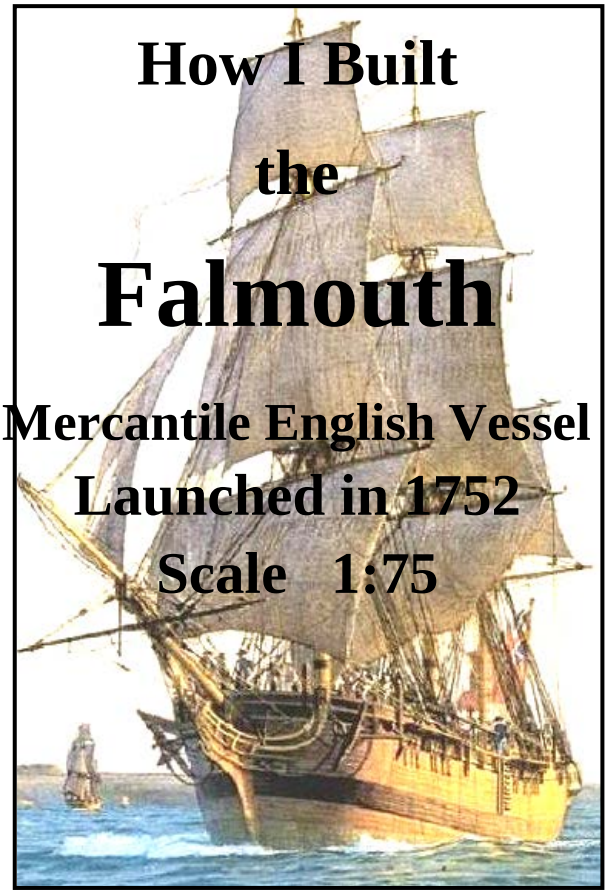


Figure 1: General Maritime View

Part 01

This manual is incomplete and is part of an editing review process so should be considered as a 'WORK IN PROGRESS'. Any changes made in subsequent versions will be shown at the start of that revised manual.

This build manual 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 manual 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.

To my friend, Massimo

Whose untold generosity as owner of Euromodel G.B.M. Snc
inspired me to translate his plans and instructions.

Who opened his family to my family
and maintained a long relationship via the Internet
between Adelaide, South Australia and Como, Italy.

Who also inspired me whilst building a kit model of the
Falmouth
to create a documented manual of construction
for others to utilize.

To him I owe much

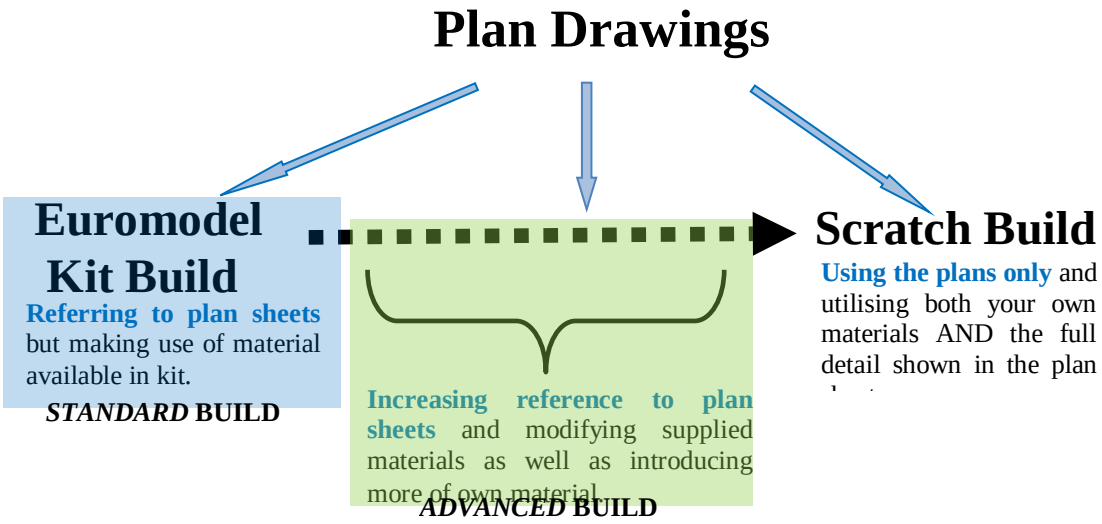
Contents

[To navigate through the contents – use 'control + click']

Illustrations

[The figures below are not hyperlinked]

Euromodel Preview



Euromodel kits are based on sets of drawings by a naval architect and contain a comprehensive amount of detail that would be a challenge to the most serious ship modeller. This is in contrast to most other kits that whilst they also contain excellent plans, the intention there is to achieve a build similar to the plans provided. Euromodel offers plans that can be interpreted at various levels of complexity. If the builder has limited experience in the craft of shipbuilding, then the plans can be read at a simplistic level.

Whilst *all* plan drawings are important to the construction of the Falmouth, the builder is well advised to focus on three – Plan Sheets 1, 2 and especially 5

It could well be argued that *the outcome is somewhere on the continuum between a standard model construction and a scratch model*. How far you wish to extend this continuum is up to you and your build of this ship will be determined by the degree of complexity you choose (refer to the diagram above).

The kit material will go a long way towards achieving a good model but be aware that the purchase of some extra material might be necessary depending on how far you wish to go in emulating the plans. There will be little left over from the kit contents, but during the construction you should experience a compelling drive to create something better than the basic model. Euromodel is aware of this challenge and so provides just the basic needs and leaves it up to the modeller to determine how far he will extend his skills.

In summary … my comments are not prescriptive and if the detail is sometimes a little too precise, please do not let this deter you. It will be up to you to take as much information as you wish and the rest to 'throw overboard'. It is your model, your creation, your handiwork.

Chapter 1: INTRODUCTION

Historical Notes

The Falmouth was launched in Blackwall, England in 1752. It was the first trading vessel of the English East India Company and showed a close resemblance to a warship in sail plan and rigging, with the most up-to-date reef-points to her topsails The ship was equipped with a large amount of artillery, unusual for the trading vessels of that period. In that she was run along the lines of naval discipline was due to the fact that the vessel could sail alone without any convoy ship, since its rich load was a good bounty for all the enemy vessels and pirate ships.

Figure 2: Finished Model of the Falmouth

The Falmouth could easily combat a war-ship of the same tonnage, thanks to its crew of 180 experienced men including the best trained gunners. The superiority of the crew was partly due to the incentive granted to each gunman allowing each individual to transport his own 5 tonnage of goods there and 2 tonnage back. These goods were usually sold as smuggled goods to the black market. The Falmouth was of 499 tons and was in service until 1764 completing five voyages for the East India Company. She was eventually abandoned at Batavia (modern Jakarta) in Indonesia after a battle in Manila in 1766.

An unusual feature of this ship is the *ponte la sole* ('sun deck') which is thought to have been added during her time in Asia to give extra shelter from the equatorial sun.

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Construction Philosophy

Euromodel have tried to simulate all the designs of the 'Falmouth' in every possible way, with attention to detail in order to appeal to the advanced model builder to construct this model. The designs allow you to construct the vessel using both pre-cut materials ready to use, and materials that require preparation.

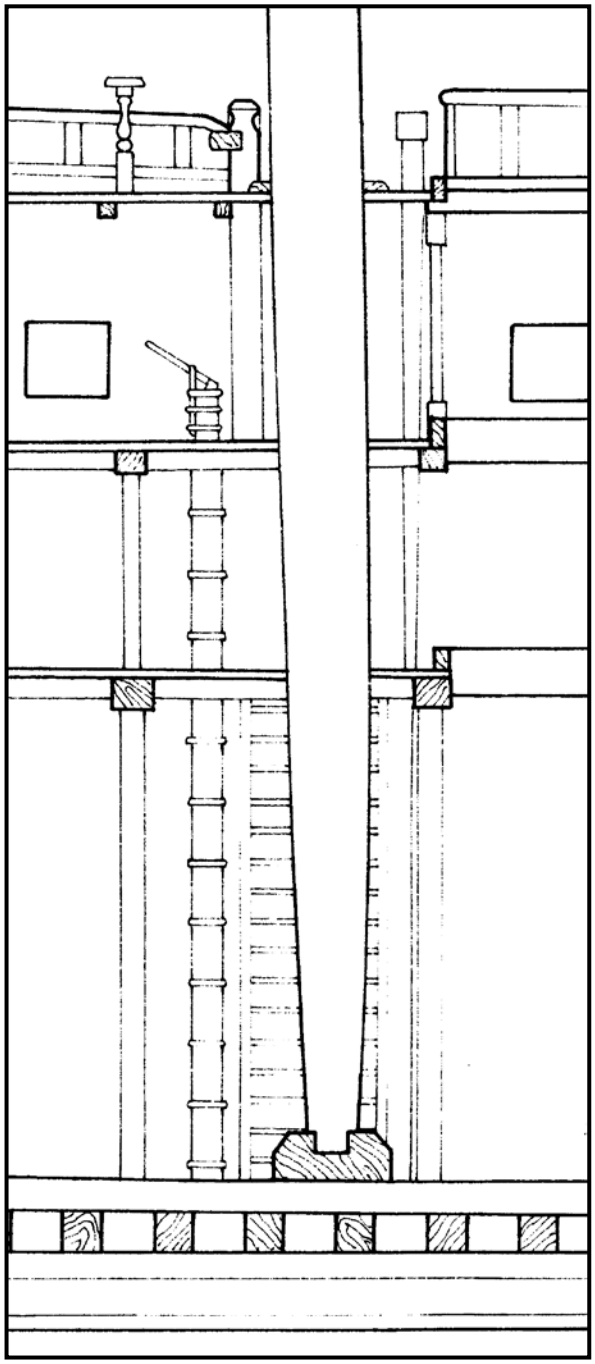


Figure 3: Sectional View from Plan Sheet 1

Kit Building versus 'Scratch' Building

There may well be some confusion in looking at the plans since there is some considerable detail intended for the 'scratch' builder but which is not provided for in the kit. The drawing opposite shows the detail that *could* be included below decks if engaging in a full scratch build.

Plan Sheet 2 contains a considerable amount of scratch information. This is a sheet that is useful in interpreting the hull structure but does contain much that is outside the scope of this kit.

This kit has a comprehensive array of items to utilise in building this ship. In many cases, these items may not display exactly the same dimensions as the plan sheets but nevertheless will enable the construction of a fine ship. The kit builder will use what is provided but the scratch builder will utilise the plans more fully and decide to spend far more time building particular items.

How *Did* I Build This Ship?

I felt compelled to build this ship from the kit provided but at the same time felt myself drawn to the highly detailed plans which portray far more than the kit provides for. What to do ?

I decided to create a text and photographic portrayal of how the ship could be built from the kit and located in a document on the Euromodel website named '**Falmouth Basic**. However, at many points I realised that there were alternative and more detailed construction processes that could be carried out. This usually meant the supply of extra material but having gone to the expense of purchasing the kit, the cost of the extra items was incidental. For these alternative processes, you will see some words or heading that by ustilising 'control+click' will allow you to navigate directly to that area of **advanced notes** at the rear of this document. Try control+ click on the words 'advanced notes' in the previous sentence.

A good example is shown by the two ship's capstans on Plan Sheet 6. The immense detail provided will enable the construction of the capstans along with the ratchet mechanisms. That degree of accuracy is beyond the scope of any kit but not the avid scratch builder. However ... I found myself continually referring to the plan sheet diagrams and calculating how I might improve upon what is in the kit. Somehow, I suspect every builder will become – to some degree – a 'kit/scratch' builder.

In any case it's essential to exercise patience and attention to detail while constructing this model. Without question this ship must be built with passion. The plans are there, an outline of the fundamental steps are there but in the end the modeller must display a high degree of flair. The plans must be studied at length before beginning because it is there that the builders will develop a 'set of instructions' for themselves. **The kit will not necessarily provide all that is required if the modeller aims to include some of the finer detail.**

The kit WILL enable an excellent model to be built from the materials supplied. The plans must be studied at length before beginning because it is there that the builders will develop a 'set of instructions' for themselves.

A complimentary criticism of Euromodel's kits is that the photos displayed on the internet do not portray the kit contents provided but in fact are scratch models. The simple fact is that there are so many variations and additions to the original design possible that (at the risk of repetition) no two ships are going to look the same. The more you examine the plans, the more you are likely to lean towards the 'scratch' style of construction.

Euromodel appreciates your choosing this product and wishes you a challenging experience. There is no question that the detail provided here on the plans and the material contained in the kit sets Euromodel kits apart from other kits available on the market.

Construction Manual

The following documentation will hopefully assist other future builders an easier pathway of construction. There is no doubt that others will see ‘flaws’ or better ways of carrying out some step. In the end, there can be no one way of doing anything so please read what I have written and then make your own judgement about the best method for you and your build.

With a limited build-time to create this hull, many might well criticise the quality of construction at some points and you might also be aware that photographing a small area on the hull and enlarging it produces a very different image to the one seen simply through the eye. So whatever you see, make yours better !

This manual is a real ‘ship building in progress’ and unlike other similar texts, the photographs show the raw work as it is being done – no ‘pristine publication-type photos.

Kit Variations

The serious modeller, of course, can make a myriad of changes and material substitutions. The choice is theirs.

As I said earlier, Euromodel have supplied material which will enable you to produce a fine vessel

As an illustration, here are a number of changes possible – but the list could go on and on ...

1. You can decide to build a complete gun deck along with correct planking and carriage-mounted guns (refer to Plan Sheet 3 for required cut-outs in frames). This is an alternative to the ‘half-guns’ supplied.

2. The decks were traditionally well-scrubbed and lighter in colour than the planking on the hulls. The kit supplies walnut but you could elect to choose a lighter coloured wood.

3. Different woods are available from suppliers for constructing masts & yards but the timber supplied is of excellent quality.

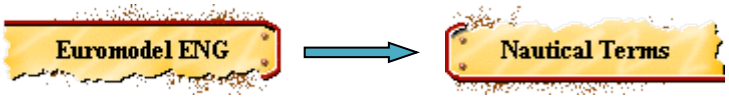
Text References

1. *Historic Ship Models* by Wolfram zu Mondfeld (1989). This book I have repeatedly utilised for historical accuracy when dealing with any part of a period ship. This is a 'must have' text. It explains everything nautical to do with early ships. This is a book that is almost a required companion if you are building the Mordaunt – the front cover of my copy is in disarray and pages have fallen out (but never lost) and glued back in as I continually research nautical aspects related to the ship.

2. *The Masting 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.

Chapter 2: TRANSLATION (from Italian to English)

Whilst every care has been taken with this translation, the author claims little depth of knowledge of Italian and thus various grammar and syntax errors will be apparent to those who are bilingual in these two languages.



An on-line dictionary is to be found on the Euromodel website – 'Nautical Terms' and this will provide assistance for a *large range of terms NOT included in the following pages* of translation from Italian to English.

Italian – English Translation

Tavola 1 VISTA DI ASSIEME	Plan Sheet 1 OVERALL PERSPECTIVE
VELA DI RANDA	SPANKER SAIL
VELA DI CONTROMEZZANA	MIZZEN TOPGALLANT STAYSAIL
VELA DI MAESTRA	MAIN SAIL
VELA DI GABBIA DI MAESTRA	MAIN TOPSAIL
VELACCIO DI MAESTRA	MAIN TOPGALLANT SAIL
VELA DI STRALLO DI MAESTRA	MAIN TOPMAST STAYSAIL
VELA DI STRALLO DI GABBIA	MAIN TOPGALLANT STAYSAIL
VELA DI TRINCHETTO	FOREMAST SAIL
VELA DI PARROCCHETTO	FORE TOPSAIL
VELACCINO DI TRINCHETTO	FORE TOPGALLANT SAIL
FIOCCO	INNER JIB
CONTROFIOCCO	OUTER JIB
CIVADA	SPRITSAIL
CONTROCIVADA	UPPER SPRITSAIL
Bottazzi :listelli noce mm. 3x3 e 1,5x3.	Little wale: Walnut strips 3 x 3 and 1.5 x 3 mm.
Fasciame dello scafo:Listelli noce mm6x2	Planking : walnut strips 6 x 2 mm.
Rinforzi esterni ricavati da listello noce mm.10x3. Sagomare secondo la curvatura della fiancata.Sporgenza mm. 3 Vedi sezione tavola 2 (Per semplificare il lavoro al modellista,nella scatola di montaggio troverà un listello in noce da mm.4x4x300 e con esso realizzerà i rinforzi).	External reinforcement using the walnut timber 10 x 3 mm. Shape follows the sweep of the broadside. Protrusion 3 mm. See Plan 2. (In order to simplify the task, we have included in the kit a walnut timber of 4 x 4 x 300 mm. as an alternative.)
Incintoni : Listelli mm.6x2 da sovrapporre al fasciame sottostante.	Wales: Timbers of 6 x 2 mm. to be put over the first planking.

Tavola 2 SCAFO-VISTE E SEZIONI	Plan Sheet 2 HULL:DRAWINGS & SECTIONS
VISTA IN PIANTA DELLO SCAFO	PLAN VIEW
PORTELLI CANNONI	GUNS PORTS
SEZIONE LONGITUDINALE DELLO SCAFO	SIDE VIEW OF FRAMES
VISTA DELLO SPECCHIO DI POPPA	STERN VIEW
VISTA DELLA PRUA CON SERPA E POLENA	BOW VIEW
SEZIONE SULL'ORDINATA "3" CON VISTA VERSO POPPA	SECTION VIEW OF THE HULL "FRAME 3" TOWARD STERN VIEW
SEZIONE SULL'ORDINATA "A" CON VISTA VERSO PRUA	SECTION VIEW OF THE HULL "FRAME A" TOWARD BOW VIEW
SEZIONE TRASVERSALE DELLO SCAFO SULL'ORDINATA DI MAESTRA CON VISTA VERSO POPPA	CROSS PLAN OF FRAMEWORK LOOKING TOWARD STERN VIEW

Tavola 3	Plan Sheet 3

VISTA PROSPETTICA E MONTAGGIO DEI PEZZI DI POPPA	PERSPECTIVE VIEW & ASSEMBLY OF THE STERN PIECES
VISTA PROSPETTICA DELL'OSSATURA.	PERSPECTIVE VIEW OF FRAMES.
SCHEMA DI MONTAGGIO DEI PEZZI DI POPPA.	PLAN BUILDING OF THE STERN PIECES.
Istruzioni per il montaggio dei pezzi: Le parti metalliche dello specchio di poppa e delle due campane vanno montate nello stesso ordine della numerazione. Prima del montaggio i pezzi andranno opportunamente tinteggiati. Tagliare il fasciame dello scafo all'altezza della galleria come indicato nel disegno "A". Incollare internamente i due spessori a-b, dopo averli opportunamente sagomati,per aumentare la superficie di incollaggio del pezzo N°1. La stessa operazione (con lo stesso scopo) verrà eseguita con i riempimenti c-d-e-f . Usare del collante Epossidico. Prima di incollare sullo scafo i pezzi 4-5-8-9 tagliare e pareggiare i bottazzi in modo da non avere sporgenze sullo scafo nella superficie di incollaggio. I pezzi 6-7 possono essere omessi:sono indicati nello schema per essere usati,nello spessore necessario, solo nel caso che i pezzi 4-5-8-9 non coprano correttamente la superficie prevista. Nello schema non sono indicati i fregi, la cui messa in opera non presenta alcuna difficoltà. Tutti i pezzi, per la loro duttilità, possono essere facilmente adattati alle superfici curve.	Instructions for building: The metal parts of the stern and the buttocks pairs, are to be built as shown by their numbers. Before putting the pieces in their position it is better to paint them. Cut the hull planking at the gallery high as indicated in the design "A". Glue in the inside the two thicknesses a-b, after having shaped them properly in order to increase the surface to be glued of piece N° 1. You'll have to do the same operation (with the same order) with the fillers c-d-e-f. Before glueing pieces 4-5-8-9 on the hull, cut and balance the little wales in order to avoid any protrusion on the hull surface to be glued. Pieces 6-7 can be omitted - they are included only in case pieces 4-5-8-9 will not cover properly the foreseen surface. There should be no difficulty in the positing of the metal ornaments as every piece can be easily adapted to the sweeping surfaces.

Tavola 4 ORDINATE E CHIGLIA	Plan Sheet 4 FRAMES & KEEL
N.B.1) TUTTE LE ORDINATE SONO DISEGNATE ESCLUDENDO LO SPESSORE DEL FASCIAME.	N.B.1) ALL FRAMES ARE DESIGNED EXCLUDING THE THICKNESS OF THE PLANKING.
N.B. 2) ORDINATE E FALSA CHIGLIA SONO IN COMPENSATO DA MM. 5.	N.B. 2) FRAMES AND FALSE-KEEL ARE IN PLYWOOD OF SIZE 5 MM.
Incollare uno spessore tra le linee tratteggiate a prua via dell'ordinata. Su questa si appoggerà il ponte di batteria.	Glue as shown by the dotted lines, an appropriate shaped support on Frame 3 for the Gun Battery Deck.
Riempimenti del dritto di poppa in noce	Stern post in walnut
Chiglia e sottochiglia in noce	Keel and under-keel in walnut
Lato superiore sinistro	Left top side
VISTA ALTO	HIGH VIEW
VISTA FIANCO	SIDE VIEW
Riempimento di prua in legno duro.Da sagomare ed incollare sulla zona tratteggiata. N°2 pezzi, di cui uno opposto a disegno.	Shape and glue the filler block bow on the dashed area. There are two pieces opposite each other.

RUOTA DI PRUA IN NOCE. Da rastremare come da disegno.	WALNUT STEM POST to be tapered as per design.
Prima della messa in opera del fasciame, questa parte della chiglia va rastremata da ambo i lati in modo che lo spessore della chiglia più lo spessore del fasciame non superi i 6 mm.	Before applying the planking, need to taper both sides of this part of the keel so that its thickness plus the planking thickness will not be more than 6 mm.

Tavola 5 LINEE D'ACQUA E COPERTE	Plan Sheet 5 WATER-LINES & DECKS
LINEE D'ACQUA IN SEZIONE	WATERLINE PLAN – BODY PLAN
LINEE D'ACQUA IN PIANTA	WATERLINE PLAN – HALF BREADTH PLAN
A: PONTE DI CASSERO	A: QUARTER DECK
B: PONTE AL SOLE	B: 'SUN DECK' – deck added at a later stage for protection from the equatorial sun.
C: PONTE DI BATTERIA 1 PEZZO A DISEGNO 1 PEZZO OPPOSTO A DISEGNO	C: GUN DECK. 1 PIECE AS THE DESIGN 1 PIECE OPPOSITE THE DESIGN
D: PONTE DI COPERTA	D: MAIN DECK
E: GALLERIA	E: GALLERY
TUTTI I PEZZI SONO IN COMPENSATO DA MM.2	ALL DECKS ARE PLYWOOD 2 MM.

Tavola 6 MANOVRE FISSE E DETTAGLI	Plan Sheet 6 STANDING RIGGING & DETAILS
SCHEMA DELLE MANOVRE FISSE (o ... etc.	SCHEME OF STANDING RIGGING
ARRIVO SUL BOMPRESSO DELLO STRALLO DI MAESTRA	JOINING ON THE BOWSPRIT OF THE MAIN STAY
ARRIVI DEGLI STRALLI DI TRINCHETTO E DETTAGLIO DEL TIENTIBENE DEL... etc.	JOINING OF THE FORE MAIN STAYS & DETAIL
DETTAGLIO DELLA FASCIATURA E FISSAGGIO DELLO STRALLO	DETAIL OF THE PLANKING AND FIXING OF THE STAY
ARRIVO A PARANCO DELLO STRALLO DI GABBIA.	STAYS FROM THE MAST TOPS CONNECTING THROUGH TACKLE TO THE DECKING
STROPPO IN METALLO E FISSAGGIO IN COFFA DELLE BIGOTTE.	METAL TIE AND FIXING THE DEADEYES AT TOP
PASSAGGI DEL CAVO DI RAGNA.	BRINGING ROPES TO SINGLE POINT (E.G. FIDDLE BLOCK)
ORDINE (DA PRUA A POPPA) DELL' INCAPPELLAGGIO DELLE SARTIE.	ORDER (BOW TO STERN) OF THE FIXING SHROUDS
DETTAGLIO DELL' INCAPPELLAGGIO DELLE SARTIE E SISTEMAZIONE ... etc	DETAIL OF THE SHROUDS FIXING AND APPLYING THE STAY EYES
NODO PARLATO PER LA ... etc	KNOT TO FIX THE RATLINES
STROPPO DELLE BIGOTTE E FISSAGGIO	METAL STRAP OF THE DEADEYES AND

DELLE LANDRE.	FIXING.
MENSOLA DEL PARASARTIE.	BRACKET OF THE CHANNEL.
PASSAGGIO E LEGATURA DEI CORRIDORI.	RIGGING THE DEADEYES
DETTAGLIO DEI PARASARTIE	DETAIL OF THE CHANNELS
Tavola 7 VELE DI MAESTRA E MANOVRE	Plan Sheet 7 MAIN SAILS & STANDING RIGGING
VISTA DA POPPA	STERN VIEW
VISTA DA PRUA	BOW VIEW
BOSA	CRINGLE
VELA	SAIL
LEGATURA DELLA MANOVRA ALLA BOSA.	RIGGING TO THE CRINGLE
BOSA DI INFERITURA	CRINGLE RIGGING
BUGNA	CLEW
BENDE DEI TERZAROLI	REEF'S BEND
LEGATURA DEI MATAFIONI	FIXING THE REEF-POINTS
A PARANCO	TO THE TACKLE
A PARANCO A PIÈ D'ALBERO	TO THE TACKLE AT FOOT OF MAST
CAVATOIA	HOLE IN SIDE OF HULL *(SEE FIGURE)*
Tavola 8 VELE DI TRINCHETTO E MANOVRE	Plan Sheet 8 FORESAILS & STANDING RIGGINGS
VISTA DA POPPA	STERN VIEW
VISTA DA PRUA	BOW VIEW
A PARANCO	TO THE TACKLE
A PARANCO A PIÈ D'ALBERO	TO THE TACKLE AT FOOT OF MAST
Tavola 9 VELE DI M EZZANA E DI CIVADA E ARRIVE DELLE MANOVRE	Plan Sheet 9 MIZZEN SAILS & SPRITSAIL & STANDING RIGGINGS
VISTA DA POPPA	STERN VIEW
VISTA DA PRUA	BOW VIEW
Alla bitta	To the bollard
A paranco	To tackle
Tavola 10 VELE DI TAGLIO	Plan Sheet 10 CUT OF SAILS
A PARANCO A2 – 151	TO TACKLE A2 – 151
A PARANCO A2 IN COFFA	TO TACKLE A2 ON THE TOP
PER E XI – 155	FOR E XI – 155
Tavola 11 DETTAGLIO ALBERI , PENNONI , COFFE E CROCETTE	Plan Sheet 11 MASTS, YARDS, TOPS & CROSS-TREES
TRINCHETTO	FORE
Albero di trinchetto	Foremast
Pennone di trinchetto	Fore main yard

Albero di parrocchetto	Fore lower topsail mast
Pennone di parrocchetto	Fore topsail yard
Pennone di velaccino	Fore royal yard
MAESTRA	MAIN
Albero di maestra	Main mast
Pennone di maestra	Main lower yard
Albero di gabbia di maestra	Main lower topsail mast
Alberetto di maestra	Main topgallant sail mast
Pennone di gabbia	Main lower topsail yard
Pennone di velaccio	Main topgallant yard
MEZZANA	MIZZEN
Albero di mezzana	Mizzen lower mast
Verga secca	"Verga secca" (*see figure*)
Albero di contromezzana	Mizzen lower topsail mast
Pennone di contromezzana	Mizzen topmast yard
Picco di randa. (vista superiore)	Spanker (*upper view*)
BOMPRESSO	BOWSPRIT
Pennone di civada	Springsail yard
Asta di bompresso	Bowsprit boom
Pennone di controcivada	Upper spritsail yard
Testa di moro di bompresso	Bowsprit cap
COFFA DI TRINCHETTO	FOREMAST
Crocetta	Crosstree
Testa di moro	Cap
COFFA DI MAESTRA	MAIN TOP
COFFA DI MEZZANA	MIZZEN TOP
DETTAGLIO DEL BUTTAFUORI DI SCOPAMARE (fuori scala)	DETAIL OF STUDDING SAIL BOOMS (not to scale)
Distanziatore in legno	Wooden spacer
Legatura in cordino	Cord ties
Anello in ottone brunito	Brass ring
In ottone brunito	Burnish brass
Da realizzarsi a cura del modellista.	To be realized by model-maker
N.B. Tutta questa parte delle coffe (o crocette) alle teste di moro , sia per gli alberi che per il bompresso , va dipinta completamente di nero.	N.B. Tops, cross trees, masts and bowsprit to be completely dark paint.

Tavola 12	Plan Sheet 12
PARTICOLARI	PARTICULAR DETAIL
Avvertenza: I pezzi descritti in questa tavola riportano dettagli irreperibili nelle altre tavole. Inoltre alcune misure sono state modificate. Ciò é stato fatto per i modellisti che intendono autocostruirsi ... etc.	Attention: The pieces described in this table do have particulars that cannot be found in the other tables. This is for the model-maker that would like to incorporate extra detail into the ship.
TIMONE	RUDDER
Tondino d'ottone da saldare al lamierino.	Brass rod to be soldered to the metal
RUOTA DEL TIMONE	SHIP'S WHEEL
GRUA DI CAPONE (scala 2:1)	CATHEAD (scale 2:1)
ANCORA DI POSTA E SPERANZA	BOW & EMERGENCY ANCHOR

CANNONI N° 8 pezzi N° 20 pezzi	GUNS N° 8 pieces. N° 20 pieces.
Mezze canne. N° 2 pezzi N° 6 pezzi	Half guns N° 2 pieces N° 6 pieces
AFFUSTO DETTAGLIATO Scala 2:1 Sezione	GUN CARRIAGE DETAIL Scale 2:1 Section.
Vista prospettica dell'imbr... (posizione in parata)	Prospective view of guns position
ARGANO A SALPARE	WINCH
ARGANO DI TONNEGGIO	CAPSTAN
CHIESUOLA	COMPASS HOUSING
CUCINA (articolo facoltativo da realizzare a cura del modellista) N.B. La cucina e il camino sono in ferro. Paiolato del castello. La base è in refrattario	KITCHEN/STOVE - to be created by the model-maker. N.B. Stove and flu are made of iron with fumes venting through a grating in the forecastle deck Base of the stove is on refractory bricks.
PAZIENZA DI TRINCHETTO	MAIN PIN RAIL
PAZIENZA DI MAESTRA	FORE PIN RAIL
PAZIENZA DI MEZZANA	MIZZEN PIN RAIL
BITTA	BOLLARD
SCALA DEL PONTE AL SOLE	UPPER QUARTER DECK LADDER
SCALA DEL PONTE DI COPERTA	MAIN DECK LADDER
A POPPAVIA	TOWARDS STERNS
A PRUAVIA	TOWARDS BOW
BALAUSTRA	BALCONY
SCIALUPPA E ATTREZZATURA	LIFEBOAT & FITTINGS
Albero di maestra	Main mast
Albero di trinchetto	Fore mast
Bompresso	Bowsprit
Antenna di maestra	Main lateen yard
Antenna di trinchetto	Fore lateen yard
Timone	Rudder
Barilotto	Water barrel
Sassola	Scooper
Alighiero	Boat-hook
Remo. (N° 12 pezzi.)	Oar (12 pieces)
ASTA DI BANDIERA Sul coronamento di poppa	FLAGPOLE On the taffrail

Chapter 3: THE KIT

Drawings

The diagrams are beautifully drawn and would allow a scratch-built kit to be

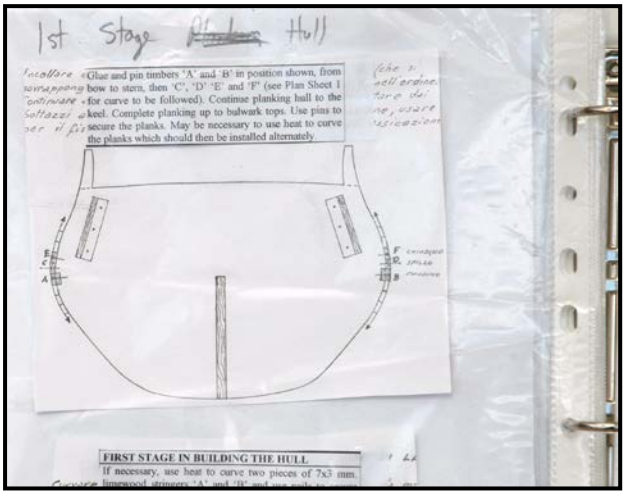


Figure 4: Cutting the Plan Sheets into Sections

readily developed. The difficulty is to separate the essential detail necessary to build the kit from the other more seriously accurate detail.

A point I found useful was for many – but not all – plan sheets to be carefully cut into small sections and placed into plastic sleeves in a folder. This way I could arrange the drawings in semblance of order of construction. Another very useful step was to print off the Italian-English translations, cut out the English translations and stick them over the appropriate Italian words (see Fig. 4)

Figure 5: Numbering of Each Metal Piece

Metal decorations

All cast metal decorations are contained in small but unmarked plastic packets. They have very few blemishes to remove. On the reverse side of the casting there is a specific number that identifies that piece. There are some excellent side and stern views on pages in the instructional booklet or CD that allows the kit builder to identify the castings with little problem.

Now is the time to go through every packet, identify the pieces. What I then did was to place an identifying name or number inside each packet and re-staple them ready for future use.

Much patience is required to identify these pieces and I would caution against direct contact with the skin – use gloves when cleaning & painting the pieces. Certainly any filing should be carried out in a separate area that can be easily cleaned up. Obviously any painting and gilding will need to be done before assembly onto the ship. More on their useage later.

Scrap Material

The laser-cut material in this kit is surrounded by pieces of wood which may appear to be superfluous – do not discard this 'waste' as there will be a number of places in the ship build where it becomes useful.

Component list

Wood – Laser-cut

Hull:

- Keel(1) – Chiglia
- Transverse Frames(10) – Ordinate

Decks:

- Main Deck (1) - Ponte di coperta
- Quarter Deck (1) – Ponte di cassero
- Upper Quarterdeck(1) – Ponte di controcassero
- Gun Deck(1) – Ponte di Batteria
- Gallery Deck (1) – Ponte di galleria

Stern:

- Rudder - Timone

Posts:

- Stem Post (1) - Ruota di prua
- Stern Post (1) – Ruota di poppa

Support Base (1) – Invasatura anteriore + posteriore

Wood – Limewood – listello tiglio

35 x 65 x 170 (1)	Filler Block for Bow - Riempimento di prua
1.5 x 6 x 760 mm. (70)	First Planking - 1° Fasciame
12 x 12 x 500 mm.(2)	Half Gun Support (Gun Battery Deck) - Supporti per mezze can *(also refer to material under 'Wood – Plywood')*
3 x 10 x 200 mm.(1)	Mast Cheeks – Maschette
3 x 6 x 760 mm. (2)	Longitudinal Stringers – Correnti lunghezza

Wood –Walnut – listello noce

PLANKING	
1 x 6 x 760 mm. (70)	Second Planking - 2° Fasciame
0.5 x 3 x 720 mm. (45)	Deck Planking - Rivestimento ponti
0.5 x 3 x 500 mm. (4)	Deck Border - Rivestimento ponti

5 x 7 x 720 mm. (1)	Keel – Sottochiglia
5 x 7 x120 mm. (1)	Stern Post - Ruota di poppa/dritto di poppa
2 x 10 x 500 mm. (1)	Channel – Parasartie
2 x 5 x760 mm. (4)	Channel bracket, Wale, Rail, Binnacle, Rail support, External ladder rung
6 x 6 x 200 mm. (1)	Cat Head - Gru di capone

WALES - Incintoni

2 x 6 x 760 mm. (4)
2 x 3 x 760 mm. (2)
2 x 2 x 760 mm. (2)

2 x 3 x 150 mm. (1)	Pin Rail (mizzen) – Cavigliera di mezzana
2 x 2 x 600 mm. (2)	Ratlines, Mast cheeks, column support for Type 22/089
2 x 2 x 500 mm. (1)	Crosstrees - Crocette
2 x 5 x 650 mm. (2)	Bulwark Capping Rail – Capodibanda
2 x 4 x 650 mm. (2)	Bulwark Capping Rail – Capodibanda
2 x 4 x 500 mm.	Trestletrees - Barre costiere

GUN PORTS	
1 x 10 x 500 mm. (1)	Lining - Battuta portelli cannoni
1 x 8 x 500 mm. (1)	Lining
1.5 x 10 x 500 mm. (1)	Hatch - Portelli cannoni
1.5 x 12 x 500 mm.	Hatch

3 x 3 x 700 mm. (2)	Stanchions , bollard, binnacle supports , outrigger of bow
3 x 3 x 150 mm. (1)	Mizzen riding bitt crossbar
1.5 x 1.5 x 500 mm. (1)	Caprail stanchions
4 x 4 x 500 mm. (2)	Bollard – Bittone di drizza; Pinrail Posts – Bitta; Hull reinforcement Rinforzi esterni

STERN	
2 x 8 x 300 mm. (1)	Stern Support Pieces - Supporti specchio
2 x 1 x 200 mm. (1)	Transom - Specchio

1 x 1 x 500 mm. (2)	Mast Top Battens – Serretta coprigiunto
1.5 x 3 x 600 mm. (1)	Border of mast top
2.5 x 1 x 350 mm. (1)	Mast top railing

2.5 x 4 x 300 mm.	Pin Rails (main & foremast) – Cavigliera de maestra e trinchetto
1.5 x 4 x 200 mm.	Balaustrade - Balaustra
10 x 10 x 345 mm. (1)	Connecting piece for base board

Wood –Plywood – compensata

5 x 35 x 300 mm. (1)	Half-gun supports
1 x 70 x 250 mm. (1)	Mast tops

Accessories

Anchor(regulation) with stock;40mm. (2) - Ancore da mm. 60 complete di ceppi (Art.11/037)
Anchor (emergency) with stock;50mm. (2) - Ancore da mm. 50 complete di ceppi (Art.11/038)
Anchor Rings (4) - anelli per ancore
Barrel – Botte (Art.22/112)
Bell(1) – Campana (Art.11/107)
Binnacle for bell - Chiesuola per campana (Art.11/363)

Blocks:

3mm., 1 hole(154) (see Plan 13) - Bozzelli da mm. 3 a 1 foro (Art.22/026)
5mm., 1 hole(30) - Bozzelli da mm. 5 a 1 foro (Art.22/028)
5mm., 2 hole (40) - Bozzelli da mm. 5 a 2 foro (Art.22/032)
5mm., 3 hole (8) -Bozzelli da mm. 5 a 3 fori (Art.22/113)
Heart, 7 mm. (2) - Bozzelli a cuore da mm. 7 (Art.22/157)
Violin, 7 mm. (10) - Bozzelli a violino da mm. 7 (Art.22/083)

Capstan, 19 x 25 mm (2) – Argano (Art.22/133)

N.B. An extra capstan has been provided in case you wish to build the Anchor Capstan

Chain Plates/ Deadeye Straps, 5mm.x 28 (34) - Lande da mm. 5 (Art.11/313)
Chain Plates/ Deadeye Straps, 5mm.x 20 (8) - Lande da mm. 5 (Art.11/316)
Chain Plates/ Deadeye Straps, 3mm.x 18 (28) - Landre da mm. 3 (Art.11/434)
Stanchions 8mm. (7) – Colonnie (Art. 22/090)
Deadeyes, 3mm.(1-hole) (4) - Bigotte da mm. 3 (Art.22/036)
Deadeyes, 5mm.(3-hole)(92) - Bigotte da mm. 5 (Art.22/020)
Deadeyes, 3mm.(3-hole) (64) - Bigotte da mm. 3 (Art.22/018)
Eye pins, 2mm. (30) - Anelli diam. mm. 2 con gambo
Grating strips, 1.5 x 1.5 x 60mm. (220) - Elementi per paiolato da mm. 50 (Art.22/162)

Armament (refer to following page)

Full Guns - Cannoni:

30mm. (8) (Main Deck) - Cannoni da mm. 30 (Art.11/015)

Half Guns

22mm. (28) (Under & on Gun Deck) - Mezze canne da mm. 22 (Art.11/309)

NOTE:
Plan Sheet 12 shows the use of full guns on these two lower decks: such diagrams are only for illustration purposes for a real 'scratch' model. The kit utilises half-guns.

Gun Carriages 19 mm. (8) -Affusti per cannoni da mm. 19 (Art.22/001)
Gun Door Hinges (56) - Cerniere portelli cannoni (Art. 11/289)
Wheels - Ruote per cannoni diam. 4mm.(16) (Art.22/148); diam. 5mm. (16) (Art.22/149); diam. 6mm.(28) (Art. 22/150)
Axles:
wooden rod 2 x 200mm (2)- Tondini di kotò diam.mm. 2 per assali affusti
brass rod 1.5 x 100mm. (2) -Tondino ottone da mm. 1.5 per spine cannoni

Ladders complete with steps (2) - Scale complete di gradini e spallette (Art.22/002)
Lantern (1) – Lanterna (Art.55/009)
Mast Caps - Testa di moro
Main Mast(5 x 12 x23mm.) (1) Art.22/173
Main Mast (4 x 8 x 16mm.) (1); Art./22/169;
Foremast (5 x 11 x 21mm.) (1) Art.22/171;
Foremast (4 x 7 x 15mm.) (1) Art.22/168;
Mizzen (5 x 8 x 18mm.) (1) Art.22/170
Bowsprit (5 x 12 x 2mm.) (1) Art.22/172
Flagpole (3 x 5 x 10mm.) (1) Art.22/161
Metal decorations set - Serie completa decorazioni fuse (Art.11/433)
Plate for ship's name on supporting base (1) - Targhetta Invaso (Art.12/010)
Rigging yarn
0.25mm.(Art. 77/025); 0.40mm.(Art. 77/040); 0.60mm. (Art. 77/060); 1.0mm.(Art. 77/100); 1.50mm. (Art. 77/150)
Rings (2mm.) (30) - Anelli diam. mm. 2
Rudder hinges (6) - Cerniere timone complete (Art.11/291)
Sailboat Hull With Keel, 130mm. (1) - Scialuppa da mm. 120 c/chiglia (Art.88/014)
Sail Cloth, 450 x 900 mm. - Serie tela per vele mm. 450 x 900 (Art. 15/010)
Wheel, Ship's (1) – Ruota o corona (Art. 22/100)
Roller for rope (1) - Cilindro o tamburo
Support of wheel (2) – Supporto del timone

Set of Plans (13 sheets) - Serie disegni (No 13 Tavole) (Art.66/011)
Instructions - Istruzioni

Masts & Spars (Alberi e pennone)

12 x 410mm. (1); 10 x 675 mm. (1) ; 8 x 660 mm. (1); 6 x 650 mm. (1); 5 x 630 mm. (1); 5 x 500 mm. (1); 5 x 300 mm.(1); 4 x 760 mm.(1); 4 x 600 mm.(1); 3 x 340mm. (1); 2 x 600mm. (1); 2 x 700mm.(1)

SAILBOAT
Masts – Bompresso, Antenna di maestra e di trinchetto per scialuppa (2 mm.)
Oars – Remi scialuppa (12) (2 mm.)
Flagpole – Asta di bandiera (2mm.)

A: BOWSPRIT

Bowsprit Mast – Albero di bompresso (10 mm.)

Flying Jibboom – Asta di bompresso (also known as ‘asta di controfiocco’) (5 mm.)

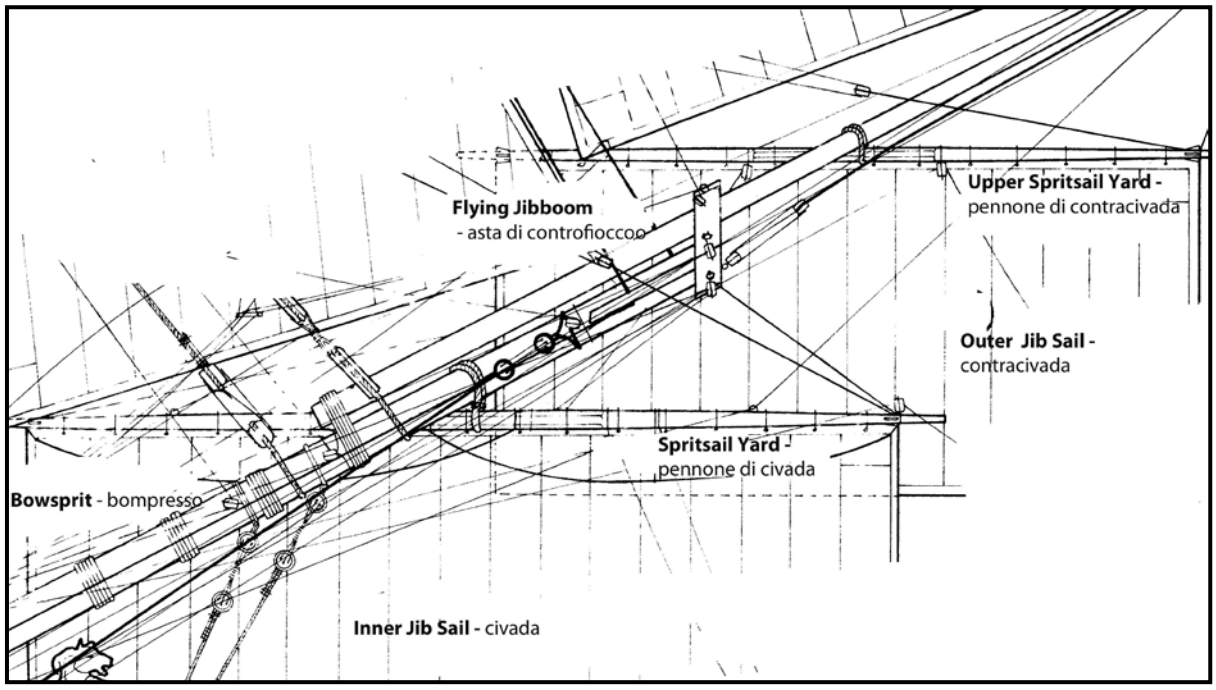
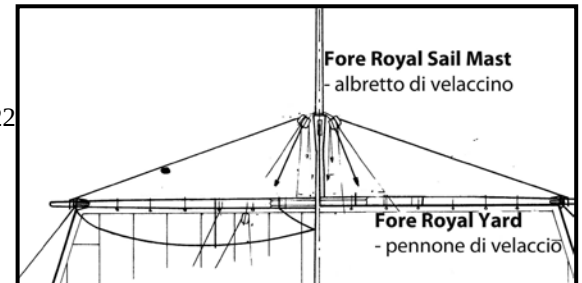


Figure 6: Bowsprit Masting

Bowsprit Yards

Upper Spritsail Yard- Pennone di contracivada (3 mm.)

Spritsail Yard – Pennone di civada (4 from 5 mm.)



B: FOREMAST
Fore Mast:Albero di trinchetto (10 mm.)
Fore Topmast:Albero di parrocchetto (6 mm.)
Fore Royal Sail Mast:Albretto di velaccino (4 mm.)

Foremast Yards
Fore Main Yard:Pennone di trinchetto (5 mm.)
Fore Topsail Yard: pennone di parrochetto (4 -5mm.)
Fore Royal Yard:Pennone di velaccio (4 mm.)

C: MAIN MAST

Main Mast: Albero di maestra (12 mm.)

Main Topmast: Albero di gabbia (8 mm.)

Main Topgallant Sail Mast: Asta di bandiera maestra (4 mm.)

Main Mast Yards

Main Lower Yard: Pennone di maestra (6 mm.)

Main Lower Topsail Yard: Pennone di gabbia (5 mm.)

Main Topgallant Yard: Pennone di velaccio (4 mm.)

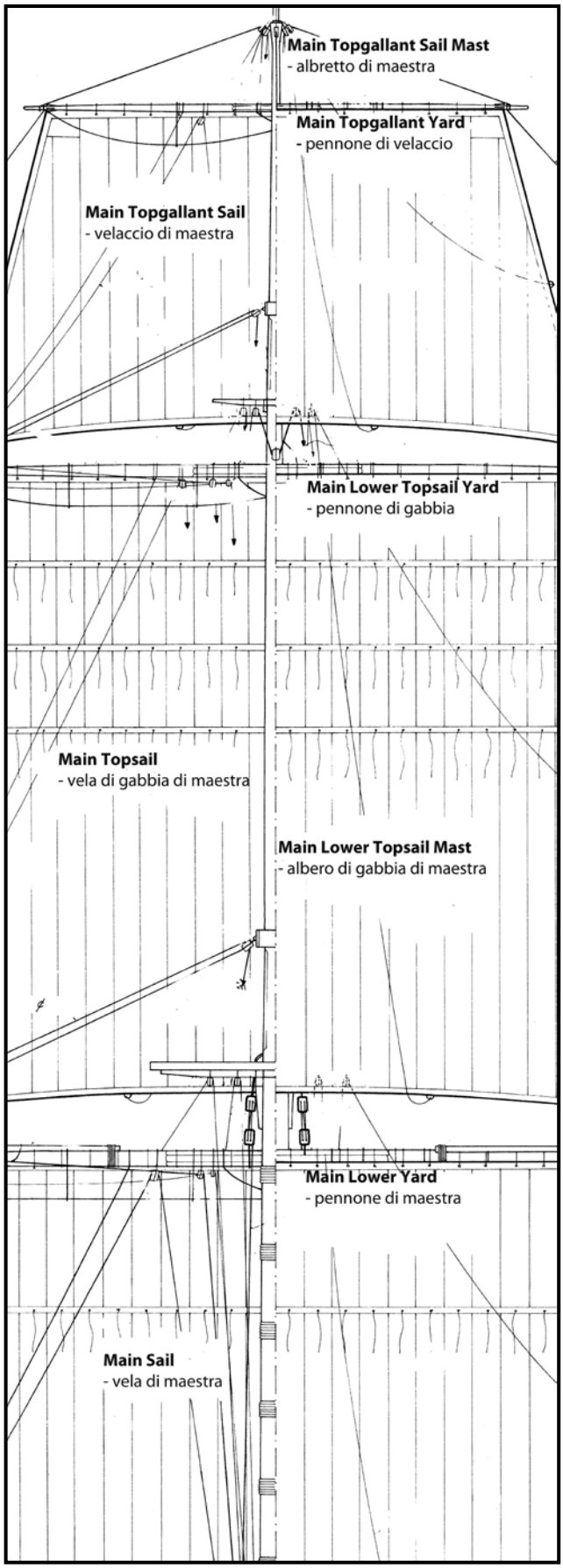
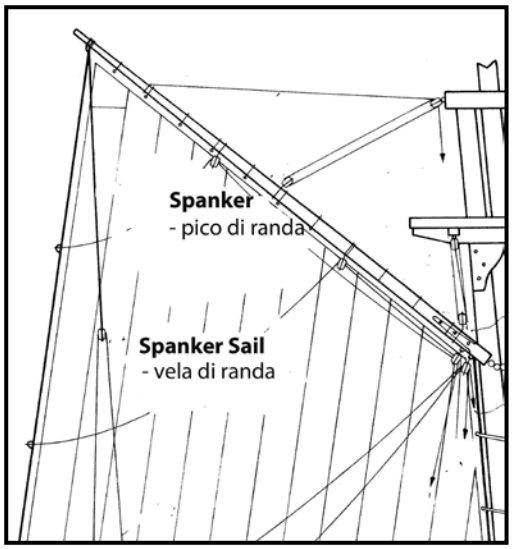


Figure 8: Main Mast Masting

D: MIZZEN MAST
Mizzen Mast – Albero di mezzano (8 mm.)
Mizzen Lower Topsail Topmast – Albero di contromezzano (5 mm.)
Mizzen Flagstaff – Asta di bandiera (3 mm.)

Mizzen Mast Yards
Mizzen Main Topmast Yard: Pennone di contromezzana (3 mm.)
Crossjack Yard: Verga secca (3 mm.)
Spanker: Pico di randa(4mm.)



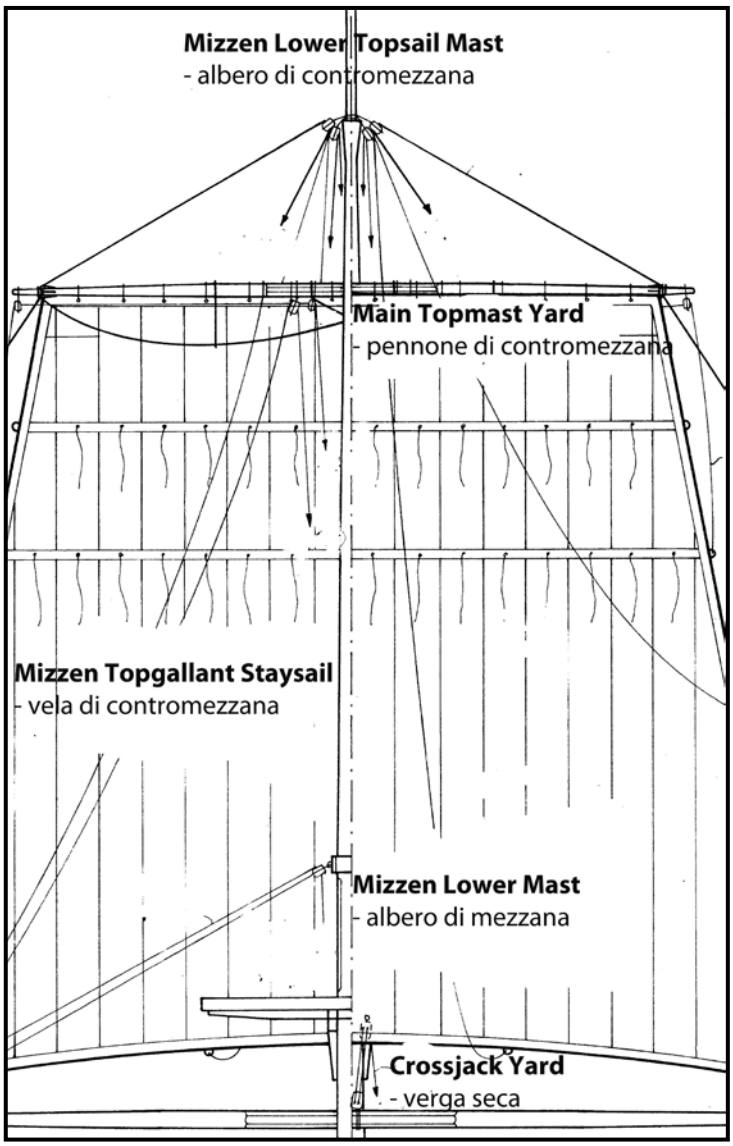


Figure 9: Mizzen Mast Masting

Colours

Bianco - white

Rosso vivo – bright red

Legno naturale – timber

Nero – black

Oro antico – antique gold

Brunito - metallic

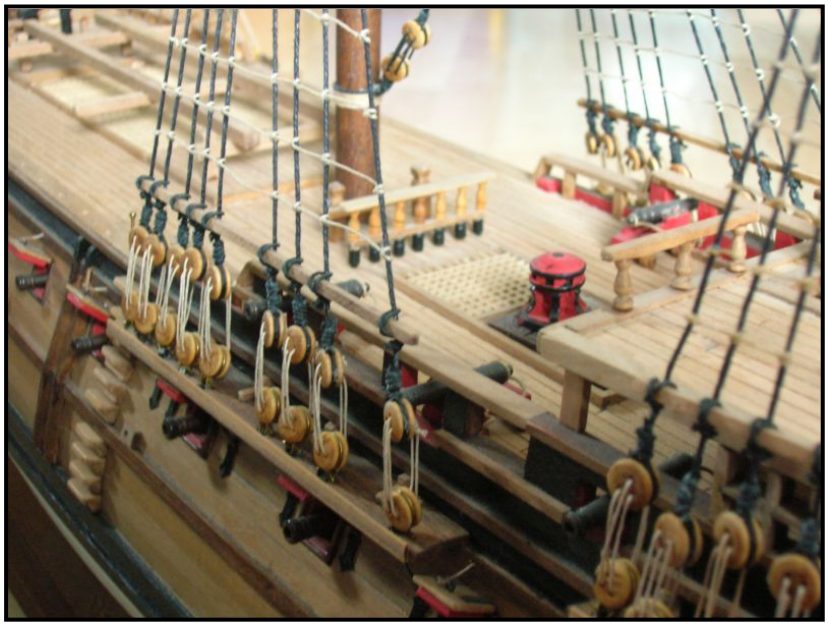


Figure 10: A Modeller's Interpretation of Colour

Euromodel have made the following suggestions but in the end it is up to you.

Black

Upper & lower wales; mast head; standing rigging; yard arm braces; mast rope bindings

Gold

Figure head, sculptures, navigation light & general decorations.

Bright Red

Gun carriages, winches, capstans, bitts, shell holders, belaying racks, pin racks, inside of gun port doors & port door opening edges.

Metallic

All metallic parts, stove & flue

White

Window frames & surrounds; lower hull planks.

Natural Wood

Upper hull planking; Decks, masts, yards.

Chapter 4: HULL STRUCTURE (Part 1)

It is best to formulate your OWN method of assembly before starting. This applies to all stages and especially includes mast & rigging construction. The following instructions are prioritised to make the construction process as simple as possible. Keep in mind that they are only suggestions. Study the designs carefully as the instructions highlight only the major steps for construction.

Structural Integrity

Frames & the Keel

The ten transverse pre-cut 'bulkheads' were slotted into the false keel as a dry run to determine which joints were too tight and which are too loose. However, all fits were excellent and no adjustments of the joint sizes needed. Alignment of the beams supporting the decks was also excellent. All ten frames were then removed from the false keel. Using a black pen, a mark was produced on the top of each frame equidistant from each side (i.e. a centre point that gives visual alignment of the whole structure).

Fixing the Frames in Position

PVA is the adhesive of choice and frame ' M ' was glued in first using a set square to check its alignment with the false keel. When this glued joint was fully dry, '1' and 'A' were then glued in position and again checking that they were square with the keel.At the same time the diagonal distance between them as well as with the frame 'M' was also checked . The glued joints were allowed to dry before proceeding any further. Frames were installed alternate at ends. Square & diagonal measurements and central alignment with the black marker points were constantly checked to ensure correct alignment (refer to fig. 11). [I also checked spacing between the frames on each side of the keel using vernier calipers.]

N.B. Only install frames D-C-B-A-M- 1-2. The other frames [3-4-5] are installed later.

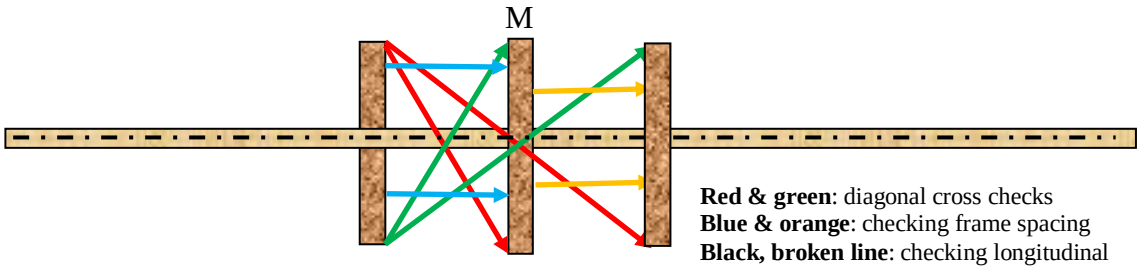


Figure 11: Positioning Frames on False Keel

These factors should provide for good symmetry throughout the ship but be warned that the frames are porous and if the stringers (see below) & the first planking are not soon put in place, moisture absorption and subsequent alteration of frame alignment can occur.The 'cell' construction described below goes a long way in preventing this problem.

Mast

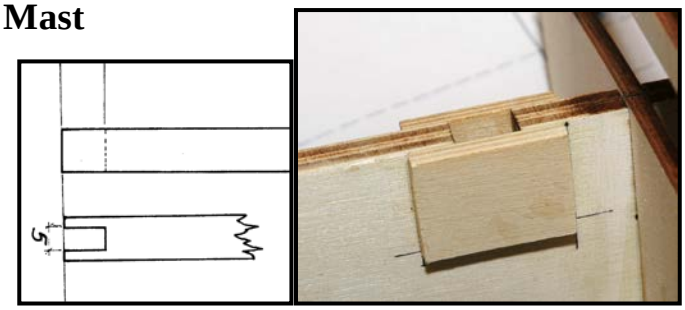


Figure 12: Main Mast Step

Steps

The plan sheets show the masts slotting *over* the keel (see diagram). I chose to do the opposite and slotted them *into* the keel by having pieces of plywood glued either side of the slots to form a useful seat for the masts when inserted at a later stage (refer to Fig. 12).

Cell Construction

Considering the size of this ship, any small degree of warping will magnify itself along the length so I created a central cell within the ship's frames. This consisted of a set of three pairs of tightly fitting rectangular panels of scrap plywood between Frames A – 2 (Fig. 13). I was just happier that this large ship now had a lot more integral strength. At the same time, these panels serve to support the outer edges of the Gun Battery Deck (see diagram below). By the time the additional pieces (refer to the blue-shaded areas in the diagram at the bottom of the page) were put in place to support the half-guns, the whole structure was now very strong – and believe it or not, the *slight warp in the original keel piece had completely disappeared !*

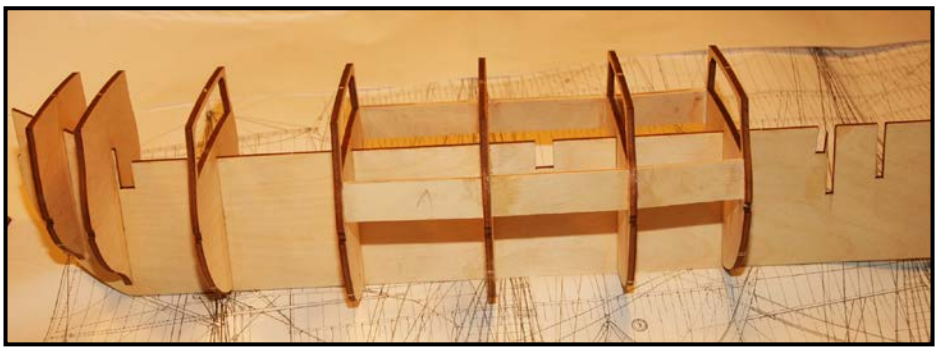


Figure 13: Formation of a Central Cell

Figure 14: Deck Support Glued onto Frame C

Deck Supports

To support both ends of the Gun Battery Deck there are two pieces constructed from scrap timber (see Plan Sheet 4) that were glued in appropriate positions on Frames 3 & C respectively. There is also a deck support needed where the Main Deck meets Frame 5.

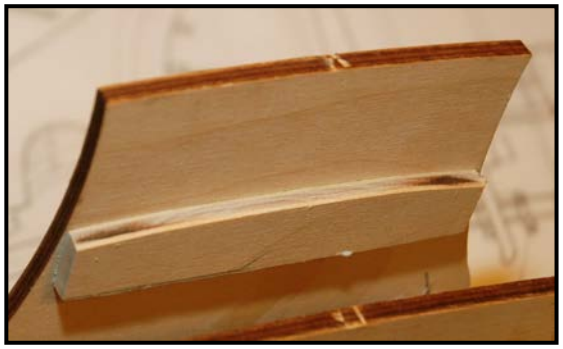


Figure 15: Deck Support on Frame 5

Figure 16: Slot Cut into Frame 3

Frame 3 & Mizzen Mast

It is clear from the angle of the Mizzen Mast step that this mast would be obstructed by Frame 3 so some adjustment to this frame is necessary. I cut a vertical slot 8 x 53 mm. in this frame to allow the mast to sit at its correct angle. The slot in the keel was 6 mm. wide which meant that the 8 mm. rod had to be reduced to 6 mm. where it passed into that slot. So the base of the Mizzen Mast will then measure 5 x 6 mm.

In spite of earlier comments in this manual that were based on some old instructions given to me by Euromodel, the Frame 3 can now be glued in position. When the Gun Battery Deck is to be put in place, it is quite a simple matter to bend the deck as it is being inserted.

Euromodel produced the Mizzen Mast slot angle very well. With some slight movement of the mast in its keel housing, it was very simple to produce the correct inclination of the mast with the deck. Using the inclination shown by a broken line passing across the Mizzen Mast in Plan Sheet 11, I estimated the angle to be 79/ 101°. Just to keep that angle correct for later, I glued a block across the back of Frame 3 just where the mast came out on that side (Fig. 17).

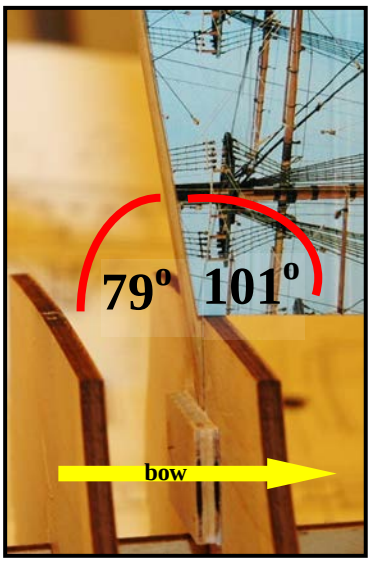


Figure 17: Cardboard Template (in blue) from Original Kit Box

Frame Adjustment

With a strip of wood you may well find that some frames are out of alignment. If any frame surface is low, packing with a thin strip may be necessary. Alternatively one or more frame surfaces may need to be reduced.

With the exception of the middle frame, all the lower half of the frame edges were bevelled as well as the upper edges where necessary and here I used my trusty Dremel power tool with a small sanding drum. Otherwise, any number of hand tools can be used to perform the same function. The frame surfaces were checked continually with a long strip of wood. *Some of the notches that the stringers sit into were then less than the required depth – some work was needed then to adjust the depth !*

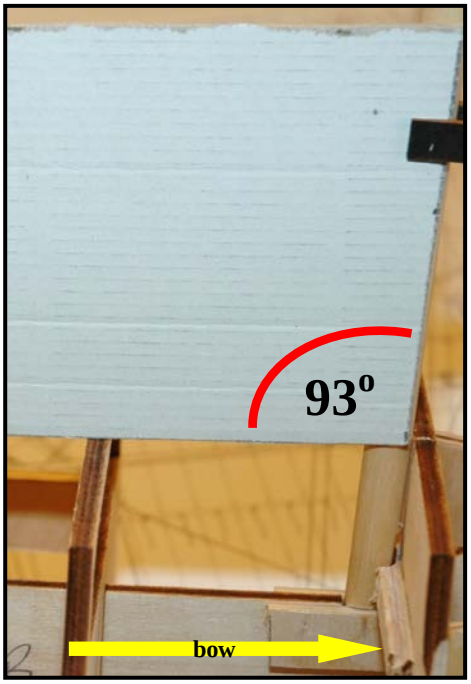


Figure 18: Checking Alignment of Foremast

Frame C & Foremast

No adjustment to this frame was necessary and as seen in Fig. 18, the mast is almost parallel to the frame [the loose mast slipped a little whilst taking the photo and suggests that there is a greater angle between it and the frame, which is not so].

What I did do though was to ‘hollow out’ the deck support so that the mast could fit correctly. Another thing to do later will be removing a small amount of the side of this mast where it fits inside the mast step on the bow side as a thin section of the keel is in the way.

Stringers

There is one pair of longitudinal stringers (3 x 6 mm.) that run from bow to stern. Quite a few of the notches in the frames needed to be adjusted to allow for a slight angle (compared to the framework and to the longitudinal run) as the stringer passed through. When putting in place, I started at the frame nearest the bow and worked towards the stern. It was altogether a simple exercise. To avoid stressing the hull structure, I lightly bent the stringers passing across Frames B – D (i.e. the last three farmes near the bow) to fit the curve of the hull.

Finally, some sanding was necessary to produce a uniform surface with the stringers and the frames.

Figure 19: Longitudinal Stringers in Position

Figure 20: Creating Support for Bowsprit

Bowsprit Housing

Before installing the decks, there is a need to create some type of support for the Bowsprit. As Fig. 20 shows, after drilling a hole through Frame D, I installed two ‘saddle’ pieces on the inside surfaces of Frames C and D to create a fairly tight fit for the 10 mm. rod that forms the Bowsprit.

Gun Battery Deck (ponte di batteria)

Alignments

General discussion ...This deck is denoted by the red line in the diagram below. Between Frames 3 and C, the half-guns are supported in blocks cut from the 12 x 12 x 500 mm. limewood supplied and which are glued down onto the deck. Other half-guns are supported by pieces cut from the 5 x 35 x 300 mm plywood and are glued in position between frames as shown by the blue-shaded areas. Three of these half-guns then are located beneath the Gun Battery Deck. There is also one gun located on the Gun Battery Deck *past Frame 5* but its support will be installed later.

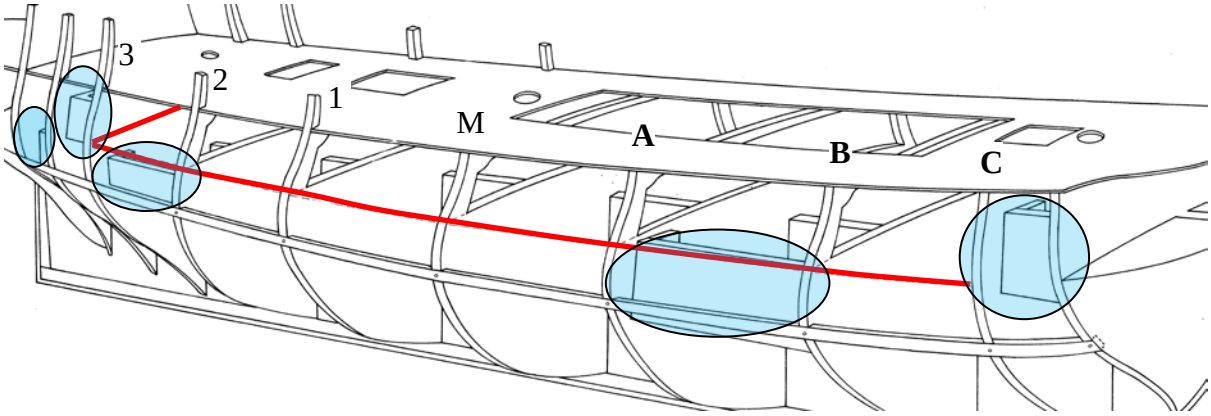


Figure 21: Half Gun Positions in Relation to the Gun Deck

Half-gun Supports

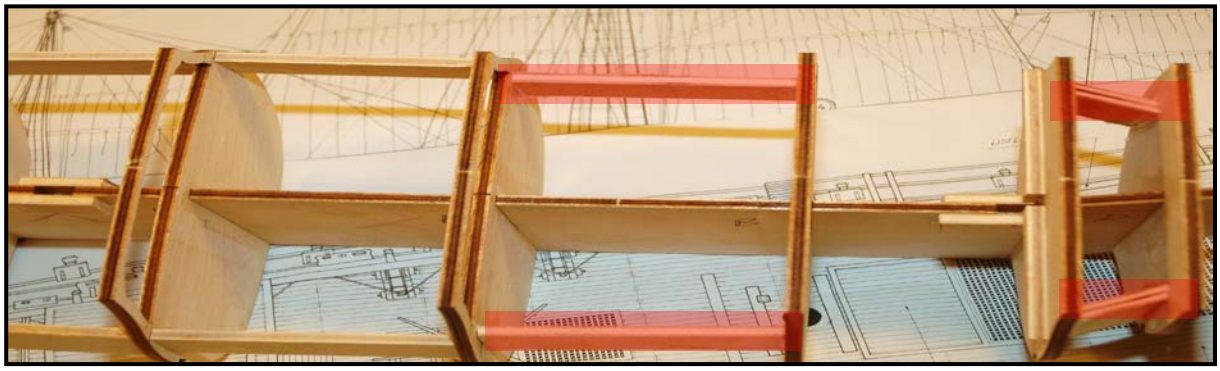


Figure 22: Mast Supports & Half-gun Supports

Fig. 22 shows : 1. Main Mast & Foremast steps with plywood pieces either side & 2. Pink-shaded areas show plywood inserts set back 11 mm. for the half-guns. Careful checking of the plan sheets will identify where these supports are to go both towards the stern and the bow. The kit supplies a plywood strip (5 x 35 x 300 mm.) from which these can be cut. They are required for the gun positions below the Gun Battery Deck as well as for a few that are in positions past the plywood deck as provided in the kit. I placed them 11 mm. in from the leading edges (but take into account that these frames need to be beveled). If they are too close to the edge of the hull, the strips of plywood can always be deepened at a later stage.

Gun Positioning

By positioning the two deck halves onto the plan view of the ship, I identified the position of the Main Mast and then marked a 12 mm. band across the two deck pieces. I have over-emphasised this band for photographic purposes by utilising a black marker pen.

Then, from Plan Sheet 1, I utilised a pair of normal calipers to check the distances of the gun ports from the Main Mast as the reference point.

When this deck is installed *and* the edges trimmed back to fit the hull lines, the blocks made from the 12 x 12 x 500 mm. will be

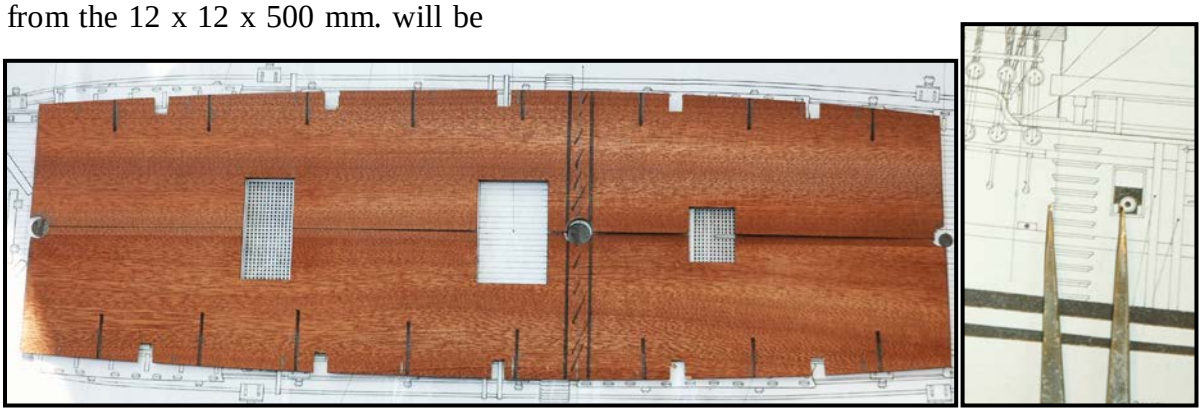


Figure 23: Gun Positioning

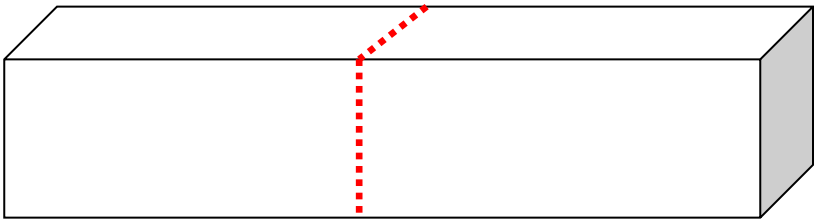
glued in position.

Hatch Cover Interpretations

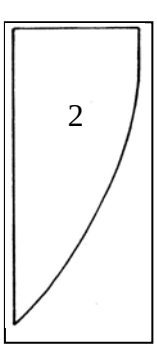
What you choose to do about constructing all the hatch covers is entirely up to you

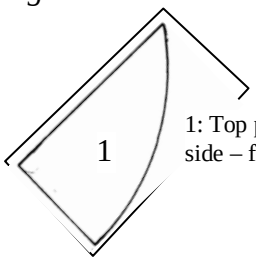
Bow Construction

The 170 mm. long block is cut into two 85 mm. halves as shown.



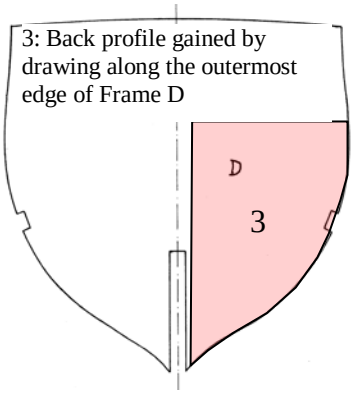
The following diagrams (not to scale) illustrate the three sketches that need to be made on each half block. In this case the illustrations are for the port (left) block. Just remember to make the *opposite drawings* for the starboard half.





1: Top profile on port side – from plan sheet

2: Port side profile adjacent to keel (bow) – from plan sheet



3: Back profile gained by drawing along the outermost edge of Frame D

Combining these three diagrams – and some considerable patience in carving – the outcome is shown by the following photos. I utilized a bench disc sander and finished off with a sanding drum on my Dremel tool. Remember to factor in the beveled edge of this last frame when contouring the shape.

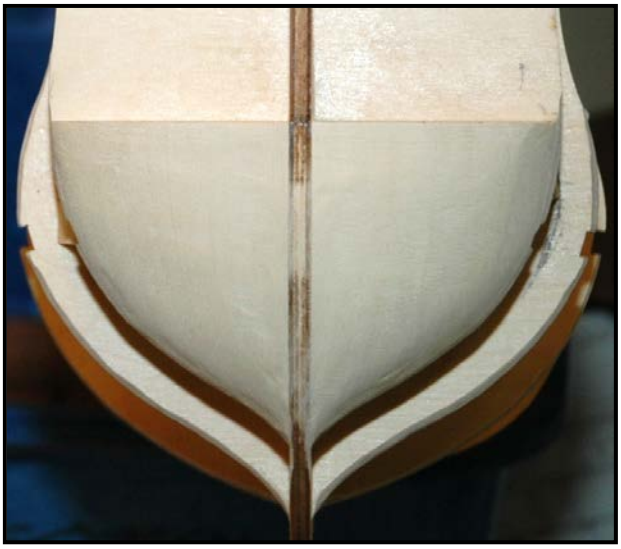


Figure 24: Front View Looking Towards the Stern

Figure 26: View from Underneath

Figure 25: View from Above

Stern Construction

Past Frame 5, there is a need for 'filler blocks' to complete the *lower half of the hull*. The upper half of the *gallery windows & balcony* forms the *transom*. Between these two sections, there is the *transom support*. Because this area lends itself to much individual variation, Euromodel chose not to include detailed drawings for the construction of the filler blocks. However, there are some excellent metal castings for all the gallery windows, balconies and external transom decorations included in the kit along with an 'exploded' diagram showing how these parts come together. The following discussion shows how I went about designing and constructing the filler blocks as well as the necessary transom support. I chose to utilize 'MDF' (medium density fibre board) which is commonly available through hardware stores. It is an easy medium to work with but remember to use a face mask as you will be producing vast amounts of fine wood fibre particles.

Longitudinal Cross-section

In order to produce the filler blocks for the stern, I went to Plan Sheet 5 ('linee d'acqua in sezione') and onto it I drew the diagram below. You should utilize the measurements given to create the same diagram on your plan sheet. If you sketch a penciled diagram with the following dimensions onto it, then an accurate portrayal of the longitudinal cross-section should be obtained. Hints: 1. Start with the yellow section as the reference point; 2. Do *not* cut out the drawings but use tracings (you will need the plans for later)

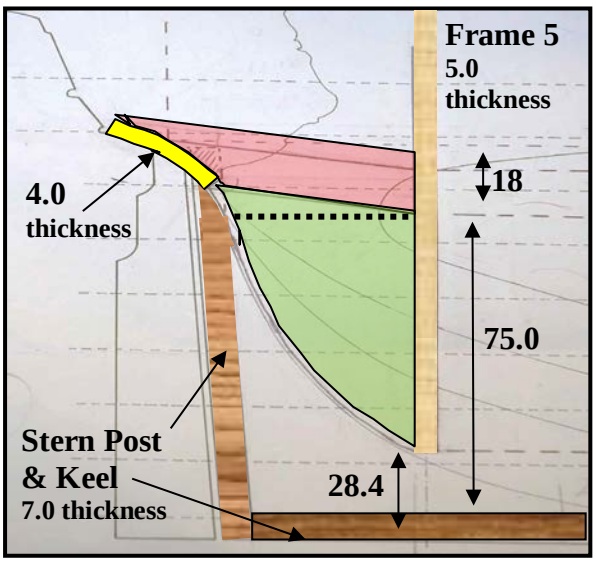


Figure 27: Plan Sheet 5 Interpretations

The yellow curved area represents the curved section underneath the gallery windows and the 4 mm. thickness represents the combined thickness of the metal decoration plus the 1 mm. thickness of the timber planking.

The green area represents the curved section of the hull underneath the transom support. Note that this section rises above the top of the keel section between the two block halves at the far end but is level with the keel at the junction with Frame 5. Remember to allow 2.5 mm. for the thickness of the first & second planking going over the filler blocks.

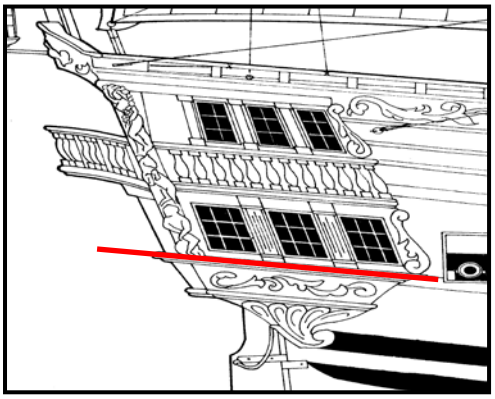


Figure 28: Gallery Window Inclination

This produces the angle of the galleries evident in the plan sheets. A common mistake is to make these windows perfectly horizontal. (Refer to Fig. 28 where the red line indicates the downward slope of the galleries. Note that it parallels the deck/ deck balustrades above).

The top of the keel is represented approximately by the black dashed line. The pink area represents the transom support which in the diagram opposite is immediately under the red line.

Templates for determining these longitudinal cross-sections will then be taken off Plan Sheet 5 and transferred onto suitable wood material. The transverse cross-section was easily obtained by holding the material to be carved against Frame 5 and tracing out the frame section.

Plan Cross-section

I went to Plan Sheet 5 ('linee d'acqua in pianta') and drew a curve parallel to the printed curve shown from a point just past the end of the keel + post down to a point approximately 20 mm. from the outer edge of Frame 5. A template was then made from the blue area shown. These are not precise dimensions as a fair amount of carving that is needed will change things somewhat!

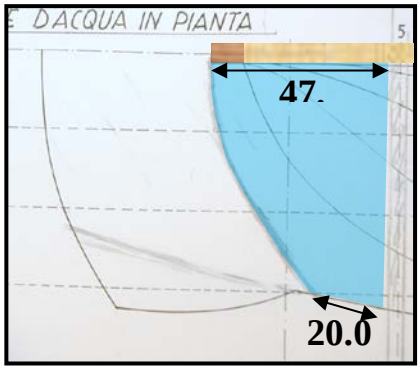


Figure 29: Bow Cross Section from Plan Sheet

Stern Filler Blocks

Here began the carving of a pre-determined shaped block, all carefully interpreted from the plans … *and then having to modify it as I went*. To a degree, the plan view of the top followed the gradual curve shown in the 'linee d'acqua in pianta'. However, as I began checking the fit and positioning of the metal decorations that were to go on it and the support block above, it became necessary to make constant interpretations and modifications. From my point of view, there was no clear picture of the shapes required and so it was left to me to decide on the final shapes.

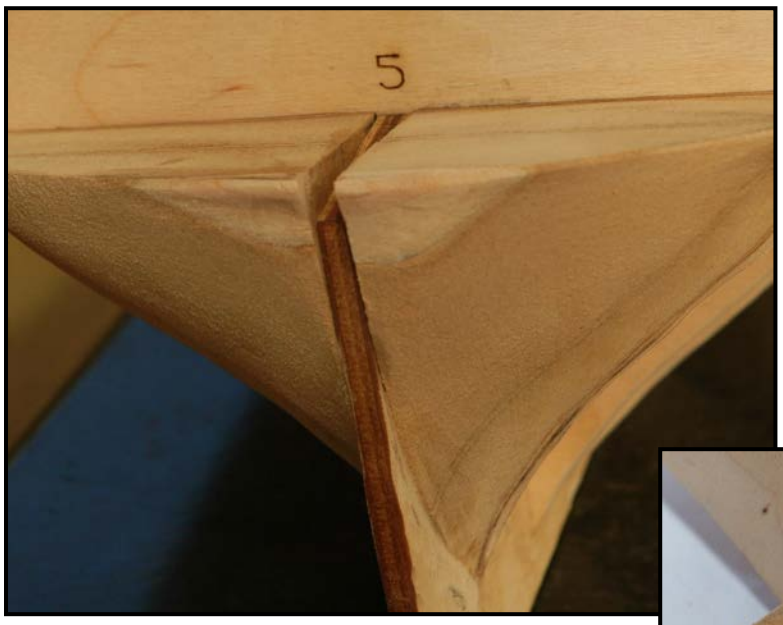


Figure 30: Filler Block Slope

A better view of the filler blocks highlighting the difference in slopes between the top of the keel and the top of the blocks.

On a bit of an angle, but showing the **inclination** of the filler block (against the keel) required to give the galleries the correct positioning

Early stages but notice how the curve is more 'square' than expected. This will still need to be modified when looking at how the metal decoration sits directly above it.

Difficult to see the filler blocks here – which of course is logical since their profile merges with the profiles of the frames behind !

Figure 32: Final Shape of Filler Block

Side view of the port side filler block

Figure 33: Port Side View of Filler Block

Transom Support

The template was produced in much the same way as for the stern filler blocks and the central longitudinal cross-section dimensions were obtained from the drawing. I must admit that my approach was a little experimental/ ad hoc in the absence of suitable drawings and my following photos will illustrate my ongoing alterations – nothing is hidden! Just remember, however, that this *will* all be hidden under the planking.

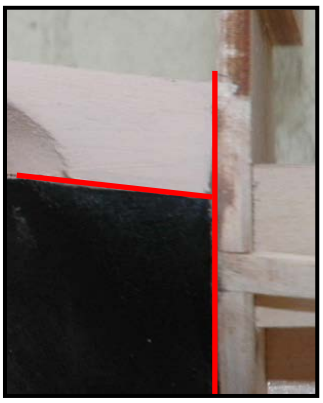
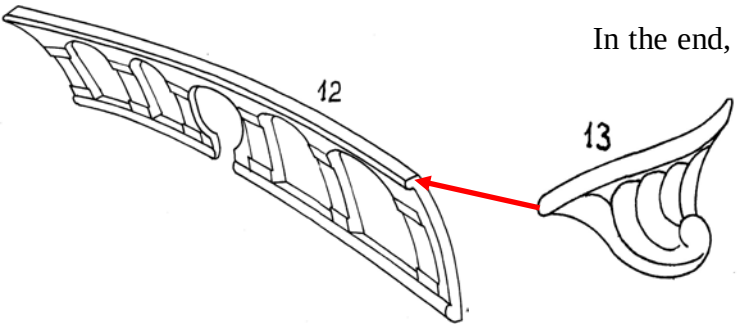


Figure 34: Angle of Transom to Frame 5

The essential features here are …

Figure 35: Apparent Metal Anomally

- the angle it makes with Frame 5 (Fig. 34)
- the curvature necessary to match the metal decoration on its external stern surface
- the matching/ continuing the upward curvature shown by the filler blocks underneath and the longitudinal curvature shown by the frames! . Builders will observe that the width of the metal decoration on the transom appears to be too wide when compared to the flow of the hull lines (Fig. 35). However, this extra width will be taken up by creating a small amount of packing underneath piece 13 (and 14).



In the end, what I was trying to achieve was a 'perfect match' of two metal pieces as shown in the diagram opposite. Some of the following photos will hopefully illustrate this point.

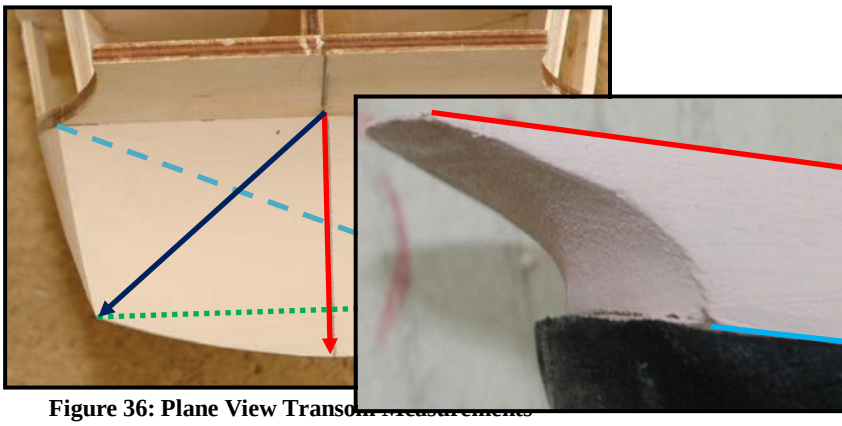


Figure 36: Plane View Transom Measurements

Figure 37: Side View Transom Measurements

Dimensions taken from the plan view of the transom support:

Red line: 65.24 mm.
Dark blue line: 70.64 mm.
Light blue line, (broken): 119.74 mm.
Green line, (broken): 102.29 mm.

Dimensions taken from the side view of the transom support:

Red line: 54.0 mm.
Green line: 18.0 mm.
Light blue line: 21.64 mm.

The support in Fig. 38 is recessed back (as seen by the shadow) to allow the fitting of metal decoration '12'.

Further construction of the stern, except for the following section, was then put on hold until the first and second planking was completed.

Quarter Deck Supporting Structure

At this point, it seemed appropriate to create a supporting structure for the Quarter Deck which could then be temporarily held in place to check the placement of all the stern transom pieces. [Probably not needed in the end once the planking was completed but I just wanted to check on placements before I had gone too far!] The principle followed here was that the Quarter Deck would be parallel to the inclination of the transom supporting block.

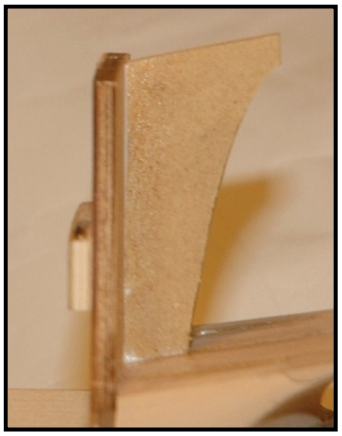


Figure 39: An Extra Support for the Quarter Deck

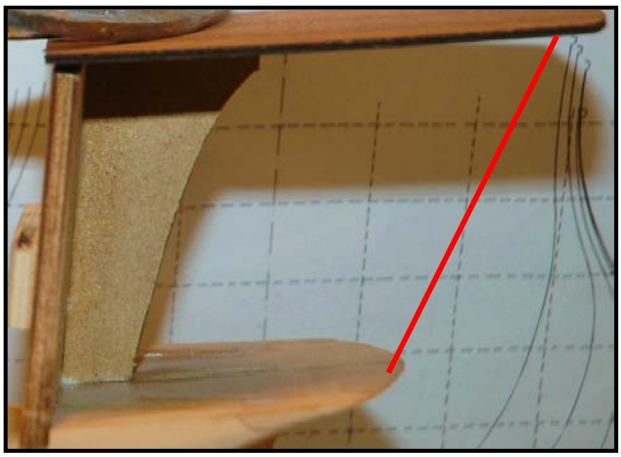


Figure 40: Checking Transom Pieces Angle

As seen from Fig. 39, a vertical piece was created from some scrap material and inserted about 25 mm. from the rear edge of the transom support.

Fig. 40 shows how the angle of the transom pieces can be checked as they are being put in place.

Chapter 5: STEERAGE, ANCHORAGE & HAULAGE

Steerage

At the beginning of the 18th century, the ship's steering wheel appeared and with a rope system wrapped around its barrel it was connected through a to the rudder blade via a horizontal beam termed the tiller.

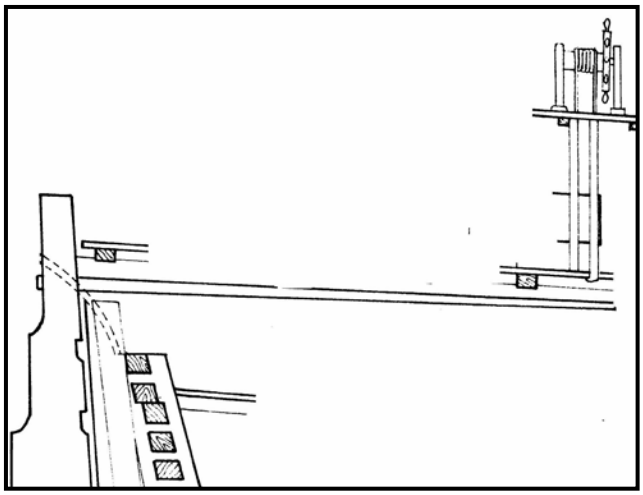


Figure 41:Ship's wheel, Tiller Arm & Rudder

Rudder

The supplied blade is already laser-cut to shape including that required for the fitting of the pintles ('rudder irons') attached to the hull (refer to the Fig. 42 and the plan sheet diagram). A housing near the top of the rudder post needs to be formed for the tiller.

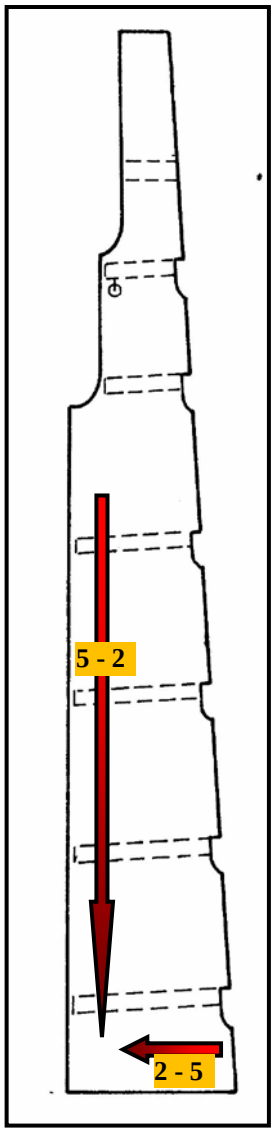


Figure 42: Rudder Tapering

The blade was tapered from **5 mm. to 2 mm. on the aft edge from below the second rudder iron (pintle) downwards** and also the same tapering through the blade in a horizontal sense - Fig 42. Thus the maximum taper is at the bottom on the aft edge [diagram opposite illustrates the tapering by increasing darkness]. Dimensions are given for the tiller and so it seemed appropriate to construct that as well.

There are **choices** to be made here – the **tiller arm** can be shown projecting aft of the rudder post, the **rudder blade** can be made to appear (correctly) as consisting of three timbers joined together and the **pendant ropes** can be created.

Rudder Pendant

An eye pin and ring were inserted on each side near the top of the rudder to anchor the rudder pendants (ropes that could be used in the event of tiller damage). The 1.0 mm. ropes were also attached to rings anchored on the stern with eye pins. Further comment can be found in the 'advanced' section.

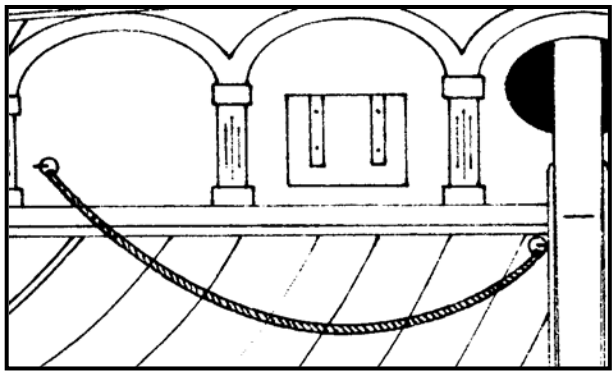


Figure 43: Rudder Pendant

Steering Gear (ruota del timone)

You may decide that the ship's wheel need not be constructed as it is not really visible underneath the Quarter Deck.

However, having said that, I note that Euromodel has supplied a length of 8 mm. rod and a ship's wheel. Examination of the plan diagram shows a few finer points of construction for this object. I found that a good representation could still be created by simply utilising the 8 mm. rod without any change to its shape and Fig. 48 illustrates what I did. A 2 mm. hole was drilled into each end and wooden rod glued into position. Remaining to be done are the two timber strips to support the bottom of the legs of the wheel assembly. Diversity of colour suggests that the assembly be painted or at least stained ?

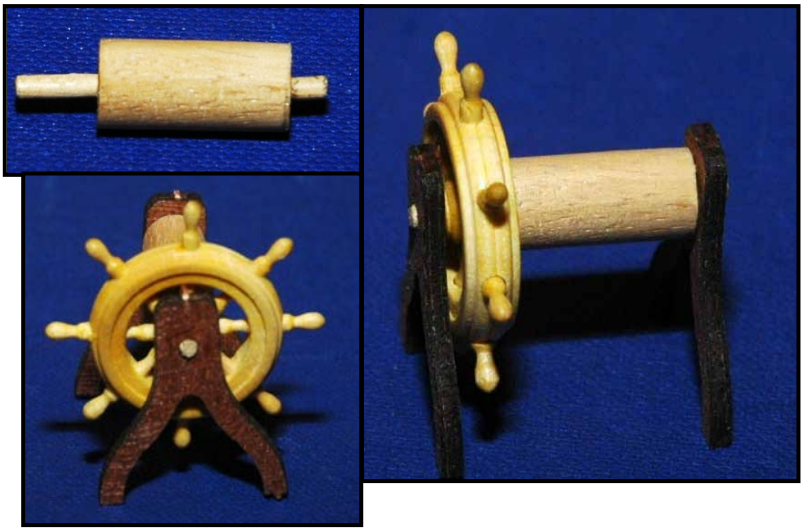


Figure 44: Basic Steering Gear (Wheel)

Anchorage

Anchor Assembly

Euromodel must be congratulated for including ***four*** anchors – the majority of ship model kits contain only two! Some time needs to be spent on the metal components filing the surfaces to remove raised casting edges. At this stage, the top of the shank (above the wooden stock) will need to be very carefully drilled through to accomodate the **anchor ring (cicala delle ancora).** There may well be an impression of a hole, but this will need to be re-located further up the metal shank due to the thickness of the stock. This fits in well given the diameter of the anchor ring. The metal is fragile and and drilling must be done by hand ***very slowly*** to avoid breakages. [I had to reduce the thickness of the stock slightly before doing all of this!].

The larger **sheet anchor** (ancora di speranza) and the smaller **bow anchor** (ancora di posta) are to be found on each side at the bow end. The attached ropes are connected to a nearby capstan. Buoys floating on the water surface indicate the vertical position of each anchor.

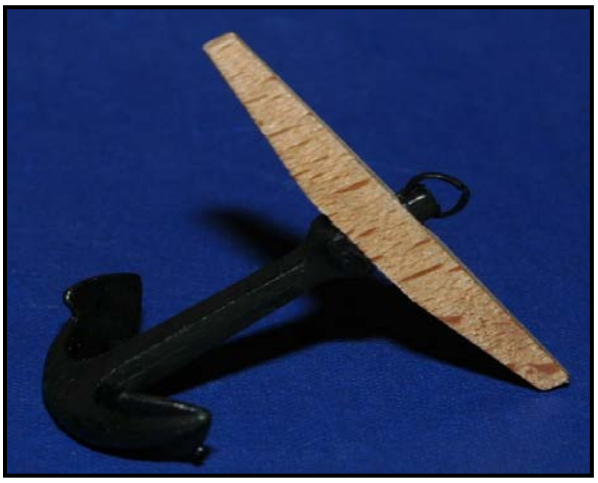


Figure 45: Stock, Metal Anchor & Anchor Ring

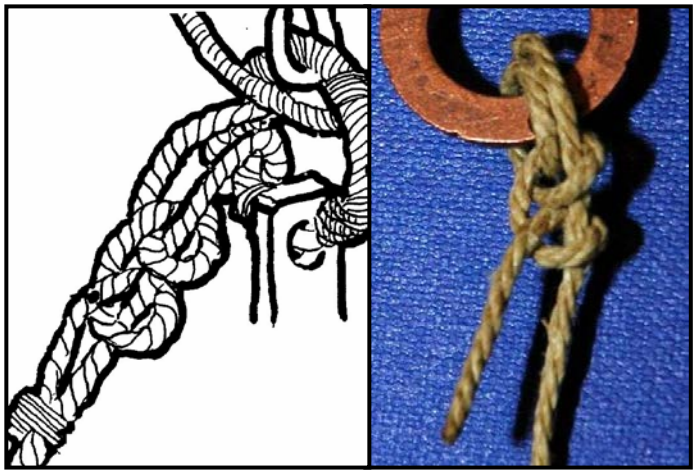


Figure 46: Fisherman's Knot Detail

Anchor Cable (gomene delle ancora)

At sea, the cable was often unreeved ('unrove' or 'undone') from the anchor ring and secured along the deck. During the 18th. century, the cable was secured to the ring with an 'fisherman's knot' - some references confirm its use on Mediterranean vessels during this time. The 'fisherman's knot' is an easy knot to create. Figure 42 illustrates this knot.

Do not colour the rope to simulate tar. Historically, these ropes were not coated with tar – handling would be difficult and in any case the ropes readily dried out after immersion.

So ... sheet anchor cable = 1.5 mm./ bow anchor cable = 1.0 mm.
seizing rope = 0.25 mm.

Figure 47: Completed Fisherman's Knot

Hardage

The **hardage** was a heavy beam extending well out from the hull to allow the lifting of large metal anchors without damaging the wooden hull.

Cathead (gru di capone)

Hauling of the ropes was done by movement of the rotating **capstan** – from the 17 century one was located abaft the Main Mast for general lifting and the other abaft of the Foremast on or under the Forecastle Deck for lifting the anchors.

This heavy wooden beam, used to raise anchors, carries three sheaves (‘pulleys’) at its outboard end. The anchor tackle is reeved through these sheaves and belayed to a cleat or timberhead on the forecastle.

The drawings show a **fourth sheave on the side of the cathead** but it is not shown in Plan Sheets 1 or 2. If the anchor rigging is carried out using the latter plan sheet, then you can ignore the sheave altogether. There was no consistency in the cathead configuration during these times so it would be acceptable not to include this fourth sheave. Having said all of that, this sheave does have a function in securing the bow anchor if it is left hanging from the cathead but in Plan Sheet 2, the bow anchor is shown stowed away along the channel. In Fig. 44 the cathead beams are shown with the simulated three sheaves but the fourth sheave on the side is omitted (vertical hole inboard of the three sheaves has not yet been formed).

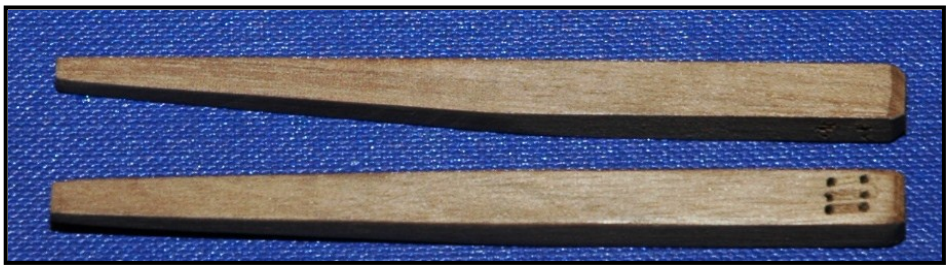


Figure 48: Cathead in Basic Form

Top: Side view of cathead showing upward taper
Bottom: Top view of cathead showing tapering of the inboard section (to 4 mm.)

The six holes passing through the cathead that simulate the three sheaves I produced by using a very fine drill. The hole drilling must be done slowly and care taken that the bit is at right angles to the surface. Even so, I started each hole from both sides and with some patience, the holes were drilled and channels carefully cut into the surface between each pair of holes.

Some of the typical terms relating to the cathead assembly are :

1. **Cathead Block** (bozzello tipo ‘3H’)
   The block available for this is a 3-hole, 5 mm. piece.

2. **Cathead Tackle** (paranco di capone)
   0.25 mm. rope starts from a vertical hole behind the sheaves in the cathead, through the block and cathead above and then to a timberhead of similar fixing point on the nearby bulwark.

3. **Cathead Tackle Hook** (stroppo e gancio in acc.)
   The hook and the strap around the block are both made from brass wire.

Capstans

The **main capstan** (argano di tonneggio), located abaft the Main Mast, was principally used to raise yards and the small boats, whilst the **anchor capstan** (argano a salpare) located forward of the Main Mast was used to raise the anchors. This latter capstan is not visible in the model and therefore is not supplied in the kit.

Main Capstan (argano di tonneggio)

This capstan is actually a double-capstan design with two barrels fitted on the same spindle situated on two decks thus allowing double the number of men to operate it. Whelps were arranged around the barrel to help prevent the rope from slipping and strengthening chocks were fitted between the whelps.

The drawings for both capstans are at a scale of 2:1 – the dimensions, however, are a mixture of 2:1 and 1:1, but this is of no consequence. The capstan supplied is of a reasonable size (**19 x 25 mm. height**) – however I chose to reduce the height down to 22.0 mm. by removing the domed top (but still creating a slight curve) and sanding off half of the base. At least this was halfway down to the correct dimension. All that was then required was the assembling of the **eight** whelps and creation of the bars. A further enhancement – not yet done – is to **square the round holes**. When attaching to the deck, the capstan was glued down onto the deck planking.

Figure 49: Typical Form for Both Capstans

Chapter 6: ACCESSORIES (Part 1)

Stove (cucina)

The stove – apart from the chimney – is an unseen entity. So for the basic approach, all that was needed was the construction of the 4 mm. chimney with a 90^{o} bend at the top. I was a little dubious about two factors …

1. Forming an opening in the pipe
2. Creating a bend in the pipe

1. **Chimney Opening**

I found this task easier than I thought. Using a very fine drill, I formed a hole approx. 3 mm. deep in a short length of 4 mm. rod. Using a succession of increasingly larger drill sizes, an opening was created without any splintering – and now I had a chimney end that looked like a normal opening.

2. **Creating a bend**

On the flat top of an approx. 40 mm. section of 4 mm. rod, I glued a small rectangular piece of 2 mm. walnut planking – Fig. 51. A wide open groove (approx. 1.5 mm. deep) was formed in the top of the extra timber added – Fig. 52.

The short top section was glued in place – Fig. 53 – and some excess 'overhang' at the back was allowed to leave room for forming the 90^{o} curve. The remnant 2 mm. section underneath at the front allowed for the formation of a curve underneath the top piece.

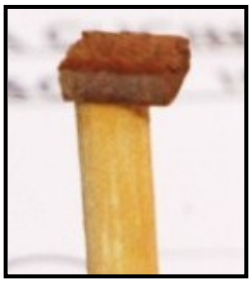


Figure 52: A Piece of 2 mm. Planking Glued on Top of the 'Chimney'

Figure 52: Groove Formed on the Top to Accept 4mm. Rod

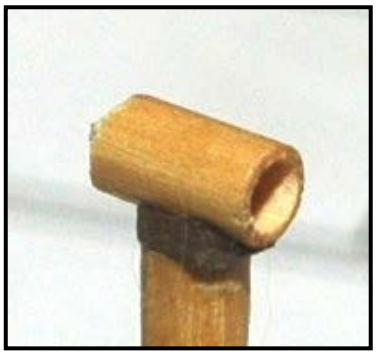


Figure 52: Chimney 'Top' Glued in Position

The top section was then *carefully* sanded back to create the required bend. So … in a few easy steps, the chimney was created !

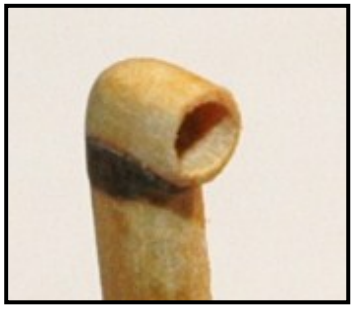
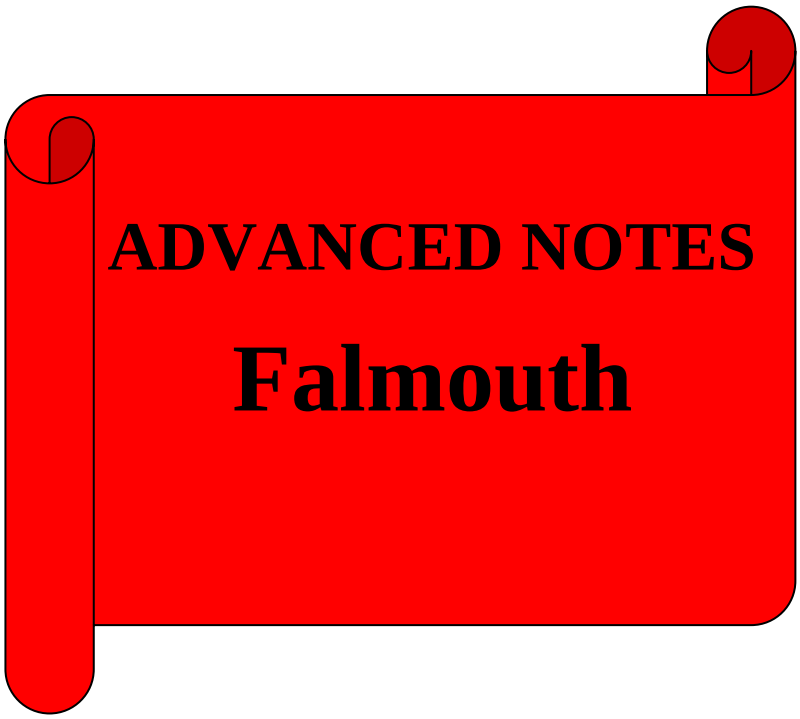
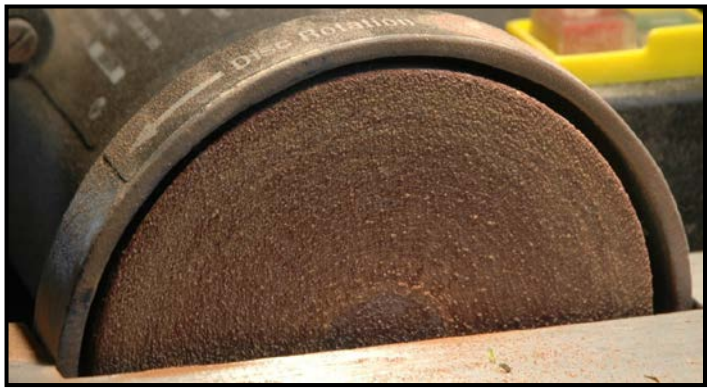


Figure 53: Chimney 'Top' Rounded Off


ADVANCED NOTES
Falmouth

Tools

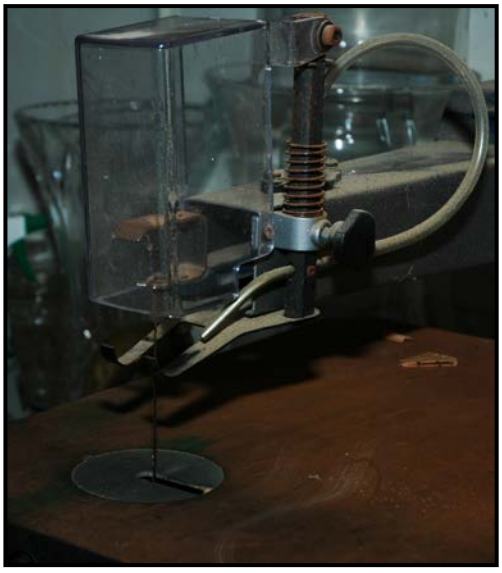
Apart from the normal range of cutting blades, cutting mats, fine metal files, large soldering iron (plank bending) etc., the following tools were essential or at the very least *useful*….



Vertical belt sander with attached sanding disc – absolutely indispensable

Dremel tools (high speed cutter tool, sanding drum & other bits; flexible drive attachment; along with a mini **drill**

Digital vernier calipers – how could you do without these ?



Jig saw – fine blade. No way I could have done without this work horse.

Lathe – for those masts & yards, etc. Not shown but also useful is an electric **min-plane (below)**.

One of my most valuable tools will always be the glue syringe. Used with care, it can deliver just one very small droplet glue to the task in hand. Alternatively, it can deliver a constant stream. The advantage of this device is that it has a very small opening at the external tip which easily seals over after use where it comes in contact with the air. When next required, a pin prick through the small pocket of solidified glue at the tip allows the syringe to come back into use. I can leave the tool for months without use and it is always ready to use. I would not be without it.

Hatch Cover Interpretations

The diagram below show where this deck is visible from above meaning that perhaps some planking could be carried out. That is something extra you may wish to contemplate. Because it is not 'essential', the extra planks are not provided in the kit.
Your choices could include:

- leaving the plywood visible on the Gun Deck,
- painting the areas on the Gun Deck matt black,
- building another cover hatch on the Main Deck to cover this opening,
- alternatively, putting a hatch cover on the Gun Deck & leaving the Main Deck open.

Also, you need to build two sets of stairs and produce two hatch covers over the merchandise holds underneath. Note that 'C' on the plan sheet is not the Gun Battery Deck as indicated but I am making a hatch cover instead. Look at Fig. 49 below.

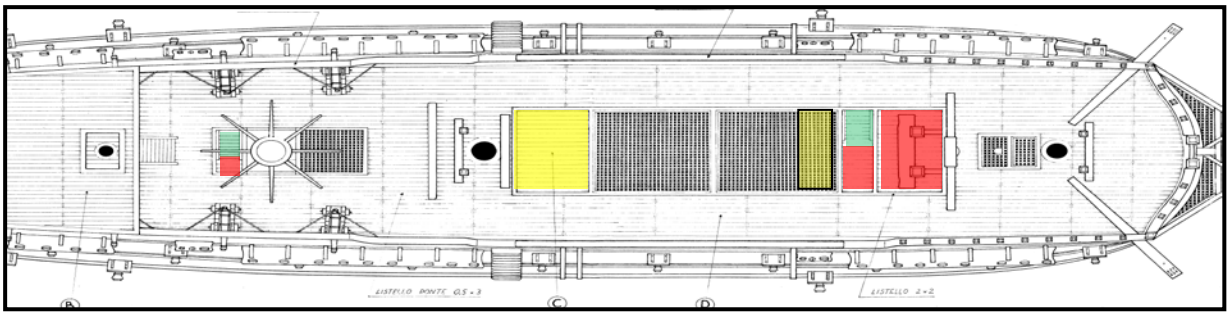


Figure 54: Steps, Hatches & Decking

Green: Stairs/ steps
Pink: Gun Battery Deck planking that *is* visible
Yellow: Gun Battery Deck hatch covers (the one nearer the bow is under the grate but would still be visible from the area near the adjacent stairs.

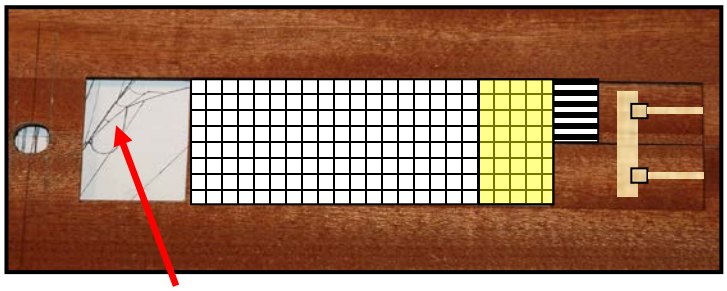


Figure 55: Reason for Constructing Two Hatch Covers

By carefully placing the Main Deck over the two Gun Battery Deck halves, there is an obvious space immediately adjacent to the Main Mast. There is no Battery Deck 'C' in this position which conforms to the longitudinal sectional drawing of the ship, the relevant part of which is shown below.

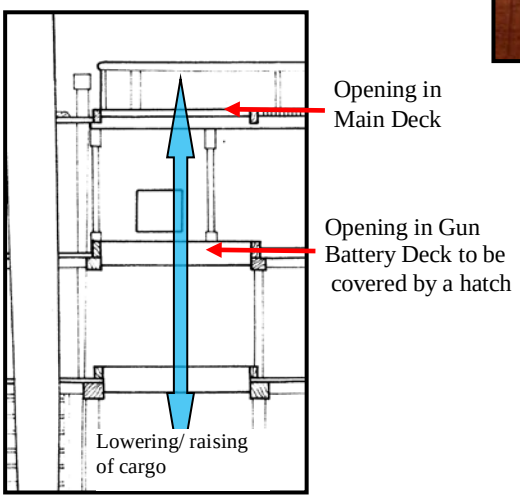


Figure 56: Vertical Transfer of Cargo

Anchor Assembly

The metal castings approximated **very close in length** to the drawings but the other dimensions were markedly different. The wooden stocks were also different in their dimensions when compared down to the described size and appearance. I felt it a pity not to attempt some modification to the items supplied ...

Sheet Anchor (ancora di speranza)

Stock (ceppo dell'ancora)

64.5 x 5.6 x 8.0 mm. could be decreased to drawing size of **48.0 x 5.0 x 7.0 mm.** The problem with this is the size of the square shank passing through the stock. The pre-formed hole in the stock is far too large since the shank needs to be reduced in size from approx. 4.2 mm. to 2.0 mm. So, the hole should be much smaller. In the end, I decided to produce the stock from scrap timber. **Reducing the stock** in size totally improves the appearance.

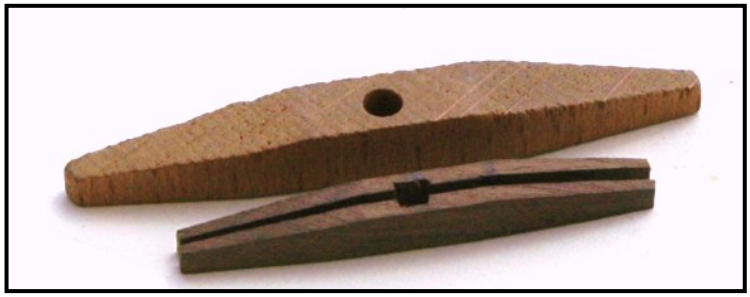


Figure 57: Baulk Construction for Anchor Stock

The stocks were created in two halves creating the appearance of the two ***baulks*** that make up the stock – a laborious task but worth the effort.

So ... I gave myself some work to do. For this, I utilised some scrap 5 mm. mahogany left over from some of the laser-cut pieces. In the drawings, the two halves are shown to be bound together by metal bands but after some research I decided to go with rope which seems to be typical of 18 century Continental anchors.

Anchor

Figure 59: Reduction in Size of Anchor Shank

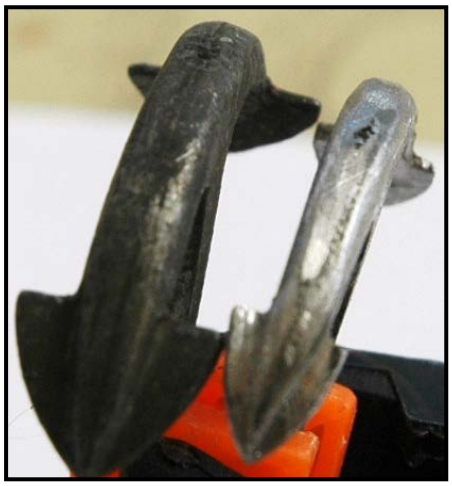


Figure 58: Reduction in Width of Anchor (fluke - fluke)

Having created a wooden anchor stock of the plan dimensions, there was little choice but to then reduce the dimension of the metal anchor. ***Severe*** (but careful) filing of all aspects of the casting did create an anchor that was much more in proportion to the stock (Figs. 53 & 54). Most significant changes were in the width & tapering of the shank (4 mm. finished at base to 3mm. finished at top), the fluke size and the fluke-to-fluke dimensions. The latter I reduced from 41.5 mm. to 36.0 mm.

Bow Anchor (ancora di posta)

Stock

44.0 x 7.3 x 6.0 mm. could be decreased to drawing size of **40 x 6.0 x 4.0 mm.** Now, the same comments apply here as they did to the Sheet Anchor. I used some1.0 x 6.0 mm. planking glued together to make a strip approx. 1.7 mm. thick [the '1.0' was very dry and approx. 0.89 mm. thick!].

Anchor

The dimensions did not warrant altering.

Metal Hoops

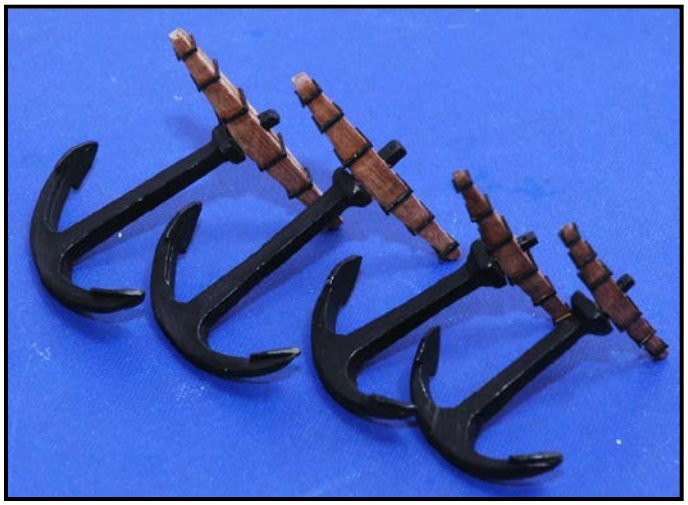


Figure 60: Metal Hoops on Four Anchors

These bands hold the baulks together and for these I created some timber strips that were 0.5 x 1mm – a little thick (and also a little wider) but some careful sanding afterwards reduced the thickness. I found it easier to glue these on rather than use metal such as brass. To make my task a little easier, I painted each piece black before applying to the stock. The method of application was to simply apply each 'hoop' in four pieces working around the four faces in that order. The stock will remain 'natural timber' so any glue residue needs to be carefully removed as you work (refer to photo on the next page).

Anchor Ring (cicala delle ancora)

The four brass rings supplied were all approx. 6.5 mm. in diameter and will be utilised by most modellers. However, it was here again that I decided to work from the diagrams and created two 9 mm. rings for the sheet anchors and two 8 mm. rings for the bow anchors, both from some 0.81 mm. brass rod I had. Of interest, the ring would have a series of puddening – strips of tarred cloth followed by rope and finally some fine yard applied at each end of the rope and also in the middle. At this scale, it is reasonable to only apply the rope (0.6 mm.) – see photo opposite. At this stage, the top of the shank (above the stock) will need to be very carefully drilled through to accomodate the anchor ring.

Figure 61: Anchor Ring

Cathead (gru di capone)

This heavy wooden beam, used to raise anchors, carries three sheaves ('pulleys') at its outboard end. The anchor tackle is reeved through these sheaves and belayed to a cleat or timberhead on the forecastle. Plan Sheet 12 shows a **fourth sheave on the side of the cathead** but not in Plan Sheets 1

or 2. If the anchor rigging is carried out by using this latter plan sheet (i.e. Plan Sheet 2), then you can ignore the sheave altogether. There was no consistency in the cathead configuration during these times so it would be acceptable not to include this fourth sheave. This sheave does have a function in securing the bow anchor if it is left hanging from the cathead but in Plan Sheet 2, the bow anchor is shown stowed away along the channel. ***For accuracy, I decided to include this latter sheave.***

In its construction, I followed the drawings and utilised a **2.5 mm. diameter brass sheave (thickness of 1.1 mm.)** on the side of the cathead beam as shown but could have simplified things by just inserting a brass rod. The six holes passing through the cathead that simulate the three sheaves I produced by using a very fine drill. The problem here was that because the drill is so thin & fragile, the hole drilling must be done slowly and it then follows that the wood grain the bit encounters easily forced the drill off on an unwanted angle. Still, with some patience, the holes were drilled and channels carefully cut into the surface between each pair of holes.The housing for the side sheave was made from a piece of 3 x 2 mm. wood strip.

Figure 62: Advanced Form of Cathead

The following diagram *could* apply to the Falmouth but is a generic layout and hence open to interpretation.

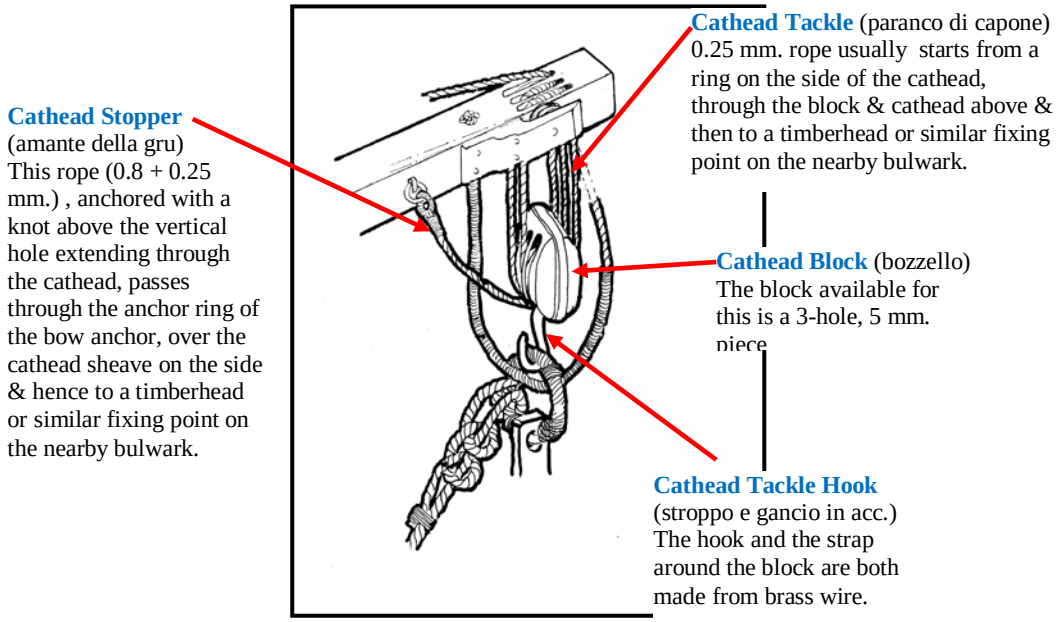


Figure 63: Cathead Rigging

Capstans

The **main capstan** (argano di tonneggio), located abaft the Main Mast, was principally used to raise yards and the small boats, whilst the **anchor capstan** (argano a salpare) located forward of the Main Mast was used to raise the anchors. This latter capstan is not visible in the model and therefore is not supplied in the kit.

Main Capstan (argano di tonneggio)

This capstan is actually a double-capstan design with two barrels fitted on the same spindle situated on two decks thus allowing double the number of men to operate it. Whelps were arranged around the barrel to help prevent the rope from slipping and strengthening chocks were fitted between the whelps.

Figure 64: Capstan Height Reduction

The capstan supplied was **25.4 mm.** in height including the rounded base. The **drawing dimension, though, was only 19 mm.** to the bottom of the whelps with the capstan then sitting on a larger squared base. Firstly, I glued in position the eight whelps around the spindle. As seen in the photo opposite, I then removed the highly curved dome on the top and completely removed the round base. Combined, this **reduced the overall height down to 19.0 mm.** ! The capstan's height then was correct even if it was a little narrower.

NOTE: Holes in the above capstan to be squared and cleaned up. Capstan will be seated on an enlarged square base.

Anchor Capstan (argano di salpare)

Given that the Gun Deck is present in this model, there is no reason why the serious modeller could not decide to include this capstan – more effort, a little more cost but more complete – your choice!

The capstan I selected was again **19 x 25 mm.** in height including the rounded base. The **drawing dimension, though, was 23 mm.** down to the base. Firstly, I glued in position the eight whelps around the spindle. As seen in the photo opposite, I then removed the highly curved dome on the top and partially removed the round base. Combined, this **reduced the overall height down to 23.0 mm.** ! Again, the capstan's height then was correct even if it was a little narrower. NOTE: Again, holes still to be squared !

Figure 65: Extra Capstan

Steering Gear (ruota del timone)

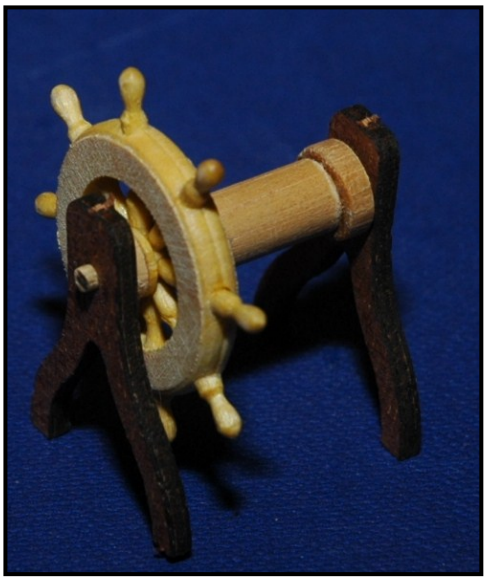


Figure 66: Ship's Wheel Overview-1

The wheel is underneath the Quarter Deck and to the majority of observers, its presence will not be easily seen. **You may, therefore, feel that it is not necessary to build this structure.** Having said that, Euromodel has been generous in supplying a wheel which would be appreciated by the avid modeller. Slightly smaller than the overall dimensions but I was more than happy to go along with that piece.

Construction seemed like a daunting task with the **barrel** having 8 mm. ends and a 6 mm. section between. I considered using my wood-working lathe but decided against that in preference to a very simple technique that would allow the formation of the narrow widths at each end without fracturing. The supplied **pedestal** columns mounted on **platforms** were easily created. A final touch on assembly will be the addition of **tiller rope** around the barrel and the creation of **tiller rope slots** in the deck.

Step 1: Using a length of 6 mm. rod, I squared off one end against my bench sanding disc.
Step 2: After squaring off one end of an 8 mm. rod, I cut off a small section and glued this onto the 6 mm. rod from Step 1.
Step 3: After the glue was set, this 8 mm. piece was ground back VERY SLOWLY to 2.5 mm. thickness – sanding on the bench disc creates a large amount of heat which can easily cause the PVA glue to partially melt so do this slowly.
Step 4: The 6 mm. rod was cut back to its correct length of 13.0 mm. and then a 8 mm. section added to this end as well and likewise ground back to 2.5 mm.
Step 5: The wheel supplied was too thick (according to the diagram) and this was reduced to approx. 3.4 mm.
Step 6: On one side of the wheel, a thin section of 4 mm. rod was added and finally sanded back to 1.5 mm.
Step 7: Pedestal feet were constructed from some scrap 2 mm. square timber.
Step 8: The wheel & barrel were of a very light timber (as supplied) & the pedestals a darker colour – painting was necessary to create a uniform colour.

Figure 67: Ship's Wheel Showing Extra Spacer

Figure 68: Ship's Wheel Overview - 2

Rudder

The rudder typically was made up with three or four lengths bolted together, each one stepped down in a "hance" to the rudder post. So deep lines were cut down either side of the blade to simulate the use of **three timbers** in creating the rudder blade.

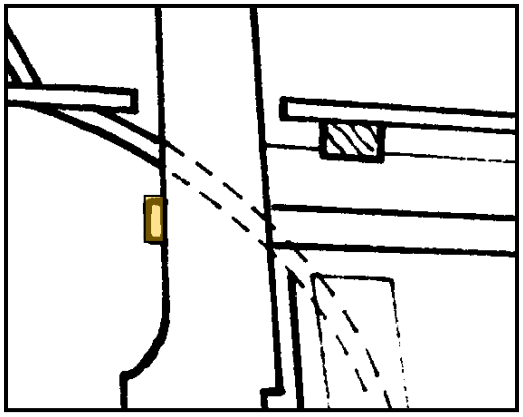


Figure 69: Tiller Arm Projection

Near the top of the rudder, a **2.5 mm. square hole for the tiller arm** was produced. For the sake of completion, I produced a **2.5 mm. 'tiller arm'** projection out from the rudder – a total length of 6.0 mm. allowed the projection to fit into the rudder post (refer to the object shaded pale orange in Fig. 69). A horizontal pin (brass rod) was inserted through the tiller projection adjacent to the rudder post.

In building this model from the kit it is unlikely that the remainder of the tiller arm in total can/will be built.

Rudder Pendant

The eye pin + ring attaches the pendant rope to the rudder and is often anchored through a metal strap such as a metal pintle for added strength and not just the wood. Plan Sheet 2 appears to show this (not sure where pin is located – could be just off the pintle but I assume that it IS passing through the pintle)

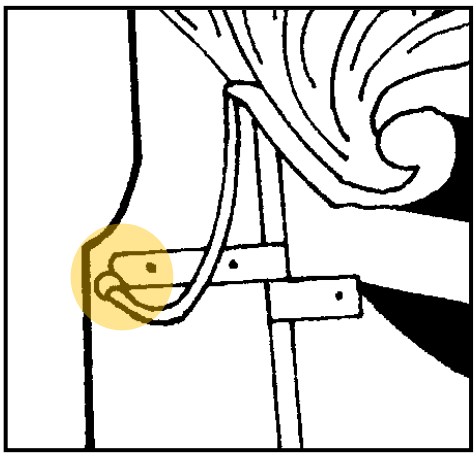


Figure 70: Pendant Rope Attachment to Rudder

Stove (cucina)

Seemingly out of order here but it is time to make a decision. The chimney of the ship's stove protrudes through the grating on the Forecastle Deck. Making only the chimney and glueing that on the grating would not look realistic. So, almost as a diversion, the complete stove was constructed. I used some pieces of scrap board and with careful use of a bandsaw and belt sander, easily produced the whole structure in one evening. How realistic do you wish to make it? Sadly, the stove will not be visible but the effort was still worthwhile! This can then be put to one side until after planking of the Main Deck.

If you wish to totally deviate away from the plan design and create a truely accurate ship's stove, then I suggest you look at a site I found … **http://www.modelshipwrightsdatabase.com/Articles/19GalleyStove.htm.** I did not have the time to do this but you might like to consider Allan Yedlinsky's approach.

Constructional Points:

- The actual stove I produced from some 'mdf'
- Some scrap mahogany plywood was glued on top and then sanded back to 1 mm. thickness.
- The base of the chimney and the base of the stove itself was created from some 5 mm. thickness scrap mahogany
- The two 'hotplates' were small sections of 10 mm. rod glued on and then sanded back to approx. 0.75 mm. thickness – a delicate operation.
- Doors were added along with some handles – from 6 x 1 mm. walnut planking scrap.
- Painting was with 'Citadel' paints ; the stove body and the chimney painted with 'boltgun metal' and then with 'badab black' wash. The latter served to create a stove that was well utilized.
- The sloping base represents a layer (or two) of heat insulating refractory bricks. To the best of my knowledge, they are a ceramic base rather than clay and so usually tend to be white or cream colours.

Figure 71: Complete Stove with Chimney and Refractory Base