

ESPRIT MODELS Micro Flash

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High-speed, high-tech pussycat

Ever since I first saw a hotliner fly, I knew that I wanted one. Sailplanes, with their high-aerodynamic efficiency have always fascinated me, but F5B competition ships, hotliners as they are called, are in a class of their own. Every aspect of their design and construction is optimized for performance.

The Esprit Models Micro Flash shows the sophistication of an all-out F5B design but is small and relatively inexpensive. It has a thin, RG15 airfoil and a hollow molded carbon fiber reinforced wing with a bit of dihedral. The wing has a beautiful elliptical taper, turned up pointed tips and full span ailerons. It includes “live hinges.” The surface material of the molded wing itself forms the hinge joint along the full span of the control surface. The wing is built to be very strong with serious amounts of carbon fiber securely attached with steel screws.

The fiberglass fuselage is carbon reinforced and has a sharp-looking carbon fiber canopy. The V-tail is one-piece composite hollow molded and is also reinforced with carbon. The entire airplane comes with a flawless pre-painted gel-coat finish and is available in several color choices. The wing is optionally available with either single-piece or two-piece construction.

The Micro Flash comes without documentation; however, it is fully built except for the



PHOTOS BY TOM ATWOOD

SPECS

PLANE: Micro Flash
MANUFACTURER: Mibo Modeli
DISTRIBUTOR: Esprit Models
TYPE: Mini hotliner
FOR: High-speed flight and entry-level competition
WINGSPAN: 59 in.
WING AREA: 340 sq. in.
FLYING WEIGHT: 36.5 oz.
WING LOADING: 15.4 oz./sq. ft.
LENGTH: 39 in.
RADIO: 4 channels required; flown with a Hitec Flash 5 transmitter, Hitec Super Slim receiver, 1 HS-81, 2 HS-125 servos

POWER SYSTEM: Hacker B40 10S 4.4:1 geared motor, CFK 13x8 CF prop, Hacker Master 40B 40-amp speed control, 3S3P Thunder Power slim 4000mAh Li-Poly battery

FULL THROTTLE POWER: 49.5 amps, 525 watts; 14.38 W/oz., 230 W/lb.

TOP RPM: 7,830

DURATION: Over 30 minutes with dozens of 5-second rocket climbs to vision limits, power-off high-speed dives and aerobatics

MINIMAL FLYING AREA: 200 ft. landing area with a 400 ft. clear approach

PRICE: \$249.95

COMPONENTS NEEDED TO COMPLETE: Power system, folding prop and spinner, servos, 6-in. servo extensions, radio

SUMMARY

The Micro Flash is near the absolute limit for RC aircraft performance. It has outrageous aerodynamic efficiency and power-system performance. It is beautiful to look at and to fly—there are very few aircraft that will outperform it. It performs dazzling high-speed loops with no tendency to snap out.

motor and battery mount and a canopy latch so there really isn't much that you need a manual for. All the information you need is on the Esprit Models web page—setup specs and pictures of the servo installations. Assuming you have rigged similar airplanes you should have no trouble getting a Micro Flash ready to fly.

CONTROL SYSTEM INSTALLATION

There are two unique covered servo bays on the sides of the fuselage behind the wing. An elevator pushrod comes preinstalled. Since Esprit Models does not recommend rigging the V-tail with rudder control, a single pushrod will suffice. The elevator pushrod requires soldering a Y piece at the end to connect both surfaces using the supplied ball ends. The HS-81 elevator servo fit right into the side servo compart-

ment with screws. The Hitec HS-125 wing servos came with wires long enough to reach through the hole in the center of the wing. Six-inch extensions made it from there to the receiver location. I did have to trim the wing servo openings slightly to fit the servos in. My FMA Servo Lab made it easy to set up the servos and to check the installation.

POWER

The motor installation was a snap. I glued in the fiberglass mount supplied by Hacker and soldered the wires to the ESC. The speed control was checked for proper voltage cutoff, and soft start and soft braking. I did have to cut open the inside wall of the molded-in cooling vents to allow cooling for the power system; do not forget to do this.

A new Thunder Power “Slim” battery, designed especially for this type of applica-

tion, is incredibly narrow and light for its 4000mAh capacity. It had only a slight voltage drop when drawing 50 amps, indicating that the pack was up to the job. Powerpole connectors also contribute to the low voltage drop.

A large hole was cut in the top of the fuse under the wing to install the receiver. Placing the receiver at the bottom of the fuse behind the wing hinders positioning the battery back sufficiently aft. I moved the receiver to the top of the fuse behind the wing and was able to slip the battery under the receiver and properly set the CG. A balsa block with a double-sided Velcro strap holds the battery in place. I fabricated a metal clip for the front of the canopy and used Velcro at the rear. For extra security, I am going to switch out the Velcro and use rare earth magnets.

Thunder Power's new Slim batteries are designed specifically for installation in slender glider fuselages.



TIPS FOR SUCCESS

The only glitch I ran into was that I was unable to install the nice blue servo covers that were supplied with the airplane. The Hitec HS125 wing servos are perfectly designed for a thin sailplane wing—easily fitting in terms of depth—but the servo covers were made for something with a smaller width. I recommend the following throws: 8mm up and down 8mm for the elevator and the ailerons up 12mm and down 8mm.

CONCLUSION

Now that I have the Micro Flash I am spoiled. All my other airplanes seem like clunkers with no performance! Flying them is like driving to the store in the mini-van, and the Flash is like driving a racecar at the track. If

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you cannot afford a turbine-powered jet this is the closest thing to it.

Considering that the Micro Flash is very comfortable to fly it is a very good choice for your first true hotliner. It is also a good choice for an entry-level F5B competition ship. With the performance of the Micro Flash, you will blow away all the other ships at the field, glow or electric. ☺

Links

Esprit Models, www.espritmodel.com, (321) 729-4287

FMA Direct, www.fmadirect.com, (800) 343-2934

Hacker Brushless USA, www.hackerbrushless.com, (480) 726-7519

Hitec RCD USA, Inc., www.hitecrd.com, (858) 748-6948



The Hitec HS-125 aileron servos are perfect for the Micro Flash, but the covers do not quite fit. You can smooth the airflow across the servo bays with clear packing tape.

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



The V-tail only uses elevator control, so a single pushrod, split at the end makes for a clean and straightforward installation.

For more information, please see our source guide on pg. ____.

AIRBORNE

After a careful preflight and range check, the airplane was ready to fly. The conditions were perfect, almost dead calm. A solid toss while applying full throttle was all it took. The Flash flew solidly away and accelerated quickly.

I was immediately amazed at how easy the airplane was to fly and at the same time blown away by the climb performance. Five seconds after launch it was time to cut the throttle, as the plane was getting small. I was comfortable with this airplane right away, not usually the case with a new ship. It goes EXACTLY where you point it no matter what: whether it is fast, slow, power-on or power-off. Out of all my airplanes—and I've built and flown quite a few hotliners—the Micro Flash gets the prize for going where you point it. Even when I flew it on another day in windy conditions with strong gusts, I had complete control.

With 230 watts per pound (525 input watts) and a super slippery airframe, it probably climbs faster than the Space Shuttle, at least for the first 2,000 feet or so. It accelerates in a vertical climb and has its best angle of climb steeper than 45 degrees. I can't imagine that anyone would want more climb performance than this. The Hacker B40 geared motor seemed to be the perfect choice for the Micro Flash. The Hacker power system has the smoothest and best-sounding gear motor in my current stable—a quality setup.



You may think the climb-out is the fun part, but the fun really starts when you shut the motor off. The routine is to give a short motor run to altitude and then split-S into a dive back to Earth. It will pick up speed at an alarming rate, but at no time did it get twitchy or exhibit any sign of flutter. It sounds even better power-off with that ethereal, high-speed sailplane whistle as it goes by over 100 mph. The level flight prop speed is about 60 mph, but in a dive it will easily reach over 100.

The Flash has a very good roll rate, especially considering the long wings, perhaps 360 degrees per second, and rolls are perfectly axial. The turns appear perfectly coordinated using just ailerons. The pitch and roll seem harmonized, and again, the airplane always goes exactly where you point it. I set up the ailerons with three wing camber settings: flat, 2mm up and 2mm down. The performance of the airplane at each of the three settings was noticeably different. A better high-speed glide was obtained with the reflexed camber (up 2mm), and the sink rate improved with increased camber (2mm down). Each setting had a fairly significant pitch trim change—increased camber and it pitched up, and with reflex it pitched down.

The Micro Flash slows down well and has a docile stall, which is a real confidence builder. Even without a throttle-to-elevator mix, there is no noticeable pitch trim from power-off to power-on, only a bit of yaw from the motor torque. High G high-speed pull-ups and snappy crank and bank turns show very little wing flex; it definitely will take some abuse. I have experienced no high-speed stalls or snaps—another confidence builder.

The glide performance and energy retention are something to behold. It just does not want to come down at any speed. Though it is not primarily a thermal ship, longer duration flights in good thermalling conditions will not be a problem. It doesn't fly inverted as well as right side up, but if it turns you on, go for it.

Landings require that you bleed off most all of your speed before starting an approach. I used the Hitec Flash radio, which does not include flaperon programming. However, flaperons (ailerons deflecting downward) would be helpful. It takes a few trips around the pattern to gradually slow it down before you can think about starting your approach. It is essential that you "come over the fence" with all the speed and energy used up. The plane still does not want to come down. You must fly on to the ground and skid to a stop while being careful not to touch the wing tips before it stops. Be careful to save some battery power to go around in case you overshoot the landing.