

DESIGN J & B

Paper Models Studio

**BRAZILIAN
AIRPLANES**



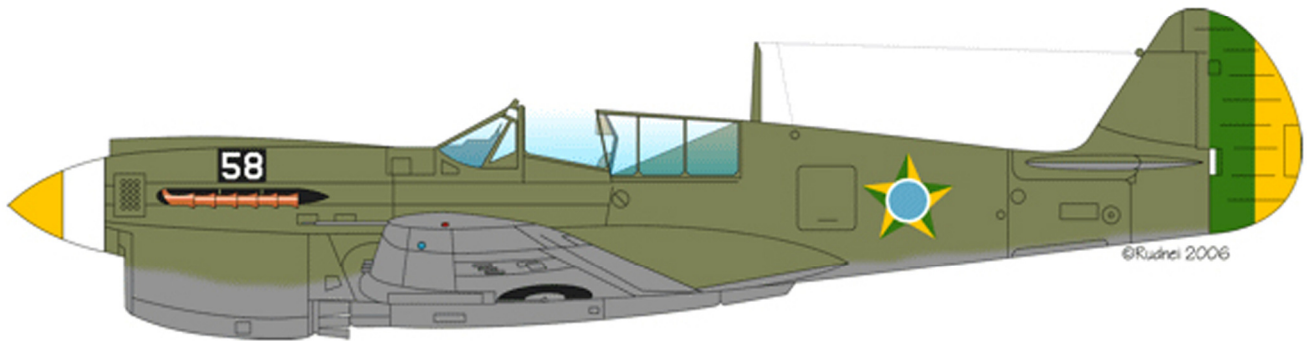
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Curtiss P40N Kittywank

July/2010



BRAZILIAN AIR FORCE

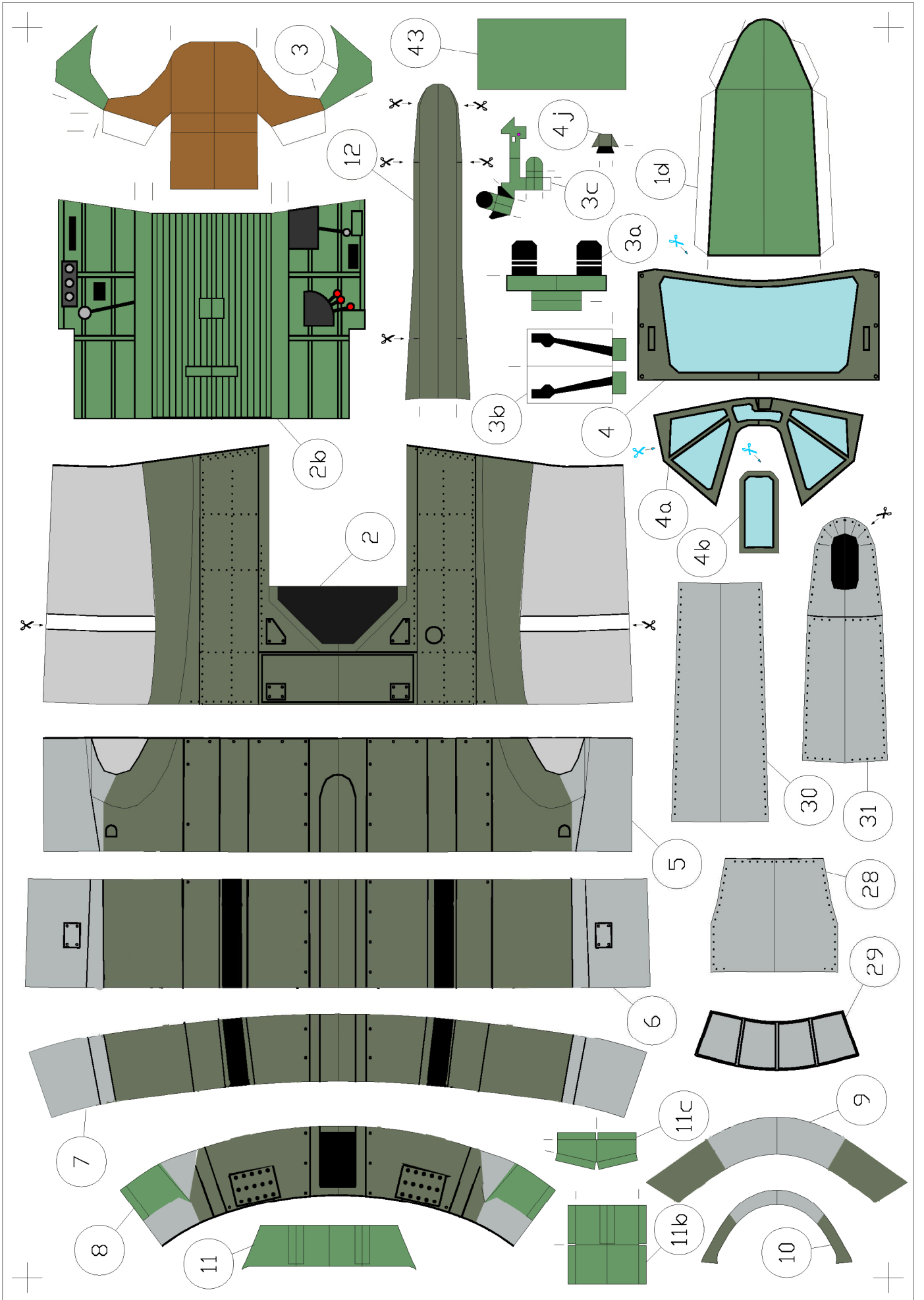


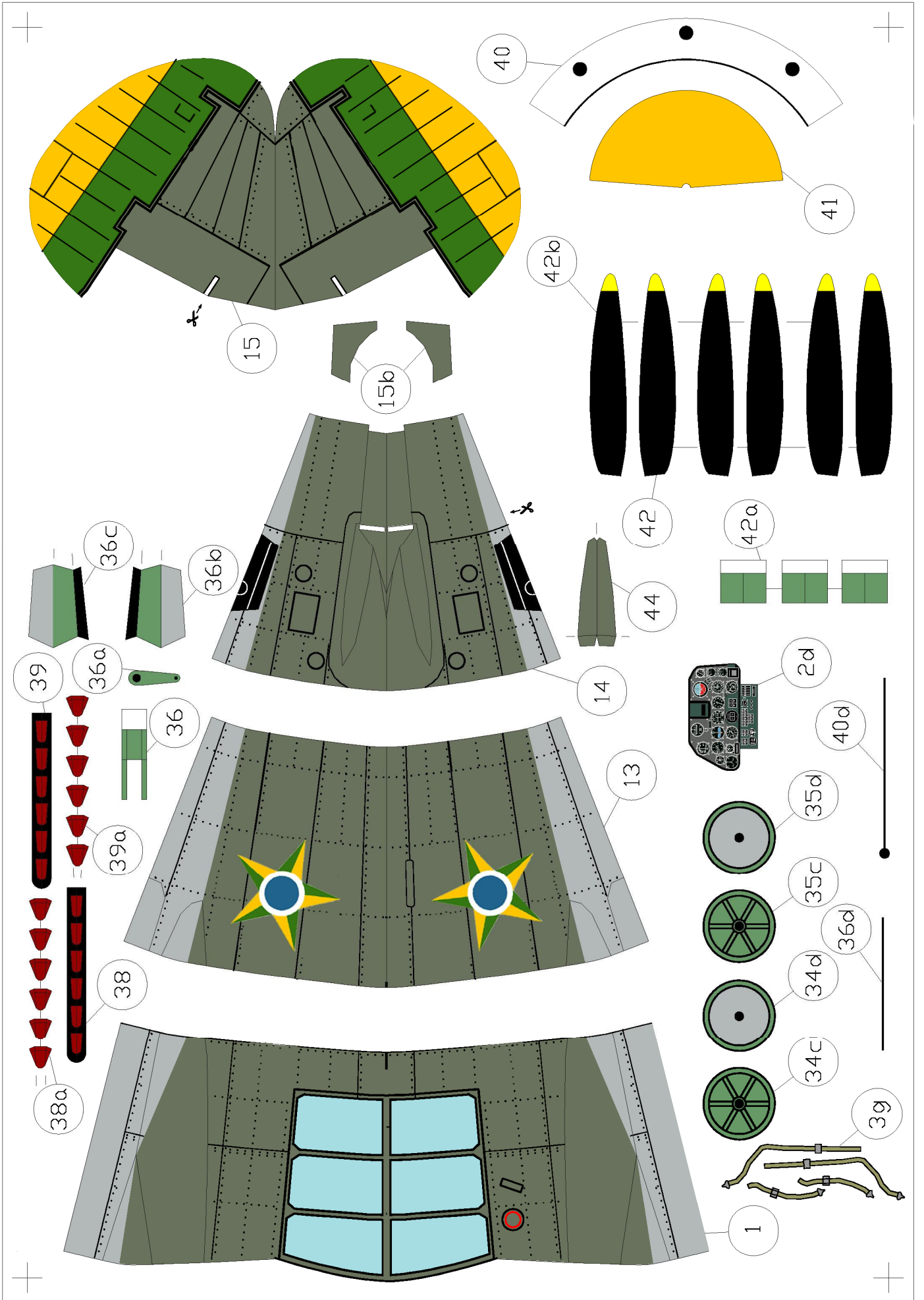
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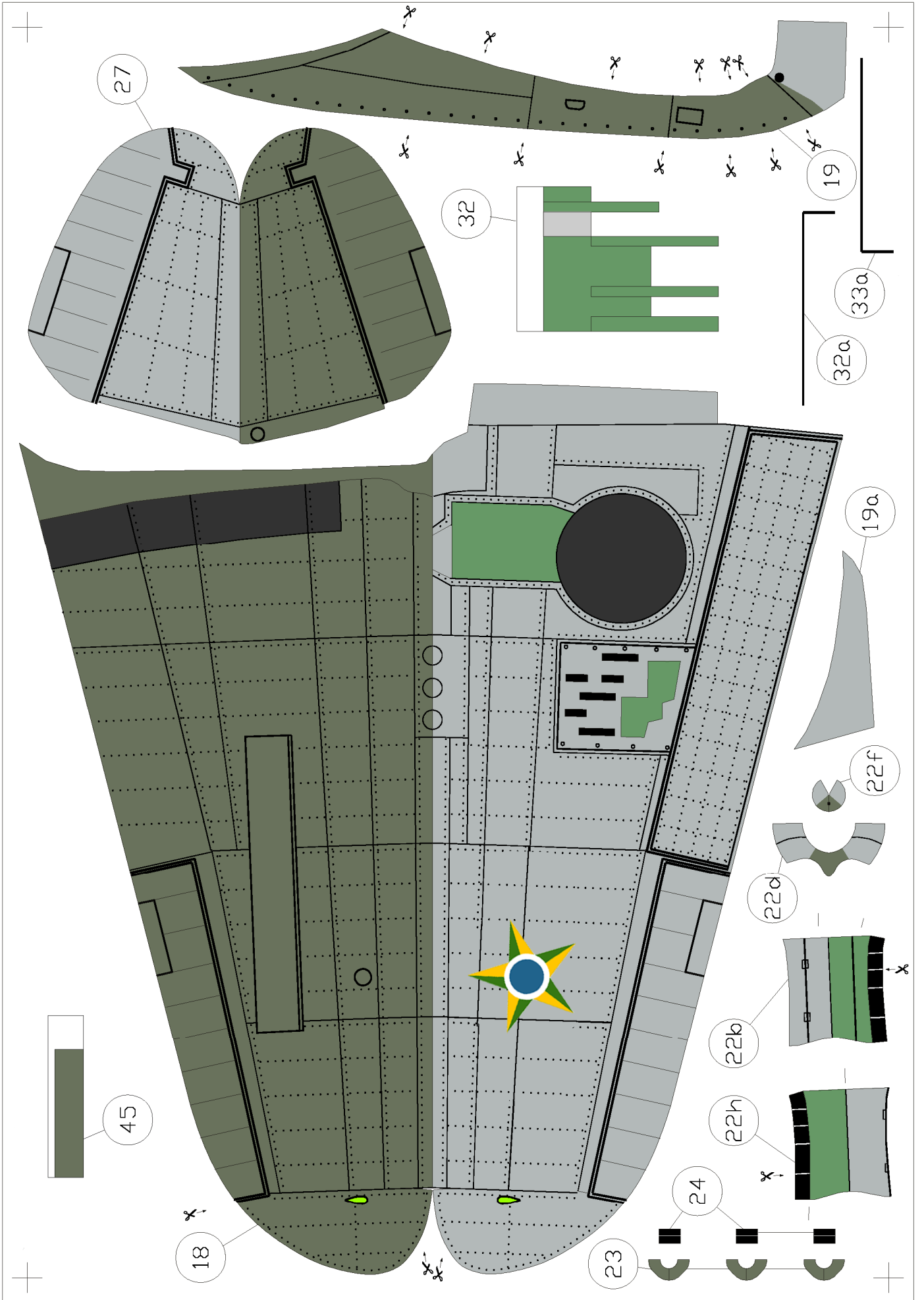


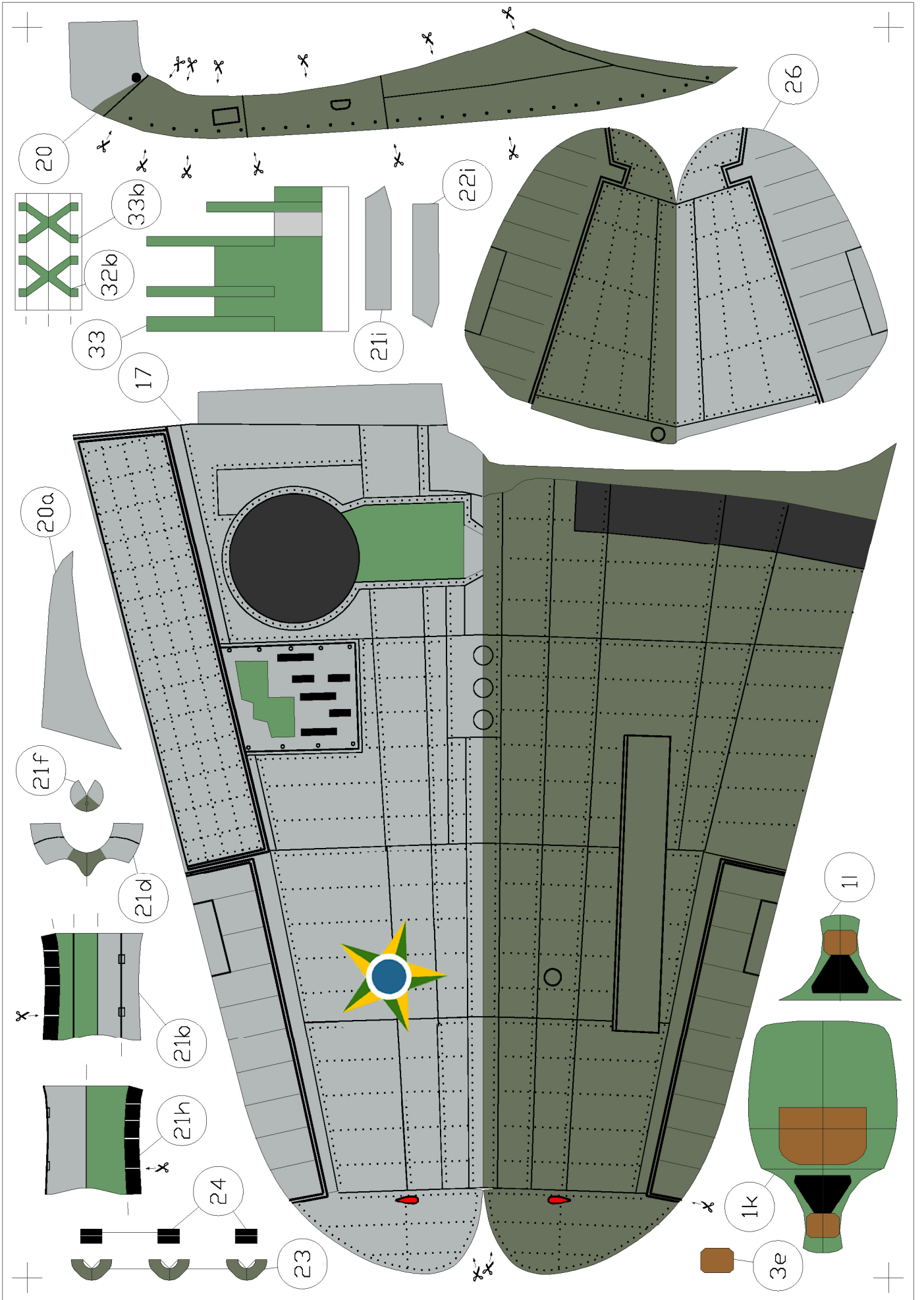
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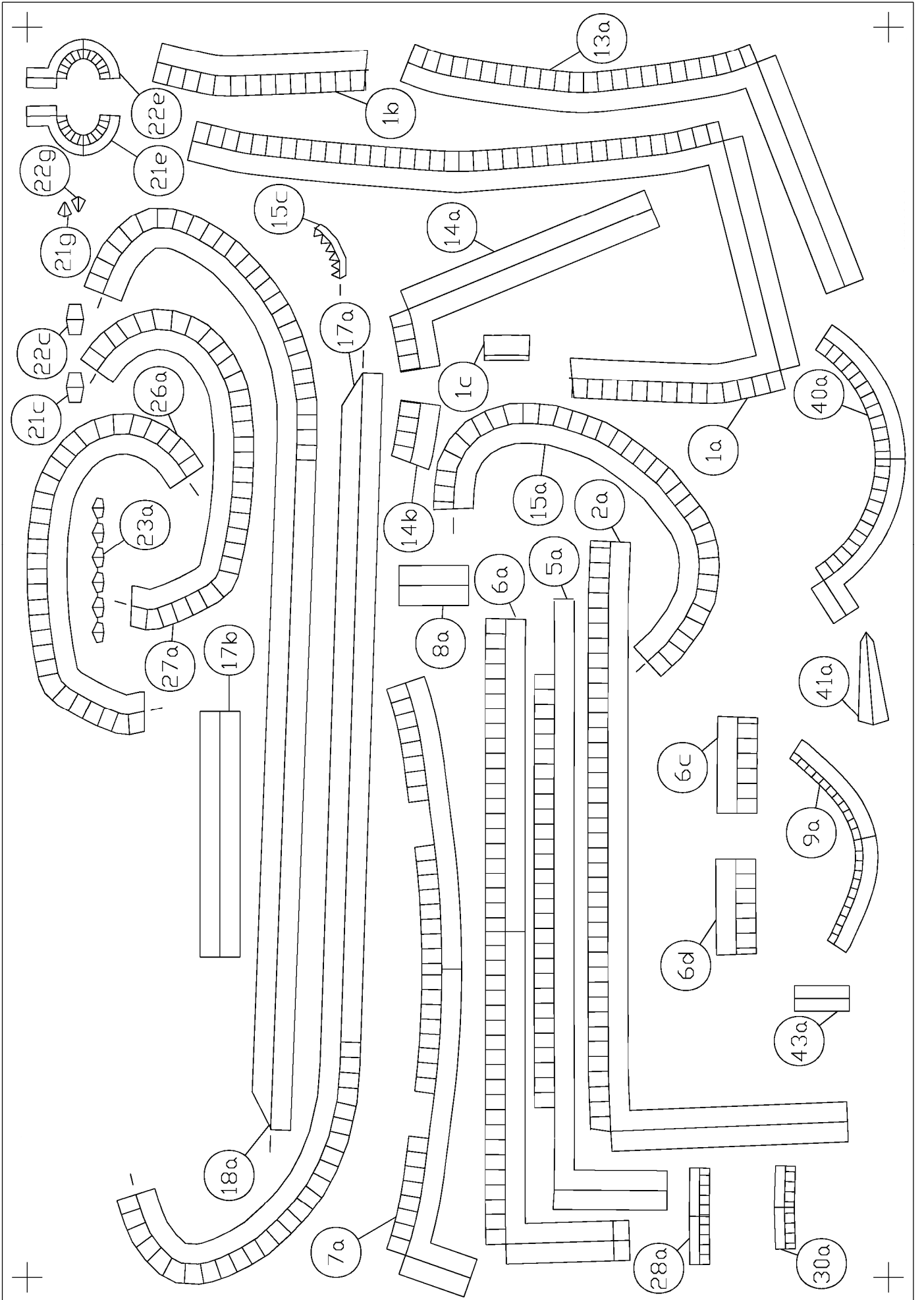
Original Design:
Emil Zarkov

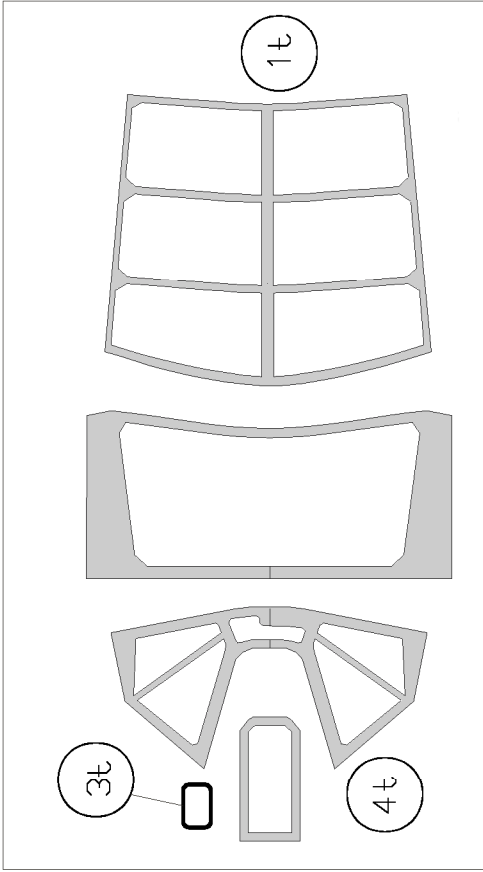
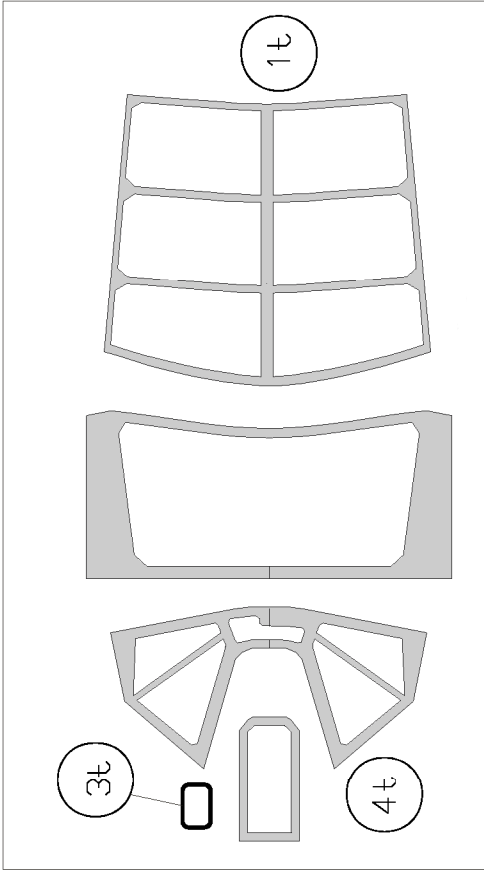




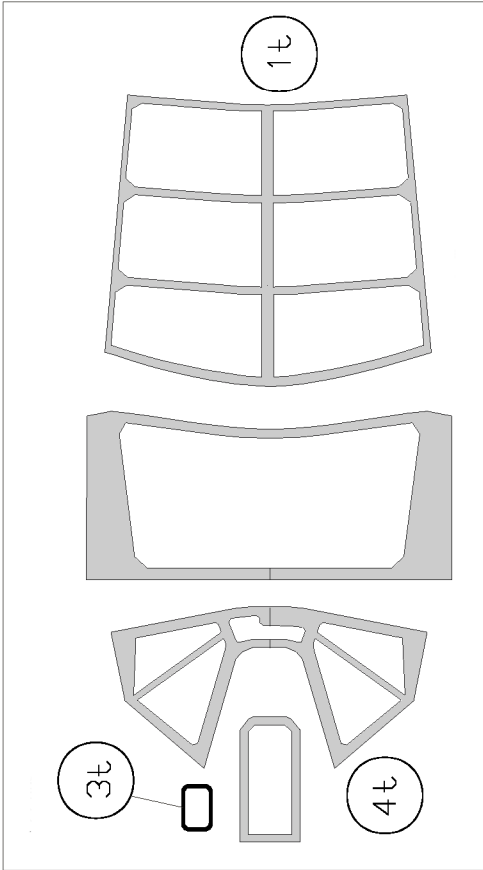


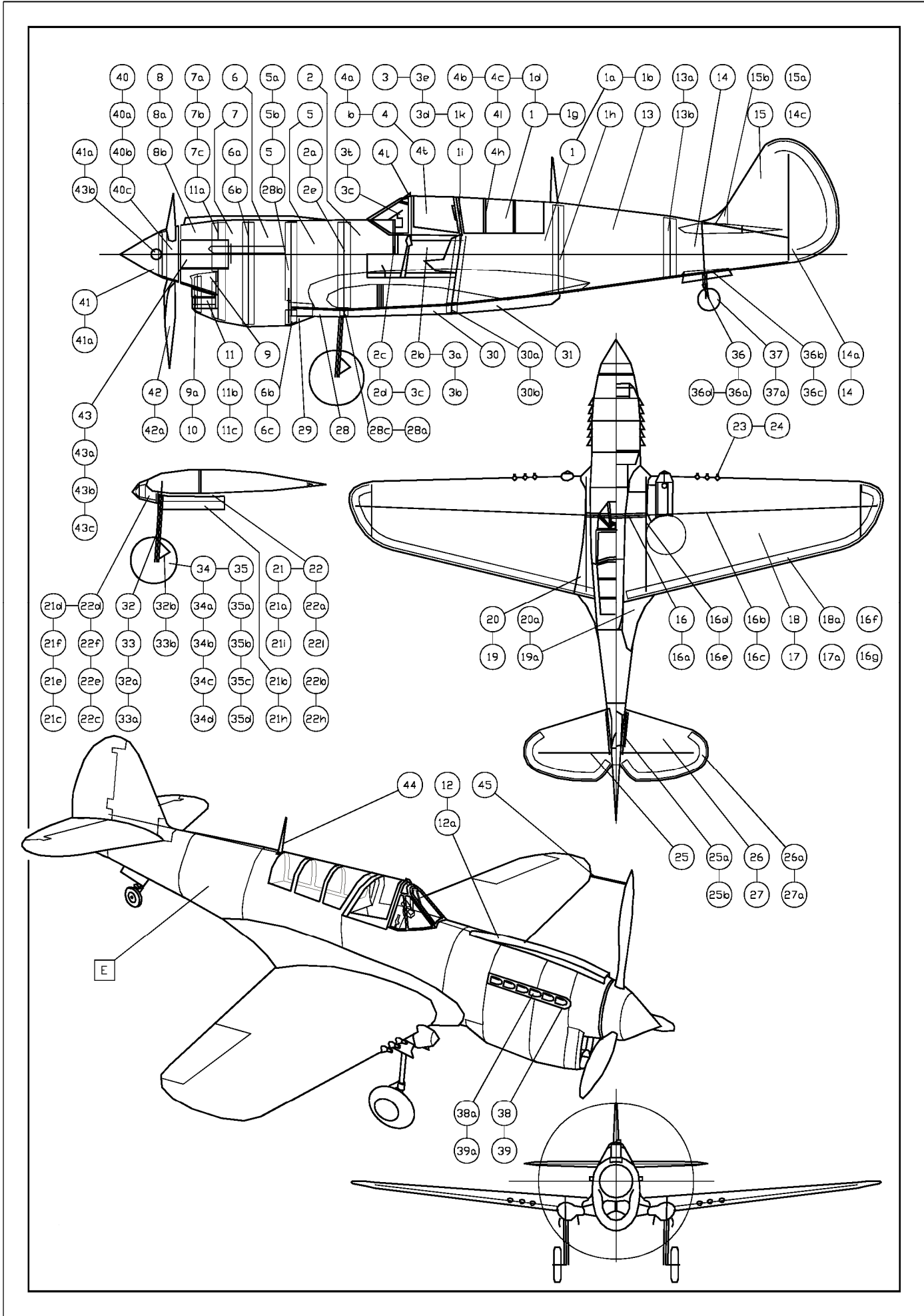






WARNING
TRANSPARENT PARTS
USE ONLY TERMOPROOF
SPECIAL TRANSPARENT FOIL
FOR LASER PRINTING
OF THIS PAGE
USING UNAPPROPRIATE MATERIAL
CAN BADLY DAMAGE YOUR
LASER PRINTER!





P-40 N ASSEMBLY INSTRUCTION

Before you get down to assembling the model you need to do some preparation work. First, you need to read through these instructions. Examine thoroughly all the design elements and carry out the assembly procedure in your mind. It's only after you make sure that everything is clear that you may start assembling the model.

You also need to pick up some necessary tools - scissors, sharp modeling knife, knife with a blunt blade for scoring parts, tweezers, pins and wire, and very important - good glue and applicator. We do not recommend using water-base glue. UHU or similar glue is the best variant. "Moment" is also possible but it is not transparent.

The preliminary stage includes attaching a load-bearing elements sheet to a piece of cardboard, scoring all crease edges with a blunt blade, drilling holes in wheels and cutting inner frame holes. Don't cut all the parts at once since you can mix them up or lose them. When everything is ready you can get down to assembling the model.

First comes the fuselage sector behind cockpit 1. Attach binding strips, then place the glazing 1f. Glue the segment, then insert there interior part 1d and formers.

Continue with the cockpit segment 2. Do the same thing with binding strip 2a and, after the compartment is carefully shaped, temporarily fix front former 2e with two/three little drops of glue, which can be easily removed later. Only after compartments 1 and 2 are glued can we make a cut for the spar. All this is necessary to achieve a proper shape of sector 2.

While glue is drying you can proceed to cockpit interior arrangement. Get ready to work with small parts: assemble sight 3c, 3f, dash-board 2c, d, handles 3b and control pedals 3a, seat 3 along with attached belts 3g, floor and cockpit inner surfaces 2d. When everything is ready temporarily remove the front former of the cockpit and paste up interior 2d. Fix foot pedals in proper locations and attach front former 2e again along with other parts of the cockpit interior.

Let's get down to assembling canopy 4. Use the sharp modeling knife to cut all inner surfaces of windows from cockpit parts 4 and then outer contours. Likewise, cut transparent parts 4t. Attach the cockpit sash to the transparent parts and, after shaping them, glue the ends of windshield 4b, e and swing-out part 4, 4g and the front part of cockpit 4a, b together.

Let's proceed to fuselage compartment 5 located in front of the cockpit. Assemble former 5b, c, stick binding strip 5a and, after shaping the skin, assemble the compartment, insert the former and attach the compartment to the fuselage. Assemble the remaining sectors 6, 7 and 8 of the head as described above. Inner holes of formers 7b, 7c and 8b should be cut with special care because later there will be installed propeller shaft bearing 43 there. While gluing fuselage segments together you should stick with symmetry lines and avoid bending and twisting. When the fuselage head is ready, use outer parts 9, 9a and 10 and inner parts 11 - 11c of air flow separation to assemble the lower air inlet for cooling water and oil radiators of the engine. Having scored the bends, attach carburetor air inlet 12 to the head. According to the above technique assemble two remaining tail segments 13 and 14. Before assembling segment 14 you should cut a passing point for horizontal stabilizer spar 25.

Make vertical stabilizer 15 by bending scored binding strip 15a and attaching it to the inner side of sweep 15 at a 1-mm shift from the contour edge. Apply a thin strip of glue to the area right next to the contour of the other half of sweep 15 and bend it carefully so that to avoid cracks in the front part of the stabilizer. Ensure that the back edge is not twisted and distorted during gluing. When the stabilizer is ready, attach it to compartment 14 of the fuselage along with fillet 15b, which should be bonded in advance with strip 15c.

Now come the wings. First, use elements 16 -16g to assemble the frame. Then, cut wing surface sweeps 17 and 18. Don't forget to make cuts at the

flow at points identified by the scissors symbol. That's necessary because at that points the wing surfaces are double-curved. Assemble the wings by gluing the two halves together using binding element 17b. Then, attach previously prepared (like in case with the vertical stabilizer) strips 17a and 18a, approximately by one millimeter from the contour edge, to the lower inner surfaces of the sweeps. Attach frame 16 to the lower inner surfaces of two half wings 17 and 18 and proceed as in case with the vertical stabilizer. It's very important not to let the wings twist and to ensure that their back edges are straight. Hold the situation under control until glue is dry!

So, the wings are ready, glue is dry, and now they can be attached to the fuselage. Apply some glue to the lower surface of the central line of the symmetry and insert the wings make sure the wings are arranged symmetrically and the wing axis is in perpendicular to the fuselage. Now you are going to make a very important procedure that is to make wing-to-fuselage fillets 19 and 20. Cut the both fillets beyond the sweep contour so that scissors marks are visible. Then make cuts in the direction where marker arrows point to approx. up to the middle of the fillet and cut them along the contour. Then give the fillet surfaces the dual-curvature shape. When, after you try to assemble the model without glue, you realize that everything is OK, proceed to gluing.

The easiest way to stain the model with glue is to apply it to the fillets. Use a little trick, namely: apply glue to the arrears where they adjoin the fuselage and the wings. Then put the fillets to their places starting from the lower front part.

After you have attached the lower rear segments of fillets 19a and 20a you may proceed to the final stage by sticking the hot air cowling (parts 28 -31) and cooling loop shutter 29. Make horizontal stabilizer 26, 27 just as you made the vertical stabilizer, again adhering to the symmetry and avoiding twists and distortions.

Now it's the turn of small parts. Using tweezers give a cone shape to machine-gun cowlings 23, glue them and attach them to the wings. The machine-gun itself can be made of parts 24 by rolling them to produce small tubes, but you can use instead 1-mm in diameter.

You will have no problems with undercarriage post cowlings 21d, 21f and 22d, 22f - they are assembled according to the techniques developed during the work with the segments. Attach assembled cowlings along with formers 21a, 22a to the wings and then undercarriage bases 21 and 22, which must feature small holes for wire supporting the posts. Assemble undercarriage doors 21b, h, i and 22b, h, i and stick them at appropriate places to 21 and 22. Roll undercarriage posts 32 and 33 to produce tubes and insert supporting wires in it, which are used to string wheels. Use parts 34 - 34d and 35 -35d to assemble the wheels by gluing them together. As soon as glue is dry finish the wheels with sandpaper and then use a black felt-pen or paint to make their edges black. Apply the same technique to rear wheel 37. Use a piece of wire to make parts 32a, 33a and 36d. Stick the undercarriage posts to the appropriate locations and make sure they are positioned under an appropriate angle until glue is dry.

Assemble exhaust nozzles 38a and 39a by bending them along previously scored lines and attaching to bases 39 and 39, which are to be attached to the fuselage head. Then fix tubes Pilot 45 into left wing 17 and attach antenna 44 to the rear top part of segment 1 of the fuselage. You only have to assemble screw spinner 40, 41 and propeller blade 42 - 42b, and insert it's shaft 40b into bearing 43. The spinner and bearing are made according to the known technique. While gluing the blades and spinner you should make sure that they lie in the plane of rotation at 120 degrees to each other with the same angle of attack. The blades should be tilted to ensure a permanent spinner diameter travel. White paper edges of glued blades can be painted in black with the same felt-pen or paint used for the undercarriage wheels. It would be perfect if you ensure free rotation of the propeller so that even a week

waft of the wind could make it rotate. In order not to let the propeller fall out of its bearing, attach limiter 43d to the shaft. Put the propeller into the fuselage head and complete the model.

Now your Curtiss Kittyhawk P-40N model is in your hands.

Enjoy!