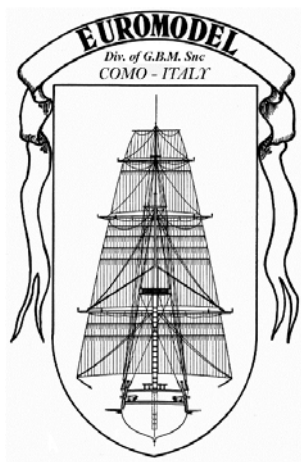


TRANSLATION LINKS:

1. type into your browser ... **english+italian+glossary+nautical terms**
2. utilise the translation dictionary 'Nautical Terms' from Euromodel website



# *An Interpretive Build* of the **Pinco Genovese**

18<sup>th</sup>. Century Ligurian Navy Ship

Scale - 1:36

**utilising the supplied kit**

## **Hull Construction – Part 2, v.6**

**My interpretive build is based on the supplied drawings, the kit material – and an amount of extra material.**

***This work only illustrates how this ship might be built. The level of complexity chosen is up to the individual***

This resource information was based on the original text supplied by Euromodel and then expanded in detail as the actual ship was constructed by the author, Peter Coward. Neither the author or Euromodel have any commercial interest in this information and it is published on the Euromodel web site in good faith for other persons who may wish to build this ship. Euromodel does not accept any responsibility for the contents that follow.

## ***This is NOT an instructional manual***

***It shows how I interpreted the build*** utilizing the provided kit ... ***and supplementing with additional material*** which was dictated by my own personal choices. Many steps could have been simplified by only using the material as it was supplied. This invariably is indicated by the heading 'Alternative 1'. However, where I did feel that I needed to challenge myself with a higher degree of accuracy, this will be denoted by 'Alternative 2'.

## **Reference Text**

*The Mastng and Rigging of English Ships of War 1625 – 1860* by James Lee (1984). Another indispensable book ! Without this, the masting and especially the rigging would have been difficult.

*The Construction and Fitting of the English Man of War 1650-1850* by Peter Goodwin (1984)

*Historic Ship Models* by Wolfram zu Mondfeld (1989).

*[To navigate through the contents – use ‘control + click’]*

# Contents

<b>RECENT CHANGES TO MANUAL</b> .....	5
<b>CHAPTER 1: ACCESSORIES - 1</b> .....	6
Hatchways & Coamings.....	6
Main Hatchway ( ‘ 44’ ).....	6
Minor Hatchways .....	9
Ship’s Boat – Supplementary Construction.....	10
Plastic Resin vs Timber.....	11
<i>Possible</i> Hull Modifications .....	12
Weathering .....	15
Ribs.....	16
Bottom Boards .....	17
Risings & Thwarts .....	17
Kedging Components .....	17
Thwarts and Thwart Support .....	18
Tholepin/ Thole .....	18
Pintle and Gudgeon .....	20
<b>CHAPTER 2: QUARTER DECK</b> .....	21
Deck Support .....	21
<b>CHAPTER 3: UPPER QUARTER DECK</b> .....	22
Companionway.....	22

## Illustrations

[The figures below are not hyperlinked]  
No table of figures entries found.

Figure 1: Main Hatchway Cover (non-curved).....	6
Figure 2: <i>End Profile</i> of Coaming Should be <i>Shorter</i> Length.....	6
Figure 3: <i>Mid-Line Profile</i> of Side Coaming Should be <i>Longer</i> Length.....	6
Figure 4: 3D Impression of a Curved Hatchway Cover .....	7
Figure 5: Coaming Interpretation.....	7
Figure 6: Hatchway Spacing .....	7
Figure 7: Angle Joint .....	8
Figure 8: Modified Joint .....	8
Figure 9: Forward Hatchway (no item number).....	9
Figure 10: Coaming Cross-Section .....	9
Figure 11: Deck Cargo .....	10
Figure 12: Non-modification of Supplied Boat.....	10
Figure 13: Cutting & Sanding Tools .....	11
Figure 14: Longitudinal Profile .....	12
Figure 15: Possible Internal Contouring.....	12
Figure 16: Possible Further Modifications.....	13
Figure 17: Boat's Rudder .....	13
Figure 18: Boat Structural Detail.....	14
Figure 19: Anchor Kedging .....	14
Figure 20: Paint Selection for Dry Brushing.....	15
Figure 21: Wet Brush Layer .....	15
Figure 22: Immersion in Ammonia Soln.....	16
Figure 23: Rib Shaping .....	16
Figure 24: Ribs in Position.....	16
Figure 25: Painted Ribs .....	16
Figure 26: Bottom Boards .....	17
Figure 27: Risings and Thwarts .....	17
Figure 28: Kedging Bars (fore and aft) .....	17
Figure 29: Kedging Components Completed.....	18
Figure 30: Reinforcement of Mast-Supporting Thwart.....	18
Figure 31: Oar Lashed to a Tholepin.....	18
Figure 32: Tholepins in Place.....	18
Figure 33: Breast Beam.....	21
Figure 34: Hanging Knee.....	21
Figure 35: Introducing a Breast Beam .....	21
Figure 36: Companionway Examples .....	22

## **RECENT CHANGES TO MANUAL**

### **Version 1 to 2**

- Construction of ship's boat (supplemental to kit contents)

# CHAPTER 1: ACCESSORIES - 1

## Hatchways & Coamings

In total, there *are four hatchway coamings to construct*:

- Main Deck (No. 44, large)
- Quarter Deck (No. 41, small) and on Main Deck directly underneath (also No. 41, small)
- Main Deck - adjacent to Foremast, no item number, small

[The kit supplies two lengths of 1 x 4 x 570 mm. for the coamings - how this is utilised is up to the builder].



Figure 1: Main Hatchway Cover (non-curved)

### Main Hatchway ( ‘ 44’ )

#### Alternative 1:

The hatch cover is described in the drawings as composed of five pieces of 10 mm. wide timbers but this is not provided for in the kit. Scrap material was also required to produce the coamings.

The hatch cover is often built as a *flat surface* but the drawings do imply a *curved surface*. So there is a definite choice to be made.

#### Alternative 2:

- *2.8 x 10.3 mm.* timber was used for the hatch cover which was obtained from my scrap box
- Plan Sheet 4 shows a length of the curved coaming that implies it would fit athwartships (across the ship) but in fact it needs to be shortened and added in on the port and starboard sides. Athwartships, the coaming is not curved.

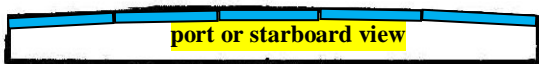


Figure 2: *End Profile* of Coaming Should be *Shorter* Length



Figure 3: *Mid-Line Profile* of Side Coaming Should be *Longer* Length

- *2.8 mm.* wide timbers were used in constructing the coaming

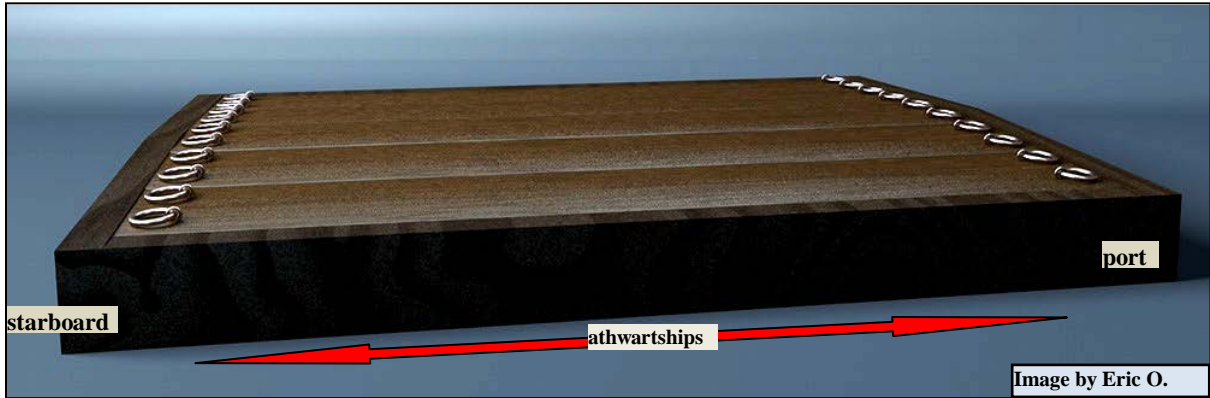


Figure 4: 3D Impression of a Curved Hatchway Cover

In spite of the drawings showing a 1 mm. thickness for the hatchway cover boards, I increased this to **2.8 mm.** thickness. I felt the 1 mm. thickness was too thin and would warp. Fig. 1 supports this.

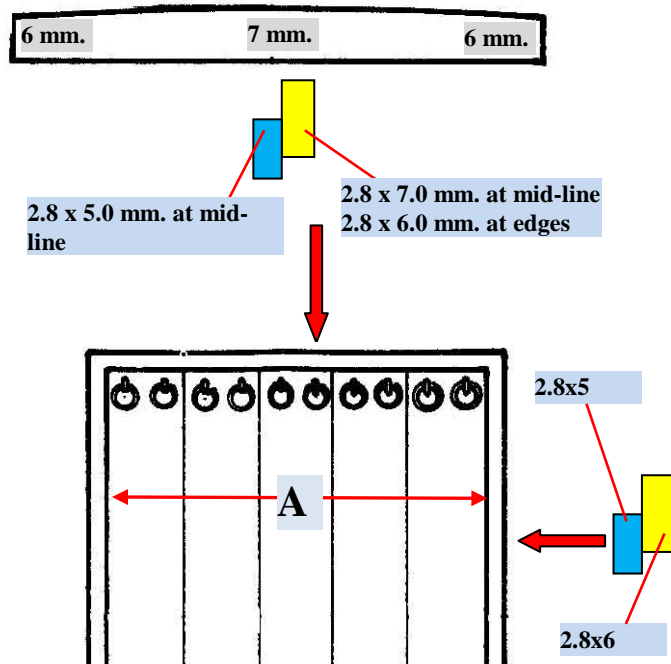


Figure 5: Coaming Interpretation

The total width 'A' of material used to make the hatchway cover will determine the opening size in the laser-cut plywood. The exact width of 'A' was **51.6 mm.** but I allowed a space of **52.5 mm.** to allow an easier fitting of the individual planks making up the cover.

In my build, the overall width was **60.1 mm.** (2.8 + 52.5 + 2.8). The width of the opening in the laser-cut plywood was **56.6 mm.** I reduced this down to **52.5 mm.** (red spacer shown in Fig. 52 below.) *In hindsight, the planks could have been slightly wider.*

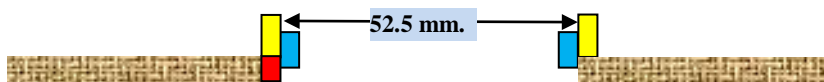


Figure 6: Hatchway Spacing

## Coaming Construction

There are a number of ways that the four coaming pieces could be joined together ...

### *Alternative 1:*

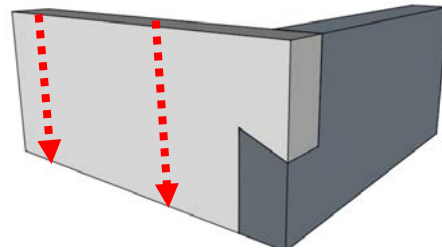
#### **Butt Joints**

By far the easiest to produce and perhaps the best alternative.

### *Alternative 2:*

**Angle Joints** - at this scale, the joint construction is not practical !

Fig. 7 shows the actual joint often used and was so designed to offer the greatest strength in holding the four sides together. Two bolts (indicated by the broken red lines) hold opposite sides down onto deck beams locking the other two firmly in place.



**Figure 7: Angle Joint**

I used the simple butt jointing but Fig. 8 below shows a simplified version of the traditional joint shown in Fig. 7 above.



**Figure 8: Modified Joint**



Figure 9: Forward Hatchway (no item number)

## Minor Hatchways

The kit supplies two lengths of 1 x 4 x 570 mm. From the drawings, this timber could be used for the small, un-numbered hatchway coaming on the Main Deck (Fig. 9).

However, the Quarter Deck coaming (and the one directly underneath) i.e. 2 x '41' are both constructed from a thickness of 2 mm. - whether this greater thickness is used or the 1 x 4 mm. timber is used, is up to the builder.

My method was a little different (Fig. 9, not to scale) ...

... all three minor hatchway coamings were built from inner pieces of 1 x 6 mm.(green) joined to outer pieces of 2 x 3 mm. (yellow) with an inner step-down ledge (red) of depth 1 mm.

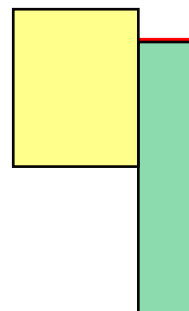


Figure 10:  
Coaming Cross-  
Section

## Ship's Boat – Supplementary Construction

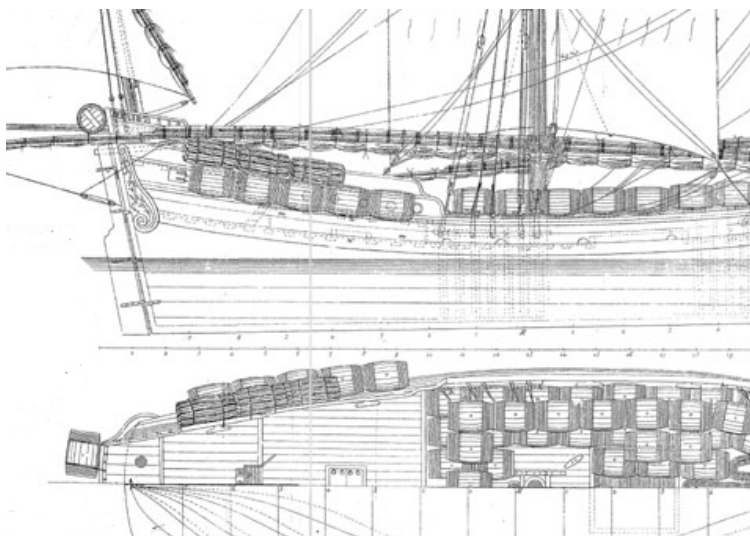


Figure 11: Deck Cargo

An interesting possible addition! The Pinco Genovese was typical of ships that worked close to the coastline in the Mediterranean. Their role was solely for cargo transportation, and, not being overly large, space was always at a premium with some goods lashed to the outside. Invariably, the ship's boat was towed behind and, it too, was usually filled with cargo. Euromodel decided that the ship would best be built without the boat and have not included it in the kit [it can still be purchased from the Euromodel on-line shop].

### Construction Choices

#### Alternative 1:

The ship is loaded with cargo and the ship's boat is being towed astern. The *boat then is not added*.

#### Alternative 2:

If the boat supplied in the kit is to be included, then it can be suitably *painted as it is and eventually installed with perhaps only the thwarts installed*. Euromodel supplies simple plastic resin hulls which will save much time and far less patience !

#### Alternative 3a:

*Install interior fittings in supplied boat.* (Fig. 43) – not the Pinco Genovese, but showing the construction style.

#### Alternative 3b:

Modify the longitudinal profile (and perhaps interior profile as well) and *install all interior fittings.*

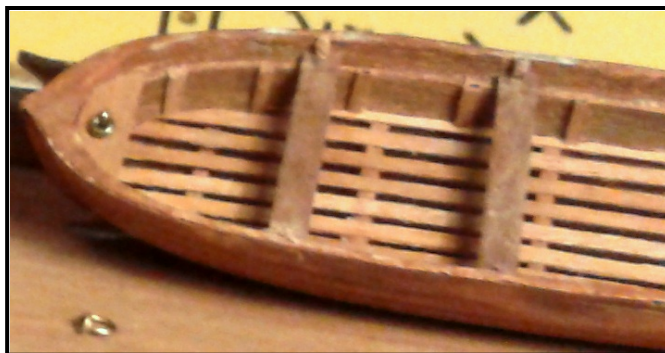


Figure 12: Non-modification of Supplied Boat

**Alternative 4:** The supplied boats are discarded and new ones *built from scratch*. This is only for the ardent builder !

*After some deliberation, I decided to adopt 'Alternative 3b' option.*

## Boat Crutches

The construction of the boat crutches was left until a later stage.

## Plastic Resin vs Timber

I decided on the on-line purchase approach and found that in fact the plastic resin was incredibly easy to work with and equipped with a Dremel and a number of differently-shaped cutting and sanding tools, I was able to alter the standard shape to conform quite closely to the drawings supplied.

In summary – a worthwhile purchase. The white appearance was readily changed to a timber weathered finish with a combination of wet and dry brushing coats.



Figure 13: Cutting & Sanding Tools

## Possible Hull Modifications

The generic Euromodel shell that I purchased, not surprisingly, required significant changes to bring it into line with the drawings. That is the nature of this work.

- The drawing shows the gunwale as having a *curved longitudinal profile*. I opted to shape the gunwales – curved downwards from stem to stern. Note also that the stern is approx. the same height as the stem (broken blue line).

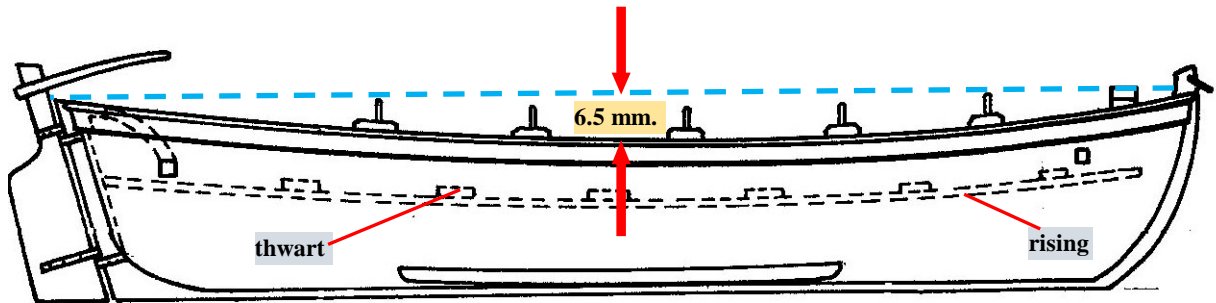


Figure 14: Longitudinal Profile

- The flat inside bottom was changed into a *concave surface matching the outside*. A Dremel cutting bit with a rounded shape made this task simple and approx. 5 mm. was cut out from the bottom (refer back to Fig. 13). The guide to cutting down to a suitable depth involved holding the boat up to a strong light and observing a uniform translucent colour (to begin with, thick bottom was totally opaque to light). The concave inner surface is evident in Fig. 15 below and this was carried out before any further modifications took place.

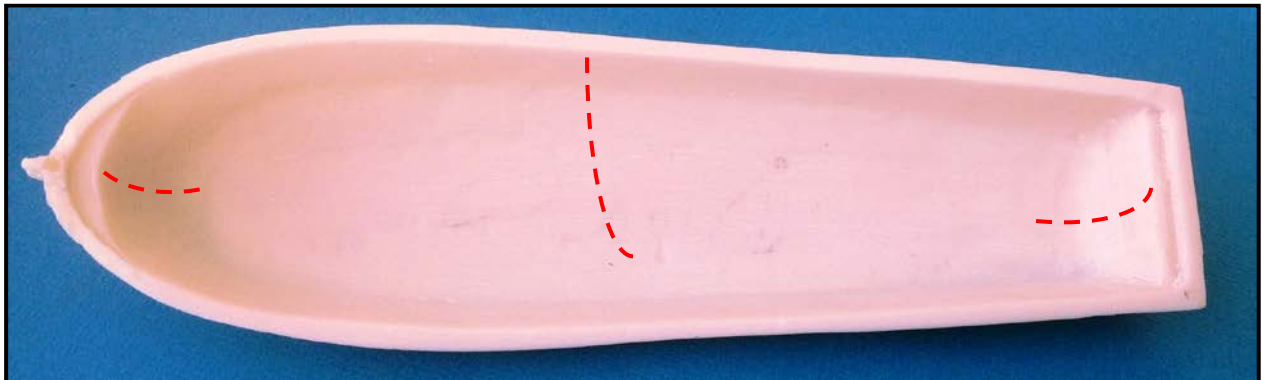


Figure 15: Possible Internal Contouring

- Sequence of Further Possible Modifications

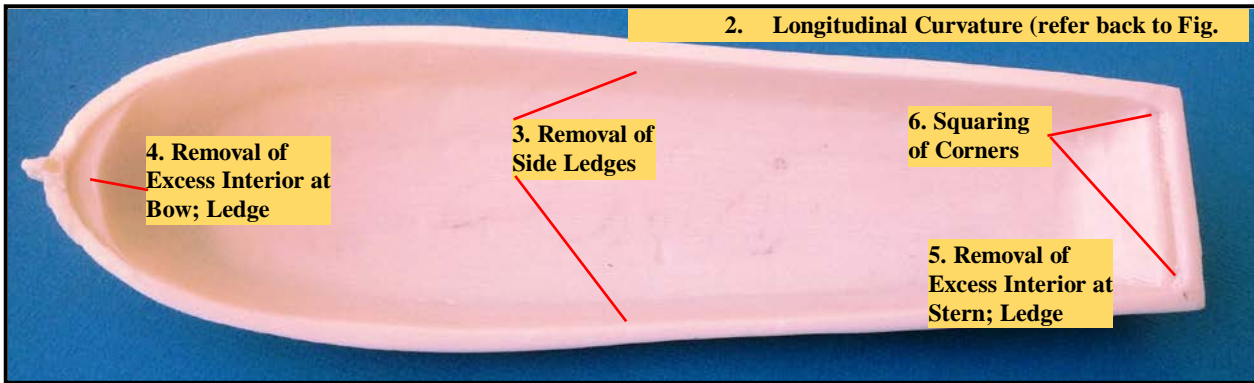
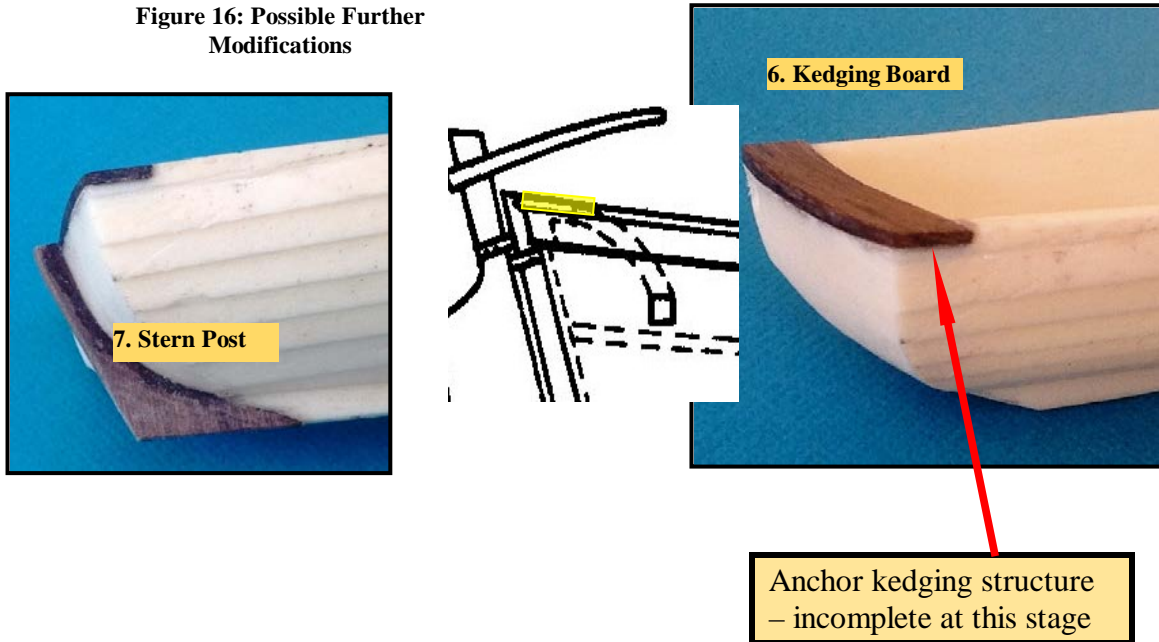


Figure 16: Possible Further Modifications



### Rudder

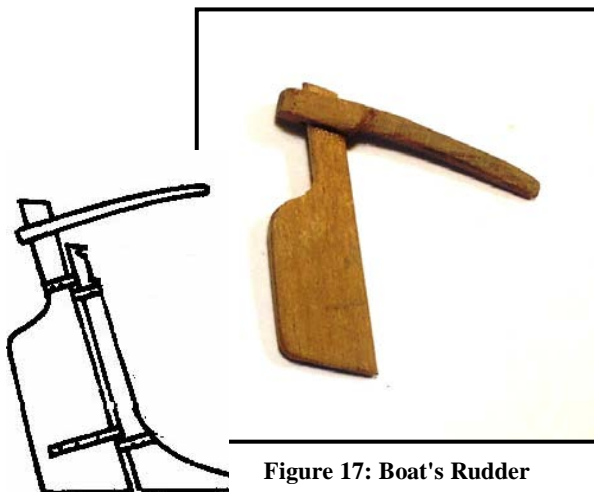


Figure 17: Boat's Rudder

- Tiller arm angle a little different due to shape of supplied plastic resin hull.
- Tiller arm *length* was made longer (27 mm.) than that shown in the drawing (same reason as above).
- *Thick timber* scrap was chosen to allow for curvature of tiller arm.
- *Hole for the rudder* was created first before reducing timber to required width (allowed for greater strength whilst drilling).

Figure 18 displays extensive interpretive detail for fitting out the boat – so how much is added is up to the individual.

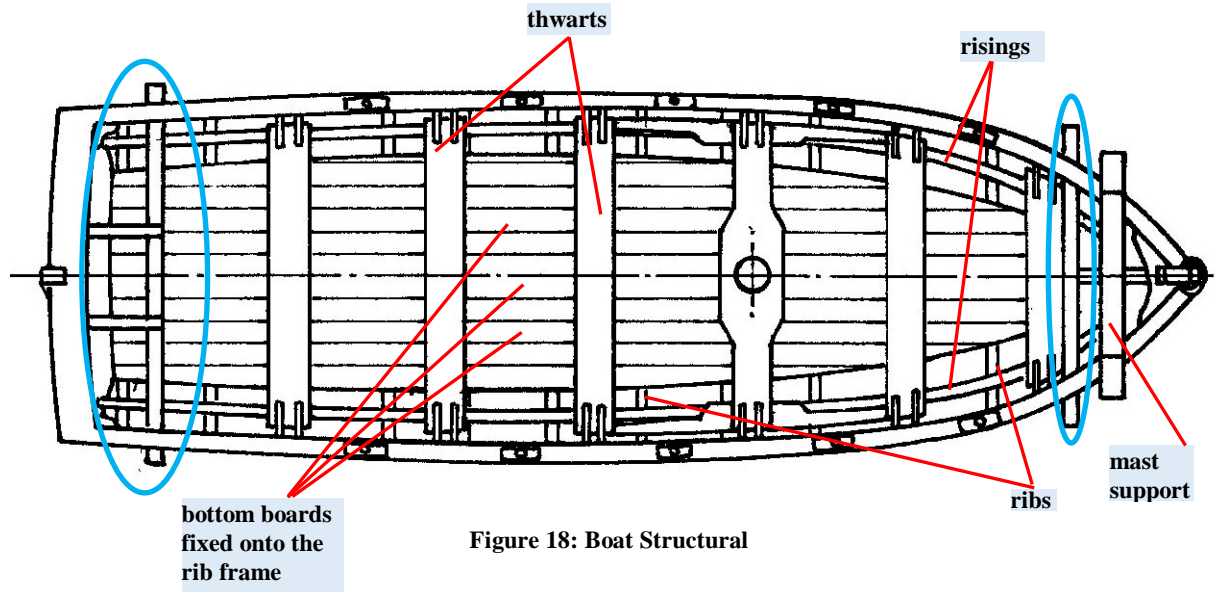


Figure 18: Boat Structural

### Anchor Kedging

Euromodel have included specific anchor kedging structures into the drawing design of the boat (encircled in blue in Fig. 16 above), both of which are particularly uncommon amongst ship plans and yet in one form or another was not uncommon in nautical practice. The following information gives some background ...

... kedging was a means for maneuvering large ships in and out of tight harbours, shallow estuary entrances and off mudbanks and sandbars. Sailors would take to the ship's boat and row out one of the ship's smaller anchors in the direction they wanted to move the ship. They would then drop anchor, return to the ship and use the ship's capstan/ windlass to pull the ship up to the anchor. It was a slow, dangerous and arduous process, but was often the only option. [ <http://www.hnsa.org/...ng-out-anchors/> ]

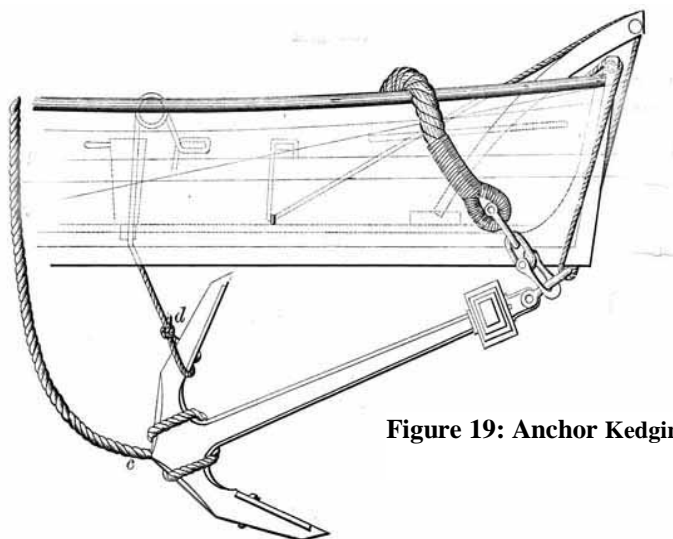


Figure 19: Anchor Kedging

Diagram taken from:

<http://www.hnsa.org/...ng-out-anchors>

Historical Naval Ships Assoc.  
**CARRYING OUT ANCHORS**  
 Chapter XVII, p.280

## Weathering

Constructing a boat out of timber seemed to be the ideal but having settled on using the supplied white plastic piece, the hull needed painting (before fitting out) to create a weathered finish. Dry brushing was utilised to achieve this. [The paints used were a brand called 'Citadel' from Games Workshop that seem to have outlets in many countries. Model Ship World Forum contains a number of very excellent & specific references.]



Figure 20: Paint Selection for Dry Brushing

## Weathering: Wet Brush Layer (Dryad Bark)



Figure 21: Wet Brush Layer

Having modified the hull, and applied the wet brush layer of paint, the hull needed to be fitted out with ribs, bottom boards, thwarts, rudder etc., etc. How much detail and what proportions are used is very much up to the individual.

## Ribs



Figure 22: Immersion in Ammonia Soln.

Ribs: *2 mm. x 65 mm.* (i.e. excess length)

To fit ribs against the curved boat interior without breaking, the strips were soaked in dilute ammonia solution – available from supermarkets as a cleaning agent called ‘cloudy ammonia’.

The timber strips were removed after 3-4 hours of soaking, wiped with a dry cloth and then held in position in a block grouping (Fig. 23) allowing at least 12 hours to dry.

Even though the athwartships width varies across the boat along the length, the dry ribs were easily fitted into position.



Figure 23: Rib Shaping

Rib spacing along the boat was approx. 10 mm.

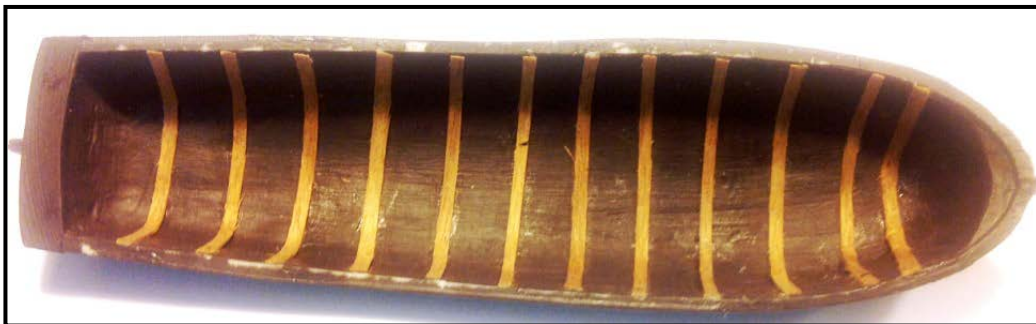


Figure 24: Ribs in Position

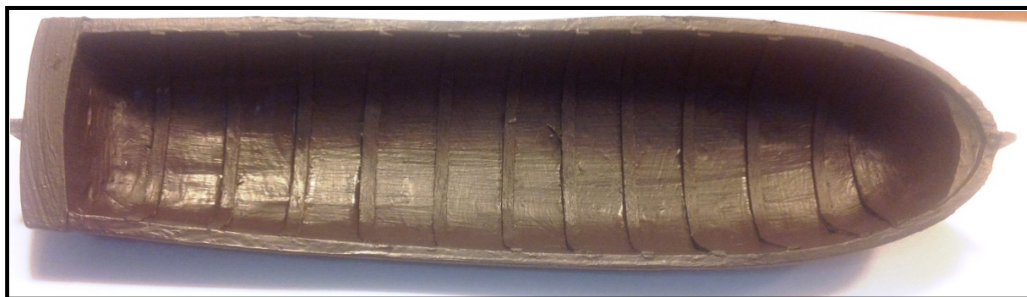


Figure 25: Painted Ribs

### Bottom Boards

From my stock, I utilised timber that was  $0.9 \times 3 \text{ mm}$ . [*forward ends of boards still to be finished*]



Figure 26: Bottom Boards

### Risings & Thwarts

Thwarts (seats) were often removable and supported by the risings – a narrow strip of timber underneath (refer back to Fig. 18). This allowed for better storage of masts, oars, sails, water barrels and so on. In this build the thwarts were fixed later – after the dry-brushing.

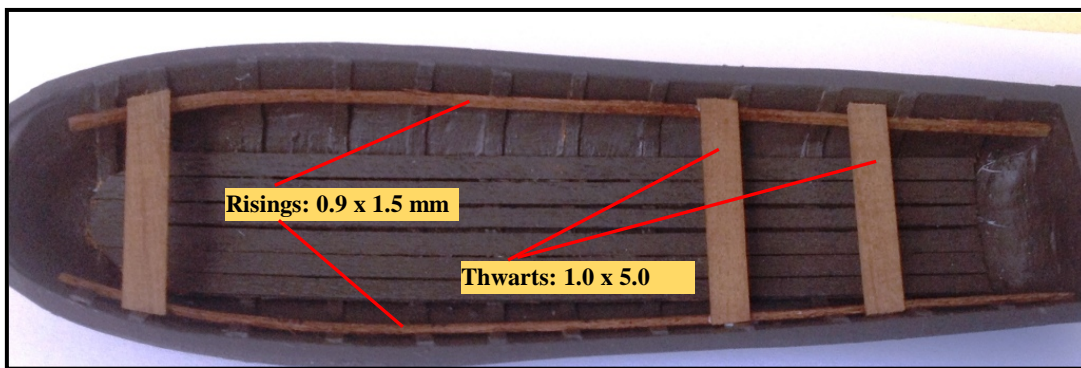


Figure 27: Risings and Thwarts

### Kedging Components



Figure 28: Kedging Bars (fore and aft)



Figure 29: Kedging Components Completed

### Thwarts and Thwart Support

Thwarts were installed even though this was to make it difficult with the dry-brushing applications.



Figure 30: Reinforcement of Mast-Supporting Thwart

### Tholepin/ Thole

These pins, either singly or in pairs were embedded into the gunwale to act as a fulcrum for the oar. Fig. 31 is from an actual boat.



Figure 32: Tholepins in Place



Figure 31: Oar Lashed to a Tholepin

## **Weathering: Dry Brushing**

Layer Sequence:

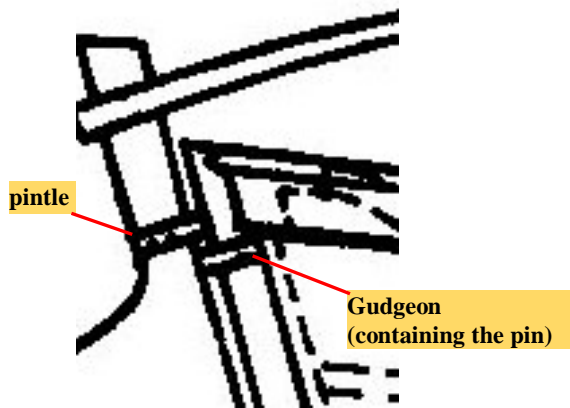
1. *75% Dryad Bark & 25% Skrag Brown*
2. *50% Dryad Bark & 50% Skrag Brown*
3. *Dawnstone*

Dry brushing involves a specific brush being lightly filled with the paint applied and then stroking that brush over paper until all the paint appears to be used. The brush is then lightly applied to the base coat until an amount of colouration can just be perceived. That is the point when the brushing on of that new 'layer' is stopped. If multiple brush coat 'layers' are used, then it becomes a mixture of colours rather than just a multi-layered application of paint.

The wet layer of Drad Bark had already been applied at this point.

### **Dry Brushing Layer 1:**

## Pintle and Gudgeon



The approach adopted here was to construct fixed rudder hinges (pintle + gudgeon) made from black cardstock/ cardboard. This will be shown later after finishing the boat with all fittings so as to avoid any damage to the 'hinges'.

## CHAPTER 2: QUARTER DECK

### Deck Support

Before introducing the Quarter Deck into this build, the first planking was continued to a point above the deck to allow for the addition of an extra component - the leading edge deck beam. If this is not to be used, then the first planking is not critical.



Figure 33: Breast Beam

Underneath the deck are a number of *supporting deck beams* but only one of them is clearly evident at the leading edge. That beam is often referred to as a 'breast beam' since it covers the full width of the ship. Either side is supported by a *hanging knee*.



Figure 34: Hanging Knee

#### Alternative 1:

In this build, the basic approach is to lay the supplied deck over the installed beams and cover with planks. A thin strip could be added on the edge.

#### Alternative 2:

To add more realism to this build, the curved beam (Fig. 30) was fashioned from some scrap walnut (but the hanging knees were omitted).

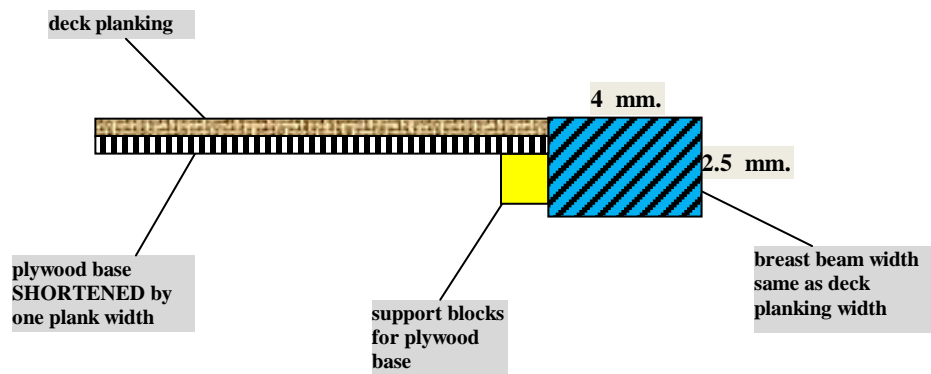


Figure 35: Introducing a Breast Beam

## CHAPTER 3: UPPER QUARTER DECK

### Companionway

This term is applied to a feature with a raised hatchway and twin doors in the ship's Upper Quarter Deck with a ladder leading below.

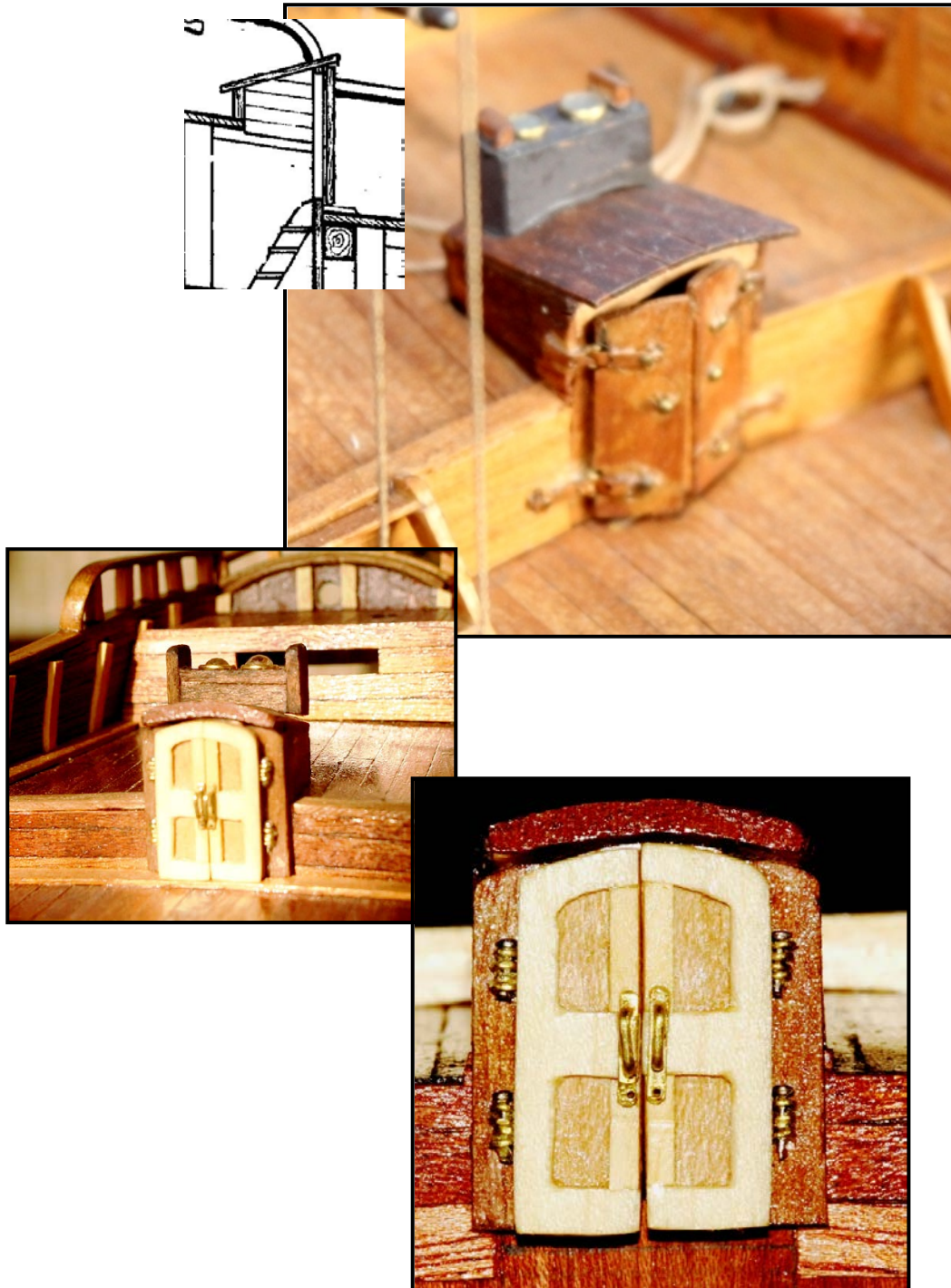


Figure 36: Companionway Examples

