MIKE ASHEY PUBLISHING

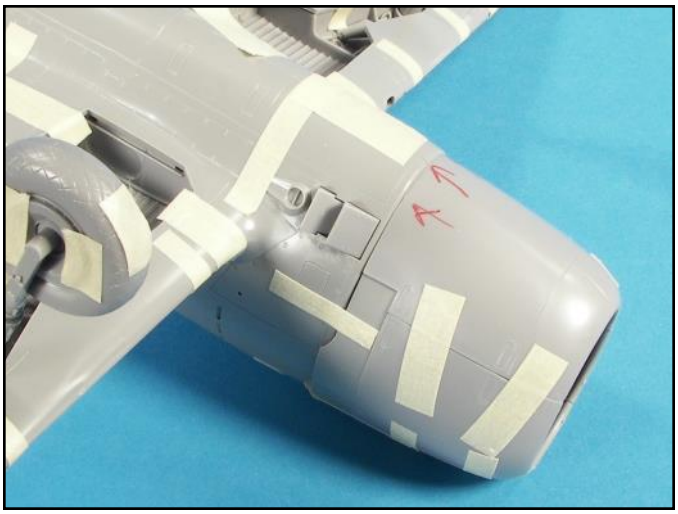
COMPREHENSIVE SERIES SCALE MODEL AIRCRAFT MANUAL
NUMBER 3

BUILDING & DETAILING THE HASEGAWA 1/32 SCALE P-47D THUNDERBOLT

There are several fit issues that you will run into as you build this kit and the challenge is to figure out how to fix them. The individual wing panels and gun covers on the leading edges of the wings need some tweaking to get them to fit correctly. The wing-to-fuselage fit on both the upper and lower sides will require some work. There is also a step between the underside of the engine cowling where it meets the underside of the fuselage. The front of the fuselage is either too wide from top to bottom or the cowling is too shallow. There are also sink marks along the lengths of the upper wings which need to be sanded out. The decal sheet has excellent decals and they respond well to decal setting solution. I used Testors model master enamel paints for this project. For detailing the cockpit, I used Eduard's pre-painted self adhesive placards, their standard brass photoetch sheet, and their pre-painted seat belts. To fix some of the fit, issues I used Evergreen plastic strips of various sizes and shapes.

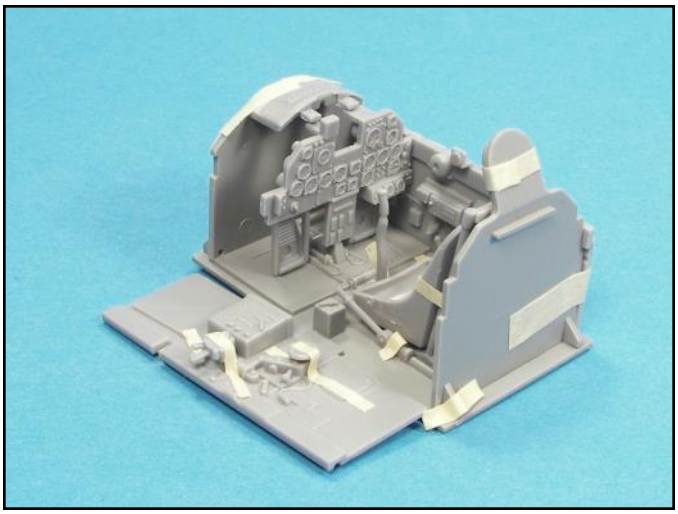
All the major components were cleaned up and taped together to check the fit and identify areas that would need attention.

I also checked the fit of the canopy windscreen and found that the port side had a gap which would need to be filled with .010 inch strip.

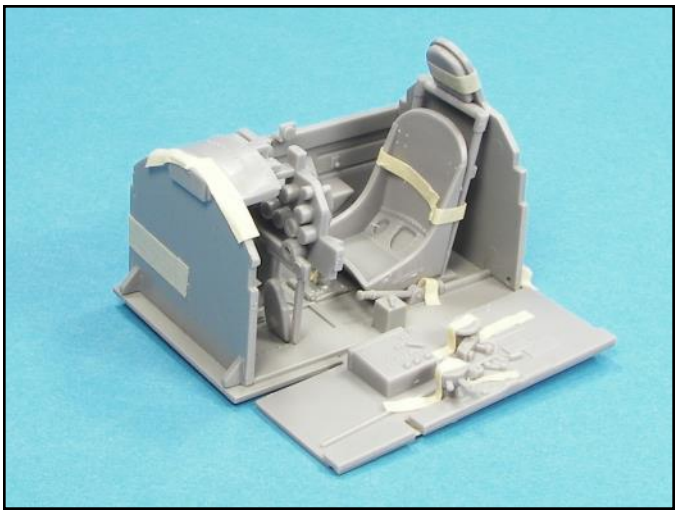


The step between the fuselage and the engine cowling is very noticeable and will need to be fixed by modifying the cowling.

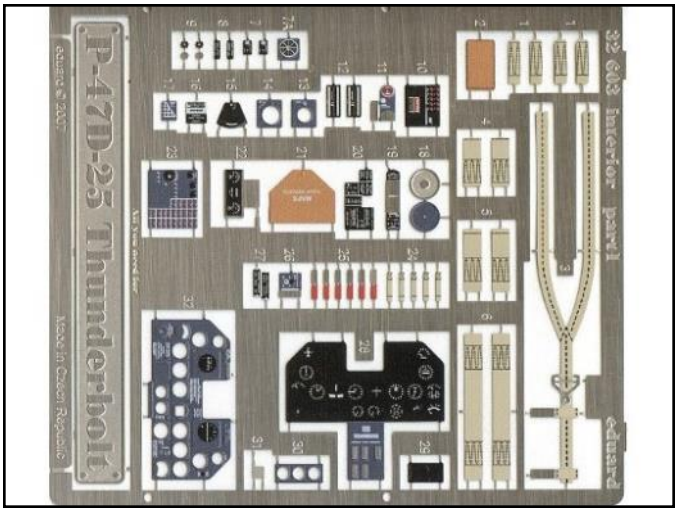
There are stringers on the inside of the wings to add strength however there are also depressions on the wings surfaces which will need to be sanded out.



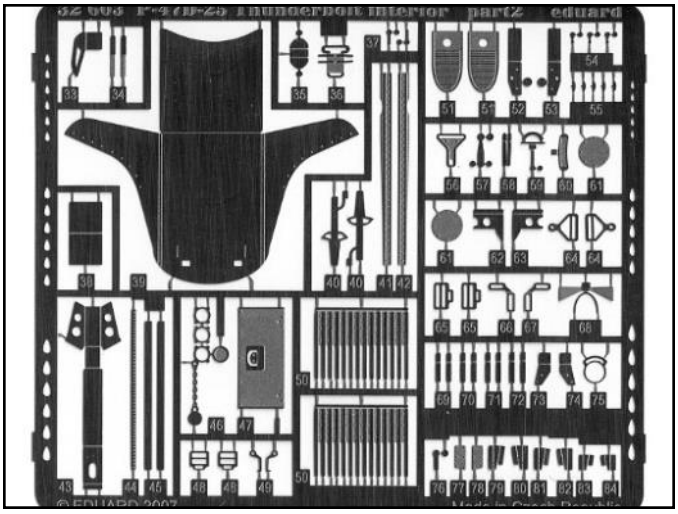
The cockpit detail is impressive however, the Eduard standard brass and pre-painted placards and seatbelts will create a realistic cockpit.



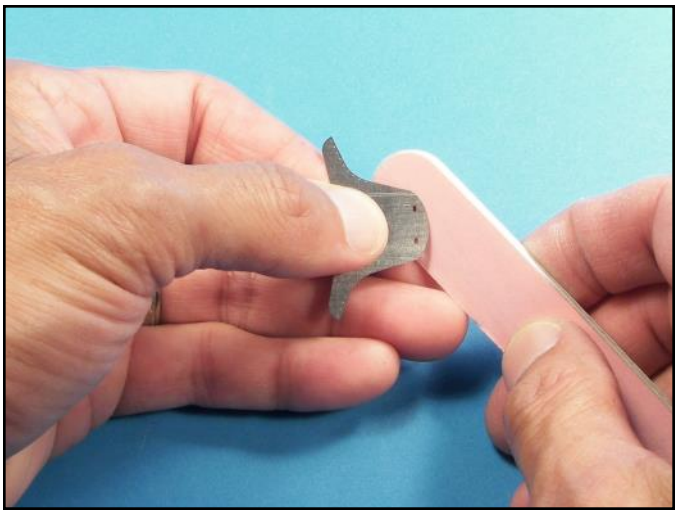
The Eduard brass sheet comes with a pilots seat but I like using combinations of plastic parts and brass details. I planned on thinning the plastic seat and adding the Eduard photoetch details to it.



The Eduard pre-painted self adhesive placards have an excellent level of detail and they are easy to assemble.



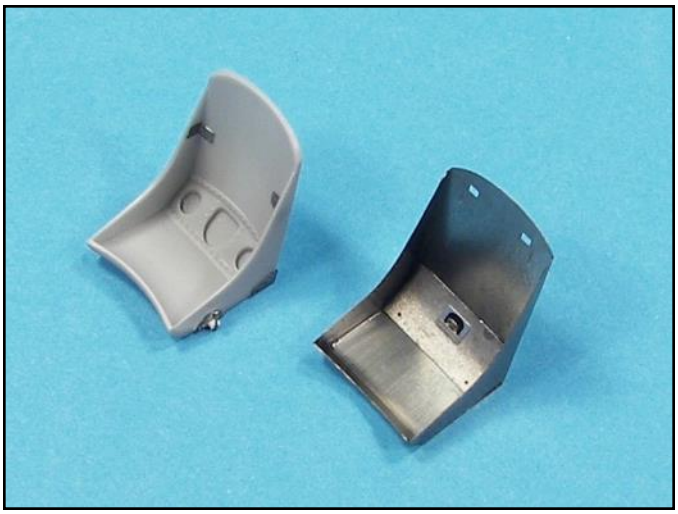
The Eduard standard brass detail set will be used in combination with the kits plastic parts.



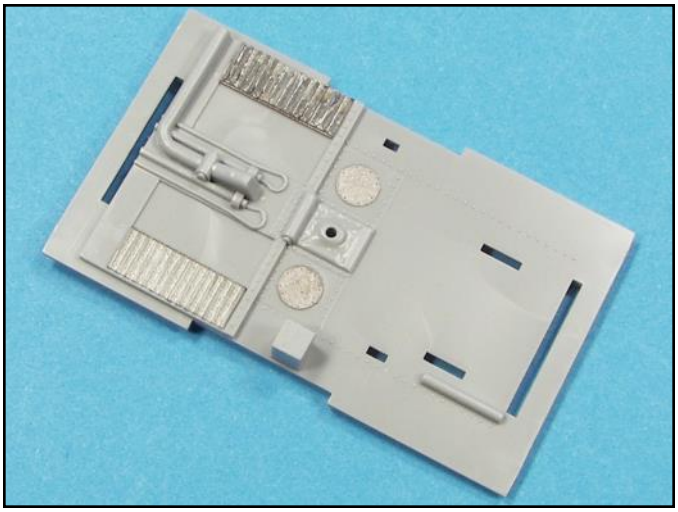
The brass photoetch seat was cleaned up using a sanding stick and then bent into shape and super glued together.

The kits seat and the Eduard photoetch seat both look good, but I used the kits seat.

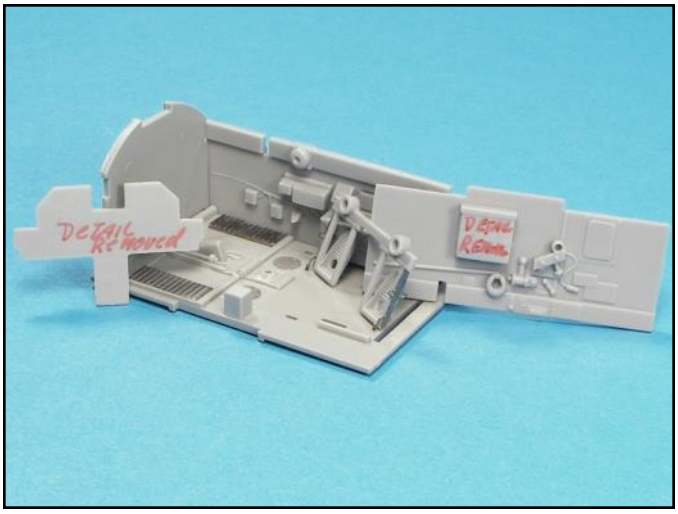
I thinned the sides and the back of the kit supplied seat by running it across a stationary piece of wet sandpaper.



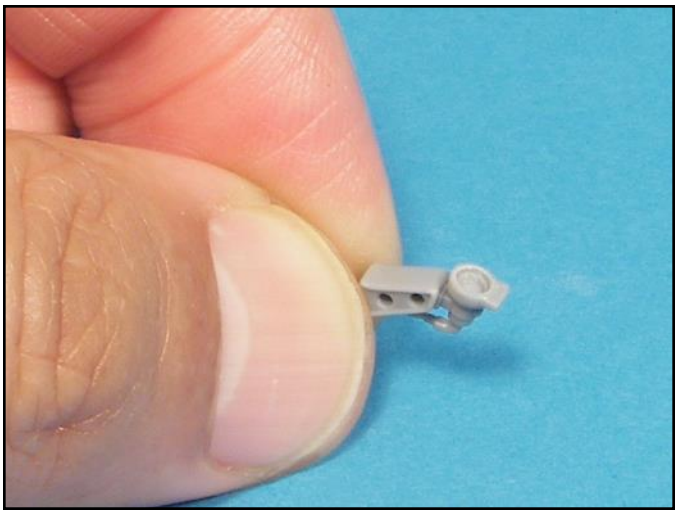
With the photoetch details added, the kits seat looks much better. It is a stronger assembly than the photoetch seat.



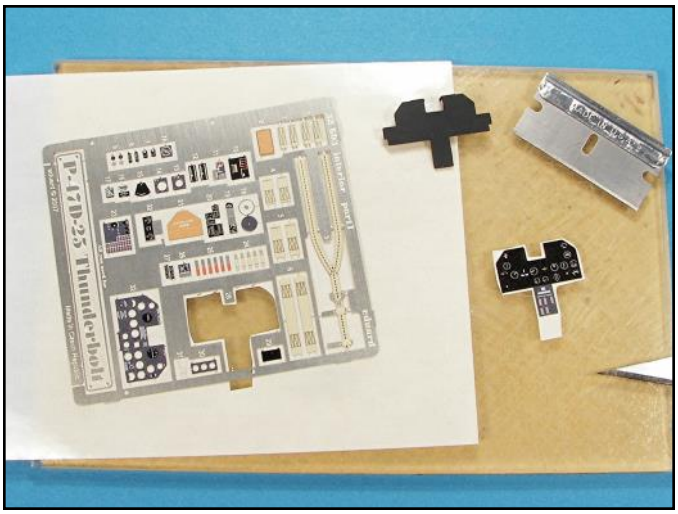
The Photoetch details for the flooring of the cockpit were run across a piece of sandpaper to clean the gluing surfaces and then super glued to the cockpit flooring.



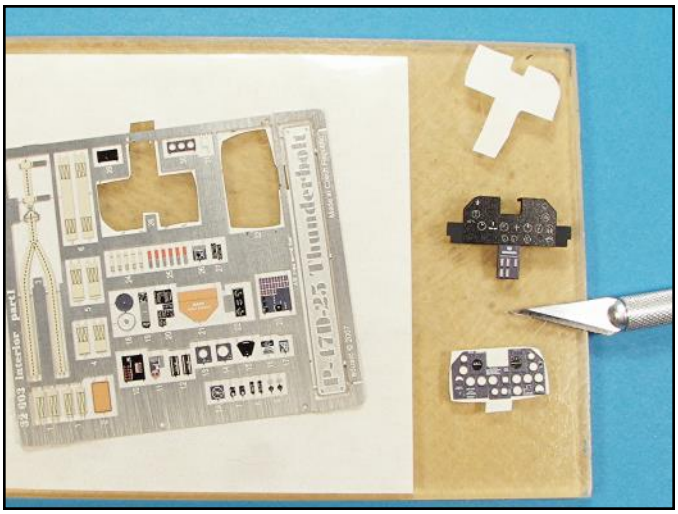
After carefully studying the Eduard pre-painted placard's instructions, I sand off the molded on surface detail for the instrument console and the fuse box below the throttle quadrant.



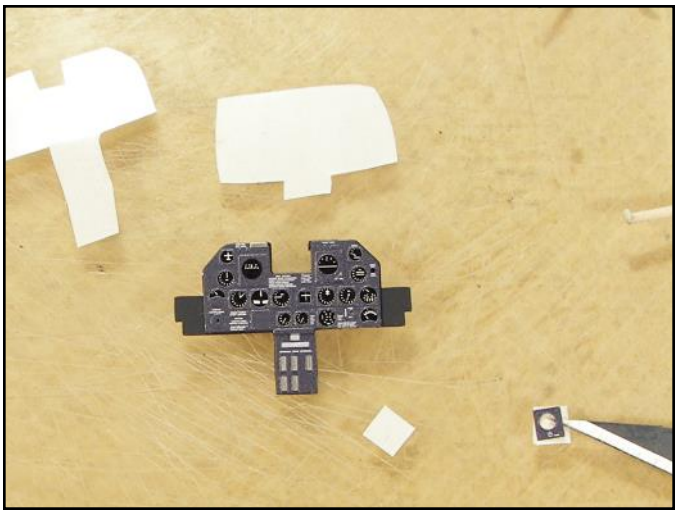
Instead of using the photoetch gun sight, I modified the kits part. I deepened the retainer for the reflective lens and drilled out the frame holes.



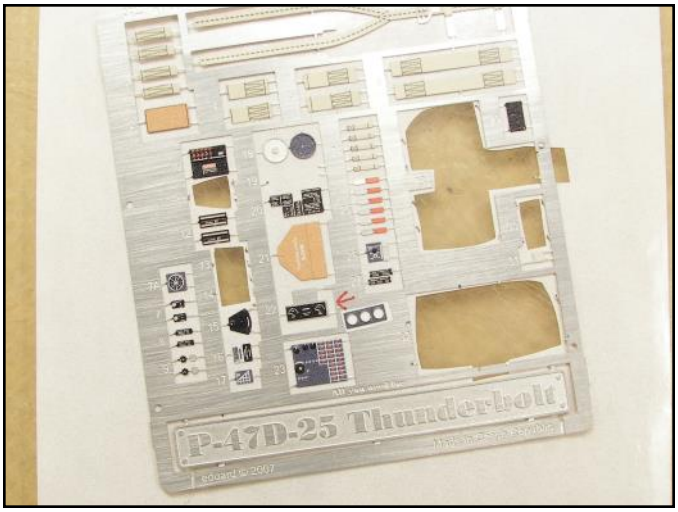
The self adhesive placard sheet comes with a wax paper backing to protect the glue. When cutting out each part, leave some extra backing so you can easily peel it off. The kits console face was painted black.



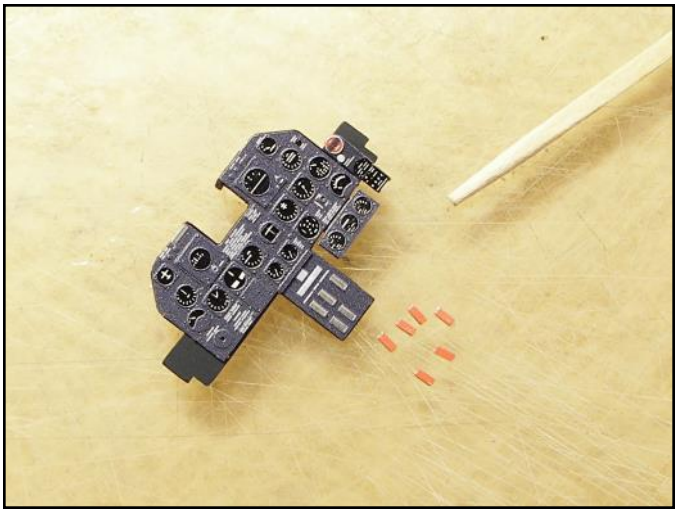
The Eduard console with the instrument faces was positioned onto the kits console and then pressed down to activate the glue. The next step was to cut out the consoles top layer, which has the instrument bezels.



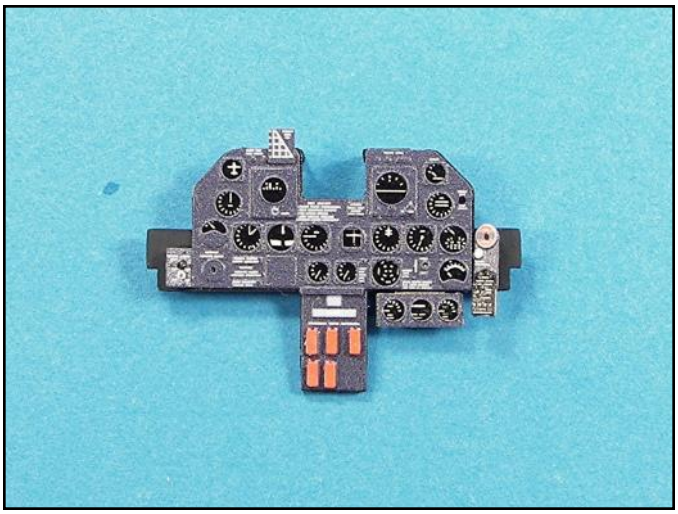
The top layer of the console was then positioned and pressed down. Be sure the holes for the instrument dials line up correctly. To position small parts, use a toothpick with a tiny piece of masking tape attached to the tip.



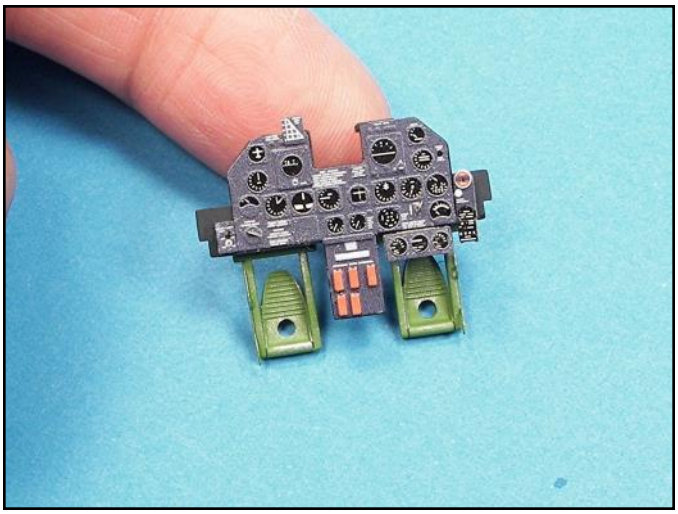
For small parts with two layers, I found it easier to remove the top layer and attach it to the bottom layer and then remove the completed assembly from the photoetch sheet.



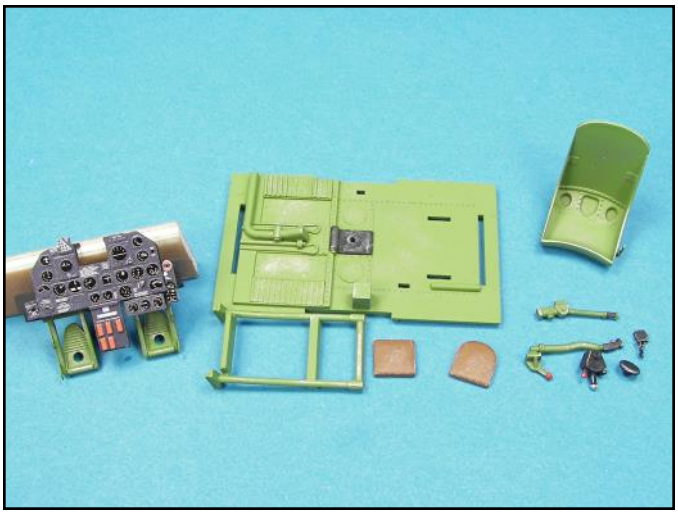
The red switches were folded over and the edges lined up. To attach them, I used tiny drops of white glue. To pick up small parts, flatten the end of a toothpick, moisten it and then pick up each part and position it on the console.



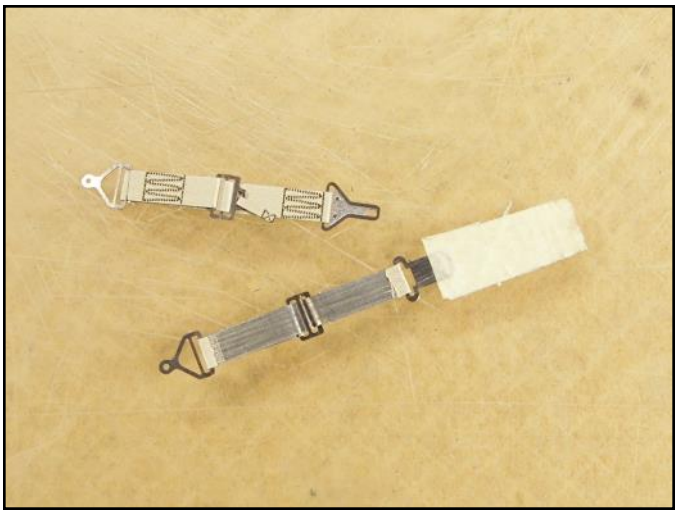
The completed console looks very realistic and it only took about an hour to complete the entire assembly.



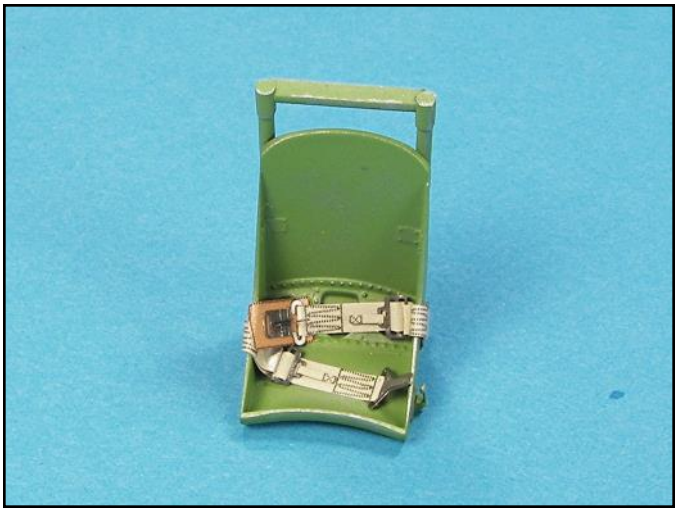
The last step was to add the rudder pedal assembly. By using the kits console as a backing for the Eduard placards, it made it easy to attach the rudder pedals.



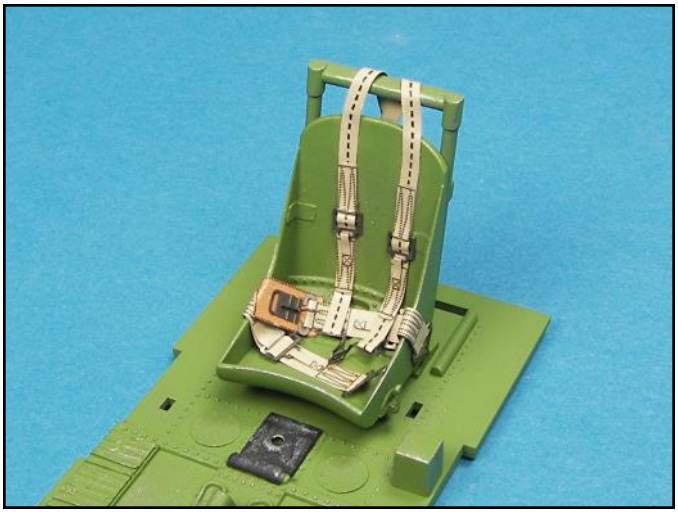
Combinations of the kit supplied parts along with Eduard photoetch parts and pre-painted parts can really dress up a cockpit and add a level of realism, not achievable with just painting the kits parts.



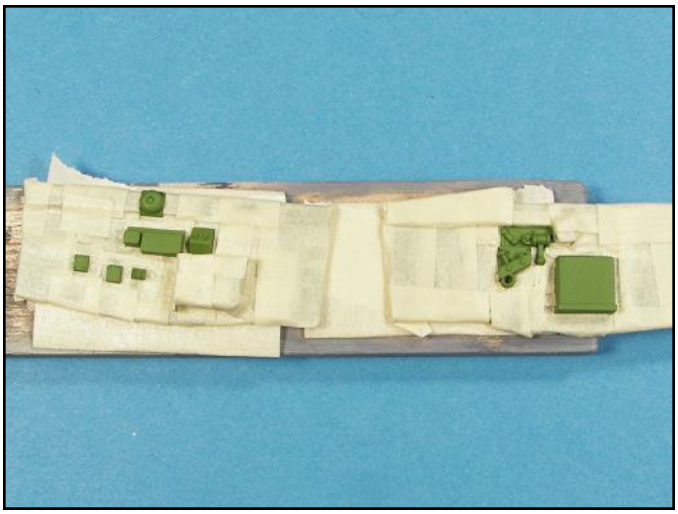
Pre-painted seat belts are easier to assemble if you secure one buckle end and then assemble the belt. To protect the painted surfaces while bending, place masking tape on the inside of the flat surfaces of flat nosed pliers.



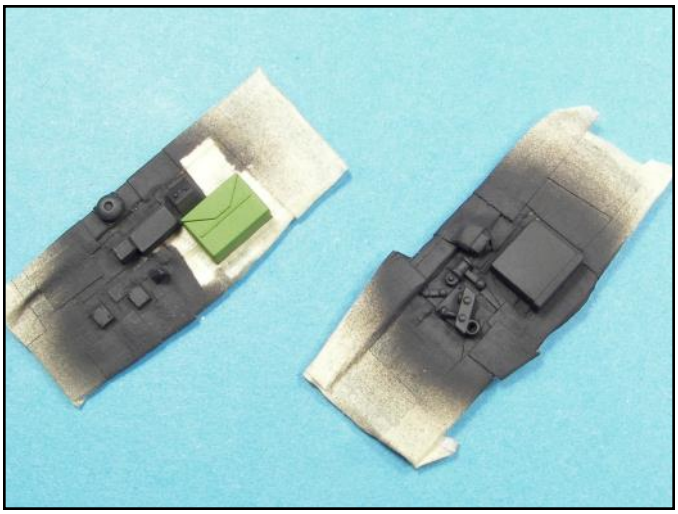
The lap belts are usually positioned first. They should be form fitted around the seat edges and onto the seat using a round toothpick with a flat end. After they are positioned apply tiny drops of white glue or super glue.



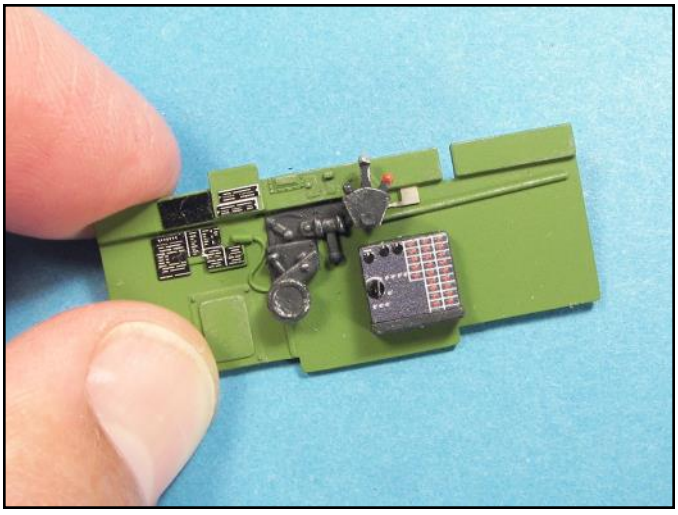
When positioning the shoulder harness, be sure they appear to be draped over the seat frame. Here again form fit them over the top of the seat frame, then onto the seat backing and then the seats base.



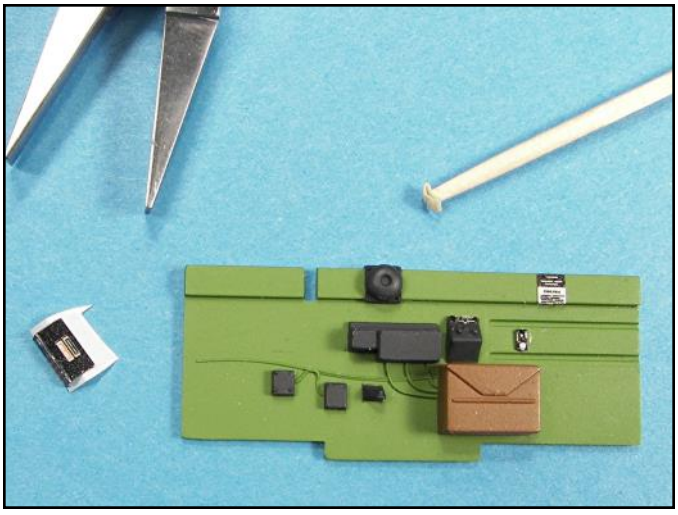
Use small strips of masking tape around surface details that will be airbrushed. To prevent paint bleeding, run the tip of sharp pencil around the perimeter of each part to push the tape down.



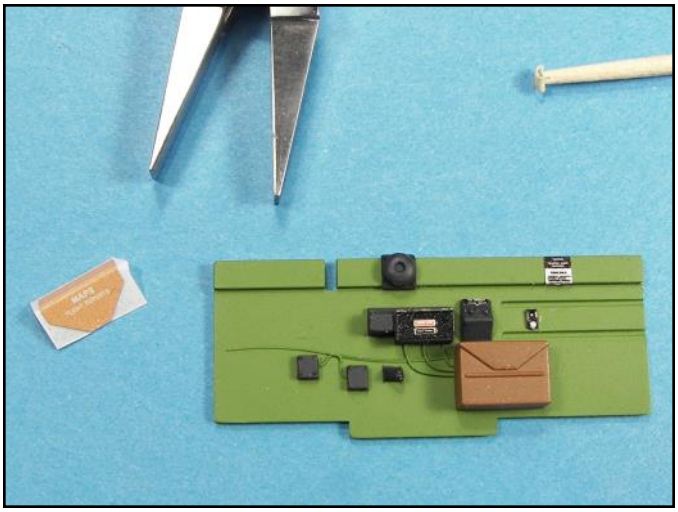
All the parts were painted flat black except the map, case which will be painted brown. The flat black painted surfaces will be masked and then the map case will be airbrushed. This technique is called paint layering.



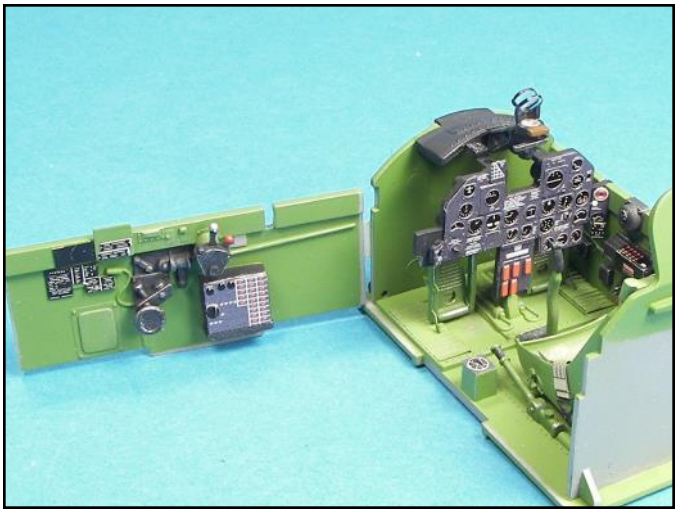
The completed left side of the cockpit is now complete. The combination of kit parts, pre-painted placards, careful airbrushing and drybrushing with silver paint really enhanced the appearance of this assembly.



Flat nosed pliers were used to bend small parts. The inside faces of the pliers have strips of tape to protect the painted parts. After the parts were bent into shape, the backings were removed and a toothpick was used to position them.

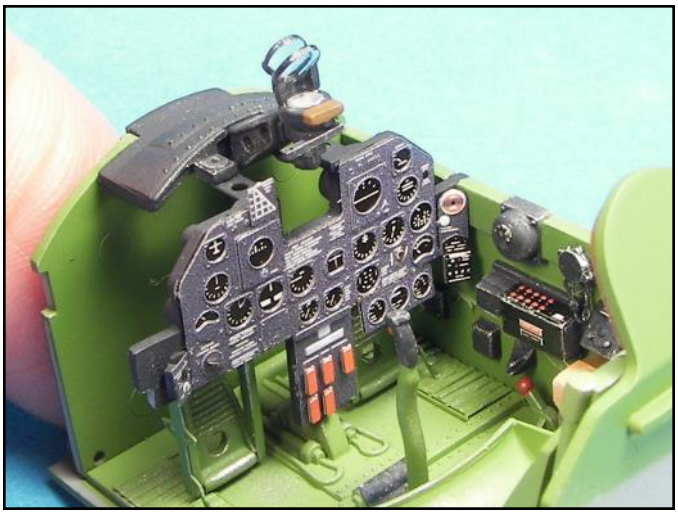


Sometimes you need to use two toothpicks for attaching small parts. Use one with tape on the tip to pick up and position the part. The second one is used to hold the part in place while you pull off the one with tape on it.

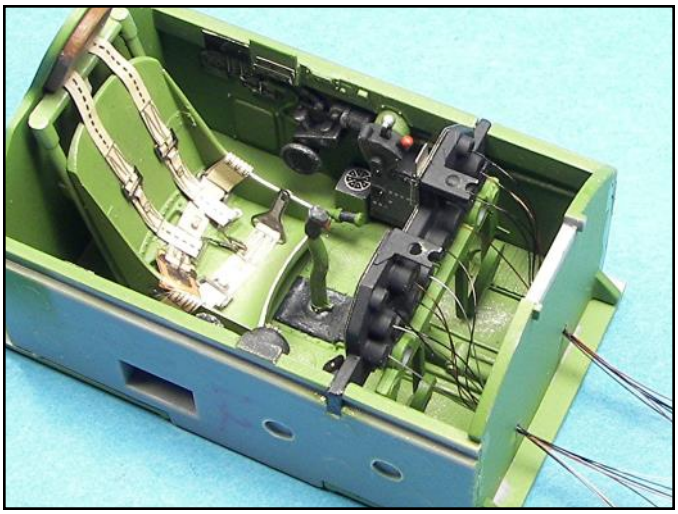


Once all the sub-assemblies are complete, it is time to start putting the cockpit together.

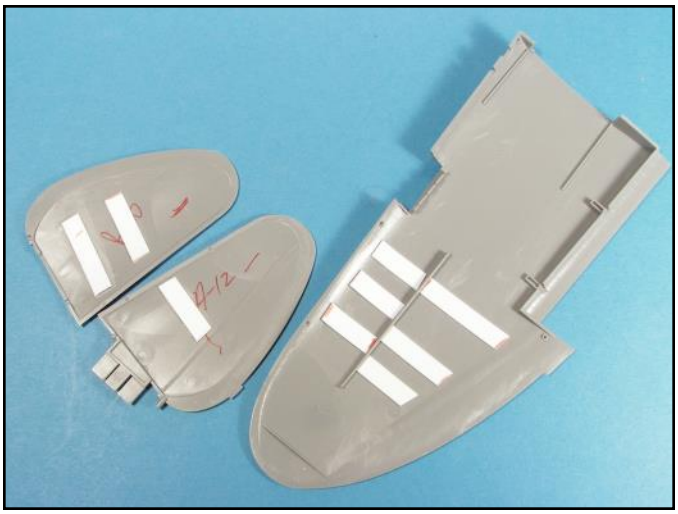
The seat belts look really good and their positioning adds yet another layer of realism to the overall appearance of the cockpit.



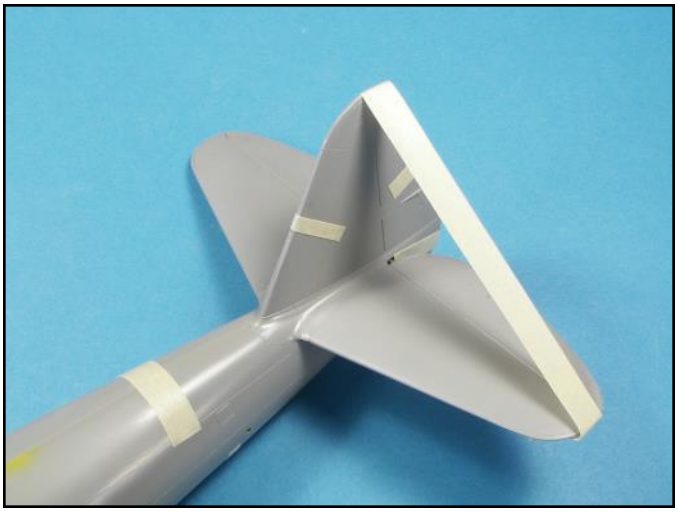
The gun sight and its reflective lenses in combination with the instrument console make for a busy looking and highly detailed cockpit interior.



Since the back of the instruments would be visible, I added wiring using nylon thread colored with an indelible marker. I should have used several different colors to make the wiring really stand out.

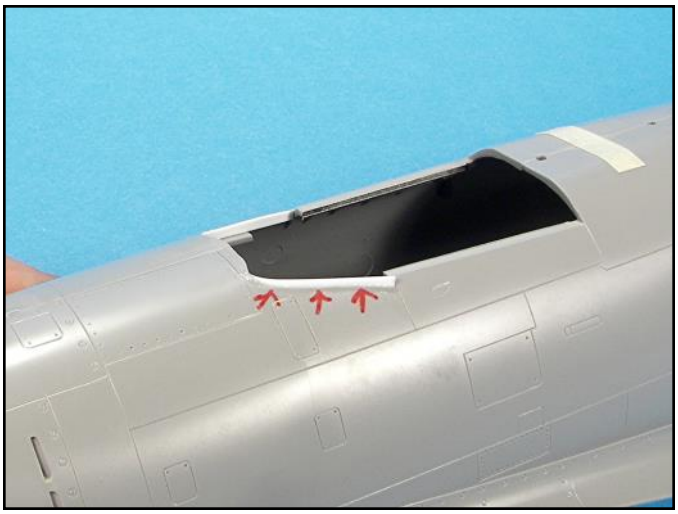


After the cockpit was completed, I turned my attention to the assembly of the wings and control surfaces. I laminated plastic strip to the inside areas to add strength to the assemblies to prevent flexing.

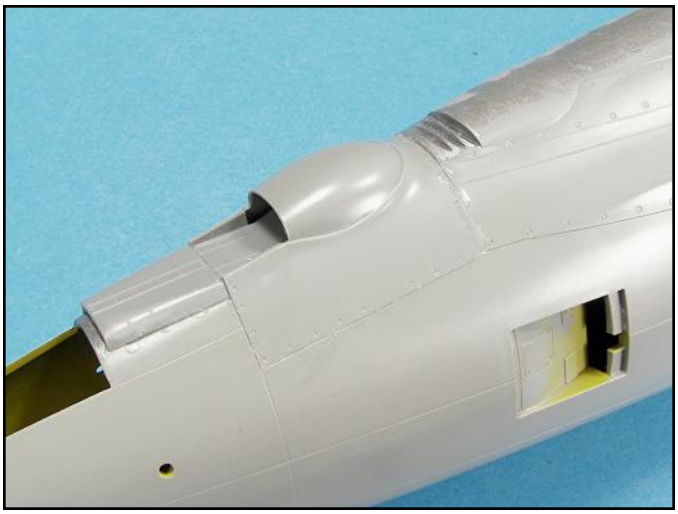


The seams on the elevators were minimal and I then taped the fuselage together and glued them in place. After the glue dried, I separated the fuselage halves and worked on the attachment areas between the elevators and the fuselage.

Use masking tape to protect surface details around the areas that you need to sand. The elevator attachment point fit was tight and there was minimal seam work to do.

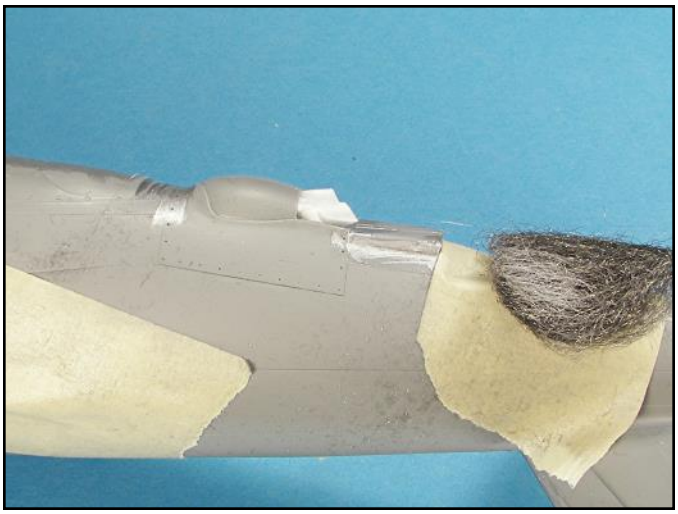


To fix the void on the port side cockpit area for the windscreen, I laminated .010 inch thick strip and then cut and shaped it. After this was completed I installed the cockpit assembly and glued the fuselage together.

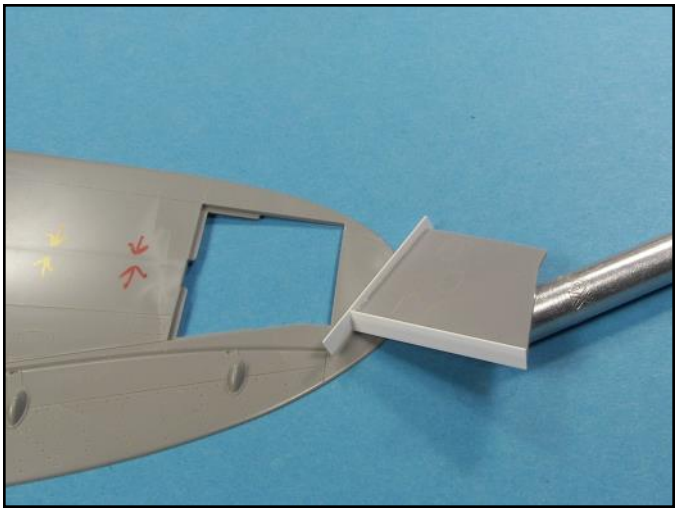


The supercharged part fit snugly in place, but there was some seam work needed in order for the surface to be smooth and bump free. The port side of the part is almost flush with the surrounding surface.

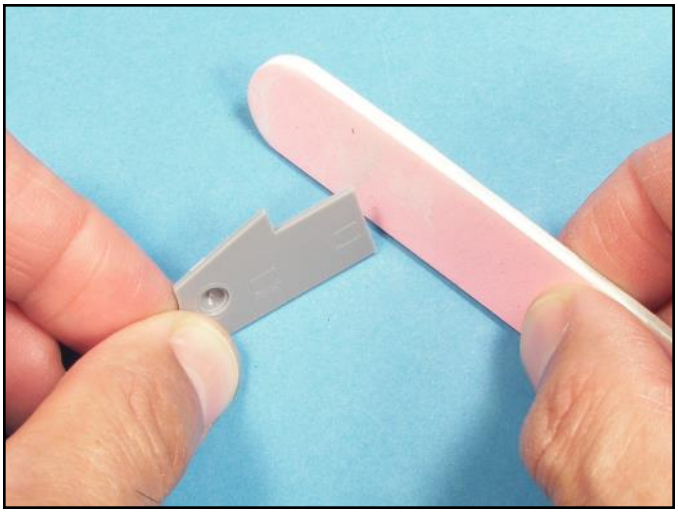
The starboard side does not sit flush against the surrounding area and will need sanding and some surface detail restoration.



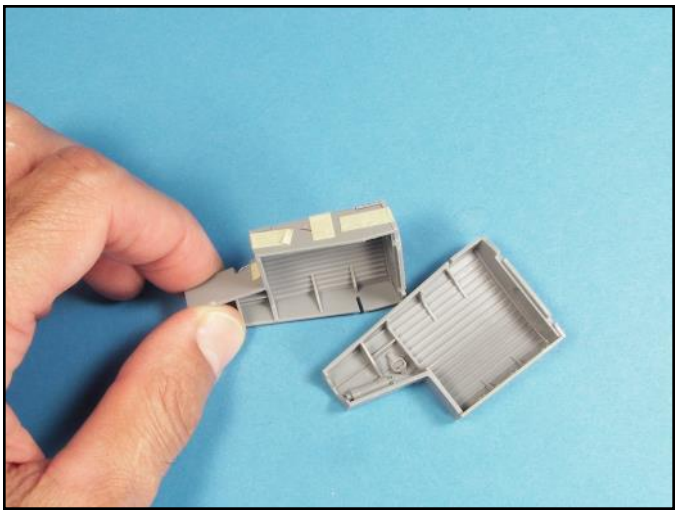
I used masking tape and tissue to keep sanding dust and steel wool particles from getting inside the fuselage. The 0000 steel wool was used to polish the plastic and remove any remaining surface scratches.



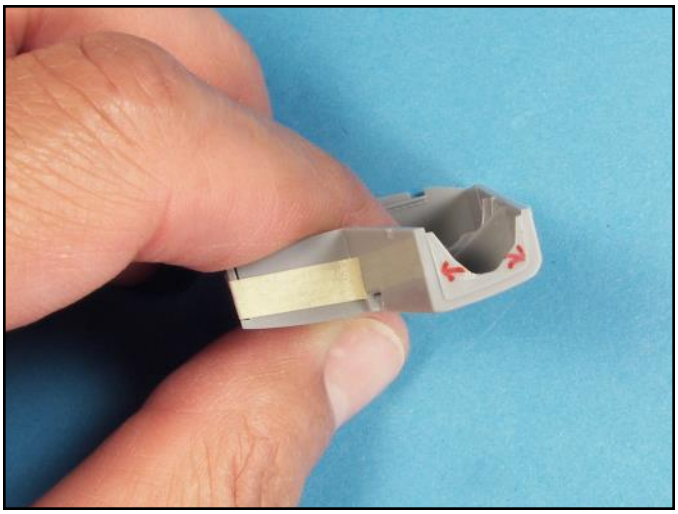
To get a tight fit on the wing panel I had to laminate strips of plastic around the edges.



Some wing parts just needed some minor sanding to get them to sit tightly in place.

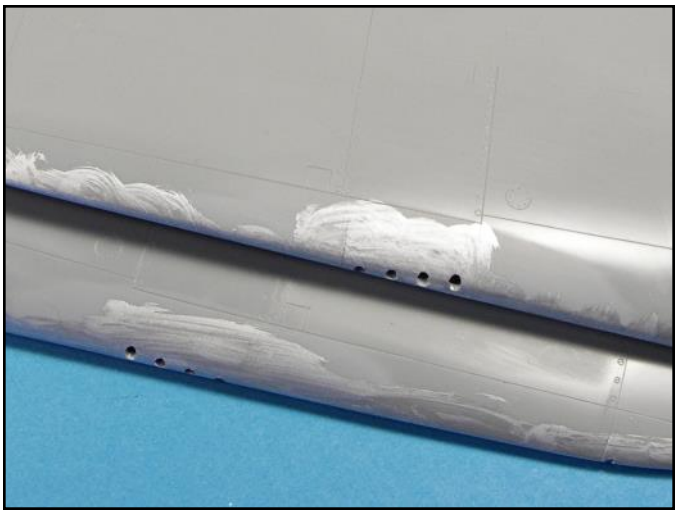


I assembled the landing gear wheel wells with masking tape and then ran tiny beads of super glue along the seam lines.

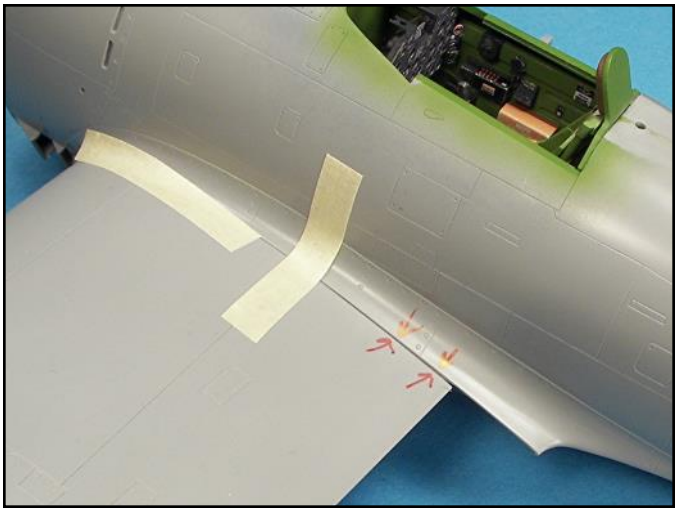


To get the wings to fit correctly against the fuselage you will need to remove this raised surface on the ends of the landing gear bay assemblies.

The covers for the wing guns did not fit well on the leading edges of the wings. It took several iterations of scraping, sanding and applications of super glue to get them contoured correctly.



Using Testors silver paint to check seam work is the best way to identify if any voids need to be filled or to detect any residual super glue.

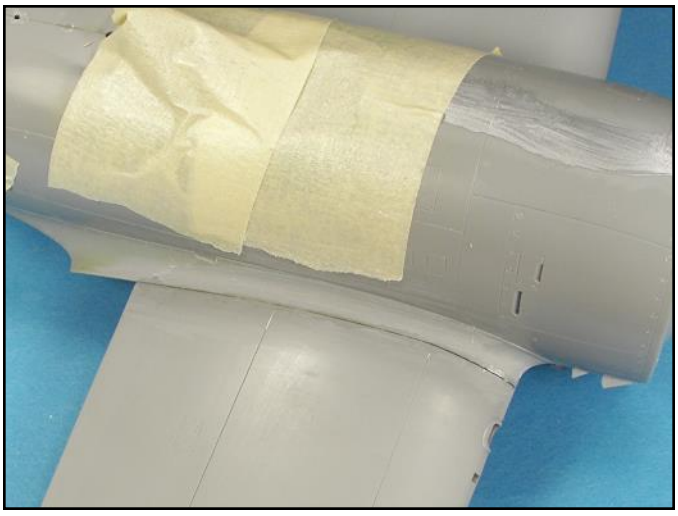


The step on the aft wing area was being caused by something preventing the wing from sitting correctly. This was a problem for both wings.

There was also a gap on the undersides, sink marks and a height difference between the wing and the fuselage.

The culprit was a tab on the inside area of the wing attachment surface which needed to be cut down and reduced in size.

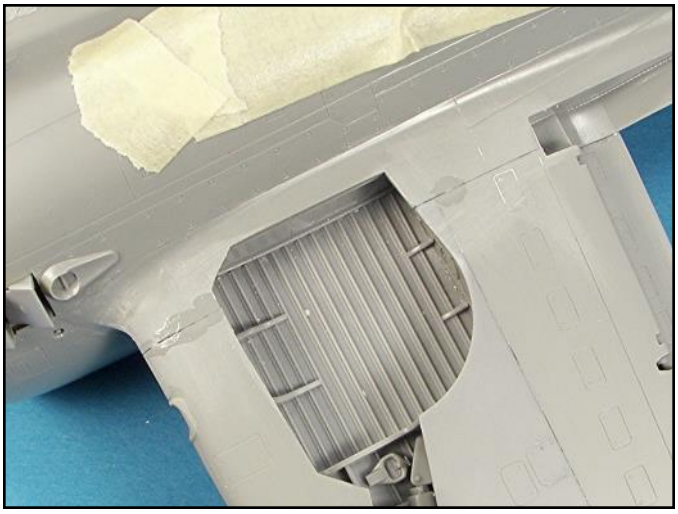
Cutting down the tab made a big difference in the positioning of the wings on both the upper and lower areas. The step was greatly reduced.



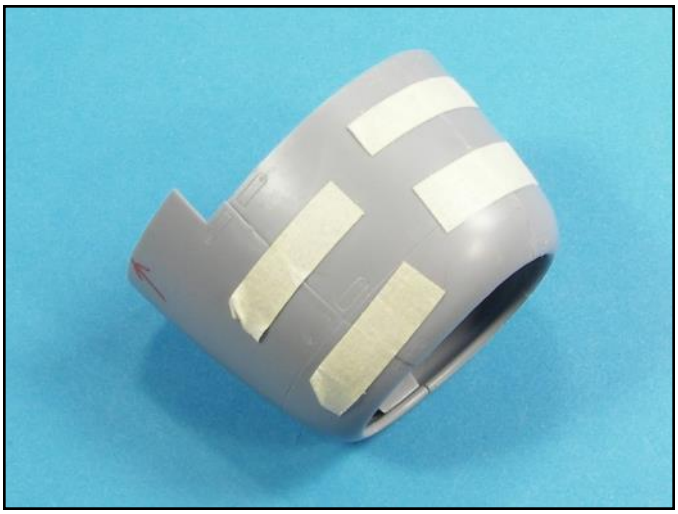
The upper wing seams were very tight and only needed a few applications of super glue and wet sanding to get them smooth.

Cutting down the tab also reduced the gap on the underside of the wings. However, there was still a difference in the height of the plastic between the wing and the fuselage that needed to be sanded down.

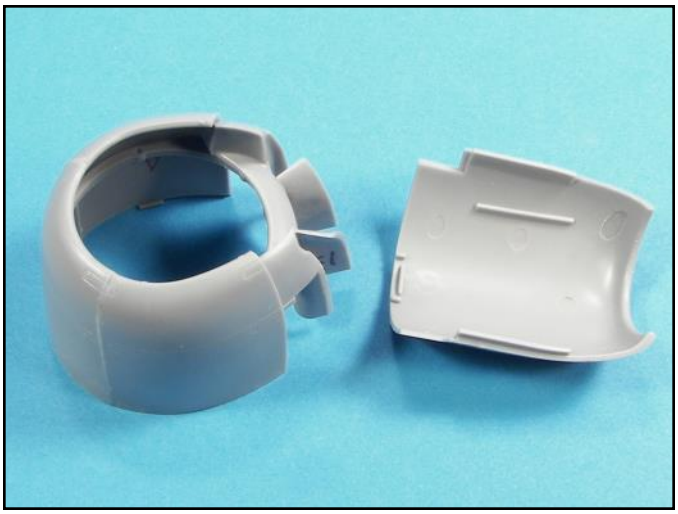
The port side wing underside had an even higher step that needed to be sanded.



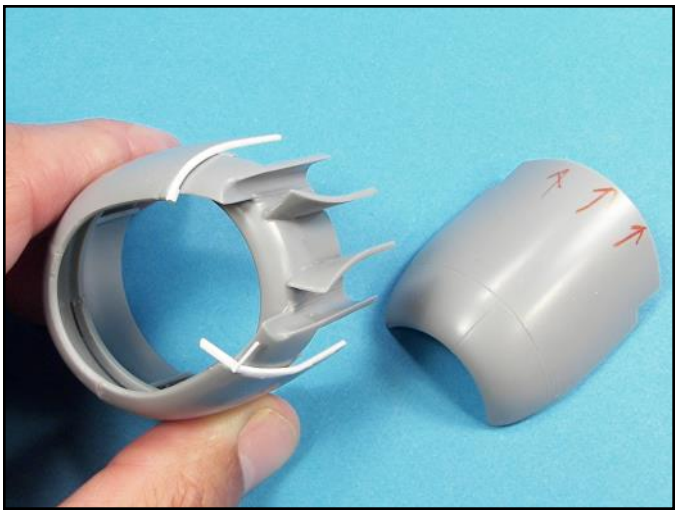
The starboard wing underside has been sanded down and more super glue has been added to areas that still needed attention. Once the super glue was sanded smooth, silver paint was applied to identify any remaining flaws.



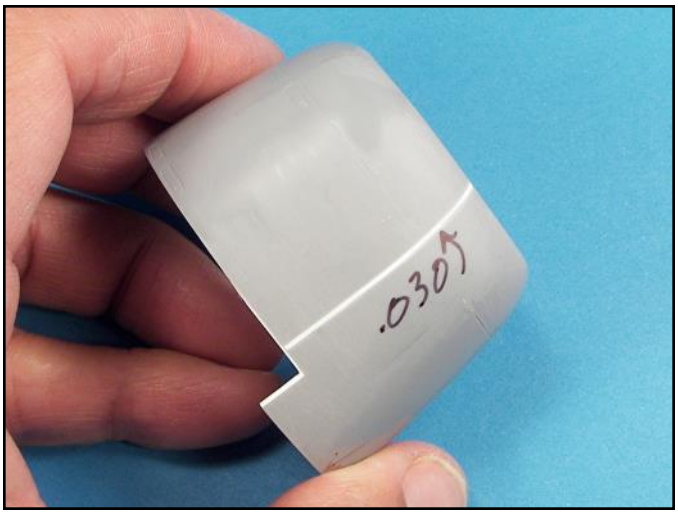
It took several attempts to get the engine cowling panels to line up correctly and taped together. I did not glue the lower panel in place, because it is the solution to the step problem between the cowling and fuselage.



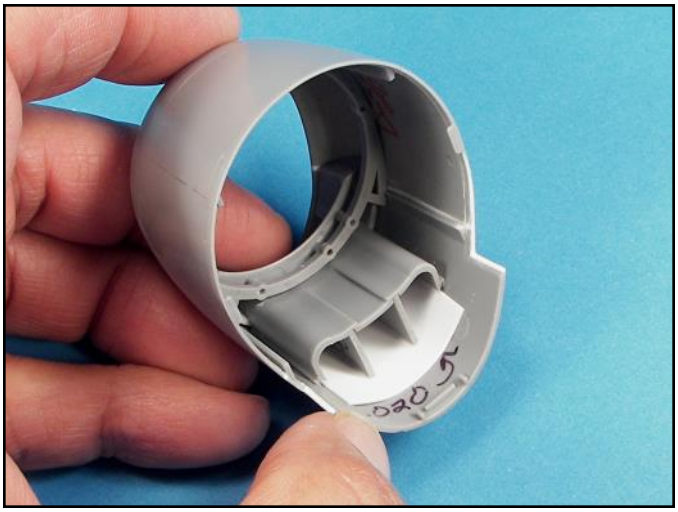
The cowling assembly is complete and the lower panel removed so that various thicknesses of plastic strip could be inserted between the panel and the rest of the assembly to test which size solved the step problem.



The thickness that worked was .030 inches. Two strips were glued in place and then cut and shaped.

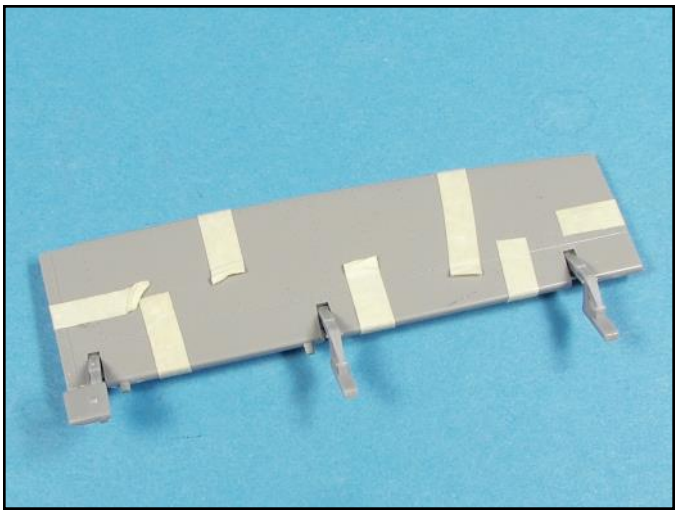


The cowling is now completely assembled and the added .030 inch strips of plastic contoured to the surrounding surface.

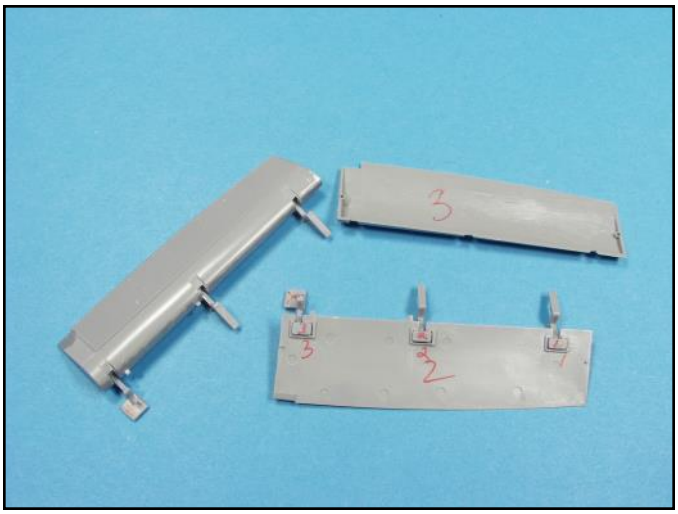


To fill the gap in the engine air duct channels I slipped a section of .020 inch thick plastic sheet in place and applied tiny beads of super glue along the edges.

A final test fit showed that the step between the cowling and the fuselage has disappeared. I had to do a little sanding along the edges of the cowling to get a tight fit.



I cleaned up the flaps and taped them together to check the fit.

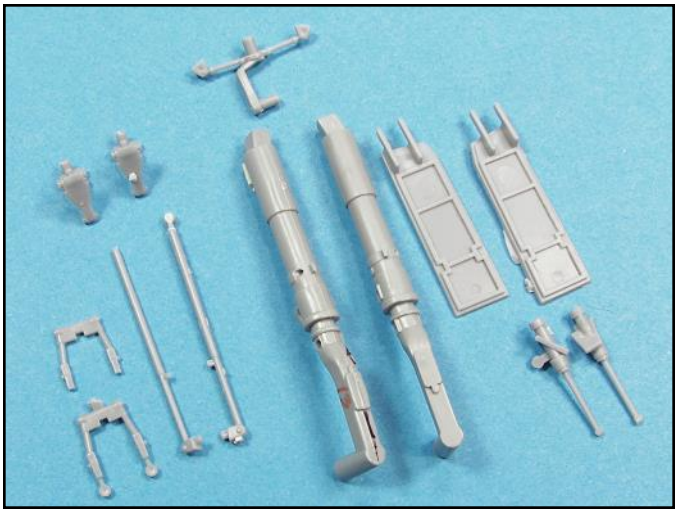


I marked the hinges so they would not get mixed up. I glued them into place and then closed each hinge, taped them together and ran a bead of super glue along the seam line. Light scraping and sanding fixed the seams.

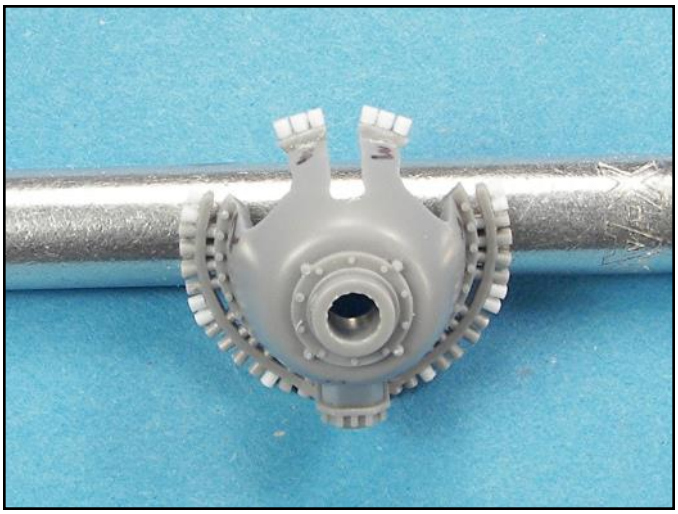
I used a sanding stick to smooth the super glue along the seam lines on the tires. I also kept the surface wet so that the tread detail would be minimally impacted by the sanding.

The bead of super glue is almost invisible on the left tire and the right tire has been checked with silver paint.

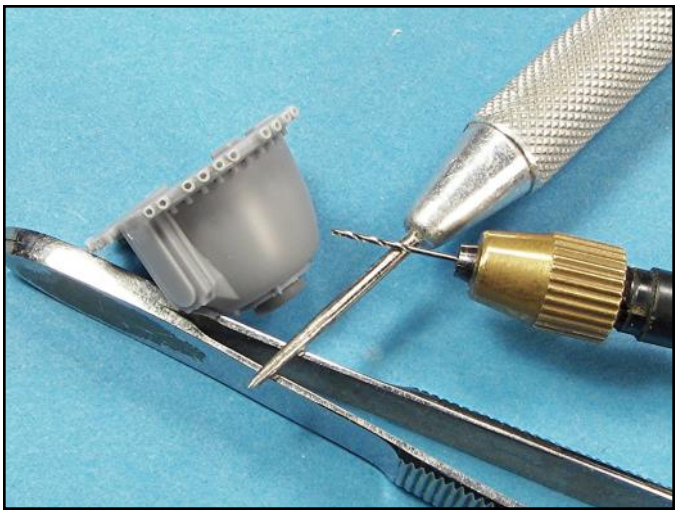
I used a jewelers saw to restore the tread. The tread on the right and left side of each tire was used as a guide for the saw. I simply ran the saw across the surface of the tire to connect the treads.



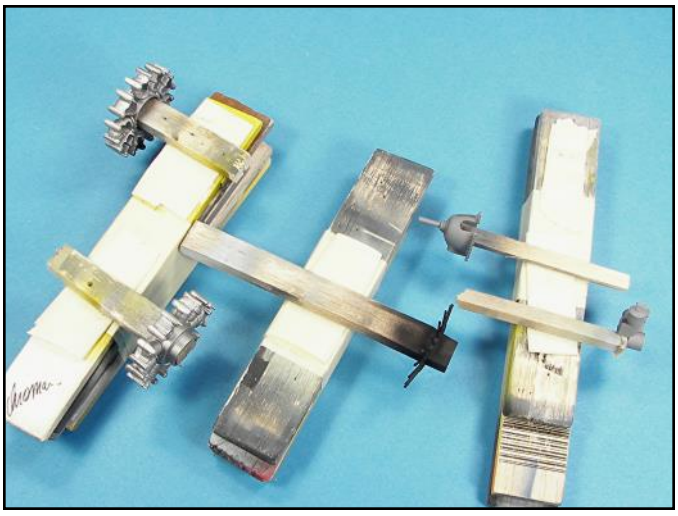
There were mold lines on the landing gear parts that needed to be carefully scraped off. I used a Flex-I File to restore the curved surface of the landing gear.



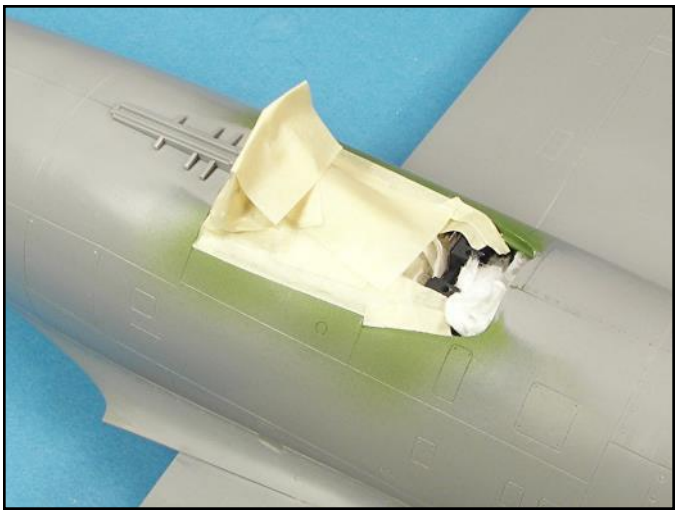
There were not enough spark plug wire attachment points on the engines collector ring for an R-2800 so I added some more with .035 inch diameter rod. Each cylinder gets two spark plug wires.



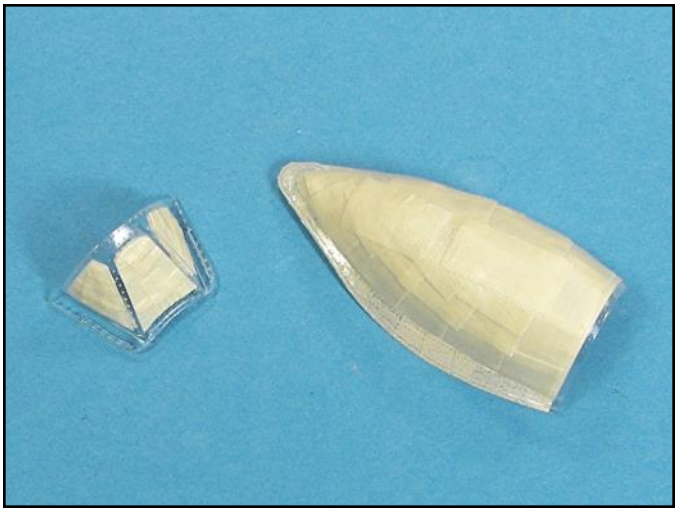
I drilled out the locations for the spark plug wires. I used soft brass beading wire for the spark plug wires. Each length of beading wire was stretched to make it stiff and then each length was cut and bent into shape.



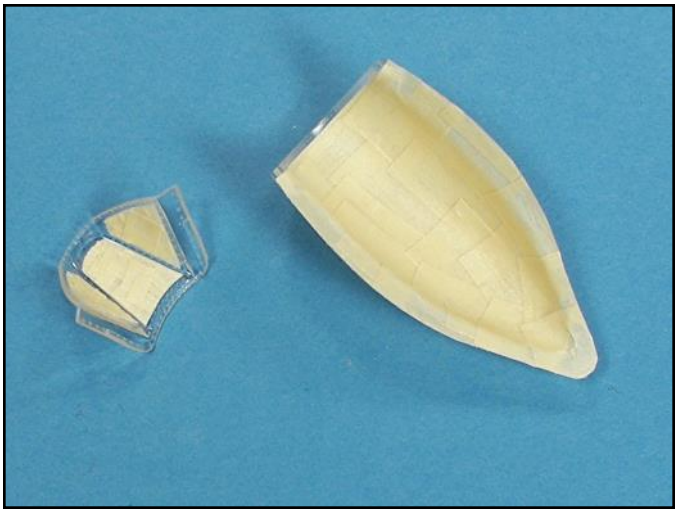
The engine parts were attached to strips of balsa wood and airbrushed. The engine was then assembled and the spark plug wires were form fitted into place and the completed sub-assembly was set aside until installation.



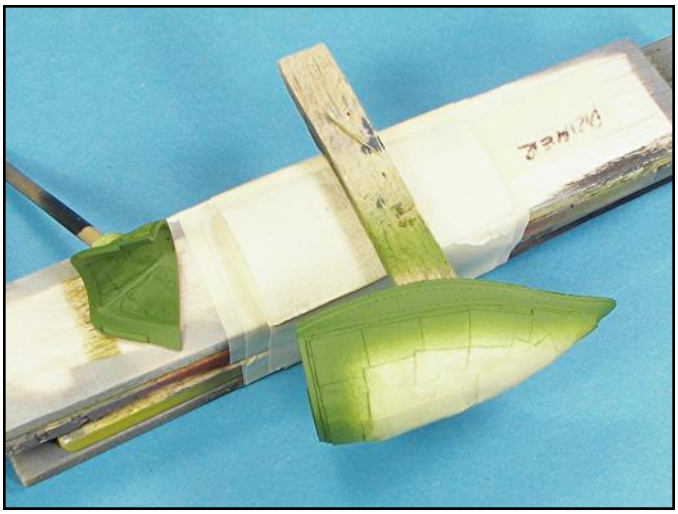
I restored the panel lines on the fuselage and the wings and then masked the cockpit for painting. I primed the model and then turned my attention to the clear parts and the propeller.



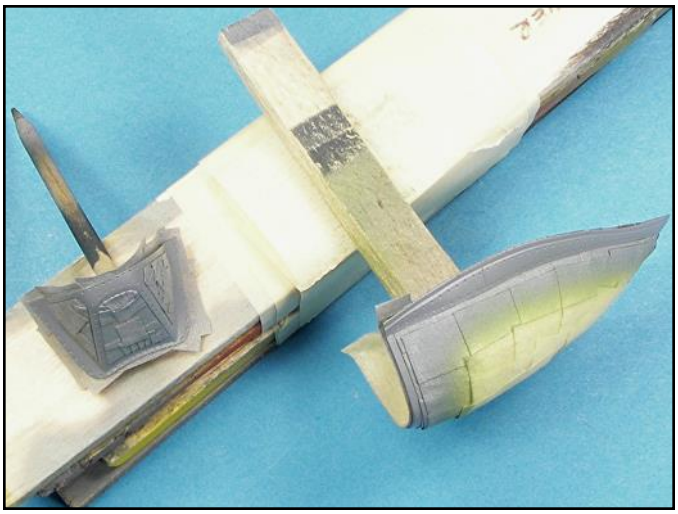
The clear parts were dipped in Future Floor Finish and then masked. I used small sections of making tape along the canopy and windscreen framing and then filled in the remaining areas with larger sections of tape.



I also masked the inside area of the windscreen and the underside of the canopy.

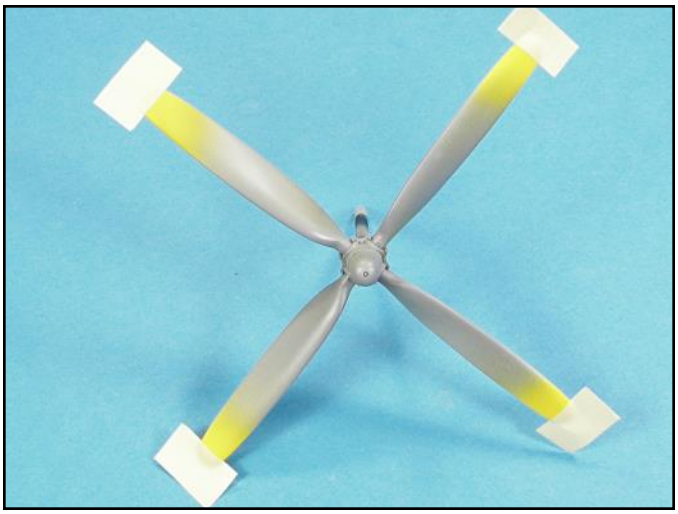


The inside areas were airbrushed the zinc chromate green color and then masked over after the paint dried.

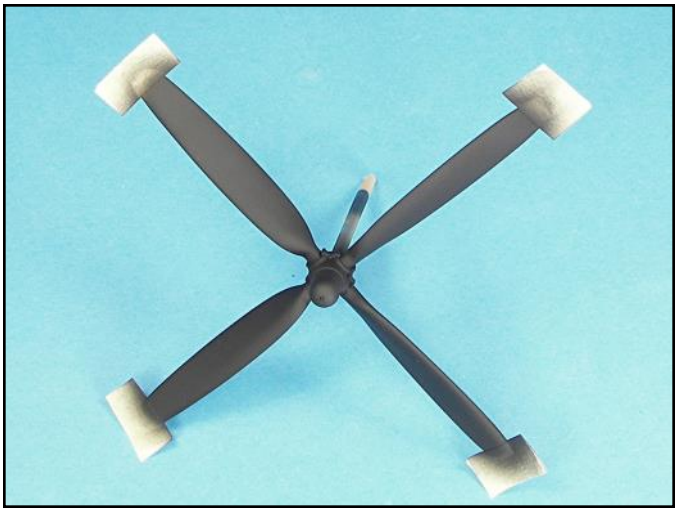


The exterior canopy and windshield framing was primed and then painted dark gull gray

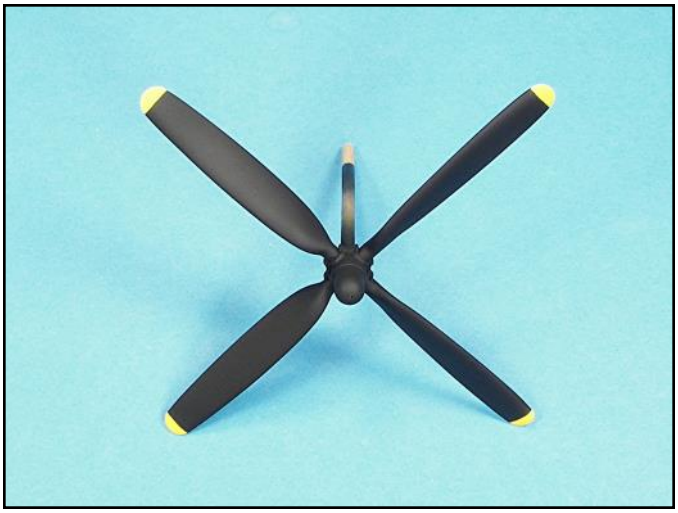
The propeller tips were airbrushed with flat yellow.



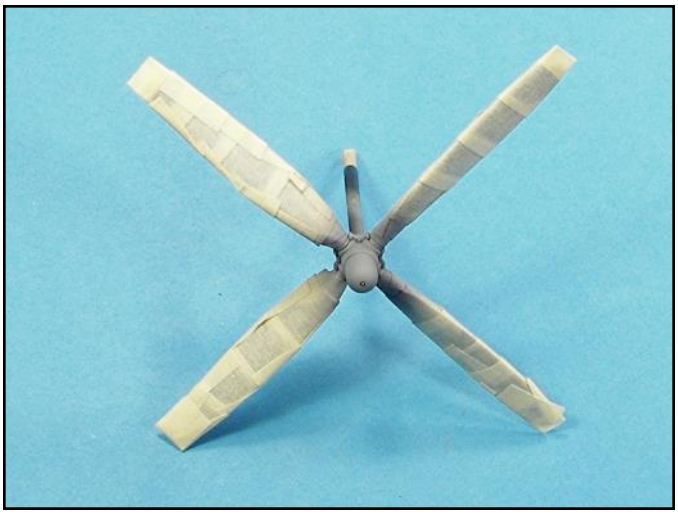
The tips were then masked off. Be sure that the masking tape positions on both sides of each propeller blade match. Also, be sure the masking tape is pressed flat onto the surface so there is no paint bleeding under the tape.



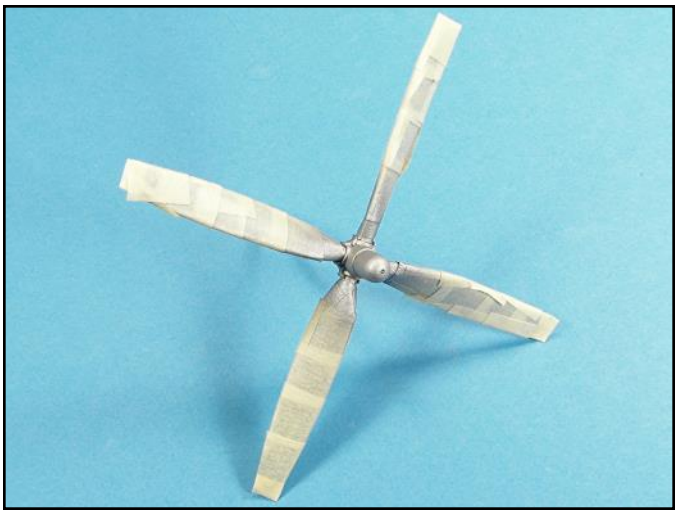
The propeller was then airbrushed flat black.



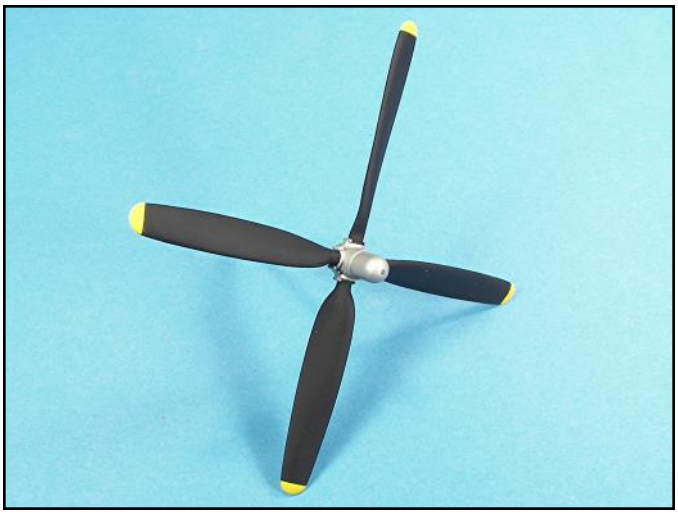
The masking tape covering was removed to check the yellow tips and ensure that there was no paint bleeding.



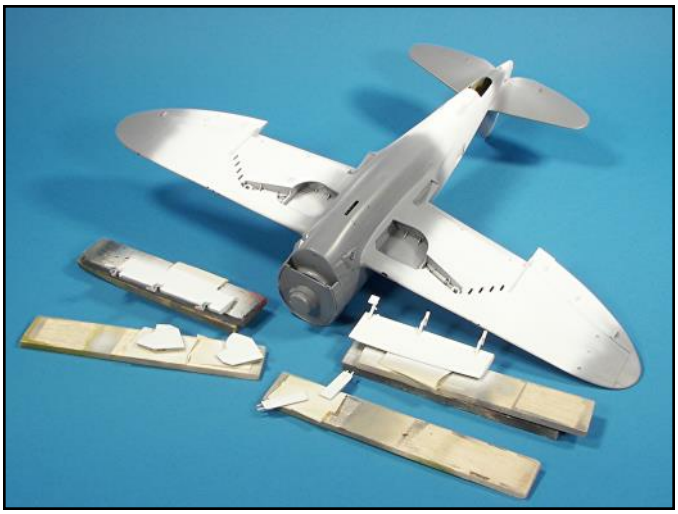
The propeller blades were masked over except for the hub. Here again check the masking tape to be sure it is in full contact with the surface around the base of the blades. The hub area was then primed.



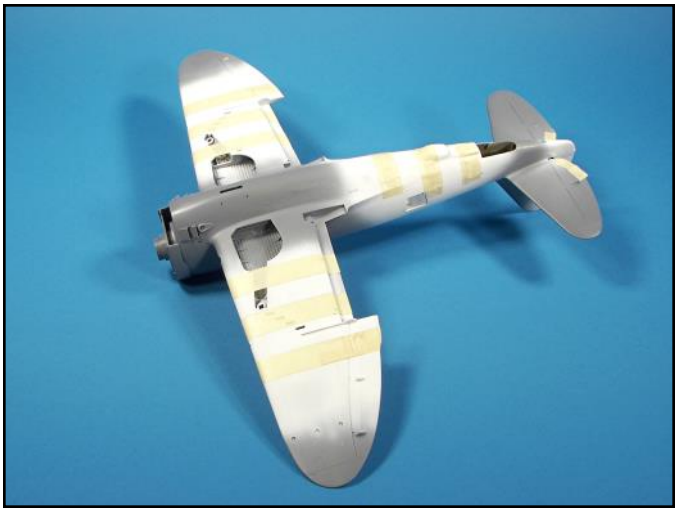
The propeller hub area was then airbrushed with Testors Metalizer steel color.



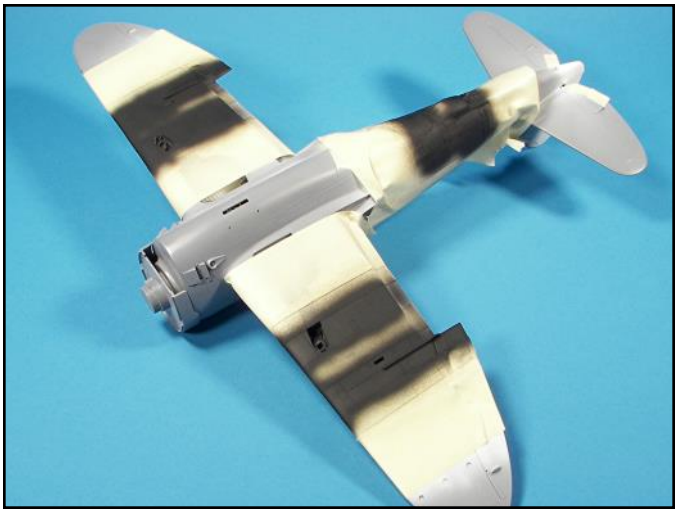
With all the masking tape removed, the propeller has very sharp demarcation lines between the colors.



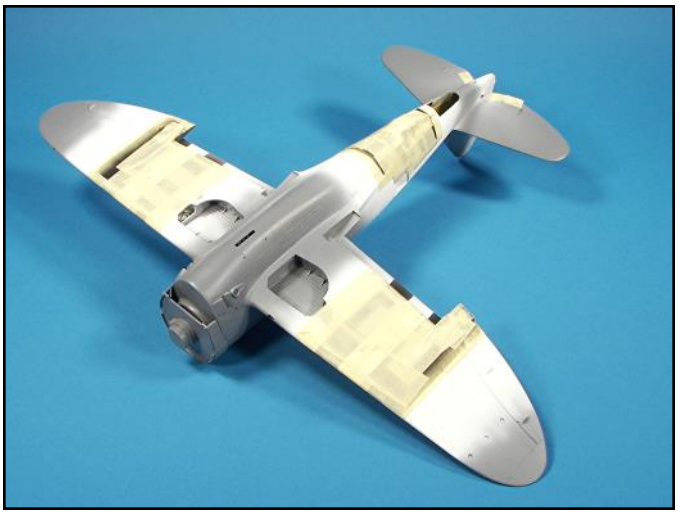
The first step in painting the fuselage is to paint the invasion strips. The undersides of the wings and flaps, the landing gear bay covers and the lower rear fuselage area were airbrushed flat white.



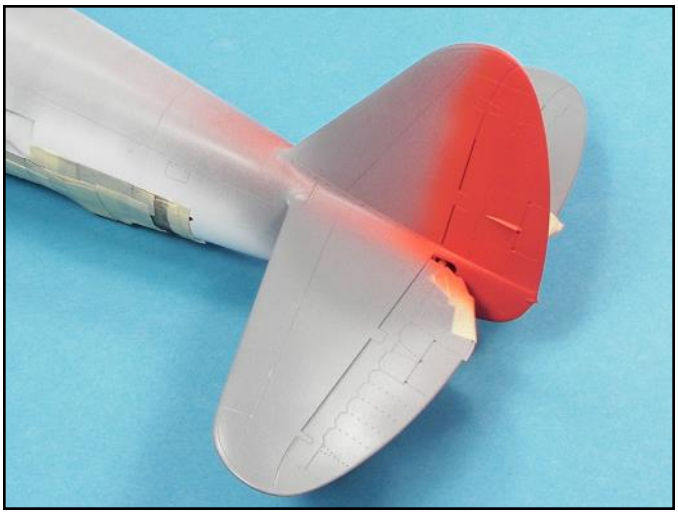
Next masking tape was carefully measured, cut and positioned over the flat white areas to represent the white portions of the invasion strips.



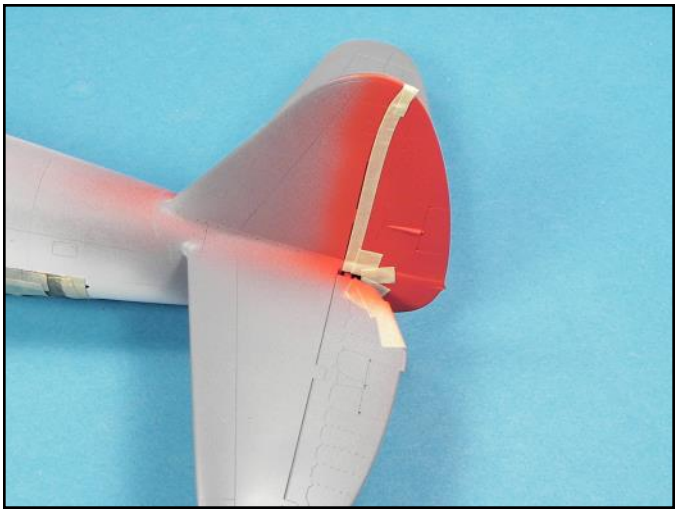
I also masked the areas around where the black strips were to prevent any flat black paint dust spreading over the primed surface.



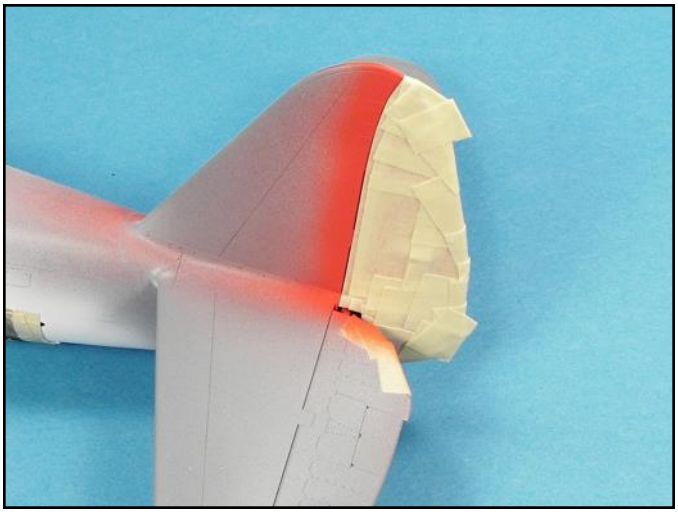
The next step was to mask over the completed flat black invasion strips.



I airbrushed the rudder flat red.



I then carefully masked the rudder. I used small lengths of masking tape around the edge of the rudder to ensure a sharp demarcation line and prevent paint bleeding under the masking tape.

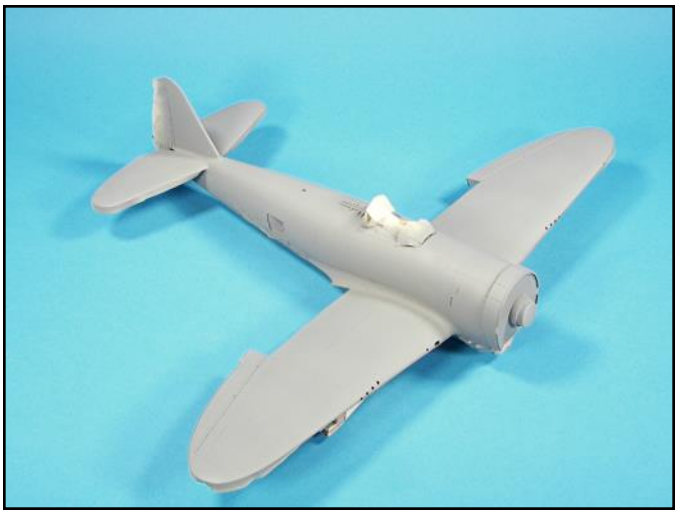


Larger sections of masking tape were then applied to the remaining areas of the rudder.

The exposed surfaces that were not masked were re-primed and then airbrushed with Testors flat gull gray color.

I decided to remove the masking tape over the wing invasion strips to check my work and I was very pleased with the sharp lines between the colors.

Masking tape was applied over the flat gull gray.

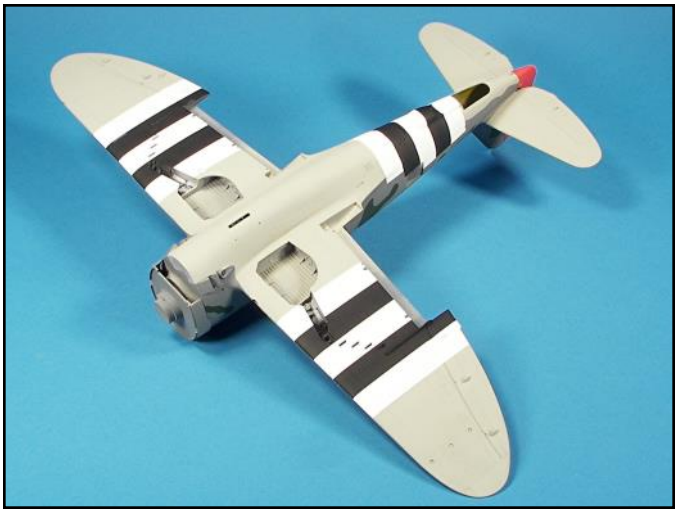


The upper wings, elevator and the upper fuselage area were airbrushed dark gull gray.

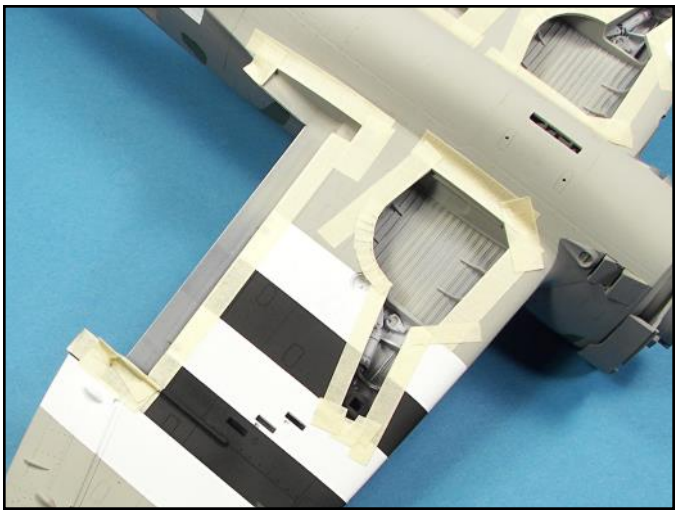
I wanted to try masking off random dark green colors instead of freehand airbrushing them. I was curious how this would look.

The drawback to the masking approach is that the chance of paint bleeding is greatly increased. If you decide to freehand airbrush the green color, be sure the paint is thinned at least 50% thinner to 50% paint.

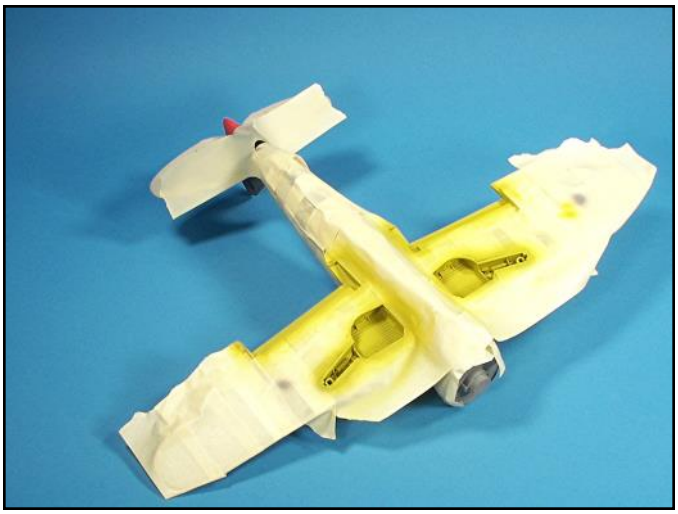
The result looks okay however, I should have masked off more areas as the actual aircraft that sported this camoflague scheme had a lot more random green areas. Next time I will use the freehand method.



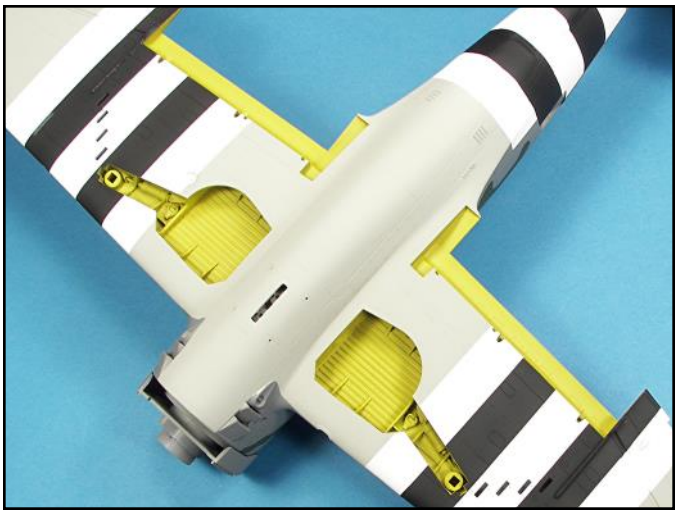
With all the masking tape removed, the invasion strips look great and the demarcation lines between all the colors are very sharp.



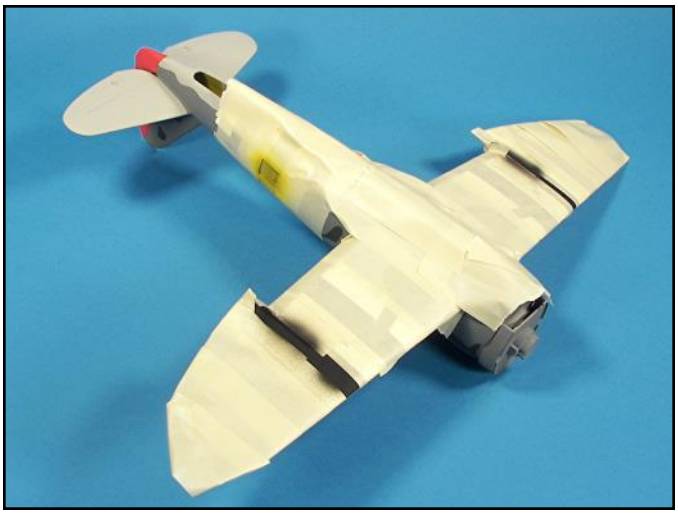
To airbrush the landing gear wheel wells and the inside of the flap areas, I masked off the perimeters with small strips of masking tape and then added larger sections to cover the rest of the areas.



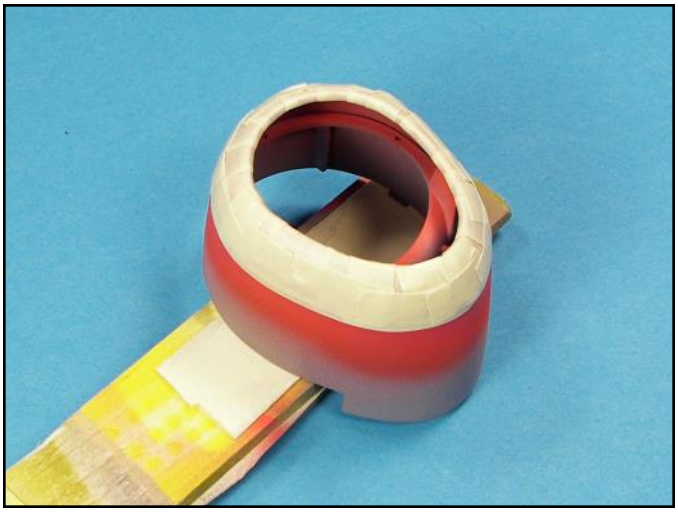
I covered all the surfaces with large sections of masking tape to prevent any overspray and then I airbrushed the flap interior areas and the landing gear areas with yellow zinc chromate.



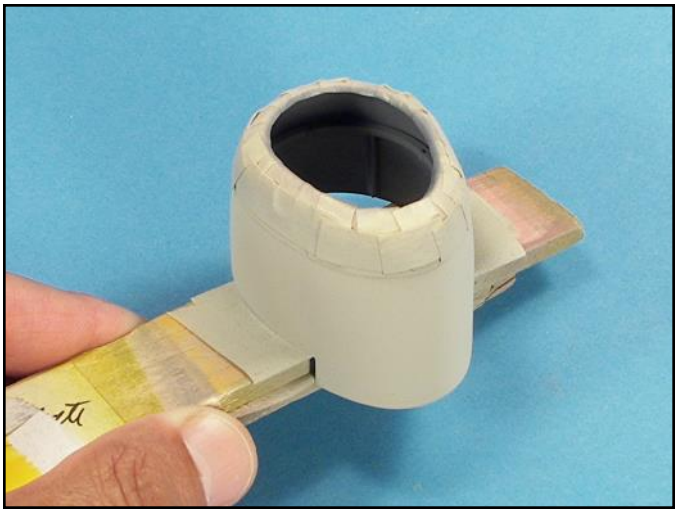
The yellow zinc chromate looks great and there is no overspray or bleeding onto the surfaces around the landing gear bays or the flap areas.



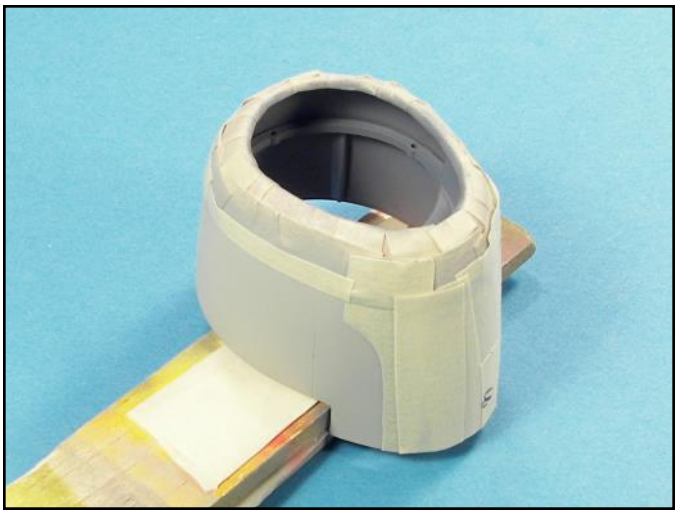
I noticed that I did have some bleeding onto the outer flat black invasion strips so I re-masked the areas and airbrushed several light coats of flat black.



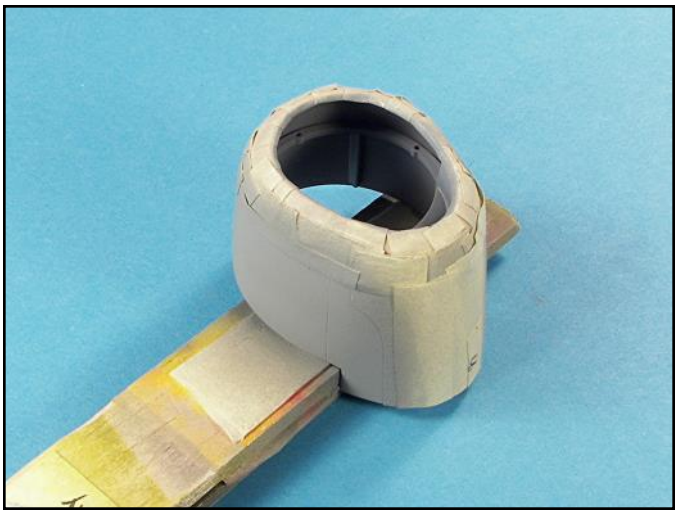
The cowling was airbrushed the same flat red color as the rudder and then carefully masked off.



The exposed surface was then primed and then given a few light coats of flat gull gray.

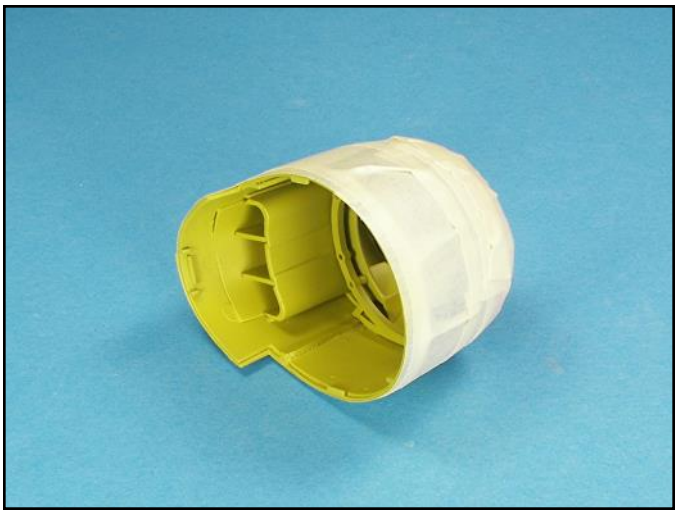


Masking was then applied for the flat gull gray color. The masking at the aft end of the cowling matched the flat gull gray color locations on the port and starboard sides of the fuselage.

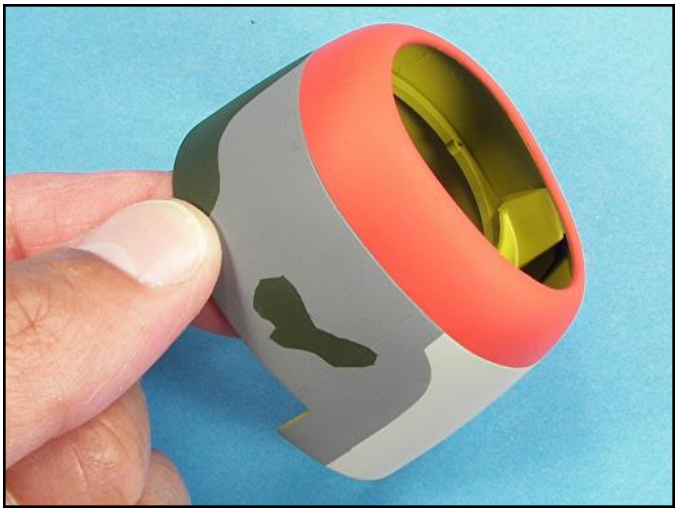


The dark gull gray color was then airbrushed onto the exposed surfaces of the cowling.

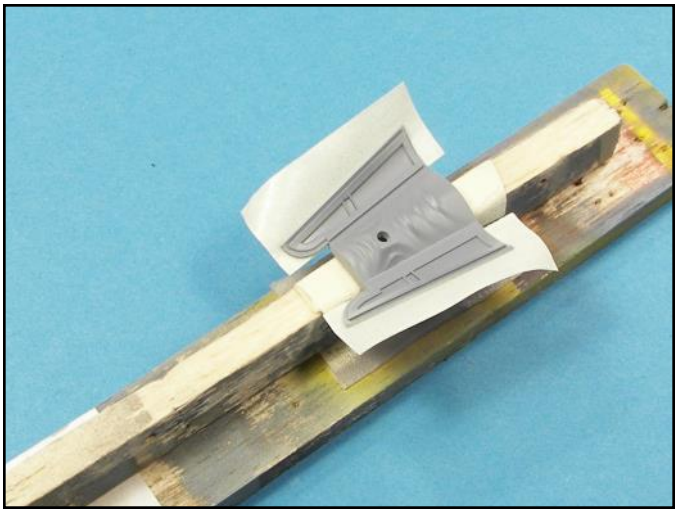
The next step was to cut out some random shapes for the dark green color. The demarcation lines between the different colors are very sharp thanks to careful masking.



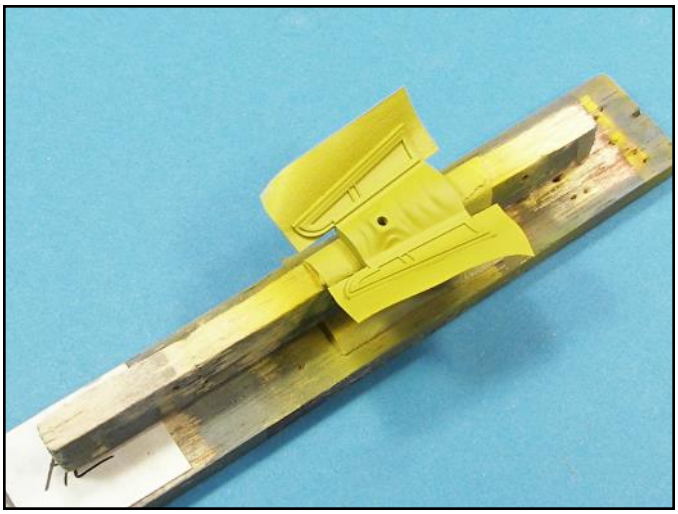
The last step was to mask over the entire surface of the cowling and airbrush the interior yellow zinc chromate.



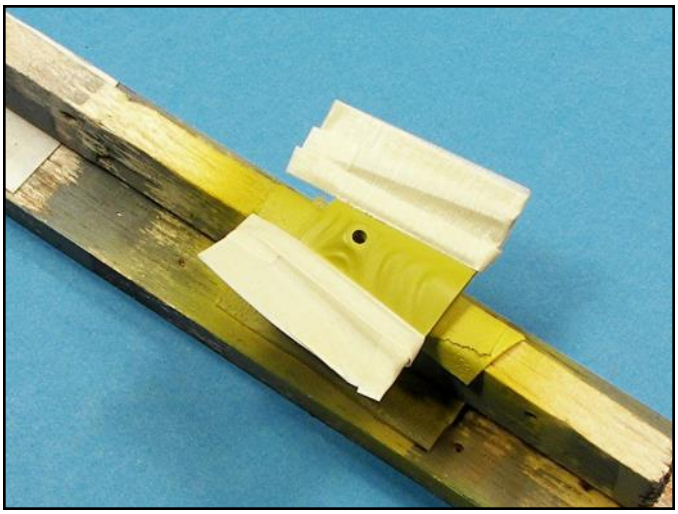
The cowling is now ready for final assembly.



The tail wheel part was primed and checked for flaws. The underside areas were airbrushed with flat gull gray and then masked.

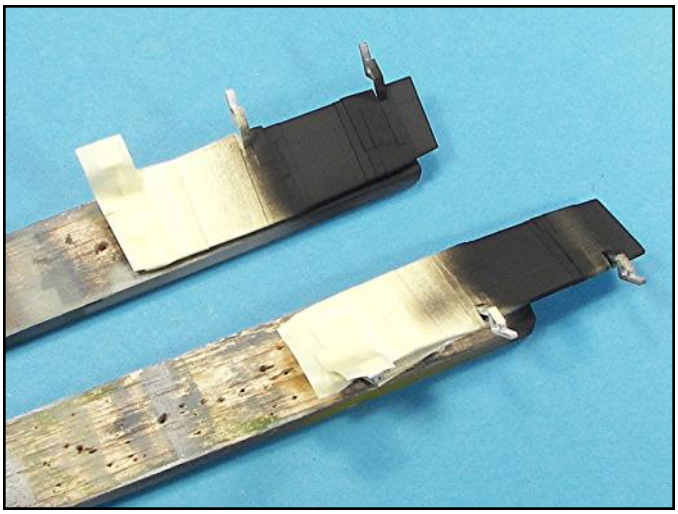


The part was then airbrushed the yellow zinc chromate color.

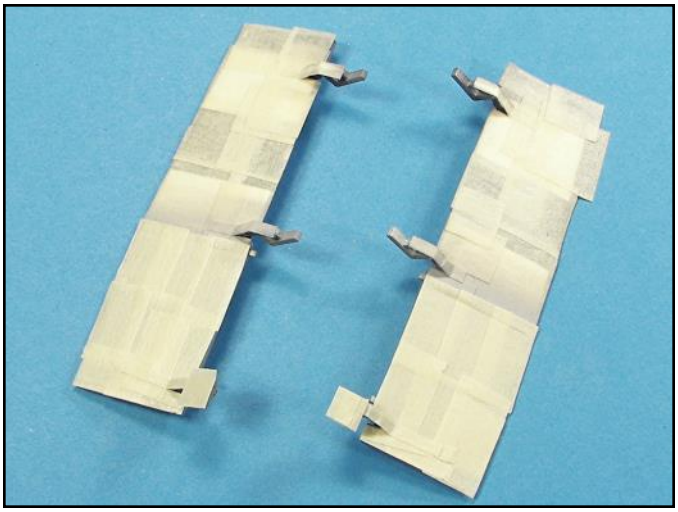


The yellow zinc chromate color was then masked to prepare for the final coat.

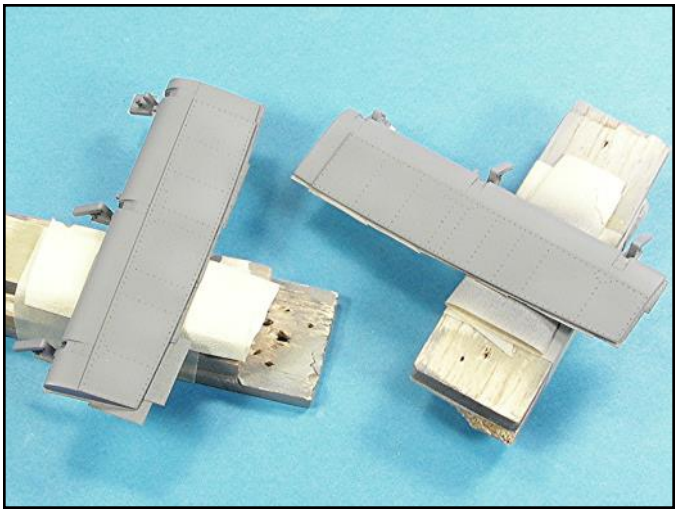
The canvas color was airbrushed olive drab with some flat white mixed in to lighten the base color.



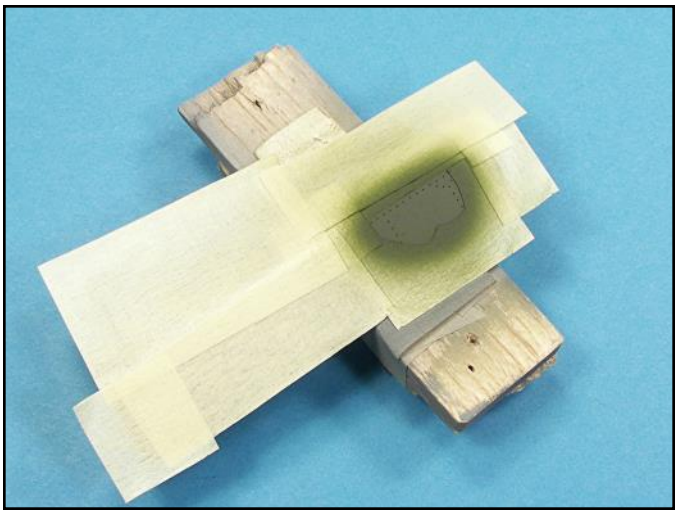
The black invasion strips were painted onto the bottom side of the flaps and the black and white strips matched the strip locations on the undersides of the wings.



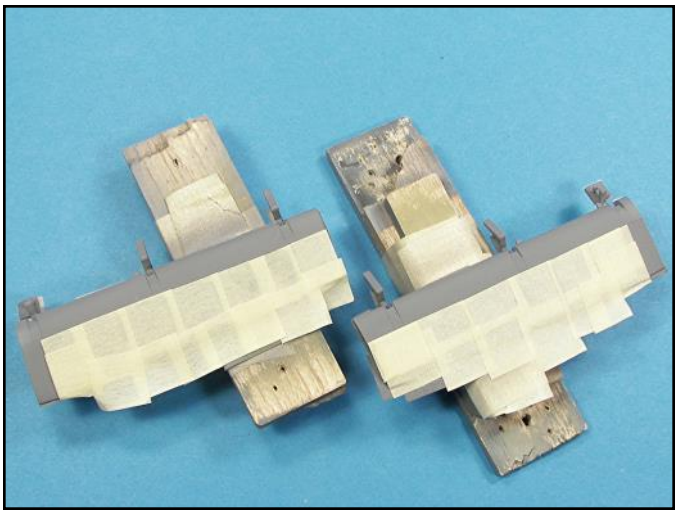
The bottoms of the flaps were masked off after completing the application of the black invasion strips.



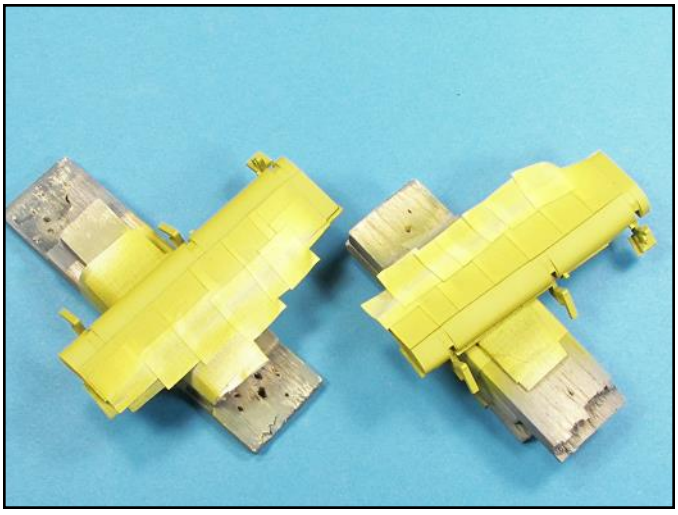
The upper surfaces of the flaps were airbrushed dark gull gray.



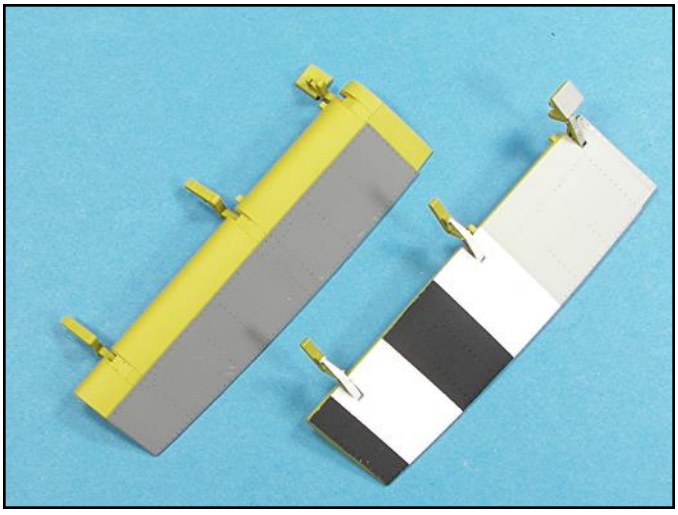
I added a random shape of dark green onto the upper surface of the starboard flap.



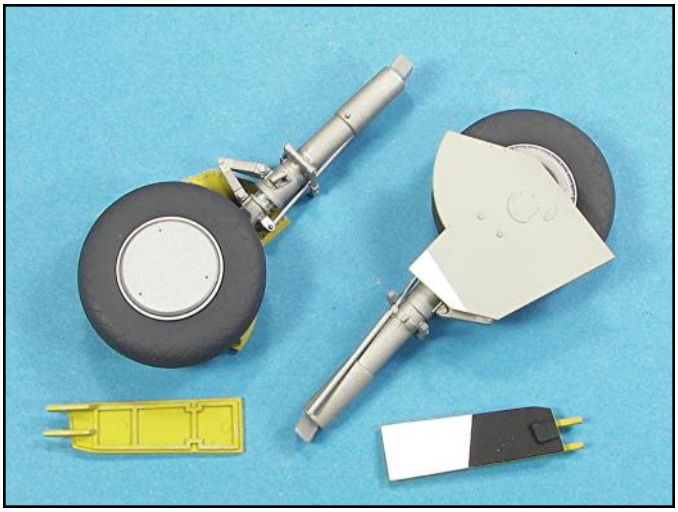
The upper surfaces were then masked off for the final color.



The yellow zince chromate color was airbrushed and then all the masking tape was removed.

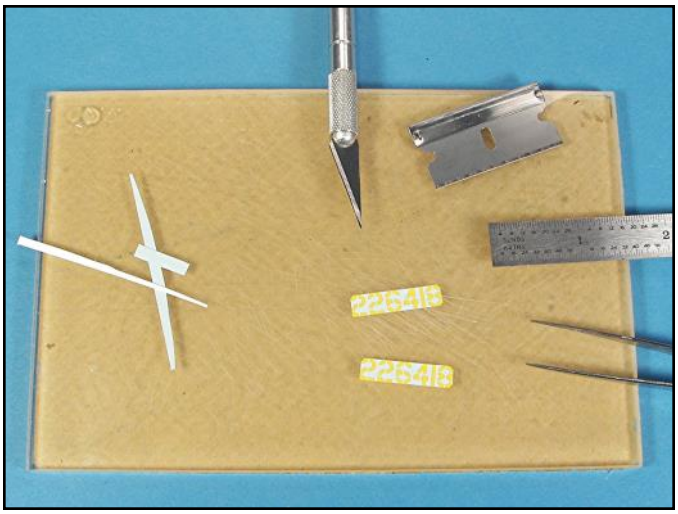


The steps involved in painting the flaps are what I call my “paint layering technique.”



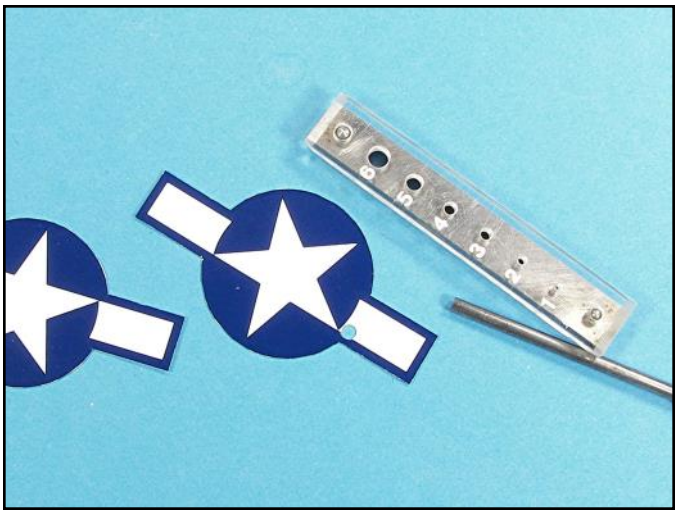
The landing gear and the landing gear bay covers have been airbrushed and assembled and they are ready for installation onto the aircraft.

The model was given several coats of a clear gloss finish prior to any decal application.



I always remove as much of the clear backing as possible from any decals perimeter to help reduce the risk of silvering.

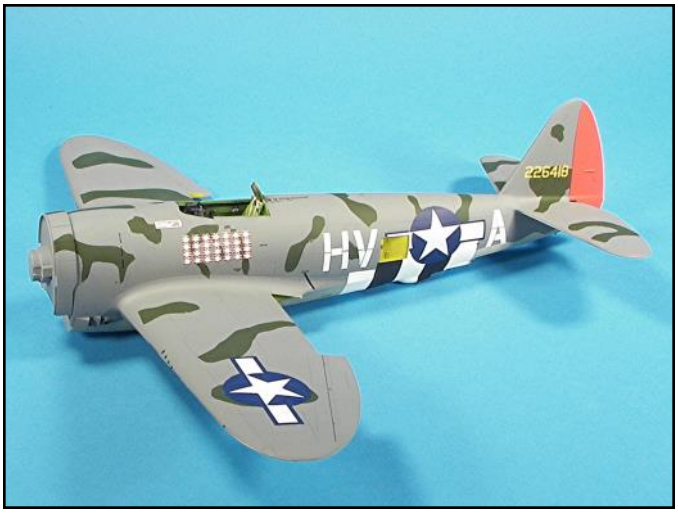
For larger decals, I cut out the individual letters and numbers and carefully applied them to the model, being careful they were straight, level and equally spaced.



I used my trusty Waldron Punch Tool to punch out a hole for the formation light on this national insignia decal for the underside of the wing.

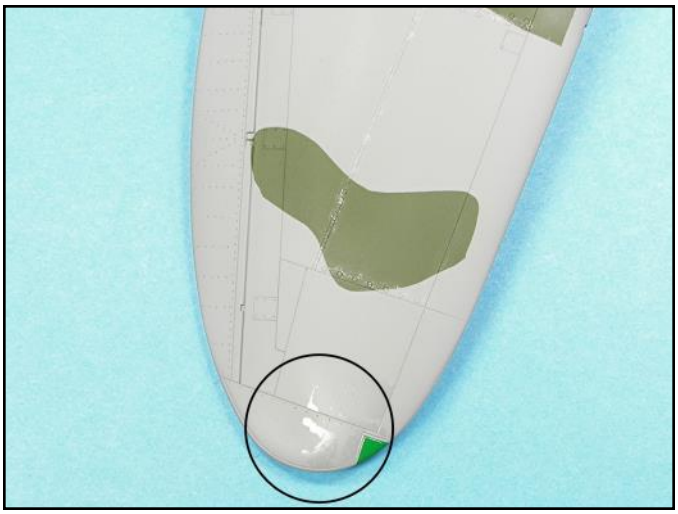
The decals did not react well to setting solution. I used a Q-Tip dampened in decal softener to careful flatten out the decal.

The decals have been applied and I used Q-Tip's dampened in water to clean around the decals to remove any residue decal glue or decal setting solution.

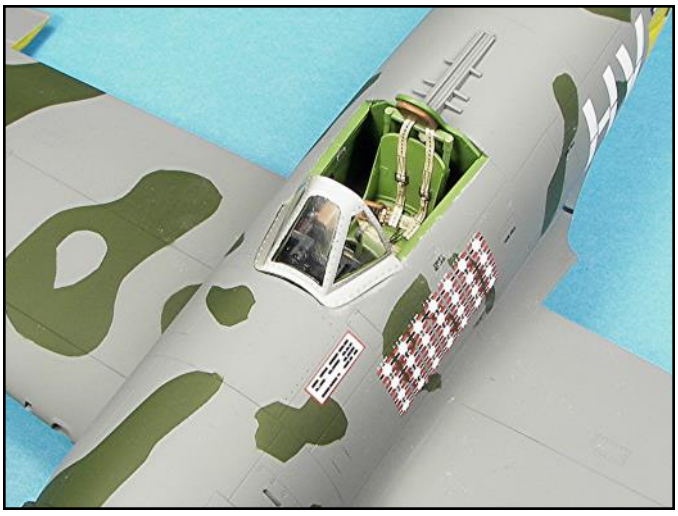


The entire model was then given two coats of Testors clear dullcoat.

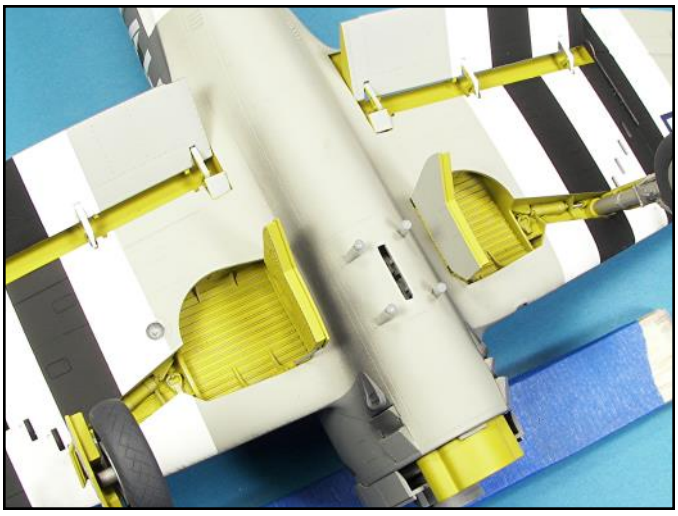
I masked off around the wing lights and carefully brush painted them.



Masking tape will sometimes remove some of the clear dullcoat. This can be fixed by carefully reapplying tiny amounts of Testors dullcoat with an airbrush to the effected areas.



The void at the base of the windscreen was filled with white glue by carefully applying tiny drop by tiny drop with a thin wire applicator. I then used a detail brush to paint the dried white glue.



I wanted to depict a freshly painted and newly deployed P-47 so I did not apply any weathering pastels to the inside areas of the landing gear bays.

To set the wire antenna, I drilled a tiny hole in the leading edge of the tail. Note how good the tail number decal looks.

I also drilled a tiny hole through the vertical antenna and used nylon thread colored with an indelible marker to depict the antenna wire. The white insulator located near the tail was made from a short length of plastic rod drilled out.

The models final assembly is progressing well. The next step is to attach the engine, the cowling and then the propeller.

The engine wiring adds a level of realism to the appearance of the engine.

The last assembly was the belly tank. Overall the model looks pretty darn good.

When working on a scale modeling project which requires a lot of colors, be sure to label them.