



SKEETER

by LLOYD NICHOLSON

I think that in order to best describe the Skeeter, I will change the format of the normal magazine construction article. What I will do is interrogate myself for, I hope, your benefit.

Q. When was the Skeeter designed?

A. In Early 1965.

Q. Why did you design it?

A. It was an attempt (successful, I think) at closing a gap in model design.

Q. What gap?

A. The maneuver gap. I wanted a truly aerobatic model capable of ALL the maneuvers, not just some. In addition, I wanted to accomplish maneuvers not yet included in the pattern at that time. The talk then was of a free style type of contest. To my surprise and delight I obtained what I wanted in the Skeeter.

Q. Is there any maneuver it won't do?

A. If there is, I haven't found it yet. The tail slide is still the toughest, though.

Q. How about spins?

A. Spins are a natural. Both inverted and upright the entry is clean, spin is slow and recovery is predictable. Snap rolls, the same thing. I've seen contests lost because a model wouldn't spin. The Skeeter will spin every time, even with a sloppy entry.

Q. Isn't an airplane that spins and snaps easily unstable?

A. Not on your life. The Skeeter will not spin or snap unless you cause it to do so by applying the proper spin or snap command, yourself. I often fly the Skeeter, low throttle, full up elevator, and steer it around with aileron, just to show off the extreme stability, and then kick in rudder to spin. Reverse spins are great!

Q. With these types of flying characteristics it must be a good contest machine.

A. It is! The Skeeter has bagged 22 trophies in Novice and in Expert Class C competition. Such places as Amarillo, Texas; Wichita, Kansas; Denver, Colorado; Billings, Montana. Know the bite of the Skeeter! Its last contest was at Marana Air Park in Arizona, at the First Annual RCM Winter Nationals, where it captured fifth place in C Expert.

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Q. I notice that your last 3 Skeeters have fiberglass fuselages. Do they fly any better than the earlier wood ones?

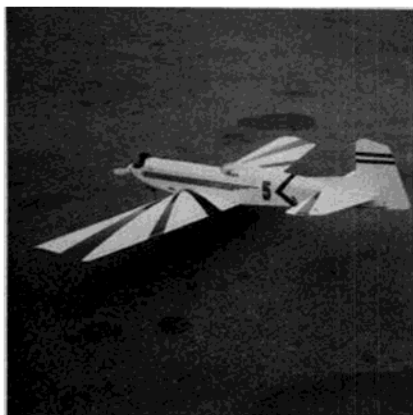
A. Not at all. For me, fiberglass is less costly, quicker, more durable, and better looking than wood, but does not fly any better. The wood Skeeter does build pretty fast, though.

Q. What equipment are you using?

A. The Classic system as published in RCM. I am using 4 of the 6 channels.

Q. What servos are you using. The PS-2 or PS-3?

A. Neither. I'm using the latest, the KPS-9 with Classic amplifiers. I have found this to be a very fast, smooth servo. I hadn't thought that the extra speed the KPS-9 offers would be of any great



Skeeter prototype No. 5.

importance, but I found out differently the first time that I tried a set. Because of the faster response time the reverse spin became much easier to accomplish. Also, the Four Point Roll and Eight Point Roll is easier because there is no over-roll when you relax the stick. The servo is right with your transmitter. No lag. I used to use the PS-2 until the KPS-9 became available.

Q. What engine do you use?

A. I am using the Super Tigre G.60 which is a very powerful engine. The Skeeter likes power; I think because of the thick wing and the altitude here at Denver. The new Merco III .61 looks like a real powerhouse too.

Q. I've heard that some airplanes are for their designer only. In other words, no one else has much luck with them. How about the Skeeter? Will it fly the same for someone else as for you?

A. I am sure it will. Several people have built Skeeters and are very happy with them. The design is very tolerant and does not have to be letter perfect to give winning performance.

Q. A lot of emphasis has been placed on the Skeeter and contests. How about the sport and fun flyer?

A. The Skeeter is a very good ship for the sport flyer. The characteristics that make it a good contest design also make it a good sport model. Basically, it grooves well and handles easily plus the fact that it won't pull some unexpected dido on you such as snap rolls with an application of elevator, or drop a wing in a landing, even if it is too slow.

Q. Would you then say that the Skeeter is a good all-purpose miniature aircraft that the average modeler can enjoy or the more bloodthirsty types can use to bring home the hardware?

A. YES!

THANK YOU!

CONSTRUCTION NOTES

Fuselage

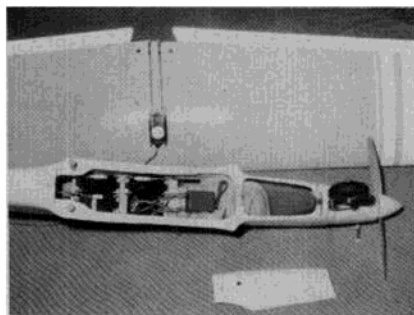
1.) Cut out balsa fuselage formers F3 through F6. Cement 1/8" balsa braces to F4 through F6. Set aside.

2.) Cut ply formers F1 (firewall) and F2. Prepare F1 and nut plate, glue nut plate to F1.

3.) Cut 1/32" ply fuse doublers and cement (contact cement works best) to 1/8" x 4" x 48" balsa fuse sides. Cut fuselage sides to correct shape. Position and cement remainder of side pieces (1/8" x 1/2" strips).

4.) When dry, join sides using formers F2 and F4, keeping assembly square. Let dry. Cement 1/4" wing saddles. Install firewall F1 (epoxy cement highly recommended here). Install former F3.

5.) Shape engine compartment floor block and cement. Do not forget the square cut for nose wheel block.



RCM Classic servos and six channel radio.

Next cement the bottom nose block (1 piece, nose to wing) 4 x 1 x 12 to fuse and permanently cement to 1/2" back of firewall. Tack cement the remainder, as this will be cut off later to form the bottom tank hatch.

6.) Fit 1/8" x 2" top side sheets and cement from F1 to F4. Cut excess from top side sheets and install 1/8" top sheet from F1 to F4.

7.) Join sides at tail using tapered tail block. Install formers F5 and F6. Install 1/8" x 1/2" bottom cross braces.

8.) At this point cement stabilizer and elevator horn assembly to fuselage. Notch stabilizer T.E. to clear horn for down elevator. Cement on pre-shaped vertical stabilizer and install elevator pushrod. Check for bind-free pushrod and horn action. Watch fin and stab alignment to fuselage.

9.) When dry, sheet the top of the fuselage, working upward from the sides. This is the same method as used for the front. Fit and glue, and bevel edges for good edge match.

10.) Sheet the bottom using either cross grain sheeting or length-wise grain sheeting.

11.) Cement on pre-shaped dorsal fin.

12.) Install desired engine, observing right thrust (1/16") behind left side of mount. Cut the nose back to 3/8" behind the propeller. Cement 1/4" sheet balsa to nose, cement triangular (1" square split diag.) pieces to sides of fuse and 1/4" balsa nose sheet in engine compartment so the nose can be shaped to spinner. Attach 2 1/2" spinner and draw out line on nose. Cut a piece of 1/32" to the spinner diameter, cut holes in center and cement to nose using spinner outline as a guide to position. Allow to dry thoroughly.

13.) Enlarge the hole in the nose to 1/4" from the outside edge of 2 1/2" diameter 1/32" ply. Remove engine.



Large control surfaces and thick percentage wing are responsible for stability and flyability.

Shape bottom block and nose. Keep bottom block as thick as possible at area of nose gear block.

14.) Cut a square hole in the bottom block for the nose gear block. Cut nose gear block (3/4" sq. basswood or 1/2" sq. maple) to the proper length. Drill a 3/16" hole through the entire length. Install in fuselage using EPOXY CEMENT. Make sure the nose gear strut hole is vertical.

15.) Cut the bottom nose block at the position shown on plans and remove from fuselage. Cement 1/8" ply keys to hatch cover.

16.) Cut the canopy from a standard bubble canopy. Position to fuselage. Cut the cockpit opening and install floor and walls.

17.) Fill all cracks in fuselage with "Your Favorite Crack Filler and All Purpose Mistake Hider." Sand!

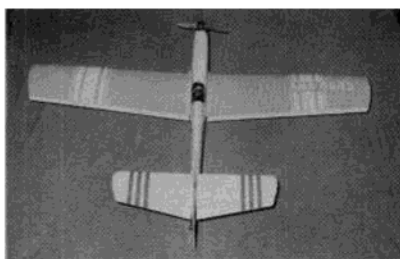
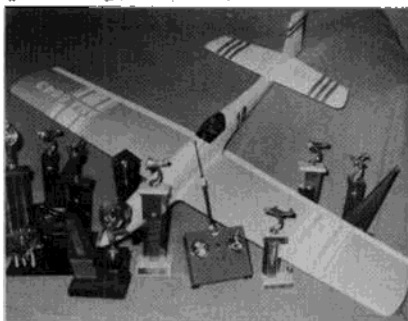
18.) Install desired wing hold-on device (dowels, screws, etc.).

19.) Finish as desired.

20.) Coat engine compartment with epoxy to fuel proof. I recommend coating the tank compartment with fiberglass resin to fuel proof this area.

21.) Drill all holes for nose gear and throttle pushrods. Cut holes for

A good radio and a good design produce good results!



Skeeter No. 10 with fiberglass fuselage. Flying characteristics identical with all-wood models No. 1-8.

rudder pushrod and install.

22.) Install the nose gear, engine, radio gear and finished control surfaces. Use nylon hinges or sewn hinges on elevators and sewn hinges on rudder.

Wing

1.) Join 3/8" square balsa spar halves to form two full length spars. Use 1/8" ply spar joiners to form correct dihedral angles. The bottom spar should have 3" to 4" dihedral under one side only. Note short joiner on aft part of lower spar. Shape the leading and trailing edges (see cross section of wing). Cement shaped 1/8" ply L.E. joiner to right half of L.E.

2.) Pin bottom right wing spar in place over the plans and place a 3/16" piece of balsa scrap under the tip to prevent built-in wing warp.

3.) Place R1 and R12 in place to position T.E. Pin T.E. and elevate to a height of 1 1/8" above plans.

4.) Cement all ribs in place.

5.) Cement right hand L.E. in place.

6.) Install and cement top spar and 1/4" x 1/8" top balsa sheet skin joiner spar.

7.) Sheet top of wing with 1/16" x 4" balsa before removing from plans (standard open framework silk covered method may be used here with 1/16" capstrips but I do not recommend doing so.)

8.) Repeat process for left half of wing. Support right half.

9.) Cement 1/16" ply L.G. block rib doublers to both sides of R4 on each panel.

10.) Install with white glue or epoxy, the Top Flite landing gear blocks and basswood blocks.

11.) Cement bottom 1/4" x 1/8" balsa sheet skin joiner spars (whew!) in place.

12.) Cement 1/8" ply screw wing fastening plates in place to R1 and R2 if the screw fastener is to be used. Drill holes later.

13.) Cement 1/8" ply center section webbing to front of main spars

if screw fasteners are to be used.

14.) Sheet bottom of wing.

15.) Add triangular tip blocks and form when dry (this way they are self shaping to the airfoil).

16.) Sand!

17.) A fiberglassed center section is highly recommended. If used, do it now.

18.) Silk covering is not required anywhere on the Skeeter. Light grade (00) silkspan over the entire model provides a very good base to dope and finish. Loss in strength is small.

20.) When finished, drill 1/4" holes in L.E. and install 1/4" dowel wing pegs.

21.) Drill 1/4" screw holes after fuselage position is located.

Stabilizer

Stab construction is self explanatory. I use the flat stab because of ease in building and have found no ill effects from it in the air.



Lloyd Nicholson and Skeeter No. 5.