



SNARK

By Mike Hollison

S nark was inspired by a collection of C/L stunt ships that the author saw lined up at a local flying exhibition. With a few modifications such as a wider fuselage to take the radio gear, a more substantial fin/rudder for stability, and a Sullivan molded foam wing, Snark was born.

The plane is a pleasure to fly, and both construction and handling are well within the capabilities of a reasonably experienced modeler.

Wing Construction:

Snark has only flown with a foam wing; however, plans for a built-up wing are shown for those who prefer a more traditional approach.

First of all, notch both leading and trailing edges for the wing ribs and epoxy the aileron hinges into place. Then, building one panel at a time, cement the ribs into position, add 3/16" square spars top and bottom, and fill in the space between them with 3/16" scrap balsa sheet.

Next, cut two undercarriage mounts from 1/4" ply, and epoxy a stack of three squares of 1/4" ply at one end for the torque box. Epoxy one mount in position, then cut the 1/8" ply dihedral wing brace and epoxy that in place also.

Cover one panel with 1/16" balsa sheet, after first gluing the scrap balsa wedge in place for the wing mounting bolt. Epoxy the remaining wing panel at the correct dihedral angle, then sheet and add the torque rods, ailerons, balsa

wing tips and locating dowel. Finally, fiberglass the wing center section and put aside.

The Sullivan molded foam wing is even easier to construct since one merely follows the instructions included in the package! However, a couple of changes need to be made to suit the design.

First, each panel must be cut down by 8 1/2" at the tip, reducing the length of each wing half from 31 1/2" to 23". Next, the spaces provided for the landing gear blocks must be filled in with a strip of 1/4" sheet balsa, and a new space cut as shown on the built-up wing. The molded squares immediately around this new mounting slot should also be filled in with 1/4" balsa sheet. Remember to use only Titebond, or a similar adhesive here, not balsa cement, as this will attack the foam core.

The landing gear blocks should now be epoxied into position, and the center section sanded so that the required dihedral angle may be obtained.

Balsa tips should then be added to each panel, as should the 1/2" balsa ribs at the center section, and the building instructions supplied by the manufacturer followed from this point on. The author sheeted and capstripped the wing as directed, fiberglassed the center section and, once the balsa fillets beneath the wing had been sanded flush with the fuselage, covered the finished

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Designed for a .35-.40 engine, the Snark is tailored to fit the needs of the Sunday Flier.



SNARK

Designed By : Mike Hollison

TYPE AIRCRAFT

Sport/Stunt

WINGSPAN

48 Inches

WING CHORD

Root 11 $\frac{7}{8}$ " — Tip 10 $\frac{1}{2}$ "

TOTAL WING AREA

528 Sq. In. (Approx.)

WING LOCATION

Low Wing

AIRFOIL

Symmetrical

WING PLANFORM

Double Taper

DIHEDRAL, EACH TIP

3/4 Inch

OVERALL FUSELAGE LENGTH

42 $\frac{3}{4}$ Inches

RADIO COMPARTMENT AREA

(L) 17" x (W) 2 $\frac{3}{4}$ " x (H) 2 $\frac{1}{2}$ "

STABILIZER SPAN

20 Inches

STABILIZER CHORD (incl. elev.)

6" (Avg.)

STABILIZER AREA

120 Square Inches

STAB AIRFOIL SECTION

Flat

STABILIZER LOCATION

Top Of Fuselage

VERTICAL FIN HEIGHT

5 $\frac{1}{4}$ Inches

VERTICAL FIN WIDTH (incl. rwd.)

5 $\frac{1}{2}$ " (Avg.)

REC. ENGINE SIZE

35-40 Cubic Inch

FUEL TANK SIZE

6 Ounce

LANDING GEAR

Conventional

REC. NO. OF CHANNELS

4

CONTROL FUNCTIONS

Rud., Elev., Throt., Ail.

BASIC MATERIALS USED IN CONSTRUCTION

Fuselage Balsa & Ply

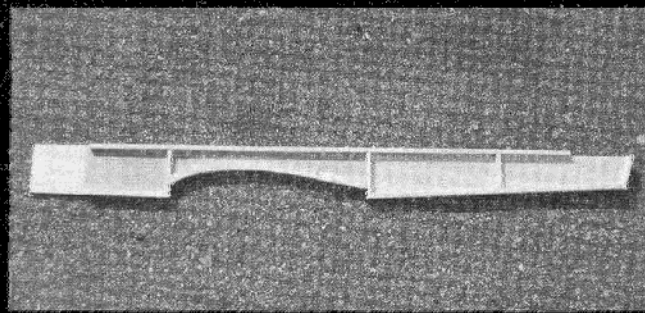
Wing Foam, Balsa & Ply

Empennage Balsa

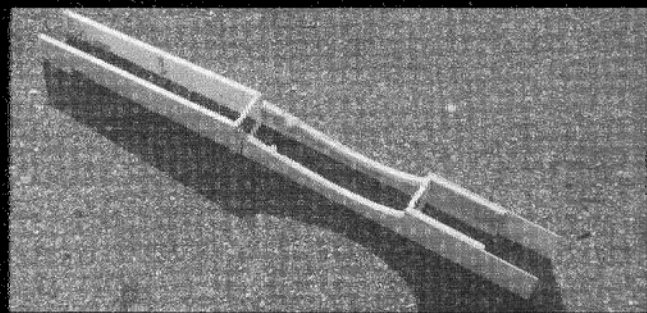
Wt. Ready-To-Fly 80 Ounces

Wing Loading 21.8 Oz/Sq. Ft.

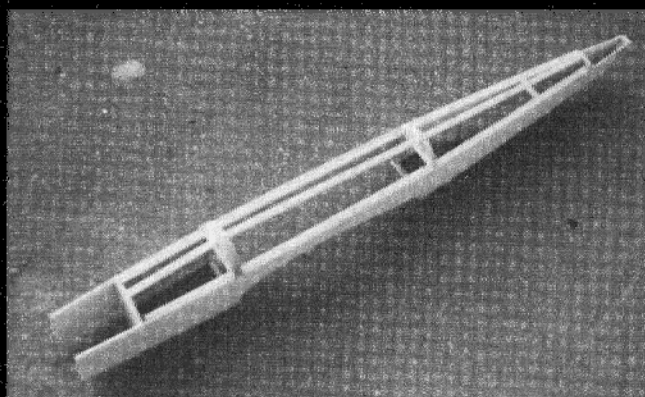




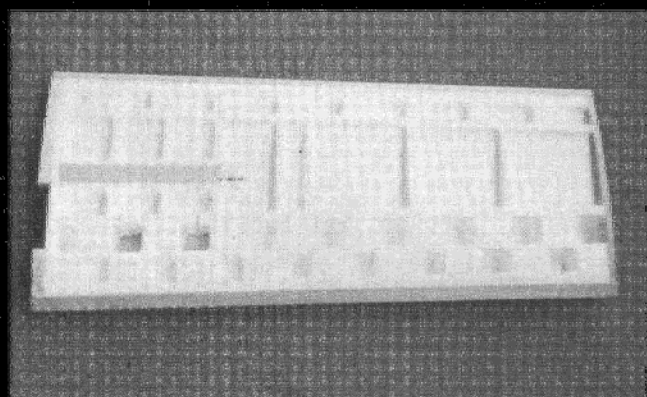
Fuselage side complete with nylon wing hold-down bracket attached.



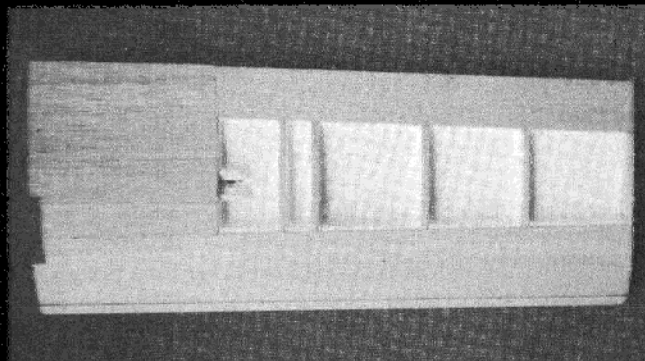
Inverted fuselage sides joined at wing saddle on a flat surface. Check for proper alignment.



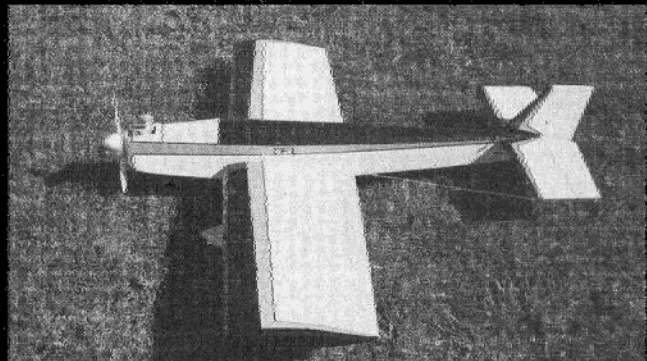
Basic fuselage structure completed awaiting top and bottom sheeting.



Sullivan foam wing ready for sheeting.



Sheeting and capstrips added to Sullivan foam wing. Plans also show a built-up wing.



Completed Snark shows the clean and simple lines. A Wing Mfg. canopy could be added.

wing with Solarfilm.

Fuselage Construction:

The fuselage is basically a box structure with a turtle deck top and should present no problems to the average builder.

Cut two sides from 3/32" balsa, then add the 1/32" ply doublers as shown. Glue on the 1/4" square stringers, spacers, and balsa side rails, then bolt the Du-Bro wing mounting brackets in position ensuring that they match up with the bolt holes in the wing.

Next, cut the motor bulkhead from 1/8" ply, drill for fuel lines and throttle pushrod, and bolt on the pre-tapped motor mount as shown in the plan. Epoxy the bulkhead and balsa spacers to the fuselage sides, ensuring that all is

square; then glue the fuselage tail together.

Install a six or eight ounce fuel tank at this point, epoxy the 1/8" ply wing retaining bulkhead in place, then cut top formers F1 and F2, and glue in place. Add the 1/4" square balsa spine, and cover the top with 1/16" sheet balsa. Sheet the bottom of the fuselage back from the trailing edge with 3/32" balsa.

Add scrap balsa blocks around the nose, slide a 2" diameter spinner onto the motor, and bolt to the engine mount. Wrap the motor in a plastic bag to prevent dust from getting inside, and sand the fuselage nose flush with the spinner. When this is done, remove the motor, and epoxy the 1/32" ply spinner ring to the carved balsa nose.

Finally, bolt the wing to the fuselage and, using scrap balsa, build up the center section of the wing to conform with the lines of the fuselage bottom. Cover the wing with Solarfilm.

Tail Assembly and Landing Gear Construction:

The vertical and horizontal stabilizers are cut from lightweight 1/4" balsa, hinged and epoxied to the fuselage.

The tailwheel strut is bent from 1/16" diameter wire, and glued in position as shown, and the main landing gear bent from 5/32" diameter wire. Be sure that the wheels are cambered slightly, and that each one points inwards toward the nose. This will ensure that the plane tracks in a straight line on take-off.

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Cut a pair of landing gear 'doors' from 1/32" ply, bind and epoxy to the wire, then bolt the gear to the wing with Goldberg landing gear clamps.

All that remains now is for the motor and radio to be installed and the model painted.

Flying:

Snark flies slow & stable and should present no problems to the beginning stunt pilot. Take-offs are straight and true, and the Sullivan wing shows no tendency to stall even when the engine is throttled way back on landing approaches.

While Snark was not designed as a pattern ship, its performance is lively and much like the C/L planes it was modeled after. Square and triangular loops are easily done, and the author is now working on wing-overs. Happy stunting! □

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