

How I Built the Mordaunt

4th Rate English Vessel
Launched in 1681

Scale 1:60

Figure 1: Photo Courtesy of National Maritime Museum of Greenwich

Part 01 (version 1)

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 Mordaunt
to create a
documented manual of construction for others to utilize.

To him I owe much

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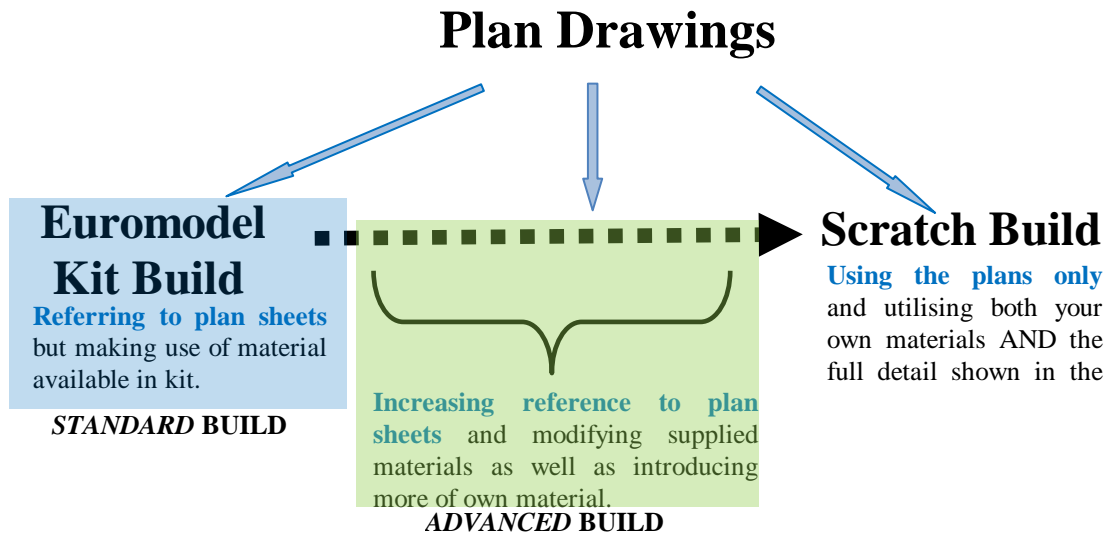
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Euromodel Preview



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 Mordaunt, the builder is well advised to focus on two – Plan Sheets 1 & 2

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 Mordaunt was launched at Deptford, near London in 1681. It was commissioned by a syndicate of shipowners headed by Lord Mordaunt. However, he later became the sole owner of the vessel, when the other members left that association. The aim in having such a greatly armed private ship was to eliminate the war ship stock. This idea aroused some suspicion, therefore the Ambassador of Spain presented his complaints to the Court of



Figure 2: Completed Model of Mordaunt

St. James, asserting that a warship owned by private people could have been easily taken by the Elector of Brandesburg, who was completing a fleet to move against Spain. The vessel was sequestered, and Lord Mordaunt was forced by the Court to limit the armament and crew. In 1683, the ship was seconded into the Royal Navy, where it remained until 21 November, 1693, when it disappeared in the open sea off Cuba. A model of this ship is showed in Greenwich Museum

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Construction Philosophy

Euromodel have tried to simulate all the designs of the ‘Mordaunt’ 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.

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 above 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.

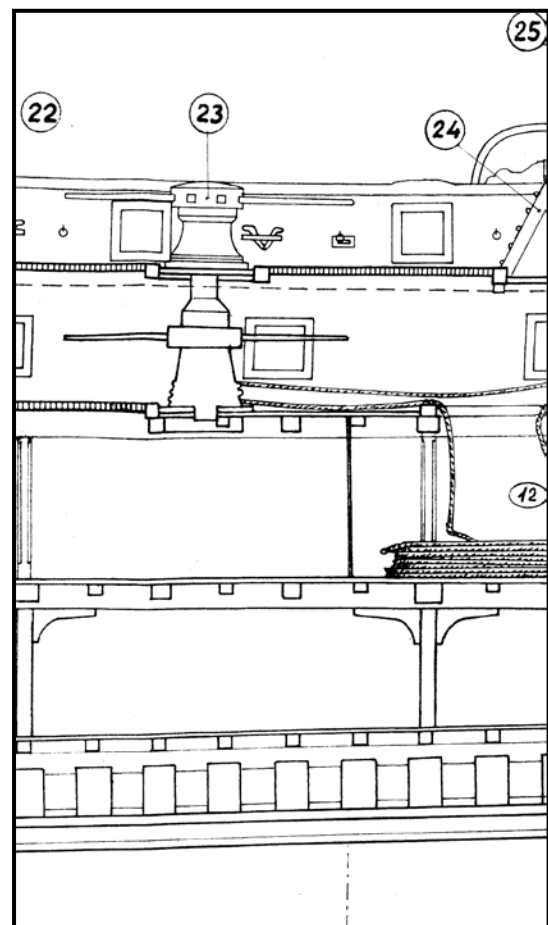


Figure 3: Vertical Cross-sectional View from Plan Sheet 2

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 '[Mordaunt Notes](#)'. 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 utilising '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. In the kit, bulkhead cabin fronts on the decks & cabin sections on the stern are all in cast metal. You *could* elect to create these in timber. Note that the plan sheets show the instructions for creating the wood sections but since most modellers will utilise the metal pieces, these instructions will be ignored. To familiarise yourself with this difference, look at Plan Sheet 3 at the bottom ... ‘34 Parti laterali della bottiglia.. etc’. This is an example of what most modellers would not utilise !
4. Different woods are available from suppliers for constructing masts & yards but the timber supplied is of excellent quality.

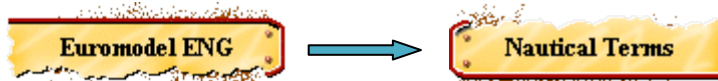
Text References

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 Mastng and Rigging of English Ships of War 1625 – 1860* by James Lee (1984). Another indispensable book ! Without this, the mastng 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 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 Plan Translation

Tavola 1 VISTA DI ASSIEME	Plan Sheet 1 OVERALL DRAWING
BOTTAZZI in listelli noce mm 3 x 3 & 2 x 3	RAILS in 3x3 & 2x3 mm walnut
FASCIAME DELLO SCAFO ... etc	PLANKING OF THE HULL in 6x2 mm walnut
INCINTONI in listello mm. 6x2 ...etc	Wales made from 6x2 mm. planks placed on top of planking
RINFORZI ESTERNI ricavati ... etc.	OUTSIDE REINFORCING from 10x2 mm. walnut. Shape to curve of hull side. Protrudes 4 mm. at lower end tapering to 2 mm. at top (Plan 2)
1.5X6 1 FASCIAME ... etc.	1ST PLANKING IN 1.5X6 MM; 2ND PLANKING IN 1X6MM

Tavola 2 SCAFO: SEZIONI E VISTE	Plan Sheet 2 HULL – LONGITUDINAL DRAWINGS
SEZIONE LONGITUDINALE DELLA SCAFO	LONGITUDINAL SECTION OF THE HULL
VISTA IN PIANTA DELLO SCAFO	PLAN VIEW OF THE HULL
VISTA DELLO SPECCHIO DI POPPA	VIEW OF THE TRANSOM
VISTA DELLA PRUA, CON SERRA E POLLENA	VIEW OF THE BOW, WITH BOW WORKS & FIGUREHEAD
VISTA INTERNA DEL CASTELLO, VERSO PRUA	VIEW FROM MAIN DECK LOOKING TOWARDS THE BOW
PARATIA DEL CASTELLO	FORECASTLE BULKHEAD
DETTAGLIO DEL PARASARTIE In listello noce da mm. 10x3: no 3 pezzi a disegno e no 3 pezzi opposti	DETAIL OF CHANNELS made from 10x3 mm. walnut: 3 pieces as per plan & 3 pieces in mirror image
PARATIA DEL CASSERO	QUARTER DECK BULKHEAD
INTERNO DEL GUARDIACORPO DEL CASSERO	INSIDE THE QUARTER DECK RAILING
PARATIA DEL CONTROCASSERO N.B. La stemma qui raffigurato e quello ... etc.	POOP DECK BULKHEAD N.B. Mordaunt family coat of arms (gusset with three shining stars)
VISTA INTERNA DEL CORONAMENTO	INTERNAL VIEW OF TRANSOM TAFFRAIL
SEZIONE TRANSVERSAL E DELLO SCAFO ... ETC.	TRANSVERSE SECTION OF HULL ON THE MAIN FRAMES WITH VIEW LOOKING TOWARDS THE STERN
POSIZIONE DELLE ORDINATE	POSITION OF THE FRAMES
LISTELLO	TIMBER
PORTELLI CANNONI	GUN DOORS

Tavola 3 SCAFO – ORDINATE E FALSA CHIGLIA	Plan Sheet 3 DRAWINGS OF FRAMES & FALSE KEEL
ORDINATA DI MAESTRA	MAIN FRAMES
Riempimento opposto a disegno. Riempimento opposto a disegno 'A'	Bow filler blocks made according to design 'A'.
Riempimento opposto a disegno. Riempimento opposto a disegno 'B'	Stern filler blocks made according to design 'B'.
Tutte le ordinate sond in compensato da mm. 5	All the frames are in 5 mm. plywood
FALSA CHIGLIA in compensate da mm. 2.5 x 5	FALSE KEEL made from 5 x 5 mm. walnut
Dritti di poppa in noces da mm. 2.5 x 5	Stern post made from 2.5 x 5 mm. walnut
Chiglia in noce da mm. 5x5	Keel made from 5 x 5 mm. walnut
SPECCHIO DI POPPA in compensata da mm. 2	TRANSOM in 2 mm. plywood
PARTI LATERALI DELLA BOTTIGLIA (non compresa nella scatola di montaggio)	SIDE PARTS FOR THE STERN CABIN SIDES (not included in the kit). Please Note: Cast metal stern cabin sides are provided in the kit.
Di dritta	For the starboard side
A sinistra stessi pezzi opposti a disegno	Mirror-image parts are made for the port side
SESTA DEL BOLZONE	SHAPES OF THE DECK FORMERS
Da incollare sull ordinate 2	Glue onto frame 2
Ruota di prora in tavoletta di noce ... etc	Bow piece in 5 mm. walnut. It has to be shaped to 3 mm. at the top-front as per the plan
Attenzione: La parte delle ordinate tratteggiata ... etc	Please Note: Areas on frames shown by broken lines are only cut out if the modeller wishes to construct the internal detail of the gun decks. This is shown on Plan Sheet 3. It should be noted this is optional and is not in the scope of the kit.
Prima della messa in opera ... etc.	The sides of the frames need to be sanded or filed (bevelled) to enable the planks to maintain full contact with the curve to take the shape of the hull. The planking is not commenced until the shaped bow and stern filler blocks are installed.

Tavola 4 PONTI DI COPERTA E ISTRUZIONI	Plan Sheet 4 MAIN DECK INSTRUCTIONS
I pezzi descritti in questa tavola (No. 34-32-33-29-15-30-18) sono in compensato da mm 2	The pieces 34-32-33-29-15-30-18 are in 2 mm. mahogany
I pezzi descritti in questa tavola vanno rifiniti ... etc.	N.B. The pieces, and any openings shown in this plan, to be finished to size before assembly. Lines are ruled on the decks to simulate the planking (see Plan Sheet 2), then use heat to bend to the shape of the deck formers. The bulkheads of quarter, poop deck & fore decks (the front of frame 'D' forms the fore deck bulkhead) are covered with 3x1 mm. walnut, corresponding to the curve of the decks, other than door timbers which are placed vertically. Note: this is not necessary for this kit as the decks are later planked with walnut and the bulkheads are provided as castings.
I guadacorpo, qui tratteggiati, vanno realizzati ... etc	Balustrades shown by the broken lines are made after assembly of bulkheads and decks with 6x2 mm walnut.
PRIMA FASE DI LAVORAZIONE ... etc	FIRST STAGE IN BUILDING THE HULL
Curvare opportunamente a caldo due listelli ... etc	If necessary, use heat to curve two pieces of 7x3 mm. limewood stringers 'A' and 'B' and use nails to secure them in their positions on the frames. They should curve without causing strain to the assembly. Then measure and cut out of 3x25 mm. limewood for gun placements (stained with dark walnut). The supports for these (shown as 'C' and 'D') are cut from 3x4 mm timber.
Incollare e fissare con chiodini o spilli I listelli ... etc	Glue and pin timbers 'A' and 'B' in position shown, from bow to stern, then 'C', 'D' 'E' and 'F' (see Plan Sheet 1 for curve to be followed). Continue planking hull to the keel. Complete planking up to bulwark tops. Use pins to secure the planks. May be necessary to use heat to curve the planks which should then be installed alternately.
SECONDA FASI DI LAVORAZIONE ...etc	SECOND STAGE IN BUILDING THE HULL
1.Tagliare i scalmotti ... etc.	1.Cut off bulwark supports at their base & remove. Carefully sandpaper inside surface of the bulwarks
2.Tagliare i sabordi dei cannoni ... etc	2.Cut out the gun ports. Carefully glue the main deck onto the frames and temporarily fix with small nails.
3.Incollare un secondo corso di fasciame ... etc	3.Glue a second layer of planking inside bulwarks. Cut pieces of 1 mm. timber & frame insides of the gunports. Sandpaper and paint inside surface of the bulwarks red.
4.Incollare il trincarino usando listelli di tiglio da mm. 4x1.5 profilati come a disegno. Incollare i capodibanda, dopo averne smussato gli spigoli	4. Glue the waterways using 1.5x4 mm. limewood, profiled as per the plan. Glue the bulwarks capping after smoothing off the corners
Sezione del trincarino	Section of the waterway

AVVERTENZE PER LA MESSA IN ... etc	INFORMATION FOR THE PLANKING PROCESS
Rastremare i listelli verso prua, a partire dall ... etc	From about the position of frame 'A' to the bow, planks will need to be carefully tapered to enable them to fit. Near the bow they will be tapered to half width to enable them to fit. If necessary they may need to be cut before the bow is reached – as indicated here.
I riempimenti necessari a poppavia dello scafo vanno eseguiti nel modo seguente	Fill spaces in the planking at the stern in the manner shown:
DRITTO DI POPPA	STARBOARD VIEW OF THE STERN

Variante – fuori scatola di montaggio. Il modellista che volesse realizzare ... etc

Variation – not in kit. If modeller wishes to construct gun decks, frames have to be cut as described in Plan Sheet 3 & then proceed to install the planking of the decks to complete. Cut suitable lengths & lay them alternately either side of the centre line. Frame the openings of the gun ports with 1.5x5 mm. walnut. This should be done with care as the cutting of the frames to accommodate the gun decks could weaken the upper structure. The barrels of the guns have to be fixed to the gun carriages & gun carriages to the deck, as this cannot be done once the decks above the gun decks are installed.

Tavola 5 BOMPRESSO ALBERI E PENNONI	Plan Sheet 5 BOWSPRIT, MASTS, YARDS, ETC.
ALBERO DI MAESTRA	MAIN MAST
ALBERO DI GABBIA	MAIN TOP MAST
PENNONE DI MAESTRA	MAIN LOWER YARD
PENNONE DI GABBIA	MAIN TOPSAIL YARD
COFFA DI MAESTRA	MAIN MAST TOP
TESTE DI MORO	MAST CAP
CROCETTA	TREES
ALBERO DI TRINCHETTO	FORE LOWER MAST
ALBERO DI PARROCCHETTO	FORE TOP MAST
ASTA DI BANDIERA	FLAGSTAFF
COFFA DI TRINCHETTO	FORE MAST TOP
PENNONE DI TRINCHETTO	FORE YARD
PENNONE DI VELACCIO	MAIN TOPGALLANT YARD
ALBERO DI MEZZANA	MIZZEN LOWER MAST
ANTENNA	MIZZEN YARD
ALBERO DI CONTROMEZZANA	MIZZEN TOP MAST
PENNONE DI CONTROMEZZANA	MIZZEN TOPSAIL YARD
COFFA DI MEZZANA	MIZZEN TOP
PENNONE DI MEZZANA (VERGA SECCA)	MIZZEN YARD
ALBERO DI CIVADA	BOWSPRIT MAST
BOMPRESSO	BOWSPRIT
PENNONE DI CIVADA	SPRITSAIL YARD
PENNONE DI CONTROCIVADA	SPRIT TOPSAIL YARD
DETTAGLIO DEI BUTTAFUORI DI ... (FUORI SCALA)	DETAIL OUTSIDE OF THE MAIN YARD (NOT TO SCALE)
Tutte le coffe ... di compensato da mm. 1 di spessore	All tops made according to the plan from 1 mm. plywood
Distanziature in legno	Wooden spacer
Legatura in cordino	Cord binding
Anello in ottone brunito	Browned brass ring
In ottone brunito	Browned brass
Da realizzarsi a cura del modellista	Detail is choice of modeler
N.B. Tutta questa parte, dalle coffe o crocette ... etc	N.B. All the tops, trees & the area between including the similar parts on bowsprit finished in black

Tavola 6 PIANO DELLE MANOVRE FISSE	Plan Sheet 6 CONSTRUCTING STANDING RIGGING
VELA DI STRALLO DI TRINCHETTO	FORE MAST SAIL
LA DRIZZA PASSA PER UN BOZZELLO ... ETC	ROPE TO BLOCK A1 TO TOP YARD & ENDS WITH BLOCK/TACKLE
PARTICOLARE 'A'	DETAILS OF 'A'
ESECUZIONE DEL NODO PARLATU .. etc	MAKING THE KNOTS FOR THE RATLINES
VELA DI STRALLO DI GABBIA	MAIN TOPMAST STAY SAIL
VELA DI STRALLO DI MAESTRA	MAIN MAST STAY SAIL
VELA DI STRALLO DI MEZZANA	MIZZEN MAST STAY SAIL
CUCITURA DEI GRATILE E INFERITURA DELLA ...	STITCHING SAIL EDGE & FIXING RINGS ONTO THE STAYS
VISTA PROSPETTICA DELL INCAPPELLAGGIO ... ETC	ARRANGEMENT OF THE SHROUDS AT THE TOPS
STROPPO DELLA BIGOTTA IN COFFA	DEADEYES AND STRAPS IN THE TOPS
ORDINE DI INCAPPELLAGGIO	ORDER OF INSTALLING SHROUDS IN THE TOPS
SARTIE DI MAESTRA	MAIN MAST SHROUDS
SARTIE DI TRINCHETTO	FOREMAST SHROUDS
SARTIE DI MEZZANA	MIZZEN MAST SHROUDS
ESECUZIONE DELLA RAGNA	MAKING THE SPIDERS
DETTAGLIO PROSPETTICO DEL PASSAGGIO DEL ... ETC	DETAIL OF RIGGING THE LANYARDS TO THE DEADEYES

STROPPO DELLA BIGOTTA E LANDRA	RIGGING THE DEADEYE STRAPS
Tavola 7 VELE DI MAESTRA, GABBIA, TRINCHETTO E VELACCIO, E RELATIVE MANOVRE	Plan Sheet 7 LOWER & UPPER SAILS OF THE MAIN & FOREMAST; RELATIVE POSITIONS
VISTA DA POPPA	VIEW FROM THE STERN
VISTA DA PRU	VIEW FROM THE BOW
IL CAVO TERMINA ...B2 ALLA BITTA POSTERIORE DI SINISTRA	ROPE ENDS WITH ANOTHER BLOCK/TACKLE B2 AT REAR LEFT BITTS
IL CAVO TERMINA ... B2 ALLA BITTA POSTERIORE DI DRIITA	ROPE ENDS WITH ANOTH. BLOCK/TACKLE B2 AT REAR RIGHT BITTS
FISSARE LA SCOTTA ALL INTERNO CON UN NODO	FIX TO BELAYING DEVICE INSIDE THE BULWARKS WITH A KNOT
PARANCO	HOIST BLOCK & TACKLE
DORM.	FIXED
Tavola 8 VELA DI RANDA, BELVEDERE, CIVADA E CONTROCIVADA, E ARRIVI MANOVRE	Plan Sheet 8 MAIN, MIZZEN TOPGALLANT, LOWER SPRIT & UPPER SPRIT SAILS – RIGGING POINT LOCATIONS
VISTA DA POPPA	VIEW FROM THE STERN
VISTA DA PRU	VIEW FROM THE BOW
IL CAVO TERMINA ... B2 ALLA BITTA POSTERIORE DI SINISTRA	ROPE ENDS WITH ANOTHER BLOCK/TACKLE B2 AT REAR LEFT BITTS
SOTTO LA BARRA COSTIERA DI SINISTRA	UNDER LEFT SIDE OF TRESTLE TREES
DORMIENTE	FIXED
LEGATURA A MURATA	TIE TO BULWARKS
B2 PARANCO PER IL CAVO TROZZA DELLA VERGA SECCA	B2 BLOCK & TACKLE ... TO PARREL ROPES OF MIZZEN YARD
B2 PARANCO PER IL CAVO ... PENNONE DI CONTROMEZZANA	B2 BLOCK & TACKLE TO PARREL ROPES OF MIZZEN TOP YARD
B2 PARANCO PER IL CAVO TROZZA DEL PENNONE DI GABBIA	B2 BLOCK & TACKLE TO PARREL ROPES OF MAIN TOP YARD
B2 PARANCO PER IL CAVO TROZZA DEL PENNONE DI MAESTRA	B2 BLOCK & TACKLE TO PARREL ROPES OF MAIN YARD
B2 PARANCO PER IL CAVO ... PENNONE DI TRINCHETTO	B2 BLOCK & TACKLE TO PARREL ROPES OF FORE LOWER YARD
B2 PARANCO PER IL CAVO TROZZA DEL PENNONE DI VELACCIO	B2 BLOCK & TACKLE TO PARREL ROPES OF FORE TOP YARD

Tavola 9 PARTICOLARI E SCIALUPPA	Plan Sheet 9 SHIP ITEM DETAILS INC. LIFEBOAT
All translations are now included for this Plan Sheet in the appropriate sections of this instruction manual. Refer to 'Contents'

Tavola 10 INVASATURA, BANDIERE, BOZZELLI, BIGOTTE, CAZZASCOTTE, TROZZE, ECC.	PLAN SHEET 10 DISPLAY STAND, FLAGS, BLOCKS, DEADEYES, CLEATS, PARRELS, ETC
INVASATURA (in legno pregiato)	DISPLAY STAND (from good quality wood)
VISTA PROSPETTICA DELL INVASATURA	VIEW OF THE COMPLETED STAND
Rivestimento in panno	Glue some material to prevent scratching
BANDIERA DELLA MARINA DA GUERRA	ROYAL STANDARD
Leone, doppia banda e gigli rossi in campo giallo	Lion, with a double stripe & red lilies on yellow field
Gigli gialli in campo azzuro	Yellow lilies on azure field
Leoni gialli in campo rosso	Yellow lions on red field
Arpa gialla in campo azzuro	Yellow harp on azure field
Leoni gialli in camp rosso ... etc	Yellow lion on red field; azure lion & red hearts on yellow field; white mare on red field. At the centre, yellow crown on red field
VESSILLO DI SAN GIORGIO	FLAG OF ST. GEORGE
INSEGNA DELL AMMIRAGLIATO	ADMIRALTY STANDARD
Ancora e festone gialli in campo rosso	Yellow anchor & cable on red field
BANDIERA NATIONALE	UNION JACK (NATIONAL FLAG)
Legenda dei colour	Colour legend (see 'Nautical Terms for colours')
Nota: Per la scatola di montaggio i bozzelli ... etc	Note: In the kit version of the model, some blocks are treated as a single size. They are A1 & B1; C1 & D1; C2 & D2; E & F
STROPPO IN CORDA	STRAPPING THE BLOCKS WITH THREAD
STROPPO IN FERRO	METAL STRAPPING OF BLOCKS
ESECUZIONE DEGLI STROPPI	MAKING THE STRAPPING
1.Legare con un nodo semplice 2. Inserire il bozzello e bagnare con un po di collante il tratto da stroppare 3.Avvolgeri strettamente il fino 4.Bloccare l'avvolgimento con un ultimo ... etc	1.Fasten with a simple knot 2. Moisten the loop with a spot of glue and insert the block 3.Wind thread around to secure the loop 4.Tie off the thread and cut away any excess
1.Appiattare con un martello un tratto ... etc 2.Inserire il bozello 3.Chivdere e saldare 4.Piegare a gancio e tagliare	1.Using a hammer, flatten the metal being used & then bend to achieve the desired shape 2.Insert the block 3.Glue or solder the joint 4.Form an eyelet & cut off excess metal
ESECUZIONE DELLA TROZZA	MAKING THE YARD PARRELS
VISTA DALL' ALTO	HORIZONTAL VIEW
COLORAZIONE DEL MODELLO	COLOUR SCHEME FOR MODEL
NERO: Bottazzi delle fiancate (Tav.1) colombieri ... etc	BLACK: Areas between the rails (Plan 1), gun port interiors (Plan 4), the areas (generally backgrounds) of the metal ornamentation – see Plans 1 & 2, and all the standard rigging and the bindings on the yards & masts
ORO ANTICO: polena, sculture, fregi etc	OLD GOLD: This is the basic colour of all metalwork such as carvings, ornaments, lanterns and so on (see pictures on the kit box) N.B. this is quite distinct from metalwork such as found on bulkheads (see light brown)
ROSSO VIVO: Lato interno delle murate... etc	BRIGHT RED: Inside of the bulwarks, gun port doors, gun carriages, capstans, bits, fife rails
BRUNITO: Tutte le parti in metallo etc	LIGHT BROWN: all the internal metalwork such as bulkheads with the exception of the gun barrels; the galley chimney
BIANCO: Connice e telaio delle finistre	WHITE: window frames
LEGNO NATURAL: fasciame dello scafo e di ... etc	NATURAL WOOD FINISH: The hull & decks, masts, yards, etc

Tavola 11	Plan Sheet 11
SCAFO: ASSIEME PROSPETTICO DELLE OSSATURE – BLOCCHETTI DI RIEMPIMENTO – SUPPORTO MEZZE CANNE	HULL: OVERALL VIEW OF FRAMEWORK – FILLER BLOCKS – SUPPORT FOR HALF GUNS
LISTELLO (A) DA SAGOMARE E DA INCOLLARE SULLO ... ETC	TIMBER (A) SHAPE & GLUE ONTO TRANSOM (directly underneath the far end of the Poop Deck)
Riepimento a disegno 'A'	Bow filler block
Riepimento a disegno 'B'	Stern filler block
TAVOLETTA PER MEZZE CANNE IN COMPENSATA ... ETC	MOUNTING PIECE FOR GUN BARRELS IN 5MM. PLYWOOD
Id lunghezza si determina tilerando la ... etc	Cut to appropriate lengths to fit between frames

Chapter 3: THE KIT

Drawings

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

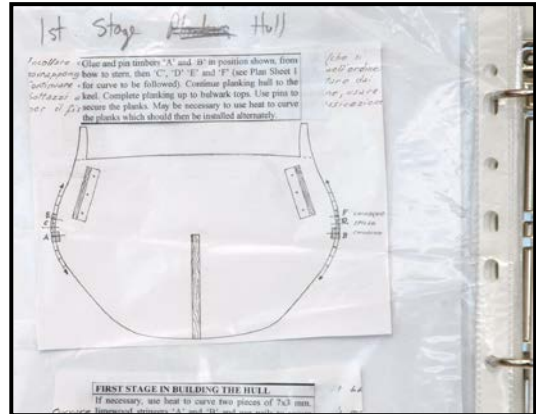


Figure 4: Organisation of Plan Sheet Material

English translations and stick them over



Figure 5: Metal Part Identification

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 usage 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

‘C’ & ‘D’ Deck Formers 5mm. plywood - Particolare in compensato da mm. 5 ‘C’ e ‘D’

Decks:

Main Deck (1) - Ponte di coperta

Forecastle Deck (1) - Ponte di castello

Upper Quarterdeck(1) – Ponte di controcassero

Quarter Deck (1) – Ponte di cassero

Prow Deck (1) – Ponte di prodiero

Stern:

Transom (1) - Specchio di poppa

Rudder - Timone

Transom Support (pieces ‘B’ & ‘C’)

Poop Deck Rear Support Piece ‘A’ (to be shaped to size)

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 60 x 140 mm. (1)

Filler Block for Stern - Riempimento di poppa

25 x 55 x 170 mm. (1)

Filler Block for Bow - Riempimento di prua

1.5 x 6 x 760 mm. (70)

First Planking - 1° Fasciame

3 x 7 x 760 mm. (2)

Stringers (Hull Length) - Correnti longitudinali

3 x 25 x 600 mm. (2)

Dummy Gun Support – Supporti per mezze canne

Wood –Walnut – listello noce

1 x 6 x 760 mm. (70)

Second Planking - 2° Fasciame

0.5 x 3 x 660 mm. (50)

Deck Planking - Rivestimento ponti

2.5 x 5 x 120 mm. (1)

Stern Post - Ruota di poppa

2 x 6 x 760 mm. (4)

Wales – Incintoni

2 x 5 x 760 mm. (8)

Wales (4), Cap Rail, Pin Rails, Upper Mast Circle –
Incintoni, capodibanda, pazienza

2 x 2 x 760 mm. (6)

Wales (2) – Incintoni, base de aragano, serpa

5 x 5 x 600 mm. (1)

Keel – Sottochiglia

2 x 5 x 650 mm.(4)

Bulwark Capping Rail – Capodibanda

3 x 3 x 500 mm. (3)

Pinrail - Pazienza

4 x 4 x 200 mm. (1)

Pinrail - Pazienza

1.5 x 4 x 200 mm. (1)

Pinrail - Pazienza

3 x 5 x 200 mm.(1)

Bits – Bitte

6 x 6 x 120 mm. (1)

Cat Heads - Gru di capone

4 x 8 x 200 mm. (1)

Crosstrees - Crocette

2.5 x 5 x 300 mm. (1)

Crosstrees - Crocette

2.5 x 4 x 300 mm. (1)

Crosstrees – Crocette

2 x 3 x 500 mm.(1)

Crosstrees – Crocette

1 x 2 x 300 mm.

Crosstrees - Crocette

1 x 1 x 500 mm.

Tops – Coffe

3 x 10 x 560 mm. (1)	Channel - Parasartie
1 x 12 x 300 mm. (1)	Gun Port Lining - Battuta portelli cannoni
1 x 8 x 250 mm. (1)	Gun Port Lining - Battuta portelli cannoni
1.5 x 14 x 300 mm. (1)	Gun Port Hatches - Portelli cannoni
1.5 x 10 x 250 mm.(1)	Gun Port Hatches - Portelli cannoni
2 x 2 x 200 mm. (1)	Tree Support - Zeppe per alberi
1.5 x 4 x 600 mm. (1)	Waterway - Trincarino
1.5 x 4 x 400 mm. (2)	Waterway - Trincarino
3 x 3 x 760 mm. (4)	Hull Stengthener – Bottazzi
3 x 2 x 760 mm. (7)	Hull Stengthener – Bottazzi
2 x 10 x 400 mm. (1)	Hull Stengthener - Rinforzi esterni di murata
10 x 10 x 190 mm. (1)	Base support cross piece - Traversa invaso

Accessories

Anchor with stock & ring 60mm. (2) - ancore da mm. 60 complete di ceppi ed anelli (Art.11/360)

Anchor with stock & ring 50mm. (2) - ancore da mm. 50 complete di ceppi ed anelli (Art.11/031)

Barrel – Botte (Art.22/112)

Bell (1) – Campana (Art.11/107)

Binnacle for bell - Chiesuola per campana (Art.11/363)

Blocks:

N.B. The plan sheet shows a larger variation of block sizes than that provided in the kit. This kit has amalgamated a number of blocks with similar sizes together – e.g. A1 and B1 both use the same sized block.

A1/B1: 3mm., 1 hole(160) - Bozzelli da mm. 3 a 1 foro (Art.22/026)

B2: 3mm., 2 hole(60) - Bozzelli da mm. 3 a 2 foro (Art.22/031)

C1/ D1: 5mm., 1 hole (57) - Bozzelli da mm. 5 a 1 foro (Art.22/028)

C2/D2: 5mm., 2 hole (43) -Bozzelli da mm. 5 a 2 fori (Art.22/032)

D 3: 5mm., 3 hole (4) - Bozzelli da mm. 7 a 1 fori (Art.22/113)

E/F: Violin, 7 mm. (6) - Bozzelli a violino da mm. 7 (Art.22/083)

N: Heart, 7 mm. (2) - Bozzelli a cuore da mm. 10 (Art.22/085)

Brass rod, 1.5mm x 200mm.- Tondino ottone da mm. 1,5 x 200 per spine cannoni

Capstan

Basic: 15x20 mm. (2) – Argano (Art.22/134) [Capstans](#)

Advanced : 15x20 mm. (1) - (Art.22/134); **20x25 mm. (1)** – Argano (Art.22/133) [Advanced Capstan](#)
i.e. 3 capstans included, using two depending on skill level

Chain Plates:

3mm.,(4)- Landra da mm. 3 (Art.11/358)/ **7mm.,(34)**- Landra da mm. 7 (Art.11/312)

Deadeyes:

A: 7 mm. (68) - Bigotta da mm. 7 (Art.22/022)/ **B: 3 mm. (50)** - Bigotta da mm. 5 (Art.11/0

Eye Pins, 2mm. (90) - Anelli diam. mm. 2 con gambo (Art.11/022)

Flag set - Serie completa bandiere (Art.13/036)

Armament (refer to following page)

Full Guns - Cannoni:

A - 24mm. (6) ... described on plan sheet under 'Cannoni' as '35'

B - 30mm. (14) ... described on plan sheet under 'Cannoni' as '36'

Half Guns

C - 22mm. (22) ... described on plan sheet as '37' & having a gun carriage; not so in kit

D - 18mm. (4)

E - 16mm. (6)

Gun Carriages-Affusti per cannoni **21mm. (14)** (Art.22/008); **16mm. (6)** (Art.22/154)

Gun Door Hinges (68) - Cerniere portelli cannoni (Art. 11/289)

Wheels - Ruote per cannoni **diam. 4mm.(12)** (Art.22/148); **diam. 5mm. (40)** (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 200mm. (1) -Tondino ottone da mm. 1.5 per spine cannoni

Grating strips, 1.5 x 1.5 x 50mm. (160) - elementi per paiolato da mm. 50 (Art.22/067)

Lantern (1) – Lanterna (Art.55/008)

Mast Caps: Art.22/159 (1); Art./22/141 (1); Art.22/160 (3); Art.22/142 (2); Art.22/161 (2) - Testa di moro

Metal Decorations Set - Serie completa decorazioni fuse (*Composta da N°98 Pz.*) (Art. 11/359)

Rigging yarn

0.25mm. (15m.) (Art. 77/025); 0.40mm. (15m.) (Art. 77/040); 0.60mm. (30m.) (Art. 77/060); 1.0mm. (10m.)
(Art. 77/100); 1.50mm. (5m.) (Art. 77/150)

Rudder hinges (4) - Cerniere timone complete (Art.11/026)

Sailboat Hull, 120mm. (1) - Scialuppa da mm. 120 c/chiglia (Art.88/002)

Sail Cloth, 450 x 900 mm. - Serie tela per vele mm. 450 x 900 (Art. 15/008)

Stairs (2) - Scale (Art.22/002)

Stanchions ('staghorns') (4) – Tacchetti (Art.11/271)

Tops - listello compensato ; coffe mm. 1 x 70 x 300

Set of Plans (11 sheets) - Serie disegni (No 11 Tavole)

Instructions - Istruzioni

Colour photo - Fotocolor

Oars – Remi scialuppa (12) (3 mm.)

Colours

Bianco - white

Nero – black

Oro antico – antique gold

Legno natural – natural wood finish

Rosso vivo – bright red

Giallo ocra – ochre

Brunito – light brown

Lego noce – walnut

Verde marcio – green

Euromodel have made the following suggestions (Plan Sheet 10) but in the end it is up to you, the modeller.

Black: Areas between the rails (Plan Sheet 1), gun port interiors (Plan Sheet 4), the areas (generally backgrounds) of the metal ornamentation – see Plan Sheets 1 & 2, and all the standard rigging and the bindings on the yards & masts

Old Gold: This is the basic colour of all metalwork such as carvings, ornaments, lanterns and so on (see pictures on the kit box) N.B. this is quite distinct from metalwork such as found on bulkheads (see light brown)

Light Brown: All the internal metalwork such as bulkheads with the exception of the gun barrels; the galley chimney

White: Window frames

Decks: natural colour finished with wax or varnish

Gun barrels burnished

Non-ferrous kit items not covered by the colour of the detail they are attached to (e.g. gun door hinge) can be painted with a black & silver mixture to simulate steel.

Red

Inside of the bulwarks, gun port doors, gun carriages, capstans, bits, fife rails [N.B. ‘red’ paints were manufactured using pigments such as red lead & iron oxides; the resultants paints were therefore a darker red & not a primary red colour].

Walnut

inside bulwarks, handrails, stairs, hatchway coamings, mast coamings, masts & yards, tops & crosstrees, capstans, inside of life boats & their stands, blocks, deadeyes & belaying pins.



Figure 7: An Individual Colour Scheme

A ‘colour scheme’ that does not follow the suggestion of a red coloured carriage but preserves the natural wood colour of the walnut.

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.

Basic Hull Construction

Frame Assembly

The ten transverse pre-cut ‘bulkheads’ were slotted into the false keel as a dry run to determine which joints are too tight and which are too loose. Before doing so a little clean-up of the edges of the bulkheads was required since all the joints were extremely tight and needed a considerable amount of work to enlarge them to fit. Areas on frames shown by broken lines are only cut out if the modeller wishes to construct the internal detail of the gun decks. This is shown on Plan Sheet 4.

Alignment of the beams supporting the decks was 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).

PVA is the adhesive of choice and frames ‘1’ and ‘2’ were glued in first using a set square to check their alignment with the false keel whilst at the same time the diagonal distance between them was also checked. These two frames were allowed to dry before proceeding any further. Frames were then put in place at alternate ends (‘3’ & ‘A’, and so on). Square & diagonal measurements and central alignment with the black marker points were constantly checked to ensure correct alignment. These combined factors should provide for good symmetry through the ship.

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 of Frames B, C & D 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 here to remedy this situation !*

Stringers

There are two longitudinal stringers (3 x 7 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 middle frame and worked first towards the bow and when completed, then towards the stern. To avoid stressing the hull structure, I lightly bent the stringers to fit the curve of the hull (using my electric plank bender !)

NOTE: The stringer section between the centre and the bow required a considerable amount of bending in two directions (easily done using an ‘Amati Plank Bender’ or similar) – so take your time to properly seat the stringer into each frame, nailing into each frame as you work towards the bow. Finally, some sanding was necessary to produce a uniform surface with the stringers and the frames.

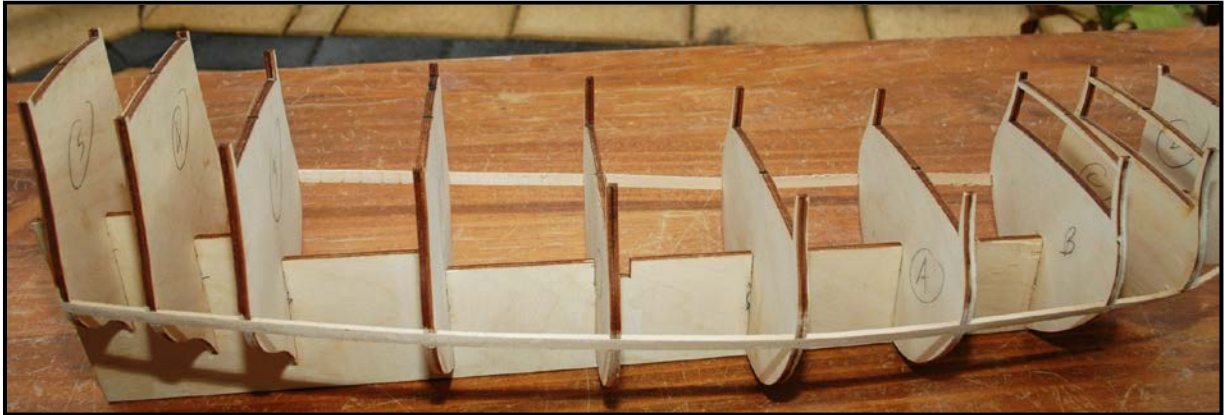


Figure 8: Longitudinal Stringers in Place

Deck Formers

There are two pieces, ‘C’ & ‘D’ (see Plan Sheet 3) that were glued in appropriate positions on Frames 2 & 4 respectively.



Figure 9: Adding Deck Formers to Support Decking

Gun Supports

Two strips of limewood are supplied in the kit, each 3 x 25 mm in cross-section. Utilising Plan Sheet 11, sections of this timber were cut to fit in between the frames.

In the original kit, the ship utilised 5 x 30 mm timber as is indicated in the plans.

So, when using Plan Sheet 11 to determine the placing of the gun supports, **allowance was made for the timber being smaller in width**. Since the front of the gun support is to be 10 mm from the frame edge (as shown in the plan, I marked pencil lines 13 mm. back as a guide for the supporting strips C and D.

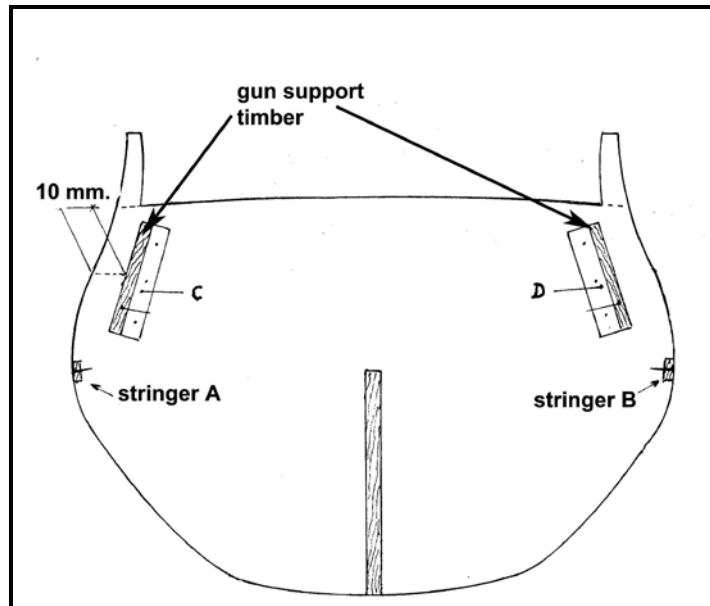


Figure 10: Gun Support Timbers



Figure 11: Adding Gun Support Timbers

supporting strips should be carefully measured for the half-gun positions and appropriately-sized holes drilled.

The supporting strips were then stained a dark brown to obscure them from view.

Each gun support piece is supported from the rear by two small strips of wood which were first glued in position (3 x 4 mm. is suggested in the instructions but this obviously is not too critical – I finished up using 5 x 5 mm.) which I cut from some scrap plywood.

Back supporting strips were glued in position to allow the gun supports to be 10 mm. away from the frame edges.

When in position, the

Main Deck

This came in one complete piece so the first step was to cut down through the longitudinal centre to form two sections that can now be slid into place. There are already two notches present each side but there was a need to *cut a further three notches* to fit around the frames supporting the main deck. [This is shown Fig. 12 where the top half has had the notches cut but not yet the bottom half]

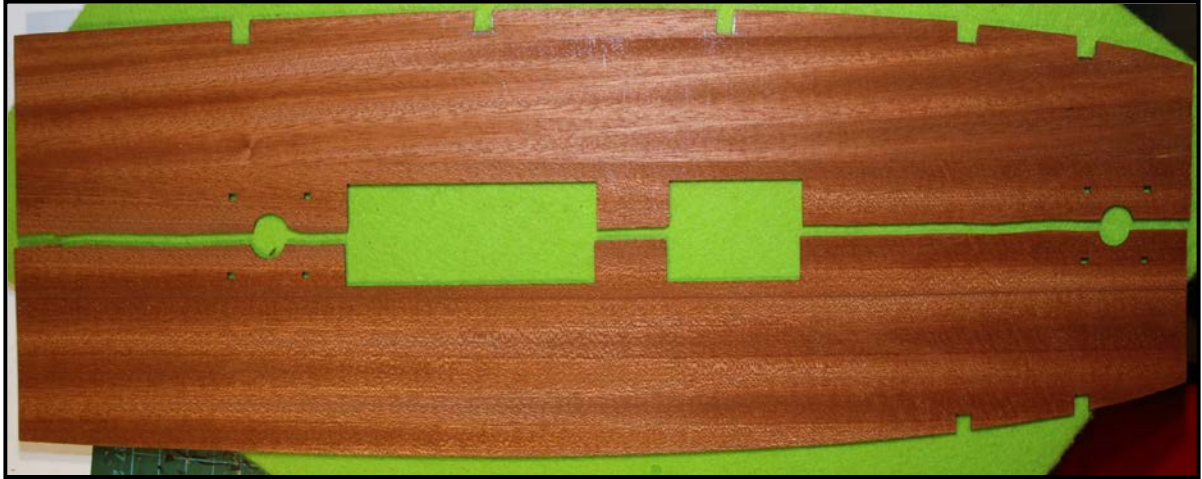


Figure 12: Cutting Extra Notches in Main Deck

The two halves were glued down separately and easily held in position by using nails inserted using an Amati ‘nailer’ (see Fig. 13). Having initially cut the deck in halves, there was a definite need to glue quite a few supporting blocks/ pieces on the underside along the centre line to produce a rigid deck. To finish off this step some rigorous sanding was needed at some points along the centre line to form a sound basis for the planking that will be done later.

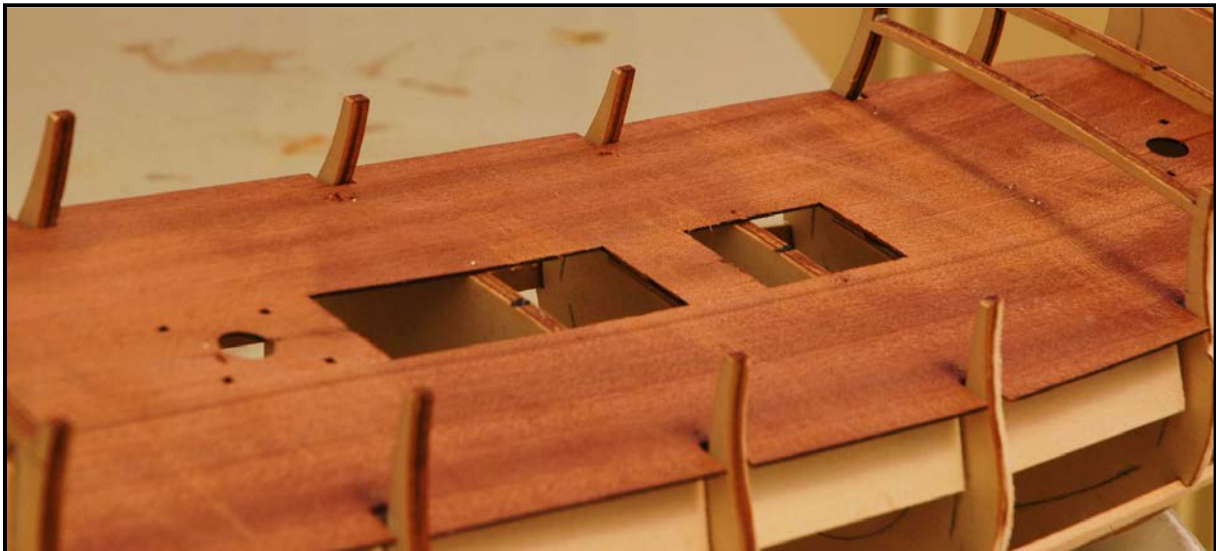


Figure 13: Main Deck Positioned

By this stage it was obvious that the outer edges of the deck needed to be slightly sanded to bring them back into a true line with the frames edges. The amount will depend on the amount of contouring done with the frame edges.

Bow Construction

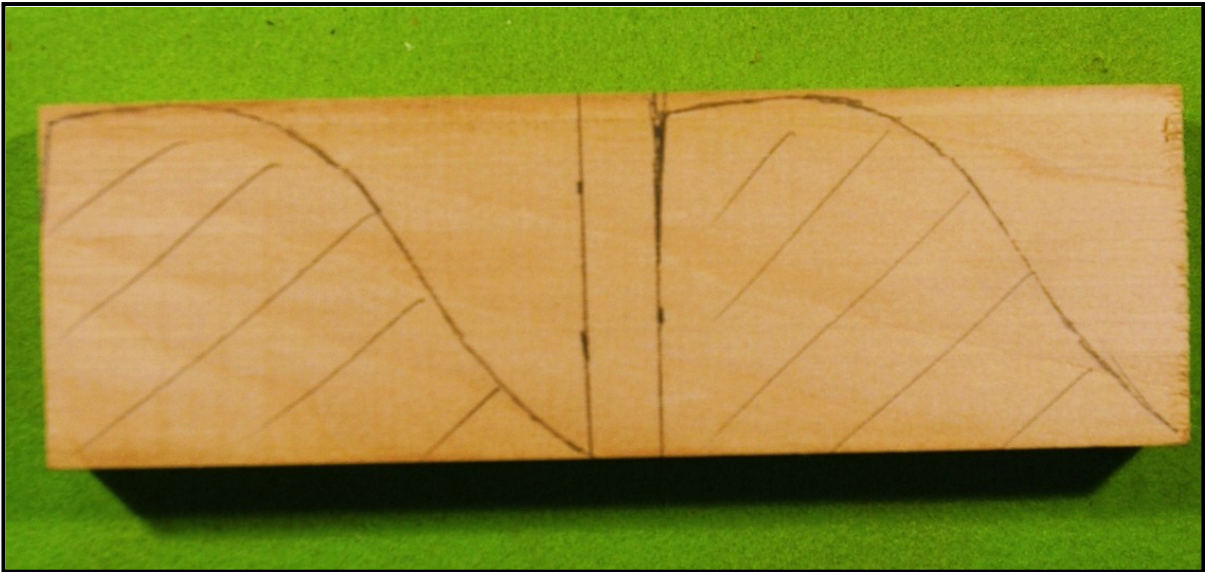


Figure 14: Outline of Bow Filler Blocks

Using the smaller of the two bow block templates provided on the plan, I traced the outline 'A' as shown in the photo below onto the lime wood block 25 x 55 x 170 mm. in two positions. Rough shaping & contouring was easily achieved using the disc on a bench sander although careful use of a sharp knife would achieve a similar result. It is useful to do as much contouring of the blocks before they are set in place. Without the power tool, I can see that this task would be quite arduous.

Plan Sheet 11 is more of a conceptual plan rather than a true dimensional one. Thus the two half blocks



Figure 15: Bow Filler Blocks in Position

at the bow appear to extend right to the end of the false keel whereas in reality they leave a gap on the front side edge of approx. 2.5 mm. (see photo opposite). This will be taken up with the combined thickness of the first & second planking

Holding one half in place on the ship, I used a sanding drum on my Dremel power tool to achieve the correct contoured shape. Some vigorous rubbing down with coarse sand paper was finally used. Minor adjustment to the bevelling on the frames near the bow blocks was still necessary.

Stern Construction

Stern Blocks

The block supplied is generously larger than required. Some fairly drastic carving is required here to create the tapered blocks for the stern. Interestingly, following the exact dimensions for the block outline leads to quite a bit of carving back of the lower section of the last frame. There would be two options here ... either carve out larger blocks than that shown by the supplied template and not carve back the frames or use the blocks as described in the plan sheet and carve back the frames.



Figure 16: Partially Carved Bow Block



Figure 17: Contoured Bow Block

I took the view that the templates

were probably closer to the correct size and thus the frames were the area to be cut back on. Fig. 16 shows that there is still quite a bit more shaping to do. The block has not been contoured 'downwards & towards the last frame'. I achieved this very easily with my Dremel sanding drum after the block was glued in place.

The completed block carving is shown opposite in the larger photo. The end frame has now been cut back to fit the contour of the block.

Framework Tapering

The longitudinal false keel of 5 mm. thickness must be tapered down to obtain a breadth of 3 mm. This allows for the thickness of the second planking either side so that the overall thickness is equal to that of the keel and the sternpost timber strips (i.e. there is no need to cover the false keel with the first planking).

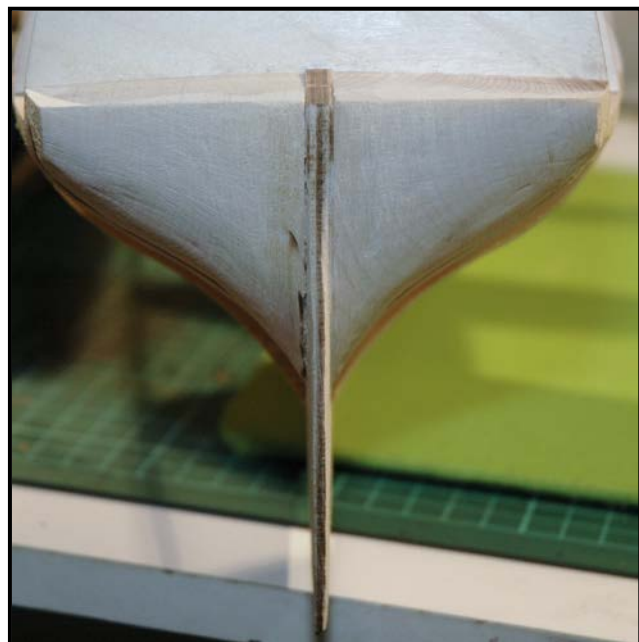


Figure 18: Framework Tapering

Transom Support (pieces 'B' & 'C')

Piece 'B' looked a difficult task but with steady hand and a sharp knife, the creation of the carved edge proved to be a simple task. Very surprised ! No reduction in size was deemed necessary.

The shape of piece 'C' is shown in the stern view of the plan sheets to have a curve corresponding to the deck curvature. Plan Sheet 11 shows the block as being straight and with a thickness of 19 mm. (as supplied in the kit). However, a 2mm. reduction in the centre underneath and likewise at each end on the top surface will produce a curved block that will fit neatly onto the stern blocks. The thickness will then be 17 mm. rather than the 19 mm. suggested in the plan sheet which as events turned out was a helpful thing. However, I initially decided to supplement the lost thickness with a 2 mm. thick piece of scrap mahogany from the kit.



Figure 21: Adding Height to the Bow Blocks

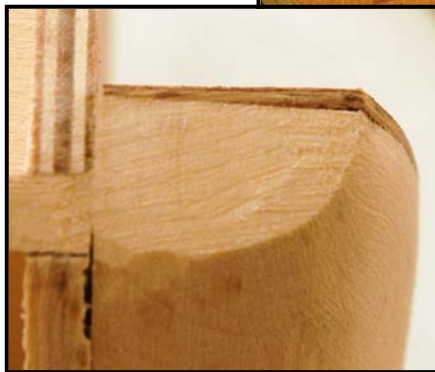


Figure 21: Side View Showing Added Height

Piece 'B' was then glued down onto piece 'C' and with suitable clamping (Fig. 22), it too then has a satisfactory curvature. *Having satisfied myself about the fit of 'B' + 'C', I put this to*



Figure 21: Forcing Shape of Transom Support Piece 'B' *one side until the first planking was complete. Be warned – some modification is required on this transom support...'*[Control+ Click'](#) on [Side Gallery Positioning](#)



Figure 22: Checking Fit of Transom Support Piece 'C'

The fitting of all these pieces at the stern necessitates an overall perception of the hull shape. In the end, I found that a considerable amount of shaping was required – the upper sides of the last two frames, the outer-most surfaces of each of the two stern blocks and the outer-most surfaces of

block 'C'. These all have to be brought together into a uniform contoured structure even though you might be thinking that every pre-cut piece is the exact & correct size. Take a few liberties !

Half-gun positions – a trial run

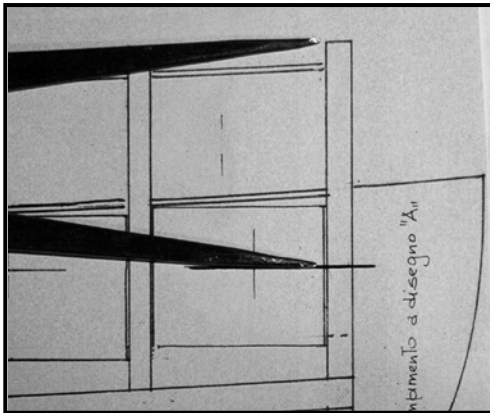


Figure 23: Using Calipers to Check Dimensions from Plan Sheet

With the use of a pair of calipers, the position of each of the holes to support the guns was measured. Since the supporting timber provided was shorter in width than used in the original drawings, I decided to base all measurements on:

1. Distance from a frame, and
2. Distance down from the top edge of a frame (see photo). When transferring to the ship frame, make sure you measure down the *side* of the frame.

Gun size/ positioning was worth checking out at this point – the variation is illustrated in the accompanying photo. The bottom row represents the gun deck and the 23 mm. length guns continue the full length of the ship.

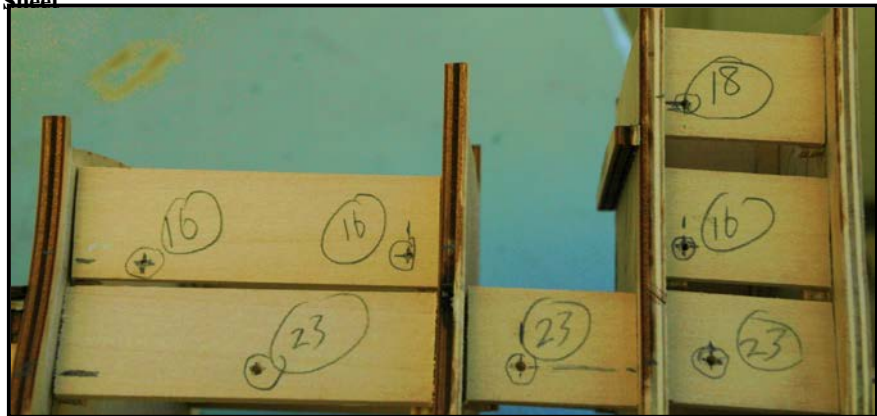


Figure 24: Half-Gun Position Check



Figure 25: Leaving Precise Location of Half-Guns Until Later !

I originally drilled the holes to take the back pin on the half-guns BUT the reality is that the final positions need to be checked once the first planking is completed and the method of doing this is explained further in later text. So a small lesson here – do not drill the holes yet. ‘Control + Click’ ... [Gun Port Positioning – A Reference Point](#)

Deck Gratings

Seemingly out of sequence, but this section helps give a greater perspective of the ship before you have gone very far.

The grates were set into frames and then mounted on the deck surface. In Fig. 26, the modeller has chosen to create a curve on the top surface. This is in keeping with the deck curvature but your choice whether you do this or not.

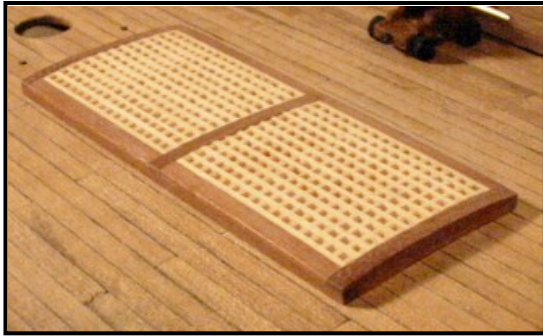


Figure 26: Curvature of Deck Grating (from a modeller)

The gratings were assembled from sufficient strips taking care not to waste any. Four complete grate squares (15 x 15 strips) can be created but in order to produce the final shapes, a number of ‘part’ squares were then built. The kit provided sufficient strips for all grates PROVIDED provided you utilise the minimum number to achieve any outcome.

Example: A grating (in the making) on the Forecastle Deck is shown in Fig. 27. Grate pieces are chosen to minimise wastage. Consider the following considerations ...

Five lengths of grate pieces are cut into halves forming the required **ten** pieces.

Six full lengths are used.

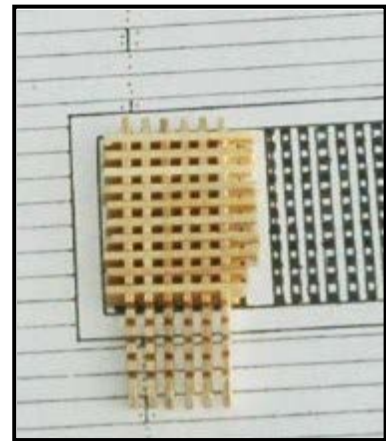


Figure 27: Minimum Wastage in Forming a Grate

The two grates mounted on the Main Deck consist of complete squares plus part squares carefully mounted together to produce a continuity of the strips.

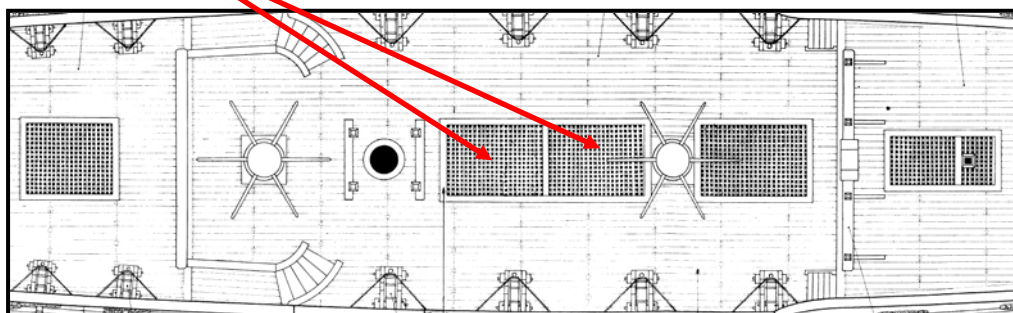


Figure 28: Analysing Grate Dimensions

Grate Dimensions:

It is important to realise that there are small variations between the plan view showing the grates on the Main Deck and the plan sheet drawing showing the different grates. The final size was determined by the dimension of the grate pieces themselves. When the raw grates were assembled, the sides of the grates were finished off allowing a suitable distance between the outer length of the last grate length and the wood length used to frame it. In other words, no grate length piece should butt up directly against the wood used to frame it.

Galley 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 be the easiest approach since the major part of the stove cannot be seen. A more complete discussion on the construction of the stove can be found in the 'Advanced' notes.

Chapter 5: STEERAGE, ANCHORAGE & HAULAGE

Steerage

During the 16th and 17th centuries, the larger ships were commonly steered through the 'sweep' – a tall vertical beam connected to the tiller through a swivel bearing. The helmsman could be found standing on the Main Deck looking out onto the Quarter Deck or taking directions from another crew member.

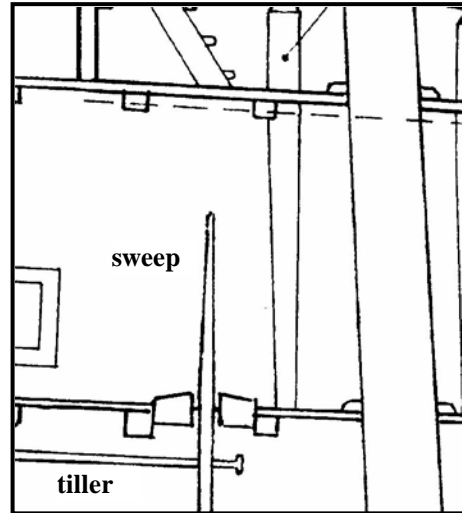


Figure 29: Sweep & Tiller

Rudder

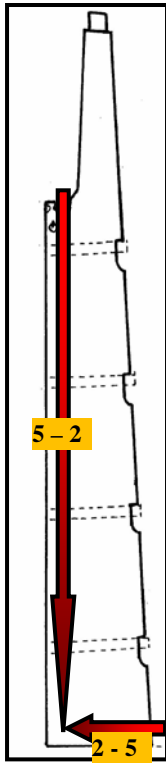


Figure 30:
Rudder Tapering

The supplied blade is already laser-cut to shape including that required for the fitting of the pintles attached to the hull.

The blade was tapered from 5 mm. to 2 mm. on the aft edge from approx. 16 mm. from the top of the blade downwards (and also the same tapering through the blade in a horizontal sense). Thus the maximum taper is at the bottom on the aft edge [Fig. 30 illustrates the tapering by increasing darkness]. Dimensions are given for the **tiller** but it will not be visible and difficult to put in place unless you were building a scratch model. Therefore, there is no need to modify the top portion of the rudder

Rudder Pendants

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). Where the 1.0 mm. pendant rope passes through the counter, I used two 2 mm. **brass 'portholes'** which formed a very neat appearance. To simplify matters, the rope end could be easily glued into a neat hole in the counter.

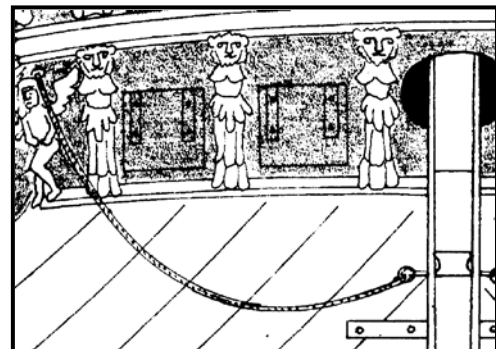


Figure 31: Rudder Pendant

Anchorage

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.

Anchor Assembly

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 accommodate the anchor ring. 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 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!].



Figure 32: Complete Anchor; Basic Form

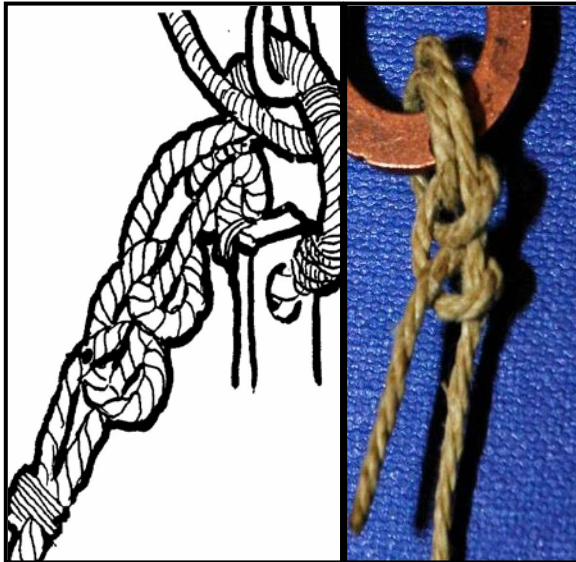


Figure 33: Fisherman's Knot
seizing rope = 0.25 mm.

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. The photo & diagram opposite illustrate 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.



Figure 34: Anchor Rigging Showing Fisherman's Knot

Haulage

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

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. In this ship, capstans are located slightly differently – refer to following page.

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.

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, the fourth 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. 35 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 35: Cathead; Basic Version; [hole still to be drilled]

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 aft of 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.

Main Capstan (argano di tonneggio); Anchor Capstan (argano a salpare)

Both capstans are 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 capstans supplied are of a height and width that fits the drawing dimensions quite well – refer to Plan Sheet 9. All that was required was the assembling of the whelps [eight for the main capstan and six for the anchor capstan] and the creation of the bars. The bars are not installed in the capstan on a working ship – they are put to one side to avoid creating an obstruction. So this is one area not demanding a high degree of precision. If you do opt for the square holes, do not drill the holes as this process will readily fracture the surrounding wood but carefully utilise a fine blade - beware that this may cut into the upper and lower ‘lips’ on the head of the capstan.

When attaching to the deck, the capstan was glued down onto the deck planking.



Figure 36: Structure Typical for the Main Capstan

Rounded holes yet to be made square !

Chapter 6: ARMAMENT

Before cutting out the gun ports, it seemed appropriate to construct the complete gun carriages with barrels mounted for the two different sizes to check the height of the opening above the deck. At this point, all 20 would best be constructed!

Gun Types

Carriage-mounted guns

The kit provides two different gun carriage types, both of which closely resemble their correct dimensions. Only one of the carriage dimensions is shown on Plan Sheet 9 (the 20 mm. carriages)

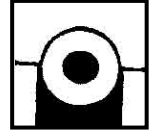


Figure 37: Symbol Denoting Carriage-Mounted Gun

There are:

- 14 x 30 mm. cannons ('A') on 21 mm. carriages - Main Deck
 - 4 are 'hidden' under the Forecastle Deck
 - 2 are 'hidden' under staircases leading up to Quarter Deck

Deck

- 6 x 24 mm. cannons ('B') on 16 mm. carriages - Quarter Deck

Plan Sheet 9 shows a complete set of carriages designed for a 'scratch' build – ignore the detail included under the heading 'nella scatola di montaggio' if you are working from the Euromodel kit.

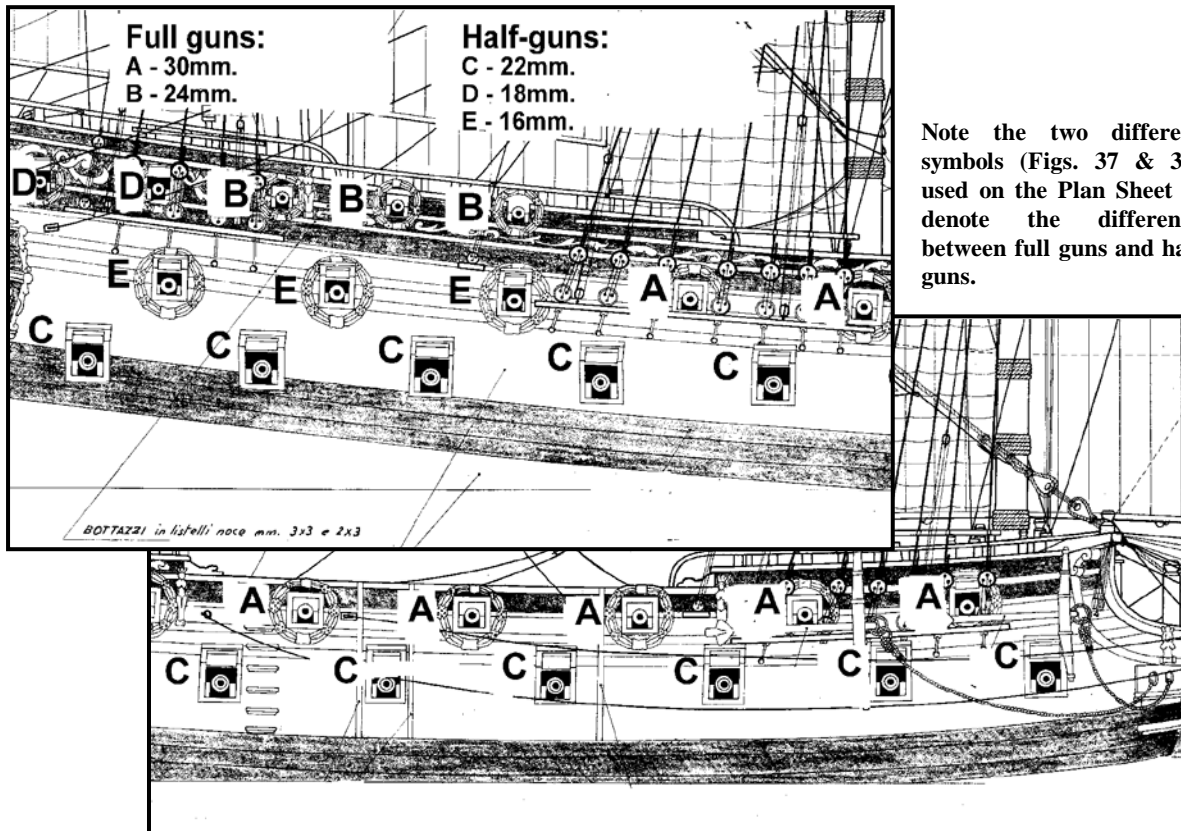
Half-guns

- 32 half-guns - 22 mm ('C')
- 18 mm. ('D')
- 16mm. ('E')



Figure 38: Symbol Denoting Half-Gun

Gun Positions



Note the two different symbols (Figs. 37 & 38) used on the Plan Sheet to denote the difference between full guns and half guns.

Figure 39: Gun Positions

Sizing of Guns & Round Shot ('cannon balls')

Research based on the dimensions given for barrel length & internal barrel diameter along with a knowledge of cannon ball diameters allowed me to make conclusions about the type of guns used (I have not described below whether they are 'long' or 'short'). The reason for doing this was to satisfy in my mind what would be the appropriate sized round shot to use. How far you take this is up to you but the two commercial sizes I am aware of are 1 mm. and 2 mm. My research indicates the following round shot:

- **Quarter Deck** - appropriate cannon ball calibre – **1.69 mm.** (see table below)
- **Main Deck** - appropriate cannon ball calibre – **1.86 mm.** (see table below)

In other words, if you *are* going to include round shot on the above decks, then 2 mm. would be the best choice.

Cannon Composition

In the 1700's, it seems that the material of choice for the cannon was cast iron since it was less than half the cost of using bronze. However, its structural integrity was very poor and accidents frequently happened. Another disadvantage of using cast iron was that after use it only had minimal scrap value whereas bronze could be re-cast multiple times. So, bronze became the material of preference until the advent of steel. In painting the cannons in this model, I had to make a decision of whether to choose an 'iron' appearance by using a silver wash over the black paint or a 'bronze' appearance by using a gold/bronze wash. Based on the correlation in the table below between what size is described in the plan sheets and supplied in the kit and what material best corresponds, **bronze seemed the logical choice.**

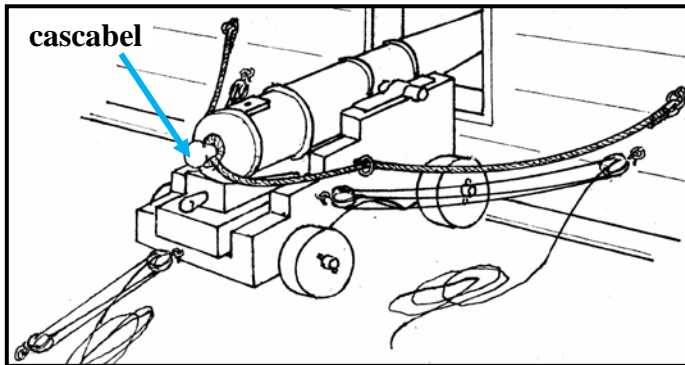
Gun Calibre (lbs.)	Ball Diam. (in.) [actual]	Ball Diam. (mm.) [actual]	Ball calibre (mm.) [model]	Barrel length (mm.) [actual]	Barrel length (mm.) [model]
4	3.05	77.47	1.29	17.78	16/18
6	3.49	88.65	1.47	22.01	22
9	4.00	101.60	1.69	25.4	24
12	4.40	111.76	1.86	27.94	30

Table data based on that established by Borgard, British Assistant Surveyor of Ordnance (appointed to that position in 1718). He rationalized the multitude of gun types then in the Royal Ordnance and specified a complete system of artillery.

Gun Carriages

Some scratch builders will become involved in the extensive rigging for the gun carriages shown in Plan Sheet 9 but most will elect to just construct and mount the carriages without the rigging. The latter approach simplifies the building of these carriages enormously. However, if some research is done, you may well decide that after all the effort in building the hull so carefully, far more time should be spent in creating a more authentic carriage. If this is the case, you will need to source a significant number of eye-pins (and blocks) to anchor the rigging to the carriage, bulwarks and decking. **Far more detailed notes are available in the 'Advanced Notes' section in the back section of this document.**

Here follows a somewhat generic approach to carriage rigging that *could* be applied to the Mordaunt.

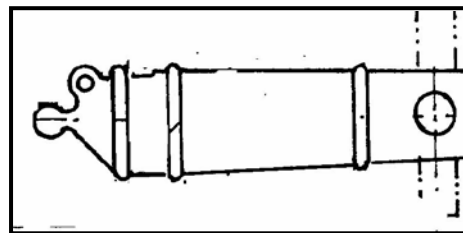


The breech rope was clinked to large ring bolts on the bulwarks and taken around the cascabel. The cascabel refers to the area at the back – the rope was often spliced around the knob but later passed through a hole cast above the knob . This latter form of the cascabel is shown in Plan Sheet 6.

It also was not an uncommon practice on the Continent for the breech rope to be passed through the carriage and not around/ through the cascabel.

Figure 40: Cascabel

The rear end of a cannon from Plan Sheet 6 showing the cascabel



Axle lengths to be cut ...

front: carriage+ 6 mm. wheels + projection = +/- 10.35 + 4.5 + 2.6 = +/- 17.45 mm.
rear: carriage+ 5 mm. wheels + projection = +/- 10.35 + 4.5 + 2.6 = +/- 17.45 mm.

Construction Details (Main Deck carriages)
 (based on kit material)

- STEP 1:** Cut wheel axles of length +/- 15.30 mm. (rear) mm. and +/- 14.44 mm.(front) from supplied wooden rod (both lengths make an allowance for what would be cotter pin fitting). Slight chamfering of the ends of the axles prevents the wheels – which are a tight fit – from cracking.
- STEP 2:** Glue the carriage down onto the two axles.
- STEP 3:** At the front, create an angled slant on each cheek.
- STEP 4:** Paint the carriage with the colour of your choice (e.g. dark red).
- STEP 5:** Glue on the two front 6 mm. wheels and the two 5 mm. wheels at the rear. **N.B. before sliding wheels onto the axle, test for a tight fit and, if necessary, utilize a round file to increase the wheel hole diameter.**
- STEP 6:** Create a quoin (wedge-shaped block) to support the rear of the barrel and glue in place. The interior maximum depth from the plan sheet is 6.0 mm. Using this figure, calculate the depth of bed.
- STEP 7:** Determine the inclination of the cannon required and utilize a template to maintain uniformity with all the carriages whilst gluing in the quoin (refer to photo below).

Chapter 7: HULL STRUCTURE (Part 2)

First Planking

- Particularly useful (indispensable) tools included:
 - small hammer
 - nail ‘nailer’
 - pointed pliers
 - ‘masses’ of small nails
 - many small (planking) clamps
- Below the Main Deck level (and above), the planks extend well past the last frame (Frame 5). I worked on a plank length of 680 mm.

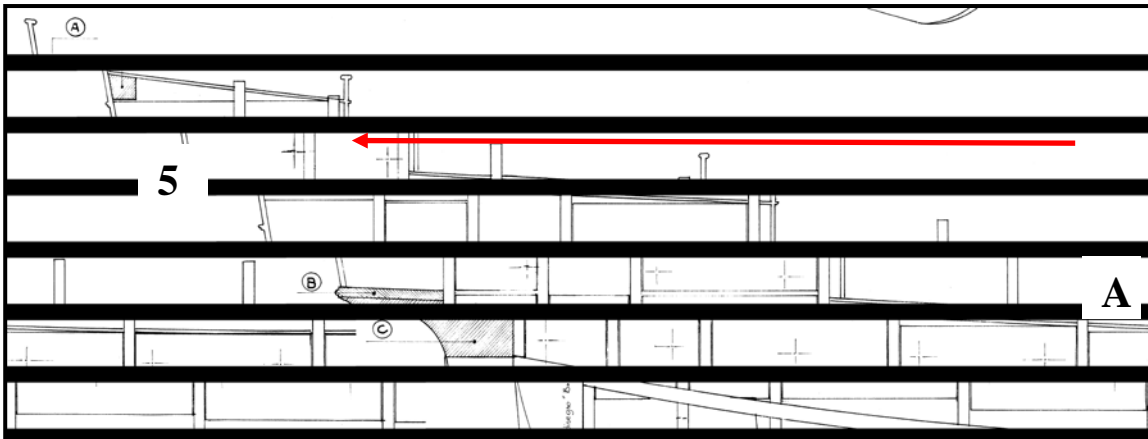


Figure 41: Extending Planking Length Past End Frame

Note that behind the end frame (Frame 5), there is the stern structure showing the transom support (B & C) and the transom above. So be careful to extend the planks past this end frame.

- Where bulwark supports extend above any deck level, remember that these are only to provide correct alignment for the planks. This then applies from Frame A and all other frames right back to the stern. Cover the outside of these supports with plastic or masking tape and this will prevent glue adhering to the planks at these points since these supports eventually need to be broken away. [Postscript – the small bulwark projections above the Forecastle Deck also need to be removed. I just used a small pair of long-nose pliers and they broke away easily].



Figure 42: Using Bulwark Supports

Three of the bulwark supports covered by masking tape to prevent them being glued to the planks.

Some of the bulwark supports are small, but the same principle applies.



Down from the Main Deck level

The majority of planks were able to be fixed WITHOUT tapering and here I found the use of brass nails driven half way in with a ‘nail nailer’ a useful technique. Sometimes the nails were more effectively bent over flat with a small hammer. Either way, after the glue had set, I had no trouble withdrawing these nails with a pair of small long-nose pliers.

It will be obvious that the planks have a distinct curve downwards between the stern & bow. I found this easy enough to achieve by first immersing the planks in water for about 30 minutes. Sometimes overnight!

Following the line of the lower surface of the main deck, the first wet plank was set in place on each side of the hull and the curves required around the bow posed no problems at all. In total, I planked five timbers down from the deckline holding them in place by small brass nails.

Length of 90mm. storm water pipe sealed with a cap at the bottom & then filled with water. The width makes it easy enough to get my fingers in the top to retrieve the timbers being

Figure 43: Soaking Planks

Obviously the planks will have swollen with immersion in the water so I allowed 24 hours for the timber to dry (and used a hair drier as well). After this time there were significant gaps between the planks (see photo opposite) but when they were removed from the frames and finally glued back in place, this proved to be of no consequence.

Drying out of the wet planks will result in significant gaps. However, when the planks are removed and re-set with glue, these gaps will be removed.



Figure 44: Drying of Wet Plank Results in Gaps

The usual approach here is to now start planking upwards from the mid-line of the remaining space between the five planks and the keel. As this is the first planking, I decided to follow my ‘line of sight’ for best fit and whilst the above guideline was not followed, it was not too far from being correct. Planking proceeded quite easily and some detail in the following photos will assist. The planks visible are the ones that have dried and are now glued in place. I made no pretence at this first planking stage but still felt that the finished planking provided a sound base for the more exacting second planking. The planking though will require the use of a filler before finishing off. (*There are some obvious gaps in my handiwork* but it is the uniformity of the surface that will be important. Do not be too judgemental !)



Figure 45: First Planking at Various Stages

Up from the Main Deck level

Above the first planked timbers (and going above the main deck), four more full-length non-tapered planks were fixed in position. The bulwark support projections of the frames either side of the main deck (and on the other decks) will be removed after the first and second planking but to prevent glue adhering to the frame surfaces, some thin plastic or masking tape (see below) is put in place before planking begins. *Make sure to mark the gun port positions even though they may need some final adjustments.*

Shorter length planks are glued in place to build up the forecastle and quarter/ upper quarter deck areas. **Again, make sure to mark the gun port positions.** I puzzled over the two frames 4 & 5 which seemingly were out of place due to their height. However, a close examination of the plans shows a gradual tapering down of the planks from the stern down to the bulwarks of the main deck. So it is that there needs to be a number of shorter strips of planking added to the quarter/ upper quarter deck areas of the ship.



Figure 47: First Planking at Various Stages (cont.)

A tip here ... support the rather large amount of planking that extends past the last frame with a couple of short strips glued in as shown in the adjacent photograph.

Since there is a considerable amount of hull planking above the decks, there is always the **inherent danger that some of these planks will be accidentally broken off.** My solution is over the page



Figure 46: Supporting the Upper First Planking Strips

Working on the Inverted Hull

Due to the fragility of the hull planking above the deck levels, it is difficult to turn the ship upside down and not damage the first planking. Sanding and smoothing the planking is one situation where the ship needs to be inverted. The following stand was created from some scrap without any of the niceties of woodworking.

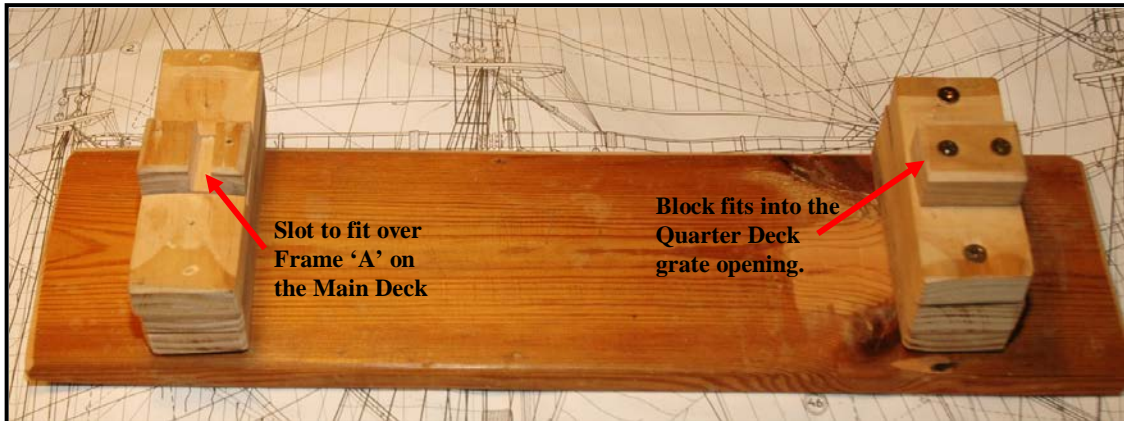


Figure 49: Support Stand for Inverted Hull



Contradiction ... from the above photograph, you can see that there has been some work on the gun ports - **I would strongly advise against cutting out the gun ports at this stage.** I attempted this work without any support stand and this caused some damage to the first planking.

I should have built the support stand before attempting any further work on the first planking.

This cutting out follows some very careful identification of the gun port positions which is discussed in the following pages.

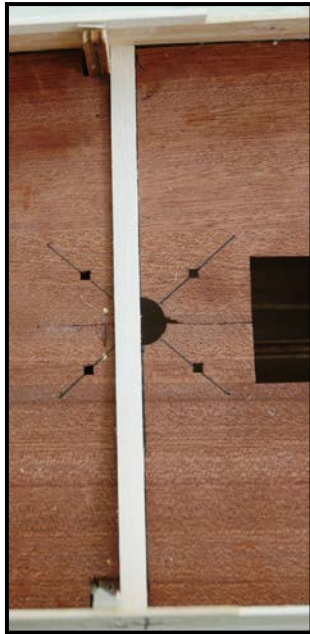
Gun Port Positioning – A Reference Point

Vertical Alignment Check

It is absolutely essential at this point to locate, check and mark the position of the gun ports. Whilst I had marked the positions of the ‘half-guns’ onto the planks from the support strips behind during the planking process, there was a need to double check these positions as well as establish other openings for those guns supported by gun carriages.

One specific gun port position should be established as a reference point. I concentrated on using the gun carriage (one of four) on the main deck nearest the bow as my starting point.

This gun port is almost directly opposite the main mast – the centre line of the gun carriage is approx. 3mm. towards the bow from the centre line of the main mast hole.



The bow is towards the right of these photos.

A length of 6mm. planking was laid across the deck and used as a form to create a black line across the deck to show the centre line of the main mast. The centre line of the gun carriage at this point is 3mm. to the right of the black line. A small hole was then drilled through the bulwark planking to identify the alignment of the gun port.

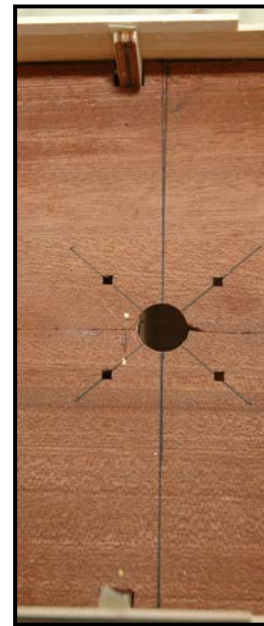


Figure 51: Marking the Centre-Line of the Main Mast Across the Deck

Using Plan Sheet 1 as my constant reference, I worked backwards towards the stern and forward towards the bow and determined the vertical separation position of all other guns on that lower deck.

Horizontal Alignment Check for the above gun port (my figures)

Inside height of the bulwark (before reducing down to final height) = 31.78mm.
 Less thickness of 0.5mm. deck planking = 31.28mm.

The height of the gun carriage + front wheels = 11.37mm.

Thus height of bulwark above gun centre = (31.28 – 11.37)mm.
 = 19.91mm.

Measured height above original marked centre = 19.94mm.

A difference of 0.03mm. is close enough !

So this now checks both the horizontal and vertical position for this gun placement.

Relative Positioning

Having established what we now hope is an accurate reference point for one gun position. a small hole is drilled through as seen in the photo below. This hole on the outside of the hole acts as a reference point for all other gun ports.

Now, since the main deck has not been planked, the height of the gun barrel on the gun carriage will be 11.38mm (height ‘2’) above the plywood surface. This fact is then translated to all other gun carriage positions on the Main Deck. The horizontal position separations (e.g. distance ‘1’) are easily determined from Plan Sheet 1. Thus the positions of the Main Deck guns are clearly determined.

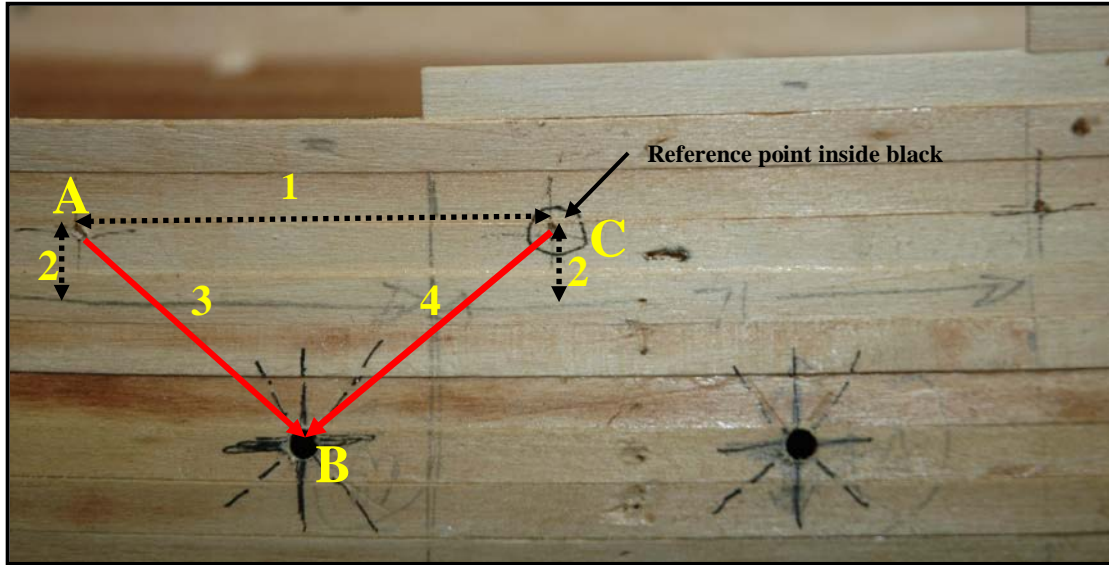


Figure 52: Determining Positions of Gun Ports from the Established Reference Point

The remaining gun port positions can readily be identified by using the method of intersecting arcs. A normal pair of engineering calipers (or similar) can be used to measure the distance of another gun port above from two adjacent gun ports in the row below. These two measurements can be transferred onto the hull surface as two arcs and where they intersect *must* be its position.

Gun Port Position Example

e.g. gun port B = arc length '3' intersecting with arc length '4'

NOTE

The gun port positions of carriages on the quarter deck can only be truly determined after that deck is set in place.

For the gun port positions that can be determined, drill a small hole through the hull. Any further sanding/ smoothing of the hull will then not remove the gun port position.

DO NOT cut out the full gun port position until after the second planking.

Side Gallery Positioning

Now that the gun ports have been positioned, it is appropriate to then arrange the position of the metal castings (376/377) relative to the gun port positions. The rationale behind this is that that will then confirm the position of the transom support that fits underneath these metal castings.

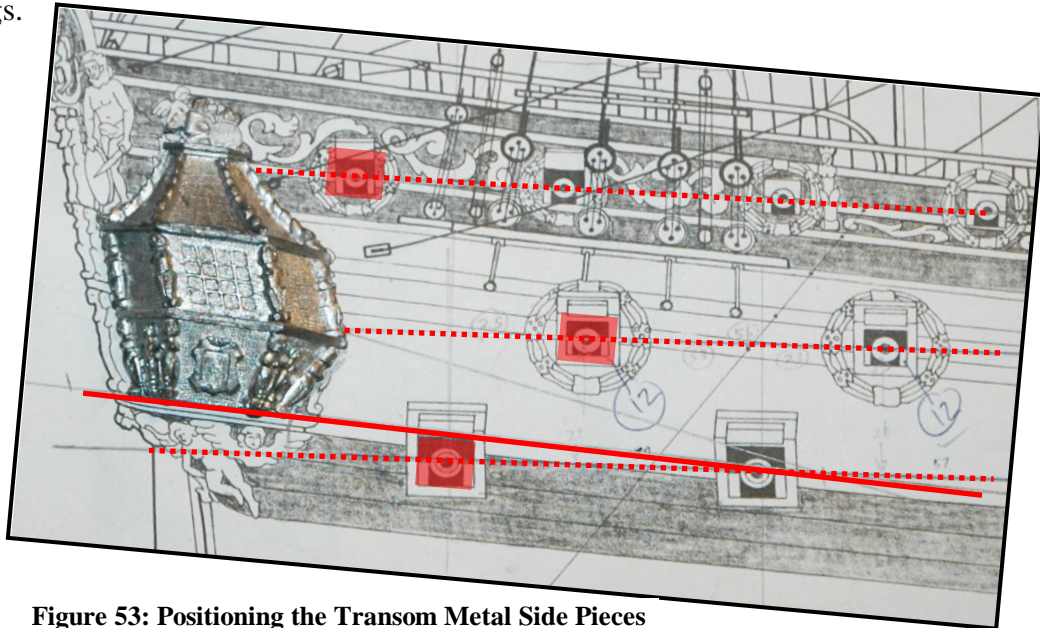
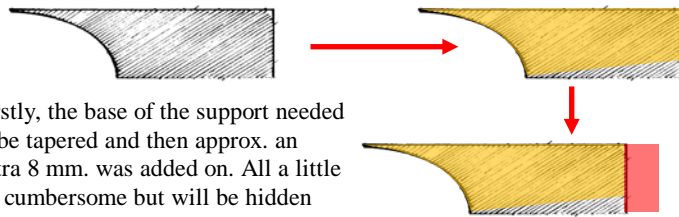


Figure 53: Positioning the Transom Metal Side Pieces

- After drawing lines (dotted red line) through the three rows of gun ports, I focused on the three shaded gun ports and *checked distances* between these and various points on the metal casting.
- In conjunction with the above point, I determined the slope of the metal casting base (solid red line) relative to the bottom row of gun ports.
- The transom support required some additional work and this is what I did !



Firstly, the base of the support needed to be tapered and then approx. an extra 8 mm. was added on. All a little bit cumbersome but will be hidden behind the planks.

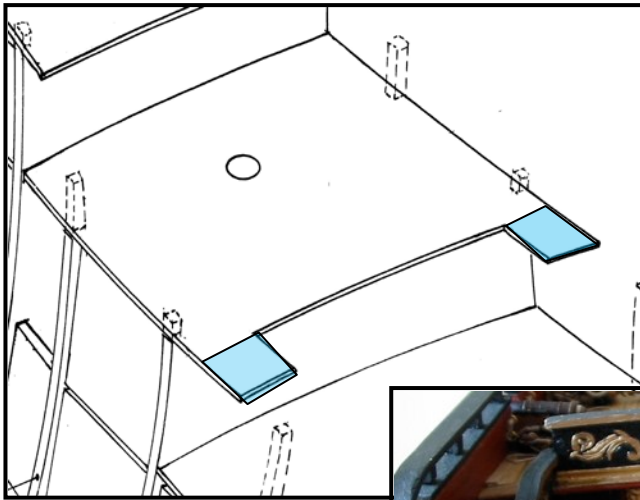


The transom support is finally in position (well, almost!) – first layer planking has filled in the open space around the support and position of metal side gallery relative to the three adjacent gun port holes

Figure 54: Final Positioning of Transom Side Pieces

Quarter Deck (cassero)

Plan Sheet 11 shows the Quarter Deck in a schematic form. This is seen in the diagram



opposite where the extended areas (blue) are not part of the kit laser-cut plywood shape supplied as this deck. They are there simply to illustrate the presence of landings leading to stairs going down to the Main Deck. The following photo illustrates what could be achieved by the modeller.



Figure 55: Summary of Quarter Deck Structure



Figure 56: Quarter Deck in Position

The supplied piece was a good fit but I needed to trim the front edge by 2.35mm. This was then glued and clamped in place.

Most modelers will simply just plank the deck with the timber provided and that will happily cover the gaps observed either side of the plywood deck. However, the astute modeler will incorporate the [Waterways](#) – these will also fill in the gaps on both sides before completing the deck planking.

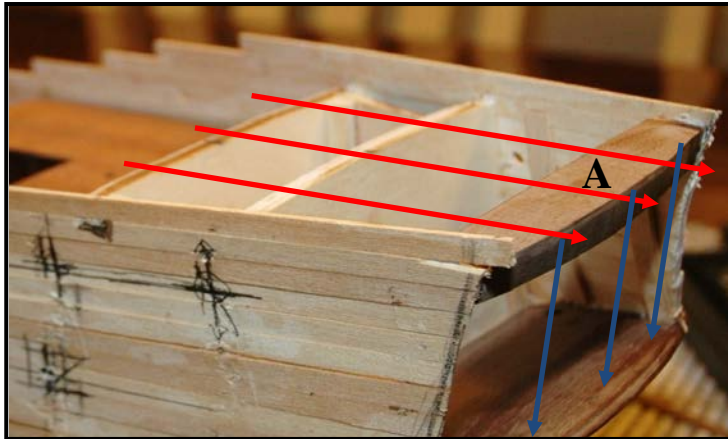
Currently Euromodel is updating various minor aspects of this (and other kits) and in the meantime I will use some suitable scrap timber pieces to create a suitable size for these timber lengths.

So ... just for the moment, this deck will remain unplanked.

Upper Quarter Deck Positioning (controcassero)

Supporting this final upper deck are the top edges of the last two frames and a block ‘A’ whose dimensions are to be found on Plan Sheet 11. This block also serves a valuable function in forming a lateral support between the two vulnerable sides of the hull at the stern. There were a number of angles to get correct and these are illustrated in the following photograph.

Block A was easily cut out from some scrap timber.



Red arrows – fair amount of work to get these three in the same curved plane. Last frame needed to be flattened a little.

Blue arrows – not so difficult to get these in the same plane and at the same time this allowed cleaning up of both side edges of the hull in preparation for the transom.

Figure 57: Upper Quarter Deck Positioning

Transom Construction

After laying the Upper Quarter Deck in position (but not fixing), the angle down to the transom support was determined, marked and cut. The transom piece supplied is cut from a fairly thin plywood and therefore easy to bend.

[Postscript – this transom piece requires some cutting and is better done before fixing onto the stern. Refer to the comments on the following page].

With the windows already cut into it (*but not required*), the bending caused some unwanted distortion across its surface. Also, I was not happy about applying some force to hold it in position against the fragile first planking edges – so - perhaps going ‘overboard’ again - I soaked the plywood in water, held it in a simple curved form (see photo below) and placed it into the oven for a while. Sounds complicated but the whole process was done within the hour and the result was great.



Figure 58: Creating a Curved Transom

The above photo shows my first attempt – I actually went back and produced a far deeper curve for the final attempt.

To hold it in place a number of small blocks (Fig. 59) were glued on both the transom support and the two sides of the hull. The transom piece overlaps the hull profile as shown by the broken lines in their approx. position in the diagram below. The top part of this transom was glued onto block 'A' – shown by the brown shading.

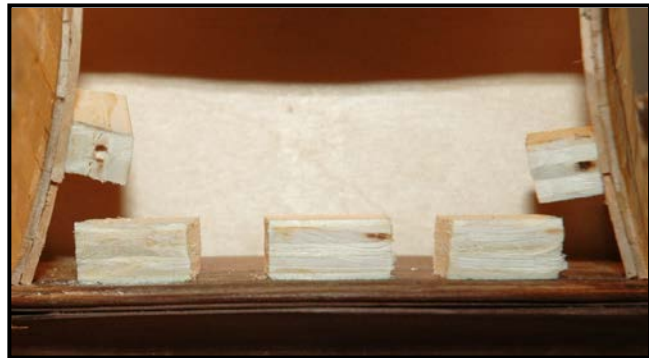


Figure 59: Rear Support Blocks for Transom

Although the photo does not show it, I added in some extra strips on both internal side surfaces above and below the blocks. This was to increase the glueing surface. With the correct curve on the transom, it was fixed in place.

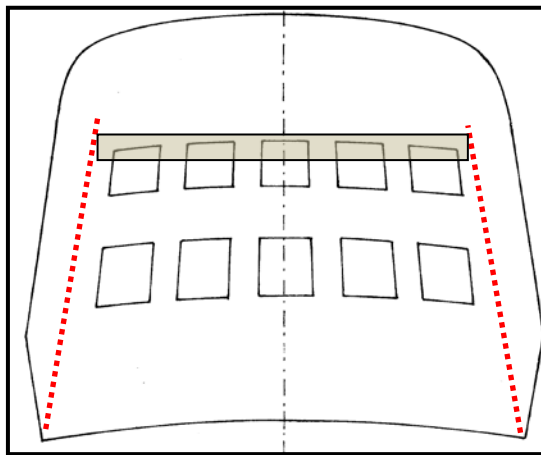


Figure 60: Schematic Positioning of Transom

Red lines – hull side edges meeting the transom

Grey rectangle – strip A is used to support the Upper Quarter deck and the transom. The actual piece A which is has a distinctive deck camber NOT shown in this simple

Support piece A is clearly visible through the top row of windows but is not an issue since this surface will be covered by metal decorations. The yellow line above the windows indicates the line of cutting that I should/could have done before applying the transom.



Figure 61: Possible Removal of Top Portion of Transom



Figure 62: Top Metal Decoration of Transom

At this point I realised that the top metal decoration (11/364) on the transom had an inside decoration as well and so the plywood transom above the Upper Quarter Deck needed to be removed so that these decorations could be seen. Ideally, this should have been done before fixing the transom in place.

Upper Quarter Deck Fitting

Before adding the Upper Quarter Deck, two extra pieces of plywood were added to support the last two guns along the hull at the stern end.

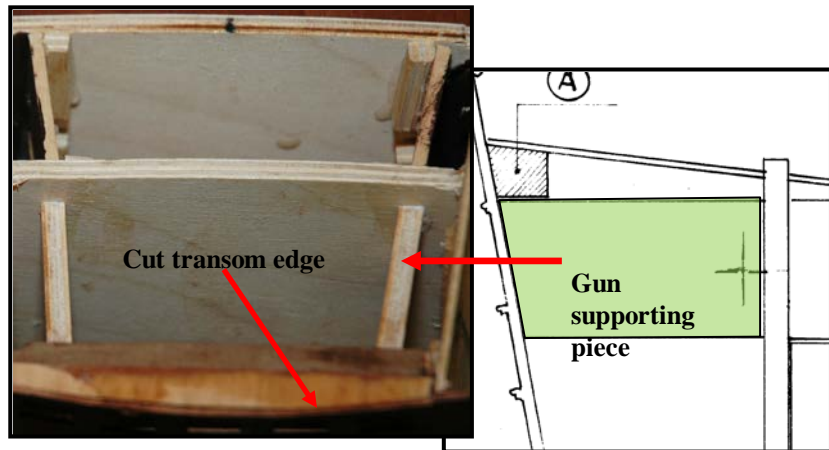


Figure 63: Fitting Upper Quarter Deck



Figure 64: Adjusting Length of Upper Quarter Deck

When installing this deck, it extended over the top of the transom cut edge. I then sanded the stern edge of this deck back to the outer surface of the transom (Fig. 64).

Planking for this deck was also put on hold for later.

Transom Planking & Painting

After cutting the transom down to the level of the Upper Quarter Deck, I felt it an opportune time to plank the transom surface and consider the metal decorations detail – finish their surfaces and edges, look at their final positioning and paint them.

The detail was very good but even so, there were plenty of areas that needed touching up with a few different-shaped metal files and the time spent was worthwhile. Although painting metal surfaces has never been a problem, for this ship I decided to brush each metal piece with methylated spirits to clean off any residual oil (manufacturing or handling). The surfaces were then coated with a white primer designed for painting models.

Prow Deck (ponte di prodiero)

Plan Sheet 11 seems to indicate that the Prow (Front) Deck is a **flat** surface. Three reasons why not :

1. All other decks have a distinct curvature to allow for water drainage
2. The cast metal piece ‘28’ Paratia del Castello – Fig. 66 - that sits on this small deck has a distinct curvature on underside surface.
3. Drawing is obviously ‘schematic’ and not necessarily to scale.



Figure 65: Curvature of Prow Deck Bulkhead



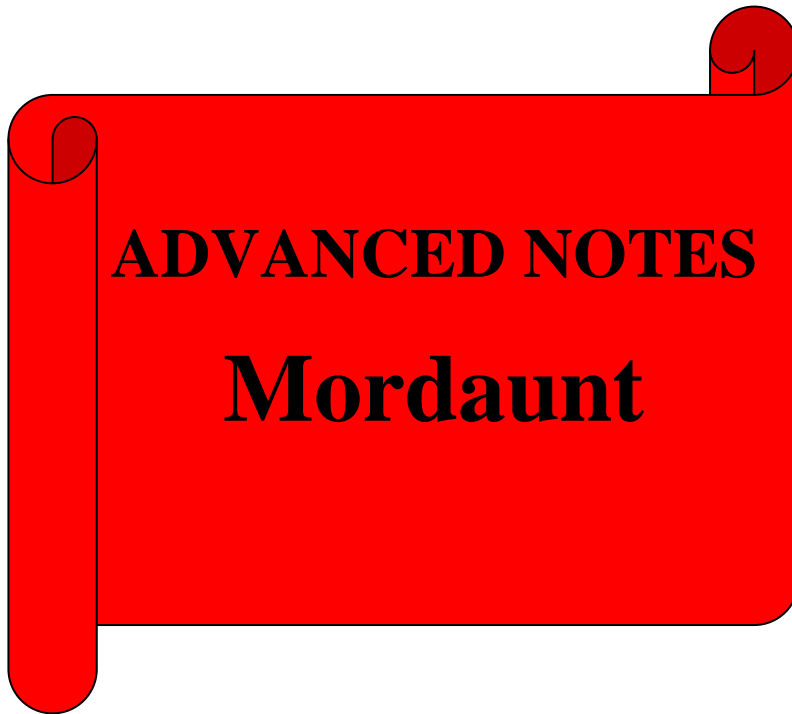
Figure 66: Further Illustration of Prow Deck Curvature

Careful examination of this build of the Prow Deck shows the deck camber

Forecastle Deck (castello)

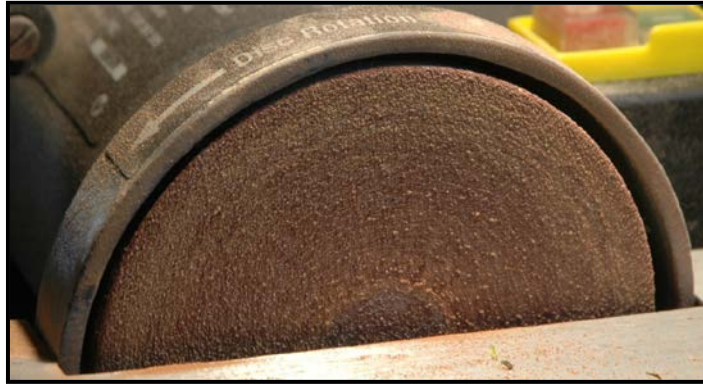
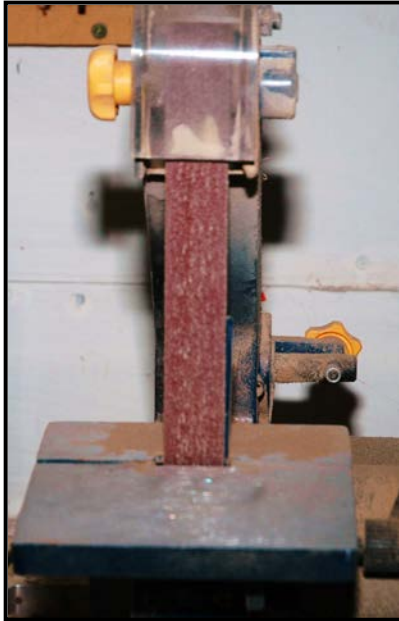
Before installing this deck, the inner bulwarks need to be lined

TO BE EDITED



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

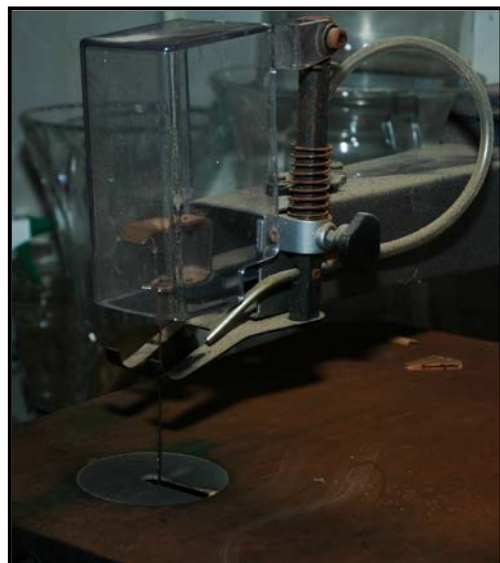


Dremel tools (high speed cutter tool, sanding drum & other bits; flexible drive attachment; along with a mini **drill**)



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.



Figure 67:
Mordaunt Rudder

Rudder

The rudder 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.

Rudder Pendants

The eye pin + ring that attaches the pendant rope to the rudder frequently is anchored **through the metal pintle** for added strength and not just the wood. Plan Sheet 2 appears to utilise a **separate metal bracket wrapped around the aft edge** over the laser-cut hole provided.

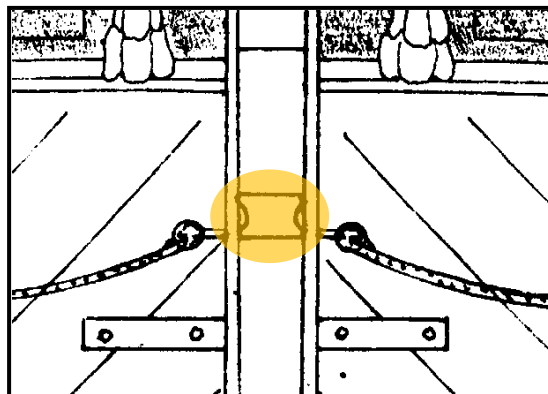


Figure 68: Pendant Metal Bracket

Capstan

Main Capstan (argano di tonneggio)

The task that should be done first is to create square (2 x 2 mm.) holes out of the rounded holes to accommodate the bars. The supplied 20 x 15 mm. capstan can be used with the height being approximately the same but the widths at the top is approx. 3.3 mm. and the base 5.6 mm. shorter. So I could have considered making the capstan from scratch but settled on using a larger capstan and making it shorter in height. The result ... the main capstan now is larger than the anchor capstan.

Capstan utilised was 25 mm. height

Dimensions

The drawing shows:

width at top = 16.0 mm.
width at base = 21.0 mm.
overall height = 20.0 mm.

20 mm. capstan supplied :
width at top = 13.7 mm.
width at base = 15.4 mm.
overall height = 20.25 mm.

As stated above, the obvious capstan to use would have been one that is 20 mm. in height but this gives a very narrow width. So, for this capstan I used one that was 25 mm. and then set about reducing the dimensions down to what is shown in the drawing. I completely removed the 'domed' top to a flat surface which was then given a gentle curvature towards the top edge. I also reduced the top width by sanding away the two 'lips' [this made the capstan look quite different to the other capstan]. The base was reduced in thickness from 3.9 mm. to 1.5 mm. by sanding off the wider 'lip' at the base - and a bit more. Combined, all three of these operations gave better dimensions ...



Figure 69: Converting a 25 mm. Capstan

Capstan on the left was created out of the piece on the right; bar holes still to be finally squared and chocks not yet in position between the whelps.

25 mm. capstan used:

width at top = 16.3 mm.
width at base = 18.0 mm.
overall height = 20.1 mm.

The six whelps were then glued in place and the six bars were produced. A common mistake is to permanently install the bars into the capstan head. In practice, these present a definite obstruction to the operations that occur on a deck and are only installed when required for raising the anchors. Otherwise, they are stowed to one side of the deck.

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 to the described size and appearance. I thought I could modify the stocks supplied but that was not the case ...

Sheet Anchor (ancora di speranza)

Stock (ceppo dell'ancora)

Tough decision here ... do you change the stock size *and* the material ? **Reducing the stock** in size totally improves the appearance (Figs. 30 & 31). What also improves the appearance is the **dividing of the stock longitudinally into two halves** (i.e. 'baulks'; Fig. 30). So you either make the stock from scrap timber or decrease the supplied stock to drawing size of **60.0 x 6.0 x 6.0 mm.**



Figure 70: Underside View of Partially Completed Stock of Sheet Anchor; Advanced

For me, there was *not* a choice. The Bow Anchor stock I *had* to make from scrap timber (mahogany) and to keep this matching with the Sheet Anchor stock timber, I could not use the light coloured stock supplied in the kit (the stock colour is deceptive as its lighter colour is covered with a coating of a darker lacquer). I could have elected to paint them but that was something I wished to avoid.

What remains to be done is to create a square hole that will not fully house the square shank of the anchor. This then creates a small space at the centre between the two baulks.

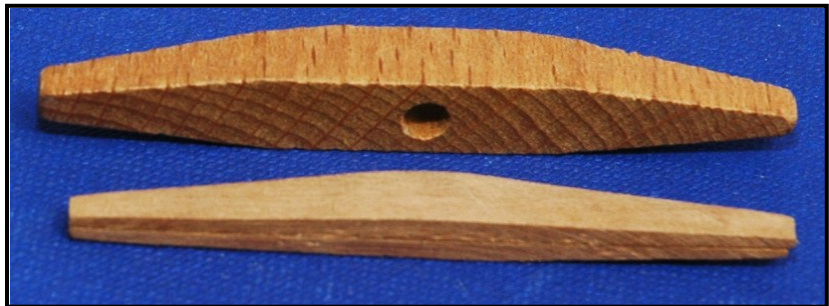


Figure 71: Side View of Partially Completed Stock of Sheet Anchor; Advanced

Metal Anchor



Figure 72: Reduction in Width of Fluke; Advanced



Figure 73: Reduction in Size of Sheet Anchor Shank;
Advanced

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 3.5 mm. finished at top), the fluke size and the fluke-to-fluke dimensions. The latter could only be reduced slightly. **There is a need to identify & create a new position for the anchor ring.**

Bow Anchor (ancora di posta)



Figure 74: Underside View of Partially Completed Stock of Bow
Anchor; Advanced

Stock

The drawing size of **49.0 x 5.0 mm.** was longer than the stock piece supplied which was only 44.5 mm. I chose to work with some scrap timber in order to create the correct dimensions. Apart from the

length, the small adjustments in thickness and width simply produced a more proportioned object.

Metal Anchor

The fluke size was significantly reduced from a width of 12 mm. to 8 mm. and the shank was squared and given a taper. **The upper shank is only 2 mm x 2 mm. and is very fragile to work with !**

Metal Hoops

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 lengths of timber black



Figure 75: Anchors Complete With Metal Hoops; Stocks Supplied
But Not Utilised

before cutting them into suitable short lengths & applying to the baulks. 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.

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 rings from some 0.81 mm. brass rod I had – 10 mm. diameter for the sheet anchors and 8 mm. for the bow anchor. Of interest, the ring would have a series of puddening – strips of tarred cloth followed by rope and finally some fine yard

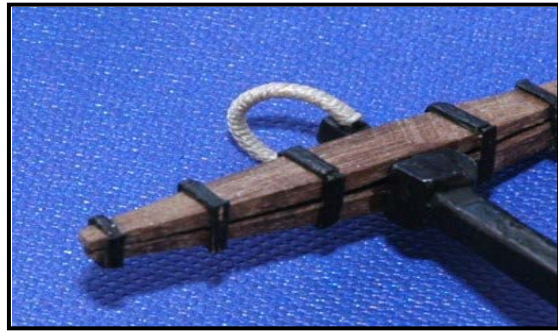


Figure 76: Anchor Ring & Metal Hoops;
Advanced

applied at each end of the rope and also in the middle. At this scale, it is reasonable to only apply the rope (0.25 mm.) – see Fig. 35. At this stage, the top of the shank (above the stock) will need to be very carefully drilled through to accommodate the 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 9 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 former plan sheet (i.e. Plan Sheet 1), 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 1, the bow anchor is shown stowed away along the channel. *For accuracy, I decided to include this latter sheave.*



Figure 77: Cathead; Advanced Version, Complete

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 housing for the side sheave was made from a piece of 4 x 3 mm. wood strip.

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

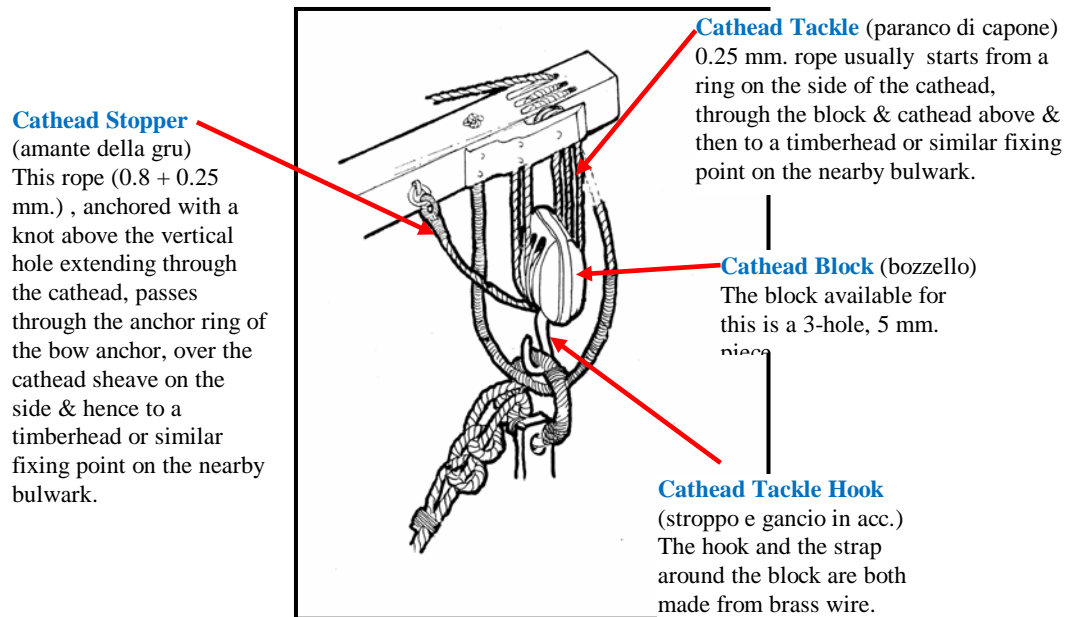


Figure 78: Typical Cathead Rigging

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.

The drawings for both capstans are at a scale of 2:1 – the stated 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



Figure 79: Typical Form for Main Capstan (eight whelps)

Galley 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 truly 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 scrap 10 mm. plywood.
- Some scrap mahogany plywood was glued on top and then sanded back to 1.5 mm. thickness.
- The base of the stove itself was created from some 5 mm. thickness scrap mahogany
- The two 'hotplates' were small sections of 8 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 curved base was made from some scrap 5 mm. mahogany reduced down to 4 mm. It represents two layers 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.

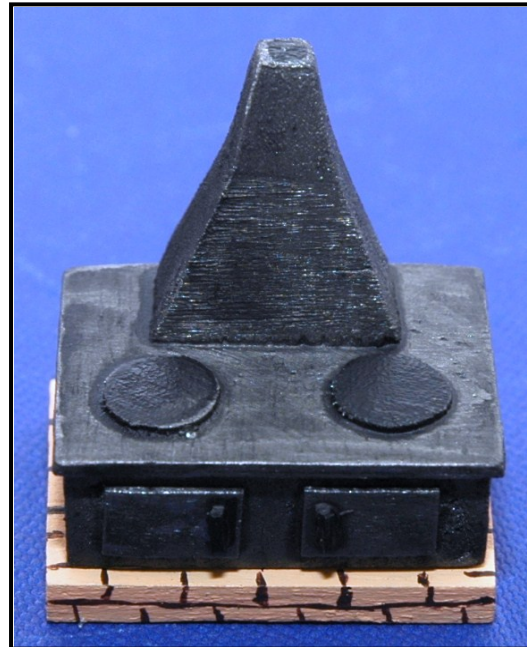


Figure 80: Complete Stove

Main Deck Guns (12-pounders)

There are fourteen guns complete with carriages that must be placed onto the Main Deck. Since the gun structures are totally visible, much effort needs to be put into creating the gun carriages and associated ropes.

Axle lengths to be cut ...

front: carriage+ 6 mm. wheels + projection = +/- 10.35 + 4.5 + 2.6 = +/- 17.45 mm.

rear: carriage+ 5 mm. wheels + projection = +/- 10.35 + 4.5 + 2.6 = +/- 17.45 mm.

Construction Details (Main Deck carriages)

(based on kit material)

- STEP 1:** Cut wheel axles of length +/- 17.45 mm. from supplied 2 mm. wooden rod (both lengths make an allowance for what would be cotter pin fitting). Slight chamfering of the ends of the axles prevents the wheels – which are a tight fit – from cracking.
- STEP 2:** Glue the carriage down onto the two axles.
- STEP 3:** At the front, create an angled slant on each cheek.
- STEP 4:** Paint the carriage with the colour of your choice (e.g. dark red).
- STEP 5:** Glue on the two front 6 mm. and the two rear 5 mm. wheels. **N.B. before sliding wheels onto the axle, test for a tight fit and, if necessary, utilize a round file to increase the wheel hole diameter.**
- STEP 6:** Create a quoin (wedge-shaped block) to support the rear of the barrel and glue in place. The interior maximum depth from the plan sheet is 6.0 mm. Using this figure, calculate the depth of bed.
- STEP 7:** Determine the inclination of the cannon required and utilize a template to maintain uniformity with all the carriages whilst gluing in the quoin (refer to photo below).
- STEP 8:** Cut 8.5 mm. section of the 1 mm. brass rod to form the cannon trunnions.
- STEP 9:** You may then wish to supplement what is in the kit by using trunnion straps as well as eye & ring bolts.

