

SIMPLE

Minimum construction and maximum performance are the keys to this little schoolyard flier.



CIZABRIA

By Fred Reese





The Simple Citabria is designed to be of the easiest possible construction that will produce an attractive, high performance, schoolyard flier. Basic construction can easily be completed in an evening using just five sheets of 3/32" x 3" x 36" balsa and some scraps of 3/32" plywood. The wing is the popular, constant chord Ace Mini foam wing of 35" span.

Models of the Citabria have been flown with a Cox .049 Black Widow, Cox TD .049 and a Cox TD .09 and all gave good performance but I prefer the TD engines. The Simple Citabria is quite fast and very aerobatic. It is not a beginner's airplane, but rather a quick building, inexpensive, high performance fun flier.

The Simple Citabria has plenty of dihedral and a large rudder for good roll response. Ailerons are not needed. The Simple Citabria will even fly inverted. The model will ROG easily from a smooth surface with a little push to get it tracking, but I usually just hand launch it.

The fuselage could be made a little wider to accommodate three servos to add throttle for an Enya .09 or O.S. .10. These engines, although more powerful, fly the Citabria slower than a TD .049. I have used .09 and .10 engines on Ace winged models for many years with very pleasant performance. The Simple Citabria only weighs about eighteen ounces ready to fly, so a slightly heavier engine and an extra servo does not hinder performance. In fact, I used to fly an Enya .09 powered four channel Mooney with the Ace tapered wing

SIMPLE CITABRIA

Designed By:
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TYPE AIRCRAFT

Simple Schoolyard Scale

WINGSPAN

35 Inches

WING CHORD

5 1/2 Inches

TOTAL WING AREA

192 Sq. In.

WING LOCATION

High Wing

AIRFOIL

Semi-Symmetrical

WING PLANFORM

Constant Chord

DIHEDRAL EACH TIP

1 3/4 Inches

O.A. FUSELAGE LENGTH

25 Inches

RADIO COMPARTMENT SIZE

(L) 8" X (W) 2" X (H) 4"

STABILIZER SPAN

12 Inches

STABILIZER CHORD (incl. elev.)

3 1/2 Inches

STABILIZER AREA

42 Sq. In.

STAB AIRFOIL SECTION

Flat

STABILIZER LOCATION

Top of Fuselage

VERTICAL FIN HEIGHT

5 1/2 Inches

VERTICAL FIN WIDTH (incl. rud.)

4 Inches

REC. ENGINE SIZE

.049-.10 Cu. In.

FUEL TANK SIZE

1-2 Oz.

LANDING GEAR

Conventional

REC. NO. OF CHANNELS

2-3

CONTROL FUNCTIONS

Rud., Elev., (opt. Throt.)

BASIC MATERIALS USED IN CONSTRUCTION

Fuselage	Balsa & Ply
Wing	Ace Foam Wing
Empennage	Balsa
Wt. Ready To Fly	18 Oz.
Wing Loading	13 1/2 Oz./Sq. Ft

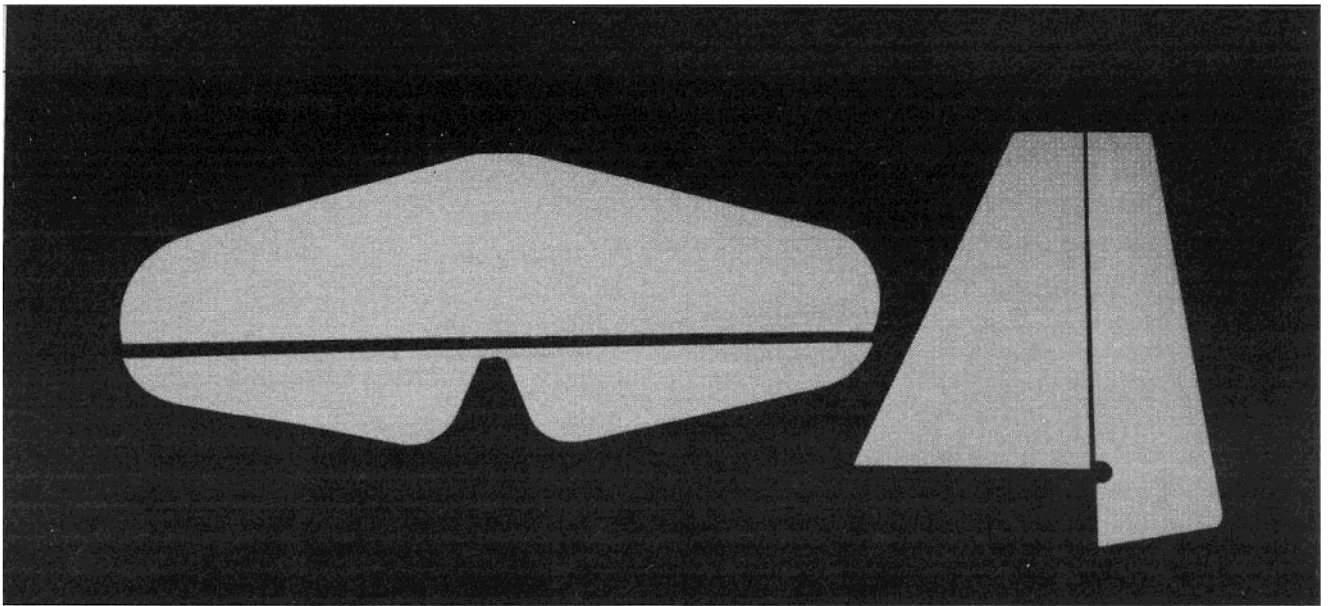
that weighed 32 ounces!

CONSTRUCTION

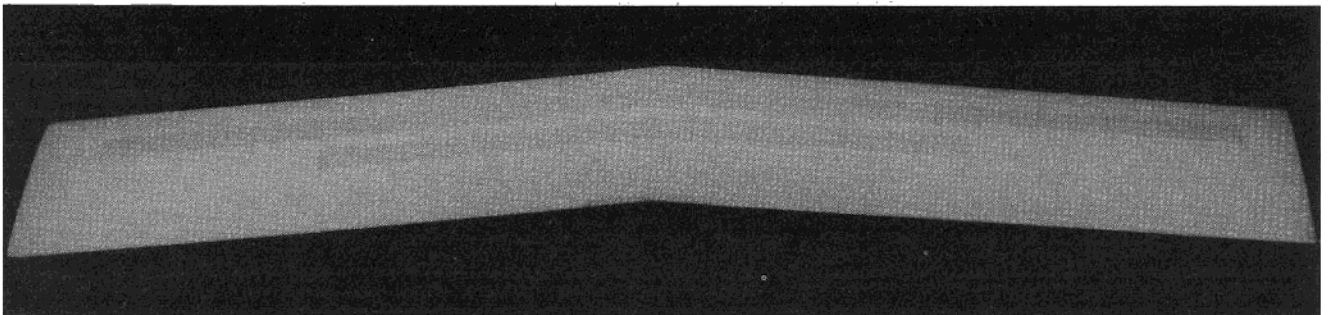
Cut out and use the fuselage side template to make two fuselage sides. Glue on the vertical grain balsa doublers over the shaded areas leaving slots for the firewall "A" and bulkhead "B." Drill the two 5/32" holes in the firewall for the fuel lines and drill four 1/8" holes for the 2-56 engine mount blind nuts. Glue the blind nuts into the firewall and then glue the firewall and balsa bulkhead "B" to one of the fuselage sides. Glue on the other fuselage side and add the plywood bottom piece "C" and the plywood landing gear doubler "D." Install the two 4-40 blind nuts for the landing gear. Pull the tail together and glue. Glue on the top and bottom 3/32" balsa sheeting with the grain cross-wise. Sand the fuselage smooth and apply a coat of Balsarite, inside and out.

Cut out the rudder and stabilizer from firm 3/32" balsa. Join the elevator halves with 1/8" dowel. Sand everything smooth and apply a coat of Balsarite.

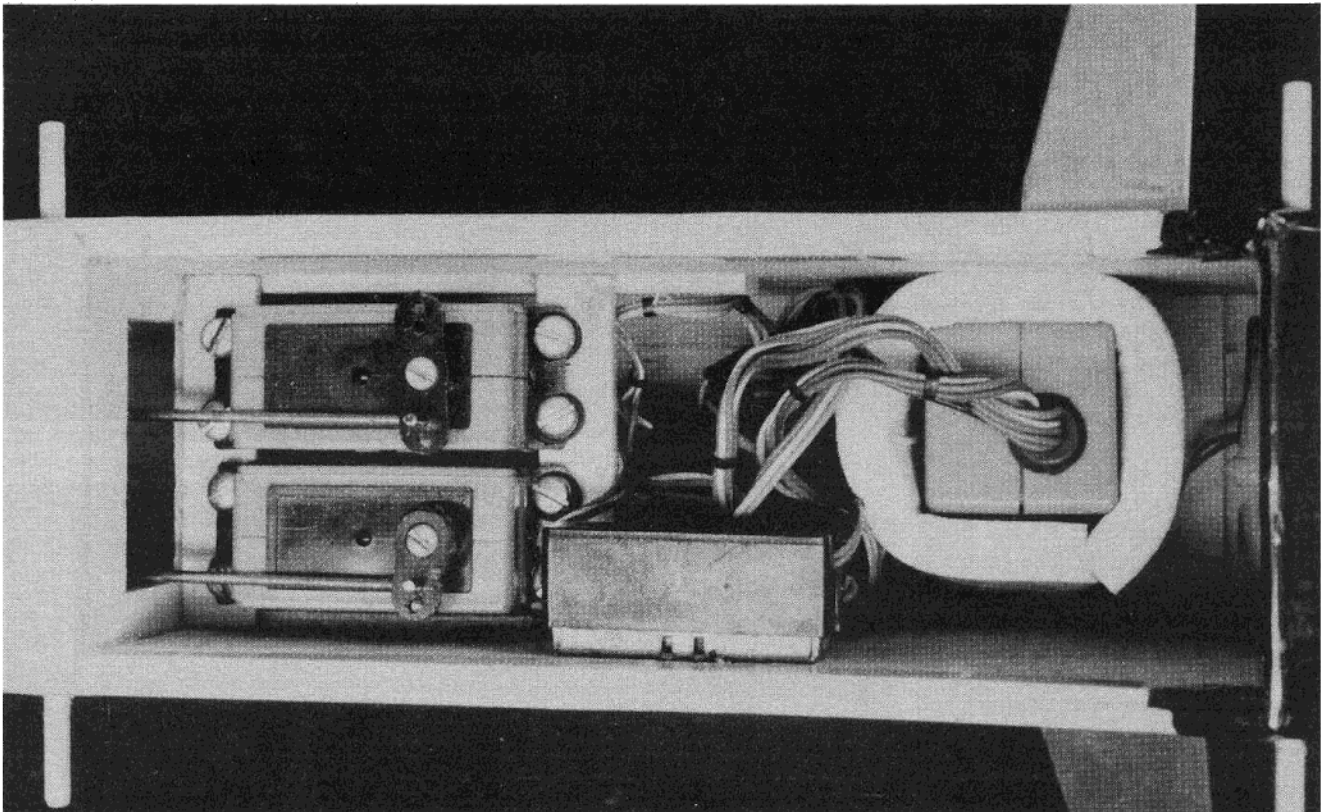
Join the foam wing halves with epoxy after sanding the dihedral angle. Block up one wing tip 3/2" until the epoxy sets. Notch the trailing edge of the foam on each side of the dihedral joint for a 2" length of 1/8" dowel to protect the foam from the rubber bands. Epoxy the dowels into the wing. Sand the wing lightly with #220 sandpaper to remove any flashing or bumps on the foam. Apply a strip of strapping tape from tip to tip on the underside of the wing, about 2" back



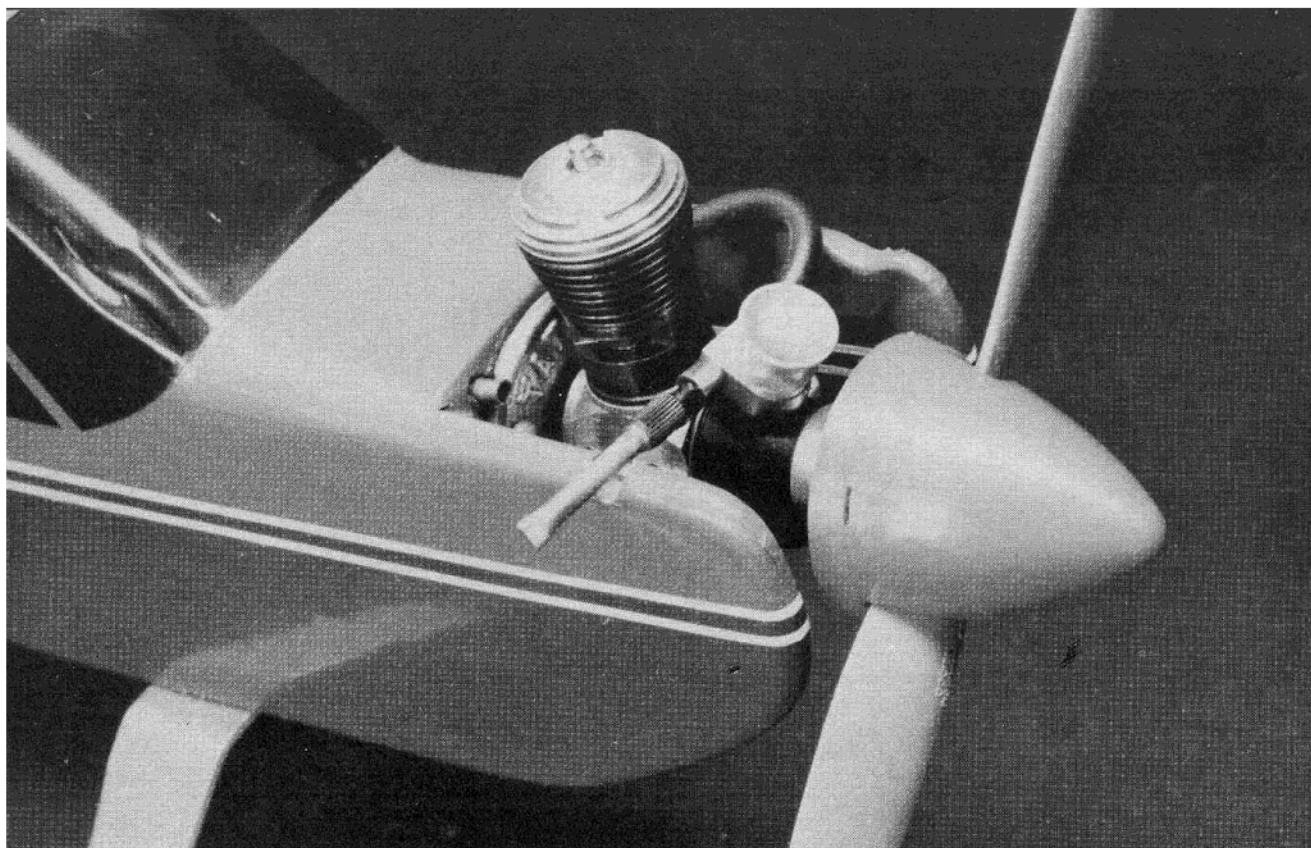
Cut out the tail group from 3/32" balsa. Join the elevator halves with 1/8" dowel.



Sand the dihedral angles and epoxy the two foam wing halves together blocking up one tip 3 1/2". Apply one strip of strapping tape from tip to tip on the underside of the wing. Notch and epoxy 2" lengths of 1/8" dowel along the trailing edge to protect the foam from the rubber bands.



Radio Installation. Servos are mounted on 3/32" plywood rails epoxied into the fuselage. The author uses 1/16" wire pushrods in all of his 1/2A models.



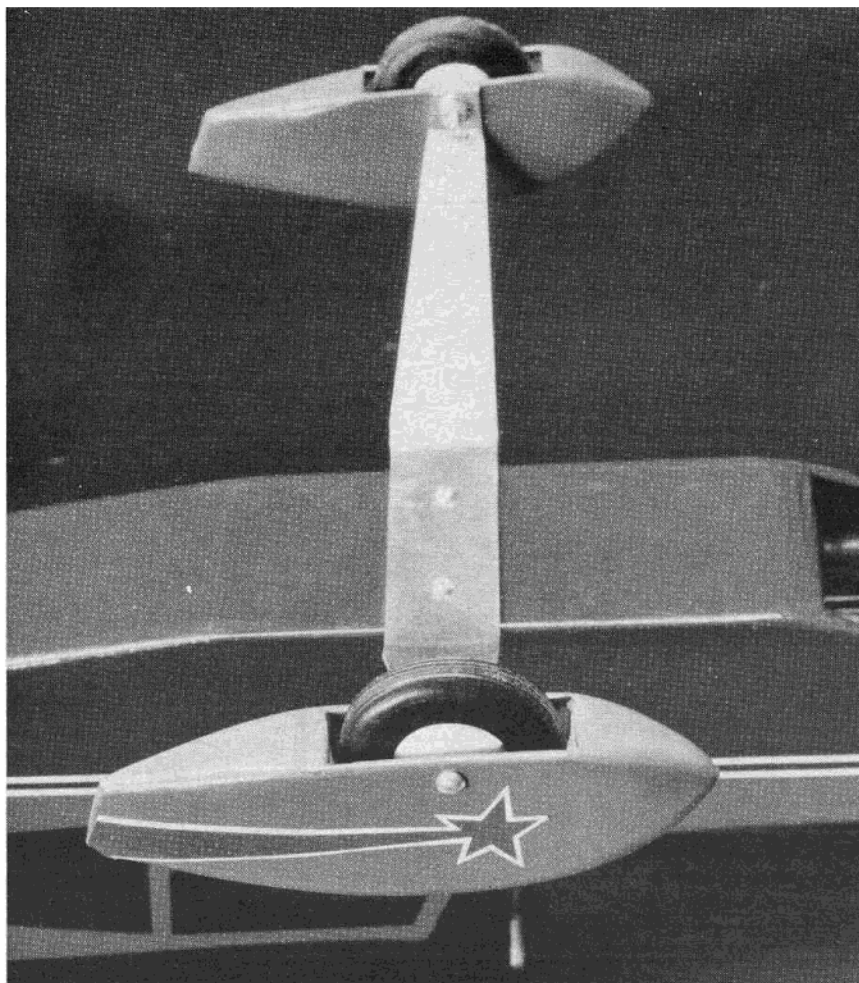
Citabria's have been flown with .049s and .09s. Cox TD .09 shown in Fred's original. .09 is not faster than a .049 but has more pulling power.

Material List

5 — 3/32" x 3" x 36" balsa medium weight.
 1 — 3/32" x 6" x 12" plywood.
 1 — 1/8" dowel approx. 18".
 1 — 1/16" piano wire 36".
 Glue: CA plus Zap A-Gap or equivalent and 5-minute epoxy.
 Balsarite wood prep for covering (optional).
 EconoKote or equivalent low temperature covering.
 MonoKote trim sheets — Black for windows plus your choice of trim colors.
 Engine — Cox TD .049 or .051 recommended.
 Ace constant chord mini foam wing #50K102 — Ace R/C.
 Hardware package — #37E30 Ace R/C.

The foam wing and hardware package includes the engine mount, spinner, wheels, landing gear, fuel tank, hinges, horns, connectors and the other nuts and bolts needed to complete the model. The wing #50K102, at \$4.50, and the hardware package #37E30, at \$7.50, is available from Ace R/C, Box 511, Higginsville, Missouri 64037, (816) 584-7121, or from your local hobby shop. If ordering from Ace R/C, add \$1.00 for postage and handling.

While preparing this article I counted back over the last thirteen years and I have built over twenty models of different designs using the Ace foam wings. Their consistently good performance, low cost and ease of construction have given me enormous pleasure in the R/C hobby. □



Ace R/C aluminum landing gear with balsa wheel pants add much to the Citabria.