Build this famed and fabled World War II bomber for twin electric power

Leon's B-26 MARAUDER

BY FRANK PISANO AS TOLD BY LEON SHULMAN

THE YEAR IS 1943. Upon completion of the Air Corps Aviation Cadet Pilot Training Program, Leon Shulman, a young Air Force pilot, has requested assignment to fly an aircraft he has always admired: the Martin B-26 Marauder. He is extremely eager to pilot this bomber because of its high-performance characteristics.

This angle nicely captures the B-26 Marauder's powerful character. This is the smaller of the two models presented.

The B-26 has had some problems in younger, less experienced pilots' hands, but Leon goes ahead with his request to be appointed to fly it. This airplane's reputation of having many flight accidents with "low-time" pilots at the controls has prompted it to be dubbed the "Widowmaker."

Given his orders, Leon sets out to fulfill his assigned duties with great anticipation. As time passes, he becomes comfortable with the bomber. Months later, and after several hundred hours of Leon's pilot time with the B-26, a new Marauder is delivered from the Martin factory to his active squadron.

Because of his accumulation of many successful missions, Leon is given permission to have *his* B-26's nose painted with a name of his choice. He decides to name it "Zomby," after a FF contest model he had designed before entering the service.

The maintenance crew is informed of Leon's name choice and carries out the request. However, when he views the finished nose he sees that the crew had painted "Zombie." And so it remains.

Leon's B-26 MARAUDER

Smaller (actuator) B-26

Type: Semiscale, twin-motor, indoor/outdoor
Pilot skill: Beginner to expert
Wingspan: 22 inches
Wing area: 63 square inches
Length: 18 inches
Weight: 35 grams, or 1.2 ounces; 1.5 ounces with battery
Wing loading: .29 ounce/square foot
Motors: Bob Selman orange pager; Bob Selman small magnetic actuators
Propellers: Selman 2 1/4-inch yellow
Radio: Microbatics with ESC
Batteries: One-cell, 250 mA Li-Poly—weight, 7 grams, or .25 ounce
Construction: Depron—body, 6mm; wing/tail, 2mm; nacelles, 3mm

Larger (servo) B-26

Type: Semiscale, twin-motor, indoor/outdoor
Pilot skill: Beginner to expert
Wingspan: 31.5 inches
Wing area: 120 square inches
Length: 25.5 inches
Weight: 96 grams, or 3.4 ounces; 3.9 ounces with battery
Wing loading: .21 ounce/square foot
Motors: Hobby Electronics #F832—5:1 gear ratio, 3 volts; Bluebird 303 servos
Propellers: GWS Direct Drive, 5.3 inches with shaft adapters
Radio: Plantronics DSP4-SC with ESC
Batteries: Two-cell, 250 mA Li-Poly—weight, 14 grams, or .5 ounce
Construction: Depron—body and nacelles, 6mm; tail surfaces, 2mm; wing, 3mm

Fast-forward to recent times. Leon and I were given an Air Hogs foam RC biplane that had seen better days. The choice was to repair the model or scrap it and use the electronics in a new design.

Since Leon and I are flying buddies and had worked together on models, the answer became obvious. We would design and build a B-26: the bomber Leon flew in World War II!

We wanted to design it as a profile model in keeping with our Keep It Structurally Simple (KISS) guidelines. It was to be flown primarily indoors, but we would also fly it outdoors during calm weather.

Leon and I constructed the B-26 from Depron foam board and used the electronic equipment from the tired Air Hogs bipe. We kept the construction uncomplicated so the model could be built quickly and flown realistically!

With experience gained with our earlier series of KISS designs, the B-26 turned out to be an easy project. After we completed the model and test-flew it successfully, we were amazed by the performance the combination of construction and equipment had produced.

Then we decided to go "first class" and built a second model using other micro components that are presently available. We chose a combination of a small receiver and two actuators: one for the rudder and the other for the elevator.

The bridge in the background makes a nice backdrop to this landing approach. Shooting a landing with a twin is fun and challenging.

The B-26 climbs out just after liftoff. Notice how the foam-board wings bend slightly under the load, giving extra dihedral angle.

Both equipment-variation versions can be built from the plans shown. They are good fliers. The choice of electronic components is yours.

After we flew both versions of the B-26, many of our fellow fliers wanted to build similar models. Several of them asked for a slightly larger variation that would use so-called "regular" motors and equipment and be more in tune with what they were used to handling.

Leon and I scaled up the plans 140%, built the new model, and installed a regular receiver and two servos. Wow! What a fun twin-engine airplane it turned out to be.

Tony Schiavone is one of the many prolific modelers in our Metropolitan Sports Squadron group, and he built the larger B-26. We have flown both sizes of models in formation and have performed maneuvers including touch-and-gos, bringing forth lots of *oohs* and *aahs*.

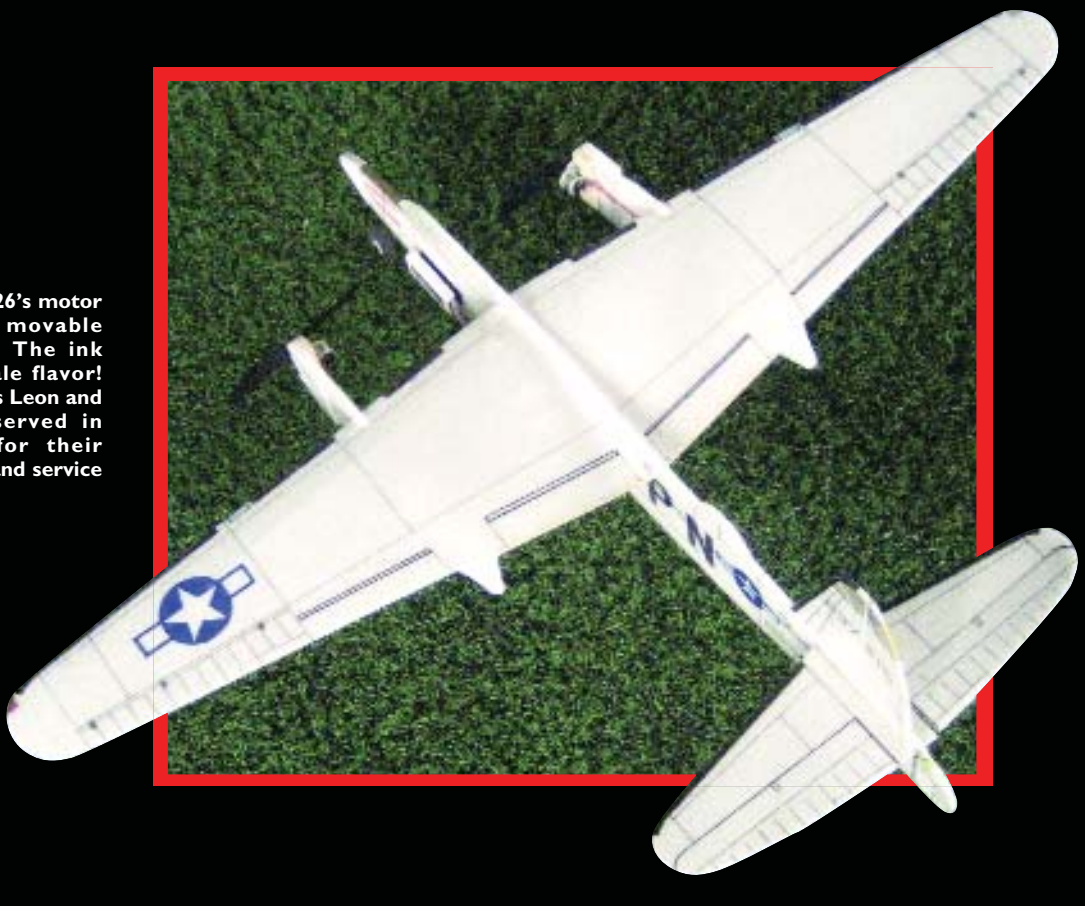
Tony was curious to know how the performance would be affected if we added flaps to the model. I told him how effective the flaps were on the full-scale airplane and how they improved its slow-speed characteristics. Tony added fixed flaps to his B-26 to test the idea's practicality.

Rather than cut the wing TE and angle the flap downward, as on the full-scale aircraft, Tony wanted to keep it easy. He simply added a similar section between the fuselage and the engine nacelles by taping each end onto the mating surfaces with approximately a 25° angle, thus leaving the

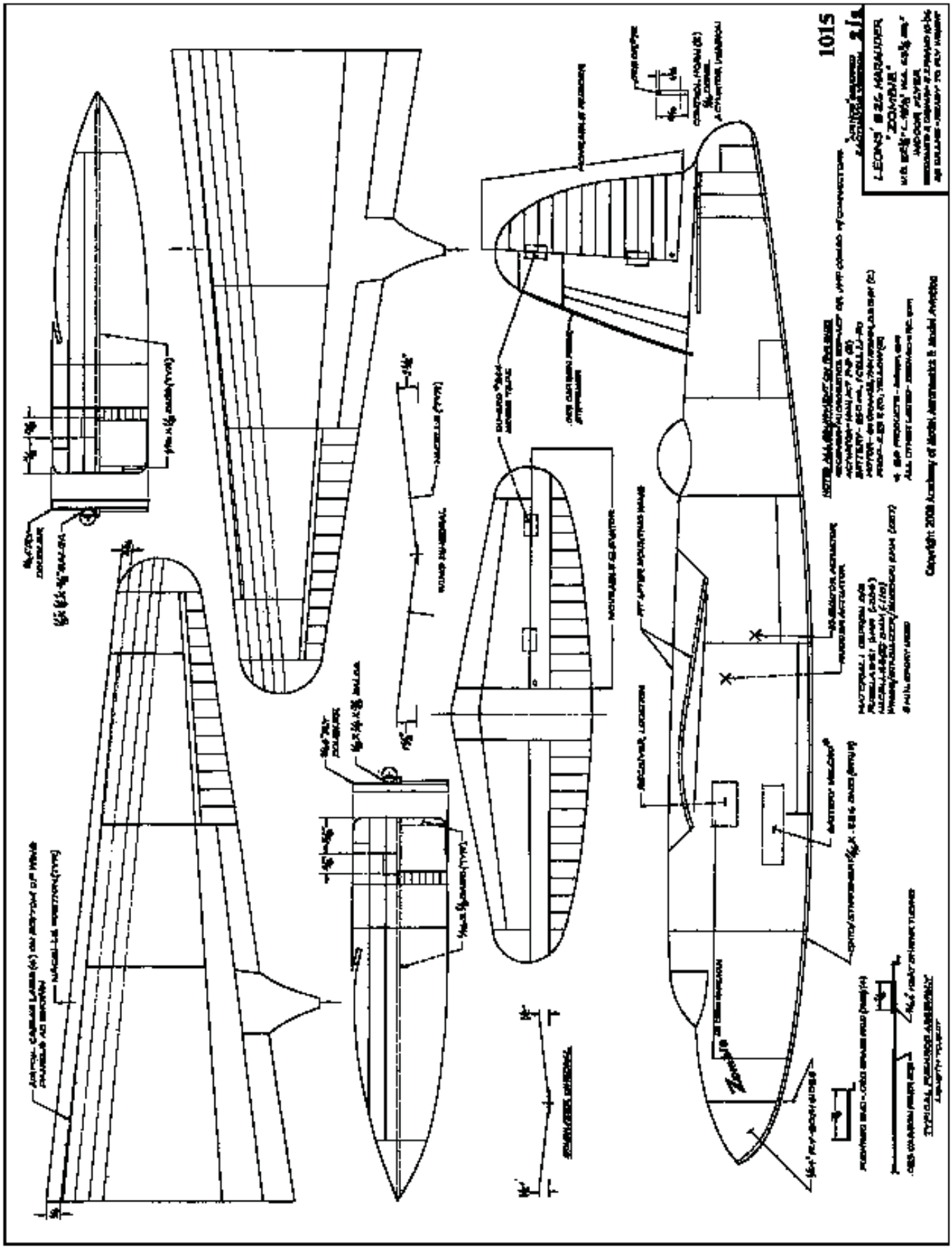
Left: Leon Shulman with his 1941 Zomby FF model in *Air Trails* magazine. Inset: An official Air Corps photo of a young Lieutenant Leon Shulman with the full-scale B-26 that he piloted in many missions during World War II.

Photos courtesy the author

Mickey Paglialonga's B-26 was built from the plans presented here. It has flown hundreds of indoor "missions" at the Teaneck Armory in New Jersey.



You can see the B-26's motor installation and movable control surfaces. The ink detailing adds scale flavor! The *MA* staff thanks Leon and all others who served in World War II for their sacrifice, courage, and service to our country.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LEONS' BIG HARASSER
"ZOMBIE"
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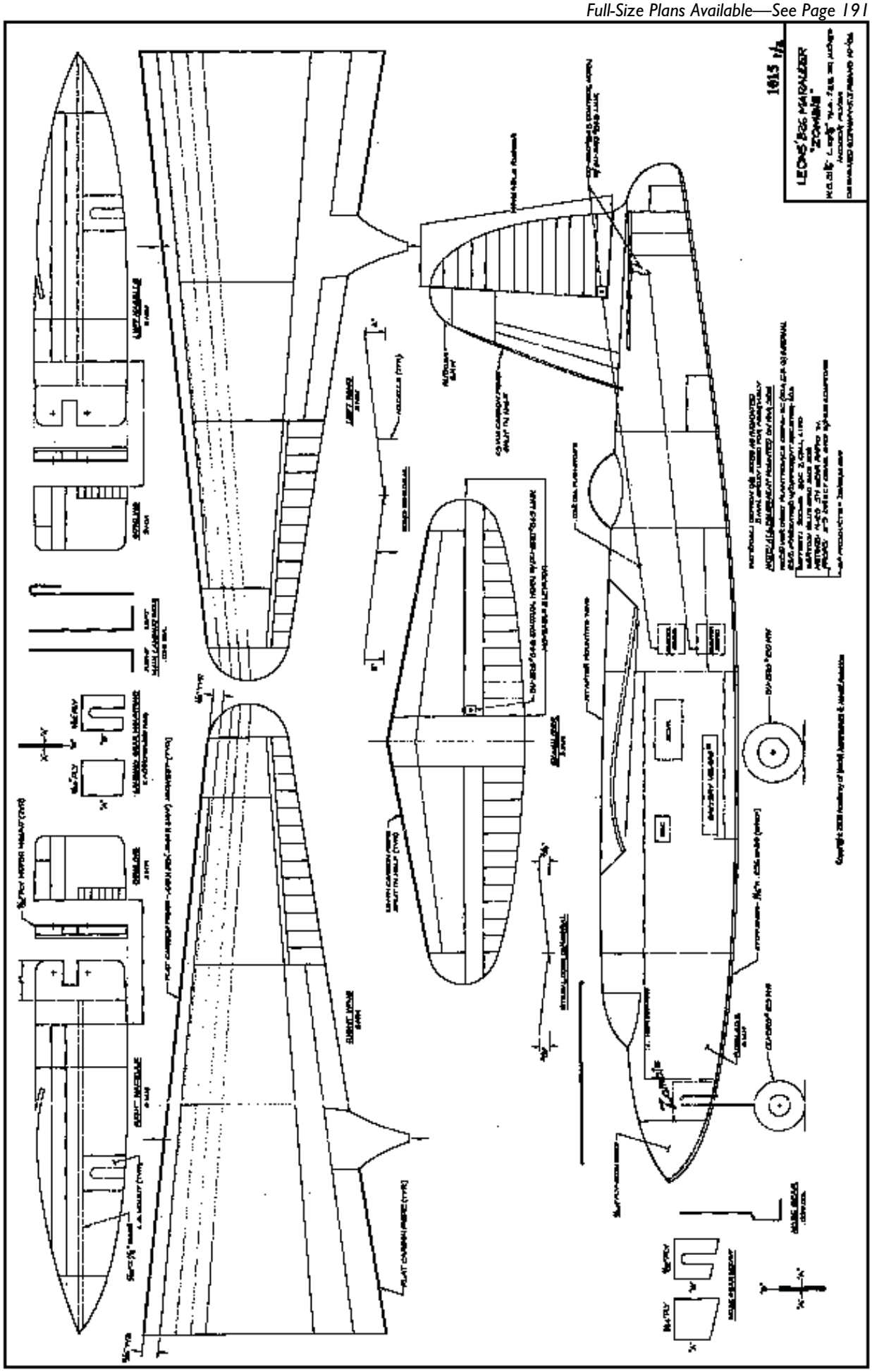
Full-Size Plans Available—See Page 191



wing to platform as-is. It worked fine, and the modified version does fly slightly slower. That is another avenue you can take on this versatile version of this popular design.

Leon and I are including plans for *both* sizes of the B-26. Each set provides details about the structure and equipment. Your usual tools should be sufficient for building the model since this is basically an assembly project. The larger version is made from 3mm and 6mm Depron, along with other materials noted on the plans.

CONSTRUCTION

Cut all the required parts from Depron foam board, as the plans indicate.

Glue the skid strip to the bottom of the fuselage using five-minute epoxy. You can make the skid follow the nose curve by cutting several kerfs along its length in the top of the strip. Hold this strip in place with short pieces of masking tape until the glue sets. Add the 1/64 plywood nose-turret pieces to each side of the fuselage.

If you want scale markings on the B-26, now is the time to apply them—before assembling the parts. You can make the lines with a Sharpie Fine Point marking pen. These details add scale appeal. The nose, windshield, turret, and rear turret are painted with Tamiya flat-black acrylic paint.

Crease the wing panels, as indicated, to obtain the airfoil shape. Sand the center wing edges to provide for the indicated dihedral.

The stabilizer need not be cut in half; you can fold it against a straightedge at the centerline to achieve the slight dihedral angle shown. If you are constructing the first-class (Combat-ready?) version of the B-26, you will have to cut the rudder and elevator moving parts free at this time.

The hinges for the smaller variation of the model are 1/4 x 3/8-inch strips of Du-Bro Electric Flyer Hinge Tape (product 916). You will need two hinges for the rudder and two for the elevator. For the larger B-26, use the Du-Bro hinge tape as you normally would. Run it the entire length of the movable surface on one side only.

Insert the stabilizer into its slot in the fuselage. Glue it in place using five-minute epoxy.

Adhere the wings at the correct dihedral angle using five-minute epoxy. When the epoxy has cured, glue the wing in position. Be careful to keep it aligned properly on the fuselage.

Fit the top of the wing filler piece back in place and glue it after the wing is secure. Glue the nacelles to the wing panels, as indicated by the alignment marks, and add the stiffeners.

Position the receiver, as shown on the plans, using double-stick tape and place the battery using hook-and-loop fastener. You will need to make a small hole under the wing and above the receiver to pass the motor wires through the fuselage.

On the Air Hogs version of the aircraft, you will have to cut the motor wires to fit through the fuselage hole. Be sure to splice in similar wires so the "plus" is always to the "plus" on the motor side and the "minus" is always to the "minus" on the other motor.

All motors should run counterclockwise for the propellers we use. Leon and I used a scavenged two-pin plug from a worn GWS motor to connect to the controller.

Secure the motors to the inside of the nacelles with double-stick tape or silicon adhesive. On the larger B-26, use the servo screws that were supplied with your servos to mount the motors. If you are using actuators/servos for the movable surfaces, you will have to add control horns at this time.

Assemble and fit the pushrods. Details are shown on the plans. Check all surfaces for alignment.

Flying: When flying in a limited space, Leon and I learned that the fin/rudder on the Air Hogs version might require trimming (reduction of area) to achieve a smaller turning radius. This was noncritical, but being perfectionists we experimented by test-flying and cutting down the rudder slightly, by trial and error, to see if we could effectively *increase* the turning radius. (The Air Hogs version depends *only* on the motor-speed change to initiate and maintain a turn.)

Although we did notice a slight improvement in the turn radius, we decided that it was necessary only when flying in an *extraordinarily confined* space.

The larger B-26 with servos flies consistently well and is gentle and easy to handle. Both versions of the airplane have hundreds of flights logged with no mishaps. Takeoffs and landings are a breeze, with no bad tendencies. Transition from full power to motor shut-down causes no problems, with full controllability throughout the flying range.

Leon and I have executed many missions with these models. We have done formation flying and touch-and-gos, and we have taxied the airplanes back to their parking ramps—just as we would the full-scale B-26s!

Good luck, and enjoy flying this "popular-scale" twin-engine airplane with complete confidence.

When you finish this simple, enjoyable project, let us know about it. Maybe we'll produce another favorite in the near future; our Air Force is very active and prolific.

As Leon says, "keep 'em flying." MA

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