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Making Silkspan Sails

By Bob Hunt

Over the years we've all seen sails on model ships in one form or another. Most kits that supply sails in the kit use cloth such as muslin because of its color and close appearance to old time canvas. These sails are usually pre-cut and sewn up around the edges with rope for attaching blocks and rigging lines such as the model shown in Photo 1.

Photo 1

For some model ships such as the one shown above, these sails don't look too bad. The detailed sewing of panels and seams gives the sail an authentic look. The sails looks somewhat natural in the way that it hangs thus enhancing the overall appearance of the model.

This type of sail is even one that you as a modeler can create yourself with a sewing machine and a little bit of sewing experience. In my business, the Lauck Street Shipyard, I have even developed a practicum on how to make your own sails using some muslin cloth, a sewing machine, and a scale drawing of the sail you wish to make.

Today I'm going to show you a different technique for making your own sails using a very special type of material called silkspan. Silkspan is more of a tissue than a cloth often used by modelers who build radio controlled model aircraft. It is used to cover the surfaces of a bibbed wing and sometimes even the fuselage or the entire model aircraft. One would

not think that a paper type product would qualify as a viable material for a model ship sail, but there are some real advantages for using silkspan.

Silkspan looks like tissue paper but it much stronger because it actually has silk spun into the fibers. It can be purchased from a number of sources on the internet such as Sig Manufacturing (www.sigmfg.com).

Silkspan most often comes as a white sheet of tissue, but can be colored most any color you desire. If water is applied to it, it will become limp allowing for shaping. After shaping it, the shape will be retained once the water has evaporated from the material. The benefit to this property is that one can wet the finished sail, shape it to look like it is furled, and when dry, it will retain a more natural look than a heavier cloth such as muslin.

Oddly enough, I have also found that you can print details such as seam lines onto the silkspan. You can easily glue pieces of silkspan to each other to give the appearance of reinforcement panels as seen on actual sails.

Given these properties, I will show you just how easy it is to make silkspan sails in any shape, size, or color and use them on your scale model ship. These sails should open up all kinds of possibilities for display such as furled sails, sails under wind, or just plain sails hanging from a yardarm.

Photo 2

You will need some supplies to to make these sails. I found some unpainted picture frames at a local craft store that worked well for making these sails. You'll probably want a couple of these frames so that you can work on more than one sail at a time. I opted for a 12" x 14" frame such as the one shown in Photo 2.

As you can see in this photo, I have cut out a piece of silkspan that is the same size as the frame. Flipping the frame over, I used some packing tape to tape the silkspan to the frame as shown in Photo 3.

Photo 3

The silkspan is a bit transparent, and of course, white is not the color we want our sail to be. To color the silkspan, I used a very diluted mixture of artist's acrylic paint in a tube and water.

Windsor & Newton make a variety of acrylic paints in tubes that are inexpensive and work great for this purpose. You can purchase individual tubes in a variety of colors. The most often used colors for tinting the silkspan to look like old canvas is Burnt Umber, Burnt Sienna, and Yellow Ochre. You'll also need a tube of Titanium White.

First mix some Titanium White with the color(s) of your choice to obtain the overall color you want your sail to be. Once that color has been mixed, dilute it in a large cup or glass jar until it is the consistency of milk.

Photo 4

You'll need a soft, wide artist brush to brush the color onto the silkspan. When you do this, the silkspan will become loose looking and will sag. Just paint on the color. Do not try to adjust the silkspan to make it tighter.

As it dries, it will become taught as shown in Photo 4.

At first the silkspan will look a bit transparent, but as you apply a second or even third coat of the diluted paint, it will look more like a piece of scale canvas losing its transparency. I gave this sail three coats of my diluted paint.

Once your silkspan looks the way you want it, you can remove it from the picture frame. To do this, I used a very sharp #11 Xacto knife to cut through the silkspan along the inner perimeter of the picture frame leaving the tape and remaining silkspan attached to my frame. Afterwards I peeled the tape off to prepare the frame for making another sail.

With this dry, painted piece of silkspan, I placed it over a sheet of white bond paper I use in my inkjet printer. I trimmed the silkspan around all four sides until it was slightly smaller than the printer paper. Then using some frosted Scotch tape, I taped the silkspan to the bond paper as shown in Photo 5.

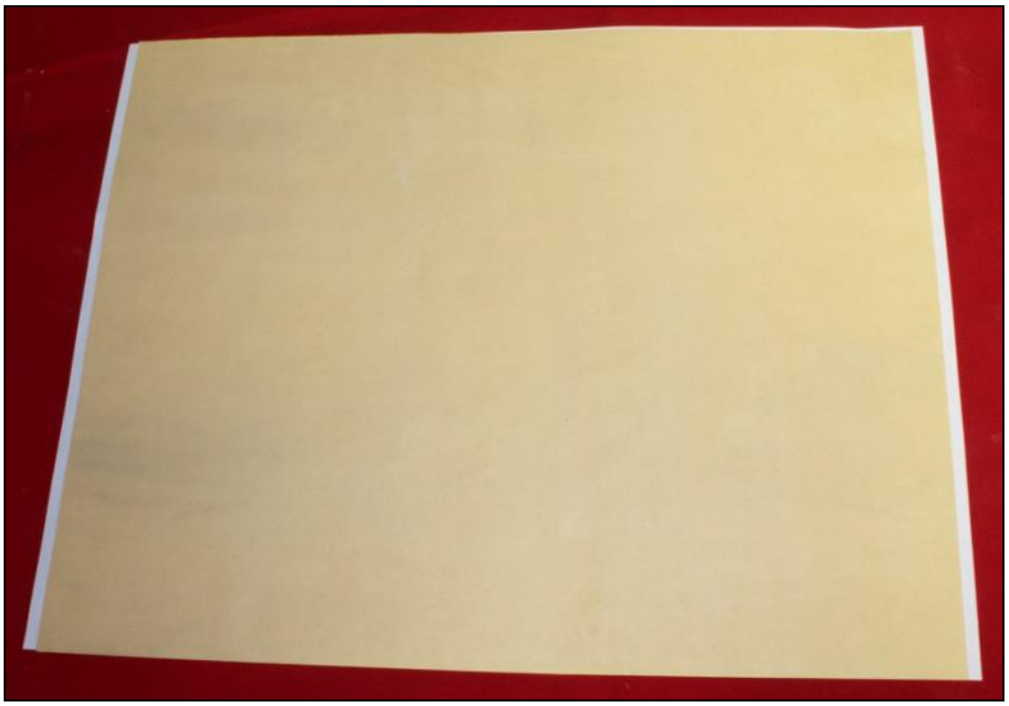


Photo 5

As you can see in this photo, I have trimmed the silkspan at the top and bottom so that there is just enough bond paper exposed to apply the Scotch tape. Only a very small amount of the tape lies across the edge of the silkspan - approximately 1/16”. The tape is folded over the edge of the bond paper and pressed down smooth on the backside of the paper.

After taping down the top edge, I pulled the silkspan taught across the bond paper and trimmed and taped the bottom edge of the silkspan to the bond paper.

Now the fun part. You will need to create a scale drawing of your sail with all of its details using a photo program such as Adobe Photoshop or a CAD program. I used AutoCAD for this purpose because it allowed me to import the actual drawing of the sail, scale it, and then trace over it with brown colored lines.

What you are going to do is load the silkspan/bond paper piece into your ink jet printer. On my printer, the paper is loaded upside down which means that the silkspan was face down in the printer tray.

Then, using my CAD software, I printed the traced sail drawing onto this piece of silkspan as shown in Photo 6.

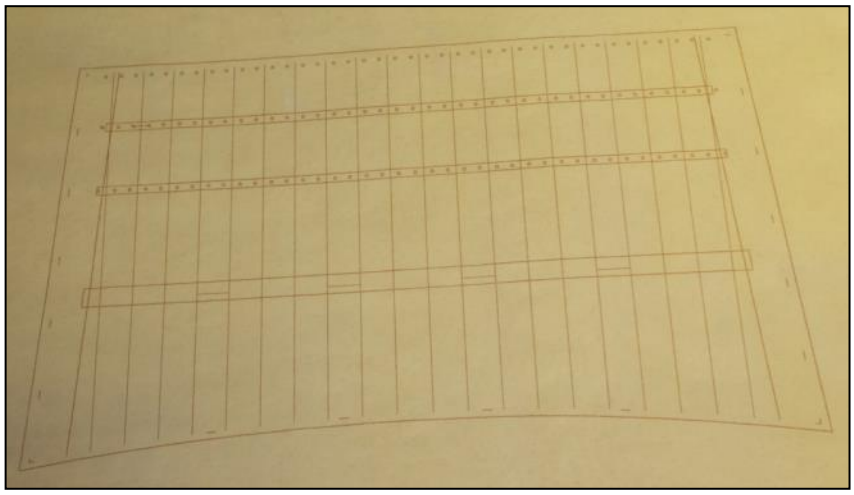


Photo 6

Let me explain what you are seeing in this photo. First, the sail is about 1/16” larger on all four sides than the finished sail. The dashed lines around the edges of the sail represent the fold line as well as points where cringles or loops of rope will be created.

The vertical lines represent the numerous panels that make up a sail. The small dotted rectangles across the upper face of the sail represent reinforcement panels and the dots at the top represent where the sail will be attached to the yardarm with loops of thread or fine rope.

There are also some horizontal markings in the lower portion of the sail on alternating panels which represent additional reinforcement panels.

The next step in this process is to attach the rope that circles the outer edges of the sail and is used to form the various cringles where ropes and blocks will later be attached. Let’s look at Photo 7 first.

This photo shows what you will need to complete your sail. First, above the sail you see a bottle of Turbo Tacky Glue. This is a thick white

glue you can find at most any craft store. It works well on cloth and paper, dries invisible, and can be diluted with water.

Photo 7

Next to the bottle of Tacky Glue, you see a small jar. I have added some of the glue to the jar and diluted it with water to the consistency of milk.

Next to the sail you see a pair of tweezers with a fine tip, a #22 Xacto knife, a small paint brush, a toothpick, a #11 Xacto knife, a pair of fine tipped scissors, and a metal ruler. All of these tools will come in handy while attaching the rope and reinforcement pieces. You can also see in this photo some tan rope that I have already begun attaching to the sail.

To begin attaching the rope, start at the top of the sail, and fold the sail over your ruler by aligning the ruler with the upper edge of the dots that will later show you where to attach the ropes or thread when mounting the sail to the yardarm.

After making this fold, tuck the rope under the folded portion starting in the middle of the sail. Let the outer end of the rope simply hang outside the upper corner at the left in of the sail so that you are attaching the rope in a counterclockwise fashion. (You can go clockwise as well. Counterclockwise just seemed more natural to me since I am right handed).

Now using your paintbrush, apply the diluted Tacky Glue to the sail underneath the folded edge. You can use the toothpick as well as the #22 Xacto knife edge to help press the folded portion tightly against the rope.

(If you hold the #22 Xacto so that the round portion of the blade is flat against the silkspan and close to the rope, you can press the folded silkspan down flat and tight against the edge of the rope). Photo 8 shows a close up of the sail as I attach the rope around the perimeter of the sail.

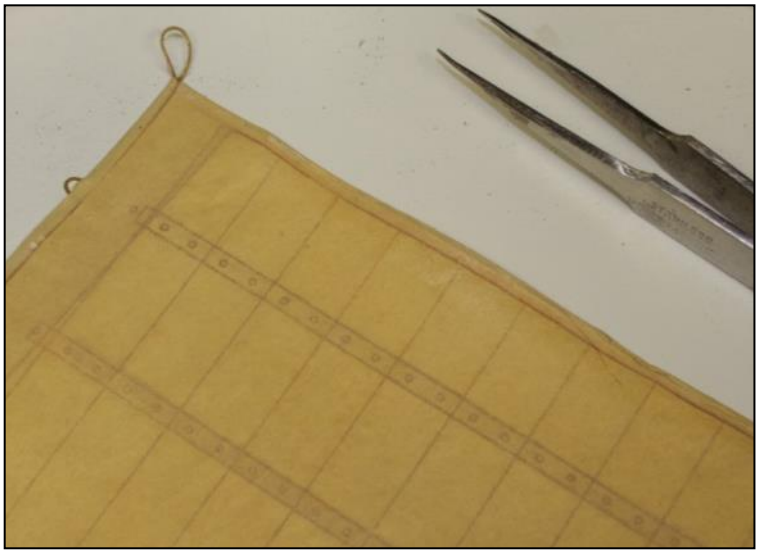


Photo 8

As you can see in this photo, I have formed a loop or cringle in the upper left hand corner of the sail and then continued the rope down the left hand side of the sail. I folded the left hand side of the sail over using the dashed lines printed on the sail as a guide. At each dashed line, I made a slit so that I could form this rope cringle with the rope. NOTE: Your scale drawing of the sail should show all of these details on it. You should use that drawing to locate each of these details on your traced scale drawing.

This process of forming cringles and attaching the rope around the perimeter of the sail is continued until the entire perimeter has the rope attached and all of the cringles have been formed. Photo 9 shows more of the attachment of the rope around the perimeter of the sail.

Photo 9

All that remains now is to add the reinforcement pieces. To do this, I took scraps of the silkspan that were left on the frame and cut the small strips needed to make these reinforcement pieces. Using the steel ruler and #11 Xacto, I cut strips the width needed to make these reinforcement pieces.

Photo 10 shows the finished sail.

You can see the horizontal thin strips of reinforcement silkspan I applied to the sail using the diluted Tacky Glue. There are additional pieces

along the two outer edges running vertically and some smaller pieces in alternating panels at the lower area of the sail. All that is left is to attach the sail to the yardarm (which I have not done yet in this photo).

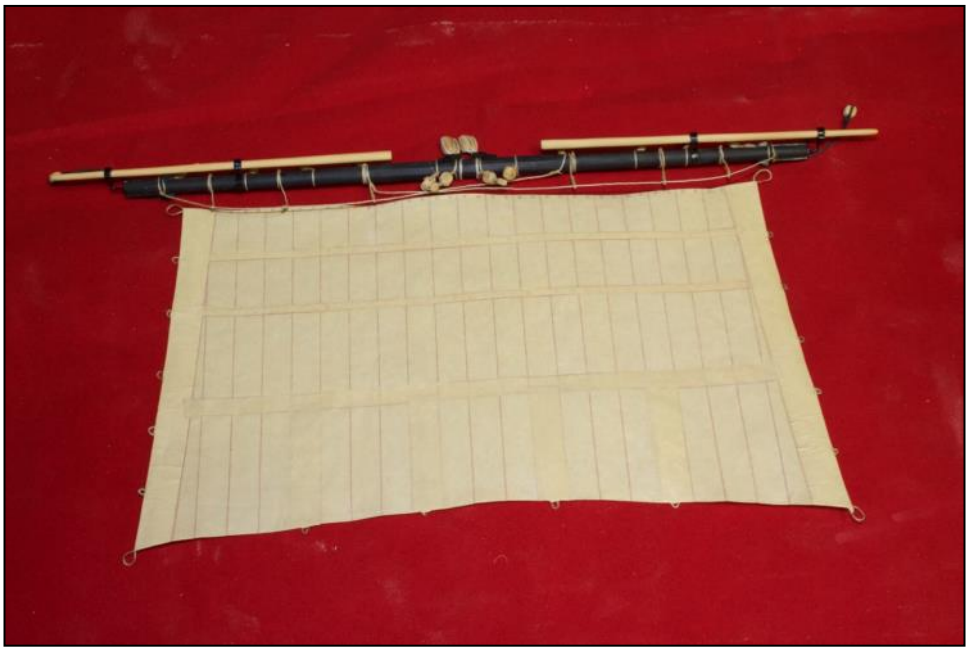
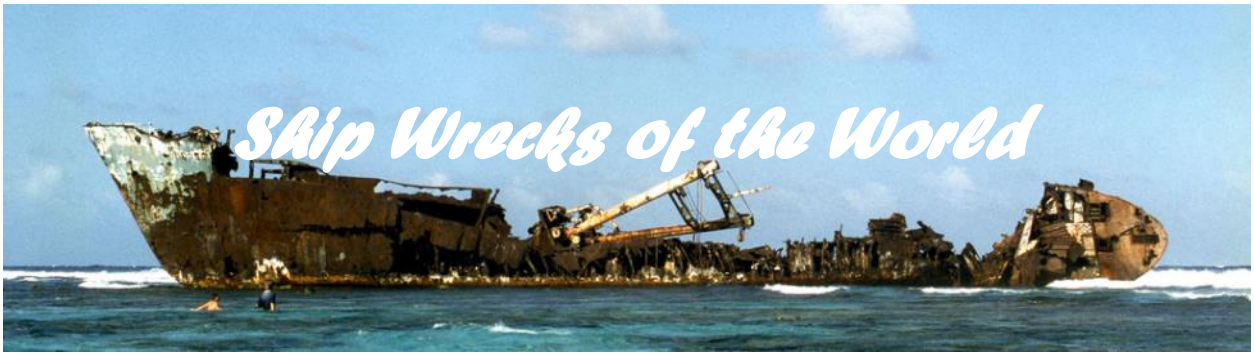


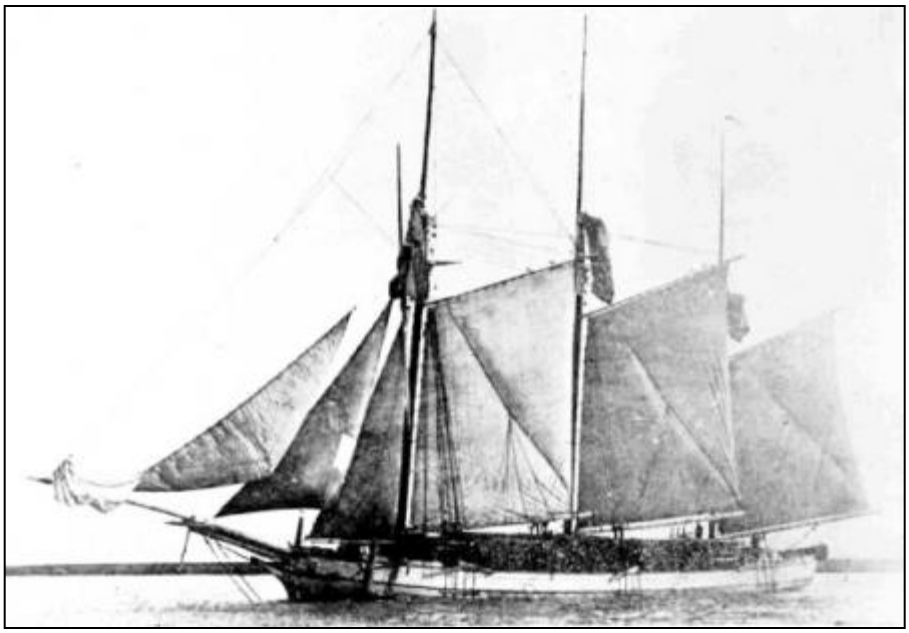
Photo 10

After attaching the sail to the yardarm, you will have to attach the various ropes and blocks to the cringles along the sides and bottom of the sail. You can also add the reef ropes through the horizontal reinforcement bands using a needle and thread. Typically these ropes have a knot on each side of the sail to hold them in place. For scale model sails, it is easier to have a knot on one side of the sail and use a dab of the tacky glue undiluted to hold these ropes in place.

I hope that you find this tutorial useful for making sails for your own model ship.



The *Rouse Simmons*
aka. The Christmas Tree Ship



The *Rouse Simmons* was a three-masted schooner famous for having sunk in a violent storm on Lake Michigan in 1912. The ship was bound for Chicago with a cargo of Christmas trees when it foundered off the coast of Two Rivers, Wisconsin, killing all on board.

The legacy of the schooner lives on in the area, with frequent ghost sightings and tourist attractions whereby its final route is traced. It was known as "The Christmas Tree Ship" and was one of many schooners to transport Christmas trees across the lake. However, with railroads, highways, and tree farms proving much more economical, the tree-shipping industry was on a steep decline and they had stopped sailing by 1920.

Background History

The *Rouse Simmons* was built in Milwaukee in 1868 by Allan, McClelland, & Company, and named after a Kenosha businessman Rouse Simmons. The schooner was soon purchased by wealthy lumber magnate Charles H. Hackley of Muskegon, Michigan and joined his sizeable fleet. Hackley's ships served across most of Lake Michigan's coastline, and the Rouse Simmons became a workhorse, shipping lumber from company mills to several ports around the lake for around 20 years. At its peak the schooner was making almost weekly runs between Grand Haven and Chicago.

After its service for Hackley the ship exchanged hands several times. Many similar schooners were also frequently sold and they became known as "tramp ships". In 1910 Herman Schuenemann bought an interest in the ship, expanding that to an eighth in 1912. The other shares were owned by Captain Charles Nelson of Chicago, who owned one eighth and would sail alongside Schuenemann on the fatal journey, and three fourths (the commanding share) were owned by Mannes J. Bonner, a businessman from St. James, Michigan.

The "Christmas Tree Ship"

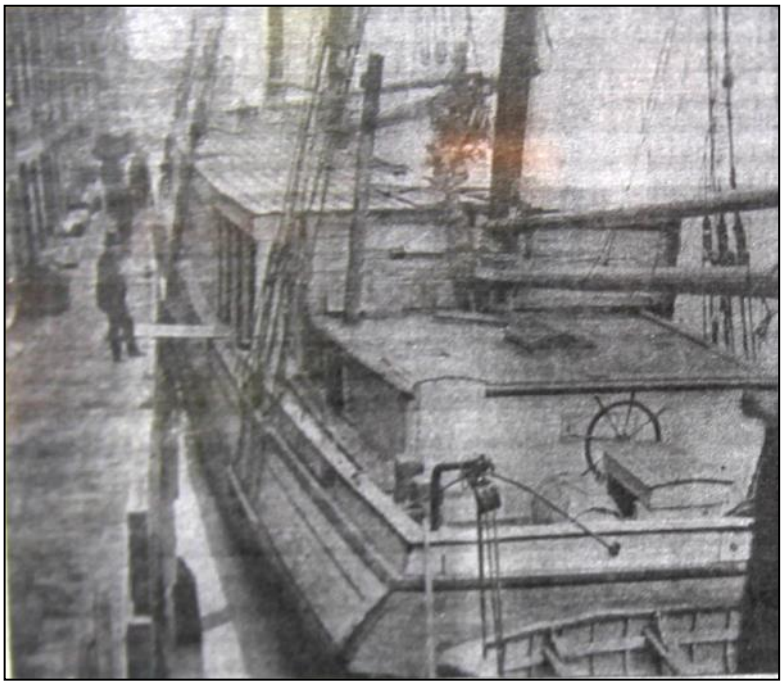
The Schuenemann brothers, Herman and August, had been trading Christmas trees in Chicago since around the start of the 20th century. August died in November 1898 aboard the S. Thal – a 52-ton, two-masted schooner – when it sank in a storm near Glencoe, Illinois. His younger brother continued the family business. While many rival traders had sold to wholesalers and local grocers, Schuenemann sold directly to Chicago residents at dockside by Clark Street Bridge. By cutting out the middleman in this way the trees could be sold cheaply while still making a profit. The venture used the slogan "Christmas Tree Ship: My Prices are the Lowest", with electric Christmas lights and a tree atop the main mast. The trees were sold for between 50 cents and $1, but Herman Schuenemann, affectionately known as "Captain Santa", also gave away some of the trees to needy families.

Final journey

Schuenemann loaded the schooner with 5,500 trees from Thompson Harbor near Manistique, Michigan and planned to make the week-long journey to Chicago. The difficult weather had discouraged his competitors from making their own journeys, and snow had covered the tree farms in Michigan and Wisconsin. He hoped that the resultant shortage of Christmas trees would lead to a huge profit and solve his financial problems.

Already by 1912, November had a reputation for especially violent storms on the Great Lakes. November, 1912, however had been relatively quiet, with only one significant storm so far, which affected especially southeastern Michigan and northwestern Ohio. (The reports that say

another storm had already taken many lives and ships that month are erroneous, confusing 1912 with the Big Blow of 1913.) Still, a second storm was brewing. The conditions of the day were very poor, with many ships anchoring in port for shelter to avoid being battered by the 60 mph winds that could be anticipated in a November gale.



Last known image of the *Rouse Simmons*
Image from Marine Review

Local legends say that some sailors refused to board the ship and that the vessel was unseaworthy. Two years previous the schooner had been towed to port by The Grand Haven Tribune after it was found riding low in the water. Despite this the journey began at noon, with trees crammed into every possible corner of the ship. The weight of the trees was far above recommendations, especially in the bad winter weather, and was certainly going to contribute to the tragedy. During the night, with storms hitting the Simmons hard, two sailors were sent to check the lashings on deck. Both seamen were swept overboard by a giant wave that collected them, many bundled trees, and a small boat. Now that the schooner was slightly lighter and more maneuverable Captain Schuenemann directed it towards Bailey's Harbor. Suddenly, and tragically, the storms worsened; ice formed on the sodden trees and winds battered the hull.

When the Kewaunee Life Saving Station spotted the *Rouse Simmons* on 23 November 1912 it was low in the water with tattered sails, flying its flag at half mast to signal that it was in distress. Logs from the station show that a surfman spotted the *Rouse Simmons* at 2:50pm and alerted station keeper Nelson Craite. Craite found that the station's gas tugboat had left earlier in the day and, at 3:10pm, Craite telephoned the nearest other Station. George E. Sogge of Two Rivers, located just south of Kewaunee, sent out the power boat Tuscarora on a rescue mission, but the *Rouse Simmons* was not seen again.

The *Rouse Simmons* was not the only ship to go down during the storm, with the South Shore, the Three Sisters, and the Two Brothers suffering similar fates.

Wreck and debris

A message in a bottle from the Rouse Simmons washed onto the shore at Sheboygan. It had been corked using a small piece of cut pine tree and, other than the occasional trees caught in fishing nets, was the only remains of the vessel discovered for many years. The message read:

> *"Friday … everybody goodbye. I guess we are all through. During the night the small boat washed overboard. Leaking bad. Invald and Steve lost too. God help us."*

In December 1912 Christmas Trees and wreckage were reported ashore at Pentwater, Michigan. In 1924 a fishing net trawled up a wallet belonging to Captain Schuenemann. The wallet, well preserved because it was wrapped in oilskin, contained business cards, a newspaper clipping and an expense memorandum. In 1971 the wreck itself was discovered by scuba diver Gordon Kent Bellrichard from Milwaukee. Bellrichard was searching for the Vernon, a 177-foot, 700-ton steamer that had sunk in a storm in October 1887, and had been told about an area in which local fishermen had frequently snagged their nets. When his sonar appeared to have located something he dived down to a shipwreck on the bed of the lake 172 feet below. Despite his light failing, Bellrichard managed to survey the wreckage with his hands and concluded that he had instead found the Simmons.

A forensic study of the wreck suggested that the ship had steerage and was sailing for shelter when it sank. The mizzen mast snapped off above the deck and the upper portion was not located. The main mast was found forward and to the port side of the wreck with the base missing. The foremast is intact and lies nearly parallel but on top of the main mast suggesting at least one of these masts fell out of the mast step as the ship went down.

Many of the trees are still in the ship's hold, though two were extracted and shown as exhibits. Several items recovered from the Rouse Simmons are now housed in Rogers Street Fishing Village Museum in Two Rivers, including the ship's wheel. The ship's anchor was retrieved and now stands at the entrance to the Milwaukee Yacht Club. The remains of the wreck are listed on the National Register of Historic Places.

Legacy

The Christmas Tree Ship lived on through Schuenemann's wife, Barbara, and their two daughters. However, in the latter years they chose to transport the trees by train and merely used a boat as a platform for sale. The practice of transporting trees by schooner ceased in 1920, and the increasing popularity of railways, highways and tree farms soon made it easier and more affordable for everyone to buy a tree.

Bibliography

National Register of Historic Places. National Park Service.

Jacobson-Tews, Lori. Pier Wisconsin. "The Story of the *Rouse Simmons*".

Boaters Dream, 25 November 2002. "'Christmas Ship,' sunk in gale, has historical ties to Muskegon".

Longacre, Glenn V., Prologue Winter 2006. "The Christmas Tree Ship: Captain Herman E. Schuenemann and the Schooner *Rouse Simmons*".

United States Environmental Protection Agency, 9 March 2006. "The Fate of the Christmas Tree Ship".

Wilmar Tribune December 11, 1912 page 10

Stanton G, Meverden K, Thomsen T, Garey J (2007). "Closed-Circuit Rebreathers in the

Forensic Study of the *Rouse Simmons* Shipwreck.". In: NW Pollock, JM Godfrey (Eds.) the Diving for Science... 2007. Proceedings of the American Academy of Underwater Sciences (Twenty–sixth annual Scientific Diving Symposium).

"National Register of Historic Places Listings: March 30, 2007". National Park Service.

Source: Wikipedia

Cutter

Scale: not calculated. A model of a thirty-two foot, clinker-built, sloop-rigged, ship's cutter. Finely made and full of interest it is equipped with a metal centre plate and winch, six thwarts, cockpit with backboard, rudder, tiller, six pairs of oars, mast and sails. It's large, sturdy and has a bespoke stand, and one wonders whether it was made as a pond model and, if so, how well it would have sailed.

Materials: coating: varnish; metal: brass; metal: copper; organic: cotton; wood

Dimensions Overall model: 1110 x 1318 x 357 mm; Base: 127 x 881 x 381 mm

Source. National Maritime Museum

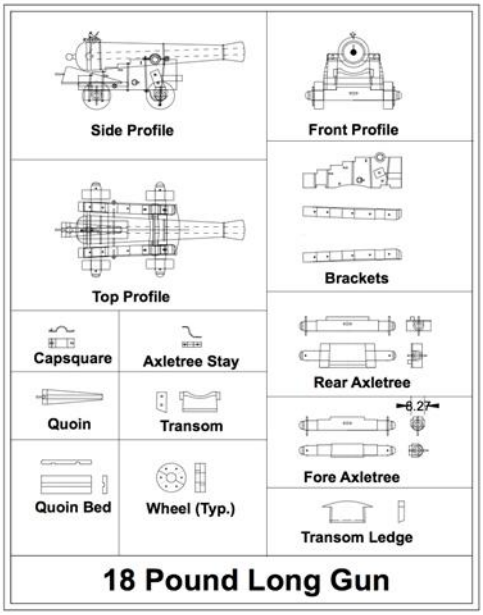
Making Long Gun Carriages

Previously I wrote an article on turning brass cannon barrels for my Brig Eagle. This is a continuation focused on building out the carriages. The ship will have a combination of 4 - 18 pound long guns and 6 - 32 pound carronades fully rigged along the starboard side.

There will be a number of phases discussed in making the fully rigged cannon. I recommend looking at each of these phases like a mini-build/ project. For me, this keeps my focus on the task at hand rather than when the ship is going to be finished.

Anyway, just to refresh where we are the phases are:

- Turning the Brass Barrels (Winter 2015)
- Making the long gun carriages
- Making the carronade carriages
- Photoresist etching the gunlocks and hooks
- Making blocks and Rigging



The long gun prototype I will be reproducing. There are still a few issues that need to be addressed during the construction including making the capsquare chain, making the quoin a bit smaller, and a better fitted capsquare.

Last year, in preparation for making the armaments for the Brig, I developed CAD drawings for both the long gun and carronade carriages. These were based on what Dr. Crisman published in his books as well as that from the US Navy Constitution documentation. I built single prototypes of each carriage to ascertain what planking I wanted to do on the main deck of the ship as well as checking the sizing for the ship. These also allowed me to refine my plans for the construction. The long gun carriages will be made from maple according to these drawings.

Figure 1 - 18 Pound Long Gun Prototype

Here is a list of the tools and material required.

- Band saw
- Micro Table Saw
- Disk Sander
- Spindle Sander
- Rotary tool
- Rotary tool arbor
- Electric Drill
- Assorted files
- Sandpaper
- Micro Drill bits
- Hardwood
- Brass

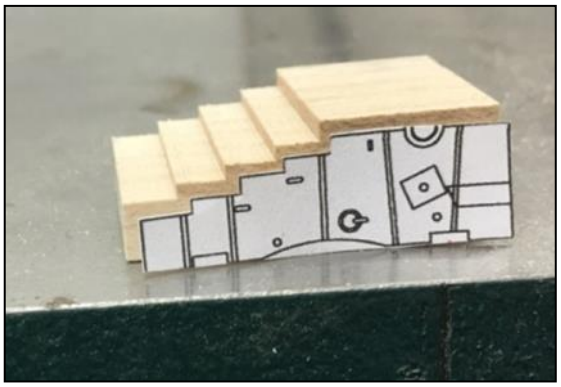
I use the band saw to create blanks. Once cut, they are sent through the thickness sander leaving them slightly oversize. I will be using the Byrnes Table Saw for the detailed cuts. There are other micro saws out there and you could certainly do this by hand but it will take a bit longer. The disk and spindle sanders make quick work of squaring ends or shaping wood. The variable speed rotary tool has a number of purposes from a small disk sander for detailed work to drilling holes quickly and accurately.

Good files are critical to accurate fitting. It is helpful to understand the terminology of files. There is an excellent primer on this at Nicholson File Primer . I find that flat, straight files with one safe edge in a couple sizes (Small, and medium/large) are invaluable. A file with a safe edge has no teeth on that side. This keeps the file from inadvertently cutting into a second surface while using. My file collection is rounded out with variety of round, triangular and rifflers sets.

Lastly, I will be focused on the processes and not specific sizing since this will be wholly dependent on your scale and the details you choose to include. For this build, the Brig Eagle is 1:48.

Carriage brackets

Create a piece of stock slight thicker than the finished bracket top to bottom. This will be shaped with the side profile before each bracket is sliced off.

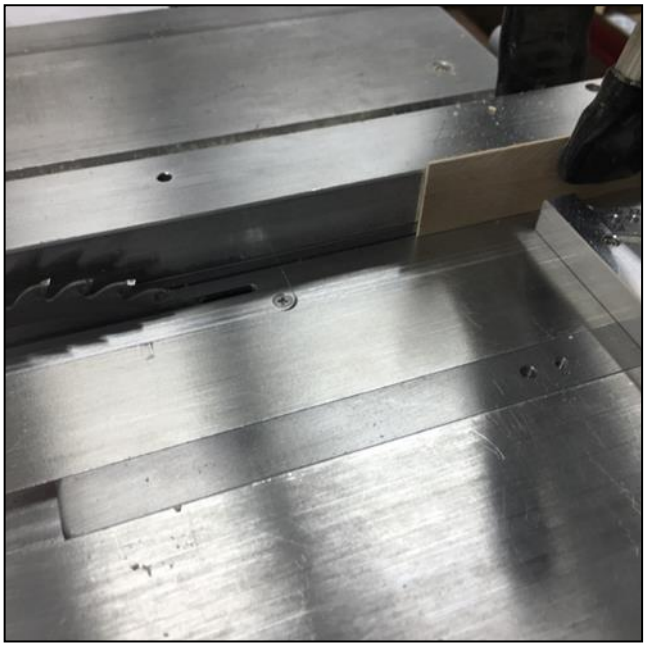


Tool Tip: Table saws should always demand the highest respect whether operating a 10" full size saw or a micro saw as shown here. When dealing with very small parts it is even more important to watch where your fingers are during operations. Blood stains maple - don't ask, just take my word for it. Always read your manual and plan your cuts before attempting them.

To slice the brackets off consistently without having to reset the fence every time I clamp a thin sheet of wood to the fence. This sheet can be any size as long as it does not extend to the blade of the saw.

With a properly squared miter set to 90 degrees, adjust the fence for the thickness of the bracket + the thickness of the clamped sheet. The point of this is to give clearance between the bracket, the blade, and the fence. Without this, you stand to get kickback.

Hold the profiled block against the miter and the sheet, then slide the block through the saw. Use a very thin strip of wood to push the bracket through the saw taking care to not let the block move side to side once it clears the sheet.



After the first bracket is cut, check the thickness and make any adjustments necessary. Cut the remaining brackets. I would recommend cutting a few extra in case of accidents in later steps.

Pair the brackets and mark them lightly with a pencil to insure you can always match them together. There will be a left and right so I mark mine 1R, 1L, 2R, 2L etc.

Next I use the spindle sander to cut the arc in the bases. Mark the edges of the arc on the bracket then sand the curve between.

Make sure each of the pairs is exactly matched. If not, adjust as necessary. Now clamp the pairs together, mark and notch for the axles. Keep the notch slightly shallow to allow for fitting to the axles.

Notice the brackets will tilt at an angle both longitudinally and horizontally. The only way I know to shape these consistently is to build a jig. The photo below shows mine. The steps here are still roughed in. These will be shaped to their final size with the first bracket set.

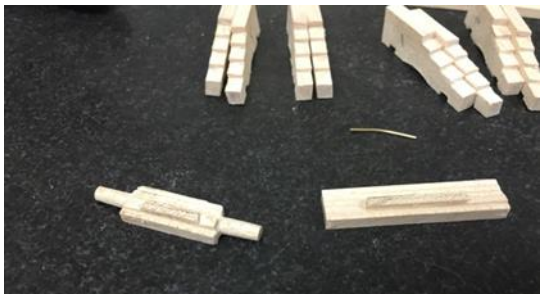
Once the first pair is clamped into the jig the bottoms need to be sanded flush. It is important to do this before final shaping of the steps.

Take a fine wood file. Use the safe edge that is smooth to run that edge against the front of each step and file the bed of each one square to the bottom of the carriage. Each step is square to it's opposite. These can and should be touched up once the assembly is glued to the axles.

Axletrees

Next start shaping the rear axletree. Create a piece of stock to the outside dimensions of the axle and than required. I clamp these in a vice and using files, gradually shape the axle to match that in the drawing. The wheel posts are cut square then gradually rounded to the final post.

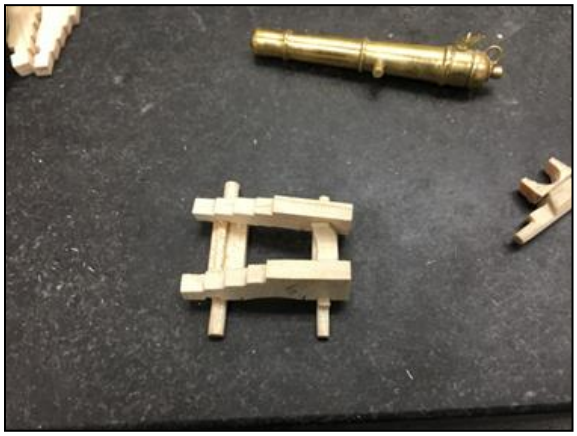
After the axle is very close to the final shape, fit it to the bottom of the brackets. Don't glue it yet but get it as close as possible to the final fitting. Once satisfied, do the same for the forward axletree.



Rear axle and roughed in blank

Axles and brackets ready for fitting

Next cut the transom and glue it to the top of the front axletree. You can see the transom installed in the carriage in this photo as well as see another unit ready for final fitting to the right. The final shaping of the transom is done once it is glued into the carriage. For now, just rough in the curve. Test fit the canon barrels to the carriage. Adjust the transom fit as necessary. The axletrees, brackets, and transom can now be glued together. Pay special attention to keeping the angles called for in the design.



Once the glue is dry we can move on to the transom ledge. Rough shape the ledge then use files to adjust the angles until you achieve a nice fit to the carriage assembly. The back edge must be filed to match the angle of the transom. Once satisfied, glue it into the assembly.

The carriage on the left has had the transom ledge installed

Once the assembly is dry, you can perform final shaping adjustments to the transom and transom ledge.

The quoin bed rides on the top of the rear axletree and a brass wire through the brackets. First shape the bed by cutting a long strip to the side-to-side dimensions. Use a slitting blade to cut a notch down the center of the entire strip. Then cut these to the length of the bed. Set the fence of the saw to cut grooves into the underside of the bed to allow it to ride the top of the rear axletree and the brass wire. Follow the dimensions in your drawing. Check the fit and adjust the width of the rear slot to fit the axle.

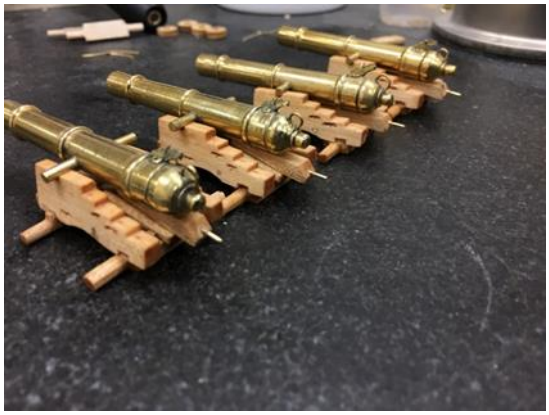
The quoin is shaped in much the same fashion as the bed. First cut a long strip with width and height of the quoin at it's largest. Next use the slitting saw to shape the bottom miter that will slide in the quoin bed. Don't overcut the miter. The fit should not be too tight or you will split the quoin bed.

Once the miter is sized, cut the strip into the lengths for each quoin. I use the rotary and disk sanders to shape these. Finally drill a hole into the end and glue a handle into the quoin. I used the brass belaying pins I created previously to make the handles - just a matter of gluing the pins into the holes leaving the handles proud. Handle could also be turned from toothpicks. Do not glue the quoins into the carriages until much later in the process.

Carriage with Quoin bed in place. The quoin is to the right. Notice also the holes drilled in the steps of the carriage. Pins will be glued in place to mimic the bolts through the assembly.

Test fit your cannon barrels to the carriages. Use the drawings as a guide and drill holes for all the hardware to be glued into the carriages. Where there will be eyes, the holes will also need to be slotted to accept the bottom of the eye. A micro-chisel can be used to cut the slots. You can make one of these out of a small screw driver. The slot should allow you to inset the eye half way. These can be adjusted as necessary when installing the fittings. It is much easier to do these without the barrels attached.

Drill the holes though the brackets for the transom bolts. These should be pinned, glued and sanded flush now since the wheels will block access to these later.



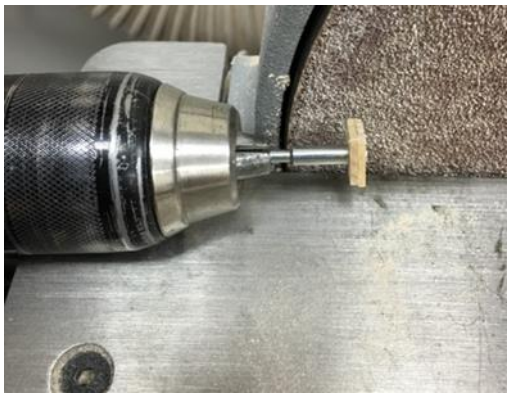
Now fit the barrels to the carriages. Mark where the trunnions cross the brackets. Take a small v-shaped file and start the grooves cutting across both brackets at the same time. Then use a small round file to shape the cuts so the trunnion fits snugly halfway down. The trunnions can now be trimmed to the sides of the bracket. Leave the slightly long for the final fitting.

Trucks (Wheels)

The wheels of these are made of two layers of material. Start with a strip larger than the final width of wheel and half thickness the final truck. Cut these into squares and glue together in pairs with the grain running perpendicular between layers.

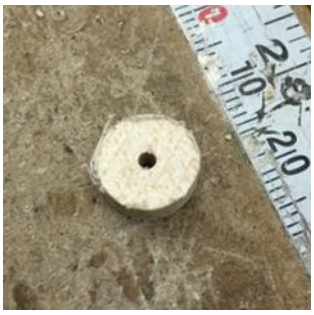
Mark the center and drill a small hole through the blank. The hole size should match the screw size of the Dremel tool arbor. You will need 4 of these per long gun.

The wheel blank is mounted to the arbor then the arbor installed into the drill chuck. I found the electric drill superior in this process to the Dremel tool itself.



To shape the wheel, I held the spinning drill against the running disk sander. This removes material very quickly to take care not to overshoot the mark. Once the blank was rounded I gradually reduced it in size stopping often to measure it until I reached the dimensions in the drawing.

Enlarge the centers to the size of your axles.



Tool Tip: The best way to do this is to gradually move upwards through your drill bits until you reach your final size. To overcome the woods natural tendency to split, run your drill bit backwards instead of forwards. It will take a bit longer but the cut will be smooth and you will not have any splitting. You can only do this if you gradually increase the bit size as you work upwards. A bit of patience and you will end up with very smooth holes!

Each of the trucks is bolted together by 8 bolts. This will be mimicked using brass pins. Use a scribe to mark holes halfway between the center axle and the sides. Starting with the 4 holes using the previous marks (to find the center hole for the arbor). Then mark holes halfway between each of those. You should end up with a circle of 8 equidistant center marks. Drill holes completely through the wheels. The size of the wire should be the

size that the head of the bolt would be for your scale. Glue the brass wires into the holes with thick CA and let dry. After they are dry, trim with flush cutters and file smoothly to the wheels. Take the time now to perform any final sanding and shaping to the wheels.

A long gun with trucks installed and eye slots prepared.

Cut small rings out of brass tube just larger than the axle hubs and cut two slots 90 degrees apart into each ring. Mount the wheels to the axle hubs and slide then slide the rings onto each axle. Adjust the rings so one slot is vertical. Mark this and drill a small hole through the axle for the pin. Dry fit the entire wheel assembly and when all four wheels fit per the drawings, trim the axles to their final length. The wheels and pins can now be glued into the holes holding the wheels in place.

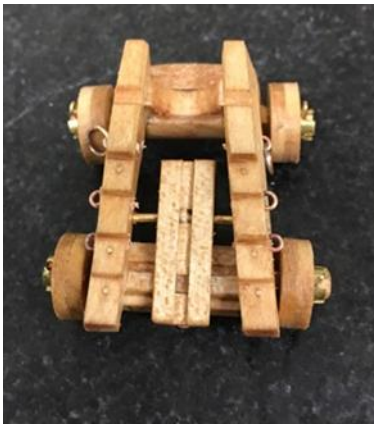
Hardware

Now it is time to make the various hardware fittings to accommodate the rigging. For the long guns there will be eyes with rings installed for the breeching line in addition to inset eyes for the gun tackle and the training lines. There will be a eye to hold the capsquare chain and pin. There will be a eye in the stern of the carriage for the aft training tackle.

The capsquare will also need to be formed.

I find making eye/rings is better done in batches. There have been a number of great articles on how to form and solder, and blacken brass eyes and rings so I will not go into that here. Spend some time counting eyes and rings and looking at size required. Only the breeching lines will have rings soldered into the eyes. The other fittings will just be eyes. Just insure you make enough eyes and rings to scale to completely build out your cannon/carronades.

Once all the eyes/rings are made, test fit them to the carriage(s). Adjust the slots as necessary to provide for sufficient penetration of the eye. Eyes



should have about half of the ring exposed. Glue these into the carriage. Take the time to install the pins in the steps as well. Sand flush. The carriage should now be finished/stained.

Capsquares

I filed a half circle into the end of an old screwdriver. The size of the half circle was the thickness of the trunnion plus the capsquares with a bit of slop. I took brass wire the size of the trunnions and filed one side down flat. This was laid on an anvil and the brass capsquare blank laid across that. Then I centered the form over the capsquare blank and hit it smartly with a hammer. This bent the blank over the half trunnion and provided nice clean bends. I made a few extra of these just in case I needed them during later steps.

Each capsquare drilled on both sides. The forward side to accept an eye and the rear a mounting socket. The photo below illustrates the configuration. Once the holes are drilled place it over the cannon trunnion on the carriage and mark the holes in the carriage brackets. Make sure the cannon barrels are aligned with the carriages. Adjust the slots and holes as necessary.

Long gun with Capsquare

The forward eye is recessed into the top of the carriage so the eye can go through the capsquare and end in the slot below. This means the hole for the eye's shaft is drilled slightly ahead of the hole in the capsquare. The slot is then created for the eye to be recessed that should result in the capsquare pivoting on the eye exactly into the position you previously marked. Once this is done, then back hole is drilled and a prepared pin glued into the hole. The pin in the back has a small hole drilled through the top it to accept the locking pin and chain. The locking pin is soldered to a chain on one end and an eye on the other. This eye is mounted slightly astern and below the capsquare locking pin. This eye will not be mounted in a slot but just a hole for the shaft.

Lastly we need to create this chain/pin assembly and mount it to the gun. This assembly is shown below. The chain is actually made by taking three pieces of very fine brass wire and braiding them together. This was soldered to the eye and pin and installed in the gun. When soldering the chain to the fittings remember the position it needs to fall and solder it accordingly.

Long Gun showing stern truck pins and capsquare chain installed.

Lastly before the cannons can be rigged they must be mounted to the ship. This is accomplished by drilling small holes through the bottom of the aft wheels through into the axle. Brass pins are glued into these holes.

Holes drilled for a long gun.

Once the pins were installed I placed each gun in position. Using the pins as a guide. I marked where they hit the deck and drilled the corresponding hole thought the deck. A touch of thick CA to the pins and the bottom of the front wheels and the cannon can be mounted firmly to the ship.

Finally, we need to glue in the quoin. The reasons we waited until now is two fold, first the handle is fragile. Secondly, we wanted to adjust the cannon angle to the gun ports. So now test fit the quoin. The barrel should point through the center of the port. If not move the quoin in or out until it does. If necessary the front angle of the quoin can be sanded down until the cannon is properly aligned. Once you are happy with it, glue it in the slot. Now it us just a matter of rigging all those rings and your cannon will be done.

I am not covering rigging in this article, but here is a photo of the fully rigged long gun.

I hope you enjoy building these as much as I did.

The Modelers Tool Chest

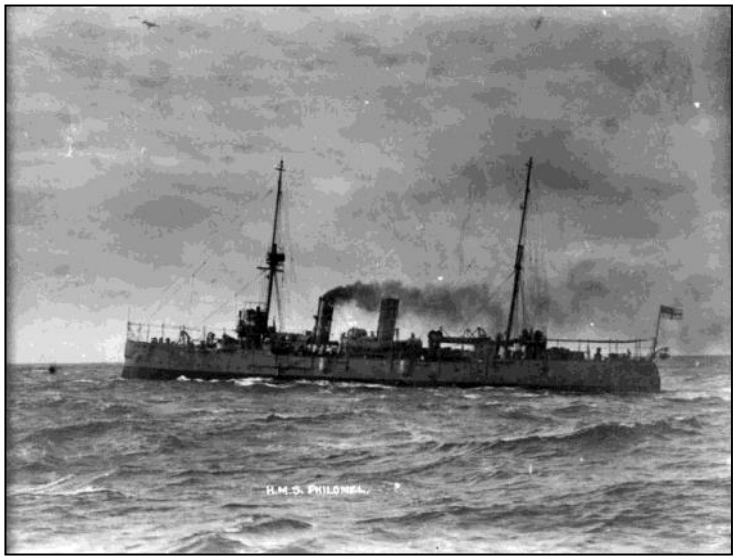
Rigging Tools

One of the most tedious jobs when building a model ship (and my least favorite) can be the rigging. Like any other process in model building is necessary to have the proper tools at hand to help make the job as easy as possible.

Over time modellers tend to build their own collection. Either by purchasing them or like their models, make them by hand. Here are a few just to give you an idea of some of the tools available.

Of course we cannot forget Beeswax. Beeswax is used for multiple purposes in rigging. It helps add a little weight to small lines so that they have a more natural hang to them. It also helps remove the fuzz that is often seen with most commercial modeling lines. Small 1oz blocks can go a long way.

Heraldic Ship Badges



HMNZS *Philomel*

formerly HMS *Philomel*

Motto: Fide et Fortitudine (By faith and fortitude)

It is believed that the badge of *Philomel* was designed in a mess deck on board the ship during the First World War. It is known to have been in existence in 1926-27. When the Royal New Zealand Navy began formalising its ships badges in the late 1940s, the design was rejected by both the Naval Board and the College of Heralds. Alternatives were suggested, but a spirited rearguard action by the Captain of *Philomel* eventually prevailed and the figure of *Philomela* holding a nightingale became the badge of the ship. A more persuasive argument was that by the time the discussions came about, the design had already been incorporated into many fixtures in the establishment. Although officially – if reluctantly – sanctioned, the badge was never formally defined. Time obscured the designer's aims and for a period in the mid-1960s *Philomela* was sometimes depicted as a Maori woman. Moves were made to have this officially recognised, but tradition prevailed and *Philomela* remains Greek.

Source: NZ History