AUSTRALIAN COLONIAL SERIES WOODEN MODEL KIT

COLONIAL KETCH MARY BYRNE 1826

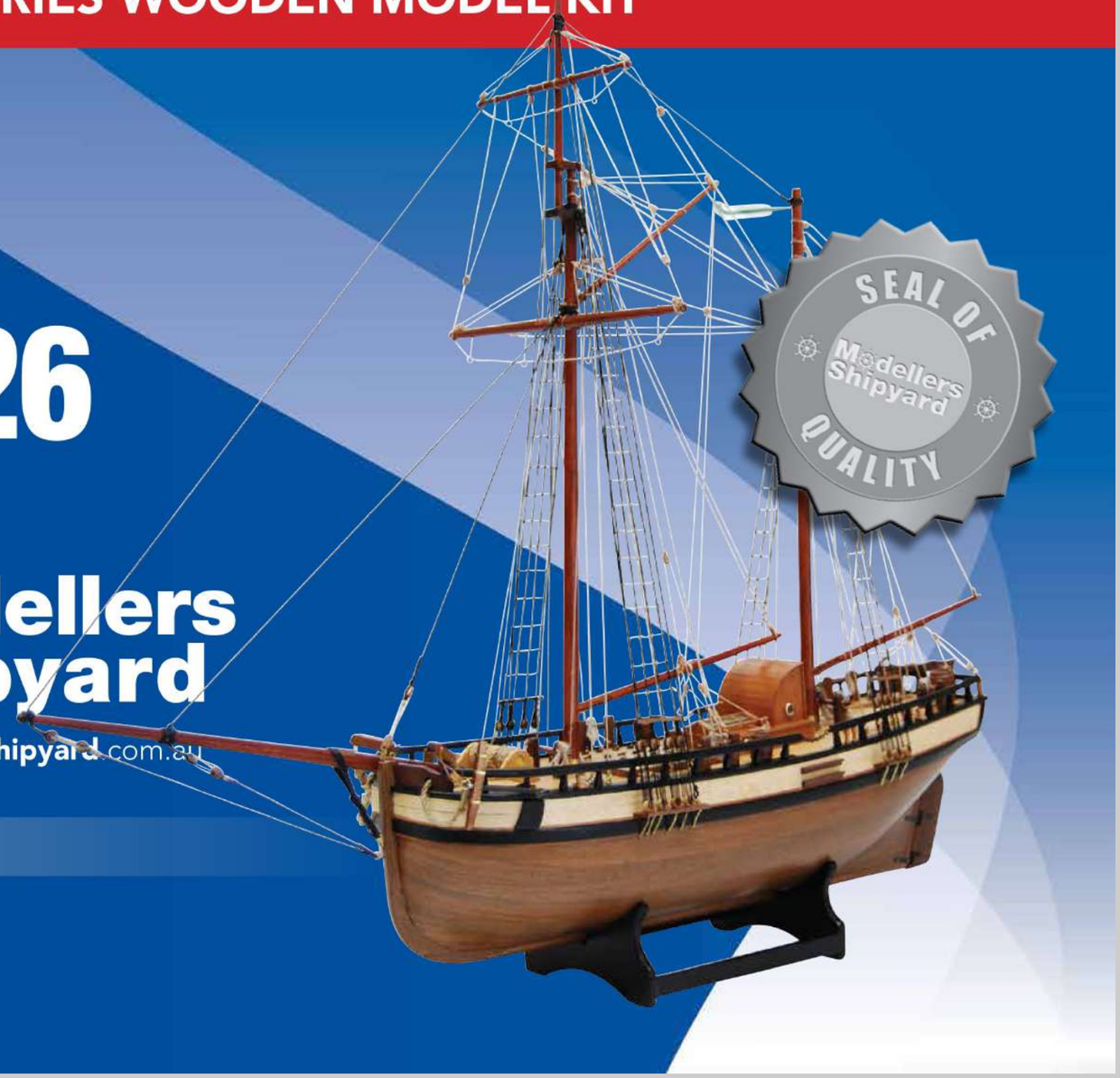
SCALE 1:48

Modellers Shipyard

www.modelshipyard.com.au

LENGTH: 590mm HEIGHT: 490mm

ITEM CODE: KTMS1013



BUILDING INSTRUCTIONS

Version 2

1.0 Introduction

Modeller's Shipyard is proud to present another wooden model ship in our Australian colonial vessel series. We are the only manufacturer of wooden model ships in Australia.

Our model of the colonial ketch *Mary Byrne* is based on a typical river & coastal ketch that sailed in Australia waters during the early nineteenth century.

Our kit of the *Mary Byrne* is double planked on bulkhead construction with laser cut plywood. The kit comes complete with all timber, rigging cord and fittings. All parts and fittings are of the highest quality.

2.0 Historical Notes

Ketches were river & coastal traders brought to the colonies of Australia by Europeans in the early nineteenth century that evolved into designs that suited Australian coastal & river waters. The vessels had two masts and a simple sets of sails so they could be managed by crews of three seafarers.

Ketches were integral to Australia's maritime history. They connected the city and country before the advent of road and rail. The ketch is quite manoeuvrable in light winds and with a shallow draught they were well suited to negotiate the coastal rivers to transport farm products, grain and minerals to the city and shipping goods and supplies to isolated river and coastal communities along the extended coast of east and south eastern Australia.

The ketch *Mary Byrne* is named after a young Irish girl. In 1826 Mary Byrne was sentenced in Dublin to seven years & transported to the colony of New South Wales from Dublin. Her crime was stealing a lace handkerchief. Mary's mother Jane appealed in writing to the local authorities to save her daughter on the grounds that she was an only child and her father was dead. This was all to no avail. Mary was transported on the Lady Rowena, which left Dublin in January 1826 and arrived in Sydney in May. The ship carried 102 females from Ireland, most transported for 7 years for minor crimes.

Upon arrival in Sydney Mary was assigned to Mr Still, at Bunkers Hill as a servant. The Sydney Gazette reported that Mary had an argument with a fellow worker in the kitchen which resulted in the police being summoned. Her employer Mrs Still came to her defence saying she was a church going lass and engaged to a policeman. Mary, again, found herself in trouble when another employer refused to pay her and Mary confronted the woman demanding her wages. This time, Mary received 3 months in the Female Factory at Parramatta. There is no doubt Mary was a feisty lass, for upon sentencing Mary was heard to state that she didn't care as she'd just have to sweep a few floors.

Mary eventually set-up house in the Rocks area of Sydney with John Burke, himself a convict who was issued with a ticket of leave. John Burke was a blacksmith, by trade but did serve some time as a police officer. The 1828 census shows that Mary and John had a daughter called Margaret, but sadly there is no further evidence of her existence. In about 1832 they had a son called John, who went on to marry Mary Coe at St Mary's church in 1856. Mary Coe too, was descended from convicts.

We next hear of Mary Byrne, when she was admitted to the Sydney General Hospital in May 1842. She died soon after of Erysipelas, which was also written up in the Sydney Gazette. The government records of Mary's autopsy state that she had a "visitation from God". Mary died, a convict, when she was just 36 years of age. Mary Byrnes descendants lived in The Rocks for well over 100 years and continue to live in Australia today.

The *Mary Byrne* model is dedicated to Mary Byrne and her descendants.

3.0 General Instructions

These instructions and kit are designed to make the construction of the model as trouble free as possible. Everyone who completes their model in accordance with these instructions and using the materials supplied will have good cause for pride and satisfaction in their achievement.

1. It is **essential** that the modeller study these instructions and associated drawings thoroughly before commencing construction. While reading these instructions, familiarise yourself with the contents of the kit.

2. Parts are identified as, for example P25 — means Part No 25.

3. Few, if any, parts can be simply glued in place without some preparation. Always dry fit parts and if necessary reshape the parts before final gluing.

4. Don't hurry. Take your time. If you are uncertain of anything take the time to study the instructions, the diagrams and photos and your kit parts. Most problems will be overcome with a little time spent pondering the issue at hand.

5. Check the contents of the kit against the Parts List. Note that some parts need to be made by the modeller from the stock of timber supplied in the kit. Parts that need to be made by the modeller from timber supplied in the kit are noted in the Parts List.

6. The construction of a wooden model ship can be divided into the following steps.
   - Hull Construction
   - Hull Planking
   - Deck & Deck Furniture
   - Masts & Yards
   - Rigging

These written building instructions are to be followed to build your model.

For the modeller who would like additional detail on particular techniques on building this model, a two DVD set on *"*How to Build the *Mary Byrne"* is available from Modeller's Shipyard. In this DVD set there is 4 hours of narration and demonstration by a master modeller as the model is built. There are countless techniques and tips presented on every detail of building the model from opening the box to putting the finishing touches of the rigging. ***Note:*** **There are some features and fittings shown on the model being built in the DVD that may not be in the kit. Also the DVD may not necessarily follow the same building steps presented in the written instructions.**

For further details on this DVD see our website www.modelshipyard.com.au — see Training Materials on our home page or call our office.

Colonial Ketch
MARY BYRNE
1826
SHEET 1

4.0 **Parts List** (Modeller's Shipyard reserves the right to make changes to the instructions, components &/or kit contents at any time without notice)

Part No	Description	Quantity	Material
1-9	Bulkhead Frames	9	4mm plywood
10	Keel	1	4mm plywood
11A-E	Bow Filler Blocks	5	4mm plywood
12A-E	Bow Filler Blocks	5	4mm plywood
13	Deck	1	2mm plywood
14	Hull Planks—First Layer	50	2x5x400mm limewood
15	Stem Post	1	4mm plywood
16	Stern Post	1	4mm ply wood
17	Keel	1	4mm plywood
18	Hull Planks—Second Layer	40	0.6x6x400mm teak
19	Fence—Base	1	2mm plywood
20	Stanchions	44	3mm plywood
21A-D	Fence-Top	4	2mm plywood
22A-D	Cap Rail	4	2mm plywood
23	Gunwale	Note 1	2x3mm limewood
24	Wales	Note 2	1.5x6mm limewood
25	Wale Flashing	Note 3	0.6x6mm silver ash
26	Wale Fillet	Note 4	1x1mm walnut
27	Eye Pins	Pkt	Parts Card 2
28	Gangway Chain	Note 5	Parts Card 2
29	Steps	Note 6	3x3mm L section walnut
30A	Hawse—Starboard	1	4mm plywood
30B	Hawse—Port	1	4mm plywood
31	Knightheads	Note 7	4x4mm walnut
32	Bowsprit axle	1	Parts Card 2
33	Catheads	Note 8	5x5mm walnut
34	Hatch Grating	1	Parts Card 2
35	Hatch Frame	Note 9	2x3mm walnut
36	Anchor Winch	1	Parts Card 2
37	Pump	1	Parts Card 2
38	Bitt heads	Note 10	5x5mm limewood
39	Rudder	1	4mm plywood
40	Rudder Tiller	1	4mm plywood
41	Rudder Hinges	3	Parts Card 2
42	Rudder Chain	Note 5	Parts Card 2
43	Mast Fife Rail Post	Note 7	4x4mm walnut
44	Mast Fife Rail	Note 9	2x3mm walnut
45	Side & Bowsprit Fife Rail Post	Note 7	4x4mm walnut
46	Side & Bowsprit Fife Rail	Note 11	2mm dowel
47	Barrels—Large	2	Parts Card 2
48	Barrels –Small	2	Parts Card 2
49A-B	Channels—main mast	2	2mm plywood
50A-B	Channels—mizzen mast	2	2mm plywood
51	Main cargo hatch base	1	2mm plywood
52	Rings—3mm	Pkt	Parts Card 2
53	Hawse pipes	2	Parts Card 1
54	Anchors	2	Parts Card 3
55	Anchor Rope	1	Parts Card 1
56	Cord—0.25mm Fawn—E	1	Parts Card 1
57	Cord—0.5mm Fawn—F	1	Parts Card 1
58	Cord—1.0mm Black—G	1	Parts Card 1
59	Block—4mm 1 hole—A	42	Parts Card 3
60	Block—5mm 1 hole—B	9	Parts Card 3
61	Block—5mm 2 hole—C	5	Parts Card 3
62	Footrope Stirrups	6	Parts Card 2
63	Deadeyes—5mm	32	Parts Card 3
64A-B	Billboards	2	2mm plywood
65A-J	Companionway Parts	10	2mm plywood
66	Companionway planking	Note 12	0.6x5mm tanganika
67	Companionway roof	Note 13	1x5mm tanganika
68	Companionway trim	Note 14	1x1mm walnut
69	Skylight window	1	Parts Card 3
70	Port Holes	6	Parts Card 2
71	Nails—Brass	Pkt	Parts Card 2
72	Main Mast—lower	Note 15	8mm dowel
73	Main Mast—upper	Note 16	5mm dowel
74	Mizzen Mast	Note 15	8mm dowel
75	Bowsprit	Note 15	8mm dowel
76	Main yard	Note 17	6mm dowel
77	Top yard	Note 18	4mm dowel
78	Boom—Main Mast	Note 16	5mm dowel
79	Boom—Mizzen Mast	Note 16	5mm dowel
80	Gaff—Main Mast	Note 18	4mm dowel
81	Gaff—Mizzen Mast	Note 18	4mm dowel
82A-B	Mast caps	2	4mm plywood
83A-B	Boom rests	2	2mm plywood
84	Boom rest supports	Note 1	2x3mm limewood
85A-B	Mast Heels	2	4mm plywood
86	Straps—Backstay & Deadeye	1	Parts Card 2
87	Channel capping	Note 19	1x2mm walnut
88	Mast Ring—4mm	1	Parts Card 1
89	Lanyard strip	Note 9	2x3mm limewood
90	Gammoning Ring	1	Parts Card 2
91	Gammoning blocks	Note 9	2x3mm walnut
92	Parrel beads	Pkt	Parts Card 3
93	Flag—Red Ensign	1	Parts Card 3
94	Flag—Mary Byrne	1	Parts Card 3
95A&B	Boom yokes	2	2mm plywood
96A&B	Gaff yokes	2	2mm plywood
97	Foot Grips	Note 4	1x1mm walnut
98	Cleats	5	Parts Card 3
99	Mast Ring– 6mm	1	Parts Card 1
100A-D	Cradle Parts	2	4mm plywood
101	Name Plate	1	2mm plywood

Notes:

1. To be cut from 2x3mm limewood
2. To be cut from 1.5x6mm limewood
3. To be cut from 0.6x4mm silver ash
4. To be cut from 1x1mm walnut
5. To be cut from length of chain supplied
6. To be cut from 3x3mm L section walnut
7. To be cut from 4x4mm walnut
8. To be cut from 5x5mm walnut
9. To be cut from 2x3mm walnut
10. To be cut from 5x5mm limewood
11. To be cut from 2mm dowel
12. To be cut from 0.6x5mm tanganika
13. To be cut from 1x5mm tanganika
14. To be cut from 1x1mm walnut
15. To be cut from 8mm dowel
16. To be cut from 5mm dowel
17. To be cut from 6mm dowel
18. To be cut from 4mm dowel
19. To be cut from 1x2mm walnut

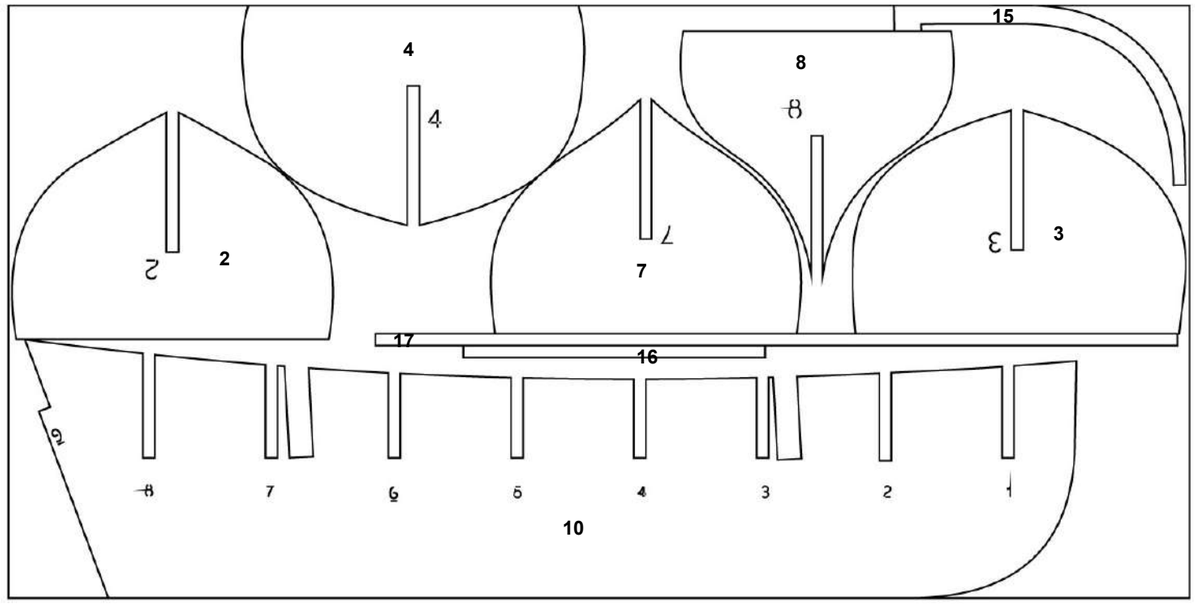
Timber Stock

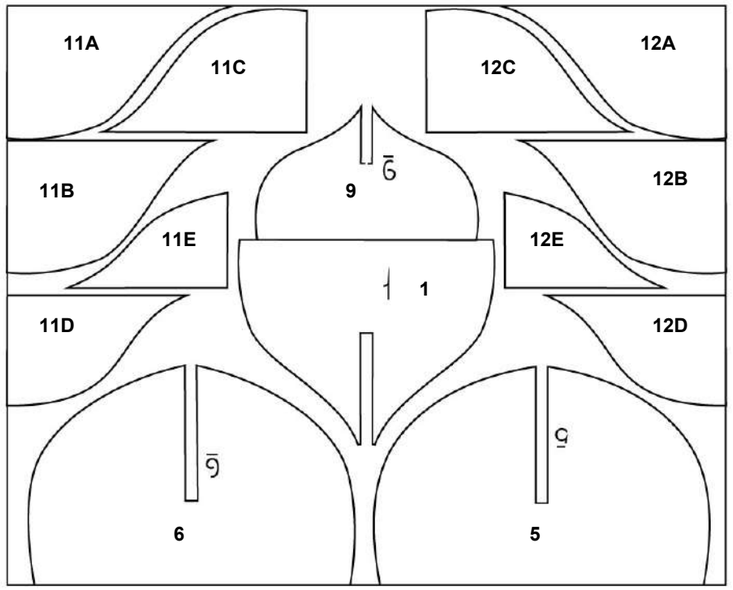
Limewood	2x5x400mm	50 lengths
	2x3x400mm	2 lengths
	2x3x100mm	1 length
	1.5x6x400mm	2 lengths
	5x5x30mm	1 length
Silver Ash	0.6x4x400mm	6 lengths
Teak	0.6x6x400mm	60 lengths
Walnut	5x5x100mm	1 length
	4x4x300mm	1 length
	2x3x250mm	1 length
	2x3x300mm	1 length
	1x2x150mm	1 length
	1x1x500mm	5 lengths
	3x3x150mm L section	1 length
Tanganika	0.6x5x500mm	2 lengths
	1x5x150mm	4 lengths

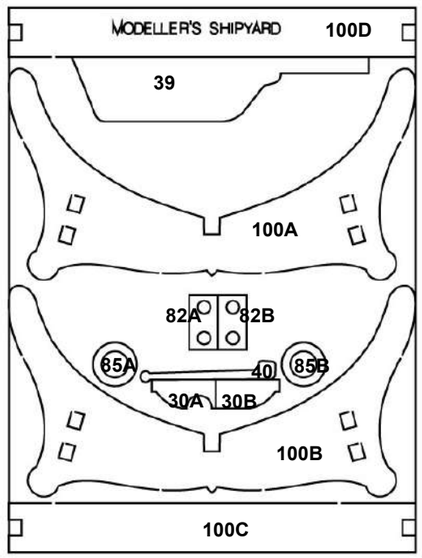
Dowels

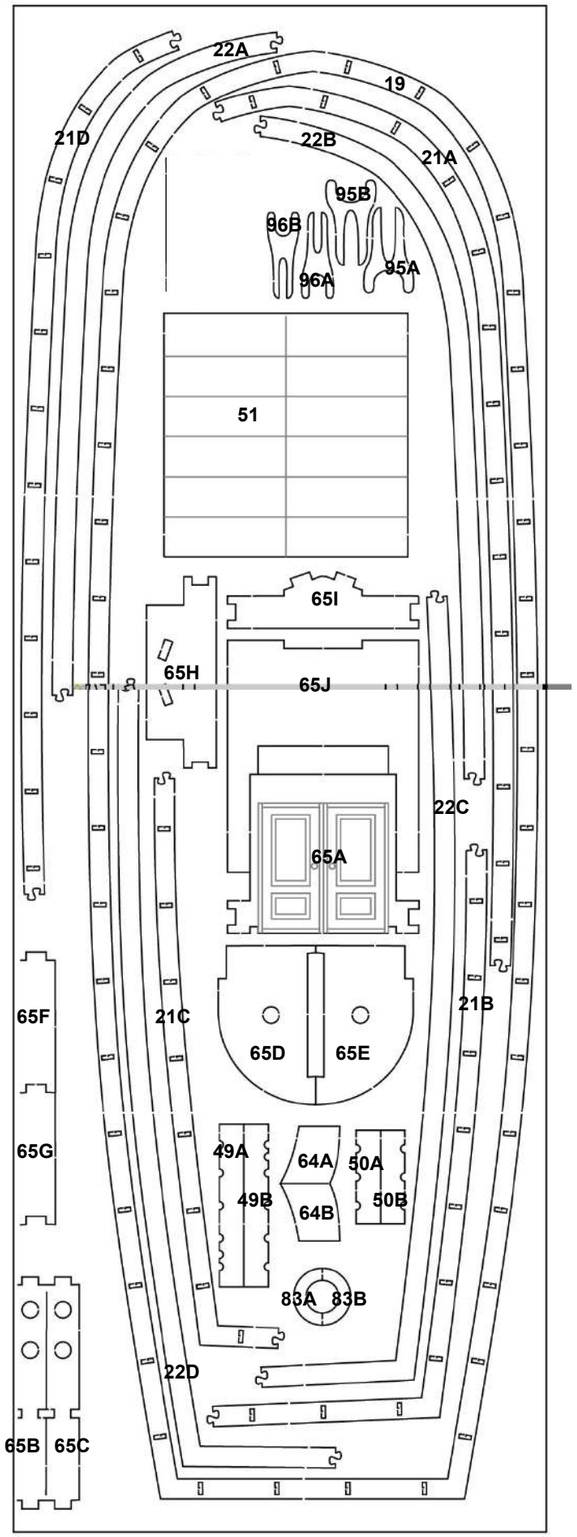
8mm dia	2x330mm lengths
8mm dia	1x250mm length
6mm dia	1x200mm length
5mm dia	1x300mm length
5mm dia	1x250mm length
4mm dia	1x330mm length
2mm dia	1x150mm length

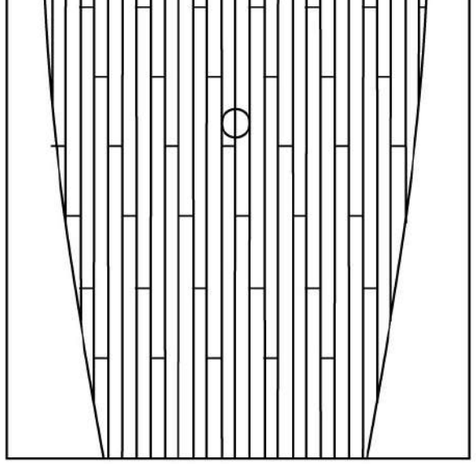
Colonial Ketch
MARY BYRNE
1826
SHEET 2

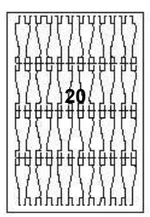












Colonial Ketch
MARY BYRNE
1826
SHEET 3

5.0 Hull Construction
5.1 Assemble the Keel & Bulkhead Frames

Step 1 On the laser cut sheets in your kit use a pencil to mark the relevant numbers on each piece before removing them from the sheet. Remove the keel and bulkhead frames from the 4mm plywood sheet. Use a snap blade knife to carefully cut through the tabs holding the parts to the main sheet.

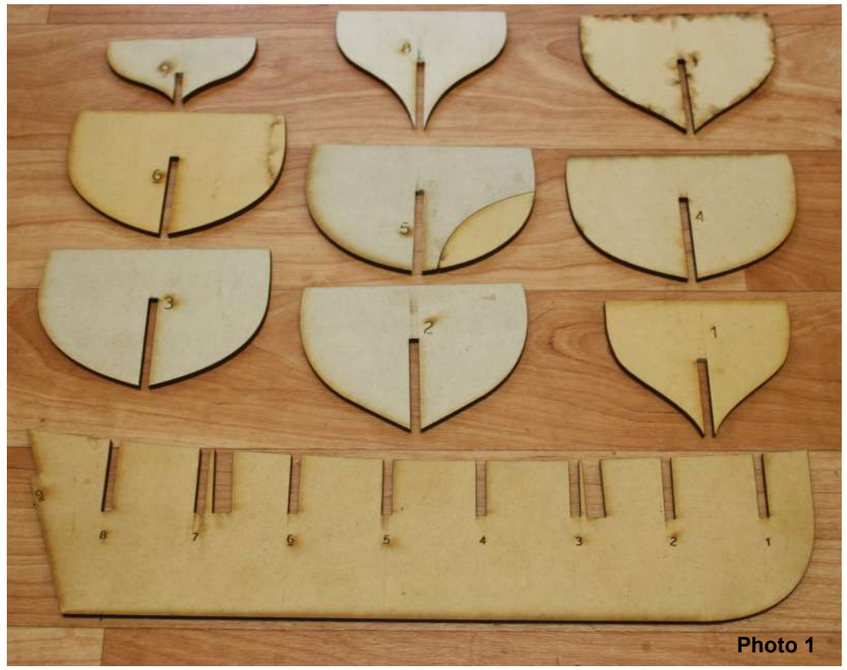


Photo 1

Step 2 Dry fit the bulkhead frames into the keel slots. Do not glue anything at this stage. Do not force the bulkhead frame into the keel slot. You may need to use a flat needle file to fractionally open the slot in both the keel and bulkhead frame. The fit should be firm but no loose.

There may be a need to adjust the slot depth in the keel and/or bulkhead frames to ensure the top edge of each bulkhead frame is flush with the top edge of the keel. Do not glue anything at this stage.

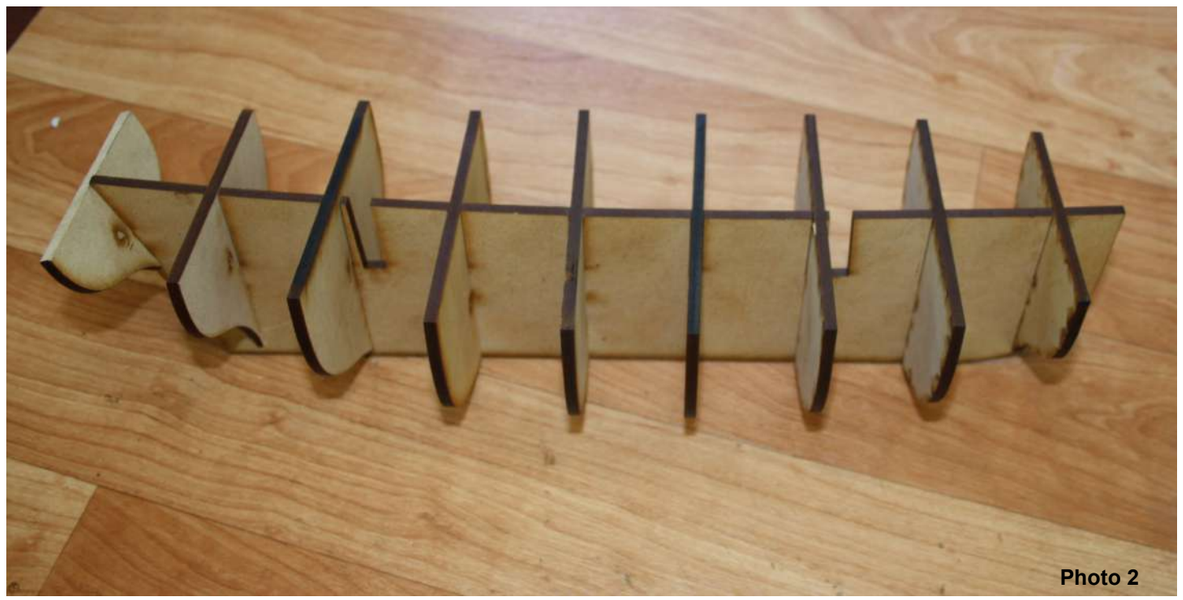


Photo 2

Step 3 You may wish to make a working base as shown Figure 1. This will help to ensure the keel does not become distorted. Cut the slots in the keel supports to correspond with the bulkhead frames.

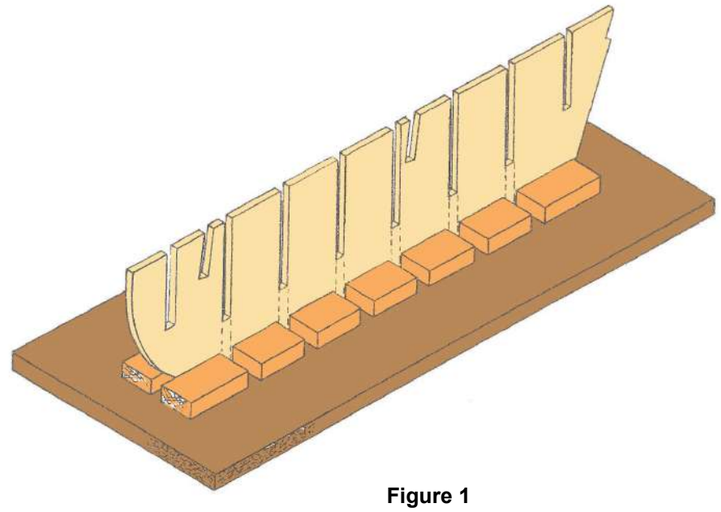


Figure 1

Step 4 Once you are satisfied with the dry fit of the frames and keel, glue each frame in place with PVA glue. It is important to make sure the frames are square to the keel. Using a square piece of timber place it along the keel against a frame. Adjust the frame to ensure it is square to the keel. Place a "bull dog" clip on each side of each frame to ensure it remains square while the glue sets. Place the keel and frame construction aside and allow 24 hours for the glue to set.


Photo 3

Colonial Ketch
MARY BYRNE
1826
SHEET 4

5.2 Bow Filler Blocks

5.2.1 Fit the Bow Filler Blocks

The bow filler blocks are Parts 11A-E & 12A-E. They provide an area for gluing the planks at the bow. Identify the bow blocks and glue in position in front of bulkhead frame 1 as shown. Allow 24 hours for the glue to set. Before shaping the bow blocks first trace the outline of the bulkhead frame 1 on to bow block A on each side. Identify the deck P13. Align the deck in place across the top of the bulkhead frames and bow blocks. Mark the outline of the deck across the top of the bow blocks. You will now have two curves on the bow blocks. Using a range of cutting and filing tools, shape the blocks to these curves. Continually check the shape against the frame and keel for fit.

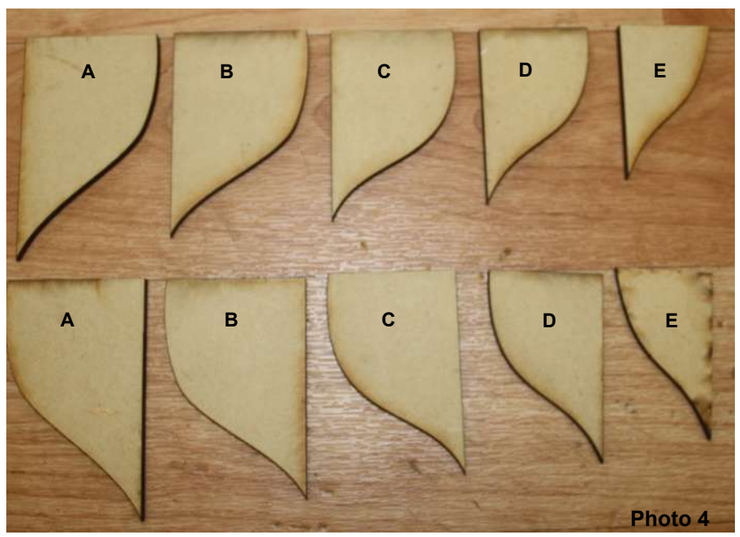


Photo 4


Photo 5


Photo 6

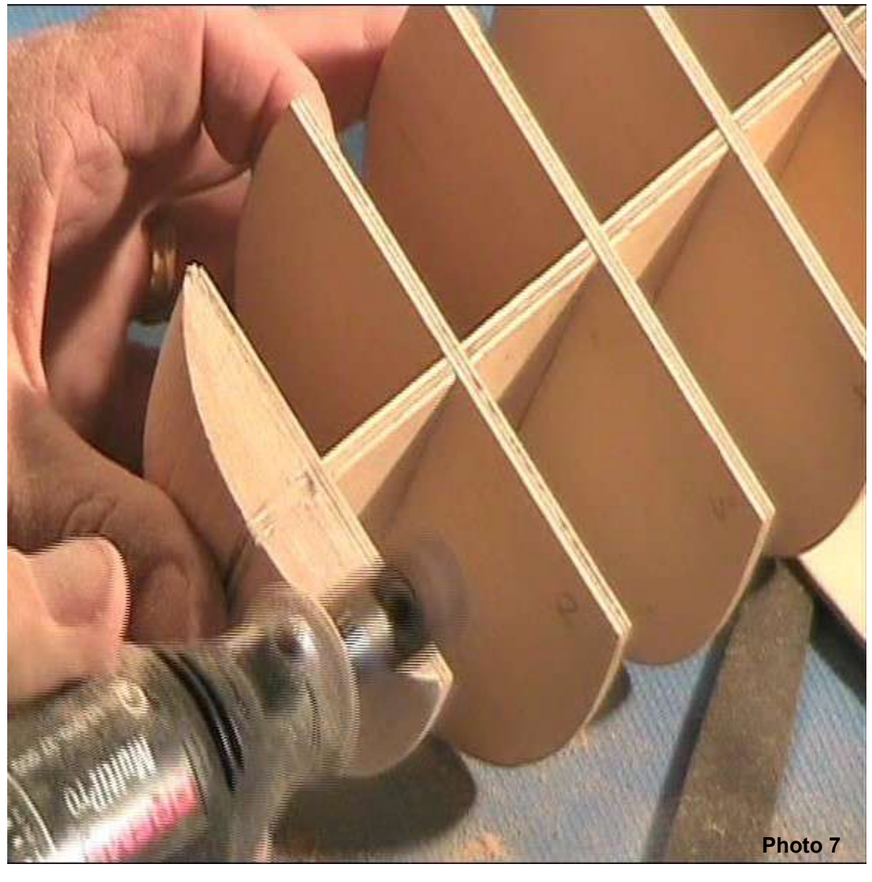


Photo 7

5.4 Fairing the Frames

“Fairing” the frames is a very important part of the preparation for planking the hull. The principle of “fairing” the frames is to ensure the planks lay flat on the edge of each frame to ensure a good glue bond is established between each plank and the frame of the model and to ensure that when planked, the hull is smooth and free of bumps or hollows. Take your time. Completing this process properly will ensure a good finish to the hull.

Lay a brass strap over a few frames. You will see that the brass strap does not sit flat across the edge of all the frames—especially at the bow and stern areas. To fair the frames use a file to move across the edges of two frames at a time starting at the deck level and moving towards the toe of the keel. Once two frames are complete move to the next one. Always make sure you are filing across two frames. Regularly check by laying a strap across the frames. Move to the bow applying the same approach as above—at the bow fair only the bow blocks—leave the keel untouched. Move to the stern applying the same approach as above. Check across all frames along the complete length of each. Move the strap across all frames to ensure it lays flat across the frames. Continue the fairing process until you can see the brass strap will sit flat across each frame.


Photo 8

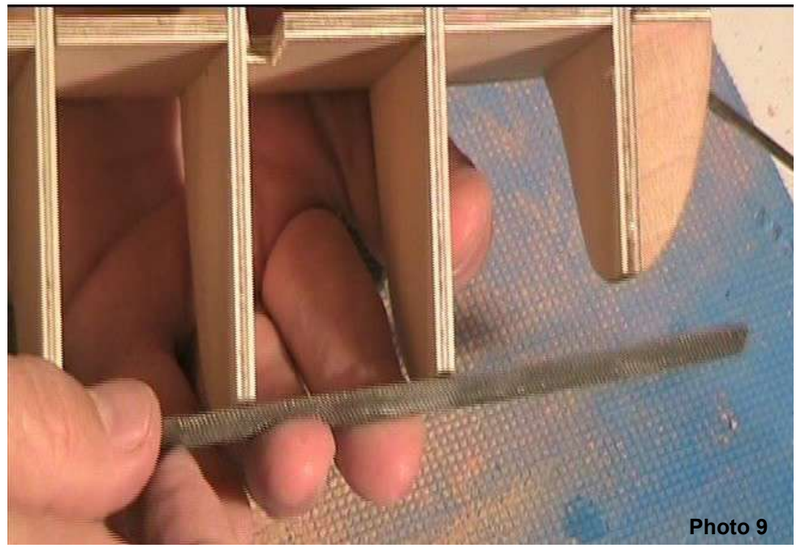


Photo 9


Photo 10

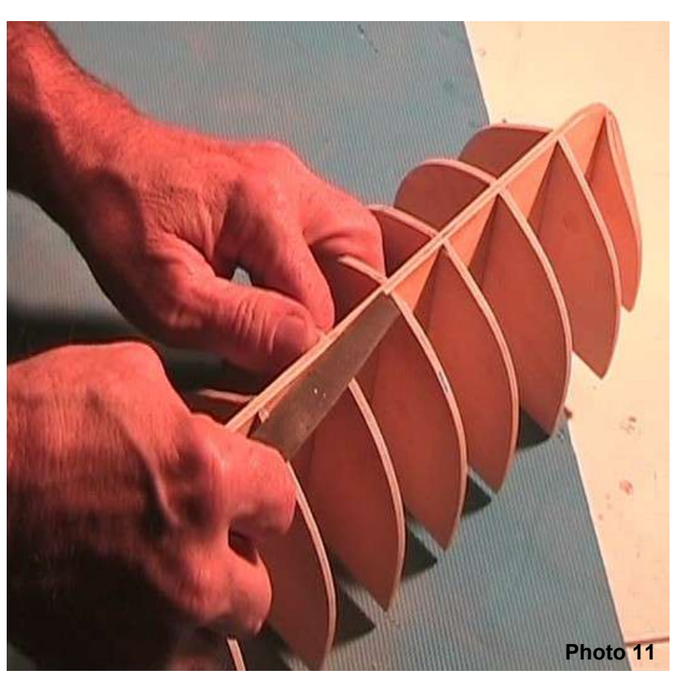
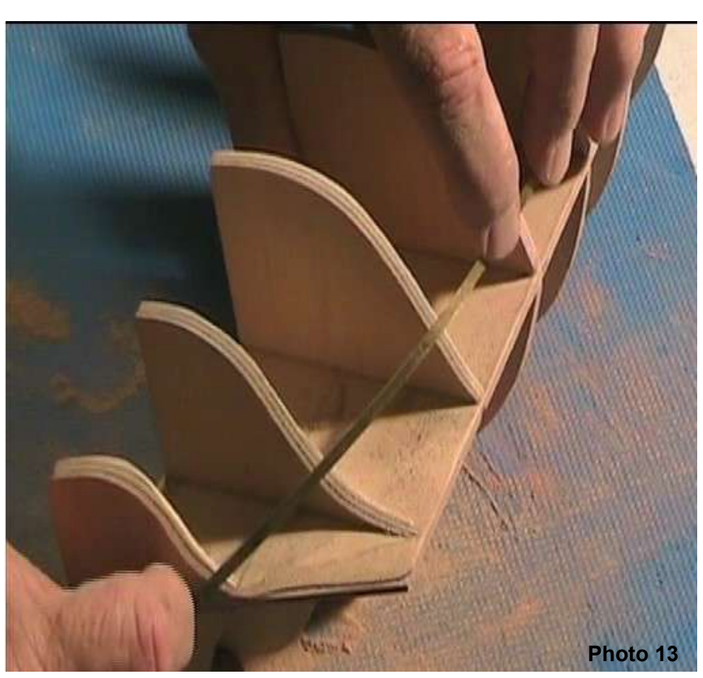


Photo 11


Photo 12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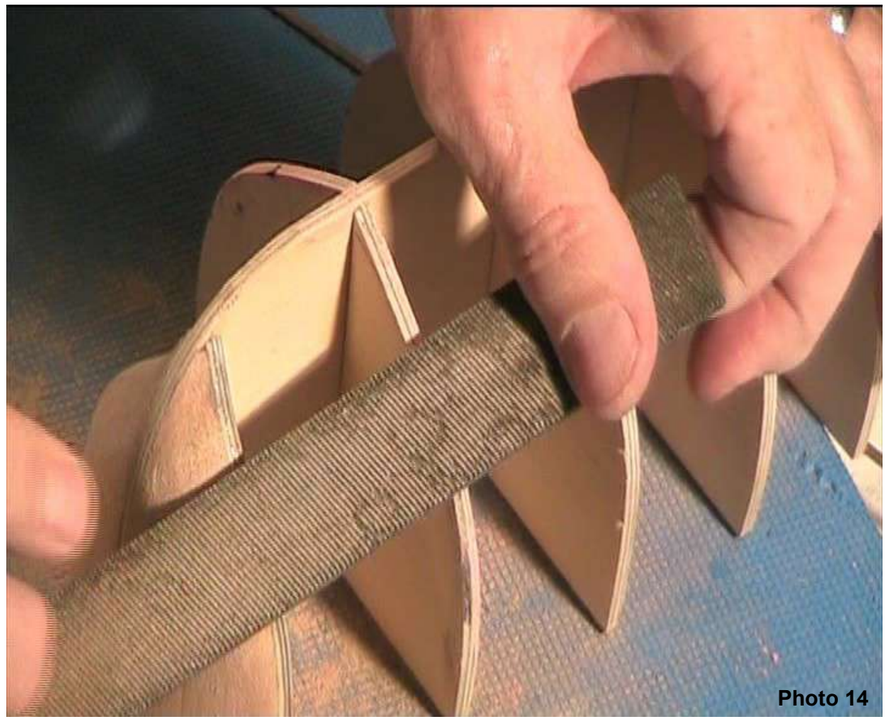

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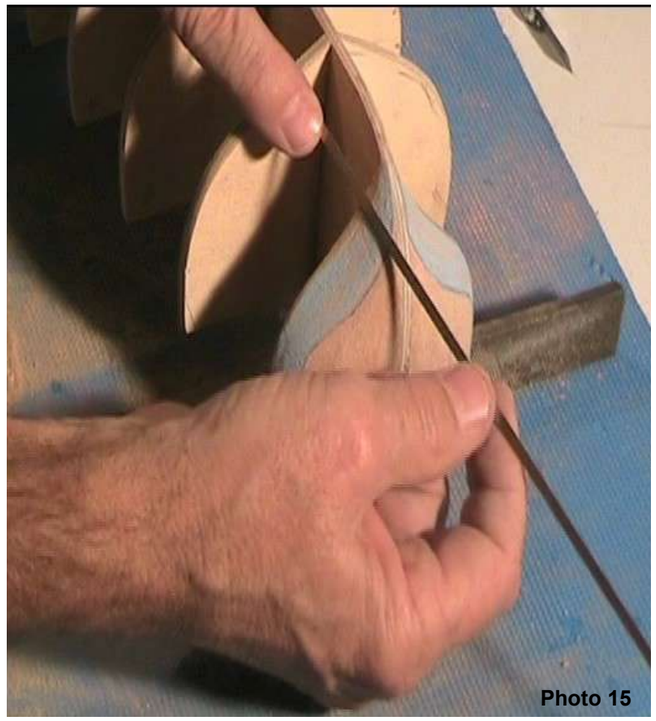

Photo 15

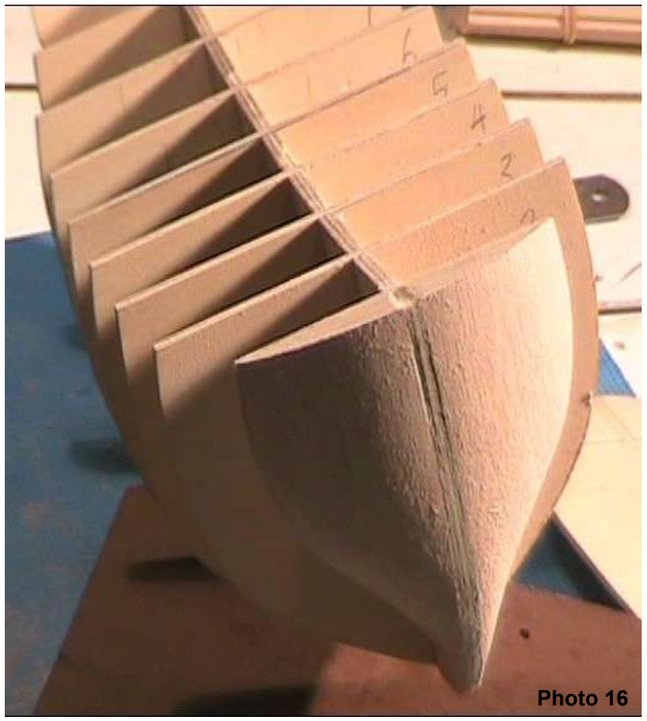

Photo 16

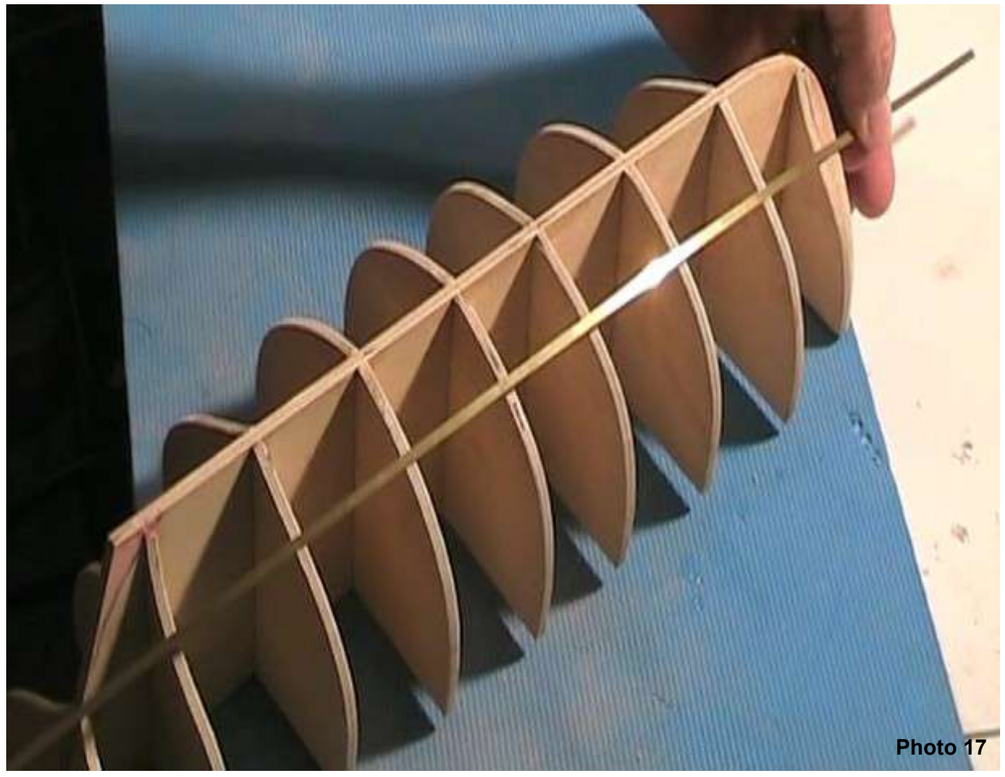

Photo 17

5.5 Deadwood Area

The area between the bottom edge of the keel and the bottom of the bulkhead frames at the stern is known as the **deadwood area**. The deadwood area will be planked with two layers of planking consistent with the rest of the hull.

The stern post and rudder however will only be planked with the second layer of planking. So when the stern post and rudder are eventually fitted you need to ensure there is a consistent thickness between stern post, rudder and the stern area of the keel.

The keel, stern post & rudder are all 4mm plywood. The stern post and rudder will be planked with 0.6x6mm teak P18. However the keel in the deadwood area will be planked with the first layer of planking—2mm thick (on each side) and then planked with the second layer of planking. Clearly, if no adjustment is made when the stern post and rudder are fitted there will be a significant discrepancy between the thickness of the stern area of the keel and the stern post and rudder.

To ensure there is consistency of thickness between the stern post, rudder and the hull in the deadwood area there is the need to ensure that when the first layer of planking is fixed in place the total thickness does not exceed the thickness of the stern post/rudder post.

To achieve this you will need to take two steps.
Step 1. Before fitting the first layer of planking reduce the thickness of the keel in the deadwood area by approximately 1mm on each side— i.e. reduce the keel thickness by about half in the deadwood area.
Step 2. Once the **first layer of planking** has been fitted then reduce the thickness of this planking by approximately 1mm on each side as well—fractionally adjusting to meet required thickness.

This will then reduce the total thickness of the keel and first layer of planking in the area to be 4mm thick thus meeting the requirement for consistency of thickness. This will ensure that when the second layer of planking is fitted there will be the same thickness between the keel, stern post and rudder.

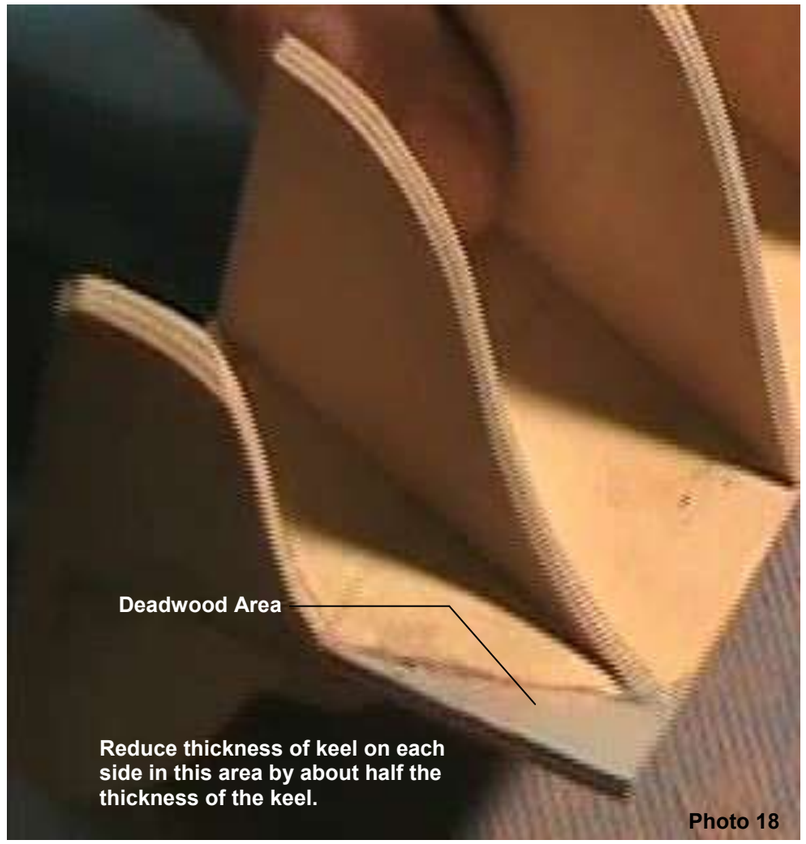

Photo 18

5.6 Deck

Identify the deck P13 again. The deck is pre-laser engraved to represent deck planks. Care needs to be taken to protect the engraved surface at this stage of building the model.

Fit the deck in place **temporarily** using map pins. So as not to damage the deck surface place the map pins around the outer deck edge into the bulkhead frames and along the centre line where deck furniture will be located —see Deck Plan Sheet 20

The deck needs to fit flush across the bulkhead frames - use a file to make any fine adjustments. —make sure the edge of the deck aligns with the top edge of the bulkhead frames. **Do not glue the deck to the bulkhead frames yet.**

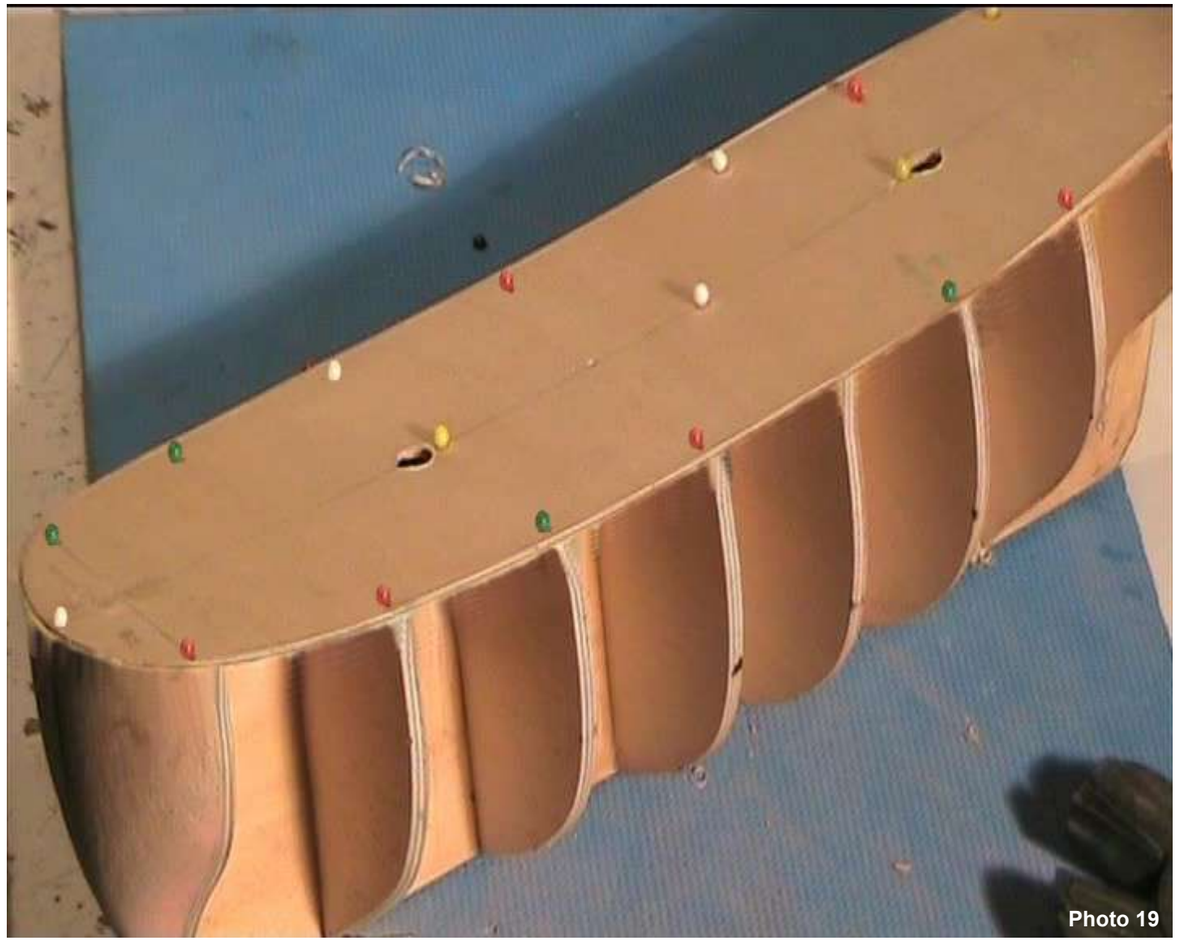
Photo 19

Colonial Ketch
MARY BYRNE
1826
SHEET 8

6.0 Hull Planking—Introduction

Planking the hull is not difficult but it does require some thought and study so that the principles are understood. It also requires some patience. Once mastered the process is straight forward.

6.1 Hull Planking—First Principles

Spend a few moments with a dressmakers tape measure and measure from the top of the each bulkhead frame around the outside of the frame to the toe of the bulkhead frame where it meets the keel. You will notice that the measurements around the bulkhead frames in the middle or "mid-ship" of the model are greater than the measurement around the bulkhead frames at the bow (front) of the hull.

We always assume that the "mid-ship" bulkhead frames are the largest distance and it is at this part of the hull the planks will be at their full width. For the *Mary Byrne* the mid-ship frames are 4, 5 & 6. From your measurements it will be clear that if you are to fit each plank along the full length of the hull you will need to taper the planks that fit across the bulkhead frames at the bow of the hull.

There are a few points to remember:

- Use a mini plane to taper the planks.
- Always taper the **lower** edge of the plank—ie the edge that will be closer to the keel.
- Prepare two planks together—one for each side of the hull. It is most important to fit and glue the planks in pairs—one on each side of the hull as this will minimise the chance of the keel being distorted or bent.

6.2 Mid-Ship Bulkhead Frames

It is assumed that the planks laid across the mid-ship bulkhead frames are at their maximum width. If our planks are 5mm wide we need to determine how many of these planks will fit into the area between the top of these bulkhead frames and the keel. As an example let's say the measurement from the top of the mid-ship bulkhead frames 4 & 5 to the keel is 120mm. We need to determine how many plank will fit into this area across the mid-ship frames. We do this by dividing 120mm by 5mm that is 120/5 = 24. This means that 24 planks will be needed to fit into the area. These planks laid across the mid-ship frames will **not** be tapered or reduced in width across these bulkhead frames.

6.3 Fore Bulkhead Frames

Now let's say the measurement from the top of the bulkhead frame 1 to the keel is 80mm. As 24 planks will have to fit into this area also then the plank width at bulkhead frame 2 will need to be reduced. To determine the width of the plank at frame 2 you divide 80mm by 24 planks that is 80/24 = 3.33mm. So the plank wide at bulkhead frame 2 needs to be 3.33mm to ensure that 24 planks will fit into this area. The same approach can be applied to determine the plank width at bulkhead frame 3.

6.4 Stern Bulkhead Frames

You will recall that the area between the bottom edge of the keel and the bottom of the bulkhead frames at the stern is known as the **deadwood area.** When making your measurements of these stern bulkhead frames include the "deadwood" in your measurement.

Across these bulkhead frames you will find the measurement from the top of the bulkhead frame to the bottom of the keel will be **greater** than it is at the "mid-ships" bulkhead frames. Where this occurs you will be inserting short triangular planks known as "stealers" or "wedges" to cover the extra distance. The use of stealers or wedges will be dealt with later.

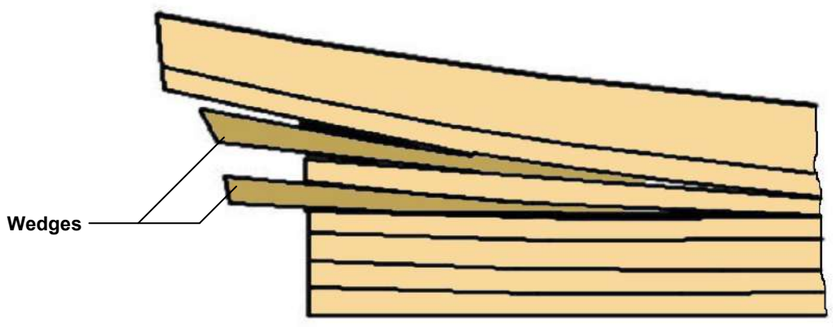

Figure 2

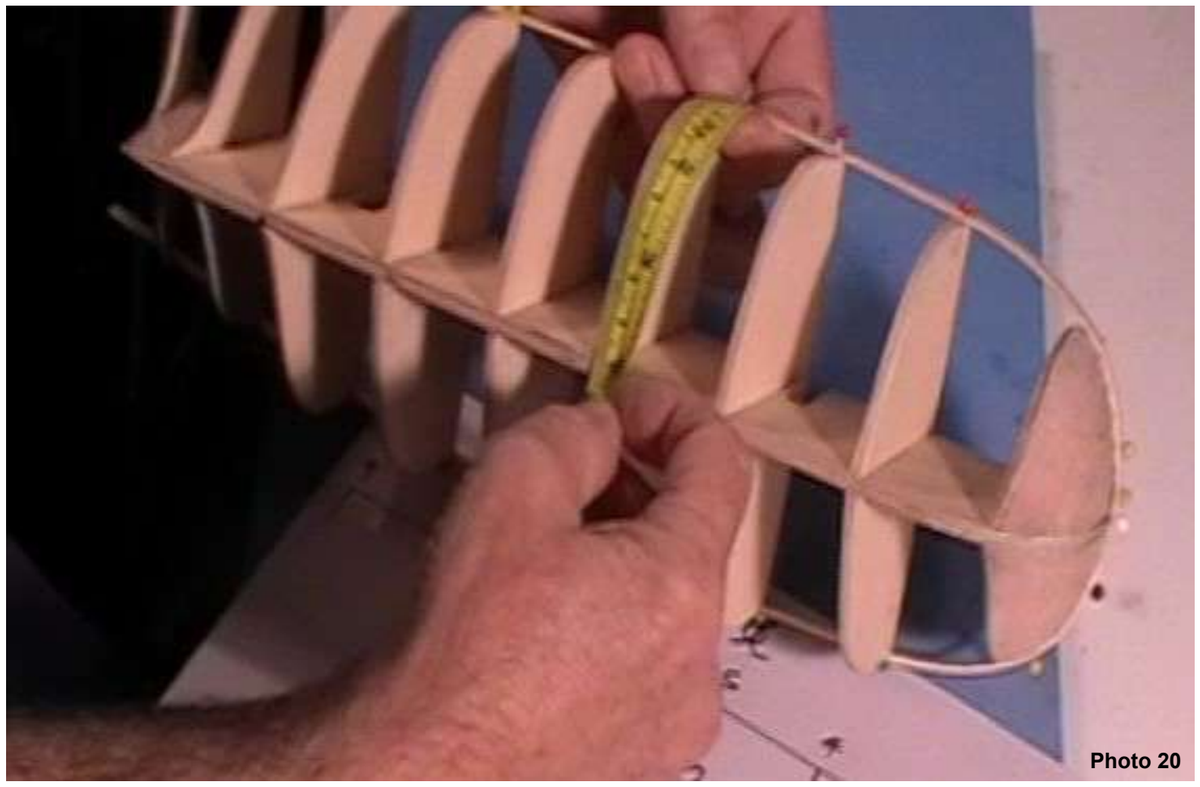

Photo 20

Colonial Ketch
MARY BYRNE
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SHEET 9

7.0 Hull Planking—First Layer

This model is “double planked”. This means there are two layers of planking. The first layer of planking provides strength to the whole hull and a solid base for the second layer of planking which is a more decorative timber. The first layer of planking timber is 2x5x400mm limewood P14. It is a white/cream coloured timber. Clearly identify these planks before proceeding further.

7.1 Fitting the First Plank

The placement of the very **first plank** (plank 1) is most important. Using one of the identified planks align it to be flush with the top of the deck and spring it gently around the curve of the bow. Note where it starts to bend. With a pencil mark this as Point A on the plank—Photo 23. Take a second plank and transfer this point on to it. On each plank mark an arrow pointing towards the bow. Also mark each plank “P” for port (left) and “S” for starboard (right). We will do this for all the planks we prepare. We will also make all planks in pairs. **The first plank will not be tapered.**

From Point A use a plank bender to gently crimp the plank toward the bow. If needed use the plank bender again to gently crimp between the previous crimps. This will increase the curvature of the plank. Repeat this process until you are satisfied with the plank curvature. Trial fit the plank—you will find you do not need to crimp the plank along the rear of the hull. **Do not taper this plank.** Fit this first plank to be **flush** with the top of the deck. Apply PVA glue to the bulkhead frames and use either map pins or planking screws to hold the plank in place while the glue sets. Repeat this process for the other side of the hull. Check to make sure that both planks (“port” and “starboard”) follow the same line and are a mirror image of each other. **Once the first plank has been fitted & glued in place on each side of the hull remove the deck and store it safely away.**

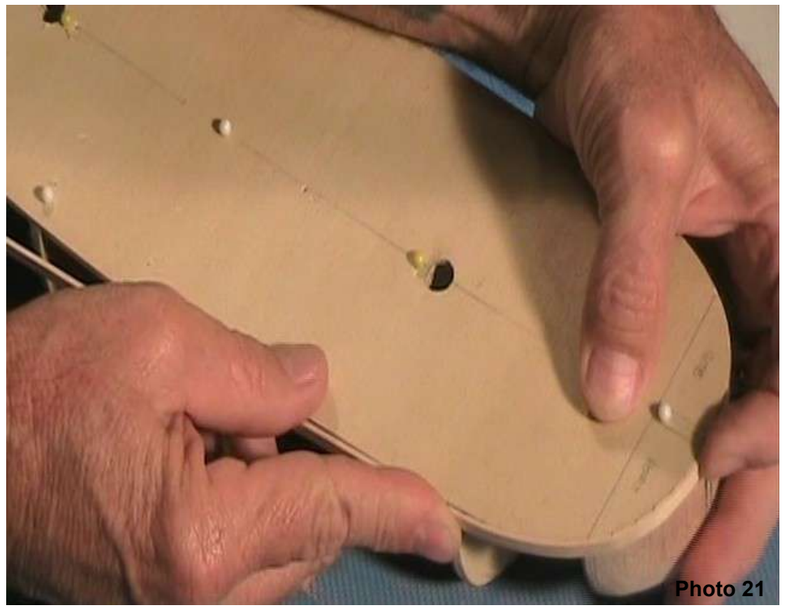


Photo 21

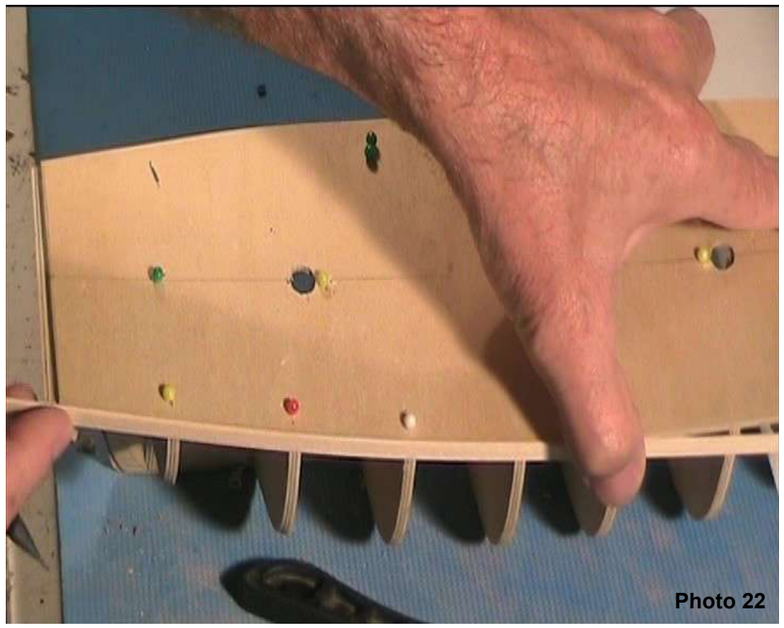


Photo 22

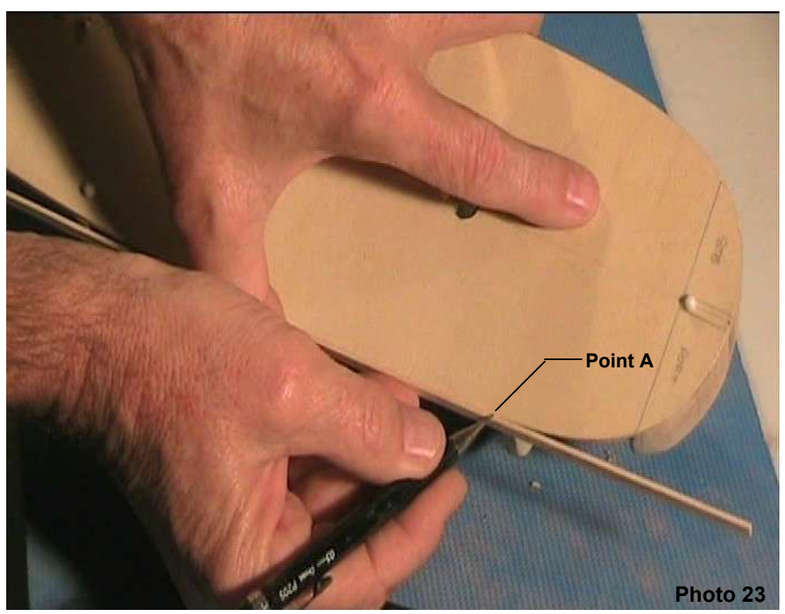


Photo 23

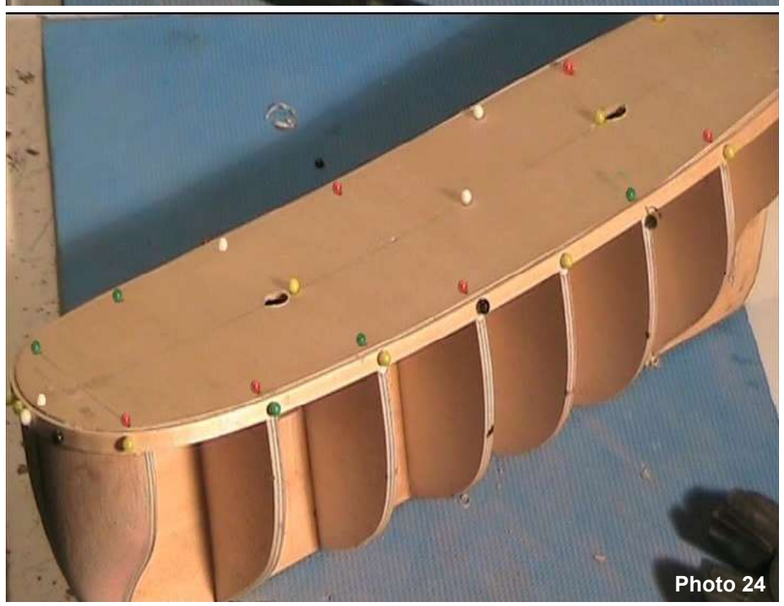


Photo 24

Colonial Ketch
MARY BYRNE
1826
SHEET 10

7.2 Completing the first layer of planking

Establish a table as shown below representing the number of bulkhead frames. To determine the plank width at each bulkhead frame use a dressmakers tape measure to measure the distance between Plank 1 and the keel at each bulkhead frame. Record these measurements in your table.

The distance between Plank 1 and the keel at the mid-ship bulkhead frames is 100mm. The plank width is 5mm. Therefore there will need to be 100/5 = 20 planks to be fitted to cover the hull on each side.

Using the measurements you have made and recorded in the table, divide each by the number of planks to determine the plank width at each bulkhead frame. Record in Table 1.

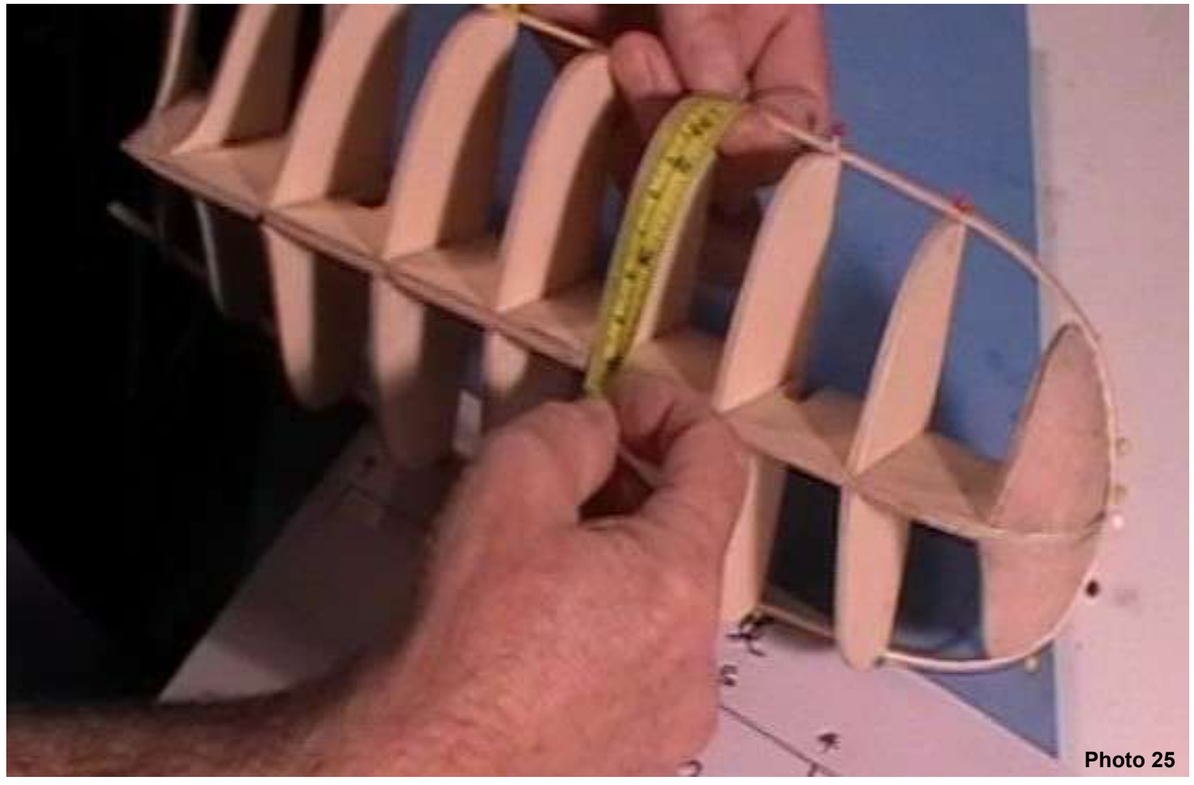


Photo 25

Bulkhead Frame	1	2	3	4	5	6	7	8	9
Measurement mm				100	100	100			
Plank Width mm				5	5	5			

Table 1

From your measurements you will find that the plank width at bulkhead frame 1 will be tapered to approximately 3.8mm . The tapering of these planks will need to start between bulkhead frames 2 & 3—mark this point.

Also from your measurements you will find that less than 1mm will need to be **tapered off** the stern end of the planks. The tapering of these planks will need to start between bulkhead frames 8 & 9—mark this point.

Clearly mark each of these points on your planks—always prepare and fit two planks together. Don't forget to mark your planks as previously described.

Taper the two planks together. To taper the planks place them in a vice with the amount to be taken off sitting proud of the vice jaws and position the marked starting point for tapering sitting flush with the jaws—Photo 26. Use a mini plane and/or file to remove the unwanted timber. Use this approach for all the planks to be prepared.

Photo 26

Make a number of planks in pairs remembering to identify the planks as previously presented. Fit each plank under the previously placed plank. Place PVA glue on the lower edge of the previously placed plank and on the bulkhead frames. Pin the plank in position, remove any excess glue with a damp cloth and use bulldog clips to hold the planks together. Repeat for the other side of the hull.

Photo 27

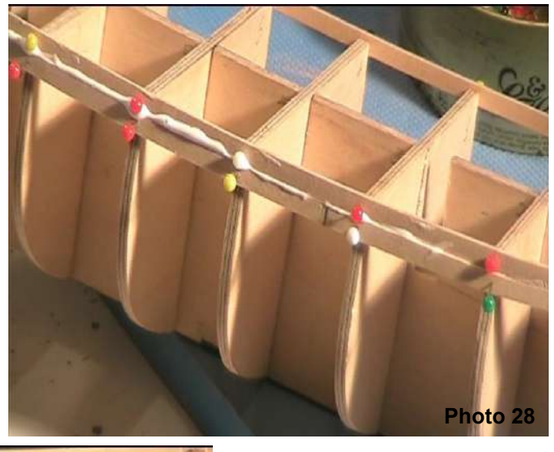


Photo 28

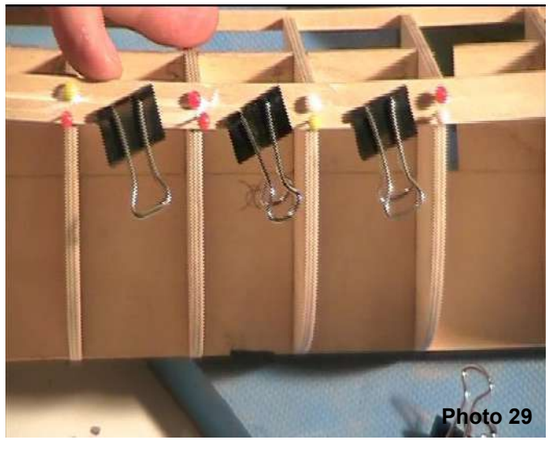


Photo 29

Colonial Ketch
MARY BYRNE
1826
SHEET 11

Progress with your planking for about 10 planks on each side.

Photo 30

7.3 Planking Directional Change

The next point is most important. As you progress with you planking down the hull you will arrive at a point where the plank does not want to lay flat. Forcing the plank into position will cause it to twist and a gap will appear between the plank and the bow block.

7.3.1 Bow Directional Change

At this point you will have to **change the direction of the plank** to ensure it lays flat on the bulkhead frames. Follow the steps below to achieve this change in plank direction to make a new straight edge.

1. Lay a brass strap or similar flexible straight edge along the length of the hull against the previously placed plank. At the bow you will see the strap wants to take a different direction—allow the strap to follow its natural course and lay over the previously placed plank—Photo 31. Use bull dog clips to hold the strap in position. Then lay the strap down over the previously placed planks and use a pencil to mark the line of strap overlap.
2. Use a sharp blade to fractionally remove the marked area of the **previously** placed plank—Photo 32
3. Repeat this process for the other side of the hull making sure both sides are a mirror image of each other

This process is called **Directional Change.**

Photo 31

Photo 32

7.3.2 Stern Directional Change

You may have to make some adjustment to the direction of the planks at the stern area. Follow the steps below to achieve this change in plank direction to make a new straight edge.

1. Lay brass strap or similar flexible straight edge along the length of the hull against the previously placed plank. Across the stern planks allow the strap to follow its natural direction across the previously laid planks. Use bull dog clips to hold the strap in position. Use a pencil to mark the line of strap overlap.
2. Use a sharp blade to fractionally remove the marked area of the **previously** placed plank—Photo 33
3. Repeat this process for the other side of the hull making sure both sides are a mirror image of each other

Photo 33

Fit and glue in position the next plank along its new direction on both sides of the hull—Photo 34

Photo 34

7.4 Garboard Plank

The next step is fit & fix the garboard plank. This plank is fitted adjacent to the keel—Photo 35. Do not taper this plank. Place a plank along the keel and notice at the bow you will have to trim the edge of the plank where it fits against the keel.—Photo 35. Glue the garboard plank in position of each side of the hull.

Photo 35

7.5 Hull Planking Continued

Fit another plank adjacent to the garboard plank. Do not taper this plank. Allow the plank to follow its natural curve across the stern area—you will notice a gap will appear—Photo 37. A stealer or wedge will be fitted later. Adjust the placement of the plank slightly to make the largest part of the gap to be 5mm—the width of the planks. This will make fitting the wedge easier later. Glue and pin this plank in place. Repeat for the other side of the hull.

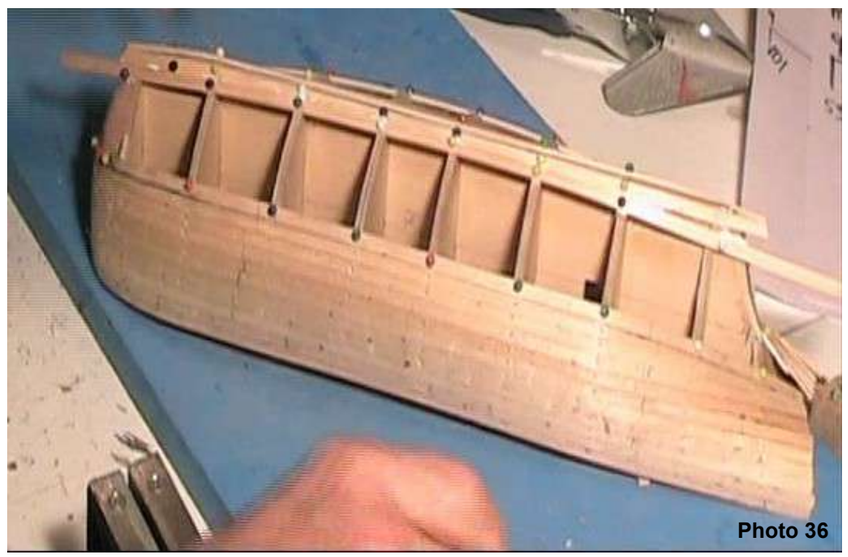


Photo 36

Photo 37

After fitting this second plank take measurements at each bulkhead frame of the gap remaining and record in the table below.

Note the plank width at the mid-ship bulkhead frames will be 5mm. Determine the number of planks required to be fitted in the remaining gap - don't worry if there is a fractional plank width - this will be catered for later.

Once the number of planks is determined divide the measured gap distance at each frame by the number of planks required to fit into the gap remaining. This will give you the plank width at each frame. Record in Table 2. Taper the planks as required and use a plank bender to shape the planks if needed.

When fitting & fixing these planks allow them to follow their natural course across the bulkhead frames. Do not force them. A gap will be formed in the "deadwood" area at the stern. This is where a "stealer" or "wedge" will be fitted later to fill the gap. Fix and glue each plank in place. Follow this process until the gap between the upper and lower bands is closed. Shape and fit the "stealers" into the remaining gaps at the stern.

Continue with the planking of the hull.

Bulkhead Frame	1	2	3	4	5	6	7	8	9
Measurement mm									
Plank Width mm				5	5	5			

Table 2

Photo 38

Hull Planking Continued

Continue with your planking, tapering each plank as previously determined. Re-check your measurements as you progress and make any adjustments as required. Trim-off any excess overhang of planking and file flush with the transom. To close the hull up take one of the tapered and shaped planks and lay it over the small gap remaining. Temporarily pin this plank in place. Then use a pencil to mark the overlap of this plank onto the previously fitted plank. Remove the temporary plank and use a pointed knife or razor blade to **slowly & carefully** cut through the plank along the pencil line. Remove the unwanted plank material. Now fit the new plank into the gap — some fractional fitting of this plank may be required. Once you are happy with the fit glue and pin the plank in place. Repeat for the other side of the hull.

Photo 39

Photo 40

Photo 43

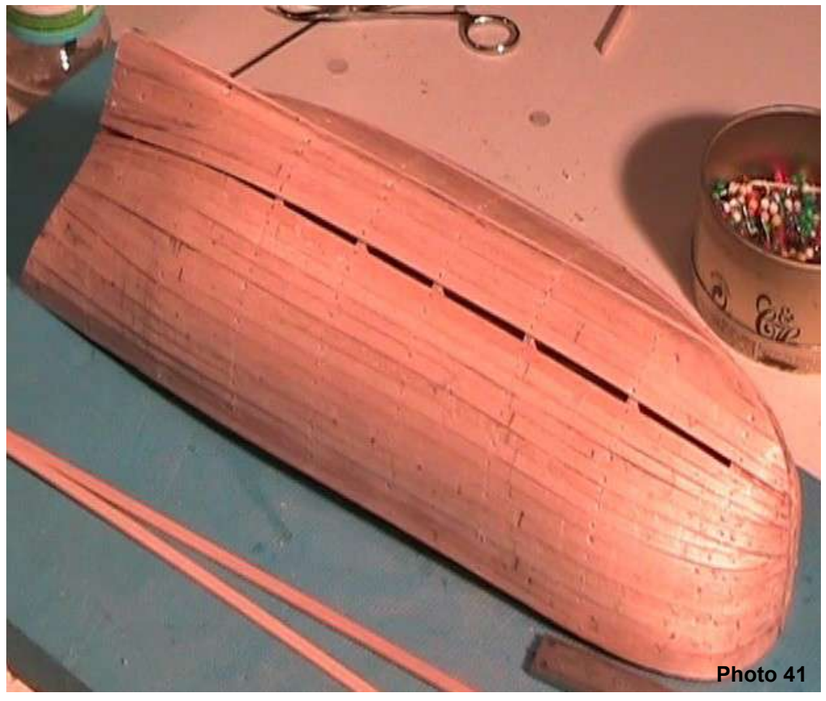


Photo 41

Photo 42

Colonial Ketch
MARY BYRNE
1826
SHEET 15

To allow for the stem post and keel to be fitted later use a file and pointed blade knife to remove any unwanted planking at the bow and along the keel .

Photo 44

Photo 45

Sand the finished hull using a medium and fine grade sandpaper. Apply wood filler if needed to fill any gaps or hollows.

Photo 46

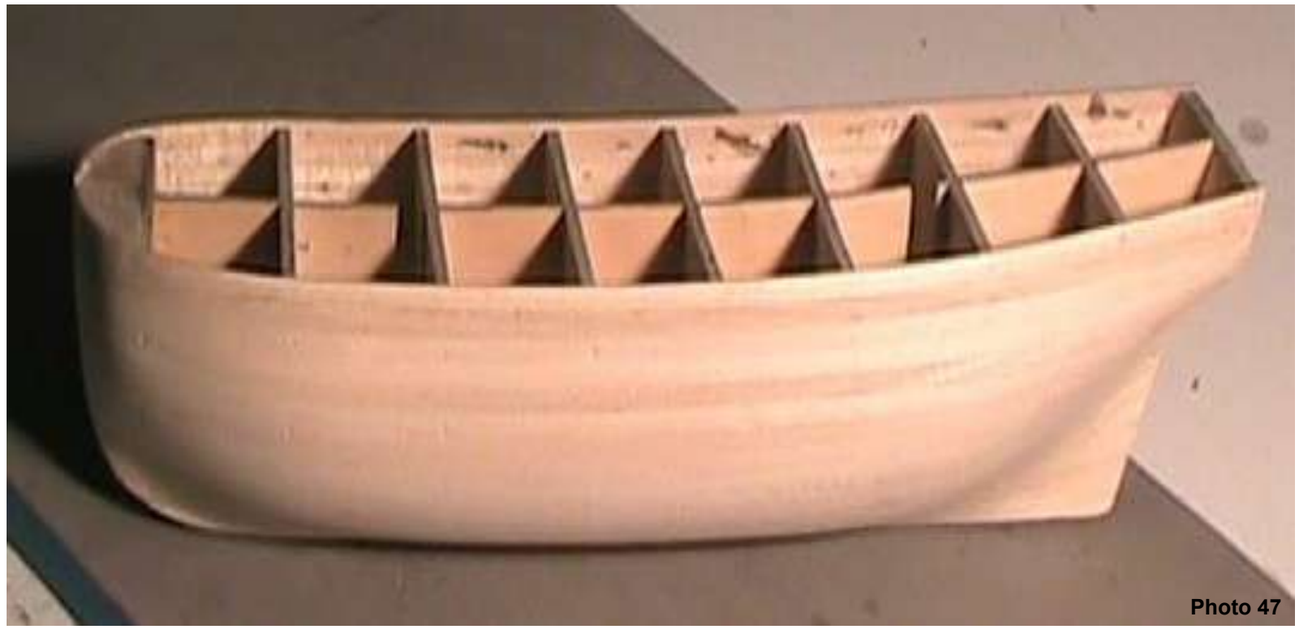


Photo 47

Colonial Ketch
MARY BYRNE
1826
SHEET 16

7.6 Deck

It is now time to fix the deck in place. Identify the deck P13 which is pre-laser marked with deck planks. Trial fit the deck to the hull. Fractionally adjust if needed. Remove the deck and apply PVA glue across the bow blocks, bulkhead frames and keel. Also apply glue to the inside edge of the top planks as the deck will fit inside these planks. Fix the deck in place with map pins around the outer deck edge into the bulkhead frames and along the centre line where deck furniture will be located—see Deck Plan Sheet 20. Use a damp cloth to remove any excess PVA glue. Once the glue has set remove the pins and spray the completed deck with a clear satin or matt finish to seal and protect the deck surface. Use a mini plane and file to remove any deck over hang at the stern.

Photo 48

Photo 49

Photo 50

7.7 Stem Post, Stern Post and Keel

Identify the stem post P15, stern post P16 and keel P17. Fit & glue each in place. Trim off the extra length of the keel to be flush with the stern post. Plank the stem post, stern post and keel using 0.6x6mm teak strip P18.

Photo 51

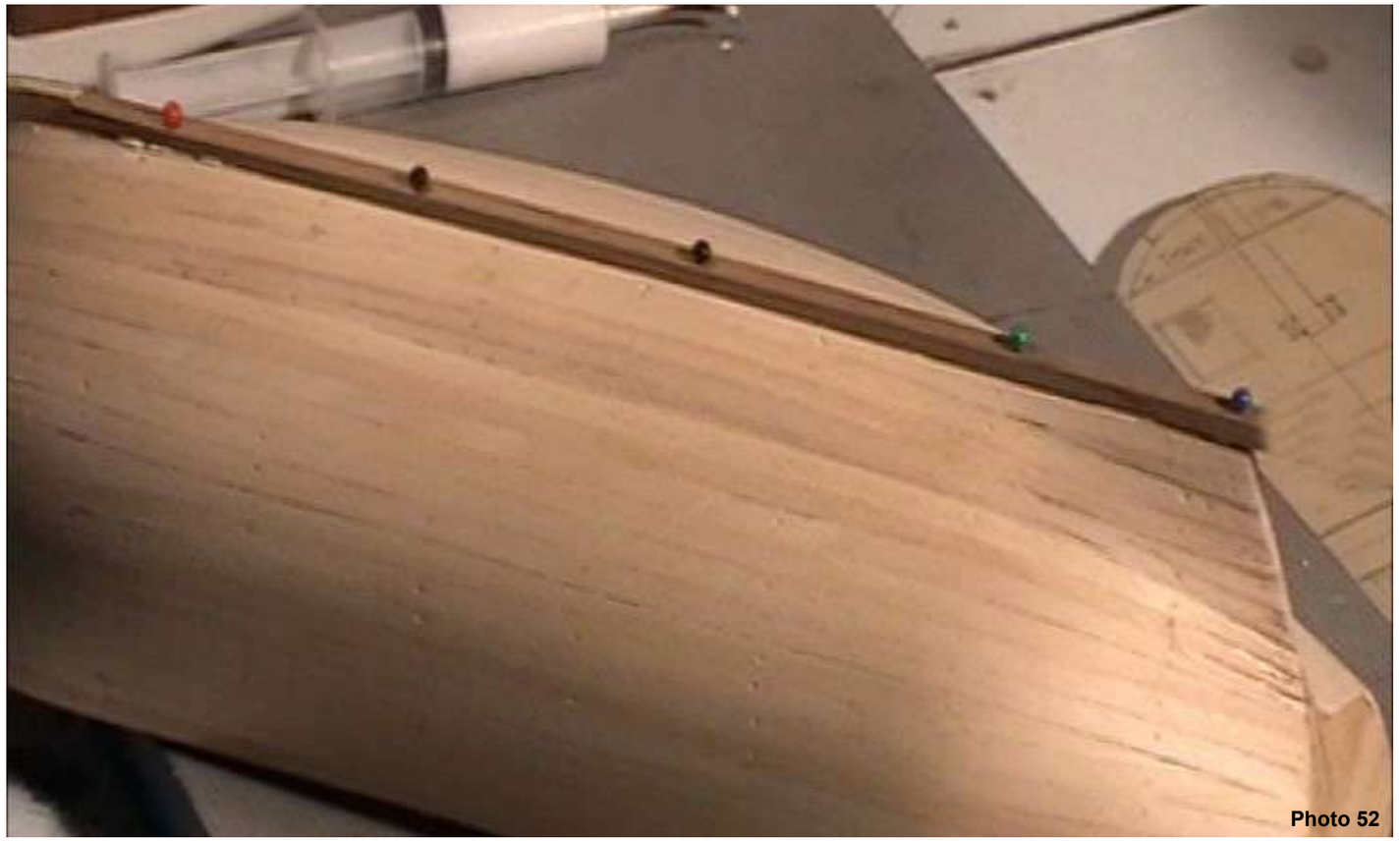


Photo 52

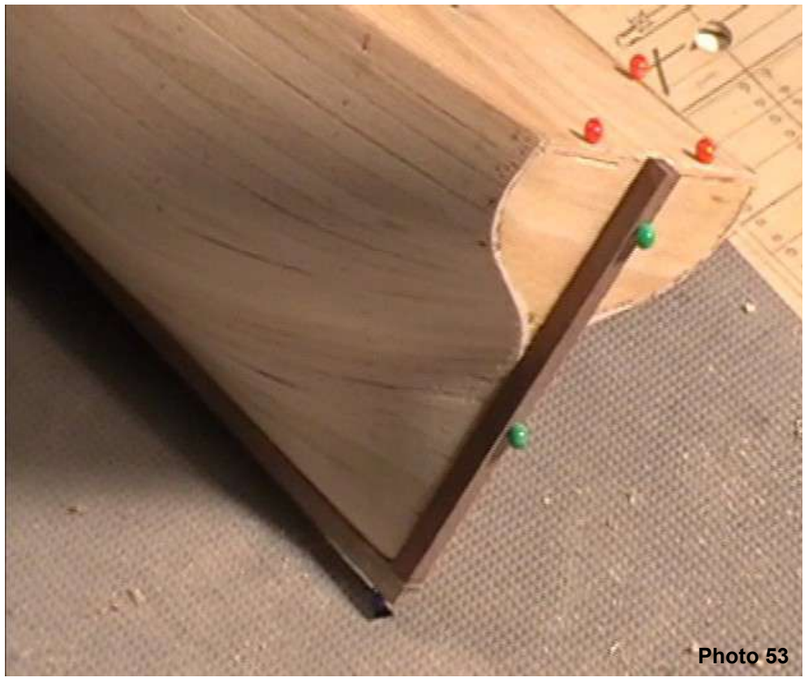


Photo 53

Colonial Ketch
MARY BYRNE
1826
SHEET 18

8.0 Hull Planking—Second Layer

Completing the second layer of hull planking is largely a repetition of the process for completing the first layer but with the added advantage of having a more solid foundation on which to work. The second layer of hull planking is the 0.6x6mm teak strips P18. Identify these planks before proceeding. To glue the planks in place use a non-drip contact type adhesive. This type of glue will help stop any tendency for the edges of the thin veneer planking to buckle and at the same time generally speeds up the planking process.

Start the second layer of hull planking along the line of the top of the deck. Fix a plank in place on each side of the hull. This plank will not be tapered. Take measurements from the underside of this first plank to the keel and record in a table as previously presented. Taper 5 planks for each side and fit & fix in position. At this point you will need to make a directional change at the bow and stern—apply the process as previously presented. Re-measure the distances and adjust the taper of the planks accordingly. Fit new planks along this straightened line. Continue to follow this process until you have completed the second layer of planking. Fit wedges or stealers at the stern as required. To finish the hull remove any excess contact glue. Lightly sand with a fine grade sand paper and finish with a clear matt or satin varnish.

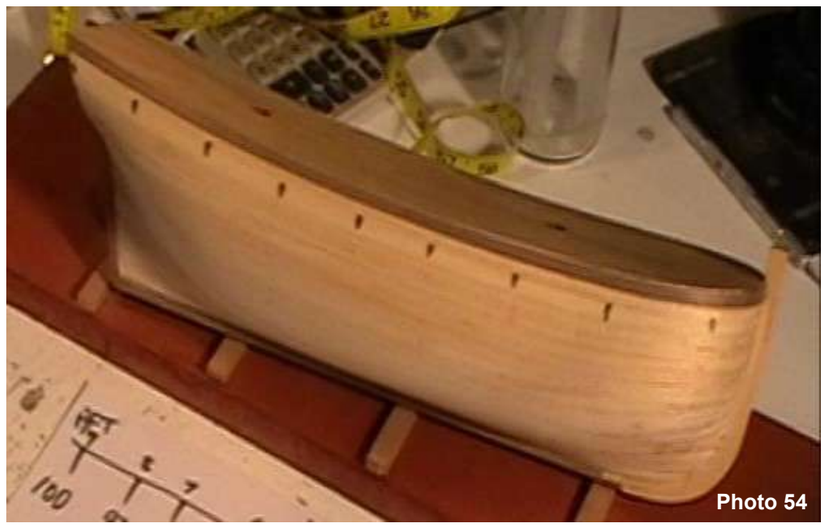


Photo 54


Photo 55


Photo 56


Photo 57


Photo 58

Colonial Ketch
MARY BYRNE
1826
SHEET 19

9.0 Deck Fittings & Furniture

The next step is to assemble and fit in position the deck furniture. The deck furniture includes the fence railings, companionway, cargo hatch, pump, winch, forward hatch, fife rails, rudder, tiller, barrels and anchors. The following describes the assembly and placement of each of these items. The placement of these items is as shown on the Deck Plan Figure 3 below.

9.1 Deck Plan

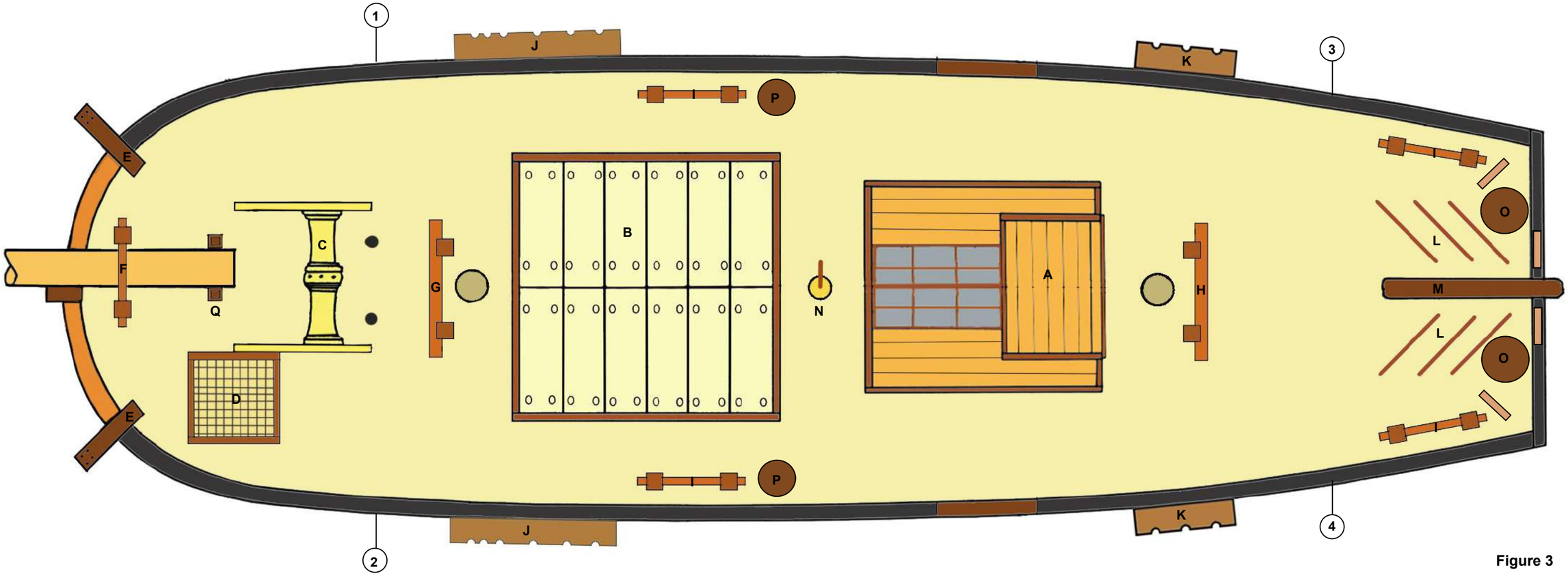


Figure 3

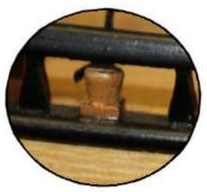
Scale 1:1 with model

Deck Furniture Key

A	Companionway	J	Channel—Main Mast
B	Main Cargo Hatch	K	Channel—Mizzen Mast
C	Winch	L	Footgrips
D	Hatch	M	Rudder Tiller
E	Catheads	N	Pump
F	Bowsprit Fife Rail	O	Barrels—Large
G	Main Mast Fife Rail	P	Barrels—Small
H	Mizzen Mast Fife Rail	Q	Knightheads
I	Side Fife Rail		

Bitt Heads

Fit bitt heads to points 1, 2, 3 & 4



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SHEET 20

9.2 Deck Fence

The fence is in a number of sections—fence base P19, stanchions P20, fence top P21, and cap rail P22. Identify these parts. Follow the steps below to assemble the fence.

1. Draw the outline of the deck on a sheet of paper.
2. Pin the fence base P19 in place on this outline.
3. Use a small file to carefully adjust the tongue of each stanchion so each fits easily into the base and top slots.
4. **Carefully** trial fit the stanchions into the base slots. Once satisfied glue each stanchion in place.
5. Slowly and carefully trial fit the fence top sections into place over the stanchions. Once satisfied glue in position.
6. Glue the cap rail P22 in place over the fence top. Allow 24 hours to dry.
7. Use a file to round the edges of the cap rail
8. Paint black
9. Once dry fix to the deck on the model.

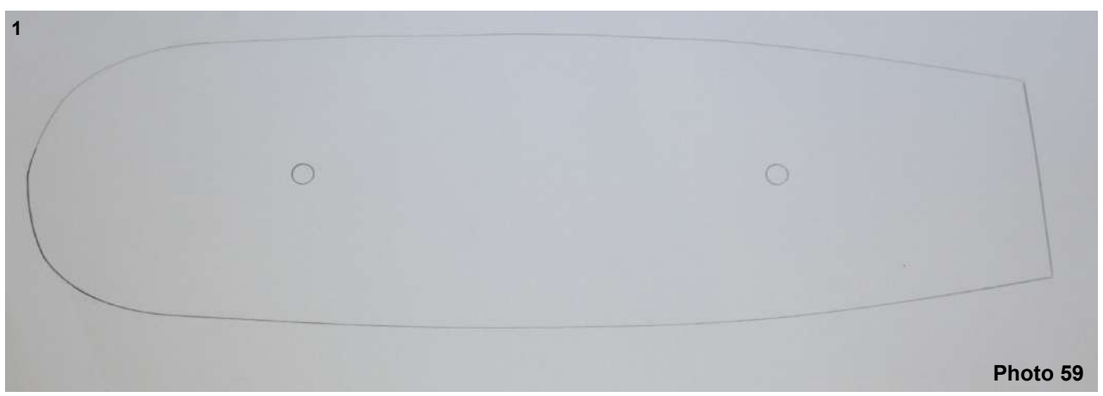

Photo 59

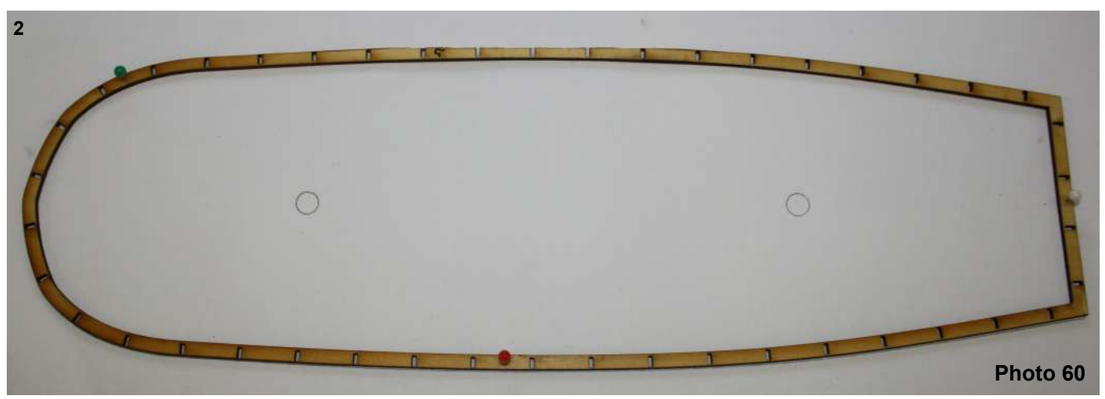

Photo 60

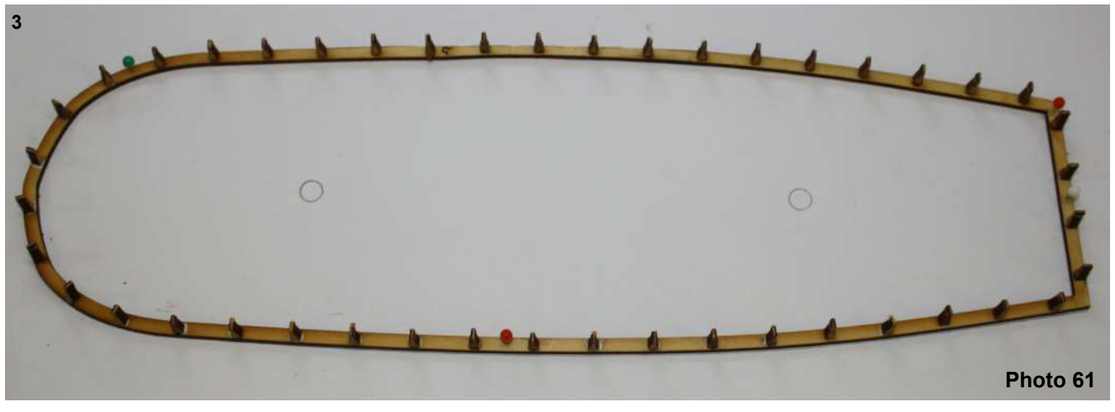

Photo 61

Photo 62

Photo 63


Photo 64

Colonial Ketch
MARY BYRNE
1826
SHEET 21

9.3 Gunwale
The gunwale fits around the hull following the top edge of the fence base. Use 2x3mm limewood P23. Fit to cover the fence base along each side of hull and across the stern. Use a hand held plank bender to shape around the bow. Paint black.

9.4 Wales
At mid-ship measure 13mm down from the underside of the gunwale. Mark three points in the mid-ship area. Using 1.5x6mm limewood P24, shape with a hand held plank bender to fit around the bow. Align the top of the wale with the three points marked on the hull at mid-ship and allow the wale to follow its natural curve around the hull both fore and aft. Fix the wale in position. Paint black.

9.5 Wale Flashing
Fix three lengths of 0.6x4mm silver ash P25 between the wale and gunwale.

9.6 Fillet
Fit a length of 1x1mm walnut P26 on the top and bottom side of the wale along its length.

9.7 Gangway
For the gangway cut a 25mm wide section of the fence out—cap rail and top only—on each side of the hull as shown. Fit an eye pin P27 into each exposed cap rail. Cut two 30mm lengths of chain P28 and attach between the eye pins as shown.

9.8 Steps
Cut four 30mm lengths of 3x3mm L section walnut P29. Fit two lengths on each side of the hull below the gangway between the gunwale and the wale as shown.

Photo 66

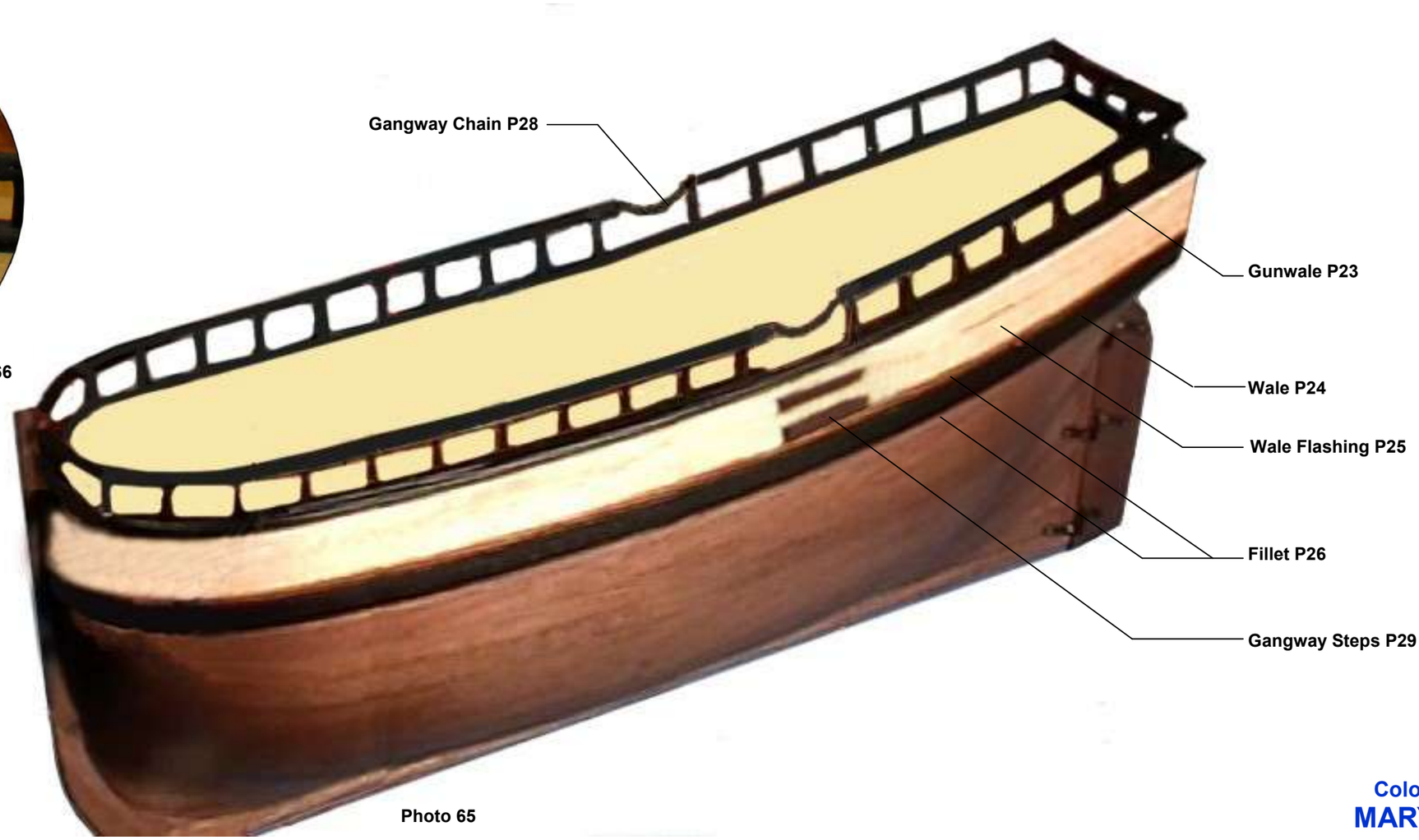

Photo 65

Colonial Ketch
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1826
SHEET 22

9.4 Hawses

The hawses are P30A & P30B on the plywood sheet. Note the starboard hawse 30A is shaped to accept the bowsprit. Identify these parts. Remove the required section of the banister rail to accommodate each hawse. Shape each hawse piece to fit snuggly under the banister rail and with a slight angle on the face of each where it butts against the stem post. Next use a half round file to shape each piece to be slightly concave on the inside face and convex on the outside face to follow the line of the hull. Fractionally fit. Drill a 3mm hole in each hawse for the anchor rope as shown. Once you are satisfied with the fit fix the hawse pieces in place.

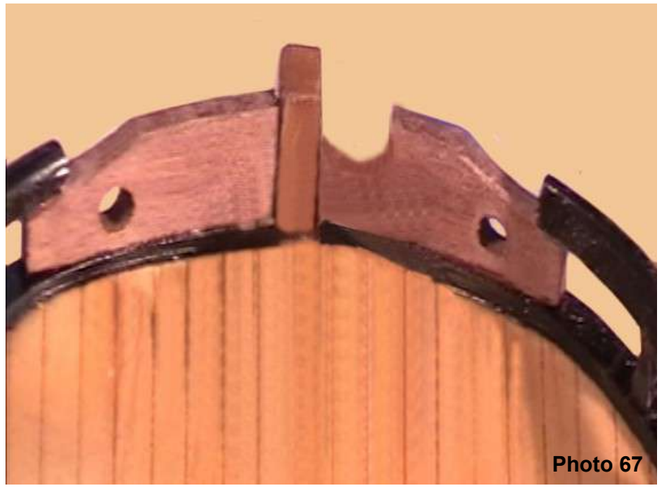

Photo 67

Photo 68

9.5 Knightheads & Bowsprit

For the knightheads cut 2 lengths of 4x4mm walnut P31 to15mm. Shape as shown Figure 4. Drill a 2mm hole 6mm from the base. Refer to Sheet 29 for the bowsprit dimensions. Cut and shape the bowsprit to these dimensions. Assemble the bowsprit and knightheads as shown. Drill a 2mm hole through the bowsprit to align with the knightheads. Fit the bowsprit axle P32 as shown.

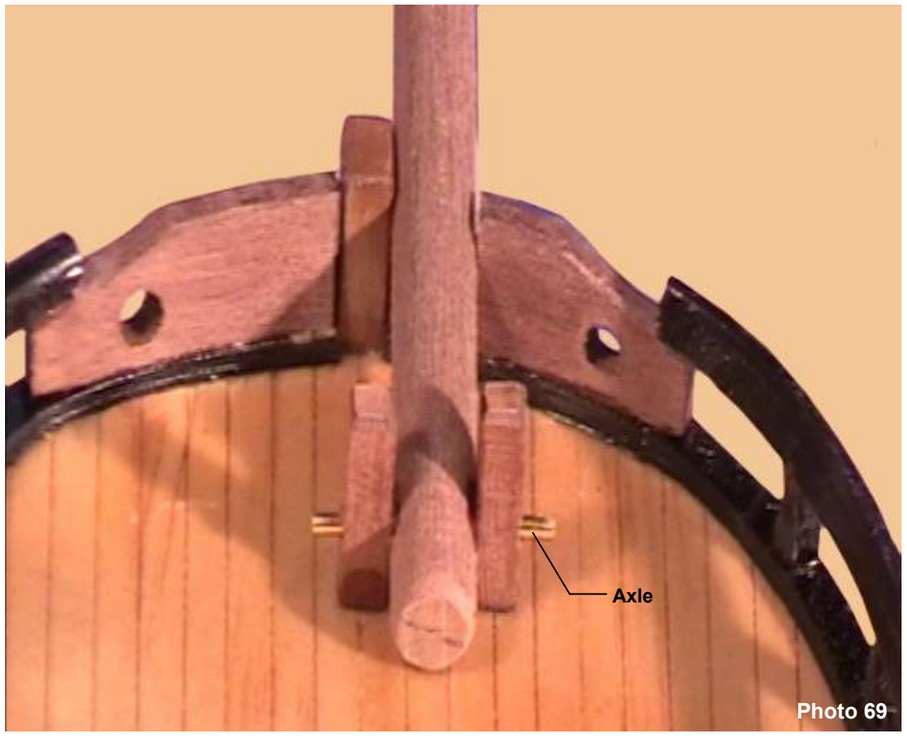

Photo 69

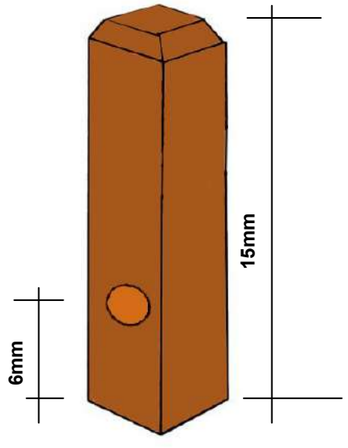

Figure 4

9.6 Catheads

Using 5x5mm walnut P33 shape and assemble the cat heads as shown Figure 5. The holes for the cat falls in the end can be made by drilling 4 holes then carving grooves. Fit an eye pin P27 to each cat head as shown.

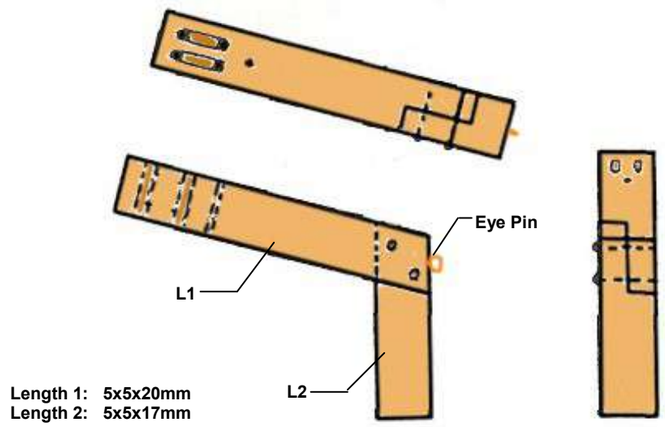

Figure 5

Photo 70

Colonial Ketch
MARY BYRNE
1826
SHEET 23

9.7 Hatch

Identify and assemble the hatch grating P34. For the hatch frame use 2x3mm walnut P35. Cut to the lengths shown. Shape the grating to fit. Fix to deck as shown.

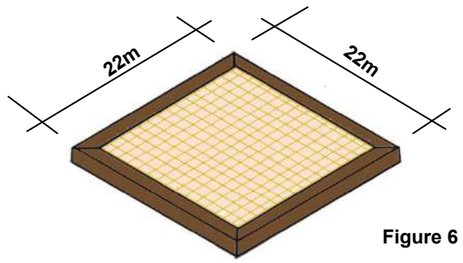

Figure 6

9.8 Anchor Winch

Identify the anchor winch P36. Assemble and fix in position as shown.

Photo 71

9.9 Pump

Identify the pump P37. Assemble the pump as shown. Fix the pump in place.

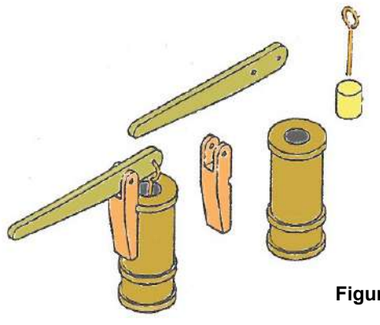

Figure 7

9.10 Bitt Heads

Cut 4 lengths of 5x5mm limewood P38 and shape as shown. Fit to fence base as shown Sheet 20.

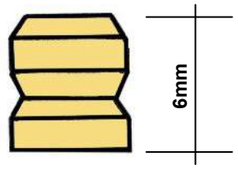

Figure 8

9.11 Rudder, Tiller & Foot Grips

Identify the rudder P39. Plank the rudder with 0.6x6mm teak strip P18. Identify the tiller P40 - shape and fit the tiller to the top of the rudder post. Apply a teak stain to the tiller.
Cut a 15mm section of the fence out so as to fit the rudder post with tiller in place.
Identify the rudder hinges P41. Cut slots in the rudder to accept the hinge joint. Fix the rudder hinges to the post with nails P71 as shown. Fix the hinges to the hull with nails P71 as shown. Fix eye pins P27 to the transom & rudder post as shown. Attach rudder chain P41 as shown. For the foot grips P97 use 1x1mm walnut—see Sheet 20.

Photo 72

Photo 73

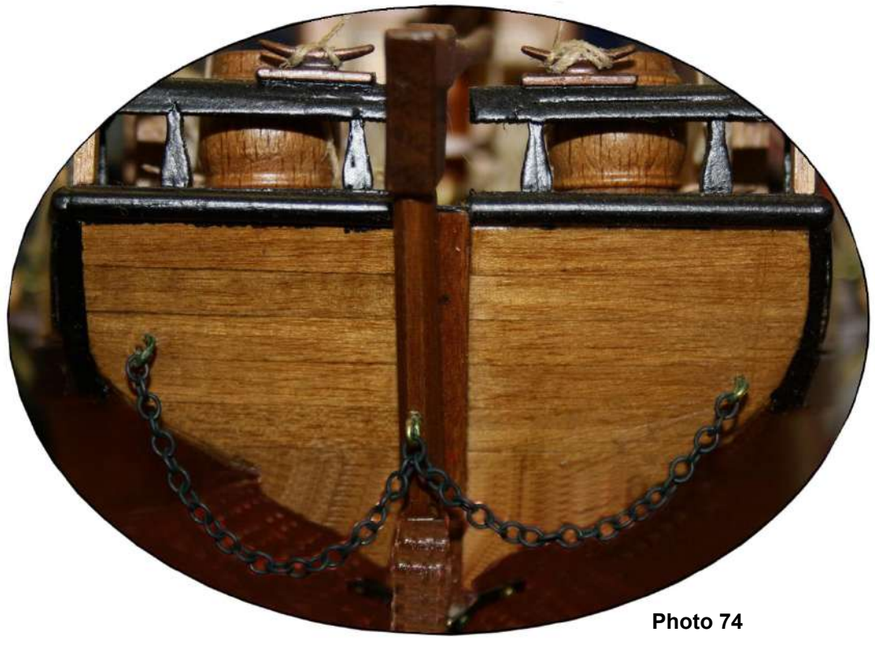

Photo 74

9.12 Fife Rails—Main & Foremasts

Cut 4 lengths of 4x4mm walnut P43 as the posts. Cut 2 lengths of 2x3mm walnut P44 as the rails. Assemble the fife rails as shown. Fix to deck.

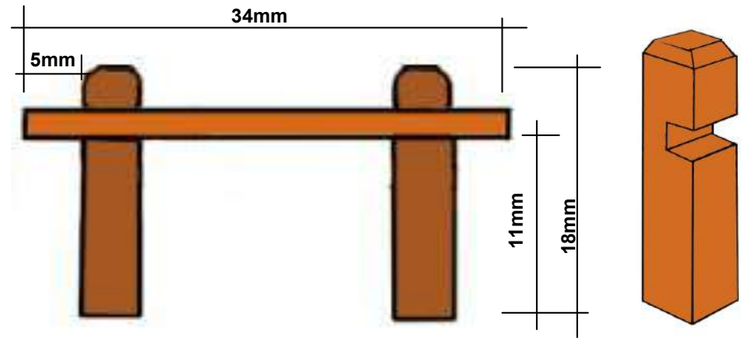

Figure 9

9.13 Fife Rails—Sides and Bowsprit

Cut 10 lengths of 4x4mm walnut P45 as the posts as shown. Cut 5 lengths of 2mm dowel P46 as the rails. Drill a 2mm hole in each post as shown. Assemble the fife rails as shown. Fix to deck.

Figure 10

9.14 Barrels

Identify the large barrels P47 and the small barrels P48. Fit each to the deck as shown.

Photo 75

Colonial Ketch
MARY BYRNE
1826
SHEET 24

9.15 Channels

The channel is a wooden platform projecting from the hull over which the deadeye straps and backstay straps sit. The channels allow the lower deadeyes to secure the shrouds to the hull. The channels are P49A-B & P50A-B. Identify these parts from the 2mm laser cut plywood sheet. Fit map pins with heads removed into the edge of each channel to assist in fixing to the hull. Plank the channels with the teak planking P18. The channels are located on the hull below the wale. See Sheet 20 for the placement of the channels on the hull.

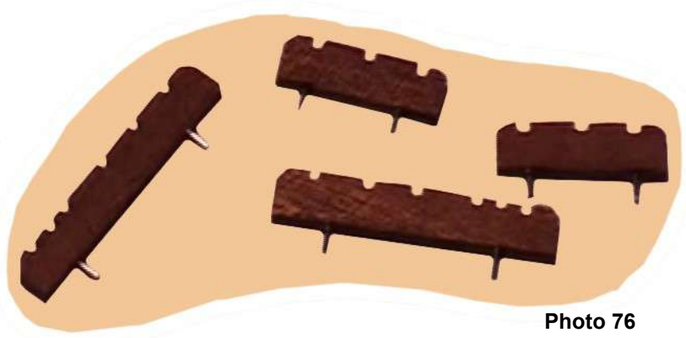

Photo 76

9.16 Main Cargo Hatch

Identify the main cargo hatch base P51 on the 2mm plywood sheet. Use 2x3mm walnut P52 to make the base trim—fix as shown. Fit eye pins P27 and rings P52 as shown.

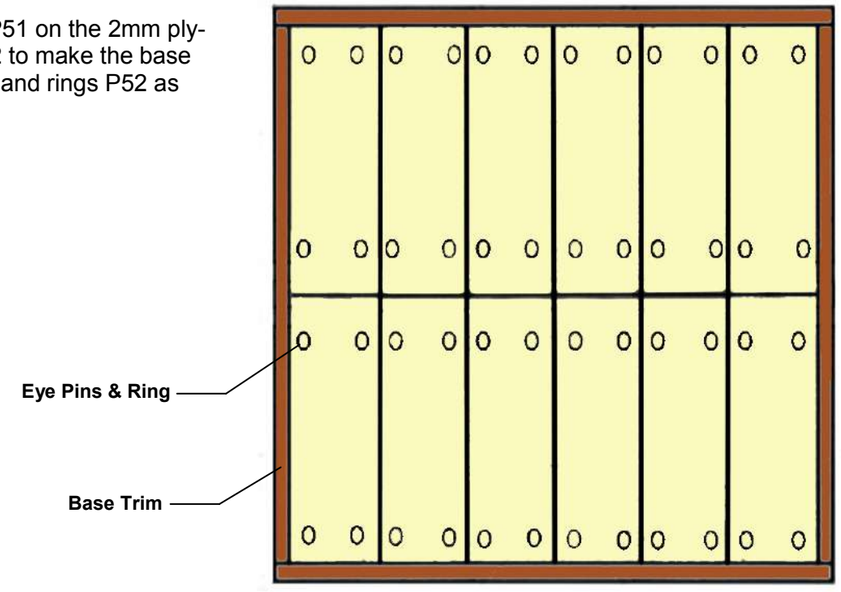

Figure 11

9.17 Bill Boards & Anchors

Identify the billboards P64A & 64B. Paint black and when dry fix to the hull as shown. Drill two holes in the deck as shown for the hawse pipes P53 as shown. Fit the hawse pipes. Identify the anchors P54. Assemble the anchors. Using 2mm cord P55 cut two lengths 250mm long. Taking one end of this cord, thread it through the large brass ring on the end of the anchor shaft, wrap approximately 15mm back on itself and secure with cord E P56. Feed the other end of the 2mm cord through the hole in the hawse and wrap around the winch—note the direction shown. Thread the remaining 2mm cord into the hawse pipe. Shape an eye pin P27 and fix to block C P61 as shown. Using block D and cord F assemble the anchor pulley as shown. Start at the eye pin and follow Figure 12. Tie-off at the fence rail. Repeat the process for the second anchor.

Photo 77

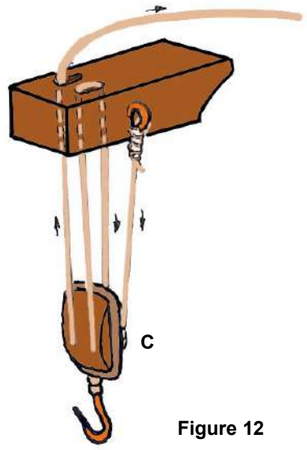

Figure 12

CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C

Figure 13

Photo 78

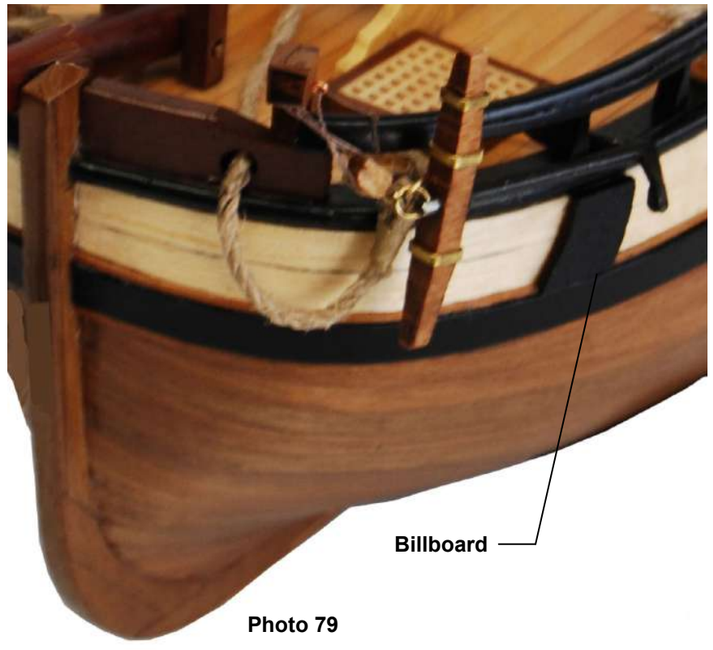

Photo 79

Colonial Ketch
MARY BYRNE
1826
SHEET 25

9.18 Companionway

Identify the companionway parts P65A-J on the 2mm plywood sheet. Use blue tac to assemble the parts together. Once satisfied glue the parts together and allow 24 hrs to dry. Plank all sides with 0.6x5mm tanganika P66. Plank the entrance roof with 1x5mm tanganika P67. For the front face plank above the doors and each side of the doors with 0.6x5mm tanganika P66.Use 1x1mm walnut P68 as the trim placed on each edge. Also use 1x1mm walnut for the door frames as shown. Fit door knobs using brass nails P71. For the skylight window use P69—cut two lengths to lay across P65F & 65G. Use 1x1mm walnut as the skylight frame. Finish by spraying with a clear matt or satin polyurethane finish. Fit the port holes P70. Fix the companionway to the deck.

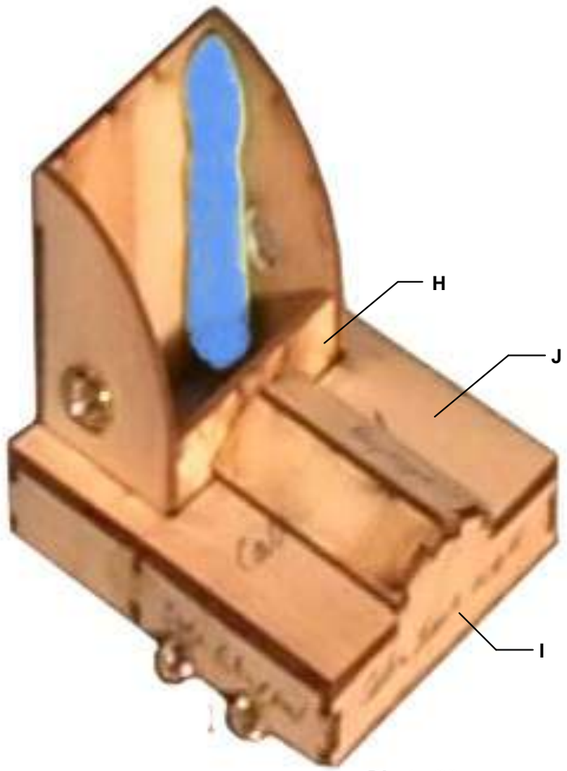

Photo 80

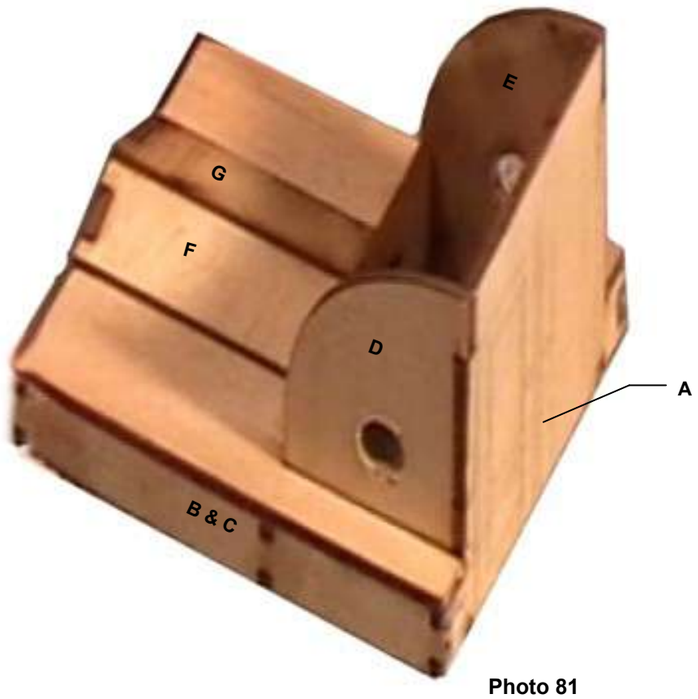

Photo 81

Photo 82

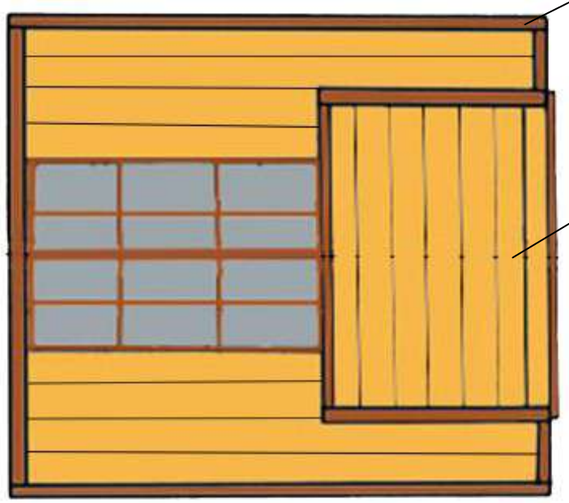

Figure 14

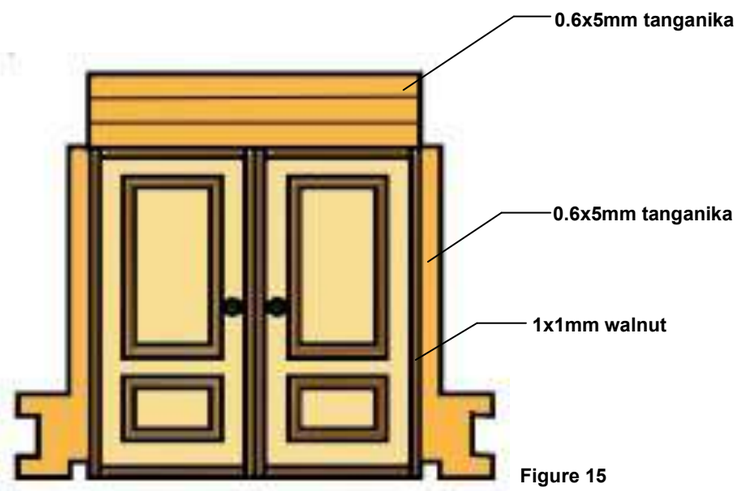

Figure 15

Colonial Ketch
MARY BYRNE
1826
SHEET 26

10.0 Masts, Bowsprit, Gaffs, Booms & Yards

The next step is to shape and assemble the masts, bowsprit, gaffs, booms & yards. Identify the various size dowels and cut, shape and taper these parts to the profiles shown in the drawings below. Tapering the dowels can be achieved using a mini plane, a file and sandpaper and using the technique presented in Figure 16. Once they have all been shaped and tapered apply a walnut or teak stain to each if desired. Finish by spraying with a clear matt or satin polyurethane finish. Locate and identify the various mast caps, blocks and fittings to be used for this stage of building the model. Fit any eye pins, blocks and footrope stirrups as shown below. Once all are assembled put each part safely aside. **Do not fit the masts, gaffs, booms or yards to the model yet.**

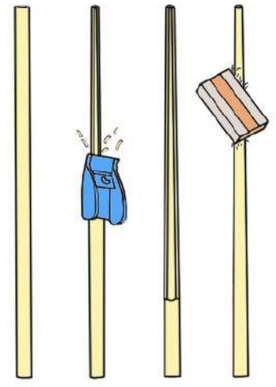

Figure 16

10.1 Masts

The *Mary Byrne* has two masts—the main mast is the taller mast. The mast to the aft of the main mast is the mizzen mast.

10.1.1 Main Mast

The main mast is made in two parts—the lower and upper main mast. The two parts are jointed by two mast caps P82A & 82B. Identify the relevant dowels and cut and shape the lower and upper main mast pieces as shown Figures 17 & 18. Fit and fix the boom rest P83B. Shape the boom rest supports P84 from 2x3mm limewood. Assemble the lower and upper main masts as shown Figure 19. Fit any eye pins P27 and blocks as shown.

NOT TO SCALE

Main Mast—Lower—L 320mm, 8mm dowel tapered to 5mm

Figure 17

Main Mast—Upper —L 120mm, 5mm dowel tapered to 3mm

Figure 18

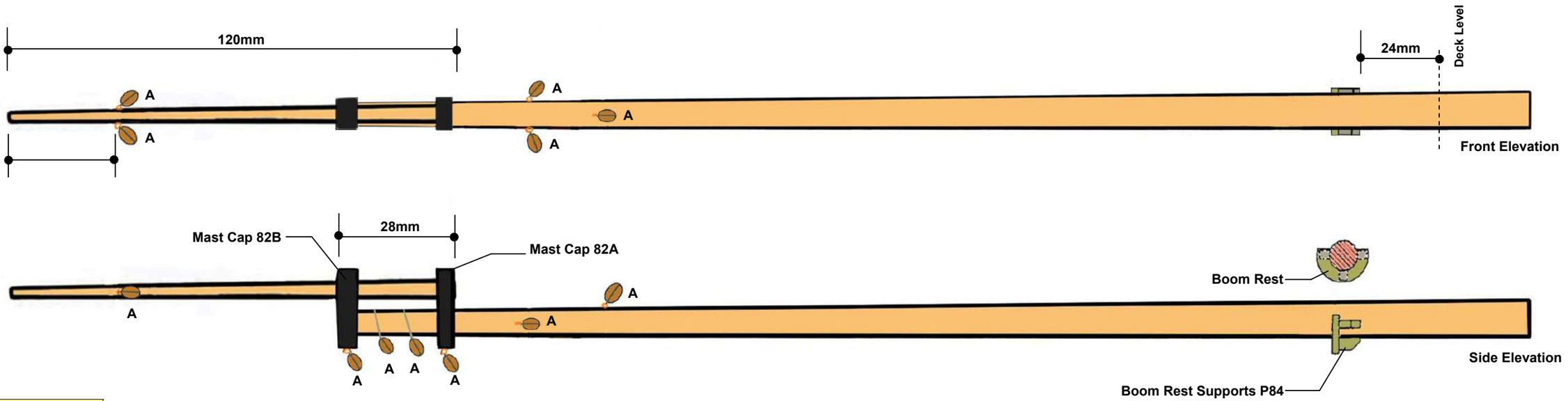

Figure 19

CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C

Colonial Ketch
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1826
SHEET 27

10.1.2 Mizzen Mast

The mizzen is made in one part. Identify the relevant dowel and cut and shape as shown Figures 20. Fit and fix the boom rest P83B. Shape the boom rest supports P84 from 2x3mm limewood. Fit any eye pins P27 and blocks as shown.

NOT TO SCALE

Mizzen Mast—L 315mm, 8mm dowel tapered to 5mm

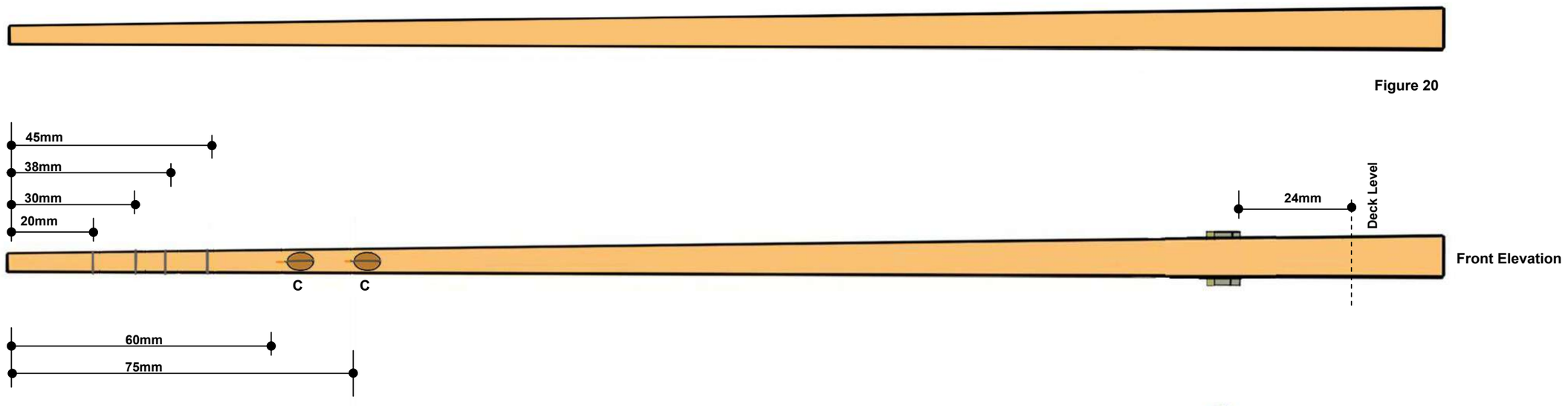


Figure 20

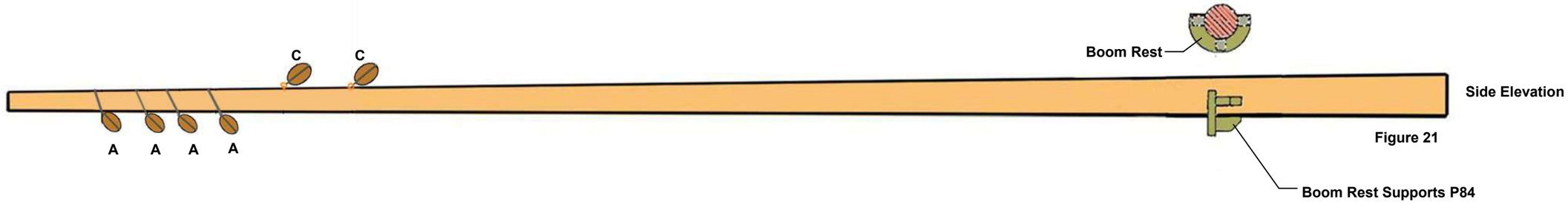


Figure 21

10.1.3 Mast Heels & Masts

Identify the main mast heel P85A and mizzen mast heel P85B. Fit and fix each mast heel in place over their respective mast hole. Fit and fix the masts in place.

CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C

10.2 Bowsprit

Identify the relevant dowel and cut and shape as shown Figure 22 Fit block as shown.

NOT TO SCALE

Figure 22

CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C

Modellers Shipyard

10.3 Booms

10.3.1 Boom—Main Mast

Identify the relevant dowel and cut and shape as shown Figure 23. Fit the boom yoke P95A. Fit blocks as shown.

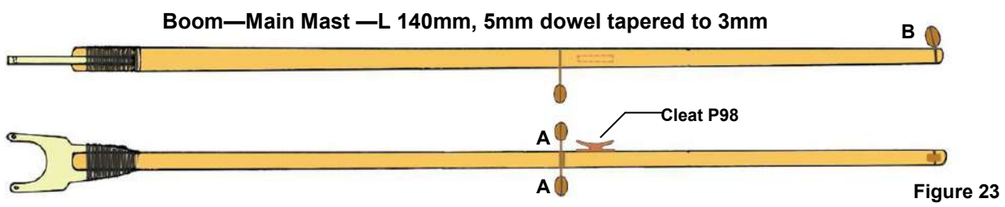


Figure 23

10.3.2 Boom—Mizzen Mast

Identify the relevant dowel and cut and shape as shown Figure 24. Fit the boom yoke P95B. Fit blocks as shown.

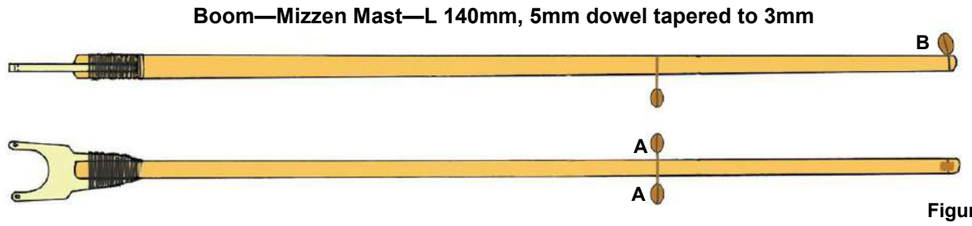


Figure 24

10.4 Gaff

10.4.1 Gaff—Main Mast

Identify the relevant dowel and cut and shape as shown Figure 25. Fit an eye pins P27 and blocks as shown.

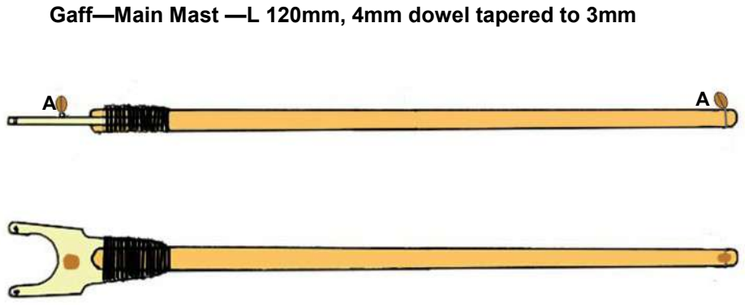


Figure 25

10.4.2 Gaff—Mizzen Mast

Identify the relevant dowel and cut and shape as shown Figure 26. Fit blocks as shown.

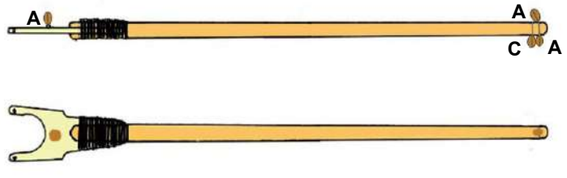


Figure 26

10.5 Yards

10.5.1 Main Yard

Identify the relevant dowel and cut and shape as shown Figure 27. Fit blocks, footrope stirrups and rigging as shown.

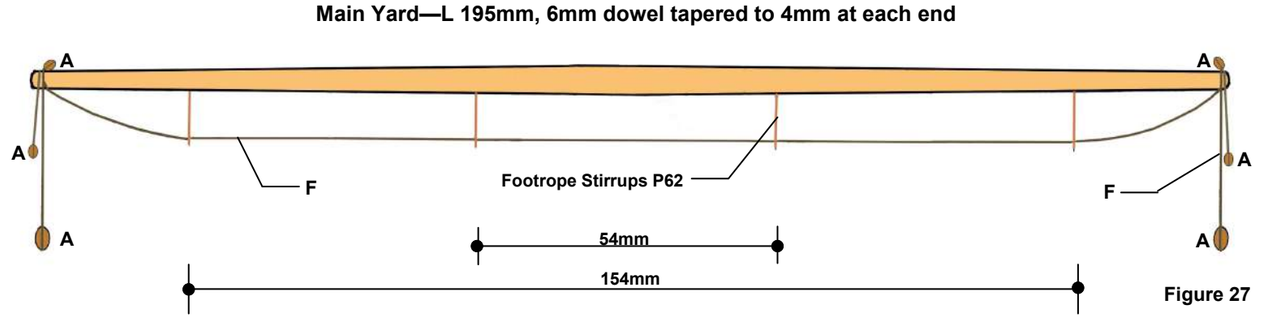


Figure 27

10.5.2 Main Top Yard

Identify the relevant dowel and cut and shape as shown Figure 28. Fit blocks, footrope stirrups and rigging as shown.

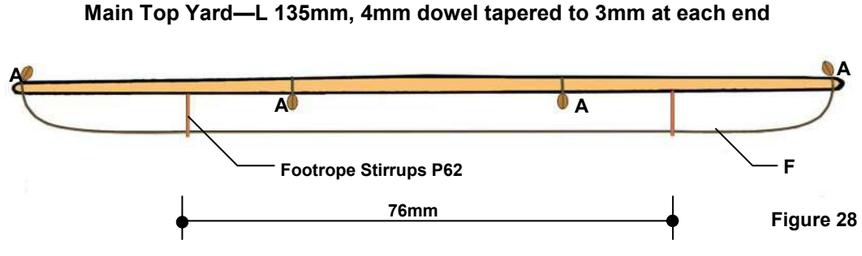


Figure 28

Colonial Ketch
MARY BYRNE
1826
SHEET 29

11.0 Rigging—Introduction

11.1 Types of Rigging

The rigging of a ship can be divided into two main parts:
1. “Standing” rigging, which is used to support the masts and bowsprit.
2. “Running” rigging, which is used to manipulate yards and sails through pulley blocks.

On an “actual” ship any rigging that did not pass through a pulley block was coated with tar to help prevent it rotting. To simulate this the cord supplied in the kit for the standing rigging is 1mm black. The running rigging is fawn and of two sizes, 0.25mm and 0.5mm.

11.2 Preparation for Rigging

If needed drill out the holes in the blocks and deadeyes to facilitate the threading of the rigging cord when the time comes. For the most inaccessible blocks, insert a short piece of thin rigging cord through the hole and glue it to itself forming a loop. Later, when you wish to insert the permanent running rigging you cut the loop, glue the new cord to one end and pull it through the hole using the other end of the pilot cord.

There are a few points to remember when rigging.
- Never cross rigging lines with each other.
- Never run rigging lines on the forward side of the yards.
- Never bend rigging lines around obstacles.
- Never run rigging lines through ratlines.
- Never make knots in rigging lines.

11.3 Typical Rigging Applications

The following figures represent a range of rigging applications you may encounter as you rig the model.

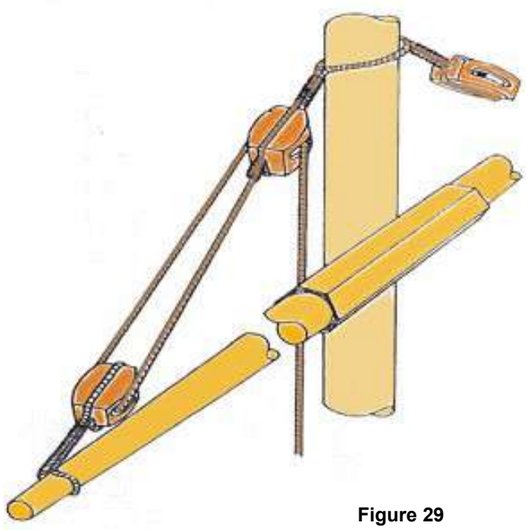


Figure 29

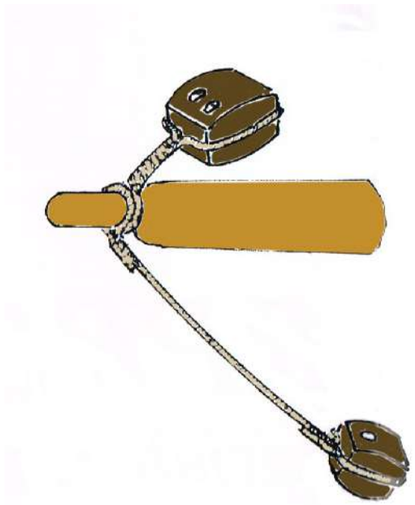


Figure 30

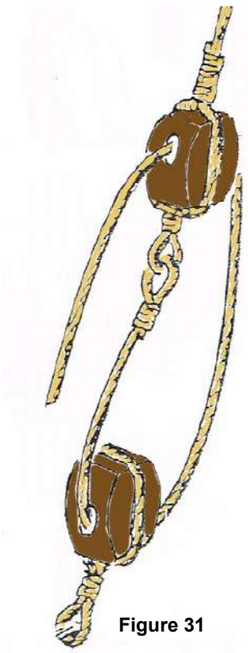


Figure 31

Figure 32

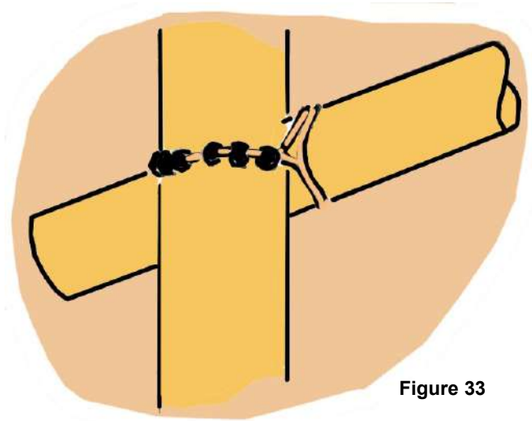


Figure 33

Figure 34

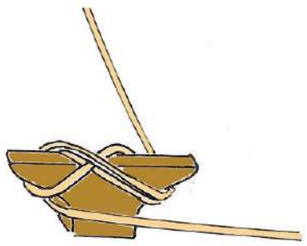


Figure 35

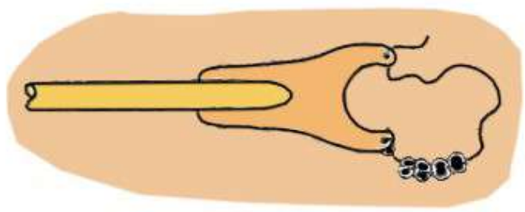


Figure 36

Colonial Ketch
MARY BYRNE
1826
SHEET 30

11.4 Belaying Plan

The belaying plan shows where the rigging starts and finishes. This plan will be used in each of the following sheets. The numbers presented on the following drawings & photos correspond to the belaying points indicated Figure 37.

Fit eye pins P27 with rings P52 to the following belaying points:
1, 2, 3, 9, 10, 11, 12, 16, 20, 25, 26, 27, 28, 31, 32, 33, 34, 37 & 38.

Fit cleats P98 to the following belaying points:
7, 8, 22 & 24

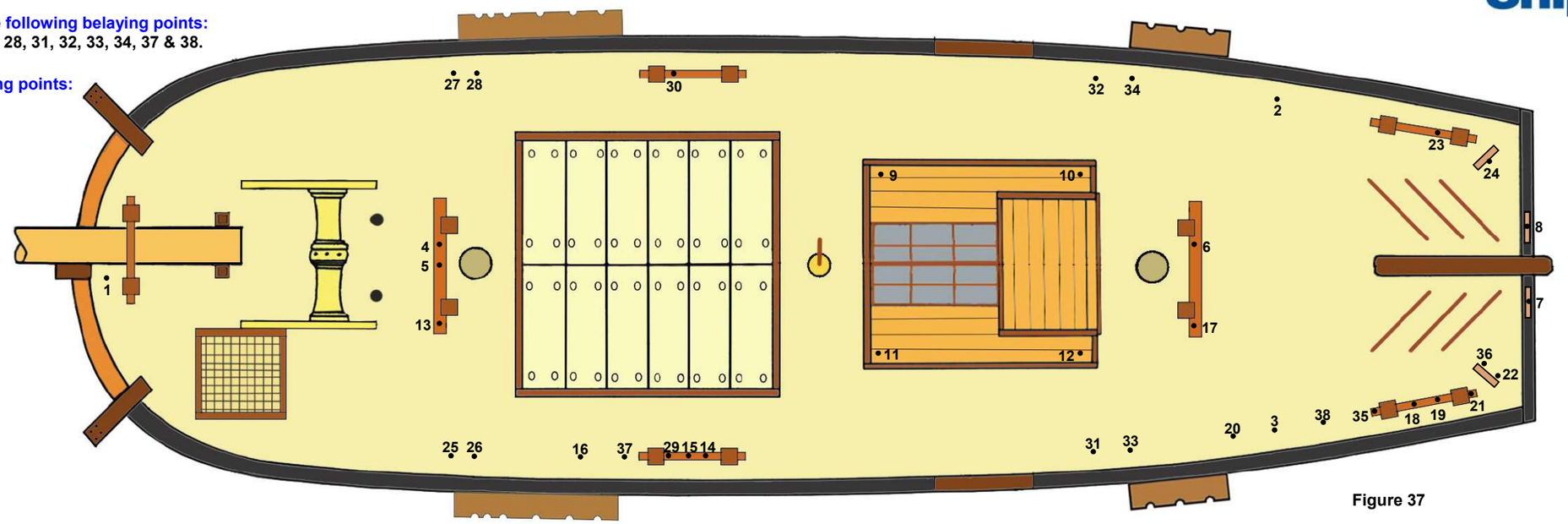


Figure 37

12.0 Standing Rigging

The standing rigging includes the rigging of the forestays, backstays, bobstays and shrouds and is completed before the running rigging. Completing the standing rigging is fairly straightforward and should present few difficulties. The “golden rule” for rigging is to work from the centre and lower parts of the model and work up and out trying to avoid difficult and confined spaces. It is recommended to complete the standing rigging in the following sequence:

1. Forestays
2. Backstays
3. Bowsprit rigging
4. Shrouds.

The instructions follow this sequence. However before progressing with the standing rigging we need to make and fit the backstay straps and the deadeye straps to the channels.

12.1 Backstay Straps

The backstay straps are fixed to the hull over the main mast channels and hold the back-stays in place. To make the backstay strap cut a 60mm length of 0.5mm brass wire P86 and with long nose pliers twist the wire around a brass ring P52 —Photo 83. Make 4 backstay straps. Do not fit to the main mast channels yet.

Photo 83

12.2 Deadeye Straps

The deadeye straps are fixed to the hull over the channel and hold the lower deadeyes of the shrouds. Identify the 5mm deadeyes P63. To make the deadeye straps cut a 80mm length of 0.5mm brass wire P86 and with long nose pliers twist the wire twice around the deadeye—Photo 84. Make 14 deadeye straps. Do not fit to the channels yet.

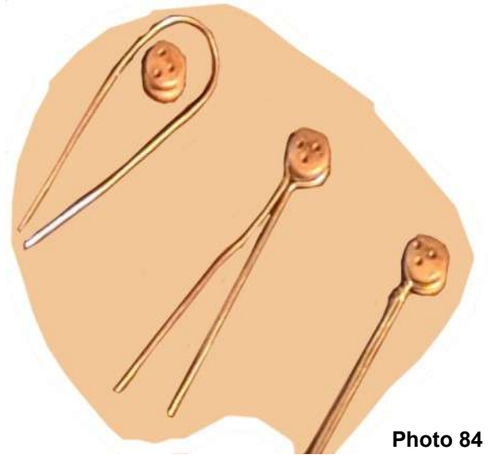


Photo 84

Colonial Ketch
MARY BYRNE
1826
SHEET 31

12.3 Shroud Extension Angle

The deadeye straps need to be fitted to the side of the hull as an extension of the angle of the shrouds. Before fixing the deadeye straps to the side of the hull we need to determine the extension angle for each shroud. To achieve this follow the steps below:

1. Temporarily attach a length of rigging cord from the mast head down to below the channel. Tape the cord to the hull below the channel—Figure 39.
2. Each deadeye strap is attached to the hull below the wale. For each deadeye strap mark on the hull the fixing hole at relevant angle. Do this for each shroud.
3. Drill a hole at each point to accept the strap. Fix the deadeye strap to the channel and into the hole. Fit & fix all deadeye straps in place.

12.4 Backstay Straps

Fit the backstay straps to the hull in line with the deadeye straps. Bend the top of the strap over at a right angle to ensure the backstays are behind the shrouds when fitted—Photo 87

12.5 Channel Cap

Once all deadeye straps and backstay straps are in place fit a channel cap P87 over the edge of each channel —Photos 85 & 86.

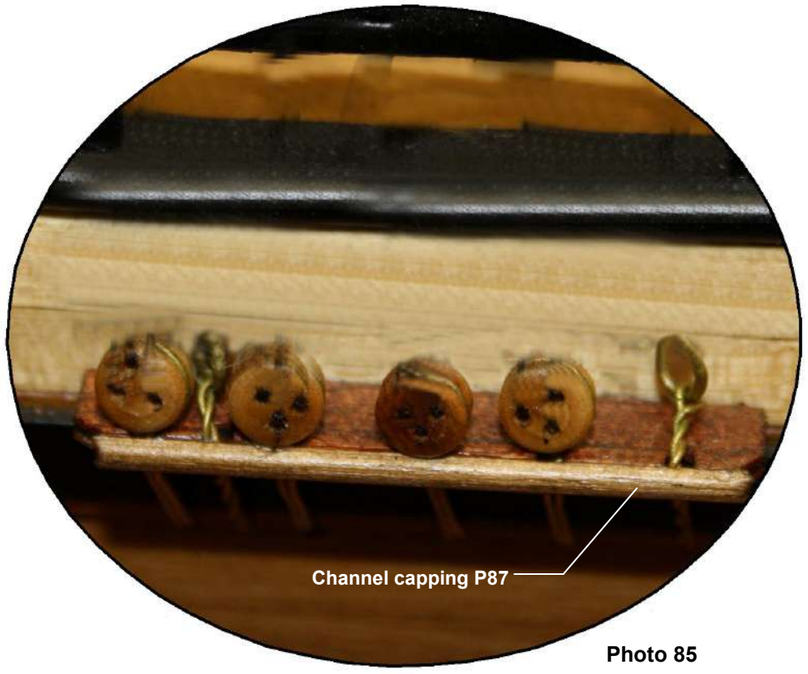


Photo 85

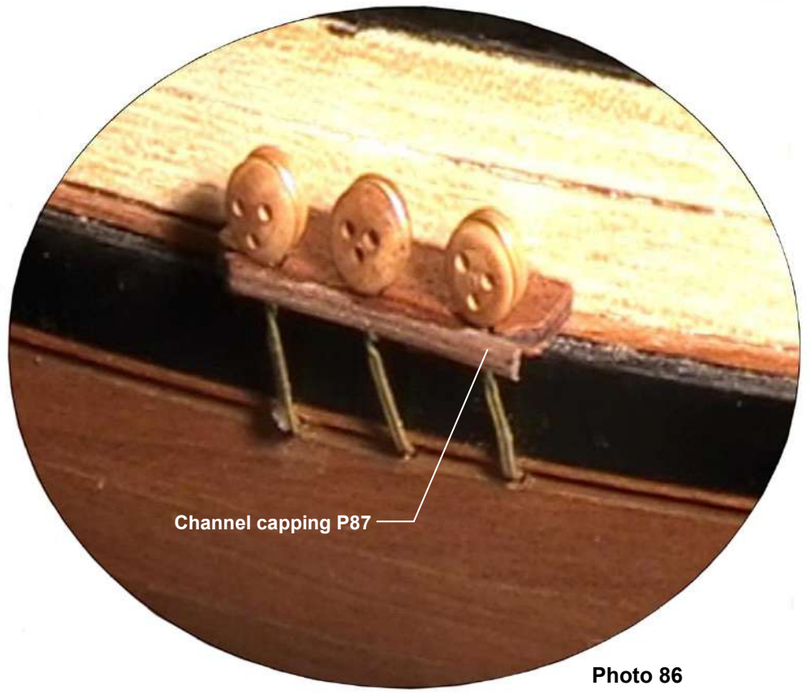


Photo 86

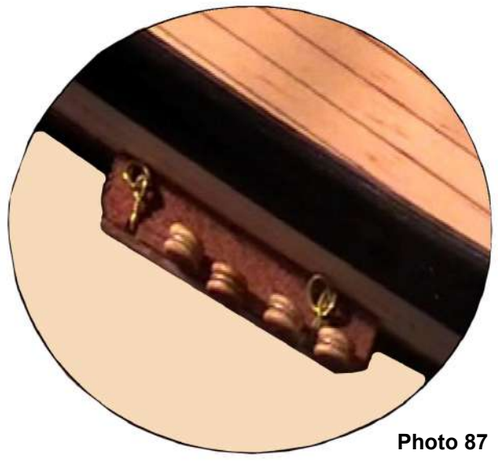
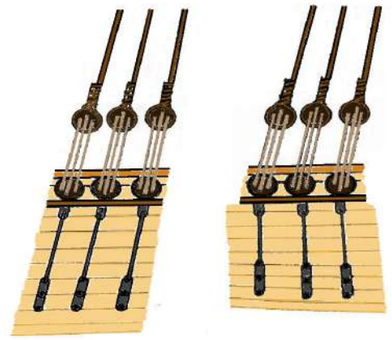


Photo 87



Correct Incorrect

Figure 38

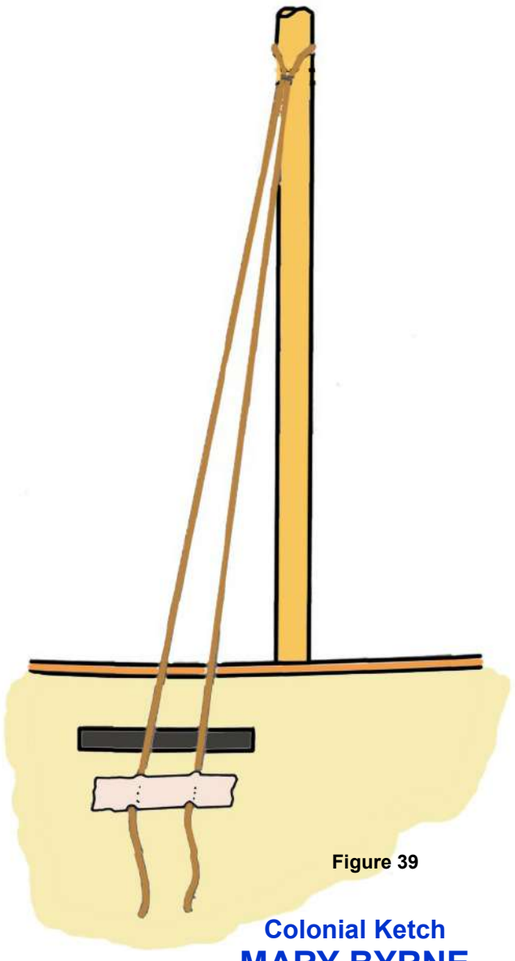


Figure 39

Colonial Ketch
MARY BYRNE
1826
SHEET 32

12.6 Forestays

Fit the forestays in the order presented below. Use cord G for all forestays and backstays

12.6.1 Preventer Forestay

Start the preventer forestay 165mm from the top of the mast. Fit an eye pin P27 to the top of the stem post. Rig as shown Photo 88. Reeve the stay as shown Photo 89. Terminate at Point 1.

12.6.2 Forestay

Start the forestay 165mm from the top of the mast. Rig as shown Photo 88.

12.6.3 Topmast Stay

Fit a 4mm brass ring P88 to the main mast 27mm from the top of the mast. Tie the start of the stay around this ring and rig as shown Photo 88.

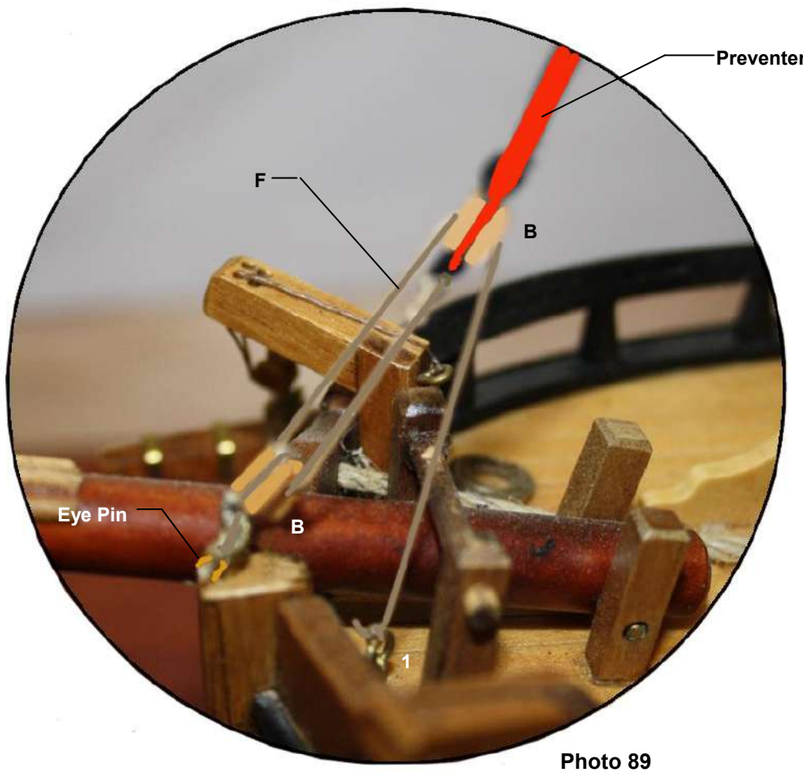


Photo 89

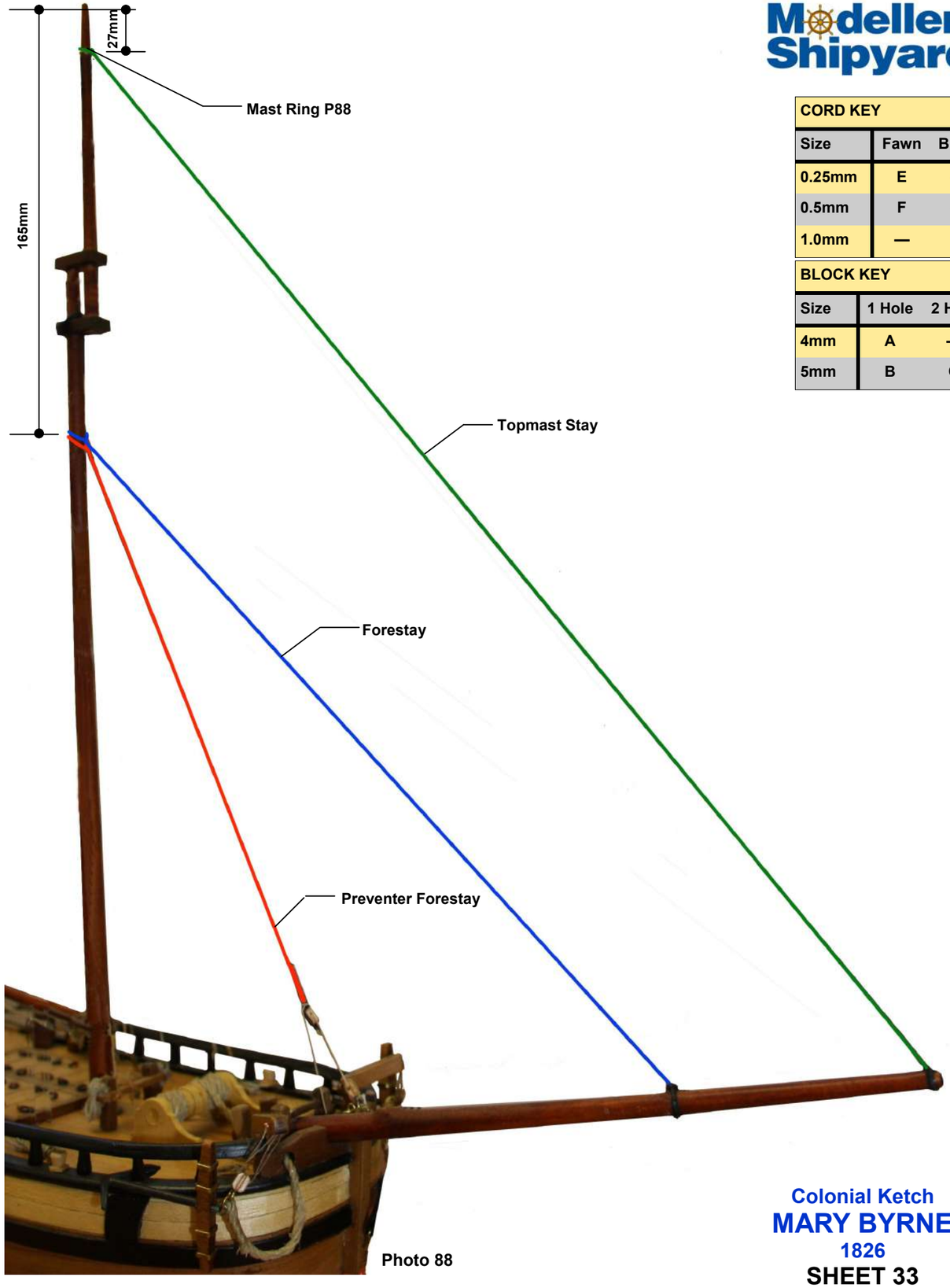


Photo 88

CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C

Colonial Ketch
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SHEET 33

12.7 Backstays

12.7.1 Main Mast Backstays

Rig the main mast backstays as shown Photos 90 & 91 to the backstay straps on the main mast channel. Use cord G. Repeat for the port side of the hull.

12.7.2 Mizzen Mast Backstays

Rig the mizzen backstays to Points 2 & 3 - Photo 92 . Use cord G.

12.7.3 Mizzen Staysail

Rig the mizzen staysail as shown Photo 90. Use cord G.

CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C

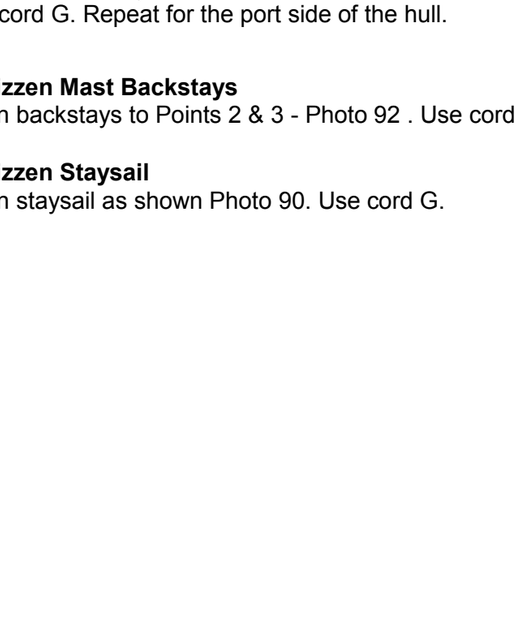


Photo 92

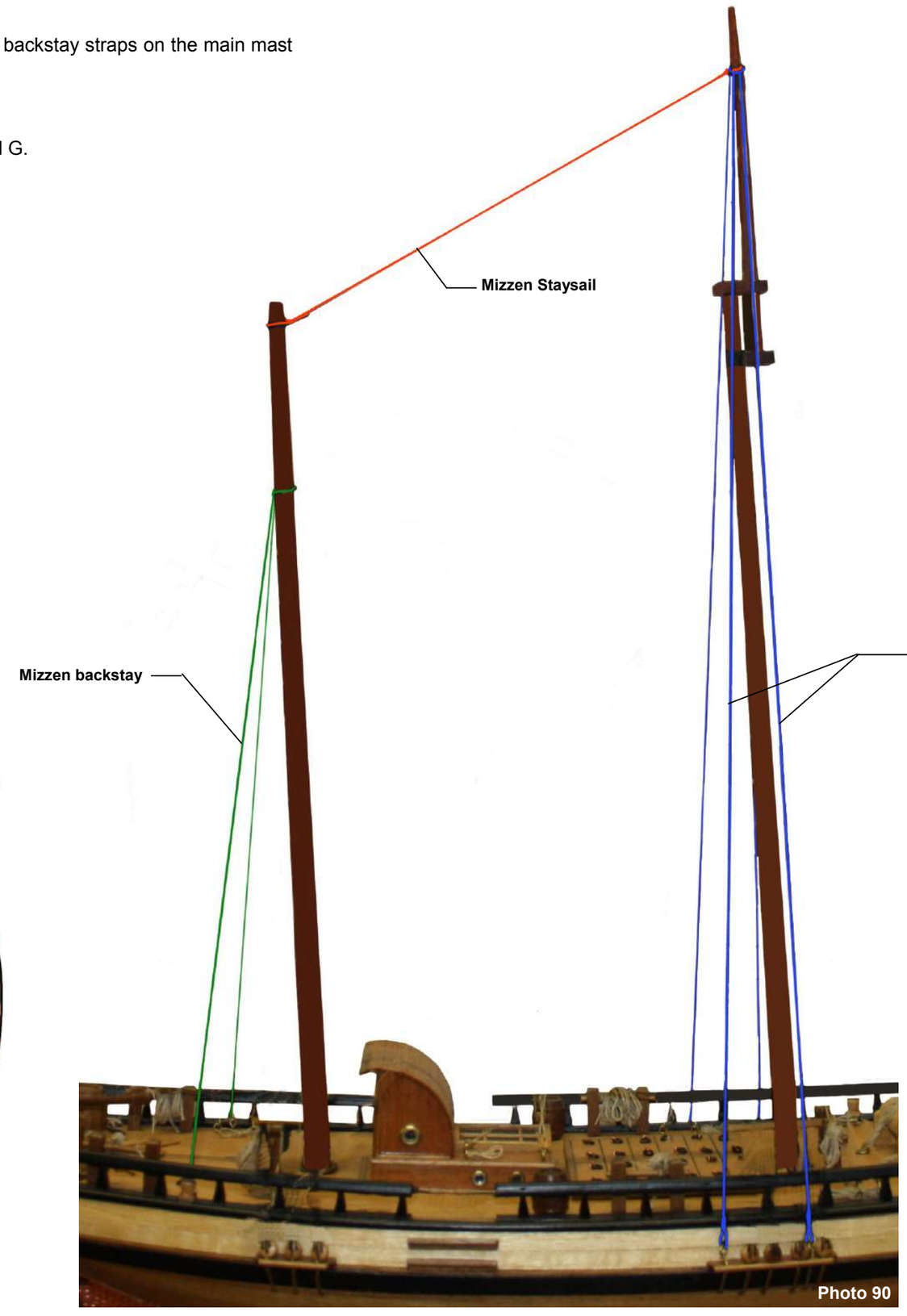


Photo 90

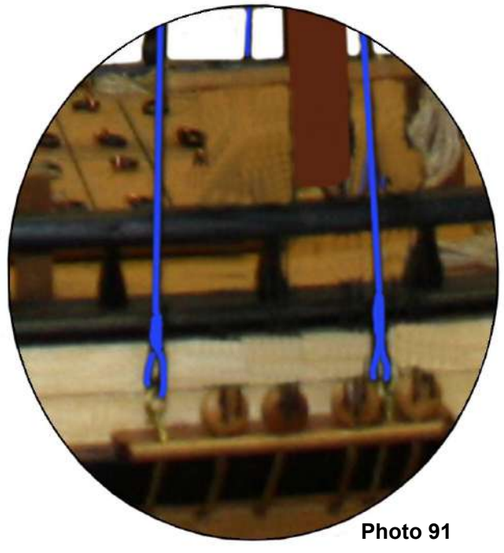


Photo 91

Colonial Ketch
MARY BYRNE
1826
SHEET 34

12.8 Bowsprit

12.8.1 Gammoning

Make the gammoning blocks P91 from 2x3mm walnut—cut 3 lengths 10mm each. Round the top edges. Fix to the bowsprit as shown. To make the gammoning ring P90 shape a 20mm length of 1mm brass wire as shown. Fix the gammoning ring to the bowsprit as shown. Lash the gammoning as shown using cord G.

12.8.2 Bobstays

Fit an eye pin P27 to the stem post below the gammoning ring as shown. Fit deadeyes P63 to the bowsprit as shown. Attach deadeyes P63 to the ends of two lengths of cord G. Reeve the bobstay deadeyes using cord E as shown.

Photo 95

Photo 96

Gammoning Ring

Photo 94

Gammoning Blocks

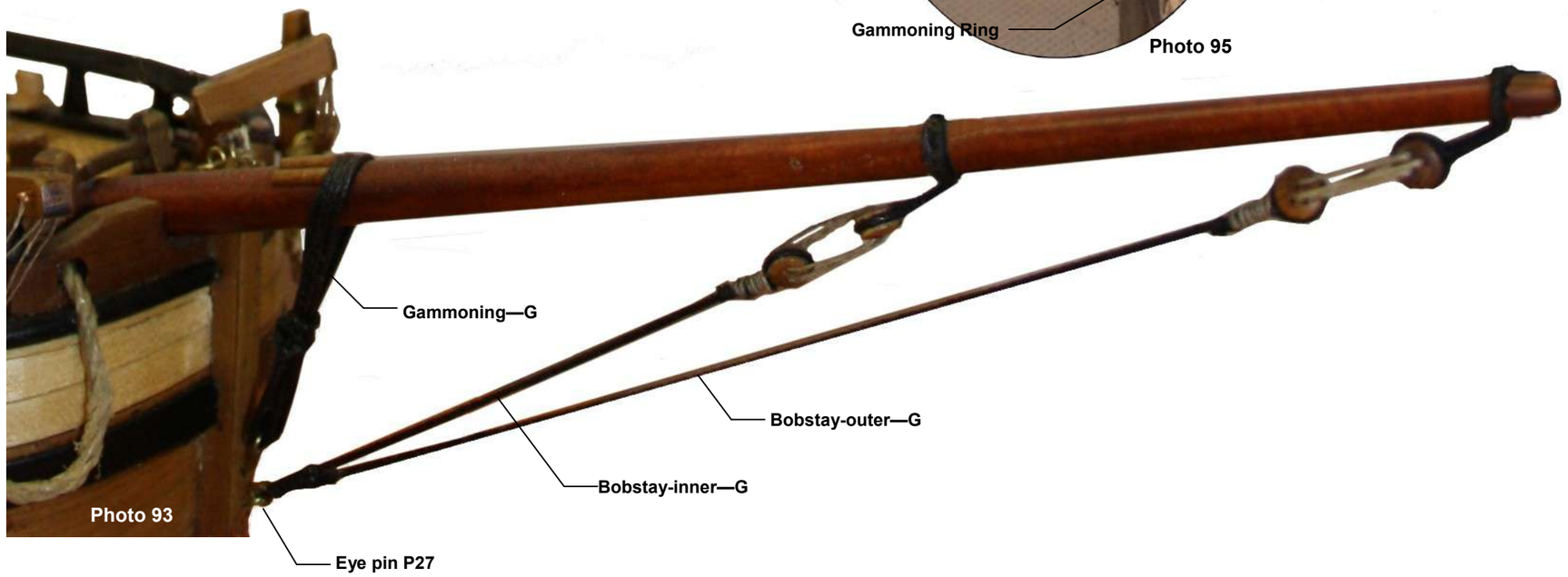
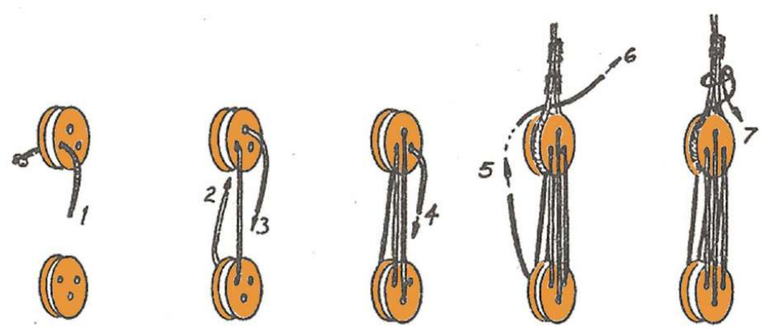


Photo 93

CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C



Reeving Deadeyes

Figure 40

Colonial Ketch
MARY BYRNE
1826
SHEET 35

12.9 Shrouds—Preparation

The next step is to fit the shrouds. The shrouds are made up in pairs with a deadeye attached to the end of a single cord. On the port side fit the first pair of shrouds by cutting a length of cord G long enough to go from the channel to the mast cap twice with approximately 30mm overhang. Using an alligator clip glue one end of the rigging cord around a deadeye. Make sure the centre hole of the upper deadeye is the highest of the three. This deadeye should then be temporarily connected to the front portside lower deadeye using the deadeye wire jig- Figure 42. This wire jig will provide the correct spacing between the upper and the lower deadeye and ensure the deadeyes are in straight rows parallel with the channels and with each other.

The loose end of the cord then goes up and around the mast and down to the position of the lower deadeye immediately behind the first. Using super glue, alligator clip and another wire jig, attach the upper deadeye to the shroud. Using a short length of cord E seize the two shrouds together around the mast at the mast cap -Figure 41. Once the first pair of shrouds has been completed, the exercise is repeated on the starboard side, then back to the portside and so on. At the upper deadeye bind the double thickness of cord immediately above the upper deadeye with E cord. Seize the end of this cord with a dab of super glue. Fit a lanyard strips P89 using 2x3mm walnut as shown Photo 98 & 99. Finish the shrouds by fitting the ratlines using cord E—see Figure 44.

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C

CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

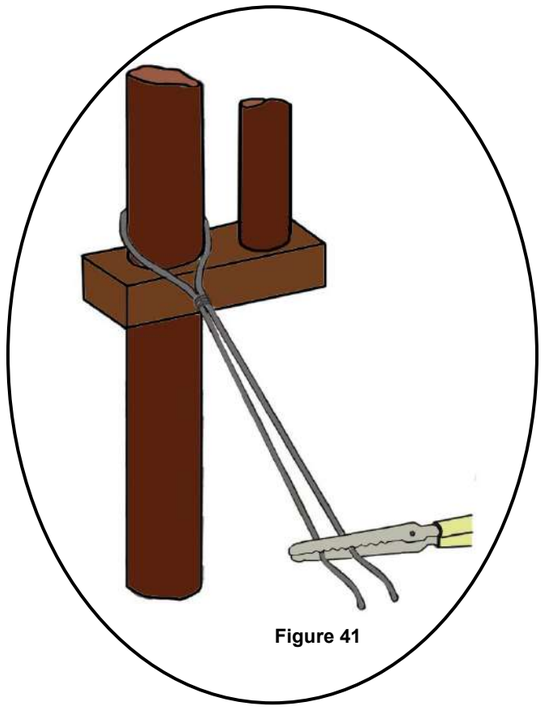


Figure 41

12.9.1 Deadeye Wire Jig is a piece of pliable steel wire bent at right angles at each end — long enough to fit into and hold the upper and lower deadeyes. The distance between the two bends should be about three times the diameter of the deadeyes—Figure 42.

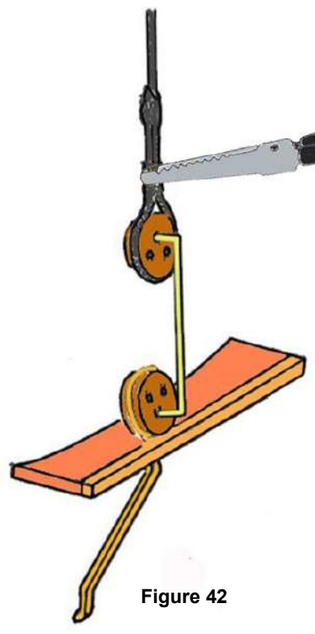
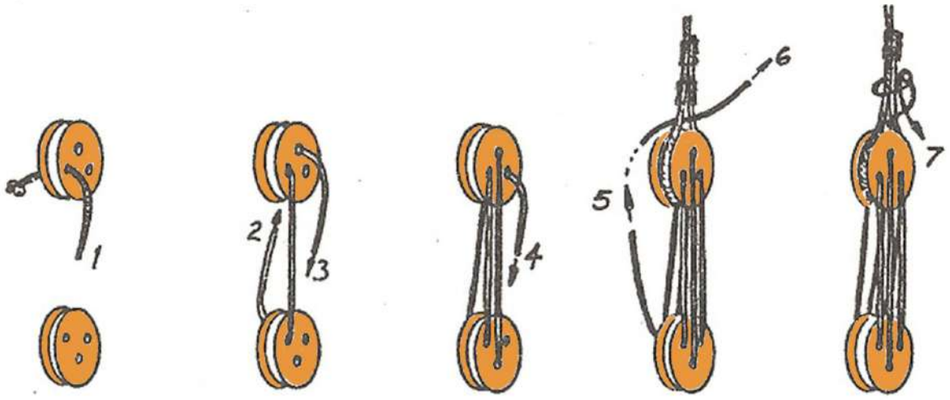


Figure 42

12.9.2 Lanyards

The lanyards are the cords that tie (reeve) the upper and lower deadeyes together and are used to tension the shrouds. For the lanyards use cord E and reeve as shown Figure 43.



Reeving Deadeyes

Figure 43

12.9.3 Ratlines

The ratlines are the rope ladders used by the crew to climb up the mast. Using cord E tie off the ratlines to the shrouds. Space the ratlines approximately 10mm apart making sure they are horizontal and parallel with each other. Seize each knot with a dab of glue and trim excess cord—Figure 44

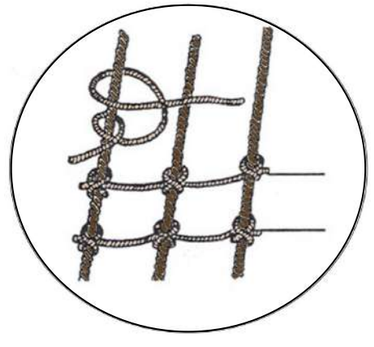


Figure 44

Colonial Ketch
MARY BYRNE
1826
SHEET 36

12.9.4 Shrouds

Fit a 6mm brass ring P99 to the mizzen mast 70mm from the top of the mast. Tie the mizzen shrouds around this ring. Applying the approach previously presented, rig the main mast and mizzen mast shrouds.

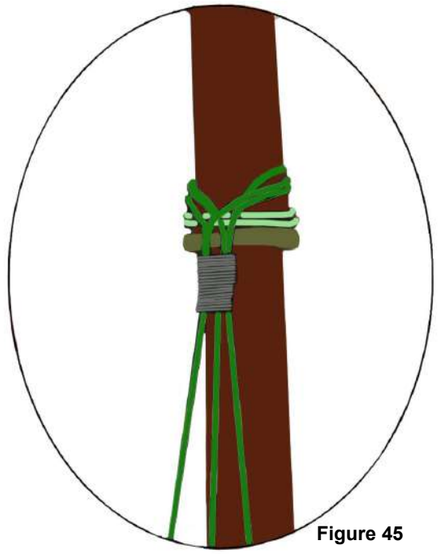
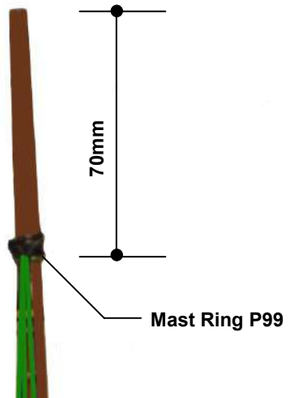


Figure 45



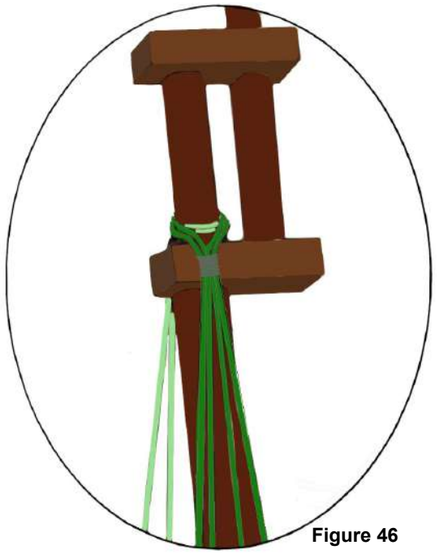


Figure 46

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C

CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

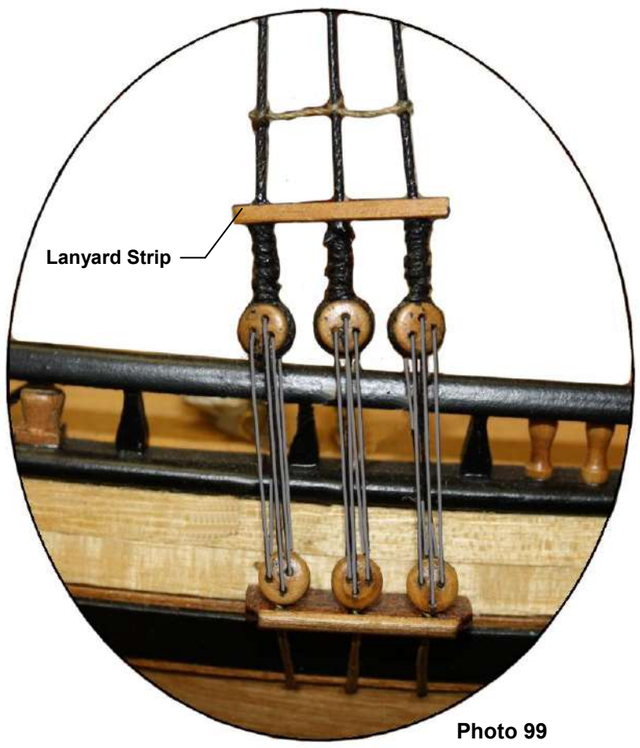


Photo 99

Photo 97

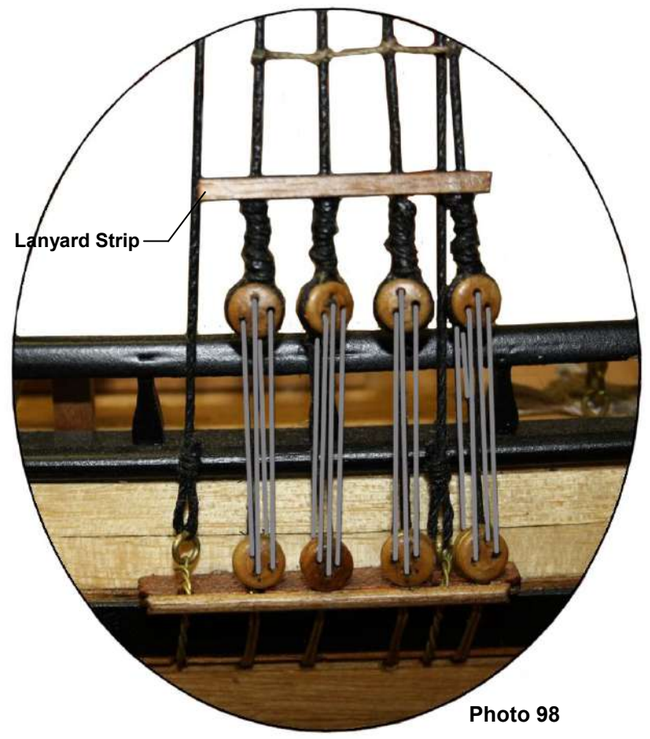


Photo 98

Colonial Ketch
MARY BYRNE
1826
SHEET 37

13.0 Fitting the Yards
Fit the main yard and main top yard to the model.

13.1 Main Yard
Using cord F and parrel beads P92 tie the main top yard to the mast as shown Figure 47

13.2 Main Top Yard
Using cord F and parrel beads P92 tie the main top yard to the mast as shown Figure 47

Photo 100

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C

CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

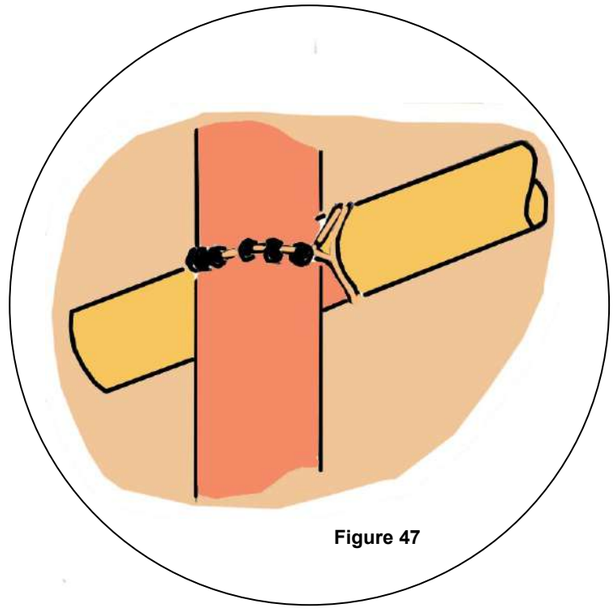


Figure 47

Colonial Ketch
MARY BYRNE
1826
SHEET 38

14.0 Running Rigging

The running rigging includes the jib halliards, bobstays, lifts, cluelines & sheets, yard braces, topping lift, topsail yard halliard, mainsheet and flag hoists. Use cord—F.
While completing the running rigging make sure to follow the rigging points presented previously. Refer also to the Belaying Plan Sheet 31 for belaying points.

Modellers Shipyard

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C

CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

14.1 Jib Halliard

Rig the jib halliard as shown. Terminate at Point 4

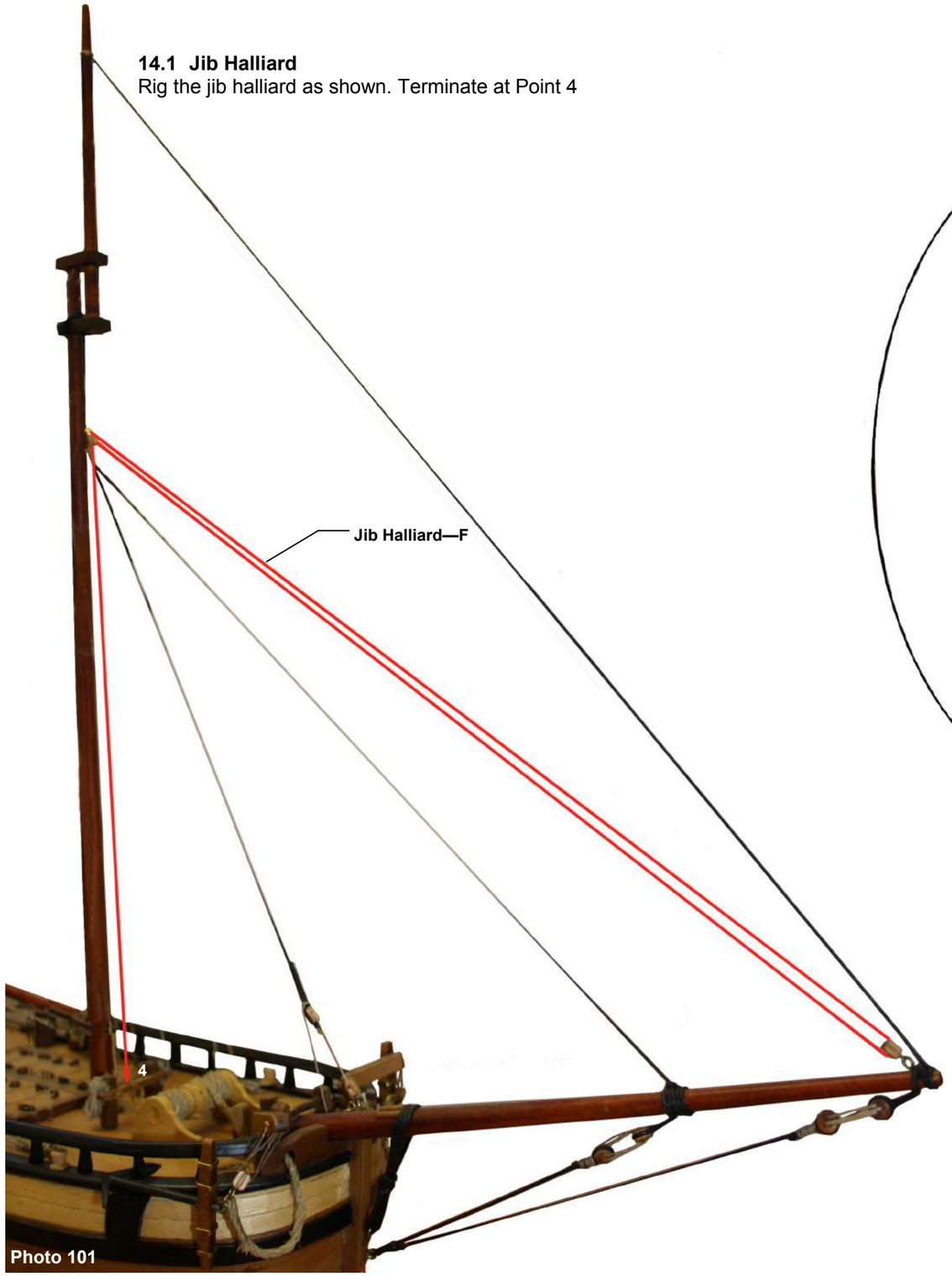


Photo 101

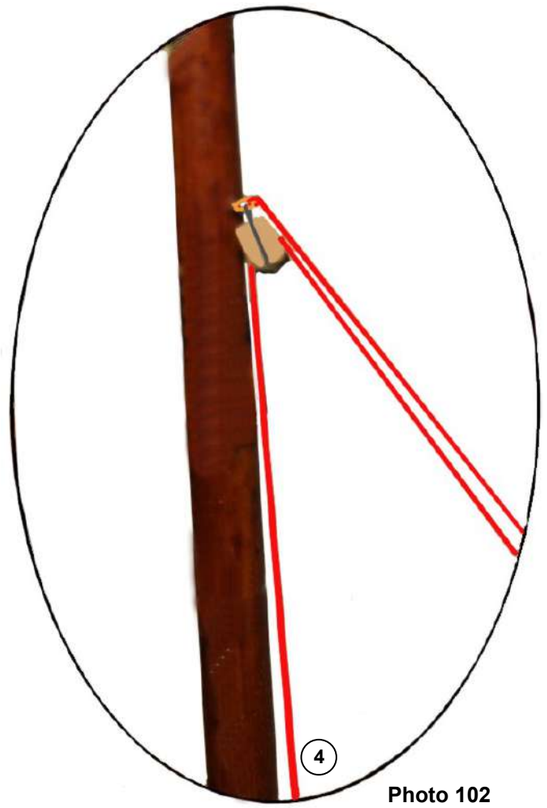


Photo 102

Colonial Ketch
MARY BYRNE
1826
SHEET 39

14.2 Booms & Topping Lifts

14.2.1 Boom—Main Mast

Fit the main mast boom - tie the boom yoke with parrel beads P92—Figure 48. Rig the topping lift as shown. Terminate at Point 5

14.2.2 Boom—Mizzen mast

Fit the mizzen mast boom - tie the boom yoke with parrel beads P92—Figure 48. Rig the topping lift as shown. Terminate at Point 6

Photo 103

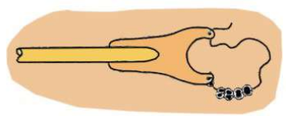


Figure 48

14.3 Sheets

14.3.1 Mizzen Mast Boom Sheet

Fit two cleats P98 to the cap rail as shown Photo 104. Fit two eye pins P27 to the cap rail as shown Photo 104. Attach blocks A as shown. Rig the mainsheet as shown and terminate at the cleats Points 7 & 8.

14.3.2 Main Mast Boom Sheet

Fit eye pins P27 to the companionway roof as shown Photo 105. Fit a block A to Points 10 & 12. Rig the mainsheet as shown. Terminate at Points 9 & 11.

Photo 104

Mizzen Boom Sheet

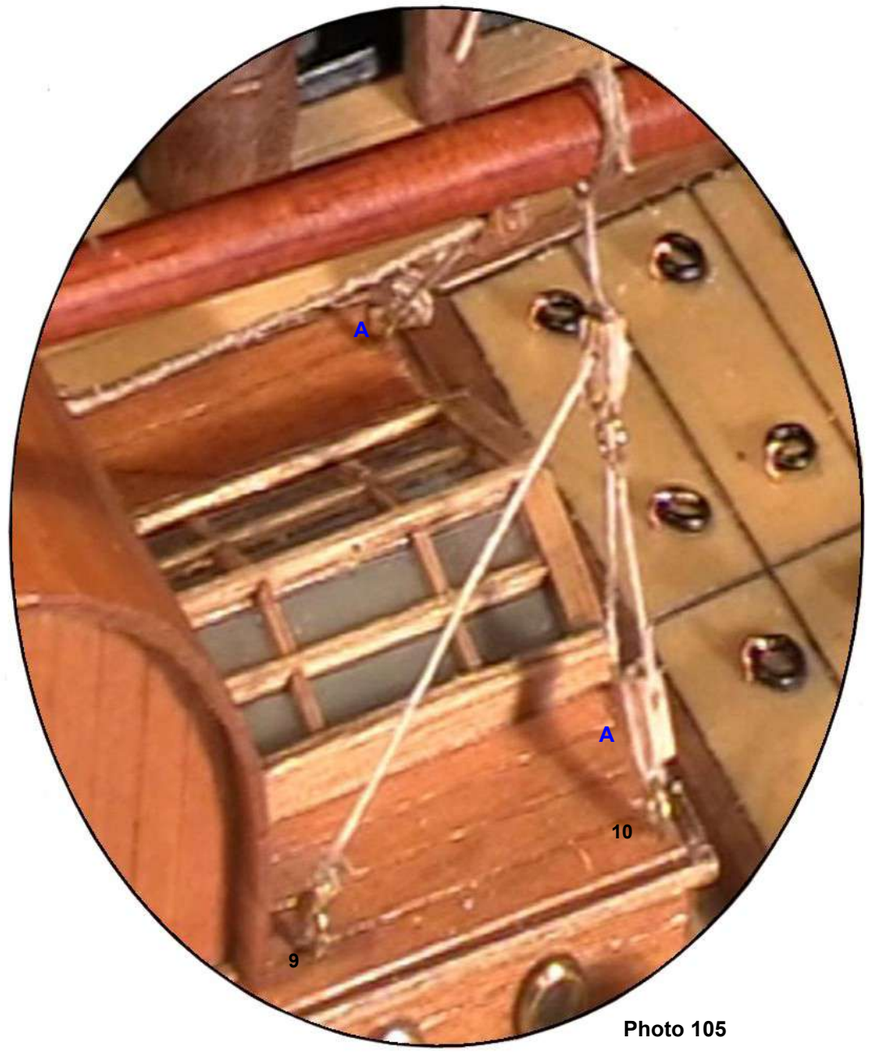


Photo 105

Main Boom Sheet

CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C

Colonial Ketch
MARY BYRNE
1826
SHEET 41

14.4 Gaffs

14.4.1 Gaff—Main Mast

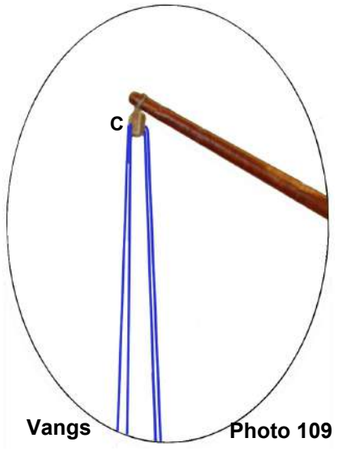
Identify the previously made main mast gaff. Tie the yoke to the mast with parrel beads P92—Figure 49
Rig the throat halliard as shown. Terminate at Point 13
At Point 37 attach block B. Rig the gaff lift as shown Photo 110. Terminate at Points 14 & 15
Rig the peak halliard as shown. Terminate at Point 16

14.4.2 Gaff—Mizzen Mast

Identify the previously made mizzen mast gaff. Tie the yoke to the mast with parrel beads P92—Figure 49
Rig the throat halliard as shown. Terminate at Point 17
At Point 38 attach block B. Rig the gaff lift as shown Photo 110. Terminate at Points 18 & 19.
Rig the peak halliard as shown. Terminate at Point 20.

14.4.3 Vangs

Rig the vangs as shown. Terminate as Points 21 & 22 and 23 & 24.



Vangs Photo 109

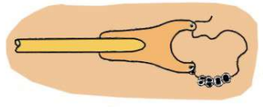


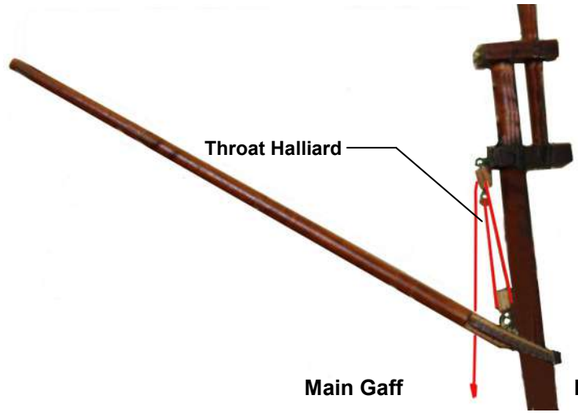
Figure 49

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C

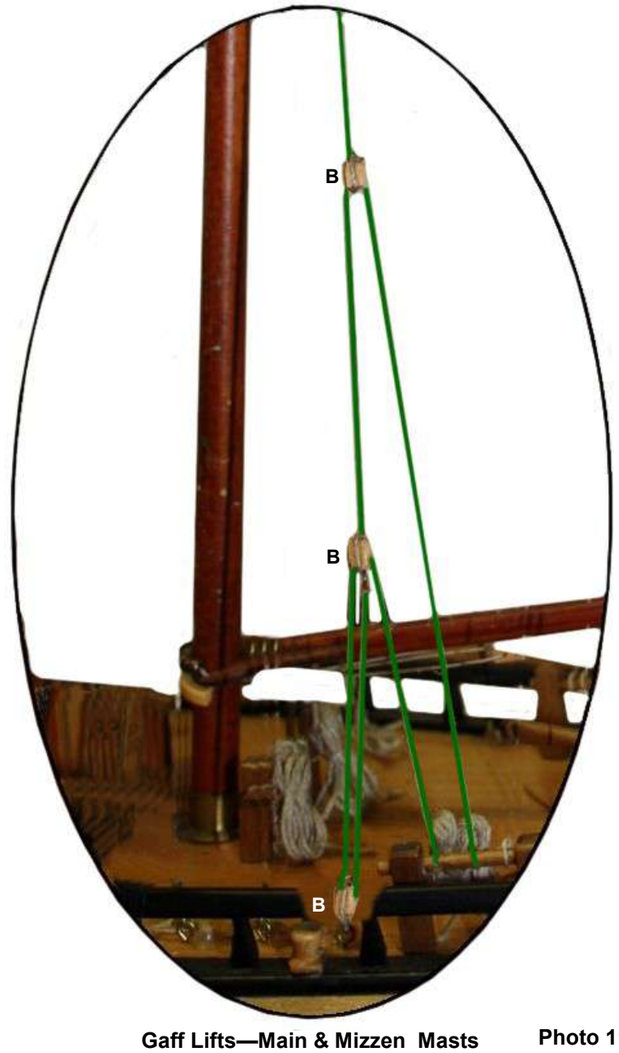
CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

Photo 106

Photo 107 Mizzen Gaff



Main Gaff Photo 108



Gaff Lifts—Main & Mizzen Masts Photo 110

Colonial Ketch
MARY BYRNE
1826
SHEET 42

14.5 Lifts
Lifts are ropes that reach from each mast-head to their respective yard to steady and suspend the yard ends.

14.5.1 Main Yard Lifts
Rig the main yard lifts as shown. Terminate at Points 25 & 27

14.5.2 Main Top Yard Lifts
Rig the main top yard lifts as shown. Terminate at Points 26 & 28.

14.6 Cluelines & Sheets
Rig as shown. Terminate at Points 29 & 30.

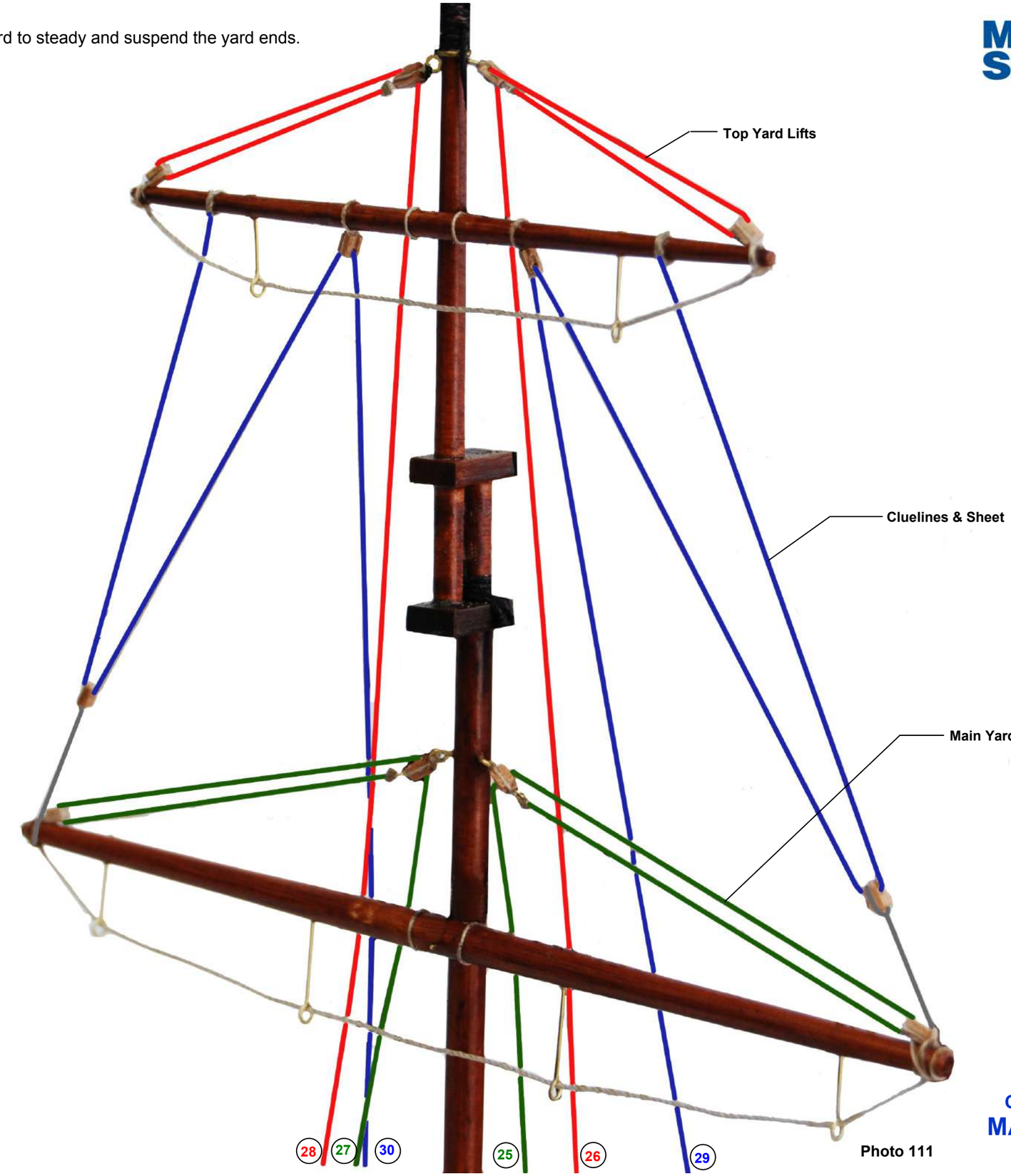


Photo 111

Colonial Ketch
MARY BYRNE
1826
SHEET 43

14.7 Yard Braces
Braces are ropes that trim the yards into or off the wind.

14.7.1 Main Yard Braces
Rig the main yard braces as shown. Terminate at Points 31 & 32.

14.7.2 Top Yard Braces
Rig the top yard braces as shown. Terminate at Points 33 & 34.

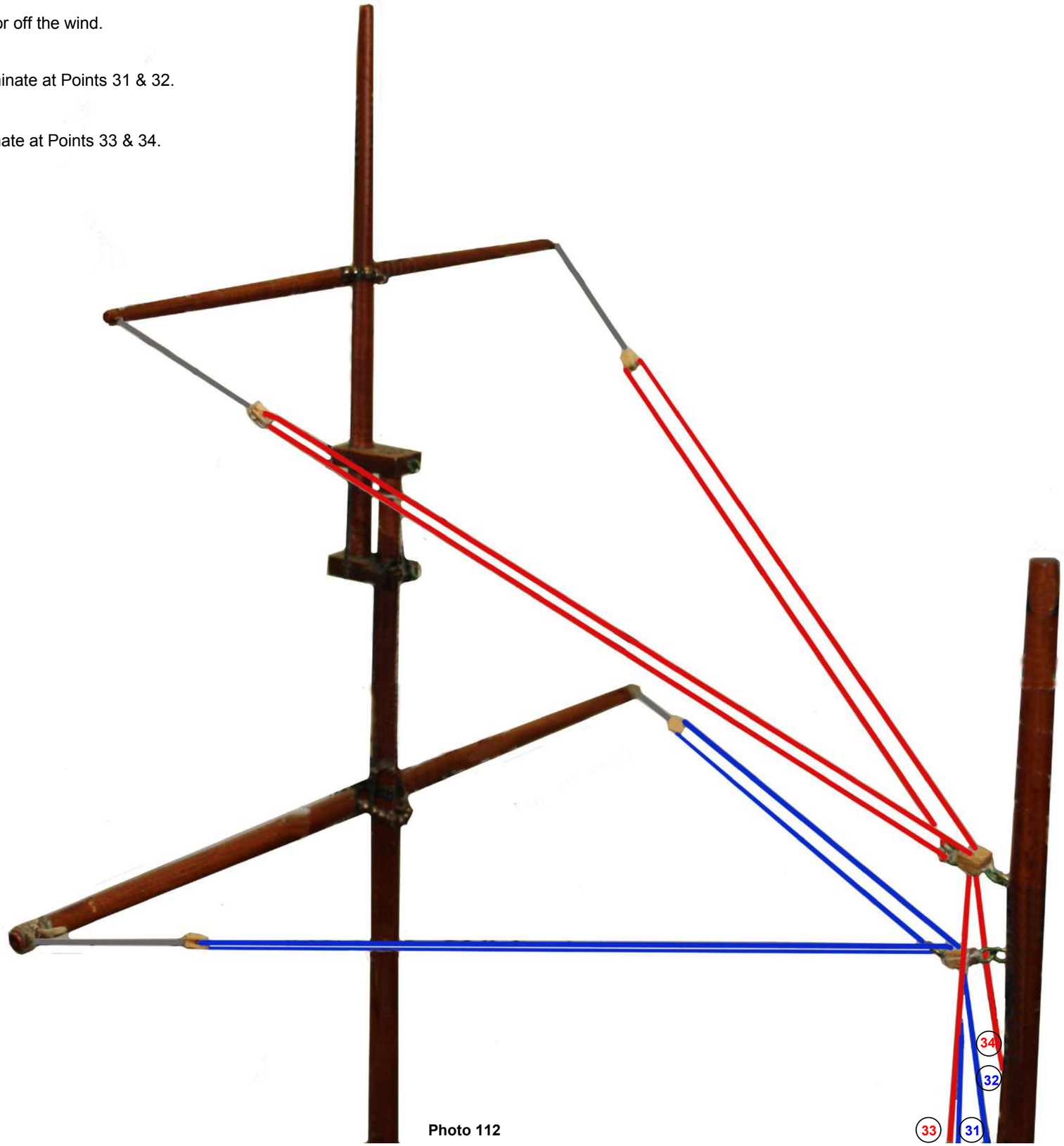


Photo 112

14.8 Flags

Run a flag hoist as shown from the mizzen gaff. Rig from Points 35 & 36. Fit the Red Ensign flag P93 to this hoist. Run the pennant hoist as shown from the main gaff. Rig the Mary Byrne pennant P94 to this hoist. Tie-off to the main mast boom as shown Photo 113.

CORD KEY		
Size	Fawn	Black
0.25mm	E	—
0.5mm	F	—
1.0mm	—	G

BLOCK KEY		
Size	1 Hole	2 Hole
4mm	A	—
5mm	B	C

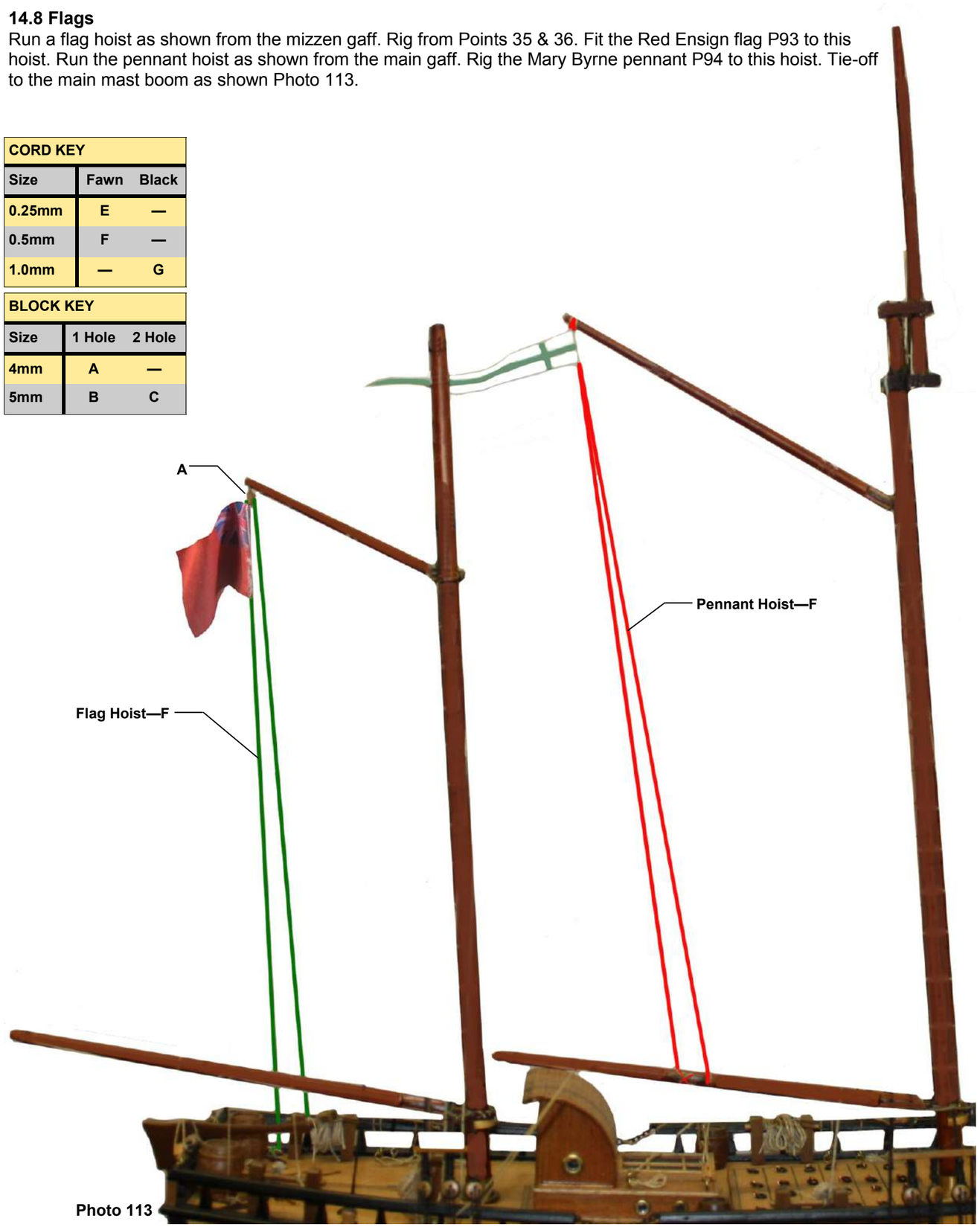


Photo 113

14.9 Finishing Touches

Make rope coils to be placed at the various belaying points on the deck.

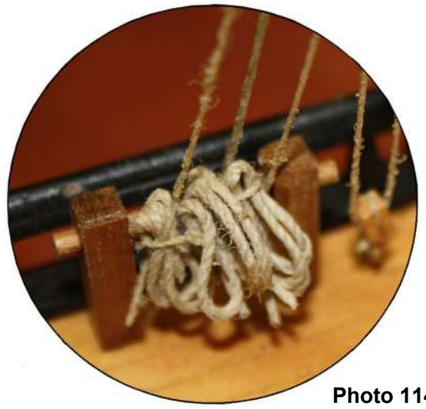


Photo 114

Photo 115

Photo 116

Colonial Ketch
MARY BYRNE
1826
SHEET 45

15.0 Finished Model

Assemble the cradle parts P100A-D—paint black.
Look carefully over the instructions, photos & drawings and check to ensure that you have not forgotten anything.
You might consider a display case which will protect your model from dust and accidental damage.

Proudly display your completed model of the Colonial Ketch *Mary Byrne* 1826.

Photo 117