

Ivan's Iron Dog

By JOHN BERRYMAN. . .The P-39 was built like a tank; in Soviet service it proved deadly against the Nazi panzers. This model should be built very light for outstanding performance.

- The P-39—the airplane nobody loved. Our own fliers called it the “Iron Dog.” Minus its turbocharger, and shipped to the British, it was judged “unsuitable for combat” in Europe. We even tried to sell a few to the French, but the country fell before they arrived. Saburo Saki, the famous Japanese Ace, shot them down in droves. Quite an inauspicious beginning for what may have been the first single-engined fighter to exceed 400 mph in level flight.

But the Russians, who were starving for aircraft of any description, used them, and used them well. With its powerful 37mm



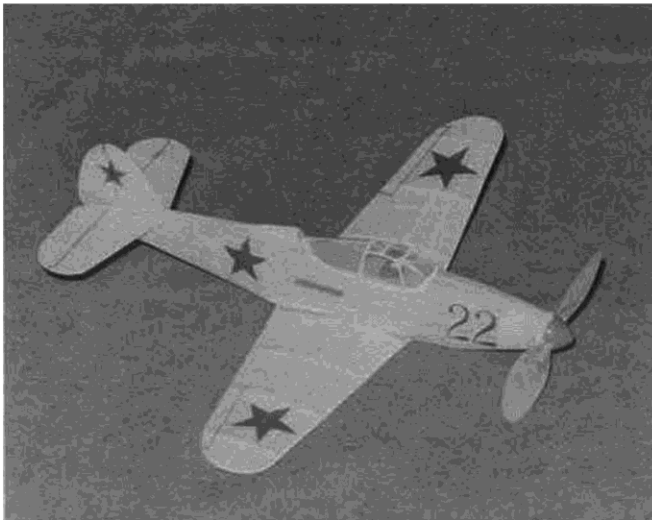
Author describes easy-to-build balsa prop that is efficient and very light.

cannon firing through the spinner, it was an efficient tank-buster in the early days of the war. Its trike gear must have also made it amenable for use on primitive Russian airfields as well.

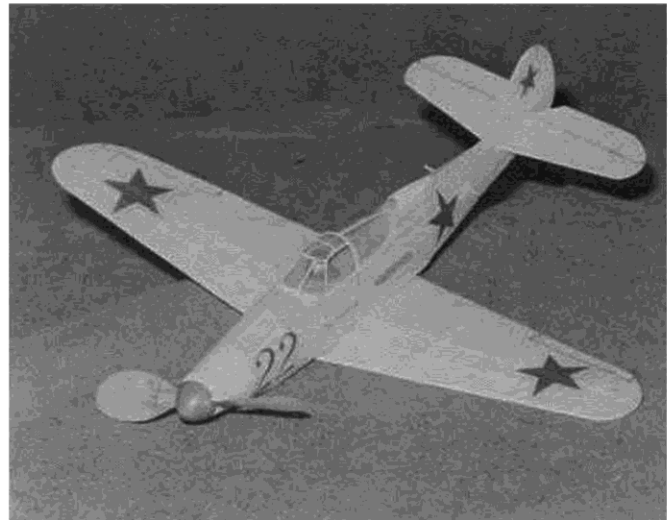
If anyone ever loved the P-39, it had to have been the Russians and we modelers. Finally, a WWII fighter with a decent nose moment, a fair-sized tail, and a bit of 1930's “Bill Barnes-ish” panache, as well.

This peanut model may look familiar to those of you who were fortunate enough to

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Simple lines of the P-39 are very pleasing to the eye, and make for a good flyer. Light construction is important.



The P-39 flew well after author removed some of its downthrust. The Iron Dog can perform beautifully in a small space.

pick up *Model Builder's* plan book of WWI aircraft. It should because it's a reduction (and alteration) of Clarence Mather's P-39. If you compare the two sets of plans, you'll see that the wing construction has been changed considerably and that all the wood has been appropriately "down-sized" for proper peanut construction. In addition, I chose to use a "home-brew" prop of my own design on my "Iron Dog." This is one model that won't need much nose weight; in fact, if you use a plastic prop, you may end up nose heavy. Mine weighed 6.5 grams (no rubber), and the CG ended up at about 10 percent (more about this later).

While not a beginner's model, construction is straightforward for anyone who has ever built a few peanuts.

FLIGHT SURFACES

Assemble the tail feathers (5-pound, 1/20-inch stock), and build the wing "in the usual manner." I chose to use heavier 7-pound, 1/16-inch stock for the leading edge of the wing, as it does take a beating. The balance of the wing was assembled from 4- to 6-pound stock, in the sizes called for on the plans. All the curved surfaces of the flight surfaces were laminated from two pieces of 1/40-inch that were soaked, and bent around appropriately sized cardboard forms. They were then glued while still damp with white glue. If you've never used this procedure before, I urge you to try it, as it's very light and strong. I also urge you to remember to wax the forms, or you may never get the tips off.

FUSELAGE

I've had two problems with "half-shell" fuselages: Either I build 'em light (and they become crooked as the formers pull on the structure), or I build 'em straight (and they are really heavy). After a couple of these disheartening experiences, I resolved to find a better way. Here's how I went about it: First, strip the 1/16-inch square main longerons (use 4- to 6-pound stock for all fuselage construction). They will form the upper and lower keels of the fuselage and will also form main side stringers at points 90 degrees to the keels. Then strip a bunch of 1/32-inch by 1/20-inch auxiliary stringers. Then soak the whole works in hot water to which a splash of ammonia has been added. When the stringers are nice and floppy, pin the keels to the plan, and also pin the pieces that will become the main side stringers down to the top-view of the fuselage. This is to pre-shape the pieces, so you won't be torquing the fuselage as you build it. Allow these parts to dry overnight, but don't remove the 1/32-inch stringers from the water—let 'em soak.

When dry, add the un-notched half-formers to the fuselage, using a small triangle to make sure they're really vertical. Allow to dry. When they've set up, add the main side stringers in this fashion: Tape a piece of carpet thread to the plan so that it will cross the tail-post where the main side stringer will. Then pull the thread across the long axis of the fuselage so that it also

crosses the first former where the main side stringer should. My, what a nice straight line we've got! Tape the thread down and mark the places where it crosses the formers with a fine-tipped marker. Remove the thread, and using a new and sharp double-edged razor blade, cut notches for the former. Then remove the pre-shaped main side stringers from the plan, and glue in place. You'll note that I've marked the approximate locations of the smaller stringers on the formers. The only places where I found the small stringer locations to be critical were the uppermost stringer locations on formers "D" and "E." As you can see from the plans, you'll trim the tops of these bulkheads (and the upper main crutch) to locate the canopy. If you locate the top stringers as shown on the plan, you'll have a base upon which to build a floor for your cockpit. The bottom stringer location on former "E" is also important, as it will assist you in locating the wing properly. The small 1/32 x 1/20-inch stringers are (except as noted above) located by using the same procedure you used with the 1/16-inch square main side stringers except that they are installed wet (or damp, anyway). The trick with the string will keep them from wandering, white glue will hold 'em just fine, and they will dry in place.

If you have the same luck I did, you'll rein a fairly wrinkle-free fuselage.

FINAL ASSEMBLY

Final assembly is pretty straightforward. You'll note that the wing has about 1/16 inch positive incidence, and the horizontal stab about 1/16 inch negative. No, I'm not kidding. You may have to clip the bottom of bulkhead "E" to make it fit the wing. Make some wingsaddle mounts from light 1/32-inch stock where the wing and fuselage meet. The cockpit also requires some clipping of formers for the floor. I vacu-formed my canopy from some three-mil acetate that I picked up at a drafting supply store. Ivan, the pilot, was hacked from balsa and painted with Floquil. As always, measure and eyeball the flight surfaces carefully to make sure that everything is straight and true.

FLIGHT ADJUSTMENTS

Now, in the midst of all this nonsense, Doc Martin's latest newsletter happened to arrive, and in it was an article on peanut trimming by Butch Hadland. Well, since my low-wing peanuts generally have been, er, less than successful, I decided to try it his way.

The setup for the P-39 was as follows: left-left pattern, 1/8-inch left rudder, 1/8-inch wash-in on the left wing, 1/16-inch washout on the right wing, about 2 degrees right thrust, and a tad of downthrust.

The CG was located at about 12 percent with a 17-inch loop of 1/10-inch rubber installed. Yes, I know that these settings sound awfully gross for a peanut, and I know that the CG may be much more forward than what you're used to, but trust me (or Butch).

And, no, the P-39 did not fly out of my hand. I needed to remove half the down-

thrust—then it flew out of my hand. Mine will do 30 seconds very reliably, and I'm not even close to the 49-foot maximum of our site. It also turns nice and tight, and I believe that the ship would do well even in a small site. I suspect that better (lighter) builders than I will be able to use lighter rubber and that flight speeds will go down (and times up).

All in all, I found the Iron Dog to be a rewarding project. Give it a try and go Panzer hunting in your gym! •