FIELD & BENCH REVIEW

Midwest Products' Das Bipe Stik

Here's a "stik" for the bipe lover in all of us!

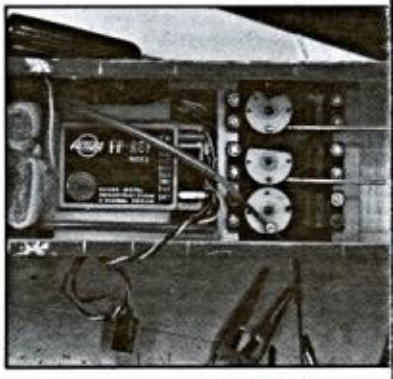
by PHILIP CRAMER

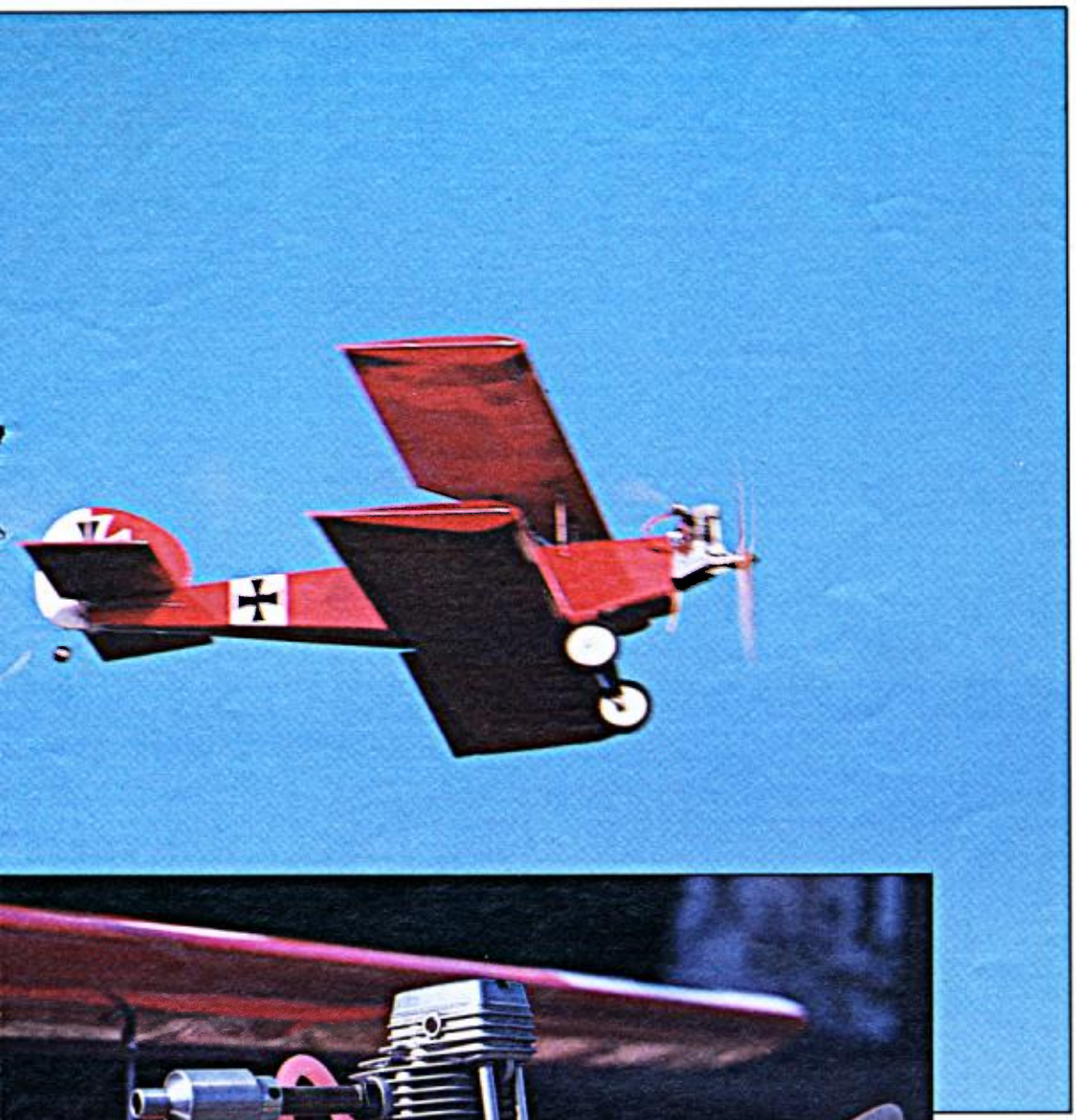
WHEN I FIRST saw this sharp little biplane in a Midwest Products Company* balsa ad last year, I was intrigued by the possibility of using my World Engines* O.S. FS-40 on it. I love four-strokes and I liked this bipe's straightforward design and appearance. It seems like a biplane has always been in my heart and on my list of future projects, but other planes had occupied my time. So, when specifications and availability of Das Bipe Stik were announced this winter, I jumped at the chance to get a kit. The charm of my four-stroke together with this bipe were too much to resist.

This bipe is the latest in the "stik" series by Midwest Products. These proven and popular designs are all winners and this bipe is no exception. Sound design, straightforward construction, and great flying are what it's all about. If you think simple is beautiful, then this bipe is for you.

Das Bipe Stik is designed to be fully aerobatic, yet easy to handle. Symmetrical airfoils are set up at 0°-0° incidence with ailerons on the lower wing only. A wing area of 700 square inches with a weight of 4.5 pounds results in a wing loading under 16 ounces per square foot. This relatively low wing loading, along with the drag of two wings, lets it slow down quickly at low throttle for beautiful slow flight and great tail-dragging, full-stall landings. Please note

Although very simple in construction, Das Bipe Stik has a charming antique look. Ship is powered by an O.S. FS-40 and carries Futaba equipment.





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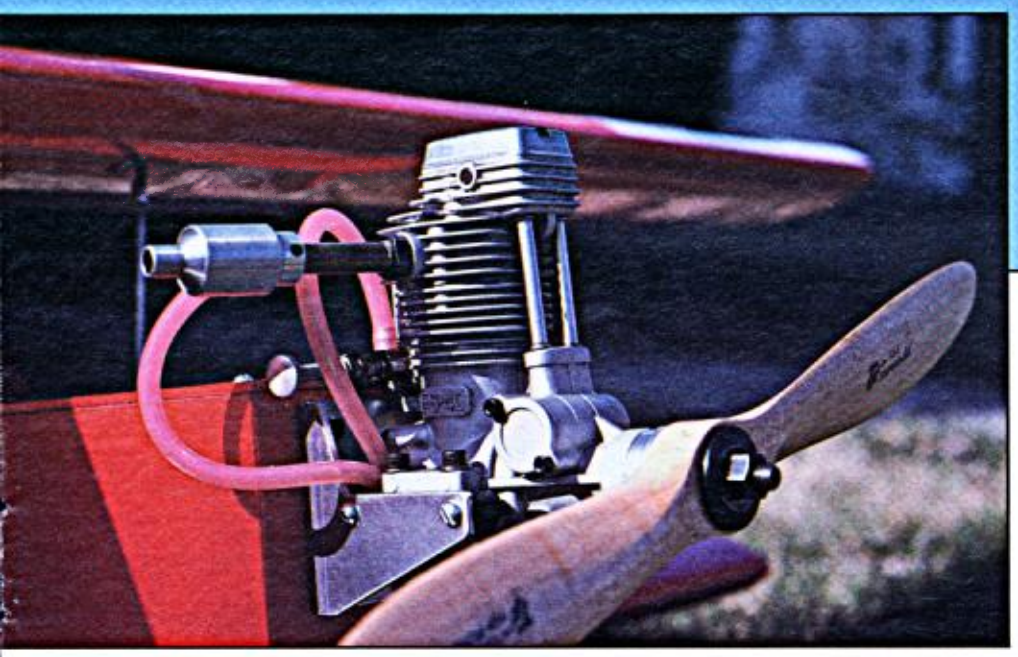

that this design, although it has no bad habits, is better suited to an accomplished sport pilot rather than an intermediate, first-time aileron flier.

THE KIT. The kit is neatly packaged and the contents are adequately organized. Sheet and stick wood is stacked and banded. The wood is flat and straight, and the choice of grain and density is first rate. Saw-cut and pre-shaped parts abound. The die-cutting is clean and very accurate. I was pleased with the oustanding fit of the parts.

This is a robust airframe that can take some abuse. Lite-ply is used for fuselage sides, hatch, bulkheads, and wing center ribs. Spruce and bass are used for main and sub-spars.

The motor mount included is of aluminum and glass-nylon construction. It worked just right with the O.S. FS-40 engine. The beams on some standard mounts are too short for the FS-40 with its rear-mounted carburetor.

The hardware package is nearly complete with only three threaded pushrod couplers needed. In addition to the engine, radio, and covering, only a tank and three wheels are needed for completion. I chose to use 3⅛-inch wheels instead of 2½-inch ones for grass-field flying, and substituted spring-steel

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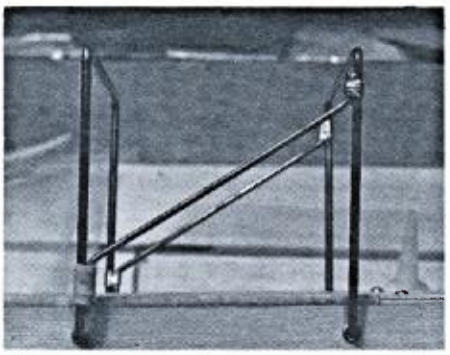
Das Bipe Stik



Cabane soldering using heat shrink tubing to hold wires in place.

(Continued from page 65)

axles for the screws provided.

The plans are full-size and are loaded with helpful information. A separate sheet of pictoral views of the wing, fuselage, and tail are really helpful. The instructions are not overly detailed, but they're fine for the experienced builder who may choose not to use them anyway. The plans are folded.

Often when I am building kits, I will find myself changing details and using different materials to correct potential problems. But not with this kit. The materials and techniques used, while not fancy, are fast and they work well. Two examples are pushrods and hinges. Simple steel pushrods are strong and effective—just Z-bends are used for connections to servos. The hinges are extruded polypropylene. They can be installed quickly, and they're strong and smooth. Resist the urge to "improve" these and other items. Enjoy fast building and get into the air sooner.

CONSTRUCTION. This plane was fun to build. Don't let the two wings discourage you. Some fliers who have always wanted a bipe never get around to building one because of the extra effort needed for the wings. The wings on Das Bipe Stik take only a little more effort than single wings for most planes. Here's why:

Das Bipe Stik wings have constant chord, no sweep, and no dihedral. Each wing is built in one piece just like the two separate panels of a regular wing, so this doesn't take any more time. Actually, time is saved by not having to join two panels and reinforce them with cloth and resin. Two wings split up the load so that center-section reinforcement is not needed.

The cabane strut setup for the top wing is neat. Pre-drilled hardwood blocks are flush with the top edge of the fuselage sides. Four wire-wrapped solder joints are required. Alignment can be automatically achieved by assembling the two main cabane wires to the wing and fuselage while soldering two diagonal braces. I used heat-shrink tubing to hold one end of the braces while wrapping the loose ends. A check of the wing incidences with a meter found them to be right-on.

The lower wing hold-down dowel installation was simple and accurate. A lite-ply center rib "sandwich" is pre-notched to receive the dowel. The plywood landing gear mounting block is also notched for the dowel which is retained by the dural landing gear. The dowel end needed just a slight bevel for a perfect fit. This was easier

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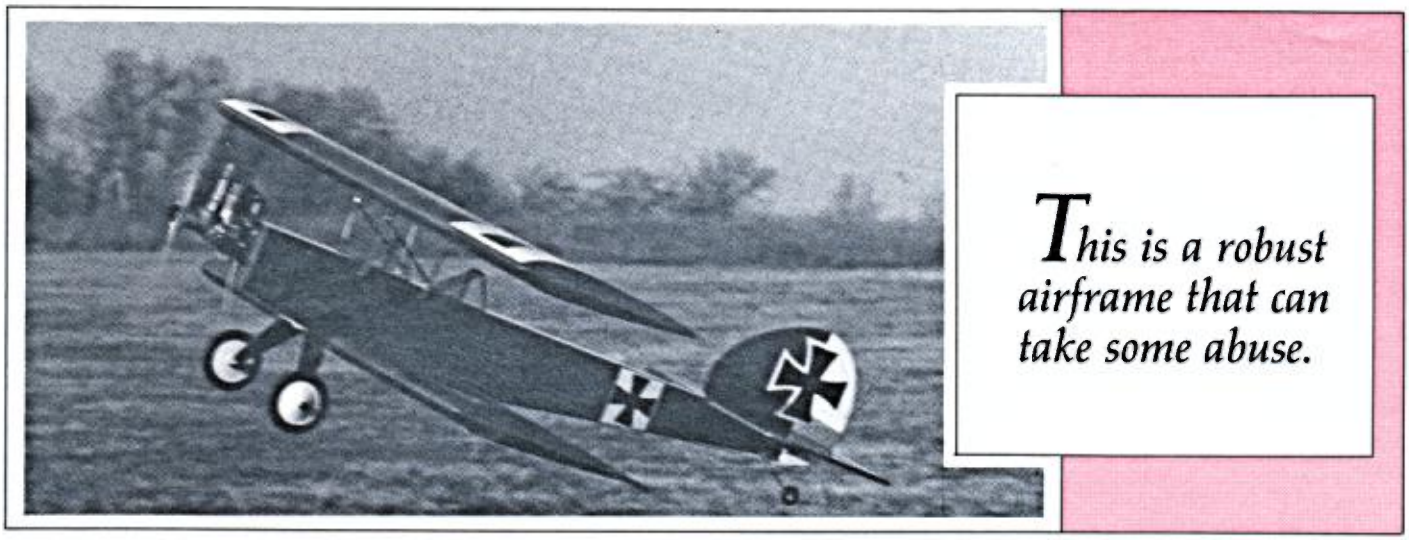

This is a robust airframe that can take some abuse.

Bottom wing center section and servo area before balsa sheeting has been applied. Note hardwood blocks for Cabane mounting.

A hinge slotted tool guide is used to draw center line for hinge mounting. Pentel mechanical pencil fits into this guide very neatly.

DAS BIPE STIK

(Continued from page 65)

than the usual method of drilling a hole in the bulkhead. Remember to do an extra strong glue job on the landing gear mounting plate since it also holds the wing on. I reinforced the bottom of the tank compartment, from the wing to the firewall, with a sheet of ⅛-inch ply.

The radio installation was a breeze. The fuselage is roomy and any standard size radio pack should fit fine. I used a Futaba* FP-6FN. Servos go three-abreast on the provided rails. I found no problem with aileron servo clearance. With the battery and the receiver in front of the servos in the main wing compartment, the balance worked out okay with both of the engines I used (approximately 11 to 12 ounces with mufflers). I installed two throttle pushrod sleeves so I could easily change from the unconventional left-side linkage used on the O.S. four-cycle to a standard right-side hookup.

And does that FS-40 ever look good on the nose of this bipe! This is one engine I hate to hide under a cowl. The pushrods, rocker cover, and exhaust pipe add a real scale-like touch. Also the *sound* of a four-cycle—I just smile all over every time I fire it up. I've been captivated by the four-cycle sound ever since I heard the O.S. Gemini in Dan Santich's Baby Bullet at the Mint Julep meet in 1980.

FLYING. The O.S. FS-40 turns an 11x6 at about 8,000 rpm or a 12x5 at 7,800 rpm on 5% fuel. Flight performance with the FS-40 is scale-like with steady climb-outs. A little right rudder/aileron helps counter the torque of a four-cycle. Loops from level flight can get to about 30 or 40 feet in diameter. Maneuvers are graceful and require skill to get the most from a four-stroke. Das Bipe Stik does a beautiful avalanche. Snaps, spins, and rolls are all slower than usual and a lot of fun. Inverted flight at half throttle is so slow and steady (just a little down-elevator needed) that you will be tempted to make lots of low-level inverted passes. Touch-and-go's and landings are pure pleasure.

I love to make a fast, steep approach to the field and chop the throttle just a short way out. She will slow down quickly and drag in near a stall with careful use of the throttle. A favorite technique of mine is to blip the throttle a few times just before touchdown to get the tail way down and make the four-stroke belch smoke. Shades of Rhinebeck! The Baron lives!

Knife-edge flight and other maneuvers that require lots of speed and momentum are not in the four-stroke repertoire. Put an O.S. .45 on the nose and this bipe changes from barnstormer to barnburner. Das Bipe Stik handles this screamer with style. It's hard to overpower a bipe. Now loops are as big as you want. On the same 11x6 prop, vertical is non-stop out of sight. Lomcovaks are now possible. She will climb in knife-edge attitude. I've even circled the field on knife-edge to the "down" side. I feel that any standard .40-size engine would have plenty of power for sport flying.

To improve takeoff tracking, I bent the main gear to give some toe-in. Also, I reversed the main gear to move the wheels back about ¼ inch so the tail doesn't go down so hard on touch-and-go's and landings. I haven't encountered any problems with nose-overs on my grass field.

In summary, this is one fine all-around sport biplane. From the charm and grace of a four-cycle to the speed of a Schnuerle-ported powerhouse. Das Bipe Stik performs great. Combine this with easy construction and you have no more excuses for not building a bipe.

**The following are the addresses of the companies mentioned in this article:*

Midwest Products Company, Inc., 400 S. Indiana St., P.O. Box 564, Hobart, IN 46342.

World Engines, 8960 Rossash Ave., Cincinnati, OH 45236.

Futaba, 555 West Victoria St., Compton, CA 90220. ■