

A classic is back in S400 size!

by Jason Carter

IKARUS Su-27 XXL

It was one of those days. Back pain that just wouldn't go away, deadlines looming, boss on the phone and, as if that wasn't enough, my one little hope to escape to the "happy place" known as the airfield disappeared as I stepped out through the front door and then started to load my truck. The thermometer read 106 degrees at 6:30 p.m., and the humidity wasn't far behind—a typical summer day in Georgia. Once at the airfield, the photographer and I unloaded, gave each of the planes a preflight check and put each into the air. As we took turns flying and taking photos, gnats dive-bombed us and made it difficult to focus on the task at hand. We landed, grabbed something to drink, and then grabbed the next plane to go into the air—the Ikarus Sukhoi SU-27 XXL Shockflyer. With my buddy Roy Graham manning the camera, I planned to launch into the sun and toward Roy. Roy was a bit skeptical about having a 42-inch-long foamie launched in his direction, so he stepped aside a few feet and gave me the nod. We were both apprehensive, but that feeling disappeared the moment the SU-27 left my hand. The gnats disappeared, too. The heat went unnoticed, and suddenly, all was right with the world. Even my back pain seemed to melt away. This was fun flying at its best.

CONSTRUCTION
Building the SU-27 XXL takes two to three hours if you plan to do it all in one sitting. Before you start, study the instructions and dry-fit the parts together. Although UHU Por is included with the kit, to save time, I chose to use 5-minute epoxy to build the airframe. I expected that the SU-27 would have a high top speed (and, consequently, would stress the airframe), and I thought that epoxy would hold the airframe together better than foam-safe CA. Each of the four control surfaces has to have its leading edge beveled at a 45-degree angle. Instead of using the kit's clear hinge tape, I used 1-inch strapping tape for the hinges; it withstands the Georgia summer better than standard hinge tape.

With the control surfaces installed, I built the control linkages and epoxied the included plywood control horns into place. I also installed a pair of GWS NARO+F HP servos and connected them to the control rods. The SU-27 has a unique control-surface arrangement: the aileron and elevator on each side of the plane are mechanically coupled to one another. The result is a 3-channel plane with hinged ailerons and elevator that combine to give the SU-27 spoilers. This causes the SU-27 to fly like a delta-wing aircraft.

PHOTOS BY MINA CARTER AND ROY GRAHAM

AIRBORNE

That first flight was hot and hectic. Roy positioned himself where he knew he would get the best launch photos, and I tossed the SU-27 into the air at nearly full throttle. As I released it, my worries about how the SU-27 would fly disappeared. I commented to Roy that the SU-27 was nice and stable immediately after being launched. As I increased to full throttle, I was surprised to find that the top speed wasn't nearly as high as I had expected. This plane flies slowly without any tendency to stall. Simply throttle back, and the SU-27 will gently descend to the ground and stay level with hardly any elevator input. On my second lap around the field, I decided to make a slow pass and pitch the nose high. The result was a nice, slow flight past the camera at a high angle of attack. After a few more passes, I even pulled off an elevator maneuver with the plane by bringing the nose high and chopping throttle. After a brief ride down, I increased throttle and gave it some down-elevator to level it and gain airspeed. It was at around this point that a slight breeze presented itself; it was just enough to tickle the hair on our necks but not enough to dismantle a comb-over. This provided a perfect opportunity to take the SU-27 into a headwind and pitch the nose high again. With just a slight wing rock, it maintained its high angle of attack much more easily when flying into the breeze.

As I made a few passes into the wind at high alpha, I noticed that I was consistently countering the wing rock with a touch of left aileron. I passed the transmitter to Roy and let him take the controls while I shot photos. Since I hadn't programmed dual rates into the transmitter, Roy initially found the ailerons overly responsive, but he soon got a feel for the SU-27 and made several high-alpha passes. The SU-27 can make such passes because of its main wing's 290 square inches of wing area plus the horizontal stab and elevator wing area of 153 square inches. The horizontal parts of the fuse add another 30 square inches for a combined total "wing area" of 473 square inches.



The SU-27 really excels in high alpha flight. With just a couple of minutes behind the sticks, you'll be able to bring the big bird by in a slow, controlled harrier as shown here.

SPECS

PLANE: Sukhoi SU-27 XXL ARF Shockflyer

MANUFACTURER: Ikarus

DISTRIBUTOR: Ikarus USA

TYPE: Outdoor scale electric park flyer

FOR: Beginners to advanced pilots

WINGSPAN: 29.75 in.

WING AREA: 473 sq. in.

WEIGHT: 1 lb.

WING LOADING: 4.9 oz./sq. ft.

LENGTH: 41.25 in.

RADIO: 3-channel required; flown with Spektrum DX7, AR6100 receiver, and 2 GWS NARO+F HP servos

POWER SYSTEM: Stock 400-size brushed motor, Castle Creations Pixie 20A ESC, Thunder Power 11.1V 1320mAh LiPo battery

FULL-THROTTLE POWER: 13.5 amps, 149.9 watts, 9.37 watts/oz., 149.9 watts/lb.

TOP RPM: 18,150

DURATION: 10 min. plus, depending on conditions

MINIMAL FLYING AREA: Experienced pilots—front yard; beginners—schoolyard

PRICE: \$59.90

COMPONENTS NEEDED TO COMPLETE: Brushed ESC, battery, radio gear

SUMMARY

Very few aircraft renew your joy of flying like the SU-27 does. Everyone at the field commented on how cool the big foamie looked and performed. I think that they were most impressed that a "jet" was creeping past them at a high angle of attack and making it look easy before gaining altitude and further impressing them with an exceptional roll rate for such a slow airspeed.



TIPS FOR SUCCESS

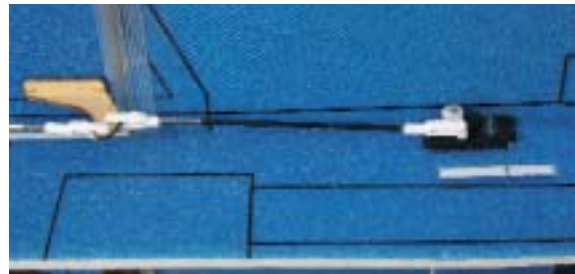
Before you do anything, study the instructions—a simple four-page pictorial of assembly. Test-fit the parts before you break out the adhesives.

I used a fair amount of 5-minute epoxy to join the parts that make the main structure.

Pay particular attention to the illustration that provides CG info.

Unlike with other aircraft, the CG measurement doesn't start from the leading edge of the wing, but is instead referenced from a point on the fuselage.

There aren't any control-throw measurements in the instructions. I didn't bother programming control throws into the DX7; I just put a bit of expo on the elevator and ailerons to soften their response around center stick. This works well for me, but when I handed the



The SU-27 uses a unique linkage configuration for flight. With the aileron and elevator on each side of the aircraft combined on a single servo, the SU-27 flies like a light delta wing yet has an exceptional roll rate even at low speed.



The included brushed 400 motor and 5x4.3 prop give the SU-27 a slow flight speed and enough thrust to perform high alpha flight. Also notice the carbon reinforcement at the trailing edge of the main wing structure.



There's plenty of room to mount electronics on the SU-27. Thanks to the design, everything is also very well protected. The forward placement of the battery was used to balance the aircraft.



transmitter to other pilots at the field, the SU-27's fast roll rate caught them off-guard. I suggest high rates at max throw with low rates at about 1/2 throw.

FINAL CALL

The Ikarus SU-27 XXL is unique. It is large for a profile foamie, has a slower top speed than you'd expect from a jet and is maneuverable enough to fly out of your yard. Even with the stock, 400-size brushed motor, the SU-27 is a blast to fly. It has a flight envelope that goes from gentle and forgiving to lightning-fast roll rates. Beginners and advanced pilots will love not only how good the SU-27 makes them look in the air, but also how much fun it is to fly. ☺

Links

Castle Creations, www.castlecreations.com (913) 390-6939

GWS USA, www.gwsus.com (909) 594-4979

Ikarus USA, www.ikarus-usa.com (239) 690-0003

Spektrum, distributed by Horizon Hobby, www.spektrumrc.com (800) 338-4639

Thunder Power Batteries,
www.thunderpower-batteries.com (702) 228-8883

For more information, please see our source guide on page 185.