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Introduction

On September 1, 1939, German forces invaded Poland, leading to declarations of war by France, Britain, Australia, and New Zealand and beginning World War II, a nearly 6-year conflict spanning the globe and enveloping millions of people. This traumatic period corresponds with huge technological leaps forward—for example jet aircraft, mass production on an unprecedented scale, and radar—creating machinery that fueled the birth of scale modeling as a hobby and capturing the imaginations of many of us still today.

Building these models connects in a very real way with the history most of us can only read about. It's a rare thing to see a Churchill tank rumble and clank across the ground or watch a B-26 Marauder bank through the air. But we can all put our hands on these objects in scale form and appreciate the ingenuity of the designs and the sacrifices of the crews. It's why World War II remains a vital part of the hobby, inspiring more kits of more subjects than any other period.



As we mark the 75th anniversaries of key events of the war, it seemed a good time to gather some of the best modelers in *FineScale Modeler's* stable of authors to produce how-to projects of vehicles and figures from the conflict. This volume covers the European theater, including North Africa and the Eastern Front. A second book will do the same thing for the war in the Pacific.

3

Building and finishing Tamiya's Spitfire

How to groom Supermarine's early-war thoroughbred

AARON SKINNER

World War II produced several iconic aircraft, but the Supermarine Spitfire is arguably the prettiest. I'm not sure R.J. Mitchell had a straightedge in his drawer, relying on French curves to outline the airframe. Vari-

ants added bumps and lumps, but the essence of the Spitfire remained as the design continued in front-line service even after the war.

The Spitfire's fame has made it a popular subject for modelers and almost every modeling com-





19

Then I sprayed the sidewalls with Tamiya German gray.



20

I painted the exhausts with Testors Model Master Metalizer burnt metal.



21

I painted the external colors with AK-Interactive Real Color acrylic lacquers, starting with the aluminum underneath the fuselage. Using AK's thinner mixed in equal measure with the paint, the color went on in thin smooth layers at 20 psi.



22

While I had aluminum in my airbrush, I carefully sprayed it along the fuselage and wing seams. The natural-metal shade revealed a couple of flaws in the joints that I filled with super glue and accelerator before sanding them smooth and re-spraying the aluminum.



23

Before painting the wings, I tacked the panels over the landing-gear brace and the chin intake in place with dots of white glue. A little pressure and water should pop these loose after painting so I can fit the landing gear.



24

I masked the forward and rear fuselages with Tamiya tape for curves at the edge of the mask. Regular Tamiya tape protects the areas behind these from overspray. Then I sprayed the underside of the starboard wing with AK flat white.



37 The fit of the upper and lower fuselage sections was rather poor. Fortunately, the seam doesn't follow any panel lines here; glued joints are difficult to re-scribe.



38 The fairing behind the cockpit has a rounded, upside-down V shape, but it should look more like an inverted T with more distinct headrest and prominent indentations along the sides; also, the rear end drops off too sharply, making it appear too short. I added strip styrene to the spine, then covered the whole fairing with a lot of super glue and sanded it to shape.



39 On the rear fuselage, where the joint between the fuselage sections follows a panel line, the fit is worse—the lower section is wider, producing a step I had to eliminate. I also filled the molded fabric-and-rib texture on the rudder and elevators; sanding the filler produced razor-thin trailing edges. While I was at it, I used a razor saw to make a gap between the elevators and fuselage.



40 I scribed missing panel lines on the rear fuselage. To outline the curved fairings around the stabilizers, I used a template cut from Dymo labeling tape.



41 Photos show the Saetta's rivets to be visible, even under camouflage, and most of them are double lines. As a compromise for scale, I added single lines and only some of them. I have trouble keeping lines of rivets straight, so I drew guides with a drafting pencil and Dymo tape as a straightedge.



42 After all of the rivets were done and the panel lines were re-scribed, I sanded the airframe and applied a dark wash to check for irregularities. The aileron hinge covers were lost to sanding so I re-scribed them also.



43 I drilled out the gun channels and re-scribed the outlines. I also added various screws using either an Olfa needle (top) or a sewing needle mounted in a pin vise.



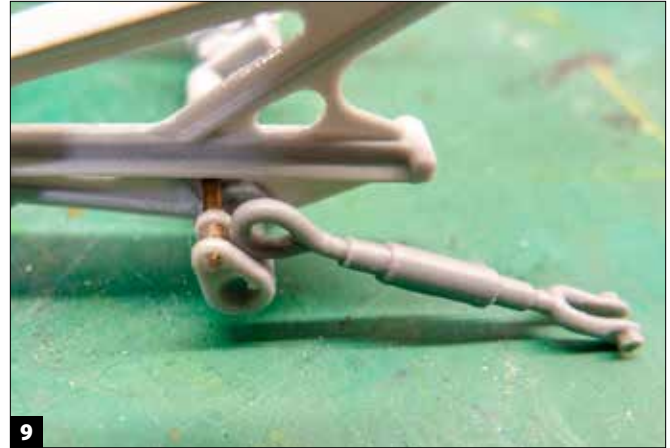
44 Spraying interior color along the joint at the wing root revealed that the seam was far from perfect. After filling and sanding, I re-scribed the vents on the front panels.



45 Some of the filler along the panel lines, super glue, in this case, chipped. The initial coat of primer revealed it. It wasn't hard to fix, but it was annoying.



8 Before completing the hull details, I prepared and test-fitted the front arms of the bridge deployment mechanism to ensure everything will line up with the hull-top gearbox and deployment shaft.



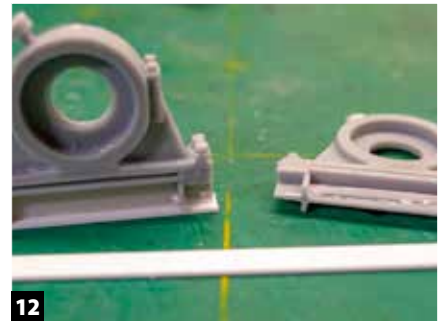
9 The instructions missed one point though, and that's the threading of the pin through the shackle eyes on the cross shaft behind the roller before gluing the pin in place.



10 In my case some cross drilling was required to allow the brass pins to pass through pivot points.



11 Satisfied that everything lined up, I glued the front pivot points to the glacis plate. Once these important parts had set, I moved on to complete the Valentine hull adding the track guards, tool boxes, exhaust, and other hull details.



12 The deployment-arm gearbox was next on the agenda. One of the resin mounting plates on my example was broken and the other very thin, so these were sanded off and some styrene strip replacements added in their place.



13 The gearbox was inserted between the two mounting plates and the end caps carefully tacked into place. The entire assembly was then glued into place on the hull. Ensure that the gearbox can pivot within the mounting as this will be necessary the line up the remainder of the deployment mechanism.

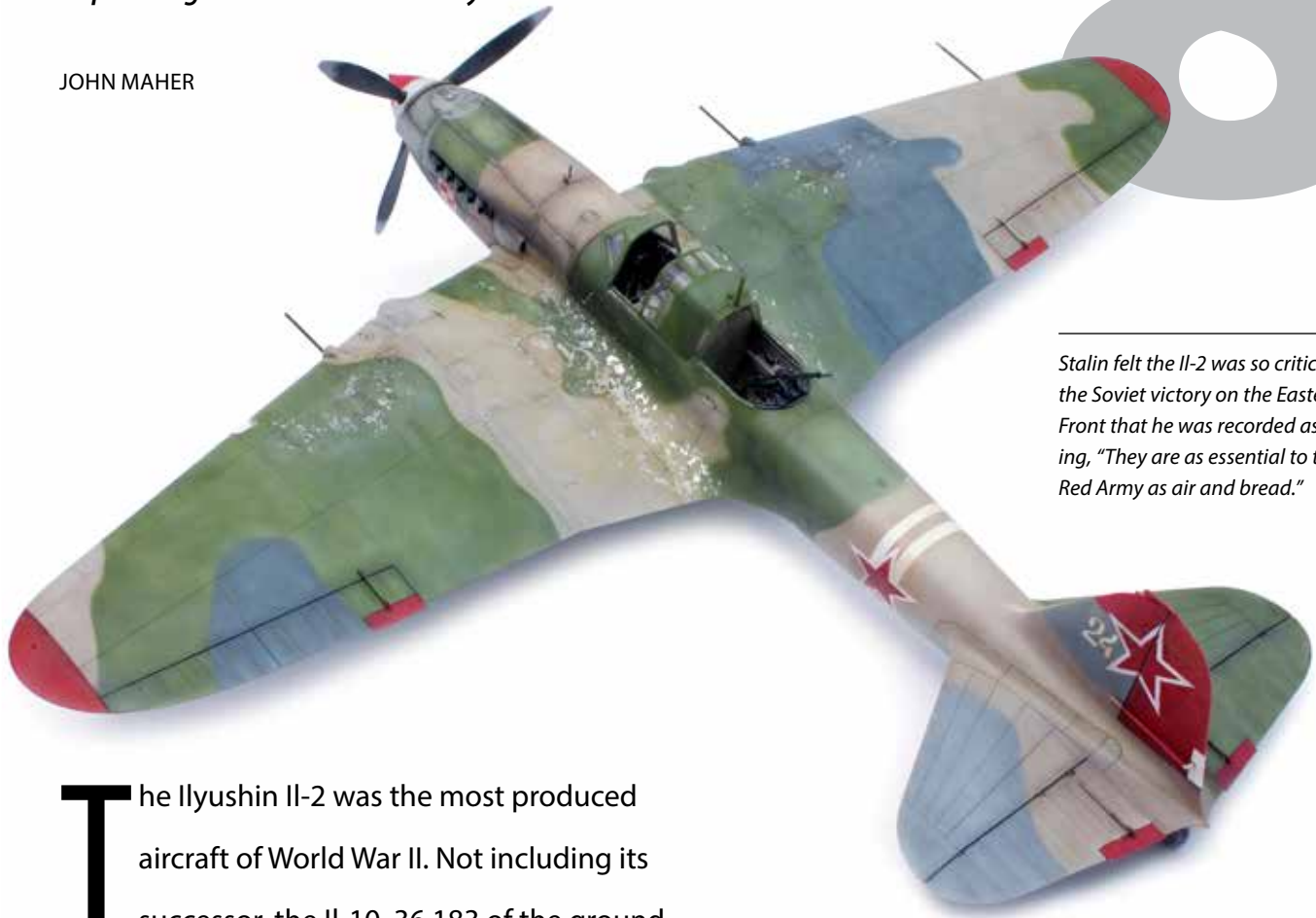


14 The resin bridge transport support brackets can also be added at this point, but I left gluing the supports for the counterweight arm until I had that entire subassembly ready to put in place to once again be sure of final alignment.

Riveting gets attention

Impressing extra detail on Tamiya's 1/48 scale Shturmovik

JOHN MAHER



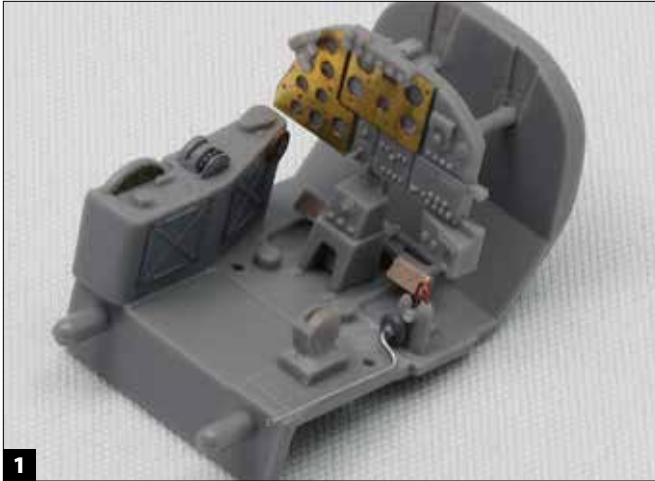
Stalin felt the Il-2 was so critical to the Soviet victory on the Eastern Front that he was recorded as saying, "They are as essential to the Red Army as air and bread."

The Ilyushin Il-2 was the most produced aircraft of World War II. Not including its successor, the Il-10, 36,183 of the ground attack aircraft were completed by the end of hostilities. Known as the "Flying Tank" or Shturmovik, it included armor plating around the cockpit and could take a pounding and continue flying.

Czech and Polish crews also operated Shturmoviks in the Soviet air force. Late in the war, the latter were allowed to add Polish insignia to their aircraft, so I modeled a Shturmovik in a Polish unit.

Released in 2012, Tamiya's 1/48 scale Il-2 is state-of-the-art for ease of assembly. However,

unlike some manufacturers such as Eduard, Tamiya did not include rivet detail on the surfaces. As I've wanted to try adding rivets myself, this was the perfect subject to start with as Tamiya chose the variant of the Il-2 with a wooden fuselage. That mean I only had to add rivets to the wings and tail planes. I used Tamiya acrylics unless otherwise noted; they are widely available, and I like them for the consistency of the results I get using them.



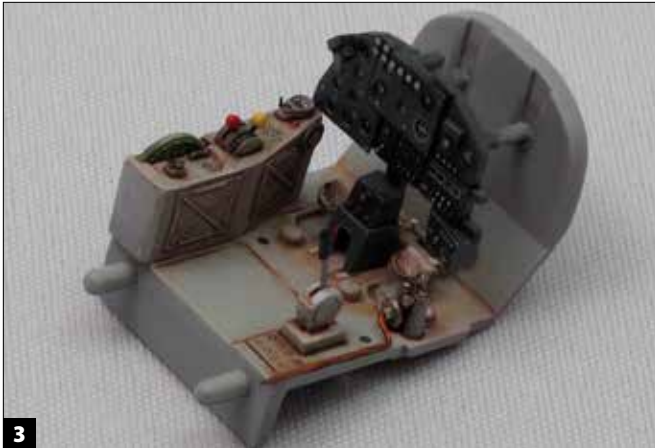
1

Extra cockpit details include Eduard photo-etched metal (PE) for the left console and rudder pedals (49607). The instrument panels are from an Eduard set for the Accurate Miniatures Shturmovik.



2

The main reason I chose the old Eduard PE set is that it uses acetate film to represent the instrument faces. With off-white paint on the back side of the acetate, I like the result.



3

I picked out cockpit details with various Vallejo colors. After applying a brown wash, I used a mix of Mig Productions dry mud and light European earth pigments to create the dusty looking floor. The two levers on the pilot's left-hand console are .012-inch brass rod with blobs of 5-minute epoxy for knobs.



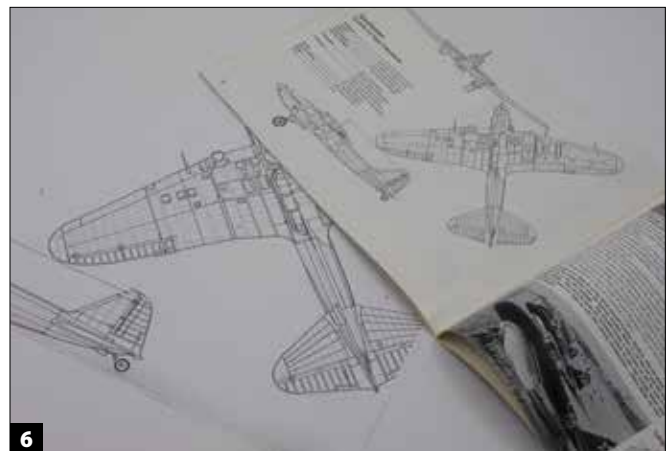
4

I added the harness from the old Eduard PE set because I wanted it to drape naturally. To make brass more malleable so it holds its shape, I anneal it in the open flame of a lighter. (That would've burned the paint off of a newer set.) The chipping on the rear armor above and beside the seat was added with a sponge.



5

For riveting, I used a technique developed by Tony Bell. You'll need these tools (from left): small Post-it notes, a mechanical pencil, medium width Tamiya tape, electrical tape, and a riveting tool or pounce wheel. Mine came from Rosie the Riveter as a set.



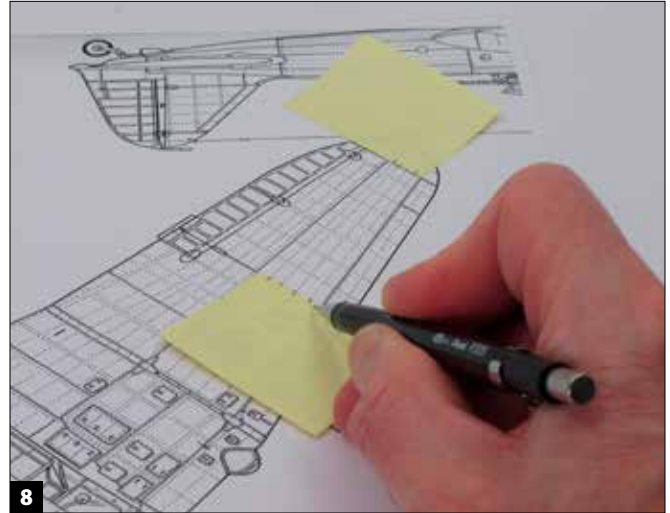
6

You'll also need a set of drawings that feature the rivet plan for your subject. I found what I needed in *Il-2 Stormovik in Action* by Hans-Heiri Stapfer (Squadron/Signal, ISBN 978-0-89747-341-5). Using a photocopier, I enlarged the drawings by 177 percent.



7

First, lay electrical tape over the a strip of Tamiya tape and cut thinner strips. A metal straightedge keeps the blade on track.



8

Using Post-it notes squared up to a panel line on the drawing, mark off the rivet lines on either end of the panel to be riveted.



9

Then locate the matching panel line on the model to square up the Post-it note so that you can accurately transfer the marked rivet lines. I've read some modelers apply the rivets after the whole model is assembled, but I prefer to lay the wing and tail plane halves against a flat surface because it's steadier.



10

Place a strip of electrical/Tamiya tape between two marks as a guide for the riveting tool. Don't go too fast but don't go too slow either. I developed a steady pace with light pressure that took me about 30 minutes to do one wing section. I did all the span lines first, and then the rib lines.



11

The combination of electrical and Tamiya tapes provides the rigidity of electrical tape and the easy reusability of Tamiya tape. The electrical tape alone would leave behind a sticky residue.



12

The end result should be subtle. I rubbed burnt umber oil paint into the surface and wiped it off to make the rivets show up. I dabbed Mr. Surfacer 500 onto mistakes and sanded them smooth.



13

Primer was Mr. Surfacer 1200 mixed 50/50 with lacquer thinner. After airbrushing the wing roots and the area around the wing gun access panels with Mr. Color silver (No. 8), I dabbed equal parts Vallejo Liquid Mask and water along walkways with a sponge to mask natural looking paint chipping.



14

The aircraft I was building had red wingtips and a red rudder with red trim on the vertical fin. I find it easier to paint primary colors over the closest matching camouflage color—in this case a light coat of Tamiya red (X-7) over NATO brown (XF-68).



15

I follow a three-step camouflage process. First, I pre-shade, or as I call it, pre-stain. I found black shifts the base color too much, so I started with field blue (XF-50) on the light blue underside, spraying it around control surfaces, aft of the rocket racks and various panel lines. Then, random mottling helped create a stained effect.



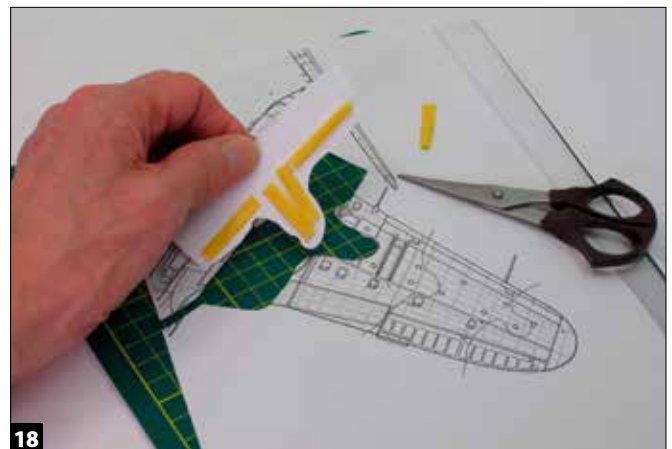
16

The second step softens the contrast of the previous layer. I applied light blue (XF-23), concentrating it around areas that naturally discolor—engine, guns, and rocket exhaust—and at the same time helping define control surfaces. In all steps, the paint was thinned 15 percent to 85 percent Mr Color Leveling Thinner.



17

The third step mixes field blue (XF-50) with light blue (XF-23) and white (X-2) in a 20/40/20 ratio. The retarder in the thinner slows drying time, important as each application is applied slowly by mottling and subtle streaking to get the effect I'm after.



18

To create the soft but defined edge between the upper surface camouflage colors, I used the drawings from the riveting step again. I drew the camouflage pattern in pencil, then cut out the sections. Rolled bits of Tamiya Tape secured the masks.



19

When applied to the model, the masks sit slightly proud of the surface, thanks to the rolled up Tamiya tape underneath. By airbrushing along the paper mask edge, I got a soft but defined line. I made sure to hold my airbrush at a consistent angle to avoid uneven color demarcations.



20

With the camouflage completed, I added the markings. For the red stars, I used custom masks from Mal Mayfield of Miracle Masks. The masks are multipart and applied to the model as a single marking—you then remove the section to be painted. Note the black marker orientation lines. First I sprayed the white trim.



21

The orientation lines assist in re-positioning the previous section when you apply the next color. Before applying the red, I replaced the section covering the white. Note the toothpicks inserted in cannon shell ejector ports—these kept the model off the workbench surface during the painting process.



22

The individual aircraft number was also applied using a Miracle Mask. Masking your markings allows you to get them extremely close to one another without having to worry about decal film overlapping and creating unsightly ridges that obscure surface detail.



23

Layered weathering starts with Mig brown wash, followed with Winsor & Newton burnt umber, 502 Abteilung's shadow brown (Abt015), and engine grease (Abt160) for the oil streaks. I used my airbrush to blow Humbrol ochre 83 from a no. 2 paintbrush to represent mud splashes.



24

Industrial earth (Abt090) and light mud (Abt125) were speckled on and around the main landing gear. Eduard Brassin wheels (648 072) replaced the kit parts. I added PE pin wheel fuses from the old Eduard set to the kit's rockets.



25

The rear gunner's ammo box is Eduard Brassin (648 079). The ammunition feed draped over the top is from the old Eduard PE set. Paint chipped off the floor exposes the wood finish.



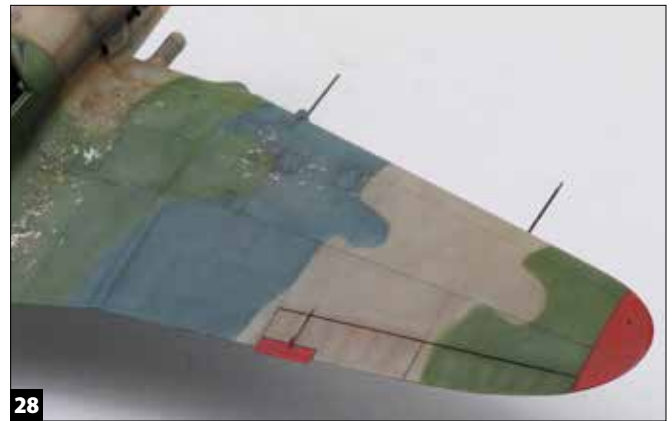
26

I removed the Vallejo liquid mask using a flat toothpick beveled to a sharp edge, exposing the chipping along the wing roots and around wing cannons. Note the paint starting wear off the back of the propeller. The trim tabs were picked out with Vallejo red and white.



27

The cannon barrels and the pitot tube are Albion Alloys brass tubing. I dipped them in AK-Interactive photoetch burnishing fluid rather than paint them, as chemical etching is more resilient than paint on brass. The Polish checkerboard insignia is a Microscale decal. Note how the oil staining curves around the spinner thanks to centrifugal force. These were created with Winsor & Newton burnt umber and shadow brown (Abt015) oil paints.



28

I was pleased with the way the rivets turned out—some argue that rivets would not be seen if a real airplane was reduced to 1/48th scale. But I think these subtle rivet lines give a real sense of the structure under the skin of an aircraft and therefore make the model more interesting to look at.



29



30

The Il-2 won't win any beauty contests, but with their red and white motif, Polish Shturmoviks make a colorful subject. Note the defined but soft edged camouflage pattern and the general overall wear and tear. But at this angle, the rivets are unseen—just what I wanted when I decided to give riveting a try!