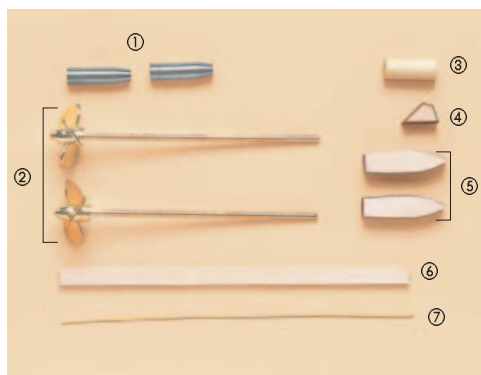
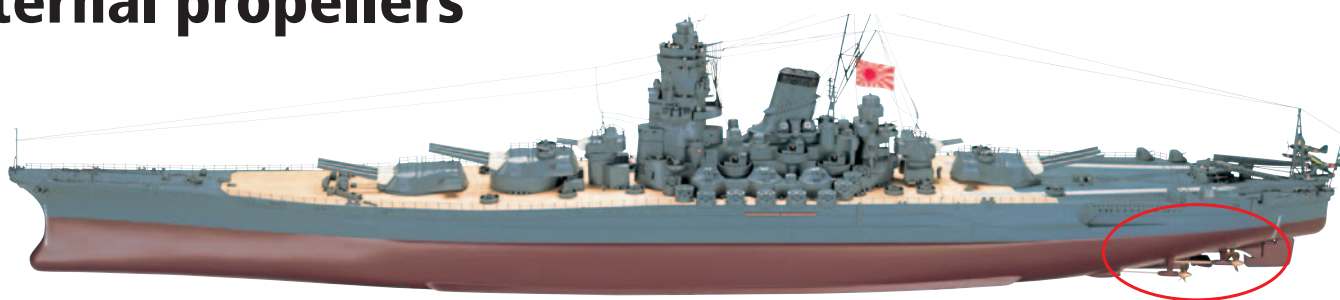




# Internal propellers



- ① Propeller shaft x 2
- ② Propeller shaft x 2
- ③ Cylindrical rod
- ④ Support
- ⑤ Propeller shaft casing x 2
- ⑥ Slat
- ⑦ Wire

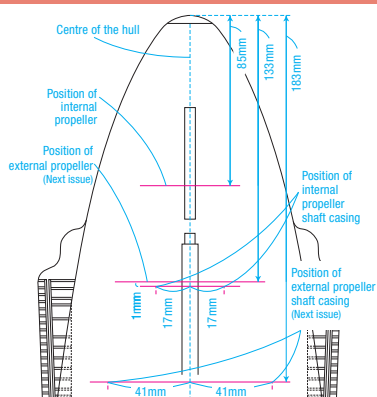
This despatch also contains a template to help you position the internal propellers (pictured in Step 4).

## Recommended tools and materials

- Fast-drying glue
- Wood glue
- Sandpaper (grain nos. 240 and 400)
- Metal file (round)
- Ruler
- Pencil
- Drawing pin
- Craft knife
- Double-sided adhesive tape
- Pliers
- Hand drill (diameter 0.5mm and 1.2mm bit)
- Putty
- Set-square

## INTERNAL PROPELLERS

**1** Turn the hull over and draw a reference line on the stern. Copy the red lines from the plan onto the hull, paying attention to Steps 2 and 3.



**2** Using the set-square and ruler as shown, establish the distance from the stern, keeping the set-square vertical between the work surface and edge of the stern. Mark the distance.



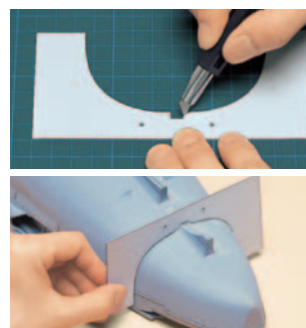
**3** Draw a reference line perpendicular to the centre line of the hull. Place a piece of strake on the hull, as shown in the photo (right, above). To determine the distance from the centre line, place the set-square as shown in the photo (right, below), and draw a mark on the corresponding point.



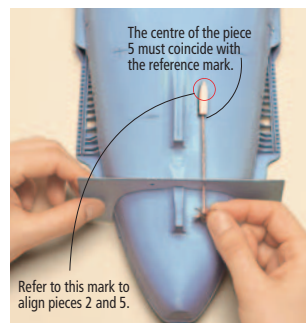
**4** On the template with the outline, use a craft knife to cut along the square lines and then along the dotted lines. Using a drawing pin, make two marks at the points indicated by the two circles, then enlarge the holes with the 1.2mm bit.



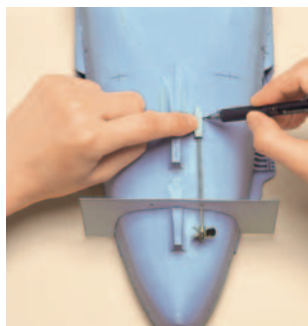
**5** Place the template cut in Step 4 onto the hull, along the reference line drawn in Step 1. The template should follow the shape of the hull. With the craft knife, remove any excess template to make it fit the hull closely.



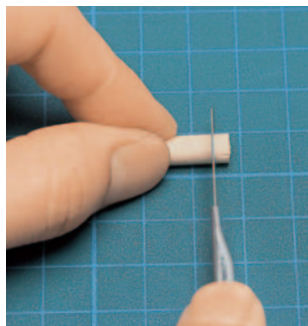
**6** Holding the template firmly, insert one of the pieces **2** into one of the holes made in Step 4. Place a piece **5** in the position marked, as shown in the photo (red circle), ensuring that it is aligned with the piece **2**.



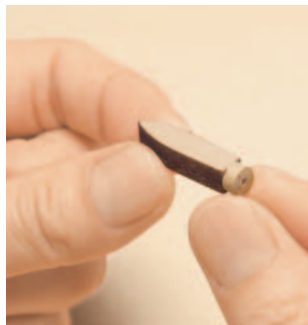
**7** Having determined the position of piece **5**, trace the outline with a pencil.



**8** Use the craft knife to cut a 3mm width of piece **3**, as shown in the photo.



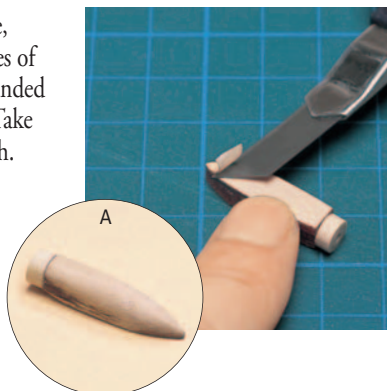
**9** Take piece **5** as shown in the photo and use wood glue to fix the section of piece **3** cut in Step 8 in the centre of the flat end. You have made a propeller shaft casing.



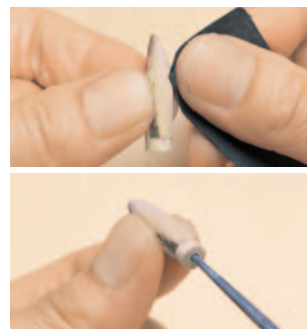
**10** Smooth the sides of the casing with sandpaper grain no. 240. After each pass, check the piece against the hull, taking care not to rub away too much.



**11** Using the craft knife, scrape away the edges of the casing to create the rounded shape shown in Figure A. Take care not to scrape too much.



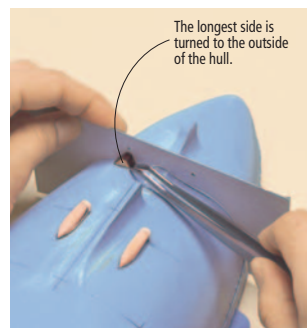
**12** Continue smoothing with sandpaper grain no. 240, then with grain no. 400. Adjust the hole in the section of piece **3** with the round metal file, enlarging it slightly.



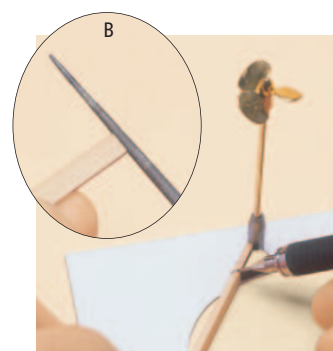
**13** Use fast-drying glue to fix the casing of the propeller shaft in the position marked in Step 7. Following Steps 6 to 12, prepare the other casing and fix it to the opposite side of the hull.



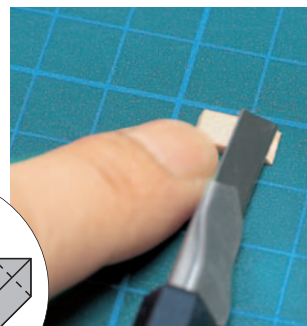
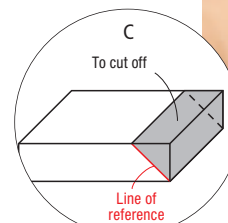
**14** Hold the template firmly in the predetermined position on the hull, and fix piece **4** temporarily with double-sided adhesive tape. Position the piece, checking against the hole in the board. The concave part should face upwards, with the longest side facing outwards.



**15** Place the template on a flat surface. Insert a piece **1** into a piece **2** and position the latter in the hole. Rest piece **6** on the longer side of piece **4** and draw a reference line by extending the baseline of **4** (Figure B). Smooth the end of piece **6** to make it fit to piece **1**. With the reference line drawn, remove pieces **1** and **2** from the template



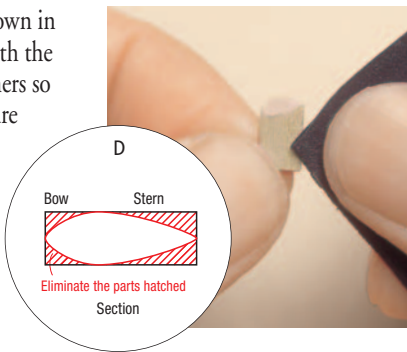
**16** With the craft knife, cut the piece **6** at the point indicated by the reference line drawn in Step 15. The operation will be simpler if you make the perpendicular cut before the diagonal one (Figure C).



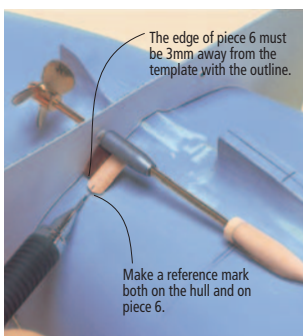
**17** Smooth the surface of piece 6 prepared in the previous step with sandpaper grain no. 240, so that the edge fits the shape of the hull. Check the fit after each pass, taking care not to smooth too much. Refer to Step 19 for the position of piece 6.



**18** Take piece 6 as shown in the photo, and, with the craft knife, blunt the corners so that they are curved (Figure D). Smooth with sandpaper grain no. 240, followed by grain no. 400. Take care not to smooth too much.



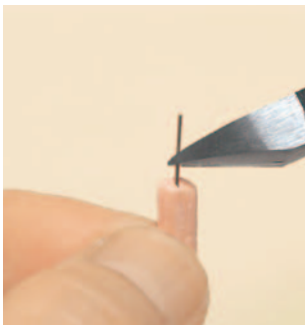
**19** Insert piece 2 into the hole of the template with piece 1 and the hole in piece 3 of the casing. Steady the template and fit the piece 6 prepared in Step 18 on the hull. The edge of the stern side must be 3mm from the template and resting on the piece 4. Draw a reference mark on the right, left and in the centre of the lower edge of the hull and on piece 6.



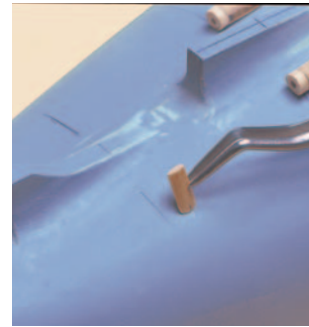
**20** Remove the template and the assembled pieces from the hull. With a drawing pin, make a mark 0.5mm from the reference mark drawn toward the centre of the hull. Drill a hole 0.5mm in diameter and 2mm deep.



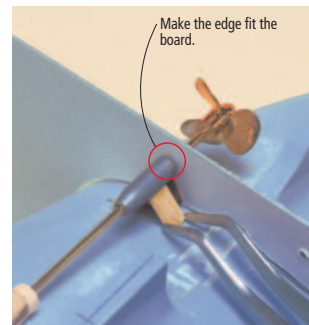
**21** Following the procedure described in Step 20, make another hole in the piece 6 at the point already marked (the centre of the side that touches the hull). Insert piece 7 and use the pliers to cut the wire, leaving 2mm protruding. Take care not to damage piece 6. The propeller shaft support is now complete.



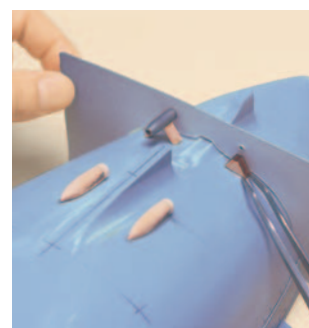
**22** Apply fast-drying glue to the side of the support that fits to the hull, and insert the protruding tip of piece 7 into the hole. Make another support for the propeller shaft by adjusting the length to the shorter side of piece 4 and fix it on the hull, following Steps 15 to 21.



**23** Put the template on the hull and insert piece 2, first into the hole in the board and in piece 1, then in the hole in the section of piece 3 of the casing. Hold the template firmly, and, with fast-drying glue, fix pieces 6 and 1 so that the edge of the latter fits the template, which should be removed when the glue is completely dry.



**24** Following Steps 14 to 23, build the support of the propeller shaft on the opposite side. Before you start, put the template in the correct position and temporarily secure piece 4 in the corresponding position on the other side.



**25** Insert the end of piece 2 in piece 1 and then into the hole in the casing. Do not fix the pieces permanently because the propellers are still to be painted. Mount all of the propellers, and adjust the joints between the hull and the propeller shaft brackets, and between the casings and the propeller shafts.

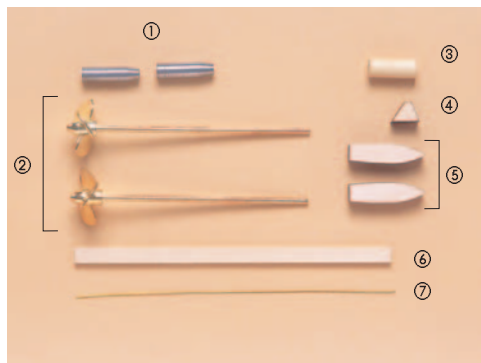
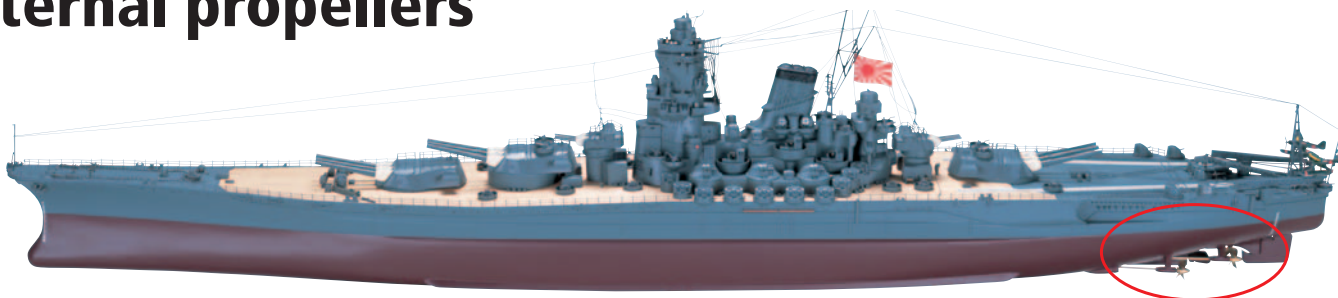


## COMPLETED PIECES





# External propellers



① Propeller shaft bracket x 2

② Propeller with propeller shaft x 2

③ Cylindrical rod

④ Support

⑤ Propeller shaft casing x 2

⑥ Slat

⑦ Wire

This despatch also contains a template with the layout of the external propellers (pictured in Step 26).

## Recommended tools and materials

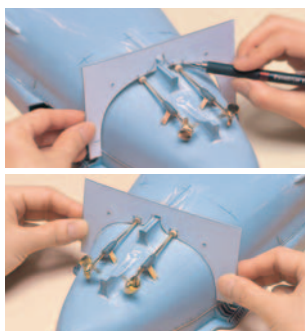
- Fast-drying glue
- Wood glue
- Sandpaper (grain nos. 240 and 400)
- Metal file (round)
- Ruler
- Craft knife
- Pencil
- Cutters
- Putty
- Hand drill (diameter 0.5mm and 1.2mm bit)
- Primer
- Long-nosed pliers
- Drawing pin
- Double-sided adhesive tape

## EXTERNAL PROPELLERS

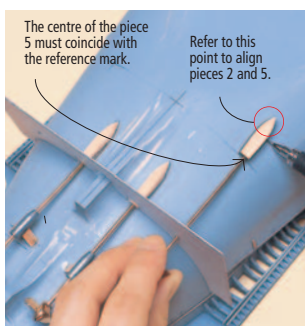
**26** Take the template with the outline of the external propellers and, with the craft knife, cut along the square lines and then the dotted lines. Drill holes at the points indicated by the two circles. With a drawing pin, mark the centre of the circles, then enlarge the holes with the 1.2mm bit.



**27** Place the template on the hull along the reference line drawn earlier. With the pencil, mark the parts of the template that touch the internal propellers and the hull, then use the craft knife to cut the excess so that the template fits the shape of the hull as closely as possible.



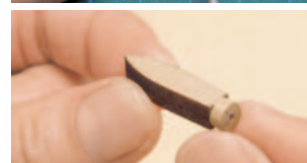
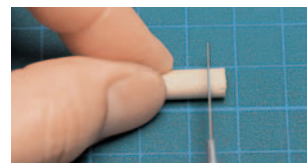
**28** Insert the pieces 2 into the holes. Place the pieces 5 in the position of the shaft casings of the external propellers and insert the pieces 2 in the holes, so that they are aligned with the pieces 5, as shown in the photo. Trace the outline of the pieces 5 on the hull, for reference.



The centre of the piece 5 must coincide with the reference mark.

Refer to this point to align pieces 2 and 5.

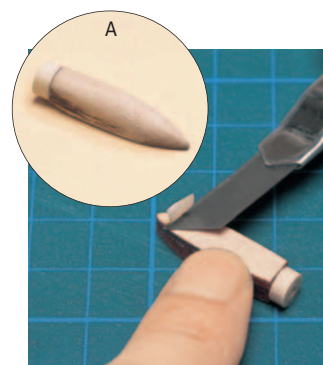
**29** Cut a 3mm width from piece 3, as shown in the photo. Then, holding the piece 5 as indicated, use wood glue to fix piece 3 in the centre of piece 5. You have now prepared the shaft casing.



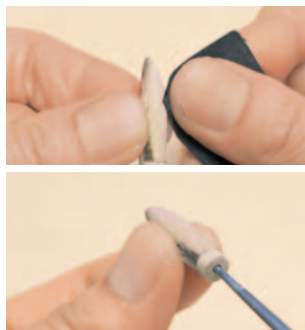
**30** Smooth the sides of the casing with sandpaper grain no. 240. After each pass, check the piece against the hull, taking care not to rub away too much.



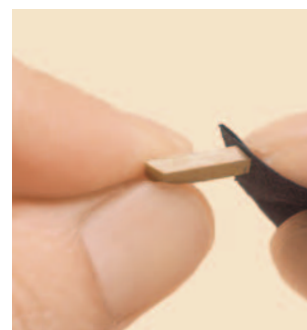
**31** Fix the shape of the other side of the casing, as shown in Figure A. Scrape the edges with the craft knife, taking care not to cut too much.



**32** Continue smoothing with sandpaper grain no. 240, then finish with no. 400. Adjust the hole in the section of piece 3 with the round metal file, enlarging it slightly.



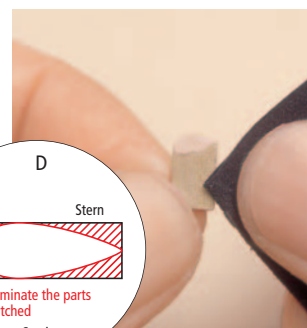
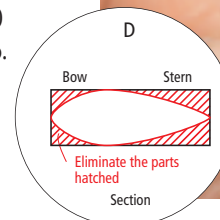
**37** Smooth the surface of piece 6, prepared in Step 36, with sandpaper grain no. 240, ensuring that it fits properly against the hull. Take care not to smooth too much. To position piece 6 correctly, refer to Step 39.



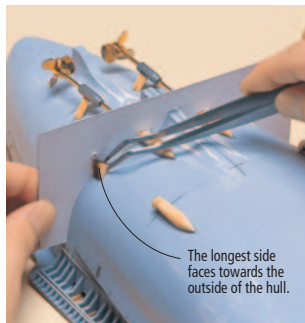
**33** With fast-drying glue, fix the casing of the propeller shaft in the position marked in Step 28. Following Steps 28 to 32, prepare the other casing and fix it to the opposite side of the hull.



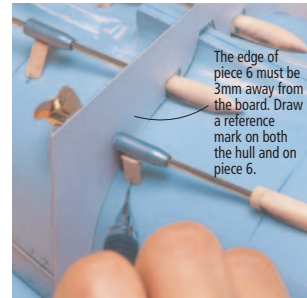
**38** Take piece 6 as shown in the photo, and, with the craft knife, work the edges of the piece to create a curve (Figure D). Smooth with sandpaper grain no. 240 and then finish with grain no. 400. Take care not to smooth too much.



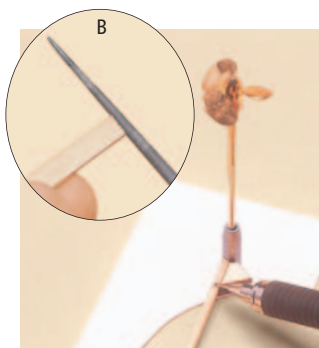
**34** Hold the template firmly in the predetermined position on the hull, and fix piece 4 temporarily with double-sided adhesive tape. Position the piece, checking against the hole in the board. The concave part should face upwards, with the longest side facing outwards.



**39** Place the template with the outline on the hull. Insert piece 2 in the hole in the template, in piece 1, and in piece 3 of the casing. Hold the template firmly and fit piece 6, prepared in Step 37, to the hull. The edge of the stern side must be 3mm from the template, resting along piece 4. Draw a reference mark on the right, left and centre of the lower edge of the hull, and on piece 6.



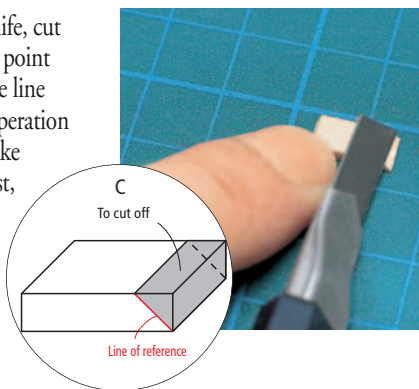
**35** Place the template on a flat surface. Insert a piece 1 into a piece 2 and position the latter into the hole. Rest piece 6 on the longer side of piece 4 and draw a reference line by extending the baseline of 4 (Figure B). Smooth the end of piece 6 to make it fit to piece 1. The reference line drawn, remove pieces 1 and 2 from the template.



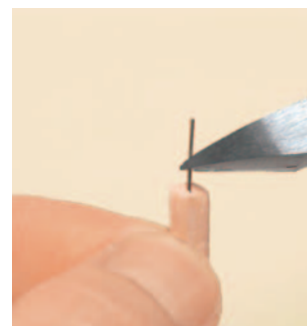
**40** Remove the template and the pieces from the hull. With the 0.5mm drill, make a hole 2mm deep and 0.5mm away from the reference mark drawn toward the centre of the hull. Mark the hole with a drawing pin first.



**36** With the craft knife, cut the piece 6 at the point indicated by the reference line drawn in Step 35. The operation will be simpler if you make the perpendicular cut first, then the diagonal one (Figure C).



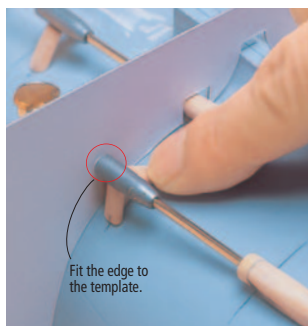
**41** Following the procedure described in Step 40, make a hole in piece 6 at the point already marked (the centre of the side that touches the hull). Insert piece 7, and cut the wire with the pliers, leaving 2mm protruding from the hole. Take care not to damage piece 6. You have now made the support of the propeller shaft.



**42** Apply fast-drying glue to the side of the support that fits to the hull, and insert the protruding tip of piece **7** into the hole. Make another support for the propeller shaft by adjusting the length to the shorter side of piece **4** and fix it on the hull, following Steps 35 to 41.



**43** Put the template on the hull and insert piece **2**, first into the hole in the template and in piece **1**, then in the hole in the casing. Hold the template firmly, and with fast-drying glue fix pieces **6** and **1** so that the edge of the latter fits the template, which you should remove when the glue is completely dry.



**44** Following Steps 35 to 43, build the support of the propeller shaft on the opposite side. Before you start, put the template in the correct position and temporarily secure piece **4** in the corresponding position on the other side.



**45** Remove the propellers from the hull and apply putty to the joins of the supports of the propeller shaft and casings. Apply the putty liberally, especially on the joints between the hull and the supports. Use a pointed piece of wood to putty the insides of the joints.



**46** Allow the putty to dry completely, then use the rounded file to remove any excess to give the supports a streamlined appearance.

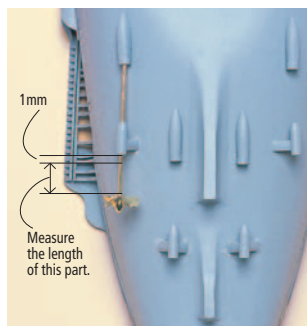


**47** Spray the primer lightly in the area of the supports and casing. When it is dry, eliminate any roughness with sandpaper no. 400. Correct any irregularities in shape with putty, allowing it to dry thoroughly before smoothing with the round file.

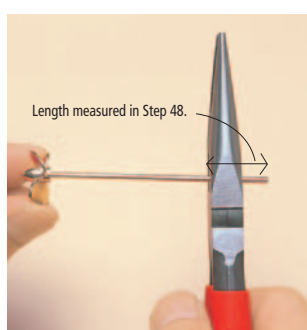


⚠ When using primer, ventilate the room well and follow the instructions on the packaging.

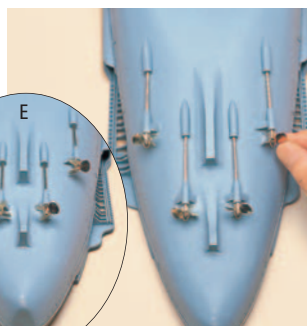
**48** Place a propeller with its shaft in the propeller shaft support and in the shaft casing, on the outer starboard side. Check the position of the propeller against Figure E in Step 50. Measure the length of the shaft, as shown in the photo.



**49** Remove the propeller, and, with the pliers, cut the shaft to the length measured in Step 48.



**50** With Steps 48 and 49 completed, adjust the length of all the shafts. Using Figure E as reference, take care with the positioning of the propellers. Do not fix the propellers permanently as they must be removed to paint the hull.



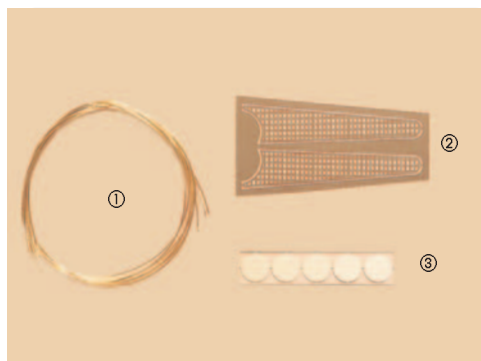
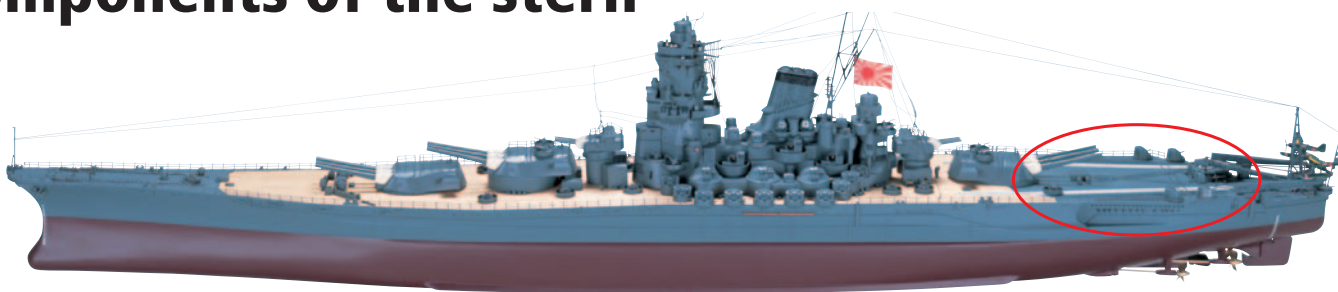
## COMPLETED PIECES



EXTERNAL PROPELLERS



## Components of the stern



- ① Wire
- ② Components of the stern x 2
- ③ Turntable x 5

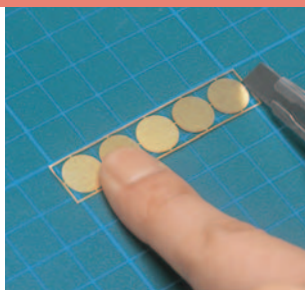
The colour chart for use as reference in painting the ship can be found at the bottom of page 165.

### Recommended tools and materials

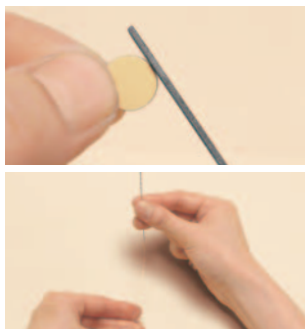
- Fast-drying glue
- Metal file
- Pliers
- Craft knife
- Masking tape
- Metal primer
- Spray paint (battleship grey, iron grey)
- Double-sided adhesive tape

### COMPONENTS OF THE STERN

**51** Remove the pieces **3** from their base and scrape the joints several times with the tip of the craft knife. Remove pieces **2** and treat in the same way.



**52** Use the metal file to smooth the edges of pieces **2** and **3**, taking care not to alter the shape in any way. This is especially important with regard to pieces **3**. Stretch the pieces **1** with your fingers to make them as straight as possible.

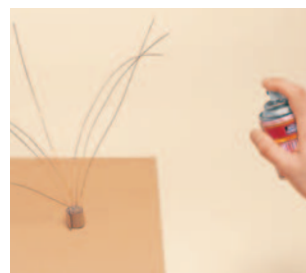


**53** Spray the metal primer evenly on pieces **2** and **3**, from a distance of about 30cm. This will be simpler if you secure the pieces to a base with double-sided adhesive tape, as shown in the photo. Pieces **2** must be coated on both sides.



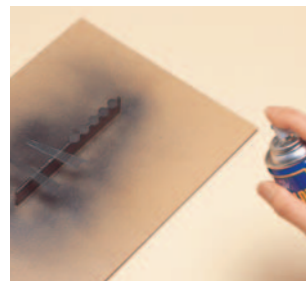
⚠ When using metal primer, ventilate the room well and follow the instructions on the packaging.

**54** Next, spray pieces **1** with the metal primer. This will be easier if you place the pieces in a small cylinder made from a piece of cardboard, as shown in the photo.



⚠ When using primer, ventilate the room well and follow the instructions on the packaging.

**55** Allow to dry thoroughly, then spray pieces **2** and **3** with a light and even coat of iron grey paint, from a distance of about 30cm. When dry, spray again from the other side. Repeat several times so that the inside of the grilles of pieces **2** are sprayed.



⚠ When using spray paint, ventilate the room well and follow the instructions on the packaging.

**56** Spray pieces **1** with a light and even coat of iron grey spray paint.

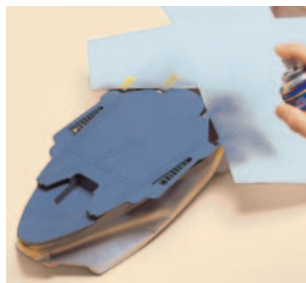


⚠ When using spray paint, ventilate the room well and follow the instructions on the packaging.

**57** Take the hull so far assembled and prepare the aftdeck for painting. First, fix a piece of paper with masking tape on the edges on the hull, as shown in the photo.



**58** Spray a light and even coat of battleship grey paint, from a distance of about 30cm. When dry, spray again from the opposite direction. Make sure that all the cavities are thoroughly sprayed.

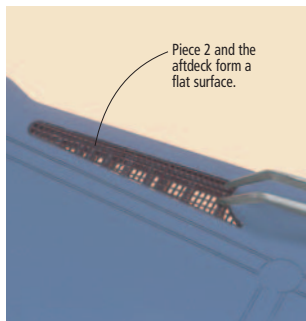


💡 When using spray paint, ventilate the room well and follow the instructions on the packaging.

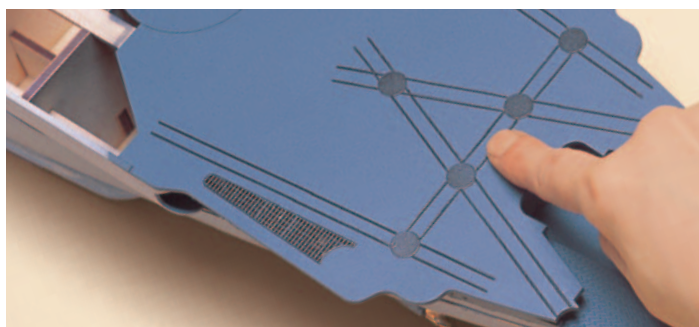
**59** When the paint is completely dry, place a piece **2** in the cavity of the aftdeck. With the tip of the craft knife, apply a small amount of fast-drying glue to the upper inside edge.



**60** Before the glue dries, insert the piece **2** into the cavity and fix it so that it is flush with the aftdeck. Similarly, glue another piece **2** on the opposite side.



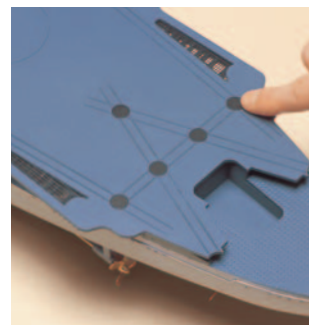
**61** Following Steps 64 and 65, glue the other pieces **1** on the relevant marks. For the intersections of the two double lines, check against Figure A.



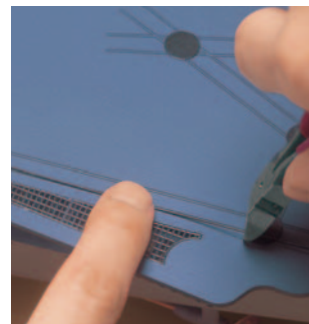
**62** Glue a piece **3** on the circle in the centre of the aftdeck. Take care the glue does not spread onto the rest of the aftdeck.



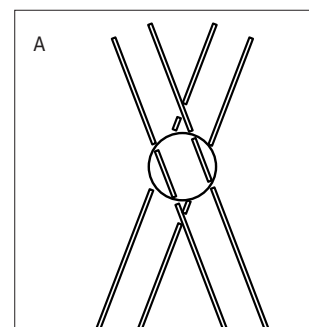
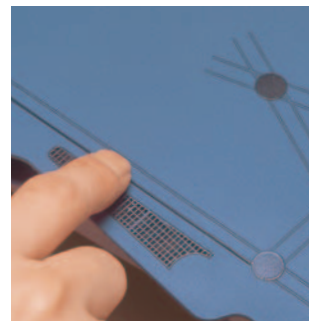
**63** Glue the remaining pieces **3** in the four circles indicated, again taking care that the glue does not spread onto the aftdeck.



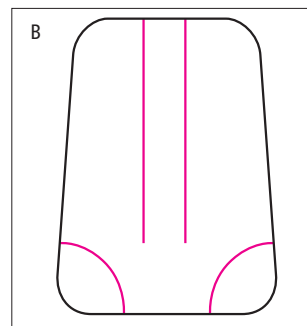
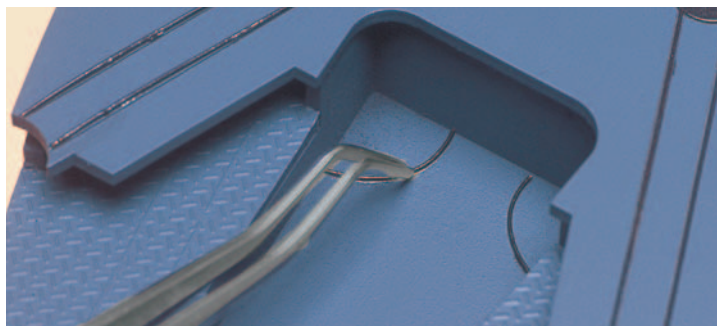
**64** Glue the pieces **1** on the parallel marks on the aftdeck. Begin with the one nearest to the port side. Before gluing, adjust the length of the piece **1**. Rest the wire on the outline and cut any excess with the pliers.



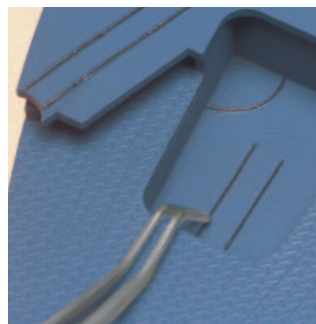
**65** Fix the piece **1**, prepared in Step 64, with fast-drying glue. Take care not to spread glue on the rest of the aftdeck.



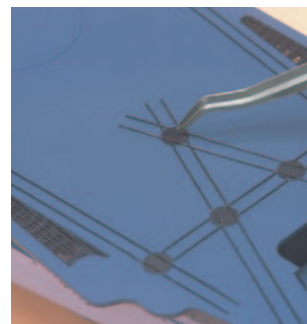
**66** Glue piece **1** in the aft area of the hangar, bending it to allow for the curve by winding it around a rod. Fix with fast-drying glue in the position indicated in Figure B.



**67** Glue the piece **1** on the parallel lines of the hangar.



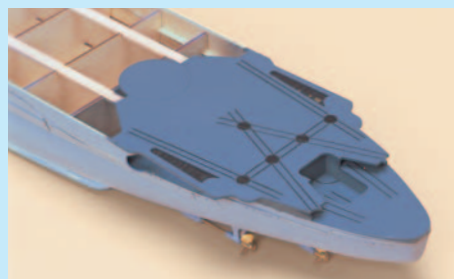
**69** On each piece **3**, fix two pieces **1**. For the piece **3** located in the centre (photo, right) refer to Figure A in Step 61. For the other pieces **3**, follow the two lines below and adjust the length as explained in Step 64. Fix with fast-drying glue.



**68** Glue piece **1** on the parallel lines on the aftdeck.



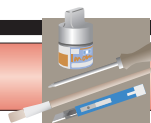
## COMPLETED PIECES



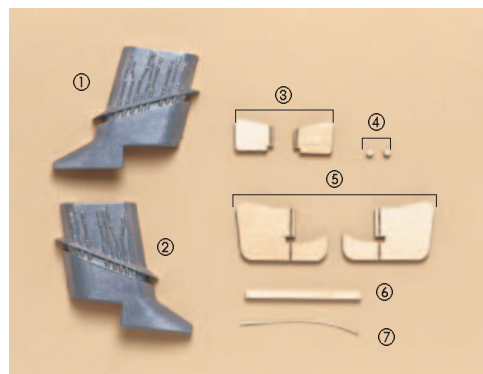
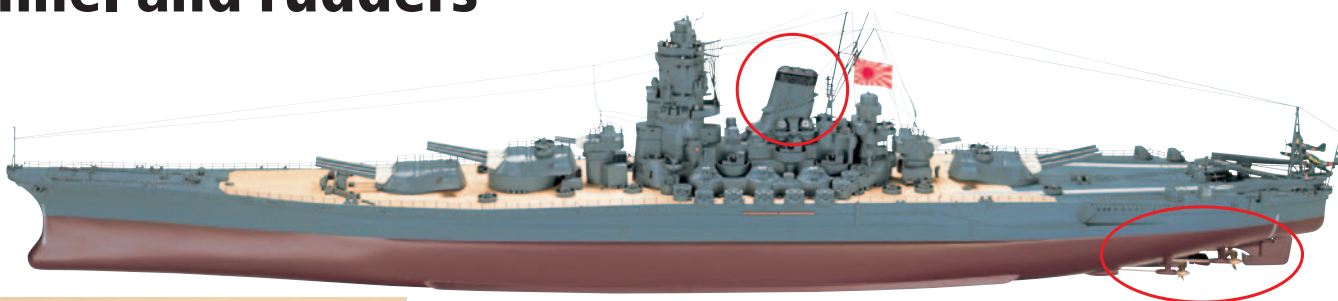
COMPONENTS OF THE STERN

## COLOUR CHART

HULL+BRIDGE TAMIYA TS66 GREY	DECORATION PLANE WINGS	GUN SLEEVES	PLANES	STRIPS ON THE AFTERDECK
HULL TAMIYA TS33 RED	SIGNAL LAMPS DECORATION PLANE WINGS	FUNNEL	PLANE FLOATS UNDERNEATH	PROPELLERS SHIP SUPPORT



# Funnel and rudders



- ① Funnel (port side)
- ② Funnel (starboard side)
- ③ Secondary rudder x 2
- ④ Wood cylinder x 2
- ⑤ Main rudder x 2
- ⑥ Slat
- ⑦ Wire

## Recommended tools and materials

- Fast-drying glue
- Wood glue
- Metal file
- Sandpaper (grain nos. 240, 400 and 800)
- Putty
- Paper
- Hand drill (diameter 0.5mm)
- Craft knife
- Long-nosed pliers
- Metal primer
- Wood primer
- Spray paint (battleship grey)
- Watercolour (matt black)
- Sanding block (optional)
- Double-sided adhesive tape

## FUNNEL

**70** Fit piece 1 to piece 2, as shown in the photo, and fix with fast-drying glue. You have built the funnel.



**73** Spray the metal primer evenly on all parts of the funnel from a distance of about 30cm. It is easier if you secure the base of the funnel on cardboard with double-sided adhesive tape.

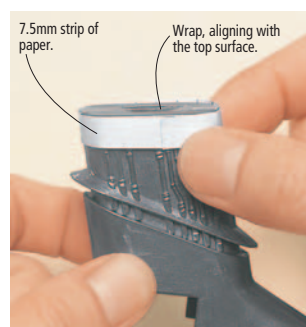


⚠ When using metal primer, ventilate the room well and follow the instructions on the packaging.

**71** File around pieces 1 and 2 to get rid of any irregularities or protrusions from where they join. Then smooth the surface of the funnel with sandpaper grain no. 800, taking care not to alter the original shape.



**74** When the primer is completely dry, prepare the funnel for painting. Cut a strip of paper 7.5mm wide and wrap around the top edge of the funnel, as shown in the photo.



**72** Fill any gaps between pieces 1 and 2 with putty. Allow to dry, and remove any excess with sandpaper grain no. 800.



**75** Position the funnel as shown in the photo, holding it firmly so the paper does not move. Run the tip of the craft knife along the edge of the paper, making a small incision around the entire circumference of the funnel. Do not remove the paper.



**76** From a distance of about 30cm, spray a light and even coat of battleship grey paint on the funnel. When dry, spray again from a different angle. Repeat the operation several times, allowing the paint to dry each time.

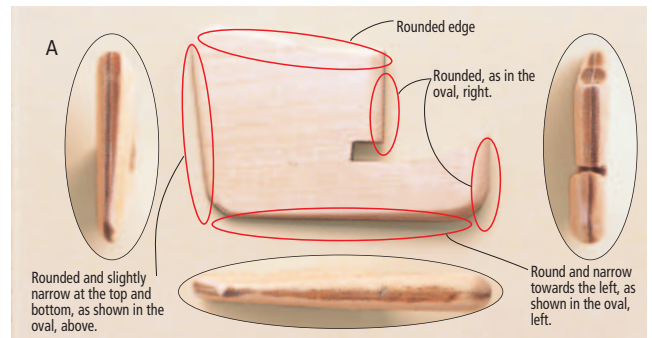
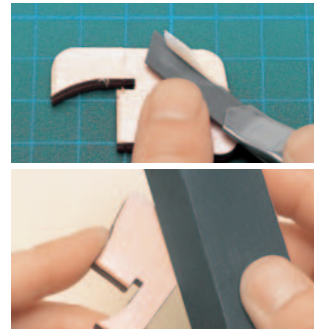


⚠ When using spray paint, ventilate the room well and follow the instructions on the packaging.

**77** When the paint is completely dry, remove the paper and paint the section of the funnel above the incision made in Step 75 with matt black watercolour. Take care not to paint beyond the line.



**81** Use the craft knife to shape the main rudder, following Figure A (below). Take care not to cut away too much. For large areas, it may be easier to use a sanding block, as shown in the photograph (right, below), using first sandpaper grain no. 240 and finishing with grain no. 400.



## RUDDERS

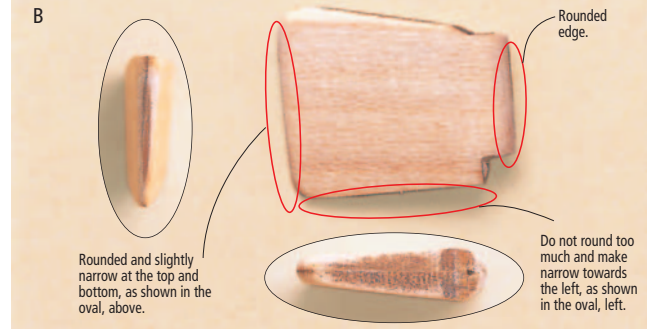
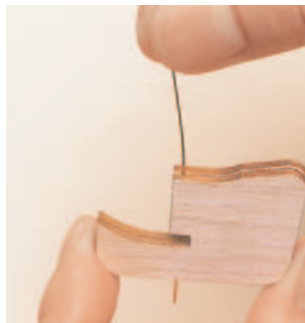
**78** Fit the two pieces **5** together, as shown in the photo, and fix them with wood glue. You have just made the main rudder.



**82** Shape the secondary rudder in the same way as the main rudder (Step 81), following Figure B (below).



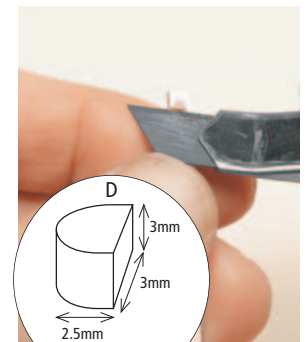
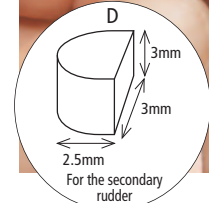
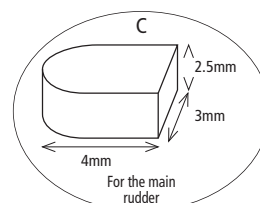
**79** When the glue is dry, hold the main rudder as shown in the photo and insert piece **7** into the hole in the top edge. Thread the wire through the piece so it protrudes from the bottom edge.



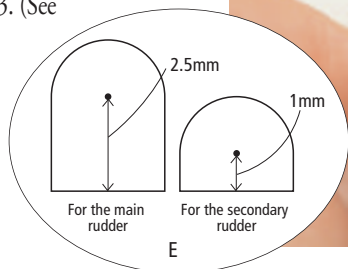
**80** Fit the two pieces **3** together, as shown in the photo, and fix with wood glue. You have just made the secondary rudder. When the glue is dry, insert piece **7** into the hole in the top edge, making sure the wire protrudes from the bottom edge as in the main rudder (Step 79).



**83** With the craft knife, cut piece **6** into two sections and shape as shown in Figures C and D. Cut to length and sandpaper to finish.



**84** Use the hand drill to make a hole in each of pieces **6** made in Step 83. (See Figure E).



**85** Use the 0.5mm hand drill to make a hole in the centre of the pieces **4**. To remove the drill, hold each piece **4** and pull gently.

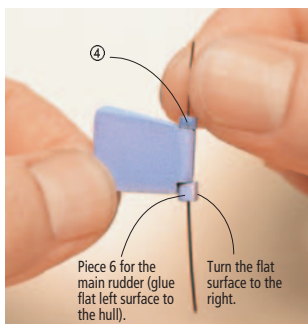


**86** Spray wood primer evenly on all parts of the main and secondary rudders, and pieces **6** and **4**, from a distance of about 30cm. The operation will be simpler if you secure the pieces to a base with double-sided adhesive tape.

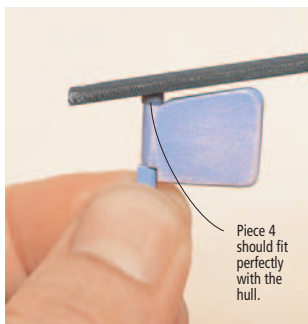


**When using the wood primer, ventilate the room well and follow the instructions on the packaging.**

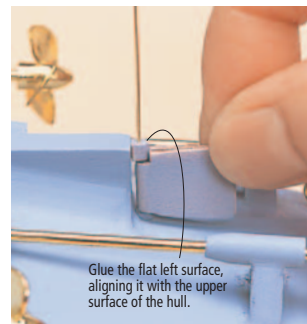
**87** When the paint is dry, insert half of piece **7**, cut with the pliers, into piece **4**, the secondary rudder, and piece **6** of the main rudder.



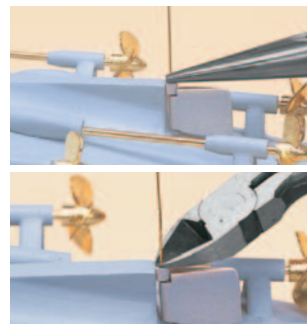
**88** File the surface of the secondary rudder (piece **4**) so that it fits against the hull without gaps.



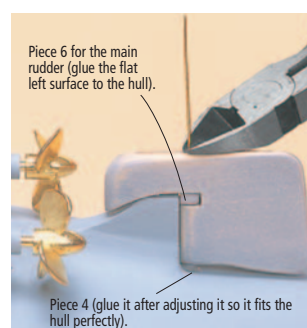
**89** Position the hull as shown in the photo. In the second raised step from the stern, use fast-drying glue to fix the secondary rudder. Apply glue only on the surfaces of the pieces **4** and **6** which come into contact with the hull.



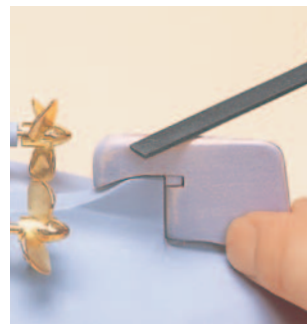
**90** Firmly grip the protruding part of piece **7** with the long-nosed pliers, and insert it about 1mm into the hull, taking care not to damage the wire. With the pliers, cut the excess off piece **7**. The assembled rudders are very fragile, so work with care.



**91** Fix the main rudder to the raised section of the stern in the same way as for the secondary rudder, working carefully to avoid damaging it.



**92** With the metal file, smooth any part of the pieces **7** protruding from each rudder. Take care not to damage the shape of the rudders.



## COMPLETED PIECES

