ESPRIT MODELS

Diablotin Super Mini

State-of-the-art electric 3D

by Russ Pribanic
with Dave Baron as test pilot

PHOTOS BY WALTER SIDAS

When I discovered this kit at the WRAM show in White Plains this past February, I immediately wanted to build it. Upon opening the box, I was pleased to see that each individual part was meticulously bubble-wrapped. The parts were finely crafted and masterfully covered with Ultracoat, with no wrinkles or dents. All the joints were well matched with a near perfect fit. I felt that the directions were a little sparse but, for me, this was acceptable because the plane is an ARF. There was not a lot of construction or assembly that needed to be done.

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AIRBORNE by David Baron

We flew with the Aveox 27/39/1.5 brushless motor mounted to a 4.4:1 gearbox. This motor was incredible from the first flight. We found that it really performed well with both APC 13x10 and 14x10 propellers. Using 12-cell SR 3000mAh NiMH packs, the duration was always 10+ minutes of highly playful flight. The 13x10 props were used when flying off grass, and the 14x10 when flying from smooth surfaces and for hovering games!

TAKEOFFS. As tested, this model can comfortably climb vertically, and thanks to its light weight, takeoffs are brisk and uneventful. Even late in the battery pack's discharge, I find that I can still pull the Diablotin vertical immediately upon takeoff and pull it all the way over onto it's back and climb out inverted in the direction from which the takeoff started. This is not just power, but power coupled with a wonderfully light wing loading, and, furthermore, with a speed range that does not let the plane fall out of the air when it transitions from prop-borne flight to wing-borne flight at incredibly low airspeeds!

NORMAL FLIGHT. This plane could be set up to be a dream plane for anyone comfortable with ailerons. Like any good acro ship, it only does exactly what it is told, and, before long, a modeler with only a small amount of experience would feel comfortable flying this ship. It tracks beautifully, stalls straight ahead with a minimal loss of altitude, and takes off and lands at comfortably low airspeeds!

AEROBATICS. This plane can do it all! Cross the field in a knife edge, hover, loop and roll flying both inside and outside maneuvers. The wonderful thing about it is the speed range that lets you enjoy fast, smooth flight as well as a slow motion ballet that defies gravity! This plane is as good as any pilot that grabs the sticks. If the maneuver does not come out perfectly, I would probably blame the pilot!

HOVERING. The ability to hover with this plane is directly related to the choice of batteries you use, prop selection, and of course your personal skills! With the Aveox motor, we had spectacular performance with APC 14x10 electric props, and 12-cell CP 1700ma battery packs.

LANDINGS. Take my advice and use your transmitter's timer to warn you of your impending battery drop off. This way, you always have enough juice to "go around" and handle any eventuality. Our modern batteries can drop off very suddenly, leaving you as good as "dead Stick!" The model handles well when it is gliding, but with its thick airfoil, do not expect it to penetrate very far. If you have a brake that you can configure on your speed control, you may want to employ it and bump the throttle to have the prop at the 3-9 o'clock position to protect the blade and the shaft in case of a less than perfect landing.

SPECS

MODEL: Diablotin Super Mini

MANUFACTURER: JR Models (Czech Rep.)

DISTRIBUTOR: Esprit Models, Florida

TYPE: Electric 3-D ARF

FOR: Intermediate pilot with appreciation for high performance electrics, or a modeler who flies in a noise sensitive environment

FLYING WEIGHT: 70 oz..

WINGSPAN: 50 in.

WING AREA: 650 sq. in.

WING LOADING: 15.8 oz./sq. ft

RADIO: number of channels required: 4-5 (independent aileron servos and flaperons enabled); flown with: JR 8103 transmitter, Hitec Electron 6 receiver, Hitec HS-5245MG digital servos

POWER SYSTEM: Aveox 27/39/1.5, 4.4:1 gearbox, 13x10 and 14x10 APC electric props, Aveox SL-48 speed control, Maxx Products 12-cell RC 3000mAh NiMH battery

POWER AT FULL THROTTLE : 13x10 APC prop: 32 amps, 414 watts; 5.8 W/oz., 93 W/lb.; 14x10 APC prop: 37 amps, 459 watts; 6.5 W/oz., 103 W/lb.

TOP RPM:13x10 APC: 6100; 14x10 APC: 5800

DURATION: 10-12 Minutes aggressive aerobatics

MINIMAL FLYING AREA: RC club field

PRICE: $250 for airframe

COMPONENTS NEEDED TO COMPLETE: Radio, brushless motor and speed control, motor mount, prop and prop adapter, batteries and charger

SUMMARY

WOW!! This model is impeccably built and covered, with attention to detail in the selection of balsa that would require a giant inventory of AAA balsa wood for the average modeler to duplicate. I have rarely seen an ARF of this quality at any price. It is lightly built but not fragile.

On my wish list? The landing gear is too light and will not long withstand rough landings. I would love to see a bowed composite gear for this model. Another request would be for longer gear to accommodate a larger variety of propellers.

In a nutshell, the plane has great quality fit and finish and is a superbly agile 3D aerobat. It flies well, whether hanging on its prop or flying on it's wings.

ASSEMBLY TIPS

Motor mount. There are so many great choices in quality motors out there, that the engine mount for a model like this can be a nightmare. There is not a quality universal mount available yet that supports the wide variety of brushless motors on the market.

I fabricated my own mount out of aluminum, rather than using the plywood mount supplied in the kit. I was not confident that the plywood mount would adequately support the high-powered motor.

Tail surfaces. Bond the horizontal and vertical stabilizer to the fuselage with 5-minute epoxy. Remember to put the torque wire for the right and left elevator halves through the fuselage at the same time the horizontal stabilizer is mounted.

When gluing the tail surfaces, be sure to remove the covering where the tail services contact the fuselage, in order to have a wood to wood bond. I felt the directions could have emphasized this a bit more.

Control linkages are short and sturdy.

Hardware. With all the control services mounted (standard fare, using 5-minute epoxy), attach the control horns, servos and linkages. You will need two 12-inch servo wire extensions for the elevator and the rudder servo wires. I mounted the receiver underneath the cockpit portion of the fuselage.

I used Du-Bro 2¾-inch wheels because the wheels that came with the kit were on the small side (1 1/2-inches in diameter). Test mount your propeller and choose your wheel diameter to allow for adequate prop clearance.

CONCLUSION

One of the things I particularly liked about the model was the ease of changing and charging batteries. The batteries slide under the canopy into a light fiberglass housing that easily flips open. No need to turn the model over.

Battery mount.

This kit could easily be assembled by a modeler with minimal building experience. My overall impression is that the kit parts are excellently crafted, meticulous packaged and well thought out. And, as noted above, the flight performance is absolutely superb. This is an airplane that is leading the pack. ✪

Links

Aveox, www.aveox.com, (818) 597.8915.

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

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

Landing Products, www.apcprop.com, (530) 661-0399.

Maxx Products International, www.maxxprod.com, (847) 439-2233.

For more information, please see our source guide, pg. 145.