

CHAPTER 3

COCKPIT AND INTERIOR CONSTRUCTION, DETAILING, PAINTING AND BASIC WEATHERING

Building, detailing and weathering aircraft cockpits and interiors depends on the scale that you are working in, the type of aircraft that you are building and what type of painting, detailing and weathering efforts you want to put into your project. I like to concentrate my creativity in those areas where viewers can see console instruments, seats and seat belts, electrical and electronics boxes, wiring, plumbing, guns, ammo belts, switches, dials and gauges. This chapter focuses on six different aircraft interior projects, and the techniques used to build them. The details added range from painting, kit part modifications, using regular photoetch detail sets and pre-painted sets, using instrument and gauge decals, highlighting and basic weathering and working with a resin detail set.

COCKPIT AND INTERIOR PAINTING

For almost all my painting I use an airbrush as it provides me with great flexibility to mix paint colors and apply them in very thin coats. I use small flat brushes for drybrushing and for the application of pencil pastel dust. I use sharpened toothpicks for detail painting for things like instrument bezels, switches, small dials, wiring and plumbing and I use a silver colored pencil to show where surface paint has worn off.

Cockpits and interior paint colors vary greatly depending on the aircraft you are building. Generally, aircraft manufacturers and the countries that fly them tend to standardize their interior colors, but this too can change as military aircraft during war years can have different interior colors due to changes to aircraft technical guidance or shortages in paint colors. Original color photos are

the best references and so are restored aircraft although some restored museum aircraft can have colors that may not be accurate.

For painting interior areas and especially cockpits, I like to use different shades of the same interior color to create a perception of depth. Artists use this technique when painting a picture that appears to have depth to it even though it is on a flat canvas. The smaller the scale the more important this technique applies. If a 1/48 or 1/72 scale cockpit is zinc chromate green or worse yet, flat black, when you look into the cockpit all you will see is that color. By adding just a few drops of flat white to a base color so that you create slight variances in the shades of the base color you can create a cockpit where the human eye can easily discern details. When using different shades of the same color it is also important to be logical and consistent in their application. Bulkheads, side walls and flooring should be different shades. However, be sure that they are all the same shades. It would look odd to have a sidewall one shade and the opposite sidewall another shade.

Using different shades of the same color is also a basic weathering technique if the shades are applied correctly. In 1985, while I was working for the Department of the Navy, I spent several months at China Lake Naval Air Station, which is located in California's Mojave Desert. There was an aircraft bone yard at this Naval Air Station that had several B-29 bombers, which had been parked there since the late 1950's. I crawled through every one of them taking lots of pictures and among the many things that I noted was that the interior green that was exposed to direct sunlight was faded to an almost light gray. In other areas of the airplane where direct sunlight never touched the paint, the interior green color looked almost as good as the day it was painted. With this example in mind, for horizontal areas that get direct exposure to the sun use a slightly lighter shade of the interior color and for vertical surfaces use the normal interior color or a slightly darker color.

Drybrushing a paint color is another technique that can accomplish two different visual appearances. I use dry brushing to highlight the corners of boxes, the edges of consoles and instrument boxes, electrical wires and plumbing. The drybrushing color can be silver or a lighter or a darker shade of the base color. If you are going to use lighter or darker shades of the base color be sure that the variance in the shade of the color is subtle. I also use drybrushing as a weathering technique to show wear and tear on the surfaces of consoles, seats and metal flooring as these surfaces get a lot of contact by the pilot and the crew. For this type of weathering I like to use silver paint to represent areas where the paint has completely worn off. You can also use a silver colored pencil, but the silver colored dust will need to be sealed with clear flat paint.

Fluid stains and small amounts of dust and dirt are also found inside a cockpit and the interior areas and these types of stains should be subtle. Fluid stains can be found on the floor area, around the control stick, the flap actuators and the rudder pedals. Dirt can be found accumulating around the floor and the rudder pedals. Paint manufacturers make paints that simulate the colors of fluids, oil, dirt and dust and they should be applied subtly and with a tiny detail brush. You can also use Pencil pastel colors to simulate dust, and dirt on the inside areas. Rub the pastel pencil color onto a piece of 200 grit sand paper and then apply the pastel dust with a soft paint brush by dipping the tip of the brush into the pile of dust and then applying it to the desired areas. The rough surface of the flat paint will trap tiny amounts of the pastel dust. Blow away the residue dust and then seal it with a coat of clear flat.

Just a note on cockpit and interior weathering and that is recognizing the difference between realism and "model art". Ground crews always have and always will take great pride in keeping their aircraft operating and in good shape. Dirty interiors with severely worn paint, exteriors that look like parts are about to fall off the aircraft and engines that look like they will not start may be great looking "model art", but they are not realistic in their appearance. In scale modeling, less is always better when it comes to the weathering of active, flyable aircraft. With that said if you are going to build a hanger queen or a derelict aircraft, any level of weathering can be appropriate.

WORKING WITH PHOTOETCH INTERIOR DETAIL SETS

You can purchase interior photoetch detail sets which will either dress up the existing kits interior parts or a detail set that could just about supply enough parts to completely rebuild the interior. These photoetch detail sets can be either painted or unpainted. Eduard has the largest selection of photoetch detail sets. They are well engineered, fit together well, they have lots of fine etched or multilayer raised detail and their painted sets are superb.

I cut off photoetch parts as I need them and I do all my cutting and assembly on a Plexiglas surface and I use a single edge razor blade for almost all my cutting needs. The fold lines on photoetch parts are usually very precise, but sometimes hard to see especially on pre-painted parts so look closely at them before you start bending. To fold the parts I use either flat faced needle nosed pliers and a single edge razor blade or two single edge razor blades. The choice depends on the situation. When using flat faced needle nosed pliers, place a layer of masking tape across the surfaces to protect pre-painted photoetch parts from scrapes and be sure there is no overhang of the tape beyond the edges of the face of the pliers. If there is an overhang, it will make it hard to judge where the fold lines are. I also run the backside of each part that will be a gluing surface along a stationary piece of 600 grit sandpaper to clean the backing so that super glue will have a better bonding surface.

Parts that just fold over to a ninety-degree angle can easily be done with the flat nosed pliers and a single edge razor blade.

Place the part into the pliers with the fold line along an outer edge and use the tip of the single edge razor blade to fold the part. If you try to bend a part with your fingers the bend will be round instead of a sharp 90 degree angle. Parts that have a top and four sides are usually shaped by slightly bending the sides along the fold lines. Once the fold lines have their initial bend you can work them into their correct positions using tweezers and a toothpick. When the sides have been folded into their correct positions and the edges butt up against the other edges of the part, apply a tiny bead of super glue along the interior corners. You want to add just enough glue to hold the part together. Photoetch shapes, especially boxes, can be pretty delicate and fragile so I reinforce their interiors to add strength. This is also very helpful when painting these types of parts, as you will be handling them a lot.

I use small plastic strips to reinforce the corners of large box shapes and I also place these strips along the open edges of these photoetch shapes for a wider gluing surface. I cut the strips longer than I need so that I can position them with tweezers. I dip the end of the plastic strip into a small puddle of super glue and then carefully position the strip at the interior corners. The super glue will bond the plastic to the photoetch almost instantly so you need to be precise in your positioning. Once all the strips are in place, I trim them to length and then add a bead of super glue along their lengths to add additional strength to the corners. When the glue has dried I form fit small lengths along the open edges of the box and then glue them into place. This will provide a wider gluing surface for the part.

To add strength to small assemblies, pick a strip size close to the interior void size, trim down the plastic so that it fits snugly inside the void and then glue it into place. If you get super glue on the outer surfaces of the photoetch, the glue can be scraped off with the tip of a number 11 X-Acto blades. If you are working with pre-painted parts and some glue has seeped onto the painted surface give the outer surface a coat of clear flat paint to hide the glue.

For small parts such as throttle and mixture levers you will need to check their fit before gluing. If you are using a photoetch assembled throttle quadrant, the actual throttle levers can sometimes slip too far down into the assembly so be careful when attaching them. To prevent this from happening and to strengthen the throttle quadrant assembly, form fit a piece of plastic into the inside area and super glue it into place. This will also provide for a strong gluing attachment point on the cockpit wall. If you are adding small photoetch levers to kit supplied parts be sure that you drill the opening large enough to accept the photoetch part. I like to paint these small parts on their photoetch trees first, remove them and attach them with tiny drops of white glue so that I have some working time to position them correctly. Once the white glue has dried you can apply a tiny drop of super glue to add strength to the attachment point and then touch up the part with a detail brush.

To reproduce the ball handles on control levers, apply a small drop of white glue to the tip of the lever with a toothpick. The glue will dry into the perfect shape of a ball. If there are circles on the photoetch electrical and radio boxes chances are there is an instrument or dial face that should be there. Use the outline as a guide to add flat white paint applied carefully with the tip of a toothpick or detail brush to color in the circle. Then punch out a decal or placard instrument using your Waldron Punch Tool with the closest diameter to the circle and attach it to the instrument face.

If a box has indicator lights apply tiny drops of white glue with the tip of a round toothpick to the locations. After the glue dries use a sharpened toothpick tip to paint the indicator lights, which are usually red, green or yellow. If there are switch locations on the part, drill out small holes and add stretched sprue or small diameter round stock attached with white glue so you have some working time to position them. The lengths of plastic for switches should be pre-painted so that once they are glued into place you can cut them to length, and then touch up the tips.

Another Eduard product that I use is their -pre-painted 50 caliber machine gun belts. They can be form fitted over molded on belts and also attached to feed trays on turrets to enhance the appearance of the turrets and areas inside the fuselage.

WORKING WITH RESIN DETAIL SETS

Resin detail sets can add a very high level of realism to open cockpits, but there can be a lot of cleanup work involved. Most resin detail sets have pour plugs, which need to be removed, and how it is attached to the part will determine how you will remove it. Before you do any cutting or sanding of resin parts I recommend that you take inventory of all the parts to be sure that they are all there and that none are damaged. Damaged or missing parts can usually be replaced by the manufacturer. Always wash resin parts before working with them to remove any mold release agents. You can soak them in warm water and dish soap for a few minutes and then scrub them with a soft toothbrush. Rinse the parts to remove the soap residue and let them dry.

Large resin plugs can be cut down using a razor saw and the remaining excess resin can be removed by running the part across a stationary piece of wet sandpaper. When cutting resin place some paper towel under the cutting area and wear a dust mask over your mouth and nose as you do not want to breath in the resin dust. When sanding resin parts, always wet sand them whether you are using stationary pieces of sandpaper or a sanding stick. The resin residue will glob up making it easy to clean up and it will help prevent resin dust.

Be very careful when sanding resin as even 400 grit sandpaper will remove resin rapidly from a part so check your sanding work

often and go slow. When sanding resin use a circular or figure eight motion and make a few clockwise circles and then an equal number of counter clockwise circles. If you are sanding back and forth or sideways rotate the part so that you achieve an equal number of sanding motions on each side and in each direction. A slight pressure on the part during sanding works best as the excess resin will be removed quickly.

Good resin detail sets have larger resin parts with minimal pour plugs and the small parts are usually found on trees. You can easily remove the small parts with the tip of a number 11 X-Acto blade. When cutting small parts off, leave some of the thin pour sheet attached to the part. Once the part is removed you can then clean it up. Parts such as frames will have a thin layer of resin between the framing. Typically this resin is .010 inches thick or less and can easily be cut out with a number 11 X-Acto blade.

All the major components that fit inside the fuselage should get a fit check. This is especially important for closing up the fuselage to insure that the cockpit tub is not too wide. You may need to do some minor trim work to get everything to fit correctly so go slow when you sand, shave or cut and be sure to form fit the parts into place by checking and rechecking your work as you progress with the removal of excess resin. Once you are satisfied that all the parts fit correctly you are ready to complete any subassemblies and prime the parts. Priming the parts is important as it affords you the opportunity to check for any flaws such as pinholes or voids where the resin did not fully fill the cavity of the mold. You can fill these with tiny strips of plastic by dipping the tip into a puddle of super glue and then sticking the tip into the pinhole or void. Once the glue has dried cut the strip and carefully scrape or sand it smooth. At this point, painting, assembly and gluing proceeds just as if it were a plastic kit. You should always scrape paint off gluing surfaces and use super glue to attach resin parts to one another or to plastic. Small parts can be attached with white glue if the parts are painted.

BUILDING THE INSTRUMENT CONSOLE

There are many kits on the market today where the instrument console has the instruments engraved onto the part. Fortunately these kits also supply console decals which can be used to enhance the plastic surface. To get a really good looking result from a kit console, first paint the console the appropriate color and then give it a gloss coat. Punch out the individual instruments from the decal sheet with a Waldron Punch Tool and apply each decal to its respective location on the painted console. This is a very slow and tedious process, but if you are careful you can get a fairly good looking console. When you are finished give the console a coat of clear flat to seal the decals and restore the flat appearance of the paint. You can also purchase aftermarket instrument decals if the kit does not supply them.

Some newer kits come with a transparent console, a plastic backing and a clear acetate film or paper instrument panel that is sandwiched between the transparent console and the backing. Sometimes the transparent part has holes for the instruments and sometimes it's just a solid piece of clear plastic with the instrument bezels outlines on it as tiny raised plastic circles. For a solid clear piece you have two options; one is to mask the instrument locations and the other is to drill them out. If you decide to drill out the instrument locations, I recommend that you thin out the clear plastic a little by running it across a stationary piece of sandpaper, as these parts tend to be rather thick.

To mask the instrument locations, use a Waldron punch to make masking tape disks that can then be placed over the instrument outlines of the clear part. This is a slow process as you have to separate the Waldron punch, place a strip of masking tape over the appropriate punch hole, replace the top part of the punch, punch out the disk and then repeat the process for the next disk. You will also have to punch out a lot of masking tape disks to get a few good ones. Sometimes using two layers of masking tape works better than one.

The second approach, and the one I like best is to drill out the instrument locations. Since clear plastic is more fragile than colored plastic you will need to be careful when drilling. Gently center punch each location by making a tiny indentation using very light pressure and then drill out a small hole. Select the drill bits you will be using and what you will need to do is use progressively larger bits to open up the instrument hole. If you try to cheat and use too large a drill bit you will crack or fracture the clear plastic. I also place the clear instrument face on a wood base when drilling.

Once you are done masking or drilling you can paint the clear instrument face the appropriate color and be sure to paint both sides. If you are using a paper instrument placard use tiny drops of white glue to attach it to the back of the console. Line up the instruments carefully and be sure that the glue is pressed flat. If you use super glue on the paper you might stain the instruments ruining the part. If you have a clear acetate part paint the backing flat white so the instruments will stand out, position the acetate onto the back of the clear part and attach with tiny drops of super glue. Complete the assembly by super gluing the backing, which should also be painted flat white, to the console. I like to run a bead of super glue around the perimeter of the completed assembly for a strong bond. You can then scrape and sand the edge smooth and touch up with the console paint color.

Another approach is to purchase a pre-painted photoetch console set. Eduard makes great pre-painted cockpit console and detail sets for hundreds of different aircraft models in 1/72, 1/48 and 1/32 scale. Their consoles are very easy to assemble, and they are

well engineered and have excellent fit. You typically get a console face and a back layer with the instruments printed on them. Their non-painted photoetch consoles come with a clear acetate sheet with the instruments printed on it and the front photoetch console. Whether you are using a pre-painted console or a non-painted console, when you assemble them be sure the instrument dials are centered inside the bezel openings on the face of the console. Most photoetch consoles need to be reinforced to add strength to them. For the pre-painted consoles, trace the outline of the console's backing onto .020-inch sheet stock, cut out the backing and super glue it to the assembled photoetch console.

For the non-painted photoetch consoles, paint the photoetch console and the back of the acetate part flat white so that the detail on the instruments will be highlighted. For plastic sheet that you will be tracing and cutting out to strengthen the console, use white plastic which will also highlight the instrument detail on the acetate sheet. Glue the acetate backing in place with tiny drops of white glue so that you can adjust the positioning of the acetate sheet. Once the glue dries you can add some tiny drops of super glue to strengthen the bond. Then glue the white plastic backing to the assembled console by adding tiny drops of super glue around the perimeter of the console. Sometimes photoetch consoles have several layers and in these cases plan your assembly carefully and reinforce with plastic whenever possible to add strength to the assembly. If you are working with Eduard's pre-painted photoetch sets, to help prevent damaging the pre-painted surfaces wrap small lengths of masking tape around the ends of your tweezers.

If the console has indicator light detail, these can be simulated by adding a tiny drop of white glue to each location using a round toothpick as an applicator. White glue has a high surface tension and will form a perfect hemispherical shape. After the glue has dried paint them the appropriate color using the tip of a round tooth pick.

SEATS AND SEAT BELTS

Wherever possible I like to use the kit-supplied seats as a starting point. Most new kits supply seats with no belt detail molded onto them, but there are lots of older kits where the belt and seat are one part. If the kit seat is thick you can thin it by running the part across a stationary piece of sandpaper. If the seat has molded on seat belts you can carefully scrape them off using a stencil knife and a number 11 X-Acto blade and then smooth out the surface using a small length of sandpaper wrapper around a length of balsa wood. Some interior and cockpit photoetch sets have replacement seats and these are excellent replacements for older kits that have the seatbelts molded onto the seats. Here again after you assemble a photoetch seat add plastic to it to strengthen the assembly.

Prior to attaching seat belts, paint the seat and drybrush the edges with silver paint to highlight the shape of the seat. Many cottage industry companies make photoetch seatbelts in 1/72 to 1/32 scale and most require painting. Some are just one piece with multilayer etching and other are multi-piece assemblies. Eduard offers pre-painted seat belts in all three scales. In 1/48 and 1/72 scale, the painted seat belts are one piece and all you have to do is some minor bending and then attach them to the seat with super glue. Carefully cut them from the photoetch sheet, bend them onto the seat and backing so that they take the shape of the edges and curves of the seat and then attach them with tiny drops of super glue. Be sure your tweezer tips are covered with masking tape to protect the painted surfaces.

If you are working in 1/32 scale, the Eduard pre-painted seat belts need to be assembled. The first step is to fold the belts at the locations where you want to put the adjustment buckles, which is usually about half way along the length of the belt. I use a set of flat nosed needle pliers, with the inside surfaces cover with masking tape, and a single edge razor blade to make the initial bend. I then exploit the bend by working the photoetch seatbelt into a tighter bend almost collapsing it onto itself. The bend needs to be tiny as the slots for the belt on the adjusting buckle are only 1/32 of an inch apart. Thread the bent seatbelt through both slots of the adjustment buckle and work it up to the fold. Once the buckle is positioned correctly, expand the belt and then press it flat to set the buckle's location. Once you have the center adjustment buckles in place, carefully fold the tabs at the end of the belts for the remaining belt hardware. Next, you can add the remaining photoetch details such as the adjusting straps.

Once I have the belts assembled I like to form the belts to the shape of the seat at their respective locations by carefully pressing the assemblies onto the seat. Go slow when shaping the seat belts, as you do not want to pop off any glued on details. Attach the belts with tiny drops of super glue. After the super glue has dried apply some clear flat paint where the super glue is exposed on the painted surfaces, which will appear to be shiny. The clear flat paint will make the super glue blend into the painted surface and it will disappear.

If you are working with a resin seat and the belts are molded onto the seat I do not recommend that you attempt to remove the belts, as it is too easy to damage the resin part. I recommend that you paint the seat, then mask off the belts and paint them and then carefully pick out the metal components with the tip of a round toothpick. Another approach is to purchase a photoetch detail set that has a seat and use it.

FineMolds introduced their "Nano Aviation" seat belt series several years ago. They are finely detailed, injection molded seat belts

that are flexible and can be positioned around the edges of the seat and the backing. This solves the problem with photoetch seat belts not having any depth to them, but you have to have a steady hand to paint them. Using a round toothpick with a sharp end helps make painting these types of seat belts easier. With that said they are an excellent addition for those who want to add that extra level of detail to their cockpits.

Jet aircraft ejection seats are very complex pieces of machinery and most jet aircraft kit seats do not do them justice. I recommend that if you really want to add a high level of detail to your jet cockpit purchase a resin ejection seat. Careful painting, highlighting and drybrushing will bring out all the detail that was added by the manufacturer. The pour plugs are removed the same was as described in the section on working with resin parts. Sometimes resin ejection seats have multiple resin and photoetch detail parts. Wash the parts and remove them from their pour plugs and then clean up the remaining flash and residual resin. Test fit all the resin parts together using tiny strips of masking tape and then test fit the photoetch parts. Keep all the parts in one storage bin so that they do not get lost or mixed in with other sub-assemblies. Pre-paint all the parts prior to assembly and be sure to scrape the paint off gluing contact surfaces so that the super glue will stick. If you need some working time with a part use white glue and do not scrape off the paint as white glue has great adhesion qualities to flat paint. As a final note of resin ejection seats, once you remove the pour plug test fit the seat inside the assembled cockpit tub and be sure to check to see that the canopy can close correctly. If there is an interference problem with the canopy you can remove some of the resin from the seats base and form fit it into place by checking and rechecking your work.

GUN SIGHTS

Most manufacturers supply some type of gun sight part, which usually has the correct shape, but lacks detail. Most World War Two fighter aircraft were fitted with some type of reflective gun sight, which was centered either at the top of the console or above it, while modern jets have heads up displays, which combines computer aided gun and missile aiming along with instrument readings. The reflective glass for the gun sight is positioned so that the pilot's eye could look through the reflective glass, on through the front of the windshield and out to the target.

To dress up the sides of the gun sight I usually add some small, thin plastic disks that I punch out with a Waldron Punch Tool. You can also add a switch or two with stretched sprue or tiny diameter stiff brass wire and to really add some realism attach a small instruction decal. Most gun sights are a light shade of flat black. Do not add the clear parts until you have finished all your painting. If the gun sight needs a reflective glass plate, but none was supplied in the kit, you can add this by cutting a small rectangular shape from clear sheet plastic or your Waldron Punch Tool if you need a round clear disk. Glue the clear parts in place with white glue so that you have time to properly position the reflective lens.

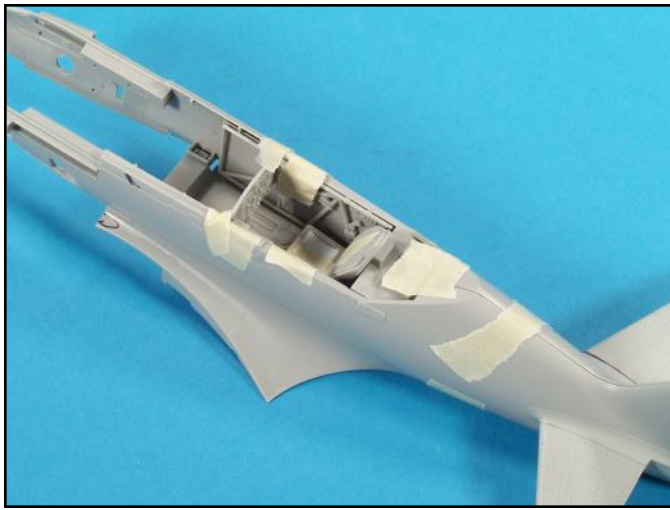
INSTRUMENT BOXES

Electrical and electronics instrument boxes can be made with a Northwest Short line Chopper and the edges sanded straight with their True Sander. Both these inexpensive tools are made by Northwest Short line and they are essential for any type of cockpit and interior basic scratchbuilding. A Waldron Punch Tool can be used to make disk dials and adjusting knobs for the boxes and you can also add switches made from small diameter stiff brass wire or small diameter plastic rod. Photoetch detail sets and resin detail sets usually supply all the boxes that you will need to add all the details you want.

ADDITIONAL DETAILING

If you decide to install interior framing keep in mind that vertical framing is wider than horizontal framing. To draw the lines for the framing on a curved surface use a thin strip of sheet stock of about .020 inches thick. If you decide to install both types of framing, I recommend that you do the vertical ones first and then form fit the horizontal ones using the grid framing that you drew onto the inside of the fuselage. Since the horizontal frames will be in sections and positioned between the vertical frames you will need to ensure that they are all installed along a straight line. I install all the strips along one line, adjust them until they appear straight and then place a drop of super glue with a thin wire applicator along the underside of each length. The capillary action will pull the glue under the plastic strip.

If you want to add some additional interior plumbing use small diameter plastic round stock for straight lengths and moderate bends. You can secure the bend's position by applying tiny drops of super glue at the bend points. If you need to run the piping along interior contours use small diameter solder or soft brass beading wire. These metals are easy to shape and contour around curves, corners and over framing. An easy way to paint these small diameter lengths is with a Sharpie indelible ink marker. Cut the tip of the indelible marker down the middle so that you can run the wire through it to color the surface evenly. Squadron Products, True Details resin line sells 1/48 scale and 1/32 scale couplings and connectors that can be used in conjunction with interior plumbing to enhance their appearance. You can also purchase colored beading wire from Arts and Crafts stores instead of using a sharpie to color the solder or brass wire.



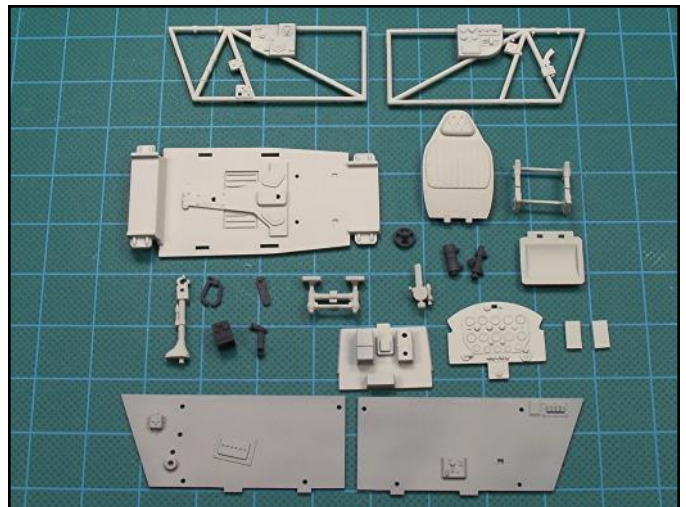
Test fitting all the interior cockpit parts ensures that any fit issues can be fixed before painting, detailing and assembly.



This seat base had some deep mold punch-outs. Rather than trying to fix them, I laminated a piece of .010 inch sheet plastic to the base of the seat. The super glue filled seams on the seat backing were carefully scraped and sanded smooth.



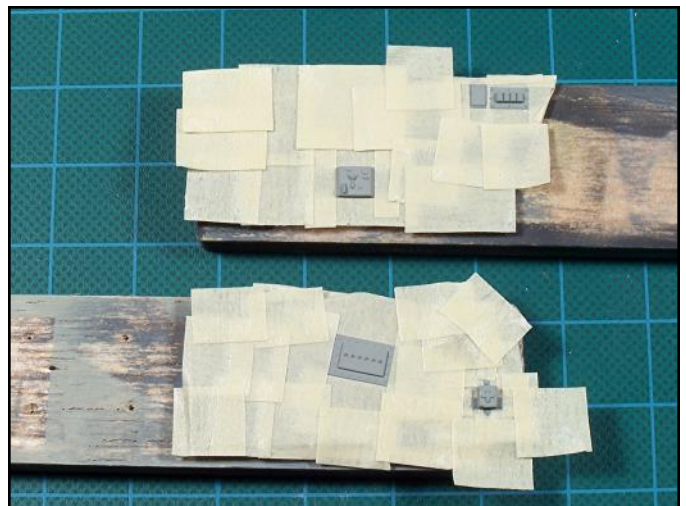
The back of the seat had the positioning pins sticking through. Super glue was applied around the pins and then the pins were cut and wet sanded smooth with fine grit sandpaper wrapped around a length of balsa wood.



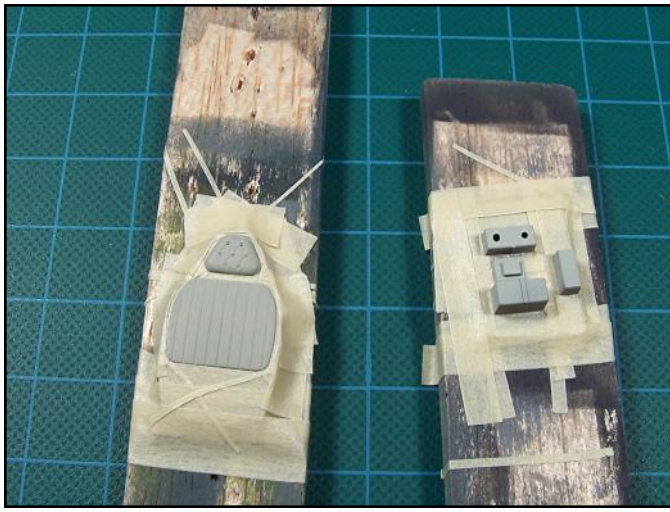
All the interior parts were cleaned up, seam lines removed and mold punch-outs fixed. They were then primed and rechecked for any flaws and then given their base coat colors.



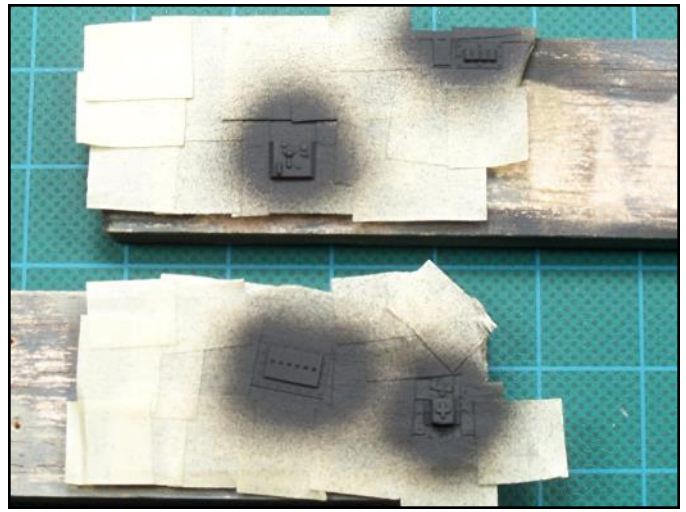
The cockpit side framing was carefully masked so that the control panels could be painted.



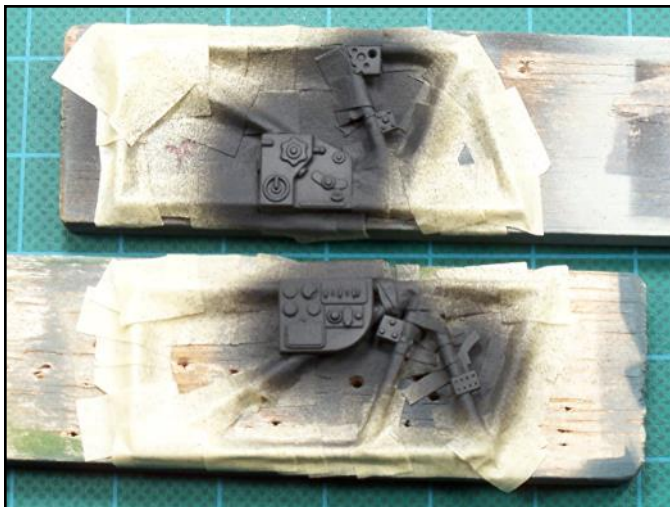
The cockpit side panels were also masked for painting.



The seat backing and radio equipment boxes also received carefully placed sections of masking tape.



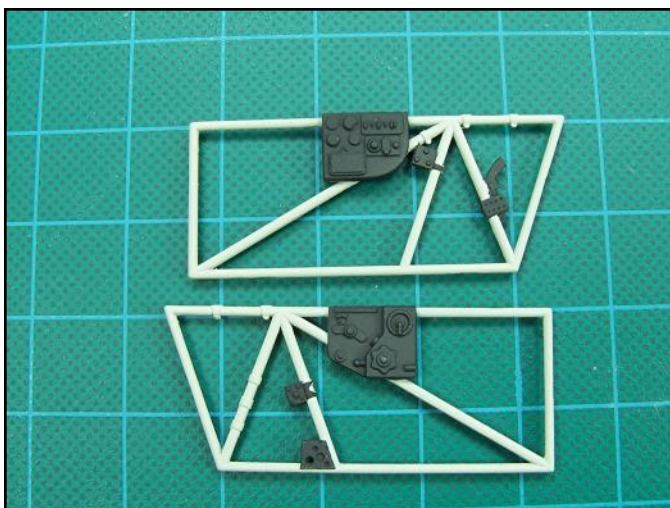
The control boxes were airbrushed with flat black paint with some white added so that the color was slightly lighter.



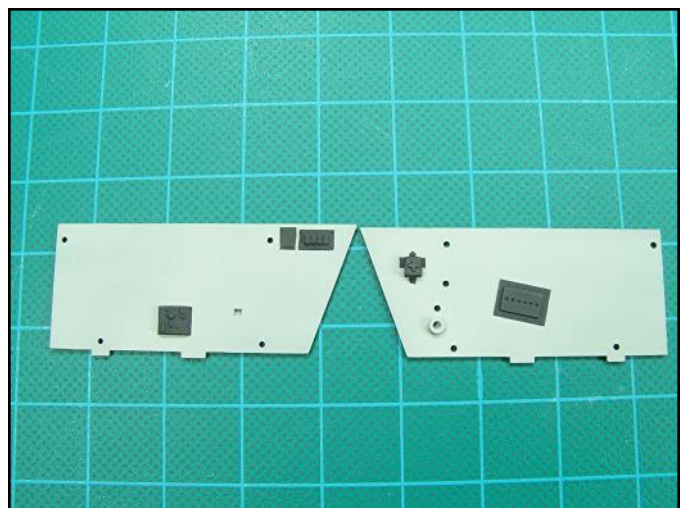
The control boxes were airbrushed flat black. This will help differentiate between the boxes on the panels and the boxes on the framing.



The flat black that was airbrushed on these parts also had a few drops of flat white added so that the resulting color was a slightly lighter flat black.



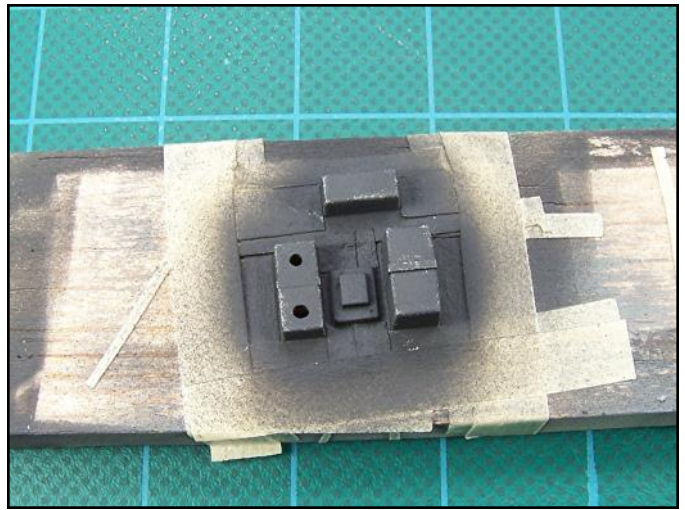
The boxes are now ready for detail painting. Thanks to careful masking there are sharp demarcation lines between the colors.



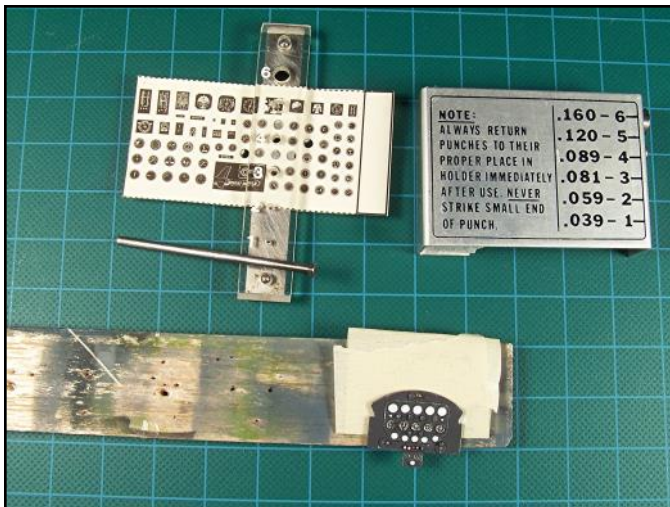
Note how crisp the different colors appear. Here again careful masking prevents any bleeding of colors.



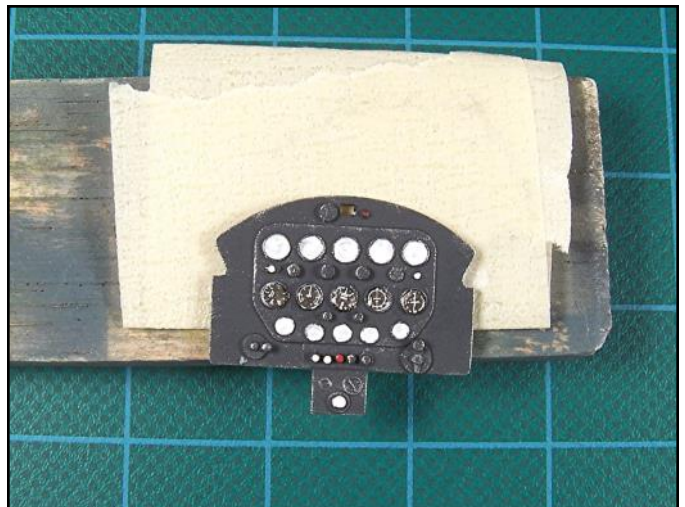
The seat cushion backing surface was drybrushed with light flat gray and flat white to represent worn and faded leather.



The edges of these boxes were drybrushed with Testors silver enamel paint. When drybrushing edges there should be almost no paint on the brush.



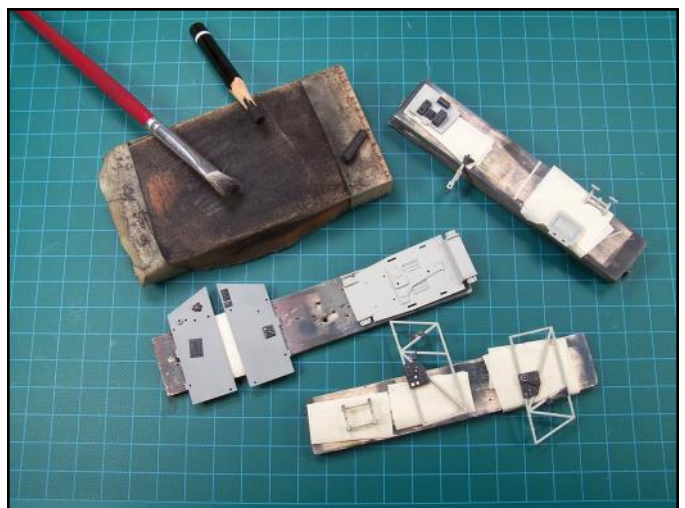
The instrument panel was airbrushed flat black with a few drops of flat white added. To represent the instruments, I punched out instrument decals with a Waldron Punch Tool.



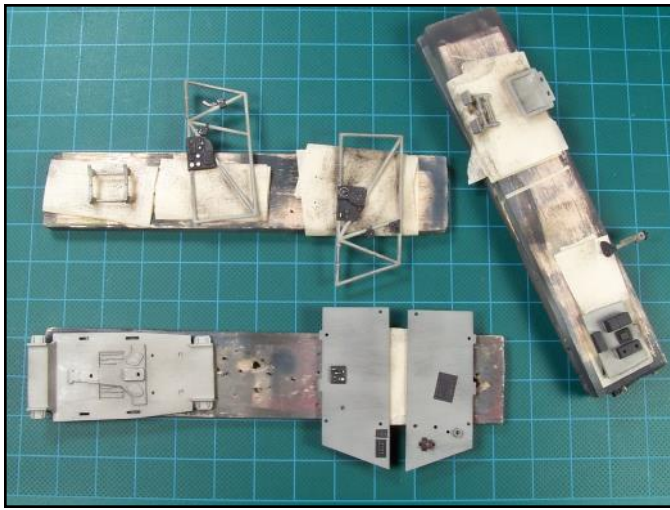
Each instrument location got a tiny drop of flat white applied with the tip of a toothpick before the decal was slid into place. The raised circles on the panel kept the paint in place. Note how the white paint highlights the instrument detail.



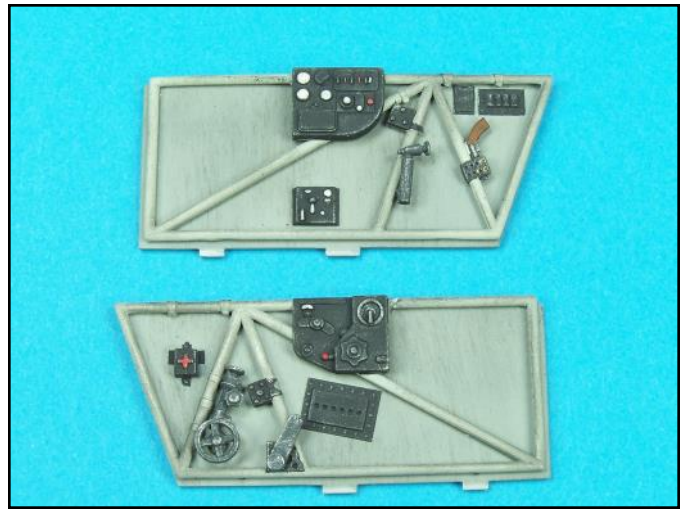
Each instrument also received a drop of white glue so that once dried the instrument appears to have a glass covering. The detail painting was done using a sharp toothpick dipped in the paint cap.



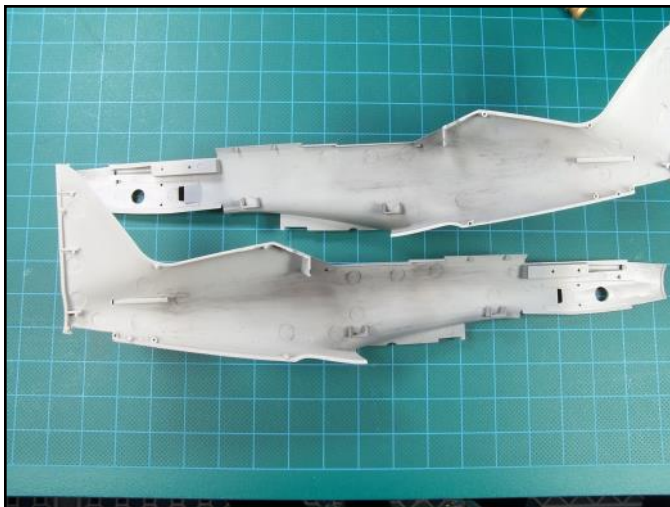
The detail painting was done first and then the pastel dust was applied. Pencil pastels and chalks are a simple and disaster proof way to achieve basic weathering.



Note that the pastel strokes are from top to bottom. The dust was sealed with clear flat lacquer paint.



Note how the various shades of flat black combined with the lighter colors, detail painting and subtle weathering all add up to nicely detailed cockpit side walls.



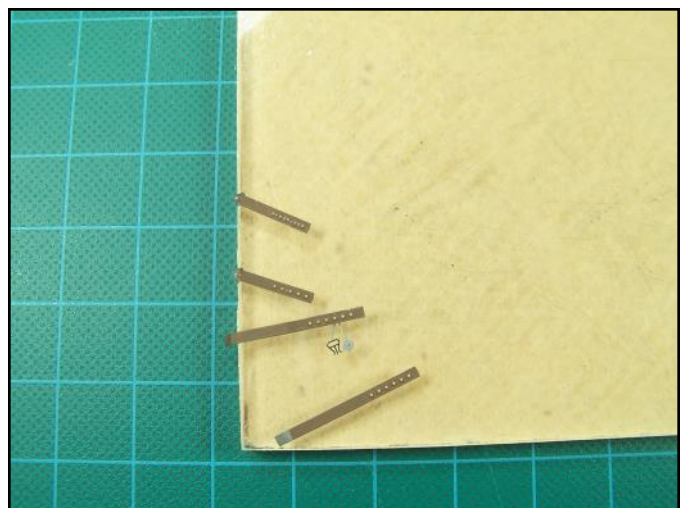
The insides of the fuselage were airbrushed and then they also received a dusting of pastel colors.



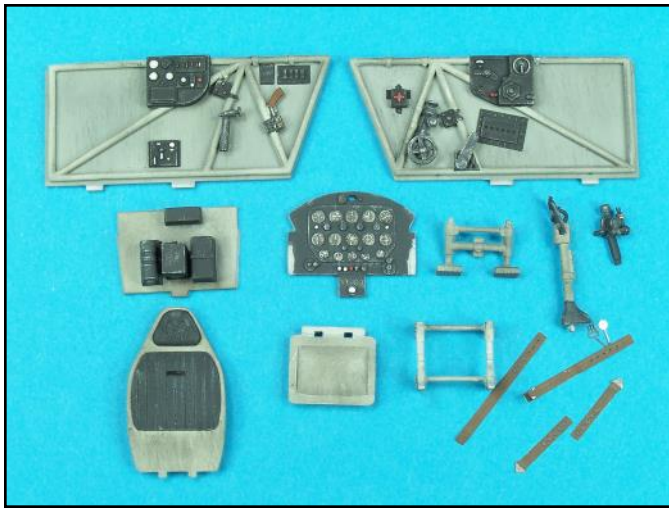
The seat belts come through the seat backing and so to make the rectangular shaped opening, holes were drilled first.



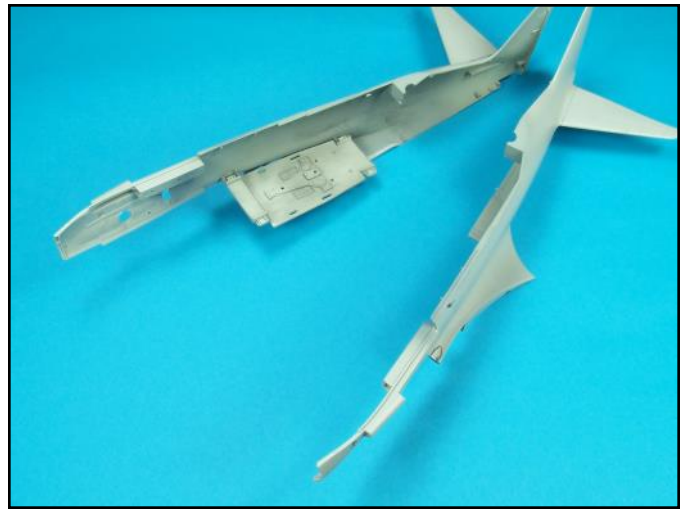
The plastic between the drilled holes were then cut out and micro files were then used to shape and clean the opening.



The photoetch seat belts were basic, but adequate. They have been painted and are ready for installation on the seat. The belts will be drybrushed with flat white so that they look worn.



All the interior parts have been painted, weathered and checked for flaws. They are now ready to be assembled.



The left and right side cockpit floor edge paint was scrapped off and then the floor was attached to the starboard side of the fuselage.



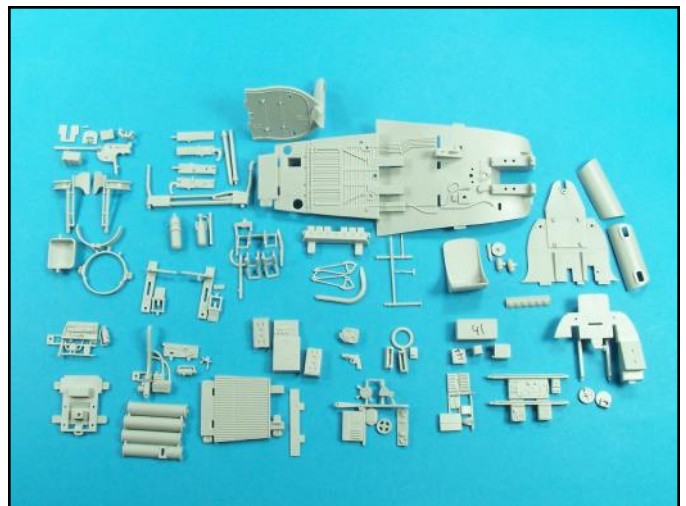
The framing for the interior sides was then glued into place.



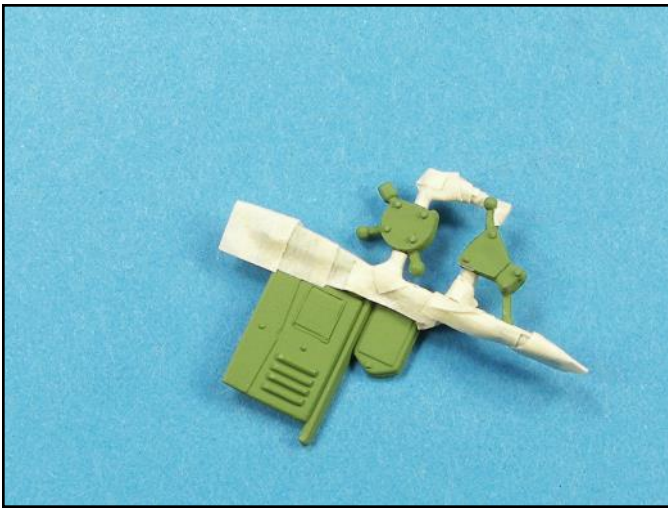
At this point in the construction sequence the fuselage sides were glued together and the instrument panel added. The instrument panel gun sight will be added at a later stage in the fuselage construction sequence.



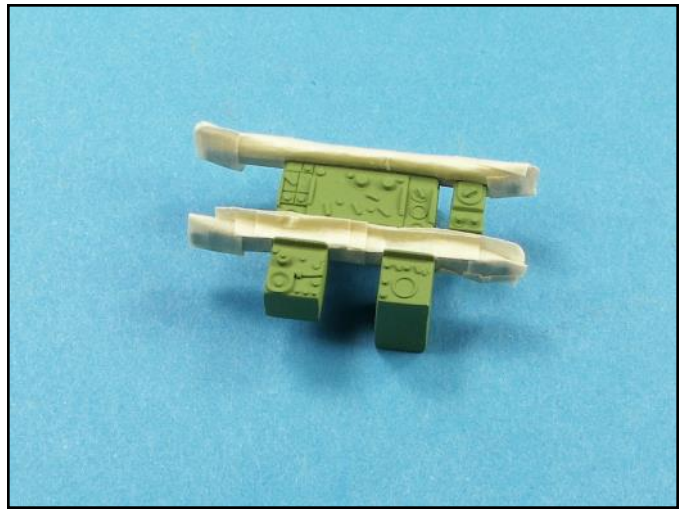
The seat was assembled, the seat belts installed and then the finished seat was carefully glued into place. I used drops of Testors tube glue applied with a toothpick so that I would have some working time to adjust the position of the seat.



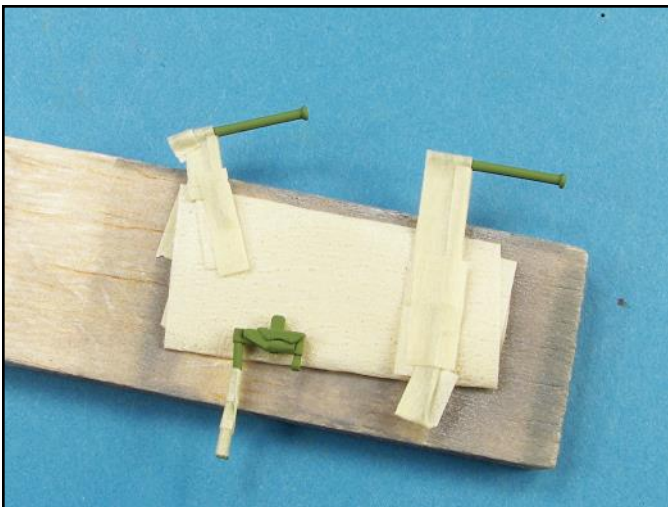
The Trumpeter 1/32 scale SBD Dauntless is one of those kits that has an enormous number of cockpit parts and detail. Parts management on these types of kits is important and plastic bin organizers are the best way to store parts.



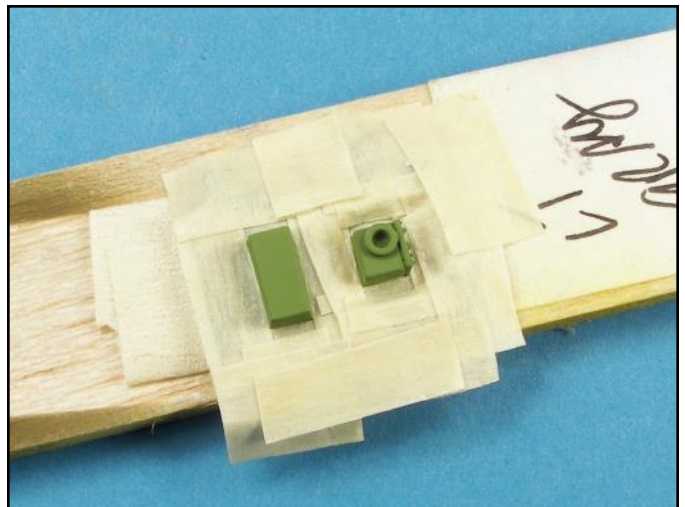
The interior parts of the SBD were airbrushed with their base color. Masking on multi-surface parts can be tricky which is why I like to use 3M painters masking tape which has stretch qualities. It can also be cut into tiny lengths.



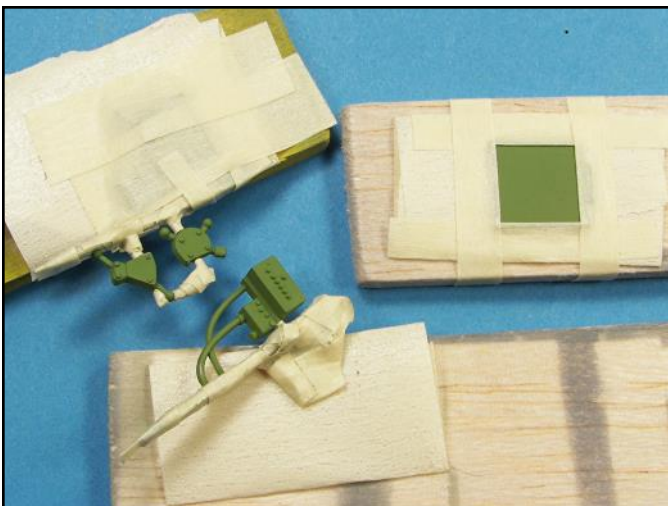
The framing on these instrument boxes are chromate green and the boxes will be airbrushed flat black with some flat white added to lighten the color.



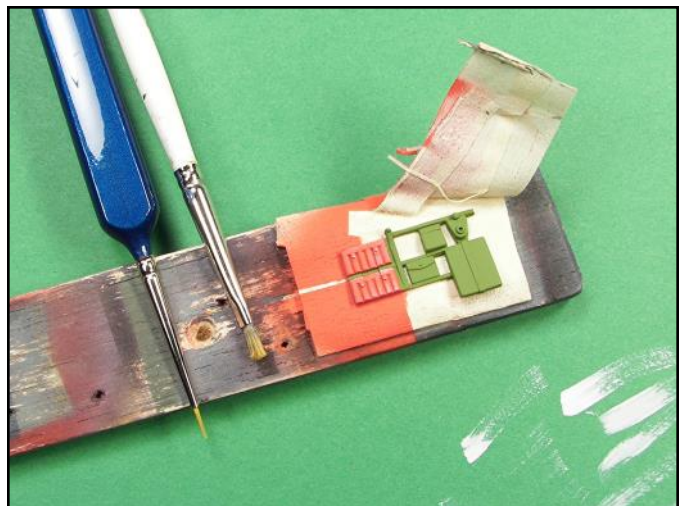
Note how the masking tape is folded over itself and attached to a length of balsa wood. This makes airbrushing these tiny parts easier.



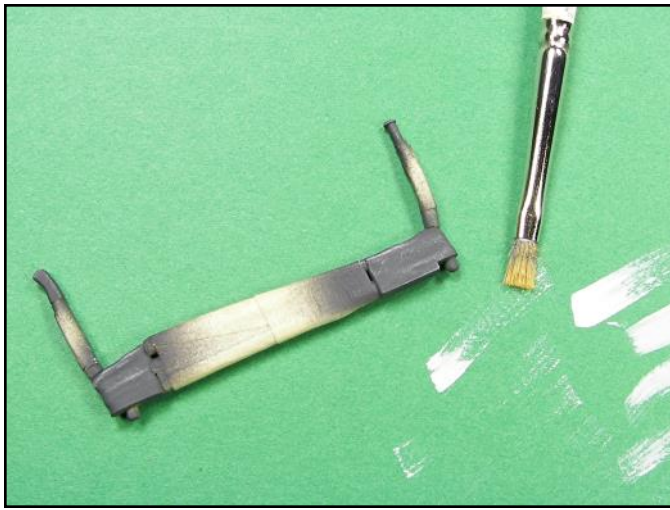
Flat surfaces are much easier to mask. Be sure to run the tip of a sharp pencil around the perimeter of the base of each raised part to ensure the masking tape is attached properly to prevent paint from bleeding under the tape.



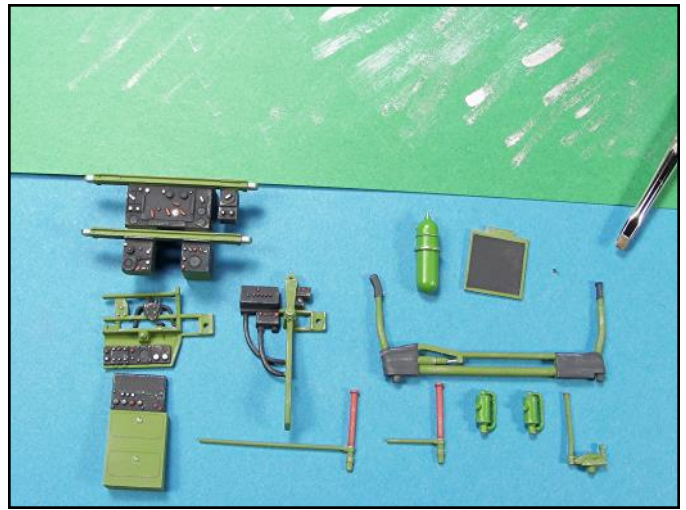
Note how the tiny strips of masking tape have been applied. Once these parts are airbrushed there will be sharp demarcation lines between the colors.



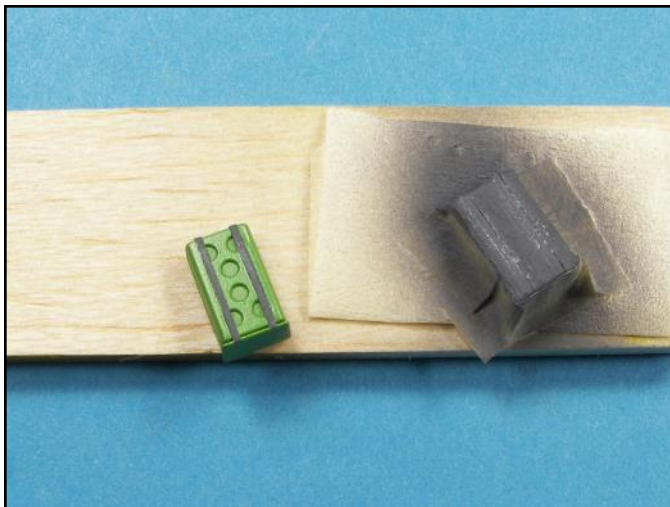
Masking can also be used when drybrushing. The orange canvas flare pouches were drybrushed with flat white so that they appear a bit worn. The drybrushing also gave the flare pouches more depth.



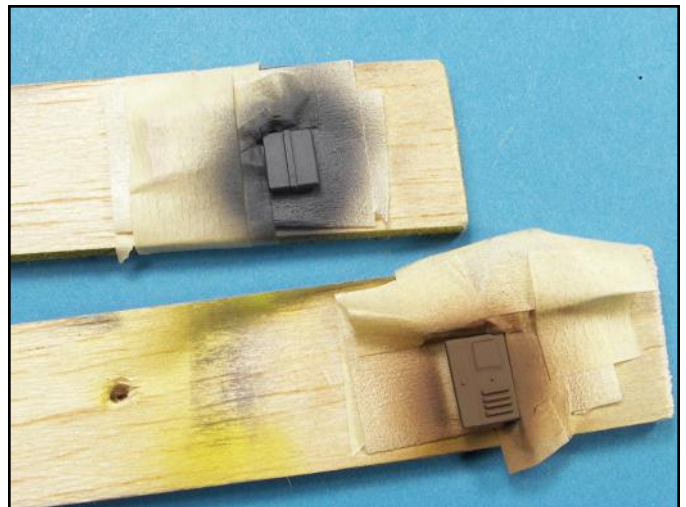
The black canvas covers on the bottoms of the control sticks were drybrushed with flat white.



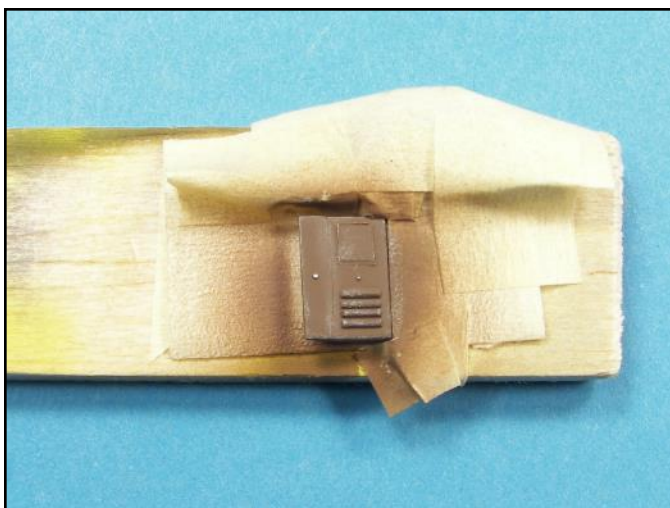
The edges of the electrical boxes and the framing received a subtle drybrush of Testors silver paint.



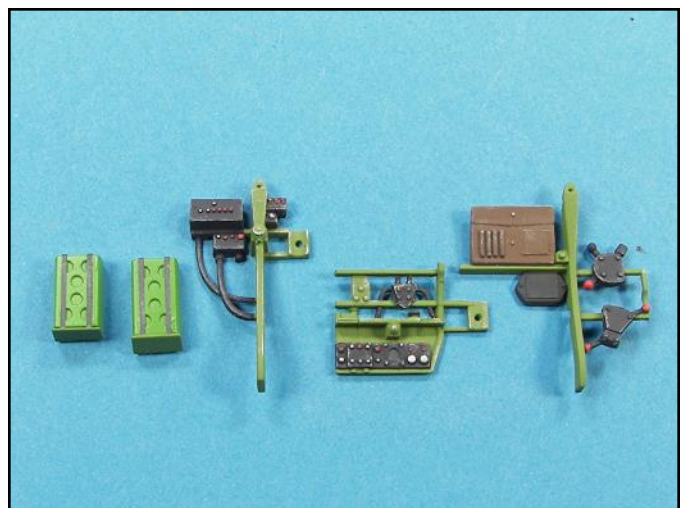
The oxygen canisters were airbrushed first, and then masked. The straps were airbrushed flat black with some flat white added. Before the masking was removed the straps were drybrushed with flat white.



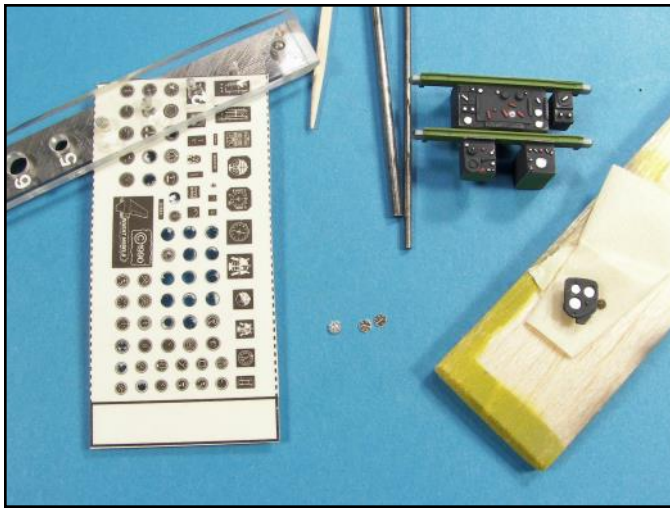
The leather pouch was attached to the framing so everything was carefully masked and the pouch airbrushed with dark brown.



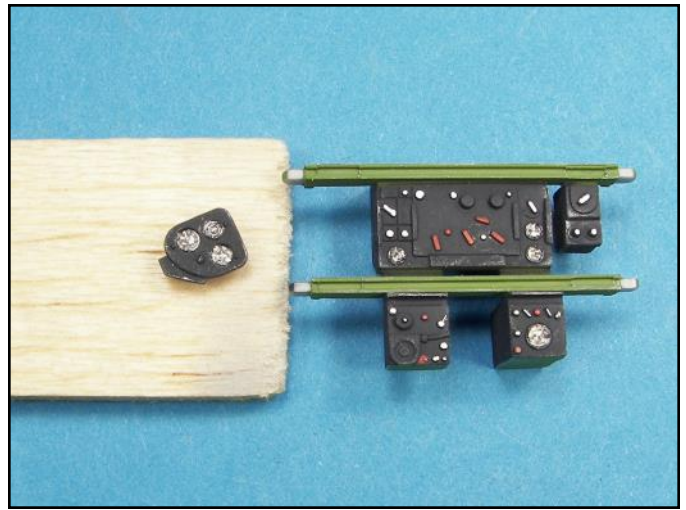
The leather pouch was drybrushed before removing the masking tape.



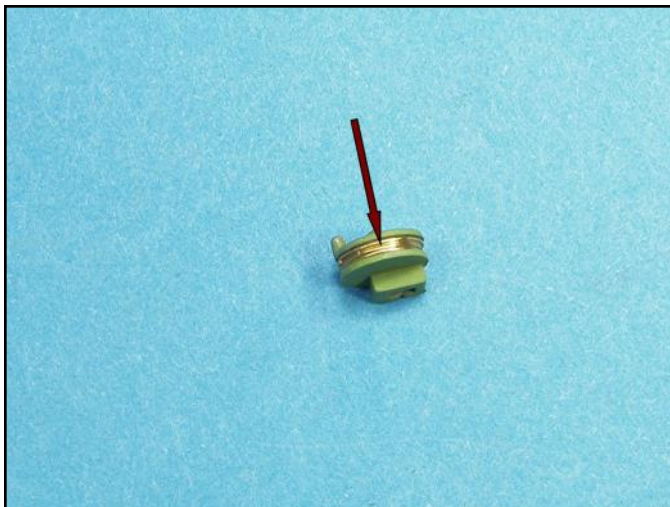
The detail painting on the dials, switches and knobs were done with a toothpick tip dipped into a paint bottle cap. This allows for the placement of tiny amounts of paint.



To enhance the appearance of the electronics box fronts that have dials and instruments, I punched some instruments out from a decal sheet and carefully slide them into place.



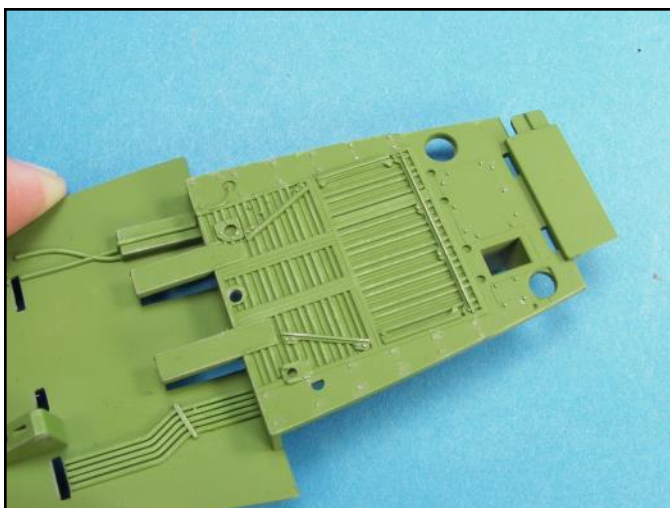
The parts look much better with decal instruments.



For added detail a length of brass beading wire was wrapped around this part to represent the extendable antenna.



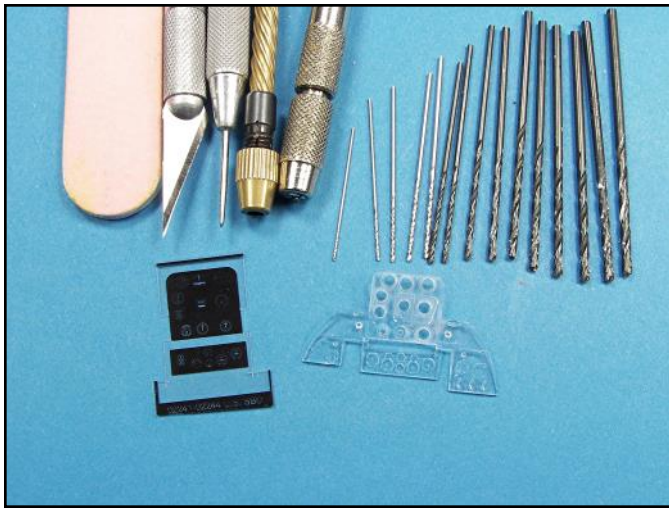
The main cockpit bulkhead, floor and seats were painted and then drybrushed with silver paint.



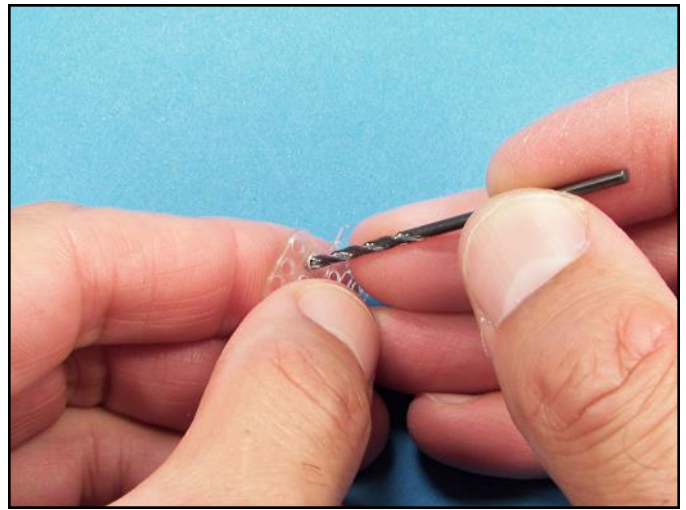
The silver drybrushing should be very subtle. The additive effect of all the interior parts being painted various shades of the same colors, plus the drybrushing and detail painting will make for a busy looking cockpit.



The radio direction finder was painted flat black, then masked, re-primed and then painted with Testors aluminum metalizer paint.



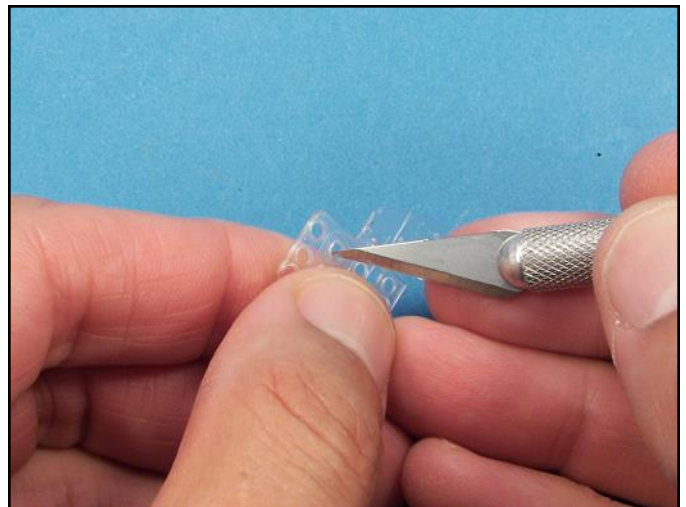
Clear instrument consoles look much better when you drill out the instrument locations, but you have to open up each hole carefully, because clear plastic is brittle and it can easily fracture.



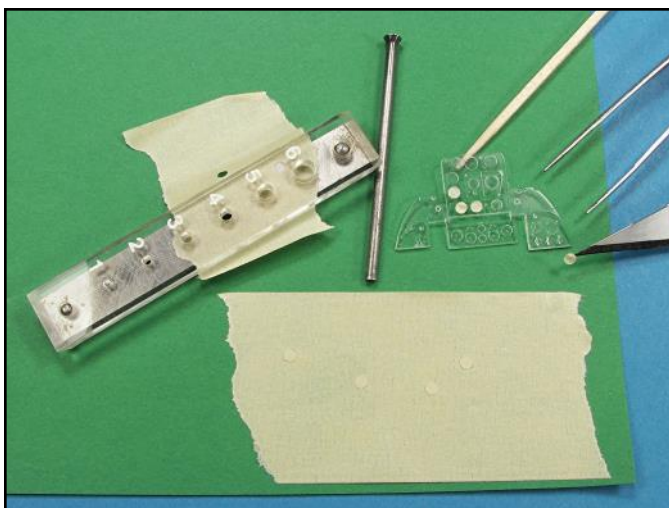
Each instrument location was hand drilled using progressively larger bits until the desired diameter was achieved.



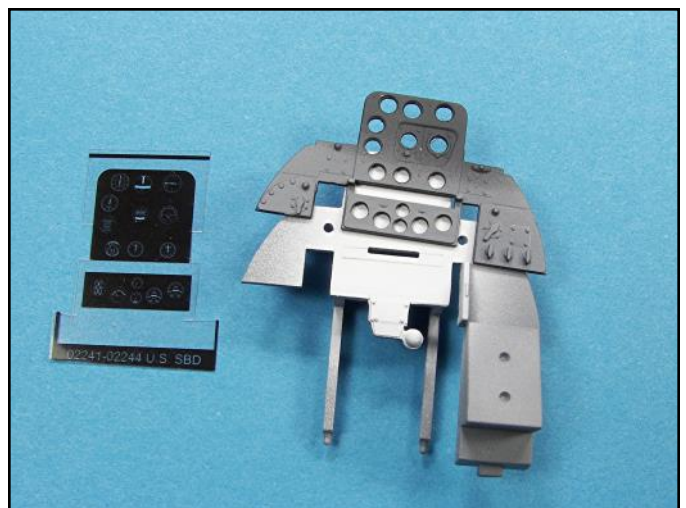
Plastic burrs around the edges of the holes were smoothed out with the tip of a fine grit sanding stick



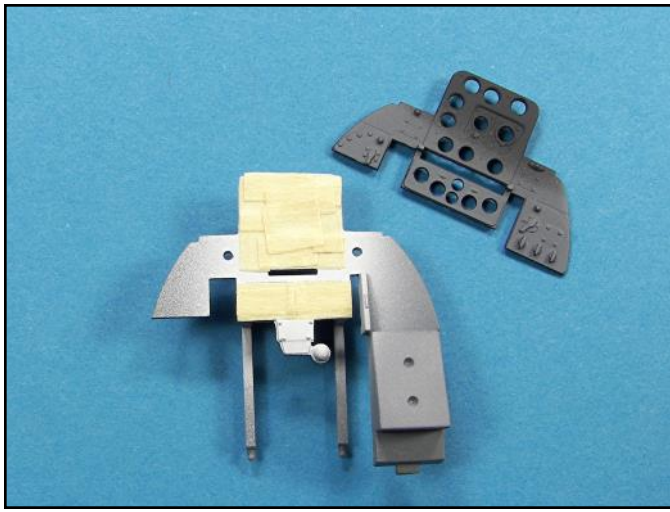
Sometimes there are also plastic burrs on the inside areas of the holes and these can be removed with the tip of a sharp number 11 X-Acto blade.



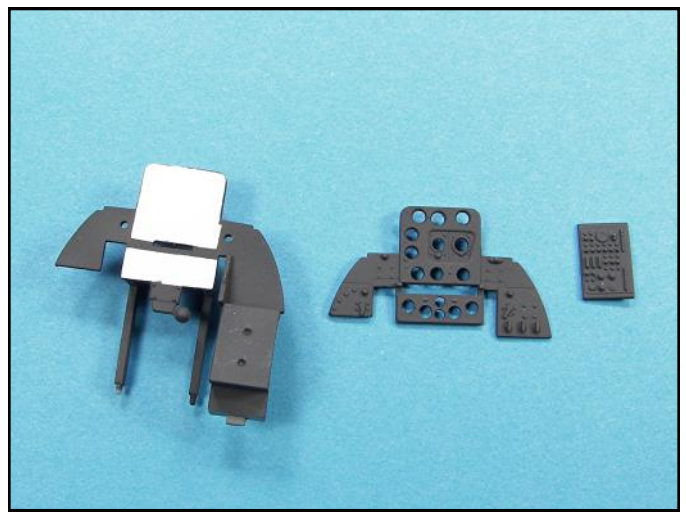
Another method for clear plastic consoles is to use a Waldron Punch Tool to make masking tape disks. These disks will have to be carefully placed over each instrument face location.



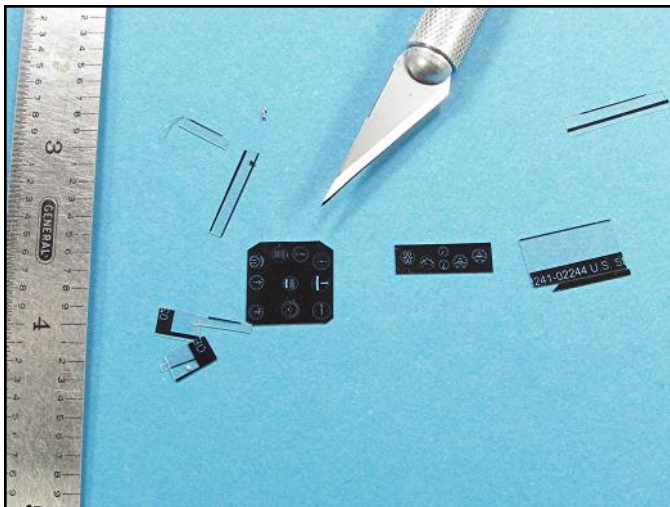
Here the drilled out console has been airbrushed and the backing to the instrument face airbrushed flat white so that the detail on the acetate instrument sheet will stand out.



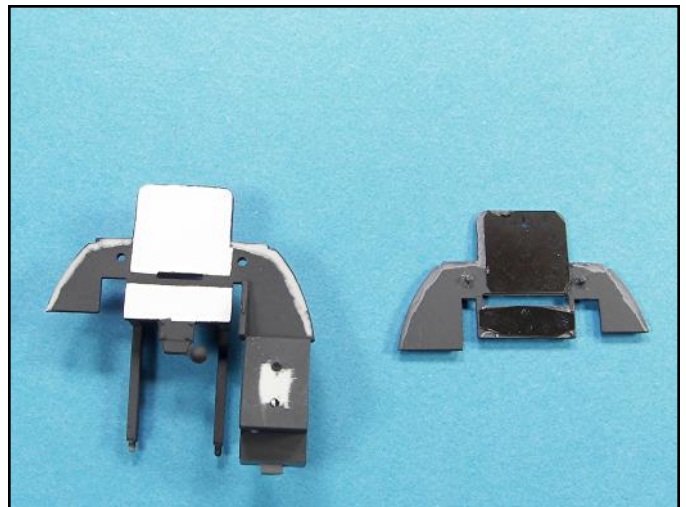
The flat white area has been masked for airbrushing the remaining areas of the part flat black.



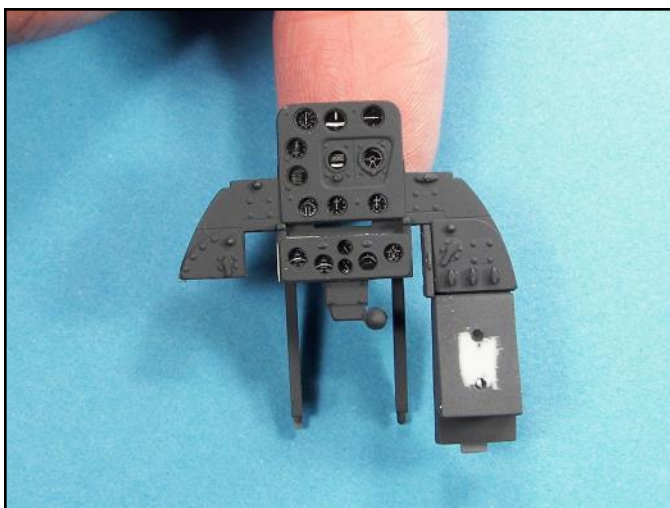
The three main console parts are now ready for assembly.



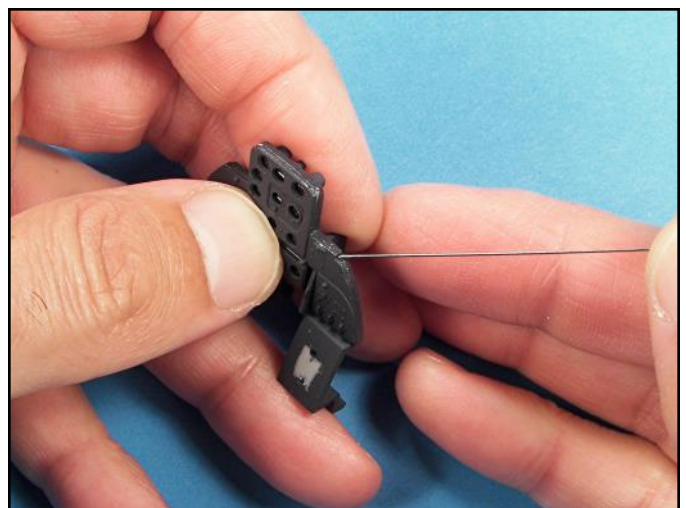
The acetate instrument sheet was cut up so that it could be properly positioned onto the inside of the instrument console.



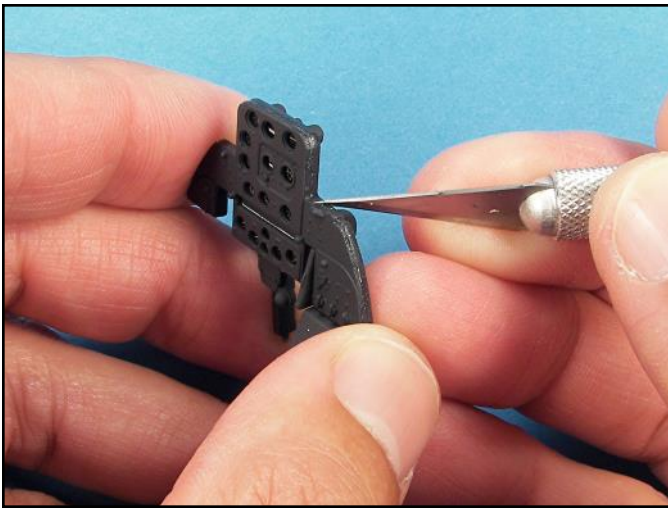
The acetate sheet was positioned and then attached with tiny drops of white glue in the corners so that minor adjustments could be made. The acetate sheet was then super glued in place with tiny drops of glue.



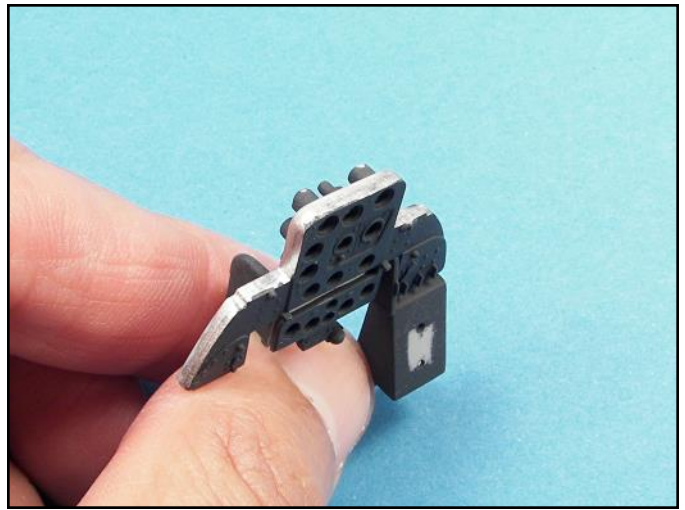
The console was then glued to the backing with tiny drops of Testors plastic glue so that adjustments could be made.



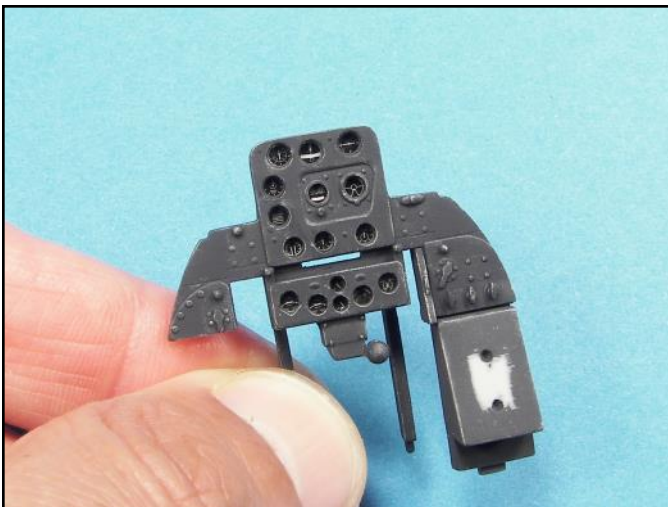
Super glue was then applied along the edge of the combined assembly.



The super glue was then scraped and sanded smooth.



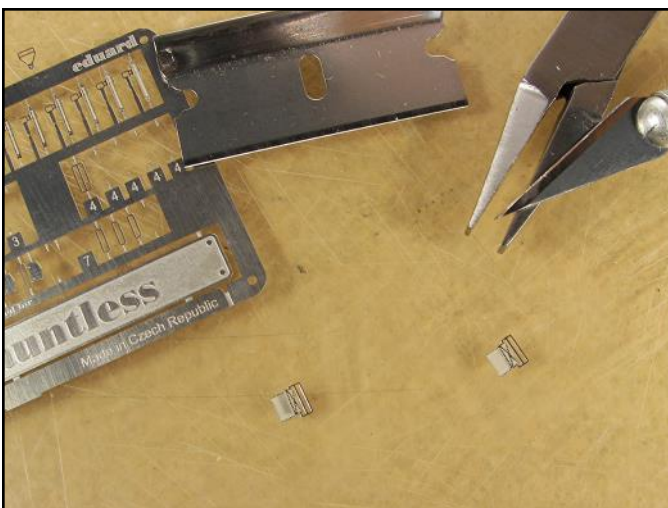
Silver paint was applied to check for flaws. The paint was then removed by wet sanding the surface smooth and then painted flat black with a detail brush.



The surface of the console was then drybrushed with silver paint.



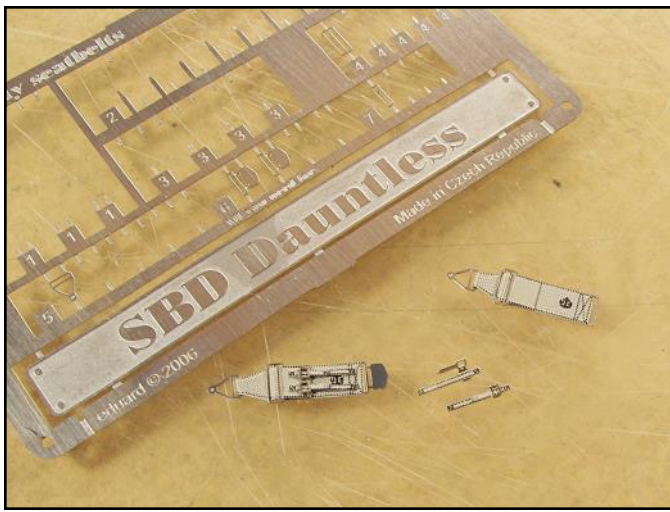
The final steps were to detail paint the side panel and console switches and then add the map tray.



The Eduard 1/32 scale pre-painted seat belts are multiple piece assemblies. Study the instructions carefully prior to assembly. I like to start with the adjusting loops.



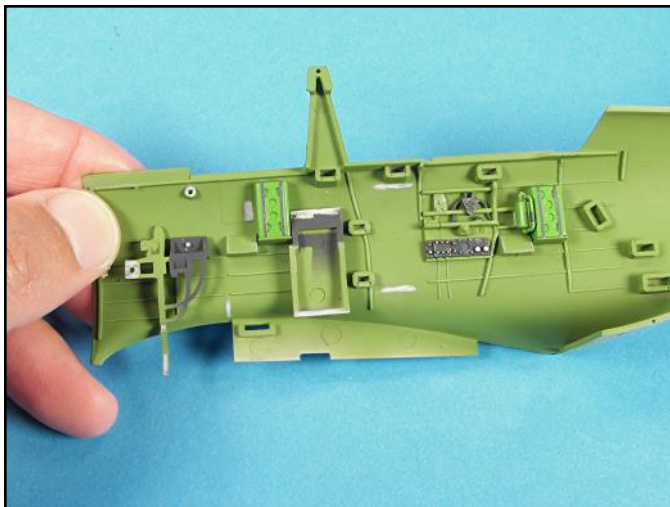
The belts were then carefully bent into shape and the adjusting loops were slipped onto the bent belts and then carefully positioned.



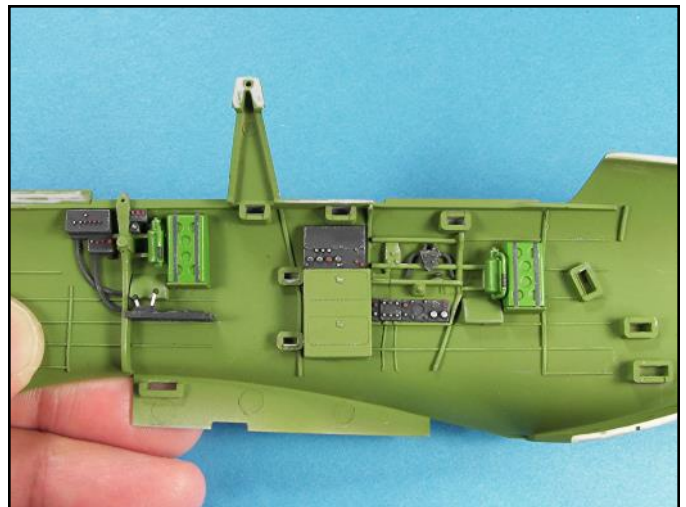
The buckles and seat clamps were then positioned and glued. The smaller belts were then attached with tiny drops of white glue to attach them so they could be positioned. Once the glue dried I add tiny drops of super glue.



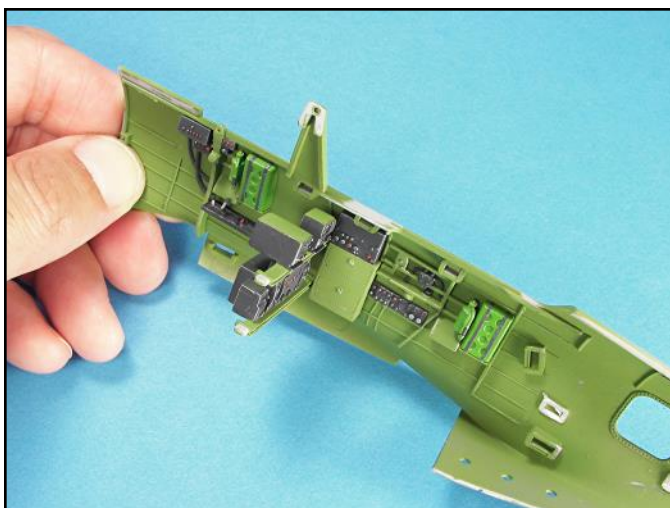
The belts seat clamps have been glued to the sides of the seats and then the belts were positioned over the seat. Note the subtle drybrushing which represents worn paint.



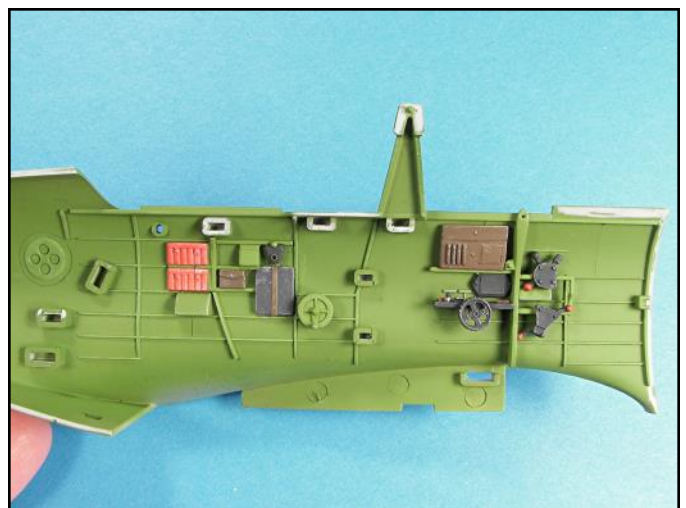
The starboard side fuselage interior parts are being added one at a time. Note that the paint that has been scrapped off for gluing the parts.



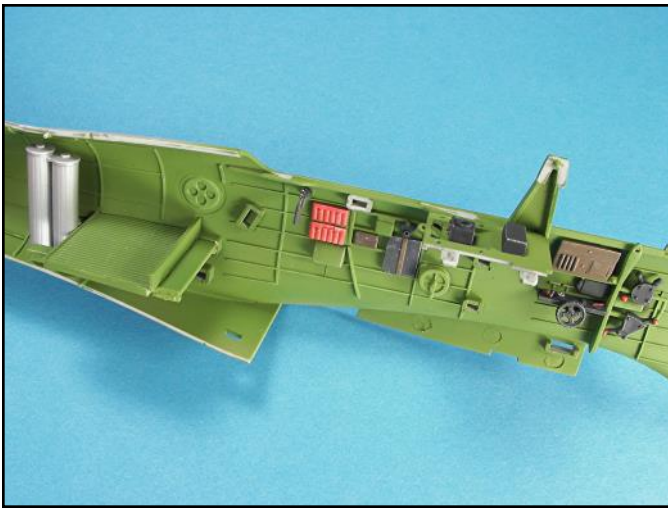
More parts have been added on the starboard side.



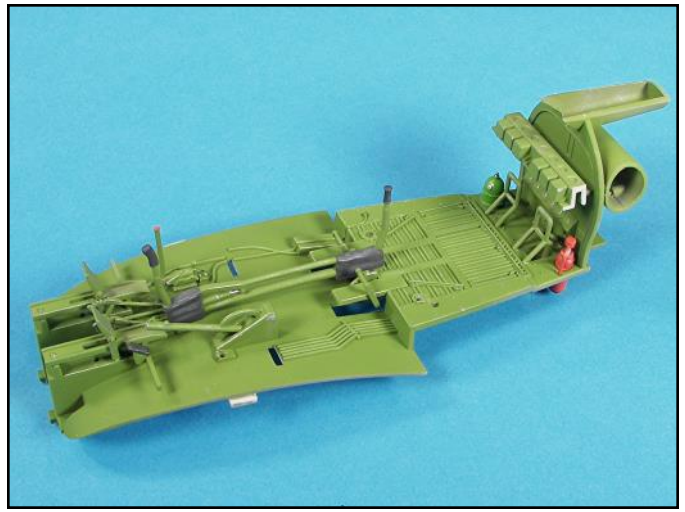
Note how the effect of using different shades of zinc chromate green, shades of flat black, detail painting and subtle drybrushing have an additive effect on the overall appearance of the fuselage side.



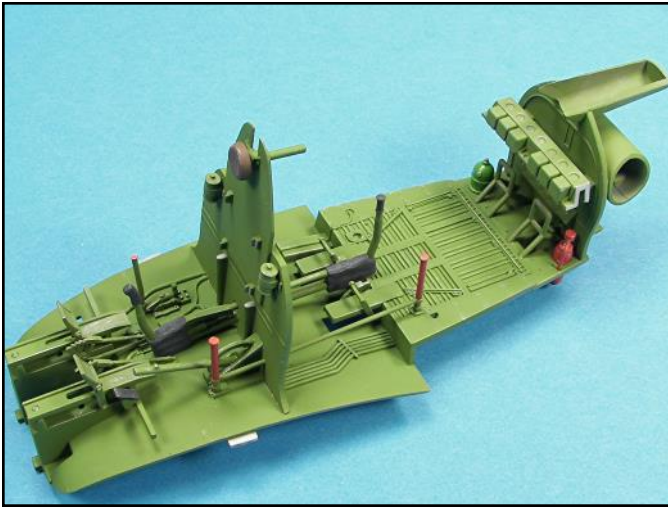
The port side assembly is also progressing. Careful airbrushing and detail painting result in sharp colors with excellent demarcation lines between the colors.



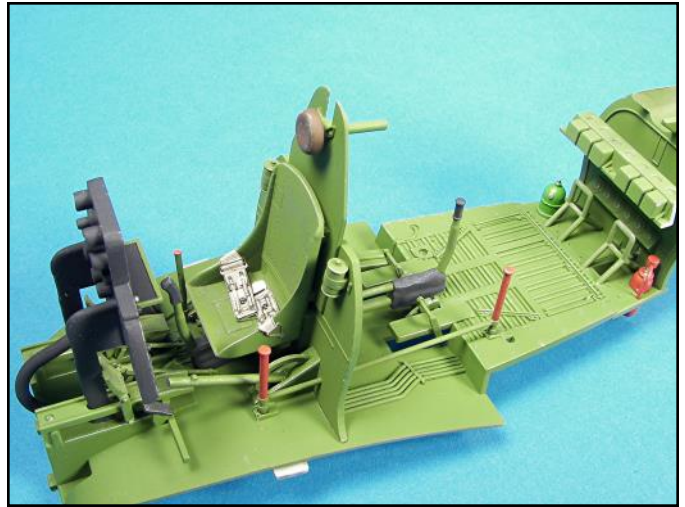
The port side fuselage interior is now complete. Test fitting was an important step for this kit prior to any painting and assembly. With so many parts it is important to be sure that everything fits correctly.



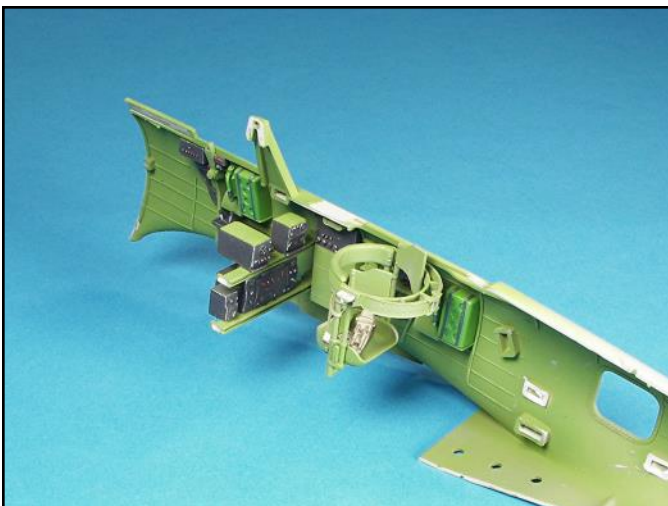
The floor assembly also has a lot of parts and each one was airbrushed, detail painted and then drybrushed.



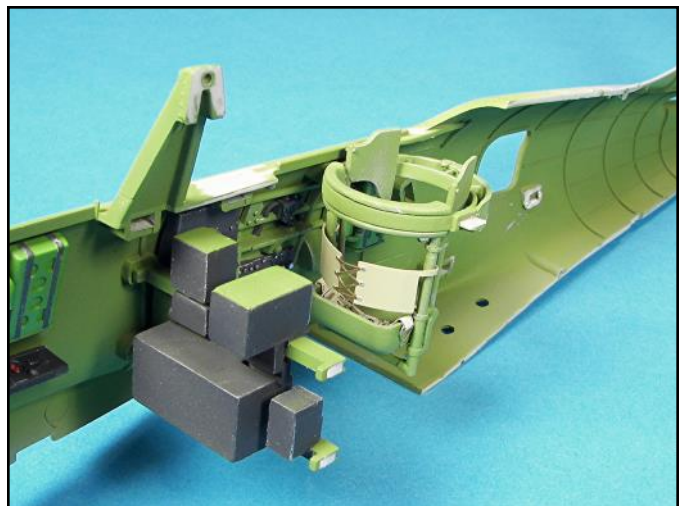
The pilot's bulkhead and associated parts were installed next.



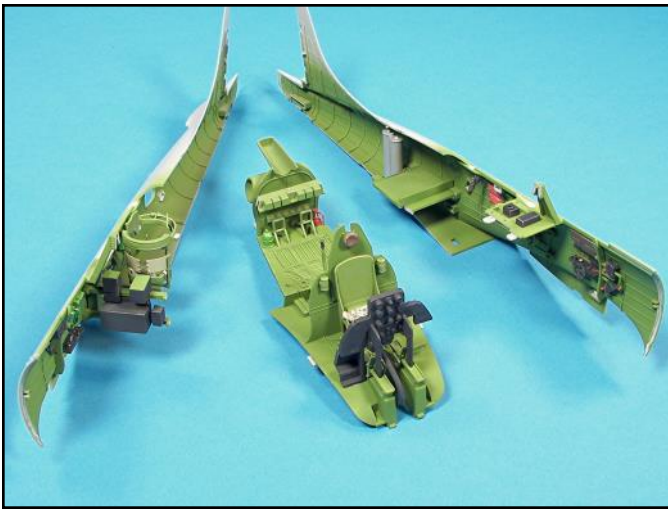
The pilot's seat and the console were then added.



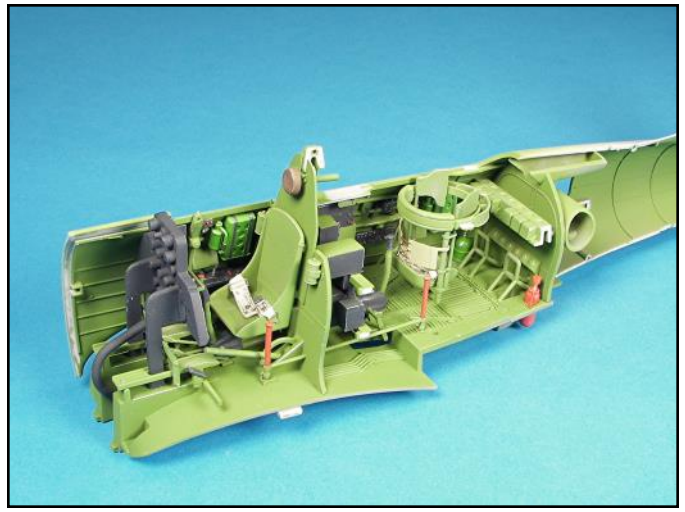
The gunner's seat was then added. At this point in the assembly process additional test fitting of the fuselage halves and the floor was necessary to be sure that parts did not interfere with one another.



Note the subtle silver drybrushing on the edges of the radio boxes and the careful painting of the leather adjusting straps on the gunner's seat belts.



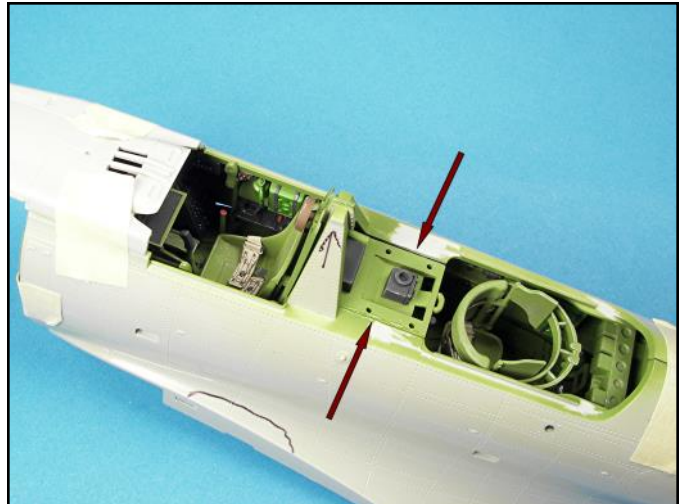
The cockpit interior is now complete and ready for final assembly.



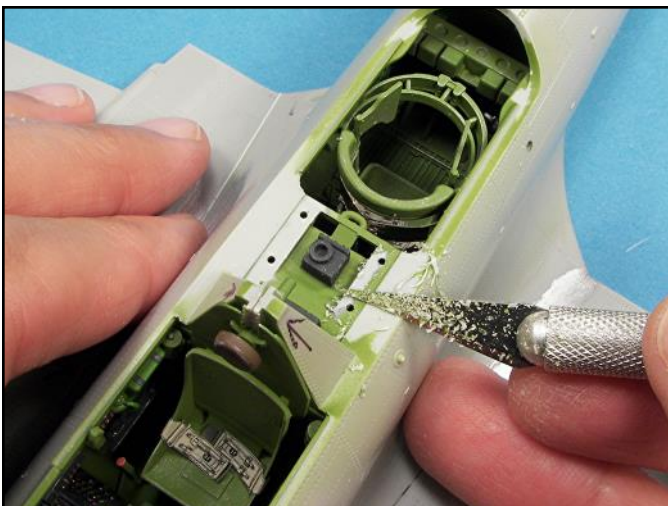
The cockpit floor was attached to the starboard fuselage side and then the port side was attached.



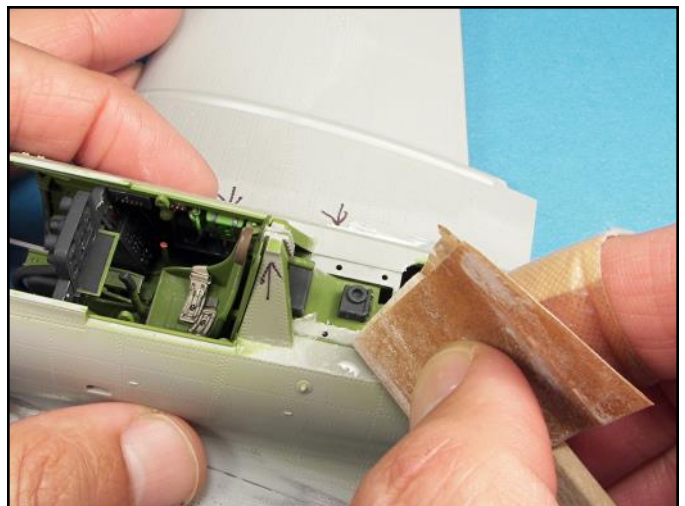
Thanks to all the test fitting prior to assembly and fit checks as the cockpit was assembled, the fuselage halves fit tightly together.



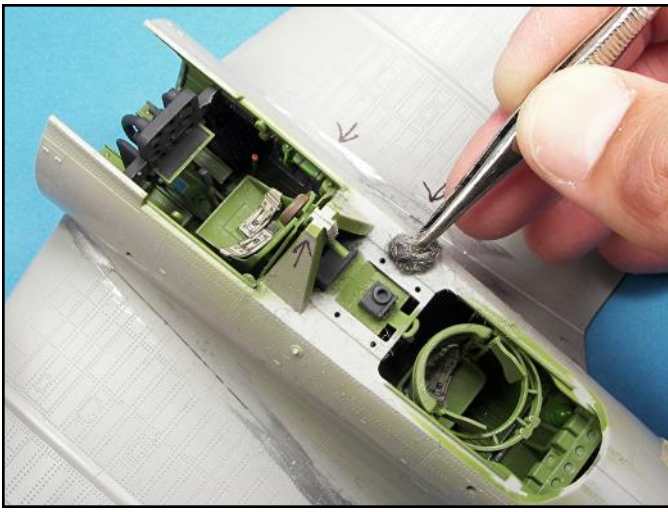
The platform between the pilot and gunner was slightly narrow, however gently squeezing the fuselage halves together solved the problem.



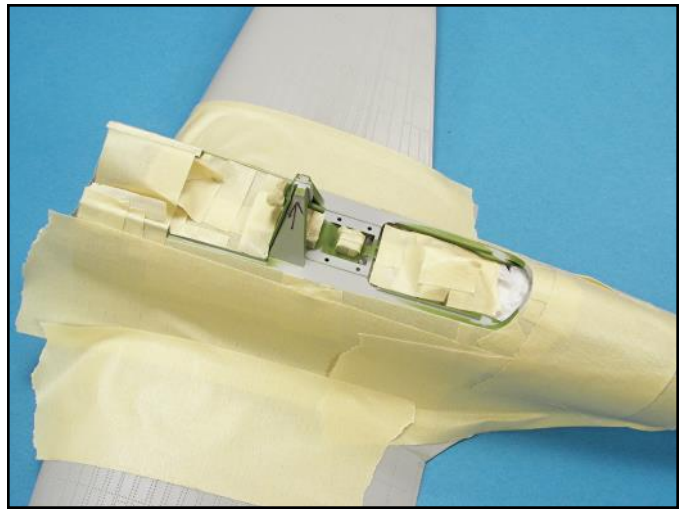
The seams were filled with super glue and then carefully scraped to remove excess glue and to flatten out the surface between the platform and the sides of the fuselage. Note how the starboard side looks.



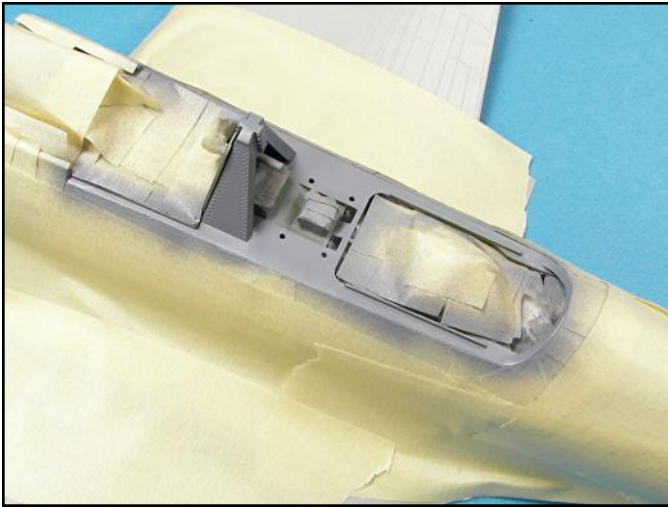
The surface of the plastic was then wet sanded with sandpaper wrapped around a length of balsa wood.



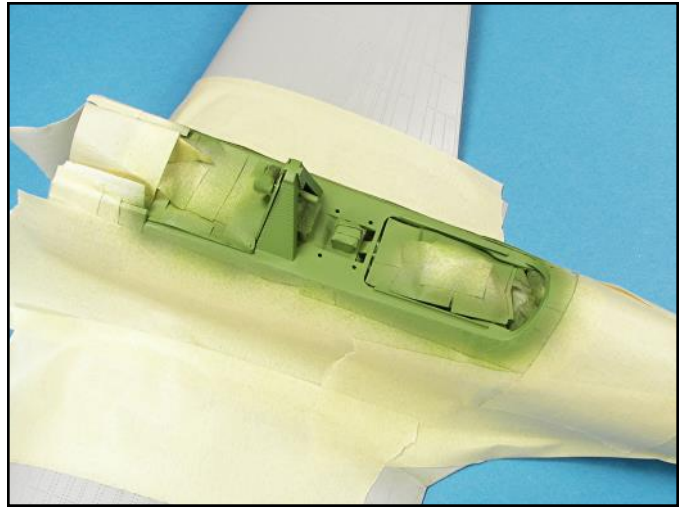
A small ball of 0000 steel wool was used to remove any remaining scratches and to polish the plastic.



Everything was then carefully masked for airbrushing.



The surface was primed and a final check was made to be sure the seams were gone and that there were no surface flaws.



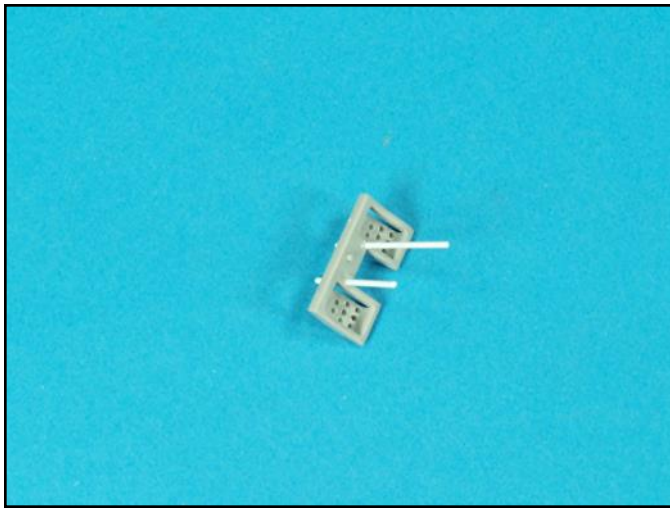
The primer was then airbrushed with zinc chromate green. The first coat was the actual color and the second coat was a slightly lighter color.



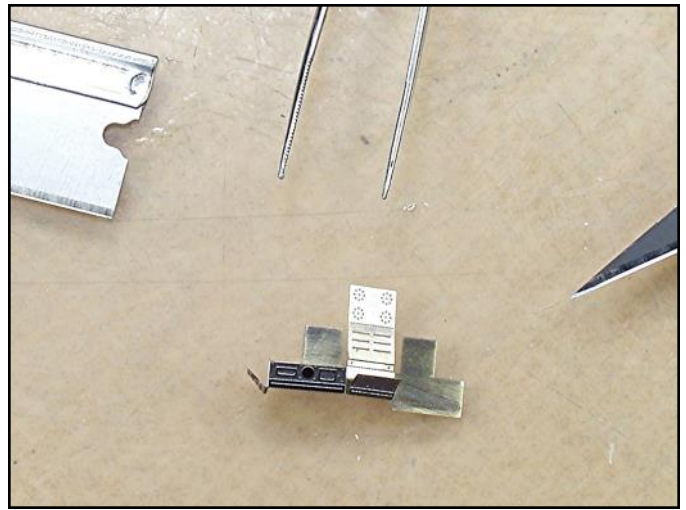
With the masking tape and tissue removed the cockpit looks great.



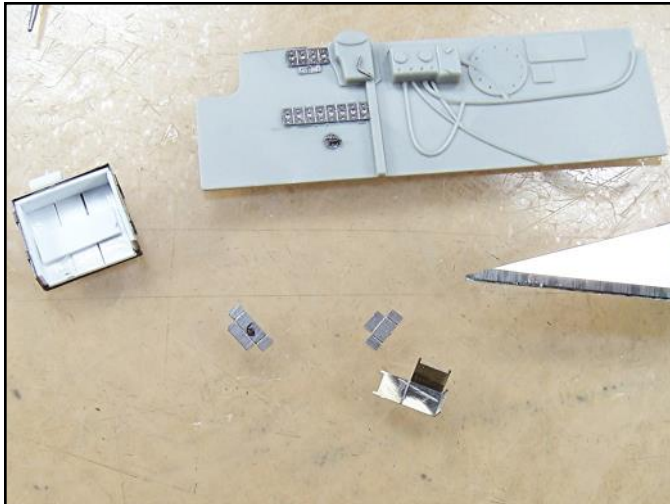
The radio boxes and the direction finder were added after the remaining fuselage parts were airbrushed and attached.



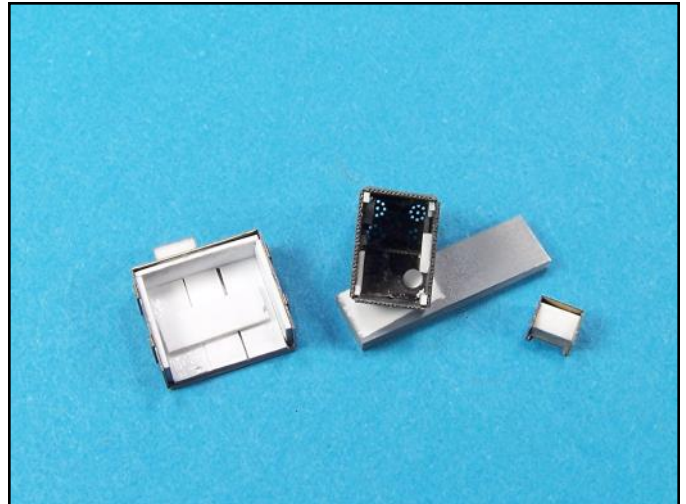
The tiny mold punch out depressions on this part were drilled out so that plastic rod could be inserted. The rods were super glued into place and then cut and scrapped smooth with the tip of a number 11 X-Acto blade.



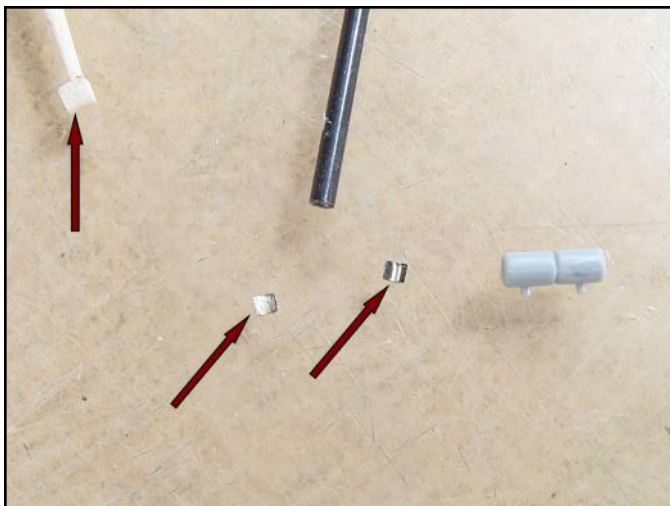
Photoetch box shapes are best partially bent along their fold lines. Once the metal is slightly worked along the fold lines you can complete the shape by bending the sections with a set of tweezers and the tip of an X-Acto blade.



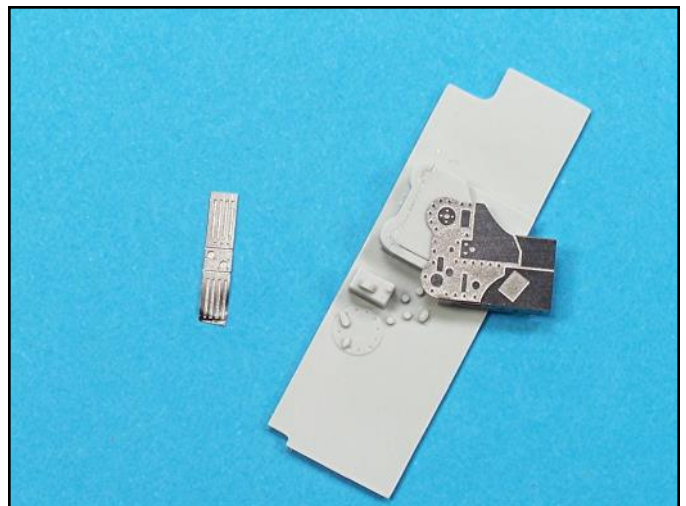
These photoetch parts are being glued into place one at a time. Working slowly in a stepped process will always yield better results with photoetch parts.



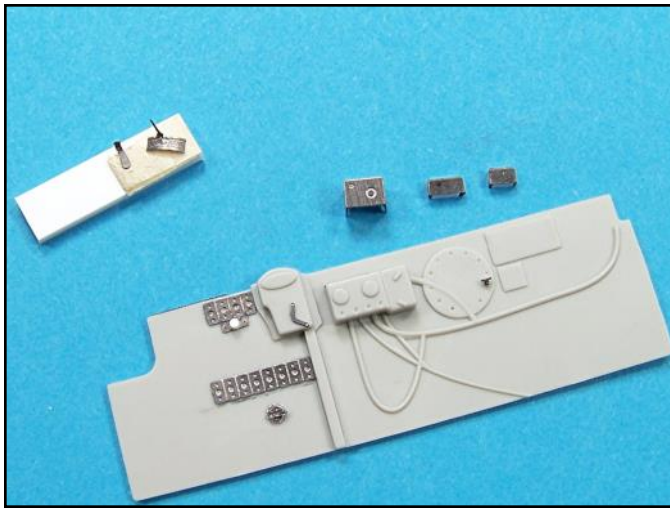
These box shaped photoetch parts had beads of super glue applied along the interior seam and fold lines. Small strips of .020 inch thick plastic strip were then added to strengthen the parts and provide for a wider gluing surface.



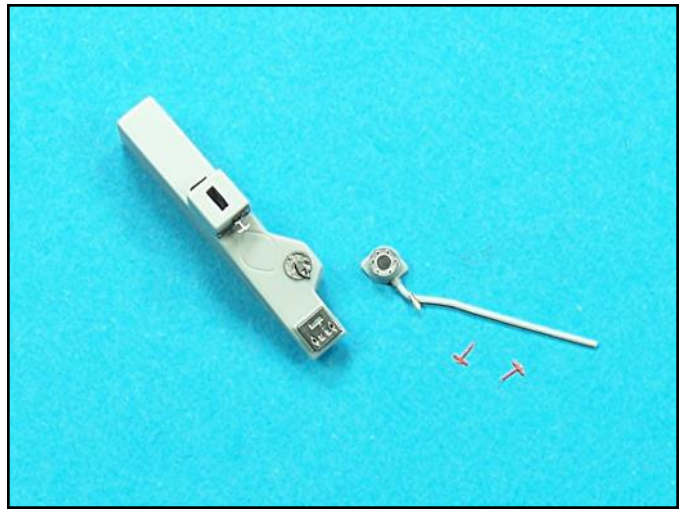
These small name plates were shaped by rolling a Waldron punch rod across them. I use a slightly smaller diameter rod than the diameter that I need so that the photoetch part would fit snugly in place.



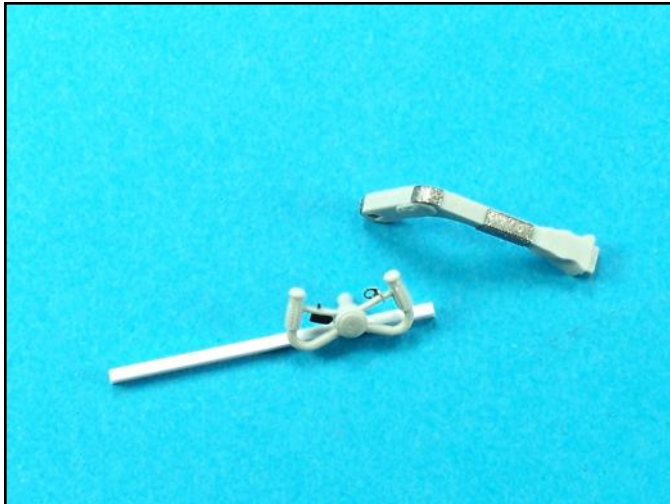
I do not always use all of the photoetch parts. The upper face plate on the throttle quadrant would be very difficult to shape and place correctly. I decided to just use the larger side plate.



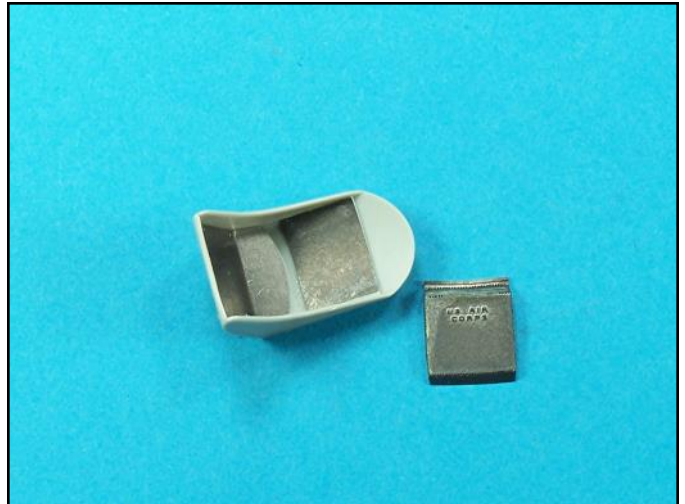
The addition parts on the sides of the cockpit will greatly enhance its appearance resulting in a very busy looking interior once the parts are all painted and drybrushed.



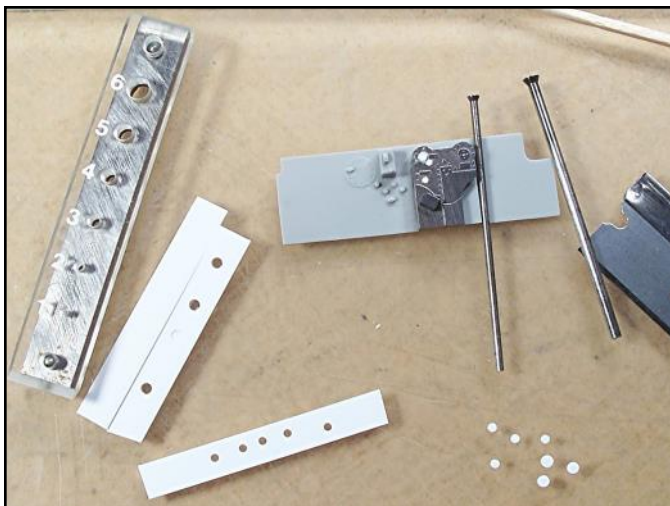
Photoetch parts can greatly enhance the appearance of the plastic kit parts. I place tiny drops of super glue at the photoetch part location and then position the part in place.



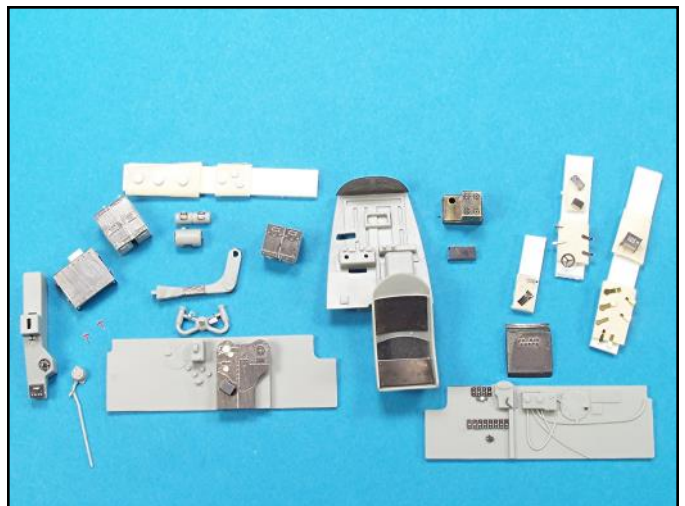
These parts will look much better once they are airbrushed and the small added details are painted with a toothpick.



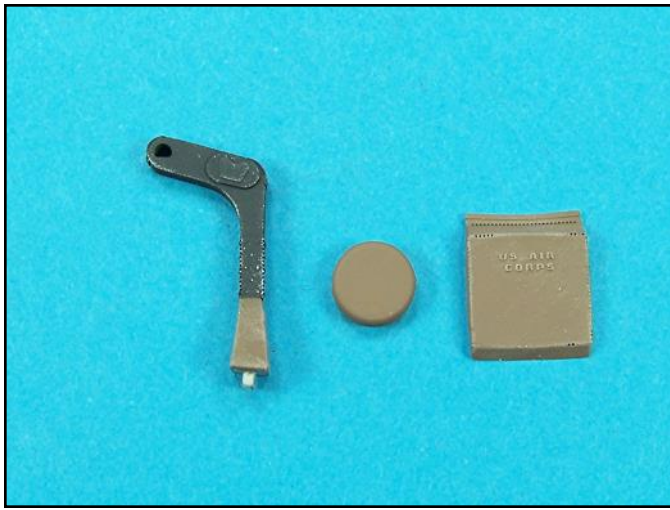
Although the photoetch detail set included a seat, I used the kit's seat. I thinned out the sides and the back by running it across a stationary piece of fine grit sandpaper and used the photoetch details to enhance the seat's appearance.



To enhance the appearance of the disks on this photoetch part, I used a Waldron Punch Tool to make some different size disks to add depth to the overall appearance of the part.



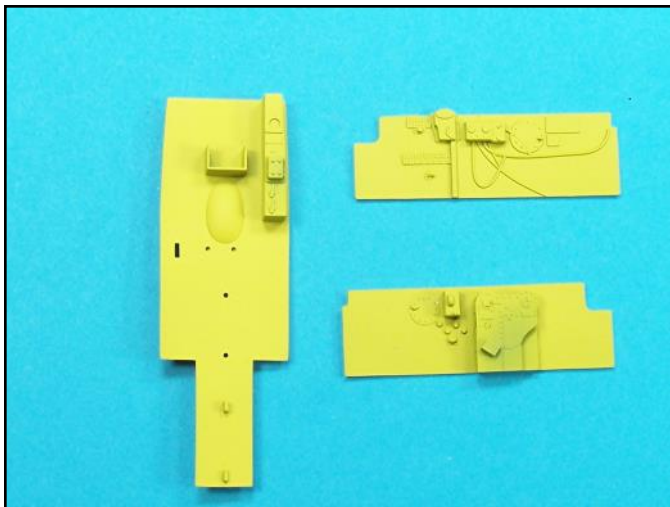
All of the kit parts for this 1/32 scale P-38J have received their photoetch details and they are now ready for priming and final painting, detailing and weathering.



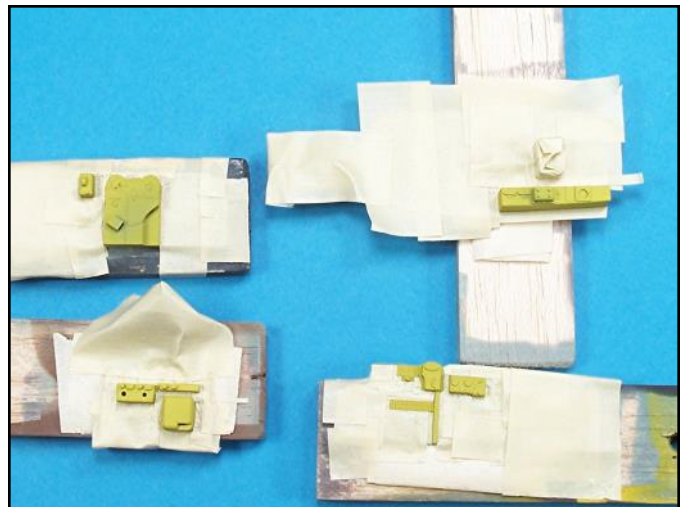
These parts have been airbrushed and then drybrushed with either silver paint or a lighter shade of the brown canvas color.



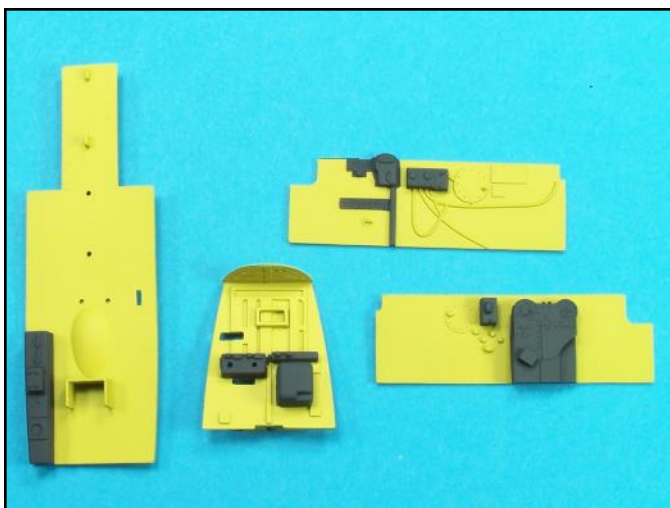
The tiny detail parts on the switch box and the control yoke were picked out with a toothpick dipped into the paint cap so that very tiny amounts of paint were applied which prevented paint bleeding onto the surrounding surfaces.



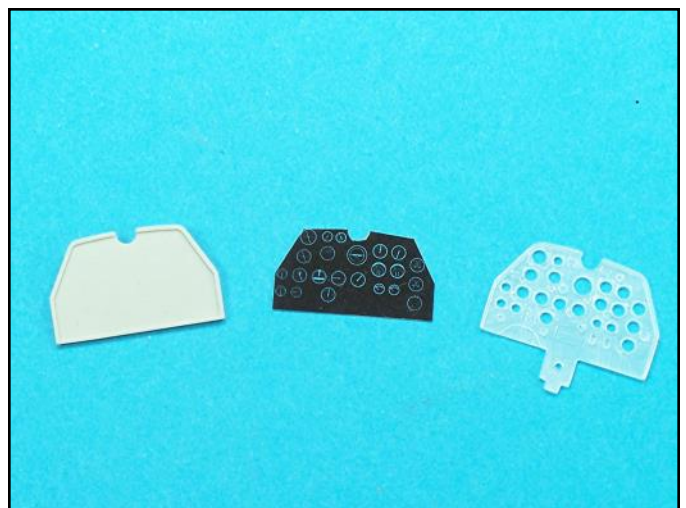
The sidewalls and the floor of the cockpit have been airbrushed with a base coat of the interior color.



The raised surfaces on the sidewalls and the floor were carefully masked so that they could be airbrushed flat black with a few drops of flat white added to lighten up the flat black color.



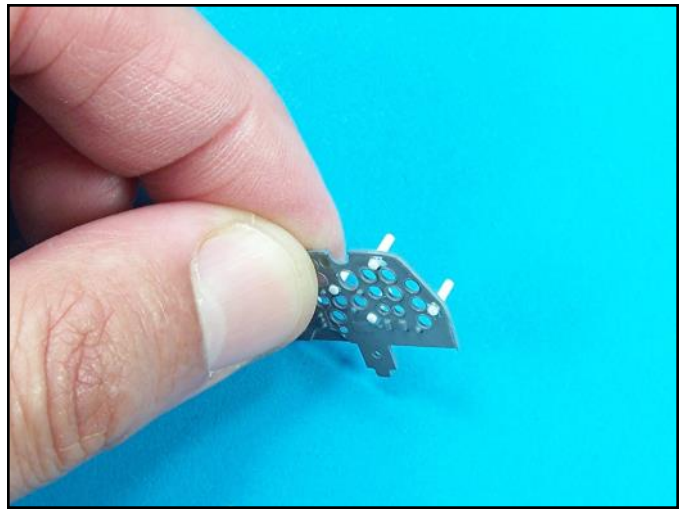
With all of the masking tape removed the raised surfaces are now ready for detail painting and drybrushing.



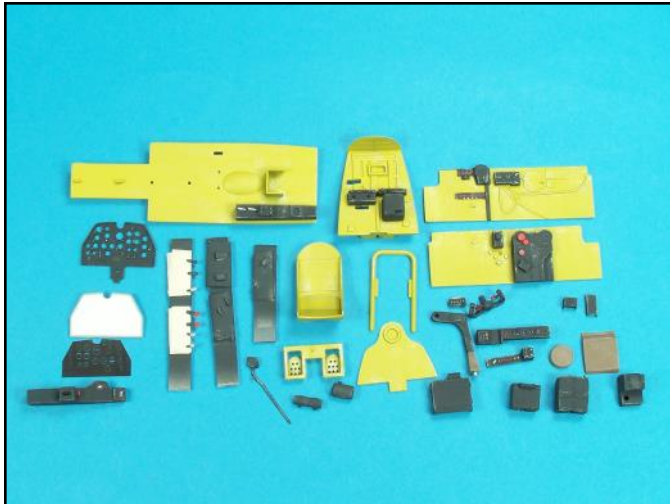
Many new kits have different types of console assemblies that include an acetate sheet with instrument details on it. The sheet gets sandwiched between the front console and its backing.



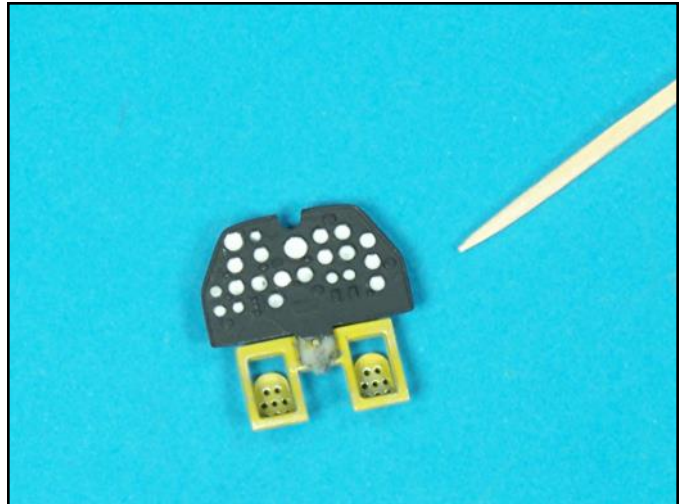
The clear plastic console was thinned out by running it across a stationary piece of sandpaper. If the plastic is too thick the instruments will appear to be set too deep into the console.



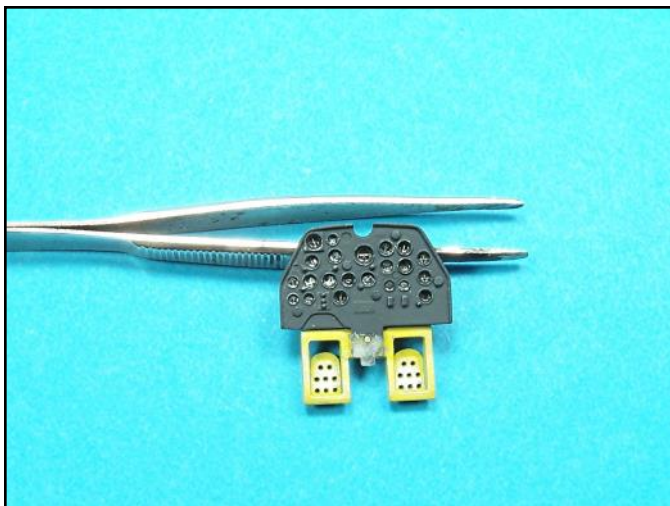
After the console was primed I noticed a few mold punch outs on its surface. To fix the problem I drilled out the punch marks, super glued the rod in place, trimmed them and then sanded the surface smooth.



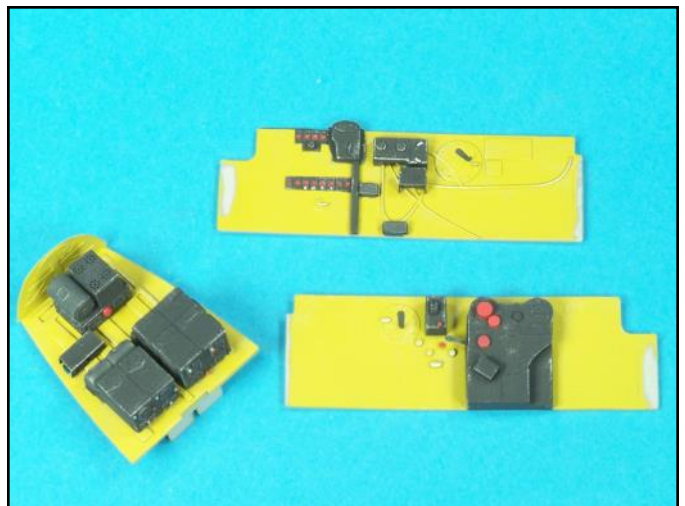
All the interior parts on this 1/32 scale P-38J have been painted, drybrushed and weathered. Note that the backing for the console is painted white so that the acetate instrument details can be clearly seen once the console is assembled.



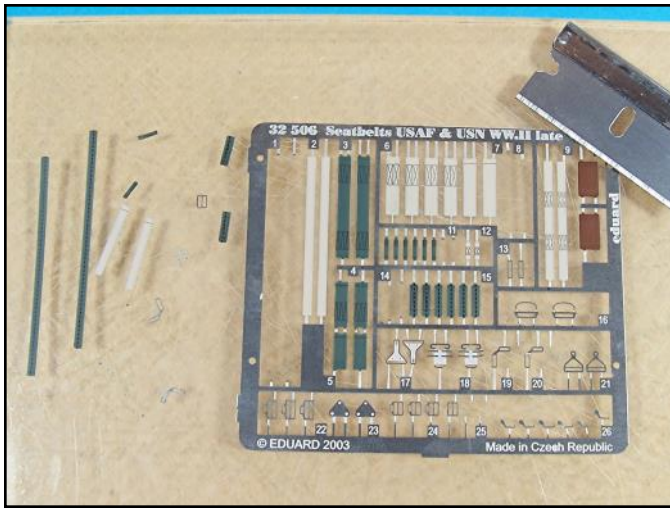
The console has been assembled and then drops of white glue were placed onto the instruments surfaces to replicate the glass cover plates of the instruments.



With the instrument console now complete it will look great once it is installed inside the cockpit



These parts were detail painted first with the tip of a toothpick and then the edges were drybrushed with silver paint.



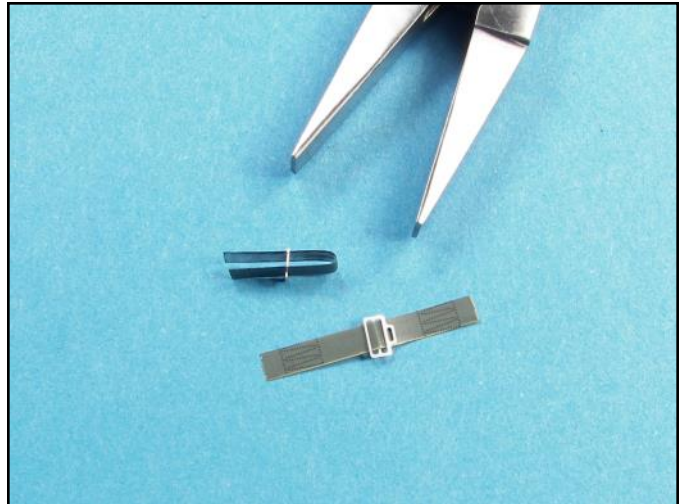
Eduard's pre-painted seat belts are sometimes printed on stainless steel. Removing them with a single edge razor blade is easier than using the tip of a number 11 X-Acto blade, which can break off.



Positioning the adjustment buckles on the long shoulder straps can be very tedious and you need to be careful to not scrape off the paint.



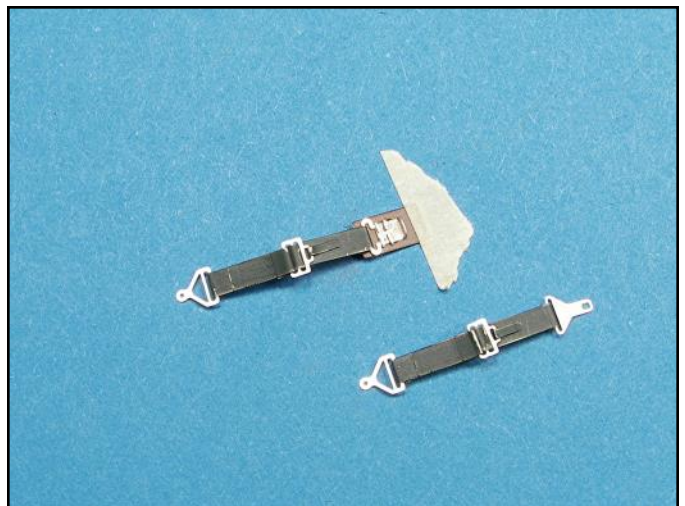
These shoulder straps are now complete and ready to be glued to the seat.



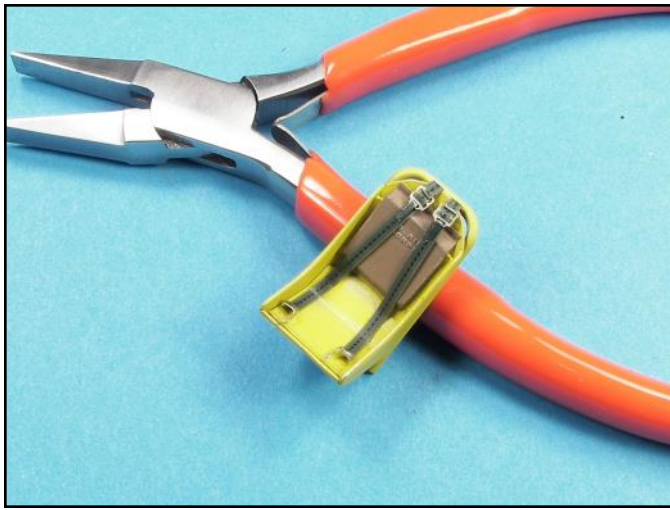
The secret to working with separate adjustment buckles is to carefully bend the seat belt, slip the buckle through the belts on both ends and then flatten the belt once you are satisfied with the buckles location.



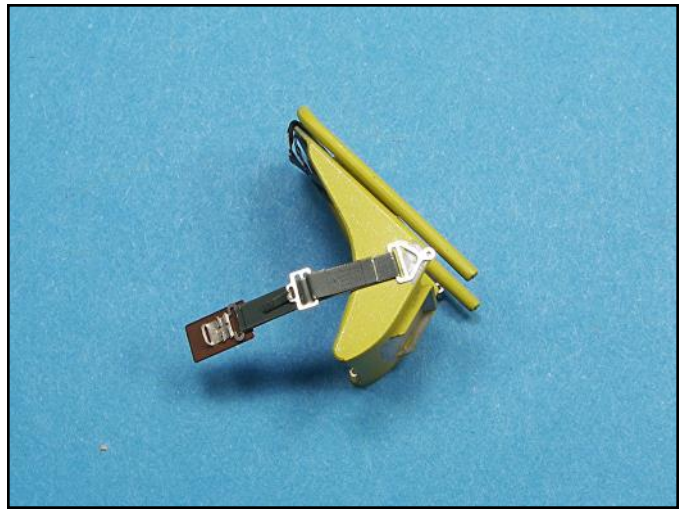
These lap seat belts have several pieces and you have to be very careful when bending the ends of the belts for the locking buckles.



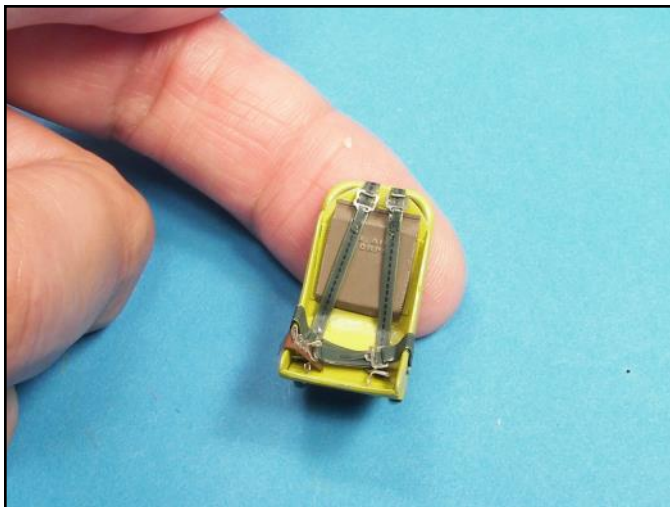
Taping one side of the belt while you position the buckle on the other end helps keep the belt assembly steady while you work on it.



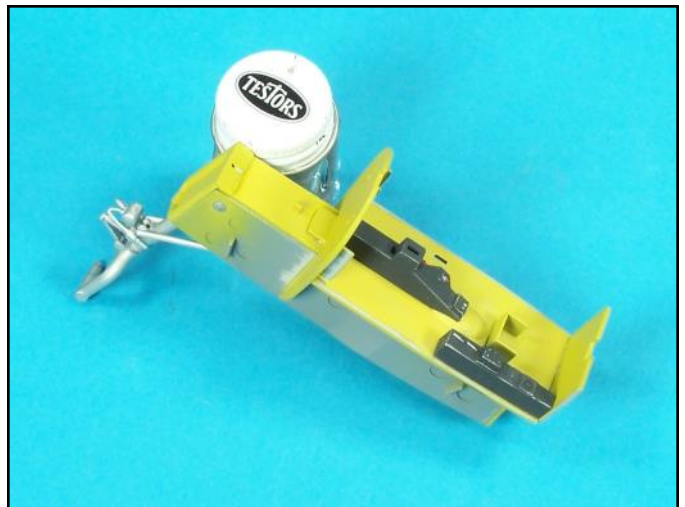
The shoulder belts on this P-38J seat were added first. The adjusting buckles should have been positioned further down on the belts.



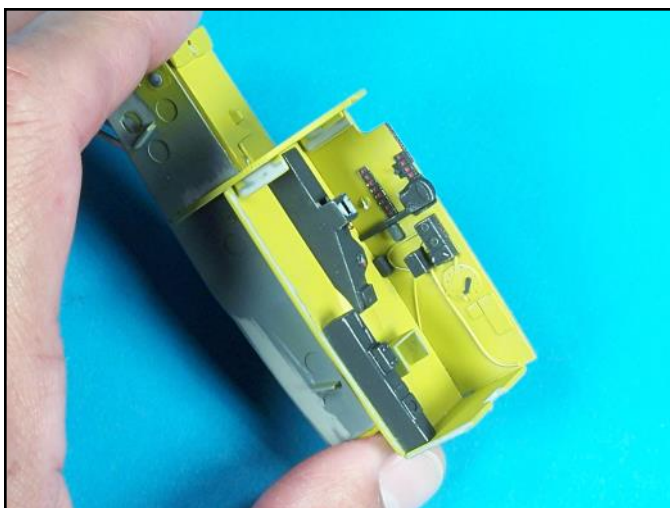
The lap belts were super glued on the sides of the seat first and then carefully folded over the edge of the seat frame.



Note how the lap belts sit under the shoulder belts. Positioning the belts this way displays more of the details on them.



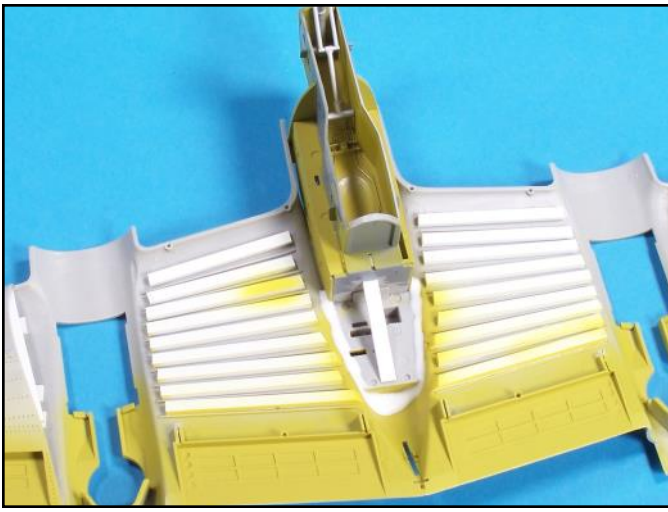
Now that all the sub-assemblies are complete on this P-38J, its time to completely assemble the cockpit. The cockpit floor attaches to the assembled forward wheel well sub-assembly.



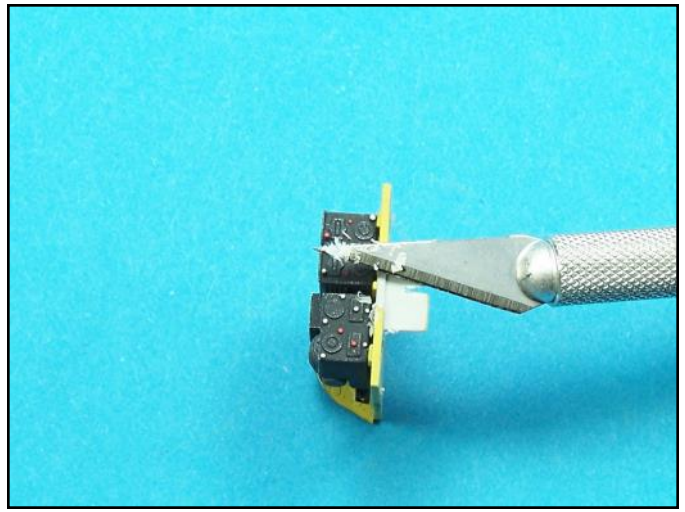
The cockpit sidewalls were added next. The gluing edges of each part were carefully scraped so that the super glue would stick to the plastic.



The moment of truth was test fitting the cockpit tub into the fuselage. Even though the kit was test fitted before assembly started there is always the possibility that assemblies will still need to be tweaked.



In addition to the stringers that were laminated to the inside areas of the wings for added strength, I also added a plastic strip to the backside of the cockpit tub to add strength to its attachment to the fuselage.



The aft electronics shelf was a bit too wide so I had to scrape off some plastic so that it would sit flush against the back of the cockpit tub. It took several fit checks to get the right amount of plastic removed.



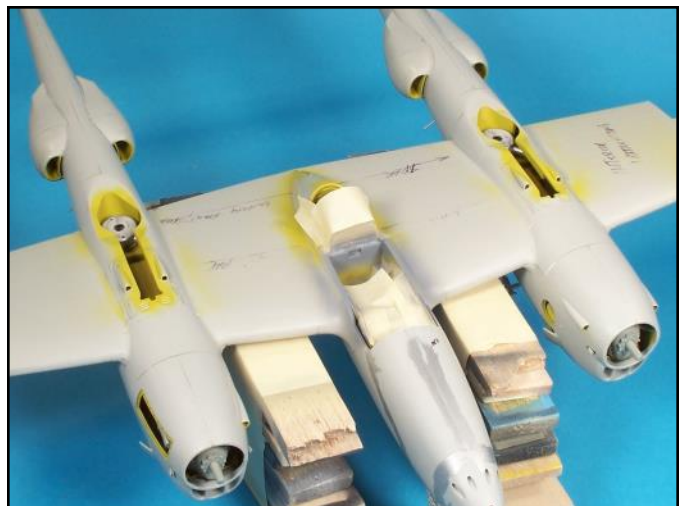
The electronics shelf was then test fitted one last time and then glued into place



The seam between the cockpit tub and the shelf was carefully filled with tiny drops of super glue and then scrapped smooth. I used a tiny ball of 0000 steel wool to polish the plastic and smooth it out.



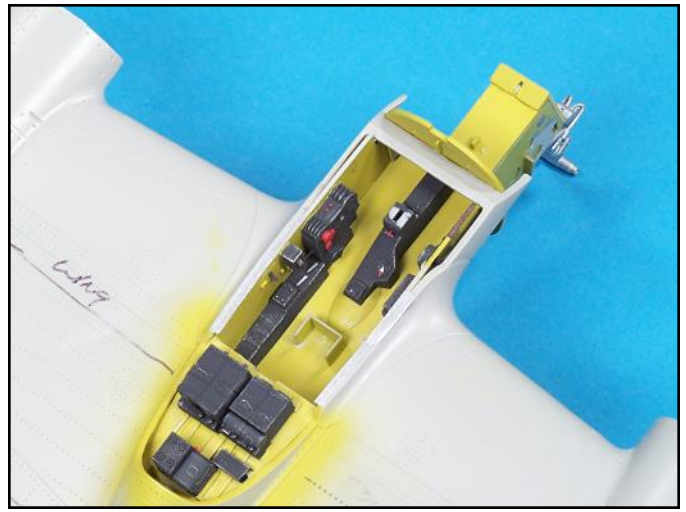
The cockpit area was then carefully masked for airbrushing the seam area.



The area was primed first.



The area was then airbrushed with the cockpit color.



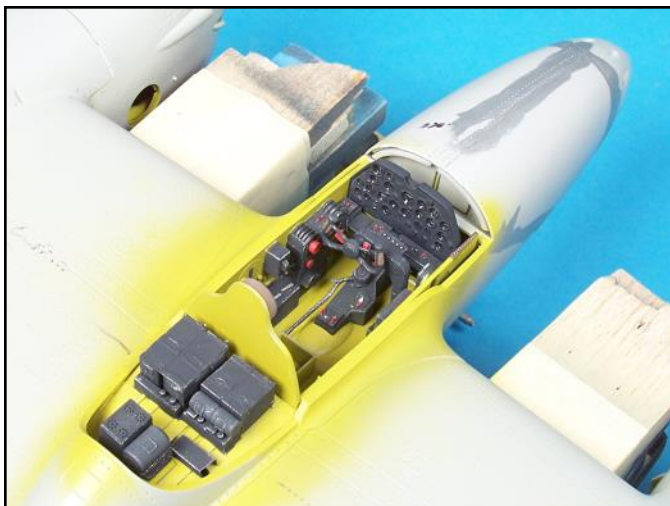
With the masking tape removed it is now time to begin adding the remaining cockpit parts.



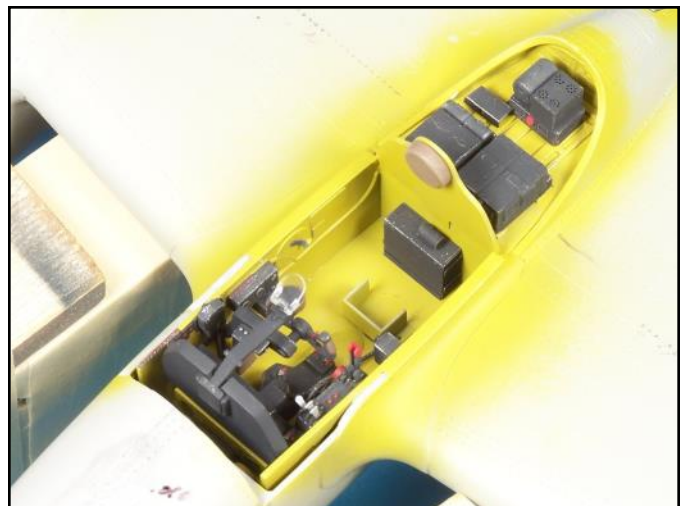
As the cockpit assembly progresses, the console was test fitted and then carefully glued into place with tiny drops of super glue.



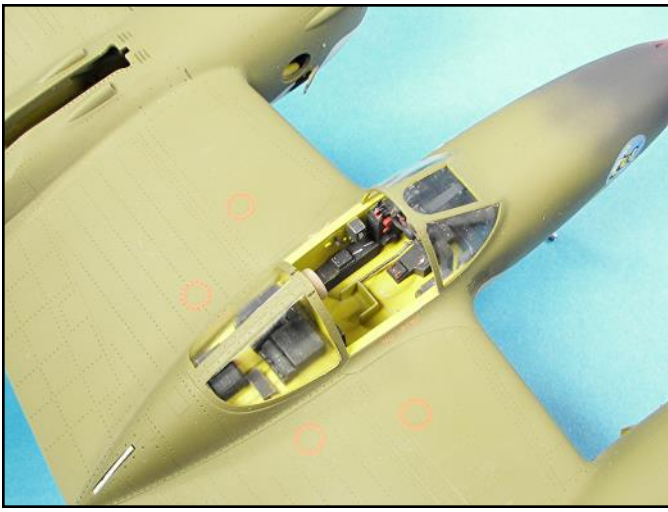
Sidewall cockpit details like the throttle controls and tiny photoetch parts were then added.



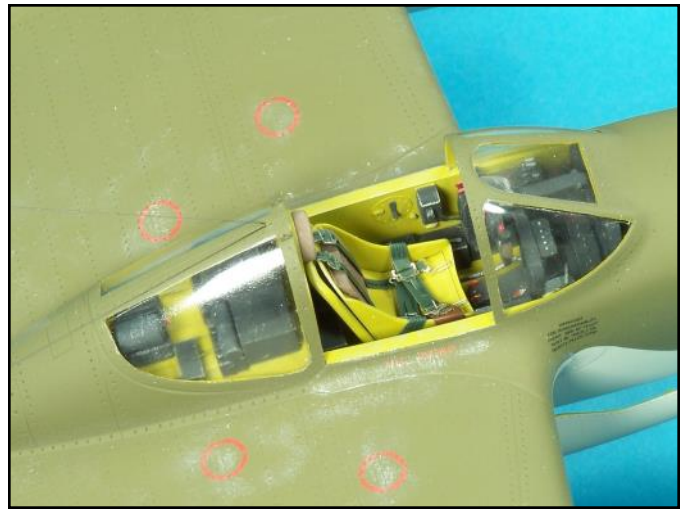
The control yoke was then added. Note how all the details stand out due to careful painting and drybrushing.



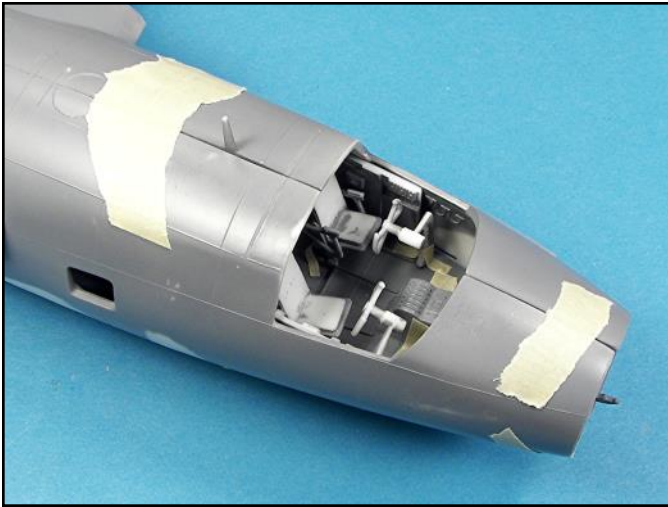
The gunsight assembly was then added. The progression of parts that are added to the cockpit ensures that each part can be installed without interfering with other parts, which have already been glued into place.



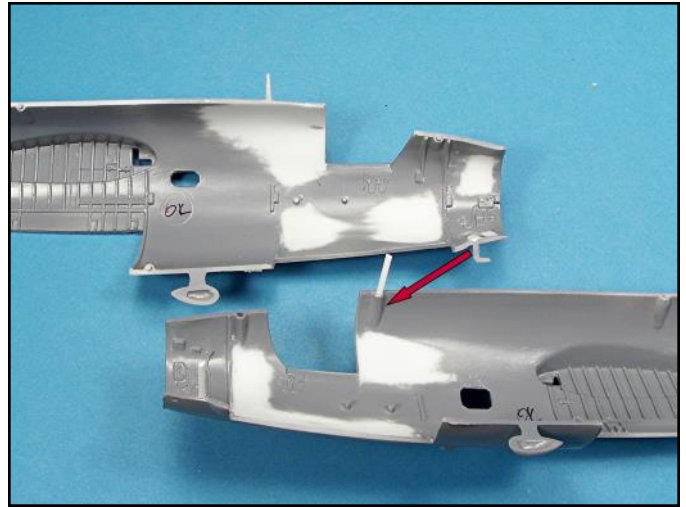
The last item to install was the seat assembly, but I waited until after the aircraft was assembled and painted before installing the seat.



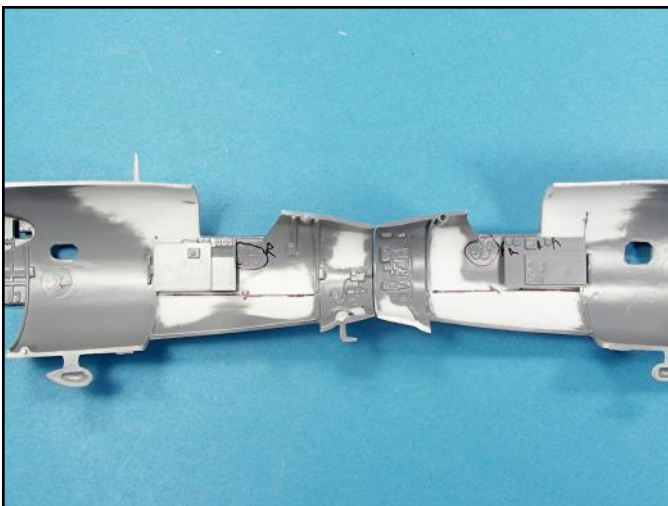
Now that the seat is installed all that is left are the side windows. The lengths of the side windows were too short so I had to add some plastic strips to the edges to get them to fit tightly between the windscreen and the rear canopy.



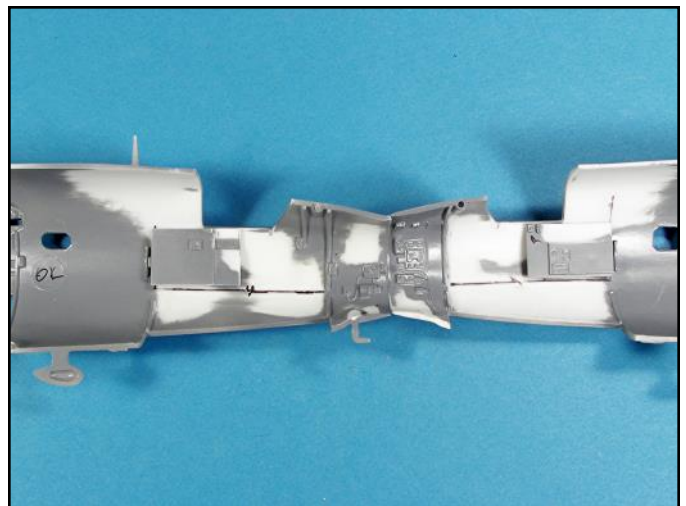
The cockpit on this 1/48 scale AMT B-26 was test fitted to ensure the floor and interior bulkheads did not interfere with a tight fit of the fuselage halves.



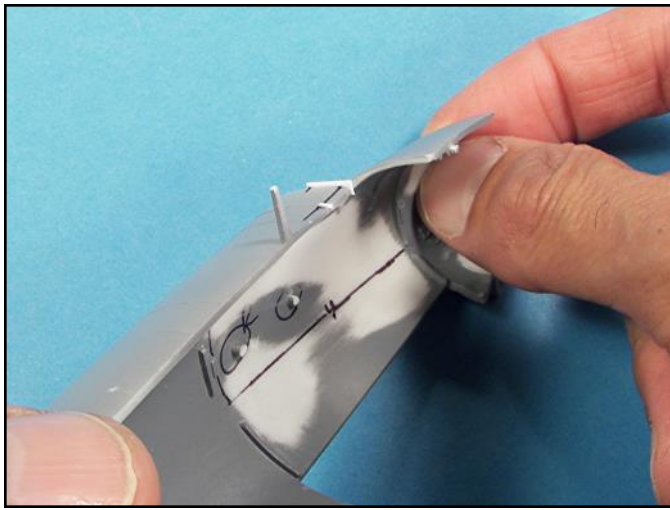
The female end of this positioning pin had to be removed because it was noticeable. The hole was filled with super glue and then a length of rod was inserted into it. The plastic was then cut, scrapped and the surface sanded smooth.



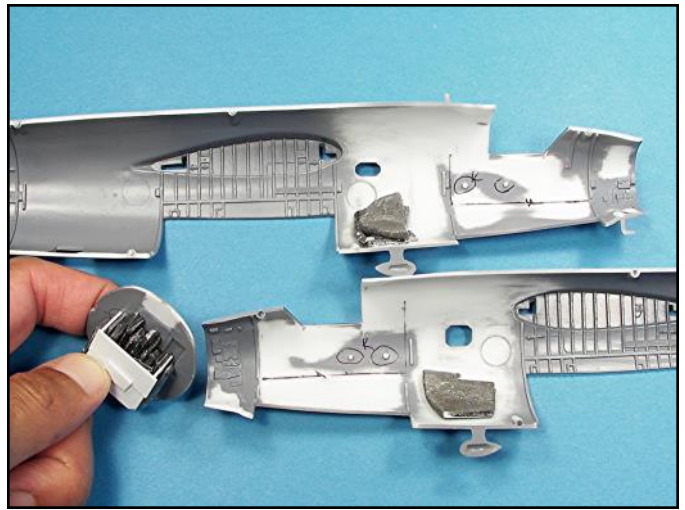
Test fitting the cockpit side walls showed that areas of the interior surface needed to be carefully sanded smooth where the side walls were not located.



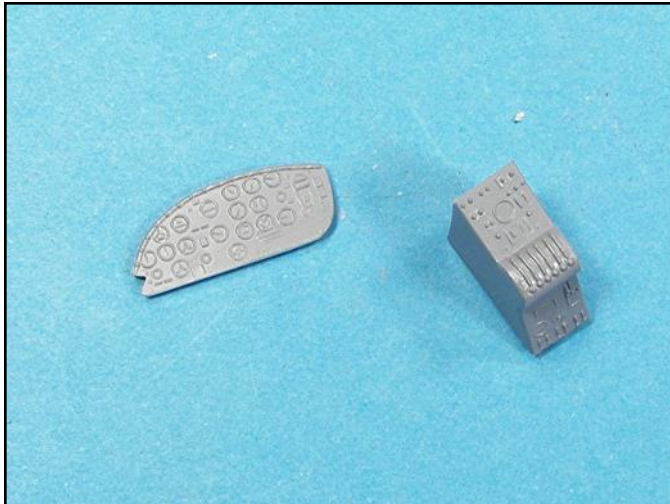
All the blemishes on the inside surfaces have been removed and sanded smooth.



When the cockpit canopy was test fitted there was a void on the port side which was filled with a strip of .015 inch thick plastic.



In addition to gluing lead weights to the interior areas which could not be seen once the fuselage was closed up, I made a box on the backside of the bulkhead and stuffed it with more lead weight.



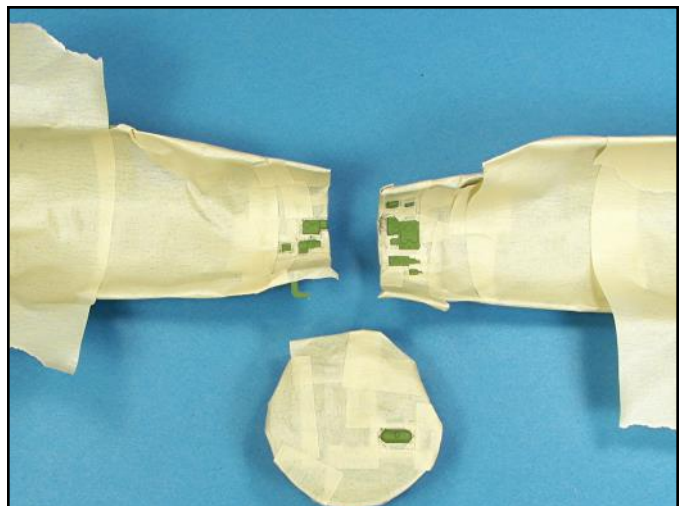
The instrument and engine control consoles needed to be sanded smooth so that photoetch parts could be laminated over them.



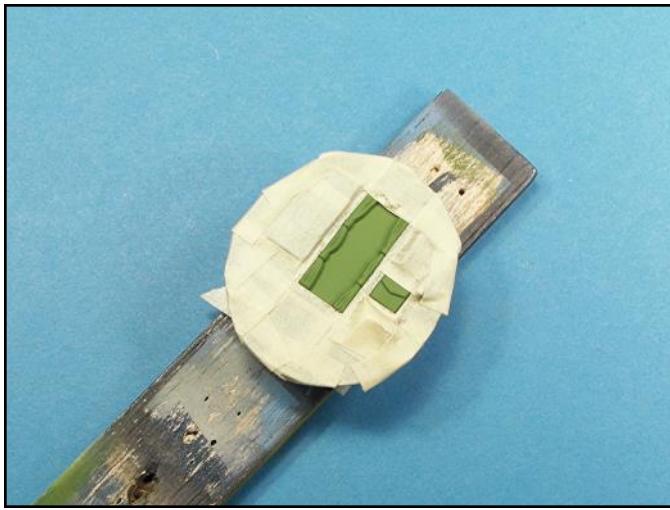
The Eduard pre-painted cockpit detail set is designed for the Revell/Monogram kit but it also works well, with some tweaks, in the AMT kit. The drill bit was used to make a curved shape for the engine console photoetch part.



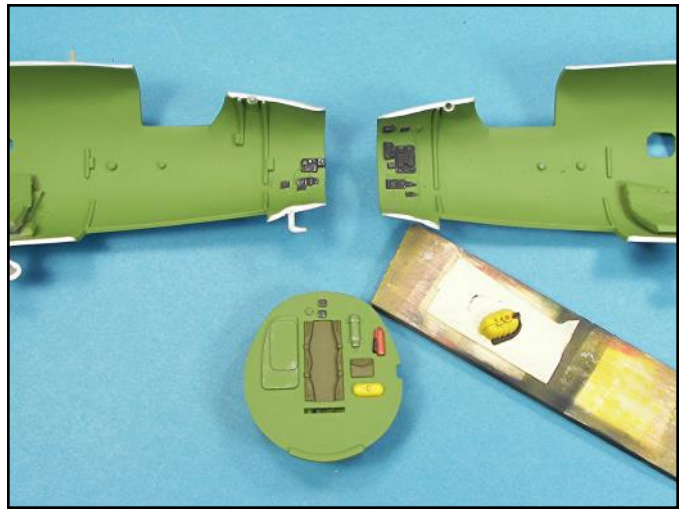
I removed some parts from a Monogram B-26 such as the aft remote gun control and the cockpit oxygen tank to add more detail to the interior of the AMT kit.



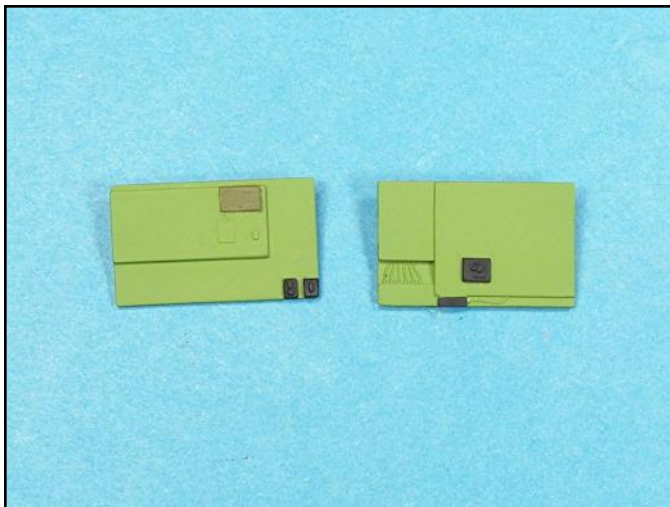
The electronics boxes were masked off after the interior was airbrushed. These details were airbrushed with flat black.



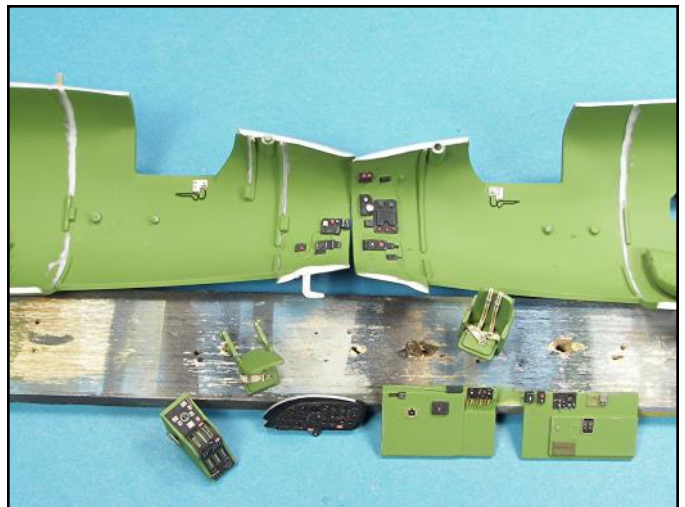
Careful masking with small lengths of masking tape around raised surface details and then adding larger sections to cover the remaining exposed areas is the best way to approach detail painting with an airbrush.



All the painted details were done with careful masking and airbrushing with different colors. Note how the details are beginning to stand out.



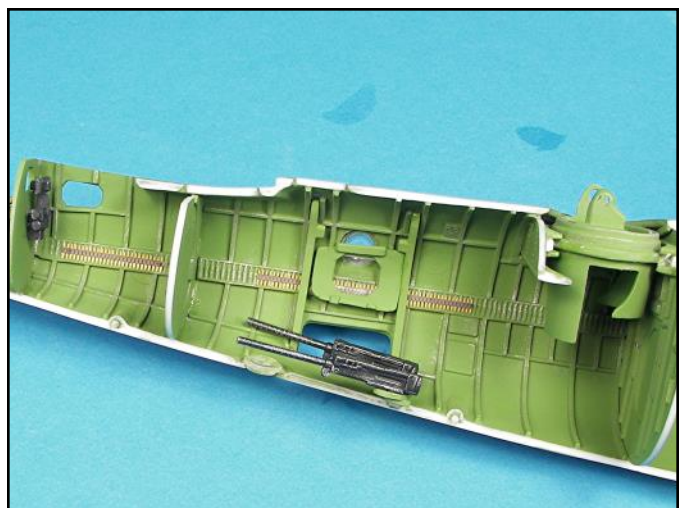
The same masking and airbrushing technique was also used to paint the details on the cockpit side walls.



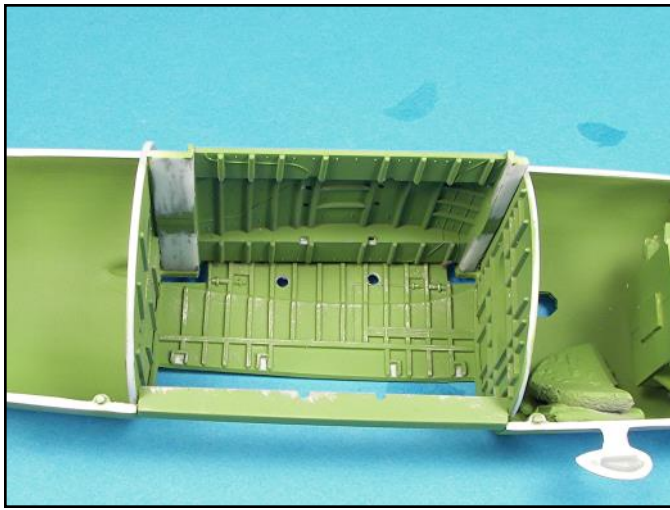
All the small painted details were done with the tip of a toothpick dipped into a paint cap. Using a toothpick allows only tiny amounts of paint to be applied at a time and prevents paint bleeding onto surrounding surfaces.



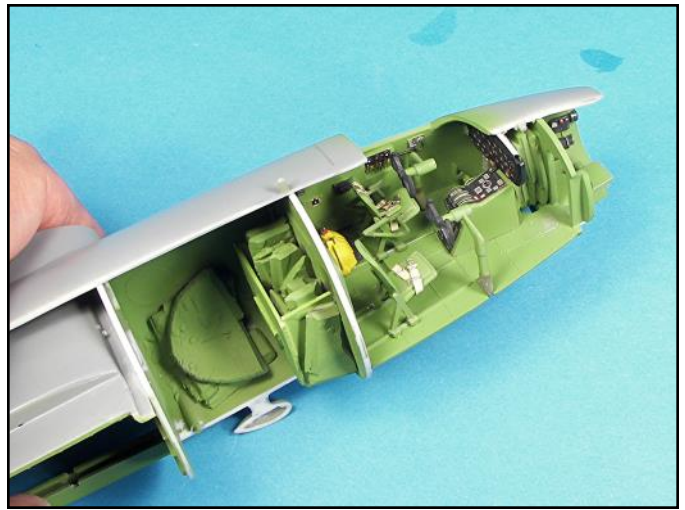
The interior painting, detailing and assembly is progressing. Note that the gluing surfaces have all their paint scraped off.



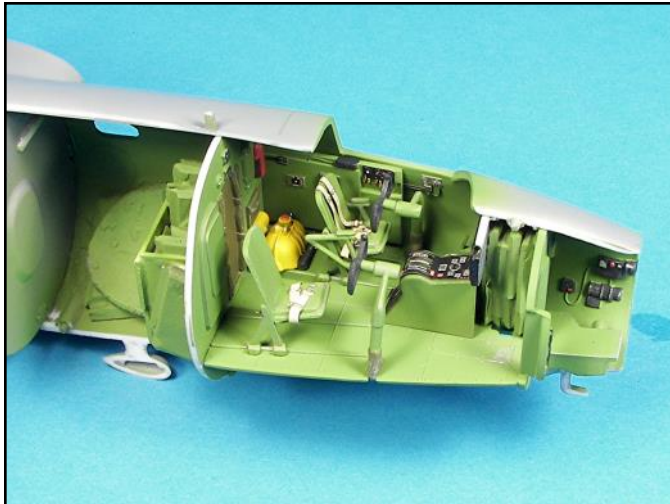
The kit's guns were not well detailed, but I was able to enhance their appearance with some drybrushing of silver paint. The lengths of gun belts are Eduard pre-painted photoetch parts.



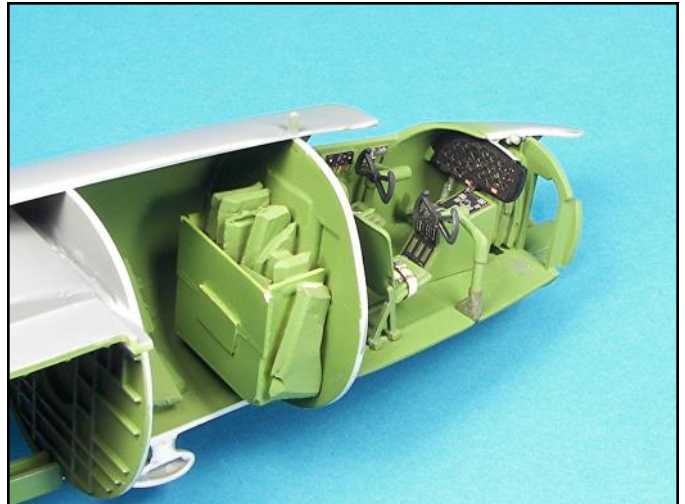
The interior rib detail has been drybrushed to enhance its appearance and make these raised surface details stand out.



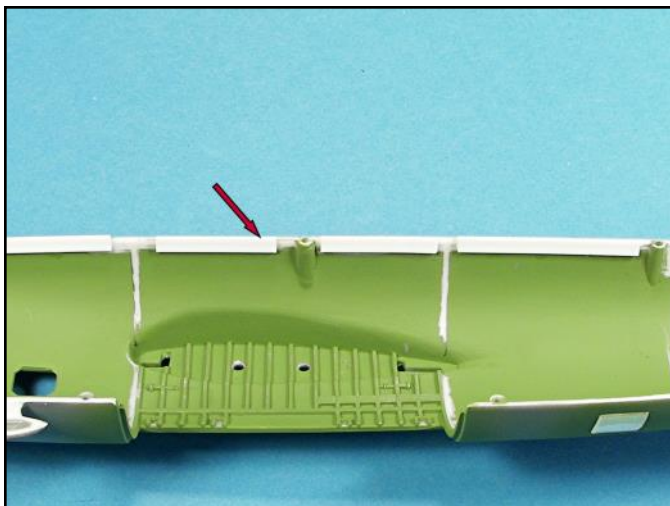
The Eduard pre-painted photoetch parts really helped improve the appearance of the cockpit.



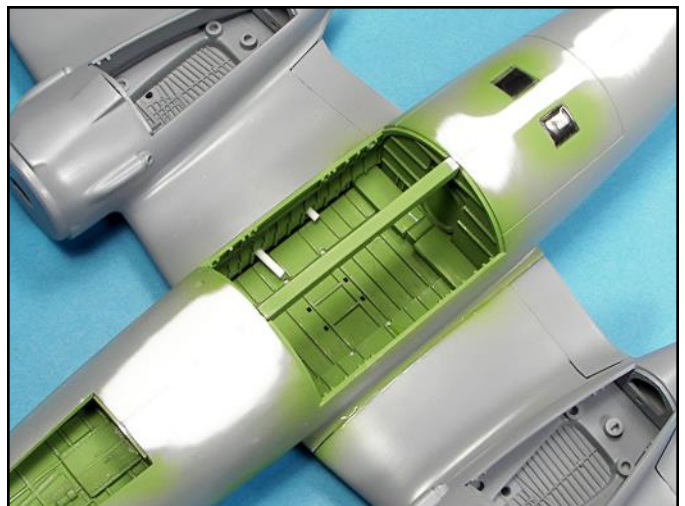
The large oxygen bottle is from the Monogram kit and the seat belts are Eduard pre-painted photoetch details.



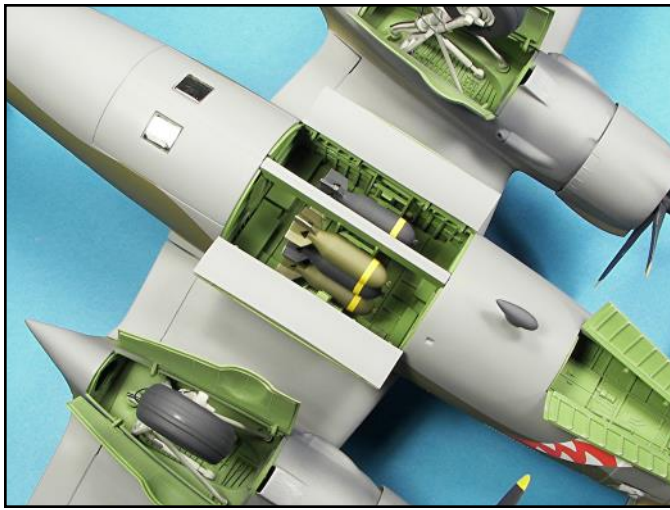
The Eduard pre-painted instrument console was not an exact fit but it was darn close. Once the fuselage is closed up you will not see the slight disparity between the photoetch part and the kits plastic part.



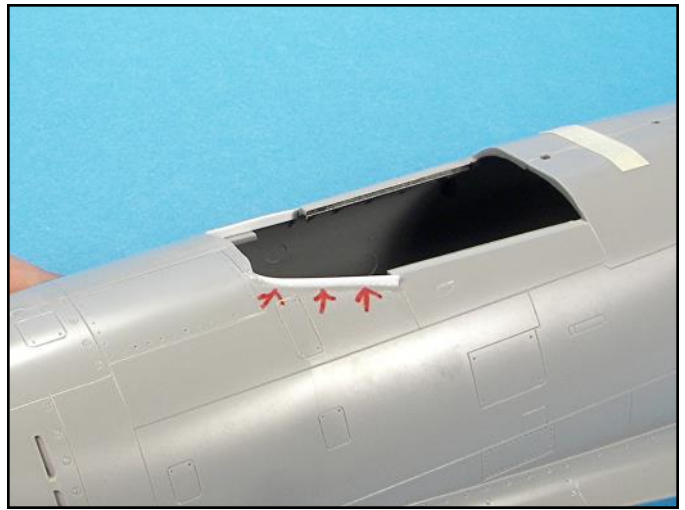
Due to the amount of lead weight that was needed to get the finished model to not be a tail dragger, I added a strip of plastic on the upper fuselage to increase the gluing surface thereby adding strength to the upper seam.



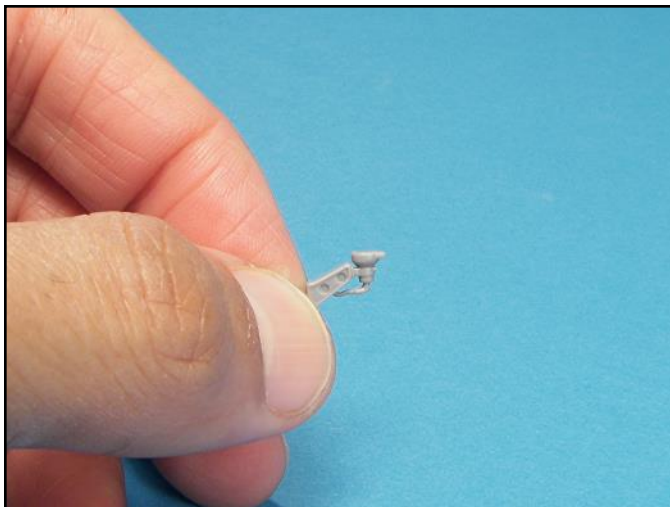
To make the wing to fuselage attachment points stronger, I pre-drilled holes through the fuselage and into the wings so that I could slide .080 diameter rods into place to add strength to the wing to fuselage attachments.



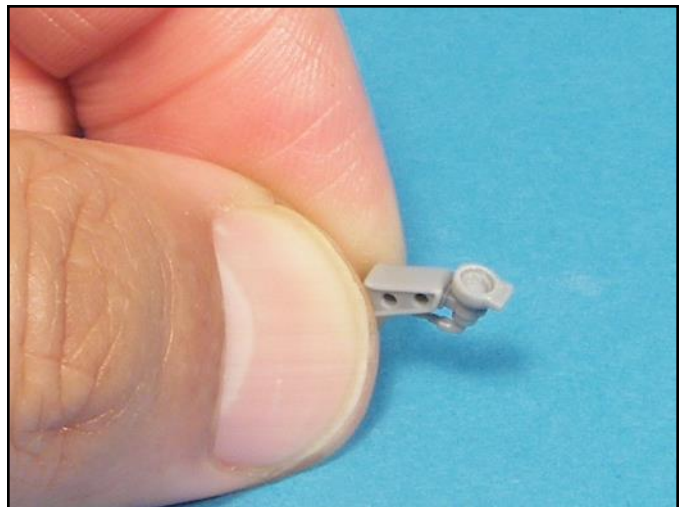
Different colored 500 lb. bombs, which represent different types of explosives, also enhanced the appearance of the bomb bays interior.



Test fitting the canopy windscreen identified a void on the port side cockpit area. To fix this, I laminated .010 inch thick strip, cut and shaped it and then wet sanded the surface smooth with 600 grit sandpaper.



The gunsight is nicely cast, however its appearance can be improved with some drilling.



The holes in the frame were drilled all the way through and I deepened the retainer for the reflective lens so that it had depth to it. The reflective lens was made from .015 inch thick clear plastic punched out with a Waldron Punch Tool.



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



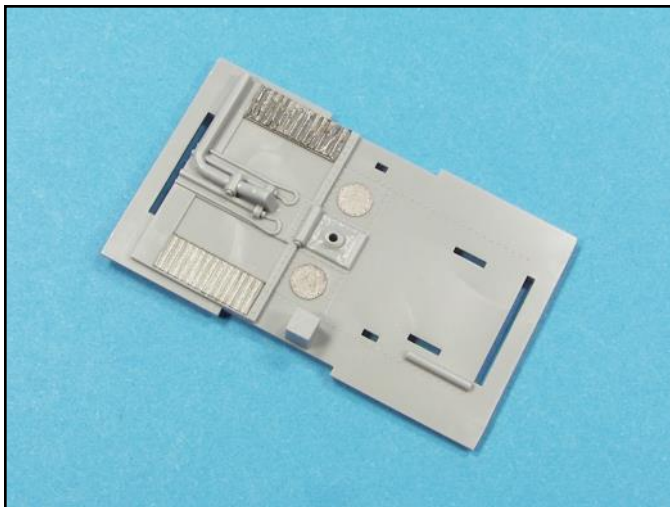
The kits seat and the Eduard photoetch seat both look good, but I used the kit's seat.



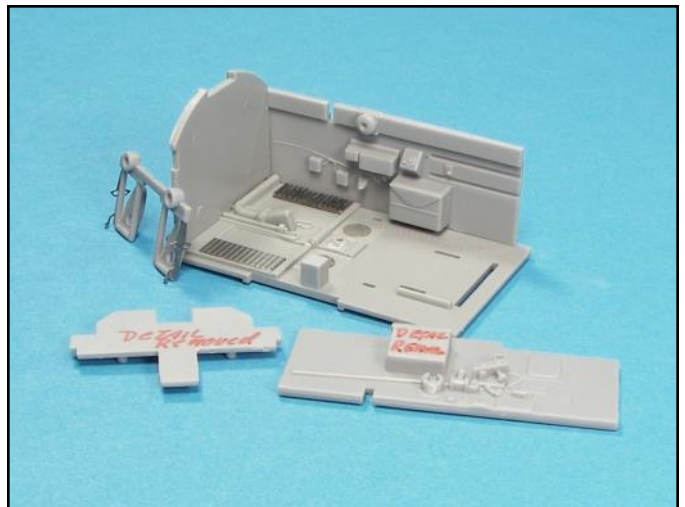
I thinned the sides and the back of the kit supplied seat by running it across a stationary piece of wet sandpaper.



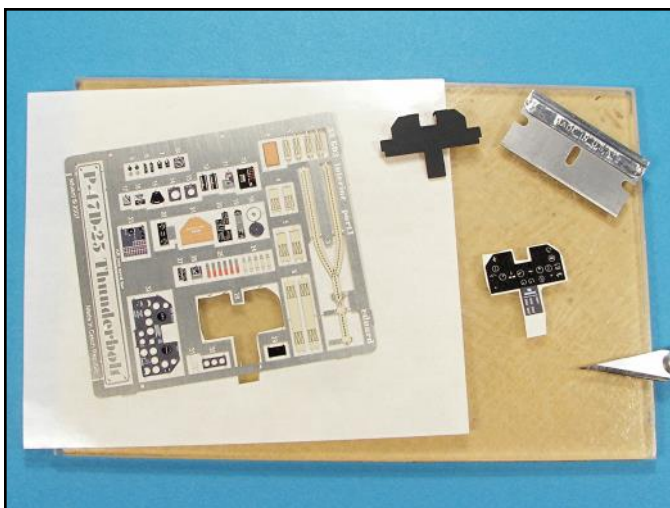
With the photoetch details added, the kit's seat looks much better. It is a stronger assembly than the photoetch seat.



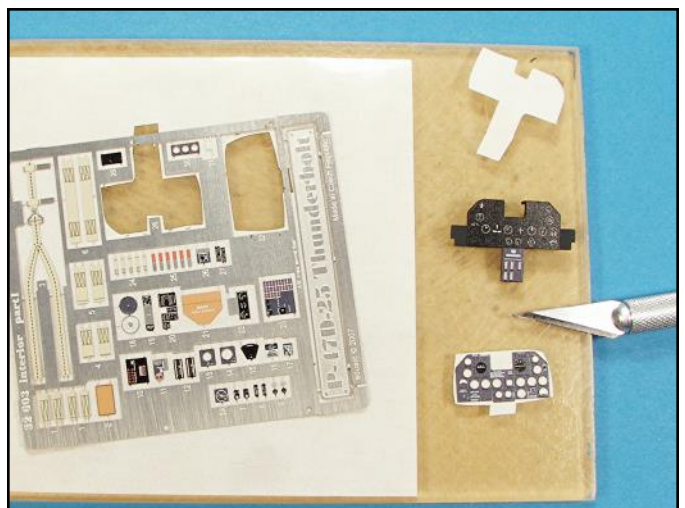
The photoetch details for the flooring of the cockpit were run across a piece of sandpaper to clean the gluing surfaces and then super glued to the cockpit flooring.



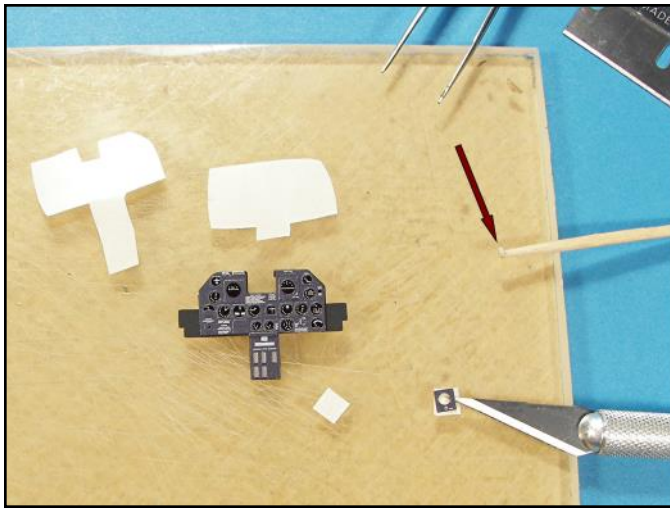
After carefully studying the Eduard pre-painted placard's instructions, I sanded off the molded on surface detail for the instrument console and the fuse box below the throttle quadrant.



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.



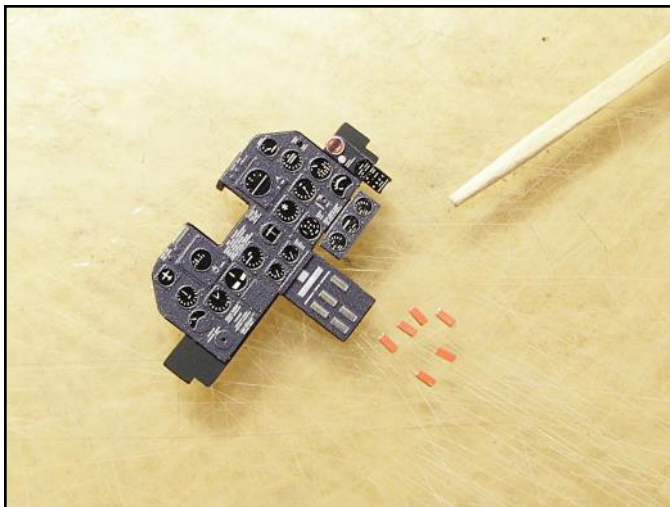
The Eduard console with the instrument faces was positioned onto the kits console and then pressed down to activate the glue. The next step was to cut out the console's top layer, which has the instrument bezels.



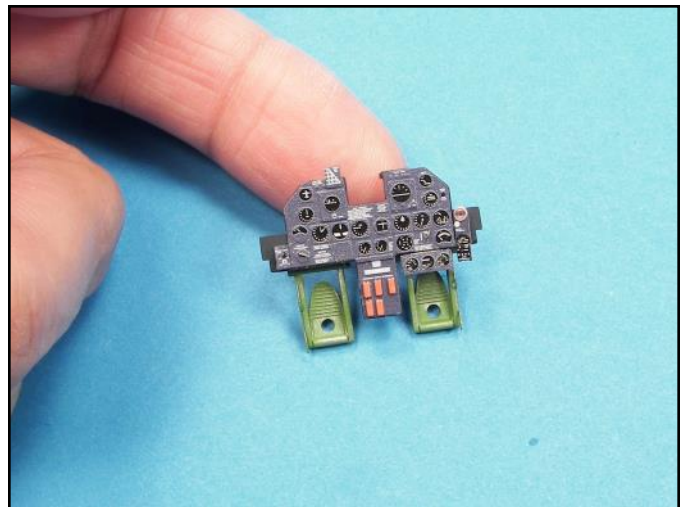
The top layer of the console was then positioned and pressed down. Be sure the holes for the instrument dials line up correctly. To position small parts, use a toothpick with a tiny piece of masking tape attached to its tip.



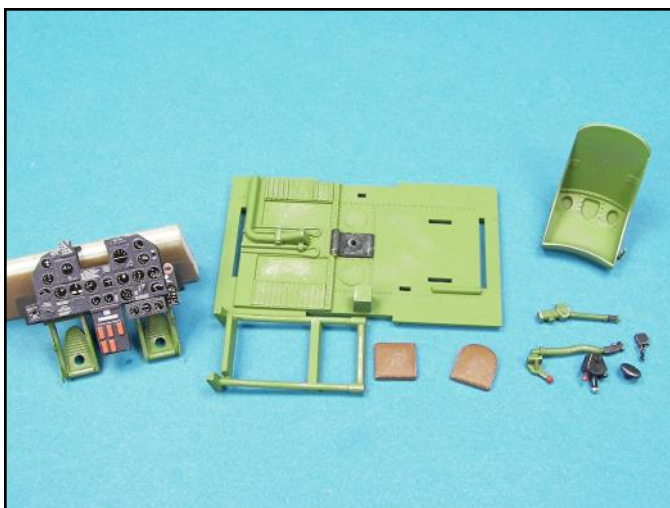
For small parts with two layers, I found it easier to remove the top layer and attach it to the bottom layer and then remove the completed assembly from the photoetch sheet.



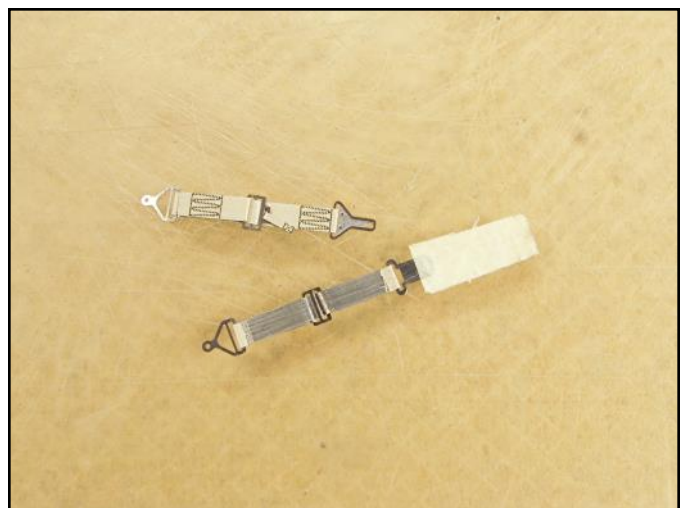
The red switches were folded over and the edges lined up. To attach them, I used tiny drops of white glue. To pick up small parts, flatten the end of a toothpick, moisten it and then pick up each part and position it on the console.



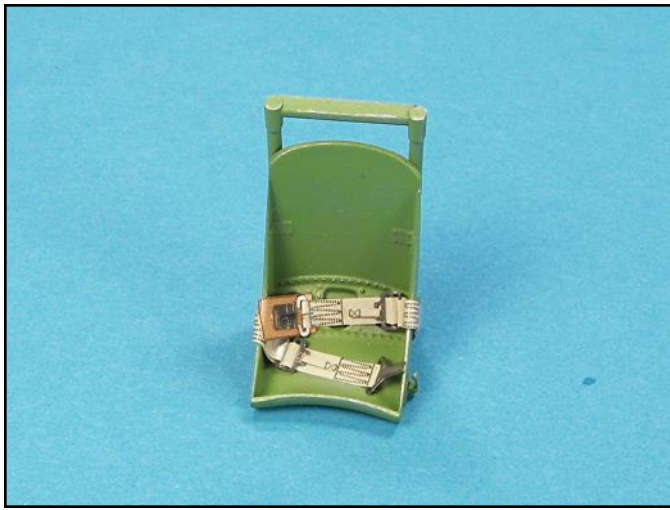
The last step was to add the rudder pedal assembly. By using the kits console as a backing for the Eduard placards, it made it easy to attach the rudder pedals.



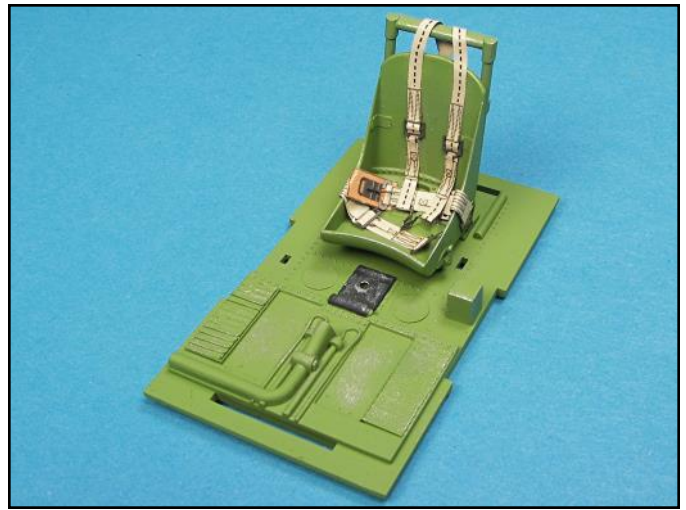
Combinations of the kit supplied parts along with Eduard photoetch parts and pre-painted parts can really dress up a cockpit and add a level of realism not achievable with just painting the kit's parts.



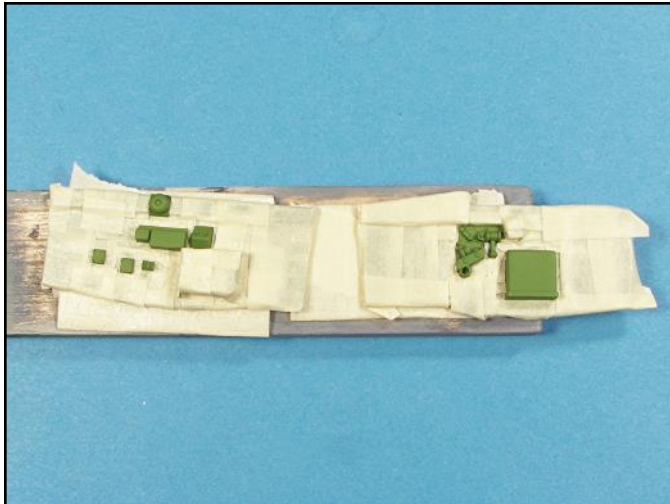
Pre-painted seat belts are easier to assemble if you secure one buckle end and then assemble the belt. To protect the painted surfaces while bending, place masking tape on the inside of the flat surfaces of flat nosed pliers.



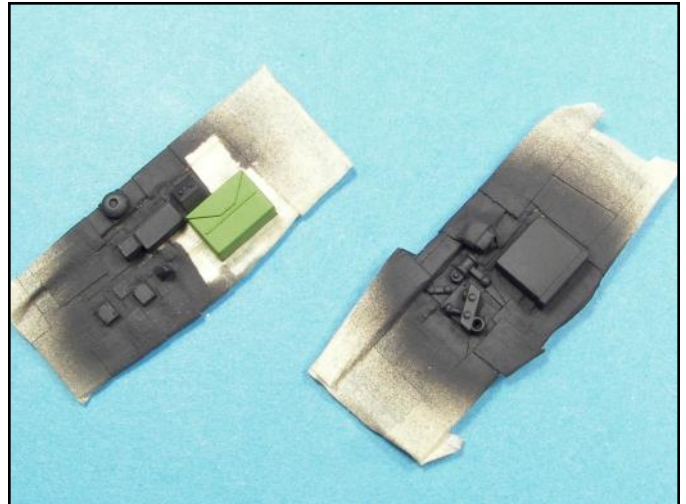
On this kit I positioned the lap belts first. They should be form fitted around the seat edges and onto the seat using a round toothpick with a flat end. After they are positioned apply tiny drops of white glue or super glue.



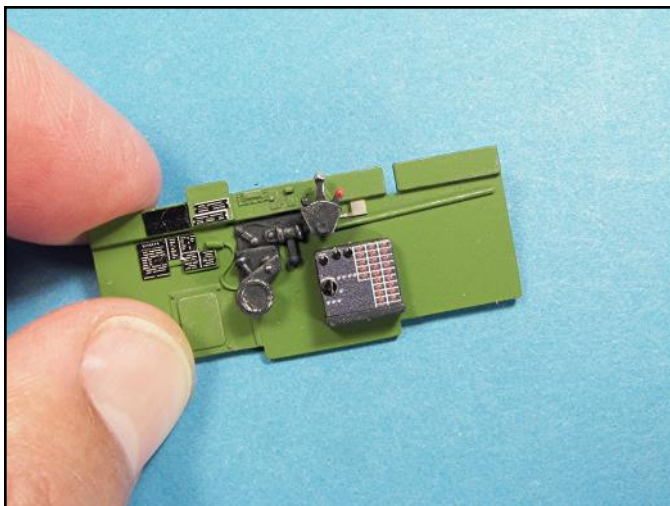
When positioning the shoulder harness, be sure they appear to be draped over the seat frame. Here again form fit them over the top of the seat frame, then onto the seat backing and then the seat's base.



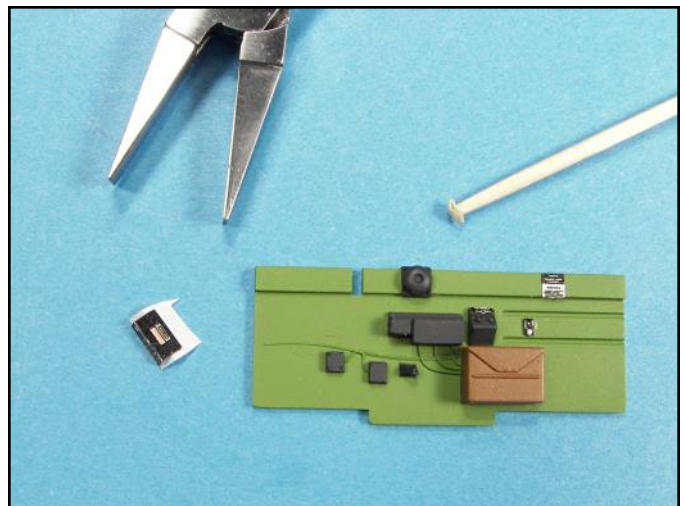
Use small strips of masking tape around raised surface details that will be airbrushed. To prevent paint bleeding, run the tip of sharp pencil around the perimeter of each part to push the tape down.



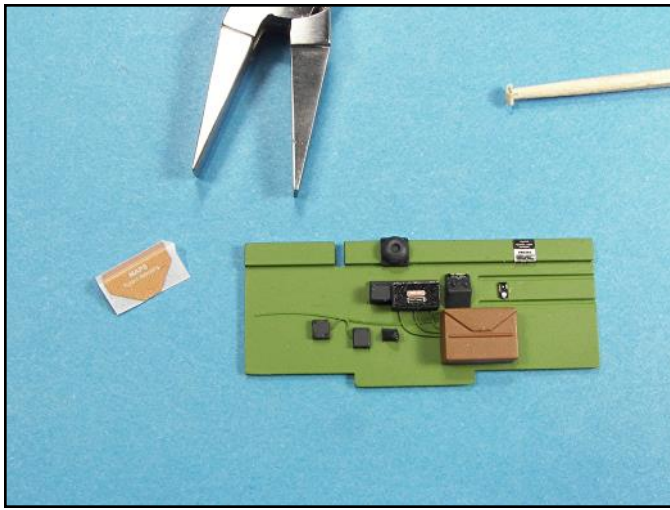
All the parts were painted flat black except the map case which will be painted brown. The flat black painted surfaces will be masked and then the map case will be airbrushed. This technique is called paint layering.



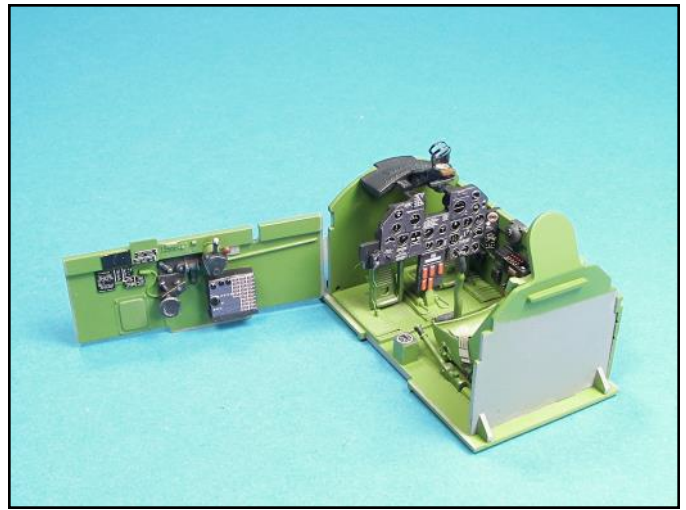
The left side of the cockpit is now complete. The combination of kit parts, pre-painted placards, careful airbrushing and drybrushing with silver paint really enhanced the appearance of this assembly.



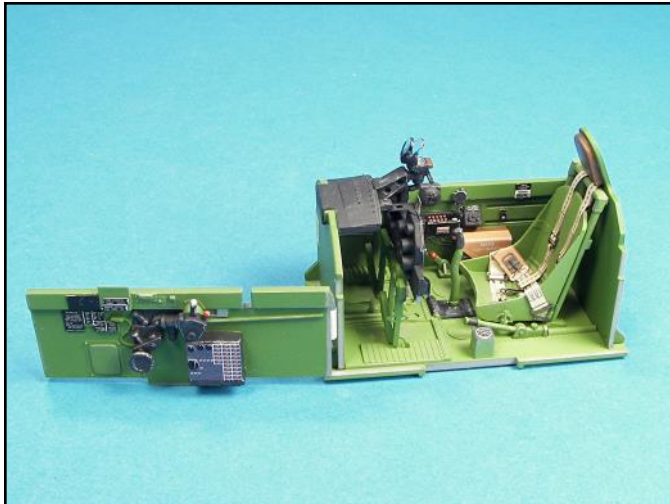
Flat nosed pliers were used to bend small parts. The inside faces of the pliers have strips of tape to protect the painted parts. After the parts were bent into shape, the backings were removed and a toothpick was used to position them.



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.



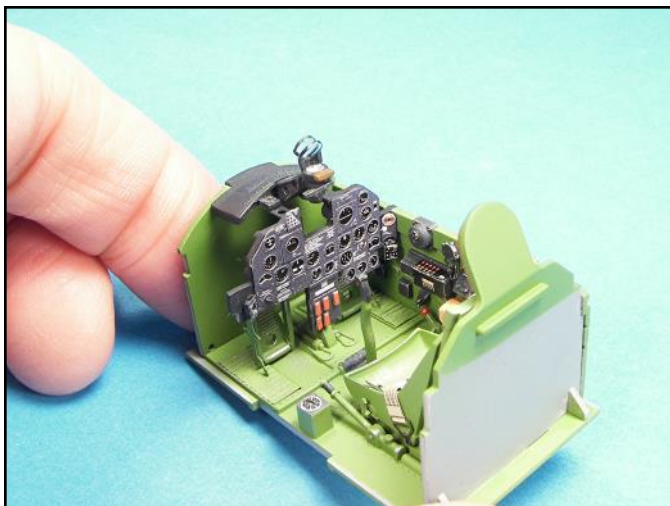
Once all the sub-assemblies were completed, it was time to start putting the cockpit together. The port side of the cockpit looks really good.



The starboard side appears a little cramped, but everything fits perfectly.



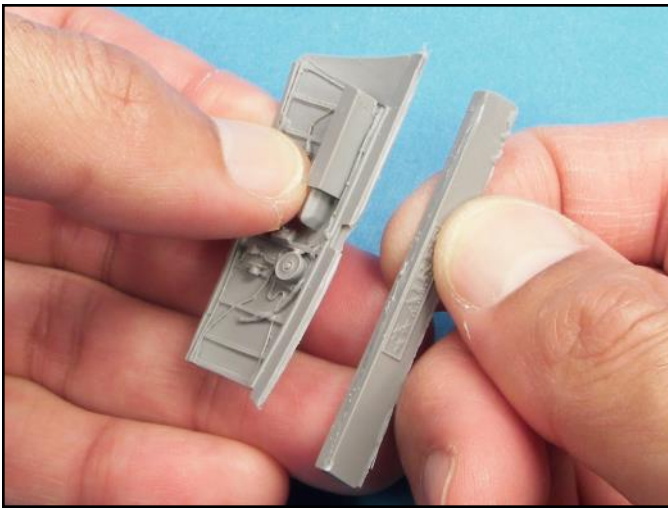
The seat belts look really good and their positioning adds yet another layer of realism to the overall appearance of the cockpit.



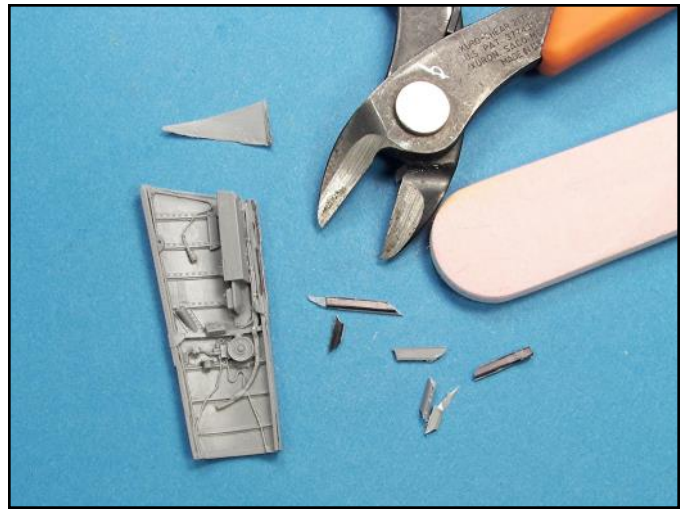
The gun sight and its reflective lenses in combination with the instrument console make for a busy looking and highly detailed cockpit interior.



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



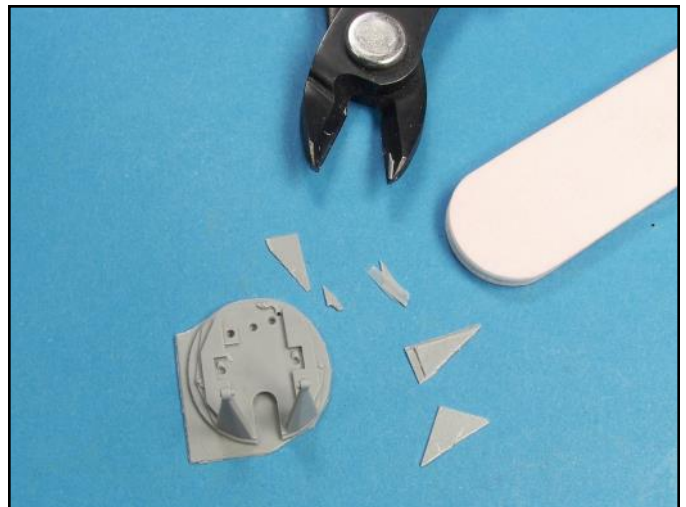
The pour plugs on some resin details can be snapped off after scribing the edge with a sharp X-Acto blade.



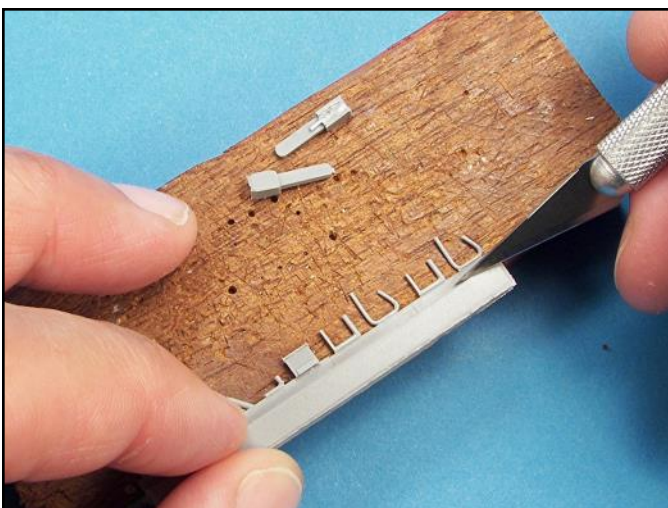
The remaining pour plugs can then be trimmed and then wet sanded smooth with a sanding stick. Be sure to wear a mask when sanding resin as the dust can irritate your throat and lungs.



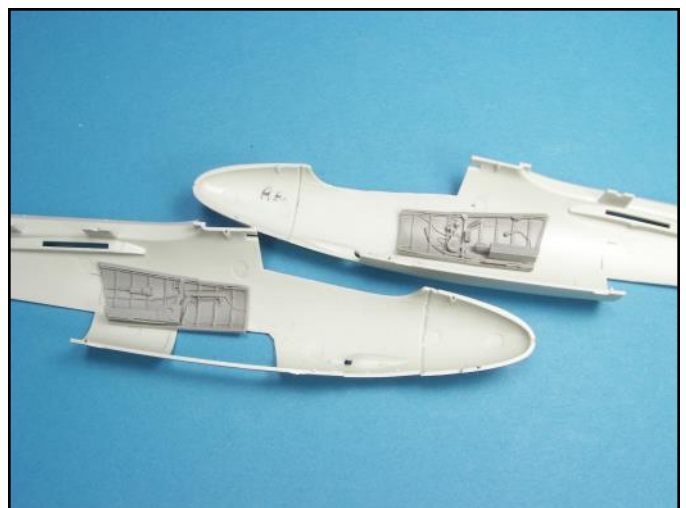
Some types of resin are more fragile than others and snapping the pour plug off might fracture a part. In these cases, cut off the pour plug with a sharp number 11 X-Acto blade.



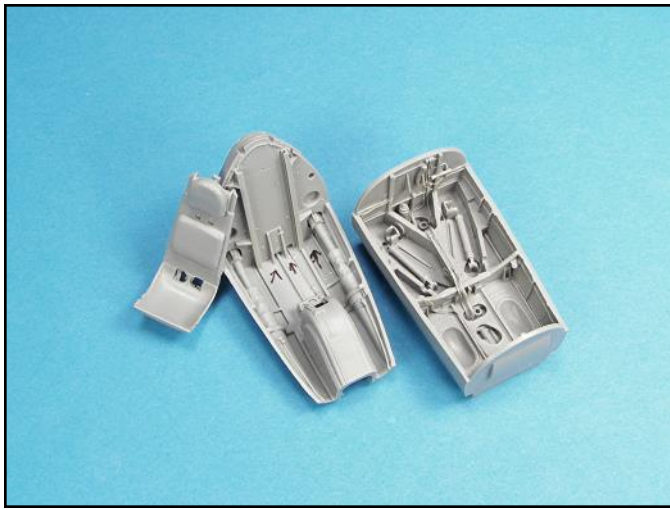
To remove excess resin from round parts, use cutters to trim around the part and then wet sand the remaining resin and restore the round shape.



Small resin parts need to be cut off using a wood block to help set the parts flat when cutting the resin pour plug.



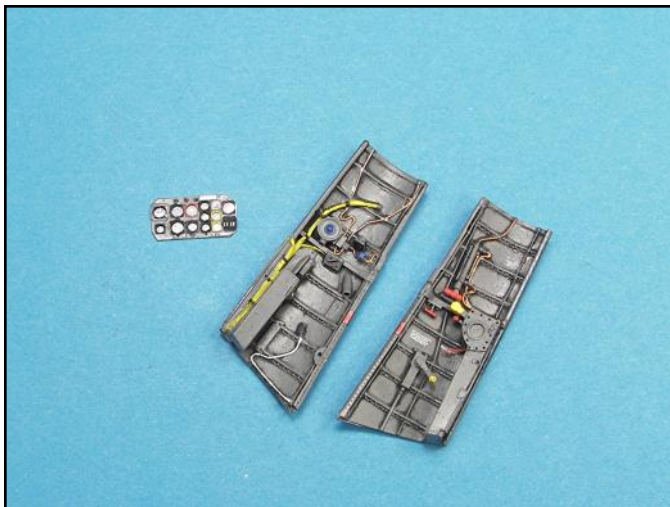
After cleaning up the resin cockpit sidewalls, test fit them to ensure they fit correctly onto the inside areas of the fuselage.



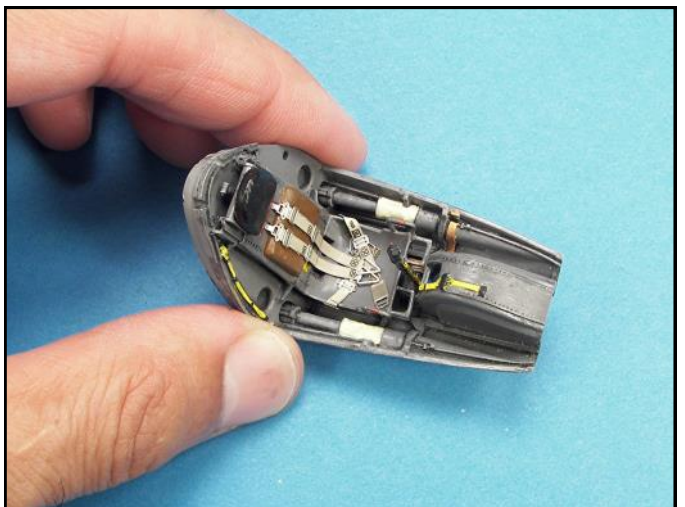
Resin cockpit detail sets can be very impressive if the castings have no flaws. However, these detail sets need to be carefully test fitted.



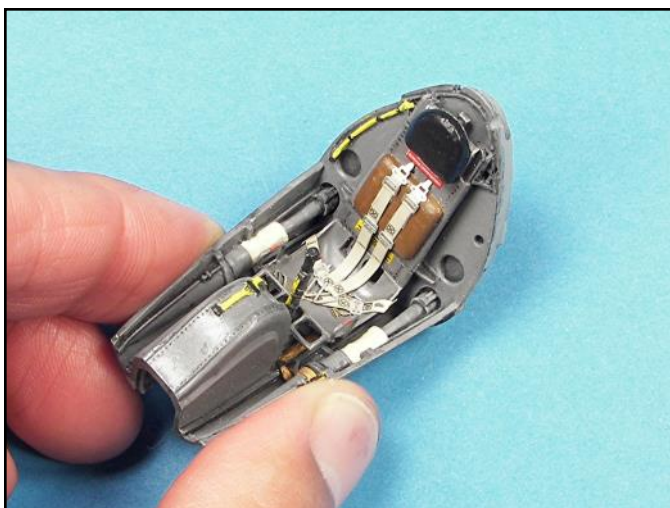
With the resin side walls and cockpit tub taped into place there is a fit problem that will need to be corrected. In this case the cockpit tub was too wide.



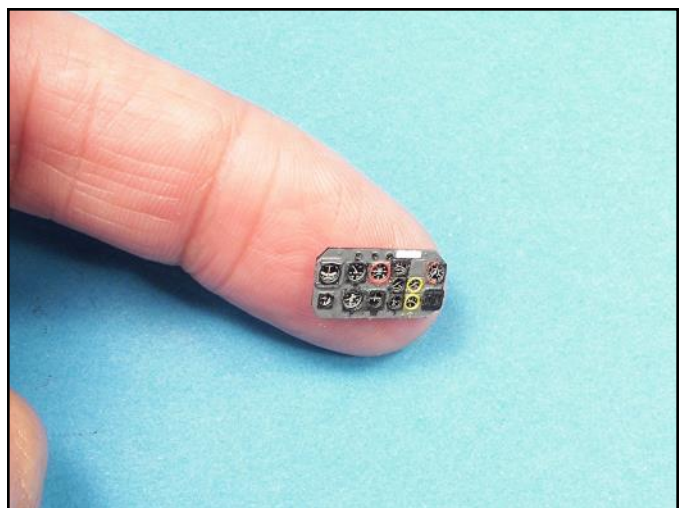
The details on these resin side walls were carefully painted with the tip of a sharp toothpick. Painting with a toothpick is tedious, but the results are impressive.



The resin seat has been painted and assembled and a small amount of resin was removed from both sides so that the fuselage halves fit together.



Careful detail painting and the addition of pre-painted photoetch seat belts make this highly detailed resin cockpit even more impressive.



The instruments are decals and the bezels were painted with a sharp toothpick before the instrument decals were positioned on the console.