

## **Hansa COG 14<sup>th</sup> century**

**SCALE: 1/72**

**Length: 430mm**

**Width: 210mm**

**Height: 330mm**

### **HISTORY:**

The Hansa was a medieval association of German cities which engaged by in long distance business mainly in area of Baltic Sea. An origin of the Hansa is probably possible to find in fellowship of Gotland's merchants in the 12<sup>th</sup> century. Later a main center of the Hansa was in city of Luebeck. Other important hanseatic cities were for example also Hamburg, Koln, Rostock, Danzig, Stralsund, Elblag, Riga and many others. The golden age of the Hansa was a 14<sup>th</sup> century and just the most widely used type of ships in 14<sup>th</sup> century was a Cog. To these days a lot of contemporary illustrations of the Cogs from 14<sup>th</sup> century are survived and also any wrecks were found. This model represents one of largest cog from first half of the 14<sup>th</sup> century.

### **Recommended tool list:**

- 1) Modeler's knife or scalpel
- 2) Mini drilling machine
- 3) Drill bits
- 4) Selection of abrasive paper
- 5) Scissors
- 6) Pliers
- 7) Clothes pegs or crocodile clips
- 8) Pencil
- 9) Rule
- 10) Set of needle files
- 11) Sewing machine
- 12) Electric plank bender

### **Before you begin:**

Before you begin to build the model it is necessary with a vengeance read building instructions and plans. Also chronology of assembly steps is necessary to keep. You check if the parts go together before you glue it respectively you make any corrections with sandpaper. During the gluing, painting, lacquering and at work with another chemical materials is necessary well ventilated in your working room. You cut the parts from sheet until actually required for fitting. You cut by knife only in direction off ward your body so that you head to injury risk.

### **Coloring:**

Medieval ships were protected against influence of salt water and woodworms by a mixture of tar and thanks to it the hull of ships was a reddish-brown or brownish-black color. This effect is possible to get by staining of the wood by dark wood stain. It is recommended to use the wood stain before gluing of the parts. Decks of the ships were probably in naturally color of wood. Anchors and other metal parts were a black color.

### **Bending of wooden strips:**

The Wooden strips will be more flexible if you will boil it in hot water about 10-15 minutes. You can bend the strips along any cylindrical area but ideal is using of special plank bender (it

would be best to use electric plank bender). If you need to do very small radius so you must bend it in more steps.

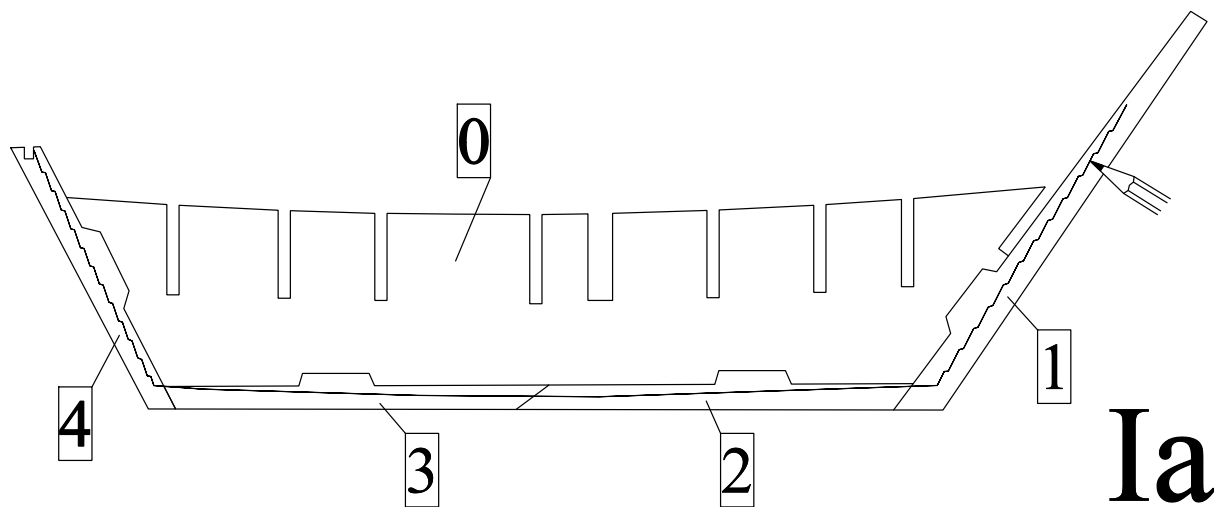
### **Work with photo etched parts:**

Very carefully cut out parts by a pliers or scissors from a sheet. The photo etched parts glue by fast-drying adhesive.

### **Model building process:**

#### **I) Keel:**

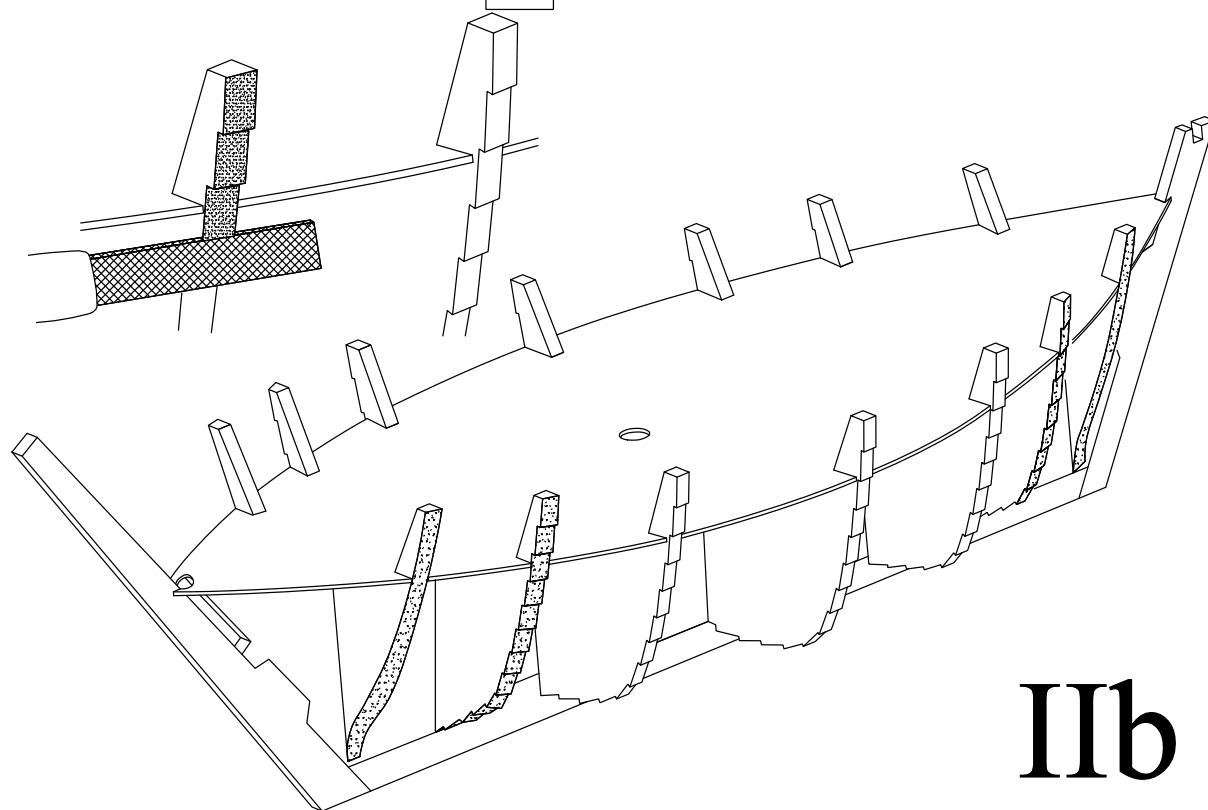
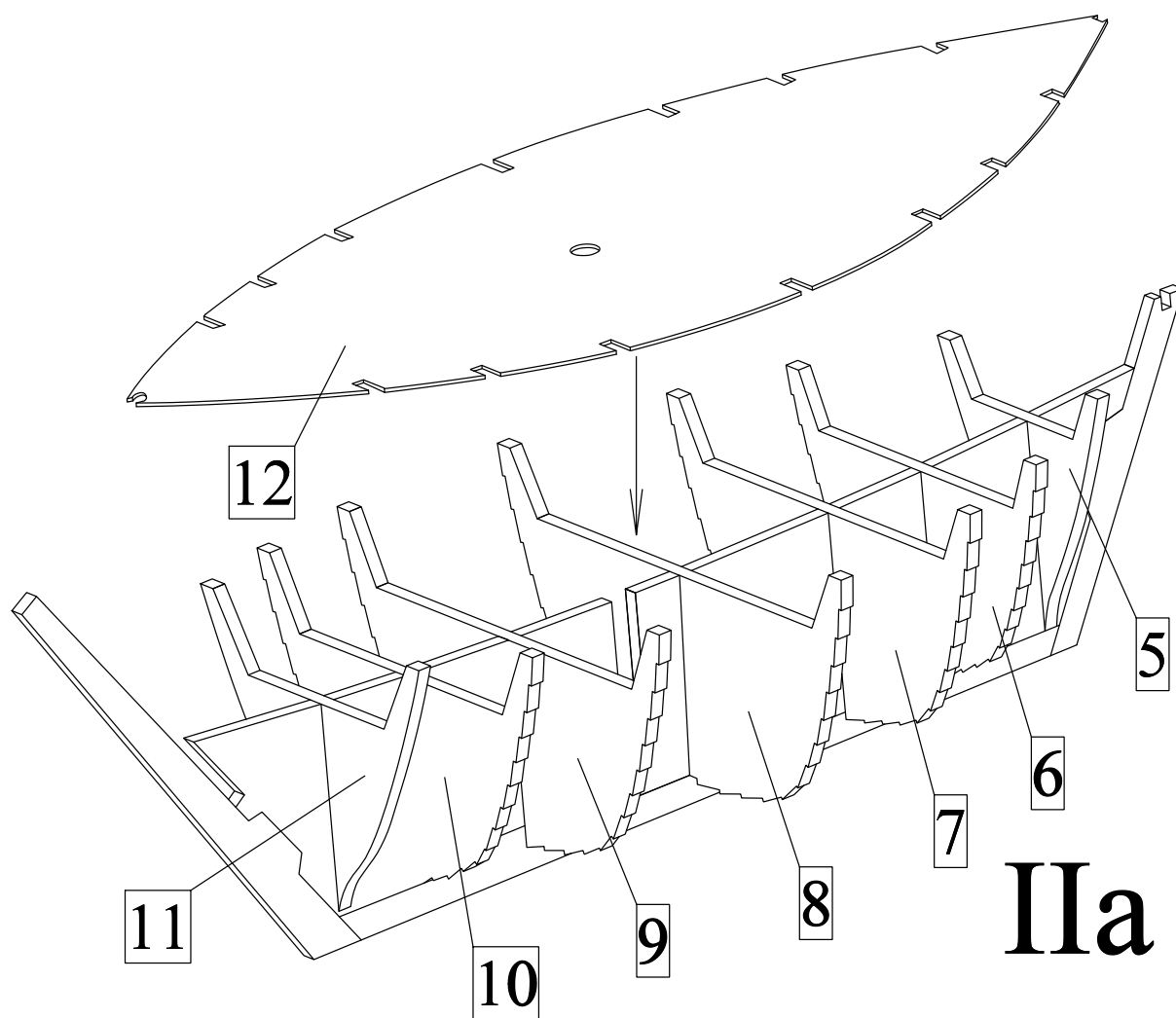
a) Glue together parts 0-4. During the gluing take care about flatness of the keel. Then draw on both sides contours of planking by a pencil. The contours measure from plan 1A.



#### **II) Framing of a hull:**

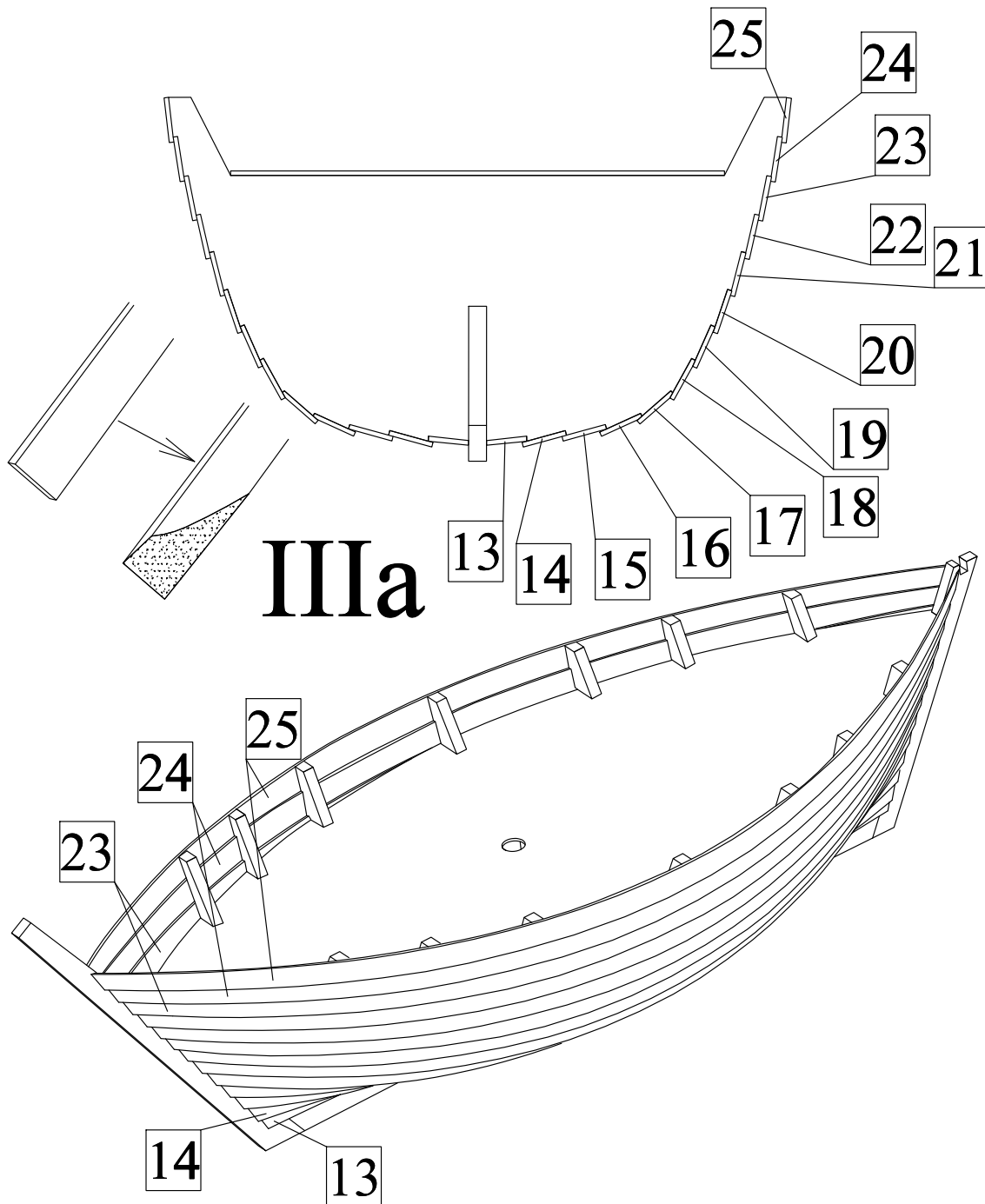
a) Push frames 5-11 into the keel but do not glue it yet! Then push a deck 12 to the frames and then glue together the keel, deck and frames too.

b) Sharpen the frames into required shape for a reason of trouble free gluing of planking (properly sharpen mainly frames 5, 6, 10 and 11).

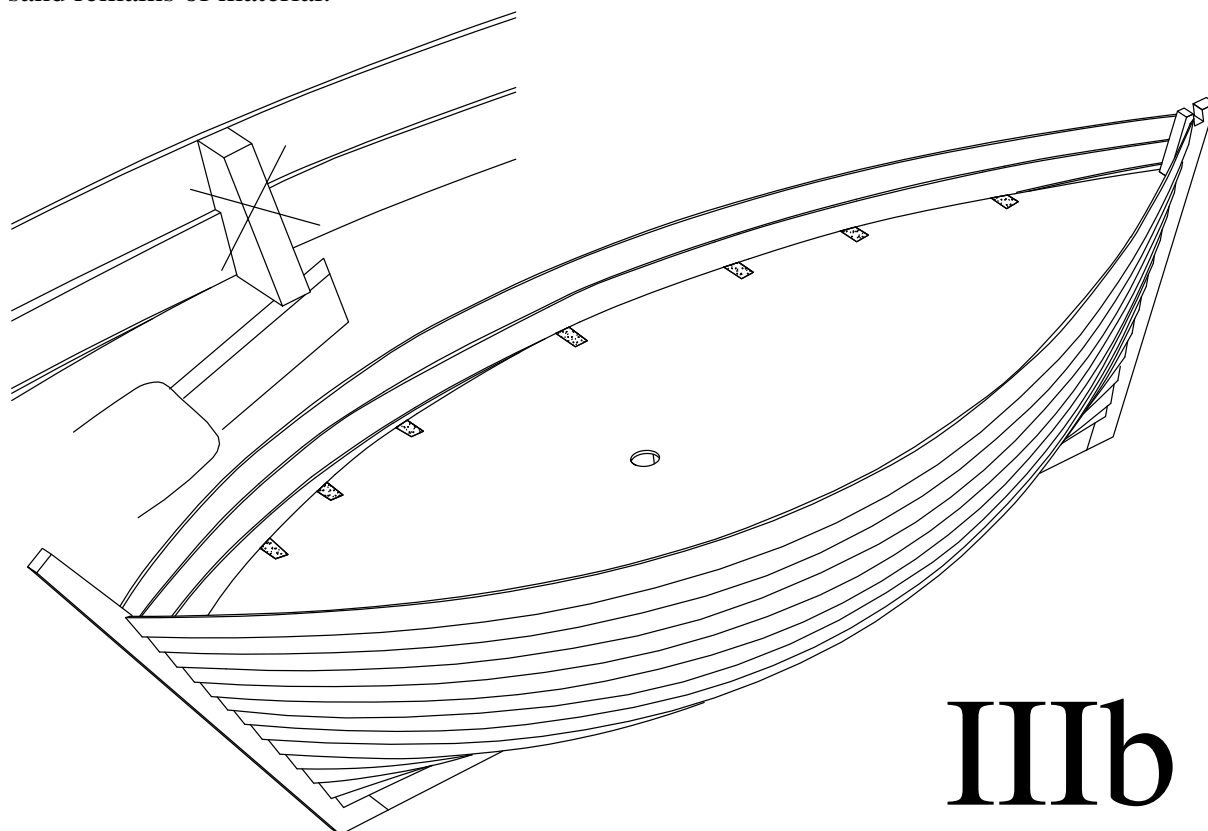


### III) Hull planking:

a) The medieval Cogs were built by clinker planking method. It means that neighbor planks are overlapped. For this reason it is very important to keep exact order of gluing of the planks! First glue lowest planks 13 to the frame of the hull. Every planks designed in this kit are a little longer than it is need because the final length of planks depend on the shape of sharpened frames described in step IIb. Before gluing of the planks to the frames it is also need to sharpen the ends of the planks. Then start to glue the planks to a bow of the ship and subsequently glue it to frames from bow to stern. Before you glue it to the stern shorten the planks into required length. Then glue also other planks in sequence from lower number 14 to the higher 25. An arrow in the plan shows an orientation of the planks.

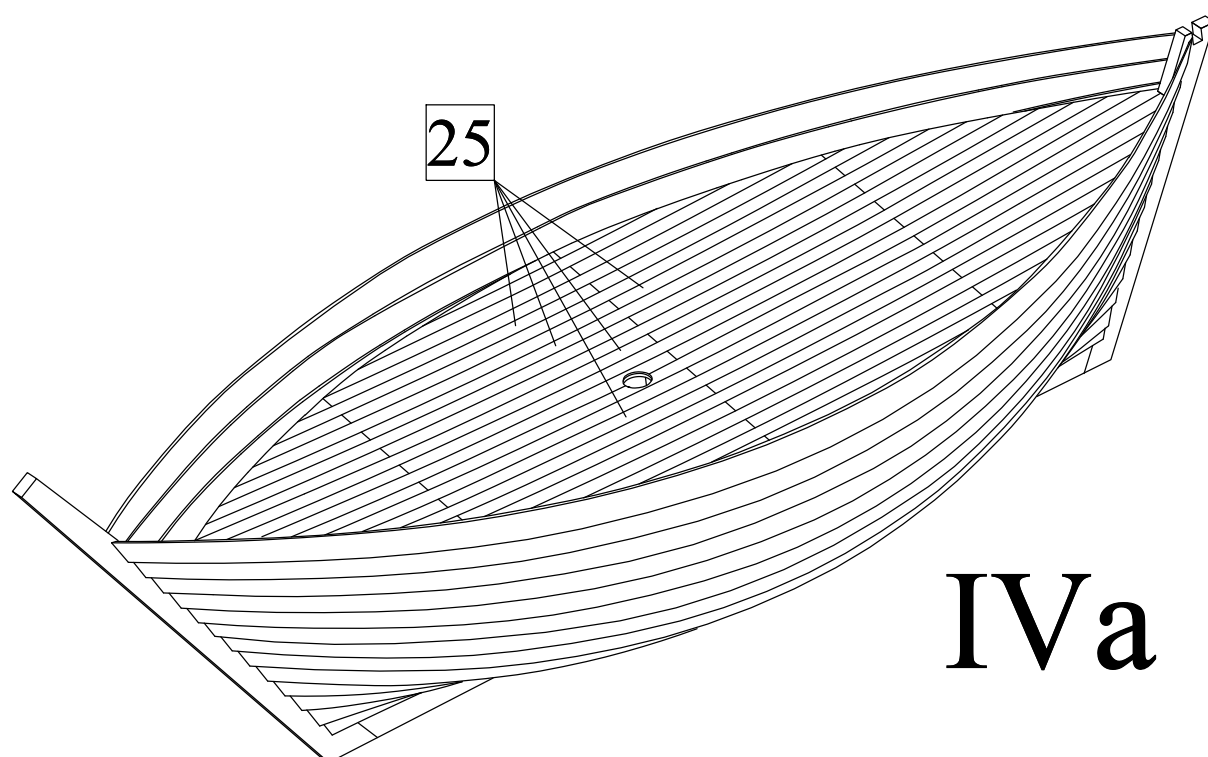


b) By a sharp knife cut out parts of the frames which exceed the deck. Then by a sand paper sand remains of material.



#### IV) Deck:

a) Planking the deck by strips 25. The planking of the deck is shown in 1:1 scale in the plan 1A.



### V) Details I:

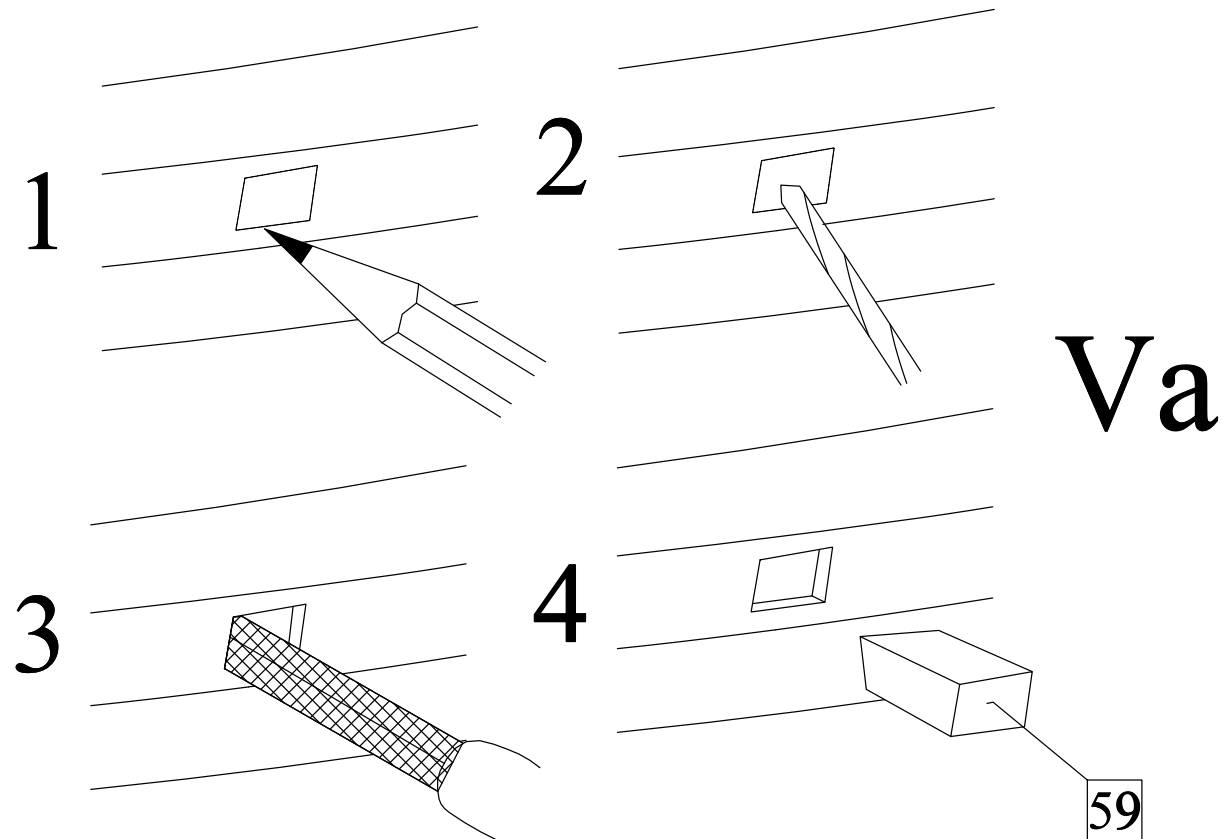
a) Glue beams 59 to the hull

-1) first by a pencil draw contours of the beams on the hull. The position of the beams is shown in the plan 1A.

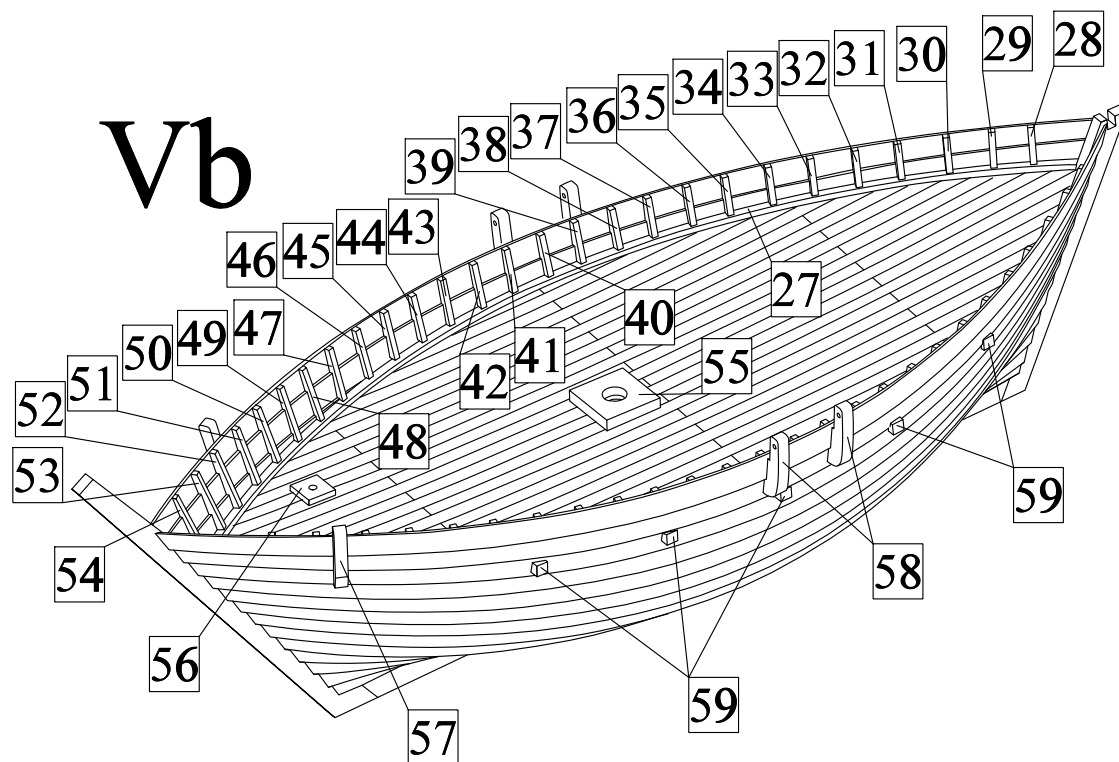
-2) then drill to the contours 3mm holes

-3) then by a four-cornered needle file sharpen the holes into needed shape.

-4) finally cut out short beams from strip 4x4mm and then glue them into the sharpen holes.

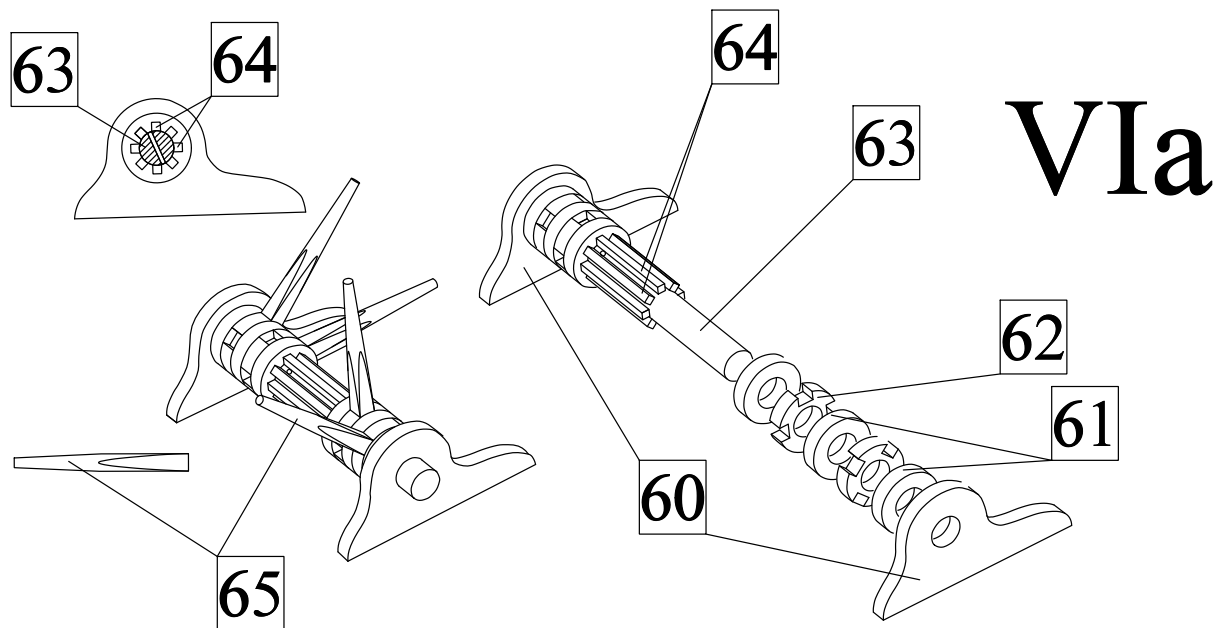


b) Glue waterways 27 to the deck and then glue frames 28-54 to the hull. Positions of the inner frames are shown in the plan 1A. Then glue a mast foot 55 and parts 56 to the deck. Then glue reinforcements 57 and 58 to sides of the hull. Their exact position is shown in the plan 1A.

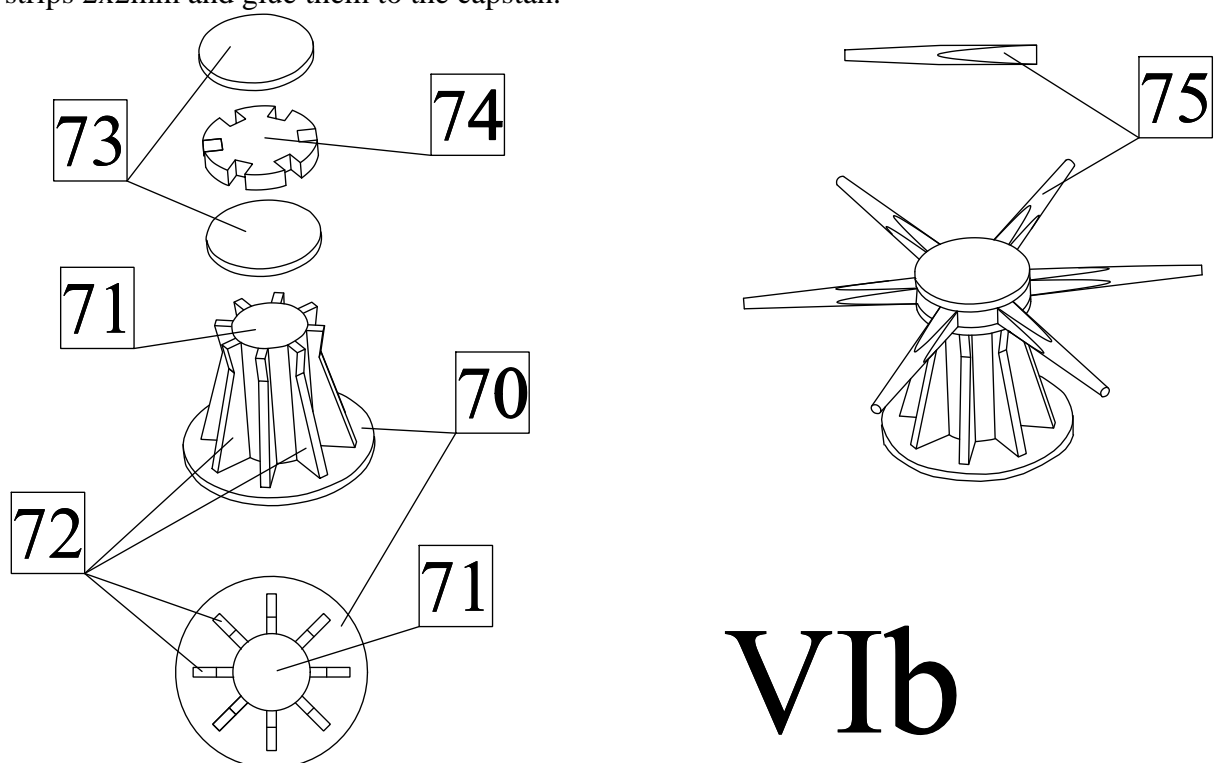


## VI) Details II:

a) Make a windlass. The windlass is in 1:1 scale shown in the plan 3G. First cut out a 4mm dowel for axe of the windlass 63. Then cut 8 pieces from a strip 1x1mm and glue them to the axe of windlass 63. The glue also parts 61 and 62 to the axe of windlass. The parts 62 make mutually angle 45 degree. To the axe of windlass drill a 1mm hole for a rope for control of a yard. Then side parts of the windlass 60 lace to the axe but do not glue them! Finally from strips 2x2mm make four arms of the windlass 65 but do not glue them to the windlass yet!



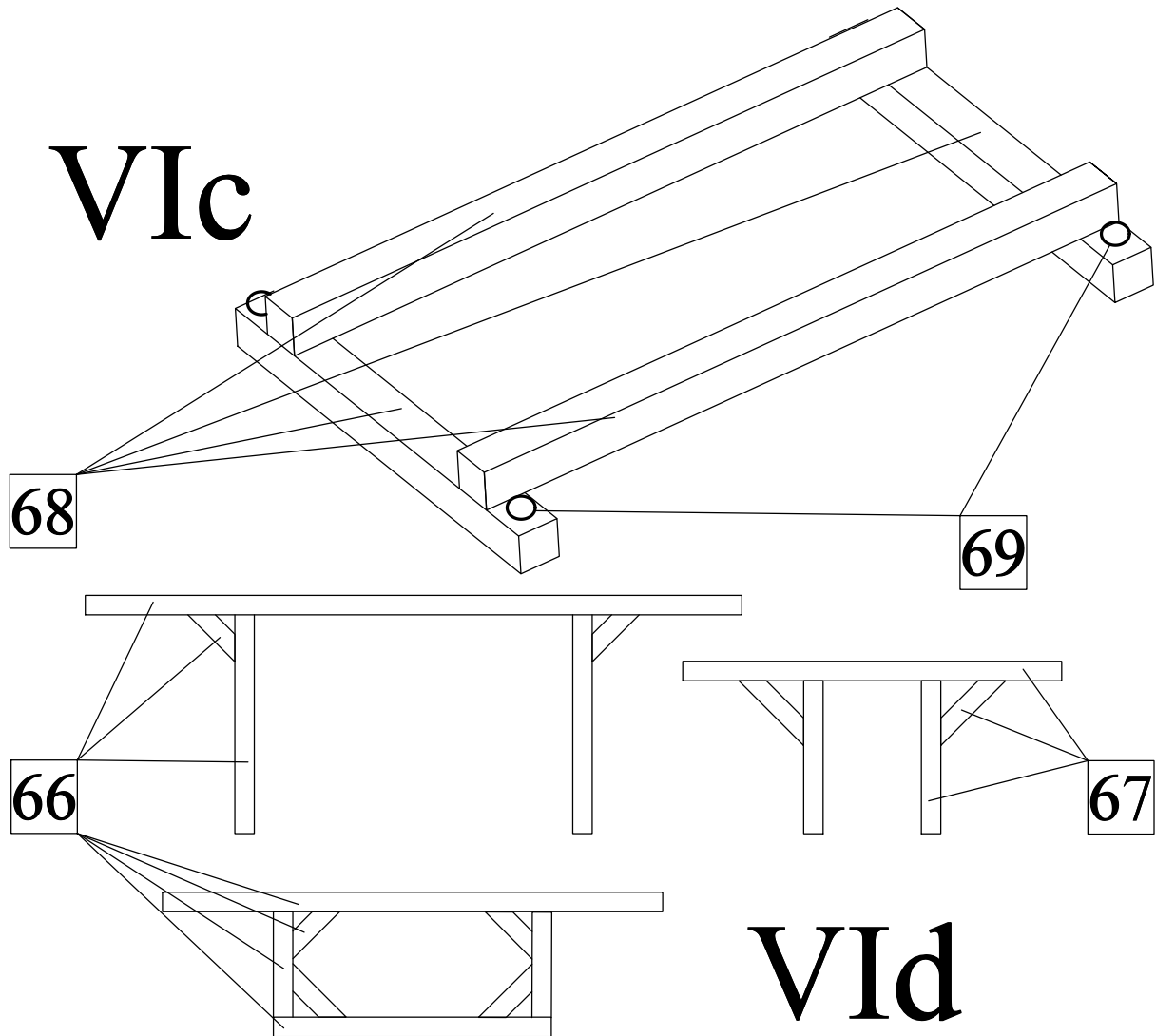
b) Make a capstan. The capstan is in 1:1 scale shown in the plan 3G. First cut out from dowel 8mm an axe of the capstan 71. Then glue the axe of capstan to base 70. Then glue side reinforcement 72 and parts 73 and 74 to the axe of capstan. Finally make six arms 75 from strips 2x2mm and glue them to the capstan.



c) Make a stand of a boat 68 from strips 3x3mm. Then drill into the stand 1mm holes for eyebolts. Then glue into the holes the eyebolts 69. The stand is in 1:1 scale shown in the plan 3I.



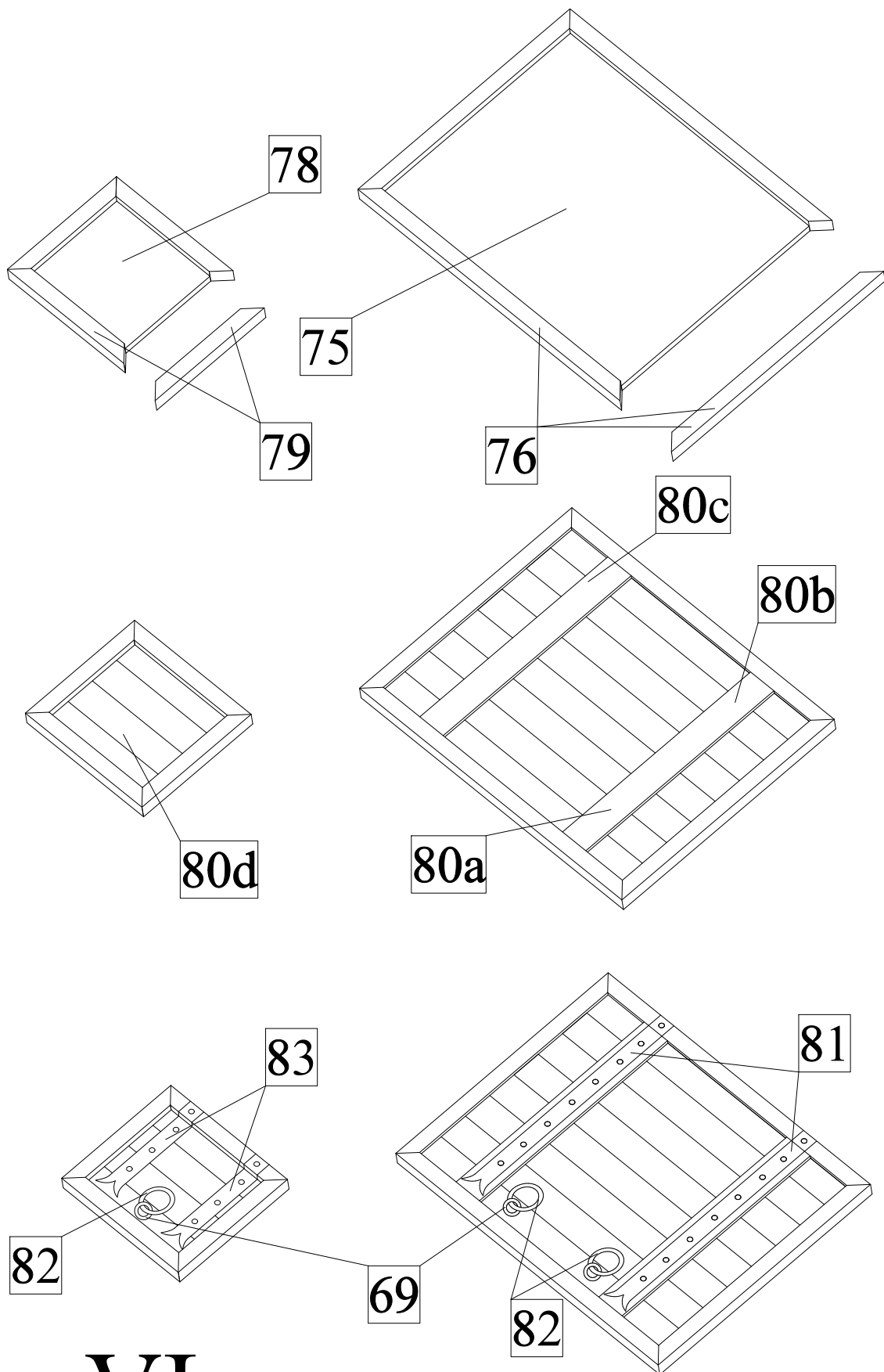
d) Make a support construction of a fore castle 67 and an aft castle 66. Both of the constructions are in 1:1 scale shown in the plan 3H.



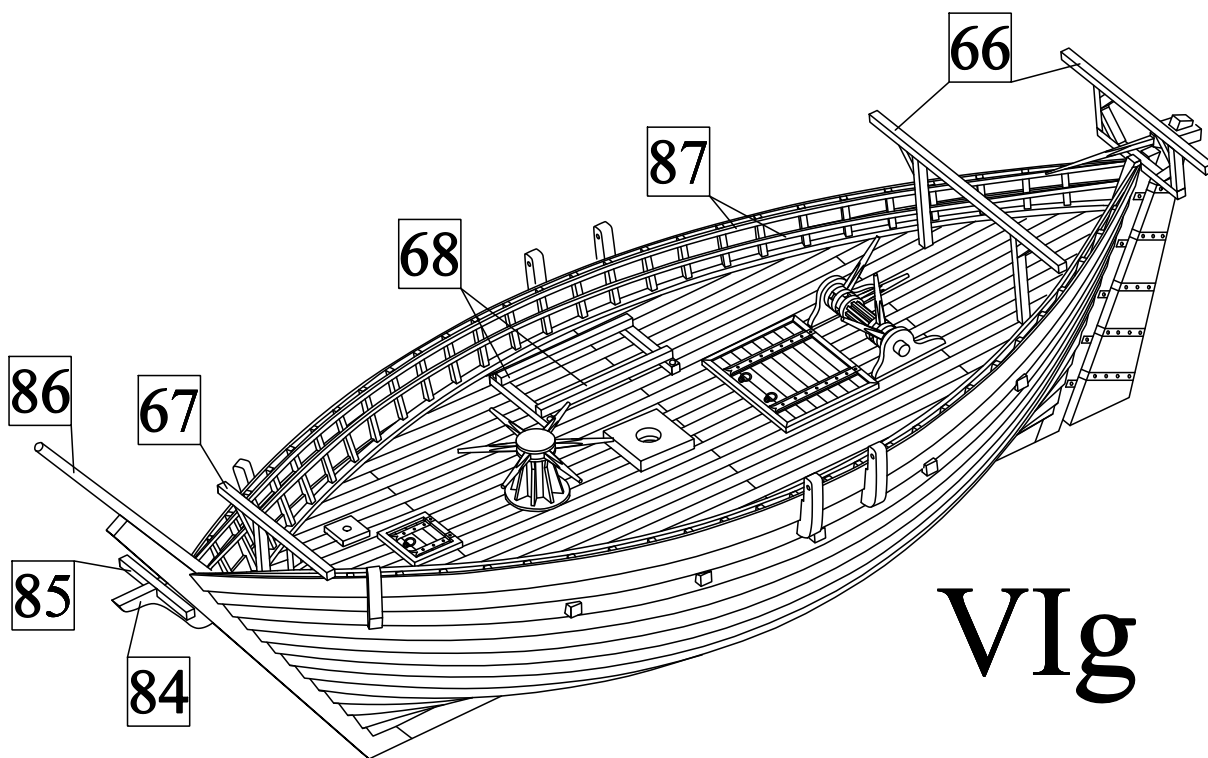
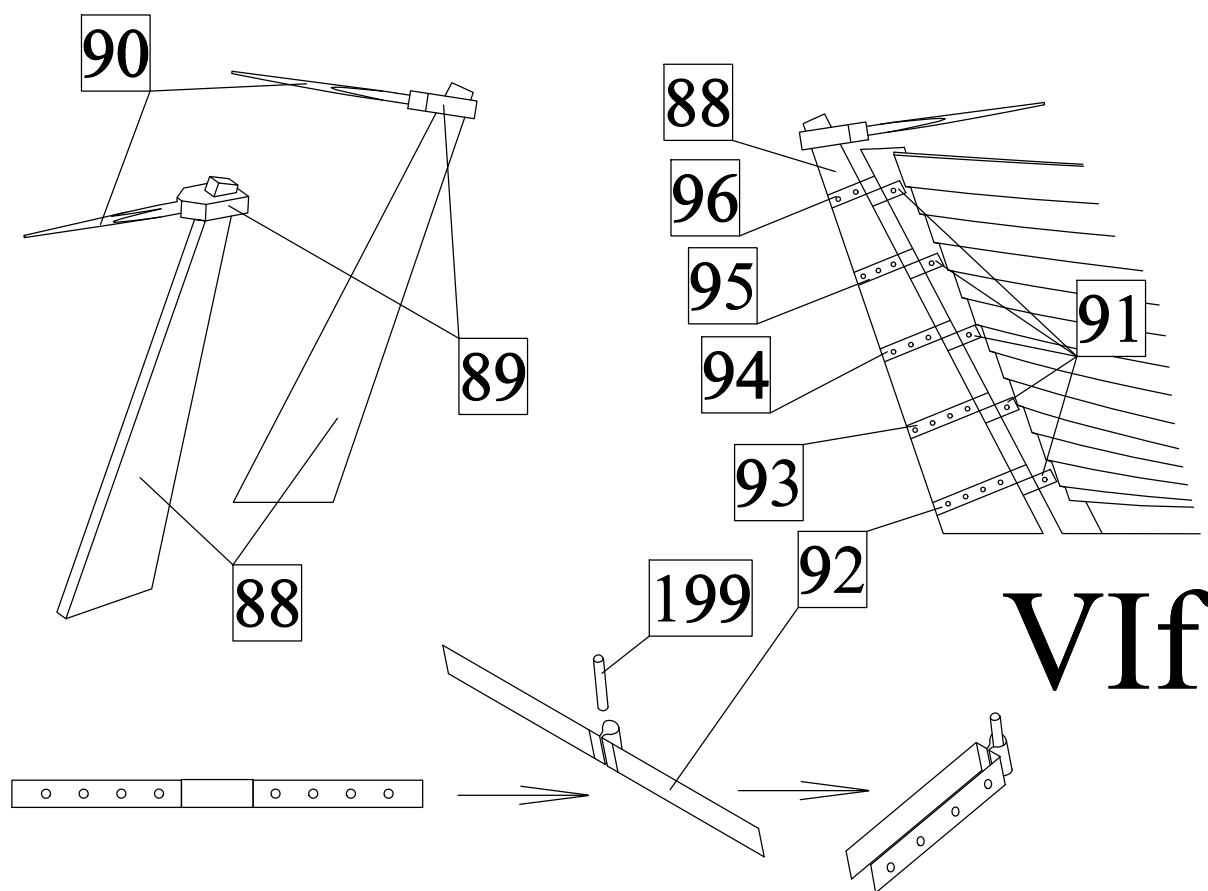
e) Make hatches on the deck. The hatches are in 1:1 scale shown in the plan 3G. First border parts 75 and 78 by strips 2x2mm 76 and 79. Then make a planking of the hatches 75 and 78 by strips 80. Finally glue to the hatches also fitting 81 and 83 and eyebolts with rings 69 and 82.

f) Make a rudder. By using of a sand paper make an arm of the rudder 90 from strips 2x2mm and then glue it to the part 89. Then glue the part 89 to the rudder 88. Then glue hinges of the rudder 91 to the stern and hinges 92-96 to the rudder. Then glue pins 199 to the hinges 92-96 and then whole rudder install into the hinges 91.

g) Glue reinforcement 84 and transverse beam 85 to the stem. Exact position and proportions are in 1:1 scale shown in the plan 1A. Make a bowsprit 86 from a dowel 4mm. The bowsprit is in 1:1 scale shown in the plan 3F. Glue beams 87 to the inner framing 28-54. Then glue to the deck also support construction of fore and aft castle, windlass, capstan, both hatches and stand of the boat. Exact position of the parts on the deck is in 1:1 shown in the plan 1A.

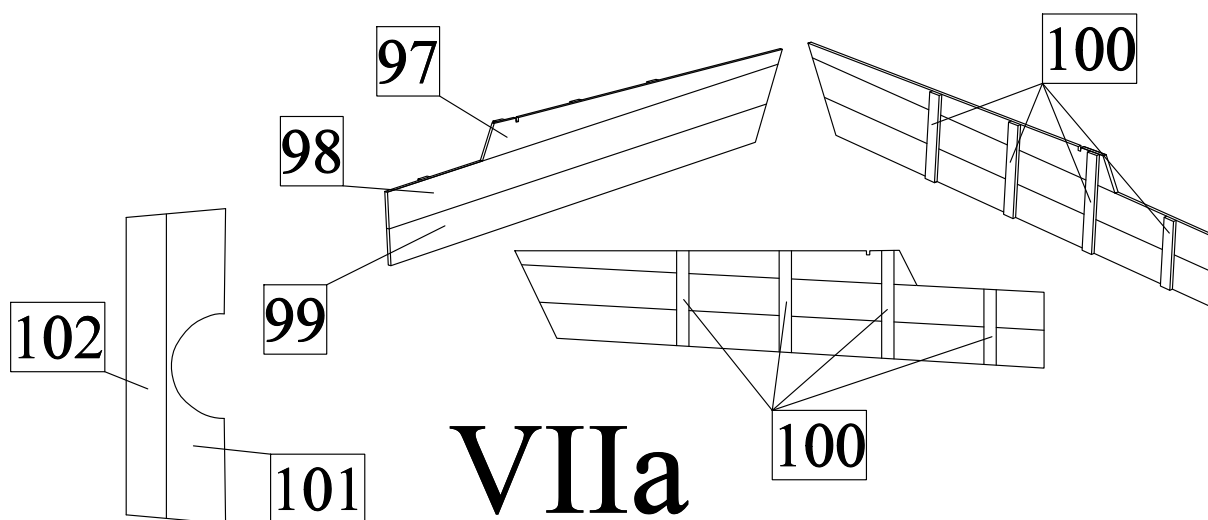


Vle

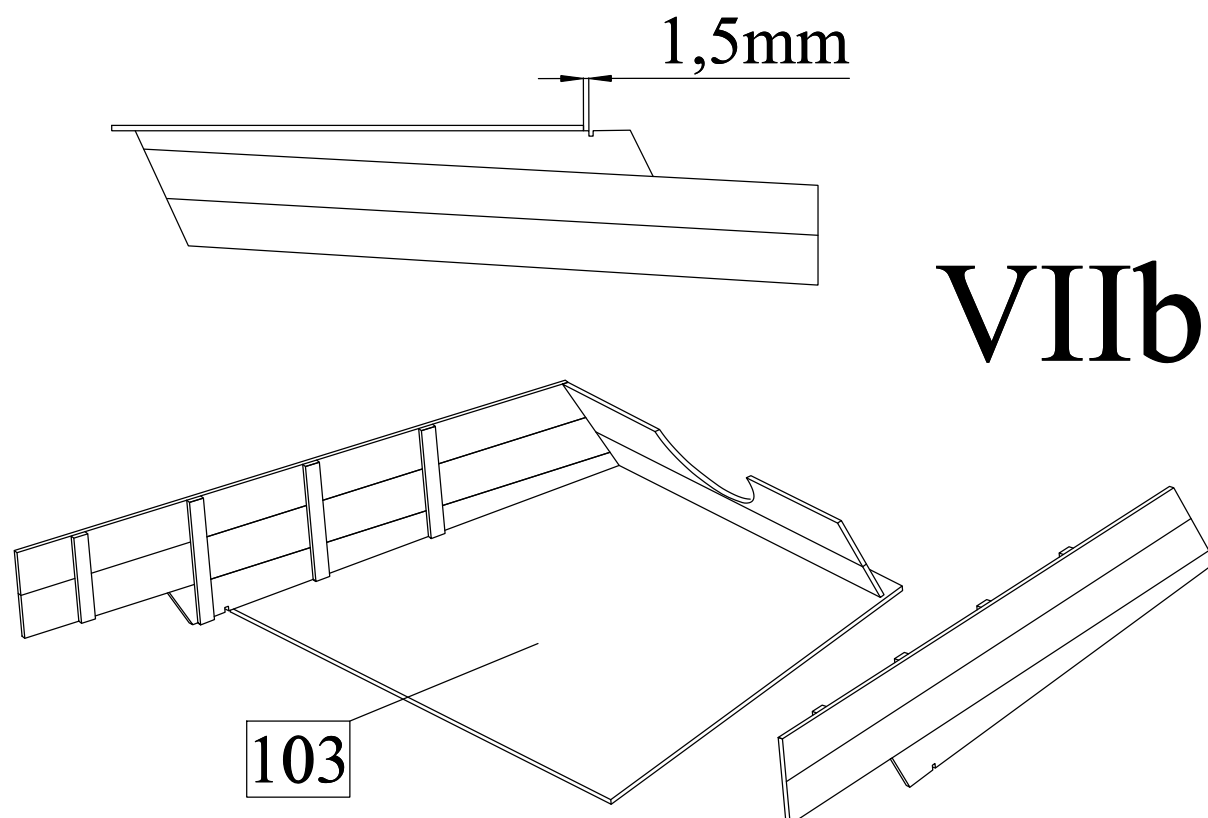


### VII) Aft castle:

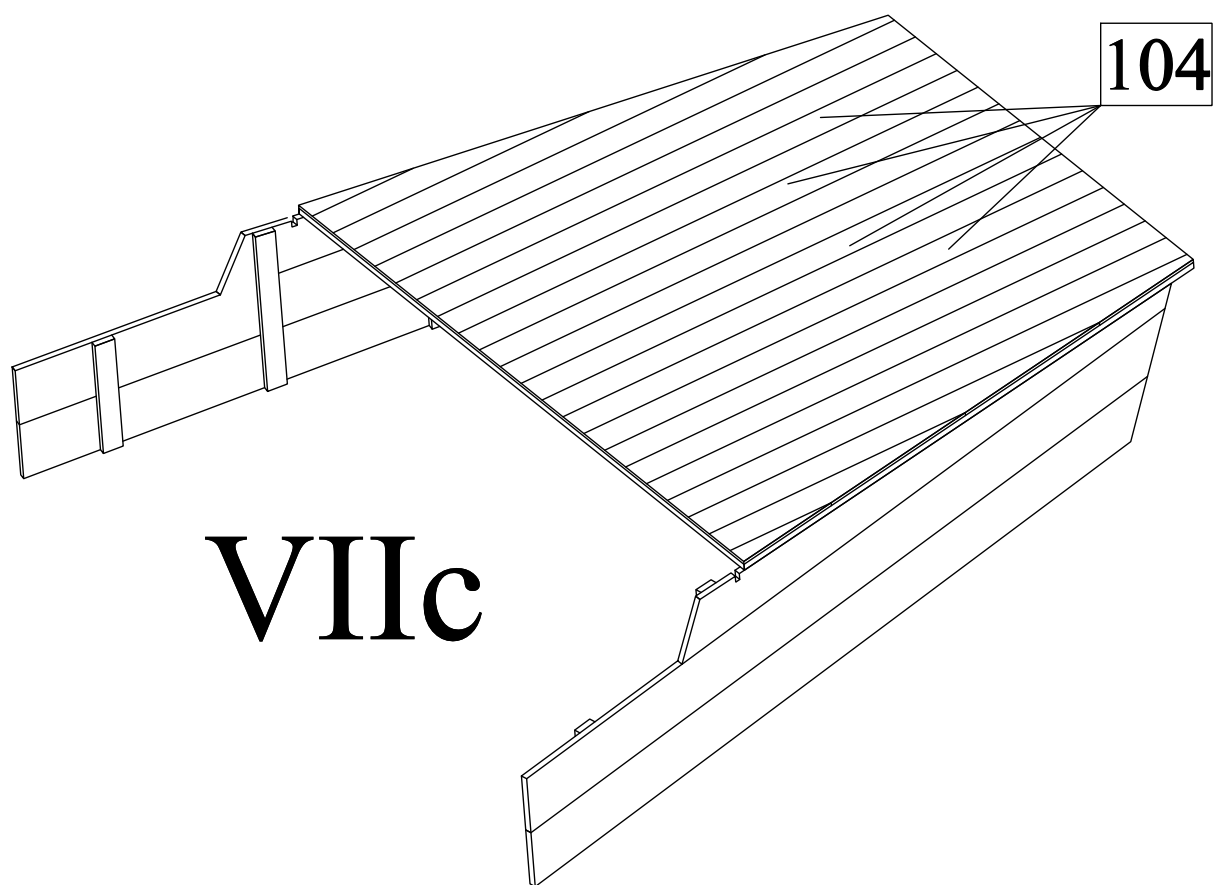
a) Glue together parts 97-99 of the side walls of the castle. Reinforce the inner side of the walls by strips 100. From parts 101 and 102 make an aft side of the castle. Side and aft walls of the castle are in 1:1 scale shown in the plan 3H.



b) Side and aft walls glue to a deck of the aft castle how it is shown below.

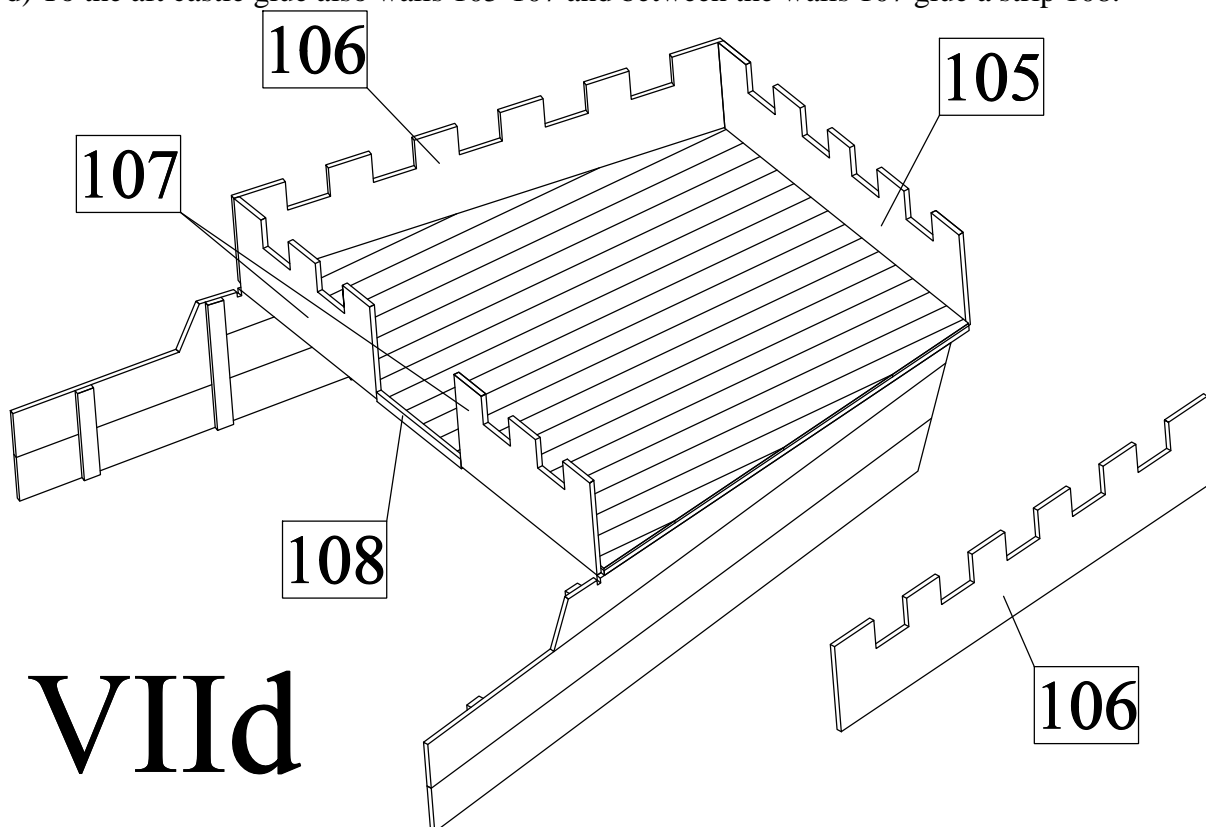


c) Plank a deck of the aft castle by strips 104.



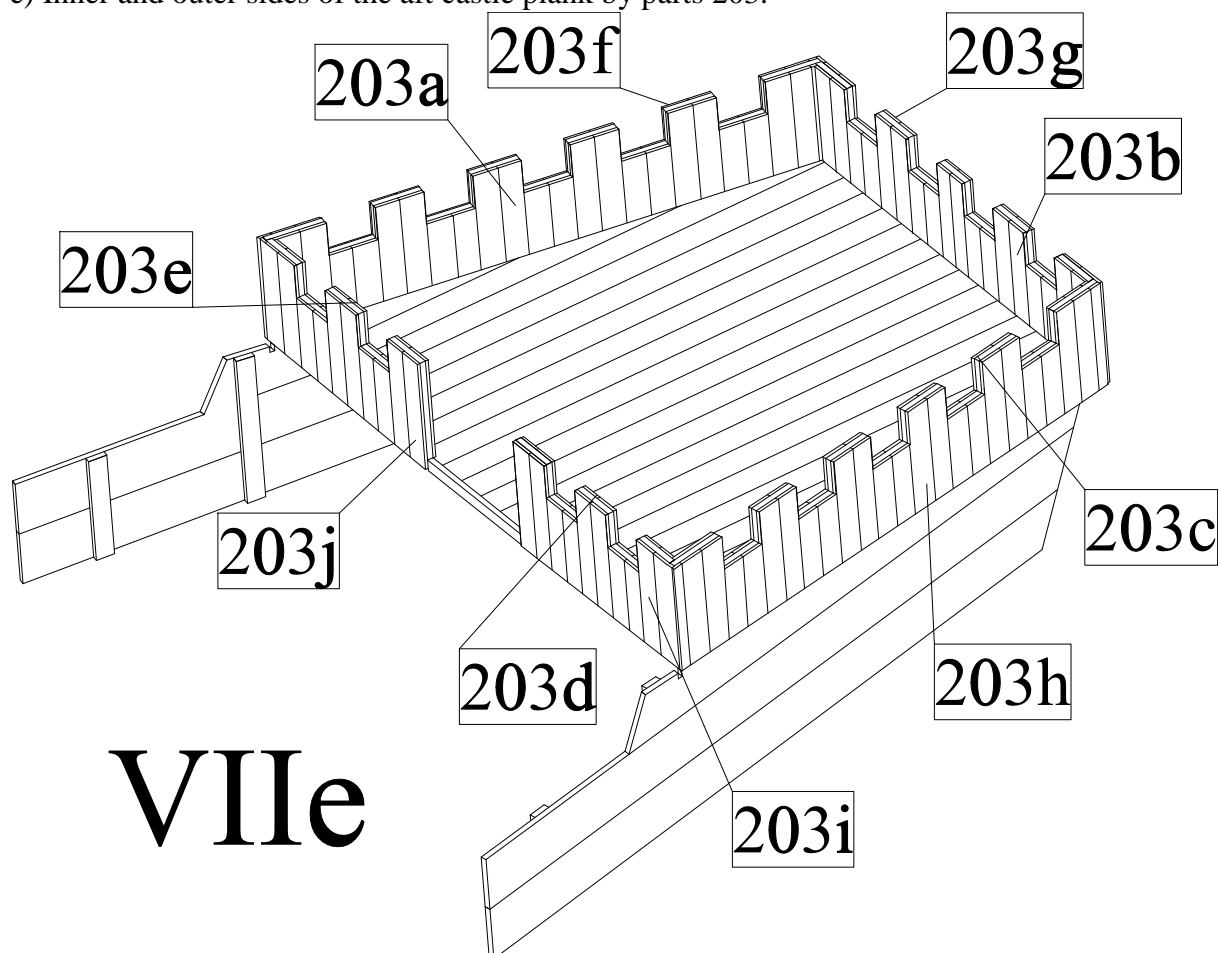
VIIc

d) To the aft castle glue also walls 105-107 and between the walls 107 glue a strip 108.



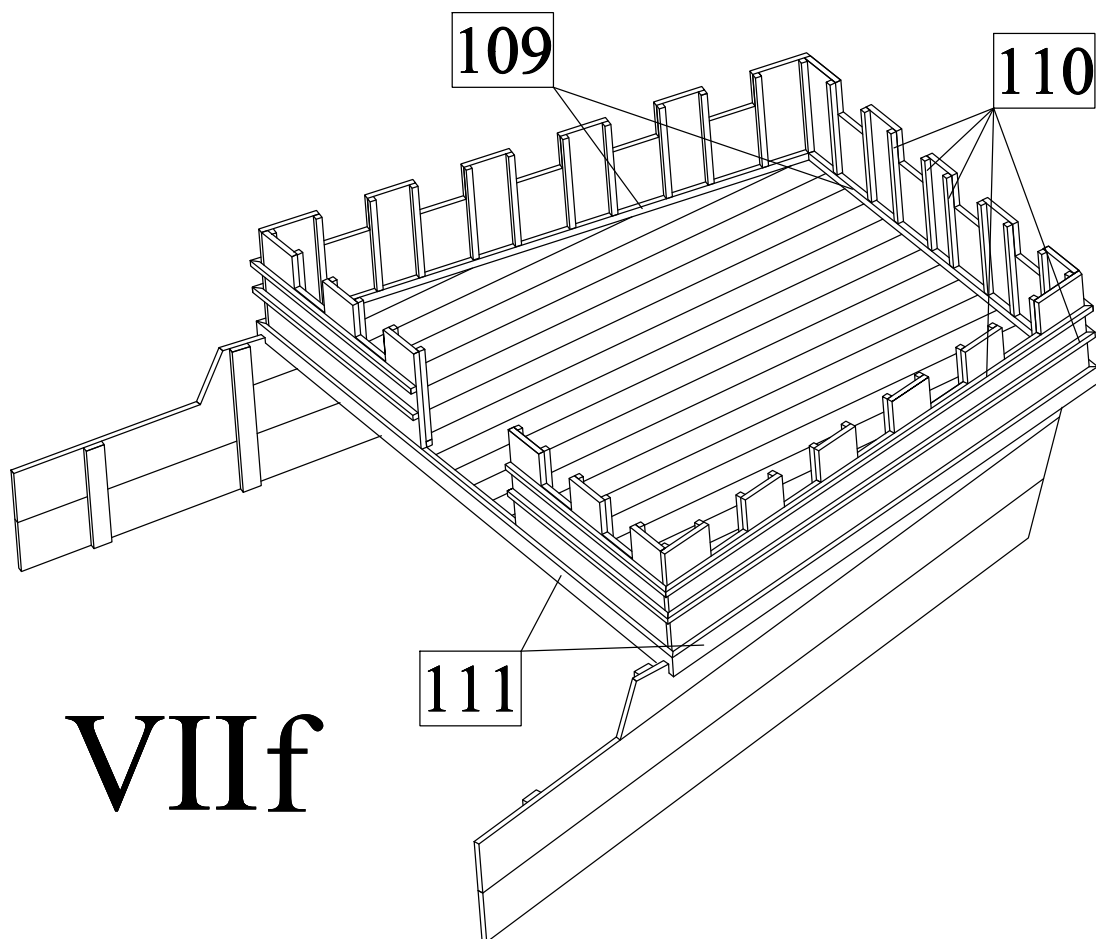
VIId

e) Inner and outer sides of the aft castle plank by parts 203.

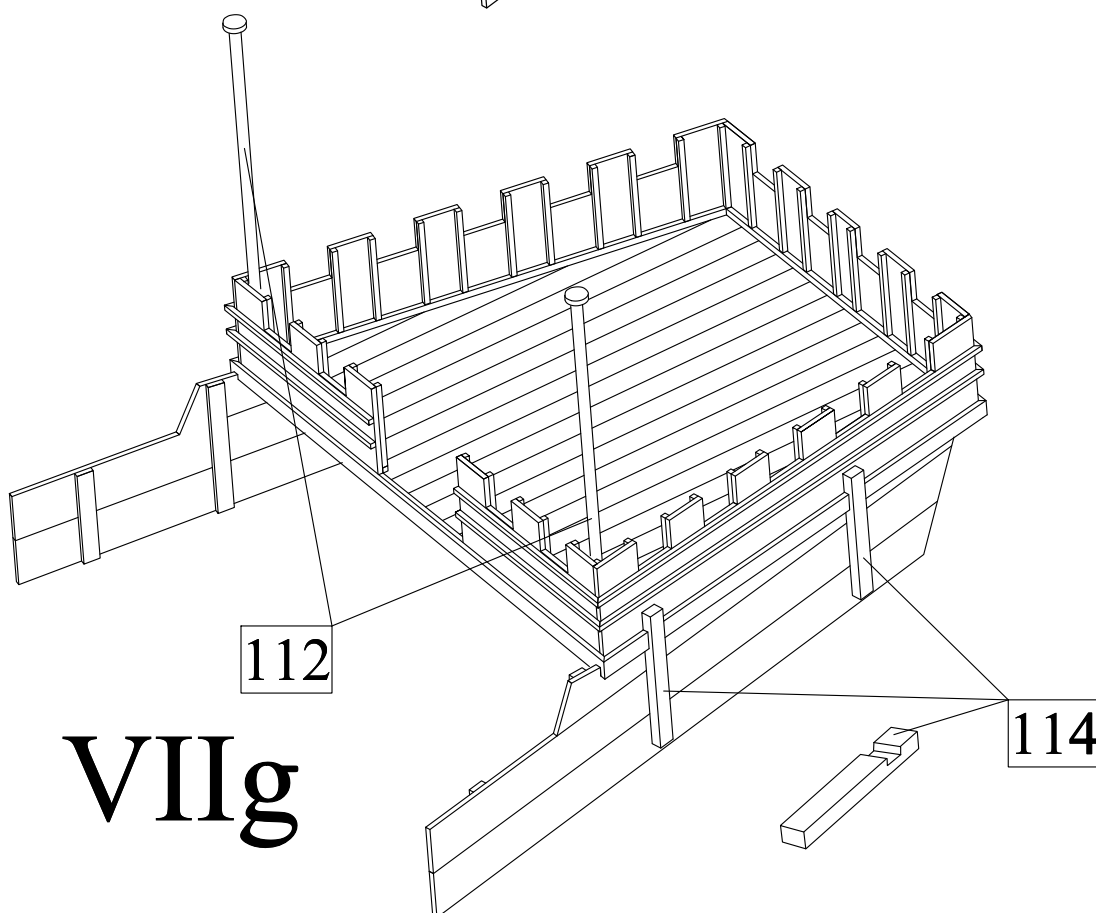


f) Border the deck of the aft castle by strips 109 and then glue to the castle also inner and outer reinforcement beams 110 and 111.

g) Make two flag mast from a dowel 3mm. To the top of the flag masts glue caps 113. Then glue the flag masts to the aft castle. Then glue to the castle also reinforcement beams 114. The aft castle is in 1:1 scale shown in the plan 3H.



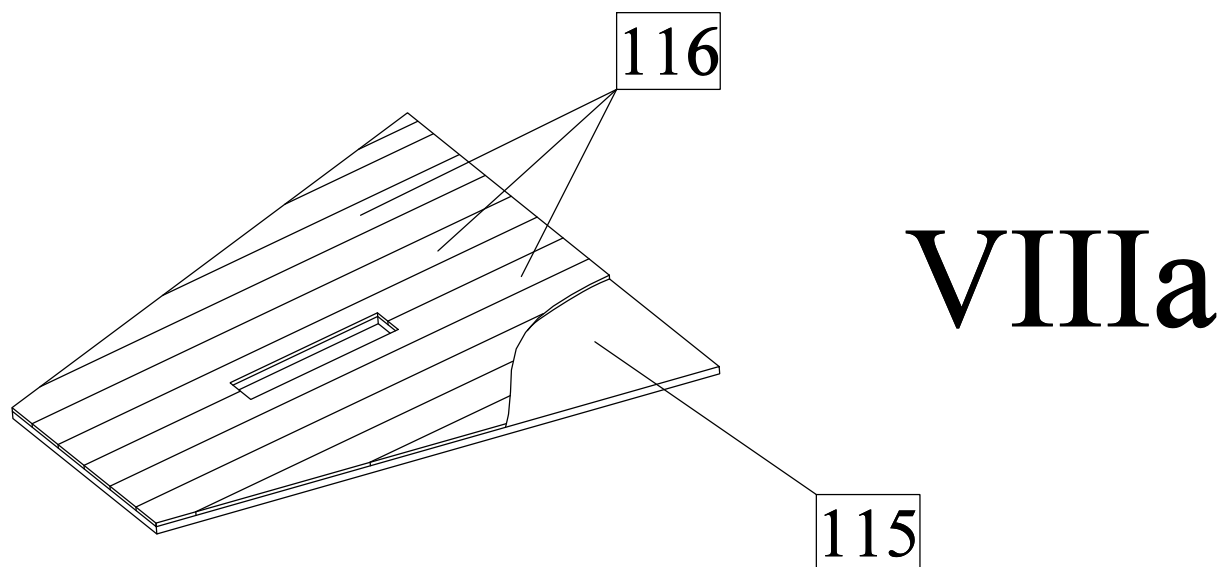
VII f



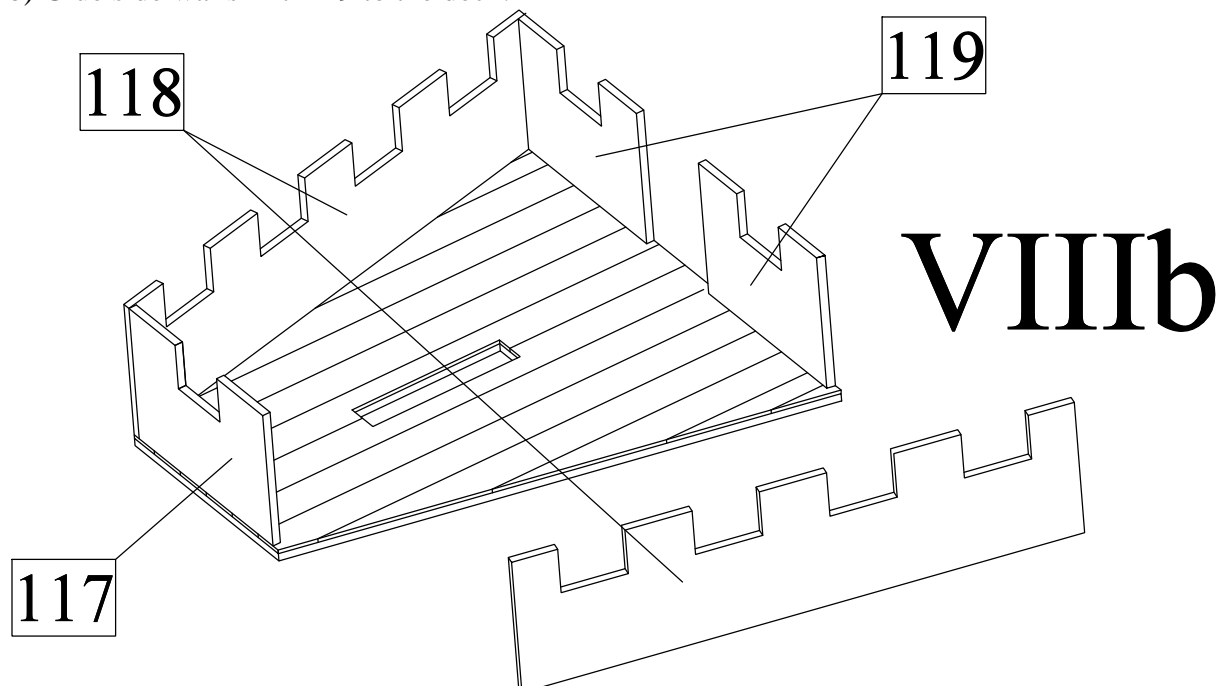
VII g

### VIII) Fore castle:

a) Plank a deck of the fore castle 115 by strips 116.

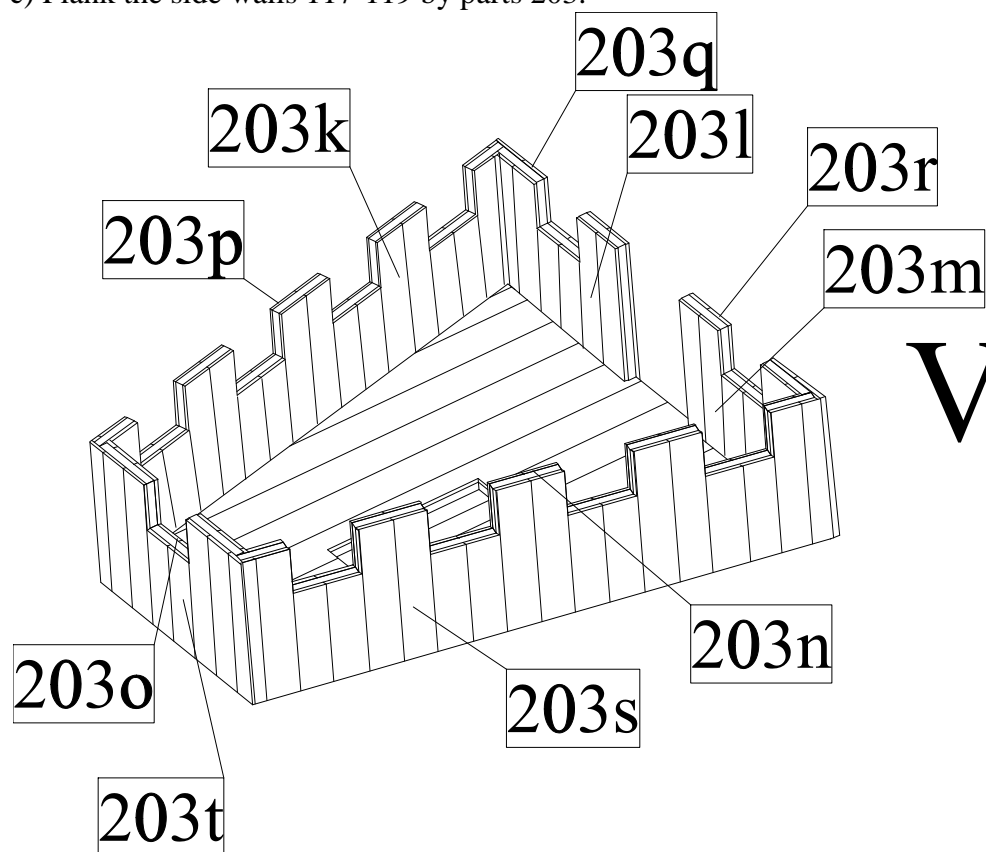


b) Glue side walls 117-119 to the deck.



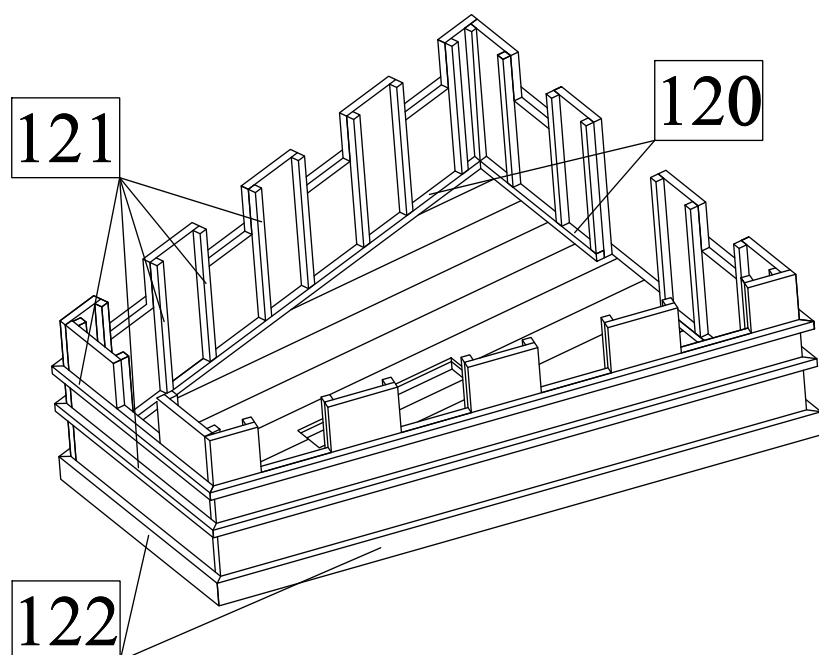


c) Plank the side walls 117-119 by parts 203.



VIIIc

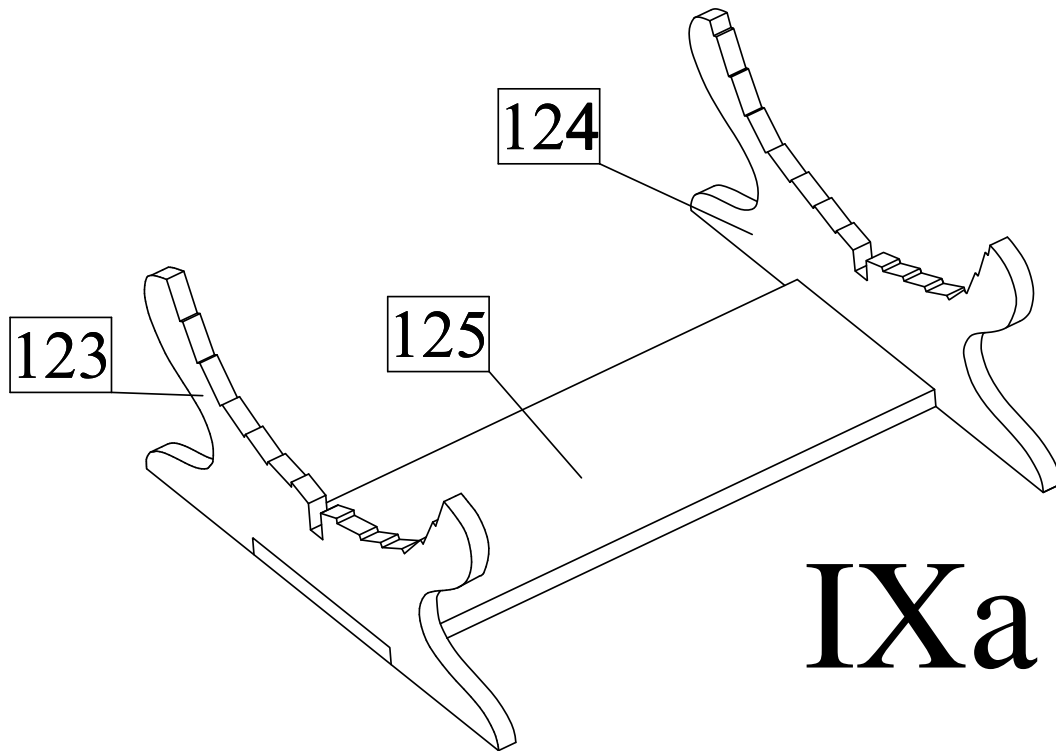
d) Border a deck of the fore castle by strips 120 and then glue to the walls also inner and outer reinforcement beams 121 and 122. The fore castle is in 1:1 scale shown in the plan 3H.



VIIIId

### IX) Details III:

a) From parts 123-125 make a stand of the model.



b) Make a boat. First glue frames 127-137 to a keel 126. Then glue frames 138 and 139 to the deck 140 and then glue them to the keel 126.

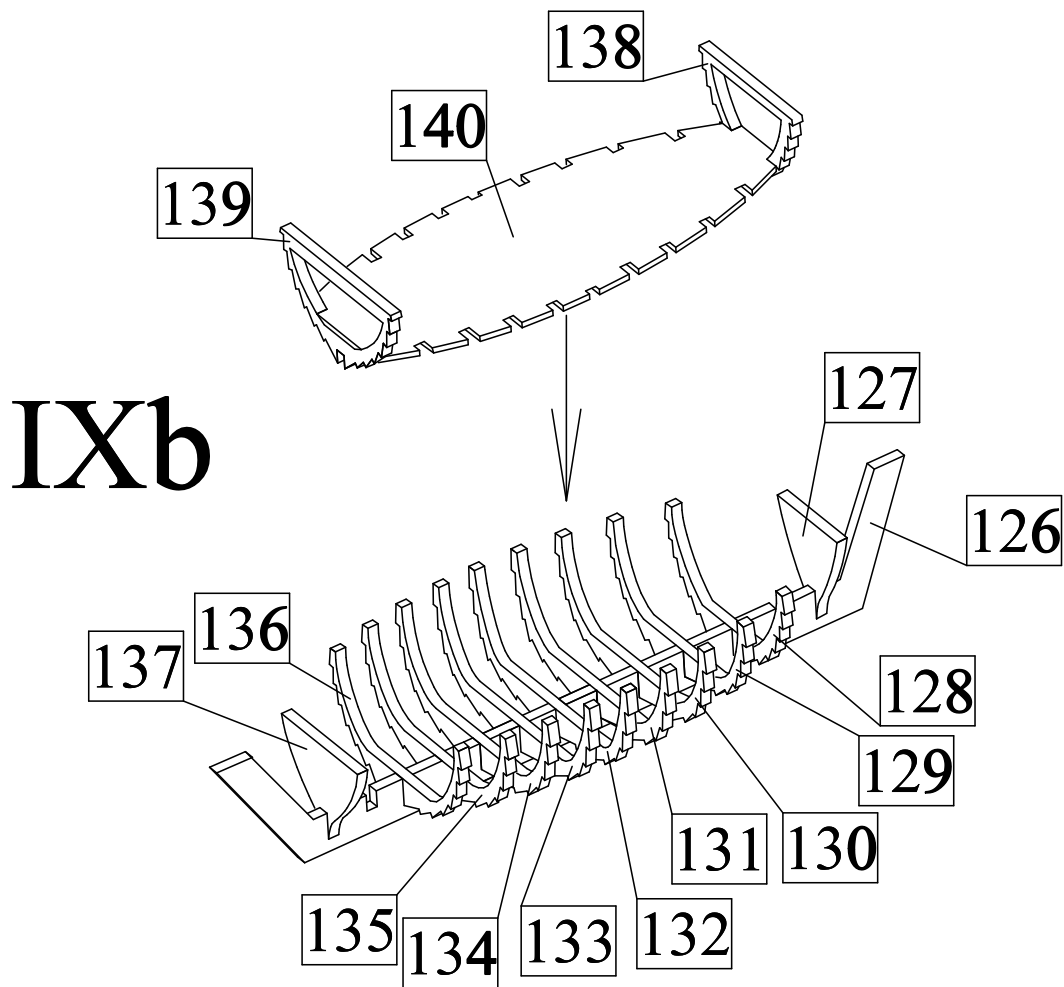
c) Glue bow deck 143 and stern deck 144 to the boat. Plank the bow 143, stern 144 and middle 144 decks of the boat by parts 141. Glue banks 145-148 to the frames 129, 131, 133 and 135. Glue hinges 200-202 to a rudder of the boat and to a stern of the boat.

d) Make a planking of the boat. The planking is same type like planking of the Cog it means clinker planking with overlapped planks. For this reason first glue lower planks 149 and then stepwise other planks 150-156. Finally glue an upper edging 157.

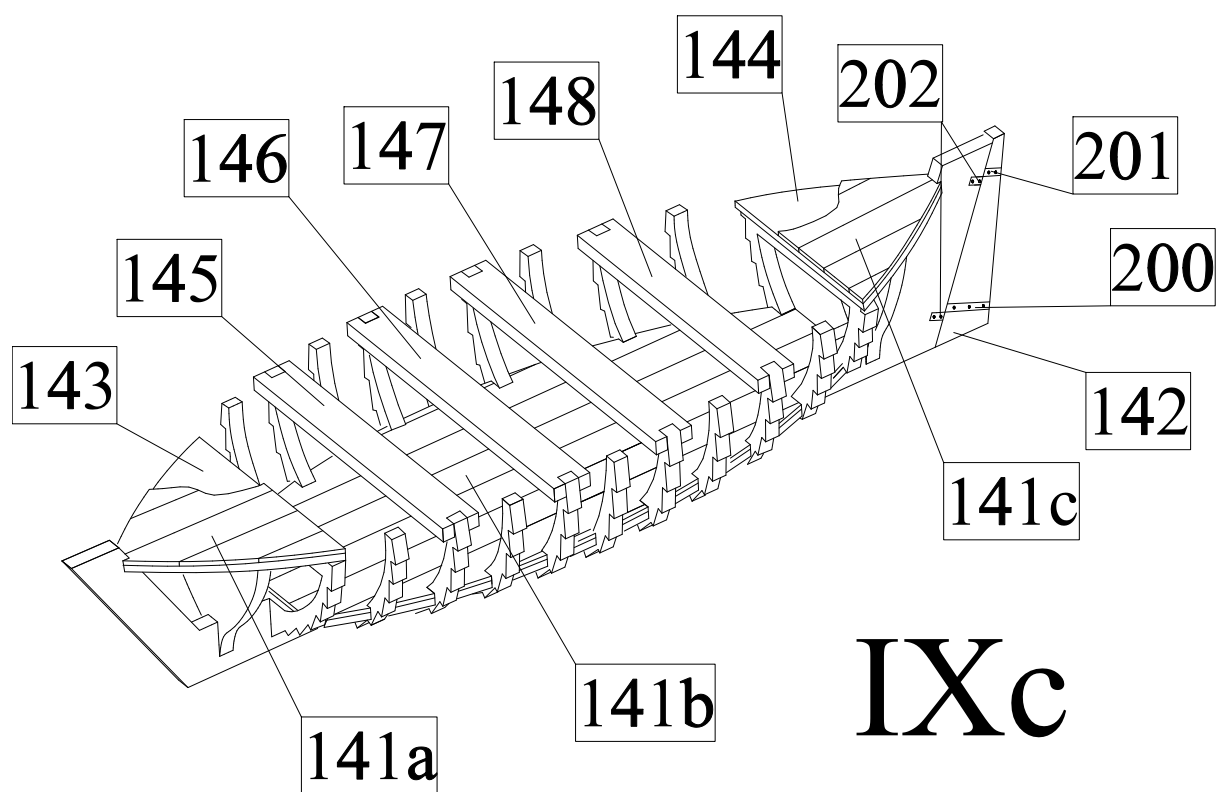
e) Make oars of the boat 160 from strips 2x2mm. First sharpen by a needle file a handle of the oar. Then by a sand paper sharpen a middle part of the oar into a round shape. Finally sharpen by a sand paper a blade of the oar. The oar is in 1:1 scale shown in the plan 3I.

f) Make underlays of oars 159 from strips 2x2mm. Then glue them to the edging 157. Glue an arm 158 to the rudder 142. Then tie the whole boat to the stand of the boat by a rope 161. The whole boat is in 1:1 scale shown in the plan 3I.

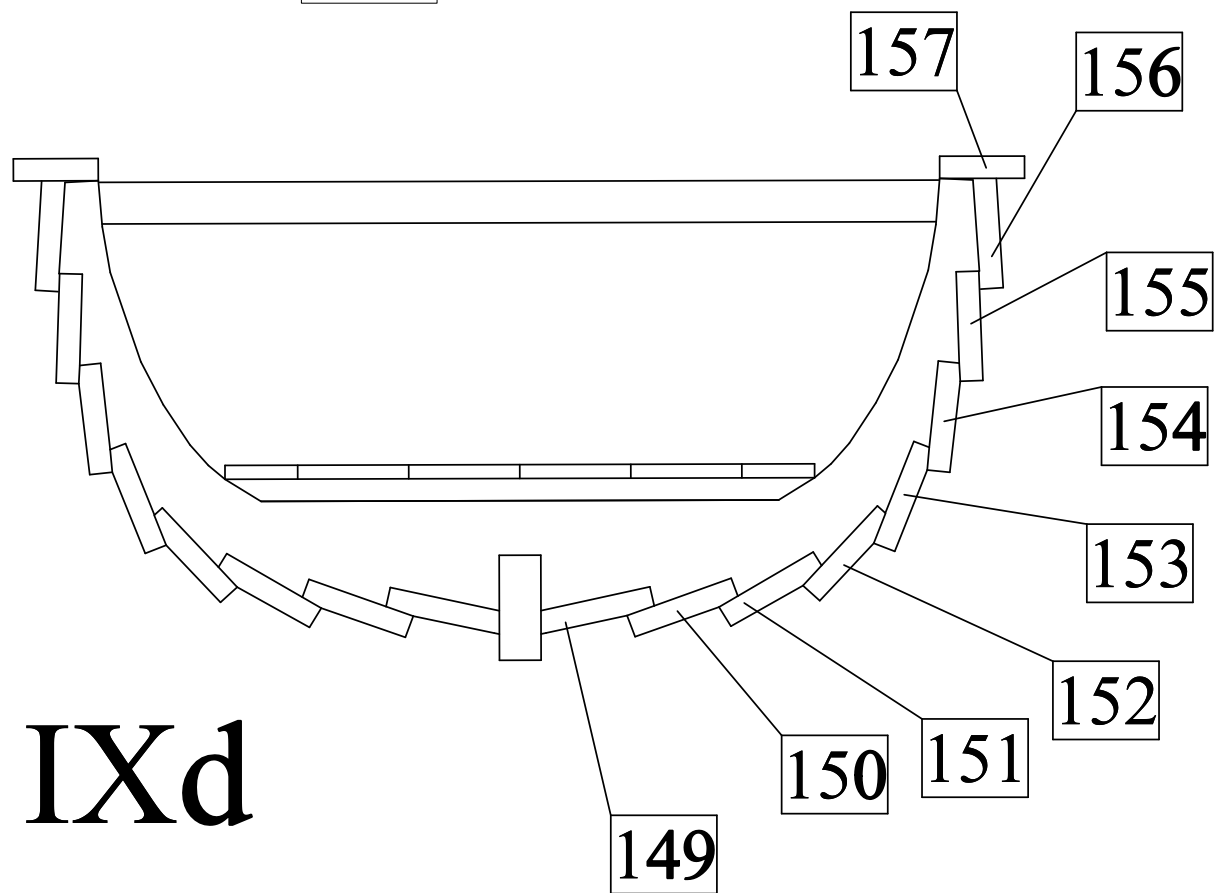
g) Make stairs for the fore and aft castle. For the making of the stairs use a preparation 165. First run into the preparation parts 163 but do not glue them! Then glue to the parts 163 also side parts 164.



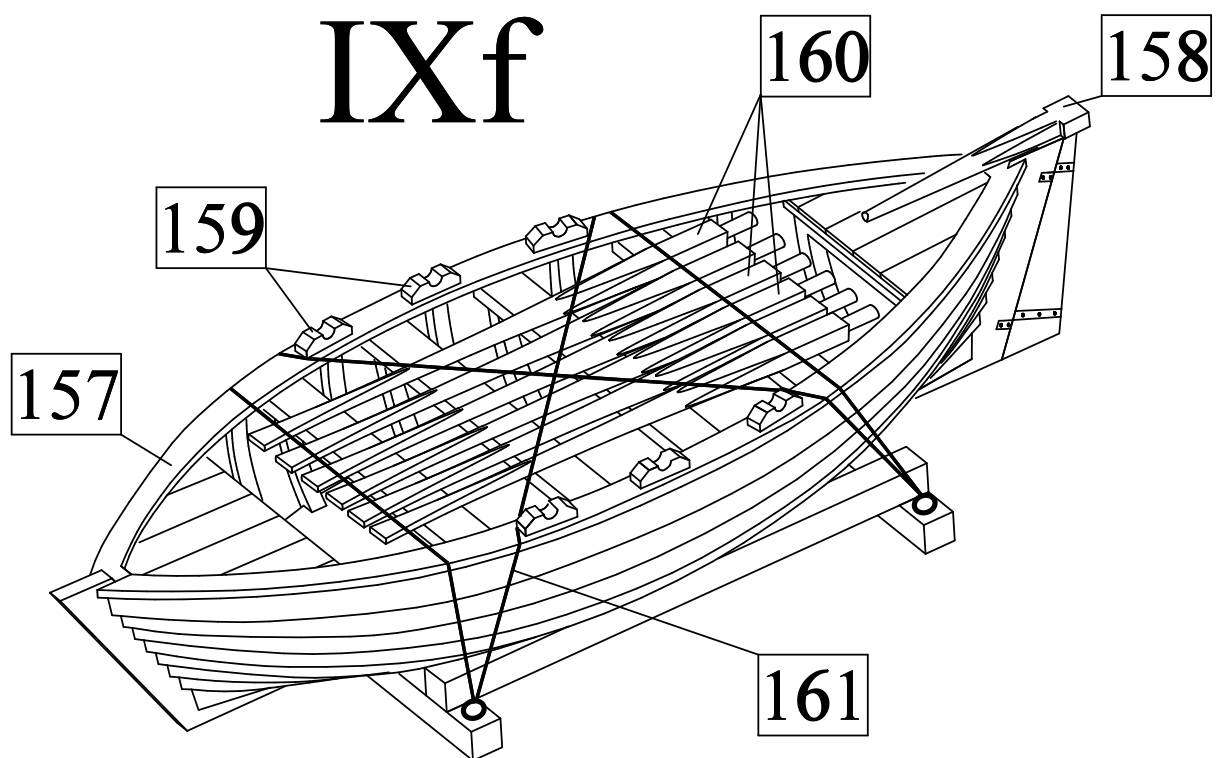
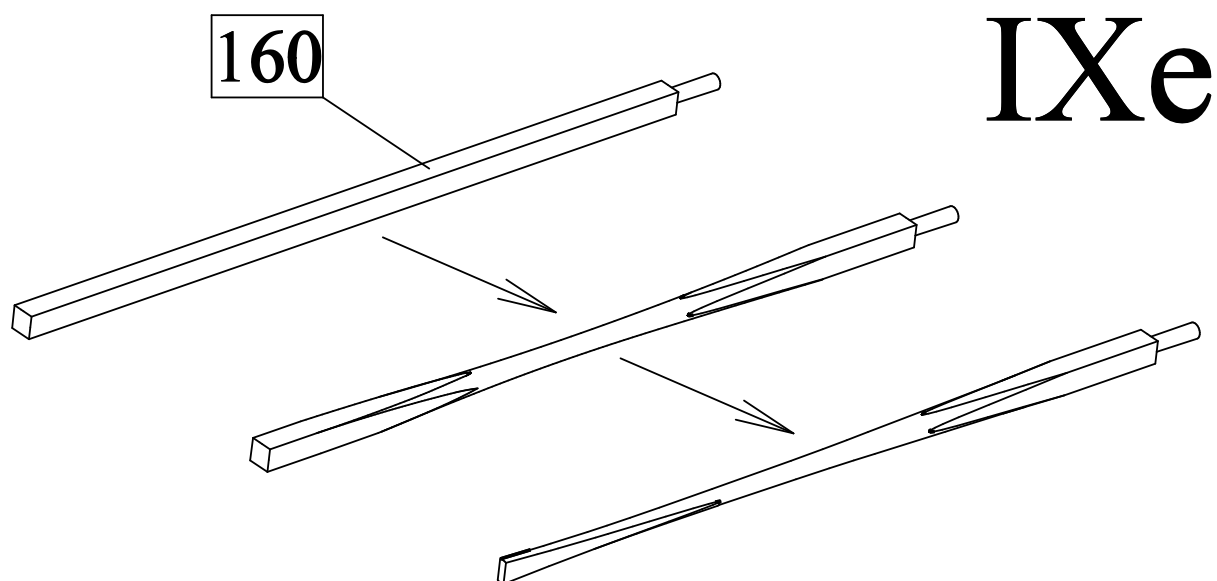
- h) Make anchors. Glue together parts 166 and 167. Then glue mountings 169 to the parts 167. Then run a ring 168 through the hole in the anchor. Finally tie a rope 170 to the ring 168.
- i) Make a ships load by gluing from parts 187-189. Then cover up it by a cloth 190.
- j) Glue the fore castle, aft castle and stairs to their position. The exact position of the castles is in 1:1 scale shown in the plan 2E.
- k) Glue cleats 177-173 and eyelets 172-176 to their positions. Exact position of the cleats and eyelets is in 1:1 scale shown in the plan 2E.
- l) Tie the load and barrels 185 and 186 to the deck. The anchor rope run through holes in parts 56 and the anchor tie to the reinforcements 57 and to the cleats 183.

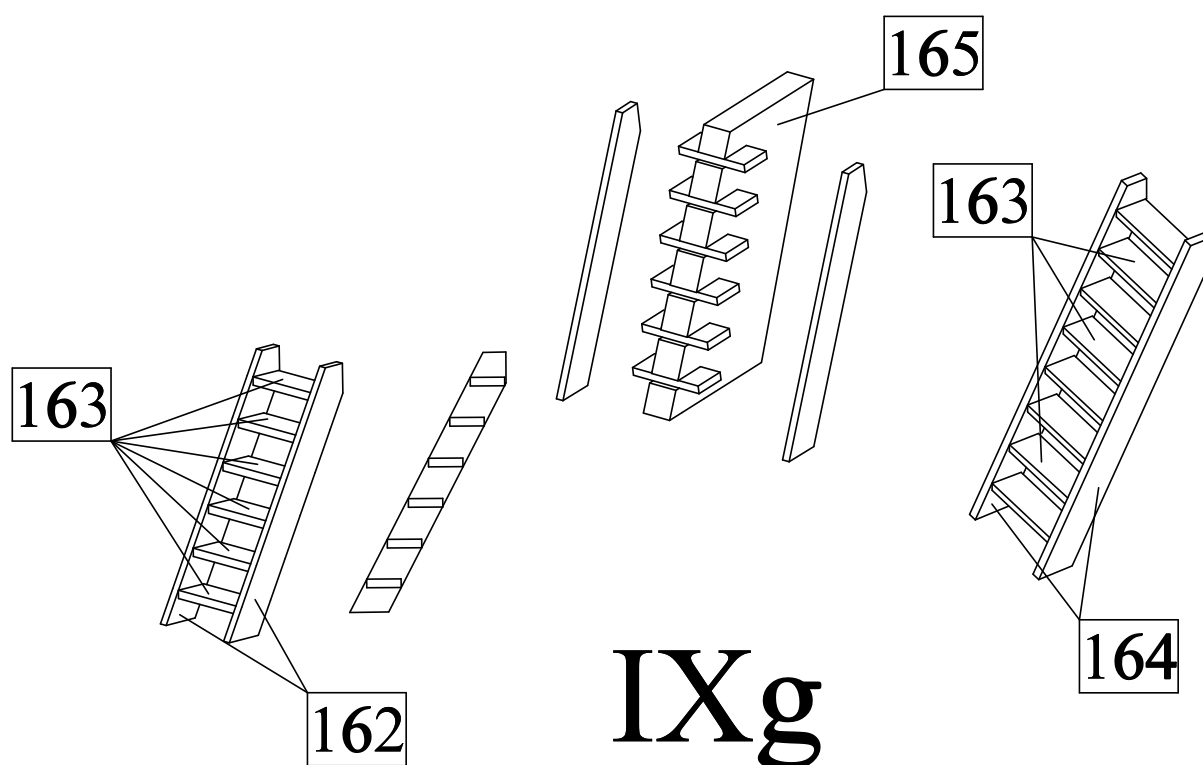


IXc

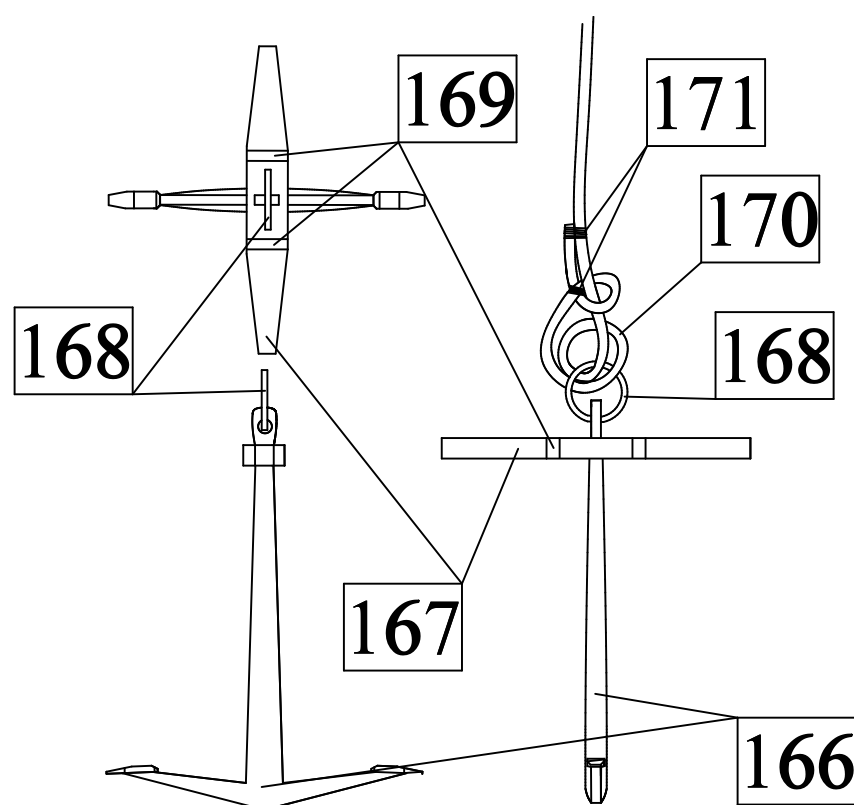


IXd

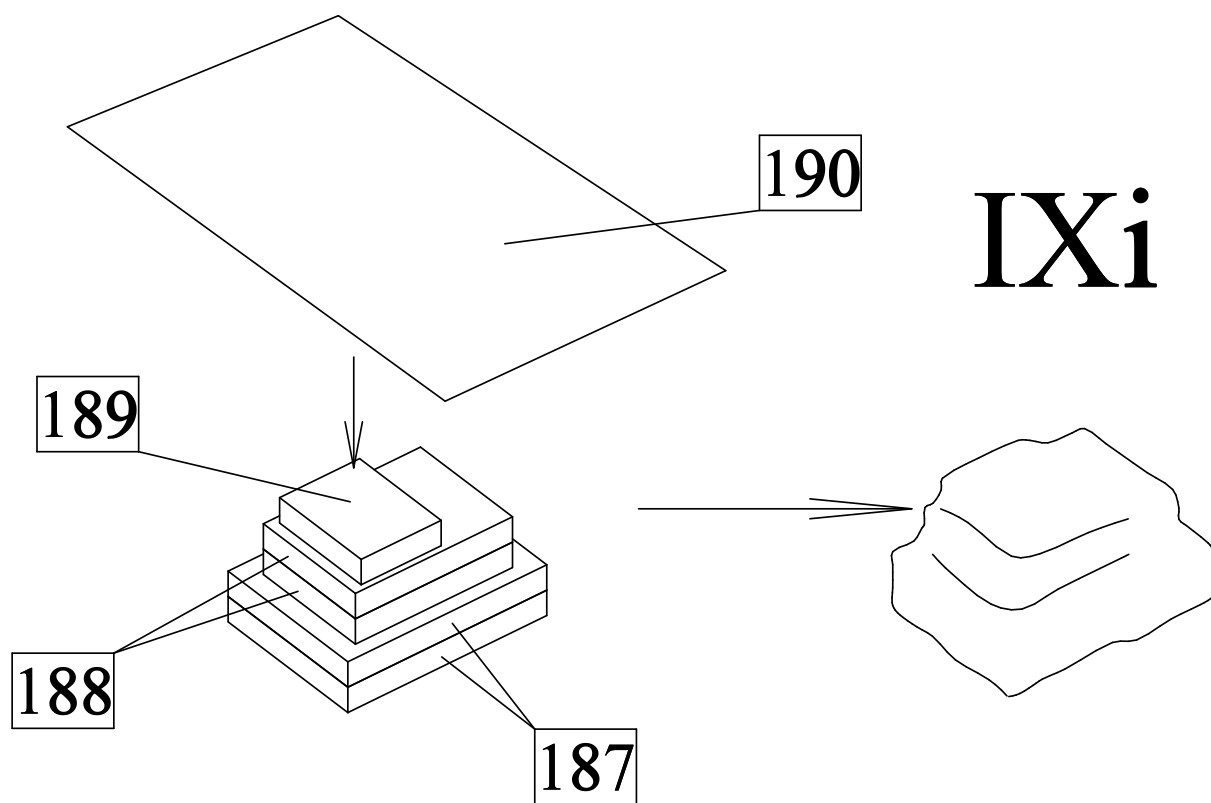




IXg



IXh



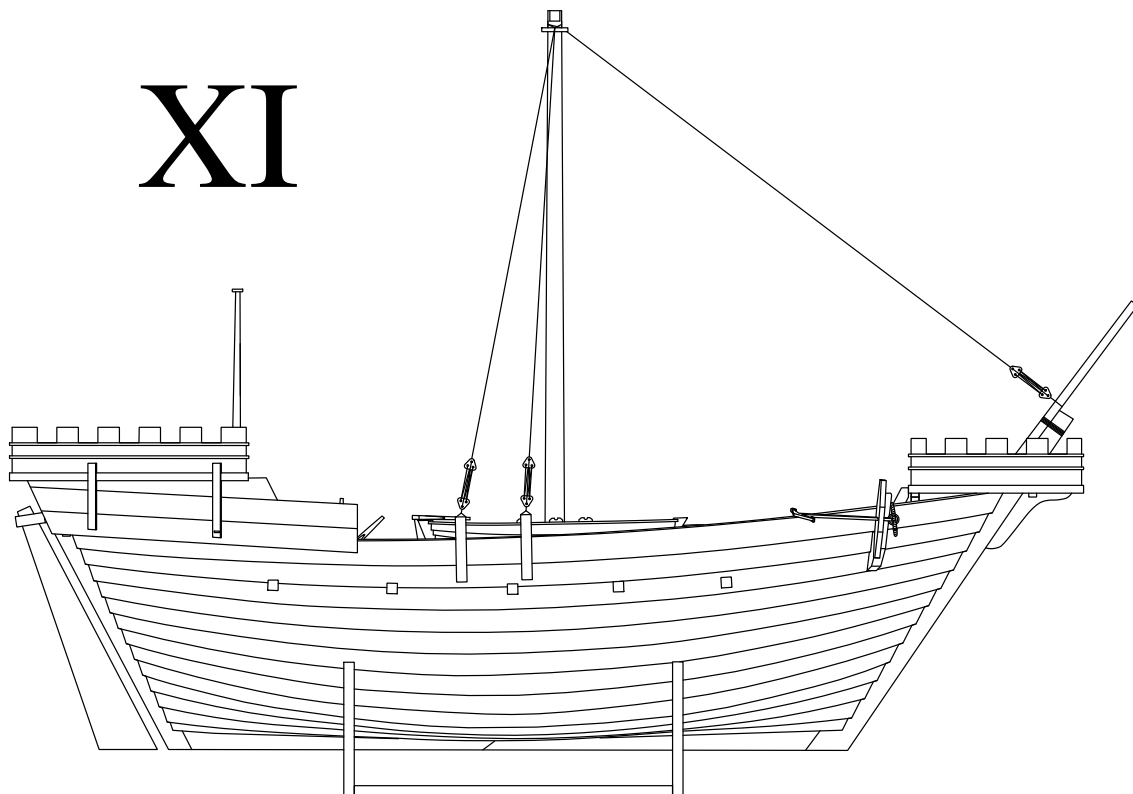
### **X) Mast and yard:**

a) Make a mast 191. Sharpen the mast into conical shape by a sand paper from a dowel 8mm. On the top of the mast make a cutout for placing of a mast top. The mast is in 1:1 scale shown in the plan 3F. Then glue side beams 192 to the top of the mast. Then tie rope 184 and drill 1mm holes to the mast.

b) Make a yard 204. Sharpen the yard into needed shape by a sand paper from a dowel 4mm. Then tie two rows of rollers 205 and blocks 198 to the yard. The yard is in 1:1 scale shown in the plan 3F

### **XI) Rigging I-standing:**

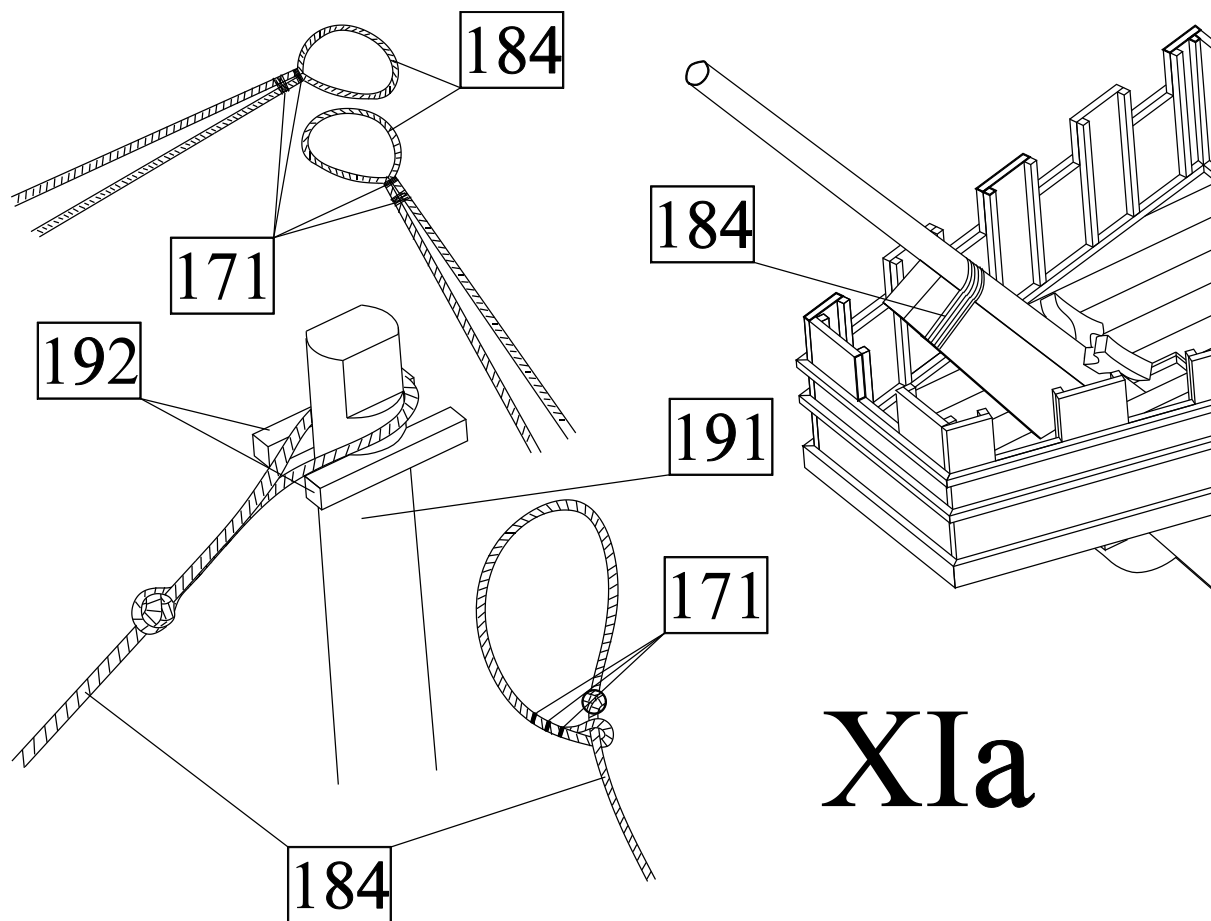
Scheme of the standing rigging is shown in the plan 1B.



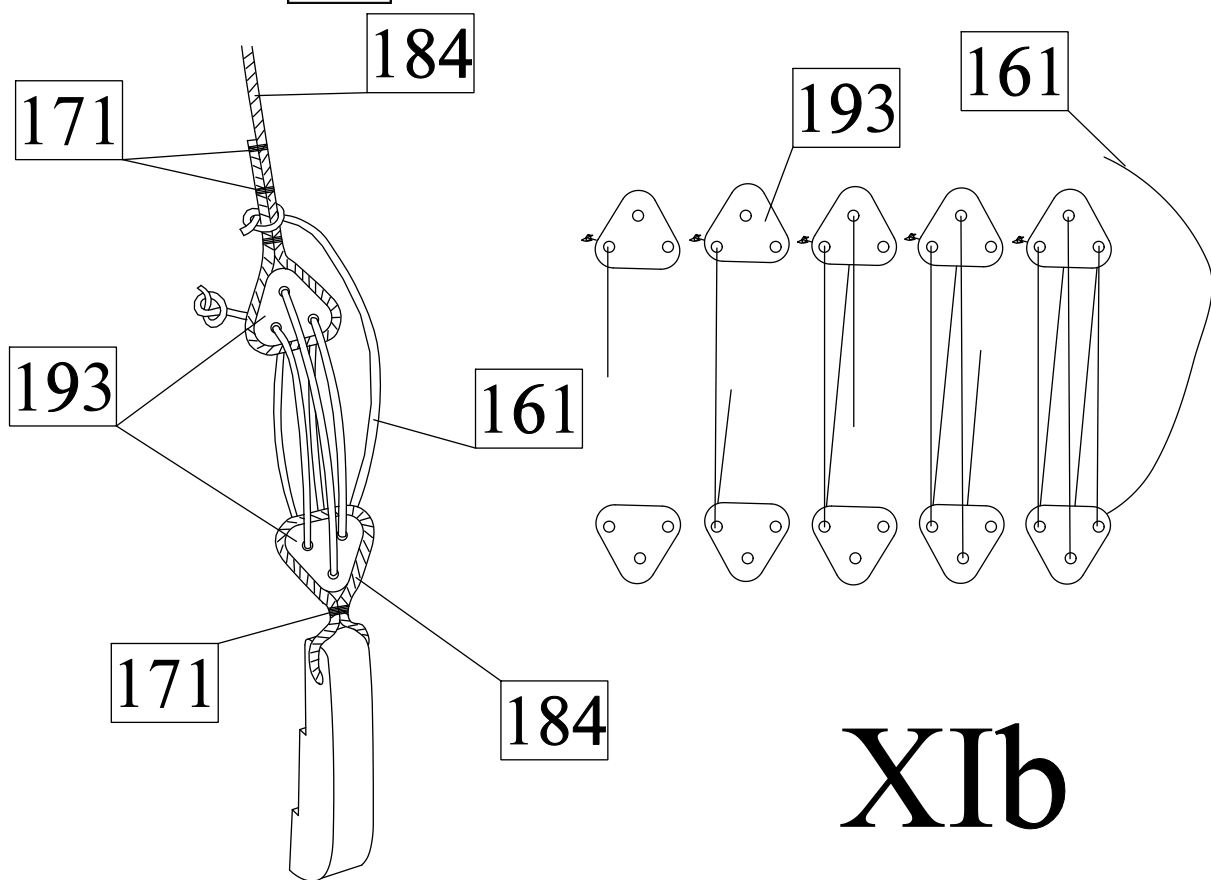
a) Tie shroud ropes 184 to the mast and also tie the bowsprit to the stem by the rope 184 how it is shown in the figure below.

b) Tie dead-eye block 193 to the second ends of the shroud ropes. Then tie the dead-eye blocks 193 to the side reinforcements 58 and to the bowsprit. Finally tie the dead-eye block together by a rope 161 (Proceed after the figure below) so that all shrouds will be tight.





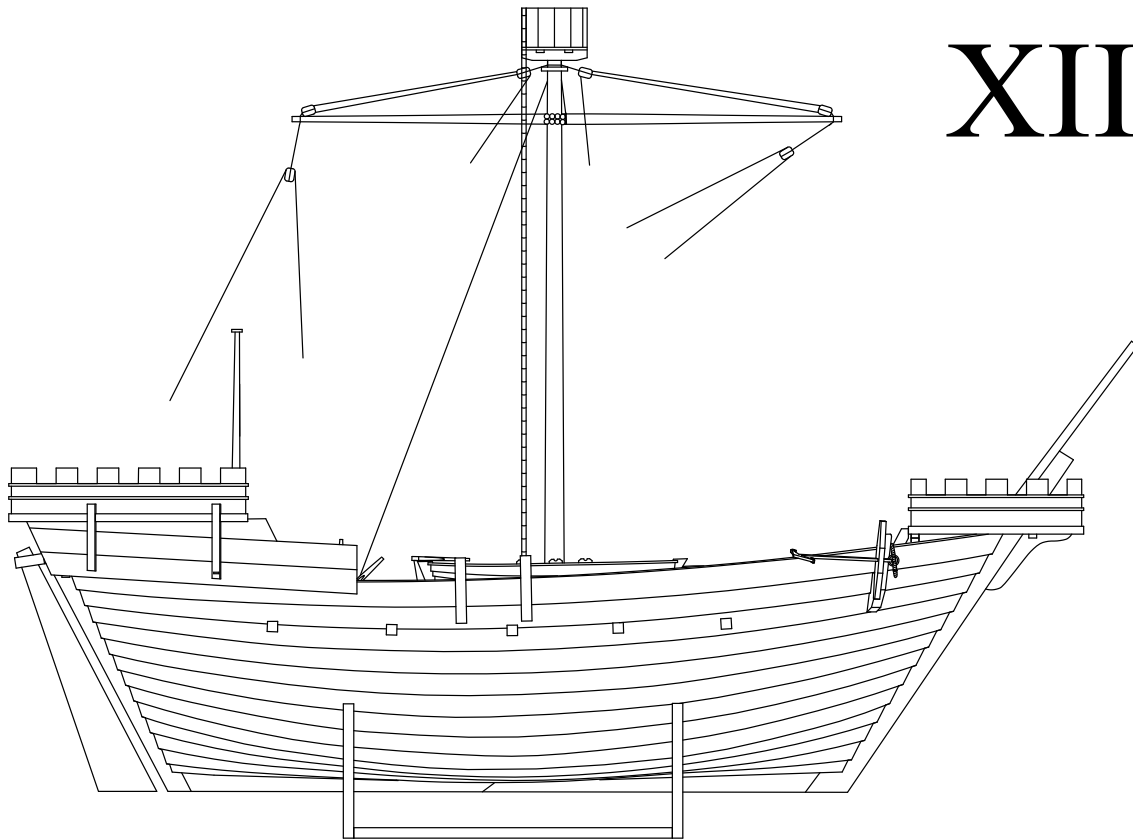
XIa



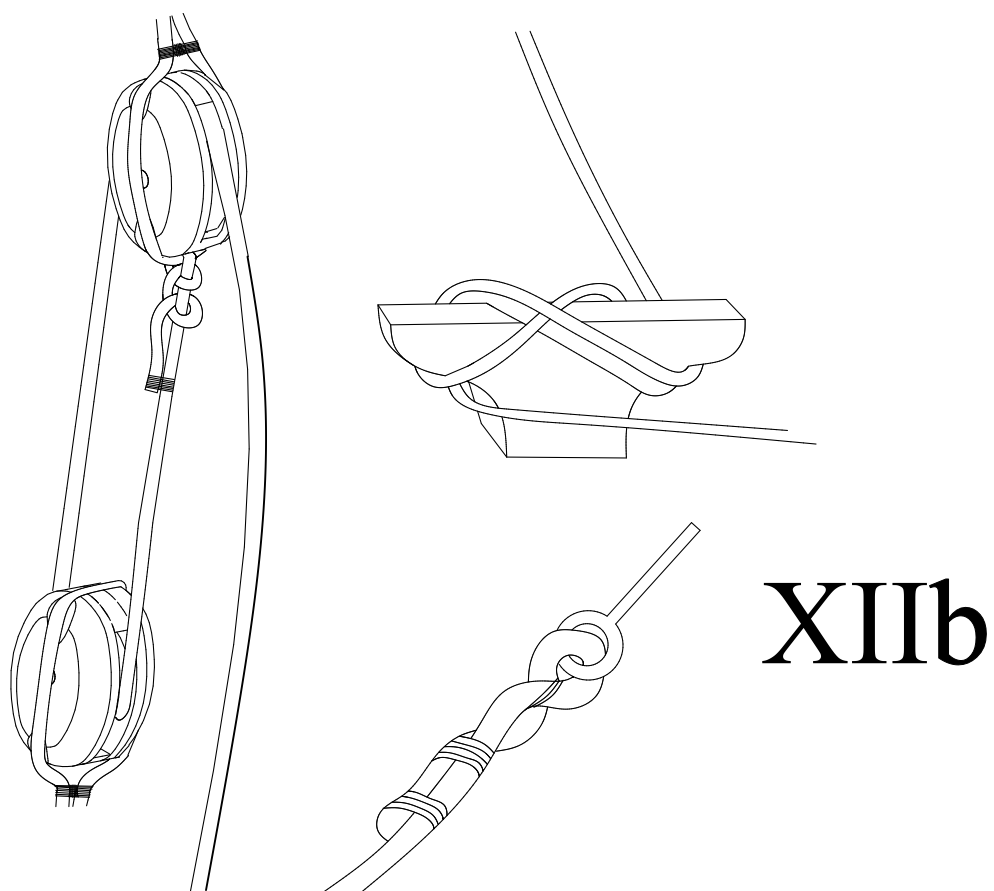
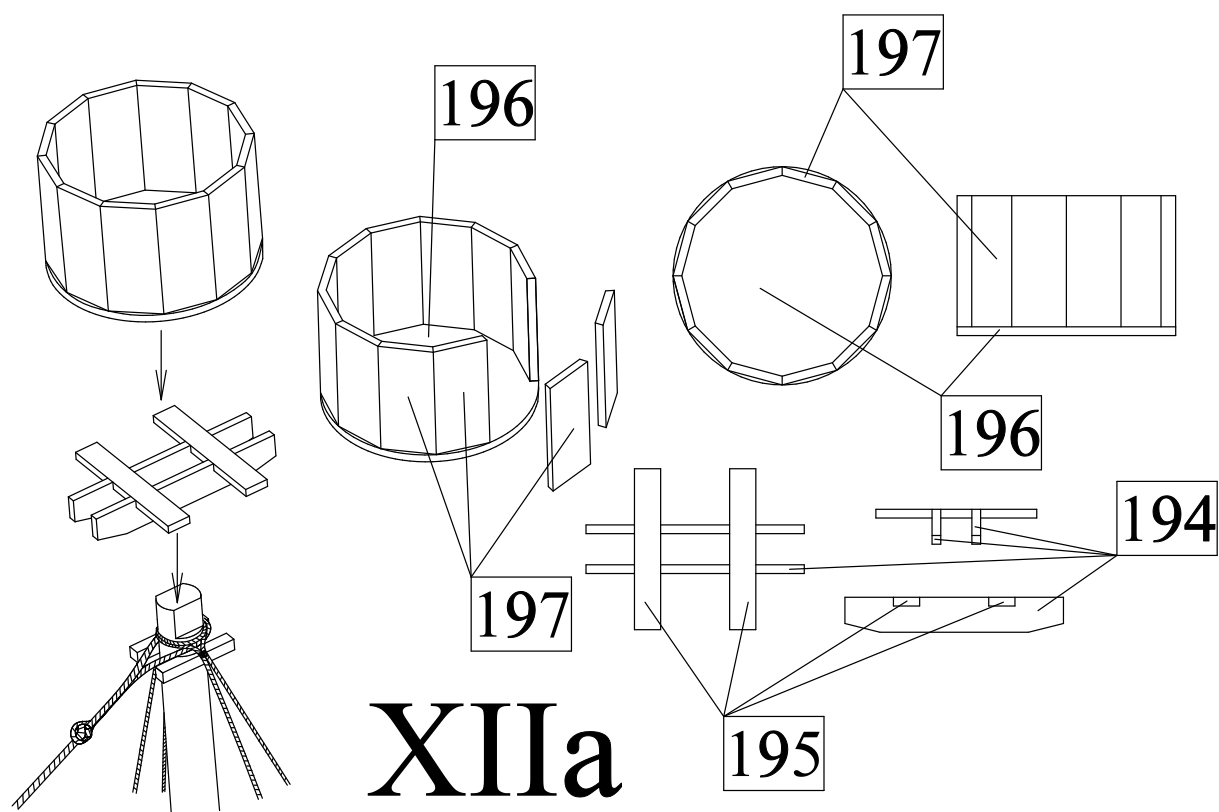
XIb

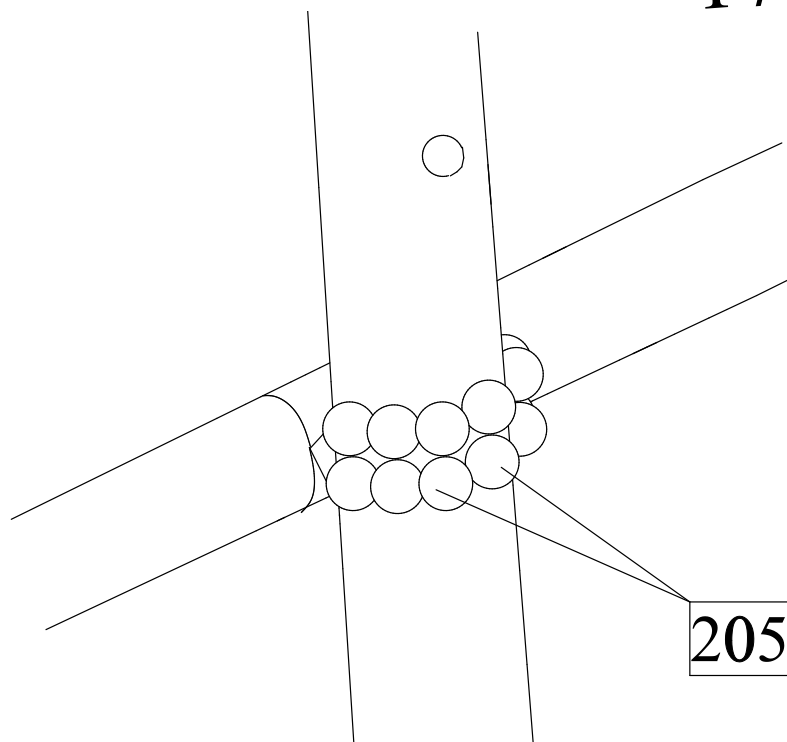
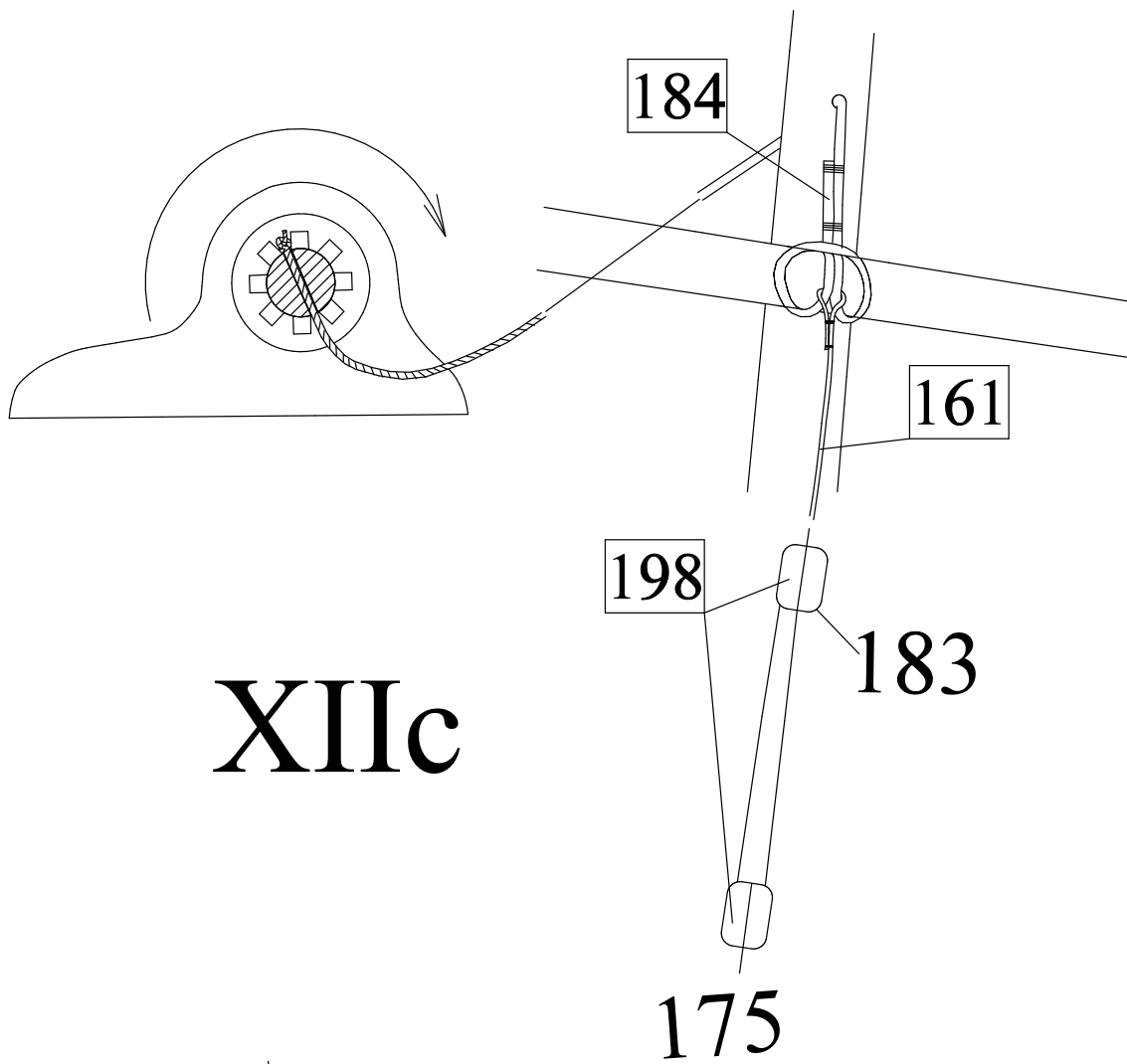
## **XII) Rigging II-running:**

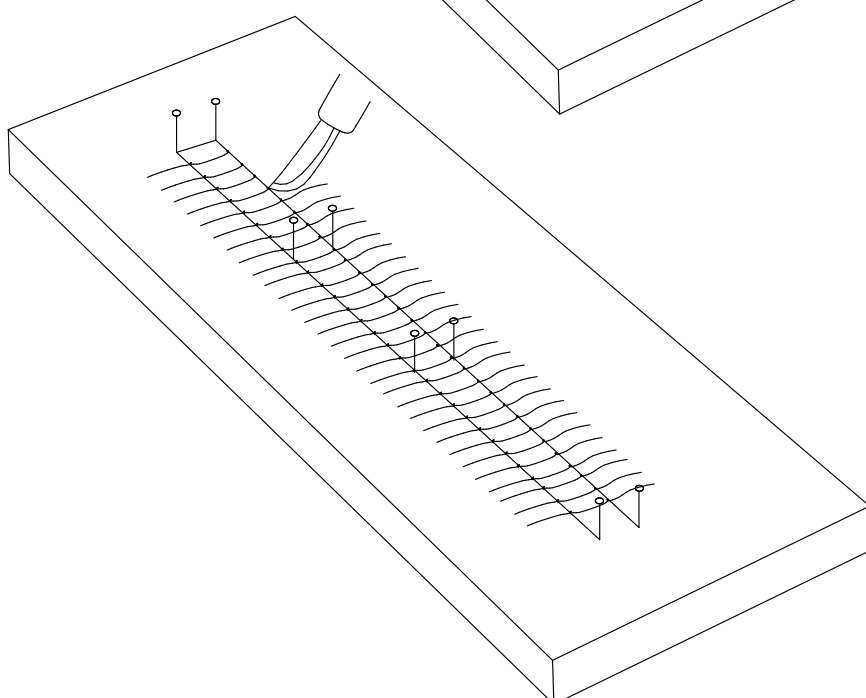
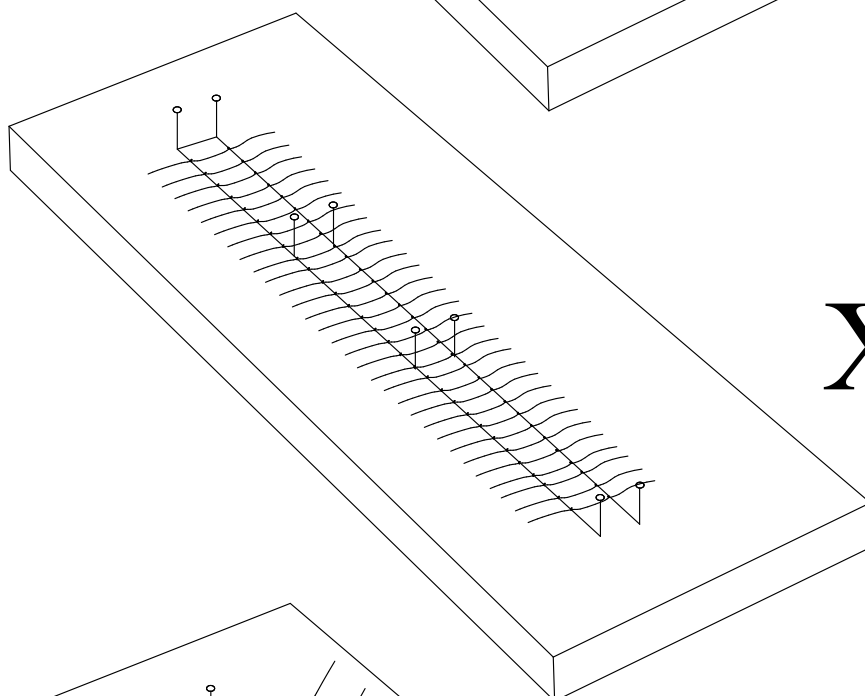
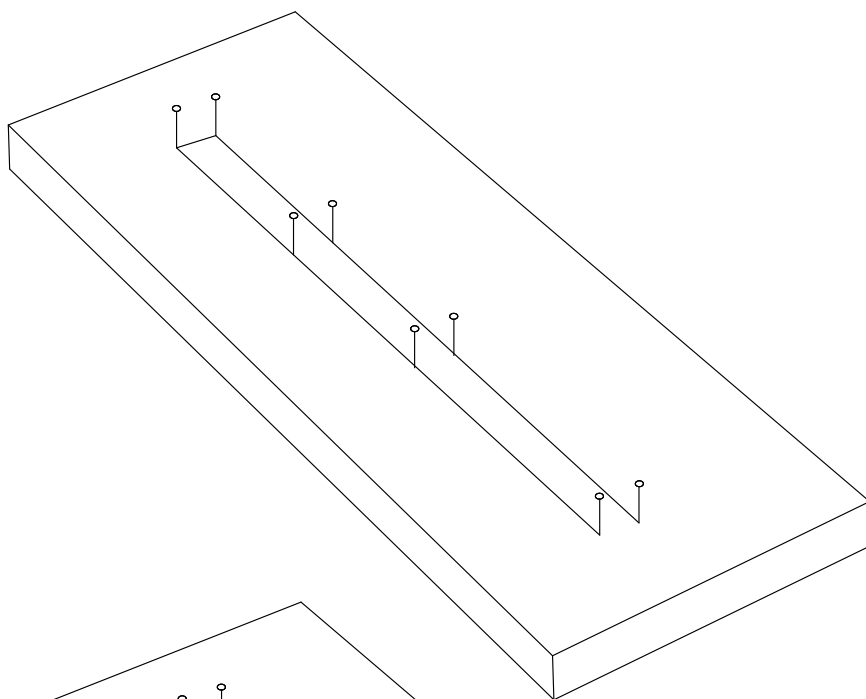
Scheme of the running rigging is shown in the plan 1C.



- a) Make a top. First glue trestle and cross trees from parts 194 and 195 and glue them to the top of the mast. Then glue from parts 16 and 197 the top and glue it to the trestle and cross trees.
- b) The figure IIb shown styles of binding of ropes to the cleats, eyebolts and blocpcs.
- c) Tie to the yard ropes 184 and 161 for raising and lowering. Free end of the rope 184 run through holes in the mast and tie it to the windlass. Then wind up the rope 184 on the windlass as long as the yard rises up into needed height. Then glue arms 65to the windlass which will fixate the position of the yard and drop an adhesives to the axe and side parts of the windlass. Then tie a block 198 to the rope 161 and through second block (tied to the eyebolt 175) tie it to the cleat 183.
- d) Tie the yard to the mast through the ropes with rollers 205.
- e) Make a rope ladder and tie it to the top and eyebolts 176. A possible procedure of a production of the rope ladder is following:
  - 1) first nail nails on a wooden board. Then tie to the nails two longitudinal ropes 169.
  - 2) then tie to the longitudinal ropes also transversal ropes 169. Mutual distance of the transversal ropes is bout 5mm. Drop an adhesive into the knots of transversal ropes.
  - 3) cut out the overhung transversal ropes. Then tie one ends of the rope layer to the top and second ends to the eyebolts 176.
- f) Finally after the figure in the plan 1C tie ropes for steering of the yard to the eyebolts and cleats.

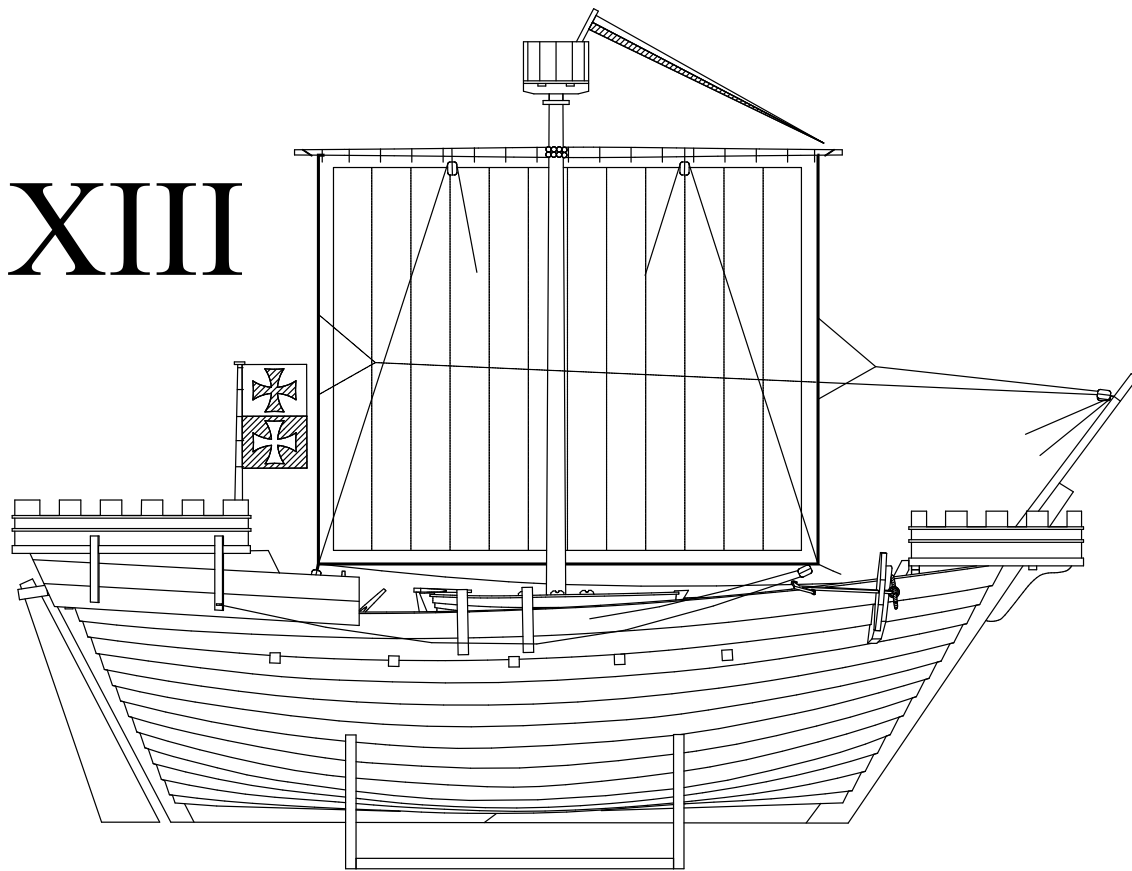






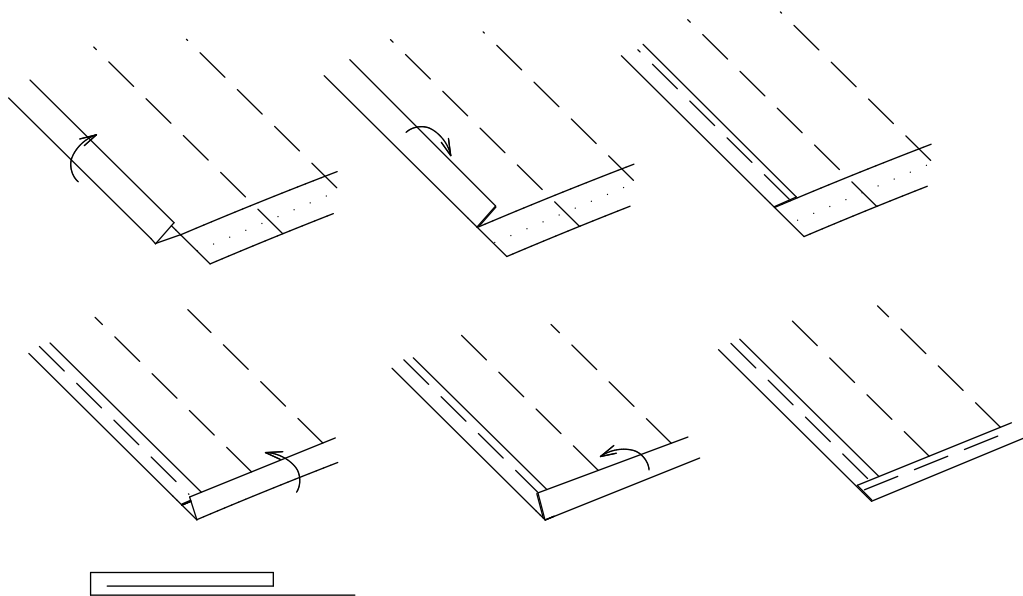
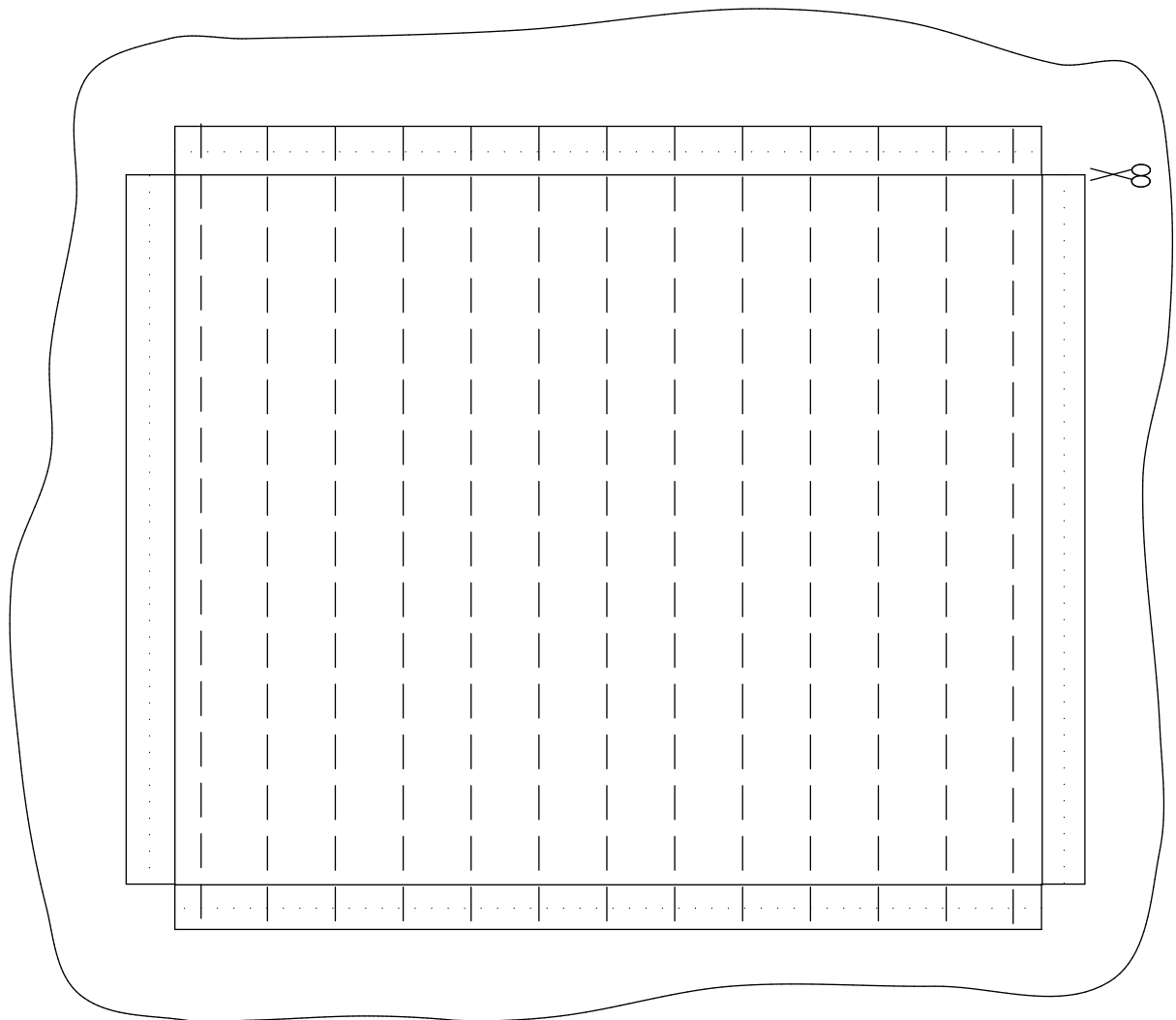
**XIIe**

### XIII) Flags and sail:

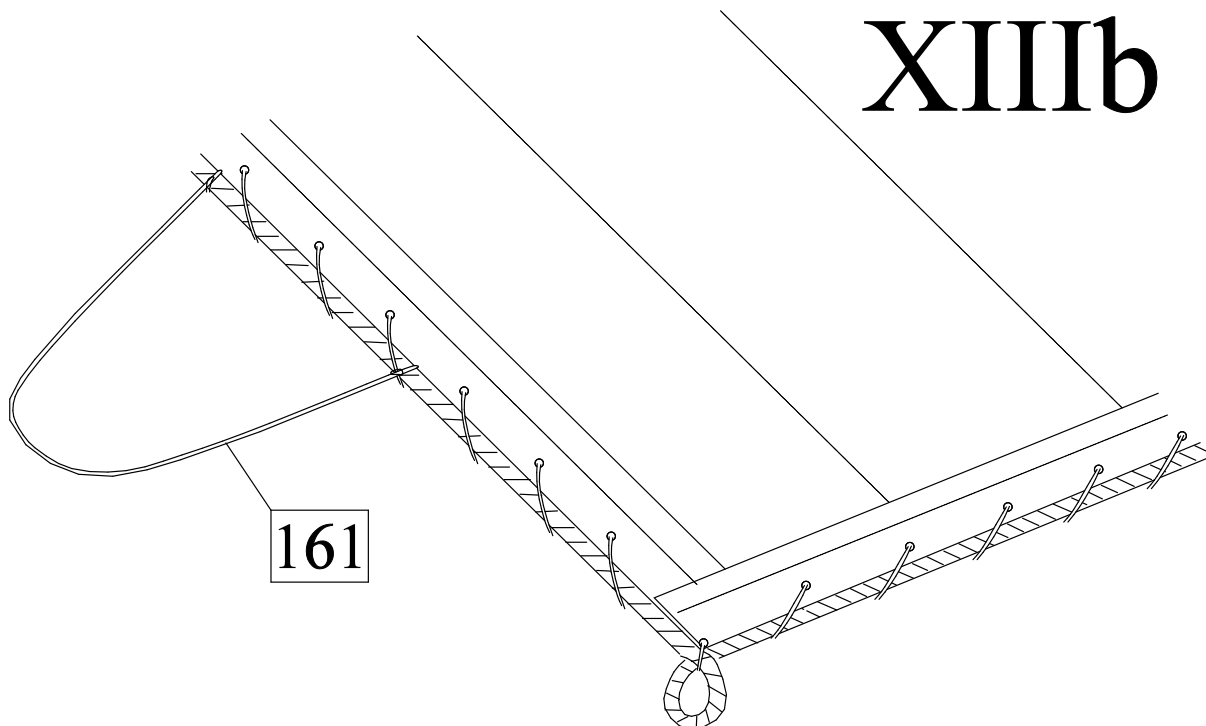


- Make a sail 209. The sail is in 1:1 scale shown in the plan 1D. First draw by pencil contours of the sail on the cloth. To the border of the sails add about 10mm for fell. By the pencil draw on the cloth also seams which divided the sail into simple segments. Then scissor the sail with fells and sewn it like it is shown below.
- To the circumference of the sail sew on a rope 184 so that in the corner of the sail will eyes with diameters about 3mm. Then tie ropes 161 to the rope 184.
- Tie the sail to the yard by ropes 161.
- After the plan 1D tie the rigging for control of the sail to eyebolts and cleats. In the figure XIIIId a detail of a tying of the blocks and ropes in lower edge of the sail is shown.
- Make a flagpole 206 from a dowel 2mm and then tie to it a pennant 207. Then glue the flagpole to the top.
- Tie fags 208 of any chosen Hanseatic city to the flag masts 112.

# XIIIa

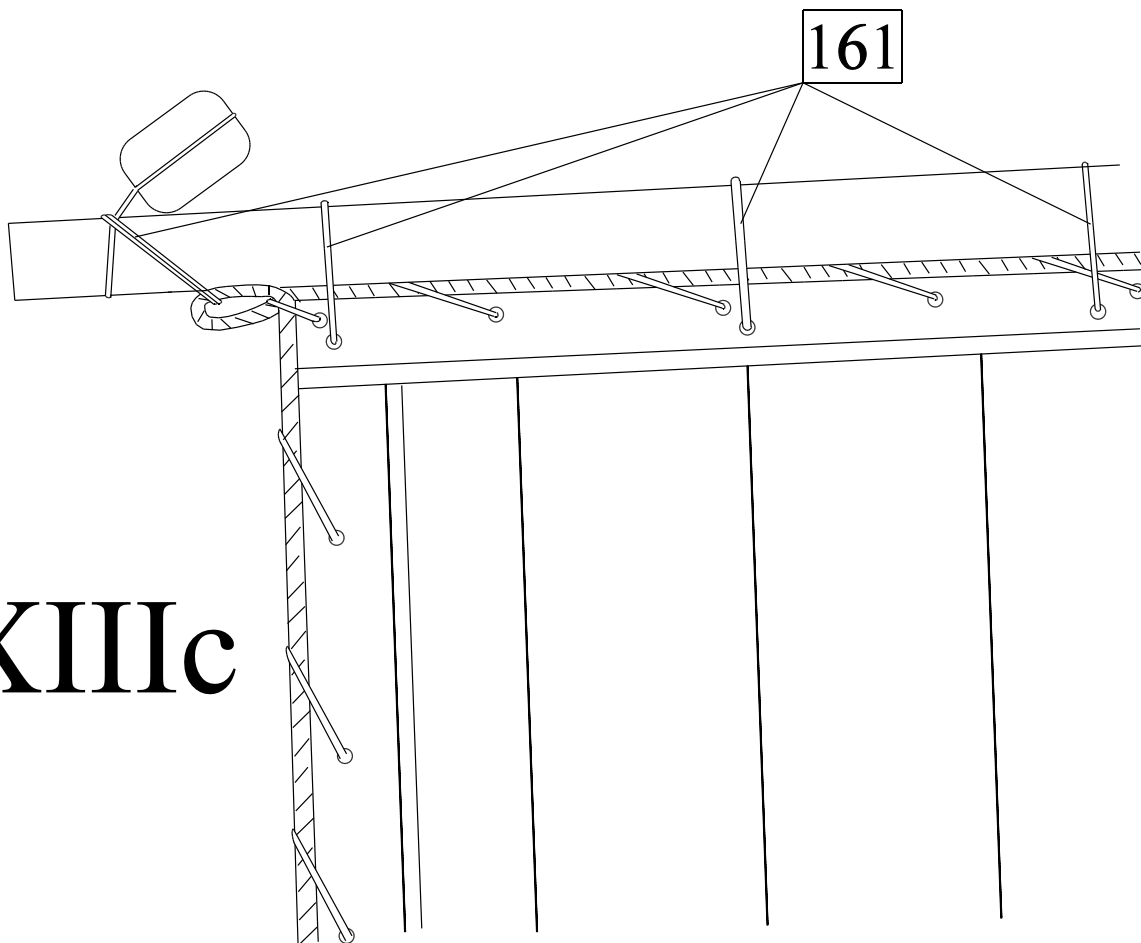


XIIIb



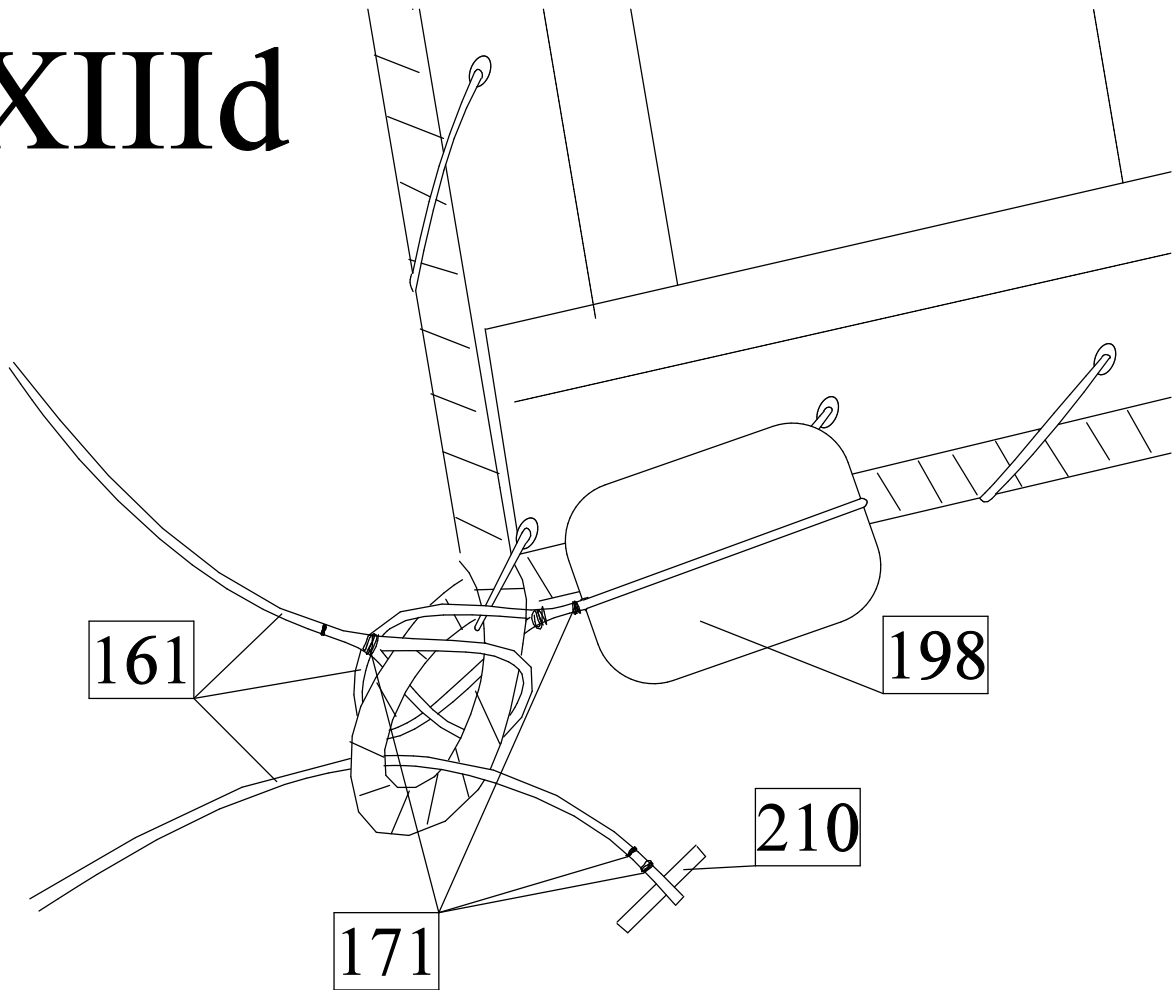
161

XIIIc





# XIIIId



**Part list:**

0	Keel	plywood 4mm	1pc
1-4	Keel	wood 4mm	1pc
5-11	Frames	plywood 4mm	1pc
12	Deck	plywood 1mm	1pc
13-25	Planks	plywood 1mm	2pcs
26	Deck	veneer 0,6mm	1pc
27	Waterways	strip 2x3mm	4pcs
28-54	Frames	wood 2mm	2pcs
55	Mast foot	wood 2mm	1pc
56	Boards with holes	wood 2mm	2pcs
57	Side reinforcements	wood 4mm	2pcs
58	Side reinforcements	wood 4mm	4pcs
59	Beams	strip 4x4mm	1pc
60	Windlass	wood 2mm	2pcs
61	Windlass	wood 2mm	6pcs
62	Windlass	wood 2mm	4pcs
63	Windlass	dowel 4mm	1pc
64	Windlass	strip 1x1mm	12pcs
65	Windlass	strip 2x2mm	2pcs
66	Beams of aft castle	strip 3x3mm	2pcs
67	Beams of aft castle	strip 3x3mm	2pcs
68	Stand of boat	strip 3x3mm	2pcs
69	Eyebolts	eyebolt	35pcs
70	Capstan	plywood 1mm	1pc
71	Capstan	dowel 8mm	1pc
72	Capstan	plywood 1mm	8pcs
73	Capstan	plywood 1mm	2pcs
74	Capstan	wood 2mm	1pc
75	Capstan	strip 2x2mm	2pcs
76	Hatches	plywood 1mm	1pc
77	Hatches	strip 2x2mm	2pcs
78	Hatches	plywood 1mm	1pc
79	Hatches	strip 2x2mm	2pcs
80	Hatches	veneer 0,6mm	1pc
81	Hatches	photo-etched part	2pcs
82	Hatches	ring 4mm	6pcs
83	Hatches	photo-etched part	2pcs
84	Reinforcement of fore castle	wood 4mm	1pc
85	Beam of fore castle	strip 3x3mm	2pcs
86	Bowsprit	dowel 4mm	1pc
87	Beams	strip 1x1mm	12pcs
88	Rudder	wood 4mm	1pc
89	Rudder	wood 4mm	1pc
90	Rudder	strip 2x2mm	2pcs
91	Rudder hinges	photo-etched part	5pcs
92-96	Rudder hinges	photo-etched part	1pc
97-99	Aft castle	plywood 1mm	2pcs
100	Aft castle	strip 1x3mm	2pcs
101-103	Aft castle	plywood 1mm	1pc

104	Aft castle	veneer 0,6mm	1pc
105	Aft castle	plywood 1mm	1pc
106-107	Aft castle	plywood 1mm	2pcs
108	Aft castle	strip 1x3mm	2pcs
109	Aft castle	strip 1x1mm	12pcs
110	Aft castle	strip 1x1mm	12pcs
111	Aft castle	strip 1x3mm	2pcs
112	Flag mast	dowel 3mm	1pc
113	Flag mast	plywood 1mm	1pc
114	Aft castle	strip 2x3mm	4pcs
115	Fore castle	plywood 1mm	1pc
116	Fore castle	veneer 0,6mm	1pc
117	Fore castle	plywood 1mm	1pc
118-119	Fore castle	plywood 1mm	2pcs
120	Fore castle	strip 1x1mm	12pcs
121	Fore castle	strip 1x1mm	12pcs
122	Fore castle	strip 1x3mm	2pcs
123-125	Stand	plywood 4mm	1pc
126	Keel of boat	plywood 1,5mm	1pc
127-139	Frames of boat	plywood 1,5mm	1pc
140	Deck of boat	plywood 1mm	1pc
141	Deck of boat	veneer 0,6mm	1pc
142	Rudder of boat	plywood 1,5mm	1pc
143-144	Deck of boat	plywood 0,8mm	1pc
145-148	Banks	plywood 1,5mm	1pc
149-156	Planks of boat	plywood 0,8mm	2pcs
157	Edging	plywood 1,5mm	1pc
158	Rudder of boat	plywood 1,5mm	1pc
159	Underlay	strip 2x2mm	12pcs
160	Oars	strip 2x2mm	2pcs
161	Rope	rope 0,5mm	10m
162	Stairs	plywood 1mm	2pcs
163	Stairs	plywood 1mm	14pcs
164	Stairs	plywood 1mm	2pcs
165	Preparation for stairs	plywood 4mm	1pc
166	Anchor	cast	2pcs
167	Anchor	wood 2mm	2pcs
168	Ring	ring 6mm	2pcs
169	Anchor	photo-etched part	4pcs
170	Rope	rope 1,75mm	0,3m
171	Rope	rope 0,25mm	2m
172-176	Eyebolts	eyebolt	35pcs
177-183	Cleats	wood 2mm	15pcs
184	Rope	rope 0,75mm	3m
185	Barrels	barrel 8x10mm	20pcs
186	Barrels	barrel 12x14mm	2pcs
187-188	Ship load	plywood 4mm	2pcs
189	Ship load	plywood 4mm	1pc
190	Cloth	cloth	1pc
191	Mast	dowel 8mm	1pc

192	Beams	strip 1x1mm	12pcs
193	Blocks dead-eye	block 5mm	10pcs
194-195	Trees	plywood 1mm	2pcs
196	Top	plywood 1mm	1pc
197	Top	plywood 1mm	12pcs
198	Blocks	block 5mm	12pcs
199	Pin	wire 1mm	0,1m
200-201	Rudder hinges of boat	photo-etched part	1pc
202	Rudder hinges of boat	photo-etched part	2pcs
203	Planking of castles	veneer 0,6mm	1pc
204	Yard	dowel 4mm	1pc
205	Rollers	rollers	30pcs
206	Flag pole	dowel 2mm	1pc
207	Flag	flag	1pc
208	Flag	flag	2pcs
209	Sail	cloth	1pc
210	Pin	wire 1mm	0,1m