

Harbour Runabout ***(with optional decoration as an*** ***Italian Police Motor Boat)***

Art. 700

ASSEMBLY INSTRUCTIONS *English Version*

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For the

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BACKGROUND

This general-purpose harbour runabout is typical of a type of working motor boat that can be found in many harbours around the Mediterranean. Specially equipped and painted, the boat also makes an ideal inshore Italian police launch. Driven by a diesel engine and a single screw propeller, the boat is sturdy and functional.

ASSEMBLY INSTRUCTIONS

General notes:

- All dimensions given are in millimetres. The symbol \varnothing means diameter
- English translations of the Italian notes on the plans are given in these instructions.
- Component numbers (n.11, etc) refer to the numbered plywood parts on Plan 1.
- Figure numbers given below (Figure.1, etc) refer to the numbered figures on Plan 1.
- The sequence given here is the recommended order for completing the model.
- **If the boat is to be sailed, the hull must first be made waterproof.** Use aliphatic (waterproof) glue - such as Mantua Model Art.1016 – to build the structure and seal all joints. If the model is for static display only, then any suitable PVA wood glue may be used.

PLAN NUMBER 1

This plan shows how to construct the frame of the boat, how to plank the hull and stern, and how to add the superstructure including the cabin. The four drawings of the laser-cut plywood parts (Tav1-Tav4) can be used for reference to identify the parts once they have been removed from the sheets.

Figure 1. On the four plywood sheets, mark the identity numbers on the parts with a soft pencil (noting that the keel is *n.9* and not *n.1* as shown on the diagram Tav1). Provide yourself with four storage boxes. Remove all of the plywood parts from the plywood sheets with a craft knife, smoothing all edges with fine sandpaper and taking care not to destroy the laser-cut outline of each piece. Put the pieces in the storage boxes for safekeeping. **Caution: Do not cut the two doors out of part n.21.**

Figure 2. This shows how the frames n.1-n.8 and the deck n.10 fit onto the keel n.9.

- Trial fit the parts together without glue, filing the slots in the parts as necessary so that they go together without being forced. **Warning: the parts are fragile and will fracture if forced.**
- It is useful to hold the keel in a vice or clamp such as Mantua Model Art.8155 (not supplied) as shown on the plan. If you do not have a suitable clamp, make up a working cradle by nailing two wooden runners 5mm thick and set 4mm apart onto a wooden base, so that the keel sits between the runners.

Figure 3. The deck determines the shape of the hull. The edges of frames n.1, n.2 and n.3 and frames n.7 and n.8 need to be filed so that the deck planks make a smooth curve around the frames to the bow and to the stern. Looking from above the deck, and using a strip of wood as a hull plank, check how much material needs to be removed from the edges of these frames. Remove all the frames and deck from the keel. File or sand the front edges of frames n.1, n.2 and n.3, and the rear edges of frames n.7 and n.8.

Figure 4.

- Sand the deck n.10 with fine (400 grain) sandpaper. Using a straightedge and a hard pencil, draw a centre line down the length of the deck. Draw in lines 5mm apart to simulate the deck planking. Draw in alternating joints between sections of plank using the overhead view on Plan 2 as a guide.
- Apply glue to the slots in frames n.1 to n.8 and assemble them into the keel, ensuring that they are fully seated into the keel slots. Before the glue sets, apply glue to the top of the frames and insert the deck n.10 pushing it fully down onto the frames. Clamp in position with clips or tape until the glue has set.

Figure 5. There are three hull planks to be fitted on each side of the hull. Chamfer the slightly larger ends of the hull planks n.11 and n.12 and the smaller end of n.13 to about 30 degrees so that they will make neat butt joints against the keel at the bow.

Figure 6.

- Apply glue to the outside faces of the frames and the deck and fix the top hull planks n.11 in place level with the top of the ribs. Ensure that the two top planks are set identically each side of the bow, and against the edges of the deck, to make a neat bow shape. Hold them in place using clamps on the frames, two pins in the bow and two pins in the stern. The pins are temporary and will be removed once the glue has set. The planks may extend beyond the stern. This excess will be trimmed off later.

- Shape the middle hull planks n.12 as necessary to fit underneath and against the top planks n.11. Fix in place using glue on the frames and between the planks, and use pins in the bow and stern.
- Shape the lower hull planks n.13 as necessary to fit underneath and against the middle hull planks n.12. Note that the straight edges of the planks are to be placed against the keel. Chamfer the front end of n.13 at about 60 degrees to make a neat joint with the bow, and chamfer the bottom front edge to butt neatly against the keel. These planks are twisted to fit against the bow and under the stern and require considerable clamping force. Use sufficient clamps and clips to hold the planks firmly in position. Fix in place using glue on the frames and pins in the bow and stern. Put aside until the glue has set.

Figure 7.

- Trim the hull planking level with the back of the stern transom n.8. Sand the transom until smooth and cover with 1x6 Walnut planks laid horizontally and trimmed carefully to fit.
- Remove all the pins and sand the entire hull smooth with 180-grain sandpaper. Sand down the joints between the hull planks until flush.
- Glue rubbing strakes (protective timbers) along the length of the hull covering the joints between the hull planks. Make these from 0.5x3 Walnut plank and use instant glue.

Figure 8. Handrails

- Sand the tops of the frames, hull planks n.11 and the transom n.8 flush, ready to take the handrails.
- Fix the stern handrail n.15 to the transom n.8, ensuring that the handrail overhangs the stern by 2mm and that it is exactly central on the transom. Note that the handrail curves outwards from the stern. Drill three $\varnothing 0.7$ holes through the handrail into the transom. Apply a drop of instant glue to a brass nail, tap the nail through the pre-drilled hole in the handrail and into the transom, cut off the nail head with a pair of wire cutters, and then tap the nail home. Fix the other nails in the same way.
- Place the handrails n.14 on the frames along the hull, against the keel at the prow, lining up the inside edge of the handrails with the inside edge of the ribs (the frame teeth that protrude above the deck) and butting against the stern handrail n.15. Mark the centres of the ribs on the handrails and drill a $\varnothing 0.7$ hole through the handrails into each rib.
- Glue the top of the gunwale n.11 and place the handrail n.14 in position. Apply a drop of instant glue to a brass nail, tap the nail through the pre-drilled hole in the handrail and into the rib, cut off the nail head with a pair of wire cutters, and then tap the nail home. Fix a nail into each rib in the same way.

Figure 9. Display Cradle. Assemble the cradle from parts n.16, n.17 and n.18 ensuring that the cradle is squared up and is placed on a flat surface to set. Varnish the cradle with two coats of matt varnish, sanding lightly between coats. Line the upper faces of the cradle with thin rubber strips such as draught excluder (not supplied) to protect the hull from abrasion. **Warning: this cradle is intended for display purposes and may fracture if put under pressure such as when hammering. Do not use this as a working cradle.**

Figure 10. Cabin Assembly. Caution: these parts are fragile

- Without glue, trial-fit the cabin sides n.19 to the cabin transoms n.20, n.21 and n.22. With a small file, open out the slots in the cabin sides n.19 as necessary to take the transom tenons without forcing. Note that the concave curves on the transoms go towards the deck.
- Glue cabin side n.19 to the transoms n.20 and n.21. Square up the assembly and leave on a flat surface until the glue has set. Fit the front transom n.22 using a rubber band to curve the sides until set.

Figure 11. Cabin Decks and Window Frames.

- Fit deck n.23 onto the cabin sides and secure with tape and rubber bands until set.
- Fit cabin window frame n.24 in place noting that the convex side goes towards the deck and that the window frame is curved outwards slightly towards the bow. Secure with tape or rubber bands until set.
- Fit deck n.25 in place, lining up the back edge with the rear overhang on the cabin sides. Note that the deck needs to be curved slightly to fit the structure. Clamp until set.

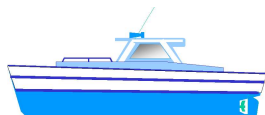
Figure 12. Cabin Windows. Measure the windows and hatch apertures and then cut pieces from the blue plastic sheet provided - allowing an accurate 3mm overlap all round each aperture. Fix the pieces behind the window and hatch apertures with small drops of instant glue. **Caution: do not get this glue on the visible surfaces of the windows as it cannot be cleaned off.**

Painting and Varnishing.

- Fill any cracks or joints in the hull with a plastic wood filler or slivers of wood. Sand the entire hull areas smooth, scraping the surface with a Stanley-type blade to remove any spots of glue. Apply two coats of a good sanding sealer (e.g. Mantua Model Art. 4401714 – not supplied in the kit), sanding lightly between coats.
- Lightly sand the deck and apply two coats of sanding sealer, sanding lightly between coats. *Note that the deck and handrails are not to be painted*
- Fill any cracks or joints in the cabin assembly with plastic wood filler. Lightly sand the cabin items and remove any spots of glue. Carefully mask off the cabin windows - inside and out - with masking tape and – inside and out - apply two coats of sanding sealer.
- Spray-paint the cabin – outside only - to your own chosen colour scheme using several thin coats of acrylic paint (not supplied). Light blue and white are very popular colours around the Mediterranean. Use matt paint. The official colour scheme for an Italian police launch is shown in the colour photograph on the outside side of the kit's box. The waterline and painting dimensions for the police launch are also shown in the side view on Plan 2. *Note: we recommend the use of an airbrush and three coats of matt acrylic paint diluted 3:1 with appropriate thinners. Alternatively, paint by hand using matt paint, a good quality sable brush and employing long longitudinal strokes.*
- Mask off the hull above the waterline and cover the deck area. Spray-paint the hull below the waterline to your own chosen colour scheme. When dry, mask off below the waterline and above the handrails and spray-paint the rest of the hull to your chosen colour scheme. The official colour scheme for the hull of an Italian police launch is shown in the colour photograph on the outside of the kit's box.
- When the painting has been completed, remove all masking tape from the hull and cabin.

Figure 13: Finishing Off.

- Glue the handrails n.26 onto the front of the cabin using spots of instant or epoxy glue.
- Radio Aerials: Two required. Cut the aerial wire to 135mm long with wire cutters and file the ends smooth. Insert the aerial wire through a 15mm long piece of plastic tubing cut from the piece supplied. Bend the last 5mm of the wire at right angles and insert the end into a Ø0.8 hole drilled in the side of the cabin as shown and fix with instant glue.
- Fettle and polish the cast parts provided. Fix the horn and the lamp to the cabin roof with epoxy glue.
- Paint the two lifebelts white with red bands and fix to the deck in front of the cabin with epoxy glue.
- Fix the four cast rope guides to the handrails with epoxy glue using the overhead view on Plan 2.
- Make two 4mm long sidelights from the Ø4 dowel supplied. Paint one light red and the other green. Fix to the cabin sides with instant glue. The red light goes on the port side (left looking to the bow).
- Write your chosen name for the boat on the stern transom in acrylic paint. If decorating as the police launch, add the "Police" label on each side of the cabin, using the side view on Plan 2 as a guide.
- Apply glue to the underside of the cabin and fix this to the deck, lining up the rear end of the cabin with the rear faces of frame n.7, checking that the cabin aligns with the centre-line of the boat. Allow to dry.
- Fix the propeller to the keel with epoxy glue.
- Place the finished boat on the display cradle and congratulate yourself on a job well done.



Parts List

Laser-Cut Boards 4off sheets containing plywood parts n.1-n.26

Walnut Planks

5 off 0.5x3x410 mm
2 off 1x6x400mm

Other

1off Steel wire Ø0.8x300mm
1 off Sheet of clear blue plastic 105x295mm
1 off Sheet of nameplates
2 off Plan sheets

Nail Pack

50 off brass nails

Casting Set

2 off Lifebelts
1 off Horn
1 off Small searchlight
1 off Propeller
4 off Rope guides / cleats
1 off Walnut dowel Ø4x30mm
1 off Nylon tubing Ø1/Ø2x30mm