BIZZY BEE

A 26" span, .049 powered two-and-a-half channel airplane for the sport flier who wants something different. Try flying it around yourself like a ukie at 50 m.p.h.

By Albert Y. Oda

If you're a proficient sport flier that's tired of the "same old rut," and looking for something different, then the Bizzy Bee is for you. This craft is a tiny 26½" wing span, 2-1/2 channel sport plane wherein rudder elevator and throttle control is available from two servos — the elevator and throttle link to the elevator servo. It is quite a snappy flying ship that can do quite a few maneuvers usually performed only by the larger ships. On up elevator, the engine goes to high throttle while, on down elevator, the engine idles. At neutral elevator the engine throttles to average speed. If you are economy minded and want some fun on the flying field, this is the plane for you.

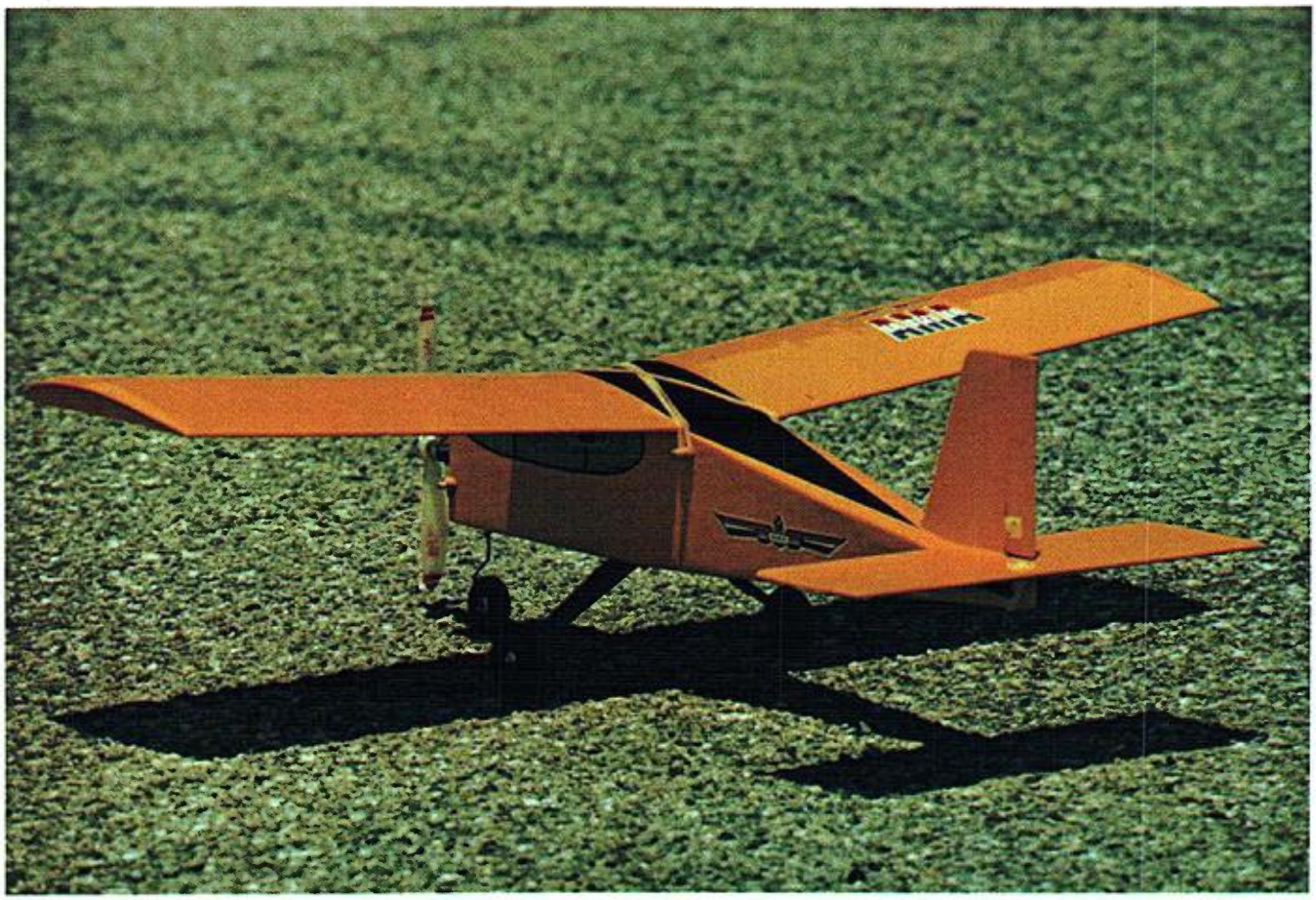
CONSTRUCTION

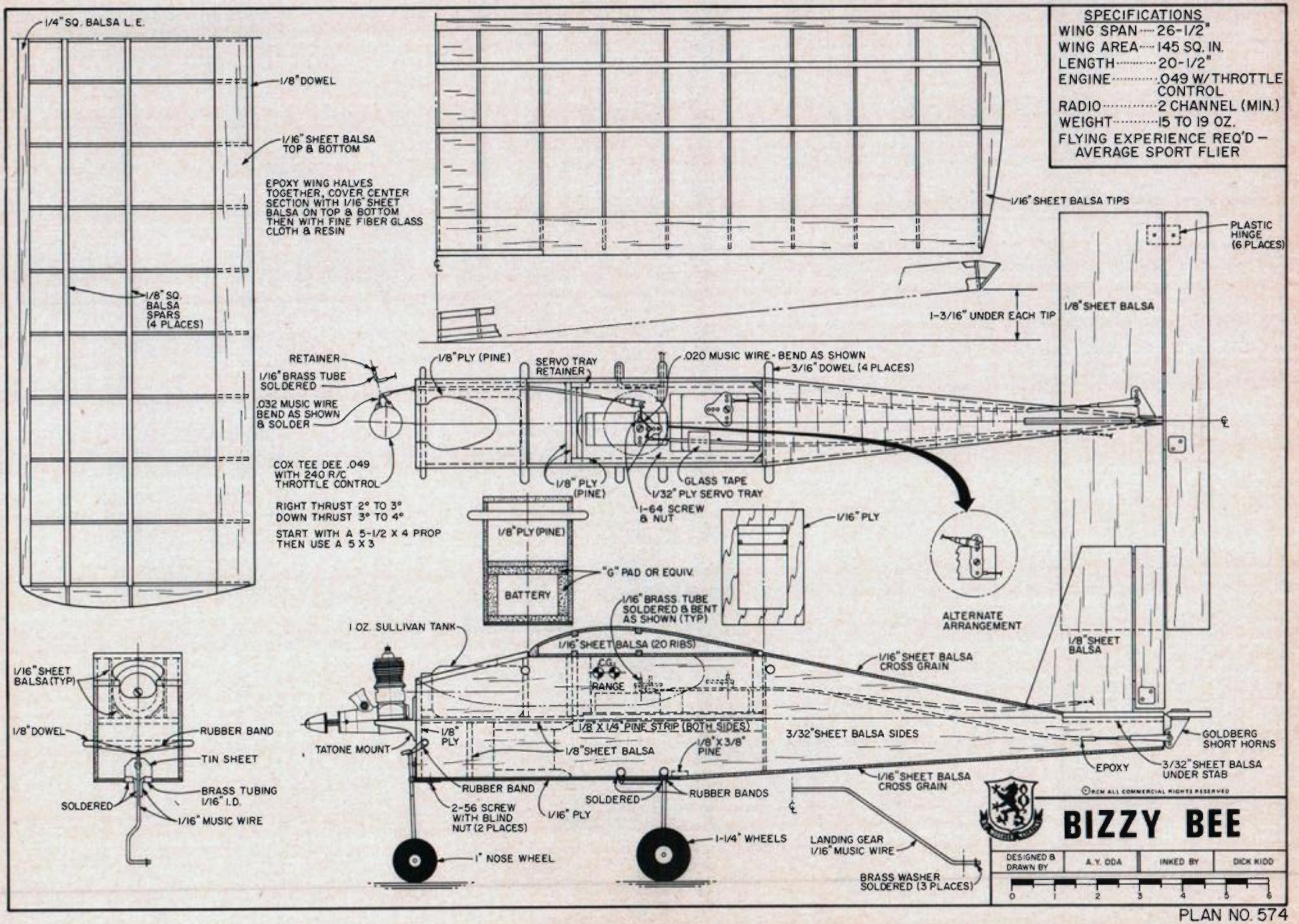
Start construction with the fuselage by cutting the sides from 3/32" sheet balsa and mark the locations of bulkheads, firewall, and strips. Use five minute epoxy to join the bulkheads, fuel tank seat, and tail together. Be sure your fuselage is in perfect alignment. Also, be sure to epoxy three blind mounting nuts for the engine and two for the nose gear bracket in place on the firewall. The design of the battery compartment is optional and is designed for 225 MA packs. Build and epoxy together the fuel compartment, drill the holes for the 1/8" x 3/16" dowels and epoxy the dowels to the firewall and to the bulkheads as shown on the plans.

After the fuselage sides are joined at the tail and to the bulkheads, epoxy the 1/16" plywood bottom in place complete with blind mounting nut, 1/8" x 3/8" pine strip, 1/16" cross grain balsa and 1/16" cross grain balsa planking. Finally, glue the top balsa sheeting in place with the grain crosswise. Drill two more holes for the 3/16" dowel pins next to the 1/16" plywood bulkhead and epoxy in place.

Cut out the tail and stabilizer from medium hard 1/8" sheet balsa and sand to shape. Use slow setting epoxy to join the empennage to the fuselage. Sand the fuselage assembly smooth and put it aside.

Next, work on the wing by cutting out 20 ribs from 1/16" sheet balsa using a 1/32" plywood template as a cutting guide. Pin the 1/4" x 1/8" strip balsa (or spruce) spar and 1/16" sheet leading edge to the plan with wax paper and glue the ribs in place. Be sure to set the center rib to the proper dihedral. Glue on the top 1/8" balsa spar (spruce can be substituted for both top and bottom spars), 1/16" sheet balsa and 1/16" balsa tip. Construct the other half of the wing and epoxy both halves together at the proper dihedral. Epoxy a 1/8" dowel trailing edge reinforcement (or 1/8" x 1/4" pine strip) on the trailing edge near the center of the wing. Cover the center of the wing top and bottom with 1/16" sheet balsa and sand smooth. The center section of the wing may be covered with light fiberglass cloth and 5 minute epoxy or light weight Selastic. Finish the entire plane with Solarfilm or light weight silk. Be sure to fillet the corners in the fuel compartment with triangular




SPECIFICATIONS
WING SPAN ..... 26-1/2"
WING AREA ..... 145 SQ. IN.
LENGTH ..... 20-1/2"
ENGINE ..... .049 W/ THROTTLE CONTROL
RADIO ..... 2 CHANNEL (MIN.)
WEIGHT ..... 15 TO 19 OZ.
FLYING EXPERIENCE REQ'D — AVERAGE SPORT FLIER
1/4" SQ. BALSA L.E.
1/8" DOWEL
1/16" SHEET BALSA TOP & BOTTOM
EPOXY WING HALVES TOGETHER, COVER CENTER SECTION WITH 1/16" SHEET BALSA ON TOP & BOTTOM THEN WITH FINE FIBER GLASS CLOTH & RESIN
1/8" SQ. BALSA SPARS (4 PLACES)
1/16" SHEET BALSA TIPS
1-3/16" UNDER EACH TIP
PLASTIC HINGE (6 PLACES)
1/8" SHEET BALSA
RETAINER
1/16" BRASS TUBE SOLDERED
.032 MUSIC WIRE BEND AS SHOWN & SOLDER
1/8" PLY (PINE)
SERVO TRAY RETAINER
.020 MUSIC WIRE - BEND AS SHOWN
3/16" DOWEL (4 PLACES)
COX TEE DEE .049 WITH 240 R/C THROTTLE CONTROL
RIGHT THRUST 2° TO 3°
DOWN THRUST 3° TO 4°
START WITH A 5-1/2 X 4 PROP THEN USE A 5 X 3
1/8" PLY (PINE)
GLASS TAPE
1/32" PLY SERVO TRAY
1-64 SCREW & NUT
1/8" PLY (PINE)
BATTERY
"G" PAD OR EQUIV.
1/16" PLY
ALTERNATE ARRANGEMENT
1/16" BRASS TUBE SOLDERED & BENT AS SHOWN (TYP)
1 OZ. SULLIVAN TANK
1/16" SHEET BALSA (20 RIBS)
C.G. RANGE
1/16" SHEET BALSA CROSS GRAIN
1/8" SHEET BALSA
1/16" SHEET BALSA (TYP)
1/8" DOWEL
RUBBER BAND
TIN SHEET
BRASS TUBING 1/16" I.D.
SOLDERED
1/16" MUSIC WIRE
TATONE MOUNT
1/8" PLY
1/8" SHEET BALSA
1/8 X 1/4 PINE STRIP (BOTH SIDES)
1/8" X 3/8" PINE
3/32" SHEET BALSA SIDES
GOLDBERG SHORT HORNS
EPOXY
3/32" SHEET BALSA UNDER STAB
1/16" SHEET BALSA CROSS GRAIN
RUBBER BAND
2-56 SCREW WITH BLIND NUT (2 PLACES)
1/16" PLY
SOLDERED
RUBBER BANDS
1-1/4" WHEELS
1" NOSE WHEEL
LANDING GEAR 1/16" MUSIC WIRE
BRASS WASHER SOLDERED (3 PLACES)
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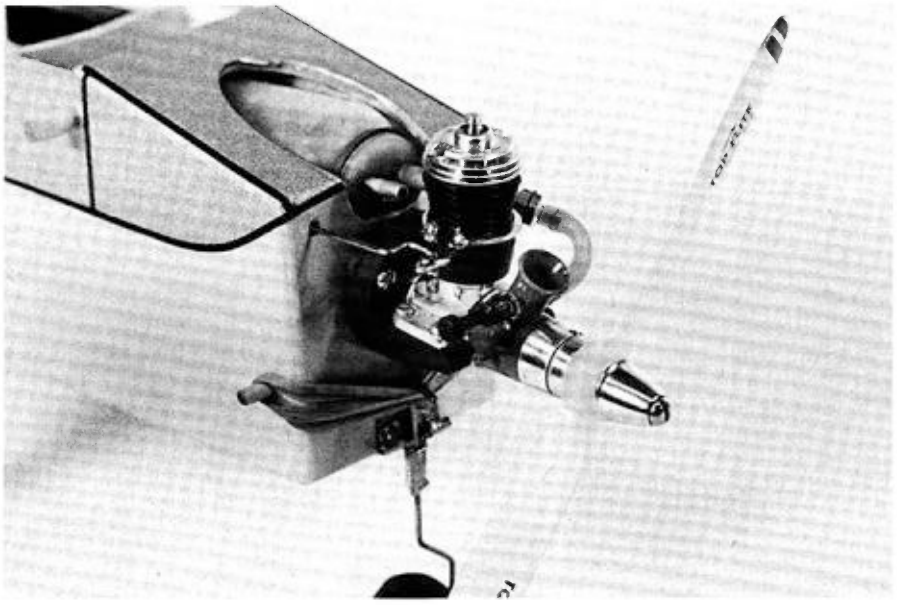
BIZZY BEE
DESIGNED & DRAWN BY
A.Y. DDA
INKED BY
DICK KIDD
0 1 2 3 4 5 6

PLAN NO. 574

stock or Testors contour putty, then coat all surfaces with either long setting epoxy or K & B Surfacing Resin.

Fabricate and install the shock absorbing nosegear as well as the main gear as shown on the plan. On the RCM prototype we utilized a small sheet dural gear which is available at most hobby shops. The installation and location of the servos, receiver, battery and control linkages are dependent upon the radio you intend to use. The authors prototype utilized a Cannon Tini-Block, while RCM's prototype used an RS Systems radio with two small servos and a 225 MA pack. The author's plane tended to be nose heavy, while RCM's prototype required 1½ oz. of weight in the nose. A 1/32" plywood tray assembly can be used or 1/4" plywood strips can be glued to the sides and the servos mounted crosswise in the fuselage as shown in the accompanying photographs. Control linkages can be Gold'N Rod with standard metal end fittings and 1/16" brass tubing soldered and bent 90 degrees as used on the author's prototype, or can be balsa and wire pushrods as used on RCM's model. The 1 oz. Sullivan fuel tank should wedge between the bulkhead and the firewall, providing a tight fit, but be easily removable. If loose, add balsa shims to the rear of the fuel tank.

The 17 oz. Bizzy Bee, ready to fly.



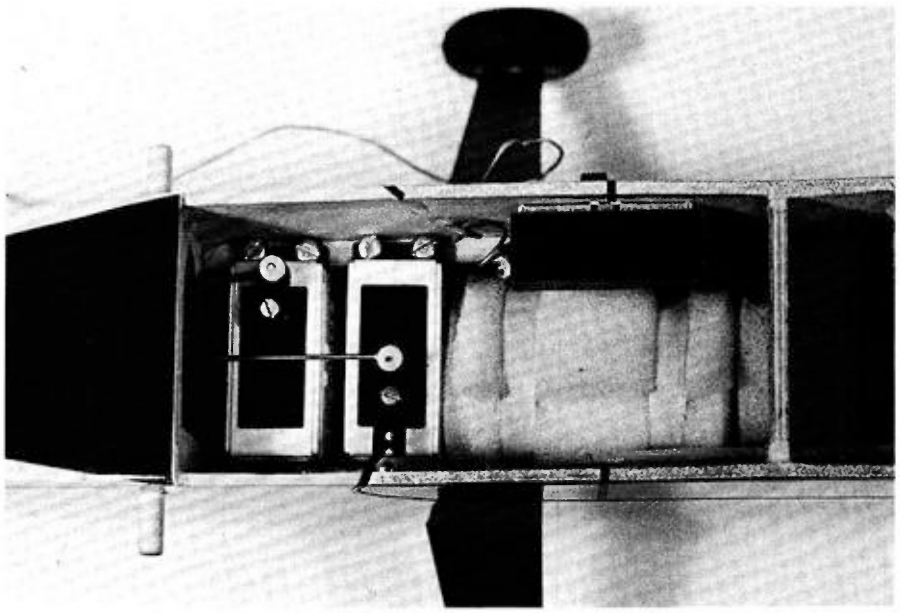
The 2 to 3 degrees right thrust and 3 to 4 degrees down thrust can be built into the fuselage or washers added behind the motor mount. Use a 6/4 prop to begin with, and cut down later if you so desire.

FLYING

Adjust the throttle sleeve on the exhaust port to 1/16" to 3/32" open at the neutral elevator position. Remember that you don't need much power to fly the tiny Bizzy Bee. Adjust the nose and main gear to roll in a straight line and check all surfaces straight with the trim levers on your transmitter.

Now you are ready for your first test flight. Take your Bizzy Bee to the nearest flying field, fuel-up, fire-up, turn on your transmitter and receiver, and adjust the elevator trim to down position which idles the engine. Carry your plane out and line it up with the runway, adjust the elevator trim to neutral position, which will throttle up your engine to average speed. As it takes-off down the runway, gently pull back on your control stick and up it goes. As you gain enough altitude, try some loops, spins, and rolls - - - you'll find the Bizzy Bee does them all and at quite a decent rate of speed! □

Close-up of motor mount, throttle linkage.



RS Radio Installation. Note elevator-throttle link.