Jeff Troy

Flight Report

Hangar 9-Carden Edition YAK 54

Two industry powerhouses team up to create this 89-inch giant. Here's Part Two.

Nice airplane, although it was a long way from finished at the end of my last Flight Report. The Hangar 9-Carden Edition YAK 54 is an excellent kit that goes together very quickly, and right now, my YAK is ready for the engine and RC installations.

My engine choice for this fine airplane is the 50GX from Evolution Engines, although pilots looking for an extra shot of power can opt for the Evolution 58GX. A few extra items are required for the installation, and these begin with the muffler. The Evolution Wraparound Pitts-style muffler is a perfect fit for the YAK.

Other useful items are a JR Choke Ring (JRPA029) for the throttle lead, a 23 x 8 propeller and a spinner from 4 to 5 inches in diameter. I chose a Tru-Turn 4.5-inch spinner.

Selecting proper radio equipment is an important procedure with an airplane like the YAK 54. Control surface servos must have at leave 180 ounces of torque, and all linkages must be absolutely free of slop.

Hobby Merchandiser's review model is equipped with an Evolution 50GX gasoline engine and an Evolution Wraparound Muffler. RC system is a JR 12X with a JR R1221 receiver and three remote receivers, and a 5-cell 3000mAh battery. Servos are four DS8411, a DS8717 for rudder and a DS821 for the throttle.

I selected four JR DS8411 servos for the elevators and ailerons, and a DS8717 for the rudder. Since my piloting reflexes are not any faster than a standard digital servo, I felt that the DS821 would be fine for throttle. A JR 5-cell, 3000mAh battery powers the onboard system.

I'm driving all this with my new 2.4GHz 12X system from JR. This is a 12-channel radio with every bell and whistle I could ever hope to use, and a few others that I will probably never have occasion to use.

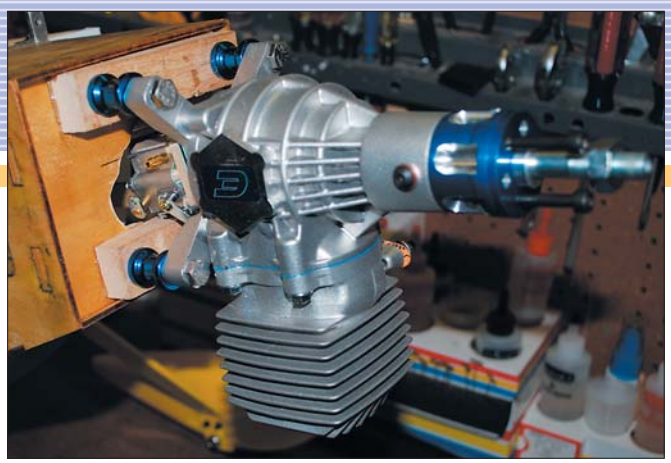
Whatever a pilot might expect from an RC system, the 12X delivers in spades. The JR R1221 receiver ships with the 12X. This is a 12-channel, full-range unit that comes with three remote receivers for the utmost in signal reception at every possible angle. If the 12X transmitter and any JR or Spektrum receiver are purchased separately, the binding procedure takes roughly 10 seconds.

Specifications

- Wingspan: 89 inches
- Area: 1,434 square inches
- Length: 84 inches
- Weight: 16.75 – 18.5 pounds
- Engine: 45 – 60cc gasoline
- RC: 4-or-more-channel system with six 100-ounce-minimum servos

ARF Features

- Factory-built airframe components
- Factory covered in UltraCote
- Factory-painted main landing gear, fiberglass cowl and wheel pants
- Hardware and fastener packages
- Control horns, rods and linkage
- 36-page assembly manual



The Evolution 50GX installs easily, although a bit of ingenuity is certainly helpful. Evolution 20mm Spacers position the engine correctly for propeller clearance, and the firewall must be relieved behind the wooden spacers for carburetor clearance.

The Evolution 50GX gasoline engine is equipped with electronic ignition, and one of this unit's advantages is that it cancels the spark if the engine should try to run backward. That's a pretty slick feature, and I like it. I chose a 2S 2100mAh Thunder Power LiPo to power the ignition.

Instructions for installing a DA-50 are given in the YAK 54 manual, but nothing is there to cover the 50GX. The differences are not severe, but it took me awhile to get it right. Evolution offers a set of 20mm Engine Mount Standoffs (EVO3310), and they will be very helpful.

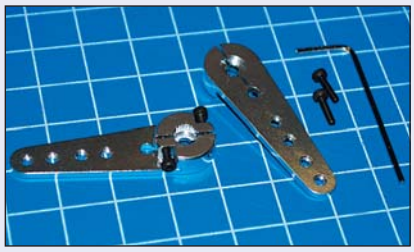
Four 1/4-20 by 2-3/4-inch socket head cap screws are needed to mount the engine. The hex head cap screws you see in my photographs have since been replaced, as the hex heads bumped slightly against the upper case walls.

The Evolution Wraparound Muffler is a Pitts-style unit. Several sizes are available, so get the one for the 45GX for a perfect fit.

After drilling the wooden spacer blocks to fit the 50GX mounting lugs, I found it easiest to epoxy the top block in first, then the lower block, instead of trying to do both at once. The opening in the firewall will need to be enlarged to fit the carburetor, throttle and choke arms.

I'm going to fly this model in the next installment, and I hope you're as excited about seeing it off the ground as I am. So far, the YAK 54 is a very impressive project. **HM**

Servos and Linkage

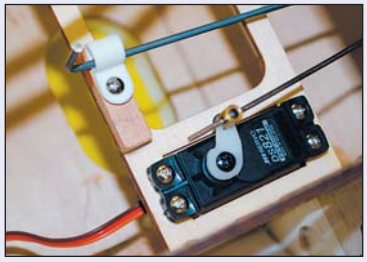


Slop-free linkage is mandatory for a large aerobat like the YAK 54. JR 1-1/2-inch Single Servo Arms (JRPA236) and 3-inch Double Arms (JRPA237) ensure integrity beyond the standard output shaft screw; two set screws are used to clamp the arms to the splines.

HM's YAK 54 uses JR DS8411 digital servos to drive the elevators and ailerons. All the linkage parts shown here are in the Hangar 9 kit. The heavy-duty control horns and ball links are connected with a turnbuckle rod. One right-hand end and one left-hand end allow adjustment without having to disconnect. anything.

The YAK 54 rudder can be set up for pull-pull control with the servo in the RC bay, or the rudder servo can be mounted at the tail for use with a turnbuckle pushrod like the elevators and ailerons. Parts for both setups are included in the Hangar 9 kit. The review model uses the pull-pull option.

JR DS8717 servo and 3-inch servo arm pay off with a pull-pull setup on a large airplane with a powerful engine and a huge rudder. Using a pushrod sleeve to help guide the rudder lines through the fuselage takes all the aggravation out of the job. Use vice grips or crimping pliers on the crimp tubes.



Standard-size, no-frill digital servo is fine on the throttle for intermediate sport pilots. Experts will demand a faster servo for hot 3D response. Plywood servo tray allows mounting on either side of the fuselage. The second rod running parallel with the throttle pushrod is used to actuate the choke — quick, simple and functional.