VIKING LONGSHIP, 11th century

SCALE: 1/35
Length: 850mm
Width: 370mm
Height: 475mm

HISTORY:

This model represents the similar long ship which was found near the village of Skuldelev at Denmark and which is known as Skuldelev 2. The original was constructed primarily of oak wood about the year 1060 in Dublin. The ship had a length of 30 meters and width of 3.8 meters. The ship could sail with 60-100 Viking warriors onboard and was driven by a large rectangular sheet. In the case of no wind, there were 60 oars.

List of recommended tools:

1) Modeller knife or scalpel
2) Mini Drill
3) Drill - 1 mm and 3 mm diameter
4) Sandpaper - different coarseness
5) Scissors
6) Tweezers
7) Clothes pegs
8) Pencil
9) Ruler
10) A set of needle nail files
11) Sewing Machine
12) Mini Lathe

Before the start of construction:

Before the start of construction, it is necessary to carefully read the building instructions to ensure the steps for the order of assembly are clearly understood. Cut out the individual parts from the sheets carefully with a sharp knife. Before gluing parts, check if each individual part to be bonded actually fits, and if not, make corrections. During glueing, dyeing, painting and working with other chemicals, it is recommended that you are working in an area which is thoroughly ventilated.

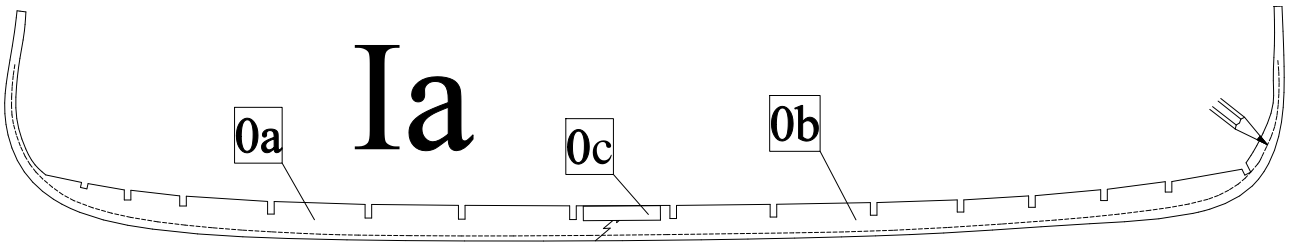
Colouring:

In medieval ships, to protect the hull from the effects of sea water and wood pests, coated mixtures based on tar were used which were a red brown or dark brown color. The model can achieve this effect by staining the parts of the hull with dark stains. The Parts should be stained before gluing them. The deck was in the original color of wood, so it is sufficient to wipe the boards with clear varnish.

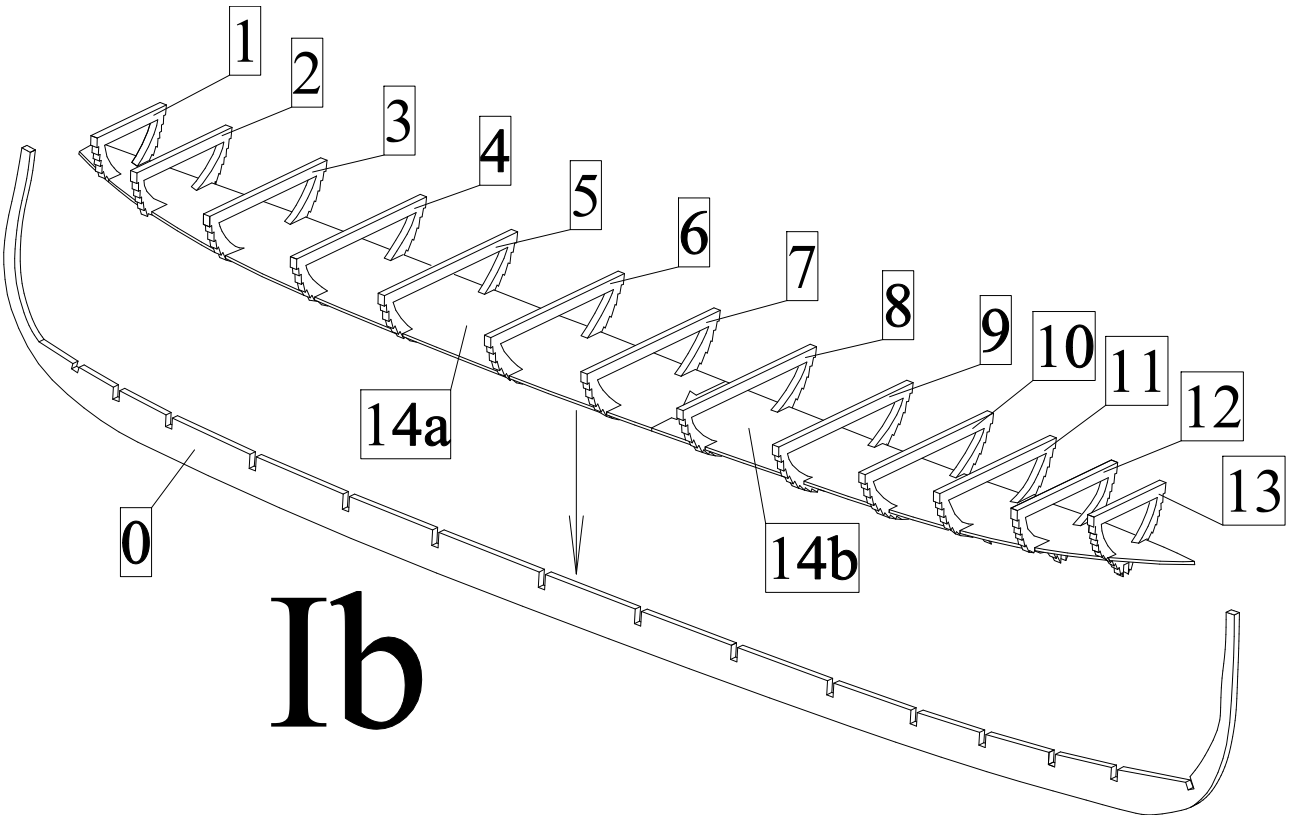
Model building procedure:

I) The framing of the hull:

a) First glue a keel from parts 0a, 0b and 0c. Then on both sides of the keel 0 draw a contour of planking as shown in the diagram Ia.

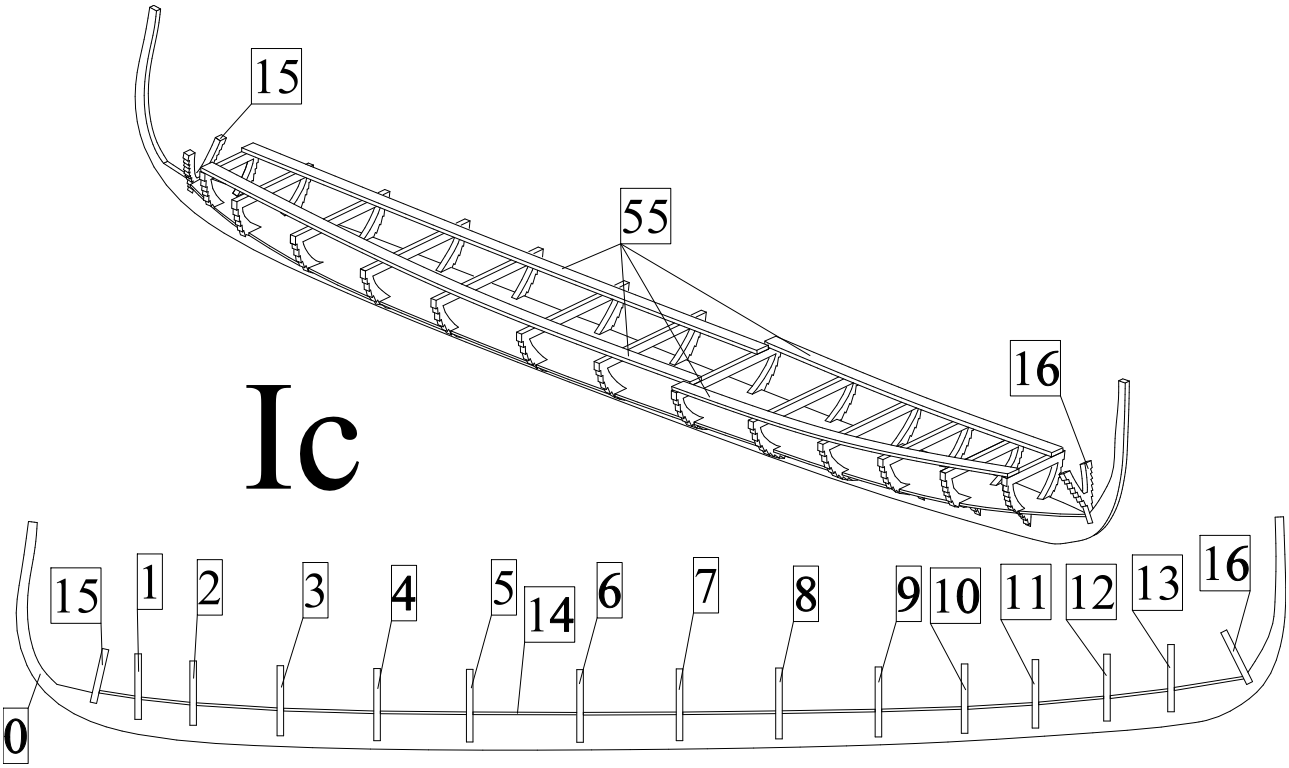


b) Attach ribs 1 to 13 to deck 14 in the following order. 7, 8, 6, 9, 5, 10, 4, 11, 3, 12, 2, 13, 1 and then attach completed deck 14 to keel 0 as shown in diagram Ib.



Ib

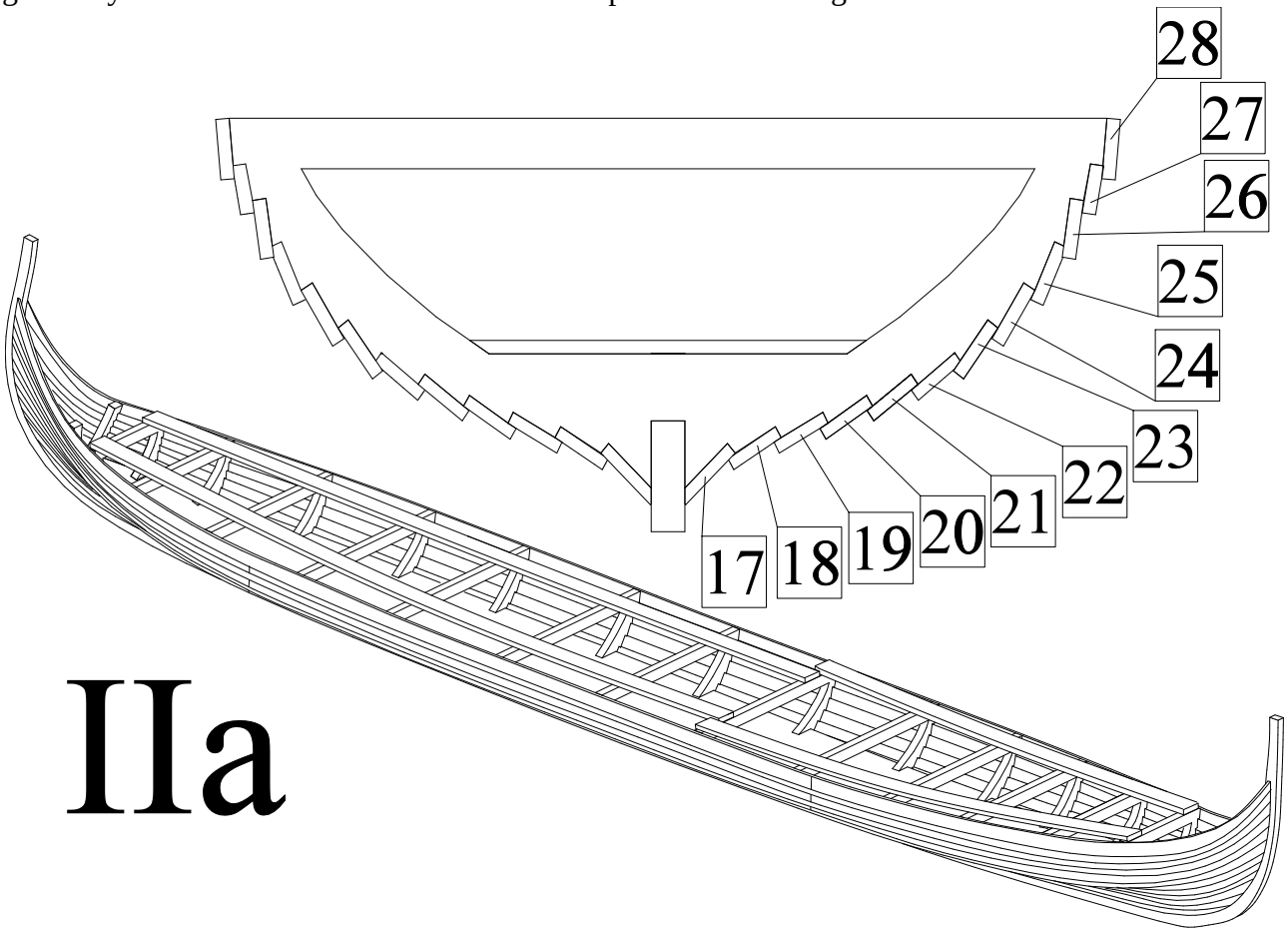
c) Attach ribs 15 and 16 to keel 0 as shown in diagram Ic. Then reinforce the whole framing by supporting strips 55 as shown in diagram Ic.



Ic

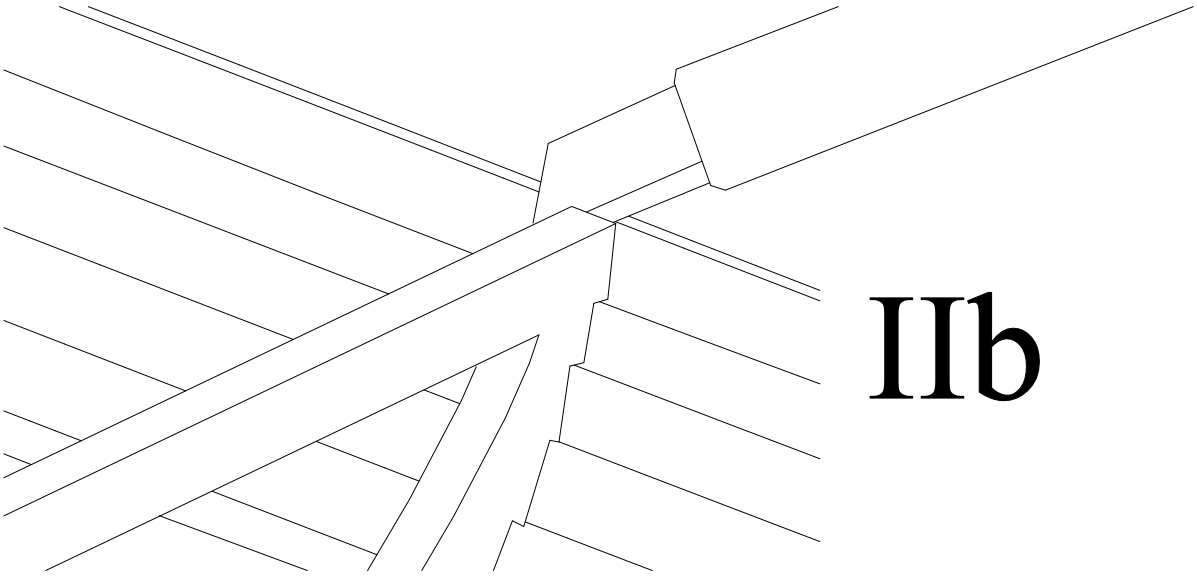
II) Planking the hull:

a) The method of planking the hull of Viking ships was known as clinker planking, which is a method where individual planks overlap themselves. It is therefore necessary to strictly comply with the order in which you stick the planks to the ribs. The first step is to glue the planks 17 to the bottom of the hull. Before gluing the planks to stem and stern, slightly grind down the ends of them to fit snugly to it. Every planks are compound from parts *a* and *b*. The arrows on the plan show a direction of the planks. After sticking planks 17 to starboard and port, follow similarly in bonding planks 18-28. After gluing the planks to the hull grind by a sand paper the frames so that following planks tightly joined to the already glued planks. As already mentioned, planks must be stuck gradually in order of 18-28 to have them overlap as shown in diagram IIa.



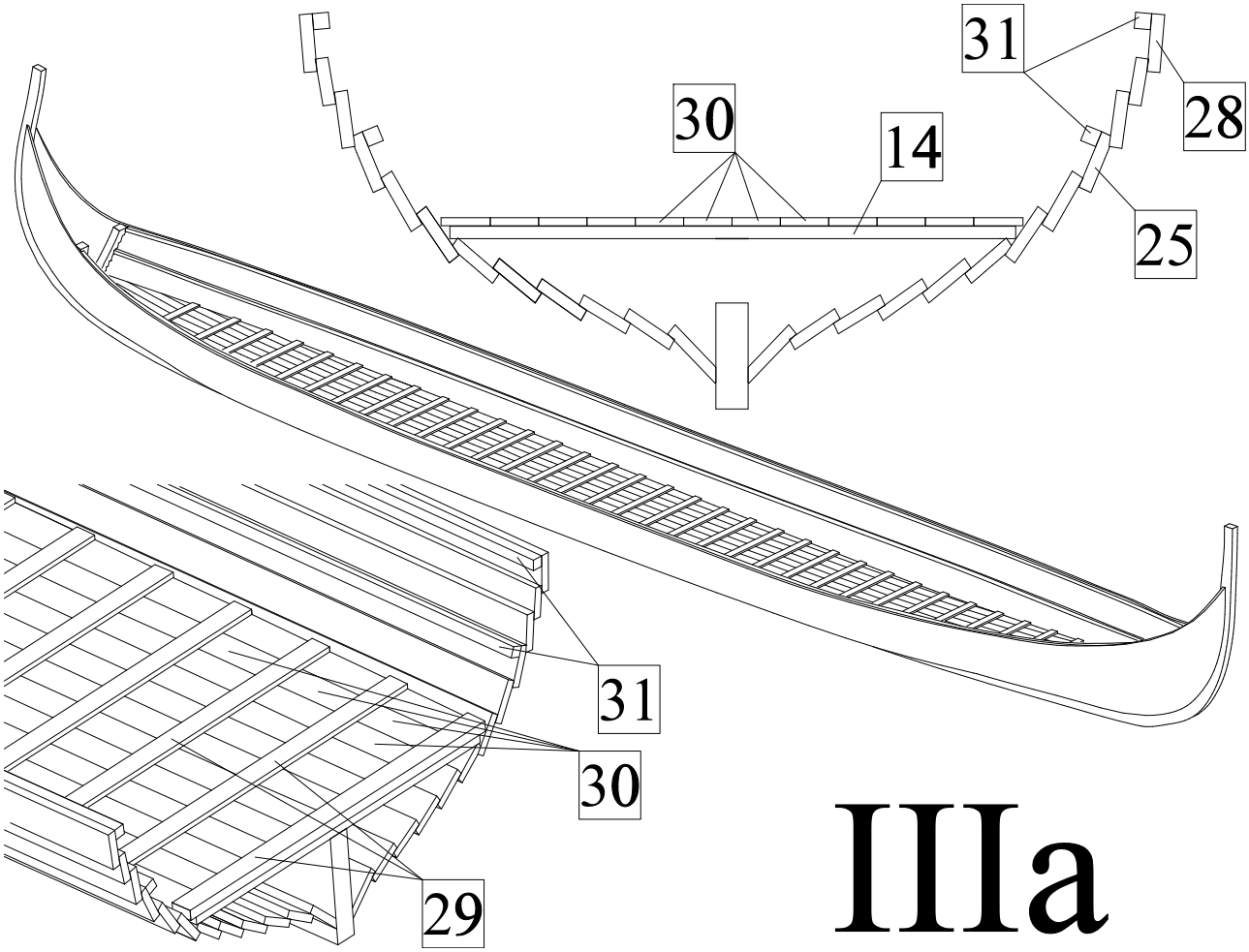
IIa

b) Cut off the parts of ribs 1-13, which overlap the deck. Attention! Ribs 15 and 16 leave in the original state.

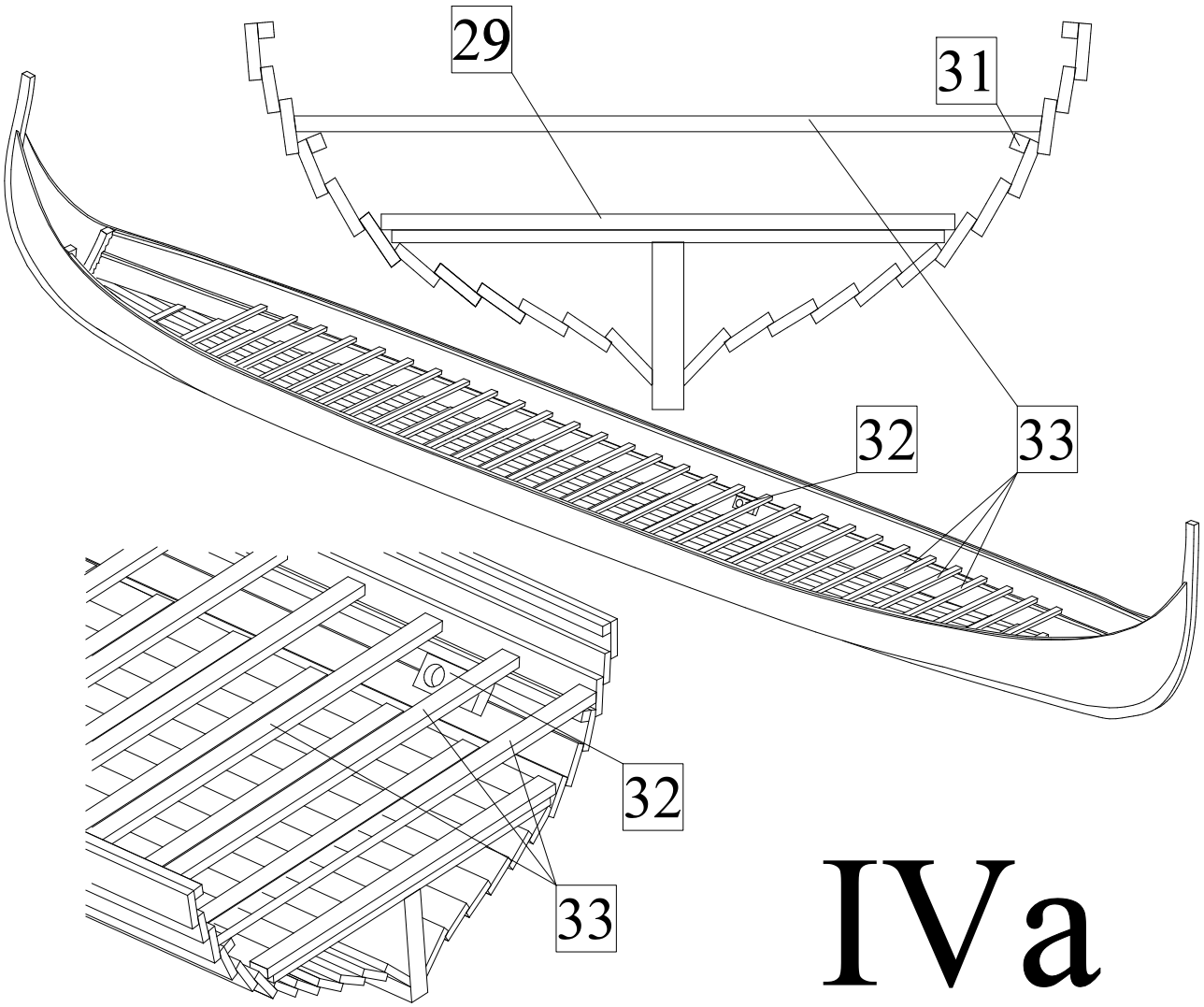


III) Planking the Deck:

a) First attach to the deck 14, the cross boards 29 as displayed at 1:1 scale in the plans. Then attach to the deck 14 longitudinal boards 30. On the inner side of the hull, attach stiffening beams 31 to planks 25 and 28 as shown in diagram IIIa.

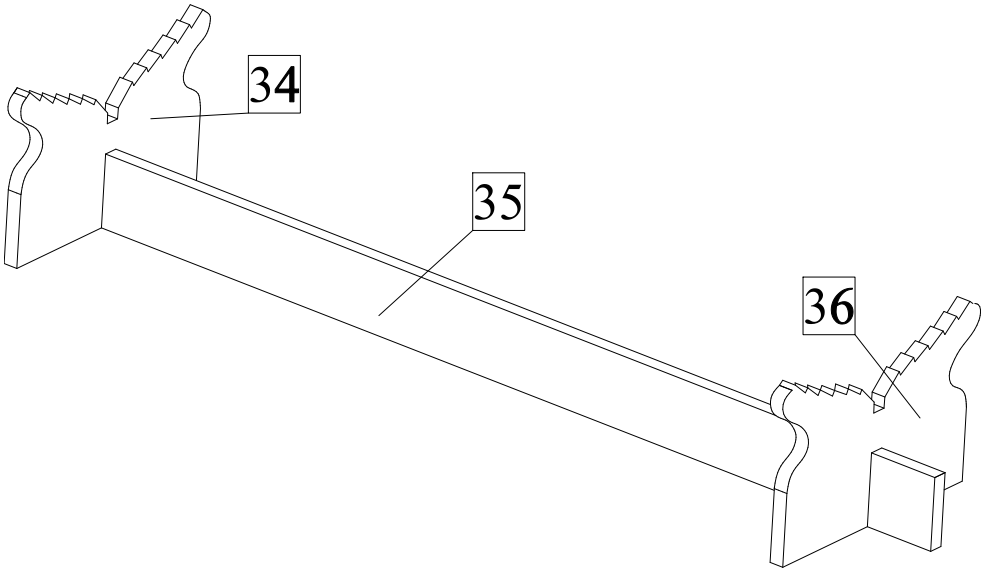


IV) Rowers seats:
a) On the inside of the hull attach components 32, at the precise location as displayed at 1:1 scale in plans. Then attach the cross girders rower's seats 33. The exact location for the rowers is also shown at 1:1 scale in plans. Seats are always placed above the transverse deck plank 29.



IVa

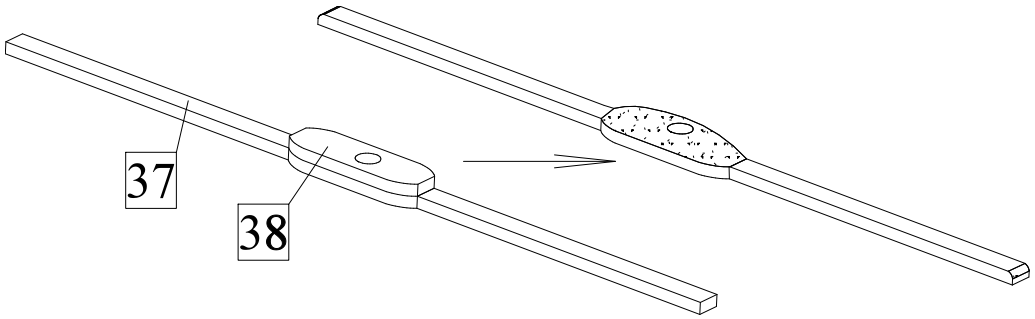
V) Stand:
a) Glue parts 34-36 to form a stand as shown in diagram Va.



Va

VI) Mast foot:

a) First, glue together parts 37 and 38. Then cut to shape using sandpaper the mast foot as shown in diagram VIa. Then attach the mast foot to the rower's seats. The exact location of the mast foot is displayed at 1:1 scale in the plans.

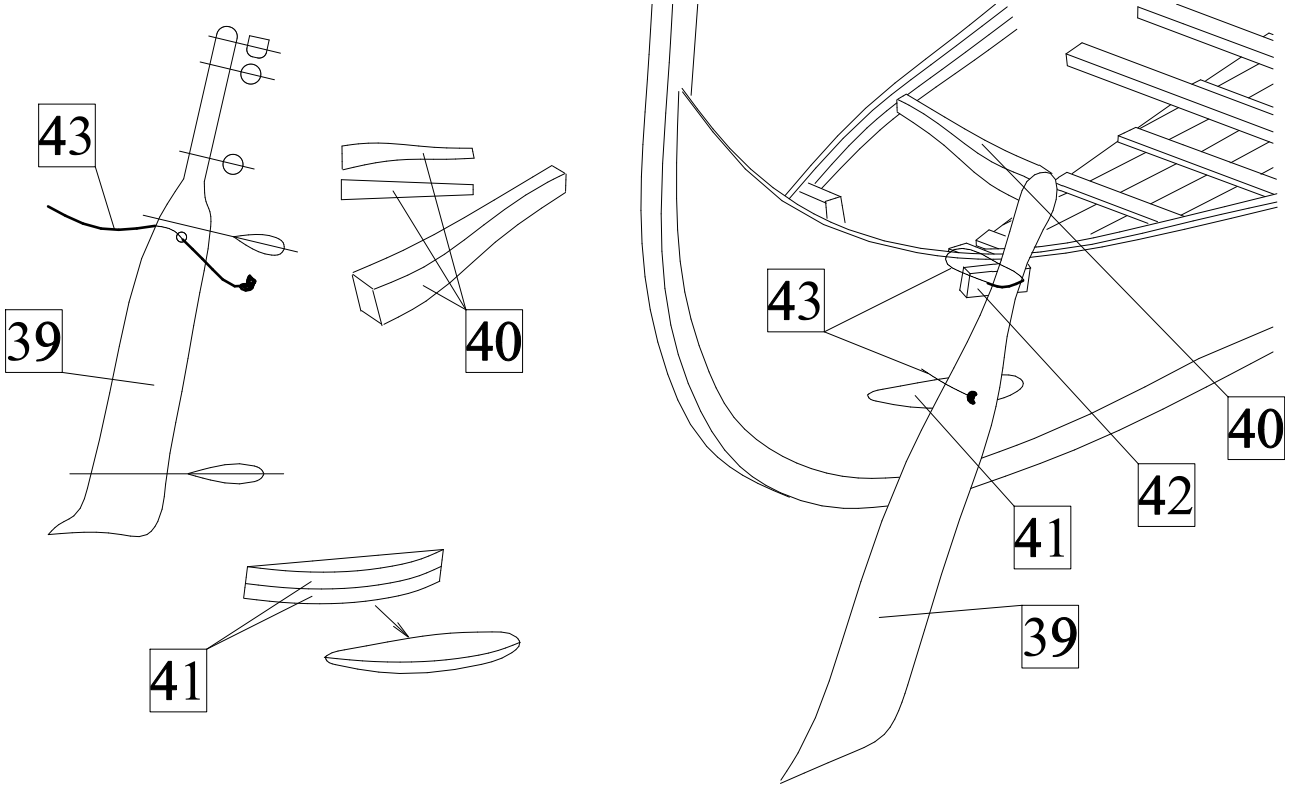


VIa

VII) The steering oar:

a) First shape the steering oar 39 into the desired by a sandpaper, ie the rudder in an oval cross-section and the neck in a circular cross section. Drill the steering sheet 43 hole with a diameter of 1mm. Then cut the handle 40 and attach it to the steering oar. Then sharpen a hinge of the rudder 41 and glue it to the hull.

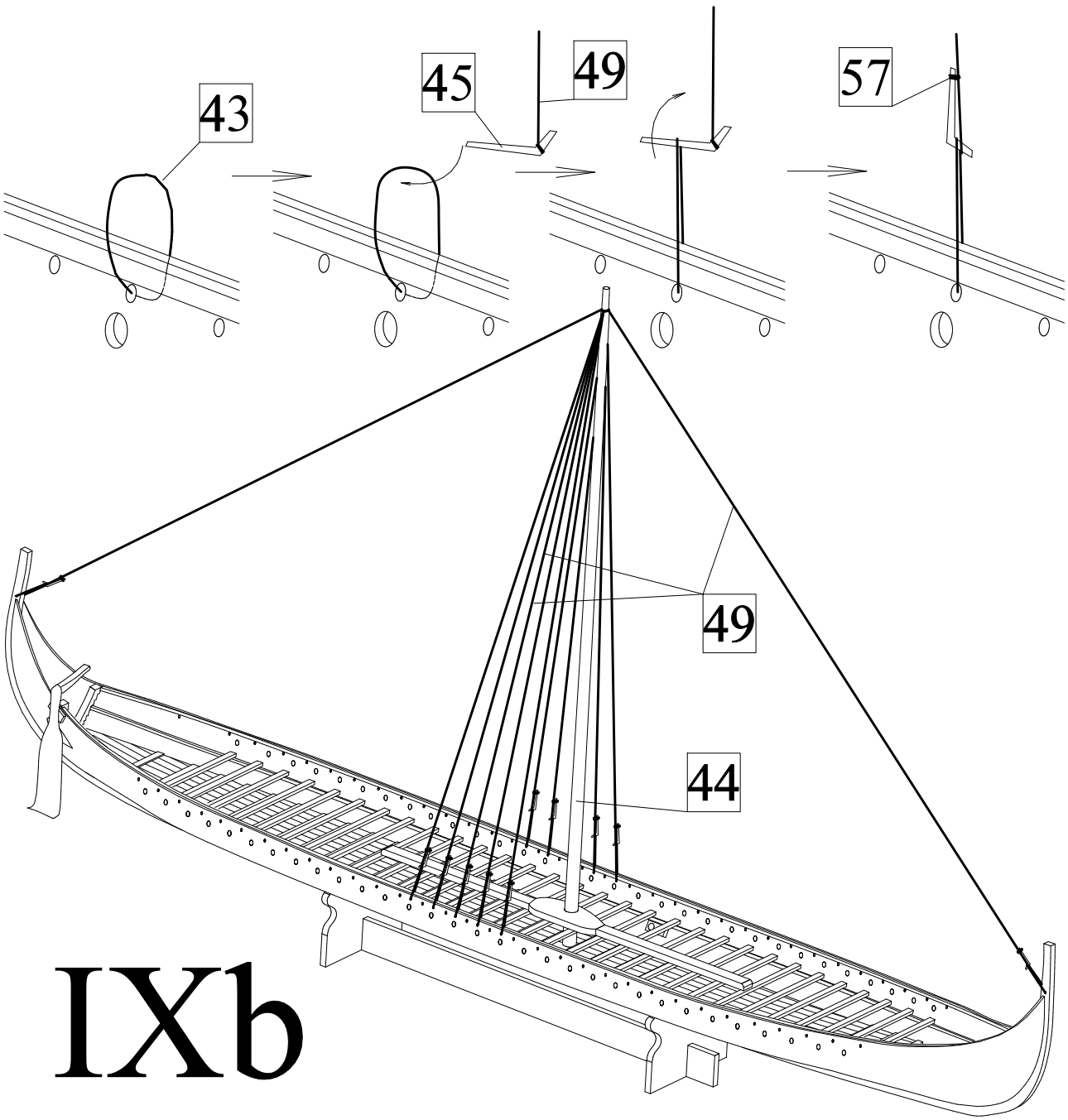
Then stick the steering oar to the hull. The exact location of the steering oar is shown at 1:1 scale in the plans. On the ship's side, attach the steering oar washer 42, whose position is also shown at 1:1 scale in the plans too.



VIIa

VIII) Openings in the hull:
a) In planks 28, drill holes with a diameter of 3mm. In planks 29 drill holes with diameter of 1mm for tethering the shields and shrouds. The location of the holes in the hull is shown at 1:1 scale in the plans.

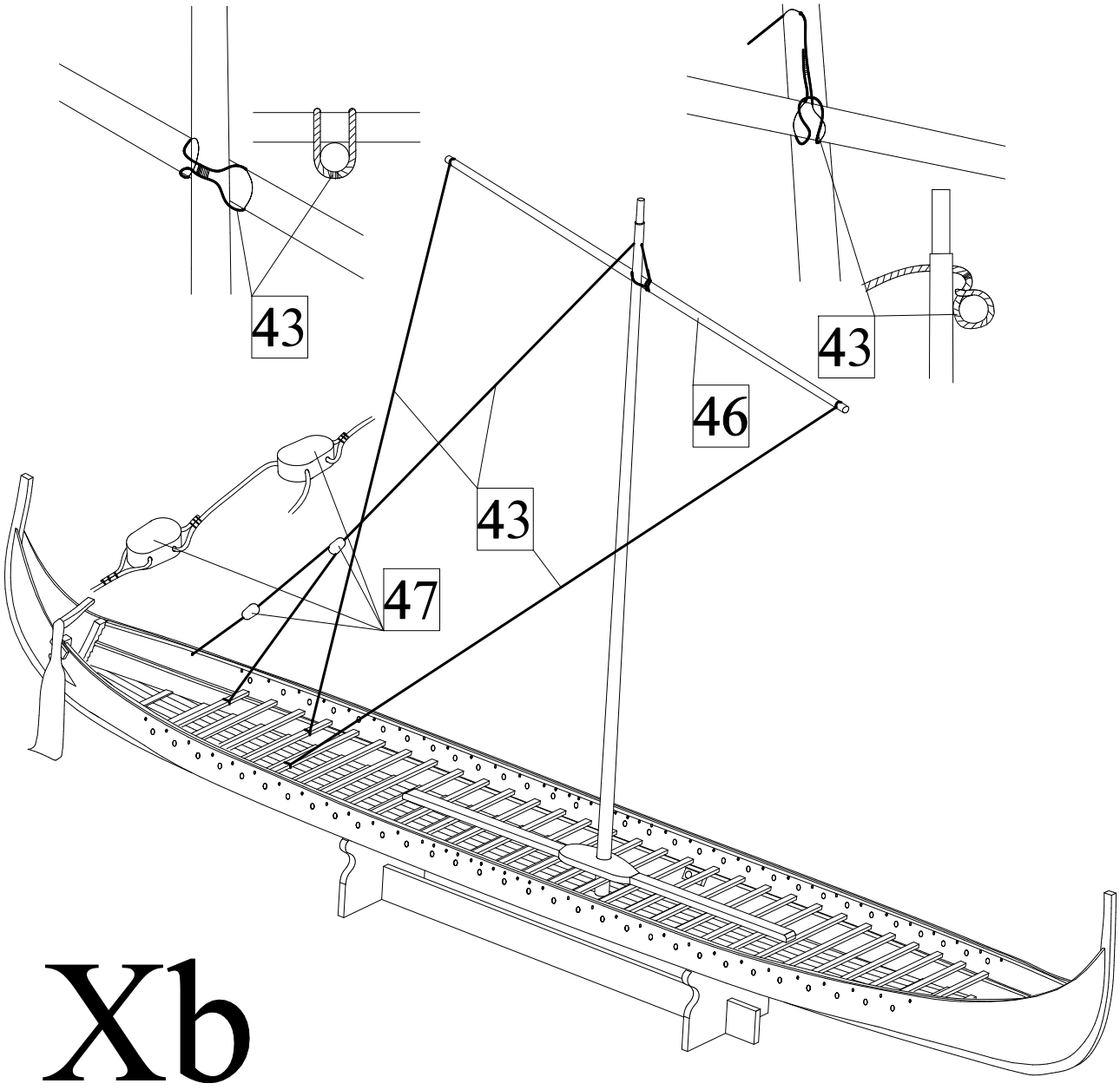
IX) Mast:
a) From the dowel with a diameter of 8 mm sharpen the cone-shaped mast 45. On top of the mast sharpen collection for tethering ropes and drill a 1mm hole. Then attach the mast to the foot of the mast. The mast is shown at 1:1 scale in the plans.
b) Use the rope 43 and by chain pins connect the mast 44 to the hull of the ship and to the stem and stern. Binding procedure of chain ropes is shown in the picture.



X) Yard:

a) From a 6mm dowel sharpen a yard 46. The yard is displayed at 1:1 scale in the plans.

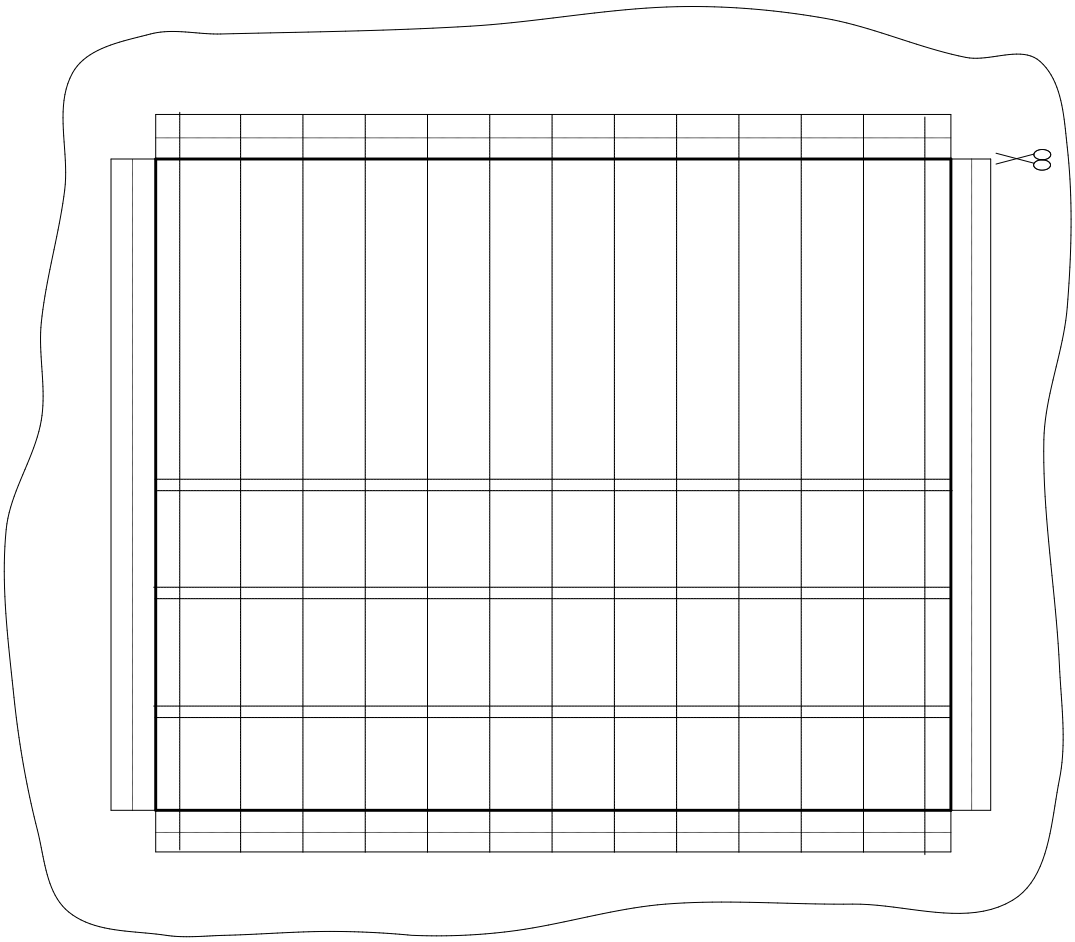
b) Attach the spar rope for pulling and download the yards, then pull the other end of the rope through the hole in the mast with pulleys and 47 consider it to rower's seats, as is shown in the picture. Thereafter attach the yard to the mast. The ends of the yard consider rope used to control yard, and then attach the other end of the rower's seats.



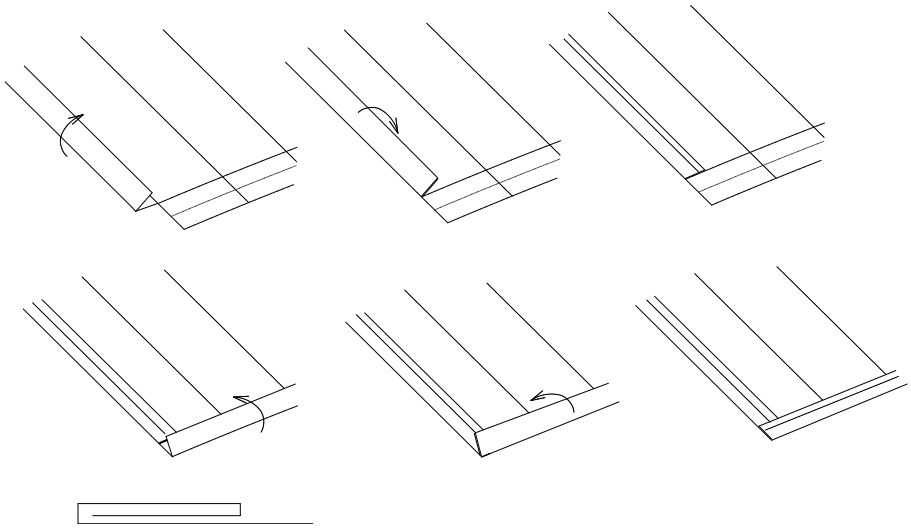
Xb

XI) Sail:

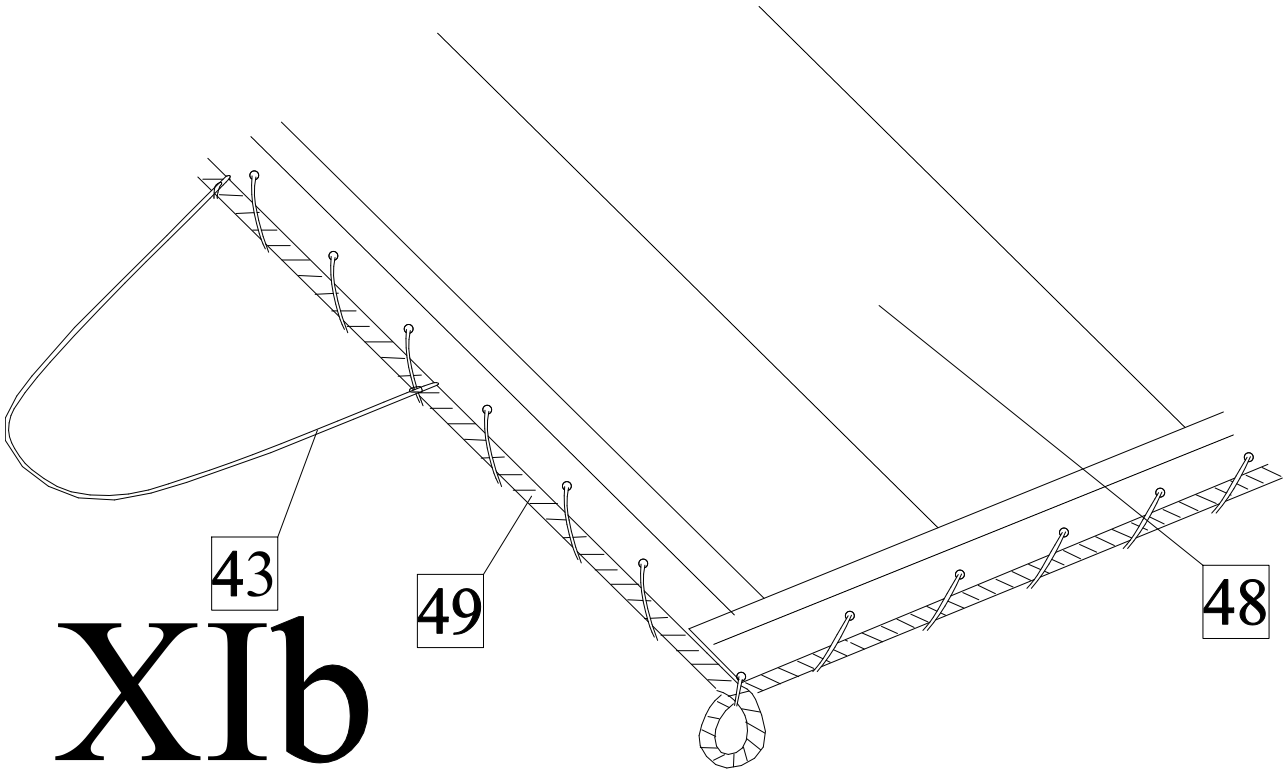
a) On the cloth, draw a pencil outline of the sail 48. To the edge of the sail, add 10mm more for the hem. Use a pencil to draw seams to divide the sail into individual segments. Use a sewing machine sews on seams dividing the sheet into individual segments. Then cut out the sail and the edge. Then sew a hem of the sheet as shown.



XIa

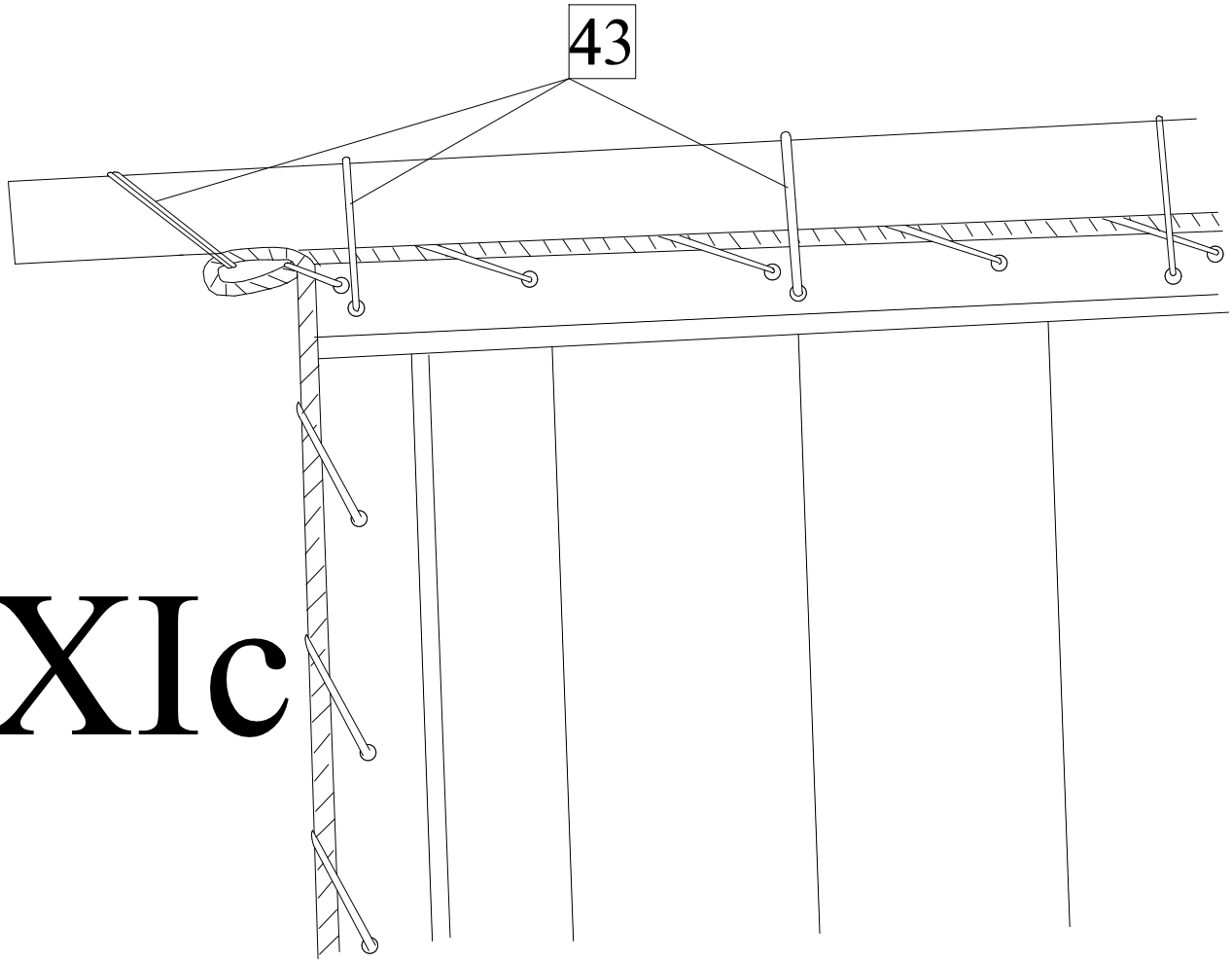


b) Sew rope 49 around the perimeter of the sail. Towards the centre of the sail tie the rope to control the sails 43.



XIb

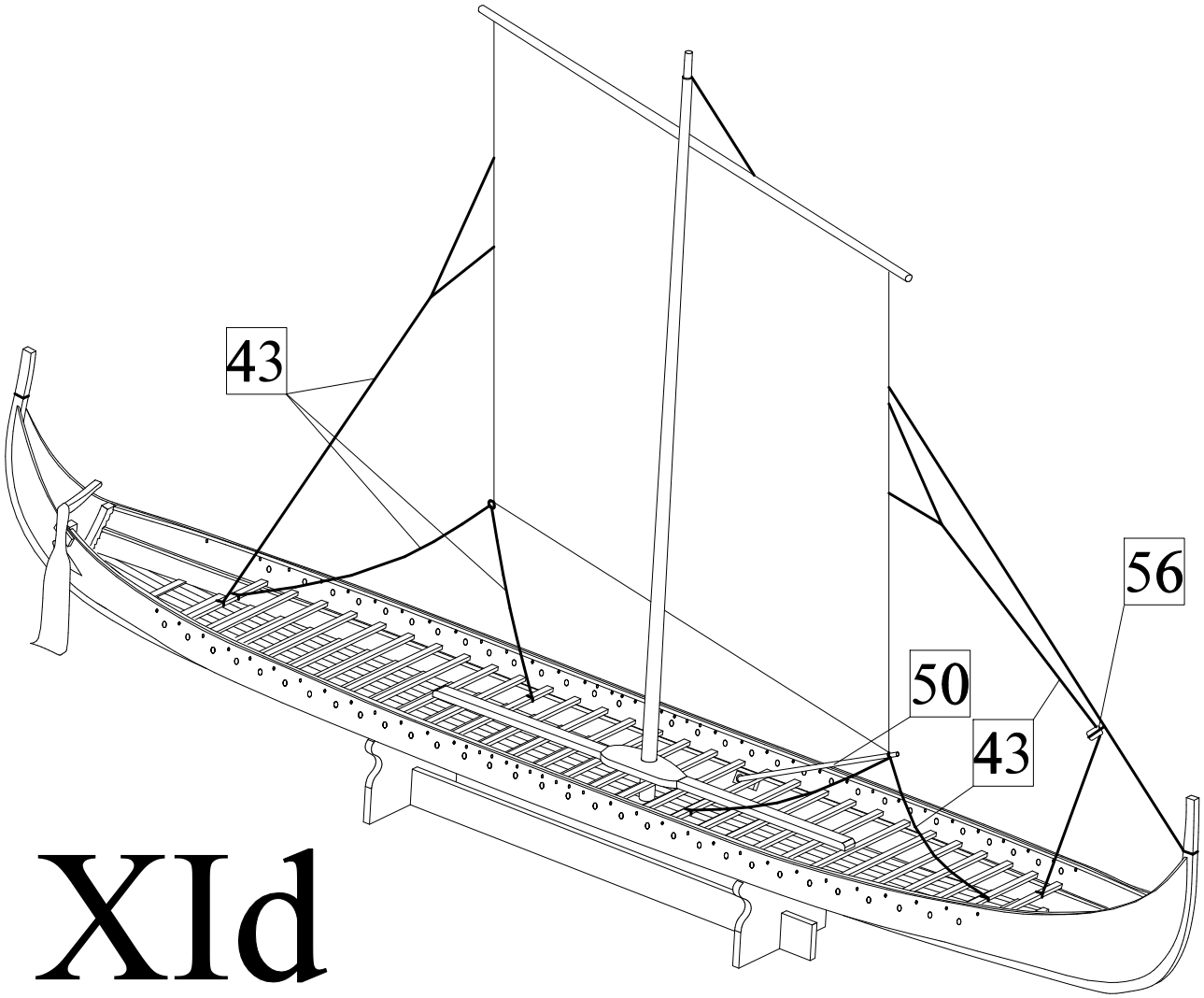
c) Tie the sail to the yard by rope 43.



XIc

d) Tie the lower end of the sail to the rower's seats using two ropes, one end of the sail tension by bar 50. The bar 50 is shown at 1:1 scale in the plans. Then attach the others used rope to control the

rigging, as is shown in the picture.

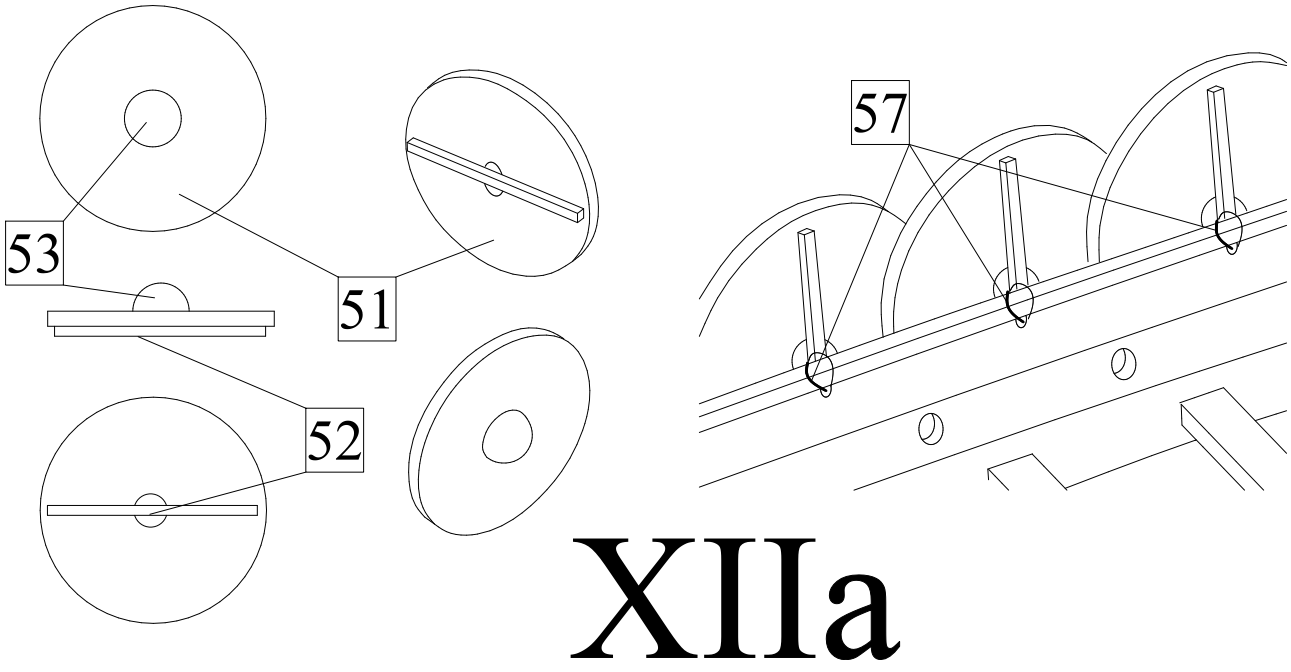


XId

XII) Shields:

a) First glue brass parts 53 to the shields 51. Then glue handles 52 to the back sides of the shields.

Finally tie the shield to the hull by rope 57.

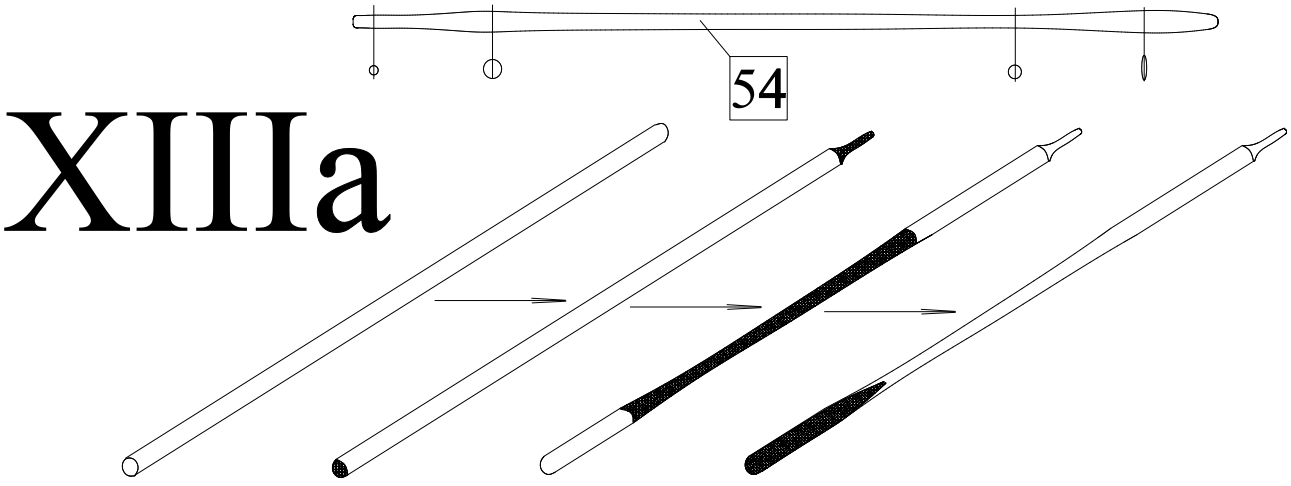


XIIa

XIII) Oars:

a) Using the 3 mm dowel, make oars 54. As a first sharpen by a sandpaper or needle file the handle. At the other end of the oars work it into a semicircular shape. Then sharpen by sandpaper the middle of a circular cross section. Finally sharpen blade of the oars. Oars are shown at 1:1 scale in the plans. Production of these would be facilitated by the use of the modellers Mini Lathe.

XIIIa



Part list:

0	Keel	plywood 4mm	1pc
1-13	Frames	plywood 4mm	1 pc
14	Deck	plywood 1mm	1 pc
15,16	Frames	plywood 4mm	1 pc
17-28	Planks	plywood 1mm	2 pcs
29	Deck	strips 0,5x4mm	8 pcs
30	Deck	strips 0,5x7mm	20 pcs
31	Reinforcement beam	strips 2x2mm	8 pcs
32	Plates with holes	plywood 4mm	2 pcs
33	Seats beam	strips 2x4mm	8 pcs
34-36	Stand	plywood 4mm	1 pc
37,38	Mast foot	plywood 4mm	1 pc
39	Rudder	plywood 4mm	1 pc
40	Rudder	plywood 4mm	1 pc
41	Rudder	plywood 4mm	2 pcs
42	Rudder	strips 2x4mm	8 pcs
43	Rope	cord 0,75mm	10m
44	Mast	dowels 8mm	1 pc
45	Shroud pins	plywood 1,5mm	12 pcs
46	Yard	dowels 6mm	1 pc
47	Blocks	block 10mm	2 pcs
48	Sail	cloth	1 pc
49	Rope	cord 1,25mm	10m
50	Bar	dowels 3mm	22 pcs
51	Shields	plywood 1mm	62 pcs
52	Shields	strips 1x1mm	4 pcs
53	Shields	brass parts	62 pcs
54	Oars	dowels 3mm	22 pcs
55	Supporting beams	strips 2x8mm	4 pcs
56	Block	block 5mm	1 pc
57	Rope	cord 0,25mm	10m