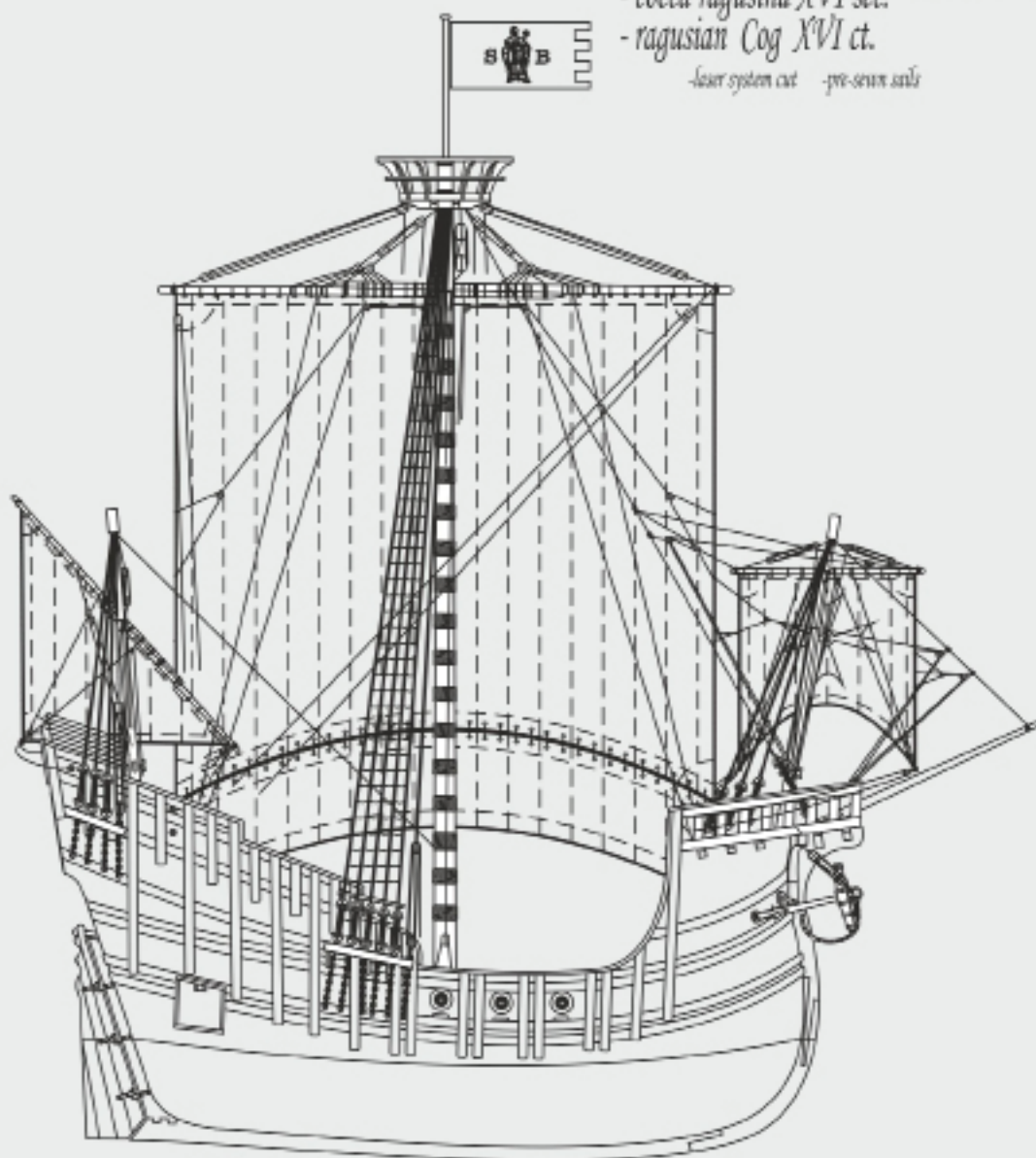




1:48 - 650 mm

KOKA DUBROVAČKA XVI st. Art. 950
- cocca ragusina XVI sec.
- ragusian Cog XVI ct.
- laser system cut - pre-sewn sails



RAGUSIAN COG XVI ct.
-building instructions

KOKA DUBROVAČKA
-uputa za izradu

RAGUSIAN COG XVI^{ct.}

Scale model's construction step by step

KOKA DUBROVAČKA XVI^{st.}

Izgradnja makete korak po korak



RAGUSIAN COG XVIct.

-building instructions

Cog is the war and merchant ship in the North Sea, the Mediterranean and the Adriatic Sea, with a big lead and two small reserve masts, whose main characteristic is high and tight bow tower forward with a almost horizontal triangular deck. One feature of this ship are the side openings for boarding horses and cattle and it is designed primarily for transporting army. It is mentioned for the first time in the 11th century, and across the Mediterranean in the 13th century. These ships were initially inaccessible thanks to the impregnable citadel. Together with cogs often sailed boats, caravels and carrack.

Making these models is intended for experienced modelers and numerical marks are placed in order of creation.

The list of materials that came with building instructions, it is extremely important because only with using it, you can determine exactly how to cut strips on the planned dimensions, and that you later do not run out of material. In addition, for the list of materials, selected and nominal positions for the drafting of which the individual strips are used. It is best to immediately organize the length and cut a strip that would not have happened to later mistakenly shorten a strip that will be needed in full length. No need to fear that they will not cut precisely because they all indicated dimensions listed on the material slightly longer than those who actually need and will adjust them later during modeling.

To create elements that are visible on the finished model, we used panels of walnut wood. On them, these elements are cut by laser. Them should be careful separate from the board by the very sharp knife to avoid crushing element because natural wood is tends to break up the rings. You need to cut tiny pieces that combine elements of the plate, and serve to the elements would not be dropped from the board. On the elements will remain blackened edges are such because of the laser beam that cuts on the way to actually burn the board at a given line. However, it is important that the blackened edges you can remove, if you will, in several ways. The easiest way is with sandpaper or an electric engraving tool, or should they simply can scrape off with a scalpel. Sometimes it is easier to put together a full element and then clean the blackened edges. We point this out to your models ultimately look beautiful and to facilitate your work.

Let's start with the building of the model:

First separate the parts of the element 1 and carefully clean their burnt area. We recommend an electric engraving tool. For this purpose is ideal the circular steel brush.

Element 1 make the keel, fore foot, stem, apron of the stem, stern knee, stern post and the inner post. All of them carefully glue each other as shown in the plan, using the ideal flat surface, such as glass. (keel; chiglia; Kiel, der). (fore foot; pić di ruota di prora; Stevenanlauf, der). (stem, stempost; ruota di prora; Vorsteven, der). (apron of the stem; controruota di prora; Binnenvorsteven, der). (stern knee; bracciolodella ruota di poppa; Hinterstevenknie, das). (stern post; ruota di poppa; Achtersteven, der). (inner post; controdrutto di poppa; Binnensteven, der).

Create a workstand in which the model will hold while you build it. Use a flat board as a base,

and two flat bars that attach to it, as a guide to the keel. It is good to make even the stem carrier and stern post carrier, also of straight bars that attach to the lower, the horizontal bars. Complete stand for development models should be stable. Model must stand tightly. Must be set so that the keel and the posts are vertical to the base. The only way you will be able to work properly.

Separate the elements 2 to 17 and 5 ½ to 12 ½.

Very occasionally, the laser does not cut off elements of the plywood in its entirety. If this happens just saw with jig saw element to the end and remove it from the motherboard.

On the bulkhead 2 glue elements 2.2 and 2.3. The deck beams (5 ½ to 12 ½), on the lower side, panel with the strips 0.6x5mm. Their side surfaces panel with the strips 1.5 x5mm. In the same way, panel the parts of bulkheads (3-12) where the main deck lies, all that is visible in the plan. In all of these elements tune grooves for the supporting strips 20, 21 and 25 and, if necessary, slopes for the inner shell.

If you plan to, later on in the building the model, the vertical side reinforcements to create in the one of the ways in which the material is not included in the kit, that is, if you intend to make them out of the walnut panels 6mm or the strips 6x6mm, then it is very useful now that copy the lines of the bulkheads where the vertical side reinforcements come. Simply draw the outer lines of laser cut off the bulkheads. Thus drawn curves will later be used to create templates the vertical side reinforcements and greatly ease the work.

Arrange all the bulkheads on the element 1, bend, set and glue the keelson 18 and 19, set the bulkheads in the correct position and glue the remaining supporting strip 20, 21, 22, 23, 24 and 25.

Assemble the element 13 and set it in the place with the transom. The transom panel from the inside 26. Set the cross beams 27, and then panel the transom from the outside 28.

The ceiling (the inner shell) (ceiling, fasciame interno): now manage the interior of the model. The first four strips 29 of the ceiling, two on each side, are the strips 1.5x7mm and they are equally wide throughout its length. The first strips glue in the middle of the supporting strips 20. Each strip lightly polish before gluing because you will not be able to do it later. Now tune and glue the flooring (flooring, pagliolo) 30 and the mast step 31 (mast step, scassa di albero).

The next four strips are the strips 1.5x5mm. they come above the top strips 1.5x7mm, and they are not equally wide throughout its length, but they need to be adjusted. Glue a few of them until you reach the level of the storage for the animals 34. Immediate finish the bilge keelson 33, using the darker strips for visual effect. Now, to make it easier to maneuver, you can remove the strips 21, but do not forget to put them back when you finish the interior.

Complete storage for the animals 34. Then place and glue the deck beams (5 ½ to 12 ½), plank the interior to the end. Panel the surface 35 of the bulkheads 3, and set up the pillars and finish the interior below deck. Eventually paint it of your choice, apply linseed oil and spray the matte varnish. We recommend that you leave the interior of the model in the natural color of wood. The more detailed description of the painting and refinishing is located at the end of this text.

The outside planking (fasciame esterno): The first by grinding askew the outside walls of the bulkheads at the bow and stern to allow the proper fit of the planking strips as it is shown in the plan. The bulkheads to the bow askew so that their rear surfaces, those that are facing the stern, leave untouched. The most italic needs the bulkhead 2. Askew and the outside walls of the elements 18.1, 18.2, 18.3 and 18.4, and glue them into the place. The bulkheads to the stern askew so that their front surfaces, the ones that are facing the bow, leave untouched. Askew and outside walls of the elements 18.5 and 18.6, and glue them into the place. We recommend filling with a piece of soft wood space between the bulkheads, the outside shell of of the ceiling (fasciame internally), especially in the particular parts of the bow, in front of the bulkhead 2. Sand all to get the proper curve of the hull. Assemble the lever for rotating the rudder and then start gluing the

planking strips. These strips can call madiere. The planking strips needs to be soaked in water, so they not break during bending. The first planking strip 36 glue so that its upper edge follows the upper edge of the element 38, the main deck rail that will be attached to the deck later. Leave it equally wide in its entire length (5 mm). Glue the following two planking strips below it. They also need to be equally wide throughout their length (5 mm). Adjust the planking so that all the planking strips that, that are below the the wales (the horizontal lateral reinforcement), are the strips 1.5x5mm equally wide throughout its length (5mm), do not adjust their width. Plank the hull to the bottom, and then proceed with the planking strip above the initial one. The freeing ports, the openings for discharging water from the deck, should be engraved on it.

How to measure and adjust the planking strips width ? Widths of the planking strips need adjusting. This is done by determining the bulkhead with the highest volume. You need to set up the planking strips from the first set down, to the keel. First we need to calculate their widths, which are not equal in their entire length. Measure the volume of bulkhead with the largest volume, that is the part that needs to be covered with the planking strips. Let the volume of the surface area is the value of A. Divide this value with a width of the planking strip. The width of the planking strip of these models is 5mm. You will get the number that should be rounded to the first higher whole number. Let's call it the number of B. This means that to fill the width A we need to use B strip width of 5 mm. Now divide A to B and you will get the width of each planking strip from the initial to the keel. So do this for each bulkhead and the resulting dimensions transfer to all of B planking strips. Transfer the marked values on the planking strips. Cut them. Make sure you cut them to length and it is always only the upper edge. When so cut planking strips set into place, starting from the top to the bottom, the bottom edge of each planking strip must be the basis for gluing the planking strip that comes below it. If you see that does not fit, do the procedure again and find where you are mistaken. Do it in the same way to the keel.

Then, plank the hull of the model starting from the initial planking strip upward. The width of the planking strips need to be adjusting in the same way. At the first planking strip from beyond the initial you need to cut the freeing ports (openings for discharging water from the deck).

Plank the models sides to just above the topgallant rail, cut off the upper visible parts of the bulkheads and finish the deck 37 (the strips 1.5x5mm) and the deck rail 38 (the strips 0.5x6mm).

Now sort out visually fitting the deck in a way that, as shown in the drawing, drill holes Ø 0.3 mm on the deck (you can use a needle) and fill them with a mixture of wood glue and brown acrylic paint. You can also use colored putty for wood. When the mixture is dry, sand and polish the deck. So you get the ideal shape of the deck as if it were nailed with wooden pegs. Coat the deck with linseed oil.

So manage visible external part of the deck as well as space in the cabins if you will later leave the door open. After that start editing the cabin space.

First, do the ceiling 39 of the lower cabin at the bow, and then set the profile 40 with the openings for the windows and doors, and plank it inside 41. Then the deck 42 and the descent 43. Then the ceiling 44 and then set the profile 45 with the openings for the windows and doors, and then plank it inside 46. Then the forecastle deck beams, the forecastle deck and descend 47.

Now do the ceiling 48 of the cabin at the stern, and then set the profile 49 with the openings for the windows and doors, and plank it inside 50 and outside 51. then set the profile 52 with the openings for the windows and doors, and plank it inside 53. Do the outsaid planking to the end (plank the hull to the end), adjusting the width of the planking strips as needed. Cut the visible upper parts of the bulkheads on the stern castle off. If necessary, adjust the deck bearing to deck rests flat as shown in the plan. Set the top timbers of the main deck 37. Set the stern deck, the stern deck rail and set its top timbers. Sort out visually stern and forecastle deck as you did with the main deck previously.

Cut the opening for boarding horses and cattle, set the threshold so that the opening 55 is drawn

into the hull for the thickness of the outside planks, that is for about 1.5 mm. Make the door of the strip 1.5x5mm as shown in the plan. When the door is put in place it should be in the line with the hull, not protrude out or in. The simplest way of making it is that the strips put on the spot, at the door frame, and glue them here one to the other. Note that the door is made of two parts. They can be placed on the deck or in the barn area, in the ceiling.

Complete the topgallant rail and all other elements. The topgallant rail make out of the strips 8x2mm. They should be bent to satisfy the shape in the middle of the model. The easiest way is to boil the strips, then bend them carefully by a pincer in the required form. For this operation, you will need a bit more experience.

The vertical side reinforcements you can make out of the strips 2x6mm, 3 times glued one to the other, sand them into the desired shapes. Then, between them, insert the fragments of the wales (the horizontal reinforcements) that you make out of the strips 1.5x6mm. But more correct is to first glue the wales (the horizontal reinforcements), and then create the vertical side reinforcements. The vertical side reinforcements you can produce from walnut wood 6mm thick, but the material for this option is not included in the kit. Then, before the start of making the model, you need to cross out the lines of the bulkheads at the points where the vertical side reinforcements come, to be easier to make their curves adhere to the hull. Also you can make them out of the strips 6x6mm, where is necessary to glue their sides together to get a strip wide enough to produce reinforcements. Also in this variant, it will help you if, before the beginning of the modeling, you cross out the lines of the bulkheads at the points where the vertical side reinforcements come. In the kit is not supplied material for making this version. The vertical side reinforcements who come highly above the waterline at the stern of the model, by their design are adapted to the longer vertical side reinforcements in such a way as they are just shorten, short cut to size.

The guns fasten fith the 3mm blocks with the hooks made of wire (the wire is not supplied in the kit), or simply fasten the 0.25 mm rope to the eye-lets. Connect the gun safety rope of 1mm.

Ragusian Cog had a boat used to have towed her behind, but during long journeys, with no doubt, the boat was placed on the deck, tied on her stand.

The realization of the boat's model is divided into three steps. First make the mold of the model's hull and prepare it for the planking. The second step is the setting and sanding of the transom and planking of the mold in two layers of verneer, then the removing of the mold. The third one consists of setting the outer keel and adjusting the model's hull, from outside and inside. To make the boat's model use the illustration BK.

First remove the mold of the inside of the hull from the balsa panel 20mm.

Make the boat's mold B1 by sanding the balsa block, to get the proper shape of the inner part of the boat's hull, as shown in the draft Ba. See the illustration BK. Make sure to sand the stempost so that its front surfaces of the sides form a sharp angle. Watching from the front, the bow must be pointed. When you set the planking slats on the sides, each on its side of the model, they must touch each other at the top of the bow. Make the same for the part in the keel.

On the back of the mold B1 of the inside of the boat's hull glue the transom B2 and shape its edges.

The mold B1 is planked by planking slats made of the 0,5x5mm slats. Their size should be 0,5x2,5mm. Glue the first planking strip B3 on the mold. Its upper edge must be leaning on the upper edge of the mold. In this way you get the proper shape of the hull's upper profile. Now plank the structure downwards. The planking slats from different sides of the mold, must touch each other at the top of the bow, at the bottom of the structure and in the stern under the transom. Don't force the gluing of the planking slats to the mold, because later you should to remove it from the boat model's shell.

After planking the structure with the first layer of planking slats, plank the hull once again, but this time more precisely. Make sure that the planking strips go from stern to bow. Smaller boats of croatian coastal area are planked so that the first is set the rubbing piece, then the planking slat very close to the keel. After that the planking slat is set next to the rubbing pieces, then the planking slat to the first up to the keel and so until their peaks reach each other in the stern and bow. Then in the middle of the hull remains an oval elongated opening. It should be closed by a planking strip, cut into its shape.

After the second planking the outside planking B4 should be 1 mm thick.

Carve the balsa block mold B1 and so remove it completely from the shell of the boat's model. Shape the upper edge of the transom B2. Sand and polish the shell of the boat from both inside and outside. Adjust the shape according to the outer keel B5 which is on the 2mm walnut panel. The keel will be leaning on a bearing in the hull which has to be sanded flat, to not have holes between the outer keel B5 and the boat hull. Glue the outer keel B5 on the boat model's hull.

Now it follows the inside adjusting. Adjust and glue the stern knee B6 and the fore foot B7, from the 2mm walnut panel. Cut slats of verneer 0,5mm thick to make the frames B8. (Upper parts, bent timbers, bent heads and lower parts of the bent timber, floor timber). Cut slats in the required lenght and glue the lower and upper parts of the frames. From the same verneer cut and glue into place the bilge keelson B9. Make and glue the floorings B10. From the same verneer cut and glue the wiring B11 in its place. On it carve slots for the thwarts and bow deck B12. Make the thwarts and the bow deck B12 of the rests of the slat. They should be 1mm thick. Glue them. Make and glue the side stringer B13. Remove four identical parts of the topgallant rail B14 from the 0,4mm panel. Glue two by two to each other. The two new parts to be glue one on each side of the hull, to get the topgallant rail B14 about 1mm thick. Now, sand carefully the outer and inner edges of the topgalant rail B14 to get the required shape. Make and glue rubbingstrakes B15 of walnut slats. Make the eyebolts with rings B16 of brass wire and set them into place. Make the oars Bd of the rests of the slats. Make and glue the thole-pins for oars.

Paint the model of the boat as the ragusian Cog. Varnish the boat with matt colorless acrylic varnish. Later, place the boat on the stand on the deck as shown in the draft. Tie her to the stand.

(wale, rubbingpiece, sheer – strake; cinta, cordone, cerchio; schergang, der). (side frame, jead, benthead, benttimber; ordinata, costola; Spant, das). (bottonframe, rib, floortimber; madiere, ordinata, costola, membro; Bodenwrange,die). (bilgekeelson; paramezzaletto). (flooring, floorboard; paglio, pagliuolo; Bodenbretter, die; Weger, der). (wiring; sottobanco, correntedimurata; Banke, die). (thwart; banco, bancodivoga; Ducht, die). (thwarts side, seats; sedile, banco; Langsbank, die). (topgallantrail, rail cap; capodibanda; Dollbord, der). (deck, coperta). (rubbingstrake, righino). (eyeboltwith ring, golfare).

The stern deck companionway cover create using the remains of the strips 1.5x5mm. Make it into two parts and set it right and left of the stern deck companionway (stern deck descent). The forecastle deck companionway cover create using the remains of the strips 1.5x5mm and set it leaning on the bulwark (the railing) of the forecastle deck. To create the hatch cover you have to glue the side surfaces of the strips 2x10mm one to another, and from them, by cutting, create the strips 2x15mm. There are five such panels. There are two pieces of the strips 4x4mm. These elements arrange on the deck around the mast or on the stern deck, there where is enough room.

The coat of arms should be carved according to the plan. Its fields are red and blue and gold wreath around it. In designing a women's figure and the sun, use the elements cut from the veneers plates as the base and plank them in to the strips 1.5x5mm. The resulting intarsia carve to the plan. Glue the elements into place on the transom.

Create the masts with all the elements. Brush those elements with linseed oil, varnish and then connect all the ropes with the block. Place the masts and connect the tensioning ropes,

shrouds, with the dead eyes. It should be pointed that before placing any rope or sail, models and other wooden components must first paint of your choice and varnish. The procedure has been described below in the text. Connect the ratlines (the rope ladder) with the shrouds.

Create the sails so that you cut them at the outer edges of the embroidered, hem the first edge (5mm) and put the wire inside, hem the second time, the another edge and put the rope Ø 1mm inside. Sew the inner regions where is the wire, parallel to the edge. The suture should be approximately 5 mm (on both sides). By the transparent glue, on the outer edges of the sails, thinly glue the rope Ø 1mm, leaving the rings on the upper corners for the putting sails on the masts. That rope stitch for the sail by the rope Ø 0.25 mm, rolling up three times to about every 5mm. Stitch it through the inner rope at the edge of the sail. On the main sail connect the bonet, the extension of the lower end of the sail. Now set the sails on the rigs and tie them, tie rigs on the masts. Shape the sails of your choice, connect all the other ropes, create flags and fix them. (spars; alberatura; Schiffstakelung, die). (Sail, sails; Velatura; Segelwerk, das). (Ropes, rigging, rig; attrezzatura; Takelwerk, das). (Shrouds, shroud; Sartia; Wanten, die). (ratlines, rattlings; Griselli; Webleinen, die).

The scale model's stand consists of two side walls in which slots on the front and back you need to set the longitudinal elongated plate with the inscriptions. Select two plates with inscriptions that suits you. One side wall put at the level of the bulkhead 5, and the second side wall put at the level of the bulkheads 11. Connect it, tune the groove for the keel, glue it and paint and varnish as desired.

The model can be left in natural wood color, as we recommend, or paint it as desired, but be sure to do it before setting up the rope. Below the water line should be painted black or matt dark green.

Models of ships should be painted so it does not shine. Use acrylic paint and an acrylic colorless matt varnish. Here's the procedure: first polish a model with sandpaper. Then spread a mixture of 40% linseed oil and 60% thinner and immediately wipe with a cloth. When dry, paint it as desired and let everything dry completely. Re-sand and polish as needed and paint everything one more time. Those parts that you intend to keep wood color, once again, after twenty-four hours after the first coating, coated with a mixture of linseed oil and thinner, and immediately wipe with a cloth. When everything is dry again spray matte colorless varnish on two occasions, between which is enough wait twenty minutes. So you will get perfect colored model.

Rarely it happens that, after painting with colorless matte varnish, on wood the appearance of tiny fibers that protrude and look ugly. If this happens, just re-polish the element and re-spray matte varnish. Fiber will disappear.

After painting and varnishing the model connect all the ropes and set the sails.

Your model is now finished.

Read more, visit “www.marisstella.hr”

We sincerely thank you opted for our model.

Best Regards

Marisstella Ltd.
Split
Croatia

The list of materials

RAGUSIAN COG XVIct.

The box 60cm x 20cm -1 pcs

Laser cut panels:

- 1) DKO105 -10cmx10cm (Finnish birch plywood 0,4x200x600 mm)
- 2) DKO12 -10cmx33,3cm (Walnut boards 2x100x1000mm 80203)
- 3) DKO22 -10cmx33,3cm (Walnut boards 2x100x1000mm 80203)
- 4) DKO32 -10cmx16,66cm (Walnut boards 2x100x1000mm 80203)
- 5) DKO54 -10cmx11,4cm (Walnut boards 4x100x1000mm 80205)
- 6) DKO16 -10cmx50cm (Walnut boards 6x100x1000mm 80207)
- 7) DKO14 -20cmx60cm Plywood 4mm
- 8) DKO24 -20cmx60cm Plywood 4mm
- 9) DKO34 -20cmx60cm Plywood 4mm
- 10) DKO120 -5cmx15cm Mini balsa block

interior:

walnut strips 10x5mm -25cm

(or walnut strips 2x10mm 80013 1x25cm + lime wood 3x10mm 82617 1x25cm)

walnut strips 1,5x7mm (80009) -4x50cm(45cm)+62x1,7cm

walnut strips 1,5x5mm (80008) -37x50cm(45cm)

mahagoni strips 1,5x5mm (81024) -14x50cm(45cm)

walnut strips 1,5x5mm (80008) -54x20cm

walnut strips 5x5mm (80018) -1x100cm

walnut strips 4x4mm (80017) -1x70cm+3x6cm

walnut strips 0,6x5mm (80002) -28x8cm

cabin interior:

walnut strips 1,5x5mm (80008) -14x7cm+18x7cm+24x14cm

walnut strips 0,6x5mm (80002) -34x10cm+100x8cm

ladder:

walnut strips 4x4mm (80017) -23x2,5cm

outside planking:

walnut strips 1,5x5mm (80008) -86x50cm

walnut strips 1,5x6mm (80025) -6x50cm+1x36cm+1x60cm

walnut strips 0,6x5mm (80002) -2x50cm

walnut strips 2x6mm (80011) -3x340cm

walnut strips 2x8mm (80012) -2x25cm+2x30cm+2x15cm+15cm+10cm

decks:

walnut strips 1,5x5mm (80008) -18x12cm+24x20cm+32x43cm

walnut strips 0,5x6mm (80032) -1x150cm

walnut strips 3x3mm (80016) -1x240cm

hatch cover:

walnut strips 2x10mm (80013) -10x 6,5cm

walnut strips 4x4mm (80017) -2x10cm

masts:

walnut dowels 14mm (89109) -1x61,5cm

walnut dowels 6mm (89105) -1x20cm+1x18cm+1x12cm+1x5cm

walnut dowels 8mm (89106) -1x35cm+2x27cm+1x30cm

walnut dowels 4mm (89103) -1x13cm+1x10cm

fittings:

belaying pins	12mm (32700)	-10pcs
port hinges	(37360)	-12pcs
convex dead-eye	7mm (37210)	-48pcs
walnut single block	3mm tamni (37000)	-44pcs
walnut single block	5mm tamni (37010)	-20pcs
walnut single block	7mm tamni (37020)	-11pcs
walnut double box	5mm tamni (37060)	-9pcs
walnut double box	7mm tamni (37070)	-15pcs
walnut double box	10mm tamni (37080)	-2pcs
gun barrel	45mm (30515)	-6pcs
wire	1,5mm (2580)	- 15cm
small bridges for the gun	(42844)	-12pcs
chain 4 mm tamni ili svijetli	(32230or32290)	-50cm
eye-let	3,5mm (33020)	-25pcs
eye-let	fi1,8x8mm (33070)	-48pcs
anchors	42x65mm (42561)	-2pcs
brass strip for the rudder irons	3mm(2533)	-20cm
wire for the sails	1mm (2593)	- 3m
wire	2mm (2581)	-25cm
clear rope	0,25mm (34350)	-1pcs
clear rope	0,50mm (34360)	-1pcs
clear rope	0,75mm (34370)	-1pcs
clear rope	1mm (34380)	-1pcs
clear rope	1,25mm (34390)	-1pcs
clear rope	1,75mm (34391)	-1pcs

Plan: - 2 sheets 900mmx1000mm

Instructions

Sails: - 1 set DUKOJ

Flags: - 1 set DUKOZ

KOKA DUBROVAČKA XVIst.

-uputa za izradu

Koka je ratni i trgovački jedrenjak Sjevernog, Sredozemnog i Jadranskog mora s jednim velikim glavnim i dva mala pomoćna jarbola, čija je glavna karakteristika visok i uzak pramčani kaštel sa približno vodoravnom trokutnom palubom. Jedna od karakteristika ovog broda su bočni otvori za ukrcaj konja i stoke jer joj je osnovna namjena prijevoz vojske.

Prvi put se spominje u 11. stoljeću, a u Sredozemlje prelazi u 13. stoljeće. Ti su brodovi u početku bili neosvojivi zbog nepristupačnog kaštela. Uz koke često su plovile i karavele, nave i karake.

Izrada ove makete namijenjena je iskusnijim maketarima, a brojčane su oznake postavljene prema redoslijedu izrade.

Popis materijala, koji je priložen uz uputu za izradu, iznimno je važan jer jedino uz pomoću njega možete točno odrediti kako pravilno izrezati letvice na predviđene dimenzije, a da Vam kasnije ne ponestane materijala. Uz to su, na popisu materijala, označene i nazivne pozicije za čiju izradu pojedine letvice služe. Najbolje je da odmah organizirate dužine i izrežete letvice kako se ne bi dogodilo da kasnije greškom skratite neku letvicu koja će biti potrebna u potpunoj dužini. Ne trebate se plašiti da ih nećete precizno odrezati jer su sve naznačene dimenzije na spisku materijala nešto duže od onih koje u stvarnosti trebaju, a ugoditi će te ih kasnije prilikom rada.

Za izradu elemenata koji se vide na gotovoj maketi koristili smo ploče od orahovog drva. Na njima su ti elementi izrezani laserom. Njih sa ploče treba pažljivo odvojiti iznimno oštrim skalpelom da ne bi došlo do pucanja elementa, jer prirodno je drvo sklono cijepanju po godovima. Trebate prerezati sićušne neizrezane dijelove koji spajaju elemente i ploču, a služe da elementi ne bi sa ploče ispali. Na elementima će ostati tamni rubovi koji su takvi zbog rada laserske zrake koja reže na taj način da u stvari izgori ploču po zadanoj liniji. No, važno je da te tamne pocrnjele rubove možete, ako hoćete, očistiti na više načina. Najjednostavniji način je brusnim papirom ili električnim alatom za graviranje, ili ih pak možete jednostavno ostrugati skalpelom. Ponekad je jednostavnije u potpunosti sastaviti neki element pa potom očistiti pocrnjele rubove. Ovo naglašavamo da Vaša maketa u konačnici izgleda ljepše i da Vam olakšamo rad.

Krenimo sa izradom makete:

Prvo izdvojite dijelove elementa 1 i pažljivo očistite njihove tamne izgorjene rubove. Preporučamo električni alat za graviranje, za ovu namjenu je idealna čelična okrugla četkica.

Element 1 čine kobilica (keel,chiglia), pramčano uzvojno koljeno (fore foot,più di ruota di prora), pramčana statva (stem,ruota di prora), protustatva pramčane statve (apron of the

stern, controruota di prora), krmeno uzvojno koljeno (stern knee, bracciolo della ruota di poppa), krmena statva (stern post, ruota di poppa), protustatva krmene statve (inner post, controdritto di poppa). Sve ih pažljivo zalijepite jedne na druge kako prikazuje nacrt koristeći pri tom idealno ravnu podlogu, na primjer staklo.

Izradite radni stalak u kojemu će te maketu držati dok je budete izrađivali. Ravnu dasku upotrijebite kao podlogu, a dvije ravne letve, koje učvrstite za nju, kao vodilicu za kobilicu. Dobro je izraditi još i nosač za astu krme i pramca, također od ravnih letvi koje pričvrstite za donje, vodoravne letve. Kompletan stalak za izradu makete mora biti stabilan, te maketa u njemu mora stajati čvrsto i postavljena tako da kobilica sa astama stoji okomito na podlogu. Jedino tako moći će te pravilno raditi.

Odvojite elemente 2 do 17 i 5 ½ do 12 ½.

Rijetko se dogodi da laser ne odreže elemente na šperploči u cijelosti. Ako se to dogodi jednostavno ispilite rezbarskim lukom i pilom element do kraja i odvojite ga od matične ploče.

Na pregradi 2 zalijepite elemente 2.2 i 2.3. Noseće grede palube (5 ½ do 12 ½) s donje strane obložite letvicom 0,6x5mm, a bokove letvicom 1,5x5mm. Na isti način obložite i dijelove pregrada (3 do 12) gdje naliježu palube, sve kako je vidljivo na nacrtu. Na svim tim elementima ugodite žljebove za noseće letvice 20, 21 i 25 i po potrebi nagibe za unutarnju oplatu.

Ako će te, kasnije u izradi, bočna ojačanja izraditi na jedan od načina za koji materijal nije priložen u kitu, to jest ako će te ih izraditi od orahove ploče 6mm ili od letvi 6x6mm, tada je vrlo korisno da sada precrtate linije rebara na mjestima gdje dolaze bočna ojačanja. Jednostavno precrtajte vanjske linije laserom odsječenih rebara. Tako postavljene krivulje kasnije će Vam koristiti za izradu šablona bočnih ojačanja i uvelike Vam olakšati rad.

Složite sve pregrade na element 1, iskrivite, postavite i zalijepite pasmu 18 i 19, podesite pregrade u pravilne položaje te zalijepite i preostale noseće letvice 20, 21, 22, 23, 24, 25.

Sastavite element 13 i postavite ga na mjesto sa krmenim zrcalom kojega obložite iznutra 26, postavite poprečne grede 27, te iz vani 28.

Unutarnja oplata (skladišna oplata, ceiling, fasciame interno): sada uredite unutrašnjost makete. Prve četiri letvice 29 unutarnje oplata, po dvije na svakoj strani, su letvice 1,5x7mm i one su jednako široke po čitavoj svojoj dužini, a prve se lijepe po sredinama nosećih letvica 20. Svaku letvicu lagano izpolirajte prije lijepljenja jer to poslije nećete moći. Sada nagodite i zalijepite podnice (flooring, pagliolo) 30 i temeljnicu jarbola 31 (mast step, scassa di albero).

Poviše prve četiri letvice slijede letvice 1,5x5mm koje nisu jednako široke po čitavim svojim dužinama, već ih valja ugađati. Zalijepite ih nekoliko dok ne stignete razinu spremišta za životinje 34. Odmah završite i bočna pasma 33 koristeći tamnije letvice zbog vizualnog efekta. Sada, da vam bude lakše manevrirati, možete ukloniti letvice 21, ali ih nemojte zaboraviti vratiti kada završite unutrašnjost. Završite spremište za životinje 34. Potom postavite i zalijepite i noseće grede palube (5 ½ do 12 ½), te obložite unutrašnjost do kraja. Obložite plohu 35 pregrade 3, te postavite noseće stupove i završite unutrašnjost potpalublja, eventualno je obojite po želji, namažite lanenim uljem i lakirajte mat lakom u spreju. Preporučamo da unutrašnjost makete ostavite u prirodnoj boji drva. Detaljniji opis postupka bojanja i lakiranja nalazi se pri kraju ovog teksta.

Oplata (outsaid planking, fasciame esterno): Prvo brušenjem nakosite stjenke pregrada na pramcu i krmi da omogućite pravilno nalijezanje letvica za oblaganje kako prikazuje nacrt. Pregrade na pramcu nakosite tako da njihove stražnje plohe, one koje su okrenute prema krmi, ostavite netaknute. Najviše je potrebno nakositi pregradu 2. Nakosite i vanjske bočne stjenke elemenata 18.1, 18.2, 18.3 i 18.4, te ih zalijepite na mjesto. Pregrade na krmi nakosite tako da njihove prednje plohe, one koje su okrenute prema pramcu, ostavite netaknute. Nakosite i vanjske bočne stjenke elemenata 18.5 i 18.6, te ih zalijepite na mjesto. Preporučamo popunjavanje sa komadima

mekšeg drva prostora među pregradama, sa vanjske strane skladišne oplata (ceiling, fasciame interno) , a naročito dijelove na pramcu, ispred pregrade 2. Sve izbrusite da dobijete pravilnu oblinu trupa. Montirajte polugu za okretanje kormila, a potom počnite lijepiti madire. Madire je, da ne bi pucali prilikom krivljenja, potrebno namočiti u vodu. Prvi madir 36 zalijepite tako da mu gornji rub prati točno visinu elementa 38, razme palube koja će kasnije biti zalijepljena na palubi. Ostavite ga jednako širokog po cijeloj svojoj dužini (5mm). Zalijepite i dva slijedeća madira ispod njega. Njih također ostavite jednako široke po cijelim njihovim dužinama (5mm). Ugodite oblaganje tako da svi madiri koji se nalaze ispod svih vodoravnih bočnih ojačanja, budu letvice 1,5x5mm jednako široke po cijeloj svojoj dužini (5mm), nemojte im ugađati širinu. Obložite trup do dna, a potom nastavite sa madirom poviše početnog. Na njemu trebaju biti urezani vodoravni otvori za istjecanje vode sa palube.

Kako izmjeriti i ugoditi širine madira ? Širine madira treba ugađati. To se radi tako da se odredi pregrada sa najvećim obujmom. Treba postaviti madire od prvog postavljenog naniže, do kobilice. Prvo treba izračunati njihove širine, koje nisu jednake po njihovim cijelim dužinama. Izmjerite obujam pregrade sa najvećim obujmom, tj. njen dio koji treba obložiti u madire. Neka obujam te površine bude vrijednost A. Podijelite tu vrijednost A sa širinom madira, a širina madira ove makete je 5mm i dobit će te broj koji treba zaokružiti na prvi veći cijeli broj. Nazovimo ga broj B. To znači da će za popunjavanje širine A trebati utrošiti B letvica širine 5mm. Sada podijelite A sa B i dobit će te širinu svakog madira od početnog do kobilice. Tako učinite za svaku pregradu i dobivene dimenzije prenesite na svih B madira. Prenesite ucrtane vrijednosti na letvice za oblaganje. Izrežite ih. Vodite računa da ih režete po dužini i to uvijek samo gornji rub. Kada tako izrezane madire postavite na svoje mjesto, počevši od gornjeg prema donjemu, donji rub svakog madira mora biti podloga za lijepljenje madira koji dolazi ispod njega. Ako vidite da se ne uklapa, učinite postupak ponovno i ustanovite gdje ste pogriješili. Učinite tako sve do kobilice.

Potom obložite trup počevši od početnog madira naviše, a širinu madira ugodite na isti način. Na prvom madiru koji dolazi iznad početnoga potrebno je prvo izrezati otvore za istjecanje vode sa palube.

Zatvorite bokove makete do iznad razme, odsijecite vidljive gornje dijelove pregrada i uredite palubu 37 (letvice 1,5x5mm) sa razmom palube 38 (letvica 0,5x6mm).

Sada sredite vizualno okov glavne palube 37 i to tako da prema nacrtu izbušite rupice fi 0,3mm na palubi (možete upotrijebiti iglu) te ih popunite smjesom ljepila za drvo (drvofiksa) i smeđe akrilne boje. Možete koristiti i obojeni kit za drvo. Kad se smjesa osuši sve izbrusite i ispolirajte. Tako ćete dobiti idealan izgled palube kao da je okovana drvenim klinovima. Premazite palubu lanenim uljem.

Tako sredite vidljivi vanjski dio palube kao i prostore u kabinama ako će te kasnije vrata ostaviti otvorena. Nakon toga počnite uređivati prostore kabina.

Prvo je unutarnja oplata 39 donje kabine na pramcu, pa postavite profil 40 sa otvorima za prozore i vrata, te ga obložite sa unutarnje strane 41. Pa paluba 42 i silaz 43. Unutarnja oplata 44 pa postavite profil 45 sa otvorima za prozore i vrata, pa unutarnju oblogu 46. Zatim nosače pramčane palube, pramčanu palubu i silaz 47.

Sada je na redu unutarnja oplata 48 kabine na krmi, pa profil 49 sa otvorima za prozore i vrata, obložite ga sa unutarnje strane 50 i sa vanjske strane 51. Postavite profil 52 sa otvorima za prozore i vrata, pa unutarnju oblogu 53. Obložite trup do kraja sa vanjskom oplatom, ugađajući širinu madira prema potrebi. Odsijecite vidljive gornje dijelove pregrada na krmenom nadgrađu. Ako je potrebno podesite ležaj krmene palube tako da paluba nalegne kao što prikazuje nacrt. Postavite lažna rebra na glavnoj palubi 37. Postavite krmenu palubu, postavite razmu palube i lažna rebra. Sredite vizualno krmenu i pramčanu palubu kao što ste ranije to učinili sa glavnom palubom.

Prorežite otvor za ukrcaj konja i stoke, postavite pragove otvora 55 tako da budu uvučeni unutra za debljinu oplate, tj. za 1,5mm. Izradite vrata od letvica 1,5x5mm kako prikazuje nacrt. Kad se vrata postave na mjesto trebaju nalijegati u ravnini sa oplatom, ne smiju stršiti vani ili upadati unutra. Najjednostavnije ih je izraditi tako da se letvice slože na licu mjesta, na sami okvir vrata, te ih tu i zalijepiti jednu na drugu. Primijetite da su vrata načinjena iz dva dijela. Njih možete staviti na palubu ili u prostor štale.

Završite razmu i sve ostale elemente. Razmu načinite od letvica 8x2mm. Njih trebate kriviti da bi zadovoljili oblik na srednjem dijelu makete. Najlakše je da letvice prokuhate, a onda ih kliještama pažljivo savite u traženi oblik. Za ovu radnju trebat će Vam malo više iskustva.

Okomita bočna ojačanja možete izraditi tako da prvo napravite okomita ojačanja od letve 2x6mm, 3 puta lijepljene jedne na drugu, brušene u traženi oblik, a onda između njih umetnete fragmente vodoravnih ojačanja iz letvice 1,5x6mm.

No pravilnije je da prvo zalijepite vodoravna ojačanja, pa onda izradite okomita bočna ojačanja. Okomita bočna ojačanja možete izraditi i od orahovog drva 6mm debelog, ali materijal za ovu opciju nije priložen u kitu. Tada prije početka izrade makete trebate precrtati linije rebara na mjestima gdje dolaze ojačanja da sada bude lakše izraditi njihove obline koje prijanjaju za trup. Također ih možete izraditi i od letvice 6x6mm koje, gdje je potrebno čeonu zalijepite jednu za drugu da dobijete letvicu dovoljno široku za izradu ojačanja. I u ovoj varijanti izrade pomoći će Vam ako prije početka izrade makete precrtate linije rebara na mjestima gdje dolaze ojačanja. U kitu nije priložen materijal ni za ovu varijantu izrade. Okomita bočna ojačanja koja dolaze visoko iznad vodene linije na krmi makete izgledom su prilagođena dužim okomitim bočnim ojačanjima i to tako kao da su duža okomita bočna ojačanja samo skraćena, odsječena na mjeru kraćih.

Topove vežite koloturnicima 3mm sa kukama izrađenim od žice (žica nije priložena u kitu), ili ih jednostavno vežite za očice konopom od 0,25mm. Povežite i sigurnosni konop od 1mm.

Dubrovačka koka imala je jednu barku koju je uobičavala vući za sobom, ali je za vrijeme dužeg putovanja barka, nedvojbeno, imala svoje mjesto na palubi, na svom stalku za kojega je bila vezana.

Izrada maketa barke podijeljena je u tri faze. Prva faza je izrada kalupa trupa makete i njegovo pripremanje za oblaganje. Druga faza je namještanje i brušenje zrcala krme i oblaganje kalupa u dva sloja furnirom te odstranjivanje kalupa. Treća faza je postavljanje vanjske kobilice i uređivanje trupa makete iz unutra i iz vani. Za izradu makete čamaca služite se prikazom BK.

Prvo odvojite kalup unutrašnjosti trupa barke sa ploče balze 20mm.

Brušenjem oblikujte kalup B1 točno kako prikazuje nacrtBa. Vidite prikaz BK. Pripazite da dobijete pravilnu oblinu unutrašnjosti trupa. Vodite računa da astu pramca treba izbrusiti tako da njene prednje bočne površine međusobno zatvaraju oštar kut. Gledano od sprijeda, pramac mora biti šiljast. Kada se na bokove postave madiri (platice), svaki na svoju stranu konstrukcije, oni se na vrhu pramca moraju dodirivati. Isto je sa dijelom na kobilici.

Na stražnji dio kalupa B1 prostora unutrašnjosti barke zalijepite zrcalo krme B2 i oblikujte mu rubove.

Oblaganje kalupa B1 vrši se madirima(platicama) načinjenim od letvice 0,5x5mm. Njihova dimenzija treba biti 0,5x2,5mm. Na kalup zalijepite prvi madir B3, dorazmenu platnicu. Njegov gornji rub mora pratiti gornji rub kalupa. Tako se postigne pravilna forma gornjeg profila trupa. Sada obložite konstrukciju prema dolje. Madiri sa različitih bokova kalupa se trebaju dodirivati na vrhu pramca, s donje strane konstrukcije, te na krmi ispod zrcala krme. Obavezno vodite računa da ne forsirate lijepljenje madira za kalup jer će te kalup kasnije trebati odstraniti, izdubiti, iz školjke makete barke.

Kada ste obložili konstrukciju prvim slojem madira, obložite trup još jednom, ali ovaj put preciznije. Vodite računa da madiri sežu od krme do pramca. Manja plovila na području hrvatskog priobalja oblažu se tako da se prvo postavi dorazmena platnica, pa onda madir koji je priljubljen uz kobilicu. Potom madir do dorazmene platnice, pa madir do prvoga do kobilice i tako naizmjenice dok se madiri ne dodirnu njihovim vrhovima na krmi i pramcu. Tada na sredini trupa ostane ovalni izduženi otvor. On se zatvori sa, prema njemu iskrojenim madirom.

Debljina oplata B4 nakon drugog oblaganja treba biti 1mm.

Izdubite balza blok B1 i tako ga potpuno odstranite iz školjke makete barke. Oblikujte gornji rub zrcala krme B2. Izbrusite i ispolirajte školjku barke iz unutra i iz vani. Prilagodite oblik prema vanjskoj kobilici B5 koja se nalazi na ploči oraha 2mm. Ležaj na koji će ona naleći na trup treba biti ravno izbrušen, tako da između vanjske kobilice B5 i trupa barke ne bude šupljine. Zalijepite vanjsku kobilicu B5 na trup makete barke.

Sada slijedi uređivanje unutrašnjosti. Prilagodite i zalijepite krmeno B6 i pramčano B7 uzvojno koljeno sa ploče oraha 2mm. Od furnira 0,5mm debljine izrežite trake od kojih će te izraditi rebra B8. (Gornji dijelovi, rebra, korbi i donji dijelovi rebrenice, pjuani). Trake izrežite na tražene dužine i zalijepite donje i gornje dijelove rebara. Od istog furnira izrežite i zalijepite na mjesto bočno pasmo B9. Izradite i zalijepite podnice B10. Od istog furnira izrežite i zalijepite na svoje mjesto klupnjak B11. Na njemu urežite utore za klupe i pramčanu palubicu B12. Izradite klupe i pramčanu palubicu B12 od ostatka letvica. Trebaju biti debeli 1mm. Zalijepite ih. Izradite i zalijepite kontracentu B13. Razmukuvertelu B14 odvojite sa ploče 0,4mm. Tu su četiri identična dijela. Zalijepite ih po dva jedan na drugi. Dva novo dobivena dijela treba zalijepiti po jedan na svaki bok, tako da debljina razmekuvertele B14 na koncu bude oko 1mm. Sada vanjske i unutarnje rubove razmekuvertele B14 pažljivo brušenjem dovedite u traženi oblik. Od orahove letvice izradite i zalijepite bokoštitnice B15. Izradite obruče (anele) B16 od mjedene žice i postavite ih na mjesto. Izradite vesla Bd od ostataka letvica. Izradite i zalijepite jastuke sa palcima za vesla.

Makete barke obojite u istom stilu kao i dubrovačku koku. Lakirajte barkumat bezbojnim akrilnim lakom. Kasnije barkupostavite na stalak na palubi kako prikazuje nacrti. Vežite ja za stalak.

(Dorazmena platnica, centun; wale, rubbingpiece, sheer – strake; cinta, cordone, cerchio; schergang, der). (Rebra, korbi; side frame, jead, benthead, benttimber; ordinata, costola; Spant, das). (Rebrenica, pjuana; bottonframe, rib, floortimber; madiere, ordinata, costola, membro; Bodenwrange, die). (Bočno pasmo, paraškuožule; bilgekeelson; paramezzaletto). (Podnice, pajole; flooring, floorboard; paglio, pagliuolo; Bodenbretter, die; Weger, der). (Klupnjak; wiring; sottobanco, correntedimurata; Banke, die). (Poprečna klupa, banak; thwart; banco, bancodivoga; Ducht, die). (Uzdužna klupa, banak; thwarts side, seats; sedile, banco; Langsbank, die). (Razma, rubnjak, kuvertela; topogallantrail, rail cap; capodibanda; Dollbord, der). (Pramčana paluba, kuverta; deck, coperta). (Žuljnica, rubnjak, branik, bokoštitnica, pas, kordun; rubbingstrake, righino). (Anel, očeta s obručom; eyeboltwith ring, golfare).

Poklopac krmenog silaza izradite od ostataka letvice 1,5x5mm. Izveden je u dva dijela pa ga postavite desno i lijevo od krmenog silaza na palubi. Poklopac pramčanog silaza isto izradite od ostataka letvica 1,5x5mm te ga postavite naslonjenog na ogradu pramčane palube. Poklopac grotla skladišta izradite tako što ćete zalijepiti čeonu letvice 2x10mm jednu na drugu pa iz njih izradite letvice 2x15mm. Takvih je ploča 5 komada. Tu su i dva komada letvice 4x4mm. Te elemente složite tamo gdje ima mjesta na palubi, oko jarbola ili na krmenoj palubi.

Grb treba izrezbariti prema nacrtu. Njegova su polja crvena i plava, a vijenac uokolo je zlatan. Pri izradi ženskih figura i sunca upotrijebite elemente izrezane iz furnira kao podložak

na koji zalijepite komadiće letvice 1,5x5mm. Tako dobivenu intarziju izrezbarite prema nacrtu. Elemente zalijepite na svoje mjesto na zrcalu krme.

Izradite jarbole sa svim elementima i katarkama. Premažite ih firnisom i lakirajte, a zatim povežite sve konope sa koloturima na njima. Postavite jarbole i povežite konope zatezače sa napinjačima. Prije postavljanja bilo kakvih konopa ili jedara maketu i ostale drvene dijelove trebate prvo obojiti po želji i lakirati. Postupak je opisan nešto niže u tekstu. Povežite skale od konopa (vrze) po zatezačima.

Izradite jedra tako što ćete ih izrezati po vanjskim vezenim rubovima, porubiti prvi rub i umetnuti žicu, pa drugi rub sa umetnutim konopom 1mm, te sašite po unutarnjim krajevima, gdje je žica, paralelno sa rubom, šavom od cca 5mm (sa obje strane). Prozirnim smolastim ljepilom na vanjske rubove oskudno zalijepite konop 1mm ostavivši na gornjim uglovima prstene za katarke. Taj konop sašijte za jedro konopom 0,25mm obmotavanjem na svakih cca 5mm tri puta, kroz konop u rubu jedra. Na glavno jedro povežite bonetu, produžetak na donjem kraju jedra. Sada jedra postavite na katarke i vežite ih, pa katarke vežite na jarbole. Oblikujte jedra po želji, povežite sve ostale konope, izradite zastavicu i učvrstite je.

Stalak čine dvije bočne stjenke u čije se utore sa prednje i stražnje strane postavi po jedna uzdužna izdužena ploča sa natpisom. Odaberite dvije ploče sa natpisima koji Vam odgovaraju. Jedna bočna stjenka dođe u razini pregrade broj 5, a druga bočna stjenka dođe u razini pregrade broj 11. Sastavite ga, ugodite žlijeb za kobilicu, zalijepite i obojite po želji.

Model možete ostaviti u prirodnoj boji drva ili obojiti po želji, ali vodite računa da to napravite prije postavljanja konopa. Ispod vodene linije možete obojiti crno ili mat tamno zeleno.

Makete brodova treba obojiti tako da se ne sjaje. Koristite akrilne boje i bezbojni akrilni mat lak. Evo i postupka: prvo maketu ispolirate brusnim papirom. Potom je premažete mješavinom 40% lanenog ulja i 60% razrjeđivača i odmah obrišete krpom. Kada se osuši obojite je po želji i pustite da se sve dobro osuši. Ponovno izbrusite i ispolirate po potrebi i obojite sve još jedan put. One dijelove koje namjeravate ostaviti u boji drva treba još jednom, nakon dvadeset i četiri sata od prvog premazivanja, premazati mješavinom lanenog ulja i razrjeđivača i odmah obrisati krpom. Kada se sve ponovno osuši lakirate sprej mat bezbojnim lakom u dva navrata između kojih je dovoljno počekati dvadesetak minuta. Tako će te dobiti idealno obojenu maketu.

Rijetko se dogodi da se nakon lakiranja mat bezbojnim lakom na drvu pojave sićušna vlakna koja strše i ružno izgledaju. Ako se to dogodi, jednostavno ispolirajte ponovno taj element i ponovno ga lakirajte sprej mat bezbojnim lakom. Vlakna će nestati.

Nakon bojenja i lakiranja makete povežite sve konope i postavite jedra.

Sada je Vaš model gotov.

Opširnije o našoj ponudi pogledajte na adresi « www.marisstella.hr ».

Iskreno zahvaljujemo što ste se opredijelili za naš model.

Srdačan pozdrav

Marisstella doo
Split
Hrvatska

Popis materijala

KOKA DUBROVAČKA XVI ST.

kutija: 60cm x 20cm

laser: 1) DKO105 -10cmx10cm (iz furnira 0,4x300x600 mm)
2) DKO12 -10cmx33,3cm (iz orah 2x100x1000mm 80203)
3) DKO22 -10cmx33,3cm (iz orah 2x100x1000mm 80203)
4) DKO32 -10cmx16,66cm (iz orah 2x100x1000mm 80203)
5) DKO54 -10cmx11,4cm (iz orah 4x100x1000mm 80205)
6) DKO16 -10cmx50cm (iz orah 6x100x1000mm 80207)
7) DKO14 -20cmx60cm šperploča 4mm
8) DKO24 -20cmx60cm šperploča 4mm
9) DKO34 -20cmx60cm šperploča 4mm
10) DKO120 -5cmx15cm mini balza blok

unutrašnjost:

orah 10x5mm -25cm
(ili orah 2x10mm 80013 1x25cm + lipa 3x10mm 82617 1x25cm)
orah ili mahagonij 1,5x7mm (80009) -4x50cm(45cm)+62x1,7cm
orah 1,5x5mm (80008) -37x50cm(45cm)
mahagoni 1,5x5mm (81024) -14x50cm(45cm)
orah 1,5x5mm (80008) -54x20cm
orah 5x5mm (80018) -1x100cm
orah 4x4mm (80017) -1x70cm+3x6cm
orah 0,6x5mm (80002) -28x8cm

unutrašnjost kabina:

orah 1,5x5mm (80008) -14x7cm+18x7cm+24x14cm
orah 0,6x5mm (80002) -34x10cm+100x8cm

skale:

orah 4x4mm (80017) -23x2,5cm

oplata vanjska:

orah 1,5x5mm (80008) -86x50cm
orah 1,5x6mm (80025) (ili bručeni orah 2x6mm)
-6x50cm+1x36cm+1x60cm
orah 0,6x5mm (80002) -2x50cm
orah 2x6mm (80011) -3x340cm
orah 2x8mm (80012) -2x25cm+2x30cm+2x15cm+15cm+10cm

palube:

orah 1,5x5mm (80008) -18x12cm+24x20cm+32x43cm
orah 0,5x6mm (80032) -1x450cm
orah 3x3mm (80016) -1x240cm

poklopac grotla:

orah 2x10mm 80013 -10x 6,5cm
orah 4x4mm (80017) -2x10cm

jarboli:

okrugli orah 14mm (89109) -1x61,5cm
okrugli orah 6mm (89105) -1x20cm+1x18cm+1x12cm+1x5cm
okrugli orah 8mm (89106) -1x35cm+2x27cm+1x30cm
okrugli orah 4mm (89103) -1x13cm+1x10cm+2x8,5cm

fiting:

klinovi tamni ili svijetli 12mm (32700)	-10kom
šarniri za vrata (37360)	-12kom
bigota (šupljača) trokut 7mm tamna (37210)	-48kom
bocel (koloturnik) 1 rupa 3mm tamni (37000)	-44kom
bocel (koloturnik) 1 rupa 5mm tamni (37010)	-20kom
bocel (koloturnik) (koloturnik) 1 rupa 7mm tamni (37020)	-11kom
bocel (koloturnik) 2 rupa 5mm (4mm) tamni (37060)	-9kom
bocel (koloturnik) 2 rupa 7mm (6mm) tamni (37070)	-15kom
bocel (koloturnik) 2 rupa 10mm tamni (37080)	-2kom

top 45mm (30515)	-6kom
žica 1,5mm (2580)	- 15cm
mostići za topove (42844)	-12kom
lanac 4 mm tamni ili svijetli (32230ili32290)	-50cm
očeta (očica) s vijkom 3,5mm (33020)	-25kom
očete (očica) fi1,8x8mm (33070)	-48kom
sidro 42x65mm (42561)	-2kom
lim za britvele kormila 3mm(2533)	-20cm
žica za jedra 1mm (2593)	- 3m
žica 2mm (2581ili kolut)	-25cm
konop svijetli 0,25mm (34350)	10m
konop svijetli 0,50mm (34360)	10m
konop svijetli 0,75mm (0,70mm) (34370)	10m
konop svijetli 1mm (34380)	10m
konop svijetli 1,25mm (34390) (1,30mm)	10m
konop svijetli 1,75mm (34391) (1,60mm)	10m

Nacrt: 2 lista 900mmx1000mm

Uputa za izradu

Jedra: 1 set DUKOJ

Zastavice: 1 set DUKOZ



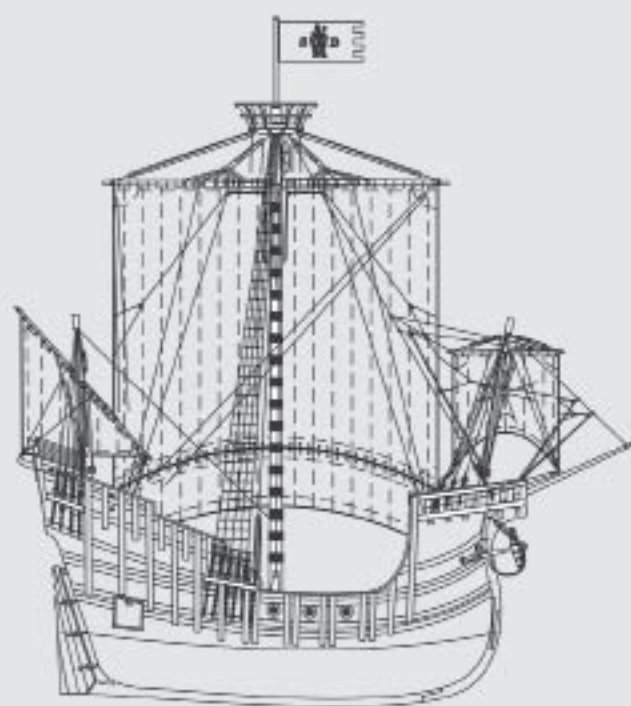












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2012.