehead was of the type known as "double equestrian," because it showed a figure, representing King George, astride a horse on both sides of the ship. In addition there are two cherubs, three crowns and two swords that make up this complex figure.

McCaffrey's miniature is carved from a single piece of boxwood (Buxus simpervirens). It is very difficult to find pieces of boxwood thick enough for carvings like this. This material has an extremely fine grain, making it ideal for fine details. The figure is mounted on an apple wood stem and plinth. The part representing the stem is tapered athwartships like the original. The royal arms are carved in bas relief just above the end of the stem. Many different specialized tools are used to create such carvings, including diamond and carbide dental burs and miniature chisels which McCaffery had to manufacture himself.

Top: Detail of figurehead

Bottom: Figurehead shown actual size
HMAV *Bounty* Figurehead, 1787
Scale: 1/2" = 1’ Height: 3”
*Boxwood, Pear Stem with Acacia Burl Base*

*Bounty* was surely one of the most famous ships in history, the mutiny aboard the *Bounty* was one of the most notorious stories in the history of the Royal Navy, yet her figurehead has been much misunderstood by ship modelers. Only by going back to the original description was McCaffery able to discover that it depicted a figure of a "pretty" lady in a riding habit.

This figurehead wears a long gown buttoned down the front, with multiple capes and cuffs. Her shirt had lace at the wrists and neck. A brimmed hat with a tall crown is tied with a ribbon finished in a bow, and ostrich plumes complete the millinery. Since this is a straddle figure, the stem must taper upwards, and this is readily seen when the figure is viewed from the bow. McCaffery combined all the historical references to recreate *Bounty’s* figurehead with a degree of accuracy never before achieved. The figure is carved from boxwood with a riding crop in her right hand. She is mounted on a base astride a pear stem and acacia burl veneer base.

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**Morning Light Figurehead**
Scale: 3/8" = 1’ LOA 3”
*Boxwood, Apple Plinth with Acacia Burl Base*

Woodcarver John W. Mason was an intriguing figure of the mid-1800s. While he left a number of beautiful pen-and-wash drawings of figureheads of the time, very few of his actual carvings are extant. McCaffery has used Mason’s renderings to reconstruct Mason’s elegant Morning Light figurehead in miniature, whose flowing drape gives a sense of movement and speed.
Ancient Victory
Height: 1 ½”
*Boxwood, Apple Plinth with Acacia Burl Base*

This figurehead is McCaffery’s interpretation of what such a figure might have looked like. It is based on a number of Greek figures as well as the remarkable figurehead of the French Le Rivoli, a model of which is in the Trianon Collection.

The figure is carved from a single piece of boxwood. The trumpet is turned and hollowed out, and she holds a laurel wreath, with the pinky and forefinger extended to ward off the “evil eye.”

It stands just over 1 ½” and is mounted on a turned apple wood sphere placed on a narrow pyramid.

Pilot House Eagle
Height: 1 3/8”
*Boxwood, Apple Plinth with Acacia Burl Base*

On small vessels such as tugs, a pilot house was built to shelter the crew, and a carved eagle was placed on top as a decorative motif. This miniature carving is McCaffery's interpretation of that traditional decoration. The design is based on the many actual eagles that have survived, with particular reliance on the work of Master Carver John Haley Bellamy (1836-1914). The piece is carved from boxwood, with the body and main wings tenoned together. All the feathers are carved in, with the primary and secondary wing feathers carved individually and inserted into a rabbet in the trailing edge of the wing. The tail feathers likewise are individually carved and tenoned. The bird grasps a turned stanchion of apple wood with end finials of boxwood. The carving is mounted on a pedestal and plinth of apple wood. This is fastened to a base of acacia burl veneer finished with 15 coats of hand-rubbed varnish.
**Velociraptor**, Late Cretaceous Period
Length: 15"
*Boxwood, Holly, with Acacia Burl Base*

McCaffery is always searching for new and more difficult challenges. To this end, he decided to create a series of fascinating dinosaur skeletons based on the latest forensic research into their bone structure. In typical McCaffery style, his dinosaurs are not simply carved to just look like their subject, they're actually constructed of many tiny individually carved pieces, subtly shaped to scale then pegged together (instead of glued together which would eventually dry out) and perfectly fitted. Of course, to create a further challenge, the 15" sculpture of the Velociraptor seen here is not static but shown in movement so that every bone is visible, contorted and turned as it would be in real life.

While the sculpture is made of boxwood, the tiny teeth are made of holly, individually drilled out and fitted into the jawbone.

Ranging in size from a 3" sculpture of an Apatosaurus to this 15" Velociraptor, other prehistoric dinosaurs sculpted by McCaffery include Sabertooth cat, Diplodocus, Elasmosaurus and the Imperial Mammoth.
Wells Fargo Concord Stagecoach
Scale: 1/2" = 1’  Length: 5 ½”

Hawthorne, Apple, Boxwood, Degama and Bamboo with Acacia Burl Base

The stagecoach is a classic icon of the Old American West. The Concord coach is a transplant from England and was perfected in New England. It also proved ideal for the rough terrain in the Western states and was a major factor in the settlement of the region.

The coach consisted of two major assemblies: the running rig, or chassis, and the unsprung frame and wheels. The entire coach body, with boots, seats and leather covers, is suspended on the running rig by two thoroughbraces, massive leather springs that run from front to back on each side of the frame. This design helped to cushion the ride, though Mark Twain’s description of traveling in a coach compares it to riding a roller coaster.

This miniature stagecoach is constructed exactly like the full-sized original, with wheels, coach frame and details faithfully following the type. The result is this jewel-like miniature, with all the fittings of the original in a work that is less than three inches high.

McCaffery's model presents the coach in two finishes. The right side is fully paneled, painted and decorated so as to present the eye with the image of the finished coach. The left side is left as a frame, showing the natural finished wood used in construction, with all the lap joints, pegs, and mortises used to fasten the structure together. The coach body panels are left off, to show the interior setting, and provide insight into methods of assembly.
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Selected Collections:

Robert P. Galvin, Chairman Emeritus, Motorola Corporation
Thomas Harrington, Commodore, New York Yacht Club, New York, New York
The Honorable Governor of Bermuda
Alan Goldstein Collection, Winter Harbor, Maine
International Yacht Restoration School, Newport, Rhode Island
Columbia Maritime Museum, Astoria, Oregon
Pan-American Japanese-American Amity Hall, Kushimoto, Japan
Toy and Miniature Museum, Kansas City, Missouri
Mystic Seaport Museum, Mystic, Connecticut
Museum of Yachting, Newport, Rhode Island
Newport Art Museum, Newport, Rhode Island

Exhibitions:

USS Constitution Museum, Boston, Massachusetts, “Model Shipwright Guild Annual Ship Model Show,” January, 2011

Awards:

First in Class III - Small Craft, Prince Frederick's Barge; 1986 International Ship Model Competition, National Maritime Museum, Greenwich, England
First Place - Scratch-Built Sailing Ships, HMS Bounty; 1985 Ship Model Competition, Mariner's Museum, Newport News, Virginia
THE BOOK

In order for Lloyd McCaffery to achieve the level of historical accuracy and elaborate detail in an extreme miniature scale, he had to literally invent his own totally new techniques and methods. These were so revolutionary that in 1998 the British publishing house Conway Maritime Press, Ltd. commissioned McCaffery to write a book about his philosophy and processes.

The result was Ships in Miniature: A New Manual for Modelmakers. In the over-140 pages illustrated with photographs, McCaffery speaks to ship modelers and connoisseurs of the art form. He discusses in detail the qualities he believes a good ship model must contain, from proper research and aesthetics to proper construction and materials, including the design of the final display presentation.

He tells how he had to make his own miniature tools to work at such a small scale, explaining how if a deck plank needed to be 1/16" wide, he first made a miniature plane which he then used to fabricate that miniature plank.

Reprinted by Conway Maritime Press in 2002, it has become the classic manual in the world of miniature ship modeling.

Here's a brief excerpt from the book's introduction:

"The last few decades have seen a major revival of interest in marine history, and a growth in the creation and collection of marine art. The psychological and sociological reasons for this have been explored elsewhere. One of the subjects of particular fascination is the miniature ship model, and an increasing number of people want to make these miniatures. There is, therefore, a growing demand for the practical information on construction. I have written this book to provide the instruction, and set standards for the research, construction and display of miniatures."