

# H.M. SCHOONER PICKLE THE TRAFALGAR DISPATCH



## **Manual 1 of 2** **Hull Construction, Masting & Rigging**

Additional photos of every stage of construction can be found on our website at:  
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# HM Schooner Pickle

Forever associated with Admiral Nelson's final and most historic victory, the Battle of Trafalgar 1805, *Pickle* was chosen to carry the News of Nelson's victory and death back to England.

Commanded by Lieutenant John Richards Lapenotiere, *Pickle* was not directly involved in the Battle of Trafalgar but was permanently busy rescuing both friend and foe from a watery death. By 6pm the muster list for *Pickle* showed a total of 160 prisoners taken on board, the majority of these coming from the burning French *Achille*. Given the size of *Pickle* and the fact that she had a crew of just 40 it is remarkable that Lapenotiere was not only able to rescue so many but that they then prevented the prisoners from taking *Pickle* as their own.

After the battle, with Admiral Cuthbert Collingwood now in command, every ship, including *Pickle*, was required to maintain the blockade of Cadiz.

On the 22 and 25 of October, Lapenotiere continued rescuing seaman and prisoners and began off loading them to other ships, including *Dreadnought*, *Euryalus*, *Revenge* and *Victory*, all the while battling to survive the storm that was blowing in from the south west.

On the morning of the 26 October 1805, Lapenotiere was signalled to come aboard *Euryalus* where he received written orders from Collingwood to sail for Plymouth with his dispatches. Knowing that the bearer of dispatches would receive a promotion, it was customary to choose a favoured officer for the task and Collingwood's choice of Lapenotiere is often attributed to an act of gratitude. It is said that, while Lapenotiere was a passenger onboard a ship also conveying Lord Collingwood, an order was given on deck to the man at the wheel. Lapenotiere, realising that if the order were obeyed the ship would be on the rocks, immediately gave another order and saved the ship. Collingwood thanked Lapenotiere saying,

*"If ever I have the opportunity I will do you a service."*

It is also said that on receipt of his orders Collingwood reminded Lapenotiere of this promise saying,

*"Now take these dispatches to England; you will receive £500 and your commander's commission. Now I have kept my word."*

Unfortunately no evidence of either of these events exists and Collingwood's choice of Lapenotiere is better explained by the fact that *Pickle* was probably the only ship that Collingwood could afford to spare given his current circumstance. This is also backed up by Collingwood's letter to William Marsden which states,

*'dispatches containing the account of the Action of the 21st Inst, and detailing the proceedings of the Fleet to the 24th will be delivered to you by Lieut Lapenotiere, commanding the Pickle Schooner ... having no means of speedier, or safer Conveyance with me at present.'*

At noon the same day, Lapenotiere and *Pickle* departed for England but his voyage was to be challenging to say the least. For the next seven days *Pickle* battled through stormy seas and, with her pumps blocked, the crew were reduced to forming a human chain in order to bale with buckets. On October 31st, with continuing gale force winds Lapenotiere ordered four of his 12 pounder carronades to be thrown overboard. November 2nd brought weather of the opposite extreme but still no rest for the crew, with calm seas and no wind the sweeps were employed just to keep *Pickle* heading toward England.

On 4th November 1805, *Pickle* finally reached Falmouth where Lapenotiere landed at shore in *Pickle's* boat. From this point Lapenotiere set off on his now famous post chaise using at least 21 changes of horses to travel more than 270 miles in 37 hours and costing £46.19s.1d, more than six months wages for a Lieutenant. Lapenotiere reached his goal of the Admiralty at around 1am on the 6th November and announced to William Marsden, First Secretary to the Admiralty,

*"Sir, we have gained a great victory, but we have lost Lord Nelson."*

On 28th July 1808, *Pickle* was finally lost, while again carrying dispatches, under the command of Lieutenant Moses Cannadey. During her approach to Cadiz, she was grounded off Cape Santa Maria on the Chipiona Shoal. *Pickle* quickly sank but all of her crew were saved.

## Getting started

*Pickle* is an exact scale model designed using original Admiralty plans. All fittings, masts and rigging have been researched using contemporary sources and the most up to date reference material available.

Although the kit is as prefabricated as we can make it, basic woodworking skills are required. Estimated build time is between 4 & 6 months of evening work, so a work space will have to be put aside for the job. Do not remove parts from the CNC cut sheets, or etched brass sheets until actually required.

Carefully study the plans in conjunction with the instructions until you are confident to tackle each stage of construction.

Patience is the key word when building any model; treat each stage as a separate project and the overall effect of the completed subject will be enhanced.

## Recommended Tool List

- 1: Craft knife
- 2: A selection of needle files
- 3: Razor saw
- 4: Small wood plane
- 5: Pin vice or small electric drill (the latter is the more recommended item)
- 6: Selection of drill bits from 0.5mm to 3mm
- 7: Selection of abrasive paper and sanding block
- 8: Selection of good quality paint brushes
- 9: Long nose pliers and wire cutters/snips
- 10: Good quality tweezers
- 11: Dividers or compass
- 12: Steel rule (300mm)
- 13: Clothes pegs or crocodile clips
- 14: Set-Square
- 15: Good quality pencil or Edding pen
- 16: Masking tape
- 17: Good quality sharp pair of small scissors
- 18: Scalpel with selection of blades

## Paints, Stains and Adhesives

- 1: White PVA wood glue
- 2: Walnut wood stain for masts & booms (Admiralty Stains: Walnut, AS9105)
- 3: Cyanoacrylate (super glue) thick and medium viscosity (Admiralty Glues, Thick (AG9103) & Medium (AG9102))
- 4: Walnut wood filler
- 5: White spirit
- 6: Varnish to seal all unpainted wooden parts (Admiralty Varnishes: Matt, AV9110)
- 7: Black paint for 'woodwork' (Admiralty Paints: Dull Black, AP9105)
- 8: Black paint for 'ironwork' (Admiralty Paints: Matt (Metal) Black, AP9106)
- 9: White paint (Admiralty Paints: Matt White, AP9111)
- 10: Yellow ochre paint for ship's boats (Admiralty Paints: Yellow Ochre, AP9115)
- 11: Red ochre paint (Admiralty Paints: Red Ochre, AP9116)
- 12: Copper paint (Admiralty Paints: Copper, AP9125)
- 13: Brown (wood/leather) paint (Admiralty Paints: Wood (Walnut) Brown, AP9119)
- 14: Metal primer for etched brass and turned brass parts (Admiralty Paints: Metal Primer, AP9205)
- 15: Black Indian ink

We highly recommend the use of Admiralty Paints; this is a new brand of paint which contains a specific range for 17th / 18th / 19th Century Man of War colours. This range of scale paints has been colour matched to the Admiralty colours, as still used on HMS Victory in Portsmouth. Unlike other manufacturers, these **are not** toy paints and have been designed specifically for use on model ships to give consistent coverage and colour.

Admiralty Paints are also available as high quality waterbased paints, if you prefer waterbased simply add W to the end of the part number when ordering.

## Before You Begin

**PLEASE READ:** A great deal of time has gone into the production of this manual to try to make the build process as clear and straightforward as possible. It is important that you should read each stage of construction thoroughly *before* starting the assembly. Many components can only be correctly fitted or positioned relative to other components and as such you may need to reference previous or future stages of the build for this information as detailed within the instructions. We have also tried to provide any required fundamental information as italicised points of **Note**.

Before you start building this model a little forethought now will be well worth the time given to it throughout the building process.

Although the majority of suggestions will be second nature to the more experienced modeller, this kit and others in the series, can be built by the less experienced, given sufficient information.

The instructions and parts manual has been compiled to give as much information as practicable together with additional diagrams, photos and a complete set of actual scale technical plans.

Wherever possible, we have tried to explain technical terms, in particular nautical terminology, but it pays to have a good selection of reference books to hand. Any defined terms, to be found in the back of manual 2, are denoted with an asterisk like this<sup>†</sup> at their first usage within the manual.

At a scale of 1:64, the model has an overall size of 565mm (L) x 180mm (W) x 460mm (H) and you should consider this when setting aside a work area for the build. You will also need regular access to both sides of the model, especially when rigging, so you will therefore need an area large enough to walk around the model or large enough to easily turn the model through 180 degrees without risking damage. Also ensure the cords for any power tools will not interfere with the model.

A 5mm ply stand is provided with the kit. This will primarily be used to support the hull during the build process. Ideally this stand should be secured to an adequate baseboard. Upon completion, the model can be placed on a display stand of your choice.

During the build it will be necessary to sand down large areas, after the first and second planking and at other stages, it is therefore advisable to work in a well ventilated area and / or wear appropriate protection. The same applies when using paints, stains, glues, fillers etc. Good lighting is also essential to the modelmaker.

The structural parts of the model are cut from high quality birch plywood and the remaining wood parts are cut from high quality walnut ply and solid walnut sheet. It is advisable to leave all components in their sheets until actually required for fitting.

Take particular care when removing parts with a craft knife and ensure all parts are identified and marked with pencil before removal. Lay the sheet from which you are going to cut the parts on a rigid flat cutting board for removal. Use a heavy-duty craft knife with a good strong blade to cut through the tabs holding the parts in place, alternatively, when cutting brass or copper parts, a good pair of stout scissors will suffice. It will also be an advantage to paint the etched brass fittings prior to removal from the sheet; they can then be touched up again when in place.

**Note:** *All metal components such as the etched brass, castings, cannons etc. should be primed with metal primer prior to painting.*

Before each stage of construction, study both the manual and the plans until you are confident in the task ahead.

The majority of the model will be painted during various stages of the build. It is important to think ahead to the next stage in the construction process and paint the various parts at a convenient time, usually before securing on the model. It is often a good idea to paint parts for the next stage and while they are drying you can be working on the current stage.

Wherever possible, offer the parts together in a 'dry fit'<sup>†</sup> before final assembly.

### Before Planking the Hull: A Note

In order that the final width of the planked hull will match the width of the stern post, some sanding will be required prior to both first and second planking.

Before the first planking is applied as described on page 7:

1. Using *Plan Sheet 1* for reference, mark the 'bearding line'<sup>†</sup> onto the keel.
2. Gently sand the shaded area, towards the stern<sup>†</sup>, until you have a taper that runs from 5mm wide at the bearding line to **3mm** wide at the stern.
3. Continue as instructed with the first planking and upon completion the width at the stern will be 5mm.

Before the second planking is applied as described on page 9:

1. Note the bearding line onto the first planking, again using *Plan Sheet 1* for reference.
2. Gently sand the shaded area, towards the stern, until you have a taper from the bearding line to **3mm** wide at the stern.
3. Continue as instructed with the second planking and upon completion the width at the stern will again be 5mm.

## Initial Hull Construction

Remove the main keel (10) from the 5mm ply sheet together with the 5mm walnut pieces, the stem (20), the false keel (21) and the stern post (22).

Although the stern post should be identified and removed, it should not be glued into position until a later stage having regard to the foregoing instructions re: the keel and hull reduction from the bearding line to stern post, on page 3.

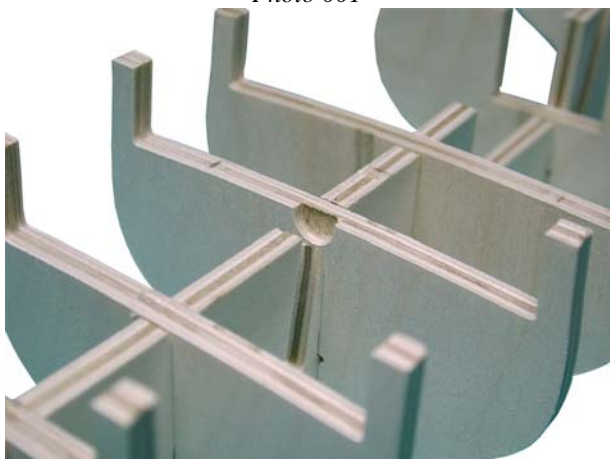
Using [Plan Sheet 1](#) for reference, glue the stem and false keel into position along the ply keel using PVA wood glue, the stern post should be dry fitted for alignment. It is important that this whole structure remains perfectly flat, straight and in line whilst drying. Tape and or small clamps can be used to assist.

A suitable building board should be considered at this point. Construct the board from MDF or similar sturdy material. The board should be long enough and wide enough to protect the model throughout construction. Consideration should also be given to the way in which the model will be displayed; it is recommended that using a 3mm drill, drill two holes vertically up into the keel centrally, one between bulkheads 5 and 6 (take care to drill this hole aft<sup>†</sup> of the main mast locating slot), and one centrally between bulkheads 3 and 4. Drill each of these holes approximately 20mm deep and glue a piece of 5mm scrap wood to either side of the keel, at the hole, but positioned approximately 5mm from the bottom of the ply keel so as not to interfere with the planking. Upon completion of the model, two brass or stainless steel rods can be used to support it on your chosen display board.

Identify and remove bulkheads 1-9 (1 – 9), from the 5mm ply sheet, together with the false deck (32) from the 3mm ply sheet. Clean out any debris from the slots of the bulkheads and the keel and push fit the bulkheads into position making sure that they sit firmly and squarely into the keel, the false deck should also be positioned at this stage. Bulkhead 3 has a profiled notch in one face; this should be positioned to face forward<sup>†</sup> (*Photo 001*) and will allow the fore mast, when fitted, to follow the correct rake<sup>†</sup>. Bulkhead 9 has a profiled slot along the lower edge and this slot should be positioned to face aft (*Photo 002*).

**Note:** Take particular care in the location of bulkhead 3, that it is positioned into the correct corresponding slot in the keel. It could easily be confused with the slot for the fore mast.

*Photo 001*



*Photo 002*



*Photo 003*



Once that you are happy with their fit, bulkheads 1-8 can be glued into position, ensuring that they remain level athwartships<sup>†</sup> and at right angles to the keel, they must also be parallel to each other, do not glue bulkhead 9 at this stage. The false deck should also be glued into position after having marked the centreline onto the upper face, fore-and-aft<sup>†</sup>, along its length – this will aid the planking applied at a later stage. This entire structure should now be put to one side and allowed to dry thoroughly. Identify and remove, from the 5mm ply sheet, the plank termination patterns (11 & 12). They should be glued into position as shown on [Plan Sheet 1](#) and ([Photo 003](#)). Care should be taken to ensure the bottom edge of the groove in the foremost plank termination patterns (11) is positioned level with the top of the keel (10).

**Note:** *The grooves in the foremost plank termination patterns (11) should also be positioned to face outboard<sup>†</sup> – this will help with their removal at a later stage. Due to the need to remove the area of the pattern, above the groove, it is important that no glue is allowed to bond the pattern to the walnut stem (20) above this groove.*

The outer stern extensions (31) can now be identified and removed from the 3mm ply sheet and glued into position in the outboard slots, after<sup>†</sup> face, of bulkhead 9. The inner stern extensions (30) can be left off the model until a later stage, reducing the risk of damage.

## Gunport Patterns

The gunport patterns (90) should now be identified and removed from the 0.8mm ply sheet. These patterns will be glued into position in conjunction with the first lower planking of 1x4mm lime. However, it is important that this whole section ‘Gunport Patterns’ should be read through and understood prior to any fitting. The gunport patterns themselves form an integral part of the building process and as such their alignment is critical.

Identify and remove the gunport pattern former (13) from the 5mm ply sheet. This former is pinned, **not** glued, into position ([Photo 004](#)) and the plank termination patterns and bulkheads 1, 2 and 3 will fit ‘into’ the pre cut slots of this former. With the keel and bulkhead assembly thoroughly dried, some bevelling<sup>†</sup> of the bulkheads and plank termination patterns will be required. Using a length of 1x4mm lime, lay the strip along the edges of the bulkheads and form it around the shape of the hull. You should clearly be able to see where the bevelling will be required to allow the strip to sit ‘flush’ against each bulkhead.

**Note:** *The area to be bevelled also includes the locations for the gunport patterns.*

It will be necessary to bevel the forward edges of bulkheads 1, 2 & 3, the after edges of bulkheads 7 & 8 and both the underside and after edges of bulkhead 9. The termination patterns, fitted previously, should also be bevelled accordingly.

**Note:** *By looking down on the gunport pattern former you will clearly see the area of bulkheads 1, 2 and 3 that require removal, it is important that the outside curve of the gunport pattern former is followed, by the bulkhead bevelling, without removing any material from the former itself ([Photos 004 & 005](#)).*

*Photo 004*

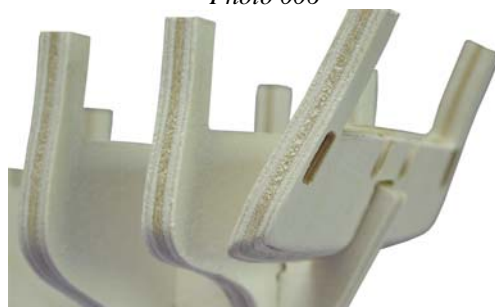


*Photo 005*



**Note:** *The profiled slot in the after face of bulkhead 9 ([Photo 002](#)) denotes the ‘true’ lower edge of this bulkhead. It will therefore require bevelling from the forward lower face back to this slot – the bevelled area will then provide ample surface area for terminating the planking against ([Photo 006](#)). With the bevelling achieved, bulkhead 9 can also be glued into place on the keel and should be positioned as far forward as its locating ‘notch’ will allow.*

*Photo 006*



With the gunport pattern former fitted to the keel and bulkhead assembly, soak the front of the gunport pattern, from the second gunport forward, in water for approximately 20 minutes. Once soaked, the forward end can be shaped around the former flush against the bulkheads. The pattern should be dry fitted into position taking care of the following points:

1. The front leading edge of the pattern should be slightly bevelled to allow the pattern to sit flush against the stem.
2. Any excess in the length of the pattern should be removed from the after end such that it sits flush to the after edge of the outer stern extension pattern, this is essential and must be achieved.
3. The top edge of the gunport pattern should run flush to the top edge of the bulkheads along the entire length (*Photo 007*).
4. The foremost top edge of the gunport pattern where it meets the walnut stem should be flush with the top edge of the stem at this point.
5. When viewed from above, the gunport pattern should follow the curve of the gunport pattern former as shown (*Photo 008*).
6. When viewed from the side it is important to note that the gunport pattern follows the top edge of the bulkheads, **not** the top edge of the gunport pattern former, as shown (*Photo 009*).
7. The curves in the after end of the gunport pattern should be aligned, athwartships, with the curves of the outer stern extensions (31).
8. Care should be taken to ensure the port<sup>†</sup> and starboard<sup>†</sup> gunports are in alignment fore-and-aft, i.e. the port and starboard gunports should be aligned athwartships.
9. You will notice that the second and eighth gunports (from the front) will be 'fouled' by the bulkhead uprights – this is correct as the stubs will be removed as instructed during a later stage of construction.

**Note:** Gunports 1 and 2 should not be opened up at this stage. If you attempt to open them up prior to fitting the patterns the patterns will distort.

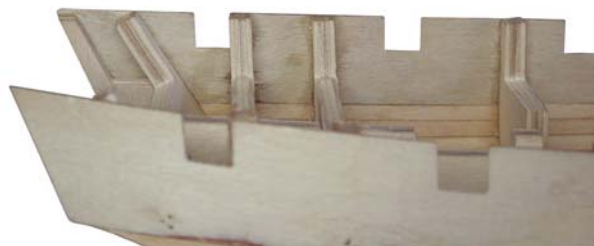
After a dry fit, the pattern should be pinned and glued (with PVA wood glue and flat head pins (149)) into position along the edges of the bulkheads and bulkhead uprights, all the while adhering to the shape of the bulkheads.

**Note:** Although the bulkhead uprights will be broken off at deck level during a later stage of construction full use of wood glue and flat head pins should be used. As the plywood bulkheads are very strong, it is recommended that 0.5mm holes be drilled into the bulkheads before the insertion of the pins. When pushing the brass pins into place, leave at least 3mm protruding so that they can be easily removed once the patterns are secure.

This procedure should be repeated for the opposite side taking care that both patterns are symmetrical, checking across the hull to ensure that the gunport cut outs of each pattern (port and starboard) are aligned to those opposite. This whole assembly should now be set aside to dry thoroughly, offer support to the assembly to prevent distortion.

Once dry, the after end of the gunport patterns can be sanded flush to the after edges of the outer stern extensions and the gunport pattern former can be removed.

*Photo 007*



*Photo 008*



*Photo 009*



## First Planking

Having tapered the keel from the bearding line aft as previously instructed on page 3 and having bevelled the bulkheads as previously instructed on page 5, the first planking, of 1x4mm lime, can be started below the gunport pattern.

Using [Plan Sheet 1](#) for reference, the first plank to be laid each side will run flush below the gunport pattern, this plank should not require any tapering on its forward or after ends, however, it should be fitted tight against the stem and will extend beyond the after edge of the outer stern extension (see note below). This plank and all of the first planking should be pinned, with flat head pins (149), and glued into position with PVA wood glue. As the plywood bulkheads are very strong, it is recommended that 0.5mm holes be drilled into the bulkheads before the insertion of the pins. When pushing the brass pins into the planks and bulkheads, leave at least 3mm protruding so that they can be easily removed once the planks are secure.

**Note:** All planks should be allowed to extend for a short distance past the after face of bulkhead 9 / the outer stern extension; they will be trimmed back, together, at a later stage.

The second plank and the remainder of the first planking is also 1x4mm lime and will run the whole length of the hull bearing in mind the following points:

1. Ensure all bulkhead bevelling has been achieved.
2. The planking will commence from the underside of the first plank laid, progressing down to the keel.
3. Before pinning and gluing the lime planking into position, it should be soaked in water for a short period. This will assist in both the shaping of the plank around the hull and the tapering of the plank.
4. At the bows, the planking should lie against the already bevelled plank termination patterns and butt up against the stem. For guidance, the lime planking will follow the line of the gunport pattern.
5. On the underside of the hull, the inboard<sup>1</sup> sides of the final planks will butt up against the false keel.
6. When viewed from the stern, the first plank laid each side will run vertically past the side of bulkhead 9, the second plank will begin to 'turn in' at bulkhead 9 and terminate at approximately 45 degrees. The third through to the eighth planks laid each side will terminate, horizontally, against the underside of bulkhead 9 (*Photos 010 & 011*).
7. The ninth plank laid each side will run onto the keel, vertically, terminating at the top of the bearding line (*Photo 010*). In doing so, a gap will present itself between the eighth and ninth planks which will need to be filled by a stealer<sup>†</sup> as explained below.
8. You should lay two or three planks on the port or starboard side, then turn the hull and lay two or three planks on the opposite side and continue this alternating port / starboard method in order to prevent the keel being pulled out of line.

*Photo 010*



*Photo 011*



**Note:** For best results, all planks should be allowed to lie naturally, do not try to artificially bend them with nippers / plank benders, or force them into position. As you start down to the curved side of the bow, the planks will need to be tapered to follow their natural run. In order to determine the amount of taper required for each plank to lie naturally, dry fit the plank from the 4th bulkhead around to the bow; mark the excess area of the plank that overlaps the plank immediately above it. This process should be repeated to determine any overlap for the stern also.

Before cutting the taper into the planks, soak them in water for an hour or so as this will minimise the chance of the knife blade following the grain of the wood rather than the edge of the steel rule.

Lay the first wet plank to be tapered on a clean, flat surface (a cutting mat is ideal). Press firmly with a steel rule onto the marked taper line on the plank and score down the line with a heavy-duty craft knife **several times** until the excess is cut off (**do not attempt to cut the plank in one pass!**).

Use this planking method right down the hull. When planking is almost complete you will notice triangular shaped gaps at the stern (and bow to a lesser degree) (*Photo 011*). This was also the case in full size practise, although not so simplified. The use of triangular shaped planks (called stealers) are needed for these gaps. Cut these to shape using the excess limewood from the ends of the planking and glue them into the gaps.



With the first planking completed trim the excess planking, extending beyond bulkhead 9, to shape flush against the after edge of bulkhead 9. Apply a coat of watered down PVA wood glue to the **inside** surface of the first planking and leave the hull to fully cure for at least 24 hours.

The next stage is to sand the hull with a coarse grade abrasive paper, followed by a medium grade to obtain a smooth surface. This will obviously entail a few hours work but it will form the basis for the second planking, remember to remove all pins (149) before sanding begins.

**Note:** Any high spots on the planking will obviously be removed during sanding, any low spots on the planking should be smoothed with filler and sanded back to obtain a smooth surface in preparation for the second planking.

The building cradle (15 – 17) can now be constructed; ideally this should be squarely and firmly secured to a building board.

## The Stern Counter

Identify and remove the inner stern extensions (30) from the 3mm ply sheet, these should be glued into position in the inboard slots across the after face of bulkhead 9. Ensure the stern extensions are at right angles to the bulkhead and that they run parallel, that is to say there should be a gap of 8mm between them both at the lowest and uppermost points. The extensions should be pushed down as far as they will go, tightly into their respective slots in the after face of bulkhead 9. Identify and remove the stern counter (92) from the 0.8mm ply sheet. Soak the counter in water for half an hour then dry fit it centrally across the curved surfaces of the gunport pattern, inner and outer stern extensions such that the upper edge extends approximately 2-2.5mm beyond the aftermost edge of the stern extensions, do not trim this back (Photo 012). With the counter correctly centralised and conforming to the curve against which it is fitted, the inner stern extensions should not foul the central slot of the counter (Photo 013). The lower edge of the counter should be located just above the after ends of the first planking, if not already done, the ends of the first planking will require trimming to achieve this. When you are happy with the positioning of the counter, it can be pinned and glued into position.

At this stage you will notice that the stern counter extends beyond the gunport patterns athwartships. Gently sand the outboard edges back to the gunport patterns. Temporarily fit the stern post (22) into position and, using 1x4mm walnut, plank the stern counter athwartships, clearing the slot for the rudder and stern post as you progress ensuring that, where the planks meet the stern post they form a flush fit (Photo 014). Upon completion, trim the outboard edges of this planking flush to the gunport patterns and remove the stern post. You will also find that the top edge of the uppermost planks will extend beyond the curved shape of the stern counter; this edge should be trimmed back while offering the stern fascia (55) into position to ensure that they feather<sup>†</sup> into one another.

**Note:** The stern fascia (55) should only be offered into position at this stage; it will not be finally fitted until instructed, after completion of the second planking.

Photo 012

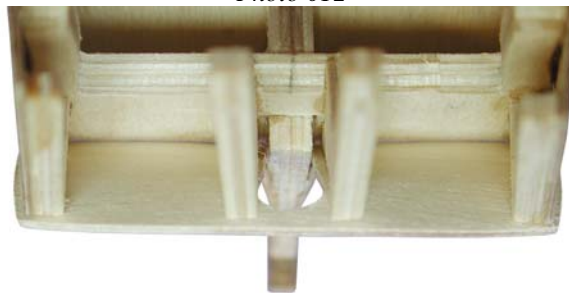


Photo 013



Photo 014



## Second Planking and the Wale

The second planking is laid using 1x4mm walnut, as always the planking should be soaked for a short period before being required. The gluing of the second planking differs from the first as the whole under surface of the walnut strip is glued to the surface of the first planking as well as edge to edge. Also, the best glue to use for the second planking is medium super glue. This is to avoid the use of pins, eliminating pinholes that would have to be filled prior to finishing. Super glue will stick the planks as well, if not better than, PVA wood glue. Around the bow area, where the walnut strip has been soaked in water, take extra care – wet wood and super glue will bond more or less instantly! Great care is needed to attain as neat a job as possible to minimise the need for filling.

Before progressing, taper the first planking from the bearding line aft as previously instructed on [page 3](#), the effects of this taper, for the first planking, can be seen in (*Photo 010*).

**Note:** *The below instructions should be followed closely and, in doing so, you will find that the second planking does not follow the same run as the first lime planking, that is to say that the walnut planks may cross one or more lime planks. This is correct; do not try to follow the run of the lime planking.*

The first plank to be laid, of the second planking, should be positioned as shown on [Plan Sheet 1](#) (still 1x4mm walnut) the vital measurements are as follows:

1. From gunports 3 to 5 (counting from the bows) the upper edge of this plank will rest 1.5mm below the gunports.
2. Travelling aft the plank will begin to run downwards (in relation to the gunports), following its natural lie, do not attempt to prevent this. The upper edge of this plank will have fallen to 2mm below the aftermost gunport, and continue aft to terminate just beyond the aftermost edge of the gunport pattern, it will be trimmed back flush when fitting the stern fascia at a later stage.
3. At the bows the plank will also begin to run downwards (in relation to the gunports), following its natural lie, do not attempt to prevent this. The upper edge of this plank will have fallen to approximately 2mm below the second gunport, and continue its natural run flush into the stem. Where this plank meets the stem, its top edge will be approximately 10mm below the top of the gunport pattern (taking into account minor build differences).

Once this first walnut strip has been laid, a second plank should be laid directly beneath it. Neither of these first two planks should be bevelled.

These two planks now fitted also form the basis of the 'black strake'<sup>†</sup> and wale<sup>†</sup>. The upper plank, the black strake, is from 0.5x4mm walnut and the lower plank, the wale proper, is from 1x4mm walnut. The black strake and wale planks should now be fitted directly onto these two planks.

The second planking, below the wale, can now be continued with 1x4mm walnut.

Work down the hull on alternative sides when planking, until you reach the false keel. The same principles as applied to the first planking should be adhered to, laying two or three planks per sides alternating. When viewed from the stern, the planks which run vertically onto the after end of the stern extensions should be allowed to extend a short distance beyond the after edge of the stern counter – these will then be trimmed back upon completion (*Photo 015*). The planking on the after horizontal edge (underside of bulkhead 9) should form a flush fit to the stern counter planking (*Photo 016*). As with the vertical planking at the stern extensions, the vertical planking at the after end of the keel should extend a short distance beyond the after vertical edge of the keel – this will then be trimmed back upon completion of the planking to allow the stern post to be fitted. This is best achieved while continually offering the stern post into position and adjusting accordingly.

**Note:** *You will find that approximately the twelfth plank laid will no longer run horizontally into the stern counter but instead will run vertically into the keel / stern post and in doing so a resultant gap will be made between the eleventh and twelfth planks, this is correct and the gap should be filled with a stealer as shown (*Photo 016*).*

Once the planking below the wale is completed, the area above the black strake can be planked, remembering to clear the gunports as you progress. Take great care when trimming the planking to the gunport openings to ensure that their edges remain clean and straight. The final plank laid will extend over the top upper edge of the gunport pattern and should be sanded back down flush to the pattern.

As before, the after end of these planks should be allowed to extend just beyond the after edge of the gunport pattern and trimmed back, together, when fitting the stern fascia as instructed at a later stage.

The stern post should now be permanently fixed into position.

Photo 015



Photo 016



## The Waterline

The waterline<sup>†</sup> should now be marked onto the hull. As can be seen from [Plan Sheet 2](#), the waterline would appear to be non-conforming, that is to say it does not run parallel to the keel. Below the waterline, as our research has shown, was coppered. In order to assist in the marking of the waterline, a small waterline jig (14) has been designed. The two holes drilled into the keel for the stand supporting rods should also be used during the following procedure.

Using a sufficiently large and flat surface, mdf / chipboard or similar, drill two holes the same distance apart as those in the keel and the same diameter as the supporting rods into this surface. The after rod should allow the hull to rest on the flat surface; the foremost rod will have to be longer to allow the keel to rise off the surface.

Identify and remove the waterline jig (14) from the 5mm ply sheet and clear the slot of any debris so that it will fit around the false keel. Referring to [Plan Sheet 2](#), the jig should be positioned at a point 230mm from the after edge of the false keel; this will raise the bows, at this position, 9mm off the flat surface. Throughout this procedure the aftermost point of the false keel should remain in contact with the flat surface, forming the pivot point, it is not raised.

The hull should be adequately supported using small blocks and set square, and must be able to support the hull so that the prow<sup>†</sup> and the stern post are perpendicular to the baseboard throughout the procedure, i.e. the hull should remain perfectly upright.

Using a vernier gauge or similar device (wooden block etc.), set the gauge so that the pencil held by the device is 50mm above the flat surface. Drag the device around the hull, marking out the waterline as you progress. The waterline should be equal both sides, if the hull is held correctly with the keel remaining perpendicular to the base, it will be.

*Pickle* was coppered below the waterline with copper plates (146). Start coppering along the length of the keel, progressing upwards, and working from stern to bow. Each line of plates should be staggered by 50% to the plate below (similar to laying bricks) (Photo 017). To glue the plates to the hull use a medium to thick super glue. Apply a spot of glue sparingly to the middle of the underside of the copper plate. Apply the plate to the hull using a pair of tweezers and then gently push the plate onto the hull to spread the glue.

To cut the plates to the correct shape at the curves and when you reach the waterline, mark off onto the plate the excess area to be cut, lay the plate on a hard flat surface and cut off the excess with a heavy-duty craft knife. Alternatively the plate can be cut with scissors but will then need to be rolled back to flat using a small piece of softwood doweling on top of a block of flat soft wood (Photo 018).

If on reaching the waterline you have not achieved an absolutely straight line this can easily be overcome. Apply masking tape all around the hull just above the waterline. Press the edges down firmly to avoid any paint seepage. Using a fine brush paint the area between the top of the copper plates and the bottom edge of the masking tape with copper paint, once dry remove the masking tape for a near perfect waterline. The underside of the keel and the end of the rudder post can either be coppered or, for ease, copper painted.

Photo 017

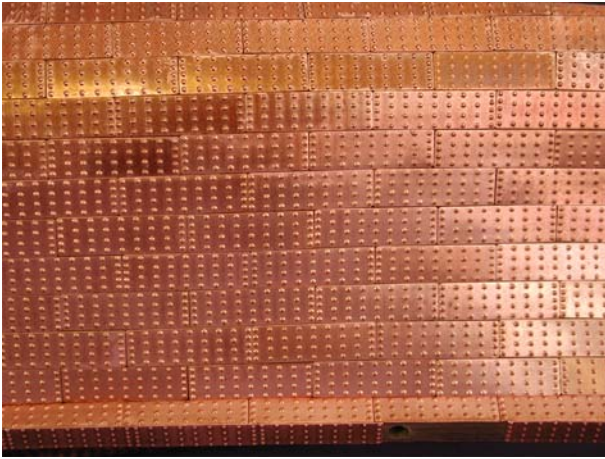
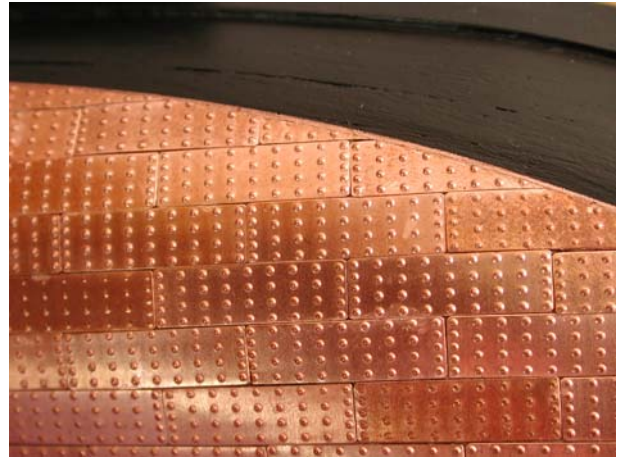


Photo 018



## The False Deck

The central portion of the false deck, previously fitted between bulkheads 4 and 7, will be visible through the companionway<sup>†</sup> and main hatch on the completed model. It is therefore necessary to plank this area with 1x4mm Tanganyika strip. The planking should be started at the centre line of the deck, progressing outboard to a distance of seven planks each side as shown (Photo 019).

Sand and varnish the deck planking upon completion.

## The Upper Gun Deck

Before the upper gun deck can be fitted, it is necessary to remove the bulkhead stubs above deck level. Using (Photos 020 – 024) for reference, this is achieved as follows:

1. Using a razor saw or similar, carefully cut through the bulkhead stub as close to deck level as possible. Care should be taken not to cut through the gunport pattern or hull planking, however, small scratches are not a problem as they will be covered by the inner bulwark<sup>†</sup> planking.
2. Using a pair of long nosed pliers, grip and gently twist the bulkhead stub back and forth until it comes away from the gunport pattern.
3. With the stub removed any remaining splinters of the stub can be cut away with a sharp scalpel or by sanding. Any remaining height of the stub should also be sanded back until it follows the camber<sup>†</sup> of the bulkhead deck support.

**Note:** Great care should be taken when removing the bulkhead stubs near to the gunports. It is important that the gunport forward, after and lower edges remain clean and straight.

The area of the fore<sup>†</sup> plank termination patterns, above the profiled slot, will also require removal following the same principles by deepening the profiled slot and gently twisting off. Take care not to damage either the hull planking or the walnut stem.

Also, the vertical uprights of the outer stern extensions should be carefully removed, giving a similar appearance in shape to the inner stern extensions.

With the bulkhead stubs removed, gunports one and two can be properly opened up by cutting down through the first 4mm of 0.8mm ply, again care should be taken to ensure that these fore and after edges of the gunports remain clean and straight.

Identify and remove the upper gun deck (91), from the 0.8mm ply sheet.

Before fitting the gun deck, mark on and draw a centre line along its length, with this done, offer the ply deck into position and check for any high spots across the bulkheads, noticing that there is a clear camber across the bulkheads which must be maintained. It is also advisable to note the areas below this deck which will be visible through the various deck openings and for these areas of the keel and bulkheads to be painted dull black; this will hide the birch ply components on the completed model and give a feeling of depth to the hatches etc.

**Note:** Do not paint the false deck planking black.

When satisfied with the fit, pin and glue the deck into position noting the following points:

1. The locating holes, in the deck, for the masts must sit directly and centrally over their respective holes in the keel.
2. The holes for the companionway and main hatch should also be positioned over the lowered sections of the keel.
3. The centre line, previously marked, should be positioned to the top; it will be required during the planking of the deck.

*Photo 019*



*Photo 020*



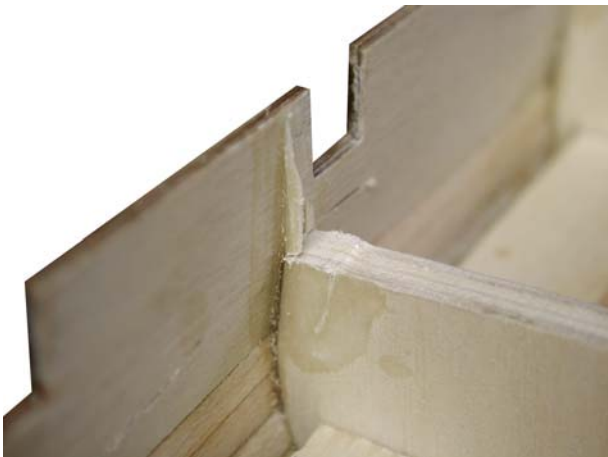
*Photo 021*



*Photo 022*



*Photo 023*



*Photo 024*



## Planking the Upper Gun Deck

The upper gun deck is planked with 1x4mm Tanganyika. As shown on [Plan Sheet 2, 'Deck Planking'](#), the first planks to be laid on the upper gun deck should run fore-and-aft along either side of the centre line previously marked. They should run the full length of the deck, from tight against the stem / inner bulwarks at the bows and back a short distance beyond the after end of the 0.8mm ply deck, these planks will be trimmed back, together, when fitting the stern fascia as instructed at a later stage. Continue to plank the deck outboard to each bulwark, remembering to cut the openings for the masts and hatches etc. as you progress. All deck planking should be trimmed to fit as tightly as possible to the inner bulwarks, although gaps of less than 1mm can be covered by the 1mm inner bulwark planking fitted at a later stage.

When the planking is complete, apply a coat of varnish to seal.

**Note:** For added authenticity you can lay the planks with a 'butt shift'<sup>†</sup>, in this case a 'three-butt shift', as shown on [Plan Sheet 2, 'Three Butt Shift System'](#), to achieve this the planks should either be cut to a length of 140mm or laid full length and the joint line, every 140mm, scored into the plank with a sharp knife (visually, this latter method often looks the most appealing). The end of each subsequent plank should then be offset from its neighbour by 35mm such that each aligned plank end is separated by three planks.

## Inner Bulwark Planking

The inner bulwark is planked with 1x4mm walnut. The first plank should be started at the bottom of the bulwark, flush as tightly as possible against the deck planking and will run from flush against the walnut stem in the bows aft in one continuous length and trimmed just beyond the after end of the gunport pattern, the after end of these planks will be trimmed back, together, when fitting the stern fascia as instructed at a later stage. As normal the planking can be soaked in water to aid construction.

Continue planking up the bulwark, clearing the gunports as you progress. As with the second planking, the final plank laid will extend over the top upper edge of the gunport pattern and should be sanded back down flush to the pattern.

At a time of your choosing, the inner bulwarks together with the gunport sides and sills should be painted red ochre.

**Note:** The area of the walnut stem, visible on the inboard side, should not be painted red ochre, it should be varnished only. However, you should also note that the area of the walnut stem, visible on the outboard side, will be painted dull black at a later stage and so should not be varnished.

## The Stern Fascia

Temporarily offer the stern fascia (55) up centrally across the stern extensions, there are several points of reference to note when doing this as follows:

1. The stern fascia should be fitted centrally with respect to the 'chase ports'<sup>†</sup>, i.e. the chase ports should be uniformly offset either side of the stern post when correctly positioned.
2. The forward face of the stern fascia will be glued to the after face of the stern extensions and the after ends of the gunport patterns and hull/bulwark planking. In order to achieve this it will be necessary to trim back the second outer hull planking, inner bulwark planking and deck planking, taking care not to remove so much material as to produce any gaps or cause splintering.
3. The lower edge of the stern fascia should be seated down flush against the upper edge of the stern counter and stern counter planking. In order to achieve this it will be necessary to gently bevel these edges. Take care not to remove too much material from the lower edge of the stern fascia, it is critical that, when fitted, the upper foremost edge of the stern fascia protrudes 2mm above the upper edge of the bulwarks at their point of intersection – this will allow a flush fit with the 2mm 'capping rails'<sup>†</sup> when fitted at a later stage.
4. Any after overhanging area of the stern counter / stern counter planking should be trimmed back flush to the after face of the stern fascia.
5. The outboard edges of the stern fascia will extend just beyond the outer hull planking and should be sanded back flush to the hull/wale sides.

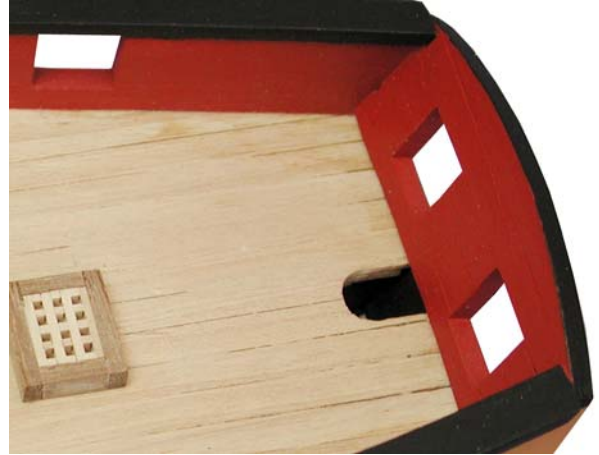
When you are happy with the dry fit of the fascia it can be glued into place (*Photos 015 & 025*).

(*Photo 026*) with the fascia fitted, the inboard face should be planked, athwartships, with 1x4mm walnut. As with the inner bulwark planking, the fascia planking should start flush as tightly as possible against the deck planking and this first plank will therefore require shaping in order to follow the deck camber. The fascia planking should continue up the fascia, clearing the chase ports as you progress, and the upper most plank will be sanded back flush to the upper edge of the fascia. Upon completion, the inner planked face of the stern fascia, together with the chase port sides and sills should be painted red ochre.

Photo 025



Photo 026



### Painting the Outer Hull

(Photos 027 – 029) the outer hull is now ready to be painted using the following guidelines:

1. The area between the copper plating and the top of the black strake should be painted dull black.
2. The entire outboard visible area of the walnut stem, above the copper plating, should be painted dull black, including the area above the black strake.
3. The entire transom area above the copper plating, incorporating the second hull planking, stern post, stern counter and stern fascia should be painted dull black.
4. The uppermost face of the stern fascia should be painted dull black.
5. The ships sides, above the black strake should be painted yellow ochre.

**Note:** The gunport and chase port sides and sills should remain red ochre as previously instructed.

Photo 027



Photo 028



Photo 029



Identify the 'PICKLE' text (133) on the 0.5mm etched brass sheet and paint them matt white. The 'PICKLE' text can now be fitted across the stern fascia, positioned centrally and within the outboard edges of the chase ports, approximately 6mm above the lower edge of the stern fascia and following the camber of the lower edge of the stern fascia (Photo 030). It is recommended that PVA glue be used for fitting the text as this allows plenty of drying time for alignment.

Photo 030



Photo 031



## The Capping Rails

Identify and remove the capping rails (50) from the 2mm walnut sheet. Temporarily secure the rails into position bearing in mind the following points:

1. The foremost ends of the capping rails should meet centrally above the walnut stem, flush on all four edges, top, bottom, inboard and outboard.
2. The capping rails will overhang both the inner bulwark planking and the outer hull planking by 1mm, throughout their length.
3. The aftermost end of the capping rails will need to be trimmed and bevelled to fit tight against the inner face of the stern fascia.
4. The capping rails also form the top lining of the gunports.

When you are happy with the fit of the forward capping rails they can be pinned and/or glued into position.

**Note:** *The whole of the capping rail is to be painted dull black, including the areas which form the upper gunport lining, and you may find it of benefit to paint them before fitting.*

With the capping rails in place, 20 belaying pins (162) can be fitted, one into each of the locating holes in the belaying pin rails.

## Inner Bulwark Fittings

### Cleats and Eyelets:

Referring to [Plan Sheet 2, 'Inner Bulwark Fittings'](#), you will need the following items:

1. 64 etched brass eyelets (135), painted matt (metal) black, (28 each side plus 8 for the transom) however only half will be fitted at this stage.
2. 8 small cleats (142), painted matt (metal) black, (4 each side).

The etched brass eyelets (135) are positioned, 4 at each gunport, as shown on [Plan Sheet 2, 'Gunport Eyelet Arrangement'](#), (Photo 031). The inner pair of eyelets (the pair closest to the gunports) are for the 'gun tackles'<sup>†</sup> and should have their 'eyes' running vertically. They are positioned 1.2mm outside each gunport at a height of 5.4mm off the deck. The outer pair of eyelets are for the 'breach ropes'<sup>†</sup> and should have their 'eyes' running horizontally. They are positioned 2mm outside each gunport at a height of 4mm off the deck.

**Note:** *The holes for the inner pair of etched brass eyelets should be drilled at this stage but the eyelets should not be fitted, it will be of benefit to position these eyes together with their blocks when rigging the carronades as instructed at a later stage.*

**Note:** *The positions for these eyelets should be drilled with a 0.5mm drill and it is important that the holes are drilled no deeper than 2mm – if you drill deeper than this you risk breaking through the outer hull planking.*



Referring to *Plan Sheet 2, 'Inner Bulwark Fittings'*, the eight small cleats (142) are to be positioned (four each side), by drilling a 1mm hole and gluing at locations as follows:

1. The first pair are positioned, one each side, centrally on the upper surface of the capping rails, running fore-and-aft, at a distance of 26mm forward of the stern fascia as shown.
2. The second pair are positioned, one each side, against the inner bulwark at a distance of 7.5mm forward of the seventh gunport and 8.5mm off the deck and angled as shown.
3. The third pair are positioned, one each side, against the inner surface of the capping rails, running fore-and-aft, at a distance of 9.5mm forward of the sixth gunport as shown.
4. The fourth pair are positioned, one each side, against the inner surface of the capping rails, running fore-and-aft, at a distance of 4.5mm aft of the foremost belaying pin rack as shown.

*Carronade Deck Blocks:*

The sixteen carronade deck blocks (56) are to be secured, one at each gunport / chase port, tight against the inner bulwark / stern fascia (*Photo 031*). Once the deck blocks have been fitted it is advisable to drill down through the hole in each deck block and through the deck with a 1mm drill.

**Note:** *Although a carronade deck block is located at each of the gunports / chase ports, only 6 carronades were carried. This is correct and the carronades would have been moved to different deck blocks as required. This is also true for the etched brass eyelets.*

*Photo 032*



*Photo 033*



*Photo 034*



## 12pdr Carronades

*(Photo 032)*

Identify and remove the carronade sliding beds (57) and carriages (58) from the 1.5mm walnut sheet.

Identify, paint matt (metal) black and remove (as needed) the trunnion<sup>†</sup> spigot (110) and bearings (111) from the 0.5mm etched brass sheet.

Identify, paint matt (metal) black and remove (as needed) the carronade trunnions (100) from the 0.9mm etched brass sheet.

**Note:** *Before removing the trunnion spigots, bearings and trunnions from their sheets, a 0.5mm drill should be passed through their holes to remove any swarf<sup>†</sup>.*

### The Sliding Bed:

Taking each sliding bed in turn, use a 1mm drill to open up the hole through the forward end and, using a needle file, clear the slot of any debris.

A length of 1.5x1.5mm walnut should be secured against the after end of the sliding bed (the opposite end to the hole), and should be sanded back to follow the arc of the after end as shown (Fig 001).

Cut a 5mm length of 1mm brass rod (177), painted matt (metal) black, and secure it into position through the forward locating hole so that the upper end is flush with the upper surface of the sliding bed and the lower end protrudes approximately 3.5mm below the lower surface.

The six sliding beds can now be positioned on the model at locations of your choosing, bearing in mind that the third and fourth gunports (from the front) on the starboard side should not be used as they will later be obscured by the storage of the ships boats.

### The Carriage:

Taking each carriage in turn, use a 1mm drill to open up the hole through the forward end and, using a needle file, clear the two slots of any debris.

**Note:** *The two slots are not cut all the way through the carriage, this is correct, do not attempt to deepen them.*

Identify and paint matt (metal) black four etched brass eyelets (135) for each carriage. Using (Fig 001) for reference, drill four 0.5mm holes into the side face of the carriage (two in each side) at a distance of 1.2mm from each end to accept the eyelets.

**Note:** *The forward pair of etched brass eyelets should be orientated with their 'eye' running at 45 degrees as shown (Fig 001), the after pair of etched brass eyelets should be orientated with their 'eye' running horizontal as shown.*

### The Trunnion:

Working on one carronade assembly at a time you will need 2 carronade trunnions (100), 2 trunnion bearings (111) and 1 trunnion spigot (110). Thread these components onto a length of 0.5mm brass wire (175) in the order as shown (Fig 001), taking care to ensure that the carronade trunnions are orientated in the same way as each other.

Take one carriage and position the carronade trunnions, loosely held on the brass wire, into their locating slots as shown (Fig 001). When you are happy with their fit they can be glued into position ensuring that they are fully seated down into the slots. The 0.5mm brass wire can also be glued and each end trimmed flush to the outer surfaces of the carronade trunnions.

**Note:** *Take care to ensure that the trunnion spigot is pointing vertically up, away from the carriage before the 0.5mm brass wire has been glued in place.*

When this assembly has thoroughly dried, a length of 1mm brass rod (177), painted matt (metal) black, can be glued into the forward locating hole, flush against the upper surface and with approximately 1.5mm protruding from the underside.

### The Carronades:

Identify the carronades (147) and paint them matt (metal) black. One carronade should be glued onto each of the trunnion spigots, using the pre drilled locating hole in the underside of the carronade. You should try to ensure that the carronade is as close to parallel to the carriage as possible when glued into place.

Using a length of 1.5mm brass rod (178), painted matt (metal) black, insert the rod down through the hole in the carronade cascable<sup>†</sup> until it is seated down against the carriage, the upper end can then be trimmed to a height of approximately 2mm above the cascable.

## Rigging the Carronades

**Note:** The following directions for the 'run' of the carronade rigging are given in relation to the carronade carriage, i.e. aft is toward the back of the carriage which will actually be inboard on the model.

**Note:** The orientation of all blocks with respect to their arse<sup>†</sup> and crown<sup>†</sup> is critical as illustrated on [Plan Sheet 6, 'Block Arrangement'](#).

(Photos 032 – 034)

12 etched brass eyelets (135), painted matt (metal) black should have one 2.5mm single block each attached to them using 0.1mm natural thread. The falls<sup>†</sup> (each approximately 50mm long) of 0.1mm natural thread should be secured into the arse of each of these blocks at the same time (it is recommended that you rig one carronade and adjust this 50mm fall length accordingly). The etched brass eyelets, together with blocks and falls, can now be secured into place in the previously drilled locating holes in the bulwarks at each of the six gunports fitted with sliding beds.

**Note:** The remaining 10 gunports / chase ports, without carronades, should also now be fitted with their etched brass eyelets, each without blocks or falls.

Twelve 2.5mm single blocks should now be secured on 2mm long pendants<sup>†</sup> of 0.1mm natural thread, one to each of the aftermost etched brass eyelets in the carriage sides, no falls are required.

**Note:** It is critical that the pendants are each 2mm long in order to hold the block far enough away from the carriage to allow it to rotate forward and form a tackle.

The carriages can now be glued into place on the sliding beds and should be located with their aftermost edge level with the aftermost edge of the sliding bed; this will make the process of rigging the tackles much easier.

### The Breech Rope:

The breech rope is from 0.5mm natural thread. Secure one end to one of the lower, outer etched brass eyelets in the bulwark side, at the position of the carronade. Thread the opposite end aft and upward through the etched brass eyelet in the forward end of the carronade carriage, from here the breech rope passes aft, over the top of the cascable and once around it, it then leads forward and down through the etched brass eyelet in the forward end of the carronade carriage (opposite side to previously) and is secured to the opposite lower, outer etched brass eyelet in the bulwark.

### The Gun Tackle:

The gun tackles (one per side on each carronade) are formed using the 2.5mm single blocks already positioned. The falls, rigged into the 2.5mm single blocks on the bulwarks pass aft and up through the sheave<sup>†</sup> in the 2.5mm single block on the after end of the carriage, it then passes forward again and down through the sheave in the 2.5mm single block on the bulwark. From here the falls pass aft and down to the deck where it is made up into a cheese<sup>†</sup> of rope. (The method for forming a cheese of rope is explained below).

**Note:** The gun tackle is rigged 'over' (outside) the breeching rope.

### Cheeses:

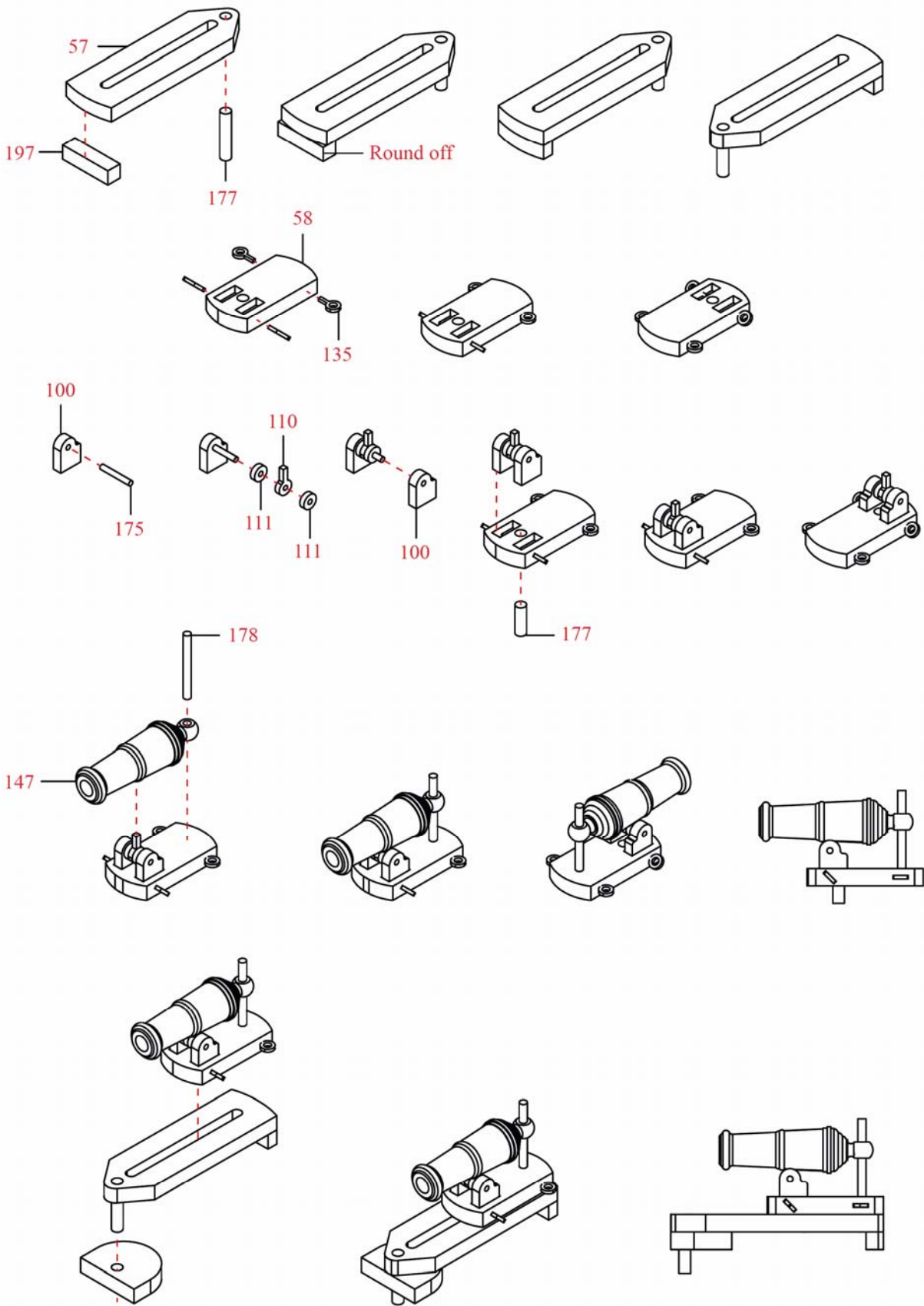
The simplest method of forming a cheese for use on a model is as follows:

1. Secure an upturned piece of masking tape onto a flat surface (sticky side up).
2. Pierce a small hole into the middle of the masking tape just large enough to pass the rigging thread through.
3. Push approximately 10mm of thread through this hole.
4. Slowly, turn the thread in an anti-clockwise direction, down onto the sticky masking tape surface until you have built up a sufficiently large cheese of rope.
5. Cut the thread and secure the end to the masking tape as a continuation of the cheese.
6. Brush watered down PVA glue over the cheese.
7. When the PVA glue has dried, peel the cheese of rope away from the masking tape and trim the central tail (previously pushed through the hole in the masking tape).
8. Secure the cheese to the deck with PVA, noting that the previously PVA'd side should be to the top.
9. Bring the end of the falls to the outer end of the cheese and secure with PVA.

This method can be applied to the production of all cheeses on this model (Photo 034).

Once the rigging is in place, brush watered down PVA over the ropes and blocks. Again, time effort and patience is required for best results.

Fig 001 – 12pdr Carronade Assembly



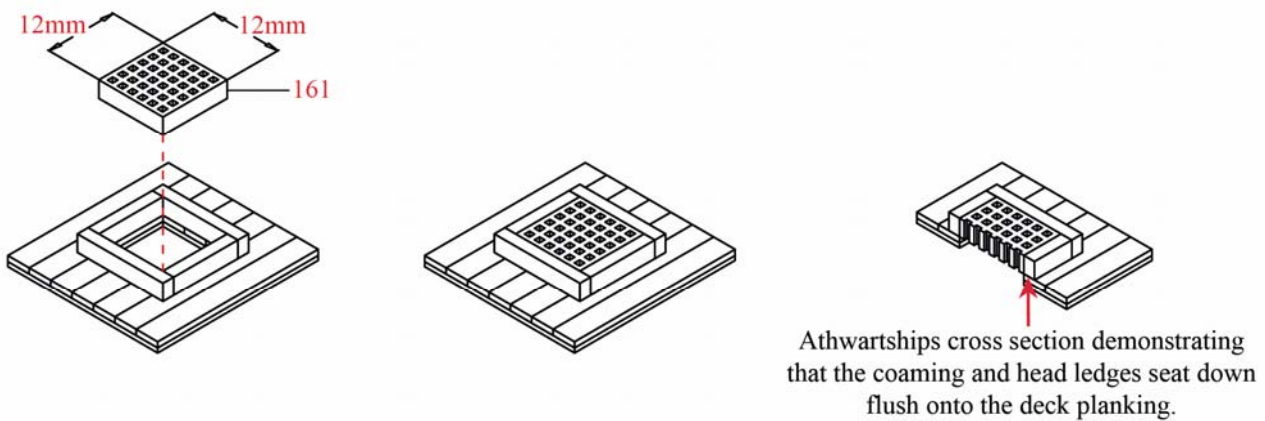
## Deck Fittings Stage 1

### Gratings:

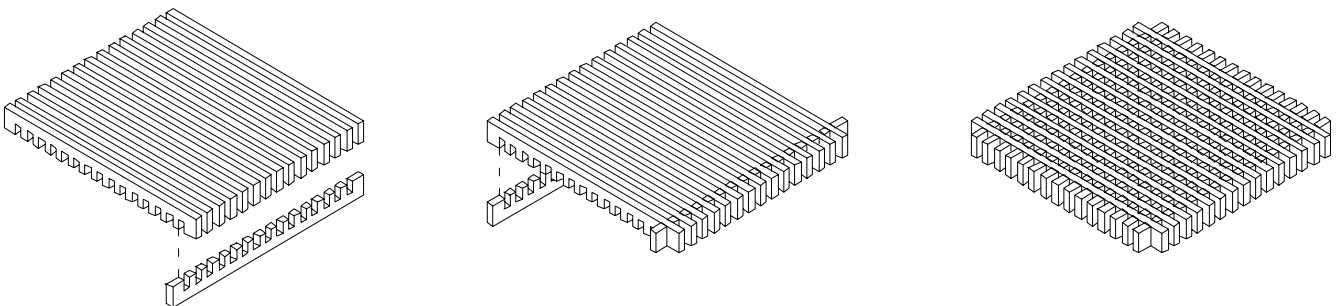
Starting from the bows, referring to [Plan Sheet 2, 'Deck Fittings'](#), the first opening to be lined is the forward hatch (*Photo 035*) as shown in (*Fig 002*). It is situated in front of the foremast and should be lined with 2x3mm walnut and fitted with a grating. The 2x3mm linings<sup>†</sup> should be orientated such that the lining is 2mm wide and stands 3mm from the deck. The lining will be secured directly to the deck planking but should be cut and dry fitted initially, with the inside face of the lining flush to the inside edges of the forward hatch cut out – this will result in the opening for the forward hatch remaining at 12mm by 12mm. The athwartships 'head ledges'<sup>†</sup> will extend beyond the ends of the fore-and-aft coamings<sup>†</sup> and be trimmed flush to the outboard edges of the fore-and-aft coamings as shown.

When you are happy with the fit of the linings they should be removed from the model. Make up a grating set from the grating strips (**161**) which are to be slotted together as shown (*Fig 003*) and, when completed, brush on watered down PVA glue to secure the strips. Once dry, trim and sand the grating to measure approximately 12mm by 12mm. With the grating made up and trimmed to size, glue the coamings and head ledges around the outside edge, remembering their correct orientation and ensuring that both the top and bottom faces of the grating are flush with the top and bottom edges of the lining (some sanding may be required to reduce the thickness of the grating). When thoroughly dried, this whole assembly can be glued into position over the locating opening in the deck.

*Fig 002 – Forward Hatch Assembly*



*Fig 003 – Grating Assembly*



The middle hatch (*Photo 035*) (*Fig 004*) and after hatch (*Photo 036*) (*Fig 005*) are also to be lined and fitted with gratings in the same way. However, the middle hatch measures 7.5mm by 10mm and the after hatch measures 7.5mm by 9mm.

**Note:** Both of these gratings should be cut from one grating set.

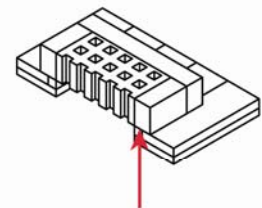
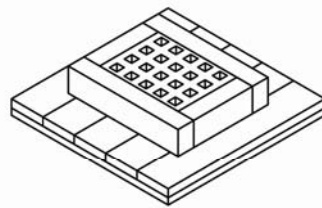
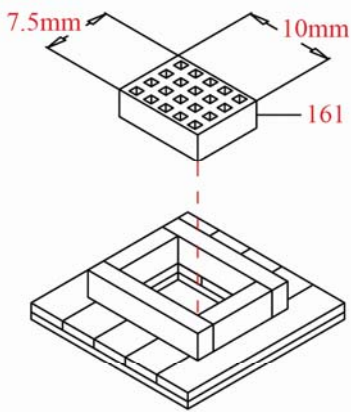
Photo 035



Photo 036

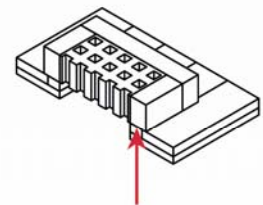
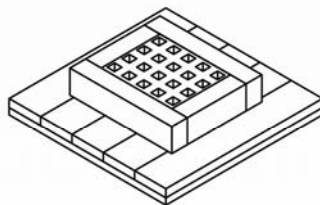
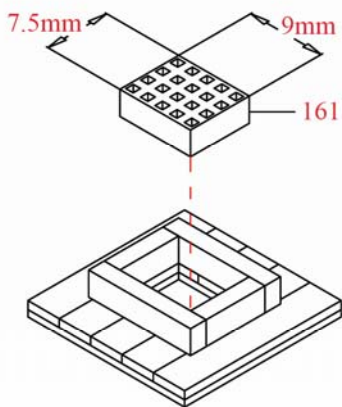


Fig 004 – Middle Hatch Assembly



Athwartships cross section demonstrating that the coaming and head ledges seat down flush onto the deck planking.

Fig 005 – After Hatch Assembly



Athwartships cross section demonstrating that the coaming and head ledges seat down flush onto the deck planking.

The Main Hatch:

As shown in (Fig 006), the main hatch is next to be lined with 2x3mm walnut orientated as per the forward hatch lining but the main hatch also requires a 'recessed' lining of 1.5x1.5mm walnut onto which the main hatch covers will sit (Photo 037). In a similar manner to the forward hatch linings, the 1.5x1.5mm walnut will be secured directly to the deck planking but should be cut and dry fitted initially, with the inside face of the 1.5x1.5mm walnut flush to the inside edges of the main hatch cut out – this will result in the opening for the main hatch remaining at 27mm by 16mm. The athwartships head ledges will extend beyond the outboard edges of the fore-and-aft coamings as before. When you are happy with the fit of the 1.5x1.5mm recessed lining, the lining proper can be cut and dry fitted from 2x3mm walnut. Again this will be secured directly to the deck planking and tight against the outside of the 1.5x1.5mm recess lining, thus forming a 1.5mm rebate. As before, the athwartships head ledges will extend beyond the outboard edges of the fore-and-aft coamings. When you are happy with the fit of these components they can be glued together and secured onto the model.

**Note:** It is important that the distance fore-and-aft, within the 2x3mm linings measures 30mm in order that the six main hatch covers, cut from 1.5x5mm walnut, will form a tight fit.

The main hatch covers can now be cut and fitted. Using 1.5x5mm walnut cut the covers to length (approximately 19mm) to fit tightly athwartships within the main hatch lining, six are required in total. Once the covers have been cut and you are happy with their fit they should be fitted with ringbolts<sup>†</sup> constructed from pairs of copper eyelets (145). Gently open one copper eyelet enough to pass the ring of a second copper eyelet through, with the second copper eyelet in position, gently re-close the first eye and trim the 'stem' off one eyelet. Repeat this until you have twelve ringbolts and paint matt (metal) black. Drill 0.65mm holes through each end of the main hatch covers, centrally fore-and-aft and approximately 2mm in from each end, to take the ringbolts. When the ringbolts have been fitted to the covers, trim the 'stem' flush with the bottom face of the cover and fit to the model – the covers can be shown either open or closed to your own preference (Photo 038).

The Galley Flue:

As shown in (Fig 007), the galley flue is positioned directly behind the second grating. Cut a 15mm length of 4x4mm walnut to form the chimney and drill a 3mm hole, 3mm deep, into the upper end of one face as shown. Paint the flue matt (metal) black and line three sides of the lower end (opposite end to the hole) forming the after athwartships head ledge and fore-and-aft coamings. With these three edges lined, the assembly as a whole can be secured into place on the model flush against the after head ledge of the second grating and centrally athwartships.

Photo 037



Photo 038



Photo 039

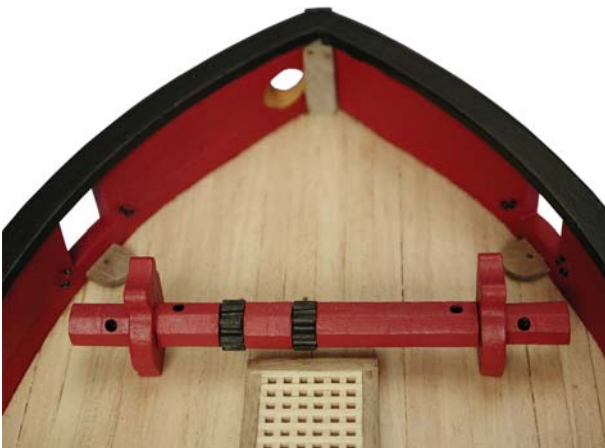


Photo 040

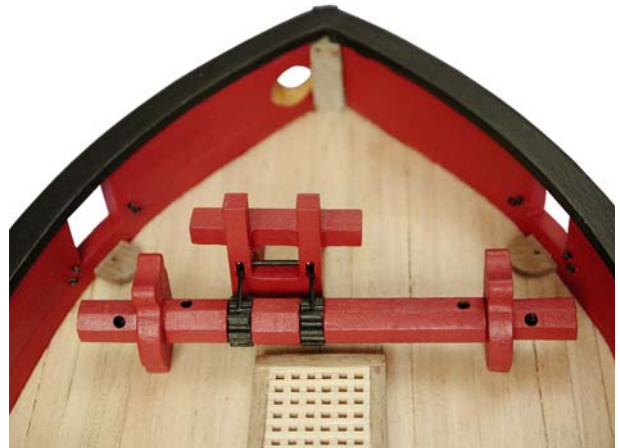
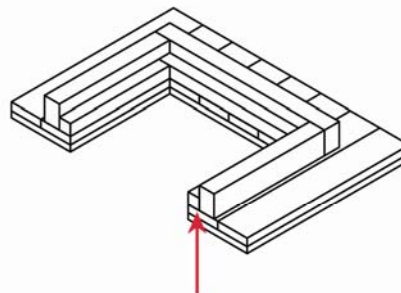
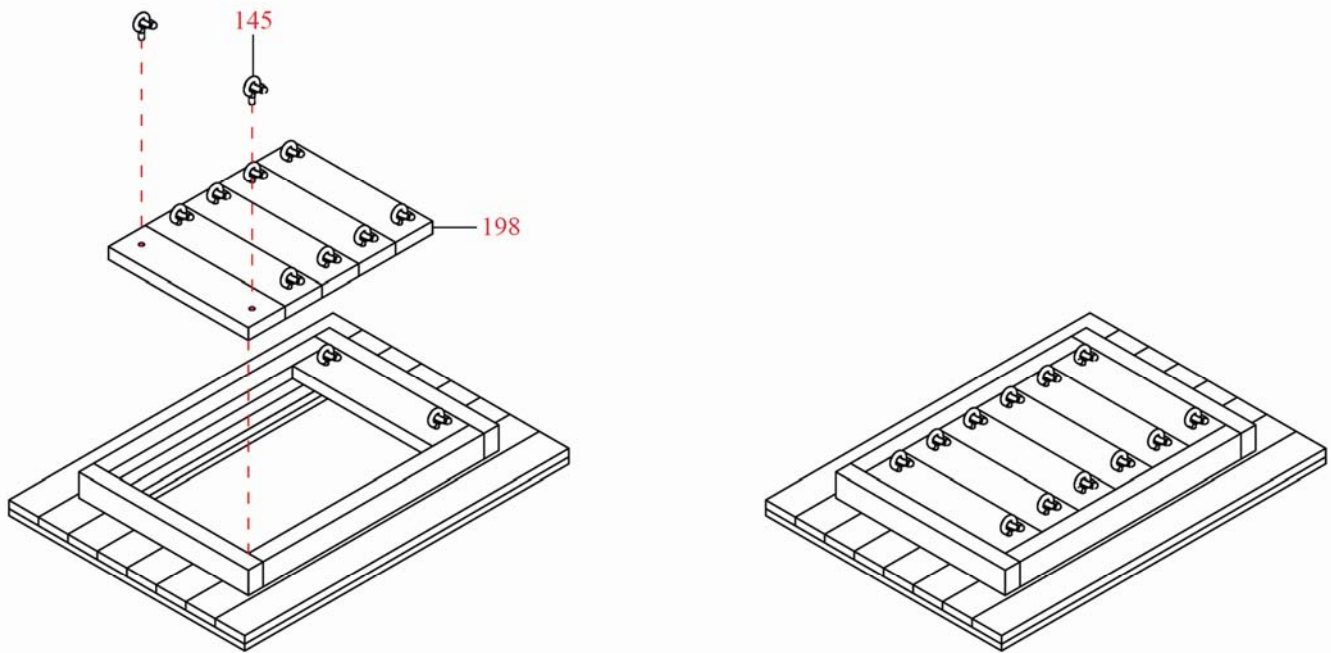
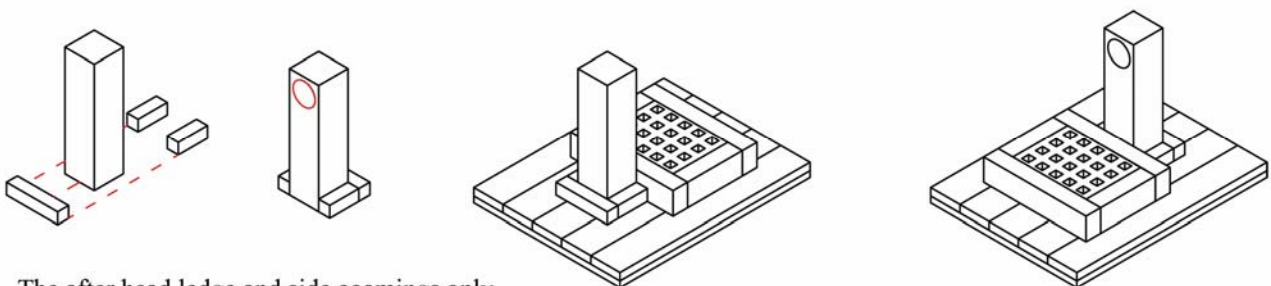


Fig 006 – Main Hatch Assembly



Athwartships cross section demonstrating that the 1.5x1.5mm AND 2x3mm coaming and head ledges seat down flush onto the deck planking.

Fig 007 – Galley Flue Assembly



The after head ledge and side coamings only are fitted around the base of the flue. There is no forward head ledge fitted, however, there is a 3mm hole drilled, 3mm deep, into the upper end of the forward face.



The Windlass and Pawl Bits:

**Note:** The windlass and pawl bits are only dry fitted at this stage and it is important therefore that you read and understand the following directions before beginning their construction.

Identify and remove the thick windlass barrel octagons (25) and windlass barrel ends (26) from the 4mm walnut sheet, together with the narrow windlass barrel octagons (35), barrel pawl rings (36) and standards† (37) from the 3mm walnut sheet. Where required, the octagons should be gently run over a fine sandpaper to cleanly remove the tabs which held them into their sheet. Each of these component parts should be painted red ochre with the exception of the windlass barrel pawl rings which should be painted matt (metal) black, this can be done before or after assembly to your own preference.

Using (Fig 008) for reference, thread the component parts onto a length of 1mm brass rod (177), taking care to align the flats of the octagons. When you are happy with their alignment they can be glued together.

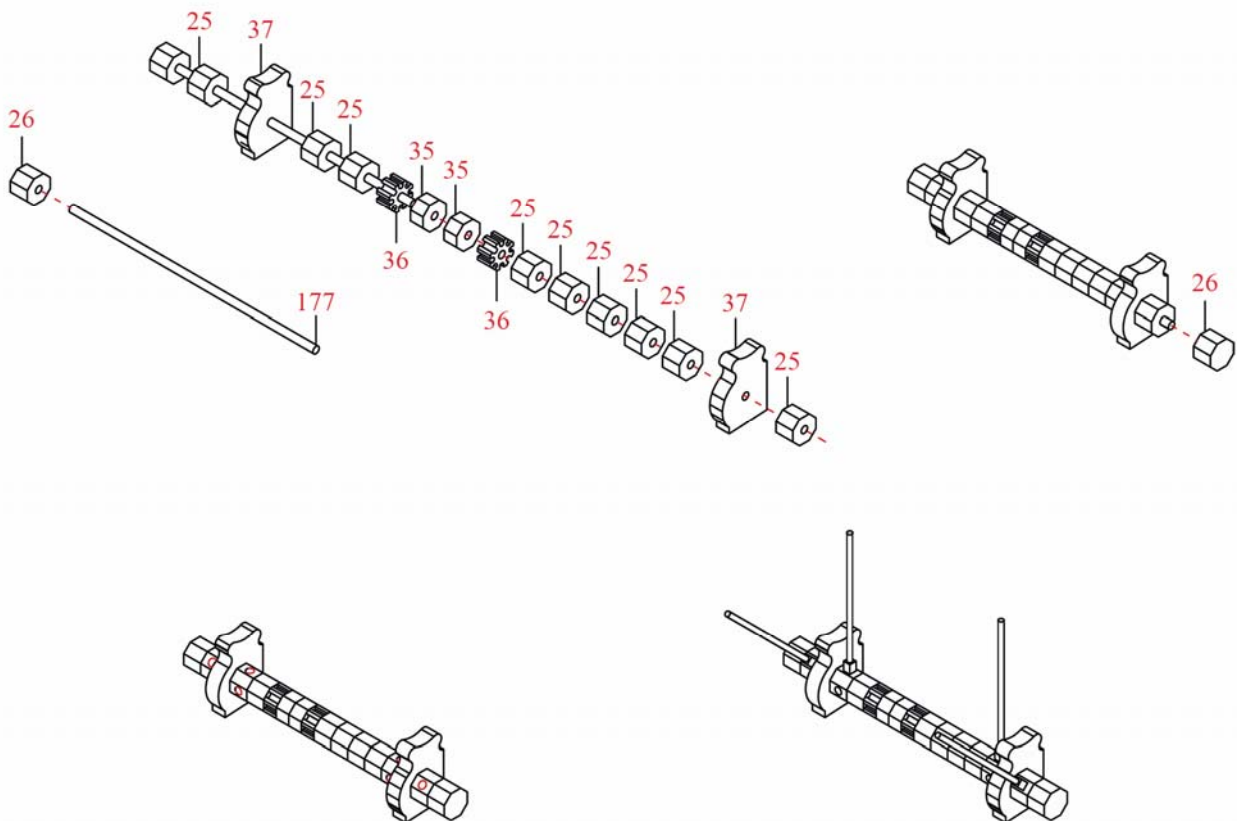
**Note:** The windlass pawl rings are not central; they are offset to the port side. Care should be taken to ensure that the standards are correctly orientated to allow this as shown.

**Note:** If you wish the windlass to be able to turn, care should be taken to ensure that neither the barrel octagons nor the brass rod are glued to the standards. If you intend to fix the barrel in place you should ensure that a slot in each of the barrel pawl rings is located to the top to accept the pawls at a later stage.

If you wish to fit the windlass with hand spikes, fashioned from 30mm lengths of 1.5x1.5mm walnut, you will need to drill 1mm holes accept them as shown (Fig 008) and (Photos 039 & 040).

**Note:** The holes for the hand spikes are only drilled to a depth of 2mm, any more than this and you will hit the brass rod running through the barrel.

Fig 008 – Windlass Assembly



Identify and remove the pawl bits (38), pawl bits standard (39) and pawl bits crosspiece (40) from the 3mm walnut sheet, each of these components should be painted red ochre.

Using (Fig 009) for reference, drill a 0.65mm hole through the sides of the bits. It should be noted that this hole is central to the pawl bits, fore and aft and top to bottom, this results in the hole being above the mid point of the pawl slot; this is correct, do not attempt to drill the hole at the mid point of the pawl slot.

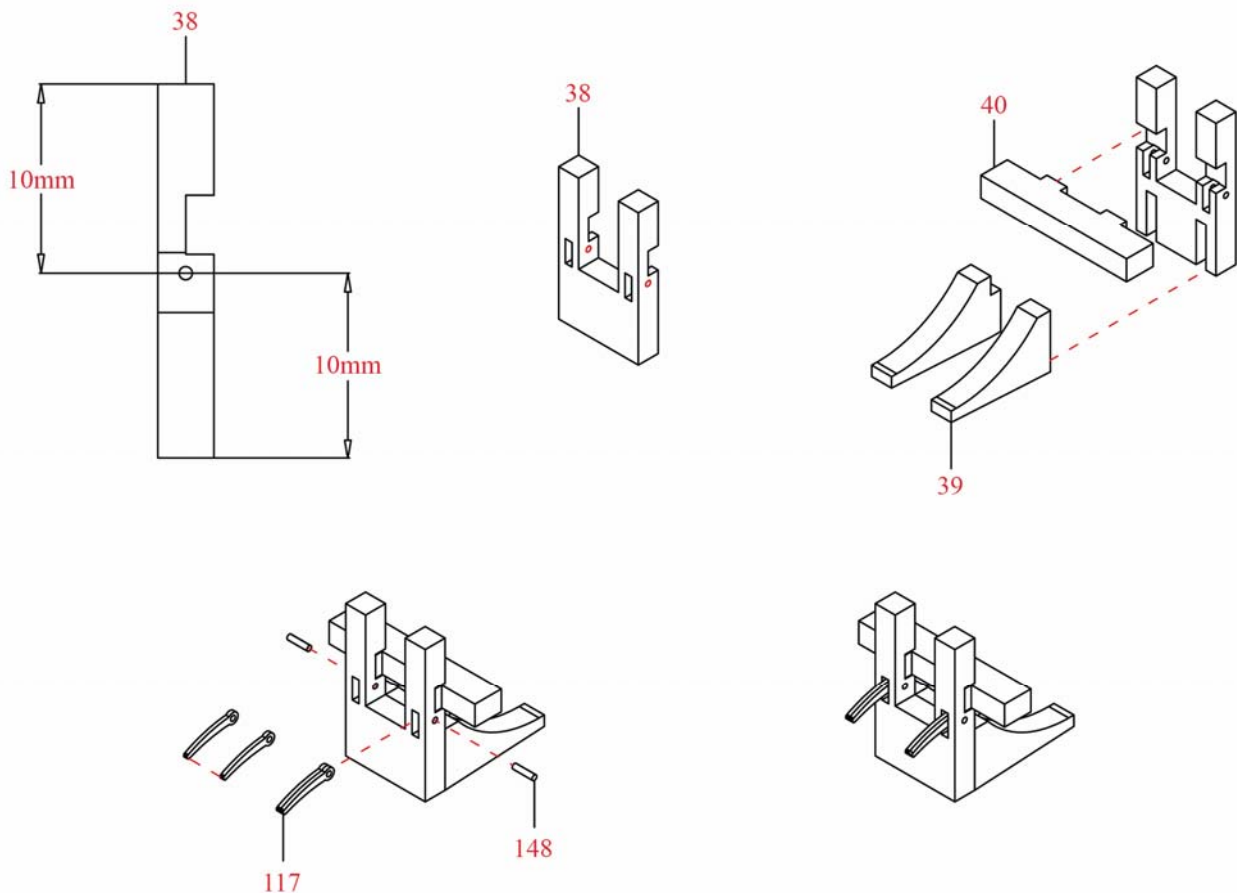
The standards and crosspiece can now be glued into place in each of their respective slots as shown.

Identify, paint matt (metal) black, and remove four windlass pawl halves (117) from the 0.5mm etched brass sheet and glue the pawls together into pairs to produce two pawls, each 1mm thick.

Insert the pawls, one into each slot in the pawl bits and secure by passing through a dome head pin (148), painted matt (metal) black and trim the pin flush to the pawl bitt sides, removing both the dome head and the point.

**Note:** The pawls, once in place, should protrude aft, away from the pawl bits standard and cross piece.

Fig 009 – Pawl Bitts Assembly



The windlass and pawl bitts assemblies can now be temporarily fitted by pinning them in place. Referring to [Plan Sheet 2, 'Deck Fittings'](#), the windlass is first to be positioned bearing in mind the following points:

1. The windlass should be positioned first and should be central, athwartships, between the bulwarks.
2. The after face of the windlass barrel should be flush with the forward face of the foremost head ledge of the forward hatch, when viewed from above. This will also mean that the after edge of the windlass standards will be 1mm aft of the forward face of the foremost head ledge of the forward hatch.
3. The windlass barrel pawl rings will be offset to port.

When you are happy with the positioning of the windlass, it should be removed and two 0.65mm holes drilled, one into the underside of each standard and fitted with dome headed pins (148) (with the dome heads removed) allowing the pointed end of the pin to protrude by 2mm. The windlass can now be re-positioned noting the location of the pins and 0.65mm locating holes for the pins should be drilled into the deck.

With the windlass now dry fitted (*Photo 039*), the pawl bitts can be positioned bearing in mind the following points:

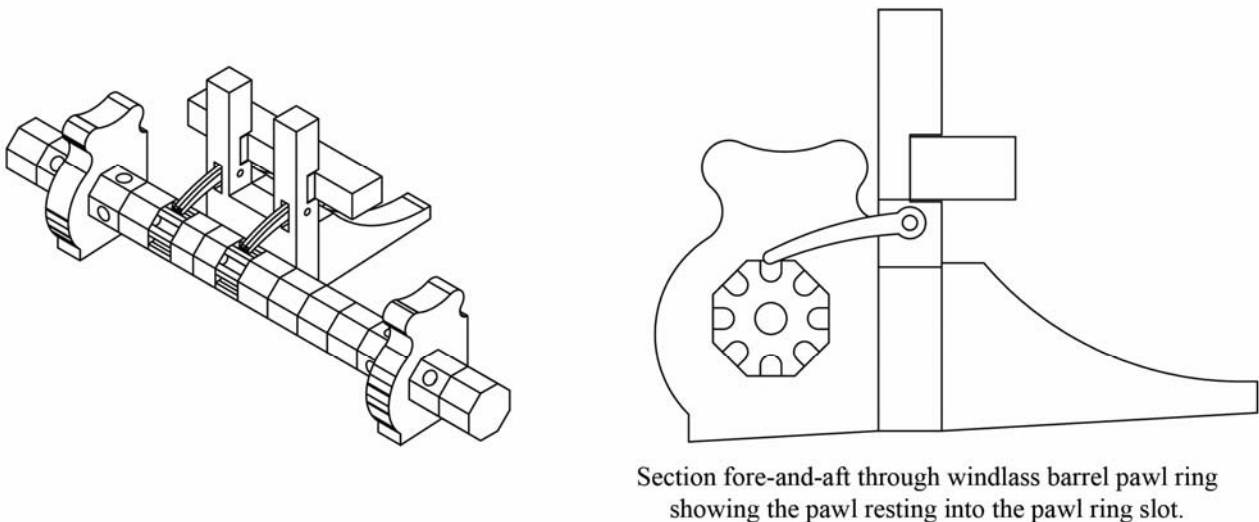
1. The after face of the pawl bitts should be flush with the forward face of the windlass standards, when viewed athwartships (*Fig 010*).
2. The pawl bitts should be offset to port so that the bitt uprights are in alignment with the windlass barrel pawl rings. When this is achieved, the pawls will sit into the topmost notches of the pawl rings (*Photo 040*) (*Fig 010*).

When you are happy with the positioning of the pawl bitts, they should be removed and two 0.65mm holes drilled, one into the underside of each pawl bitt upright and fitted with dome headed pins (148) (with the dome heads removed) allowing the pointed end of the pin to protrude by 2mm. The pawl bitts can now be re-positioned noting the location of the pins and 0.65mm locating holes for the pins should be drilled into the deck.

The windlass and pawl bitts should now be removed and stored safely until required again at a later stage.

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*Fig 010 – Windlass and Pawl Bitts Alignment*



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Cleats and Eyelets:

Referring to *Plan Sheet 2, 'Deck Fittings'*, you will need the following items:

1. 7 copper eyelets (145) all painted matt (metal) black.
2. 2 small cleats (142).

The copper eyelets are positioned by drilling a 0.65mm hole and gluing at locations as follows:

1. The first pair of copper eyelets are positioned one either side of the main mast, 8mm each side of the deck centreline and level with the aftermost edge of the mast hole in the deck. The eyes of the eyelets should be running fore-and-aft.
2. The second pair of copper eyelets are positioned, one each side, 3mm from the inner bulwark and 6mm aft of the fourth gunport. The eyes of the eyelets should be running fore-and-aft.
3. The final three copper eyelets are positioned 4mm aft of the main mast opening in the deck. The first is positioned on the centreline of the deck and the remaining pair are offset 5mm either side of the centreline. The eyes of the eyelets should be running fore-and-aft.

The cleats are positioned by drilling a 1mm hole and gluing, one per side, running fore-and-aft, located with their aftermost edge in line athwartships with the aftermost edge of the after head ledge of the middle hatch and each offside 15mm either side of the deck centreline.

## Outer Hull Fittings

### Scuppers:

Identify, and paint matt (metal) black, eight scuppers† (109) from the 0.5mm etched brass sheet. Referring to [Plan Sheet 2, 'Outer Hull Fittings'](#), the scuppers should be secured to the outer hull as shown, each at a distance of 1.5mm below the wale. It will be of benefit, for the positioning of the scuppers, to use PVA wood glue rather than cyanoacrylate.

Photo 041

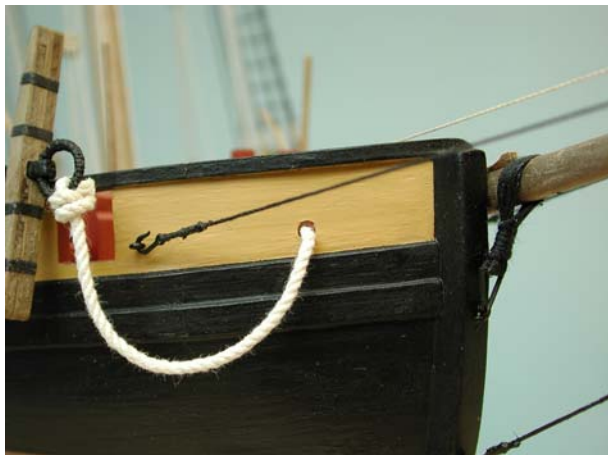


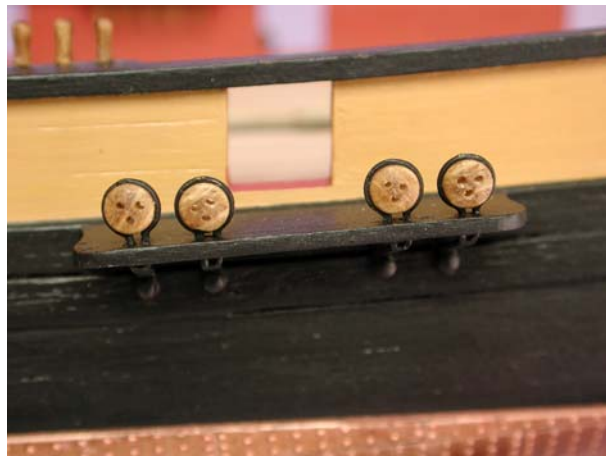
Photo 042



Photo 043



Photo 044



### Hawse Holes:

The hawse holes are to be drilled (one per side) through the bulwarks with a 2mm drill.

**Note:** Due to the position of the bowsprit and deck fittings, the port and starboard hawse holes are not symmetrical.

Using (Photo 041) for reference, the starboard hawse hole is positioned as follows:

1. The starboard hawse hole centre point is approximately 9mm below the underside of the capping rail.
2. The starboard hawse hole centre point is approximately 16mm from the stem.

Using (Photo 042) for reference, the port hawse hole is positioned as follows:

1. The port hawse hole centre point is approximately 9mm below the underside of the capping rail.
2. The port hawse hole centre point is approximately 21mm from the stem.

When you are happy with their positioning they can be drilled, taking care not to splinter the inner bulwarks.

### Channels:

The channels† are to be dry fitted only at this stage.

The foremast channels (73), one per side, are fitted bearing in mind the following points:

1. The upper surface of the channel will be flush with the upper surface of the black strake (*Photo 043*).
2. The channel will be positioned centrally between the second and third gunports.
3. The inboard face of the channels should be flush against the black strake; due to build differences some minor shaping of the inner face of the channel may be required.

When you are happy with the positioning of the foremast channels they should be removed and, using *Plan Sheet 2, 'Channels and Deadeye Strops'* for reference, drill two 0.65mm holes into the inboard face of each channel and fit dome headed pins (148) (with the dome heads removed) into these holes allowing the pointed end of the pin to protrude by 2mm. The channels can now be re-positioned noting the location of the pins and 0.65mm locating holes for the pins should be drilled into the hull.

**Note:** *The positions for the pins should be drilled no deeper than 2mm into the hull – if you drill deeper than this you risk breaking through the inner hull planking.*

The mainmast channels (74), one per side, are fitted bearing in mind the following points:

1. The upper surface of the channel will be flush with the upper surface of the black strake (*Photo 044*).
2. The channel will be positioned with the forward edge 13mm forward of the fifth gunport.
3. The inboard face of the channels should be flush against the black strake; due to build differences some minor shaping of the inner face of the channel may be required.

When you are happy with the positioning of the main mast channels they should be removed and, as with the foremast channels, fitted with 2 dome headed pins (148) (with the dome heads removed) into these holes allowing the pointed end of the pin to protrude by 2mm. The channels can now be re-positioned noting the location of the pins and 0.65mm locating holes for the pins should be drilled into the hull.

(*Photo 043 & 044*) Identify, paint matt (metal) black and remove the deadeye strops (106) from the 0.5mm etched brass sheet. As shown on *Plan Sheet 2, 'Channels and Deadeye Strops'*, position a 3.5mm deadeye within each of the deadeye strops. As shown on *Plan Sheet 2, 'Channels and Deadeye Strops'*, the deadeye strops, complete with deadeyes, can be fitted into each of the locating slots on the outboard edge of the channels. With the deadeye strops in position on the channels, a length of 1.5x1.5mm walnut should be glued along the outboard face of the channels, effectively 'locking' the deadeye strops into their respective slots. At this stage, the deadeyes should be free enough to rotate within the deadeye strop.

The channels should now be removed and set safely aside until required at a later stage. The channels and the 1.5x1.5mm walnut strip should be painted dull black at a time of your choosing.

### Bowsprit Hole:

The bowsprit hole is to be drilled through the port bulwark with a 2mm drill initially which will then be opened out to 5mm. Using (*Photo 042*) for reference, it is positioned as follows:

1. The centre point is approximately 6.5mm below the underside of the capping rail.
2. The centre point is approximately 3mm from the stem.

When you are happy with the positioning the 2mm pilot hole can be drilled, taking care not to splinter the inner bulwarks. With the pilot hole drilled, it will be necessary to re-position the pawl bitts onto the deck in order to gauge the correct angle for the bowsprit hole. Position the pawl bitts into their locating holes and, using *Plan Sheet 3, 'Bowsprit (Shipped)'* for reference, the 2mm pilot hole should be carefully opened up with a needle file to the required 5mm size AND the correct angle. This is best achieved by opening the hole a small amount and checking your angle using lengths of 3mm, 4mm and finally 5mm dowel to ensure a tight fit for the bowsprit.

**Note:** Take great care when opening the bowsprit hole to ensure that the bowsprit not only leads in, in between the standards of the pawl bitts, but also that the bowsprit runs completely parallel to the keel fore-and-aft.

When the hole is drilled and you are happy with the 'run' of the bowsprit, the pawl bitts should be removed and a 0.65mm hole drilled through, fore-and-aft, between the uprights, 2mm off the deck. A dome head pin (148), with the dome head removed, should be inserted into this hole with the pointed end forward; this will form the anchor point for the bowsprit when fitted. The pawl bitts should now be safely stored until required for final fitting, together with the windlass and bowsprit at a later stage.

### Eyelets:

Referring to *Plan Sheet 2, 'Outer Hull Fittings'*, 9 copper eyelets (145), painted matt (metal) black, are required for attaching to the outer hull, into 0.65mm holes.

The first copper eyelet is positioned 5mm to the port of the bowsprit hole and 7mm below the underside of the capping rail. The 'eye' should be orientated to run horizontally.

The next two copper eyelets are positioned, one per side, 4.25mm forward of the first gunports and 2mm above the lower sill of the gunport opening. The 'eyes' should be positioned to run horizontally.

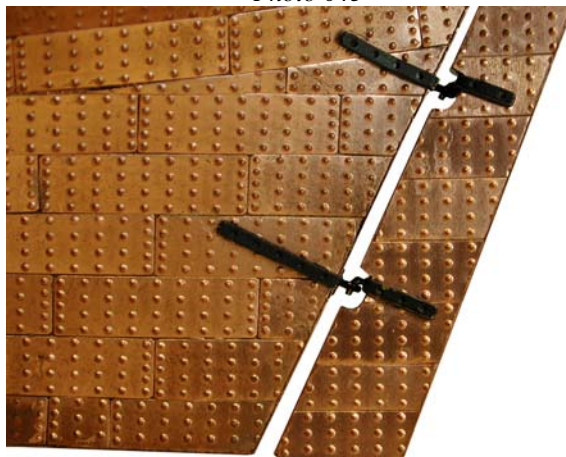
The next copper eyelet is positioned into the leading face of the stem. It is located centrally, athwartships, and at a height of 2mm above the top edge of the copper plating. The 'eye' should be positioned to run vertically.

The next copper eyelet must first be attached to the gammoning ring. Identify, paint matt (metal) black and remove the gammoning ring (118) (triangular) from the 0.5mm etched brass sheet. Gently open the eye of the copper eyelet far enough to accept the gammoning ring and then re-close it around the gammoning ring. The eyelet is positioned into the leading face of the stem and is located centrally, athwartships, and at a distance of 20mm below the top edge of the stem. The 'eye' should be positioned to run vertically.

The next two copper eyelets are located in the after face of the stern fascia. The copper eyelets are positioned, one each side, at a distance of 3mm inboard of the stern fascia outboard edges and 3.5mm below the top edge of the stern fascia. The 'eyes' should be positioned to run horizontally.

The final two copper eyelets are positioned centrally into the upper face of the starboard capping rail, with their eyes positioned to run fore-and-aft. The first is positioned 10mm forward of the second gunport and the second is positioned 20mm forward of the second gunport.

*Photo 045*



## The Rudder

Identify and remove the rudder (23) from the 5mm walnut sheet. Also identify the rudder pintle<sup>†</sup> straps (127, 129 & 131) and the hull gudgeon<sup>†</sup> straps (128, 130 & 132) on the 0.5mm etched brass sheet. It is advisable to open up the central holes through the pintle and gudgeon straps with a 0.65mm drill (to accept the pintle and gudgeons) prior to their removal from the sheet.

The pintles are formed from brass dome headed pins (148) with their heads removed and the gudgeons are formed from copper eyelets (145). When completed and in position, the straps, pintles and gudgeons are all painted matt (metal) black.

To begin, the rudder should be marked with a continuation of the waterline and coppered up to this point. The exposed, un-coppered, area above should be painted dull black.

(Photo 045) each strap will have to be bent with the half etched area facing inboard, this will result in the indented nail detail being visible, ideally a pair of long nosed pliers should be used to bend the straps. Glue each rudder pintle strap into position as shown on *Plan Sheet 2, 'Outer Hull Fittings'*, with the following considerations:

1. The straps sit tight up into the rudder cut outs 'scores'<sup>†</sup> as shown.
2. The ends of the straps will lie close to the after edge of the rudder.
3. The straps should run perpendicular to the leading edge of the rudder.

Drill a 0.65mm hole through the centre hole of the strap and into the rudder to accommodate the pintle. The pintle (fashioned from a dome head pin (148)) should be glued into the locating hole and bent downward through 90 degrees, allowing at least 3mm for the downward length to fit into the gudgeon, whilst ensuring the pintle remains within the leading edge of the rudder i.e. within the scores of the rudder.

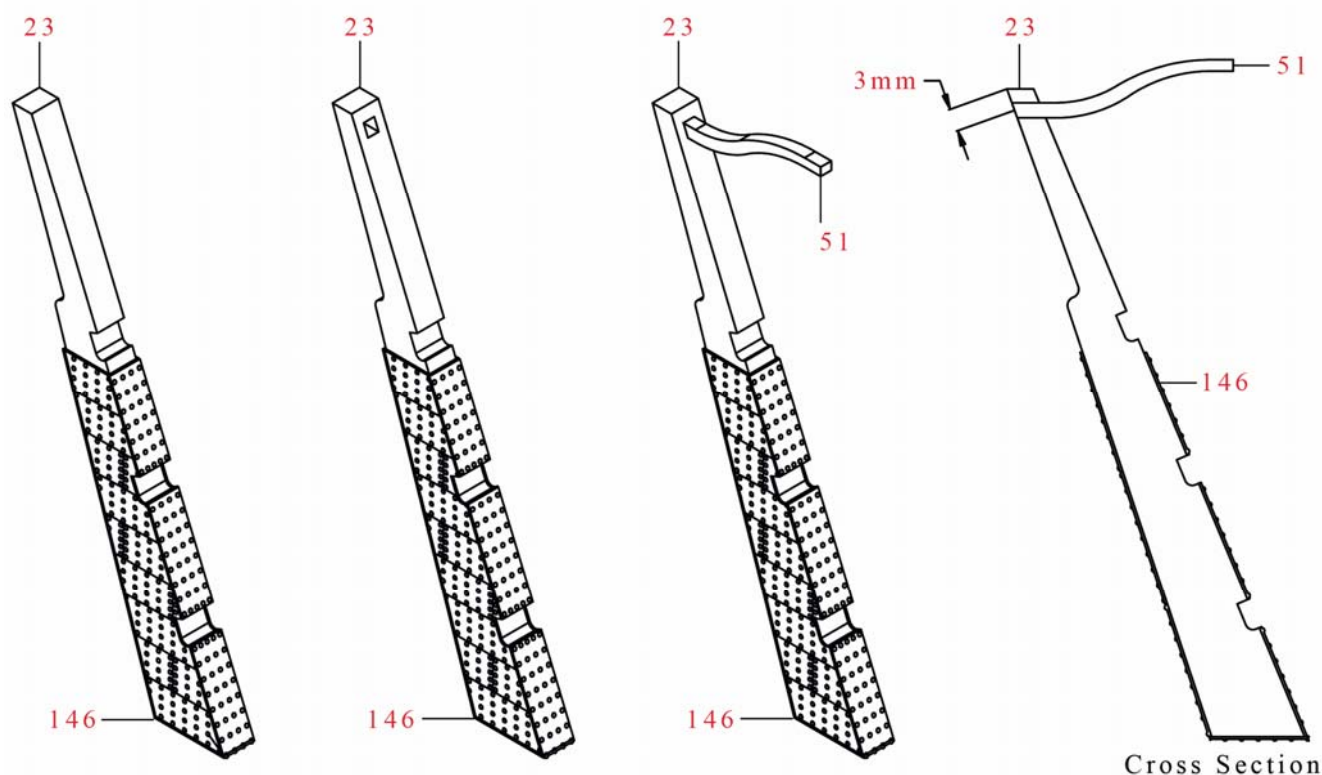
With the three pintles and straps in position, using masking tape, offer the rudder into position up through the stern counter so that the lower edge of the rudder is flush with the lower edge of the false keel. Mark on to the sternpost the required positions of the gudgeons (copper eyelets (145)) in relation to the pintles already fitted; the gudgeon position should be approximately 0.7mm below the pintle.

The rudder can now be removed and the locating holes (0.65mm) for the gudgeons drilled into the stern post. Temporarily position the gudgeons and re-position the rudder to confirm the fit. When you are happy with the assembly, remove the rudder and fit the gudgeon straps and gudgeons to the rudder post in a similar manner to the pintle straps and pintles. The gudgeon straps should lie flush against the hull and will need to be slightly bent to achieve this and should also run perpendicular to the after edge of the rudder post.

A 1mm hole should now be drilled fore-and-aft through the upper end of the rudder as shown (Fig 011). The centre point of the hole should be positioned centrally, athwartships, and at a distance of 3mm below the top edge of the rudder. This 1mm pilot hole can now be gradually opened up with a needle file to a square to accept the tiller (51), bearing in mind that the tiller has been cut with one end chamfered to follow the angle of the after face of the rudder as shown. The tiller (51) is located on the 2mm walnut sheet and should be painted red ochre before fitting.

The rudder can be finally fitted to the model at a time of your choosing.

Fig 011 – Rudder and Tiller Assembly



## Deck Fittings Stage 2

### The Elm Tree Pumps:

There are two elm tree pumps to be made up, each is assembled in the same way but you should be careful to ensure the correct positioning of the outlet in relation to the handle. The handles should be facing aft and outboard with the outlet at 90 degrees to the handle, facing forward and outboard on each pump (*Photo 046*) (*Fig 012*).

The yokes† and ‘connecting rods’† should be painted matt (metal) black and the outlets and casing should be painted dull black, while the thin ‘handle’ of the ‘brake handle’† should be painted wood (walnut) brown and the thicker ‘connecting’ area painted matt (metal) black.

The elm tree pump casings are cut from 4mm dowel, 13mm long and drilled along their length with a 0.75mm drill to accept the connecting rod of 0.70mm brass rod (*176*).

Identify and carefully remove, from the 0.5mm etched brass sheet, the left and right handed yokes (*114*). Glue a left and right handed yoke together ensuring that they marry exactly. Also make sure that the small dimples, on the profiled face of the yokes, face toward each other. Take care at this stage not to glue the dimples together as they will need to be separated when the pump handle is ‘sprung’ into place. Make up both sets of yokes.

Glue the completed yoke assemblies to the side of the pump casings ensuring that they are vertical; the small lip in the yoke sits against the top edge of the casing as shown on (*Fig 012*).

Identify and remove the brake handle (*119*), from the 0.5mm etched brass sheet, and, using 0.70mm brass rod (*176*), fashion a small loop in one end of the rod so that it fits into the larger hole of the brake handle and forms the connecting rod. Pass the rod through the casings and position the handle onto the pivot formed by the two dimples of the yokes.

The handle should be glued into position at your desired elevation and the connecting rod should be left protruding from the base of the casing by approximately 5mm to use as a locating ‘lug’ when fitting the pumps to the deck. The outlets should be glued to the pump casing orientated as stated previously; they are fashioned from 2mm dowel and should be positioned approximately 3mm off the deck. The finished assemblies can now be glued into place. They are positioned with their centre point (formed by the exposed 5mm ‘lug’ of the connecting rod) 8mm from the centreline of the deck and halfway between the companionway opening and after skylight opening as shown on [Plan Sheet 2, ‘Deck Fittings’](#) and (*Photo 047*).

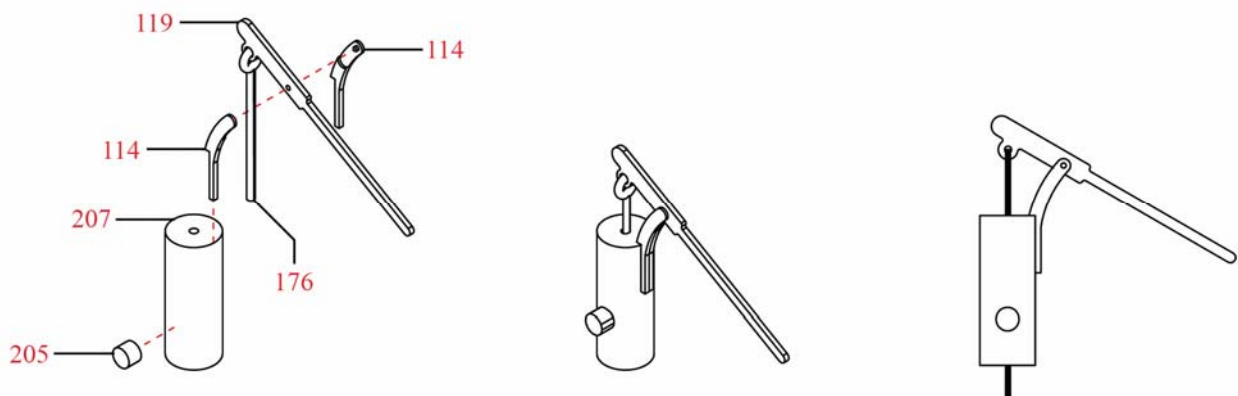
*Photo 046*



*Photo 047*



*Fig 012 – Elm Tree Pump Assemblies*





### The Skylights:

There are two skylights to be made up and their construction is identical as follows.

Identify and remove the skylight ends (59), sides (60 & 61), tops (62 & 63) and skylight openings (64 & 65) from the 1.5mm walnut sheet. Using (Fig 013) for reference, glue the sides and tops into place on the ends. When this assembly has thoroughly dried, offer the skylight openings into place. In order to obtain a good fit it will be necessary to gently chamfer the outboard edges of the top and the upper edges of the sides, together with the corresponding edges of the skylight openings to form a flush fit (Fig 013).

**Note:** *The half depth recesses in the skylight openings should remain visible on the completed skylight.*

When you are happy with their fit, the skylight openings can be glued into place.

Identify, paint red ochre, and remove the skylight window frames (122 & 123) from the 0.5mm etched brass sheet. Glue each of the window frames into position in the recessed locating slots of the skylight openings (Fig 013).

**Note:** *The vertical and horizontal window frame dividers are profiled and they should be orientated so that the flush face is inboard so that the profiling is visible on the model.*

The skylight assembly, as a whole, can now be painted red ochre (Photo 048).

Photo 048



Photo 049



Identify the glazing acetate (151) and cut four lengths one to fit across the inside face of each of the skylight openings to cover the windows – so that they appear to be glazed. Use PVA to secure the acetate in place.

**Note:** *Do not use cyanoacrylate (super glue) for securing the acetate as it will discolour the acetate.*

Identify, paint matt (metal) black, and remove the skylight protective bars (120 & 121) from the 0.5mm etched brass sheet. Using (Fig 013) for reference, glue the protective bars in place with PVA, noting that the small ‘lugs’ which simulate hinges should be orientated to the top (Photo 049).

**Note:** *As with the window frames already fitted, the vertical bars are profiled and they should be orientated so that the flush face is inboard, against the skylight so that the profiling is visible on the model.*

**Note:** *Do not use cyanoacrylate (super glue) for securing the skylight protective bars as it will discolour the acetate.*

The skylights will be fitted, together with the companion† in the next stage.

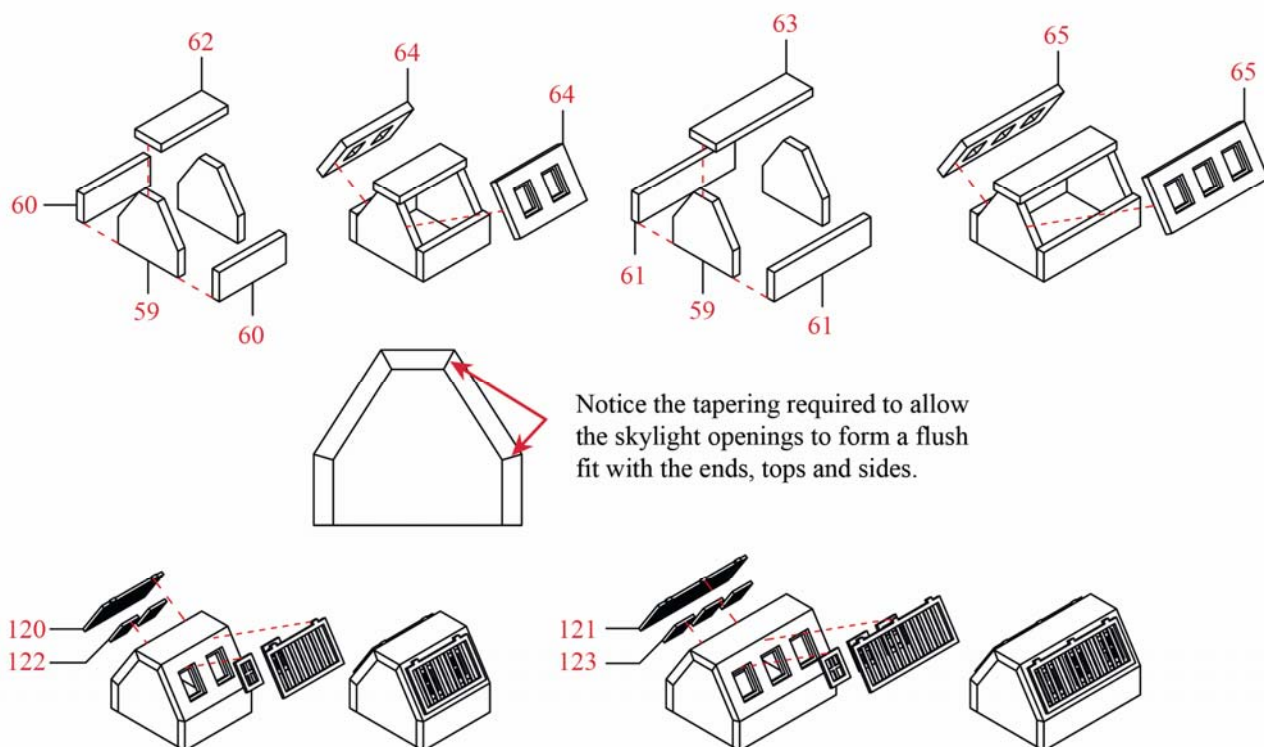
Photo 050



Photo 051



Fig 013 – Skylight Assemblies



The Companion:

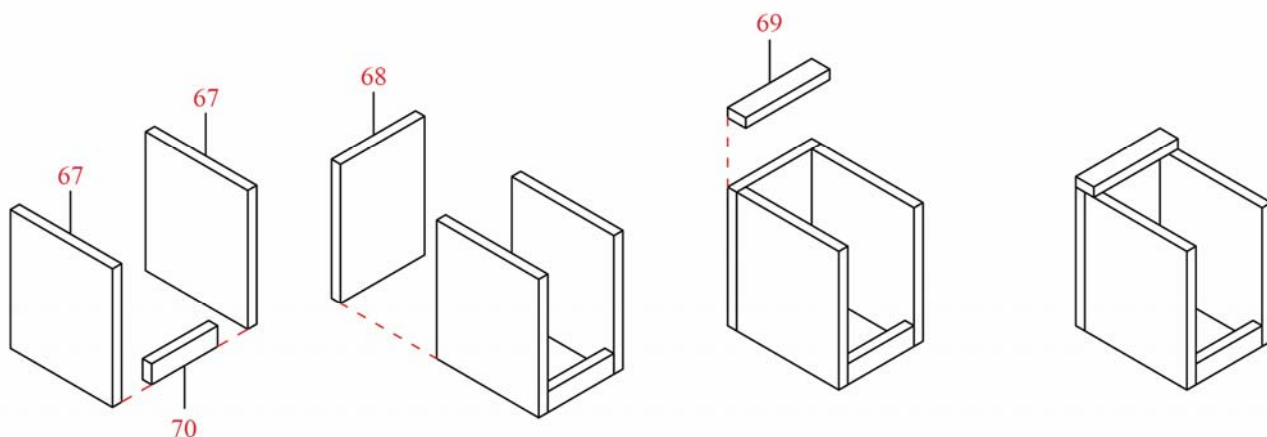
Identify and remove the ‘companion-ladder’† sides (66) from the 1.5mm walnut sheet. The treads of the companion-ladder are cut from 1x5mm walnut cut to a length of approximately 9.5mm to give an overall width to the assembled companion-ladder of 11mm, to fit tightly into the main companionway opening.

To assemble the companion-ladders, slot a tread into the top and bottom of each companion-ladder side and glue them into place, ideally a small jig should be made to keep the assembly square. When dry, the remaining treads can then be pushed into the slots and brushed with watered down PVA. Varnish to seal the assembly.

When the assembly is thoroughly dry, it can be dry fitted into the model. Pass the lower end of the companion-ladder down through the companionway opening until it is seated onto the false deck below, the top of the companion-ladder should now be seated against the starboard face of the main companionway opening and flush with the top of the upper gun deck planking, any sanding required to achieve this should be taken from the bottom of the companion-ladder. The companion-ladder should also fit tightly against the forward and after edges of the companionway opening. When you are happy with the fit of the companion-ladder it can be glued into place.

Identify and remove the companion sides (67), back (68), hinge support (69) and coaming (70) from the 1.5mm walnut sheet. Using (Fig 014) for reference, assemble the companion as shown. When thoroughly dry, paint this entire assembly red ochre.

Fig 014 – Companion Basic Structure Assembly

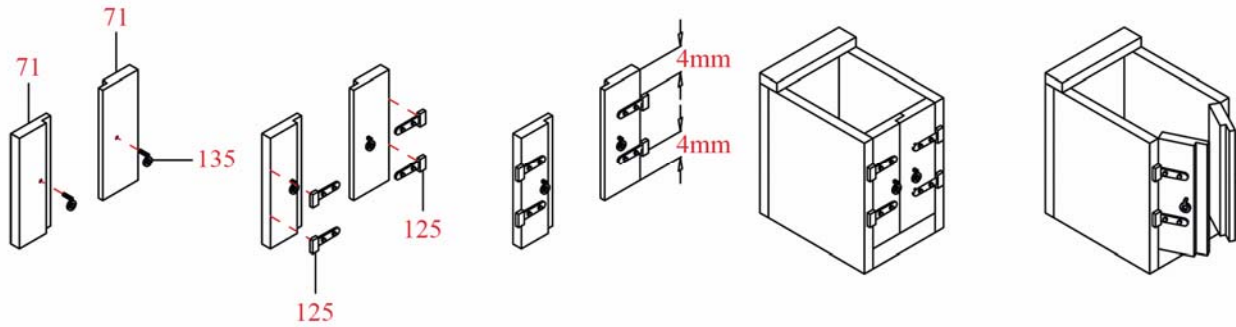


Identify and remove the companion doors (71) from the 1.5mm walnut sheet. The doors will be painted entirely red ochre at a time of your choosing.

Identify and remove four companion door hinges (125) from the 0.5mm etched brass sheet, these are to be painted matt (metal) black.

Identify two etched brass eyelets (135) painted matt (metal) black, these will be used to form the door handles and 0.5mm holes should be drilled through the doors, half way up and just offset from the profiled edges, the eyelets can then be glued into position, and bent downward through 90 degrees, such that they will be visible on the forward face of the companion doors (Fig 015). Using (Fig 015) for reference, the hinges should be glued to the doors as shown, noting that they are positioned on the opposite edge of the door to the profiled edge. It should also be noted that, when on the model, the profiled edges of the doors will meet each other (if shown closed) and as such one should face forward and one should face aft. The doors can then be fitted onto the companion assembly in an open or closed position of your choice.

Fig 015 – Companion Door Assemblies



Identify and remove the companion roof (72) from the 1.5mm walnut sheet. The roof will be painted entirely red ochre at a time of your choosing.

Identify and remove one etched brass eyelet (135) painted matt (metal) black, this will be used to form the roof handle and a 0.5mm hole should be drilled through the roof, centrally and offset from the forward edge by approximately 2mm, the eyelet can then be glued into position, and bent through 90 degrees, such that it will be visible on the upper face of the companion roof (Fig 016) (Photo 050).

Identify, paint matt (metal) black and remove the companion roof hinges (126) from the 0.5mm etched brass sheet. Using (Fig 016) for reference, the hinges are secured to the after edge of the companion roof, offset by 2mm from either side and such that the rectangular 'hinge' piece overhangs the roof (Photo 050).

Identify, paint matt (metal) black and remove the companion roof guide (101) and the companion roof guide plate (102) from the 0.9mm etched brass sheet. Using (Fig 016) for reference, secure the companion roof guide plate against the companion roof guide at a distance of 2.5mm from the end of the companion roof guide.

**Note:** The companion roof guide plate should be offset to the same side as the rectangular fixing piece of the companion roof guide, after the companion roof guide has been bent through 90 degrees.

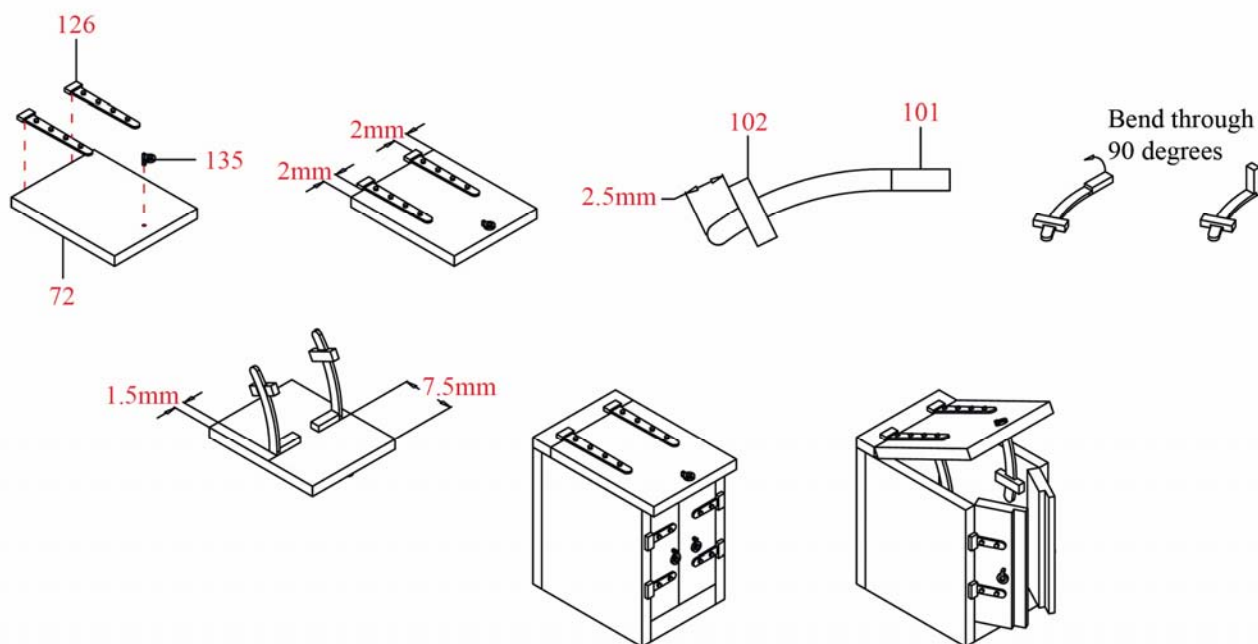
Using a pair of long nose pliers, gently bend the companion roof guide through 90 degrees at the point between the 0.9mm thick rectangular fixing and the 0.45mm thick guide piece.

The companion roof guide and companion roof guide plate can now be secured to the underside of the companion roof (one per side) at a distance of 1.5mm from the side edges and 7.5mm from the forward edge (Fig 016).

With the companion roof now assembled, it should be fitted down onto the companion assembly and the rectangular 'hinge' pieces of the companion roof hinges secured to the upper face of the companion hinge support.

If you wish to show the companion roof in an open position, it should be gently opened, bending the companion roof hinges at the point between the 0.5mm thick rectangular 'hinge' piece and the 0.25mm thick 'strap' piece. The roof should be opened until the companion roof guide plate is parallel with the top of the companion where it should be secured into place (Photo 051).

Fig 016 – Companion Roof Assembly



The skylights and companion assemblies can now be secured onto the model, together, noting that they will completely cover their respective deck openings.

**Note:** The companion assembly and smaller forward skylight should butt up tight against one another and in order to achieve this, due to the fore-and-aft camber of the deck, a small amount of material may have to be tapered from the forward end of the skylight back toward the companion.

The Fore Bitts:

Identify and remove the fore bitts (41) and fore bitts crosspiece (42) from the 3mm walnut sheet each of these components should be painted red ochre.

The crosspiece can now be glued into place in the corresponding slot in the after face of the bitts as shown (Fig 017). With the assembly complete it can be dry fitted onto the model as follows:

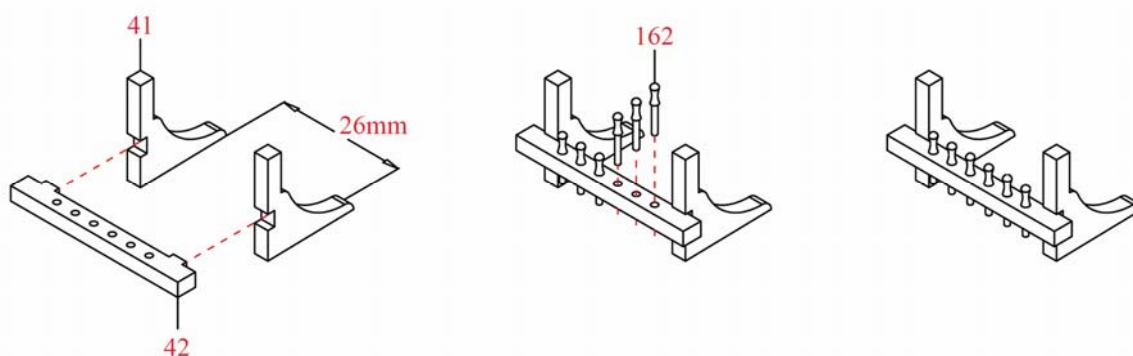
1. The fore bitts are fitted centrally athwartships.
2. The crosspiece should be orientated to the aft end of the model.
3. When viewed from above, the aftermost edge of the crosspiece should be flush to the foremost edge of the forward head ledge of the middle hatch.

When you are happy with the fit of the fore bitts they can be pinned, using dome head pins (148) in the same manner as the pawl bitts, and glued into place. Six belying pins (162) should be located, one into each of the holes in the crosspiece.

The Navel Pipes:

The 'navel pipes'<sup>†</sup> are 2mm holes drilled down through the deck to accept the anchor cable when fitted. They are positioned one per side and are located with their centre points 10mm either side of the deck centre line and 25mm forward of the forward face of the main hatch forward head ledge.

Fig 017 – Fore Bitts Assembly



## Bowsprit and Mast Assembly

**Note:** All unpainted areas of dowel for the masts and bowsprit should be stained walnut after shaping and prior to fitting.

### Tapering:

You may find it easier to avoid turning the round dowel into an oval dowel when tapering, by using a David plane, draw knife or similar as follows:

1. Reduce the dowel (running with the grain), from a round at the start point of the taper to a square at the end of the taper, of a diameter marginally more than that required.
2. Repeat this process so that the dowel runs from round at the start of the taper to an eight side polygon at the end of the taper, of a diameter marginally more than that required.
3. Repeat step two as desired so that the dowel runs from a round at the start of the taper to a 16 or 32 side polygon at the end, of a diameter marginally more than that required.
4. Using medium sandpaper, followed by fine sandpaper the taper can be gently sanded round along its length.

### Dowel Centring Jig:

The masts for *Pickle* should be made up in small sections which will be doweled together. This process greatly simplifies the required tapering and shaping of each component.

The dowel centring jig (33) has been provided to enable you to accurately ascertain the centre of the dowel, this is critical when drilling and doweled the components to one another. The jig is used as follows:

1. Place the dowel centring jig onto the end of the dowel, with the profiled 'leg' of the jig resting on the end of the dowel and push the dowel into the corner formed by the pair of non-profiled 'legs' (*Photo 052*).
2. Mark a line across the end of the dowel, flush to the profiled 'leg' (*Photo 053*).
3. Rotate the dowel and, ensuring it is still positioned as described in point 1 above, mark a second line across the end of the dowel, again flush to the profiled 'leg' (*Photo 054*).
4. The point at which the two lines intersect is the centre point of the dowel.

*Photo 052*



*Photo 053*



*Photo 054*



*Photo 055*



## Bowsprit and Jib-boom

Using [Plan Sheet 3](#) for reference, construct the bowsprit and jib-boom to the dimensions shown. The bowsprit is constructed from a 145mm length of 5mm dowel. The first 55mm of the bowsprit should remain at 5mm, from this point (55mm from the end) the dowel should be tapered to run from 5mm down to 3mm along its length (90mm).

The jib-boom is constructed from a 90mm length of 3mm dowel. The first 30mm of the jib-boom should remain at 3mm, from this point (30mm from the end) the dowel should be tapered to run from 3mm down to 2mm along its length (60mm).

One copper eyelet (145), painted matt (metal) black should be secured to the upper face of the jib-boom as shown on [Plan Sheet 6](#) and a 0.5mm hole should be drilled, top to bottom (realising that the copper eyelet just fitted now denotes the top), through the jib-boom at a distance of 10mm from the outer end as shown on [Plan Sheet 3](#).

### Bowsprit Fittings:

Identify and remove the bowsprit cap (43) from the 3mm walnut sheet. Using [Plan Sheet 3](#), 'Bowsprit Cap' for reference, two holes should be drilled through the bowsprit cap as shown. It is vital to realise that these holes are to be drilled at an angle so that, when the bowsprit and jib-boom are positioned through the cap and this assembly is fixed onto the model, the bowsprit cap must be vertical (at right angles to the waterline). When the bowsprit cap has been drilled, the upper and lower edges should also be tapered to run parallel to the holes drilled and it can then be glued into place on the forward end of the bowsprit and this forward end of the bowsprit should be sanded back flush to the forward face of the bowsprit cap.

Two copper eyelets (145), painted matt (metal) black, should be secured into the cap. Using [Plan Sheet 6](#) for reference, the first is positioned centrally into the underside of the cap and the second is positioned into the forward face of the cap at a distance of 2mm from the lower edge and offset from the centreline by 1mm to starboard.

Using [Plan Sheet 3](#) for reference, the jib-boom saddle (78) should be identified and secured to the bowsprit as shown.

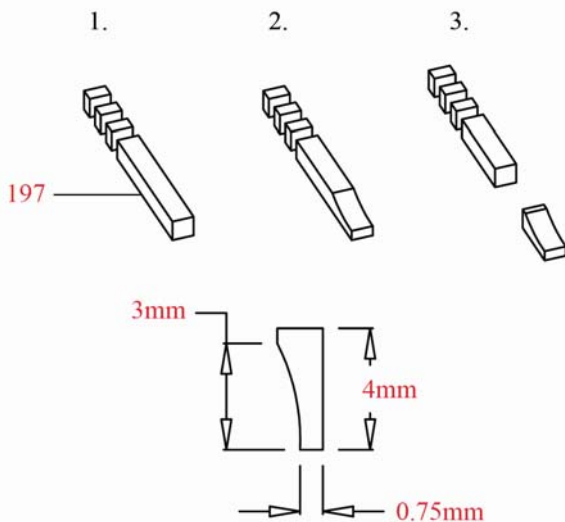
The jib-boom can now be inserted through the top hole in the bowsprit cap with the inner end resting on the jib-boom saddle as shown.

**Note:** Ensure that the copper eyelet, previously fitted to the jib-boom, is positioned to the top before securing the jib-boom.

Two stop cleats should be constructed from 1.5x1.5mm walnut. Each stop cleat should be 4mm long, shaped as shown ([Fig 018](#)).

### Painting the Bowsprit:

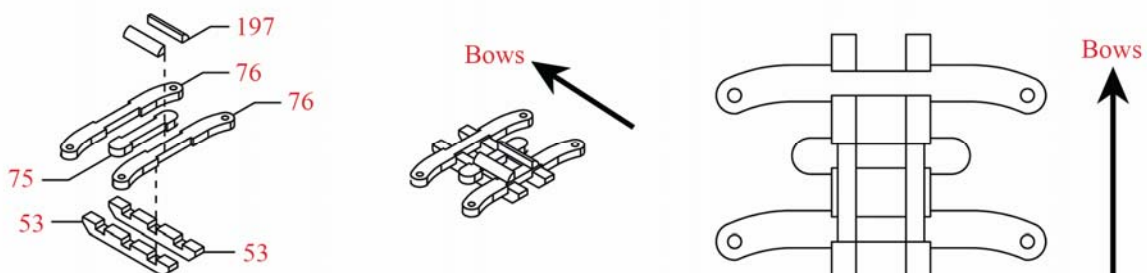
The bowsprit and jib-boom should be stained walnut and the area of each, from the bowsprit cap back to 10mm beyond the inner end of the jib-boom painted dull black. This includes the bowsprit cap, jib-boom saddle and the stop cleats ([Photo 055](#)).



*Fig 018 – Stop Cleat Construction*

1. Identify a long length of 1.5x1.5mm walnut (197), do not cut the cleat (4mm long) at this stage; it is easier to work with a longer length.
2. Using a sharp knife / file, shape one face of the walnut to an arc as shown (below left).
3. With the walnut shaped as required, the stop cleat can now be trimmed to 4mm long, from the length of walnut, as required.

*Fig 019 – Lower Top Assembly*



## The Main Mast

### Main Lower Mast:

Using [Plan Sheet 3](#) for reference, make up the main lower mast to the dimensions given as follows:

The lower mast is made up in two parts, the upper part is constructed from 4x4mm walnut cut to a length of 45mm.

The lower part of the main lower mast is constructed from 6mm dowel, cut to a length of 280mm.

The two halves can now be joined by drilling a 1.5mm hole, centrally down into the lower half, making use of the dowel centring jig, and up into the upper half and gluing the two together with the use of a length of 1.5mm brass rod (178). Do not be concerned by the variation in colour between the two different woods as this area is later painted dull black.

Identify the main lower top trestletrees (53), crosstrees (long) (76) and crosstrees (short) (75) and, referring to (*Fig 019 & 020*), assemble the top as shown noting that the crosstree (short) is positioned to the middle of the assembly.

With the assembly complete, attach the bolsters, 8mm lengths of 1.5x1.5mm walnut, sanded or filed to quarter rounds as shown (*Fig 019 & 020*), to the lower top.

As can be seen from [Plan Sheets 3 – 6](#), the top is angled such that, when the mast is stepped at the correct rake, the top will be parallel to the waterline. The angle of the top is best achieved as follows:

With the lower mast now constructed, dry fit it into its locating hole, through the deck into the keel. The top assembly can now also be dry fitted, over the head of the mast down onto the upper surface of the 6mm round section, at this point the top will sit perpendicular to the mast. Using a needle file, slowly angle the top of the 6mm dowel section until the top sits parallel to the waterline (the upper edge of the copper plating, not the keel). Once achieved, remove the top and the lower mast from the model and put them safely to one side; **do not** glue them to one another.

**Note:** *When filing the top surface of the 6mm dowel, you should only remove material from the sides and the foremost face of the dowel, the upper aftermost edge should remain untouched, leaving the total length of the 6mm dowel at 280mm.*

### Main Topmast:

Using [Plan Sheet 3](#) for reference, make up the main topmast to the dimensions given as follows:

The main topmast is made up in two parts, the lower part is constructed from 4x4mm walnut cut to a length of 50mm, the first 15mm of this remains 4x4mm square while the remaining 35mm should have the ‘corners’ sanded flat to form an octagonal, 8 sided, length (*Fig 021*).

The upper section of the main topmast is constructed from 4mm dowel, cut to a length of 100mm and should be tapered along its length, from 4mm down to 2mm.

With the two sections of the topmast formed they can be pinned and glued together with 1.5mm brass rod (178), again make use of the dowel centring jig for the round section.

With the topmast assembled, using [Plan Sheet 3](#) for reference, the locating hole for the fid<sup>†</sup> can be drilled as shown. The fid will be formed from 1.5x1.5mm walnut and when the topmast is ‘shipped’ it will sit down onto the top surface of the lower mast top trestletrees to hold the topmast at the correct height, as such its positioning is critical.

**Note:** *Only pre-drill the locating hole at this stage, do not fit the fid to the topmast or it will be difficult to ship the topmast through the cap. The fid is made from 1.5x1.5mm walnut cut to a length of 8mm.*

With both sections of the main mast constructed, the mast as a whole can be assembled.

Identify the main mast cap (27). Dry fit the main top and main mast cap to the lower mast. **Do not** secure. Now dry fit the topmast, up through the cap, insert the fid and position it down onto the trestletrees. None of the individual components (lower mast, topmast, cap & top) should be glued to one another at this stage.

With everything dry fitted together, manoeuvre the topmast to run parallel and in-line vertically with the lower mast, at the same time, the lower top should remain parallel to the waterline, i.e. not perpendicular to the mast. When you are happy with the alignment, glue the components securely in position.

**Note:** *Although the lower top must remain parallel to the waterline and as such not perpendicular to the mast, this is **not** true for the main mast cap. The cap should be fitted perpendicular to the mast and as such is not parallel to the waterline.*

The two stop cleats (197) can now be fitted to the after face of the lower mast head as shown on [Plan Sheet 3](#). Using [Plan Sheet 6](#) for reference, two copper eyelets (145) can now be fitted to the after face of the lower mast head / mast cap as shown together with their respective blocks. Using [Plan Sheet 2, ‘Main Mast Belaying Points’](#) for reference, finally locate, paint matt (metal) black and fit two small cleats (142) to the base of the mast, the cleats should be positioned, vertically, one on each side of the mast with their 1mm locating hole drilled 10mm above the ‘mast coat’<sup>†</sup> (77). In order to gauge their correct height it is advisable to dry fit the mast and coat onto the model and note the position of the mast coat onto the mast.

**Note:** *The procedure for fitting the mast coats is explained on Page 41 ‘Stepping the Masts’.*

## The Fore Mast

The foremost mast on a schooner is technically referred to as a schooner mast; however, to avoid confusion we shall continue to call this mast the fore mast throughout these instructions.

### Fore Mast:

Using [Plan Sheet 3](#) for reference, make up the fore mast to the dimensions given as follows:

The fore mast is made up in two parts; the upper part is constructed from 4x4mm walnut cut to a length of 45mm.

The lower part of the fore lower mast is constructed from 6mm dowel, cut to a length of 263mm.

The two halves can now be joined by drilling a 1.5mm hole, centrally down into the lower half, making use of the dowel centring jig, and up into the upper half and gluing the two together with the use of a length of 1.5mm brass rod (178). Do not be concerned by the variation in colour between the two different woods as this area is later painted dull black.

Identify the fore mast top trestletrees (53), crosstrees (long) (76) and crosstrees (short) (75) and, referring to (*Fig 019 & 020*), assemble the top as shown noting that the crosstree (short) is positioned to the middle of the assembly.

With the assembly complete, attach the bolsters, 8mm lengths of 1.5x1.5mm walnut, sanded or filed to quarter rounds as shown, to the lower top.

As can be seen from [Plan Sheets 3 – 6](#), the top is angled such that, when the mast is stepped at the correct rake, the top will be parallel to the waterline. This is achieved for the fore mast using the same method as the main mast.

At this stage, put the fore mast and top assembly to one side; **do not** glue them to one another.

### Fore Topmast:

Using [Plan Sheet 3](#) for reference, make up the fore topmast to the dimensions given as follows:

The fore topmast is made up in three parts, the lower part is constructed from 4x4mm walnut cut to a length of 50mm, the first 15mm of this remains 4x4mm square while the remaining 35mm should have the 'corners' sanded flat to form an octagonal, 8 sided, length (*Fig 021*).

The middle section of the fore topmast is constructed from 4mm dowel, cut to a length of 55mm. Mark, in pencil, the point 47mm from the base. From the base to this point (47mm from the base), the mast should remain round and be tapered from 4mm to 3mm along this length.

From the now 3mm diameter point, 47mm from the base, the next 4mm should be tapered from 3mm round to 4mm round with the remaining length of 4mm continuing at 4mm diameter to form the hounds'.

The 'head' of the fore topmast is a 35mm length of 3mm dowel and should be tapered along its length, from 3mm down to 2mm.

With the three sections of the fore topmast formed they can be pinned and glued together with 1.5mm brass rod (178), again make use of the dowel centring jig for all round sections.

With the fore topmast assembled, using [Plan Sheet 3](#) for reference, the locating hole for the fid can be drilled as shown. The fid will be formed from 1.5x1.5mm walnut and when the topmast is 'shipped' it will sit down onto the top surface of the lower mast top trestletrees to hold the topmast at the correct height, as such its positioning is critical.

**Note:** *Only pre-drill the locating hole at this stage, do not fit the fid to the topmast or it will be difficult to ship the topmast through the cap. The fid is made from 1.5x1.5mm walnut cut to a length of 8mm.*

With both sections of the fore mast constructed, the mast as a whole can be assembled.

Identify the fore mast cap (27). Dry fit the fore top and fore mast cap to the lower mast. **Do not** secure. Now dry fit the topmast, up through the cap, insert the fid and position it down onto the trestletrees. None of the individual components (lower mast, topmast, cap & top) should be glued to one another at this stage.

With everything dry fitted together, manoeuvre the topmast to run parallel and in-line vertically with the lower mast, at the same time, the lower top should remain parallel to the waterline, i.e. not perpendicular to the mast. When you are happy with the alignment, glue the components securely in position.

**Note:** *Although the lower top must remain parallel to the waterline and as such not perpendicular to the mast, this is **not** true for the main mast cap. The cap should be fitted perpendicular to the mast and as such is not parallel to the waterline.*

The stop cleat (197) can now be fitted to the after face of the lower mast head as shown on [Plan Sheet 3](#). Using [Plan Sheet 6](#) for reference, three copper eyelets (145) can now be fitted to the after face of the lower mast head / mast cap as shown together with their respective blocks. Using [Plan Sheet 2, 'Fore Bitts and Fore Mast Belaying Points'](#) for reference, finally locate, paint matt (metal) black and fit four small cleats (142) to the base of the mast, the cleats should be positioned, vertically, one on each side of the mast and one on each of the forward three quarter points of the mast with their 1mm locating hole drilled 10mm above the mast coat (77). In order to gauge their correct height it is advisable to dry fit the mast and coat onto the model and note the position of the mast coat onto the mast.



## Painting the Masts

As noted previously, all of the mast sections are to be stained walnut. The areas of the masts to be painted dull black are as follows:

1. The lower masts: from 10mm below the uppermost point of the 6mm round dowel section, up to and including the cap, this incorporates the lower part of the topmasts also.
2. The fore topmast: from the lower edge of the hounds up to the upper edge of the hounds.
3. The main topmast: from the lower edge of the stop cleats up to the upper edge of the stop cleats.

## Yards and Booms

Using *Plan Sheet 3* for reference, make up the yards and booms to the dimensions shown as follows:

### Fore Yard (Crossjack):

Although fitted on the foremost mast, the fore yard is shaped and rigged as a crossjack yard. Using *Plan Sheet 3* for reference, make up the fore yard to the dimensions given as follows:

The fore yard is made up from one 180mm length of 4mm dowel; the central 45mm of the yard remains 4mm round while the outer ends are tapered along their 67.5mm lengths from 4mm round to 2.5mm round.

### Fore Topmast Yard:

Using *Plan Sheet 3* for reference, make up the fore topmast yard to the dimensions given as follows:

The topmast yard is made up from one 105mm length of 3mm dowel; the central 26mm of the yard remains 3mm round while the outer ends are tapered along their 39.5mm lengths from 3mm round to 2mm round.

### Yard Fittings:

The sling cleats (80 & 81) should be identified from the 1.5mm walnut sheet and fitted to their respective yards as shown. Each yard also requires four stop cleats, one pair on each outboard end as shown. As per the bowsprit, the stop cleats should be formed from 1.5x1.5mm walnut, shaped as shown (*Fig 018*).

### Fore Gaff:

Using *Plan Sheet 3* for reference, make up the fore gaff to the dimensions given as follows:

The fore gaff is made up from one 85mm length of 3mm dowel tapered, along its length, from 3mm round to 2mm round. Identify and remove the fore gaff jaws (44) from the 3mm walnut sheet. As shown, join the jaws to the dowel with a length of 1.5mm brass rod (178).

### Main Gaff:

Using *Plan Sheet 3* for reference, make up the main gaff to the dimensions given as follows:

The main gaff is made up from one 95mm length of 3mm dowel tapered, along its length, from 3mm round to 2mm round. Identify and remove the main gaff jaws (44) from the 3mm walnut sheet. As shown, join the jaws to the dowel with a length of 1.5mm brass rod (178).

### Driver Boom:

Using *Plan Sheet 3* for reference, make up the driver boom to the dimensions given as follows:

The driver boom is made up from one 190mm length of 4mm dowel. The first 75mm from one end should remain at 4mm round with the remainder being tapered from 4mm round at this point, 75mm from one end, down to 3mm round along the remaining 115mm.

Identify and remove the driver boom jaws (28) from the 4mm walnut sheet. As shown, join the jaws to the dowel with a length of 1.5mm brass rod (178).

## Painting the Yards

All of the yards, gaffs and booms, together with their associated fittings are to be painted dull black.

## Mast, Yard & Top Blocks

With the masts and yards assembled and referring to *Plan Sheet 6* and (*Fig 020*) fit the blocks and copper eyelets (145) to the masts, yards, caps and main top as shown. Unless otherwise shown, the smaller 3mm blocks should be secured with 0.25mm black thread, while the 5mm blocks should be secured with 0.5mm black thread.

**Note:** *There are no blocks on the fore top.*

**Note:** *No blocks should be painted on any part of the model.*

## Fore Yard Horses (Footropes)

Referring to [Plan Sheet 6](#), the fore yard horses<sup>†</sup> are formed from 0.25mm black thread. The outer end is seized to the yard, outside the stop cleat, the horse then leads inboard and through stirrups<sup>†</sup> of 0.5mm brass wire (175) and the end is seized to the yard, outside the sling cleat on the opposite side i.e. port horse to starboard sling cleat and vice versa. The stirrups are from 0.5mm brass wire (175), painted dull black, and a small loop should be formed in one end just large enough for the 0.25mm black thread footrope to pass through. At the locations shown on [Plan Sheet 6](#), drill a hole into the underside of the fore yard to accept the stirrups, taking care not to drill right through the yard. The stirrup can then be trimmed and fitted so that the loop hangs approximately 15mm below the yard.

## Stepping the Masts

Using [Plan Sheets 4 – 6](#) for reference, temporarily drill and pin the yards, gaffs and boom in place on the masts (using dome headed pins). With the locations marked, drilled and pinned, remove the yards, gaffs and boom and set them to one side, they will not be finally fitted until needed for the running rigging.

Identify the mast coats (77). Pass the masts through their respective coats and step the masts into their locating holes through the deck, adjust the masts to their desired rake and secure the coat to the deck (ensure the masts are all vertical when viewed fore-and-aft).

**Note:** It will be necessary to slightly bevel the internal hole through the mast coats to allow them to sit flush on the deck while still allowing the mast to pass through at the correct rake determined by their locating slots in the keel.

Secure the masts in place.

## Standing Rigging

**Note:** All **b** numbers in these rigging instructions refer to ‘belaying points’<sup>†</sup> as described. All **c** numbers refer to specific copper eyelets. All of these points can be found on [Plan Sheet 2, ‘Belaying Plan’](#) unless otherwise stated.

The rigging plans have been drawn following extensive research, contemporary and modern. We would recommend that you follow these drawings exactly unless you are converting the model to an earlier or later version of the ship.

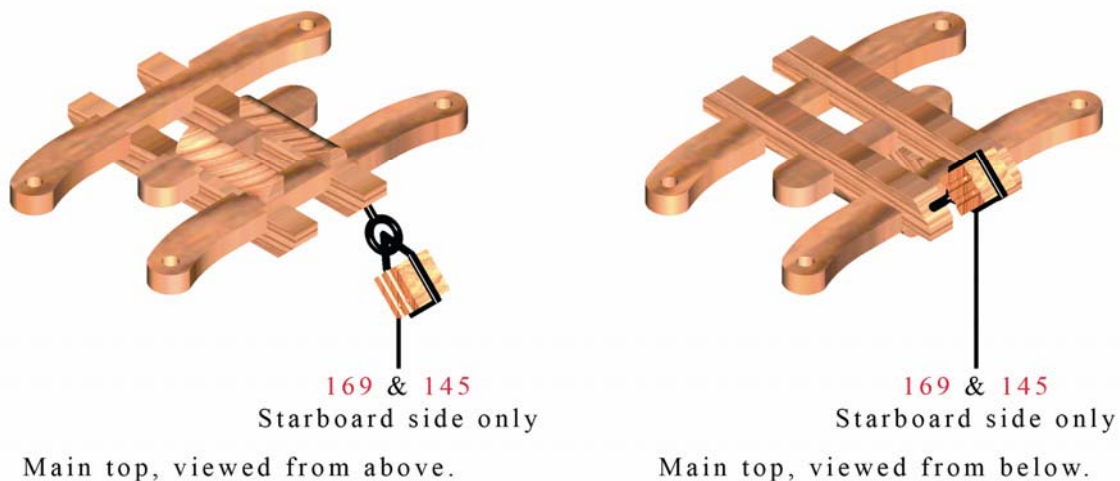
**Note:** Never use super glue on the rigging unless specifically stated in the instructions. Brushed on watered down PVA should be used for the majority of the knots. Super glue can be applied to the end of the rigging only, to aid threading through the blocks.

### Tackle Pendants (Pendants of Tackles):

One pair of tackle pendants is required on each lower mast.

The tackle pendants are from 0.75mm black thread. Using [Plan Sheet 4, ‘General Rigging Sequence at Lower Mast Head’](#) for reference, lead the pendant up between the after crosstree (long) and the middle crosstree (short), pass it round the back of the mast head and back down between the after crosstree (long) and the middle crosstree (short), opposite side. The pendants hang down 45mm below the top and a 3mm single block is seized into their ends.

Fig 020 – Main Top Blocks



### Lower Mast Shrouds:

Before the shrouds can be rigged, the channels must be finally fixed in place using the locating holes drilled during 'Outer Hull Fittings'. With the channels fitted, the lower end of the shrouds can be secured against the black strake with dome headed pins (*Photos 043 & 044*).

Shrouds are set-up next and a formal sequence must be adhered to. Forward starboard, forward port alternating. The main and fore lower mast shrouds are from 0.75mm black thread, as shown on [Plan Sheet 4](#) together with 3.5mm deadeyes. Roughly measure out the length of the first pair of shrouds and rig one end with a 3.5mm deadeye by looping the shroud end around the deadeye and securing the end back onto itself with 0.25mm black thread. The upper and lower deadeyes need to be correctly and uniformly spaced. The spacing for the lower mast deadeyes should be 20mm. A small jig can be made as follows, cut two lengths of 1mm brass rod (*177*) approximately 40mm long, bend 10mm from each end to an angle of 90 degrees. This should leave 20mm between each end. One end of the jig can be slotted into the middle hole of the lower deadeye with the other end into the middle hole of the shroud deadeye. Thread the loose end of the shroud up between the after crosstree (long) and the middle crosstree (short) around the mast, back down between the after crosstree (long) and the middle crosstree (short) (same side) and down to the second deadeye. Insert a loose deadeye into the second spacing jig with the other end of the jig in the corresponding deadeye. The loose end of the shroud should then be looped around the deadeye and seized back onto itself with 0.25mm black thread. Secure the pair of shrouds together near the tops, with a simple clove hitch, using 0.25mm black thread and then push the knot up to the bolster. Rig the lanyards† ('cable laid'†) to the deadeyes using 0.25mm natural thread as shown on [Plan Sheet 4, 'Rigging Detail'](#) (*Photo 056*). Continue this procedure until all the lower mast shrouds have been set up, bearing in mind that the shrouds will need to be cut to a longer length as you progress.

There is a futtock stave set up to each of the lower shrouds. These are cut from 0.70mm brass (*176*) to the length of the spread of the shrouds at the position to which they are to be secured using 0.25mm black thread, as shown on [Plan Sheet 4](#). Secure each shroud to the futtock stave with a simple clove hitch.

**Note:** *The futtock staves are positioned across the shrouds at a distance of 40mm below the 'top' as shown on [Plan Sheet 4, 'Futtock Stave & Topmast Shroud Assembly'](#).*

**Note:** *The fourth shroud on each mast is actually a lower mast backstay but it is correctly set up with the shrouds.*

### Ratlines:

This stage will require a considerable amount of time and patience but the end result will be its own reward.

0.1mm natural thread is used for the ratlines and is secured to each shroud with a clove hitch as shown on [Plan Sheet 4, 'Rigging Detail'](#). The first ratline should be positioned just above the whipping† of the shroud lanyards, the remainder should be uniformly spaced approximately 5mm apart, up to the futtock stave. Leave about 15mm of excess thread at each end of each row of ratlines; this will make the process of trimming the ends much easier.

**Note:** *The backstays (4th shrouds) are not rigged with ratlines.*

When all the ratlines are finally rattled stain them by carefully brushing on black Indian ink, or diluted dull black paint can be used if you prefer. Before applying the ink, cover the back of the shrouds with paper to ensure no drops are spilt on the deck. When the ink has dried it may be necessary to pull the ends of the ratlines to bring the shrouds back to shape as a slight shrinking may have occurred as the ink dried. Finally cut off the excess thread with a small sharp pair of scissors (*Photo 057*).

*Photo 056*



*Photo 057*



Fig 021 – Topmast Shrouds

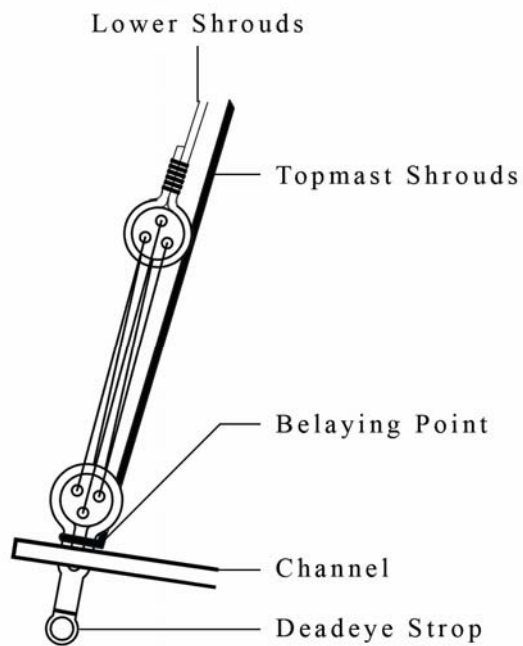
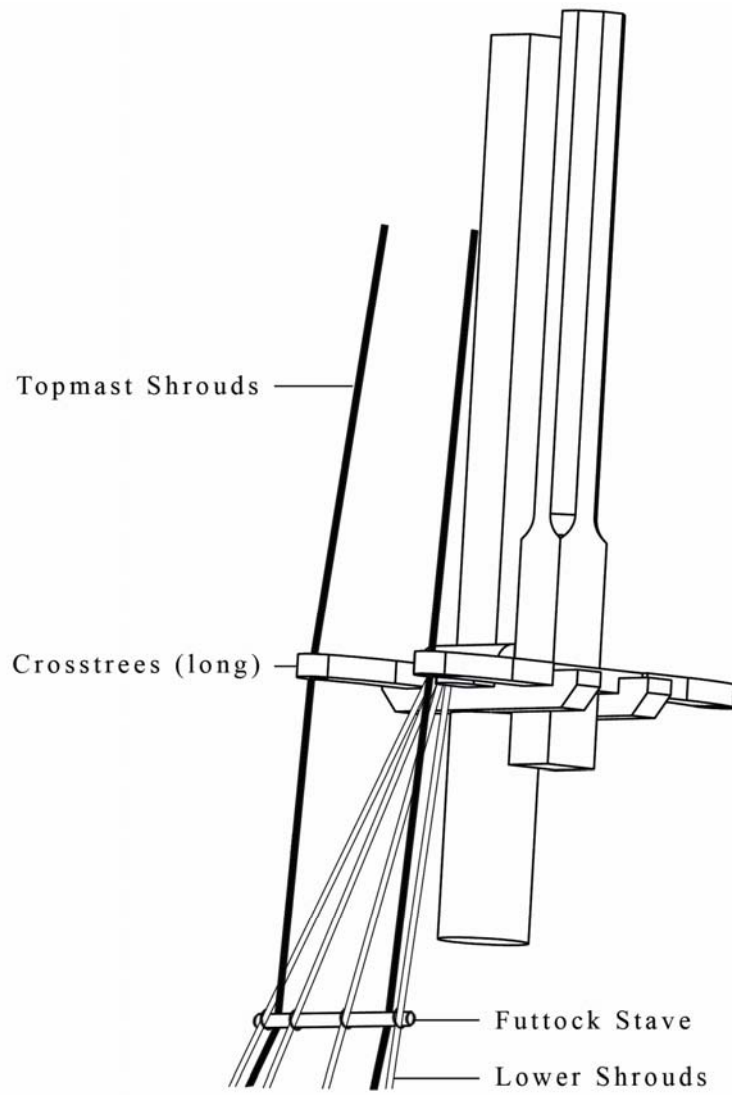


Photo 058



Photo 059



### Topmast Shrouds:

Referring to [Plan Sheet 4](#), the topmast shrouds are from 0.5mm black thread. For the fore mast, to begin, measure an 850mm length of 0.5mm black thread. Using a length of 0.25mm black thread, form an 'eye splice'<sup>†</sup> at the mid point of the 850mm length of 0.5mm black thread to form an eye of approximately 6mm in diameter (it is recommended that a piece of 6mm dowel be used to help form this eye).

The eye should now be passed over the fore topmast head until it comes to rest on the hounds with the two 'legs' running to the starboard side. Using ([Fig 021](#)) for reference, each of the 'legs' now pass down and one through each of the holes in the end of the crosstrees (long), they continue downward and pass over and inboard of the shroud futtock stays (the foremost passes between the first and second shroud, the aftermost passes between the third shroud and the backstay (fourth shroud)). The legs now continue down, inboard of the shrouds and are each secured off to the brass deadeye strops on the fore mast channel, between the deadeye and the channel. The foremost leg is secured to the first shroud deadeye strop, the aftermost to the backstay (fourth shroud) deadeye strop. This process should now be repeated for the port side of the fore mast.

The main topmast shrouds are set up in the same manner as the fore topmast shrouds with the exception that the eye, at the mid-point of the shrouds seats down onto the stop cleats.

### Bowsprit:

The bowsprit can now be glued into position, together with the pawl bits and windlass ([Photo 058](#)) – having regard for the instructions on pages 25 & 26, relocating the previously fitted dome head pin in the bits into the bowsprit; ensure that the cap remains vertical when viewed from the front and perpendicular to the waterline when viewed from the side.

With the bowsprit in position, two gammoning cleats formed from 1.5x1.5mm walnut need to be positioned onto the bowsprit to accept the gammoning. They are both positioned with their foremost face 3mm forward of the foremost face of the walnut stem and the first should be located directly on top of the bowsprit with the second offset through approximately 45 degrees to port as shown on [Plan Sheet 4, 'Bowsprit \(Plan View\)'](#).

Referring to [Plan Sheet 4](#), the bowsprit gammoning of 7 turns in 0.5mm black thread can now be rigged. The gammoning passes over the bowsprit in front of the gammoning cleats, down and through the gammoning ring in the stem. With seven turns completed, do not cut or secure off the end, instead pass it around the centre of the gammoning, between the bowsprit and stem, seven times and secure off to itself ([Photo 059](#)).

### The Fore Stay:

Referring to [Plan Sheet 4](#), the fore stay is of 1mm black thread and requires an eye and mouse<sup>†</sup>, the mouse positioned 90mm from the eye as shown on [Plan Sheet 4, 'Eye and Mouse Setup'](#). The eye end of the stay is passed up between the foremost crosstree (long) and the middle crosstree (short) from the port side around the mast and back down between the foremost crosstree (long) and the middle crosstree (short), starboard side. Lead the running end of the stay through the eye until it is held by the mouse.

A 3.5mm deadeye is held in a strop of 0.5mm black thread around the bowsprit as shown ([Photo 060](#)).

A 3.5mm deadeye is secured into the end of the fore stay approximately 20mm from the deadeye on the bowsprit. A lanyard of 0.25mm natural thread should be set up between the two deadeyes with the running end belayed back onto the stay, above the deadeye.

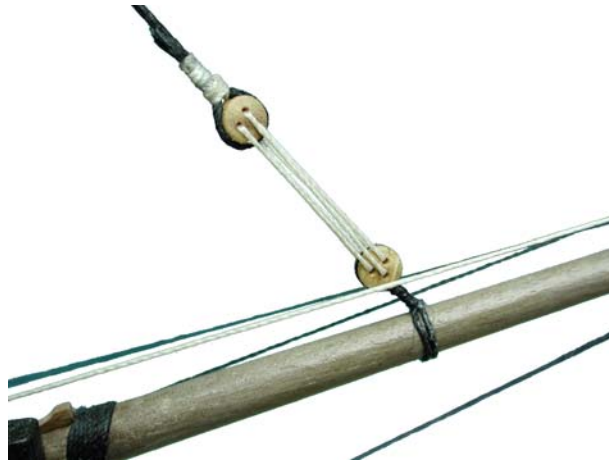
### The Jib Stay:

Referring to [Plan Sheet 4](#), the jib stay is of 0.5mm black thread and requires an eye and mouse (the mouse positioned 90mm from the eye). The eye end of the stay is passed up between the foremost crosstree (long) and the middle crosstree (short) from the port side around the mast and back down between the foremost crosstree (long) and the middle crosstree (short), starboard side. Lead the running end of the stay through the eye until it is held by the mouse.

A 3.5mm deadeye is held in a strop of 0.5mm black thread around the bowsprit and jib-boom held by the stop cleats just abaft the bowsprit cap as shown ([Photo 055](#)).

A 3.5mm deadeye is secured into the end of the jib stay approximately 20mm from the deadeye on the bowsprit. A lanyard of 0.25mm natural thread should be set up between the two deadeyes with the running end belayed back onto the stay, above the deadeye.

*Photo 060*



### The Outer Jib Stay:

Referring to [Plan Sheet 6](#), one 3mm single block should be secured into the copper eyelet on the forward face of the bowsprit cap with the falls of 0.25mm natural thread secured into the arse of this block at the same time.

Referring to [Plan Sheet 4](#), the outer jib stay is of 0.25mm black thread. Secure the standing end around the hounds of the fore mast. The running end leads down and passes through the copper eyelet in the end of the jib-boom from aft to forward and continues forward to pass down through the 0.5mm sheave hole in the end of the jib-boom. The end now leads inboard toward the 3mm single block in the forward face of the bowsprit cap and a 3mm double block should be seized into its end at a distance of approximately 20mm from the block on the cap. The falls should now be rigged between these two blocks and the running end passes starboard side of the bowsprit to the starboard end of the pawl bitts crosspiece where it is belayed ([b1](#)).

### The Fore Topgallant Stay:

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Referring to [Plan Sheet 4](#), the fore topgallant stay is of 0.25mm black thread. To begin, form a small eye (becket<sup>i</sup>) in one end of the 0.25mm black thread, approximately 1.5mm in diameter (this can be formed around some 1.5mm brass rod ([178](#))), the becket should be hardened with a very small amount of super glue applied with a pin. The becket should now be secured to the copper eyelet in the outer hull, just offset to port of the bowsprit, by a lanyard of 0.1mm natural thread – the becket should be held approximately 10mm from the copper eyelet ([Fig 022](#)). With the lanyard formed it should be stained with Indian ink or diluted dull black paint if preferred. The now running end of the fore topgallant stay passes out and through the 3mm single block on the end of the jib-boom, passing through from aft to forward and continues up to the fore topgallant mast head where it is secured as shown.

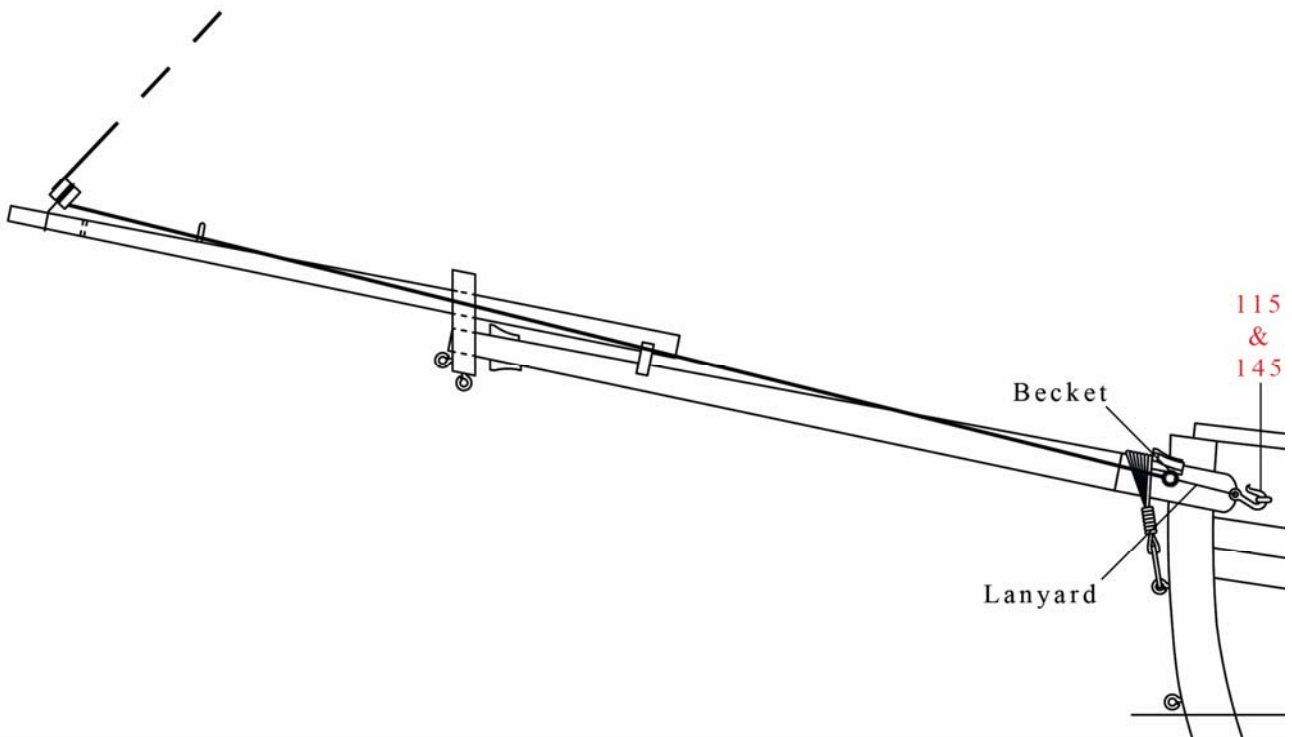
*Photo 061*



*Photo 062*



Fig 022 – Fore Topgallant Stay



The Schooner Stay:

The schooner stay is actually the main stay but is so called due to the way in which it is rigged being particular to schooners. Referring to [Plan Sheet 4](#), the schooner stay is of 1mm black thread and requires an eye and mouse (the mouse positioned 60mm from the eye). The eye end of the stay is passed around the mainmast head, port side, around the mast and back down, starboard side, held in place by the stop cleat positioned 5mm below the cap as shown. Lead the running end of the stay through the eye until it is held by the mouse.

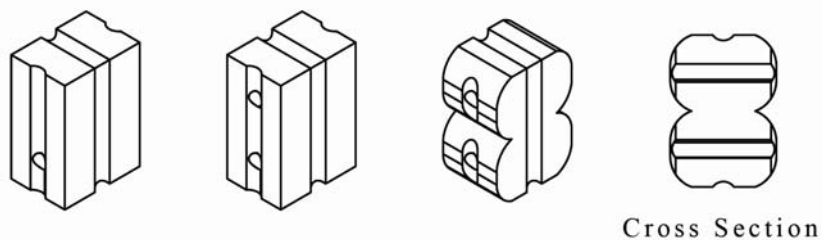
The running end now travels forward and through the 5mm single block held in a copper eyelet on the after face of the fore lower mast head, 6mm below the cap. From here it passes down towards deck and has a 3mm double block secured in this end at a height of 70mm off the deck.

A 3mm single block is hooked, with a rigging hook (115), to the central copper eyelet in the deck, just abaft the fore mast (c1), the falls of 0.25mm natural thread should be secured into the arse of the block at the same time. A tackle is now set up between these two blocks and the running end is belayed to the third belaying pin (from starboard) in the fore bitts crosspiece (b2).

The Main Topgallant Stay:

Referring to [Plan Sheet 4](#), the main topgallant stay is of 0.25mm black thread. You will find it of benefit to rig this stay backwards, i.e. from the belayed end to the standing end. The belayed end is secured to the fore stay collar, starboard side of the fore mast (b3) as shown on [Plan Sheet 2, 'Main Topgallant Stay Belaying Point'](#). The now running end passes up and through the 3mm single block in the after face of the fore topmast, just beneath the hounds and leads aft to the main topgallant mast head where it is secured as shown on [Plan Sheet 4](#).

Fig 023 – Forming a Sister Block



1. Using a 5mm single block, drill a second hole through the opposite end to the pre-drilled hole.
2. Using a needle file, gently round the ends and mid-section.

### The Fore Gaff:

**Note:** When fitting the fore gaff, the schooner stay should be allowed to run past the port side of the gaff jaws.

(Photo 061) locate one 5mm single block, using (Fig 023) for reference, form a 5mm 'sister block'<sup>†</sup>. Secure a length of 0.25mm natural thread around the gaff at a distance of 68mm from the end of the gaff, pass the thread through one of the holes in the 5mm block and secure the end back to the gaff at a distance of 37mm from the end of the gaff. Upon completion, the 5mm block should be held approximately 25mm from the gaff.

Referring to [Plan Sheet 3](#), secure one copper eyelet (145), painted matt (metal) black, into the upper face of the gaff jaws with the 'eye' running athwartships, as shown.

The driver gaff jaws (44) are held in place by 8 parrel beads (150), on 0.25mm black thread as shown on [Plan Sheet 5](#), 'Method of Seizing 'Jaws' to Masts'. As already mentioned, it is also recommended that the gaff is secured by pinning it to the mast, at the correct elevation.

Because the fore gaff is not paired to a boom it was not rigged to hoist and as such the jaws are held by a sling rather than a throat halyard.

Referring to [Plan Sheet 5](#), the sling is from 0.5mm black thread. Cut a length of 0.5mm black thread and form a 1.5mm becket in each end, upon completion the thread, with becket, should be approximately 30mm long.

Pass one end of the sling up between the trestletrees, aft of the fore mast, and around the lower mast head from port side to starboard side and back down aft of the mast between the trestletrees until this first becket is located just below the top. Pass the opposite end of the thread, with the second becket, through the first becket, effectively forming a slip knot and allow the second becket to pass down toward the copper eyelet in the fore gaff jaws, when correctly positioned the second becket should be approximately 6mm from the copper eyelet.

To complete the sling, rig a lanyard of 0.25mm black thread between the copper eyelet and the second becket.

The gaff topping lift is of 0.25mm natural thread. The standing end of the gaff topping lift is made fast directly to the fore gaff, approximately 10mm from the end of the gaff. The running end passes forward and through the 3mm single block secured to the copper eyelet (145) in the after face of the foremast cap, back and through the 5mm sister block held on the gaff, back up and through the 3mm single block secured to the copper eyelet (145) in the after face of the foremast head, 20mm beneath the mast cap. From here the running end passes down port side of the gaff, and is belayed to the third belaying pin (from port) in the fore bitts crosspiece (b4).

Again, because the fore gaff is not paired to a boom it is rigged with vang pendants.

A pair of 3mm double blocks are held one in each end of a length of 0.25mm black thread. The mid-point of the thread is secured to the fore gaff at a distance of 5mm from the end of the gaff and upon completion the double blocks should hang down approximately 70mm from the gaff.

Using rigging hooks (115) two 3mm single blocks are hooked, one per side, into the copper eyelets in the deck positioned 6mm abaft of the fourth gunport (c2); the falls of 0.1mm natural thread are secured into the arse of these blocks at the same time.

The tackles are set up between these blocks and the double blocks of the vang pendants on the gaff and they are belayed to the foremost pins, one per side, of the aftermost capping pinrail (b5).

### The Main Gaff:

(Photo 062) locate one 5mm single block, using (Fig 023) for reference, form a 5mm sister block. Secure a length of 0.25mm natural thread around the gaff at a distance of 68mm from the end of the gaff, pass the thread through one of the holes in the 5mm block and secure the end back to the gaff at a distance of 37mm from the end of the gaff. Upon completion, the 5mm block should be held approximately 25mm from the gaff.

Referring to [Plan Sheet 3](#), secure one copper eyelet (145), painted matt (metal) black, into the upper face of the gaff jaws as shown with the 'eye' running athwartships. Seize one 3mm single block to the copper eyelet at the throat of the gaff jaws using 0.25mm black thread as shown on [Plan Sheet 5](#), noting that the falls (for the throat halyard) of 0.1mm natural thread are secured into the arse of this block at the same time.

The driver gaff jaws (44) are held in place by 8 parrel beads (150), on 0.25mm black thread. As already mentioned, it is also recommended that the gaff is secured by pinning it to the mast.

Because the main gaff is paired to a boom it is rigged to hoist and as such the jaws are held by a throat halyard rather than a sling.

Referring to [Plan Sheet 5](#), the throat halyard is now rigged between the 3mm single block on the gaff jaws and the 3mm double block seized to a copper eyelet in the after end of the starboard trestletree. The running end passes down, starboard side of the gaff, and is belayed to the fourth belaying pin (from the front) of the aftermost capping pinrail on the starboard side (b6).

The gaff topping lift is of 0.25mm natural thread. The standing end of the gaff topping lift is made fast directly to the main gaff, approximately 6mm from the end of the gaff. The running end passes up and through the **starboard** sheave of the 3mm double block secured to the copper eyelet (145) in the after face of the mainmast cap, back and through the 5mm sister block held on the gaff, back up and through the 3mm single block secured to the copper eyelet (145) in the after face of the mainmast head, 25mm beneath the mast cap. From here the running end passes down port side, and is belayed to the fourth belaying pin (from the front) of the aftermost capping pinrail on the port side (b7).

**Note:** The main gaff is rigged to hoist and as such no vang pendants were ever fitted.

**Note:** The 2.5mm single block on the end of the main gaff is for the ensign halyard which will be rigged at a later stage.



### The Driver Boom:

(Photo 063) the driver boom jaws (28) are held in place by 8 parrel beads (150), on 0.25mm black thread and the driver boom saddle (79). As already mentioned, it is also recommended that the boom is secured by pinning it to the mast. The saddle is positioned 37mm off the deck and is supported by 3 cleats made up from 1.5x1.5mm walnut as per the stop cleats. Referring to [Plan Sheet 5](#), the guy pendants are next to be set up. Measure a length of 0.25mm black thread, approximately 60mm in total. At the centre of this thread, throw a clove hitch over the driver boom and secure 8mm from the end of the boom as shown. Seize a 3mm double block into each end of the thread such that they are each held 15mm from the driver boom. Using rigging hooks (115) 3mm single blocks (one each side) should be hooked, hook up, into the copper eyelets in the stern fascia as shown, the falls of 0.25mm natural thread should be secured into the arse of these blocks at the same time. A tackle is set up between the 3mm single block and the 3mm double block on the end of the boom, to form the guy pendants, and the running end is belayed to the cleat on the upper surface of the capping rail, 26mm forward of the stern fascia (b8). The topping lift is of 0.25mm natural thread as shown on [Plan Sheet 5](#). The standing end is made fast directly to the driver boom approximately 7mm from the end of the boom. The running end passes up, port side of the main gaff and through the **Port** sheave of the 3mm double block secured to the copper eyelet (145) in the after face of the mainmast cap. The running end passes down, port side, toward deck. A 3mm double block should be seized into the end of the topping lift approximately 96mm off the deck. Using a rigging hook (115) a 3mm single block is hooked into the copper eyelet in the deck, port side of the main mast (c3) and the falls of 0.1mm natural thread are secured into the arse of this block at the same time. A tackle is now set up between this single block and the double block in the end of the topping lift and the running end is belayed to the port cleat on the base of the main mast (b9). A small span of 0.1mm natural thread is now rigged between the boom and the topping lift; it is positioned 60mm from the end of the driver boom and is secured to the topping lift approximately 50mm from the standing end of the topping lift.

Photo 063



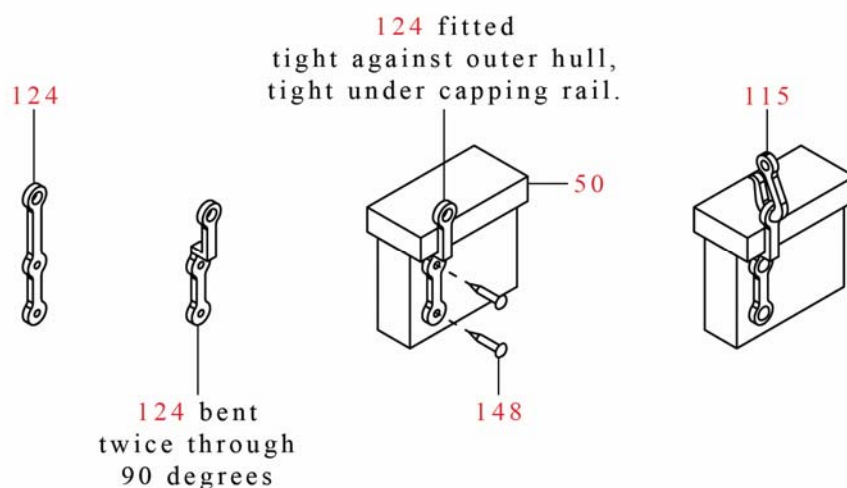
Photo 064



### The Fore Topmast Backstay:

Identify, two backstay 'iron' hull straps (124) on the 0.5mm etched brass sheet, before removing them, ensure that the two small holes are opened up to 0.65mm by drilling them, they can then be painted matt (metal) black and removed from the sheet. The straps should be fitted as shown in (Fig 024) (Photo 064), by pinning with dome head pins (148) tight against the hull. In order to achieve this, the strap will need to be bent through 90 degrees to butt against the underside of the capping rail and bent again through 90 degrees to lead upwards, tight against the outer face of the capping rail. They are positioned, one each side, at a distance of 2.5mm aft of the third gunport as shown on [Plan Sheet 2](#), 'Outer Hull Fittings'. Referring to [Plan Sheet 4](#), the fore topmast backstays, one per side, are of 0.25mm black thread. The starboard fore topmast backstay is rigged first as follows; using an eye splice, secure the standing end over the fore topmast, down onto the hounds such that the running end is held aft of the topmast shrouds. The running end now passes down and outboard toward the starboard backstay 'iron' hull strap (124) and a 3mm double block should be secured into the end approximately 50mm off the capping rail. Using a rigging hook (115) a 3mm single block is hooked into the backstay 'iron' hull strap and the falls of 0.25mm natural thread should be secured into the arse of this block at the same time. A tackle is now set up between the 3mm single and 3mm double block and the running end is belayed to the cleat on the inner face of the capping rail, just aft of the foremost pinrail (b10). The port foremast backstay can now be rigged in the same manner to the port side.

Fig 024 – Backstay Plate Fitting



#### The Main Topmast Backstay:

Identify, two backstay 'iron' hull straps (124) on the 0.5mm etched brass sheet, before removing them, ensure that the two small holes are opened up to 0.65mm by drilling them, they can then be painted matt (metal) black and removed from the sheet. The straps should be fitted as shown in (Fig 024) (Photo 064), by pinning with dome head pins (148) tight against the hull. In order to achieve this, the strap will need to be bent through 90 degrees to butt against the underside of the capping rail and bent again through 90 degrees to lead upwards, tight against the outer face of the capping rail. They are positioned, one each side, at a distance of 2.5mm forward of the sixth gunport as shown on [Plan Sheet 2, 'Outer Hull Fittings'](#).

Referring to [Plan Sheet 4](#), the main topmast backstays, one per side, are of 0.25mm black thread. The starboard main topmast backstay is rigged first as follows; using an eye splice, secure the standing end over the main topmast, down onto the stop cleats such that the running end is held aft of the topmast shrouds and the cleats. The running end now passes down and outboard toward the starboard backstay 'iron' hull strap (124) and a 3mm double block should be secured into the end approximately 50mm off the capping rail. Using a rigging hook (115) a 3mm single block is hooked into the backstay 'iron' hull strap and the falls of 0.25mm natural thread should be secured into the arse of this block at the same time. A tackle is now set up between the 3mm single and 3mm double block and the running end is belayed to cleat on the inner face of the capping rail, just forward of the sixth gunport (b11).

The port mainmast backstay can now be rigged in the same manner to the port side.

#### The Bobstay:

Referring to [Plan Sheet 4](#), there is one bobstay of 0.5mm black thread. It is set up in a similar manner to the shrouds using 2.5mm deadeyes. A 2.5mm deadeye should first be secured to the copper eyelet in the underside of the bowsprit cap. Using an eye splice, secure the standing end of the 0.5mm black bobstay through the copper eyelet positioned in the forward face of the stem, just above the waterline as shown on [Plan Sheet 4](#). A 2.5mm deadeye should be secured into the end of the bobstay at a distance of 15mm from the deadeye on the underside of the bowsprit cap; a 15mm jig can be made to achieve this. A 0.1mm natural lanyard is now set up between the two deadeyes and is belayed back onto the bobstay just below the deadeye.

#### The Bowsprit Shrouds:

Referring to [Plan Sheet 4](#), the bowsprit shrouds are of 0.5mm black thread. It is set up in a similar manner to the bobstay again using 2.5mm deadeyes. Two 2.5mm deadeyes, one per side, should first be secured to the bowsprit, just behind the bowsprit cap and held by the stop cleats. Using rigging hooks (115) the standing end of the shrouds are hooked, hook up, into the copper eyelets in the hull as shown. A 2.5mm deadeye should be secured into the end of each shroud at a distance of 15mm from the deadeyes on the bowsprit; a 15mm jig can be made to achieve this. A 0.1mm natural lanyard is now set up between the two deadeyes and is belayed back onto the shrouds just below the deadeye.

## Running Rigging

**The yards should now be fitted to the masts as follows:**

### The Fore Yard:

As *Pickle* is a topsail schooner, the fore yard is simply a spreader yard and as such is rigged as a crossjack yard and is held in place by a sling and a truss.

Referring to [Plan Sheet 5](#), the sling is set up in three sections:

The first section is a strop of 0.25mm black thread. Form a small eye in one end of the thread, the eye should be approximately 2mm in diameter. Take the end with the eye in it once around the yard, tightly, at the centre point of the yard and seize it back on itself. It should be seized back on itself so that the eye is held free, just above the yard.

The second section is another strop of 0.25mm black thread. Again, form a small eye in one end of the thread, the eye should be approximately 2mm in diameter. Pass the end without the eye in it up between the trestletrees, forward of the fore topmast, and around the lower mast head from port side to starboard side, to rest on the stop cleat on the after face of the fore mast, and back down forward of the topmast between the trestletrees and seize it back on itself. It should be seized back on itself so that the eye is held free, approximately 7mm above the eye on the yard.

The third and final part of the sling is a lashing of 0.1mm natural thread set up between the two eyes. The lashing of 0.1mm natural thread should be painted or stained black upon completion.

Referring to [Plan Sheet 5](#), '[Fore Yard Truss Pendant Detail](#)', the truss is rigged singularly as follows:

1. Form a small eye in one end of a length of 0.25mm black thread. The eye should be just large enough to allow the 0.25mm truss to pass through it.
2. Take the end with the eye in it once around the yard, tightly, against the inboard face of the port sling cleat and seize it back on itself. It should be seized back on itself so that the eye is held free, just behind the yard. The running end should now be trimmed.
3. Take another length of 0.25mm black thread once around the yard, tightly, against the inboard face of the starboard sling cleat and seize it back on itself, note that no 'eye' is formed in this length. It should be seized back on itself and one end trimmed, the opposite end will form the running end of the truss.
4. Pass the running end of the truss around the back of the fore mast, and down through the 'eye' previously formed on the port side.
5. The running end now runs down toward deck and a 3mm double block seized into the end approximately 40mm above the deck.
6. Using a rigging hook (115) a 3mm single block should be hooked into the copper eyelet (145) in the deck port side, aft of the fore mast (c4). The falls of 0.1mm natural thread should be secured into the arse of this block at the same time.
7. The falls are now set up between the 3mm single block and 3mm double block and belays to the second (from the port side) belaying pin in the fore bitts crosspiece (b12).

### The Fore Topmast Yard:

The fore topmast yard is held in place by a parrel and a tie.

5 double parrel ribs (134) and 8 parrel beads (150) are required for the parrel. The double parrel ribs should be cut in half to produce 10 single parrel ribs, 9 of which will be used. Using (Fig 025) for reference, the parrel rope, of 0.25mm black thread, passes over and around the yard and is then loaded with parrel ribs and parrel beads alternating rib, bead, rib etc, around the mast and is then secured around the yard on the opposite side. The parrel should remain within the sling cleats.

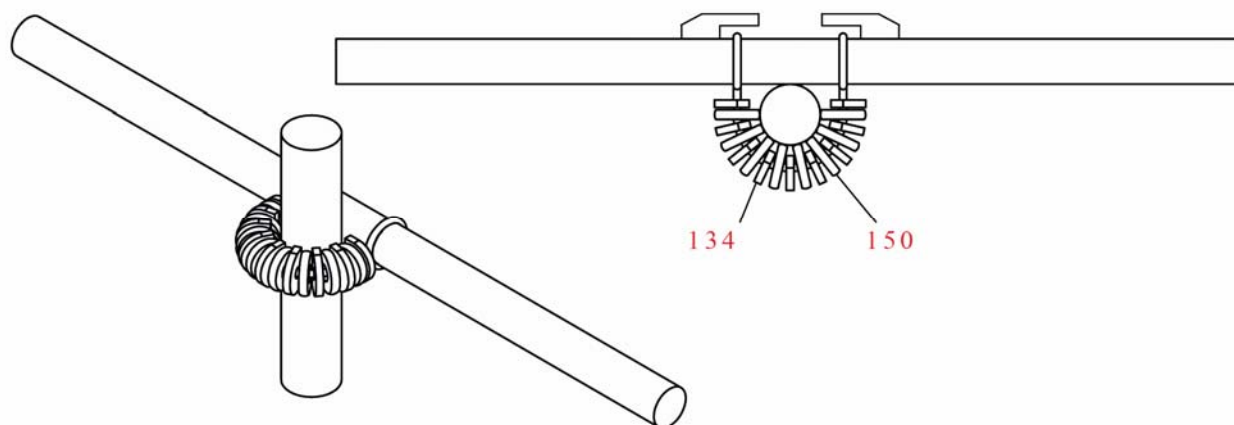
The tie is of 0.25mm natural thread. Referring to [Plan Sheet 5](#), the standing end is secured around the centre of the yard. The running end passes up through a 0.5mm hole (sheave) drilled fore-and-aft through the topmast 15mm beneath the top surface of the hounds. It then passes down behind the mast, starboard side, toward deck and has a 3mm double block secured into its end at a height of 45mm off the deck. Using a rigging hook (115) a 3mm single block is hooked into the copper eyelet (145) in the deck starboard side, aft of the fore mast (c5). The falls of 0.1mm natural thread should be secured into the arse of this block at the same time. The falls are now set up between the 3mm single block and 3mm double block and belays to the starboard cleat on the base of the fore mast (b13).

**The next stage is the lifts for each yard as follows:**

### The Fore Yard:

The fore yard lifts (one each side) are of 0.25mm natural thread as shown on [Plan Sheet 5](#). A pair of 3mm single blocks are held in a span around the centre of the fore mast cap, using 0.50mm black thread, as shown on [Plan Sheet 6](#), and the resultant pendant should be approximately 10mm long, the falls of 0.25mm natural thread should be secured into the arses of these blocks at the same time. The running end of the port lift passes down through the 3mm single block, stropped to the 5mm single block on the port outboard end of the yard. It then passes back up and through the port 3mm single block on the cap, from here, it passes down aft of the yard and is belayed to the foremost belaying pin in the foremost capping pin rail (b14). The starboard falls follow the same route but starboard side.

Fig 025 – Parrel Assembly



The Fore Topmast Yard:

Referring to [Plan Sheet 5](#), the fore topmast yard lifts are of 0.25mm natural thread. A pair of 3mm single blocks should be rigged on 5mm long pendants, over the fore topmast head, down onto the hounds. The standing end of the lift (one per side) is secured to the end of the yard, against the outboard face of the stop cleats. The running end passes up and through the 3mm block at the hounds and passes down, aft of the yards, and is belayed to the second belaying pin, from the front, in the foremost capping pin rail ([b15](#)).

**The sheets and cluelines are the next stage as follows:**

You should note that the **topmast** yard cluelines and sheets run between the **topmast** yard and **lower** yard, this is worth bearing in mind and may appear to be obvious but this stage of the rigging can become confusing. Refer to [Plan Sheet 5](#) for the clueline standing end positioning on the fore topmast yard.

The Fore Topmast Yard:

The fore topmast yard sheets (one per side) are of 0.50mm natural thread as shown on [Plan Sheet 5](#). **The easiest method of rigging the sheet is to work backwards, that is to say you will start at the belayed end and work to the sheet block.** The **port** sheet is belayed to the forward **port** cleat on the base of the fore mast ([b16](#)). Referring to [Plan Sheet 5](#), the sheet then leads up through the **aftermost** hole (sheave) of the 5mm double block (on the centre of the fore **lower** mast yard), passing from starboard to port. It then leads along the after face of the yard and through the 5mm sheet block, at the stop cleat on the **lower** yard, **port** side. It then leads up towards the 3mm single clueline block on the **topmast** yard. A 3mm single block is seized in the end of the sheet approximately 30mm from the clueline block.

The cluelines (one each side) are of 0.25mm natural thread. The standing end is made fast to the **topmast** yard as shown on [Plan Sheet 5](#). It then reeves through the 3mm single block in the end of the sheet, back up through the 3mm single clueline block on the **topmast** yard, it then passes down aft of the yards and belays to the third belaying pin, from the front, in the foremost capping pin rail ([b18](#)), **port** side.

**Note:** In order to follow a straight path to the belaying point, the clueline will pass through the shrouds and ratlines at an appropriate point.

The starboard sheet and clueline can now be rigged in the same manner noting that the sheet is belayed to the forward **port** cleat on the base of the fore mast ([b17](#)) and passes through the **foremost** hole (sheave) of the 5mm double block (on the centre of the fore **lower** mast yard), passing from port to starboard.

**The braces are the next stage as follows:**

The Fore Yard:

Referring to [Plan Sheet 6](#), the fore yard braces (one each side) are of 0.25mm natural thread. The standing end is made fast around the main lower mast directly beneath the foot of the main topmast. From here it leads forward and through the 3mm single block, held in a 60mm pendant of 0.25mm black thread, on the end of the fore yard, back and through the 3mm single block, held in a 5mm pendant of 0.5mm black thread, on the foremost main lower mast shroud, positioned 5mm beneath the futtock stave, it then leads down and is belayed to the second, from the front, belaying pin in the after capping pin rail ([b19](#)).

The Fore Topmast Yard:

Referring to [Plan Sheet 6](#), the fore topmast yard braces are of 0.25mm natural thread. The standing end, one per side, is secured directly to the yard arm, outboard and against the stop cleats. The running end leads aft and down through the 3mm single blocks (one per side) held in a span of 0.5mm black thread around the foremost head, held against the top of the stop cleat (positioned 20mm below the cap), each block is held on a pendant 12mm long. The running end of the brace now passes down and is belayed to the third, from the front, belaying pin in the after capping pin rail ([b20](#)).

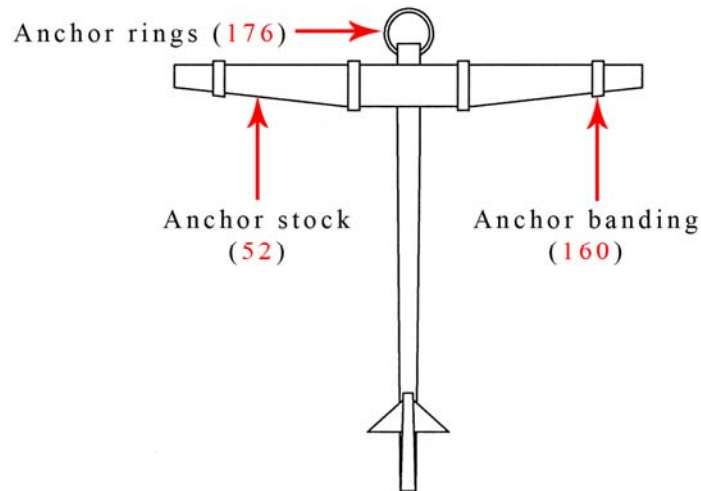
### The Ensign Halyard:

Referring to [Plan Sheet 5](#), the ensign halyard is from 0.1mm natural thread. The halyard passes through the 3mm single block on the end of the main gaff and both ends, which are both running, should be belayed to the cleat, starboard side, against the inner bulwark just forward of the seventh gunport. That is to say that one end of the 0.1mm natural thread should be belayed to the cleat, the opposite end then leads up, through the 3mm single block and back down to be belayed to the same cleat (**b21**).

### The Anchor:

Identify the cast metal bower anchor (**140**) and the 'anchor palms'<sup>†</sup> (**141**) glue them together and paint them matt (metal) black. Identify the bower 'anchor stocks'<sup>†</sup> (**52**) from the 2mm walnut sheet, the stocks should be glued around the 'anchor square'<sup>†</sup> of the anchor, centrally. (*Fig 026*) The anchor stock bands are formed from cartridge paper (**160**), these should be 1.5mm wide. The anchor rings are formed from 0.7mm brass rod (**176**), wrapped around a 6mm piece of dowel and trimmed to form a continuous ring. The puddening<sup>†</sup> is formed from 0.25mm black thread painted / stained dull black when in place.

*Fig 026 – Anchor Assembly*



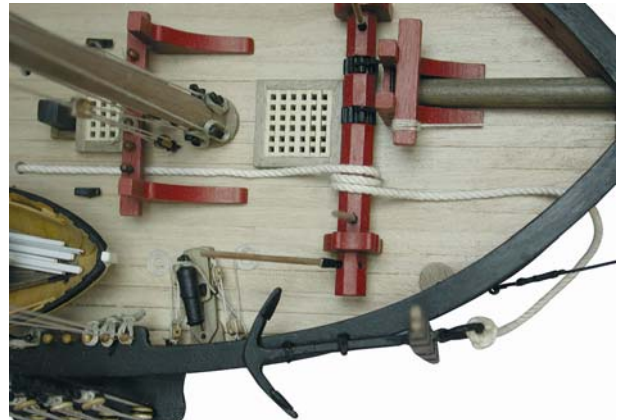
### Stowing the Bower Anchor:

The bower anchor (starboard side) is stowed as shown (*Photos 065 & 066*), lashed with 0.5mm black thread secured between the two copper eyelets (**145**) in the upper face of the forward capping and hitched to the anchor shanks. The anchor cable, of 1.3mm natural thread, is seized to the anchor with an inside clinch (*Photo 065*). The cable is then led inboard, through the starboard hawse hole and taken aft along the deck, twice over and around the windlass barrel, and aft past the fore mast and beneath the fore bitts cross piece where it passes down through the navel pipes in the deck (*Photo 066*).

*Photo 065*



*Photo 066*



## Ships Boats

While the ship's boats can be built at any time during the construction of the model, it is best not to fit them until after the rigging has been completed.

There were two boats carried onboard *Pickle* as follows:

1. 1 x 19' Launch
2. 1 x 14' Jolly Boat / Cutter

### 19' Launch:

Identify the cast resin launch hull (152), together with the black cartridge paper (160). Several strips of cartridge paper should be cut to a width of 1.5mm and will be used to form the keelson and ribs.

Referring to (Fig 027), using PVA wood glue, glue one length of cartridge paper along the inboard centreline, fore-and-aft, of the hull to form the keelson.

Using a pencil, mark the point 21mm from the transom of the launch; this will mark the foremost edge of the first 'rib' to be glued athwartships. Glue two ribs (one port, one starboard) in place with their foremost edge at the marked position. Care should be taken to fit the ribs in line athwartships and perfectly upright.

Further ribs should now be glued into place both forward and aft of the first rib, each separated by a gap of 3mm, ensuring that the ribs are vertical and all parallel to one another. The gap of 3mm between each rib is critical for later fitting of the 3mm wide thwarts and a length of 3mm strip wood can be used to check your alignment while positioning the ribs.

As you progress forward it will become necessary for approximately 3 ribs to be rotated to fill the bows as shown, the spacing between these rotated ribs is not critical.

Cut 16 strips of 0.5x2mm walnut at a length of 3mm. Using (Fig 027 & Photos 067 – 076) for reference, these should now be glued into place (8 per side) 3mm below the top of the launch's sides. They should be glued between every other pair of ribs, starting between the third and fourth ribs (from the transom) to form the rising plank supports.

**Note:** *The forward most pair of these 0.5x2mm walnut pieces may need trimming to shape at the bow to account for the 'rotated' ribs.*

Referring to (Fig 027 & Photos 067 – 076), the rising planks (one per side) of 0.5x2mm walnut should be glued against the rising plank supports so that they are tight against the inner face of the transom and their upper edges remain at a constant 3mm below the top of the launch's sides. The forward end of the rising plank should be trimmed flush to the foremost edge of the foremost rising plank support.

With the rising planks in place the whole inner surface of the launch can be painted yellow ochre.

Attention can now be turned to the bottom boards, identify and remove the launch bottom boards (93) from the 0.8mm ply sheet. Position the bottom boards into the launch and gently sand to fit. When you are happy with the fit of the bottom boards it should be removed and planked with 0.5x2mm walnut. As with the *Pickle* deck planking, the launch bottom boards planking should start at the centreline and work outboard. Once complete varnish to seal and fix into the launch.

The rubbing strakes of 0.5x2mm walnut can now be fitted to the outer hull. Start by marking the position 2mm below the top of the launch's side, the rubbing strakes (one per side) can then be fitted with their upper edge flush to this line, i.e. 2mm below the top of the launch's side and they will run the full length of the launch, from flush against the stem to flush with the transom (the rubbing strakes do not continue across the transom). You should note that the rubbing strakes will be painted yellow ochre, the outer hull below the rubbing strakes will be matt white and the outer hull above the rubbing strakes will be dull black. Although the rubbing strakes terminate flush with the after edge of the launch sides, the three colours of white, yellow and black should be continued across the transom of the launch.

The stern bench of 1x3mm walnut can now be cut and secured into place; it should rest on the top of the rising plank and be tight against the transom.

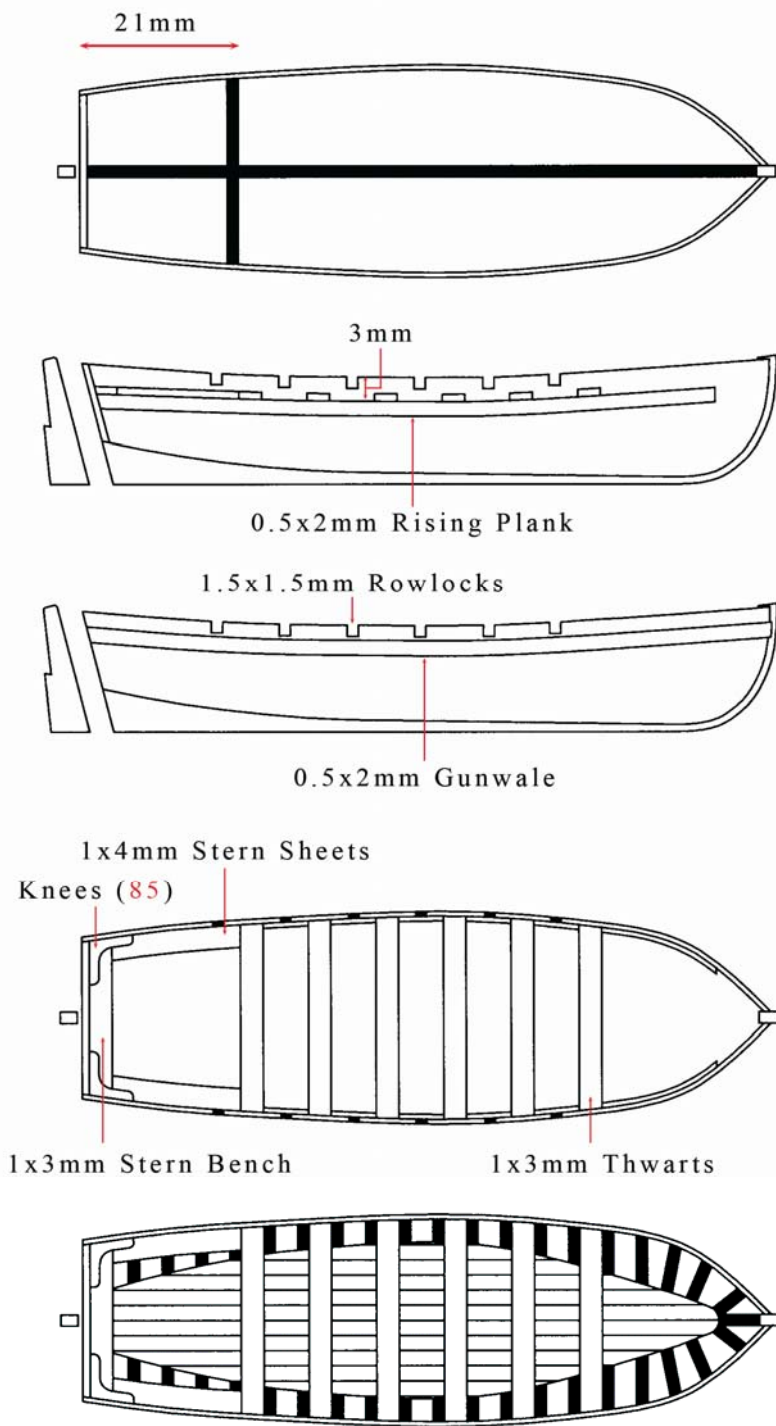
The stern sheets are next fitted (one per side) and they should be cut from 1x4mm walnut. They will rest on the top surface of the rising planks, flush against the forward face of the stern bench and continue forward to the foremost edge of the first rib fitted, i.e. 21mm from the transom. The stern sheets are from 1x4mm walnut to enable you to shape them so that their outboard edges follow the curve of the launch hull and are flush against the ribs. The inboard edges should also be shaped to follow the same curve of the launch hull resulting in a finished width of 3mm.

The six thwarts can now be cut to fit from 1x3mm walnut, the first is directly forward of the stern sheets and should be cut to rest on the top surface of the rising planks and also flush to the inner bulwarks. The remaining five are fitted in the same manner, each separated by a pair of ribs as shown.

**Note:** *If you intend to show the boats in place on the model, with the jolly boat / cutter stored within the launch, the thwarts should be cut to fit but not glued in place. They should be stored in the launch, allowing the jolly boat / cutter to sit as low as possible within the launch. The stern bench and stern sheets should be glued into place regardless.*

Finally, glue the launch knees<sup>†</sup> (85) in place and cut the rowlocks<sup>†</sup> into the launch sides. The rowlocks should be 1.5mm deep and 1.5mm wide, positioned centrally between the pairs of ribs aft of each thwart.

Fig 027 – 19' Launch Assembly



*Photo 067*



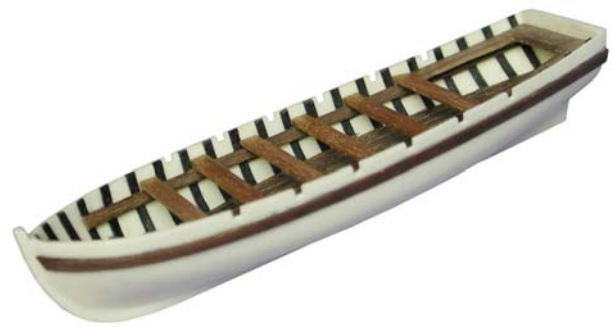
*Photo 068*



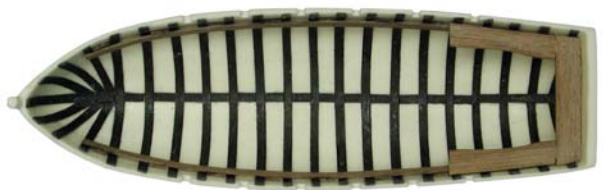
*Photo 069*



*Photo 070*



*Photo 071*



*Photo 072*



*Photo 073*



*Photo 074*



*Photo 075*



*Photo 076*



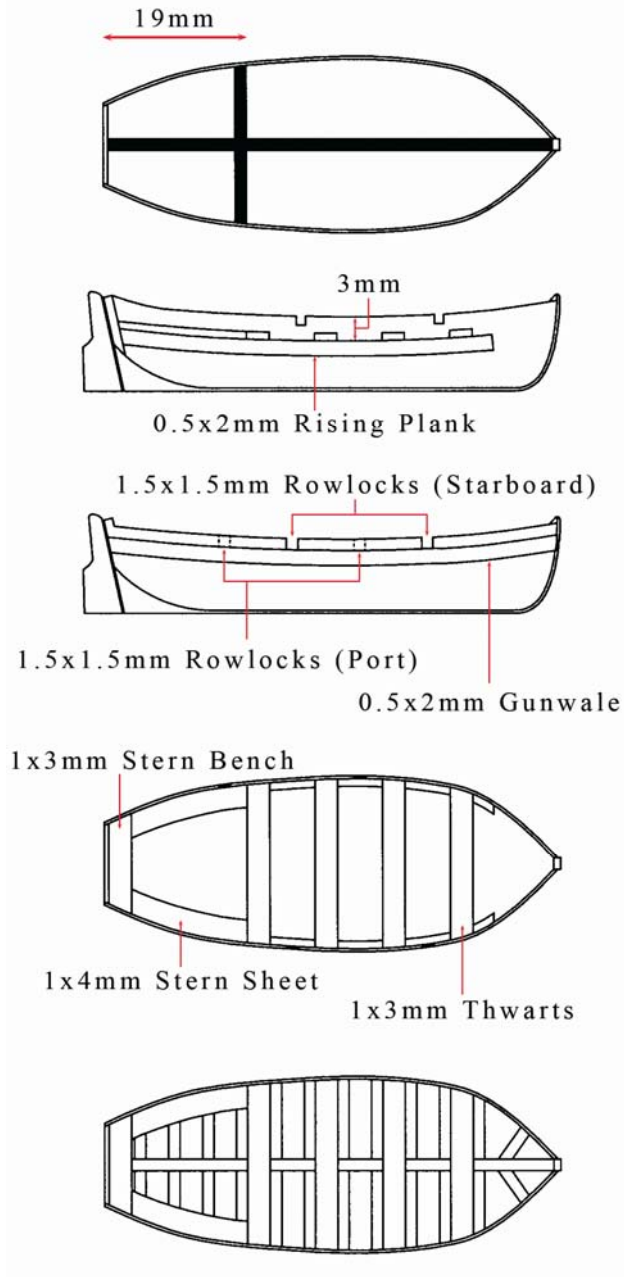


14' Jolly Boat / Cutter:

Referring to (Fig 028 & Photos 067 – 076), the jolly boat / cutter (153) is assembled in the same way as the launch with the following exceptions:

1. The first rib to be fitted should be 19mm from the transom.
2. The rubbing strakes are positioned 1.5mm below the top of the cutter's side.
3. There are only four thwarts.
4. There are only four rowlocks, two per side alternating as shown.
5. There are no bottom boards.
6. There are no knees.

Fig 028 – 14' Jolly Boat / Cutter Assembly



### Additional Fittings for the Boats:

Each of the boats is fitted with:

1. Two boat hooks (107) each. The handles should be painted wood (walnut) brown with matt (metal) black hooks.
2. 12 oars for the launch (116) and 4 oars for the jolly boat / cutter (108). The 'oar blades'<sup>†</sup> and 'oar looms'<sup>†</sup> should be painted matt white with wood (walnut) brown handles and copper blade tips.
3. 56lb grapnel (112) for the launch and 40lb grapnel (113) for the jolly boat / cutter. Each grapnel can be fitted with a 0.1mm natural rope and cheesed down; they are then stowed in each boat. The grapnels should be painted matt (metal) black.
4. Rudders (82 & 83), the rudders should not be fitted to the boats but stored inside; they were only fitted when in use. The rudders should be painted matt white.

### Securing in position:

Authentically, the boats should be secured to the deck using four copper eyelets (145) in the deck, painted matt (metal) black, and two lengths of 0.5mm natural thread.

Given that the ships boats are stowed up against the bulwark, it makes the process of securing the thread to the copper eyelets in the deck very difficult, also, due to the space taken up on the deck by the ships boats it was decided, on the prototype model, to secure them in such a way that they would be removable and it is that method which is now described.

Identify and remove the ships boat chocks (84) from the 1.5mm walnut sheet. Using (*Photos 075 & 076*) for reference, glue the chocks to the port side of the launch as shown. Into the outboard face of each of the chocks, drill and secure one copper eyelet, painted matt (metal) black as shown.

Drill and secure two further copper eyelets into the port side of the launch hull, directly opposite the chocks as shown.

The jolly boat / cutter should be positioned into the launch and the ropes of 0.5mm natural thread can then be rigged port forward eyelet to starboard after eyelet and vice versa so that they cross one another.

One or two dome headed pins, with their dome heads removed can now be drilled and secured into the lower surface of the launch keel so that the pointed end protrudes by approximately 4mm. Temporarily position the boats onto the deck, tight against the starboard bulwark as shown and note the position of the pins. The pin locations can then be drilled into the deck with a 0.65mm drill and the ships boats either dry fitted or permanently glued back into place.

## Finishing Touches

### Rope coils:

Each of the belaying pins that have rigging belayed off to them require a 'rope coil'<sup>†</sup>, these are made as follows:

1. Position two pins through a piece of scrap material, separated by an appropriate distance (approximately 15mm for *Pickle*).
2. Using the same thickness of material as the belayed thread, form three or four loops around the pins (*Photo 077*). Where to coil is to be positioned at a cleat you should miss step 3 and move directly to step 4 (*Photo 063*)
3. Using one end of the thread, throw two clove hitches around the loop, offset from centre as shown (*Photo 078 and 079*).
4. Remove the completed coil from the pins (*Photo 080*).
5. In order to form the bend in the coil you can either dab a small amount of super glue over the upper end and, once dry, bend the coil to shape (*Photo 081*) or, brush watered down PVA over the coil and hang it over the respective belaying pin, bent to shape and allow to dry (*Photo 082*).

### Nameplate:

After mounting the model on a suitable display stand, the nameplate can be also be mounted. For added impact, the nameplate can be painted a colour of your choice (*Photo 083*).

*Photo 077*



*Photo 078*



*Photo 079*



*Photo 080*



*Photo 081*



*Photo 082*



*Photo 083*

**HM SCHOONER PICKLE  
CARRYING COLLINGWOOD'S  
DISPATCHES AND NEWS OF  
NELSON FROM TRAFALGAR**