



**MIKE ASHEY PUBLISHING**  
**COMPREHENSIVE SERIES SCALE MODEL SHIP MANUAL**  
**NUMBER 4**  
**BUILDING & DETAILING THE TAMIYA 1/350 SCALE**  
**USS MISSOURI BB-63**

The Tamiya 1/350 scale USS Missouri was first issued in the early 1980's. The kit is very accurate in its hull and superstructure shape and configuration. The main deck comes in three sections and the mid-deck section is slightly short, which can be easily fixed. There are main deck inserts for the 20mm gun positions and the tiny voids along the inner edges of these inserts can be filled with the addition of thin plastic strips. There is no surface detail on the superstructure sides, but this can easily be added. Even with these shortcomings, the Tamiya kit can be built into an outstanding representation of the USS Missouri in her final World War II configuration.

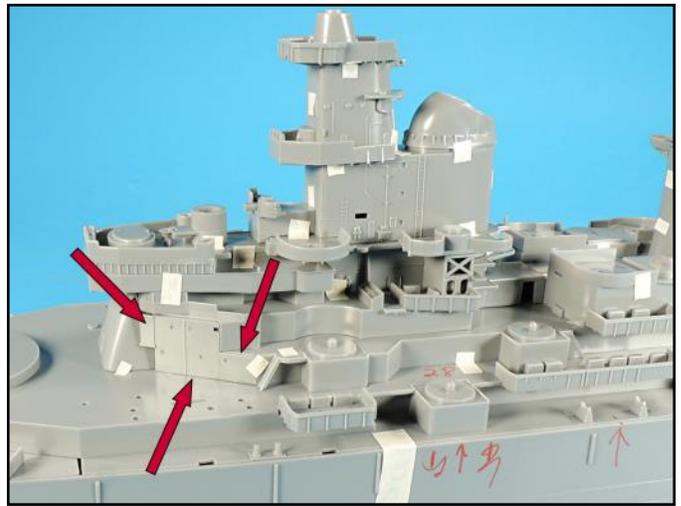
The superstructure sides were enhanced by locating and drilling out portholes, adding Gold Medal Models photoetch hatches, surface details and small scratchbuilt vents. The molded on anchor and mine sweep chains were scraped off and real chains added. Some scratchbuilding was needed for the mine sweep chain configuration. Gold Medal Models has two different photoetch sets for the Missouri and both were used along with select photoetch details from the Eduard Missouri detail set.

The 5<sup>7</sup>/<sub>38</sub> twin mounts, the 40mm quad Bofors, the Mk-51 directors, Mk-37 radars, the searchlights and the rope reels were replaced with Black Cat Models 3D printed accessories. The 20mm guns were replaced with Blue Ridge Models 3D printed accessories. These 3D printed products are easy to use and they are beautifully detailed. They greatly enhanced the appearance of the model and they also simplified construction. The display base is a length of hard rock maple stained with Minwax red mahogany and the Plexiglas case was ordered from Specialty Plastic Fabrication located in Hamilton, Ohio.

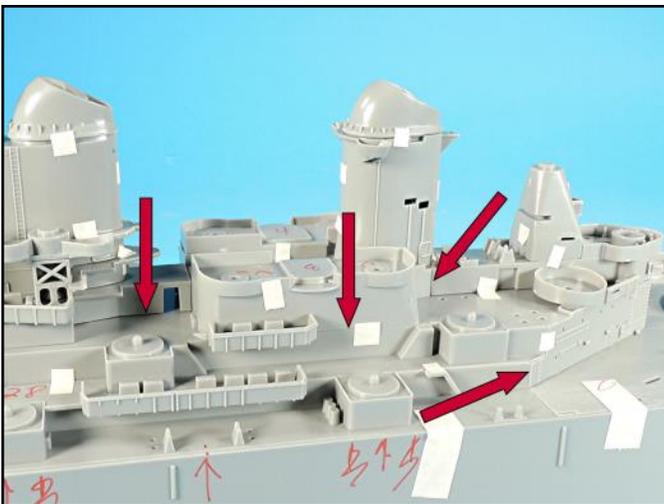
The USS Missouri is painted in her late World War II measure 22 configuration of Navy Blue, Deck Blue and Haze Gray using Testors enamel paints and their clear dullcoat lacquer.



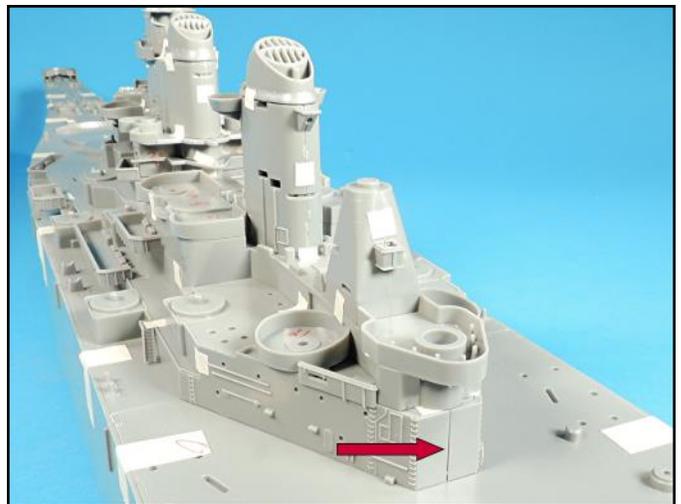
The tape up phase should always be the first step in building your model. All the main parts should be marked, removed and taped together to check the fit. This step also allows you to think about detailing and a construction sequence.



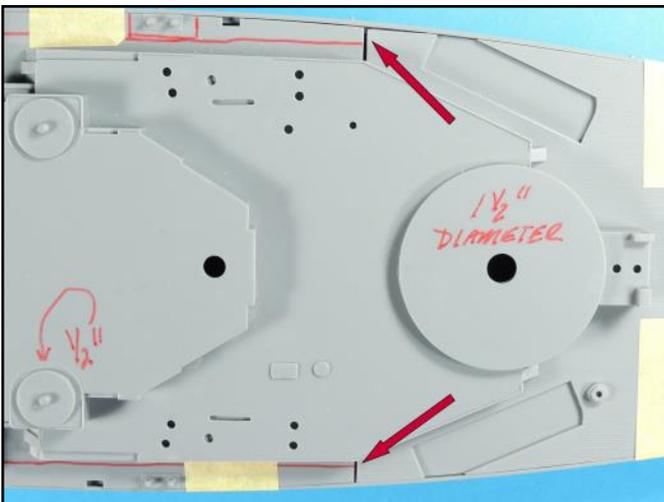
The forward superstructure inserts will need some extra plastic added to get a tight fit.



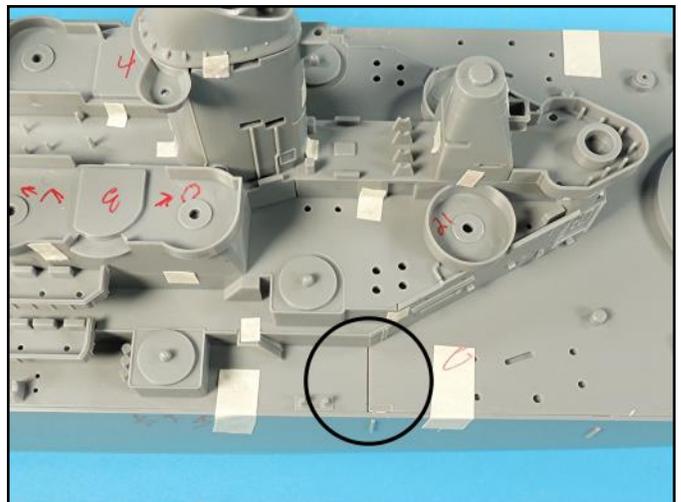
Some of these seams can be hidden with small lengths of plastic. Others will need to be filled with super glue and scraped and sanded smooth or filled with white glue after priming and painting.



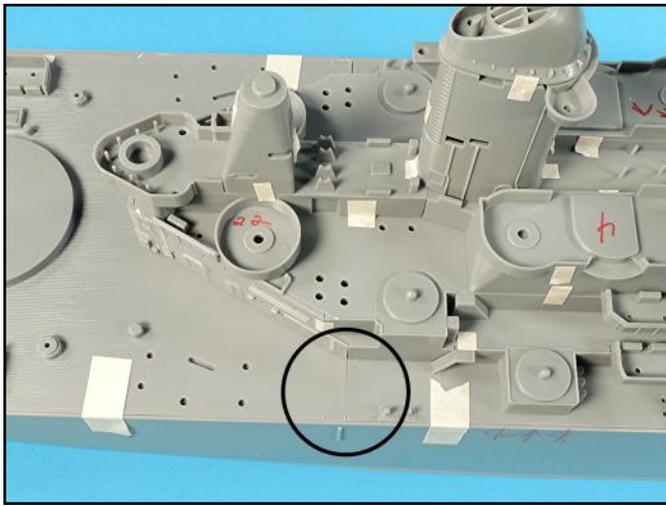
This seam will need to be carefully filled with super glue and sanded smooth.



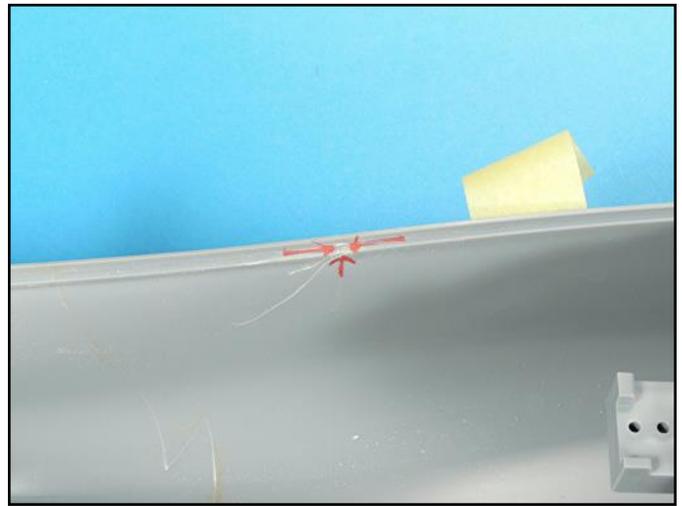
Checking the deck inserts showed a void between the middle deck section and the forward deck section.



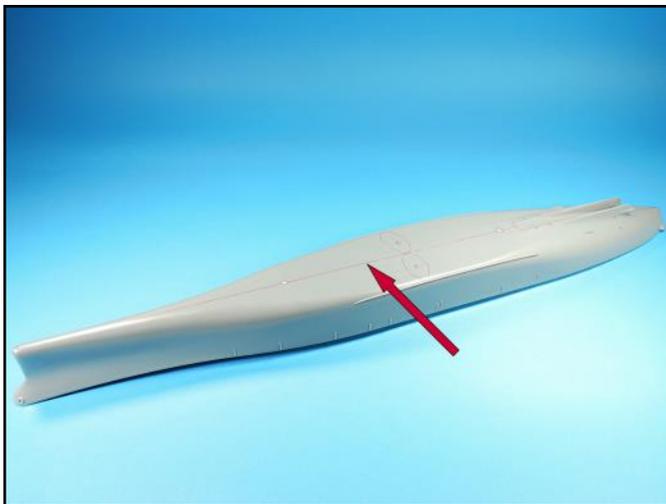
The aft deck section fit can be improved by sanding the edges of the deck inserts flat.



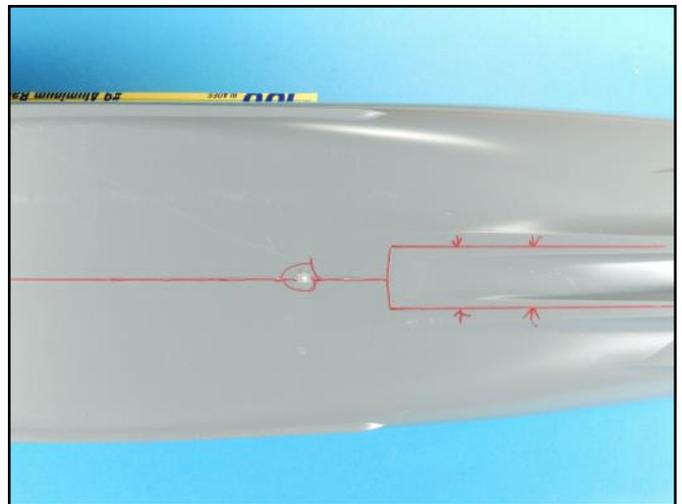
The fit of the starboard side deck insert is very tight and will only need a tiny amount of super glue along the seam line.



To get a better fit of the forward deck, remove the positioning tapes on the inside lip of the hull.



There is a mold line which runs across the entire length of the bottom of the hull. Careful wet sanding will remove it.



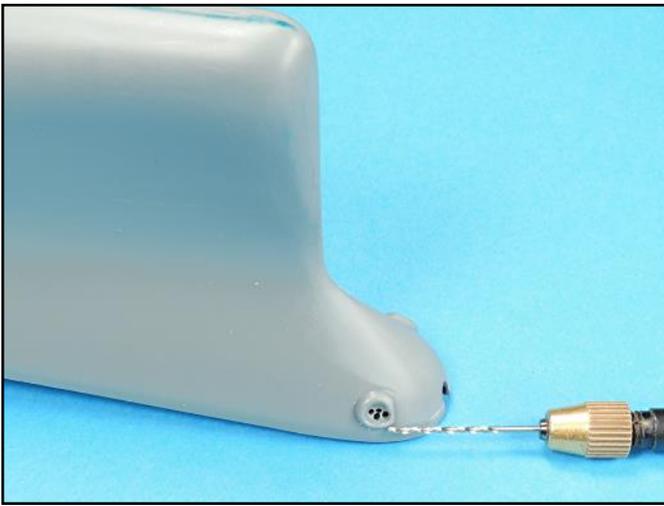
The mold lines can be wet sanded smooth. The two mold tree attachment points are slightly indented and will need to be filled with super glue and sanded smooth.



The mold line on the bow will need to be carefully scraped with a sharp number 11 X-Acto blade and then wet sanded smooth with fine grit sandpaper



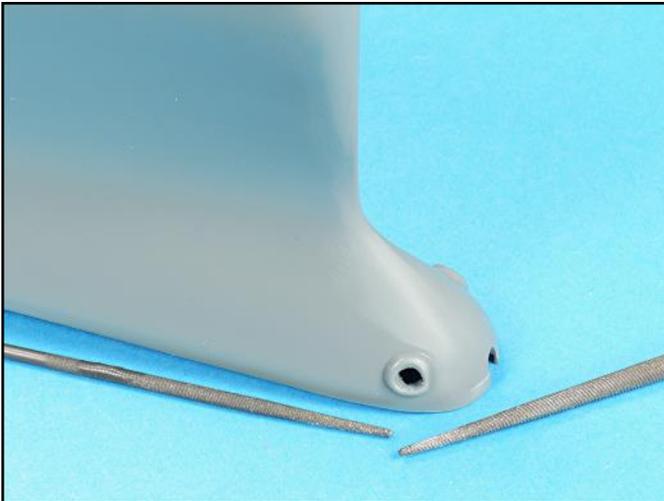
The mold lines on the stern can also be wet sanded smooth with fine grit sandpaper and then polished with 0000 steel wool pads.



To improve the bow area, drill out the plastic from the inside area of the anchor holes.



Increase the size of the hole by cutting out the plastic from between the drilled holes using the tip of a number 11 X-Acto blade. Be careful not to gouge the edges of the opening.



The opening can then be shaped with round micro files.



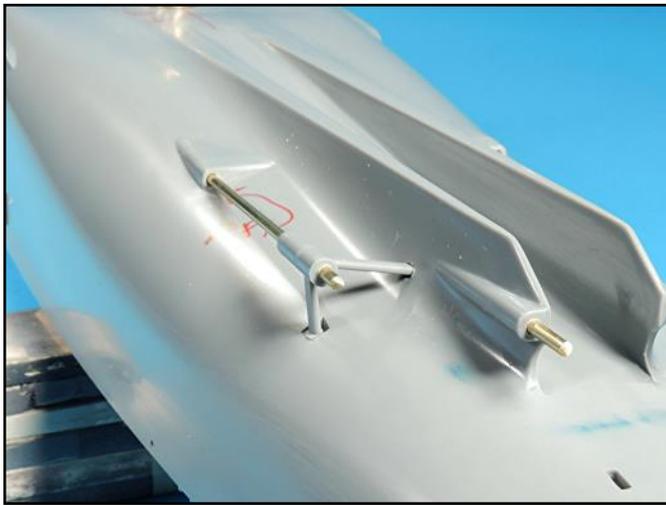
The holes in the hull for the outer propeller shafts can be improved by first filling in the holes from the inside of the hull with .1 x .156 inch lengths of plastic.



A pilot hole was centered onto the plastic insert.



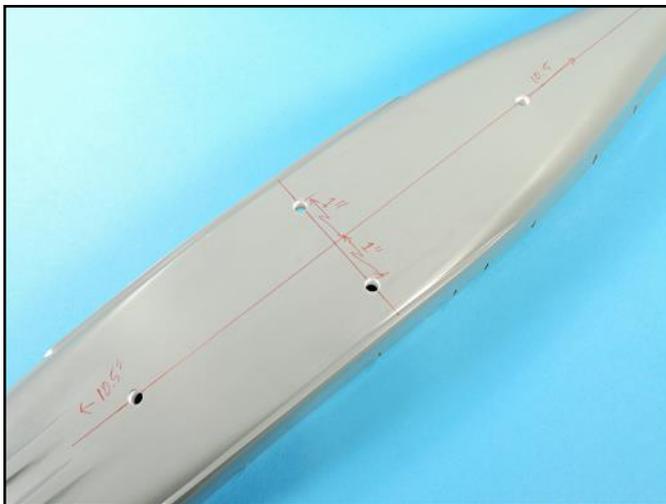
The propeller shaft holes were drilled out to a .081 inch diameter to accept .072 inch brass rod. This will allow for a little play in the fit.



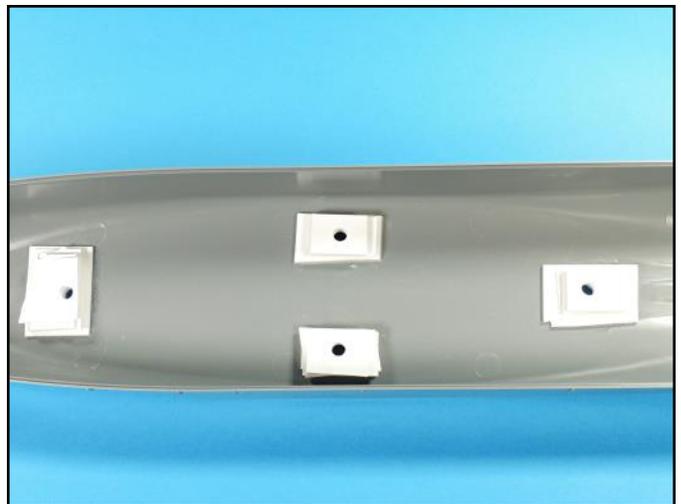
The outer propeller “V” struts were reamed out to accept the .072 diameter brass rod. The inner shaft holes were drilled out to .076 inch diameter to accept the same diameter rod.



Each propeller was marked on the inside of a blade so they would not get mixed up. The shaft openings on the propellers were carefully opened up to accept the new shaft diameter.



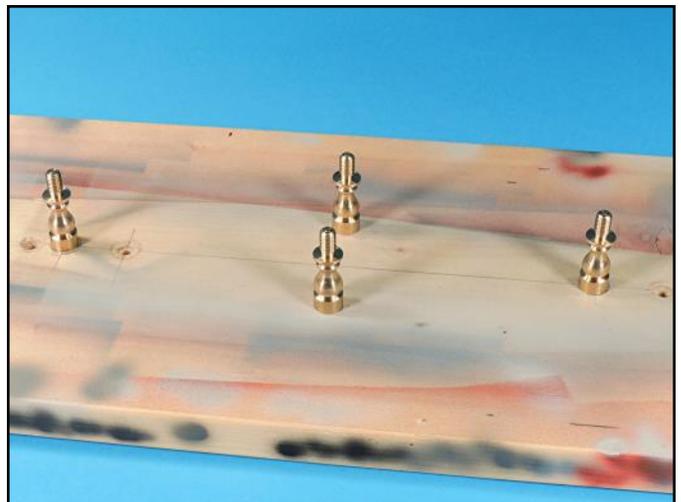
The brass pedestal locations were measured and marked on the hull. The stems on the pedestals are .234 inches in diameter. Pilot holes were drilled into the hull first and then the holes were enlarged to .236 inches.



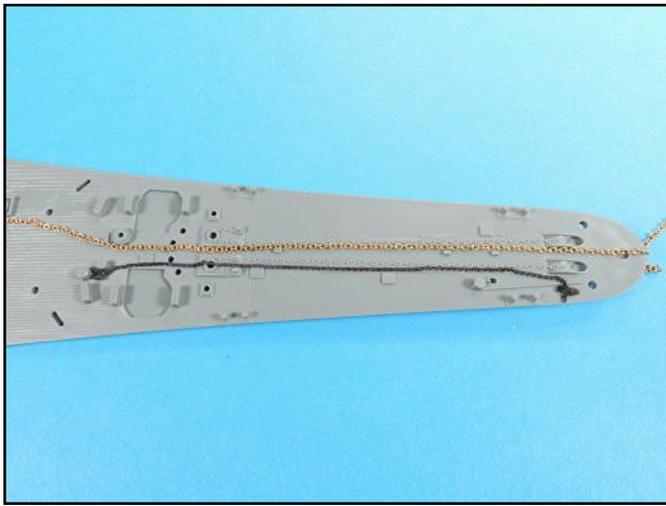
After the pilot holes were drilled through the hull, stacks of .04 inch thick plastic was super glued into place. The holes for the pedestals were drilled through the stacks so that the super glue would seep out the top.



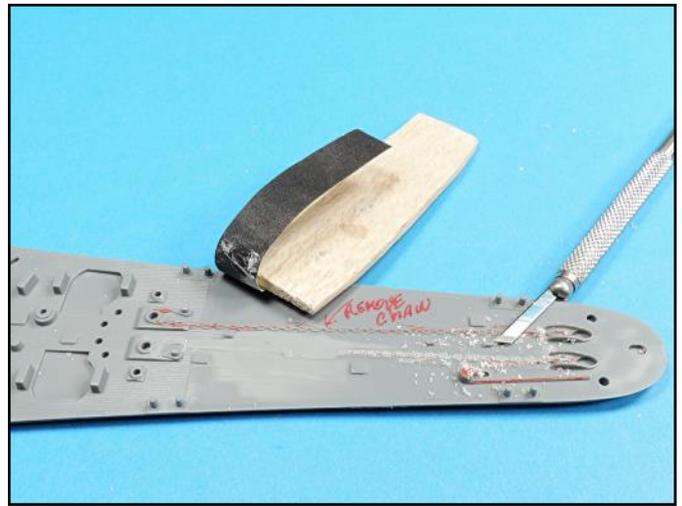
With the hull cleaned up, the pedestal holes drilled out and the anchor holes and shaft locations completed, its time to start working on the main deck.



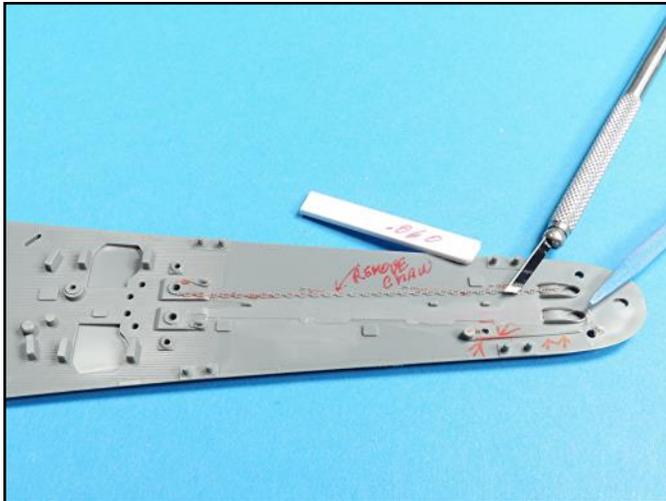
The brass pedestals are 1.5 inch lamp risers and they were purchased from the “lamppartguy” on Ebay. The risers were polished with 0000 steel wool pads and then given a coat of clear gloss to seal them and prevent tarnishing.



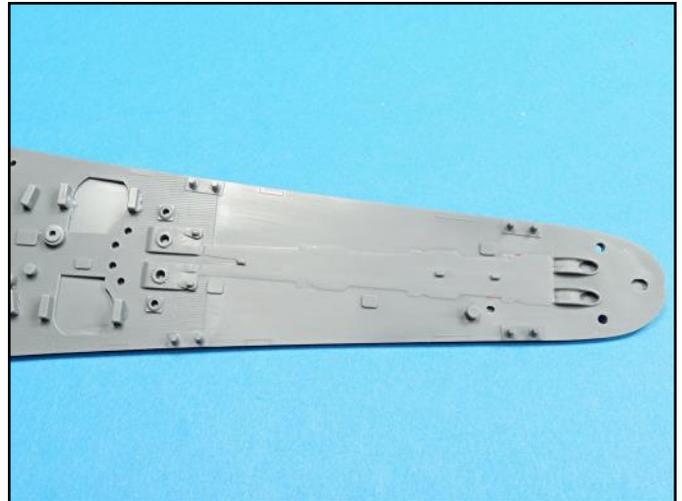
The brass chain is 24 links/inch from Model Expo and it will be airbrushed flat black and used as the anchor chain. The smaller black chain is HO scale chain and it will be used for the mine sweep chain.



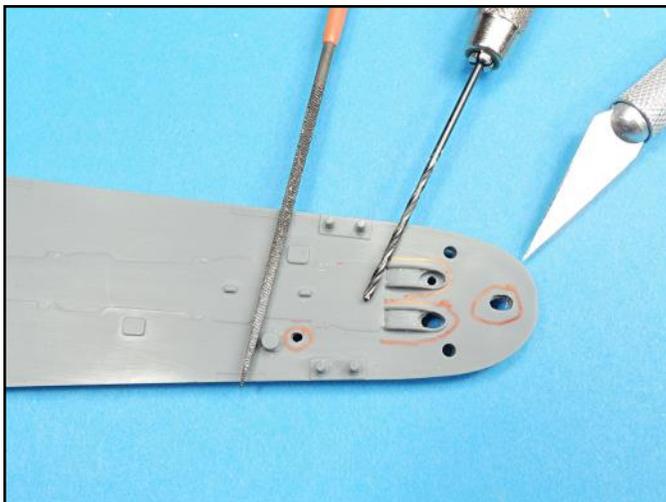
The molded on anchor chain was carefully scraped off using a sharp X-Acto stencil knife. The surface was wet sanded smooth with fine grit sandpaper wrapped around a length of balsa wood.



The molded on mine sweep chain was also removed with the stencil knife. The plastic surface on the elevated section of the chain locations was smoothed out using a fine grit sanding rod.



With the molded on chain details removed and the surface wet sanded smooth to remove any scrape marks, it is time to start the detailing process.



The chain holes for the both the anchor and mine sweep chain (at tip of bow) were carefully drilled out, the openings were enlarged with the tip of a number 11 X-Acto blade and then shaped with a round micro file.



The molded on capstan for the mine sweep chain was drilled out from the underside with a .081 bit and the existing hole was drilled out with a .062 bit. The holes were filled with .080 inch and .060 inch rod.



To make a new mine sweep capstan, a length of .080 rod was shaped with the tip of a round micro file using the adjustable chuck on a Dremel motor tool. The shaping was done at a low speed so the plastic would not melt.



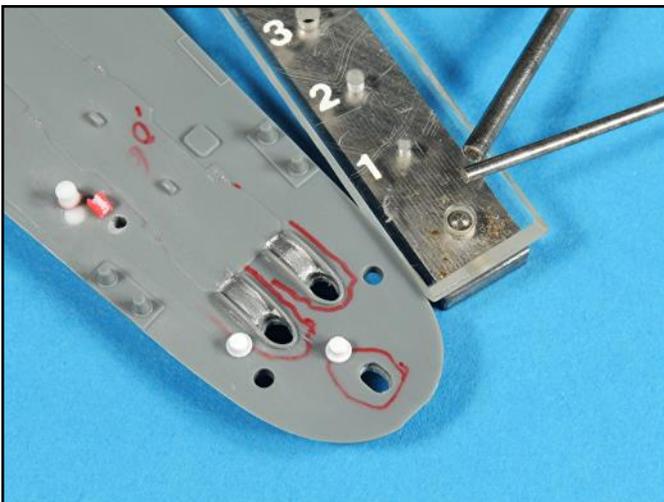
The depth of the cut into the plastic rod was checked with the HO scale chain. With the top and bottom of the capstan marked, the cuts were done with a Northwest Short line chopper.



The mine sweep chain capstan is complete. A .026 inch hole was drilled into the bottom and a length of .025 inch diameter plastic rod inserted. This rod will serve as a locating pin.



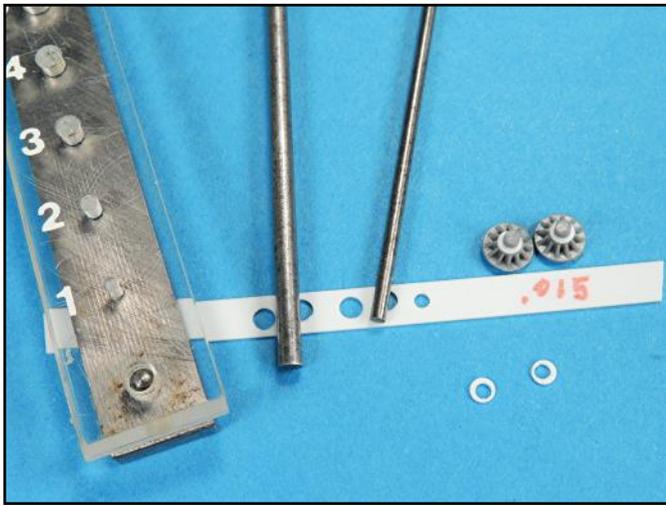
The mine sweep "chain follower" was made with a length of .06 x .08 inch plastic. The end was notched and then opened up with the edge of a flat micro file. Here again a locating pin was attached to the new part.



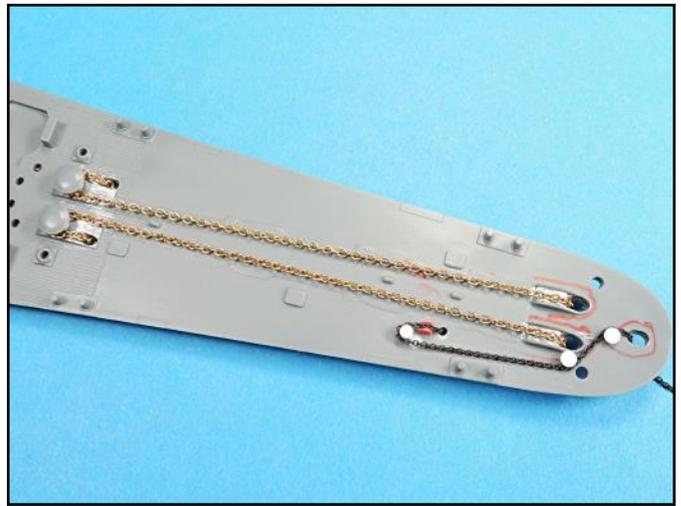
Note the new locations for the capstan, the chain follower and the hole (.052 inch diameter) for the chain. The mine sweep chain guide locations were marked after inserting the bow 20mm platform in place to check the fit.



The chain guides are plastic. The base and top are .015 inch thick and punched with a #4 Waldron Punch. The center section is .040 inch thick and punched with a #2 punch and then centered onto the top and bottom parts.



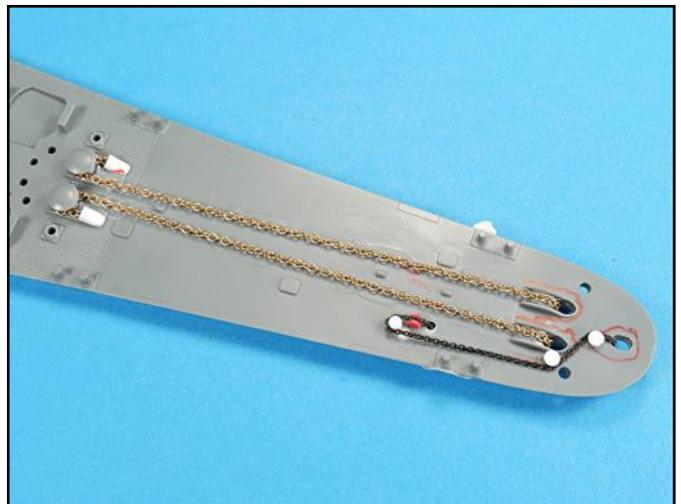
The brass anchor chain required that the chain capstans be slightly higher so inserts were made from .015 inch thick plastic. The inserts were made with a Waldron punch tool.



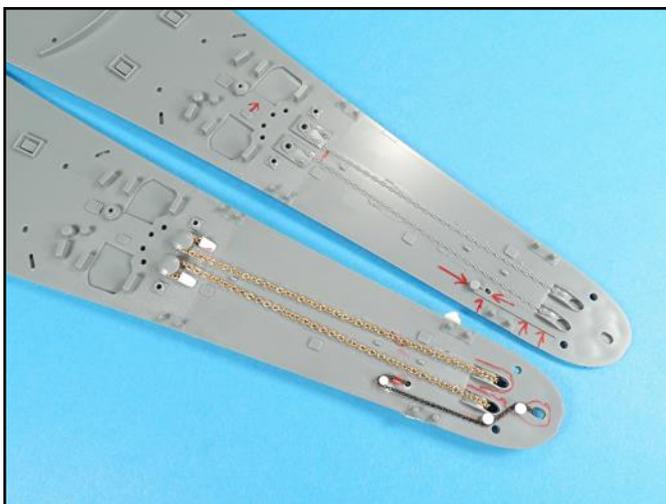
The new capstan height was checked to be sure the chain wrapped tightly around it.



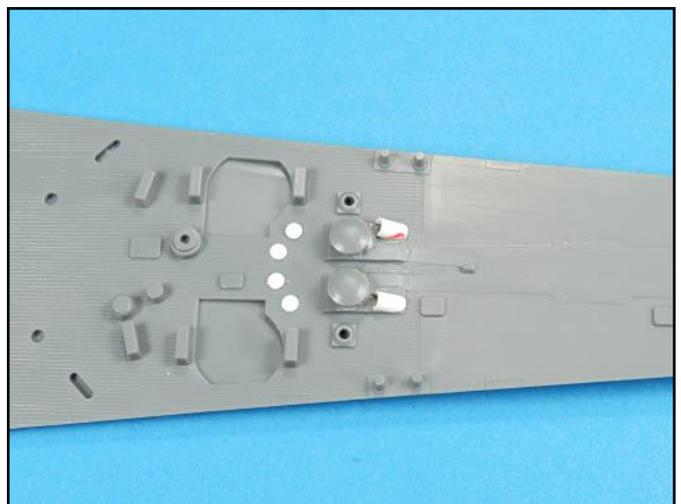
Anchor chain deck hole covers were made using 1/8 inch tubing. The inside diameter was made larger with a .067 inch bit and then then cut at an angle. It took several tries to get two of the same angle and length.



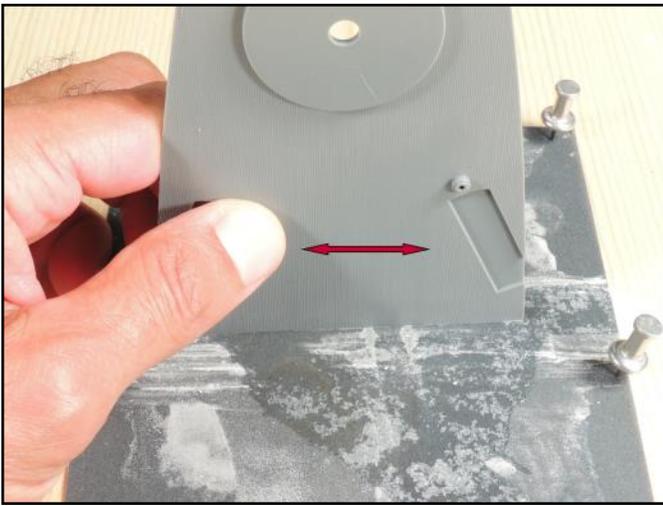
The anchor chain holes in the deck were drilled out with a .063 inch bit and angled towards the capstans. The chain covers were then carefully super glued into place by using a .012 inch diameter wire as an applicator.



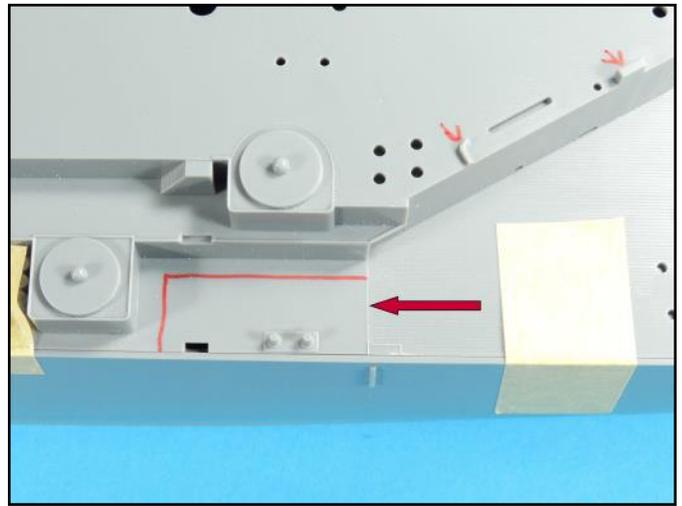
The super glue on the chain covers was applied along the outside perimeter of the scratchbuilt parts. The completed chain enhancements look much better than the original deck part.



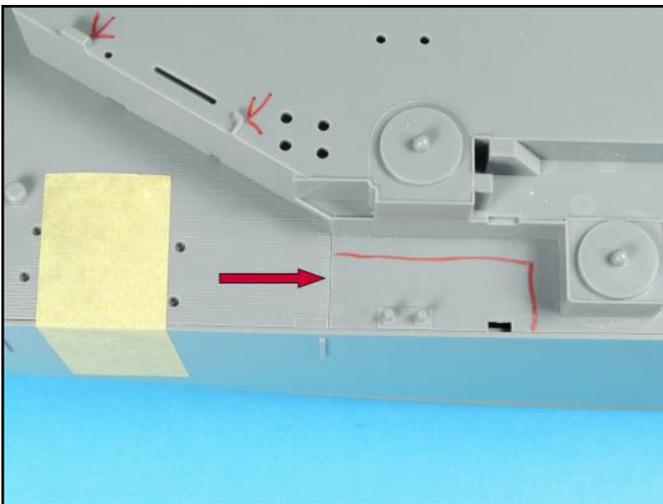
The chain brake locations were drilled out with a .063 inch bit and then filled with .060 inch rod. Covers were made with a .010 inch thick plastic punched with a #3 Waldron punch tool.



The deck insert edges were angled so they were run across a stationary length of sandpaper and wet sanded flat.



With the deck edges flat, the fit of the aft and mid section deck lengths is much tighter.



The aft deck seams will need a tiny bead of super glue applied with a .012 inch diameter wire before being wet sanded smooth.



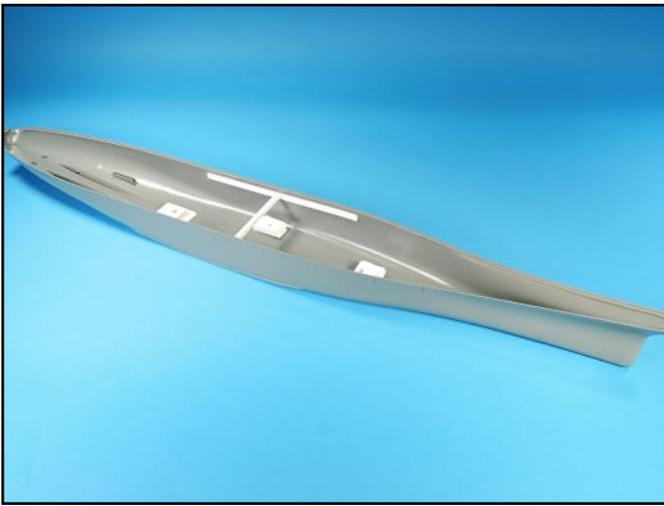
To help support the deck seams, lengths of plastic were carefully glued on the undersides of the forward and aft deck sections. They need to sit flat and no super glue can seep out or it will affect the fit of the mid deck section.



The Gold Medal Models deck hatch details were carefully glued into place using tiny drops of slow set super glue. Each part was picked up with a toothpick with a flat end that was moistened and carefully positioned.



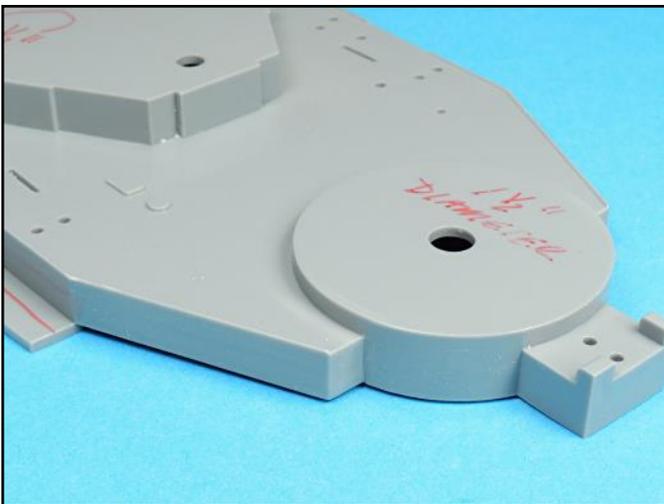
With the forward and aft deck section details added, its time to start detailing the center deck section.



The center area of the hull was slightly wider than the center deck section. With the aft and center deck sections taped into place, a cross brace was carefully form fitted into place to get a tight fit.



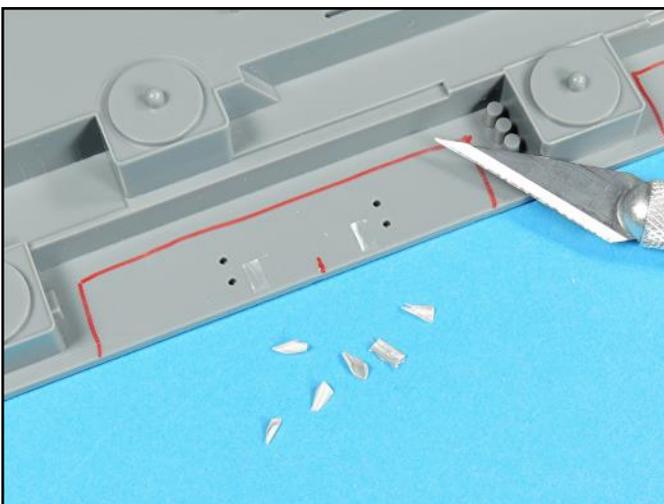
The molded on inclined ladders were shaved down with a sharp number 11 X-Acto blade.



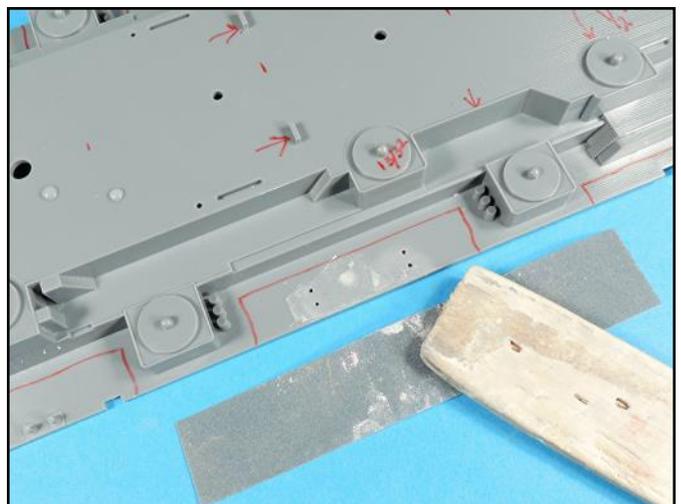
The surfaces where the inclined ladders were was then wet sanded smooth with a sanding stick.



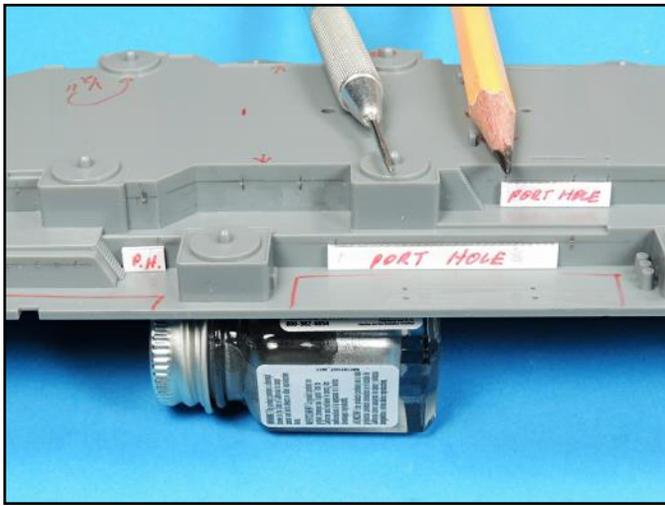
The whale boat cradles were then carefully snipped off.



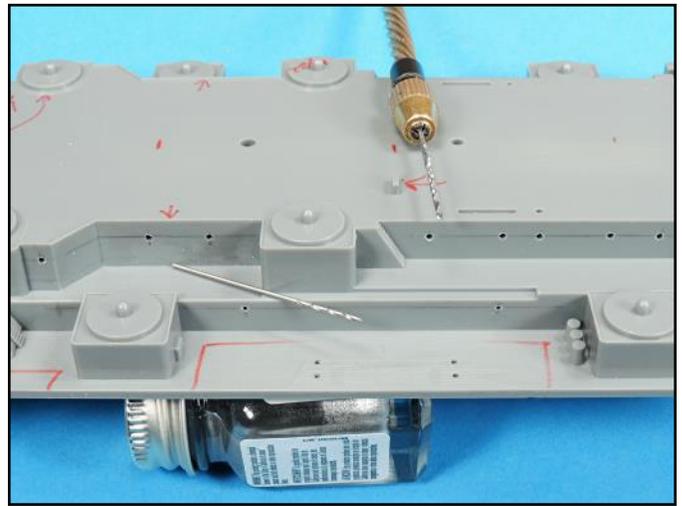
The remaining boat cradle stubs were carefully shaved off with a sharp number 11 X-Acto blade.



The boat cradle locations were then carefully wet sanded smooth with fine grit sandpaper wrapped around a length of balsa wood.



Porthole height gauges were made from .04 x .156 inch strips. Horizontal lines were drawn using a sharp pencil tip at the tops of the gauges on the superstructure sides and then marked for the approximate porthole locations.



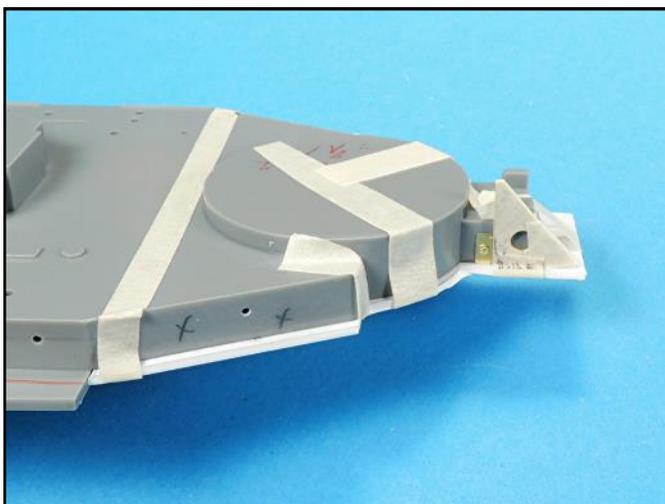
With the Floating Dry dock drawing used to locate the portholes, a center punch was used to indent the plastic. The portholes were initially drilled out using a .028 inch drill bit and then a .040 bit was used to set the porthole diameters



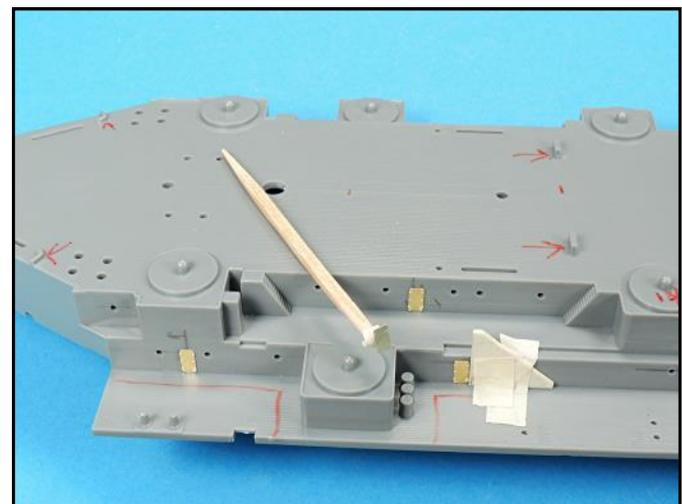
For portholes that were off center, plastic rod was super glued into the holes. The rod was cut flush and sanded smooth and the portholes re-drilled.



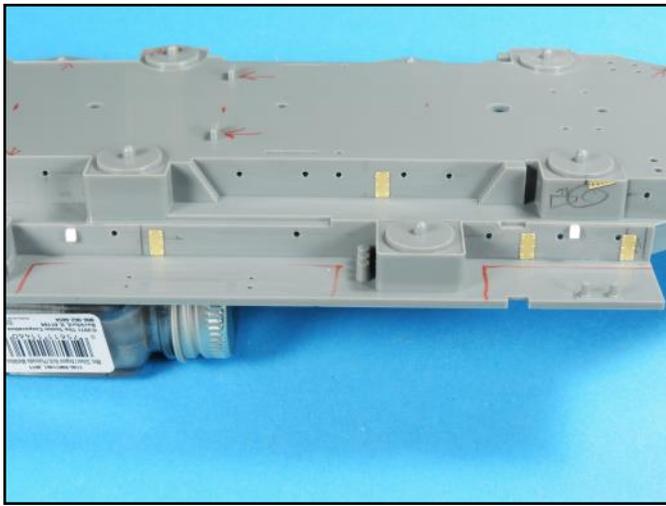
The filled portholes were checked with silver paint to be sure that the surfaces were flat with no seams or voids.



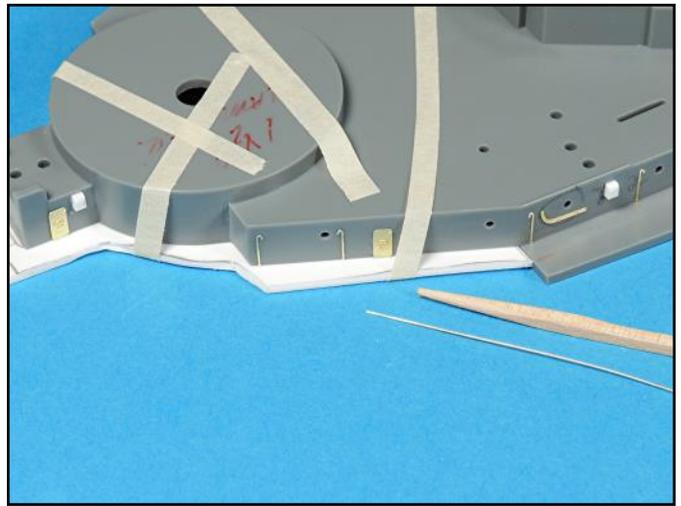
The hatch locations were set using the Floating Dry Dock drawings. An oversized section of sheet plastic was used to ensure the bottoms of the photoetch hatches were flush with the superstructure bottom.



To make sure each hatch was straight, a small triangle was used. A flattened toothpick with a tiny strip of masking tape on the tip set each hatch in place with a tiny drop of slow set super glue.



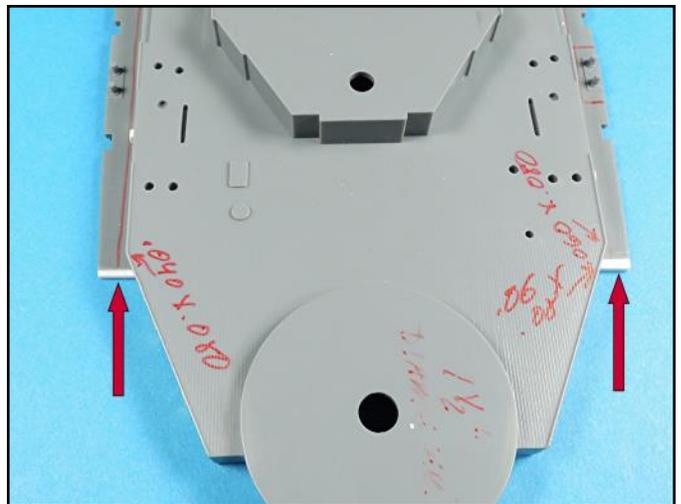
The scratchbuilt vents were made with .04 x .06 inch lengths of plastic. The tops were curved by running them across a stationary piece of sandpaper and then each one was cut to length ( 1/8 inches long) using a Short line chopper.



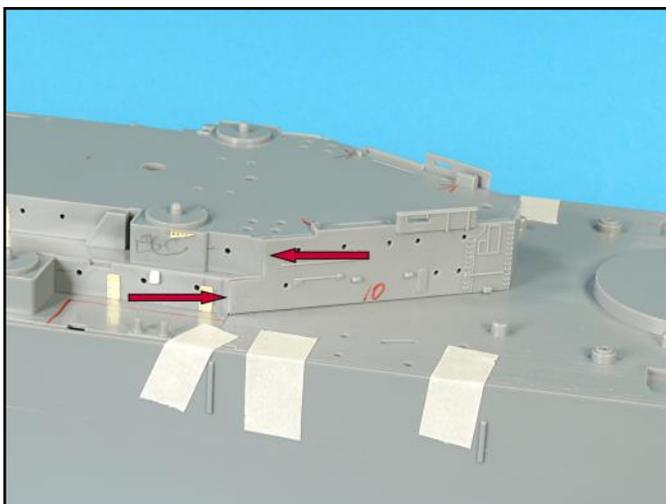
The tiny photoetch vent pipes were set in place with a toothpick with a moistened end. Tiny drops of white glue were used to attach them.



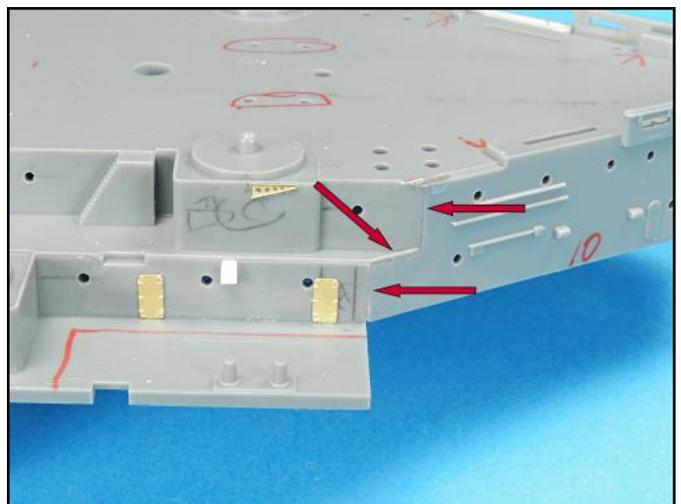
The center deck section superstructure side detailing is complete and now its time to add the plastic inserts to fill the deck voids.



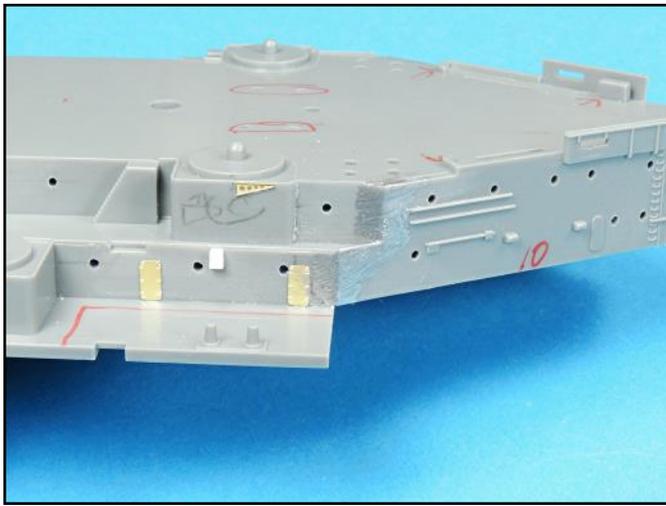
The port side strip is .06 x .08 inches and the starboard strip is .04 x .08 inches. The thickness of the deck is .08 inches so be sure to set the lengths correctly. The plastic inserts need to be flush with the deck.



The center deck section was taped into place and the aft superstructure sides were glued into place. By pressing the parts against the side while gluing you can greatly reduce the seams where the arrows are pointing.



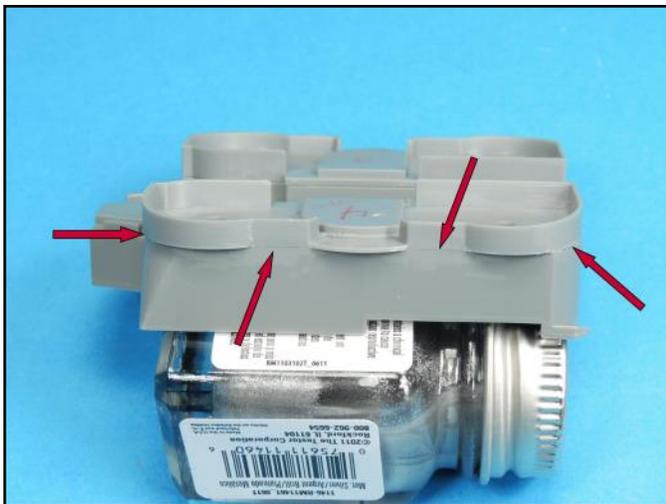
A tiny bead of super was applied along the seam lines using a .012 diameter stiff wire. The seams were then carefully and lightly scraped and then wet sanded smooth with a sanding stick.



Silver paint was used to check for any flaws.



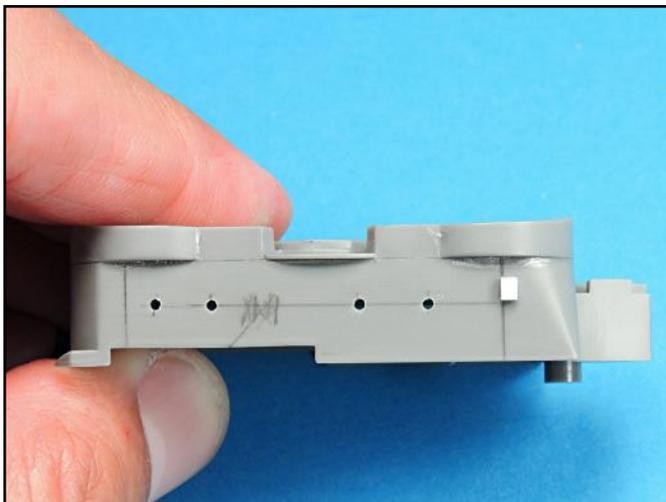
The vertical seam on the aft area of the superstructure was filled with super glue and then wet sanded smooth. Here again silver paint was used to detect any remaining flaws.



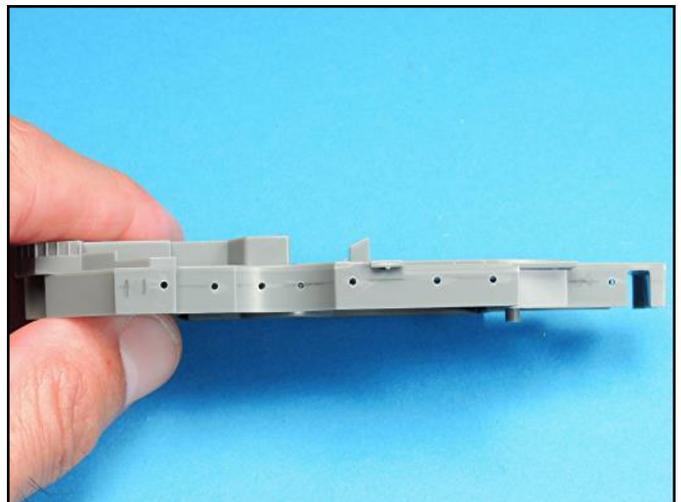
The seams on the aft 40mm bofor platform were filled with a tiny amount of super glue applied with a .012 inch diameter stiff wire applicator.



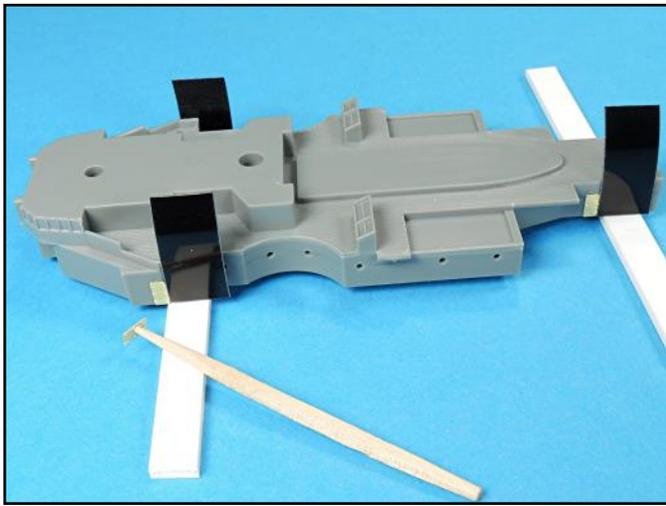
The seams were lightly scraped, wet sanded and then polished with a 0000 steel wool pad.



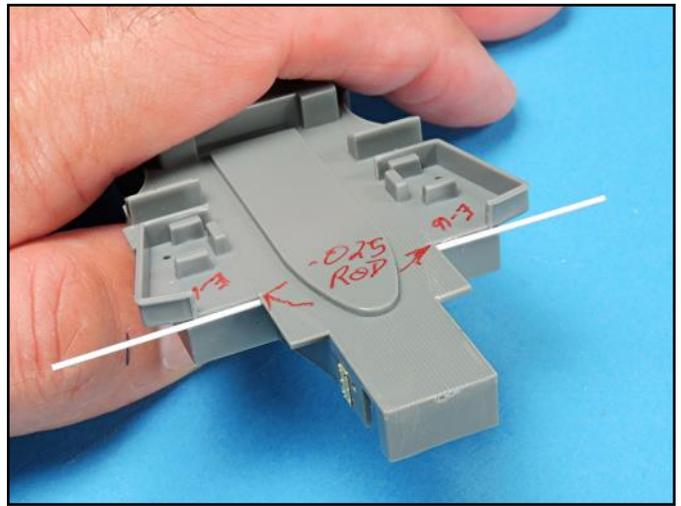
The porthole locations were marked and then drilled out. A vent was added using the same size strip as those on the main superstructure.



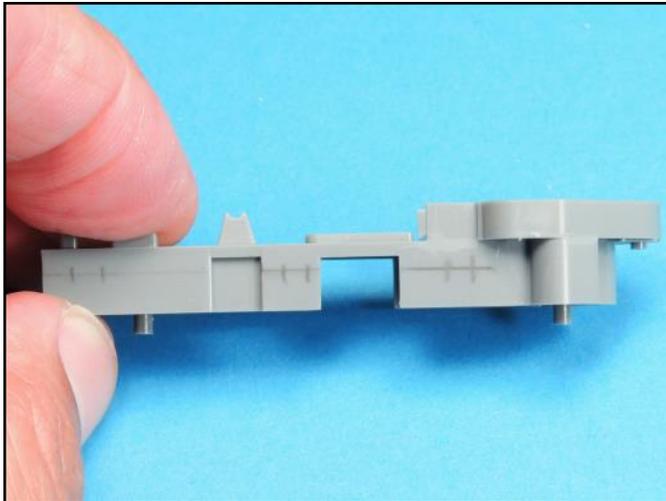
The upper superstructure sides also had portholes and hatches added.



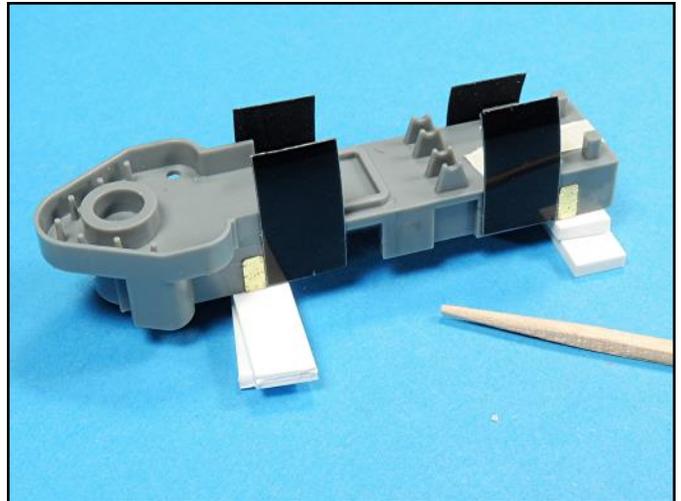
Vertical lines were drawn with the small triangle for the locations of the hatches. Labeling tape was then set along the lines so the photoetch hatches would be glued straight.



The 20mm platforms were glued into place and the seam line was hidden with .030 inch half rod.



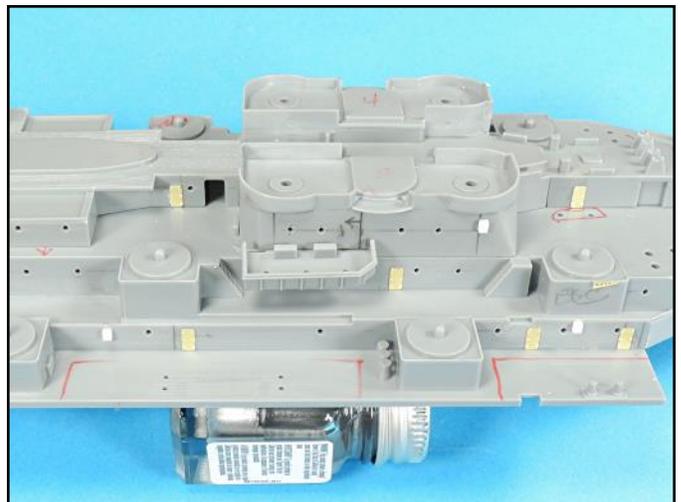
Note how the hatch locations are marked. This ensures that the hatches will sit between the marks.



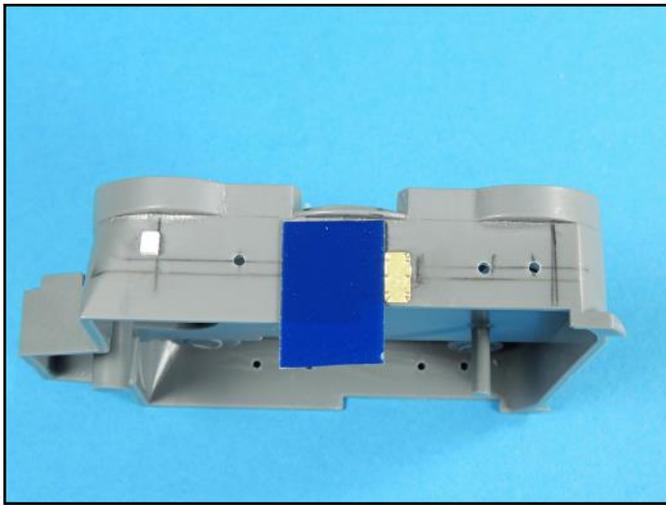
The plastic strips elevated the superstructure part making hatch attachment easier and they ensured that the hatch bottoms were flush with the superstructure side bottoms.



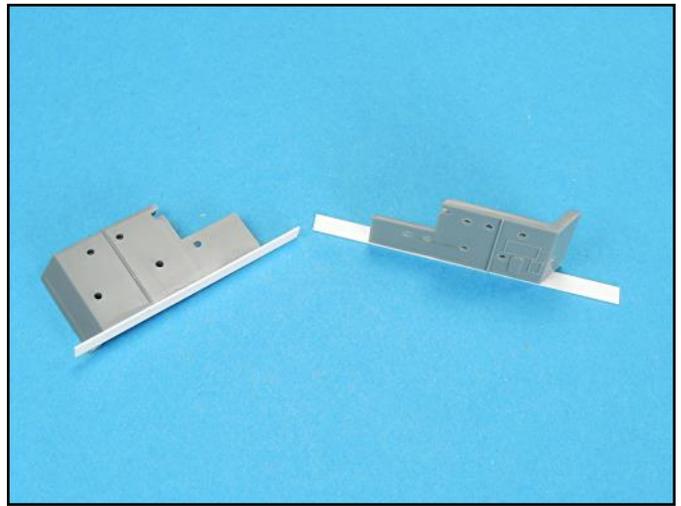
The 03 superstructure levels and the aft 40mm bofor platform are getting a final fit check. The porthole, hatch and vent locations are also getting a check against the Floating Dry Dock drawings.



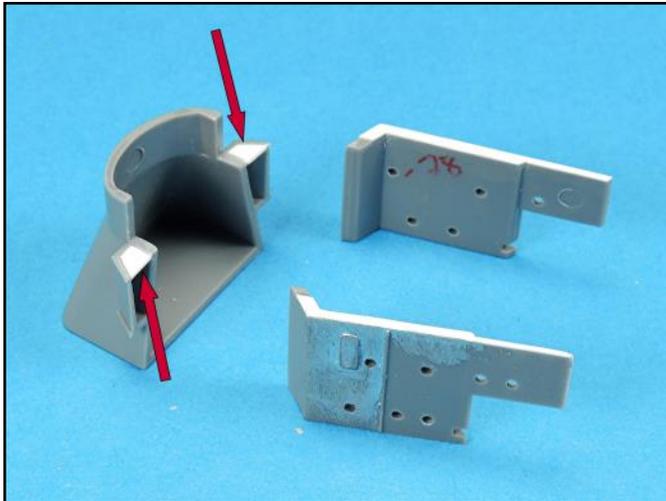
The 20mm platforms were slid into place on the aft 40mm bofor platform so that the hatch locations could be marked.



Hatches on both sides were glued into place on the 40mm aft bofor platform using labeling tape as a guide.



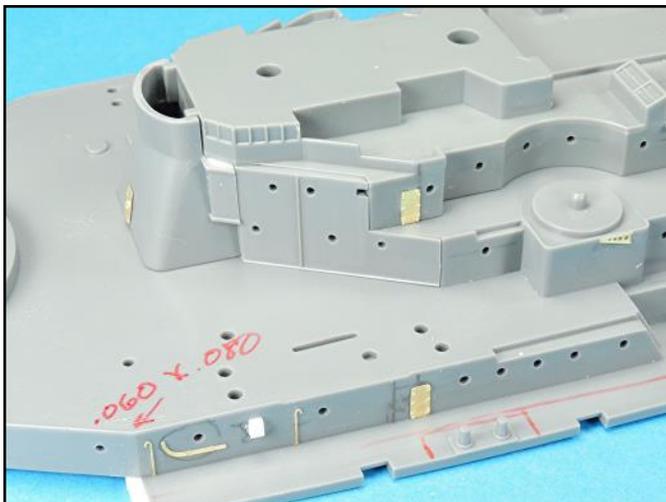
These forward superstructure sides needed .010 inch thick strips added to their bases to get them to fit correctly and eliminate the identified voids. The strips were super glued into place and then carefully trimmed.



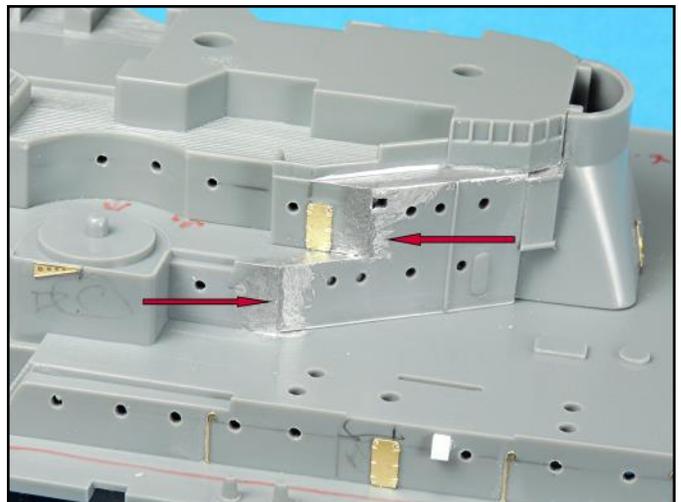
The tiny voids at the top of the forward superstructure part were also filled with plastic strips.



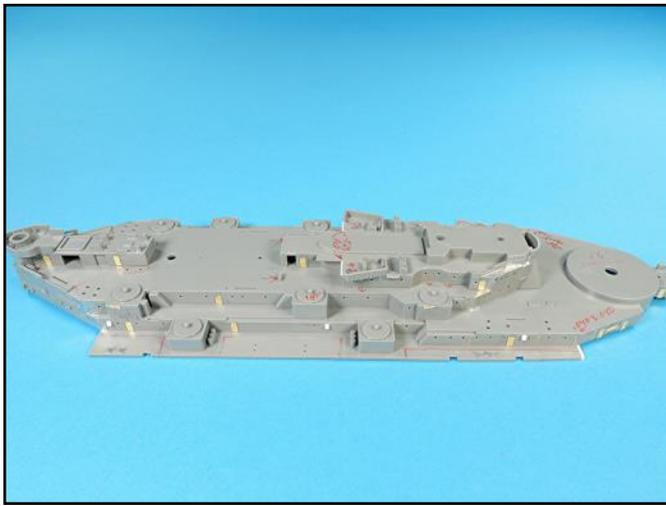
The location for the Gold Medal Models hatch for the armored conning tower was marked and carefully glued into place.



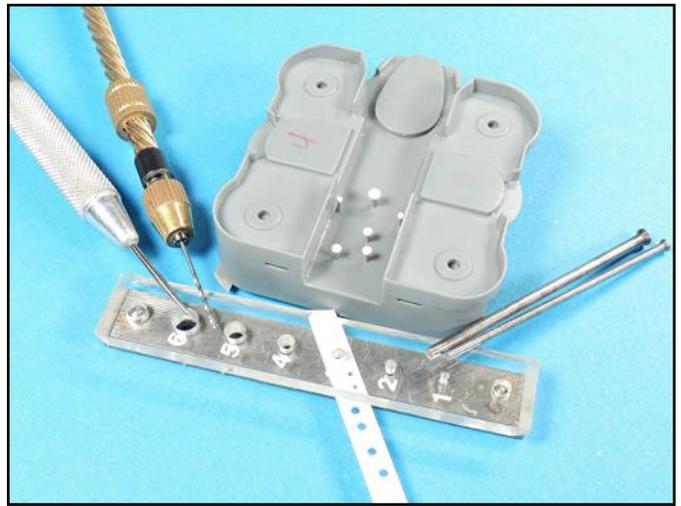
The forward superstructure part and the two side superstructure parts have been glued into place. Note how tight the parts fit together. The seams were filled with tiny drops of super glue applied with a .012 diameter wire.



The seams were carefully and lightly scraped with the tip of a number 11 X-Acto blade and then wet sanded smooth with a small section of a fine grit sanding stick. Silver paint was used to check for any flaws.



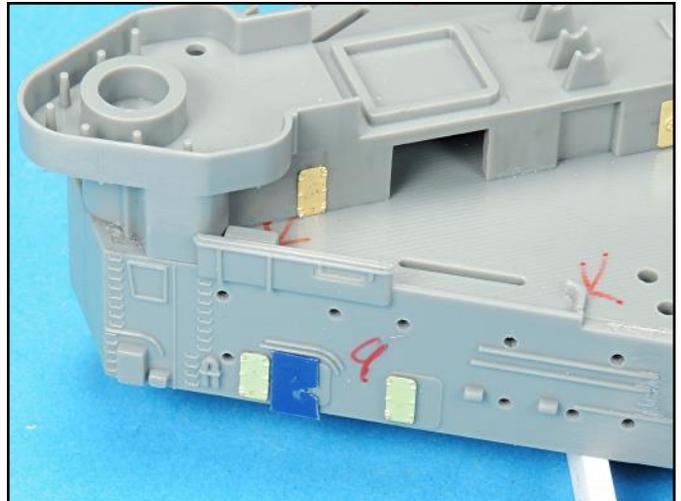
The forward and aft upper deck sections have been glued into place.



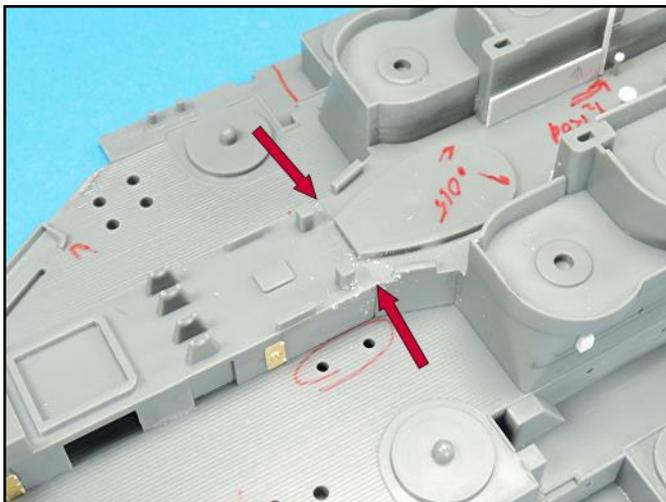
The stems on the aft 40mm bofor platform are actually vents that have round tops. These were made with a .020 thick strip and a Waldron punch tool (sizes 1-3). The centers were indented with a .02 inch (#76) bit and then glued into place.



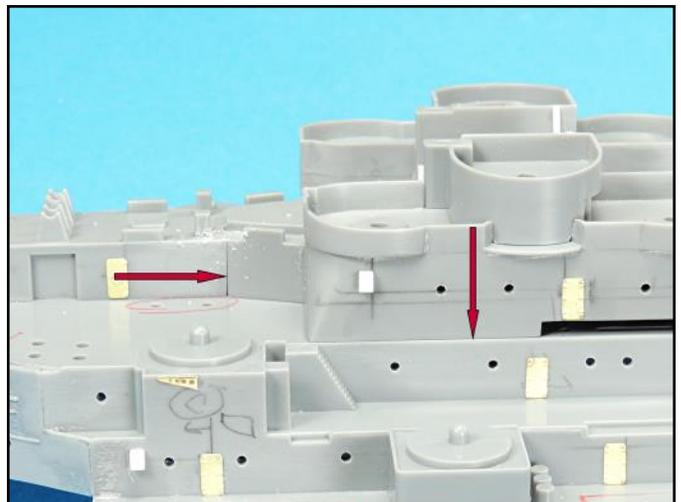
There were some seams on the inside area that were impossible to get to so they were covered with some .015 inch plastic strips.



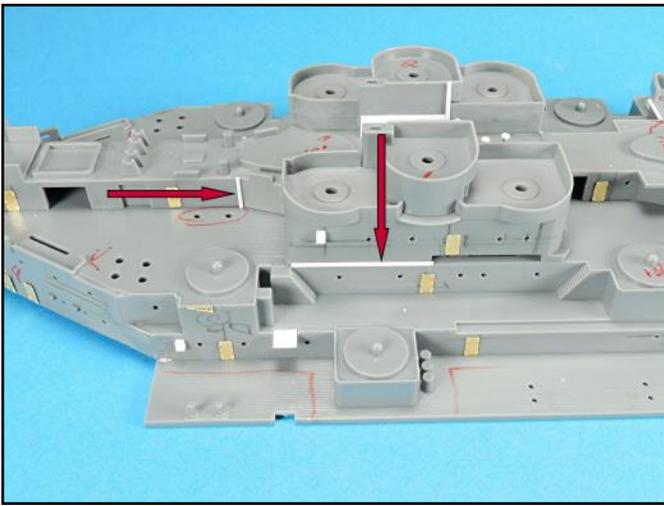
A small length of labeling tape was used to set this hatch in place. A longer length would not have layed flat due to the surface detail.



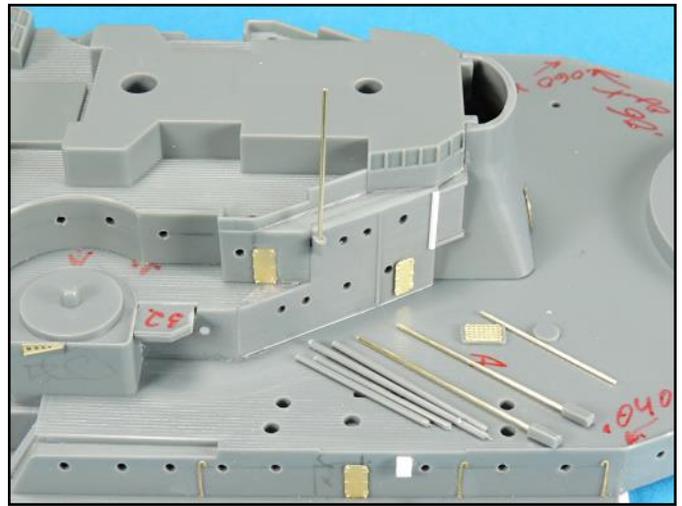
The 40mm bofor platform was glued into place. The deck seams were filled with a tiny bead of super glue and then scraped and wet sanded smooth.



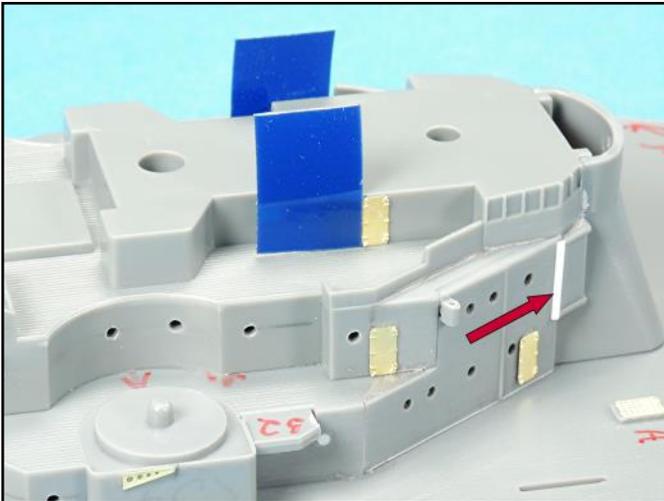
These superstructure seams will be covered with .030 inch half round.



Once the surfaces are painted the .030 inch half round will appear to be part of the superstructure sides. The inclined ladder platform was made from a .030 inch thick strip.



The kits antennas were too thick so they were cut off and new ones added with .019 inch diameter stiff brass wire. A .020 inch bit was used to drill the holes for the new antennas.



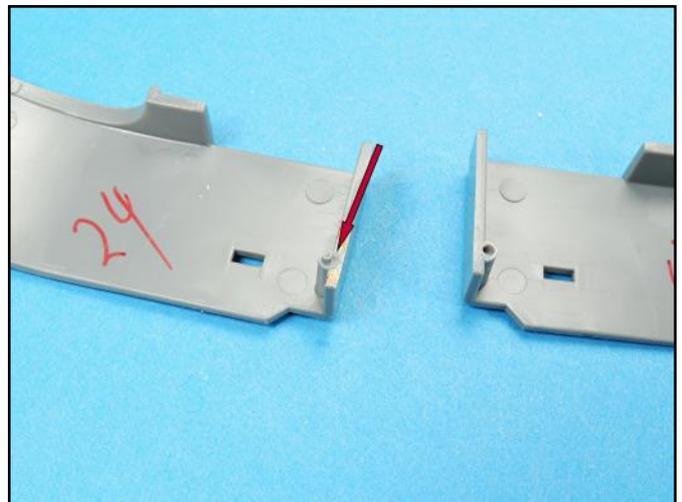
Additional superstructure detail was added to the upper forward area. Note the .030 inch half round covering the seam.



The Gold Medal Models deck railing gauge behind the number 2 turret was carefully set in place with tiny strips of masking tape and the holes drilled out with a .0145 inch (#79) bit.



The center deck section is almost ready for gluing to the hull. Just one more detail to add.



Check the gluing surfaces of the superstructure parts carefully as there are tiny raised pins areas around some of the locating pins.



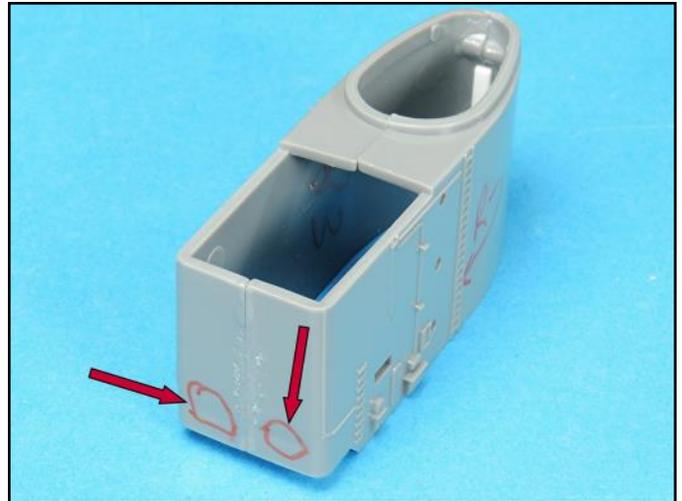
The upper superstructure gluing surfaces were all flattened so that the seams would be tight. Each assembly got several strips of masking tape to hold the halves tightly together.



Tiny beads of super glue were applied along the seam lines with a .012 inch diameter stiff wire between the masking tape strips. After the glue dried the tape was removed and additional glue was applied.



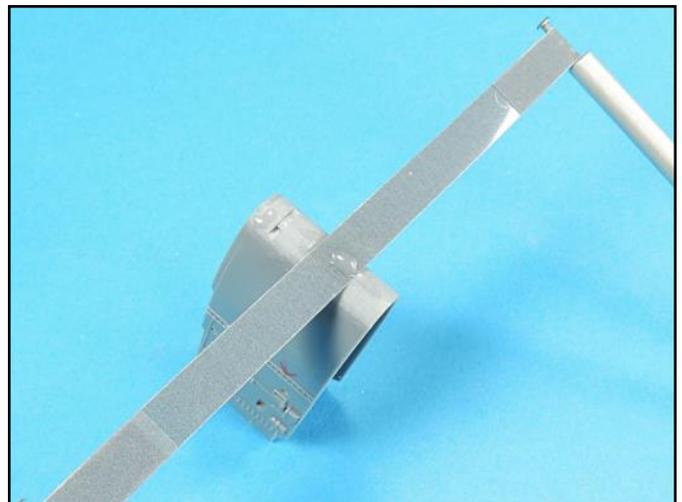
Strips of plastic were super glued to the inside areas along the seam lines to add strength to each assembly.



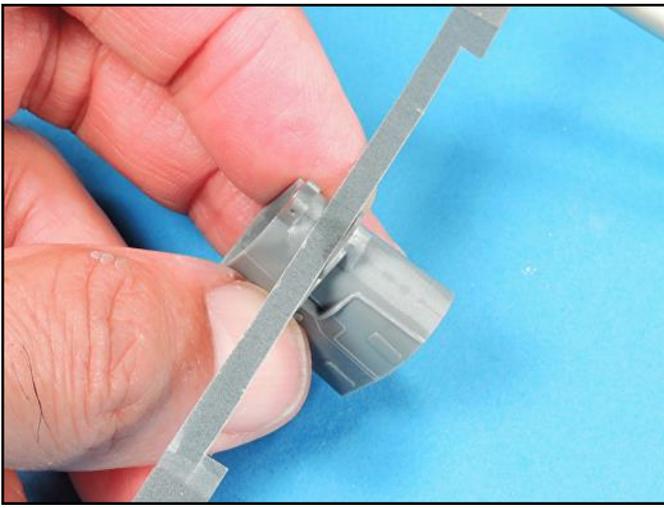
This part had depressions in the surface. Other smaller parts also had them. Sometimes you can sand them out and other times you can just hide them with thin strips of plastic.



The seam and the depressions were wet sanded smooth by running the assembly across a stationary piece of sandpaper.



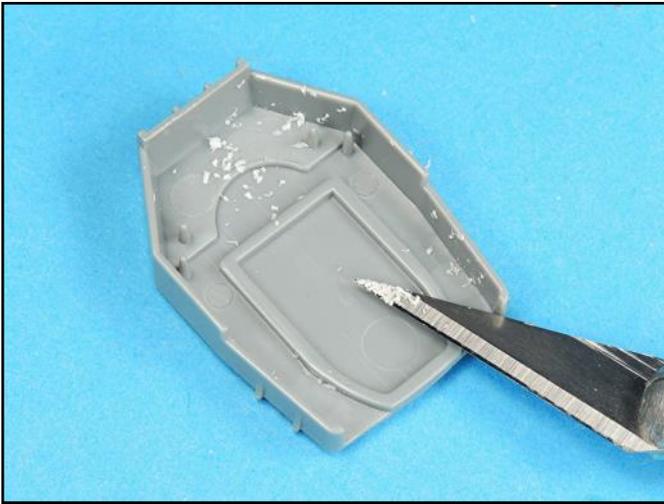
A Flex-I-File works great for sanding contoured areas so that the curved shapes are maintained.



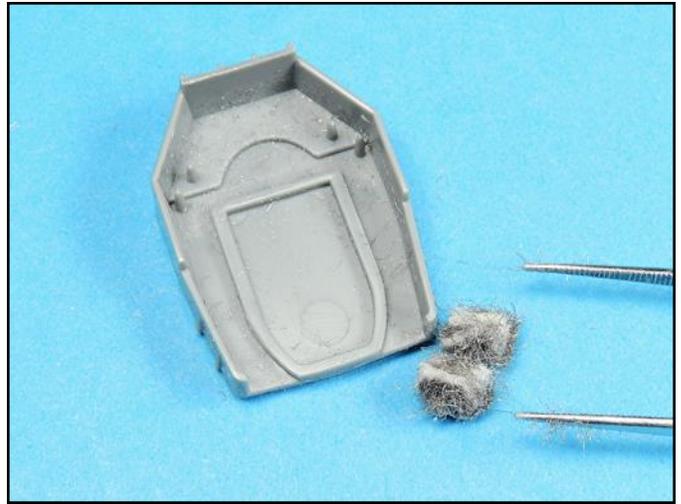
This length of Flex-I-File sandpaper was modified so that it would fit into the small area between the protruding details.



All of the superstructure assembly seams were checked with silver paint for any remaining flaws.



There were slight mold punch depressions in the deck area of this part and light scraping with a number 11 X-Acto blade removed them.



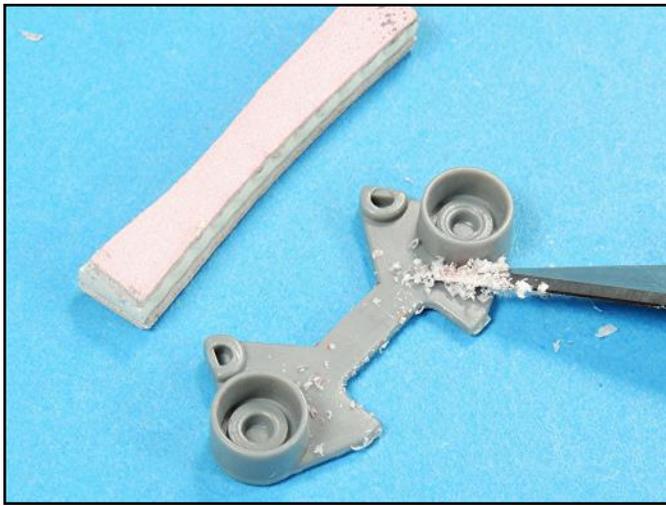
The deck surface was polished with a 0000 steel wool ball held with a pair of tweezers.



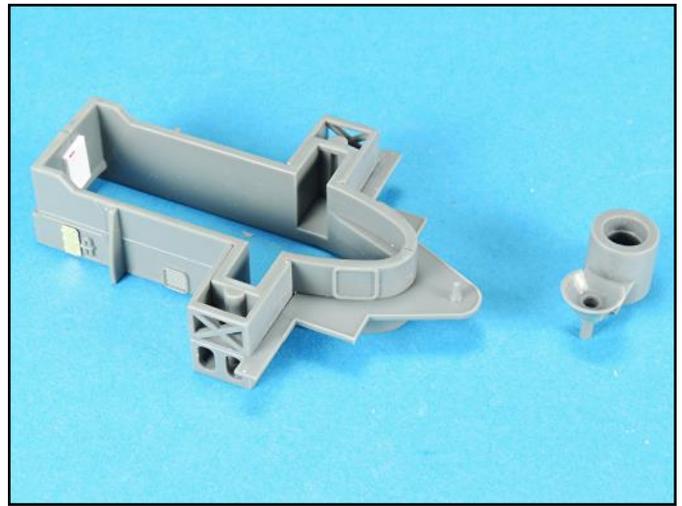
The voids between these two parts were filled with tiny lengths of plastic strip super glued into place and lightly scraped and then polished with a 0000 steel wool ball.



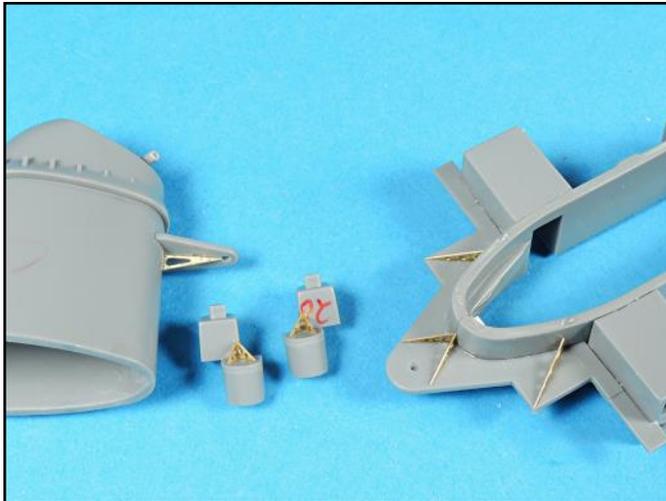
The vents on the smoke stack assemblies were drilled out using a .026 inch drill bit. Note the photoetch hatch detail added to the side of the forward superstructure assembly.



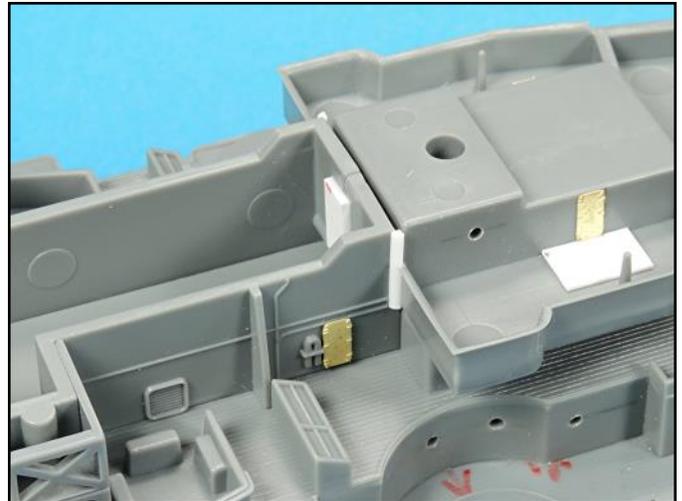
The platform for the aft range finder tower had a few mold punch outs and these were removed with careful scraping. The surface was then wet sanded smooth with a small sanding stick section.



These assemblies are now complete and ready for priming. The photoetch hatches were glued over the existing hatch detail.



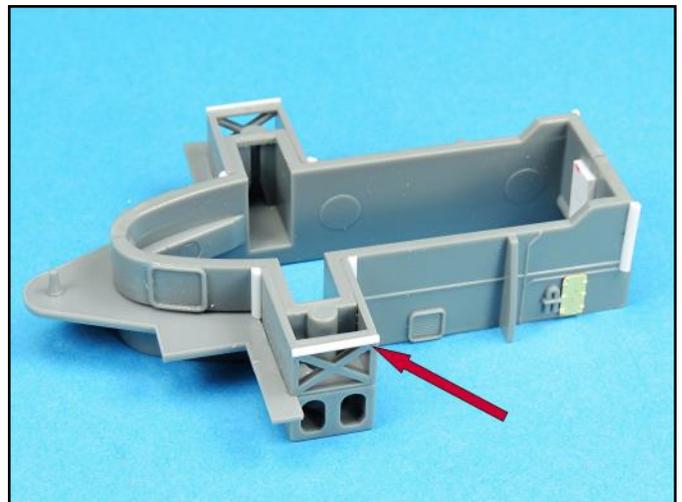
Various sizes and lengths of photoetch bracing were added to the undersides of these cantilever platforms for added detail. These photoetch parts came from the Alliance Modelworks support framing photoetch detail set.



Small lengths of .030 inch quarter round were used to hide the voids between these two parts.



To hide the voids between the main assembly and the added framing detail, small lengths of .030 inch quarter round strips were glued into place.



There was also a slight void between the outer edge of the framing and the upper deck that sits on top of this part. Small lengths of .030 inch half round were used to hide these voids.



This part has a round mold punch out and a depression for an inclined ladder part. Both were filled with a tiny piece of plastic and a disk punched from a Waldron Punch tool and super glued into place.



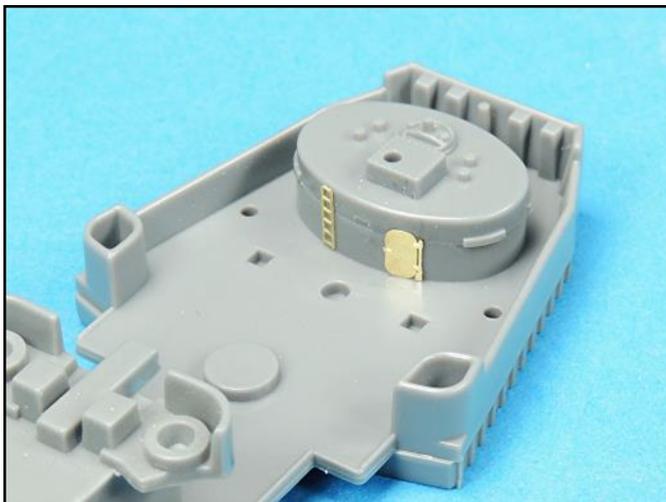
The plastic was lightly scraped with an X-Acto stencil knife. Due to the blade angle some deep scrape marks were made into the plastic.



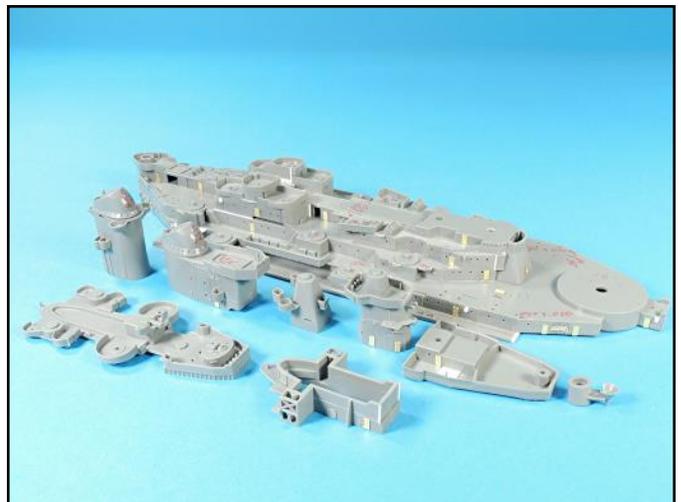
After wet sanding and polishing, the silver paint detected additional scrape marks that could not be reached for adequate sanding.



The better solution was to glue a length of .010 inch thick plastic to cover these indentations.



These photoetch details were added using a toothpick to set them into place with tiny drops of white glue so adjustments could be made to their positioning. Super glue was then added around the edges using a .012 inch wire applicator.



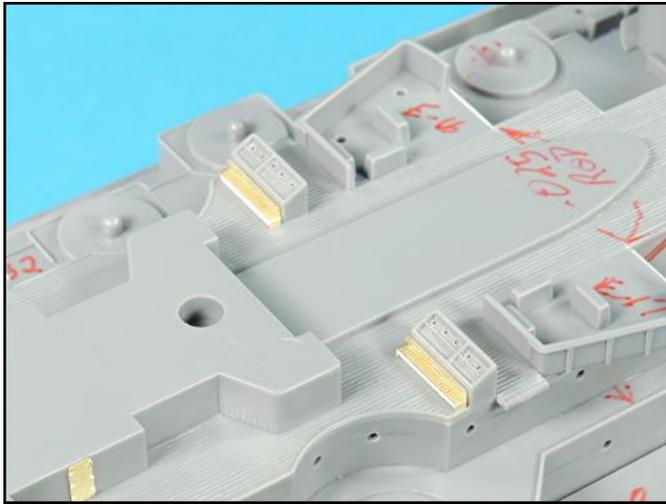
All the superstructure assemblies have been detailed and completely assembled.



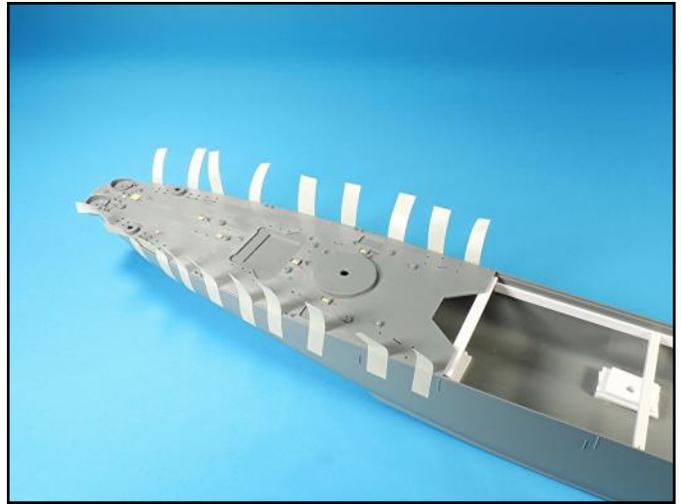
A final fit check was done to ensure that all the parts fit together tightly and all the seam and void work has been completed.



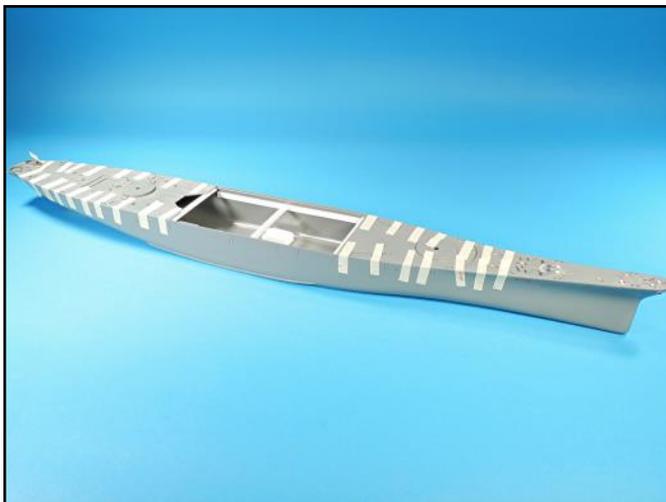
These tiny Gold Medal Models signal flag platforms had additional strips of plastic added to the undersides to increase the gluing surfaces.



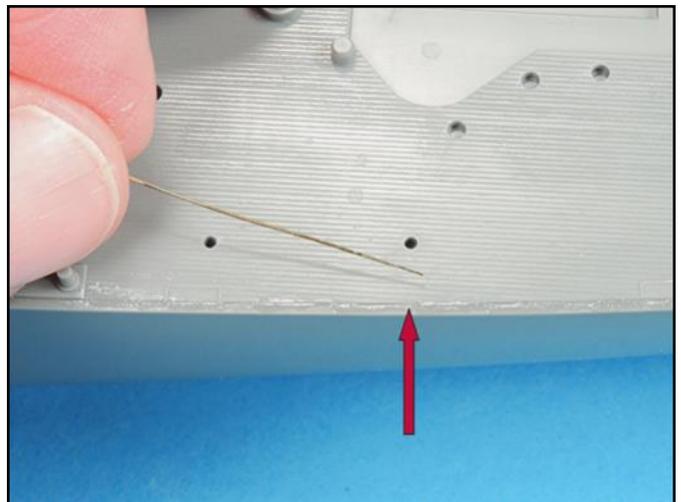
The signal flag platforms were glued into place with tiny drops of super glue.



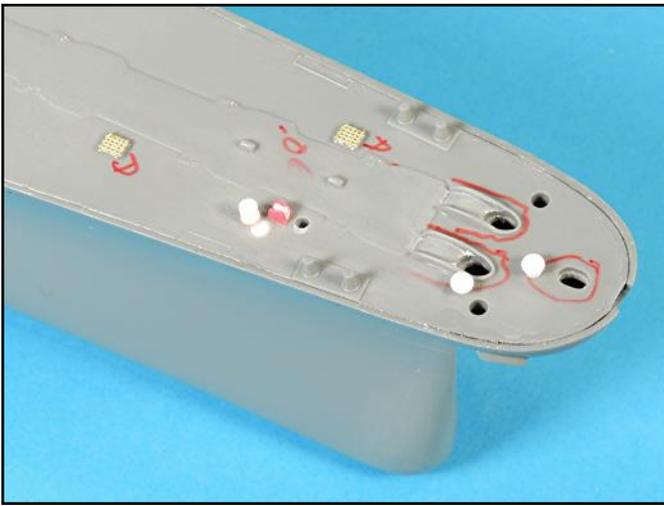
The aft deck section was positioned and taped down with a lot of masking tape strips. The deck sections should fit flush against the top of the hulls edge.



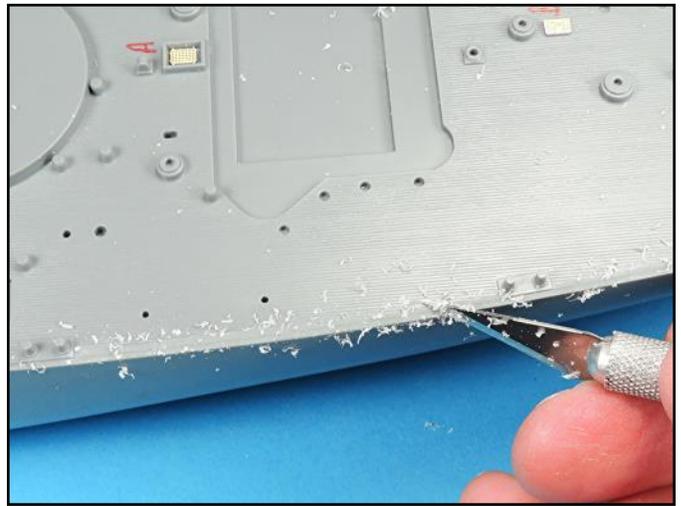
The forward deck section was then positioned and taped down. Lastly, the center deck section was inserted and taped down.



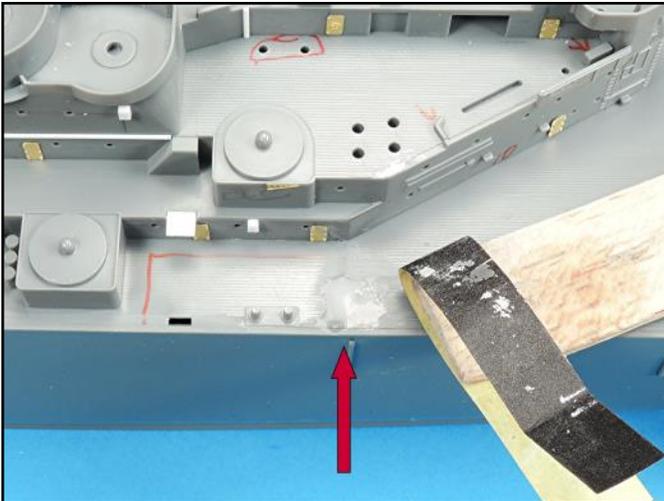
A tiny bead of super glue was applied along the seam line of the deck & hull using a .012 inch stiff wire. After the glue dried, the tape was removed and additional glue added.



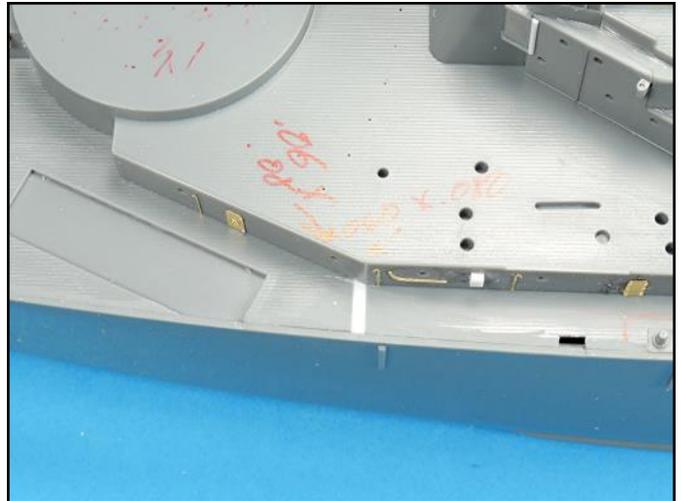
In some areas like the bow, additional applications of super glue were required. The capillary action of super glue will pull the glue down into the seam between the edges of the deck and hull.



The deck edges were lightly scraped with the tip of a number 11 X-Acto blade held at approximately a 45 degree angle.



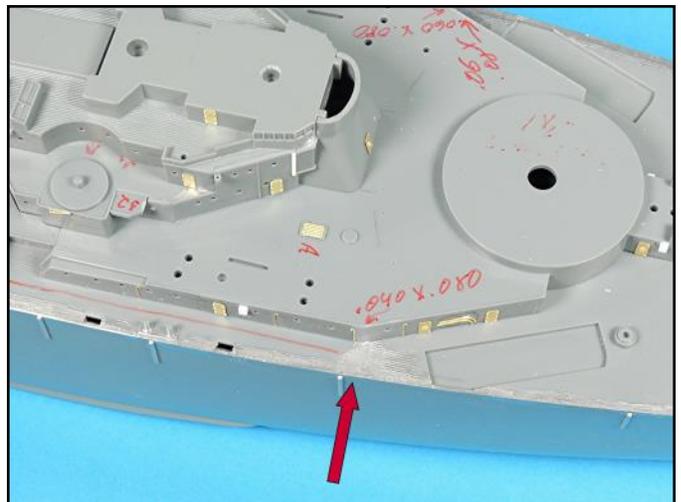
The deck seams were lightly wet sanded with fine grit sandpaper wrapped around a length of balsa wood.



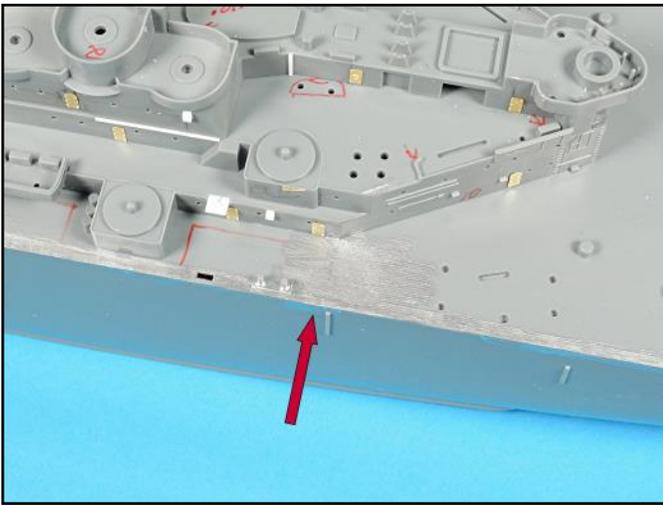
Note the tight fit of the deck insert. Be sure to minimize the area around the insert that gets wet sanded.



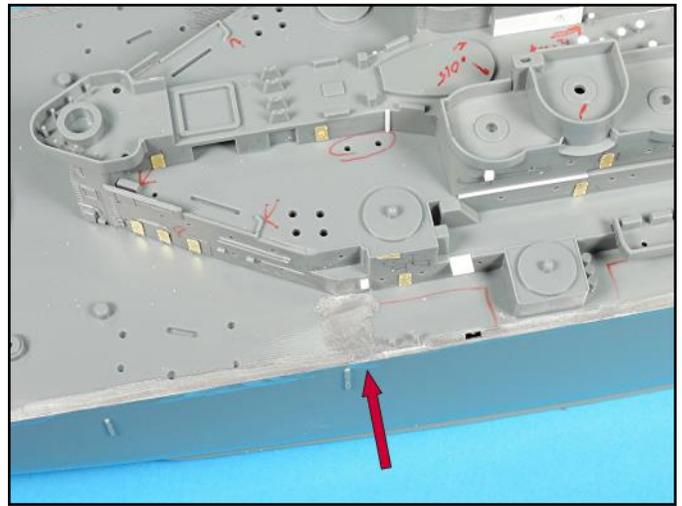
The forward deck inserts and the aft deck seams should be checked with silver paint. Apply additional super glue where needed and repeat the wet sanding process.



The starboard deck insert looks great.



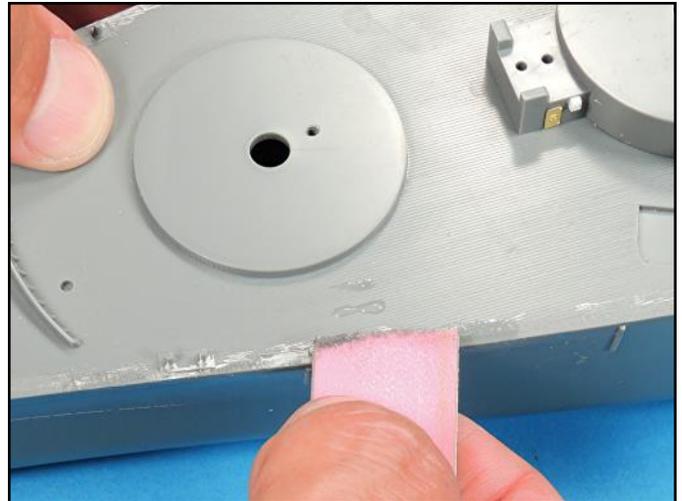
The aft port deck seam needed a bit more super glue.



The aft starboard deck seam just needed some additional light wet sanding.



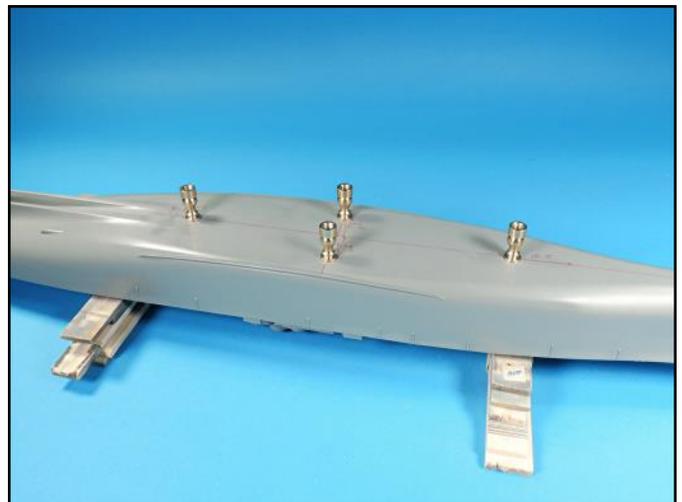
The silver paint also shows you the tiny waves in the plastic surface due to the knife scraping.



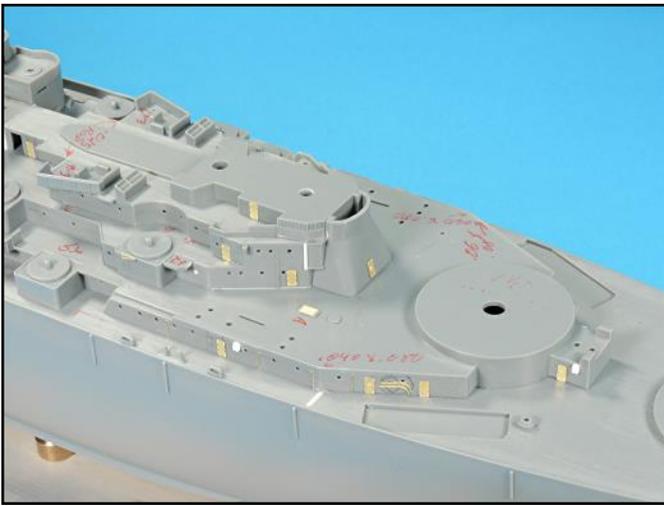
To smooth out the deck/hull edge use a sanding stick with the end cut straight and wet sand. The silver paint will act as an indicator when the plastic is smooth.



With the hull and main deck work completed its time to mount the model on its work platform.



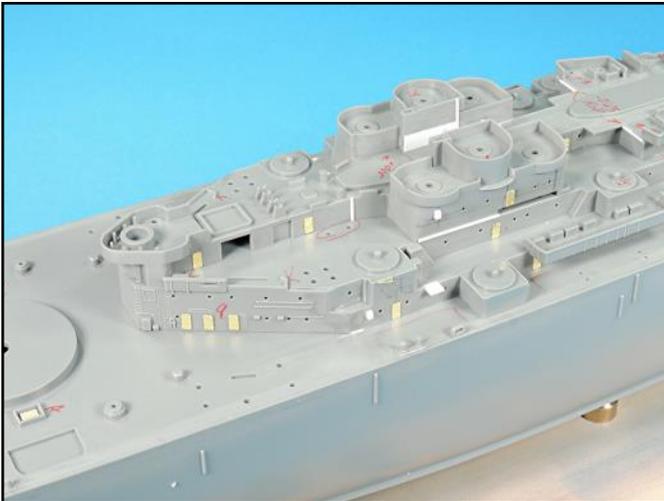
The brass pedestals were super glued into place and allowed to set and dry for several hours. Note the stacks of balsa wood strips held together with masking tape to elevate the assembly



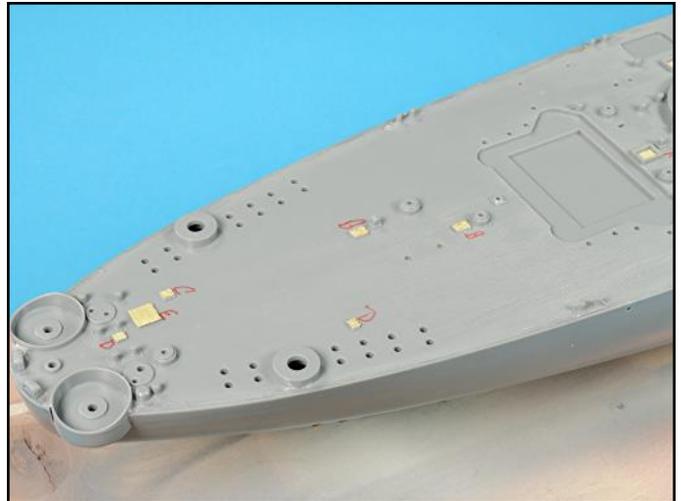
Each main deck chock was carefully positioned and then a tiny bead of super glue applied around its perimeter.



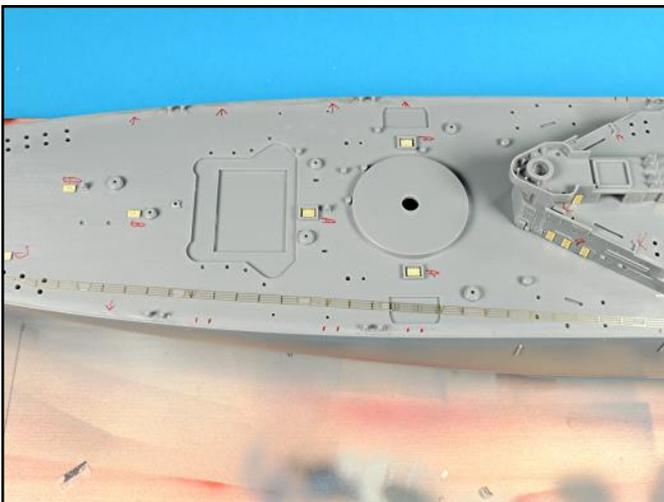
With the addition of portholes, hatches and vents, the superstructure looks much better.



The aft superstructure area had a lot of strips added to hide voids and seams but once the model is painted they will be hard to detect.



The tiny raised positioning lines for the chocks for the aft area were lost during the scraping and sanding process.



The Gold Medal Models main deck railings were used to locate the chock locations since the railings had specific openings for each chock.



The seams on the aft 40mm bofor tubs were filled with several applications of super glue.



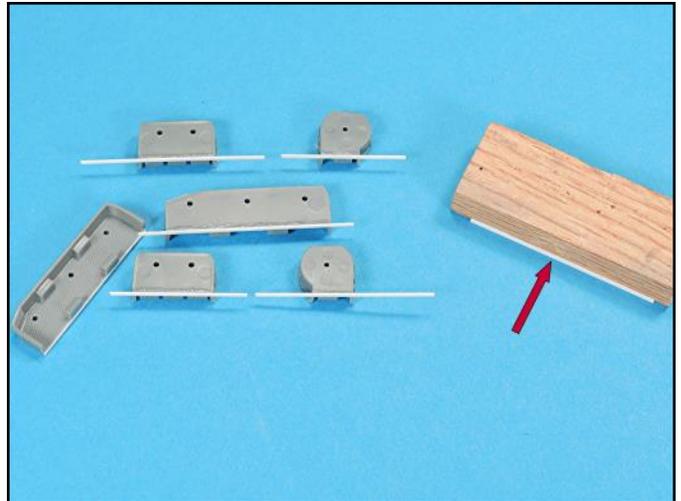
The seams were carefully scraped smooth and then wet sanded with fine grit sandpaper.



The silver paint showed no flaws.



The voids on both sides will be filled with white glue once the assembly is primed.



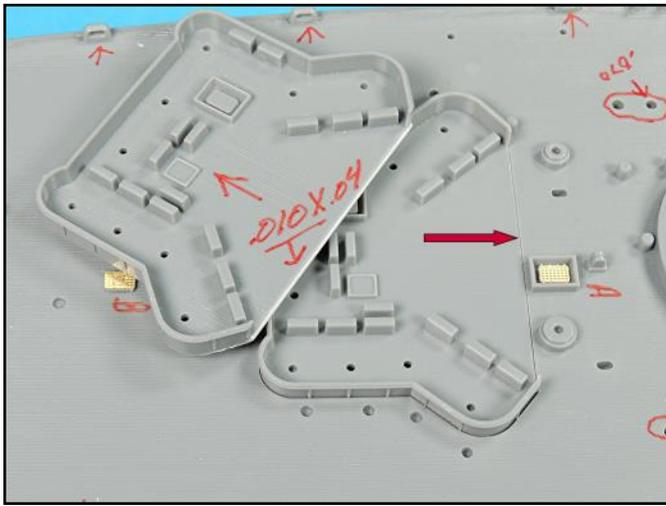
The 20mm deck inserts needed .010 x .040 inch spacers added. Each spacer was held against the wood block, tiny drops of super glue were applied along the edge and then the part was pressed against the wood block.



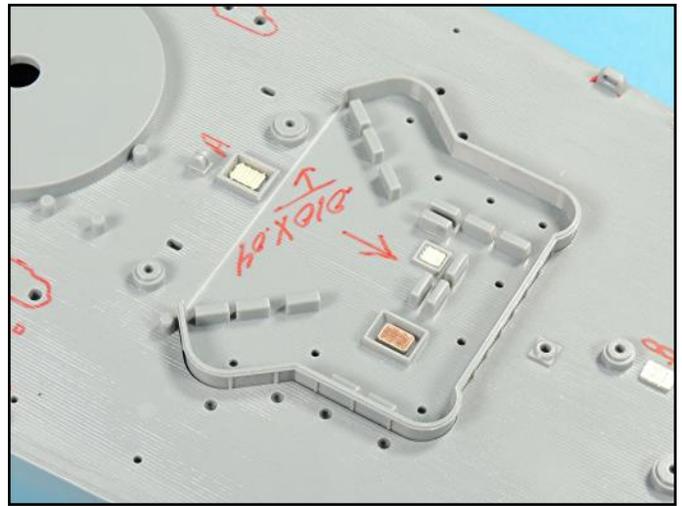
The spacers were cut and trimmed and they will fill the deck voids perfectly.



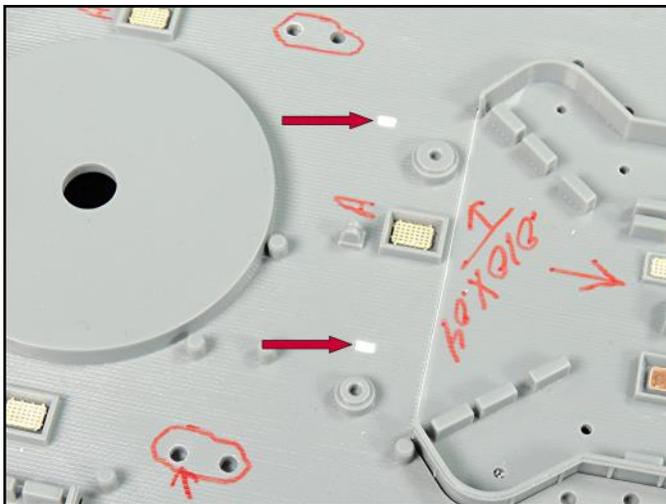
There were some indentations in the surface of the parts on these two deck inserts. The indentations were hidden with lengths of .01 x .08 plastic strip.



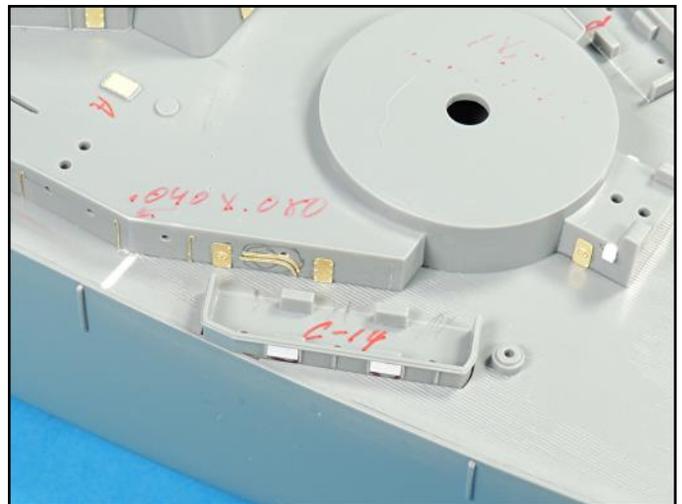
The void on the large aft 20mm deck insert has round edges so even with the spacer added there will be a visible seam.



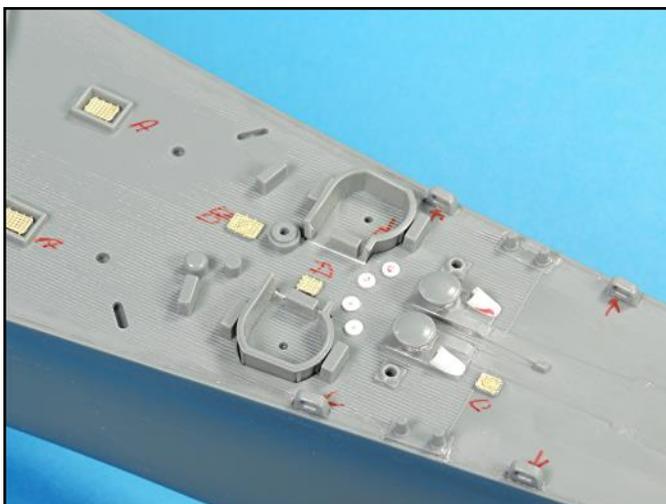
The spacer completely filled the void. The voids around the splinter shields will be filled with white glue once the surface is primed.



The positioning holes for the kit's rope reels were filled with tiny pieces of plastic. The 3D printed rope reels will fit over these locations.



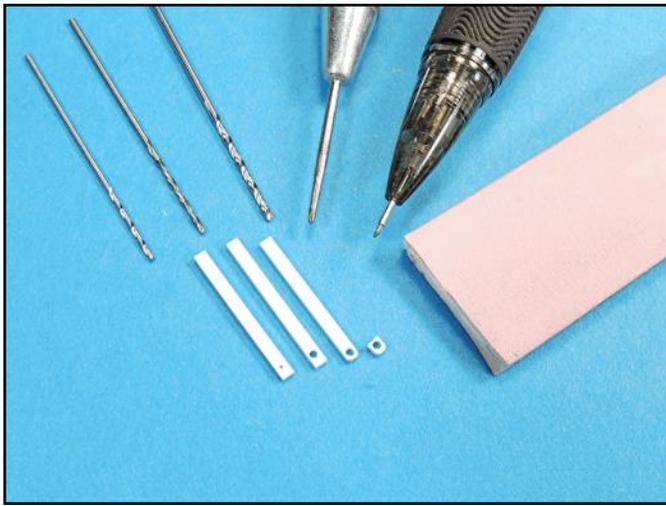
These forward deck inserts are pretty tight but there is a slight voids around the sides. Here again white glue will be used to fill them.



The bow inserts will also need some white glue once the surface is primed.



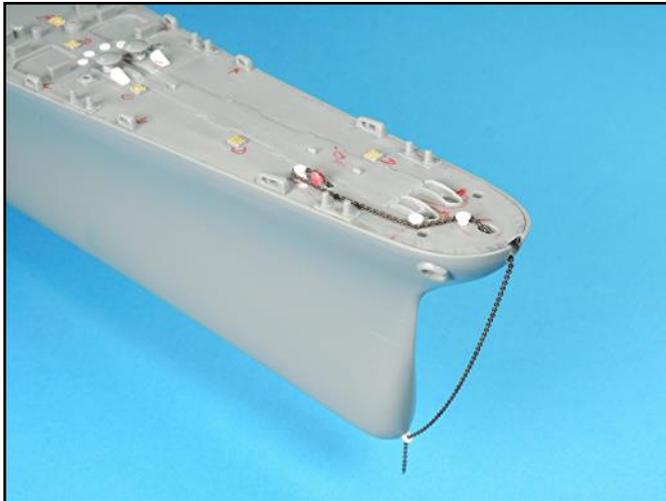
These deck inserts are very tight.



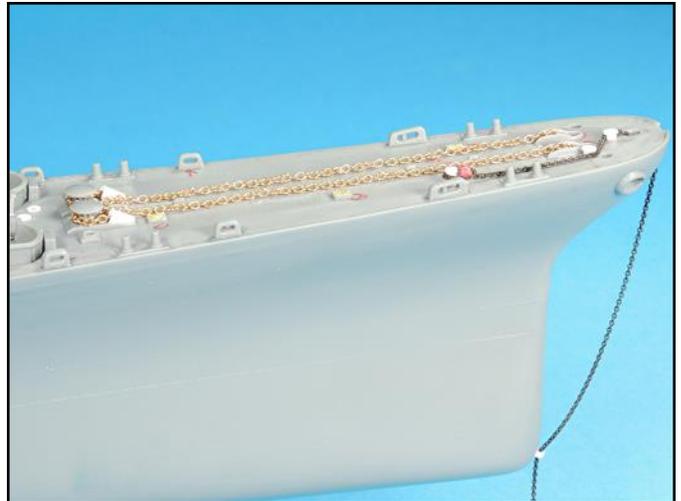
The bow attachment point for the mine sweep chain was made from a .04 x .06 inch plastic strip. The hole was drilled out with a .039 inch drill bit.



The scratchbuilt part was attached with a tiny drop of Testors red tube glue so the part could be adjusted. Once the glue was dried, a tiny bead of super glue was applied around the perimeter of the part.



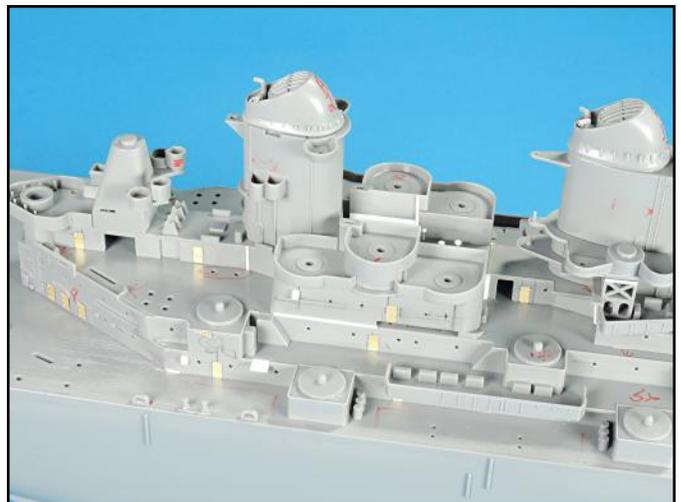
The HO scale chain fit perfectly into the tiny hole.



With the additional details added to the bow and the real chain, the appearance of this area of the ship will be greatly enhanced.



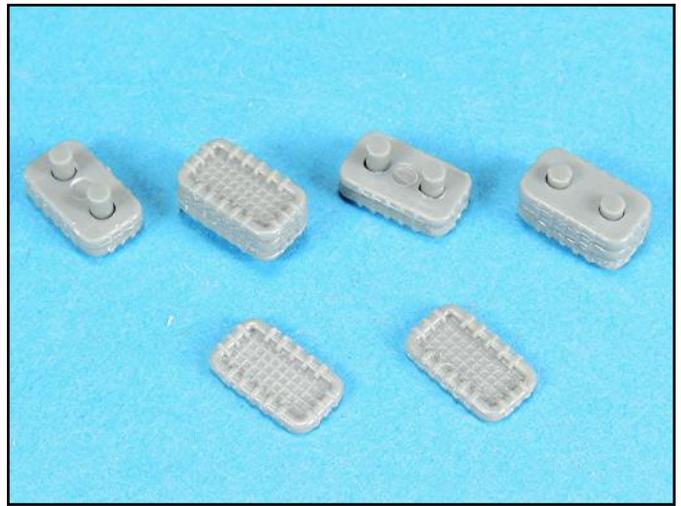
Another assembly check was made to be sure that everything fit together tightly and that no additional details needed to be added.



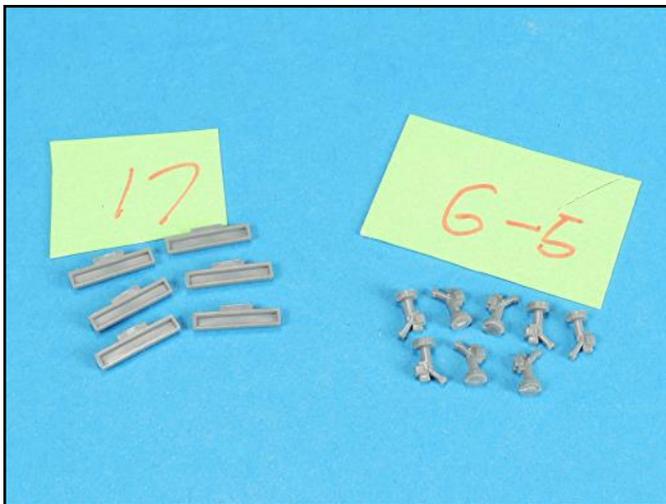
The aft superstructure area looks very different with the added detail work.



Once the catapults, the aircraft crane and the 20mm guns are installed, the stern area will have a lot of detail.



Be sure when assembling the life rafts that you follow the Tamiya instructions as to how many assemblies get two and three rafts.



The kit's floater baskets have several different sizes so be sure to add a small piece of paper with the part numbers to each bin where you are storing the parts. The kit's gun directors will be replaced with 3D printed Mk-51 directors.



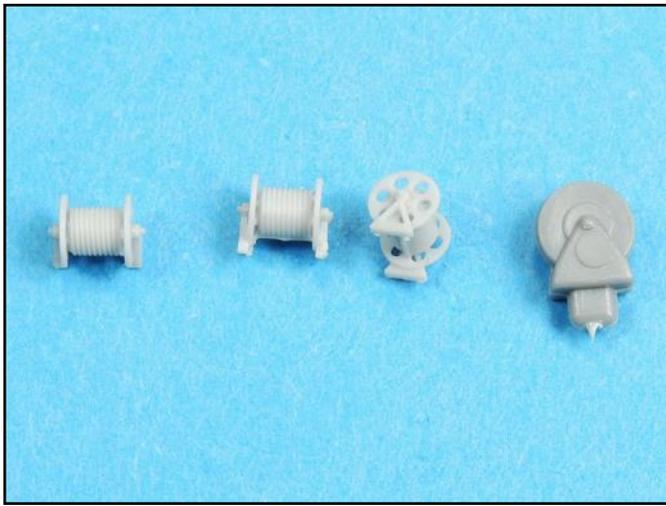
Be careful when removing the tree attachment stubs from these round vent covers so that the shapes will not be distorted.



Be sure to check each part for a mold line and carefully scrape them off with a sharp number 11 X-Acto blade.



The kit's whale boats were enhanced with photoetch detail parts from the Eduard photoetch set. The boat cradles are also from the Eduard detail set.



The kit's rope reels were replaced with Black Cat Models 3D printed rope reels. These reels even have the rope detail around the drums.



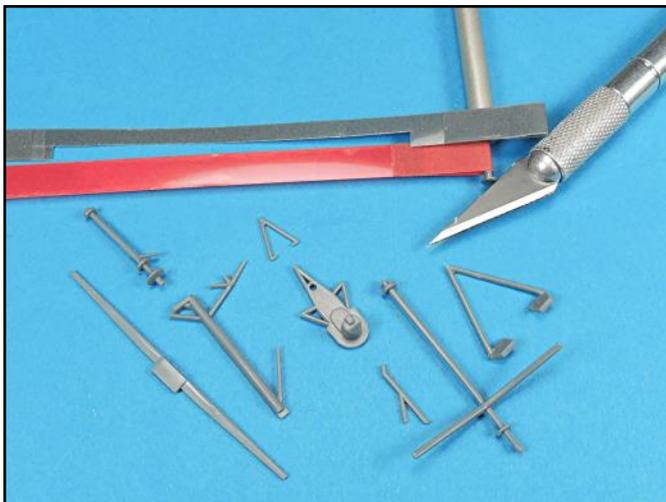
The Black Cat Models 3D printed 36 inch searchlights have an incredible amount of surface detail. The standing platforms will need to be removed for the searchlights to fit correctly on the aft smoke stack.



The Black Cat Models 3D printed 24 inch searchlights are also well detailed.



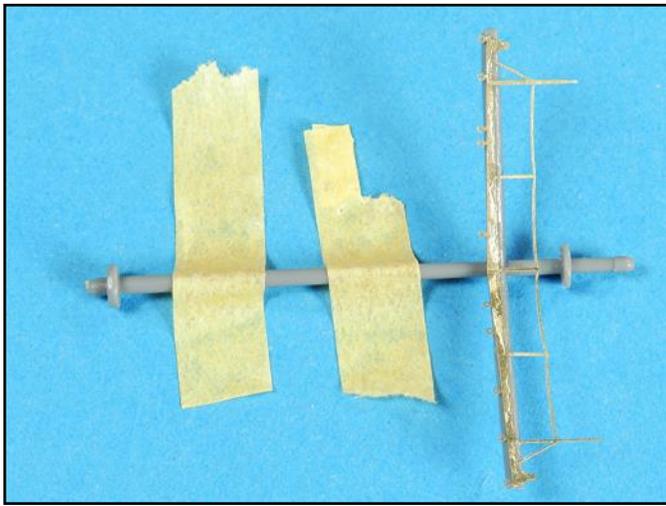
The kit's aircraft are simple assemblies, but there are mold lines to remove on the fuselages and floats. The aircraft cradles will be used in combination with the photoetch catapults.



The forward and aft mast parts were carefully scraped to remove the mold lines. The forward main mast needed some minor touchup with a Flex-I-File.



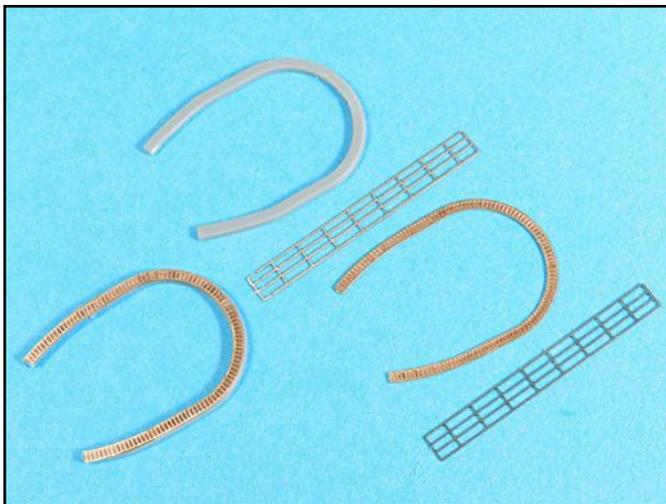
The Gold Medal Models aft mast was bent to shape and it will be glued to the backside of the kit's mast. Two holes were drilled through the yardarms about 1/32 of an inch from the end with a .0145 (#79) inch drill bit for rigging.



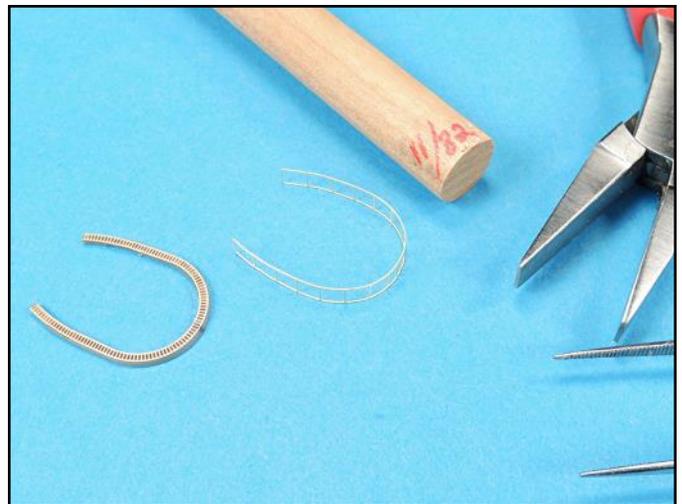
Taping the mast to hold it stationary helps the positioning of the photoetch part and gluing it into place. Use a .012 inch diameter stiff wire as an applicator and use tiny drops of super glue.



The Gold Medal Models railing was easy to shape and it fit perfectly onto the kit's small round platform. The SG radar was shaped with the end of a file and then glued into place.



The Eduard photoetch catwalks are too flimsy so they were laminated to the kits parts. The Eduard railings were cut off the catwalks and the Gold Medal Models railings, which are more accurate, were used.



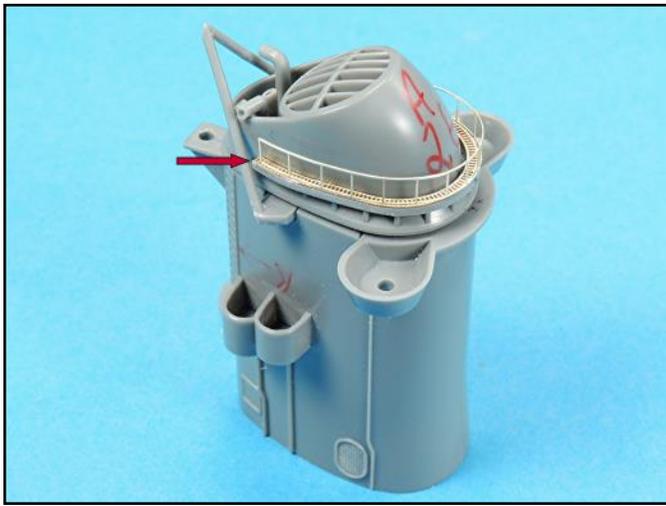
The Gold Medal Models railings were shaped with an 11/32 inch wood dowel.



These are the railing parts for the aft smoke stack. The Eduard railings were used for the platforms. The square part would not fit on the mast platform without cutting the disk at the base of the mast so this part was not used.



The smoke stack catwalks were thinned by running them across a stationary piece of sandpaper to reduce the thickness of the plastic.



The aft mast railings were too long and had to be trimmed so that they would not interfere with the aft mast angled bracing.



The mast was installed and the angled bracing and the flag staff were super glued to the main mast.



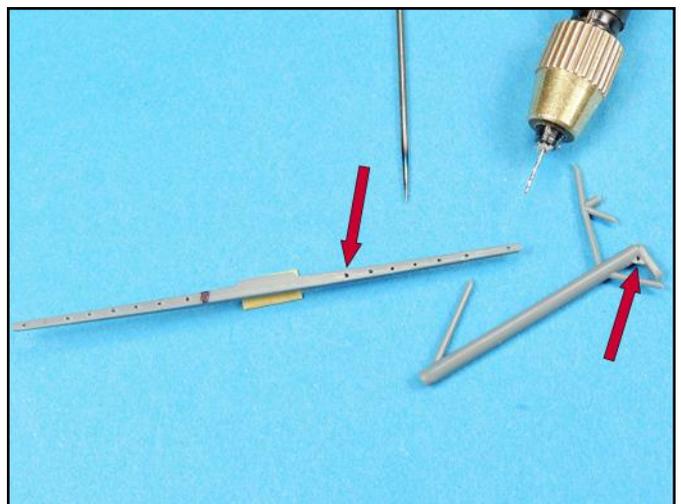
The aft mast can be removed from the stack and painted, then installed separately.



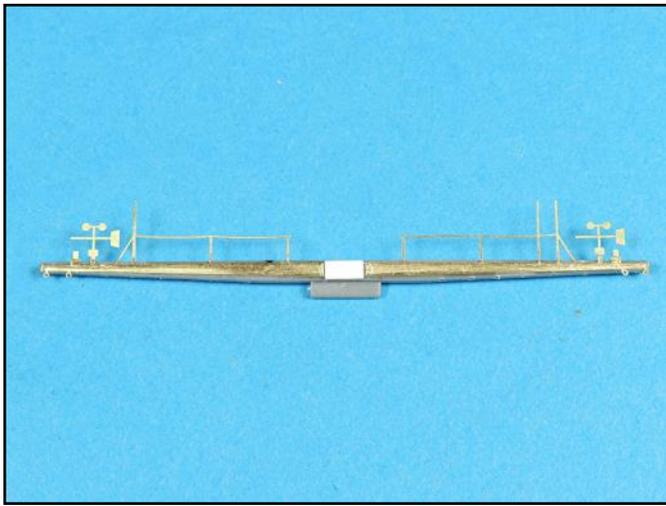
A .0145 inch hole was also drilled into the flag staff prior to installing it onto the mast for the flag rigging. The photoetch ladder is from the Eduard detail set.



The photoetch parts are getting a final fit check before moving onto detailing the main mast.



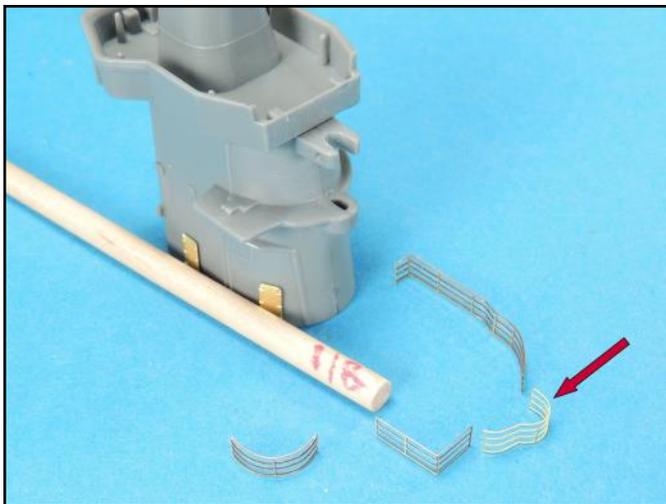
The main mast yardarm had holes drilled through it using a .0145 inch (#79) drill bit for the signal flag rigging. A hole was also drilled through the main mast at the top where the angle is so that rigging could be run through it.



The Gold Medal Models yardarm was smaller than the kit's part so it was cut in half, positioned and glued into place. A small section of .015 thick plastic was inserted between the two photoetch parts.



The main mast was carefully positioned and taped into place so that the radar platform could be attached. A tiny drop of Testors red tube glue was used so the platform could be adjusted. Super glue was then added.



Some of the Eduard exact length railings did not fit well so they were used in combination with Gold Medal Models railings. The mid-level platform has three sections of railings.



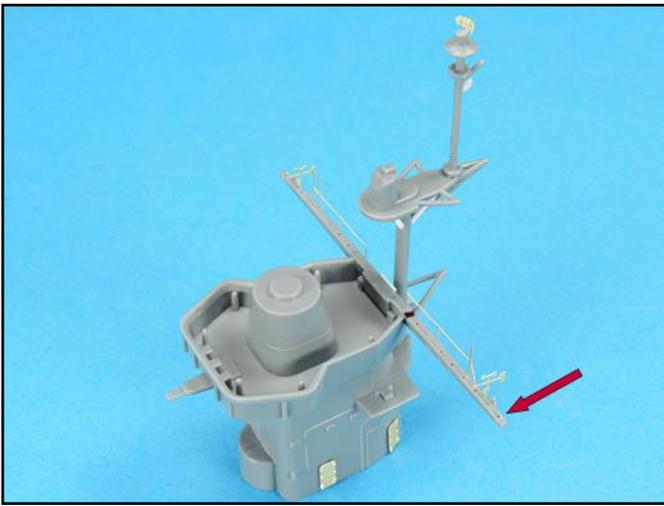
The kit's platform bracing was replaced with .025 inch rod and then the mast was super glued into place.



The angled bracing was then carefully positioned and super glued into place.



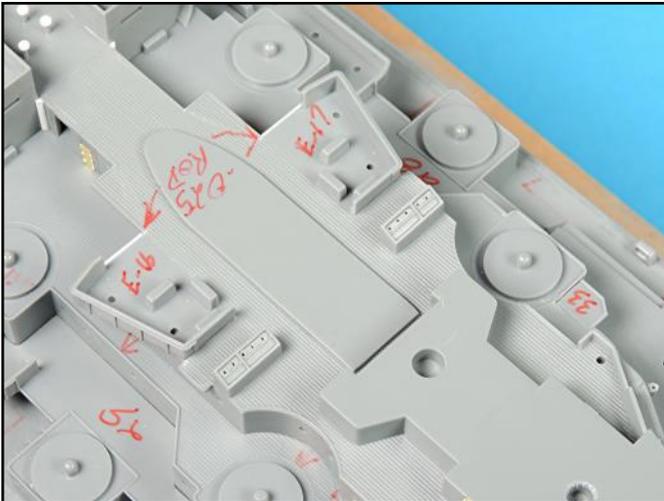
The upper mast was attached with Testors red tube glue, the part was positioned and then super glued into place. A cut disk (.010 inch thick) was made using a Waldron Punch Tool for additional yardarm rigging.



The outermost holes that were drilled through the yardarm will be for angled rigging from the upper platform and the top of the mast.



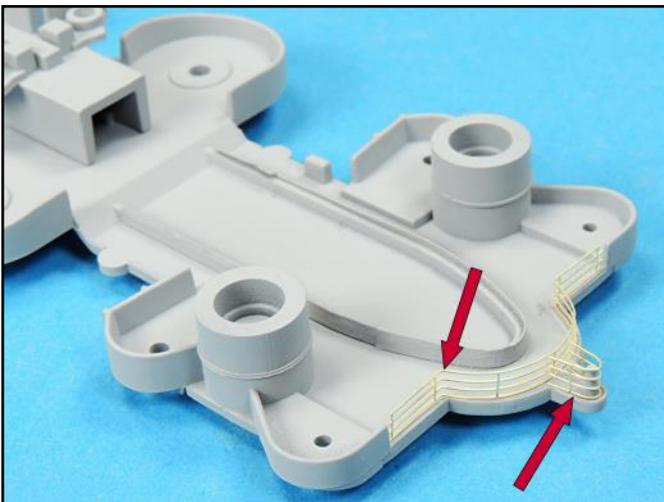
Each side of the yardarm has 5 holes evenly spaced for 5 signal flag lines that will run from each signal flag box to the yardarm.



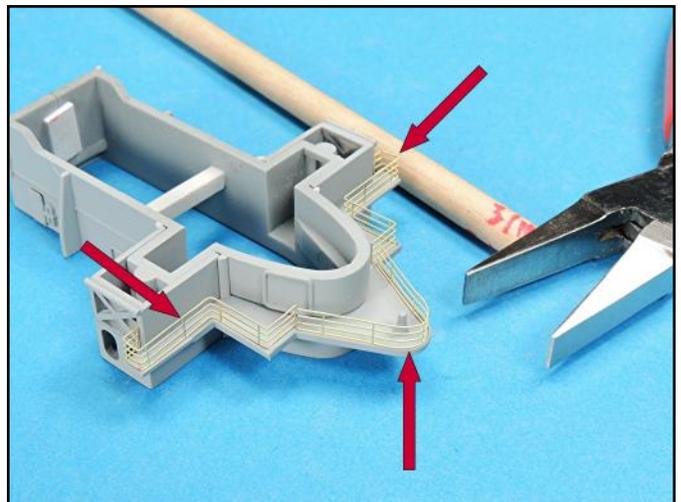
Five holes were drilled into the signal flag boxes for the signal flag rigging using a .0145 inch (#79) drill bit.



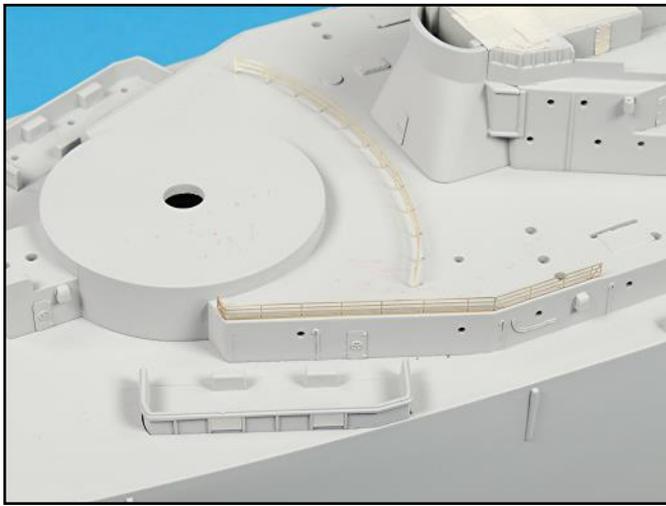
The forward upper superstructure railings were re-checked for proper fit.



These Gold Medal Models railings are in two sections to make the bending and shaping easier. The tiny curve was made using a micro file handle.



These Gold Medal Models railings are in three sections to simplify the shaping and bending. The curved railing was done with a 3/16 inch diameter dowel.



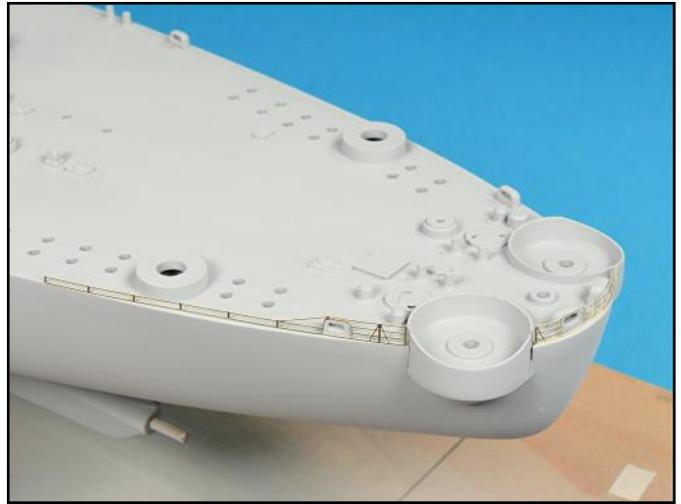
The railing behind the number 2 turret was shaped with a 1 inch diameter wood dowel. The deck edge railing length is an Eduard exact fit part.



The railings on the left are Eduard exact fit lengths and the upper right railing is a length from Gold Medal Models.



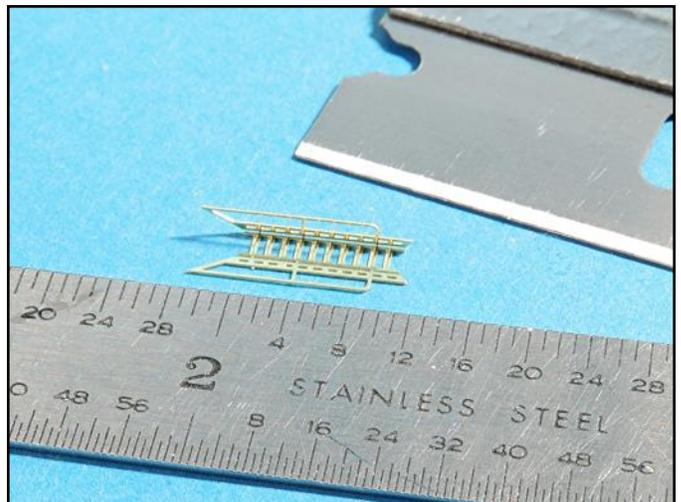
These railings are from the Eduard detail set and the inclined ladders are from the Gold Medal Models detail set. The inclined ladder on the right had to have its inner handrail trimmed so that it would fit up against the superstructure.



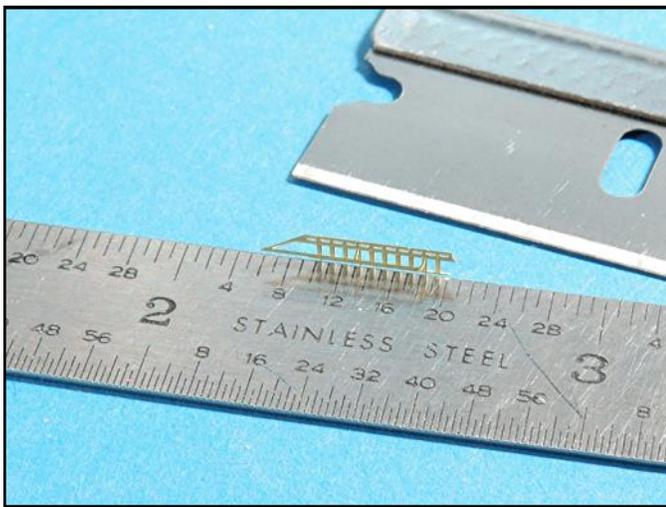
These stern area railings are from the Gold Medal Models detail set.



The bow railing is from the Eduard detail set and the curves were shaped with a 1/4 inch wood dowel.



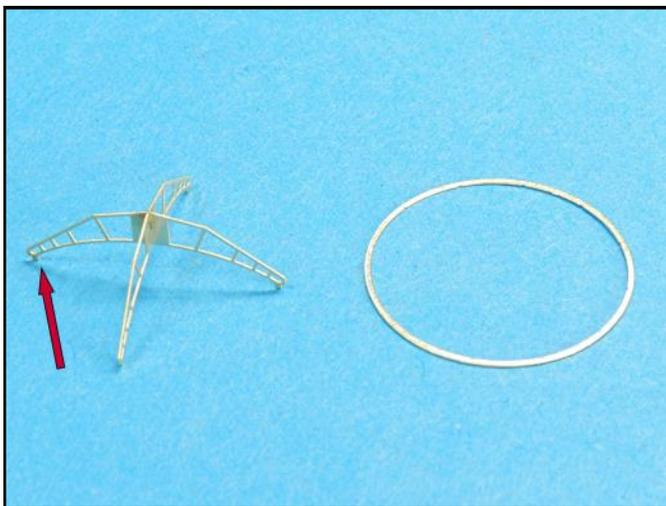
The inclined ladders were bent into shape by holding the part under a metal ruler and bending one side up with a single edge razor blade.



The ruler is then positioned under the opposite handrail section and the single razer blade was used to bend the inclined ladder up.



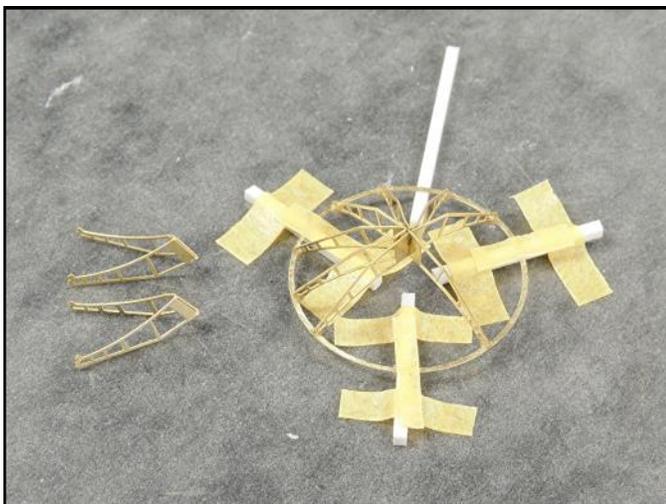
Parts management and labeling are very important in ship model construction.



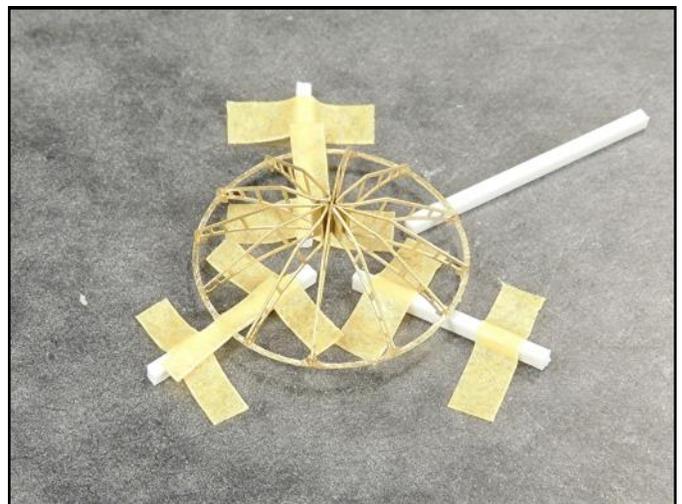
The SK-2 radar frame is glued into place and the base ring has been sanded with fine grit sandpaper for better attachment of super glue. The step in the outer end of the frame is where the ring sits.



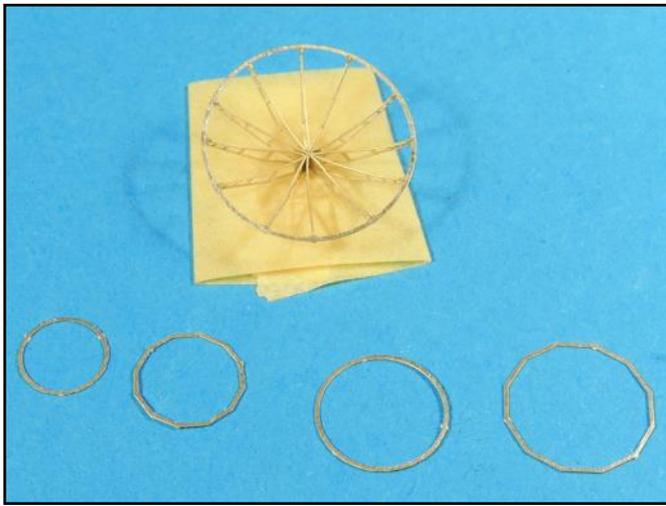
To simplify construction, raise the ring so that the frame steps will sit correctly on the ring. Tiny drops of super glue were applied with a .012 diameter stiff wire applicator.



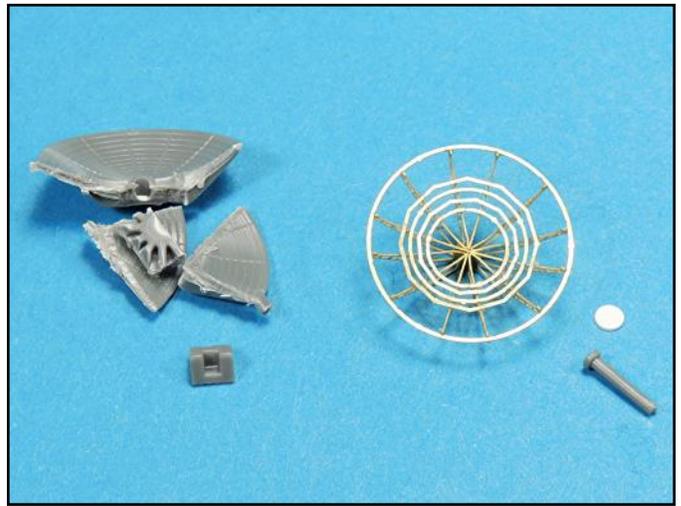
The remaining framing was bent into shape and then carefully positioned and super glued into place.



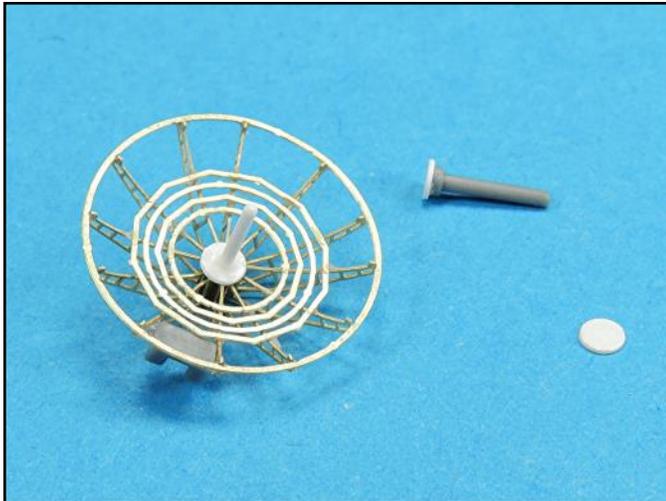
With the assembly complete it is time to add the inner rings.



The inner rings have all been sanded smooth for better attachment with super glue.



The kit's SK-2 radar base was cut out and will be attached to the photoetch radar. The rings have been attached and the center radar concentration post will need to be scratchbuilt.



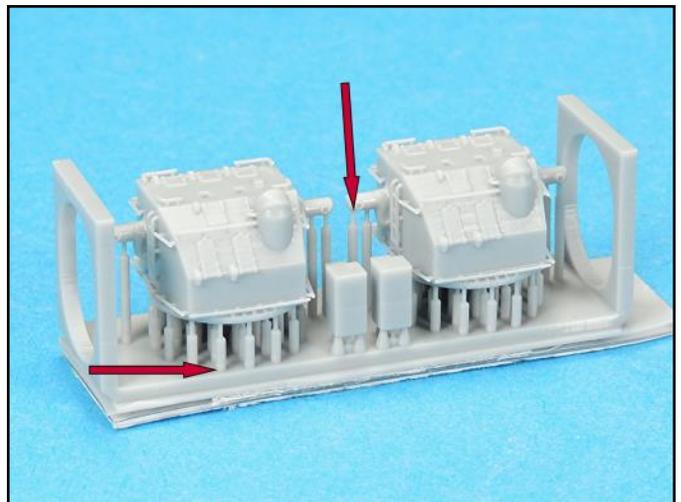
The concentration post was made from a length of .025 inch rod with a rounded end and the base was punched out with a Waldron #4 punch. The disk is .01 inches thick.



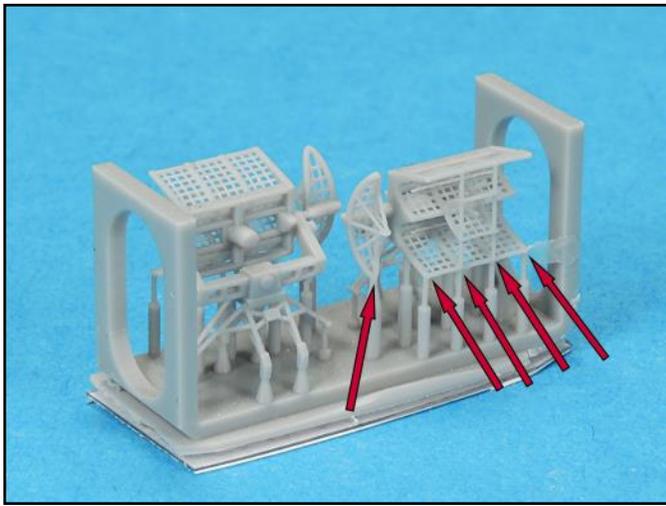
This tiny Mk-27 radar was shaped with a micro file handle.



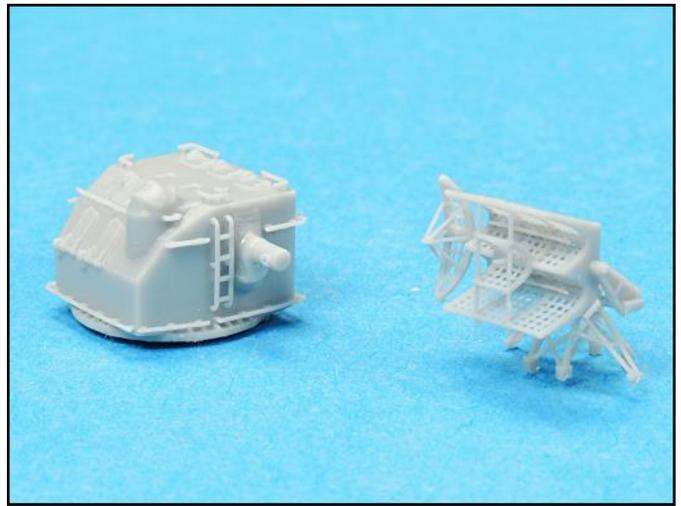
This is how the Black Cat Models 3D printed Mk-37 radar bases are set inside the print frame. The rectangular shapes glue into the backsides of the bases.



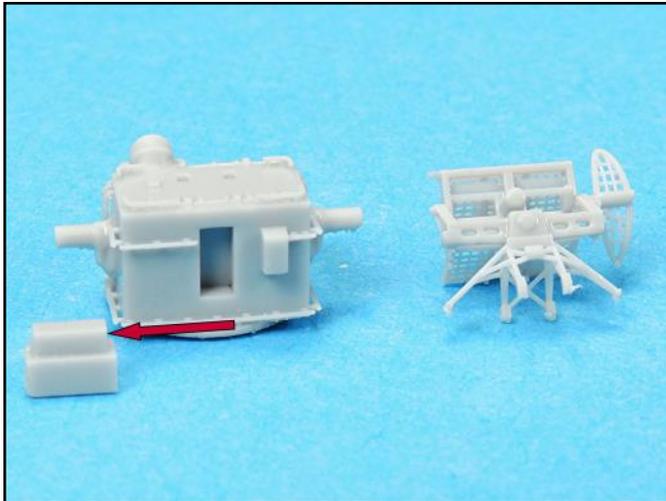
Use snippers for removing the stems on the arms first and then the stems on the bottoms of the Mk-37 bases. Use cutters or a number 11 X-Acto blade to remove any residual stems that may be attached to the parts.



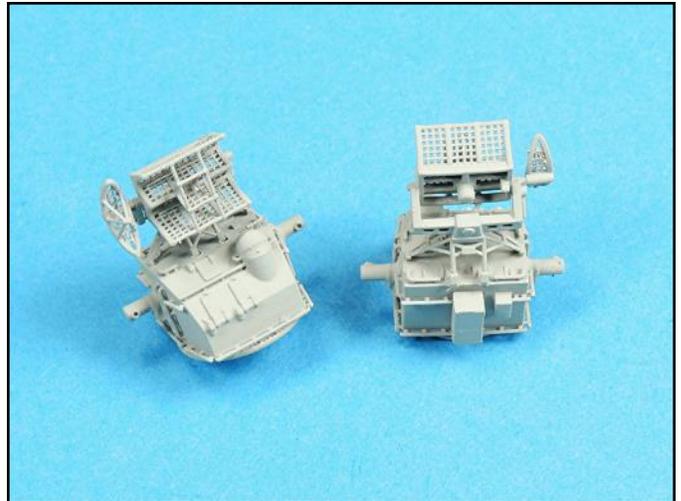
The material used by Black Cat Models for their 3D printing is flexible and strong. On the radar, make the left cut first than the other four cuts.



With all the 3D print stems removed, the Mk-37 radars are ready to be assembled.



The positioning box on the back of this part needs to be made slightly shorter in depth to get it to fit correctly. The radar assembly sits perfectly in the tiny box indentations on the top of the radar base.



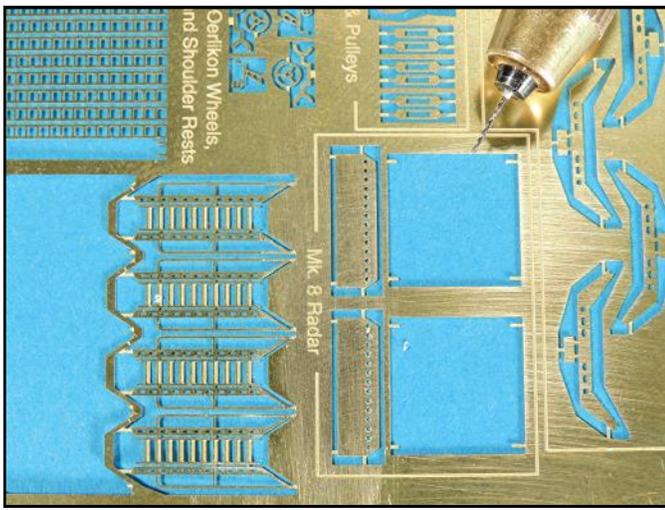
The Mk-37 radars have been airbrushed with flat gull gray and they are ready to be attached. The surface detail on these 3D printed parts is amazing!



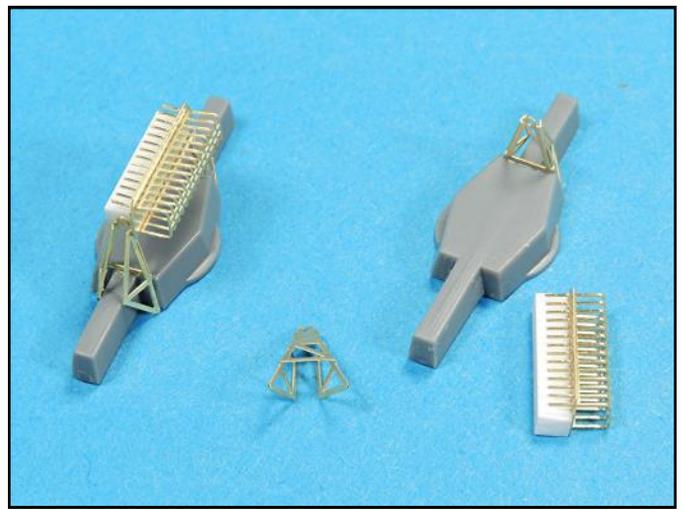
The Eduard detail parts for the Mk-8 fire control radar are nicely detailed, but the angle on the framing is wrong.



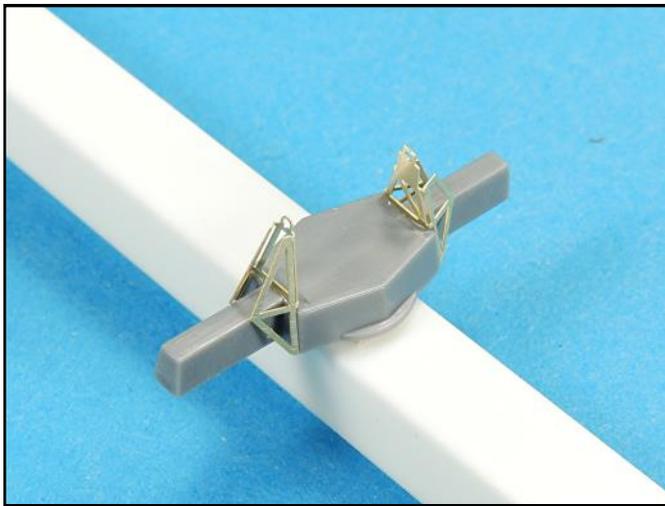
Cutting the framing off and attaching these small parts after the base was glued into place was not an acceptable solution. The framing still does not look correct, so the Gold Medal Models photoetch parts were used instead.



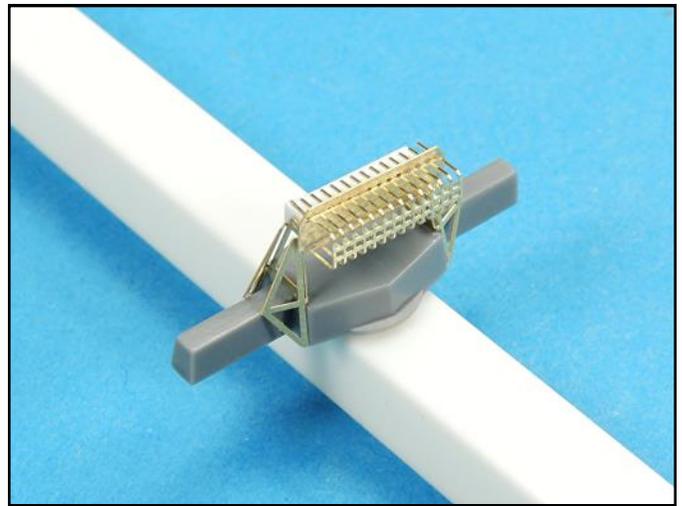
To make construction easier, the holes on the Gold Medal Models Mk-8 plates were drilled out with a .0136 inch (#80) drill bit while the parts were still attached to the photoetch sheet.



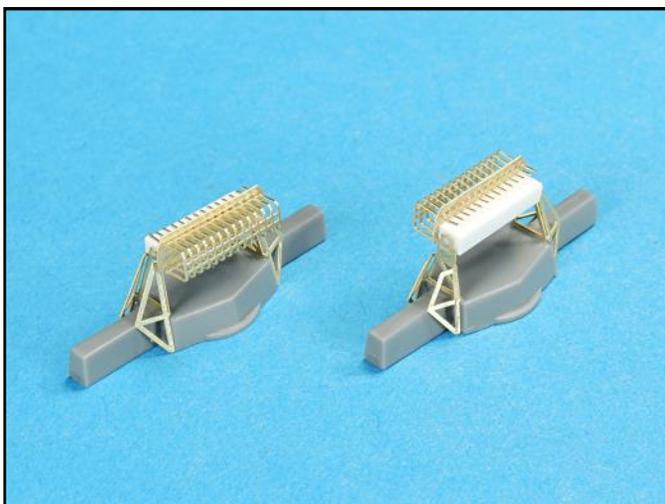
The side frames were bent into shape, test fitted and tweaked. The di-poles were bent into shape, slipped through the slightly enlarged holes on the plate and then glued to a .06 x .08 inch plastic strip.



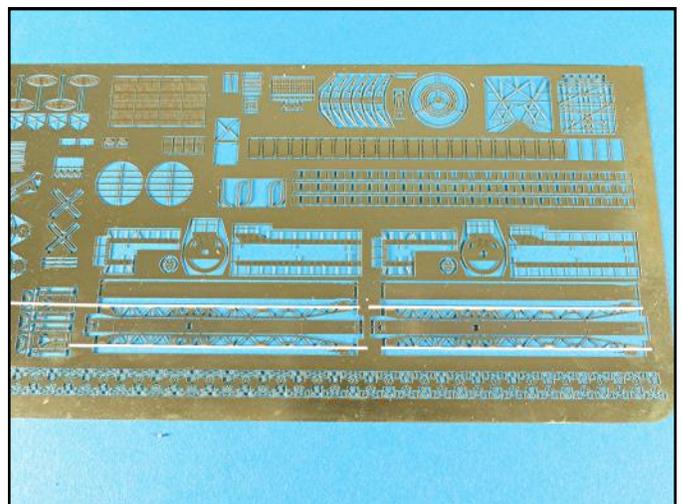
The kit's part was elevated and secured with masking tape so that the framing could be attached easier. A .012 inch diameter wire applicator was used to apply tiny beads of super glue around the perimeter of the framing.



The plastic strip on the center assembly was form fitted into place between the framing by shaving off tiny pieces until its fit between the framing was snug.



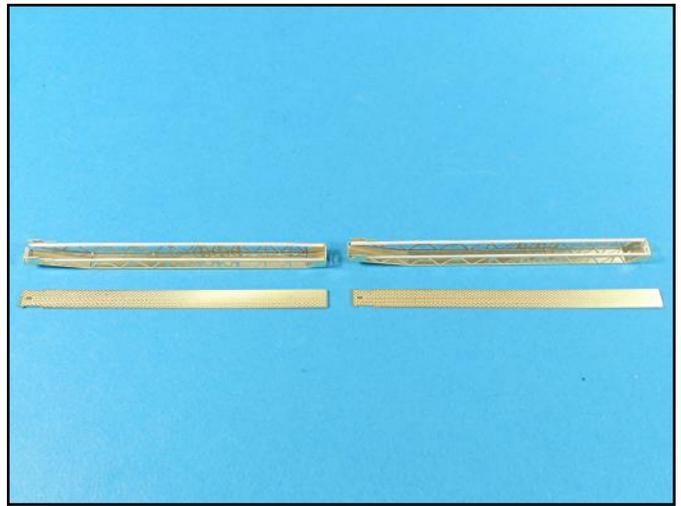
The Mk-8 fire control radars look pretty good and they are ready to be painted.



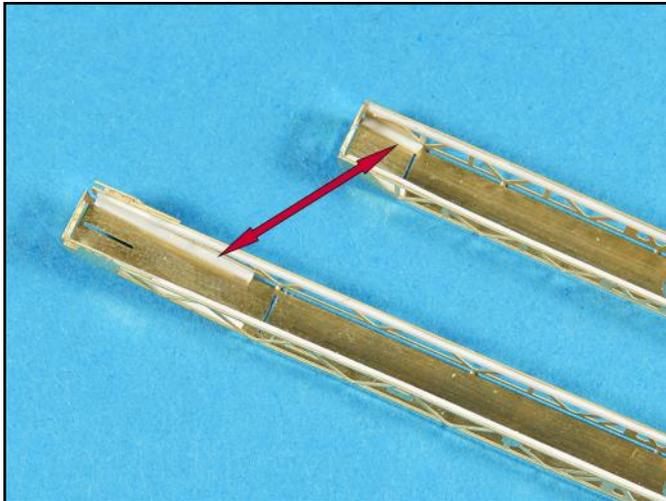
To provide for a stronger assembly for the Gold Medal Models catapults, .02 x .02 inch strips were super glued to the inside tops of the photoetch frames



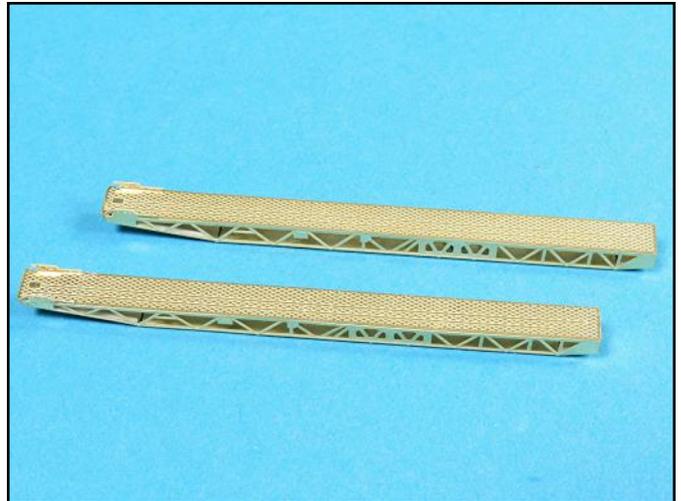
The side frames were bent up using a metal ruler and a single edge razor blade. The front and rear plates were bent up using tweezers.



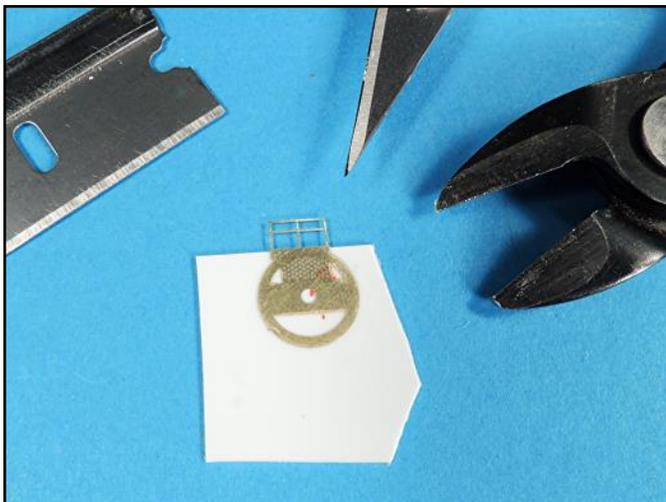
The framing has been bent into shape and tiny beads of super glue were applied at the seam lines between the end plates and the side frames.



To reinforce the frame assembly, .02 x .02 inch strips were super glued into place.



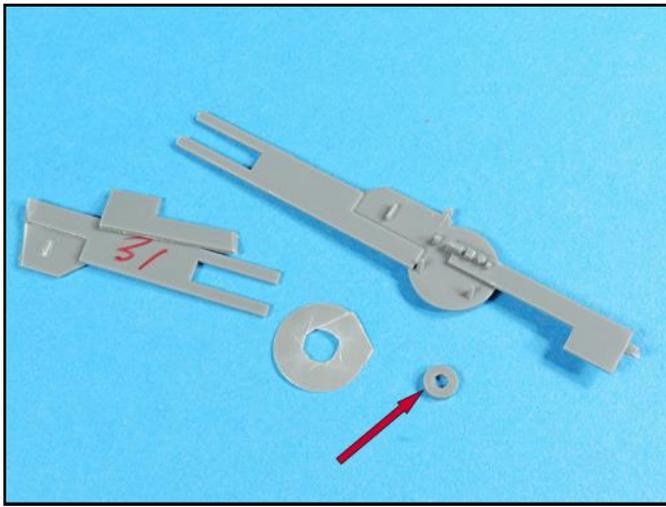
The catapult tops were positioned and beads of super glue were applied to the inside areas through the openings in the framing using a .012 inch diameter wire applicator.



The catapult bases were laminated to .020 inch thick strips to make them stronger.



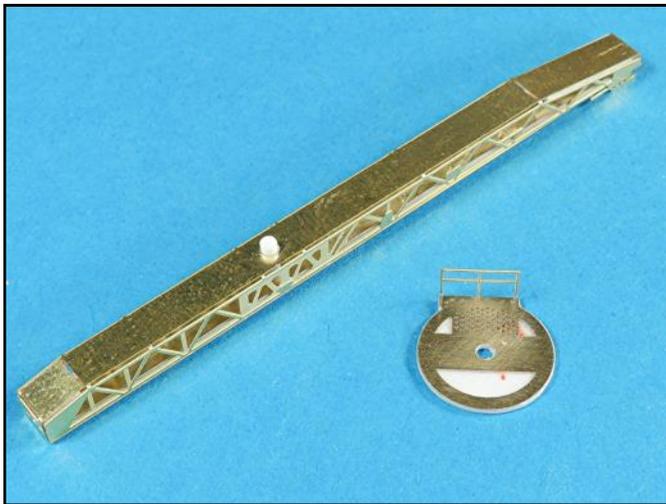
The plastic was carefully trimmed around the round bases and then finished with a sanding stick.



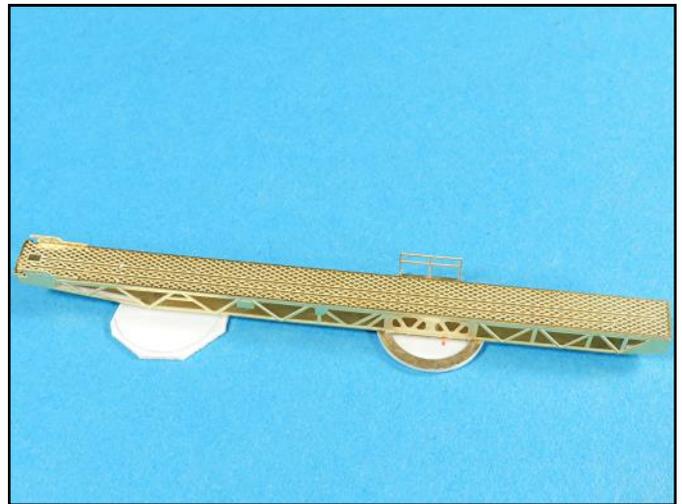
The centering rings from the kit's catapults was removed by cutting the surrounding plastic off and then running the parts across sandpaper to make the plastic paper thin. The disks just popped out of the paper thin plastic.



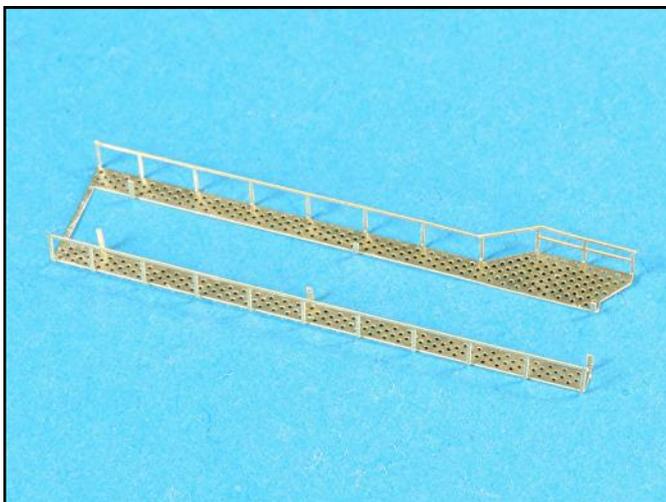
With a hole drilled through the new base with a .052 inch bit (#55), both parts can easily be lined up.



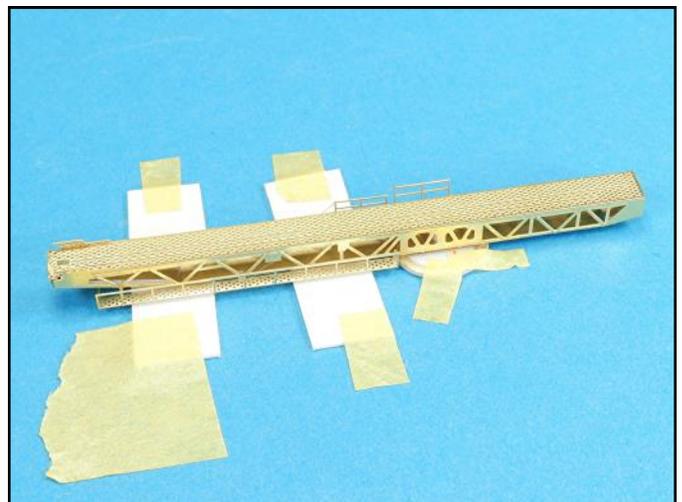
The rod is .05 inches in diameter and it will serve as a pin for the base and the centering ring.



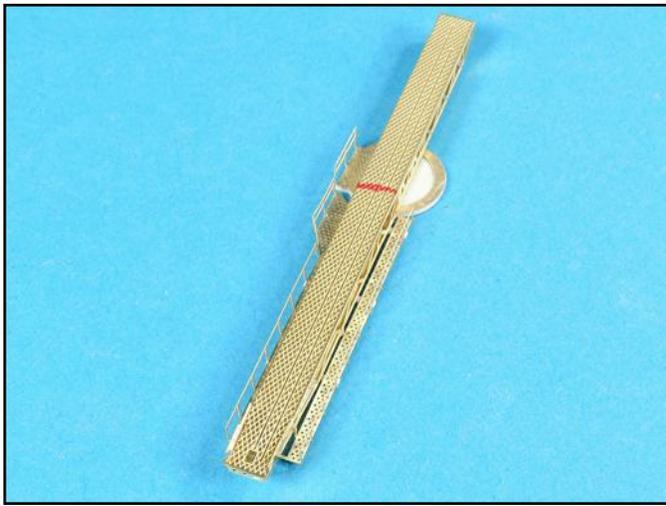
The base was glued into place first.



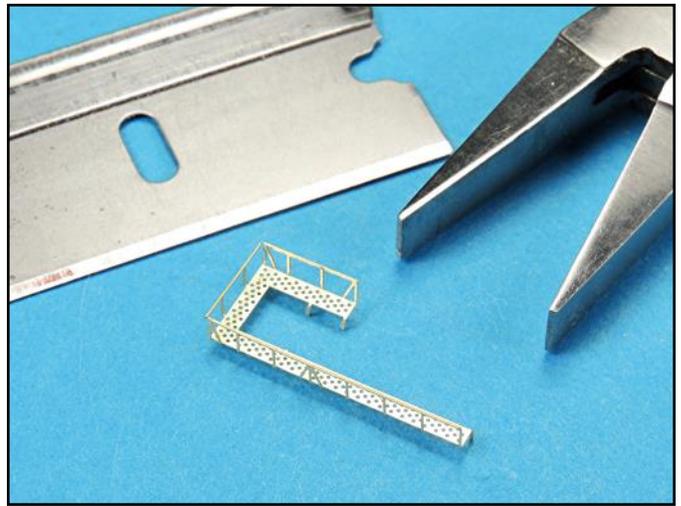
The forward catapult catwalks were shaped first. The railings were bent up first and then the positioning stubs.



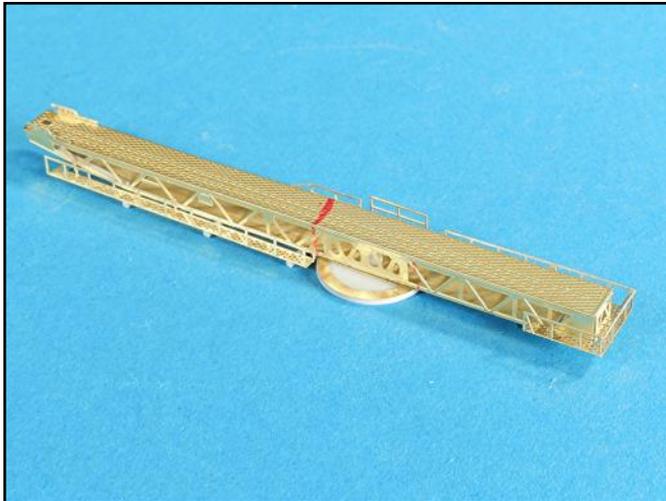
The forward catwalk was positioned and then super glued into place with tiny drops of super glue applied with a .012 inch diameter wire applicator.



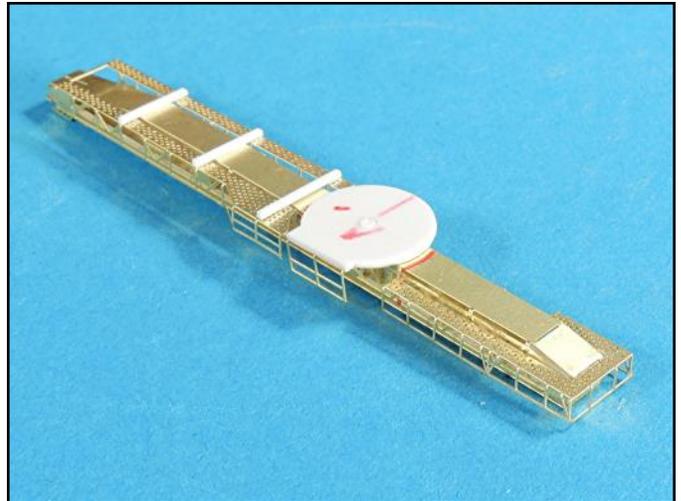
Note the positioning of the forward catwalk with respect to the end of the catapult.



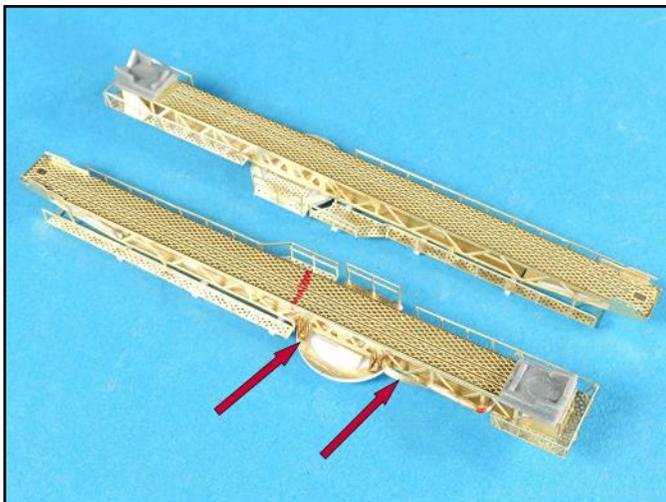
The aft catapult catwalks were then shaped. The railings were bent first and the positioning tabs were then bent down. The tabs were cut off, as they interfered with the placement of the aft catwalks.



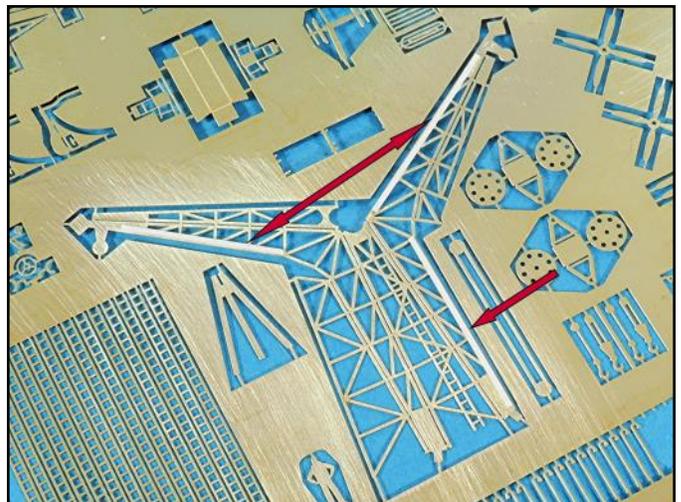
The aft catapult catwalk has been glued into place.



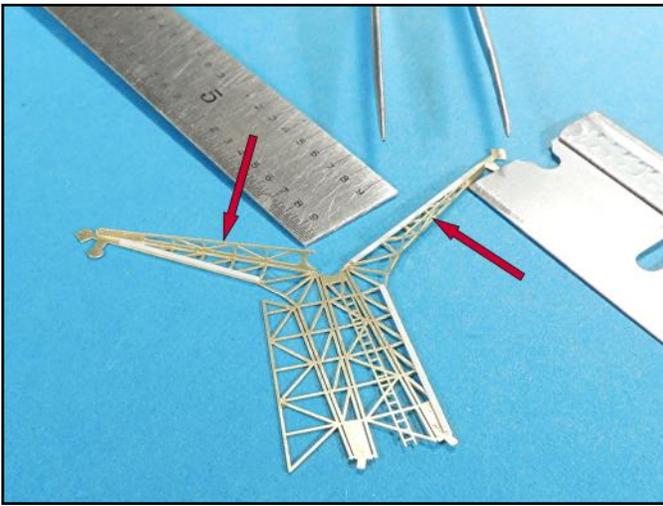
To strengthen the assembly, small lengths of .02 x .02 strip were glued to the underside of the forward area of each catapult assembly.



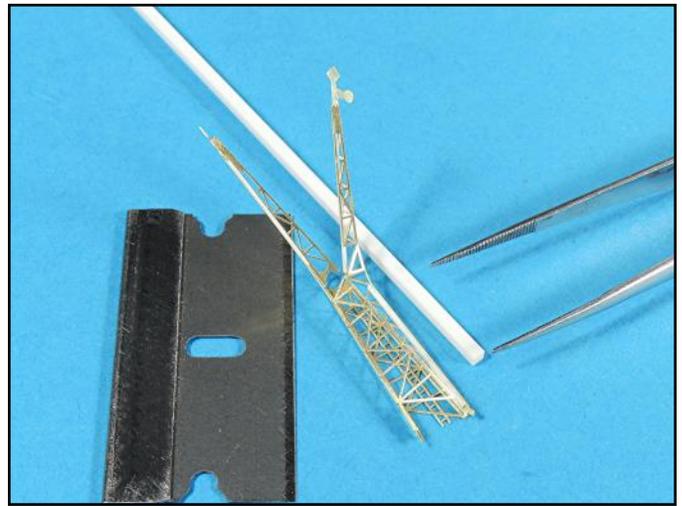
Each assembly got a .029 inch diameter brass rod shaped for the compressed air piping, and .06 & .08 inch half rounds were used for the motors. Eduard framing details were added, then the cradles and finally the centering disks.



To make the Gold Medal Models crane assembly stronger, .01 x .02 inch strips were super glued along the inside outer framing.



The top edges of the crane frame were folded inward first. Then the lower framing on the left was folded up about half way and then the center framing was folded up.



The framing is almost completely closed up. A length of plastic was inserted inside the framing to hold it steady while the bending was completed with tweezers.



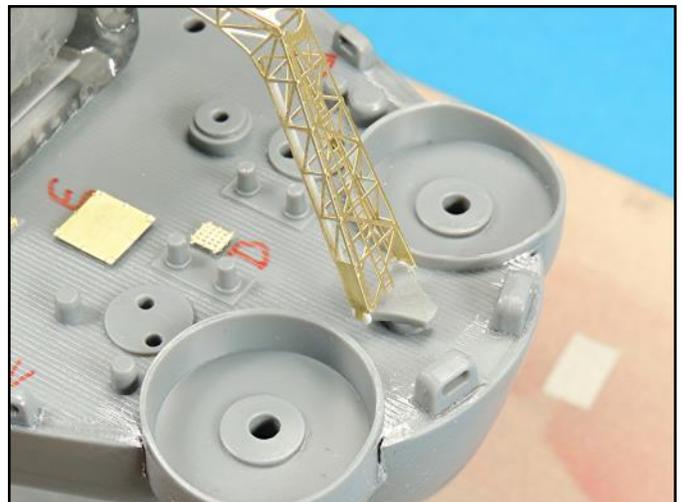
With the crane frame folding complete beads of super glue were applied at the frame connection areas.



The kit's base was cut off and disks were added to the base so that the frame would fit tightly onto it. The disks were made from .015 inch thick plastic and punched out with a Waldron #3 punch.



The crane was positioned onto the base, held in place with a paint bottle and super glued to the base at the frame connection points on the disks.



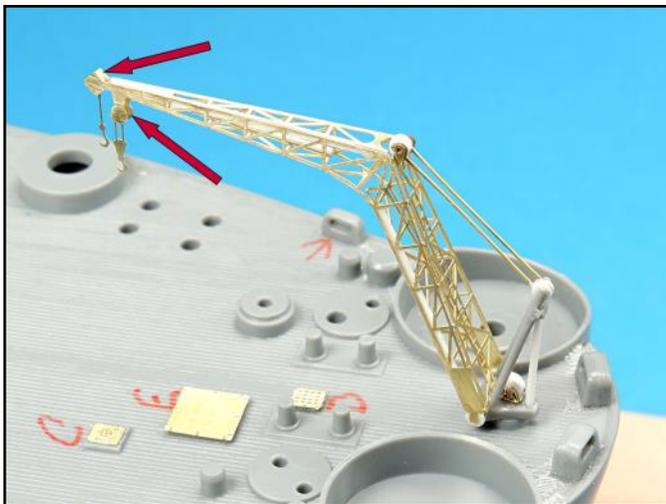
Note the positioning of the frames stubs on the disks.



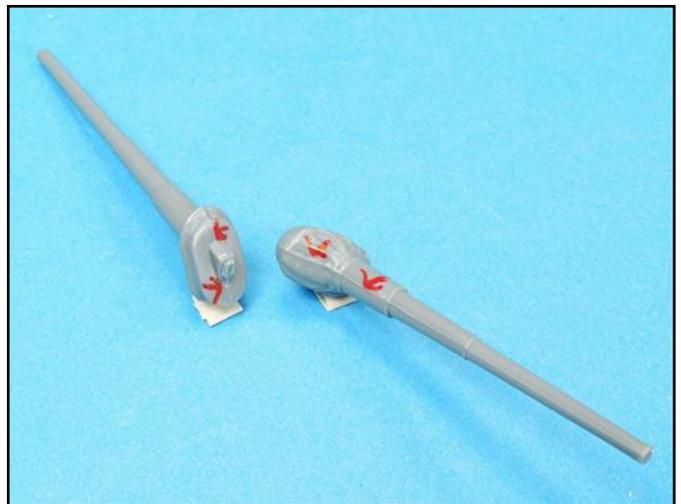
The kits "A" frame was modified and .010 inch thick disks were glued to the sides of the photoetch pulleys to give them more depth. The photoetch cable frame is from the Eduard detail set with a Waldron #4 Punched disk.



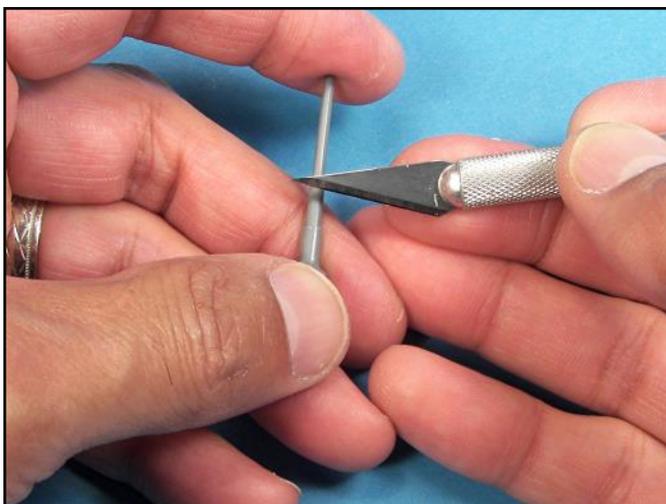
The photoetch pulley assembly and the cable frame have been super glued into place. A strong back for the "A" frame was made from .030 inch diameter rod and the tiny photoetch bracing (top arrow) came from the Eduard set.



Additional tiny disks were inserted into the openings where the aircraft hook photoetch parts attach to. The photoetch parts were then slide in between the disks.



The 16 inch guns have mold lines around the entire perimeter of each gun.



Careful light scraping with a sharp number 11 X-Acto blade held at approximately a 45 degree angle will remove these mold lines.



The round shape of the guns can be restored by rotating the barrels inside 000 steel wool pads. This also polishes the plastic.



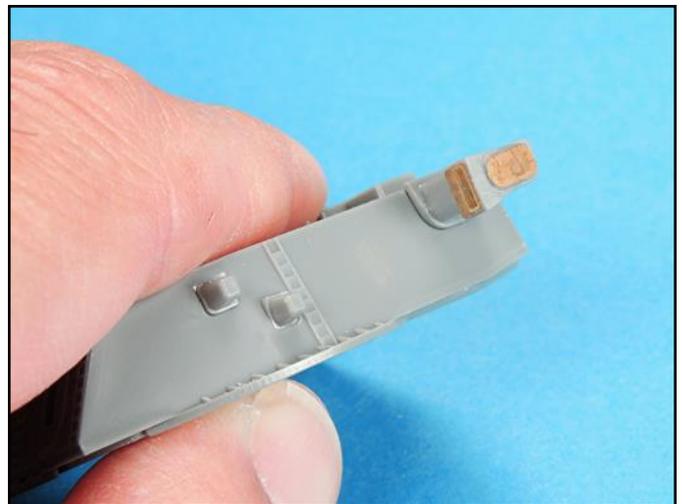
Center punch the tip of each barrel and drill out the tips. Start with a .028 (#70) inch bit and work up to a .039 (#61) inch bit. If you try to remove too much plastic too fast you will collapse the sides of the plastic ruining the part.



The barrels are complete and now it is time to work on the turrets



The turrets are cleaned up and all the remaining tree stubs have been removed.



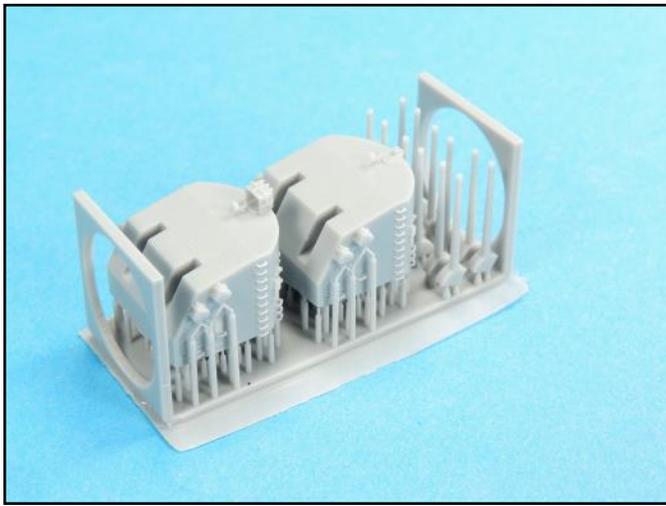
Eduard photoetch details were added to the optical range finders.



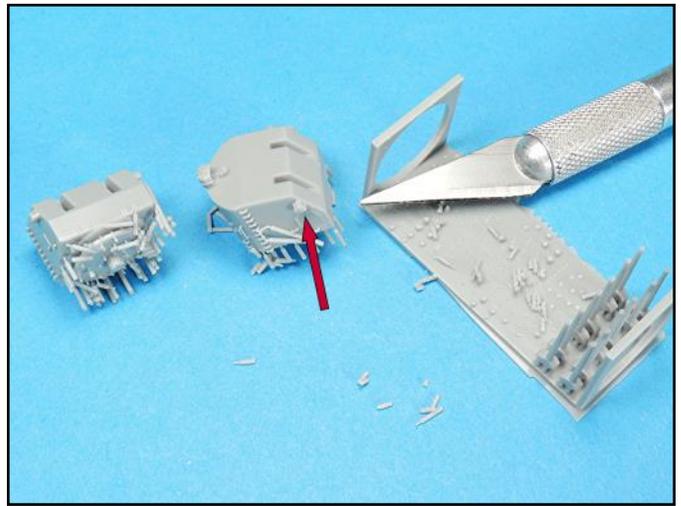
Some of the barrels had their back ends modified so that the individual barrels could be positioned at different elevations. Rod was added to the backside of the barrels and corresponding holes drilled into the turrets for positioning.



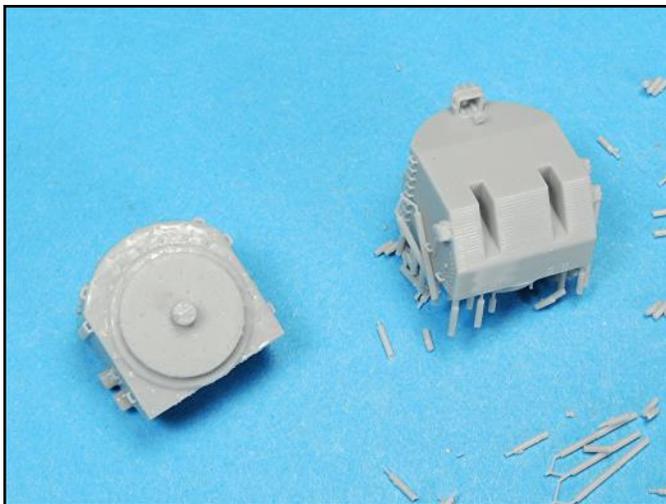
The tree stubs on the 16 inch turret 40mm Bofor platforms are attached to the upper edges of these parts where there is a lip. Use snippers to remove the stubs and then carefully smooth the edges with a sanding stick.



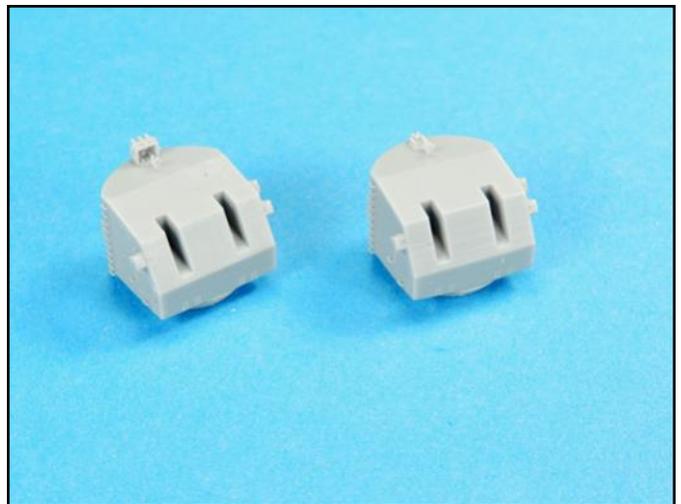
The Black Cat Models 3D printed 5"/38 turrets come with two sets of barrels so you can position them in different elevated positions.



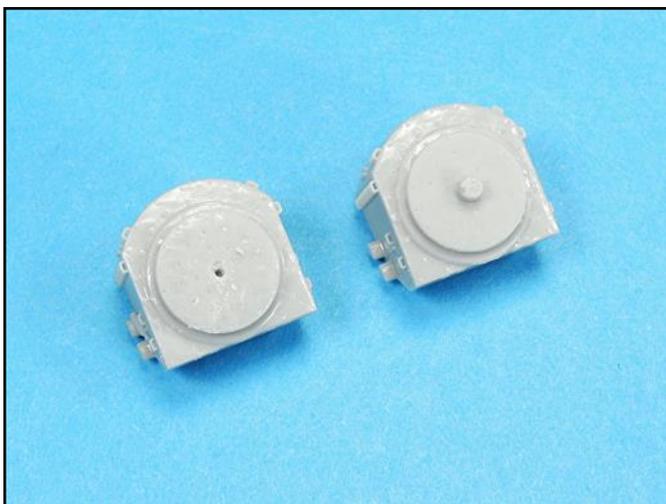
Cut the 3D stems that are connected to the optical ports first then slice off the remaining ones at the base. Also, cut the stems connecting the barrels at their bases.



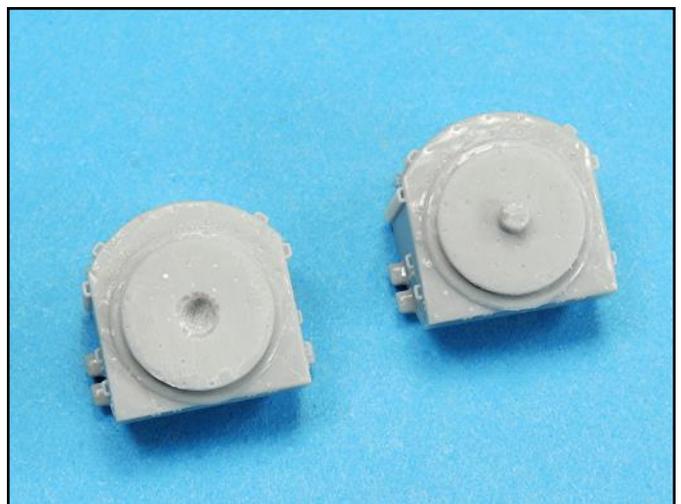
Once the turrets are removed, you can cut the stems off at the base of the turrets with the tip of a number 11 X-Acto blade.



There are tiny gun sights at the tops of the turrets just in front of the hatches so be careful not to damage them.



The positioning stubs at the base of the turrets have to be cut off and holes drilled for their locations on the Missouri. The bases have a slight concave shape so run them across a piece of sandpaper to flatten them out and drill a pilot hole.



The holes need to be progressively enlarged to .092 inches in diameter. If you try to remove too much material at once, it will crack around the edges.