

HM Review

Jeff Troy

Ultimate Biplane 160 3D ARF



Specifications

- Wingspan: 65 inches
- Area: 1446 square inches
- Weight: 12–13.5 pounds
- RC: 4-or-more-channel system with 8–9 servos, 7–9 channel computer RC recommended
- Power: O.S. 1.6 or Fuji 43

ARF Kit Features

- Factory-built components
- Factory covered in MonoKote
- Factory-painted fiberglass cowl and wheel pants
- Sturdy fiberglass landing gear
- Painted aluminum cabanes
- Smoke canopy, painted frame
- Complete hardware package
- 4-inch aluminum spinner
- Complete fastener package
- Brass tail wire fittings
- All pushrods and linkage
- Large graphics sheet
- 36-page instruction manual

Great Planes has a habit of outdoing themselves with every new ARF they release. The amount of forethought that Great Planes' project management and design team put into their new Ultimate Biplane 160 3D ARF must have been staggering. There is no experienced modeler on Earth who would not be impressed by the levels of quality and ingenuity in this kit.

The Ultimate looked like most any other high-end ARF when the parts were removed from the model's neatly compartmented cardboard carton. Once the components were removed from their poly bags, I was able to see just how different this model really was.

With its factory-assembled airframe constructed primarily of Italian poplar — light-ply — no length of wood was without its neat array of laser-cut lightening holes. In spite of all the weight elimination, no structural strength was sacrificed to achieve the goal. Seasoned builders will also notice the absence of hot glue from the Ultimate's airframe; these components are assembled with aliphatic resin — carpenter's adhesive.

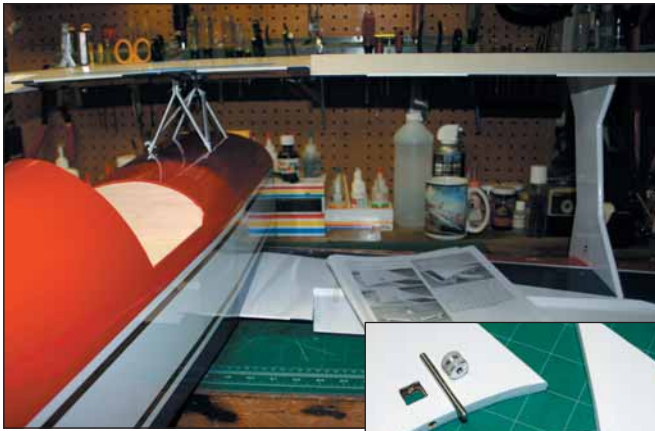
The Ultimate 160 3D ARF is professionally factory covered in Top Flite MonoKote. The covering work is of exceptionally high quality, and I gave it no more than a cursory heat-gunning with a Top Flite Hot Mitt to seal the film to the underlying wooden surfaces. The red, white and blue film is applied in the correct scheme with striking results. Great Planes provides a fiberglass cowl and wheel pants with this kit, and they, too, are flawlessly crafted and painted in fuelproof enamel to match the covering. Even the aluminum cabane strut parts are painted to match, and the firewall area has a tough epoxy coating to protect it from fuel damage.



Factory-assembled and MonoKote covered wing panels are joined with 30-Minute Pro Epoxy by Great Planes.



Sturdy aluminum cabane strut assembly is fastened to aligning structure below the deck with socket head cap screws and Nylock nuts.



Throw the nuts and bolts away! Interplane struts are attached with thumbscrews for the fastest possible field assembly and breakdown. All components for flawless operation are included.

Heavy duty nylon control horns and 4-40 linkages are provided for the included music wire pushrods, and a nice selection of fasteners assures solid attachment of all parts. A beautiful 4" aluminum spinner and backplate, complete with two crankshaft nuts and a retaining bolt round out the Ultimate 3D ARF's hardware complement.

The model is one of the most complete ARF packages I have built, with after-purchase accessories limited to only a suitable engine and radio system. I chose the Fuji-Imvac 43EI (electronic ignition), my Futaba 9C transmitter and a collection of Futaba servos and extension cords, all of which will be detailed for you in Part Two. That's when I show you the model's engine, tank and radio installation.



Horizontal stabilizer and vertical fin fit into slots in the fuselage. Alignment is easy and fit is superb.

Bench time. Great Planes 30-Minute and 6-minute Pro epoxy, and medium and thin Pro CA are the only adhesives necessary for assembly. Assembly begins with attaching the ailerons to the wing panels with thin Pro CA and the included CA hinges. Then the lower wing panels are joined over a sturdy center brace with 30-Minute Pro Epoxy. Stop at the lower wing. Modelers must resist joining the top wing panels until they are instructed to do so.

Installing the cabane strut assembly is next, and it's all done with socket head cap or round head machine screws, flat washers and Nylock nuts. The ends of the four struts are passed through slots in the fuselage deck, where they jig neatly into position over the mounting holes in the fuselage frame. An aluminum center rib is provided for the upper wing, and it has two tabs at the bottom that sandwich between the cabane struts.

The Interplane struts are builtup wooden parts, covered with MonoKote. Great Planes understands that no modeler appreciates dealing with metal tabs extending from wing panels or the endless collection of nuts and bolts that is usually needed to fit the interplane struts at the flying site, so instead of accepting the standard and following suit, they re-engineered the art of interplane strut attachment with a thumbscrew system. How cool is that!



Landing gear assembles quickly. All components are included, and no cutting or drilling is needed to install the factory-painted fiberglass wheel pants.

A threaded stud is inserted into each end of the struts, and threaded into a knurled aluminum thumbwheel fitting. A drop of thin CA secures the stud, and the extending ends are threaded into factory-installed blind nuts in the wing panels. Fore and aft alignment is assured by a short length of 1/8" birch dowel near the trailing edge of each strut.

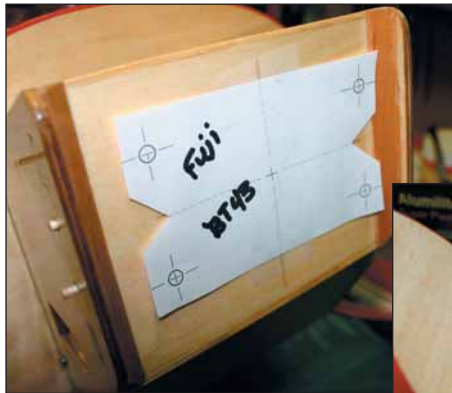
With the lower wing mounted to the fuselage, the upper center rib between the cabanes and the interplanes mounted to the lower wing, the upper wing panels are dry-fitted to the model. It's all self aligning, and once the assembly receives the walk-through, the upper panels are removed, coated with epoxy and replaced on the model. When the epoxy cures, the upper wing is able to be attached or removed in a couple of minutes, and there's never a question of proper alignment.

The horizontal stabilizer and vertical fin fit into slots in the rear of the fuselage. After a trial fitting and a check with the ruler, I marked the stabilizer and fin, removed them both, cut away the covering, coated the gluing areas with epoxy and put it all back together.

Great Planes has really perfected the art of landing gear construction. The two main gear legs are molded works of art and painted red to match the model. They attach to the fuselage chin with six 6-32 socket head cap screws, then the axles are trimmed to length. I used a motor tool and a House of Balsa 2" Tuff-Grind cutting wheel to trim the axles, then cut a small notch to seat the set screw for each outer wheel collar. Great Planes' Blue Thread Locker is a good choice for keeping set screws where they belong.

Installing the new Ultimate's wheel pants, a drudge job in most other kits, required almost no effort at all. Axle clearances are already cut in the pants, and blind nuts for the screws that secure the pants to the gear legs are factory installed. Like every other part of this model, the tailwheel assembly and installation is very cleverly engineered.

I had only invested one evening in my Ultimate so far, and assembling the airframe seemed very close to completion. I wanted to get the cowl mounted for the photo-



Paper templates are provided for the recommended O.S.

1.60 two-stroke glow engine and the Fuji-Imvac 43 gasser.

10-24 fasteners must be purchased to mount the Fuji or other gasoline engine. Jeff Troy coated the bare cockpit area with flat black Aero Gloss fuelproof dope.



graphs, so I taped the included template over the firewall and prepared to mount my Fuji-Imvac 43 EI. I'll save the details of the engine installation for Part Two of this three-installment review, but I will let you know that the operation went smoothly, and that the only

extras required to mount the gasoline engine are four sets of 10-32 x 1-3/4" socket head cap screws, flat washers, lock washers and blind nuts, a 12" length of 1/8" K&S brass tubing and a package of Du-Bro 1/8" Fuel Line Barbs.

So here I am with my airframe complete, ready for engine and radio installation, eager to get my new Ultimate Biplane 160 3D ARF into the air — when the snow came. Kinda makes it hard to see the cool tailwheel assembly from here, but I promise to show you more of everything in my next two installments. For now, please put a little faith in this old model builder and be sure to get one or more of these kits in stock. This is first-class project that no knowledgeable modeler could or would fault.

If I seem overly enthusiastic about this airplane, it isn't a mistake in your perception; I'm really impressed. **HM**



Basic airframe complete, Part Two will explain engine and radio installation. The Ultimate flies in Part Three.