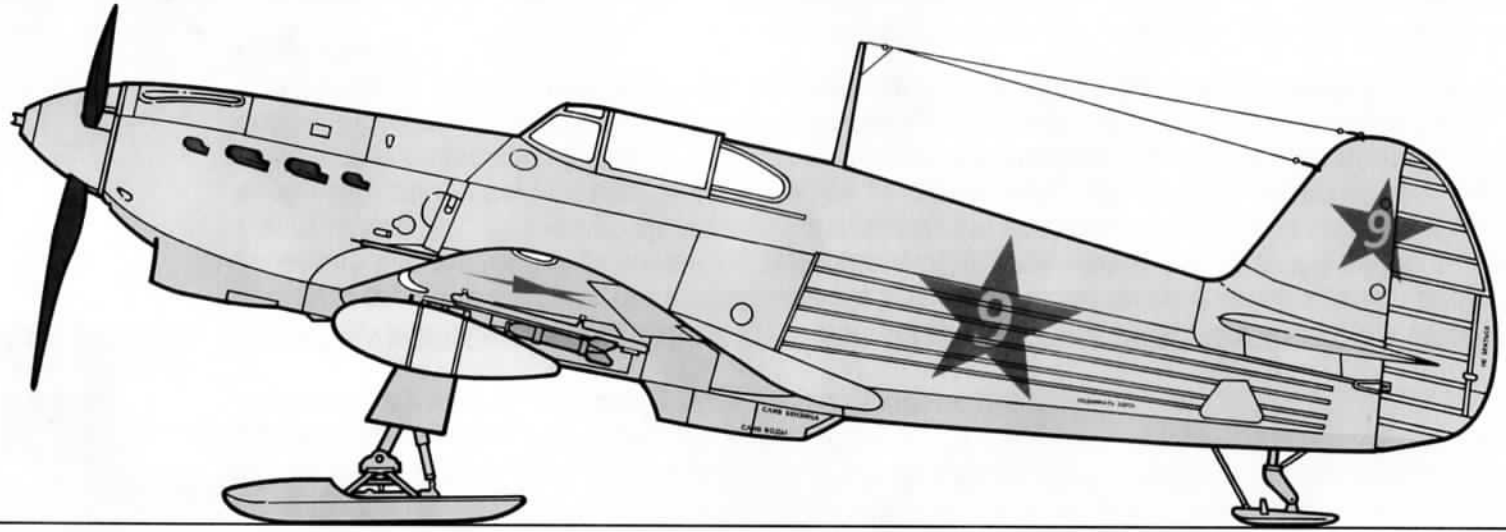
3423-0200

YAKOVLEV

Yak-1
ON SKIS

ACCURATE MINIATURES®



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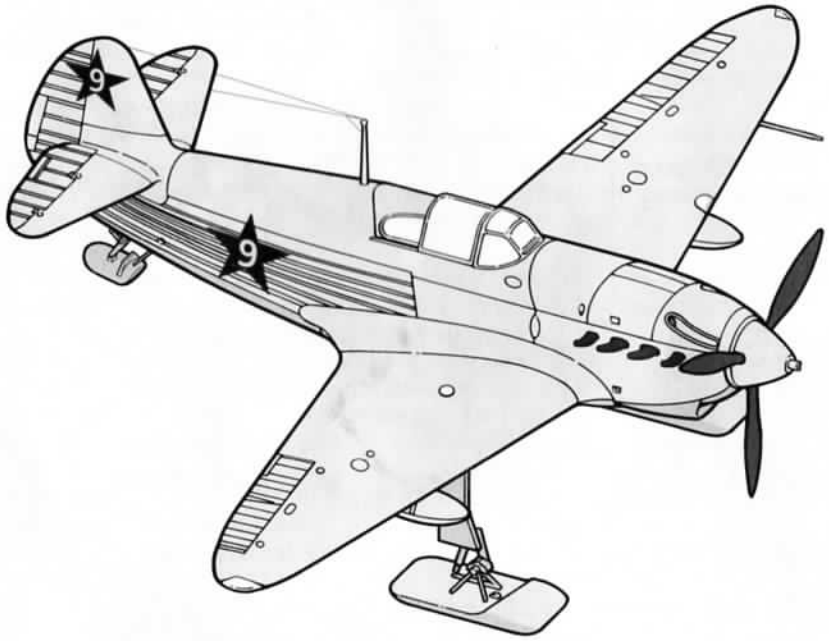
INSTRUCTIONS

The Yak fighter series is a tribute to the brilliant design capabilities of Aleksandr Yakovlev. First flown in November of 1940, fewer than 3,000 Yaks had been produced at the time of the German invasion in June, 1941. Early losses were overwhelming, but before the final flights were made in May, 1945, Soviet factories had produced more than 36,000 aircraft, making it the most produced series of fighters in history. The Yak was constructed almost entirely of nonstrategic materials (steel tubing, plywood and fabric). It was a small airplane even by contemporary standards and was considered by pilots to be an extremely maneuverable aircraft. In the hands of a competently trained pilot, it was more than a match for the best German fighters.

This kit represents a ski-equipped Yak-1 in the winter of 1941-1942. Skis were added to a limited number of aircraft to allow the fighter to more easily operate from unprepared forward airfields, which became a necessity to accommodate the fuel range limitations of the plane. Parts are included to allow the builder to construct a Series 1 early or late Yak. These aircraft are easily defined by the style of canopy behind the pilot. Early planes had a large wrap-around transparency area, while later versions had small windows on the sides. These changes reflected the increasing shortage of plexiglass in the early stages of the war. Our photographic evidence shows only small window aircraft utilizing the skis; however, it is probable that early versions also flew in this configuration. Most ski-equipped Yaks flew with the Northern Fleet Air Force, Naval Aviation and were used as patrol aircraft.

This airplane was a conversion of the single seat "razor back" fighter for use on packed snow airfields. It left the factory in the standard summer color scheme of black (FS 27038) and dark green (FS 24102) over underside blue (FS 25190). In the field during the winter, the upper surfaces received a coating of a casein-based matte white paint that could be removed in the spring. This paint was often applied in a haphazard manner with anything from mops and rags to brushes and airbrushes. The white distemper paint specifications (No. 1-22 in 1941-42 or MK-7 in 1942-43) called for the addition of a small amount of light grey paint to kill the intensity of the white. The distemper was applied over the upper surfaces and sides only. As the winter wore on, this "temporary" finish gradually wore away to reveal the camouflage surface underneath. This surface erosion allows the model builder significant leeway in just how to finish the model. The builder may elect to use water-based paints over enamels, which will allow a certain amount of experimentation with the finish. Finally, photos reveal considerable wear and tear on these airplanes.



MODEL PAINT REFERENCE CHART*

	FEDERAL STANDARD	MODEL MASTER	HUMBROL	GUNZE SANGYO AQUEOUS	GUNZE SANGYO MR. COLOR	AERO-MASTER	FLOQUIL CLASSIC MILITARY
ALUMINUM	17178	1781	11	8	218	–	303121
BURNT METAL	–	1415	–	76	61	–	–
DARK GREEN	24102	1713	117	330	303	9090	303343
UNDERSIDE BLUE	25190	–	89	323	323	–	303090
BLACK	27038	1749	33	12	33	9001	303010
FLAT WHITE	37875	1768	34	11	62	9002	303011
INTERIOR GREY-GREEN	24226	2071	92	70	60	9020	303359

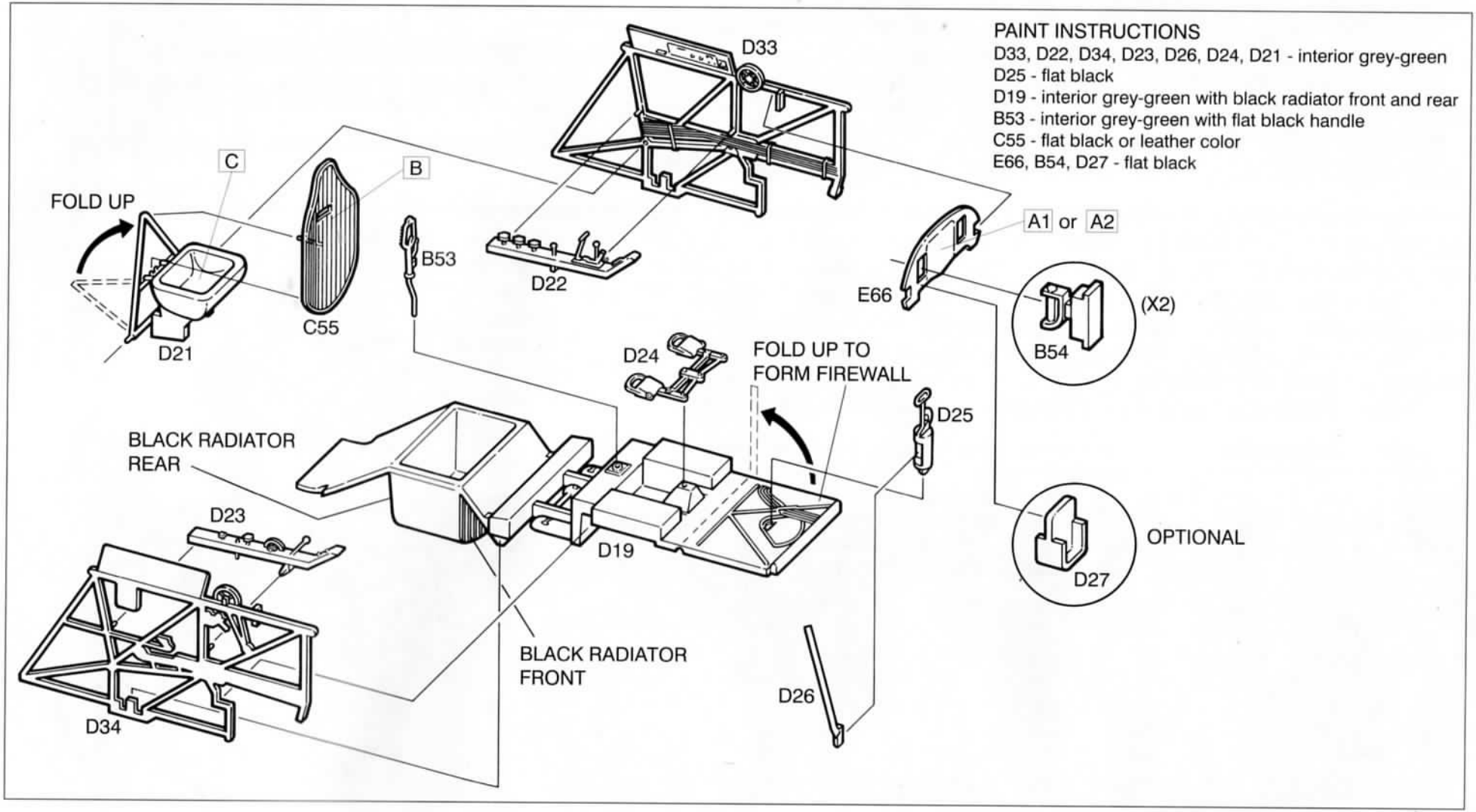
*This chart is provided only as an aid to the modeler and is the closest match possible from each paint manufacturer at the time of printing.

While we at Accurate Miniatures do not profess to be "experts" on these colors, we have done our best to provide the builder with as much information on the subject as is currently possible. We have also kept an eye on the availability of pre-mixed model paints. As experts in this area dig deeper into the maze of Soviet colors, we're sure the knowledge will improve. In the meantime, use your judgement.

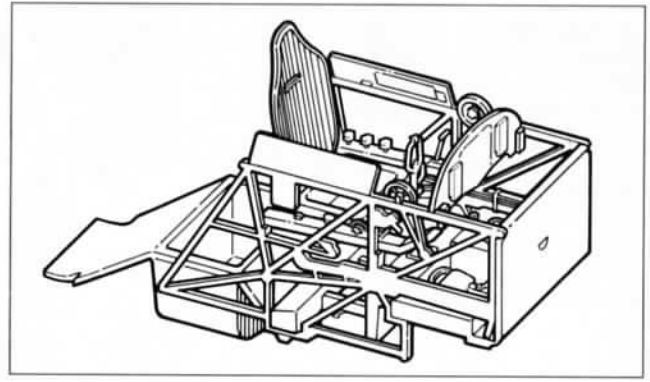
IMPORTANT

As with all Accurate Miniatures kits, we strongly recommend that you break the old habits and actually follow these instructions. We have built quite a few of these kits and have found an easy way to put them together. This kit goes together easily and with some unconventionality. If you've read this far, you'll probably do alright. Now break out the paint and glue.

STEP 1 - COCKPIT ASSEMBLY

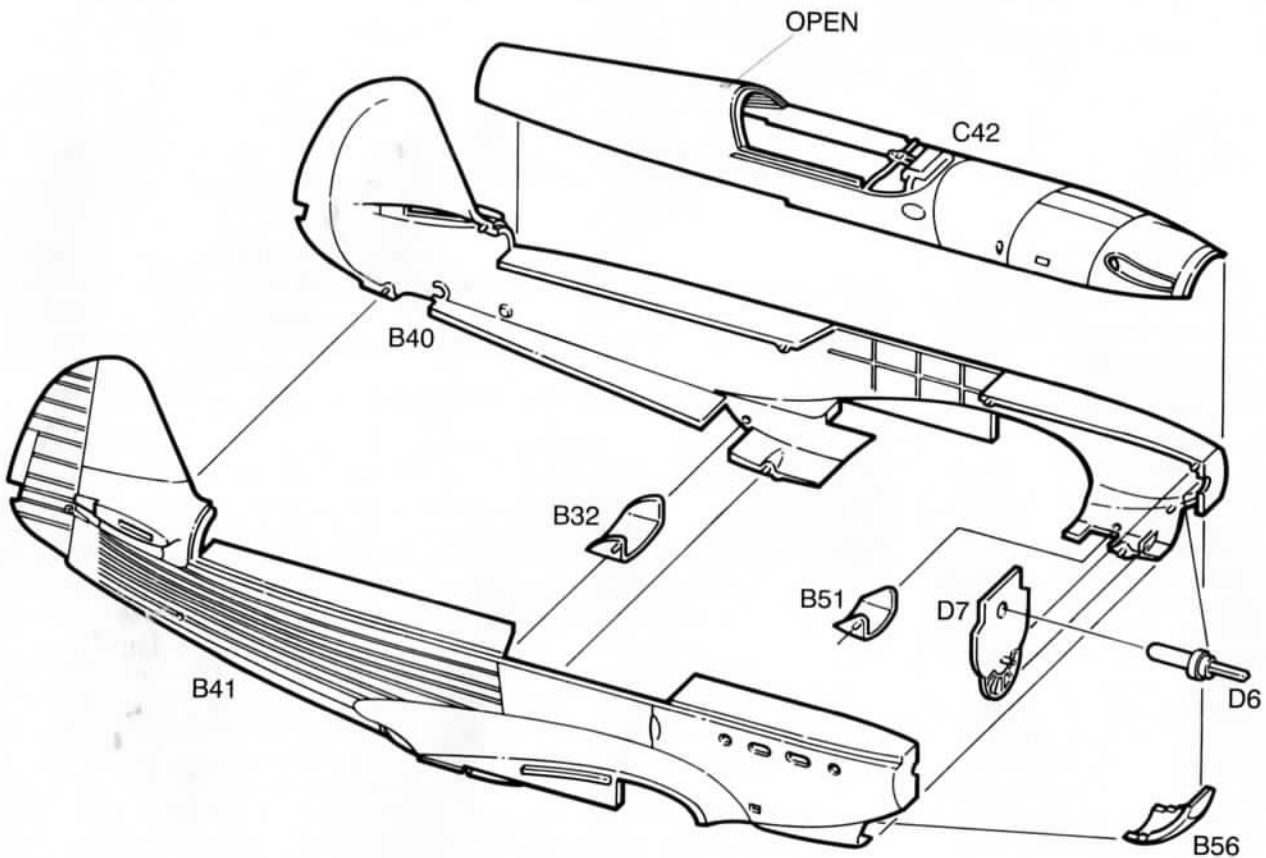


- ☐ As with most sub-assemblies, these parts will benefit from being painted before assembly. Glue the left control console (D22) to the left fuselage truss (D33). Repeat this operation for the right side using the right fuselage truss (D34) and right control console (D23). The control consoles rest on top of the small locating pins on the fuselage trusses.
- ☐ Glue the cannon shell case chute (D26) to the ShVAK cannon charger (D25).
- ☐ Glue the cannon assembly to the locator on the front of the cockpit floor (D19).
- ☐ Glue the rudder pedals (D24) to the forward most locator on the cockpit floor.
- ☐ Now glue the control column (B53) to the rear most locator on the cockpit floor.
- ☐ Carefully fold up the front of the cockpit floor, thus forming the firewall.
- ☐ Glue the left fuselage truss assembly to the left side of the floor/firewall.
- ☐ The lap belt decal (C) may be added to the pilot's seat (D21) bottom at this time. This decal represents the Sutton type harness that was common to Soviet aircraft in this time period. If the modeler chooses to find alternatives to this decal type of seat belt, we won't be insulted. The seat belt decals may also be applied to foil, paper or other materials to give them more "depth" if desired.
- ☐ The seat back frame portion of the pilot's seat (D21) is now folded upright and glued against the seat bottom.
- ☐ Carefully locate and glue the armored seat back (C55) to the seat frame. Let this have plenty of drying time.
- ☐ The shoulder harness decal (B) is now added. The top of the belt passes through the slot in the seat back and drapes onto the seat.
- ☐ After allowing the seat assembly to dry, attach it to the left fuselage truss assembly by gluing the pin on the left side of the seat frame into the hole on the inside of the truss assembly. The seat assembly should now be rotated forward until it rests on the floor.
- ☐ Before the left side glue is dry, carefully locate and glue the previously assembled right fuselage truss assembly to the right side of the cockpit floor and the firewall, trapping the pilot's seat assembly in place.
- ☐ The instrument panel (E66) front should now be painted flat black with the exclusion of the dial faces. Two different methods have been used to print the decal instrument dials. One decal (A1) has been printed "face down" with the dials facing the glue surface, while the other decal (A2) has the dials "face up". Select one of these decals to be applied to the back of the panel. If you elect to use the "face up" decal, it should be turned over on the wet decal sheet to pick up glue and then applied. Make sure that the dials line up in the clear areas, and allow to dry thoroughly.
- ☐ Glue the two gun charging handles (B54) through the openings in the face of the instrument panel from the back side, orienting as shown with the curved side to the bottom and the squared-off side to the top.
- ☐ If you are constructing an aircraft with a radio, the radio panel (D27) should be glued to the back right bottom edge of the instrument panel as indicated. Make sure the dials face forward. The kit that is represented on the box and decal sheet did not carry a radio.
- ☐ After the instrument panel assembly has thoroughly dried, it should be glued to the rear of the tab locators on the top rails of the left and right fuselage trusses as indicated.



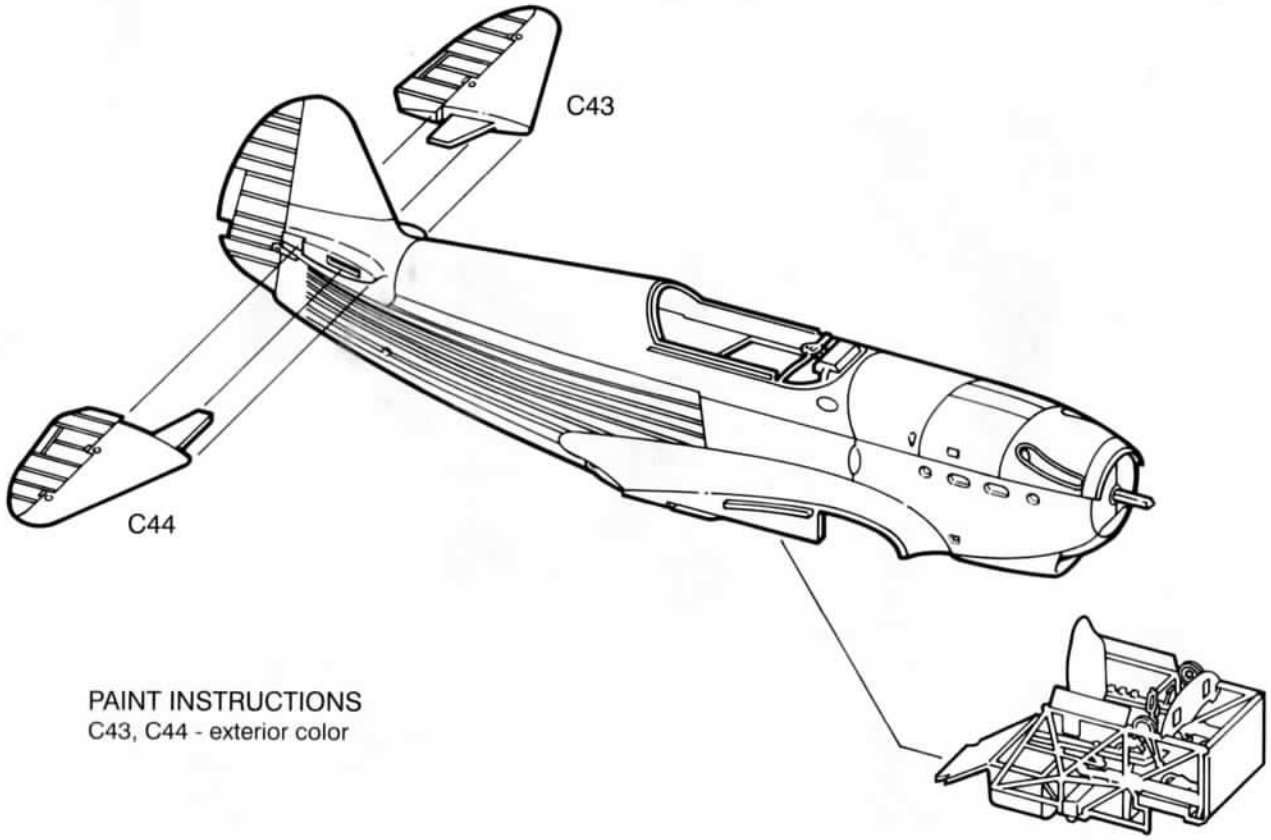
STEP 2 - FUSELAGE AND RADIATOR DOOR

PAINT INSTRUCTIONS
D7 - interior grey-green with flat black radiator
B40, B41, C42, B56, B51, B32 INTERIORS - interior grey-green



- ☐ Glue the chin oil radiator (D7) into the left fuselage half (B40). While the glue is drying, carefully place the propeller shaft (D6) into the opening in the front of the fuselage and into the indentation in the chin oil radiator. Align these pieces and allow to dry.
- ☐ Test fit and then glue the right fuselage half (B41) to the left fuselage half. If the aircraft you are building is different than the box version and carried a radio, open the flashed-over radio antenna hole in the fuselage top (C42). Now glue the fuselage top to the fuselage assembly. The vertical seam where the rear of the fuselage top meets the fuselage forward of the tail fin was a rough joint on the actual airplane and needs no filling or real cleanup.
- ☐ Carefully glue the chin radiator fuselage bottom (B56) to the nose between the fuselage halves. There was a very thin ridge of metal on the real airplane towards the opening where this piece meets the oil cooler scoop, so don't overdo the clean up of the seam.
- ☐ The oil cooler outlet door (B51) is glued into the opening at the rear of the oil cooler. You may position this as you wish.
- ☐ The engine coolant radiator outlet door (B32) is now glued into the opening in the bottom of the fuselage. Position as desired.

STEP 3 - COCKPIT INSTALLATION

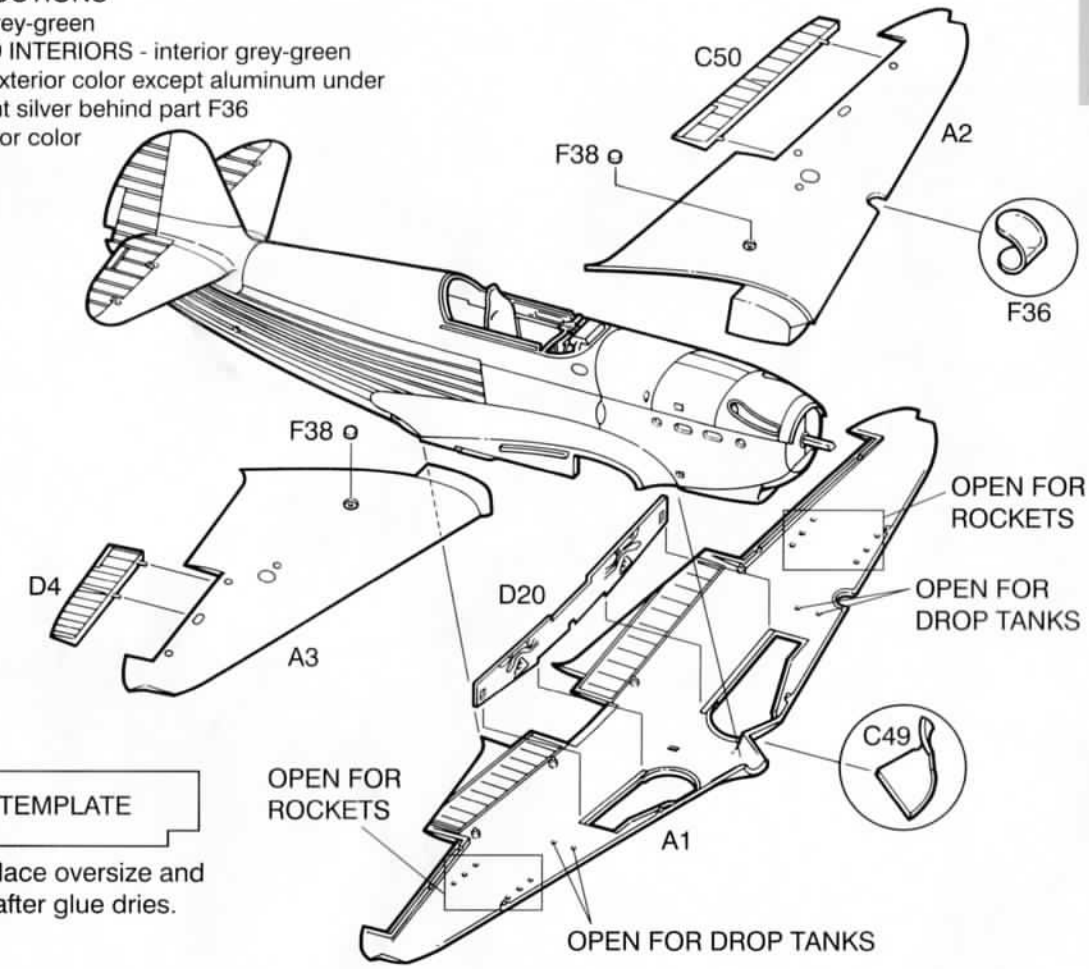


PAINT INSTRUCTIONS
C43, C44 - exterior color

- ☐ The previously assembled cockpit tub is now installed into the fuselage from the bottom. Use no glue at this time. When the cockpit assembly is properly in place, the seat back should rest against the rear edge of the fuselage cockpit opening. The wing spar which is installed in Step 4 will precisely locate the cockpit assembly. After the wing assembly is glued to the fuselage in Step 4, the cockpit assembly will be glued into place.
- ☐ Glue the left horizontal stabilizer (C43) to the left fuselage half.
- ☐ Glue the right horizontal stabilizer (C44) to the right fuselage half.

STEP 4 - WING ASSEMBLY

PAINT INSTRUCTIONS
D20 - interior grey-green
A1, A2, A3, C49 INTERIORS - interior grey-green
EXTERIORS - exterior color except aluminum under parts F38, bright silver behind part F36
C50, D4 - exterior color



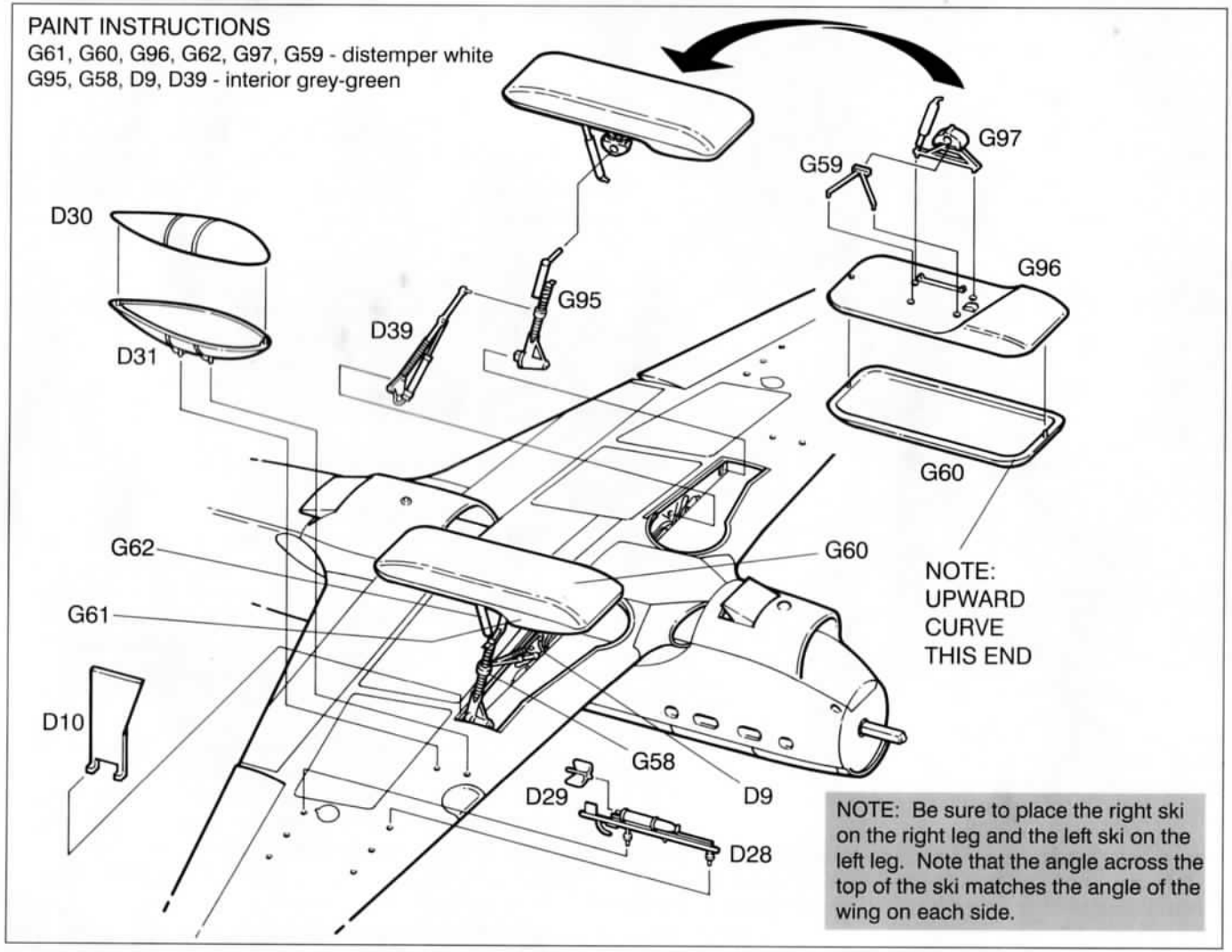
WING TEMPLATE

Install in place oversize and Trim to fit after glue dries.

Modelers who feel comfortable with their skills may elect to cut and drop the flaps. They may be cut off and reattached in the lowered position after the wings have been installed. The maximum deflection angle for the flaps was approximately 45°. Use the illustrated template to cut two pieces of thin card stock (one per side) to block off the forward side of the wing openings.

- ☐ If you plan to have your model carry the drop tanks and/or rockets, you will need to open the flashed over holes in the wing bottom (A1) at this time. Now glue the main spar (D20) to the top of the wing bottom (A1), positioning it into the slots at the rear edge of the landing gear openings as shown. Make sure the spar is kept vertical to the wing and hold it in place until the glue sets.
- ☐ Glue the spar/wing assembly to the bottom of the fuselage. The wings on the Yak were constructed of wood and therefore had a very smooth surface. Access to the internal components was gained through metal panels on the wing bottom.
- ☐ Glue the left wing top (A2) to the wing bottom and the fuselage.
- ☐ Glue the right wing top (A3) to the wing bottom and the fuselage.
- ☐ Carefully glue the carburetor air intake (C49) to the left wing root.
- ☐ Glue the left aileron (C50) to the left wing.
- ☐ Glue the right aileron (D4) to the right wing.
- ☐ Glue the clear landing light cover (F36) to the opening in the left wing. We recommend the use of white glue or a similar non-crazing adhesive for the installation of this part.
- ☐ Finally, carefully white glue the clear fuel gauge lenses (F38) into the openings in the wing tops. These gauges could be read from the cockpit and added a basic efficiency to an already simple airplane.

STEP 5 - LANDING GEAR



- ☐ Begin by gluing the skis together. The left ski top (G61) is glued to the left ski bottom (G60). Notice that the front edge where the top and bottom glue together has an upward curve, while the rear is flatter. Repeat with the right ski using the right ski top (G96) and the right ski bottom (G60).
- ☐ Glue the left ski damper strut (G62) to the left ski top. Glue the right ski damper strut (G97) to the right ski top. Both ski damper struts glue toward the inboard side of the skis with the vertical cylinder at the rear end.
- ☐ Now glue two damper strut braces (G59) to the outboard locating holes on the ski tops and to the previously installed ski damper units as shown. Set skis aside for later installation.

We recommend that the main ski assemblies be glued to the landing gear struts after the tail ski has been added in Step 6, as the model will change its "sit" after the tail ski is added.

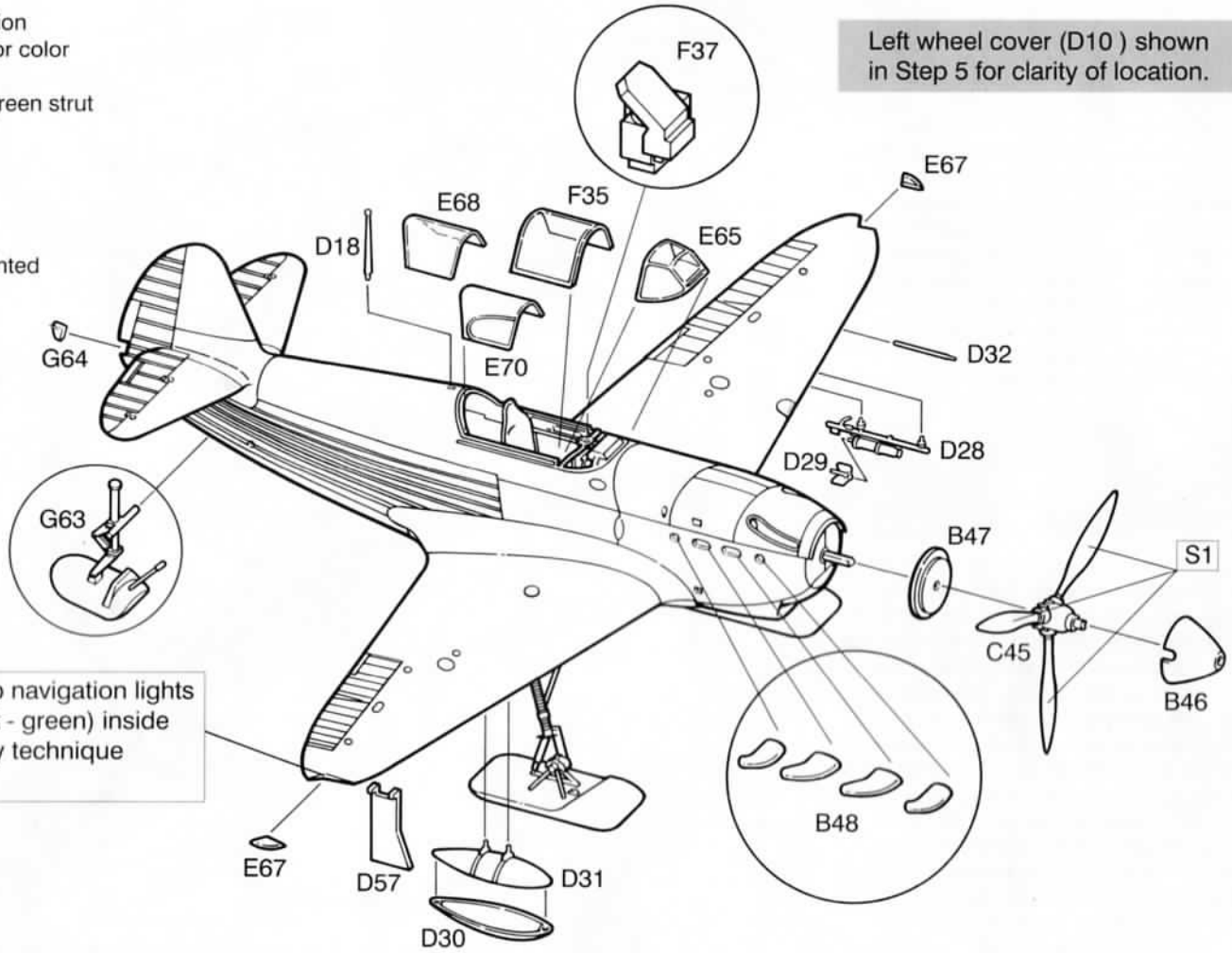
- ☐ Carefully glue the left landing gear strut (G58) to the locator in the main spar. While this part is drying, glue the left landing gear arm (D9) to the left landing gear strut and to the locator on the main spar. Check alignment. Repeat this assembly for the right landing gear components using the right landing gear strut (G95) and the right landing gear arm (D39).
- ☐ Double check to be sure that all of the landing gear components are lined up. Look from the front and the side. Compare against the box insert and instruction sheet. As a good final check, look down at the model from above to see if the gear projects forward at the same angle.

Parts D10, D28, D29, D30 and D31 will be installed in Step 6, but are shown here to clarify their locations.

STEP 6 - FINAL DETAILS

PAINT INSTRUCTIONS
F37 - flat black except for glass reflector portion
E65, E68, E70, F35 - framing to match exterior color
G64 - exterior color with white light
G63 - distemper white ski with interior grey-green strut
D10, D57 INTERIORS - interior grey-green
B48 - burnt metal
C45 - flat black blades with aluminum hub
B46, B47 INTERIORS - interior grey-green
EXTERIORS - exterior color
D28, D29 - rockets were frequently left unpainted with dark red warheads - launch rails were either unpainted steel or painted to match the underside color
D30, D31 - aluminum or underside color
D18 - exterior color
D32 - exterior color with aluminum tip

Left wheel cover (D10) shown in Step 5 for clarity of location.



NOTE: On the actual plane, the wing tip navigation lights were colored light bulbs (left - red, right - green) inside the clear exterior lenses (E67). Use any technique you desire to approximate the bulbs.

This step allows the builder the greatest amount of assembly variation. We have left the fragile parts until this last step to help prevent accidental breakage. We recommend that you duplicate the following sequence, since we've already broken enough pieces to speak from experience.

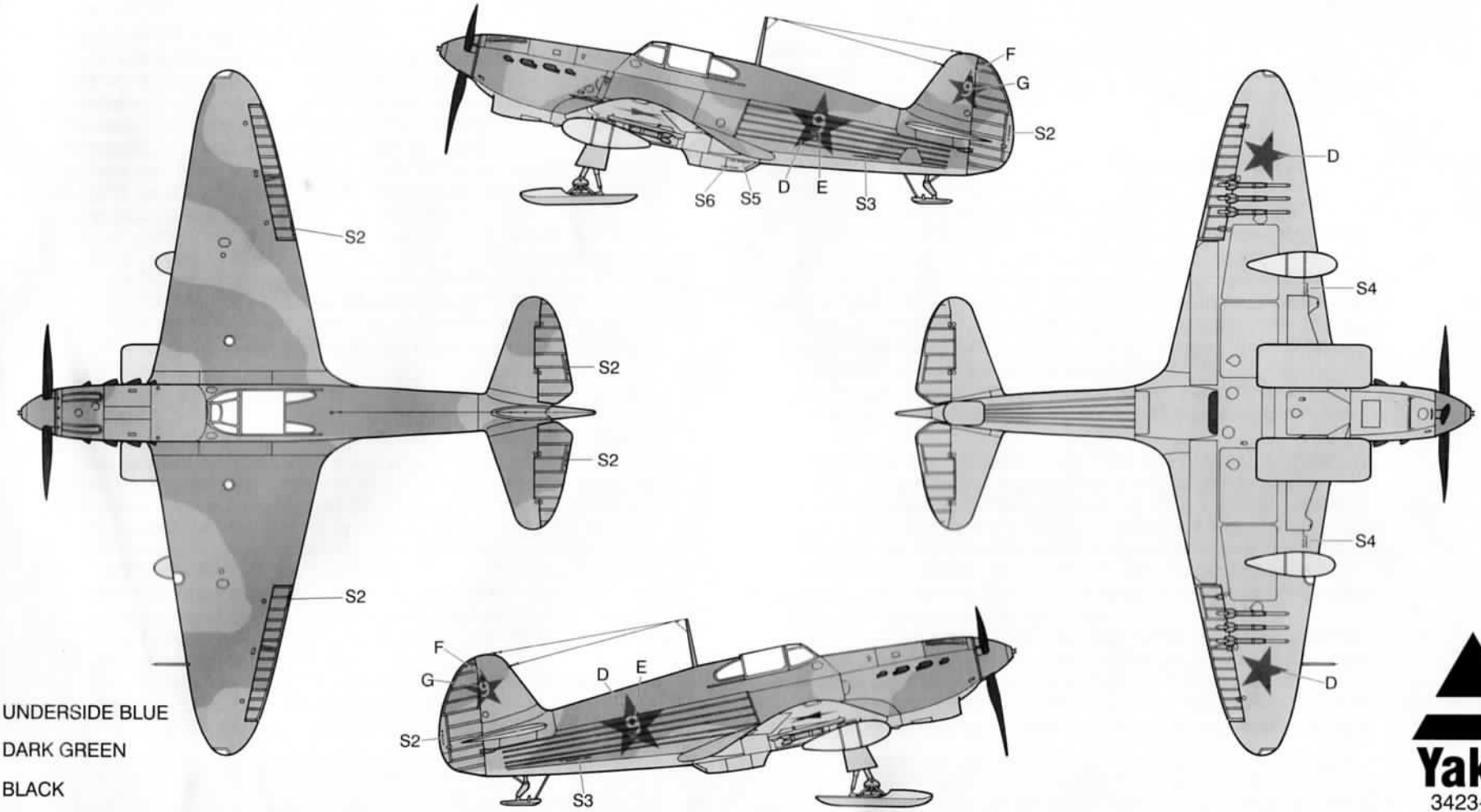
- ☐ Glue the gun sight (F37) to the locator on top of the tubular structure at the forward edge of the cockpit opening.
- ☐ Remember the white glue suggestion? White glue the windshield (E65) to the top of the fuselage.
- ☐ White glue the rear canopy (E68 or E70) to the fuselage. There are two canopies included with this kit to provide the builder with the option of constructing either an early Yak-1 or a slightly later version of the same basic aircraft. The early aircraft used the large clear panel canopy (E68). As the supply of clear plastic material became a problem, the construction of this canopy was changed to the smaller window configuration (E70). While the box art shows an aircraft with the larger window, we have been unable to confirm that any of these early planes flew with the ski modification.
- ☐ The pilot's canopy (F35) may be added now or later, open or closed.
- ☐ The clear navigation lights (E67) are now carefully glued to both wing tips.
- ☐ Carefully glue the tail navigation light (G64) to the rudder.
- ☐ The tail ski (G63) is now glued up into the opening in the fuselage. The locators have been deliberately left open toward the rear to allow the builder to install this piece after painting the model. Slide the ski forward until it locates firmly in place. After the tail ski has dried thoroughly, you may add the main skis from Step 5 to the landing gear legs. Again, check for alignment.
- ☐ Glue the left upper landing gear cover (D10) into the outer edge of the left wheel well opening in the wing bottom and against the landing gear strut (illustrated in Step 5). Glue the right upper landing gear cover (D57) into the outer edge of the right wheel well opening in the wing bottom and against the landing gear strut. It may be necessary to trim the inside surfaces of the locating tabs on the top edge of the upper landing gear covers to allow a better fit against the landing gear leg.
- ☐ The exhaust pipes (B48) have been molded on oversize sprues to make finishing easier. You may elect to drill out the openings and weather them before installation. After they are finished to your satisfaction, carefully remove them from the tree one at a time and glue them into the fuselage openings. Align and center them as they dry. Do this step for each side.
- ☐ Before installation of the propeller (C45), it should be painted and stenciled with decals (S1). The propeller should be trapped between the propeller spinner (B46) and the propeller backing plate (B47). Carefully glue the spinner and backing plate together. When this assembly is good and dry, carefully slide it onto the propeller shaft. Yes, the propeller on this plane turned "backward".
- ☐ Glue the RS-82 rocket fins (D29) to the rocket body/rail (D28). Make six sets.
- ☐ Glue the rocket assemblies to the locators on the bottom of the wings. The early Yak fighters carried these rather uncontrolled, semi-accurate rockets as a primary weapon.
- ☐ If you have elected to build your kit with the drop tanks in place, glue the top drop tank half (D31) to the bottom drop tank half (D30). Make two sets and glue the assembled drop tanks to the previously opened holes in the wing bottoms (see Step 4). These tanks were often carried to increase the flying range of the aircraft.
- ☐ If your model is to be equipped with a radio, glue the radio antenna (D18) into the previously opened hole in the fuselage top (see Step 2).
- ☐ Finally, glue the pitot tube (D32) into the opening in the leading edge of the left wing.

Your Yak is now assembled and ready for display. If you enjoyed the assembly of this kit, please let us know. We welcome any comments which might lead to improvements in future releases.

Accurate Miniatures would like to thank the following persons and organizations for their help in the production of this kit:

Natasha Yushkevich	Yakovlev Design Bureau	Yefim Gordon	Nickolas Polikarpov
Larry Fuller	Pete Chalmers	Bob Hanes	Irina Solodoukhina
Clark Macomber	Jeff Cramer	Gary Pearson	Sergey Svinkov

STEP 7 - DECAL PLACEMENT AND FINISHING



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