

● The Simitar is a product of the 70's energy crisis and the nation's general conservation effort. With the recent problems having to do with shortages of fuels and materials and the resultant high prices, more economical models seem to be a wise choice for many modelers.

Small aircraft generally cost about one third as much to build, maintain, and fly, than their much larger counterparts. Therefore, there are some of us who could not enjoy R/C flying if we were unable to realize the advantages of smaller low cost aircraft.

The significant features of the Simitar that you will enjoy are:

- (1) Easy to build and repair.
- (2) Most any .049 will provide ample power.
- (3) Response is quick.
- (4) Landing gear installation is not required.
- (5) Fuel consumption gives about 32 flights per quart at 6 plus minutes per flight.
- (6) Flying field size is minimal.
- (7) Dead stick landings are a breeze due to the excellent glide characteristics.
- (8) Near full pattern capabilities.

The disadvantages that we have noted are:

- (1) The small size, combined with high speed, make orientation at distances difficult for inexperienced pilots.
- (2) Large radio gear may be a bit cramped.

Several design requirements were kept in mind for the Simitar. Those were:

- (1) The wing span must be 48" or less.
- (2) Construction must be quick and simple.
- (3) Stall speed must be less than 10 mph.
- (4) Maximum power .049.
- (5) Two channel radio to be employed.
- (6) Weight must be 20 ounces or less to minimize damage in the event of impact.

Flying experiences with the Simitar have been most rewarding and pleasurable from the very first. Hand launches are made from a standing position, and no running start is required when using a TD .049 for power. After the first launch of the initial prototype a bit of down elevator trim was applied and it was off in a normal climbing attitude. Inside and outside loops were tight and tracking through the loops was good. The rolls, twenty-five or more, made it seem like the ship was attached to an electric drill! Four point rolls, due to a lack of rudder control, as well as tail slides, are not practical for this ship. Inverted flight and tight turns, however, were very easy.

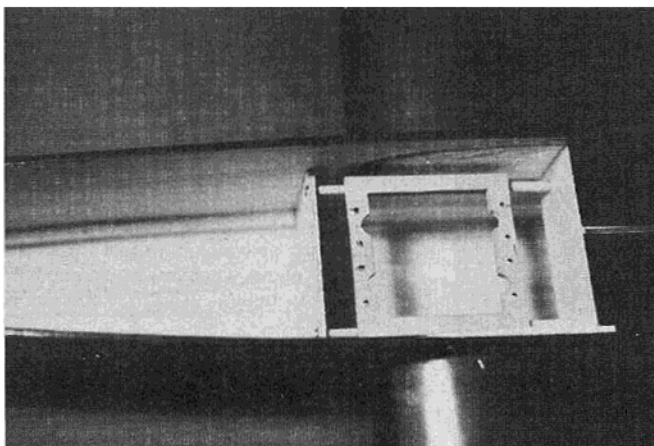
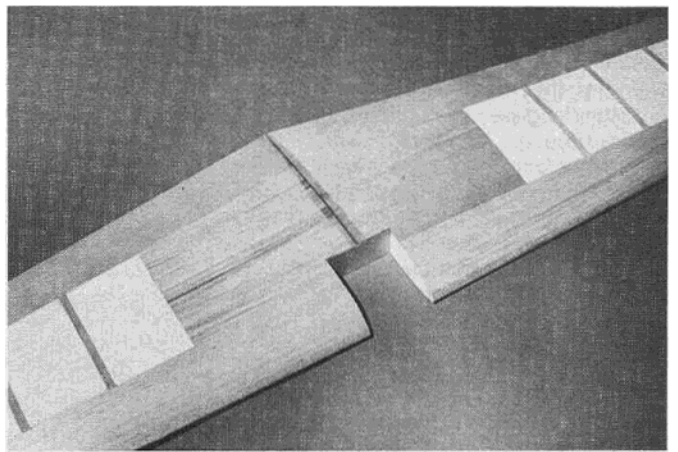
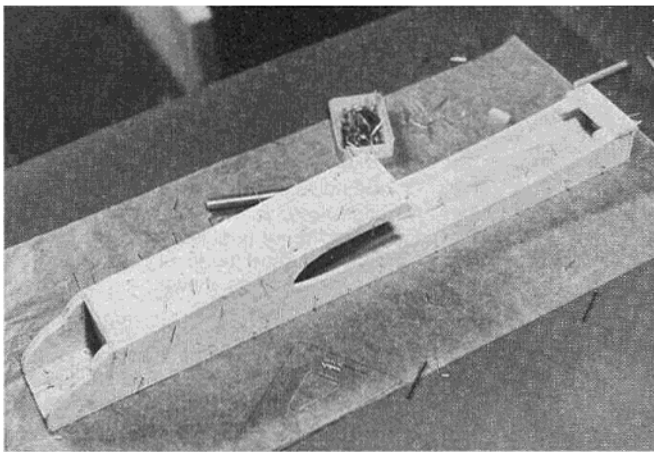
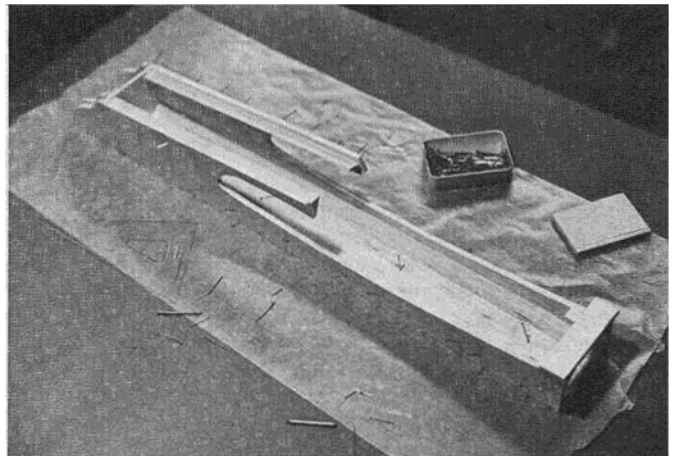
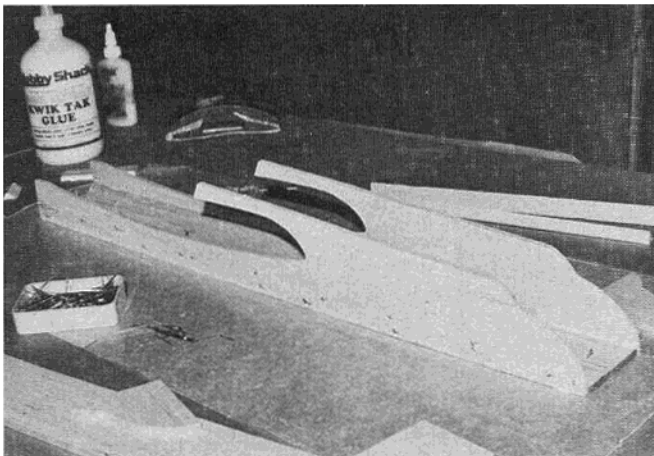
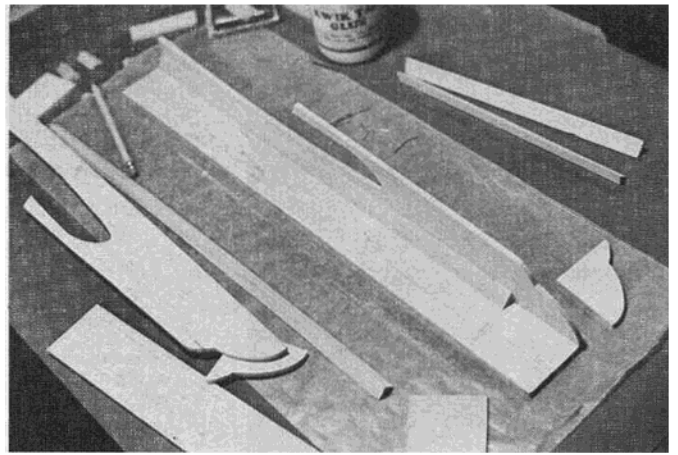
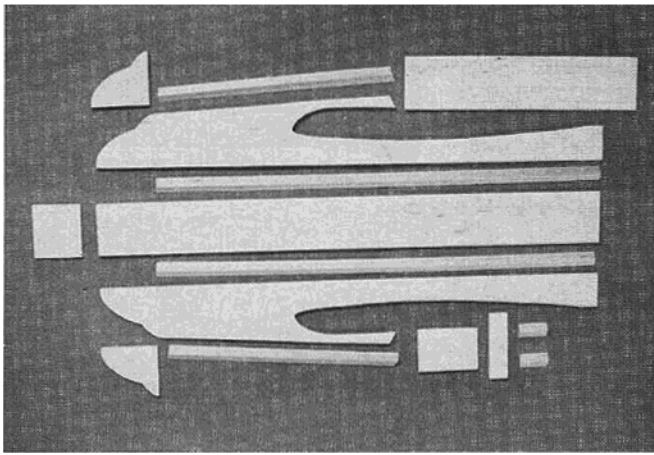
The most satisfying first flight experience was the dead stick landing, since the glide was excellent, very flat and gentle and, much better than expected.



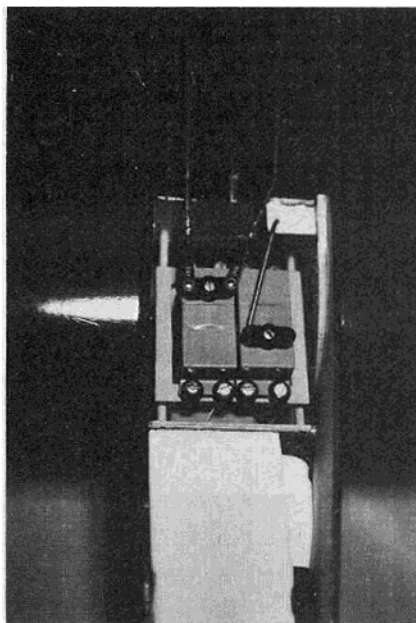
# SIMITAR

**A Half-A flying wing with quick response and near full-pattern capabilities. Easy to build and repair, the Simitar requires a minimal flying field size and yields about thirty-two flights per quart of fuel.**

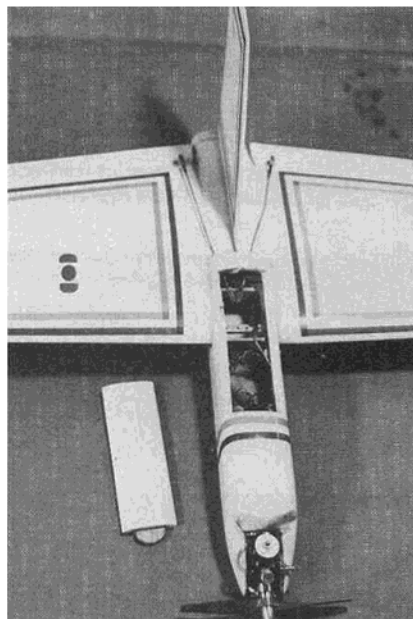
**BY BILL EVANS PHOTOGRAPHY BY BRUCE ROBERTSON**



1ST ROW: (L) Basic fuselage parts, ready for assembly. (R) One fuselage side glued to bottom. 2ND ROW: (L) Right fuselage side added to bottom sheet. (R) Firewall and bracing added. 3RD ROW: (L) Fuselage top sheet glued in place. (R) Foam wing cores with sheeting and capstrips glued in place. 4TH ROW: (L) Servo sliding tray with servos removed.



**LEFT:** Close-up view of the servos mounted on the sliding servo tray. Note linkage arrangement for elevons. **RIGHT:** The completed Simitar with Hatch removed. Note Cox Tee Dee .049 engine, hatch tongue and elevon pushrod location.



## From RCModeler Dec. 1976

- sides, not over them.
- Glue and pin the 3/16" sheet pieces for the rudder together on a flat surface.
  - Trim and sand the wing leading edges so that the leading edge wing skins will fit nicely over the leading edge.
  - Trim and sand the trailing edge strips to be flush with the foam.
  - Locate and mark the position of the wing skins on each wing panel.

In fact, the first flight landing approach was set-up three times before touch down was realized. More recent flights after the engine fuel supply has been spent have resulted in as much as six minute glider flights, and glider flight is the best expression for the landings of the Simitar.

Though the Simitar is not a beginners ship, competent multi-pilots can handle it with ease. If you have doubt about your capability I would suggest that you have an experienced flyer on hand for the initial flight. It has been our experience that one can become fairly proficient with the Simitar after two or three flights. Remember the most satisfaction comes with the flat glide which makes the landings a breeze.

Simitar foam cores are available for \$6.00 from: Bill Evans, 19216 Galvert St., Reseda, Calif. 91335. Phone: (213) 344-6391.

### Material List

- 5 — 1/16" x 3" x 36" balsa
- 3 — 3/16" x 4" x 36" balsa
- 1 — 1/4" x 4" x 36" balsa

### Construction

- Cut two 1/2" and two 3/8" strips from the 1/4" sheet.
- Cement and pin 1/2" x 1/4" balsa strip to the leading edge of each wing panel, making sure that the leading edge is kept straight.
- Cement and pin the 3/8" x 1/4" balsa strip to the trailing edge of each wing panel.
- Set these assemblies inside to dry.
- Cut the fuselage sides, top, bottom, and cowl cheeks from 3/16" sheet.
- Pin the fuselage bottom to a flat surface.
- Glue and pin the left fuselage side against the fuselage bottom. Pin the 3/8" triangle stock against the left fuselage side and the fuselage bottom.
- Repeat for the right side.
- Glue and pin the 3/8" triangles to the top inside edges of the fuselage, front and rear.
- Glue and pin the fuselage top front and rear, making sure not to glue the top to the sides. The top piece fits between the

### SIMITAR

Designed By: Bill Evans

#### TYPE AIRCRAFT

1/2A Flying Wing

#### WINGSPAN

50 Inches

#### WING CHORD

Root 10" — Tip 5 1/2"

#### TOTAL WING AREA

387 1/2 Square Inches

#### WING LOCATION

Top Of Fuse Pod

#### AIRFOIL

Semi-Symmetrical/Reflexed

#### WING PLANFORM

Swept T.E.

#### DIHEDRAL, Each Tip

1 Inch

#### O.A. FUSELAGE LENGTH

19 Inches

#### RADIO COMPARTMENT AREA

(L) 6 1/2" X (W) 2" X (H) 2 1/2"

#### STABILIZER SPAN

NA

#### STABILIZER CHORD (incl. elev.)

NA

#### ELEVON AREA

60 Square Inches

#### STAB AIRFOIL SECTION

NA

#### STABILIZER LOCATION

NA

#### VERTICAL FIN HEIGHT

7 1/2 Inches

#### VERTICAL FIN WIDTH (incl. rudder)

5 1/2" (Avg.)

#### REC. ENGINE SIZE

T.D. .049

#### FUEL TANK SIZE

1 Ounce

#### LANDING GEAR

NA

#### REC. NO. OF CHANNELS

Two

#### CONTROL FUNCTIONS

Elevons

#### BASIC MATERIALS USED IN CONSTRUCTION

Fuselage .....	Balsa
Wing .....	Balsa and Foam
Empennage .....	Balsa
Weight Ready-To-Fly .....	18—24 Oz.
Wing Loading .....	6.7—8.9 Oz./Sq. Ft.

- Apply contact cement to both the foam cores and the wing skins.
- Bond the wing skins to the wing panels, making sure that no warps occur when bonding the skin to the wing. This should be done on a flat surface.
- Sheet the wing center sections.
- Glue and pin on 1/4" x 1/16" capstrips at 2" intervals.
- Sand the wing panels smooth, rounding the leading edge to airfoil shape. Slightly round trailing edge as shown.
- Epoxy the wing panels together using a 1 1/8" block under each tip.
- Cut the elevons from 1/4" sheet and sand to shape as shown.
- Cut the rudder from 3/16" sheet and sand to shape as shown.
- Cut a notch in the wing to accept your choice of radio installation. In most cases cut a 2" wide piece out of the wing at the center section. The length of the cut should be about 3" starting at the leading edge.
- Cover the wing, elevons, and rudder.
- Trim and sand the fuselage to shape.
- Cut the hatch as shown.
- Cover the fuselage.
- Locate the fuselage on the wing and pin in place, then mark the fuselage location with a pencil. Remove the fuselage and trim the wing covering away where the fuselage covers the wing.
- Construct the servo sliding tray using epoxy, then epoxy the servo sliding tray into the wing cut-out.
- Epoxy the fuselage to the wing.
- Epoxy the rudder to the wing, removing the wing covering at this joint.
- Attach the elevons to the wing.
- Install your linkage, making sure that left rudder control on the transmitter results in the left elevon going up and the right elevon going down.
- Neutral position of the elevons should be so that the elevons are raised about 1/8" to 3/16" above what you would normally expect as neutral. This will produce a slight reflex.

**Flying — Don't over-control!** Easy smooth control must be applied until you become familiar with the craft. Fly it a bit fast until you become accustomed to its characteristics.