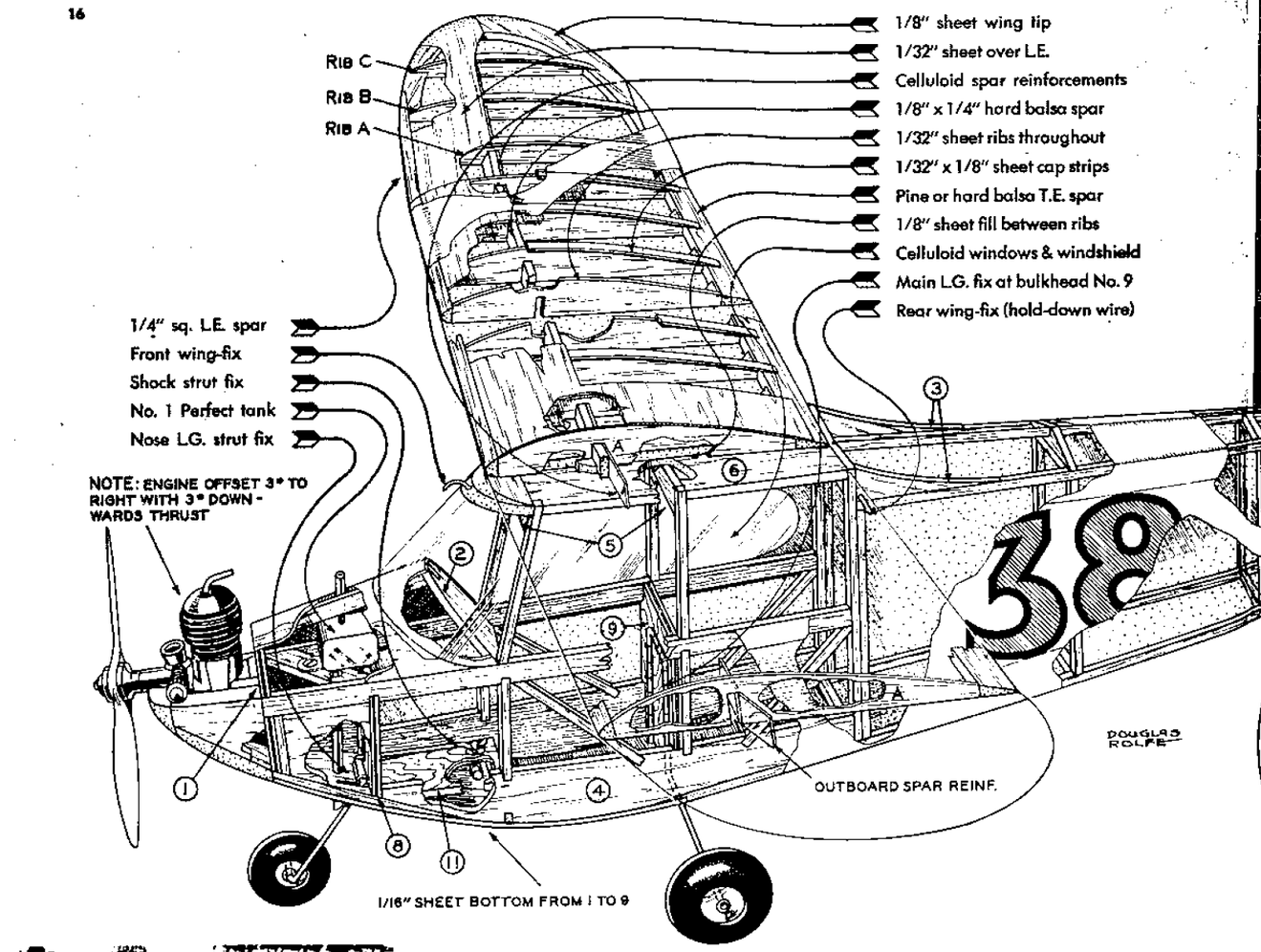
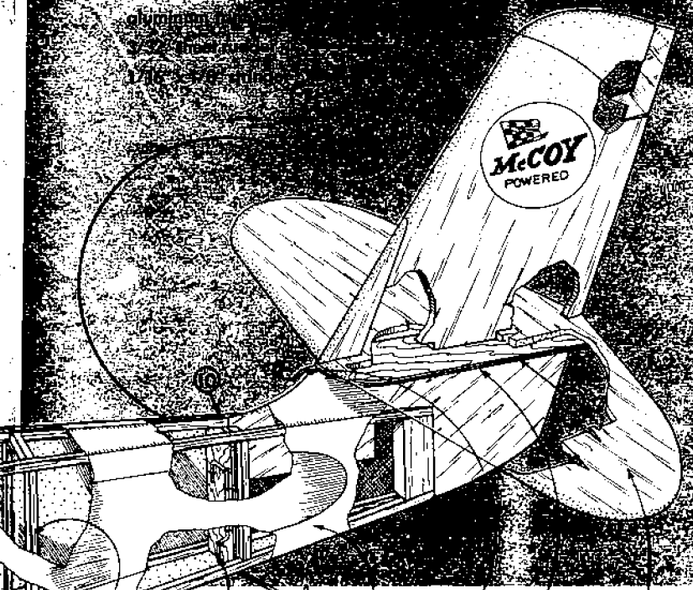
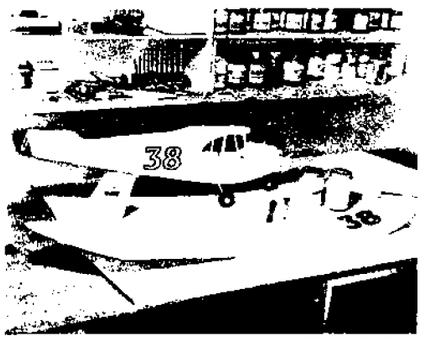




Full-size plans for Swanky Doodle on Group Plan #1156A from Hobby Helpers, 770 Hunts Point Ave., N.Y. 59, (35c).

Eye-appeal combined with fly-appeal make this sport flyer something really special. Uses .049 powerplant; climbs like a jet.



Looks like the Lieutenant is a "finish" fan.

SWANKY *doodle*

By Lt. KEITH LAUMER, USAF

■ How would you like to see a sleek, realistic model with a swept-rudder, low-dihedral wing and brilliant paint job parked on the runway with the motor howling? Released, it scoots forward for a 15 to 20 feet run before lifting in a screaming climb, a tight-banked acceleration that stresses the wing almost to the folding point; then as the power cuts, a perfect follow-through, from any attitude, without a stall, to a fast flat glide into a no-bounce landing on grass or pavement!

If that's your idea of sport flying, let's get started building "Swanky Doodle."

Construction is simple. Snappy appearance and structural strength are achieved without elaborate planking or hard-to-build curves.

Fuselage: Start by cutting out the four 1/8" plywood parts and the seven 1/8" sheet balsa parts (Nos. 1-11). Then cover the plan with waxed paper and lay out the fuselage side. Use medium hard 1/8" sq. balsa, cutting two of each part as you go along. Do not lay out the cabin side, as it is built separately. Build the second side directly over the first. Allow the glue to set hard before removing the sides from the plan and sanding with a sanding block.

Next, bend the main landing gear from 1/16" piano wire and lace it to bulkhead No. 9 using No. 30 linen thread. The tail skid is bent from 1/32" wire and laced to bulkhead No. 10. A liberal coating of cement should be applied to the lacing.

Shock-absorbing nose gear is bent from 3/32" piano wire. The first two right-angle bends are made and the 3/4" length of brass tubing is slipped over the wire. The final bend is then made by gripping the tubing in a vise or with pliers. After making this bend, the tubing can be freed to turn on the wire by tapping with a hammer, which expands the brass.

Sides are joined now on bulkhead 9 and at the rear. Note that the inner sides are beveled slightly at the rear where

Bill of Materials

1/8" plywood bulkheads, 4" x 4 1/2". 1/16" plywood bulkhead, elevator platform, 2" x 4". 1/8" balsa sheet medium, fuse formers, filling, wing tips, 3" x 18". (3) 1/8" square balsa medium, fuselage, 36". (2) 1/32" balsa sheet hard, ribs, cap strips, wing planking, 3" x 36". 1/16" balsa sheet medium, fuse planking, 3" x 12". 3/32" balsa sheet medium, tail assembly, 3" x 18". 1/4" square balsa medium, leading edge, 30". (2) 1/8" x 1/4" balsa hard, spar, sill, 36". 3/16" sheet balsa medium, nose, 3" x 3". 1/16" piano wire, main gear, wing hooks, 22". 3/32" piano wire, nose gear, 6". 1/32" piano wire, tail skid, elevator hook, 8".

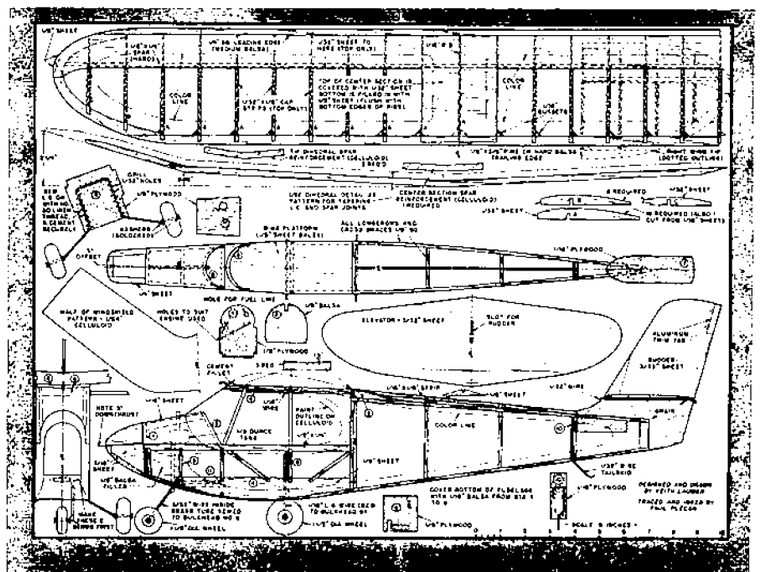
1 sheet Silkspan, 4 oz. white dope (fuel-proof). 1 large tube fuel-proof cement. 2 oz. color dope (fuel-proof). 6 brass washers, wheel retainers. 1/64" celluloid, windshield, 10" x 10". 2 oz. clear fuel-proof dope. 1 No. 1 Perfect tank. 5" small clear plastic tubing. 2 — 1-1/2" wheels (Perfect No. 34). 1 — 1-1/8" Nosewheel (Perfect No. 35). 7' No. 30 linen thread. 3/4" 8/32" I.D. brass tubing. 3/4" 1/8 wood dowel. 3/16" x 1-1/2" rubber band, nose wheel, shock link. 1/64" aluminum 3/8" x 1-3/8". 3 — 2" decal numerals.

joined. Next, the firewall is installed, after you have drilled the holes for the motor mounting bolts and attached the mounting nuts to the back. The nuts can be secured in place by gluing a piece of hard balsa over them while they are held by the bolts. Note the slight angle at which the firewall is mounted, establishing the down and right thrust.

Install bulkhead No. 8 with the nose gear attached and then place bulkhead No. 10 with tailskid. The cross pieces of 1/8" sq. balsa may now be installed and parts 2 and 11 placed as indicated on the plan.

Next, the cabin roof, part No. 6, is scored on the bottom center line and cracked into a shallow V. The 1/16" wire front wing-mounting hook is glued under this piece before parts 5 (3 of them) are glued on. The cabin supports are cut to length and attached to the cabin roof assembly, and the entire

(*Continued on page 61*)



unit is now attached to the main fuselage. The rear wing mounting dowel, of 1/16" wire, is now inserted as indicated on plan.

Rudder base, part No. 7, is installed and notched along the top edge to receive the 1/32" wire elevator hook. The 1/16" plywood elevator platform is glued to the rudder base over the wire and is well filleted with glue. Check the platform for alignment before filleting.

Nose wheel rubber shock linkage is made by folding a 3/16" by 1½" rubber band twice, and engaging the nose wheel shock arm wire through the hole in plywood panel No. 11. The projecting ends are engaged on a short length of ⅛" wood dowel and the rubber is twisted 4 or 5 turns before the dowel is glued. The bottom is now covered with 1/16" sheet balsa back to bulkhead No. 9. The first section of the fuselage sides is filled with ⅛" balsa.

Next, install a Perfect No. 1 fuel tank, and fuel line. Tubing extensions of filler and overflow should extend well outside fuselage. Interior of the tank compartment should be fuel-proofed before covering.

The 1/16" sheet planking over the tank compartment is cut to approximate shape, butt-joining two pieces if necessary. The hole for the filler is now punched. (A piece of sharpened brass tubing may be used as a punch.) Soak the piece in hot water and hold in place with rubber bands until dry; then trim, fuel proof, and install. The 3/16" nose pieces may now be added and the entire fuselage carefully sanded.

Interior of the cabin should be doped white before the fuselage is covered. Covering is very simple with the exception of the top. This portion is covered one side at a time using wet Silkspan. Attach the paper first to the curved leading edge of the rudder support; then before the glue sets pull the paper flat and attach it to the fuselage side, center stringer, and rear edge of rudder support. The entire fuselage, including planked surfaces, should be covered.

Wet the paper and when dry brush or spray on a coat of clear fuel-proof dope, and sand lightly.

Wing: All ribs are identical, with the exception of the four tip ribs and all 18 may be cut simultaneously on a bandsaw. Pin together a stack of 1/32" blanks ¾ x 5" with the pattern marked on the top blank, for sawing. Ribs should be sanded before separating.

The spar, of hard ⅛ x ¾ inch balsa, and the leading edge, of medium ¼" sq. balsa, are assembled over the plan, and celluloid reinforcements added. Rib locations are marked at this time. Ribs are glued securely in place on the spar and the leading edge is added next. The latter should project 1/32" above the top of the ribs. Trailing edge should be cut from pine, but hard balsa may be used. It is shaped before being attached and gussets are then added.

Tips, of ⅛" balsa, are assembled over the plan and then glued in place. All joints should now be checked and glue added where necessary for maximum strength. This is a very light wing structure, and its strength depends on secure joints.

Leading edge planking of 1/32" hard balsa is now cut to shape in 4 pieces. Each piece is glued first to the leading edge projecting above the ribs. When dry, the planking is glued down to the ribs. Cap strips and center planking are added next, cementing first at front, then to trailing edge. Leading edge should be shaped carefully now with a razor or modeling knife and then sanded to final shape. "D" weight aluminum oxide production paper is excellent for such shaping.

Rear ends of cap strips must be sanded out to a feather edge and the wing tips shaped before covering. Bottom of the wing may be covered with a single piece of Silkspan working out from the center. Four pieces are used on the top. Paper should be moistened and carefully drawn over tips to avoid wrinkling. Edges of the wing should be sanded to eliminate rough edges of paper. Then wet the wing, clear-dope, and sand lightly.

Tail Assembly: Rudder and elevator are cut from 3/32" medium balsa and edges are sanded round. Aluminum trim tab is attached to the rudder. A coat of clear, fuel-proof dope is applied to both rudder and elevator, and parts are sanded before gluing rudder to elevator.

Finishing: Although dope may be brushed on, spraying is a much more satisfactory method. If you do not have access to a spray gun, most body shops and sign shops will spray your model for a small charge. Fuel line and axles should be masked with masking tape, and one light coat of white fuel-proof dope sprayed on fuselage, wing, and tail assembly. All parts should then be sanded lightly and carefully to eliminate any remaining roughness.

Windshield is cut from 1/64" celluloid. After slipping the windshield over the front wing mounting hook, one side should be glued down securely. When the first side is dry the second side may be glued down. A glue fillet should now be run around the entire edge of the windshield.

The clear portion of the windshield must now be taped off. Tape can be precut to shape by covering a tracing paper pattern of the side window with tape and cutting out. The paper backing is stripped off and the tape mask laid on the celluloid. The front portion is marked out, using straight pieces. A second coat of white is now sprayed on all parts.

At this point any warp developing in the wing should be corrected by pinning the wing down on a flat board with a wedge inserted under the edge to reverse the warp. A coat of thinner is applied to loosen the paper which will dry in the new position. When the pins are removed the wing will flex back to a neutral position.

The color panels on wing and fuselage add greatly to the appearance of "Swanky Doodle" and can now be added. Any bright color or pastel shade may be used to advantage against the white background. The color areas may be outlined in pencil and color dope brushed on. But again, spraying is superior. For spraying, patterns for the curved portions may be made as for the windshield and carefully placed as indicated on the plan. The straight edges are then added to complete the outlines. The entire wing and fuselage, with the exception of the areas to be color doped, should be protected with paper taped in place.

Two light coats of fuel-proof color dope are sprayed on. Allow a half-hour for the dope to set hard before removing the tape. The tape must be peeled slowly, not ripped off, to avoid damaging the covering.

The 1½" main wheels may now be installed with washers soldered in place to retain wheels. A 1⅛" nose wheel is then installed. Decals are added. Most paint and glass stores carry a complete line of handsome black and gold numerals which add a final touch of swank to "Swanky Doodle."

Flying: Wing and tail assemblies each is held in place by four 2" rubber bands. Before test gliding check to make sure the model balances as indicated on the plan. Add weight if necessary. When properly balanced the model will glide approximately 50 feet from a hand launch, and all three wheels will touch down simultaneously. Any stalling tendency should be corrected by adding weight in the engine compartment.

Under full power the ship flies at a very high speed, and a little rudder is a lot. It is essential that there be no warp in wing or elevator and the flying surfaces must be checked for proper centering and alignment before each flight.

Offset the rudder tab 1/32" to the right and try a flight under low power. A right turn of approximately 400 feet diameter in the glide is best.

As power is increased the left turn under power will tighten. Offset rudder tab to a maximum of 1/16" to the right to compensate if the turn becomes too tight. Additional right engine off-thrust should be used beyond this point if required. If a glow plug engine is installed no further adjustment will be necessary. However, if the McCoy or Webra .049 diesels is used, additional down-thrust to that which is built-in may be required to avoid looping, although I have enjoyed the all-out acrobatics "Swanky Doodle" will perform on a long motor run at terrific speed without getting out of the area. Flying speed is so great that even when the motor cuts at the bottom of the loop the ship will ride on up and over without faltering.

A hypodermic syringe with the tip ground square makes an excellent fuel pump, and permits exact metering of fuel. Two cc. is about right for a 15 second run in an .049 diesel. This model is at its best in a take-off from the ground, but can of course be hand-launched equally well.

A contest version built of 3/32" balsa covered with Jap tissue, clear-doped, and minus the main gear can compete with any pylon job.

Six "Swanky Doodles" have been built in three different sizes and all perform identically. To size the plan for any desired engine, simply enlarge plan until the propeller diameter equals that recommended for your engine.