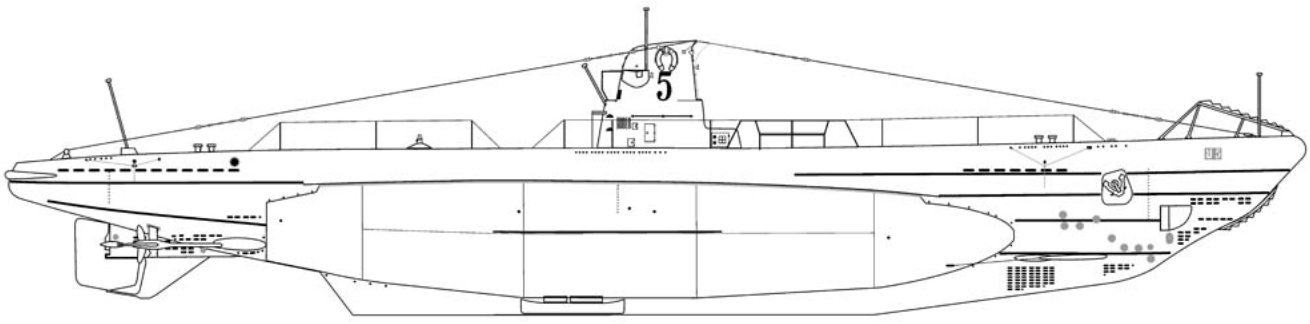
Upgrade set 72-01
For Special Navy's 1/72nd scale Type IIA U-boat kit

Instruction booklet



Research and design

The Special Navy (SN) Type IIA is a very decent kit, with many commendable aspects. The resin and white metal parts in the kit are particularly good, as is the overall shape. Like any injection moulded kit, there are areas that can be improved. The AMP set 72-01 has been specifically designed to correct and improve the SN kit, thus allowing you to build an extremely accurate model of the Type IIA U-boat.

A great deal of time and effort has been expended on researching the SN kit and the real Type IIAs. The following plans were used as reference material:

(1) Plan 9 on page 83 of *Vom Original zum Modell: Uboottyp II* by Eberhard Rössler
(2) G. Beck
(3) Hans Sievers
(4) Jeff LaRue

As U-boat superdetailers and researchers will attest, many U-boat plans cannot be relied upon implicitly. Time and again period photos show some details on U-boat plans to be erroneous. Although a combination of plans and period photos have been used, we have taken great care to rely upon assessment of period photos wherever possible in the research and design of this set.

The best book for Type IIA photos is arguably *Vom Original zum Modell: Uboottyp II* by Eberhard Rössler (Bernard & Graefe Verlag, 1999). This book is highly recommended. Edition 3 of the magazine *U-Boot im Focus* includes an exceptional photo of five IIAs. This magazine can be found at – http://www.luftfahrtverlag-start.de/UBootEnglish/ubootenglish.html

The Type IIAs were modified over time. For example, U 3 in 1941 was slightly different with regard to certain features than the same boat had been in 1938. Such differences include the fitting of the 20mm canister, additional deck railings, and the removal of the netcutter. There were also some slight differences to the forward deck pattern on the 1941 version of U 3 than on the 1938 version of U 3. Please note that the AMP set is designed for a pre-war IIA. Some minor alterations would be required for a wartime IIA.

Given the modifications over time and the differences between individual boats, it is prudent to choose one particular boat at a specific time frame.

Acknowledgements

AMP would like to thank Jeff LaRue for his very kind assistance. Jeff is a well respected modeller and former editor of the SubCommittee magazine. He has completed a number of R/C sub models, and is working on an excellent scratch built Type II in 32nd scale. Jeff has been of great help with the deck, allowing us access to his own deck design. He was also kind enough to supply us with the Beck and Sievers plans. Many thanks, Jeff!

We would also like to thank Olaf Krabbenhöft (author of *U-Boot im Focus* and modeller in chief of the International Museum of Hamburg), Jan Klarbæk, Andrea and John Martindale, Dr. John and Linda Hastings, and everyone on the AMP forum.

Best of luck!

Contents of AMP set 72-01

Photo-etch (PE)	**322 parts**
Main deck (thick PE)	2 parts
Thick PE	164 parts (hull 30 parts; outside tower 19 parts; inside tower 54 parts; deck and jumping wire 61 parts)
Thin PE	143 parts (hull 35 parts; outside tower 50 parts; inside tower 22 parts; deck 36 parts)
Ventral fret	13 (8 ventral door pieces; 4 deck seats; 1 nameplate)

Resin	**7 pieces**
R1	Ventral area (X2 – port and starboard)
R2	Deck spacing wedge (near stern)
R3	Deck spacing wedge (mid-hull)
R4	Voicepipe
R5	Foghorn

Flag
Early tricolour with cross (X2)

Decals
White waterline draft numbers (6 sets – 3 per side)
White tower U-numbers for U 2, U 4 and U 5
White U-numbers for tower lifebelt

Plan
1/72nd plan (A2 sized)

Nameplate
Included in ventral fret

Photo-etch number system

- If the part number has a Z before the part number (ie. Z41) the part is on the thin PE sheet.
- If there is no letter before the part number (ie. 41) the part is on the thick sheet.
- If there is a P after the part number (ie. 37P) the part is to be fitted on the port (left) side of the model.
- If there is an S after the part number (ie. 50S) the part is to be fitted on the starboard (right) side of the model.
- If there is no P or S after the part number (ie. 28) the part is to be fitted in a central location or fitted to both port and starboard sides.
- Part 76 to 80, and the nameplate, are included on the small "ventral" fret.

Along with these instructions are four A4 sheets. These have been included to help the modeller understand what each piece number looks like, and their purpose. Note that on these four sheets many of the pieces are **not to scale -** many pieces are so small they have been enlarged on these sheets.

We have used "SN kit" to refer to the Special Navy model kit. Our own upgrade set (AMP 72-01) is always referred to as a "set". This nomenclature allows us to differentiate between the Special Navy model and the AMP set.

Stage 1 – Hull (stern)

The purpose of the main plan is to allow the modeller to accurately position the AMP parts on the SN hull. Lay the main plan down on a table or floor. Then lay the two starboard hull pieces on top of the plan. At first glance we can see some errors with respect to the free-flooding vent holes.

The *Vesikko*, which is very similar in many respects to the IIAs, is a museum boat in Finland. As no Type IIAs have survived, and detailed period photos of IIAs are difficult to obtain, SN may well have used the existing *Vesikko* in Finland as a reference guide when designing their kit. As a result of using this museum submarine as a guide, there are *Vesikko*-only features on the SN kit. One obvious example is that the free-flooding vent holes on the SN kit are a hybrid of the Type IIA and *Vesikko*.

To correct the vent holes, quite a number of holes have to be added or filled in. Drilling templates have been added to make this task easier. The other flaw with the SN hull holes is that the **smaller holes were paired, not evenly spaced**. A number of pieces have been added to correct this flaw; they can either be used as drill templates or fitted to the hull.

We will start at the stern and work our way forwards. Note that the dive planes, guards and rudder will be added later.

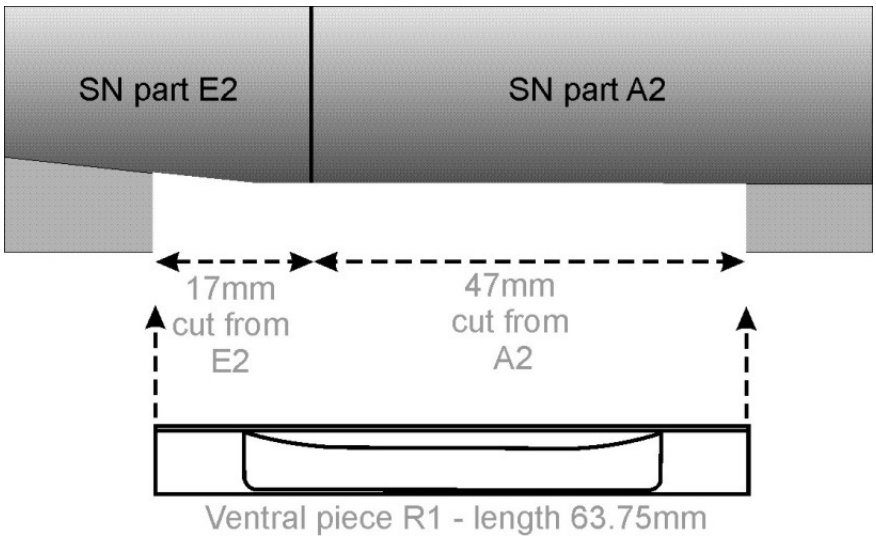
- Near the stern on the SN kit, there is a line of 11 holes on the top row and 10 holes on the bottom row. The bottom row is a *Vesikko* pattern and so they should **all** be filled in. The top row should not be filled in. However, the top row is one hole short at the rear. Drill a large vent to the rear of the main pattern by using 18.
- Use 9, 14, 15, 16 and 17 as drill templates.
- Fit 10 and 11 to the hull, around the propeller shaft.
- Fit 8 to the hull. These four holes were squares rather than circles.
- On the plan there is a circle 7mm below the bottom right hand side of part 9, and another circle 6mm to the right of part 9. Drill both these holes on port and starboard sides.
- There was a diesel exhaust outlet (21mm above part 9); this outlet was on the starboard side but NOT on the port side. Use 19 as a drill template to drill this hole. Then add Z11S over the edge of the drilled hole.
- Similarly there was a small circle over the edge of the hole to the right hand side of 14. On the main plan a grey arrow points to this hole. Add Z12 over the edge of this hole on both starboard and port sides.
- The propeller guard (SN kit part C7) will be added in stage 14. However, we should glue part Z10 in place now. When we come to stage 14, C7 will be added directly on top of Z10.
- Z9 should be added to two locations on both sides of the hull. One location is above the rear dive planes; the other is below the propeller shaft.
- As noted by Jan Klarbæk, the rear dive plane (SN kit part B6) should be moved back. This is evidenced in both plans and period photos. The plane should be moved back 4mm. Drill the new hole in the correct location and test fit part B6. Do not glue B6 in place – this will be done during stage 14.
- There are a number of horizontal strips (sometimes referred to as “doublers”) on the IIA hull. The doubler directly above the rudder extends 10mm too far back on the SN kit. Remove the rearmost 10mm of this doubler.
- Now refer to the other end of this same doubler. It should stop when it reaches the saddle tank (below part 9). On the SN kit the doubler erroneously extends by 48mm onto the saddle tank. This 48mm section of doubler should be removed.

Stage 2 – Hull (middle)

- Use 13 as a drill template (above the saddle tanks and below the tower).
- There were three circular holes near the centre of the saddle tanks. The rear hole should be drilled on both sides. The two forward holes should be drilled on the starboard side only.
- Below the three holes is a thick horizontal line. It has been impossible to assess this line using period photos. The length and position on the AMP side profile accords with the Vom Original plan. Similarly, the small weld lines on the saddle tanks are from the Vom Original plan. The vertical weld line that is farthest forward on the saddle tank does look too far forward on the kit – the position on the Vom Original (and AMP) plan looks more likely. You may wish to sand off this vertical weld line and add a new one in the correct position.
- Moving farther forward we come to a circular hole (21mm to the bottom left of part 7). This hole should be drilled on both sides.

Stage 3 – Hull (bow)

- Above the forward end of the saddle tank on the SN kit there is a line of 12 holes on the top row and 7 holes on the bottom row. The bottom row is a *Vesikko* pattern and so they should **all** be filled in. The top row should be left alone.
- Fit 6 and 7 to the hull. These holes were squares rather than circles.
- Fit 1, 2, 3, 4 and 5 to the hull.
- Use 12 as a drill template for the holes above the anchor. There is a small oval hole directly above main guard strut; use the small oval hole at the left hand side of part 12 to drill this small hole.
- Add the 8 GHG plates on either side of the hull using parts Z7.
- Add Z8 (UT plates) on either side.
- Add SN kit parts H2 and H6 around the torpedo doors (refer to step 6 in the SN kit instructions).
- Add the bow number plates by using AMP parts 3, 4, 5 or 6. If you are depicting U 1 or U 3, use SN kit parts H3 or H4.
- The main ventral area near the keel is completely missing from the SN kit, as it is on the *Vesikko*. However, the Type IIAs did have the ventral area. This is included in the AMP set via resin pieces R1. We will add the ventral area to the kit during stage 5. At this time we should take the opportunity to cut away the area of the keel where the ventral piece will go. The area to be cut away on the starboard side can be seen below. 17mm should be cut away from E1 and E2; 47mm should be cut away from A1 and A2.



Stage 4 – Fitting the deck

A great deal of time has been spent in the research and design of the AMP Type IIA photo-etched brass deck. It was designed with reference to four sets of deck plans - Vom Original, Jeff LaRue, G. Beck and Hans Sievers. However, the greatest priority has been on using period photos of Type IIA decks whenever possible. The greatest care has also gone into calculating the correct main slot sizes (width, length, and space between slots). When these are gauged correctly, the pattern of main slots can be used as reference guides for the positions of all the other deck details. This allows an accurate deck, and deck details, to be drawn. Incidentally, the slot dimensions and spacing was the same on the Type II as on the Type VII slots.

Special Navy made three significant errors with their deck design. The first mistake regards the length of all of the main slots. On the SN deck the slots are 4mm in length. AMP has assessed the slot length to be in the region of 5.7mm in 72nd scale. As the deck design consists of a pattern of numerous slots, the 30% underestimation by SN makes a massive difference to the overall look of the deck. Only when a true slot length is applied does the deck look prototypical.

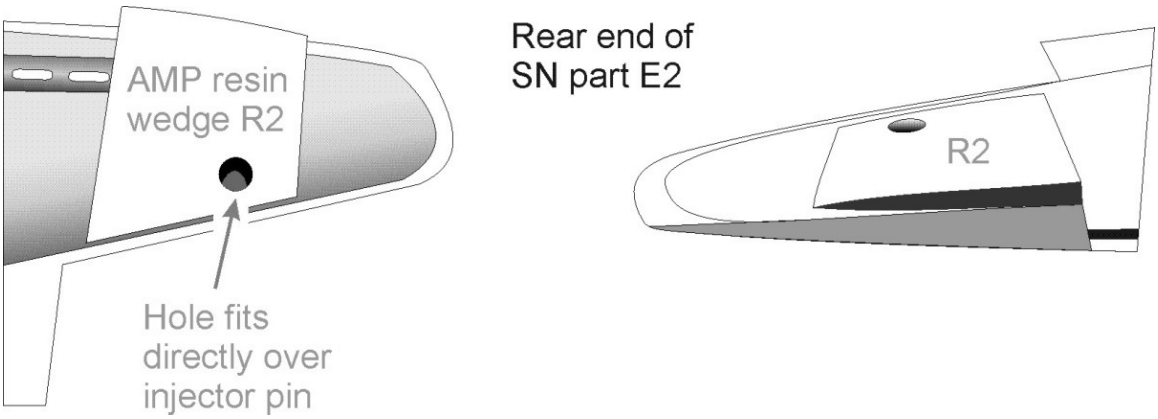
There were minor differences between slot patterns on the six IIA decks. These differences were very minor, and relevant only to the most accuracy obsessed superdetailer. The exception is U 6, which had a VERY different deck featuring none of the main slots. If you wish to model U 6 you would have to fill in all the main slots.

The second major error in the SN deck design is in respect to the metal sections at the bow and stern. The stern metal section is depicted in the SN kit by the 36mm long horizontal area at the rear of the model. However, plans show the length to be 42mm rather than 36mm. We can correct this area with the 42mm long AMP piece Z2. The little bumps on the surface of Z2 are anti-slip bumps, which help to prevent crewmen slipping overboard. These anti-slip bumps can be found on the AMP deck sections and metal deck hatches.

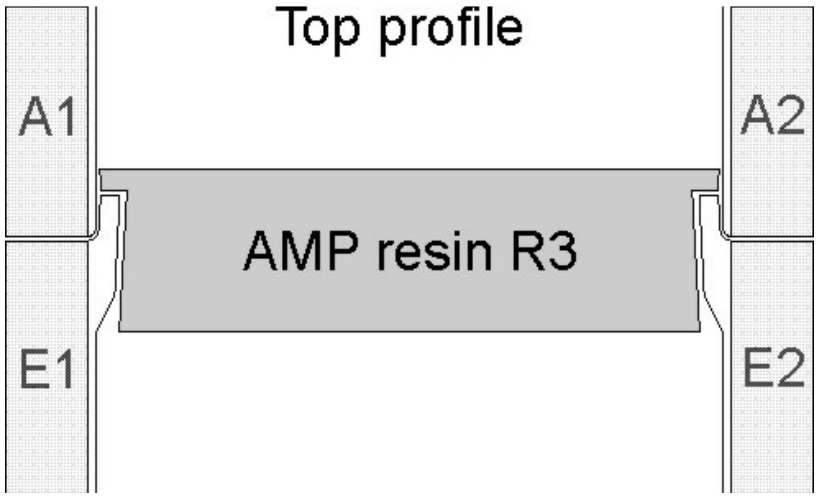
Similarly, the metal section near the bow of the SN kit is too short; rather than the 79mm in the plans, the SN area is only 66mm long. This is corrected via AMP part Z1.

The third error in the SN kit is in respect to the metal deck section near the stern. At the spot where the stern metal area meets the wooden deck, the width of the kit is several millimetres too narrow. Not only is this evidenced in all available plans – the metal section at the stern looks far too narrow in period photos.

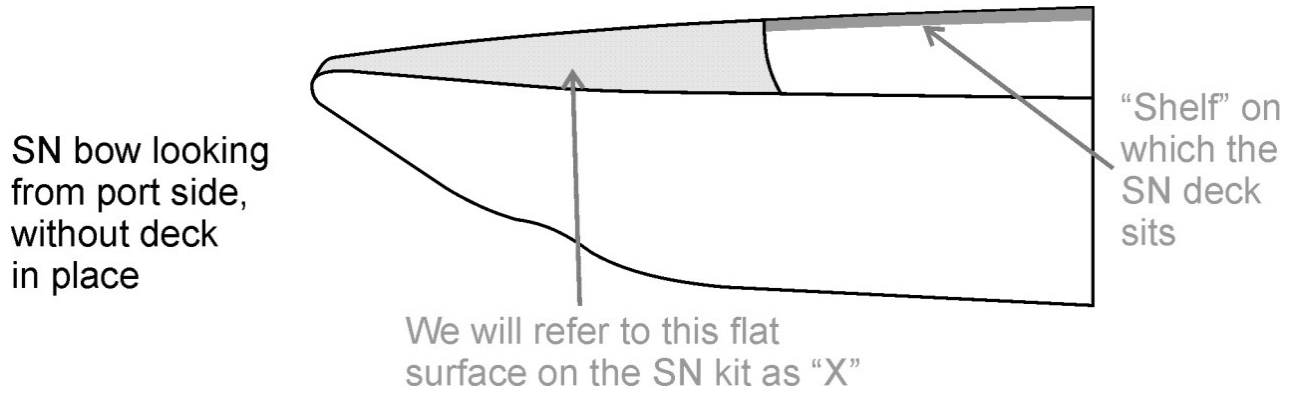
- Before gluing the hull together and fitting the deck, it is prudent to first dry fit the pieces.
- Glue deck spacing wedge R2 to the position shown in the drawing below. The left drawing is a side profile, looking towards the inside of SN kit part E2. The right drawing looks down from above. The circular hole in R2 goes directly over the injector pin near the stern. It can easily be seen how the wedge will increase the width of the hull near the stern.



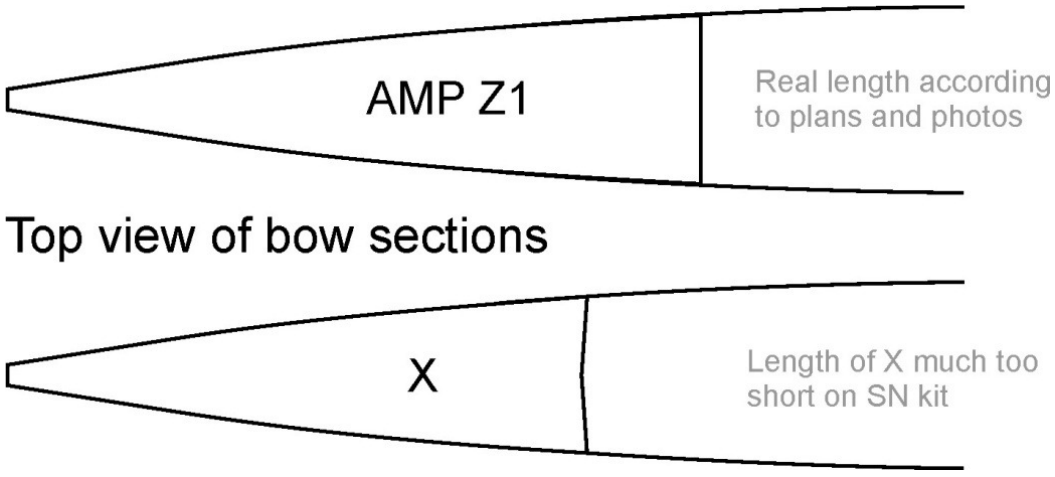
- Follow step 1 in the SN instructions, gluing together the pieces for the torpedo door.
- Glue SN hull parts A1 and E1.
- Glue SN hull parts A2 and E2.
- Hold the starboard and port hull sides together with tape – do not glue at this stage.
- Now we can test fit resin part R3, which is a wedge for the middle of the hull. It has been designed to help keep the hull together and ensure the deck fits properly onto the hull. R3 is to be test fitted where the forward hull sections (kit parts A1 and A2) meet the rear hull section (E1 and E2). The drawing below (which looks down from above the hull) shows how the lip on R3 fits together with the lip on the inside of E1 and E2.



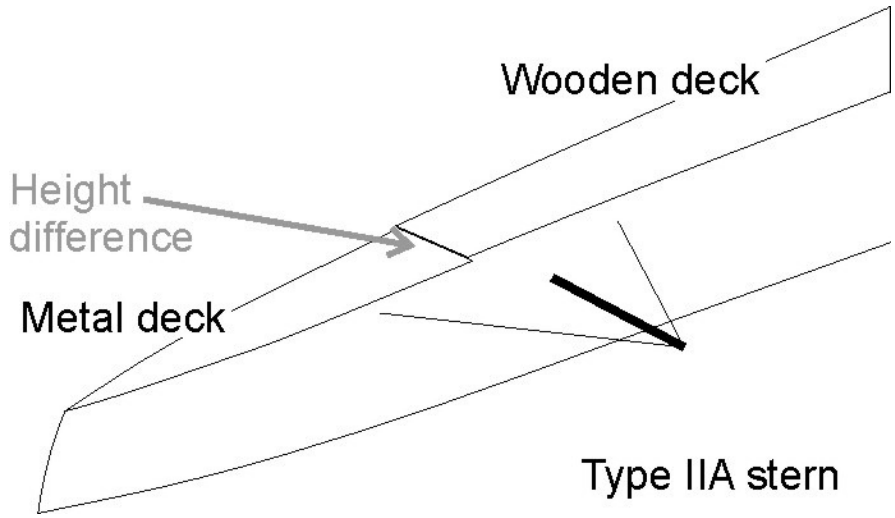
- Cut out the two large sections of deck from the photo-etched fret. These two large sections were wooden on the real Type IIAs. The large tabs on either side of the deck are designed to keep the deck firmly in place. Fold the tabs 90 degrees downwards. The tabs will need to be cut to the correct length to allow them to sit upon the "shelf". The drawing below shows the shelf. Note also that we will refer to the horizontal area at the front of the bow as "X". Similarly we will refer to the horizontal area at the stern as "Y".



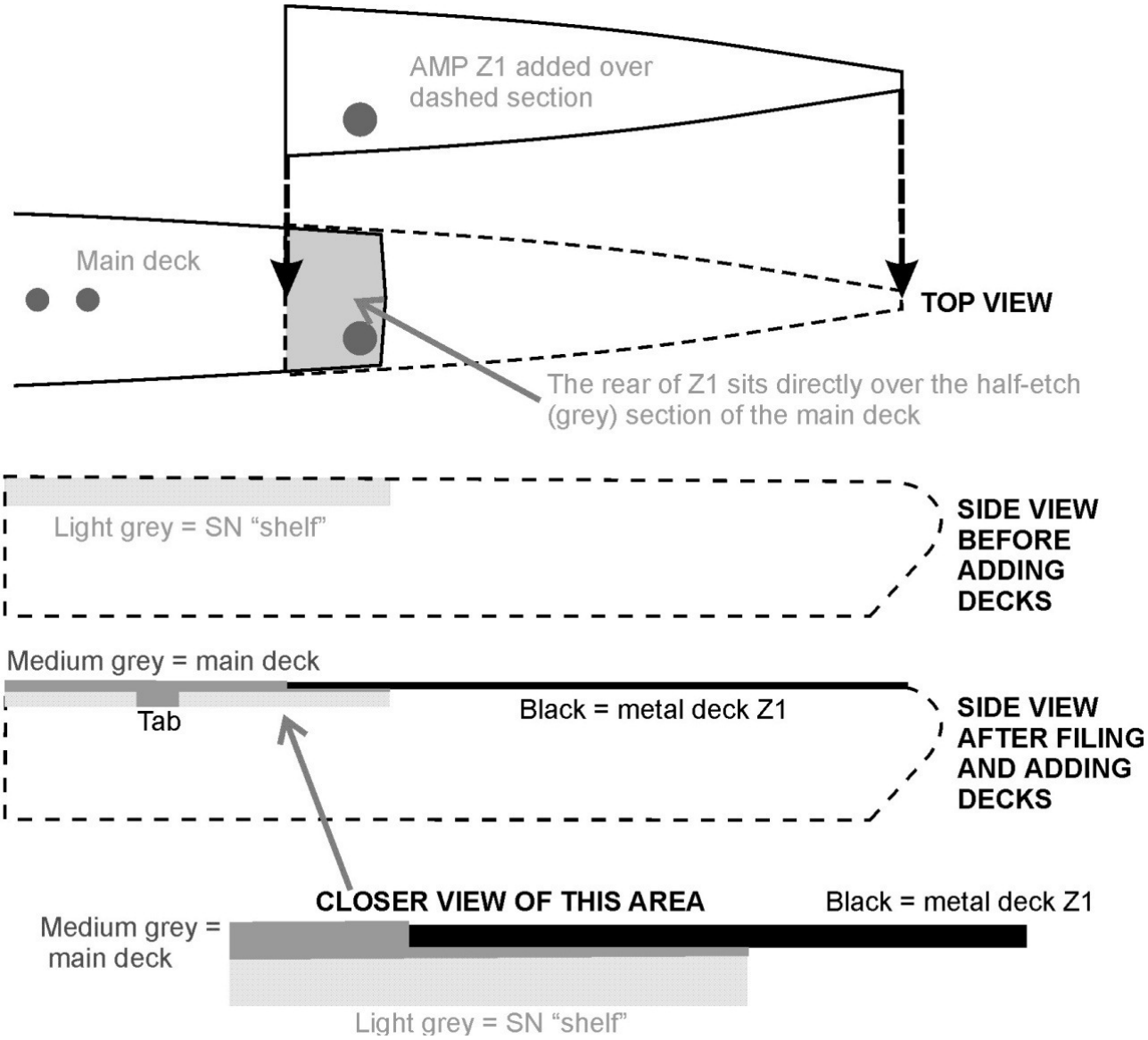
- One deck section has been half-etched from the top, the other deck section is half-etched from the bottom. The area that is half-etched from the bottom should sit on top of the area that is half-etched from the top. This allows both sections to fit together nicely.
- Sit both deck sections on the hull, with the tabs sitting on the shelf. As we can see we will need to trim the tabs to the correct length. Cut the tabs to just a little longer than they need to be. Then file away the tabs to the desired length so that the deck sits at the correct level on the kit. The wooden deck actually sat VERY slightly lower than the edge of the hull. However, given that the model is in 1/72nd scale, the deck should sit only a fraction (no more than 0.25mm) below the top edge of the hull.
- The above method should ensure that the deck holds to the hull properly. However, if you wish for a greater gluing surface you may wish to leave a few of the deck tabs a little longer than the rest. Then you could either cut channels into the inner hull, or add extra folds around the shelf.
- Once you are content with the deck height, you can glue port side and starboard side together, and then glue wedge R3 in place. Remember to fit the torpedo doors (from step 1 in the SN kit instructions). Do NOT glue the deck down at this stage.
- Now we can deal with the metal deck section at the bow and stern. Areas X and Y on the SN kit (which depict the metal deck sections at the bow and stern) are MUCH too short on the SN kit. The drawing below illustrates just how short area X on the kit is in respect to plans and photos.



- There is another important point to consider. The wooden deck section (the main deck) was at a slightly higher level than the metal deck sections at the bow and stern. The drawing below illustrates this point.



- We can replicate this height difference. Firstly, lay the main wooden deck sections in place. Then lay the AMP bow metal section (Z1) on top of area X on the kit. Note how the rear of Z1 extends over the half-etch section at the front of the main deck.



- File down the half-etch section of the main deck (ie. the grey section in the drawing above). Then file down area X on the SN kit until it is level with the half-etch section of the main deck. The bottom section of the drawing above illustrates the deck sections AFTER filing; now the metal deck Z1 is sitting at a slightly LOWER level than the main deck.
- The same procedure should be followed for the metal deck section at the bow (Z2).
- When you are content with deck levels, glue the main deck sections to the hull. Then glue Z1 and Z2 down.

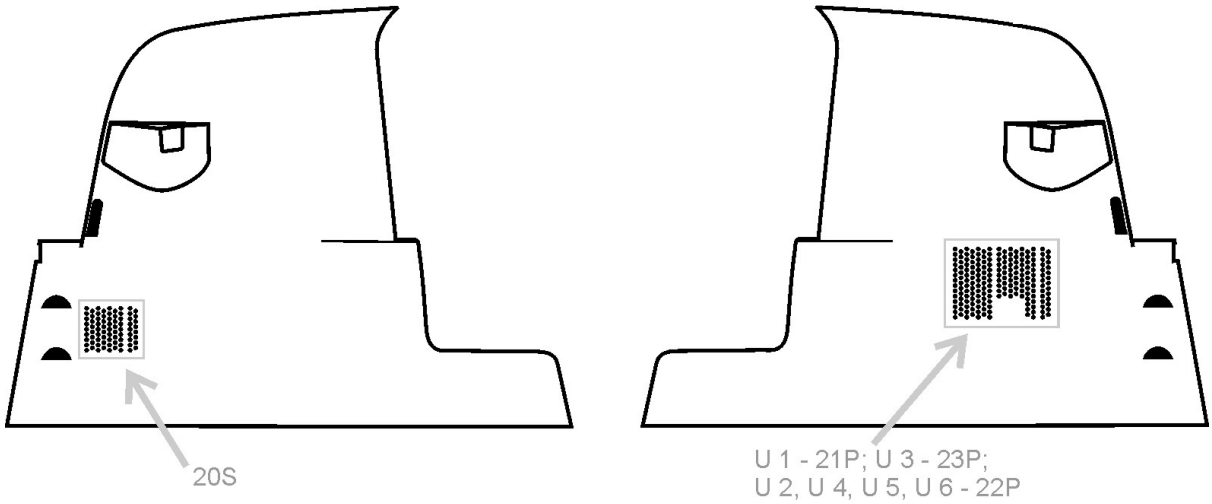
Stage 5 – Fitting ventral area

- Now that the hull and deck are glued together, you may build the ventral area. You can see that resin ventral piece R1 has a slope in the middle. When the doors were open they would rest upon this slope.
- Add the large resin ventral piece R1 into the holes that you have already prepared. Tidy up with filler.
- Glue 77 and 78 (door frames) in place. Note that they should be added partly over resin piece R2, and partly over the plastic SN hull.
- Add the ventral doors (79 and 80) over the door frames.

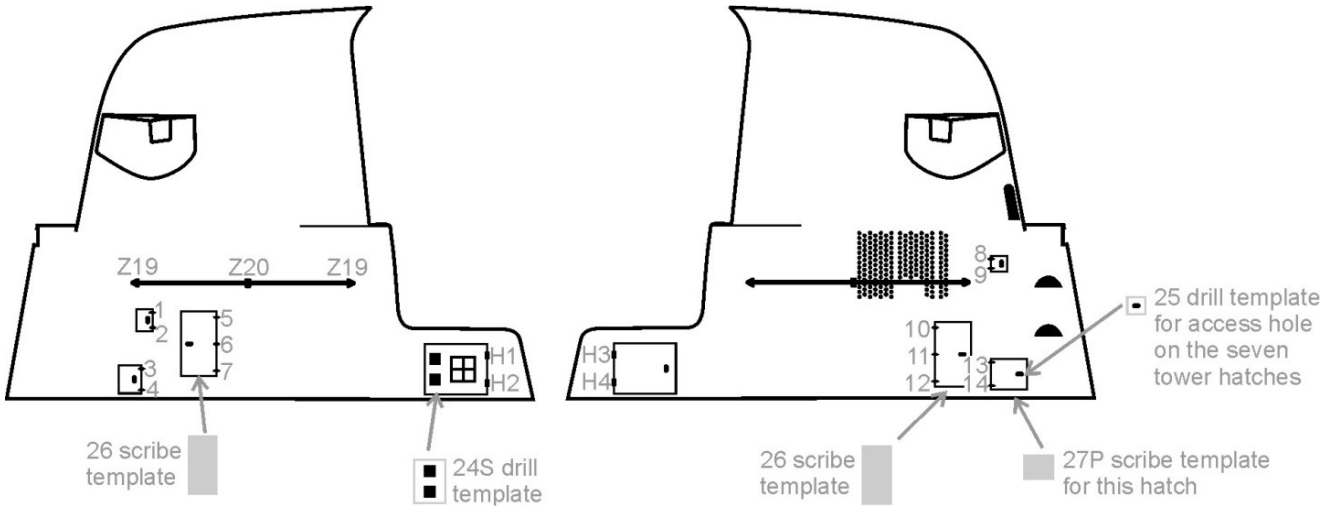
Stage 6 – Tower bulwarks (outside)

The tower drawings which follow are **NOT TO SCALE.** When positioning the AMP parts, please refer to the six tower profiles on the main plan (which are in 1/72nd scale). They are marked as Figures 1 to 6.

- Firstly add the small round vent holes on the tower sides. Use 20S for the starboard side. Use 21P, 22P or 23P on the port side depending on which boat you are modelling.



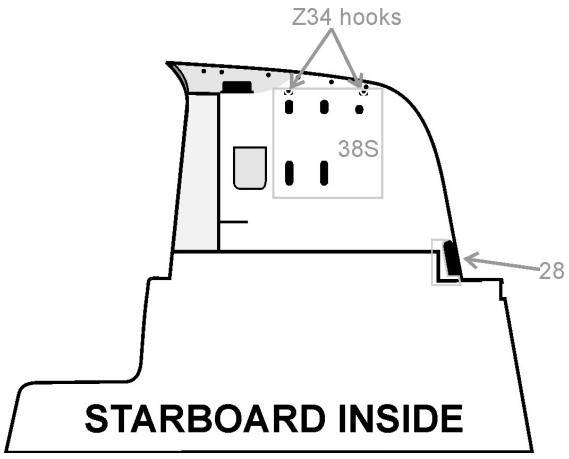
- The hatches can be seen below. Use 26 as a scribe template to replicate one of the hatches more accurately. However, rather than using the drawings below you MUST refer to Figures 4 and 6 in the main plan. When you have placed 26 in position, scribe around the edges of this rectangular part.



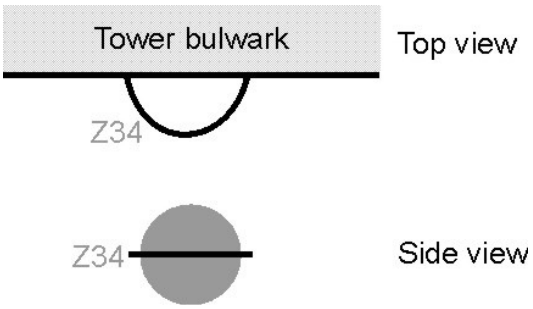
- Similarly, 27P can be used for one of the hatches on the port side.
- 24S is another drill template, this time for the square holes at the front of the tower. Note that these holes were only on the starboard side and NOT on the port side. The SN kit has two squares in raised profile in this position on the port side; these two squares should be removed from the port side.
- The last drill template is 25. This is for the very small oval holes that allowed crewmen to open up the hatches on the tower sides.
- There are photo-etched tower railings in the SN kit (parts H9 and H10). You may improve these railings with brass rod. To further improve the railings you can add Z19 and Z20 to the tower at the positions where the railings enter the tower. Z19 should be positioned at either end of the railing, with Z20 in the centre.
- In the drawing above, numbers 1 to 7 show the positions of the hatch hinges on the starboard side; numbers 8 to 14 show the positions of the hatch hinges on the port side. These 14 hinges should be added using part Z17.
- The hatch at the front of the tower had a rectangular style of hinge. In the drawings H1 and H2 show the positions of these hinges on the starboard side; H3 and H4 show the positions of these hinges on the port side. Use Z18 for these rectangular hinges.

Stage 7 – Tower bulwarks (inside)

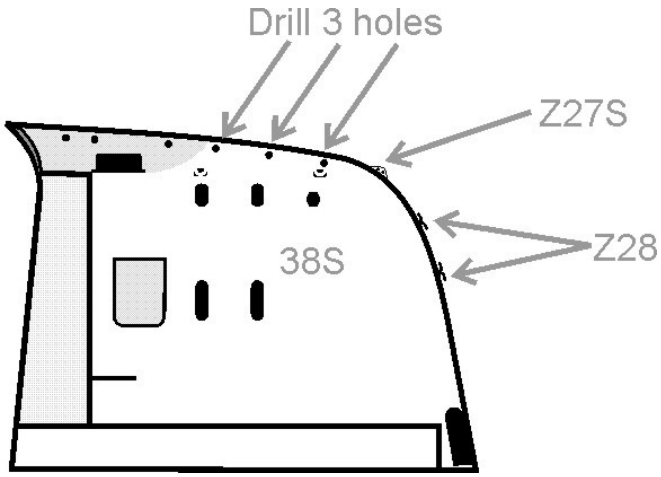
- Now we can turn our attention to the inside of the tower walls (the walls can be referred to as bulwarks). Refer to steps 7 and 8 in the SN kit instructions. Add SN kit part C9, which are side navigation lights. Then fill in the space on the inside of the bulwark around C9.
- Refer to the drawing below, which is of the inside of the starboard bulwark. Note this is not to scale in these instructions. Refer to Figure 2 on the main plan for an exact size.



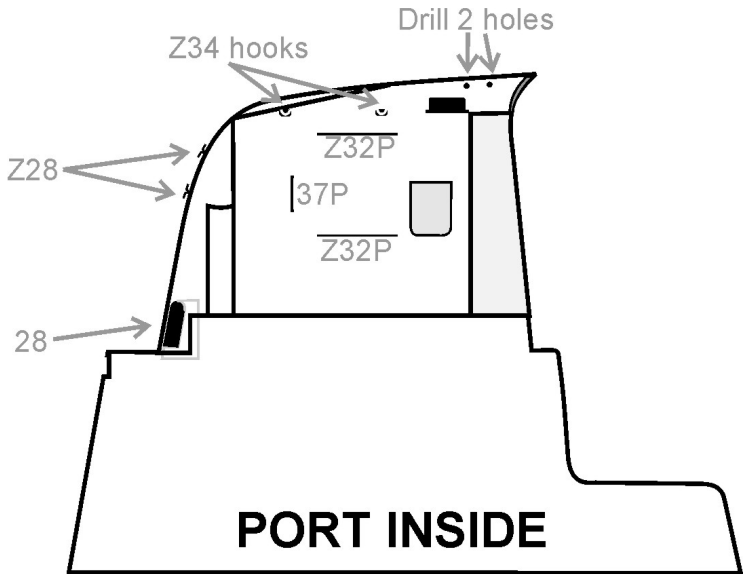
- Add 38S to the starboard bulwark. This can be used as a drill template. Or, since the tower bulwarks are quite thin, it can be added to the tower bulwark.
- Use 28 as a drill template to drill away the shape at the rear end of the bulwark.
- Z34 should be added to the areas pointed to by arrows above. These two holes had hooks around the edge. Crewmen could attach their safety harnesses onto these hooks to prevent themselves being washed away in heavy seas. Drill the holes for these hooks and add Z34 around the edge of the holes (see below).



- Drill the three holes pointed to above with arrows in the drawing below.
- Add fairlead Z27S to the edge of the bulwark. Note this fairlead was only present on the starboard bulwark and not on the port bulwark edge.



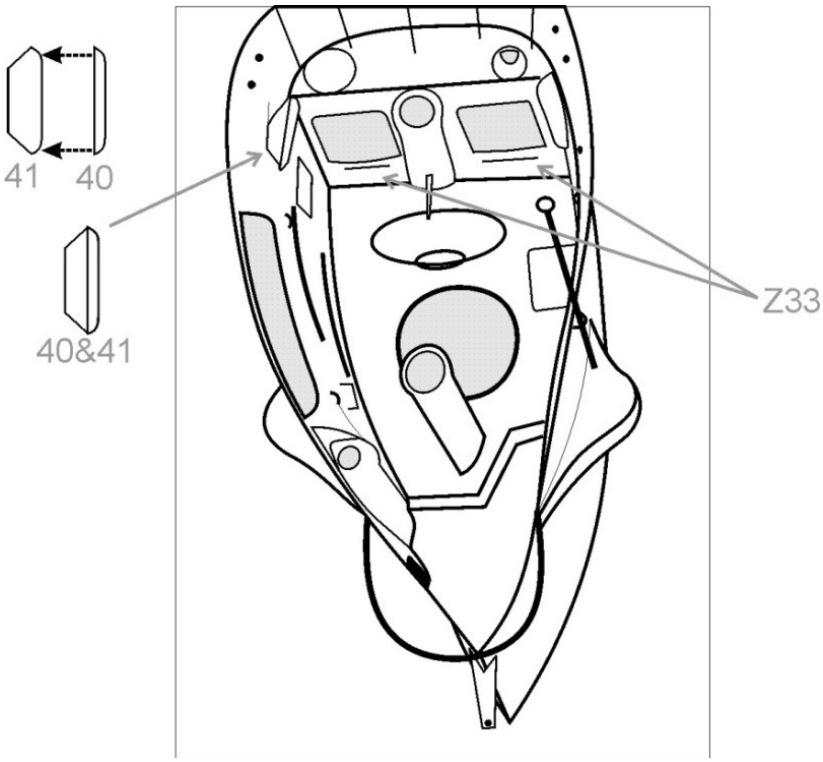
- Add the small hooks Z28. You will need two parts to make up each hook.
- Now for the inside of the port bulwark. Use Figure 1 on the main plan for an exact size.



- Use drill template 28 to drill the hole.
- Drill the two holes pointed to by the arrows.
- Add the following: small fairleads (Z28); two hooks (Z34); two lines (Z32P); grip (37P).

Stage 8 – Inside tower

- If you are building your model with the tower hatch open, drill away the tower hatch area on SN kit part B11.
- You can now glue the port and starboard tower sides together (follow steps 7 and 8 in the SN kit instructions).
- Add SN kit part C12 by referring to step 8 in the SN kit instructions.
- Below can be seen a drawing of a IIA tower from above.



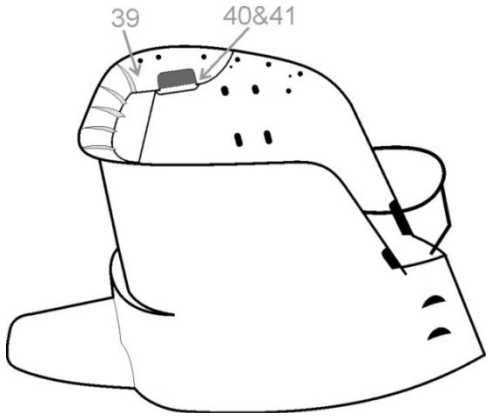
- On the vertical wall of the shelf (the SN kit part B12) there are two large openings. Add Z33 under both openings.
- You have a choice regarding part 39. It appears that the earliest IIAs did not have part 39. However, before the outbreak of war part 39 was in place on the starboard bulwark. It is likely that part 39 was also fitted to the port bulwark as well (although we do not have positive confirmation that it was fitted to both sides).

  Option 1 - Not fitting part 39

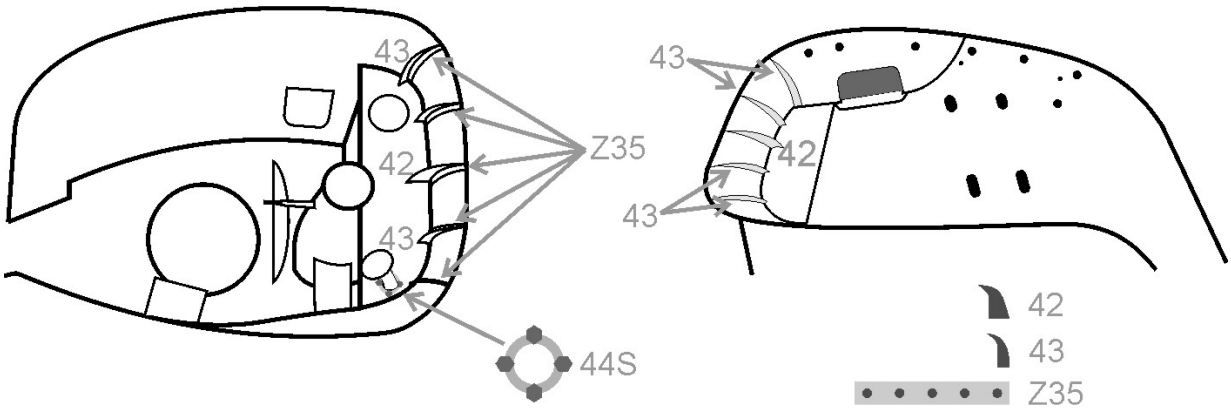
  Glue 40 over one end of 41, as shown in the drawing above. Then add to the port and starboard bulwarks in the position shown above. You will have to cut a recess in the tower bulwark in order for these parts to be fitted properly. Use page 30 of *Vom Original zum Modell: Uboottyp II* by Eberhard Rössler as a reference guide.

  Option 2 - Fitting part 39

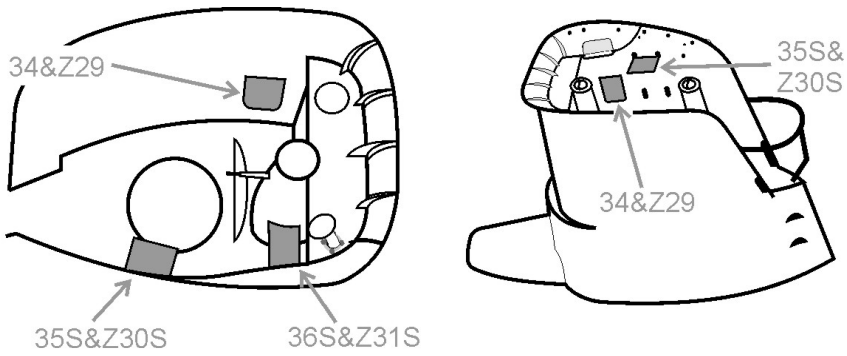
  Glue 40 over one end of 41, as shown in the drawing above. Then add 39 to the bulwark in the position shown in the drawing below. Lastly add 40&41 to the underside of 39.



- In the drawing below we can see five semi circular parts at the front of the tower. The one in the middle (part 42) is bigger than the other four (part 43). They should be added in the positions shown in the drawings below.



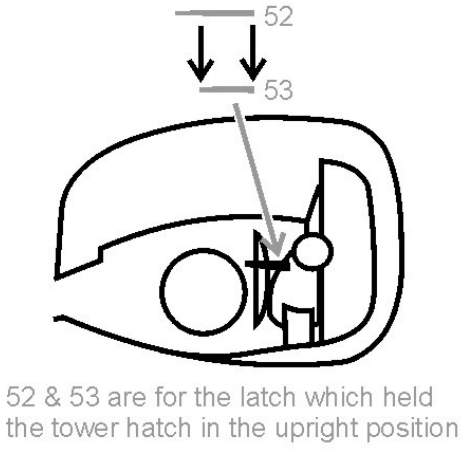
- Z35 should also be added to the side of parts 42 and 43. The left drawing above shows their correct placement. Be careful to place Z35 on the correct side!
- Fit the AMP voicepipe (resin part R4) to the starboard side of the shelf. You should drill a hole in the resin to depict the front of the voicepipe. Part 44S should be placed underneath the voicepipe.
- Next we can fit the steps. There are two parts to each step – one part from the thick fret and another from the thin fret. The thin part should be glued on top of the thicker part, with the anti-slip bumps facing upwards.

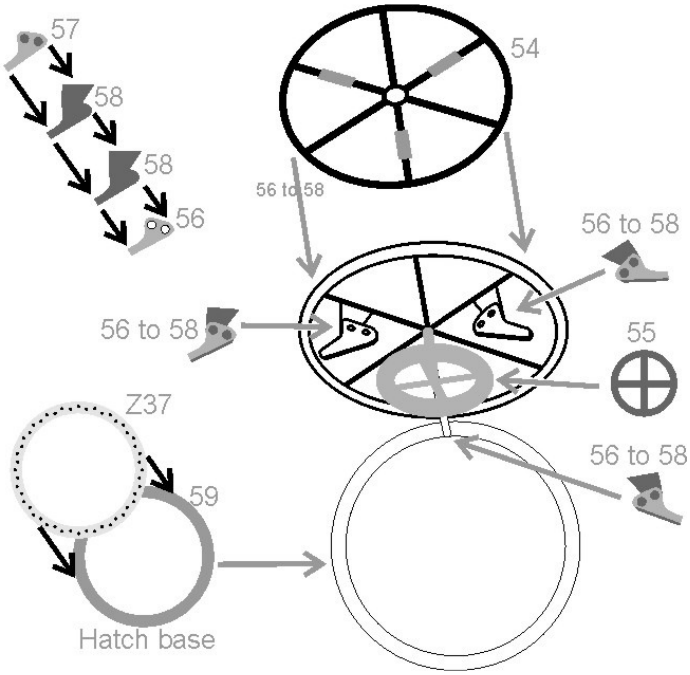


- Fit 36S & Z31S between the periscope housing and the starboard bulwark. Figure 2 in the main plan shows the exact height in which it should be added.
- Fit 34 & Z29 to both port and starboards sides. Use Figures 1 and 2 in the main plan for exact placement. The rounded edge should face downwards. As these were foldable seats, they can be modelled in the horizontal position.
- 35S & Z30S depict a removable seat, which was presumably stored inside the boat when not in use. The drawing above (on the right) shows the seat in position. Note that the seat is attached to the tower bulwark by means of two of the oval holes. This particular seat could also have been positioned beside the other oval holes lower down on the bulwark. As there were no similar holes on the port side, it is likely that this removable seat could only have been positioned on the starboard side.

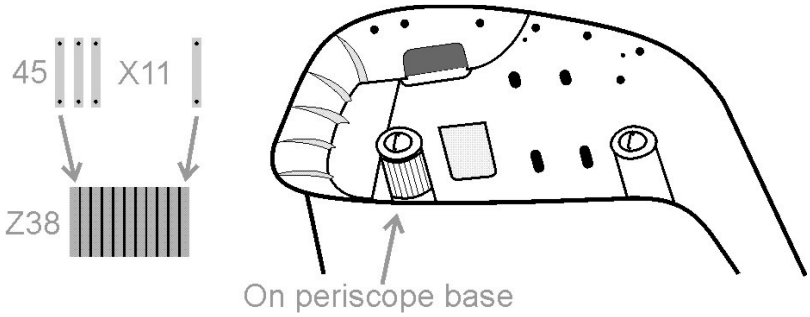
Stage 8 – Tower hatch and periscopes

- Add Z37 over the top of 59. Then add them to the base of the hatch (as in the drawing below). The hatch is part G1 in the SN kit.
- To detail the tower hatch, firstly glue 54 to the inside of the hatch.
- Glue 56, 57 and two 58s together as in the drawing below (58 and another 58 should be the middle parts, with 56 and 57 on the outsides). You need to do this three times.
- Add all three of the assemblies to the rectangular areas of 54 (the drawing shows the orientation and positions).





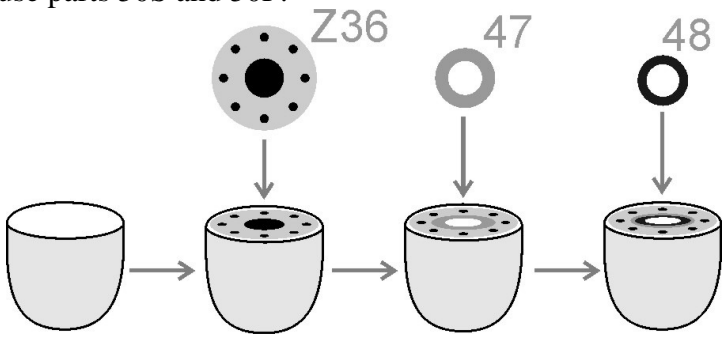
- One hatch wheel (part 55) should be added to the inside of the hatch, another to the outside of the hatch.
- Parts 52 and 53 are for the latch that held the hatch in the upright position. Part 52 should be glued over 53. The section of 52 that protrudes is the section which curves around the edge of the tower hatch.
- On later Type IIAs, wooden strips were added around the top of the periscope base. These strips helped to prevent crewmen sticking to the metal in freezing conditions. The fitting of these strips began before the beginning of the war. However, not all boats received the strips at the same time period. Check your references to see if your boat had this feature. If you do wish to add them, glue the part 45 (all 11 of them!) onto Z38. Then bend Z38 in an arc and add it to the top of the sky periscope base.



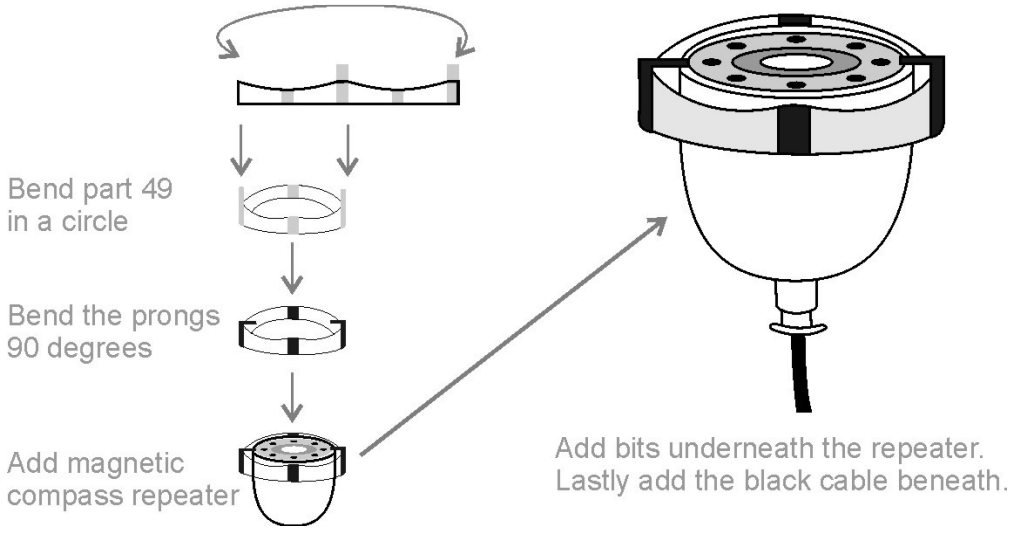
- Refer to steps 8 and 9 in the SN instructions for the following points.
- Glue in place the D/F aerial (SN kit part C15).
- Add the tower railings (SN kit parts C13 and C14).
- Add the bell (SN kit part C33) if desired.
- Add the periscope base (C10 and C11) in place. If you are adding the periscopes you may wish to alter the bases so that the periscopes fit in place.
- When the U-boats were in port they often had a lid over the top of the two periscope bases. If you want the lids in place glue 46 to the top of the periscope bases. Then add the lid handles (Z39) on top of part 46.

Stage 9 – Magnetic compass repeater

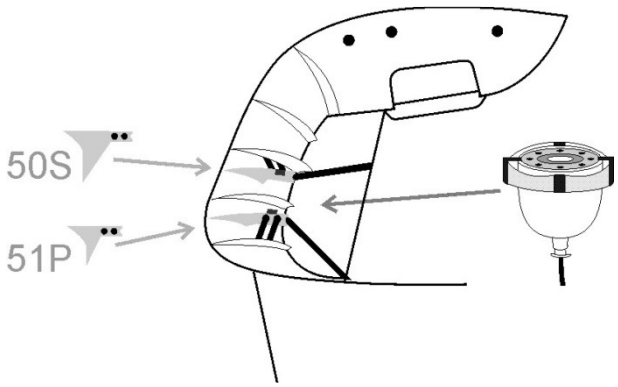
- At the very beginning the IIAs may not have had a magnetic compass repeater in place. Then a repeater was added to the front of the tower (on the port side). Please note that over time the method of housing the magnetic compass repeater on the tower may have been altered. The parts included in the AMP set are designed to help you build the repeater and attachment points on the pre-war Type IIAs. If you wish to build a wartime IIA, you may not be able to use parts 50S and 50P.



- If you wish a repeater you will have to scratchbuild the main repeater housing. This should be 2mm wide by 2mm high and look like the part on the left in the drawing above. You should then add three parts directly on top of the repeater - Z36, then 47, and finally 48.



- Now follow the steps above. Part 49 is the "holder" which goes around the top of the repeater. Firstly bend 49 in a circle and glue the ends together. You will notice two prongs sticking out the top. Bend these two prongs 90 degrees so that they are pointing at each other.
- You can then add your repeater to the holder. The two prongs should be glued to the top of the repeater, as in the drawing above.
- Scratchbuild the small parts below the repeater, as in the drawing above. The black shape at the very bottom is a black cable which ran to the tower below.

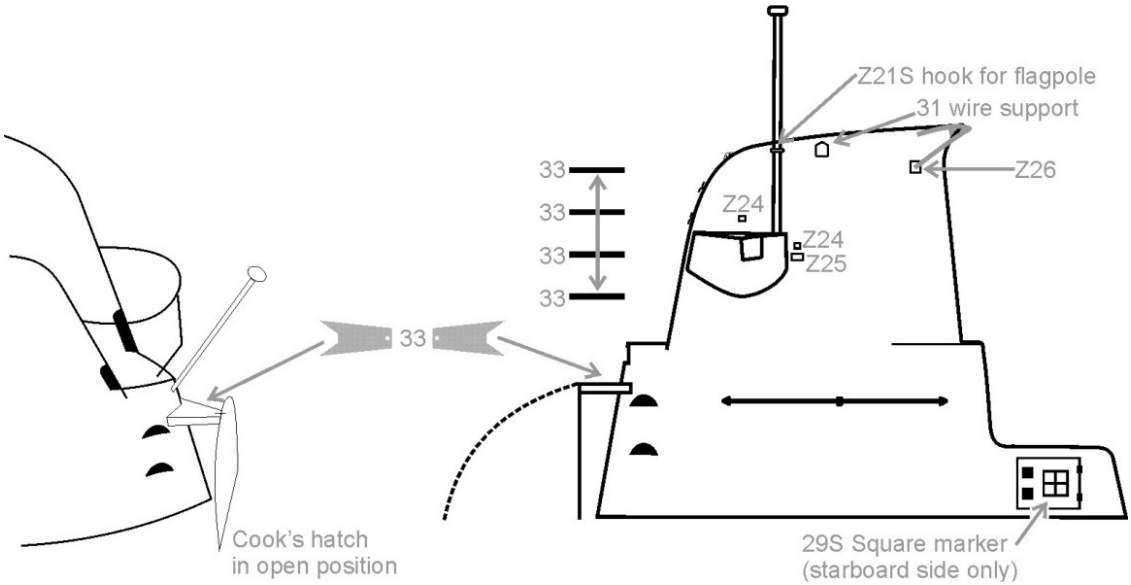


- When you follow the next few steps, please dry fit the parts first before gluing.
- If you look closely as parts 50S and 51P you will see two small prongs at the top. They should be bent 90 degrees. 50S and 51P should then be added to the front of the tower, as in the above drawing. Note how the prong of 51P points to starboard and the prong of 50S points to port. The magnetic compass repeater will be held in position by these two prongs.
- The black cable on the underside of the repeater needs to go to the tower below. Once you know the position that the repeater will take, drill a hole in the shelf directly below the black cable.
- The black lines in the drawing above are the supports for parts 50S and 51P. There are six in total – three on either side. These should be added with 0.25mm rod. If you look closely at 50S and 51P there are two holes near the rear on both parts. Add the front two supports from these two holes to the tower below.

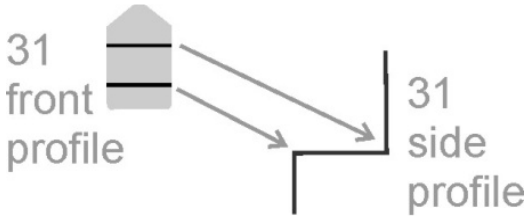
- There is a semi-circular indent at the rear of 50S and 50P. The third support (which is much longer) should be added from this indent to a position on the tower below. Use the drawing above for guidance on the position.
- You can finally add the repeater in place. The prongs on 50S and 50P should be directly above the prongs on the repeater "holder" (part 49).

Stage 10 – Outside tower

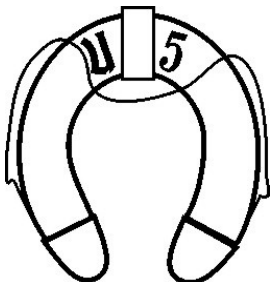
- Add Z24, Z25 and Z26 to both sides of the tower (see below and Figures 3 and 6)
- Add the square tower marker 29S to the starboard side.
- The flagpole on the starboard side of the tower was the commander's flagstaff; a commissioning pennant (a narrow strip of white material) would often be flown from this flagstaff when in port. Either use SN kit part C16 for this flagstaff or make your own. There was a hook on the tower side which held the flagstaff in place. This can be added via part Z21S. You need to bend Z21S before gluing it in place.
- On the deck, directly behind the tower, was located the cook's hatch. When this was raised, it was held in the upright position by part 33. There are four part 33s in the AMP set. You need to glue all four on top of each other and then glue it in place to the rear of the tower. You will see a small hole at the rear end of part 33. A small latch ran from this hole to the top of the cook's hatch, thus allowing the hatch to remain upright.



- Add 31, which is a wire support (alternatively you can use SN kit part H7). You need to bend 31 to shape using the drawing below as a guide.

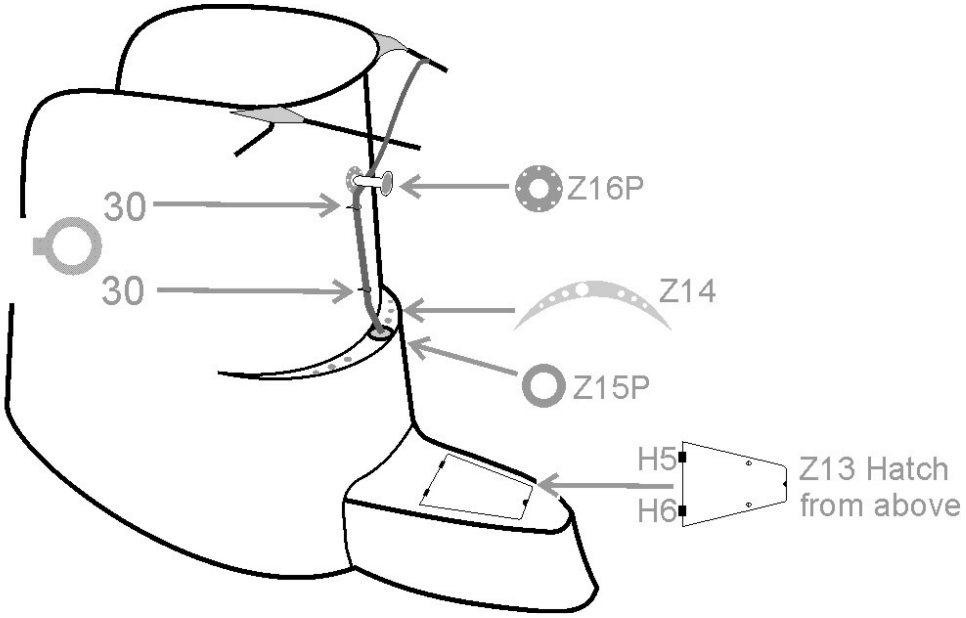


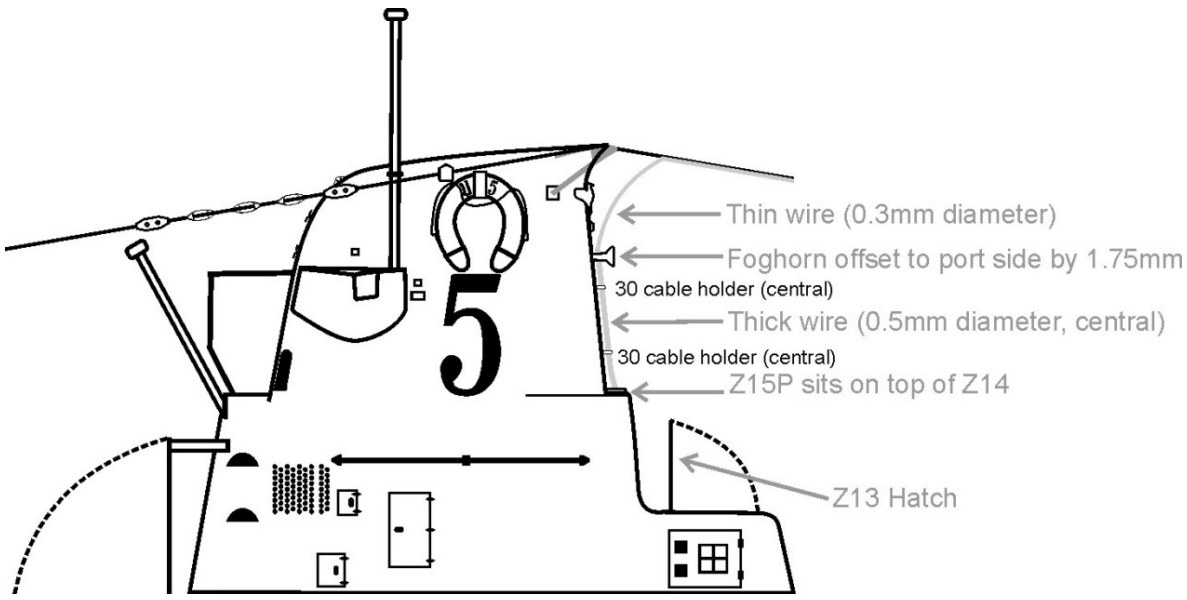
- Glue the lifebelt (SN kits parts B15) in place. Then add very thin wire as in the drawing below. At the end of your build you will add the lifebelt decals – the drawing below shows where they should go.



Stage 11 – Front of tower

- The two drawings below show a number of details at the front of the outside walls of the tower. Firstly, add Z14 to the semi-circular recess. Then add Z15P over the hole that is offset to port.
- Z16P and resin part R5 are intended for the foghorn. You can mark the height of the foghorn by referring to Figure 3 in the main plan. The foghorn was not central; it was offset to port by 1.75mm. Z16P is the foghorn base plate. You can add the forhorn over the top of Z16P later.

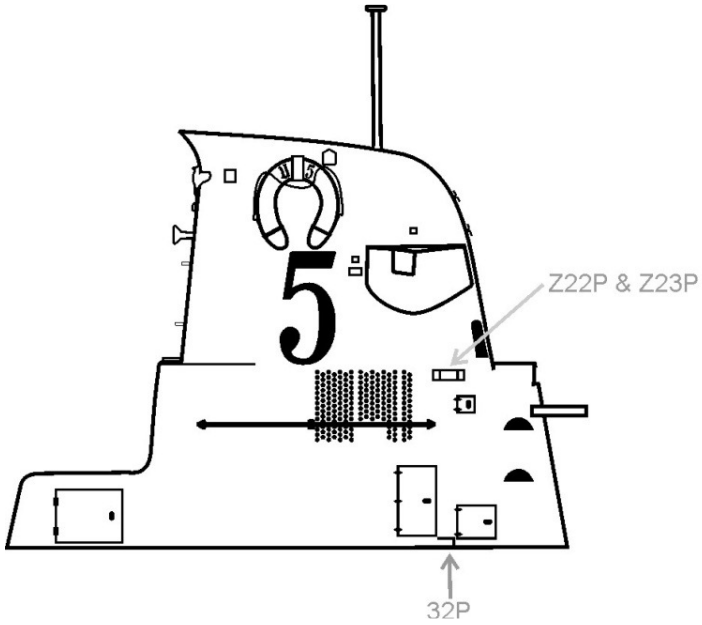


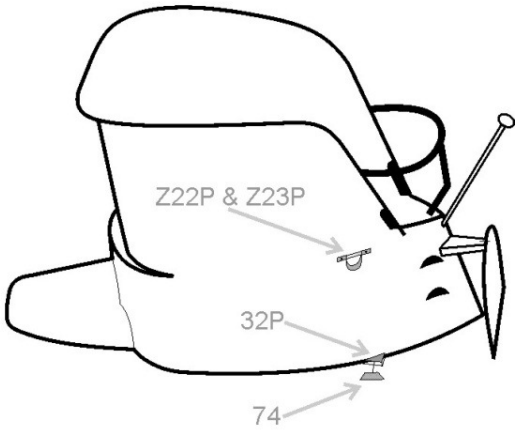


- On the drawings below you will see a wire running from Z15P up to the jumping wires. The wire was 0.5mm in diameter up to the forhorn and 0.3mm in diameter above. After making the wires to the appropriate size and length, thread them through parts 30. Parts 30 were the holders which held the wires in place to the tower. **Do not glue parts 30** or the wires in place yet – just dry fit them at this stage.
- Add the hatch Z13 to the front of the tower, along with the two hatch hinges (part Z17). Figure 4 shows the exact position of Z13 and the position of the hinges (marked as H5 and H6) on the rear edge of Z13.
- A bronze eagle was often sported by pre-war boats near the top of the tower. In mid to late August 1939, when Germany was preparing for hostilities, pre-war markings were ordered to be removed. The eagle and the U-number plates near the bow were removed, and the large white U-numbers painted over. Although the bronze eagle is usually considered to be a pre-war feature, period photos show some irregularities. The eagle did not feature on all pre-war IIAs, and the eagle DID appear on some wartime Type IIAs. For example, photos show a pre-war U 3 without an eagle; other shots taken of U 3 when it was a school boat (after 1940) show the boat with an eagle. Always refer to sources when deciding whether to fit an eagle or not. The eagle in the SN kit is a very decent example. If you are adding an eagle, glue the SN resin part F8 to the tower.

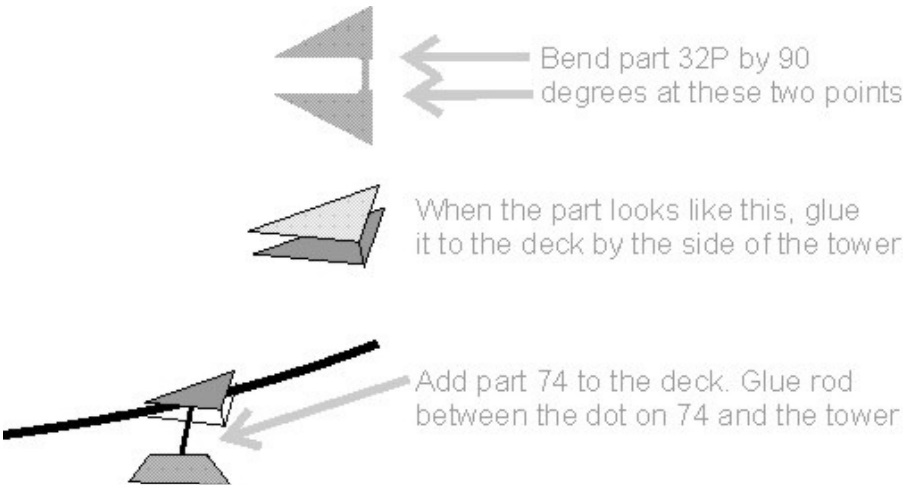
Stage 12 – Port details

- Now glue the tower to the deck. The half-etched line on the brass deck shows the exact position that the tower should be added.





- Parts 32P and 74 should be added to the deck (to the port side of the tower). For the exact positioning of both parts, refer to Figure 6 and the deck drawing on the main plan. Note that part 74 has a half-etch dot on one side. You must orientate part 74 with the dot facing the tower. The piece of rod should be added between the dot on 74 and the tower.

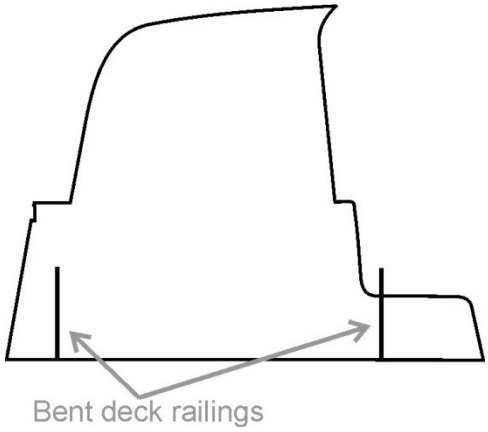


- Add the round holder on the port side of the tower by following the drawing below. When you have glued Z23P to Z22P, you can add them to the tower. Use Figure 6 to determine the exact position on the tower.

Stage 13 – Deck details

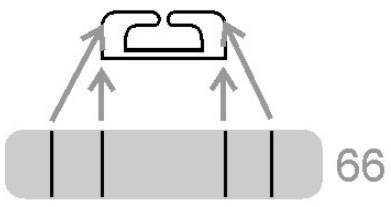
- Now we can add the deck details, using the main plan as a placement guide. On the plan, the deck details are shown either directly above or directly below where they should be placed on the deck.
- The metal deck hatches – Z41, Z42, Z43 and Z44 – should be added. These hatches are added over the half-etch areas on the main deck. The half-etch areas are deliberately slightly larger than the hatches themselves – this is exactly what the real boats looked like. No hinges need to be added on top of these hatches. The hinges are part of Z41, Z42, Z43 and Z44 (just as on the real boats). As AMP has made considerable effort to depict the anti-slip bumps, please glue the hatches with the bumps facing upwards!
- There were two circular markers (parts 73) on the deck – one on the forward deck and another on the rear deck. These marked the location of the emergency air release valve (which was below the deck). One is to be added on top of the metal hatch Z41, the other on top of metal hatch Z44.
- There were a number of larger wooden hatches on the deck. All the hinges for the wooden hatches need to be glued to the deck. On the main plan, the positions of the 26 wooden deck hinges (part Z40) can be seen directly below the deck; they can also be seen on the deck itself as grey shapes.
- On the front deck was a set of curved deck railings (G8 in the SN kit). These railings had a wooden seat at mid-level. When building the railings, add the wooden seat by using parts 76 (two pieces make EACH seat). Note that the middle vertical stanchion runs directly through the hole in part 76.

- On some boats there were an extra three vertical stanchions which ran from the railings to the hull sides below. Check your references to see if your boat had these extra stanchions. These are marked in grey on the side profile in the main plan.
- When Type IIAs were in port a set of removable deck railings would be mounted in place. The wire between the top of these railings helped to prevent crewmen from falling overboard. Photos of IIAs sailing often show the railings in place. However, when boats were at sea on active patrols the railings would be removed. If adding the railings use the main plan as a guide for where to position the railings and wires. There are holes along the edges of the deck for the 0.5mm railings and 0.2mm wire to fit into. The black arrows below the deck drawing show the holes that the railings and wire should be added to.
- On either side of the front of the tower, there were two railings that were bent in shape (G10 in the SN kit). These two railings can be seen below. To make these railings, refer to the front profile drawing on the top right of the main plan.

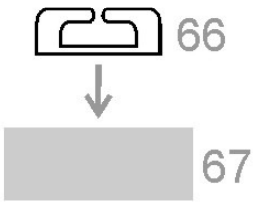


- Type IIA deck had space for four grapnels (poles) along the edges of the deck. The main plan shows the positions of the grapnels. To make the grapnels, use brass or plastic rod 1mm in diameter and 63mm in length.
- Part 71 is the grapnel end. Bend 71 in a curve and glue to one end of the grapnel.
- To attach the grapnels to the deck use parts 72. Bend 72 around the grapnel and attach to the deck. On one side of the piece was a tiny locking nut; this can be scratchbuilt and added if desired.

- Add bollard bases 70 and bollard tops 69 to both forward and rear decks. If you are depicting the bollards in the extended positions, add SN resin parts F6.
- Bend the fairlead (66) to shape by referring to the drawing below. Then add 66 on top of the fairlead base (67). Then add to the forward deck at the point where the wooden deck meets the metal deck section Z1. One half of the fairlead should be over the wooden deck, the other half of the fairlead over the metal deck section Z1.



First bend 66 in four places



Then add 66 over 67

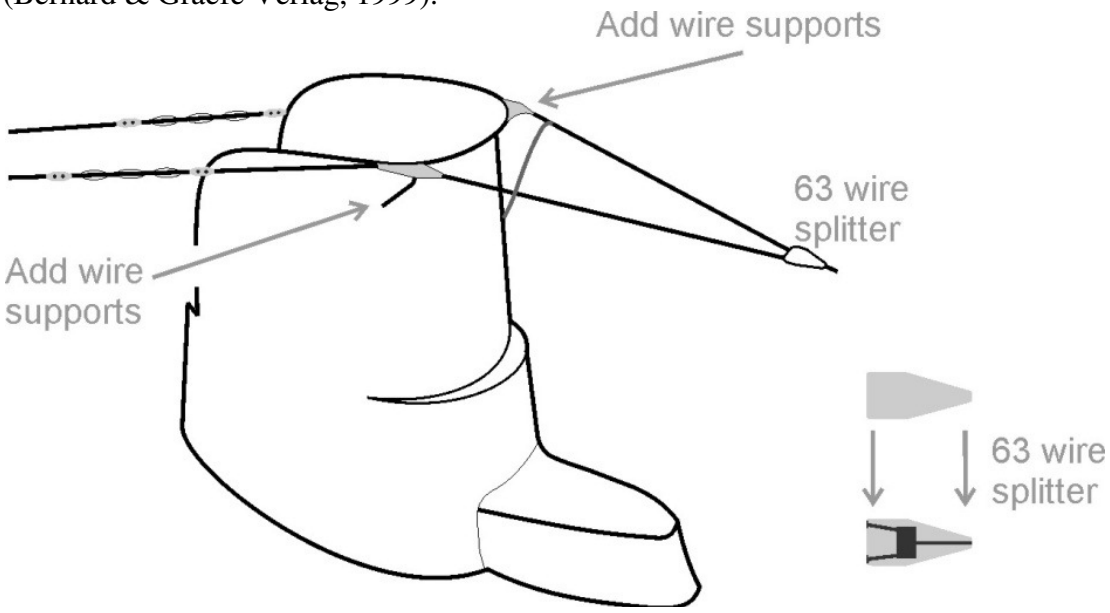
- Part 75 is a semi-circular air identification plate. This piece could sometimes be seen on the forward deck of U-boats.
- If fitting the 20mm deck gun, follow steps 10 and 12 in the SN kit instructions before adding the gun. The 20mm was often missing from pre-war IIAs.
- To build the red/white lifebouy, follow step 11 in the SN kit instructions. Then add it to the aft deck.
- Add the rear navigation light (SN kit part C24).

Stage 14 – Dive planes and propellers

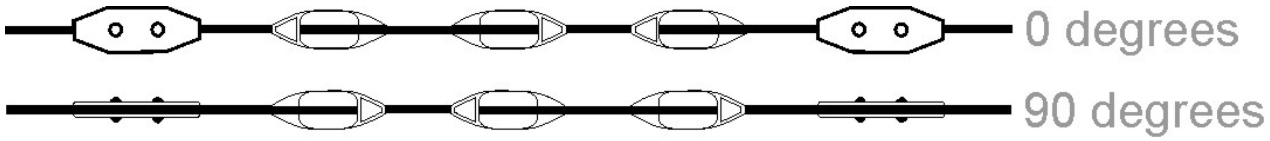
- The dive planes, propeller and propeller shaft can now be added. Follow steps 4, 5 and 6 in the SN kit instructions.
- Fit the SN kit anchor by referring to steps 13 and 14 in the SN kit instructions.
- Fit the torpedo doors and lower netcutter by following step 15 in the SN kit instructions.
- There were four sets of guards on the upper hull of Type IIAs. Two were on the front hull (on either side) and the other two on the rear hull. These guards helped protect the dive planes from damage when in port. In comparison, the *Vesikko* had no guard on the front hull and a rounded style of guard on the rear hull. There is no front guard in the SN kit and the rear guard (parts C22 and C23) are, unfortunately, the rounded style found on the *Vesikko*. As a result, new front and rear guards should be built. To do so, refer to the drawings at the top right and top left of the main plan. These drawings show a top, side and front view of each guard.
- A tensioner wire ran from the front dive plane guard to a point on the saddle tank. This wire can be seen in the main plan. Add this tensioner using 0.3mm diameter wire.

Stage 15 – Jumping wires and upper netcutter

- You should read this entire stage before beginning work on the jumping wires.
- There were three jumping wires – two over the aft deck and one over the front deck. To add the jumping wires, first add SN kit parts G2 (see step 9 in SN instructions). These are the supports between the jumping wires and tower. If you wish to improve the supports, refer to the top left image on page 33 of *Vom Original zum Modell: Uboottyp II* by Eberhard Rössler (Bernard & Graefe Verlag, 1999).

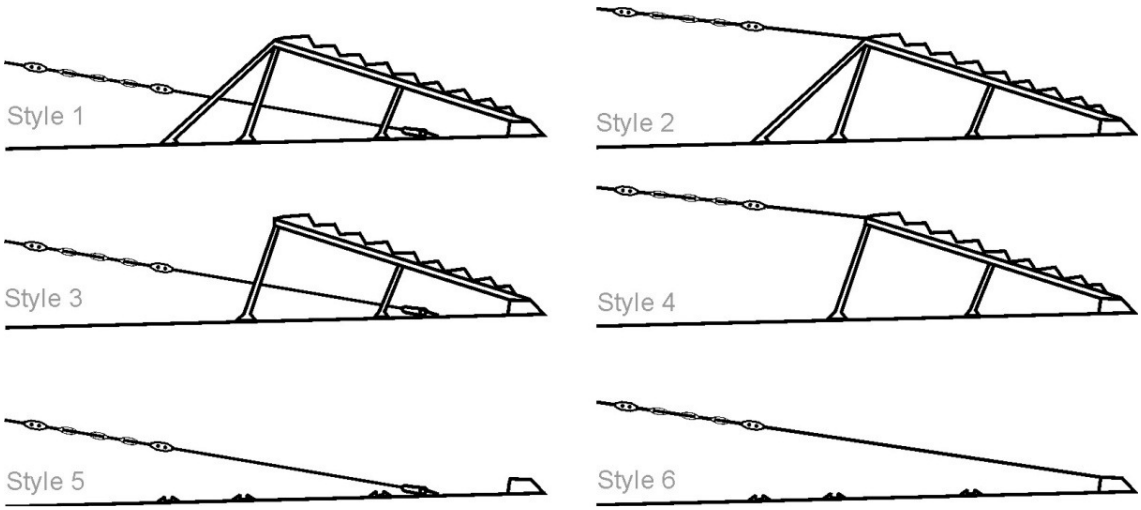


- There is a wire splitter in front of the tower. This is built using the two pieces numbered 63. If you look at parts 63 you will see there are lines marked in half-etch. These half-etch lines allow space for the jumping wires inside the splitter itself. When you are building the jumping wire, make sure the etch lines on one piece are facing upwards. Then glue the jumping wires into the etch lines.
- Take the other piece numbered 63 and make sure it is facing downwards. Then glue the piece directly on top of the jumping wire.
- There were four sets of insulator blocks along the jumping wires. The main plan shows the positions of the insulators. At either end of each insulator block were tensioners which allowed the tension in the wire to be adjusted. Use part 62 for the tensioners. Two pieces are required for each tensioner – one on either side of the wire.
- The insulators should be scratchbuilt. The drawings below shows the insulators and tensioners, and how the wires wrapped around the insulators. For photos of these insulators, refer to page 31 and page 53 of *Vom Original zum Modell: Uboottyp II* by Eberhard Rössler (Bernard & Graefe Verlag, 1999).



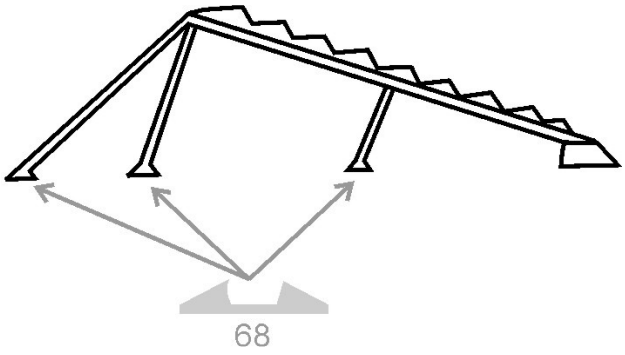
- At some point the insulators ahead of the wire splitter were moved behind the wire splitter. They were moved to the positions below.

- These were a number of different configurations in regard to the upper netcutter and the forward jumping wire bracket. Below can be seen six different configurations. ALL of these configurations are evidenced in period shots of pre-war Type IIAs.

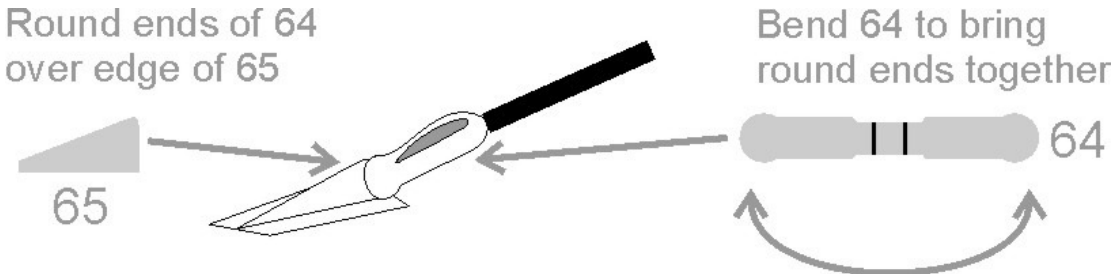


- Always rely upon research material when deciding which configuration to depict. If you do not have sufficient research material, choose style 1 for a pre-war boat (as style 1 was arguably the most common).

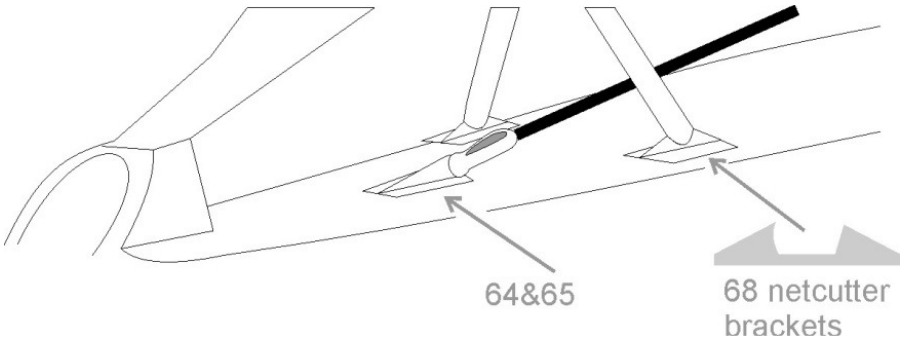
- By 1941, the IIAs were training boats. The netcutter was usually missing by this stage.
- The process of removing netcutters from Type VIIBs and VIICs began in March 1941. However, no such removal date exists in regard to Type IIAs. In the pre-war period, and indeed the wartime period, some IIAs boats had netcutters and others did not. To make matters more confusing, individual boats had netcutters at certain points in time but not during others. For example, there are photos of U 1 with a netcutter at the beginning of her career, and there are pre-war photos of U 1 without a netcutter.
- If fitting a netcutter, build it by following step 16 in the SN kit instructions. To improve the netcutter, fit the bracket (part 68) at the foot of the netcutter supports (as shown below).



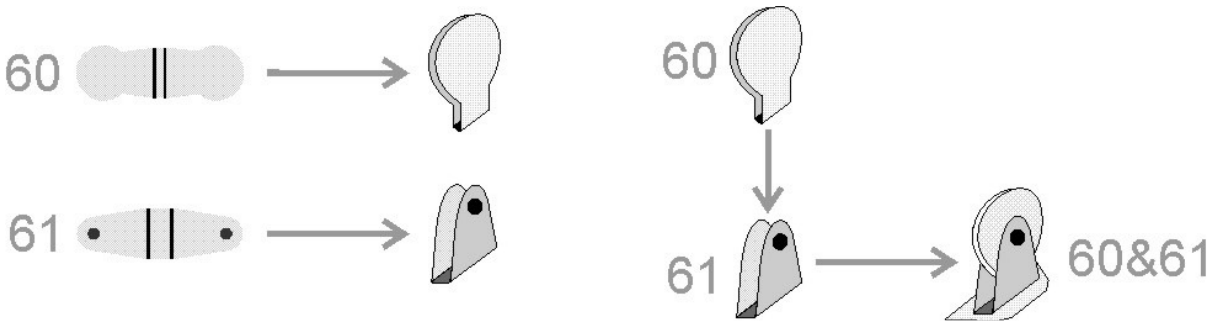
- When the netcutters were removed, the netcutter brackets (part 68) were usually left in place. So you will likely need to add parts 68 whether you are fitting the netcutter or not.
- If we look again at the drawing showing the six configurations, we can see that the jumping wire was attached at various locations. If depicting styles 1, 3 or 5, you will need to build the jumping wire attachment point on the deck. Follow the steps below to make this piece.



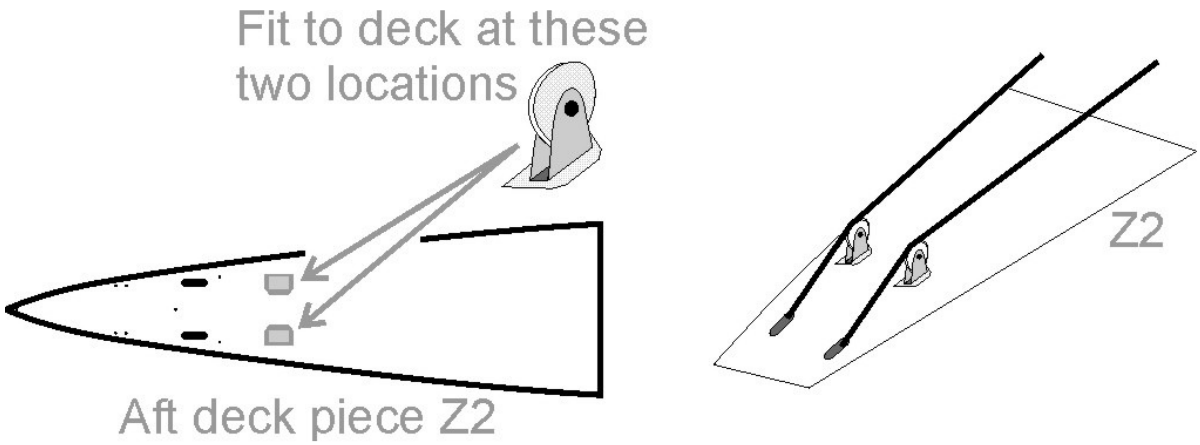
- Once you have bent 64, the two round ends of 64 should be glued over the round edge of 65. Then the pieces should be added to the forward deck, as in the drawing below. Note that the attachment point was offset to the port side of the centreline.



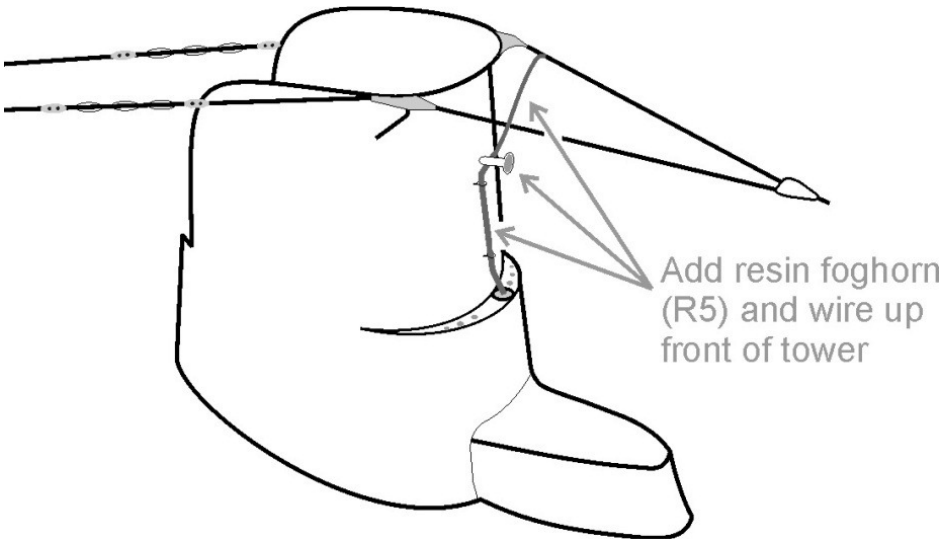
- Now we can deal with how to attach the rear jumping wires to the aft deck.
- Fold parts 60 and 61 along the half-etch lines, as in the drawings below.



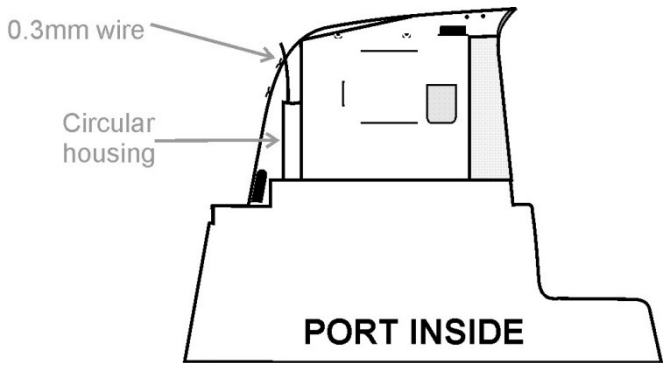
- Insert 60 into 61, as shown above.
- Add 60&61 to the two locations marked in half etch on the aft deck piece Z2. The rear jumping wires ran along the top of 60. They entered the deck in the oval holes in Z2.



- You previously prepared parts 30 and the wire leading up the front of the tower. Now you can glue them in place, as in the drawing below.



- Add the foghorn (resin part R5) in place to the front of the tower. You should cut off the excess resin from the front of the foghorn, and then drill a hole in the front.
- A wire ran from the circular housing on the rear end of the port bulwark to the jumping wire above. This can be seen in the drawing below. It ran from the top of the circular housing up to a position on the jumping wire (between the tensioner and first insulator). Use 0.3mm diameter wire for this feature.



- If you wish the periscopes (SN kit parts G6 and G7) you can add them now.

Stage 16 – Painting and decals

For information on Type IIA colours, refer to the pdf article *Kriegsmarine U-Boat Colours & Markings*. This can be downloaded from the AMP reference section at –

http://amp.rokket.biz/reference.shtml

Although the article discusses all types of Kreigsmarine U-boats, much of the content is relevant to Type IIAs. Paint cross references are included for the original Kriegsmarine colours.

One subject discussed in the article is the difficulty in determining the upper hull colour (used on the upper hull and conning tower). The following schemes are known to have been used on IIAs -

Dunkelgrau 51 hull and *Dunkelgrau 51* tower – white U-numbers
Dunkelgrau 51 hull and white tower – black U-numbers
Hellgrau 50 hull and *Hellgrau 50* tower – black U-numbers

The most common upper colour was arguably the medium grey *Dunkelgrau 51*. This being a medium grey, a white U-number was chosen so that it would be visible upon the medium grey background. So if you see a photo of a IIA with a white U-number, it is likely that the upper colour was *Dunkelgrau 51*. But if you see a photo of a IIA with a black U-number on a grey tower, it is likely that the upper colour was the light grey *Hellgrau 50*.

An unidentified Type II had Spanish Civil War stripes; this aesthetic scheme consisted of horizontal bands of red, white and black.

The horizontal surface of the fairing at the foot of the tower was normally painted black, as per the painting regulations. This fairing can be found directly at the front of the tower.

Included in the SN kit are black tower U-numbers for U 1 and U 3. In our set are white tower U-numbers for U 2, U 4 and U 5. U-numbers for U 6 are not included due to the different deck arrangement on this particular boat. Refer to Figure 3 and Figure 6 in the main plan for exact positions of the U-numbers.

Also included are the very small white U-numbers for the tower lifebelts. Refer to the drawing near the top left of the main plan for the position of these decals.

The last items on our decal sheet are the white waterline draft numbers. There were 6 sets (3 per side). Note that these Type II numbers are slightly different to the Type VIIC waterline draft markings. The drawing near the top left of the main plan illustrates these numbers. In this drawing each set has been allocated as W1, W2 or W3. If you look closely at the side profile on the main plan, you will see W1, W2 and W3. W1 is above the rudder, W2 is above the ventral area, and W3 is between the anchor and torpedo door.

Stage 17 – Flags

Parts C32 in the SN kit are the flagpoles. There were three flagpole locations on Type IIAs -

1. rear of tower
2. near bow, just to the starboard side of the netcutter
3. near stern, on top of the rear navigation light

When in port, flags were often flown from these locations. Sometimes there would be one flag, other times two flags. Three flags would be unusual.

Two flags are included as standard in our set. These flags are of the early tri-colour with cross design, which are often seen in photos of pre-war Type IIAs. If you wish an additional tri-colour flag they can be ordered from AMP (quoting code DK-RMNE-80X135-072) at a cost of $5.95 & postage and packing.

In other cases the normal Kriegsmarine flag was used; these can be ordered from AMP (quoting code DK-KMNE-80X135-072) at a cost of $5.95 & postage and packing. Two flags are included for this price.

We also offer a non-historical flag (DK-KMIC-80X135-072), which substitutes the swastika for an Iron Cross; this flag can be ordered from AMP (quoting code DK-KMNE-80X135-072) for the same price.

Now and again the party flag was used, but AMP have decided against releasing this specific flag. There were often small swastikas on the very top of the flagpoles. AMP has deliberately not included these features in this set.

Stage 18 – Displaying your completed model

If you are mounting your model on a wooden base, glue the nameplate (81) in place.

We hope you have found our set to be useful in superdetailing your Type IIA model. However, you have one final task to complete. When your Type IIA masterpiece rolls off the modelling bench and down the slipway, please share your build by posting photos to the gallery section of the AMP forum. This will ensure your work is appreciated by like-minded people in the modelling community.

Happy modelling!

Dougie & Wink at AMP